

Read this instruction manual
before using the electric stair-climbing trolley



Electric stair-climbing trolley
**DOMINO AUTOMATIC PLASMOID and
DOMINO PLASMOID STABILIZED**

Use and instruction manual

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(translation of original instructions)

**NOTICE**

- Before starting to use Domino Automatic Plasmoid, it is mandatory to read and understand the instructions in this manual.
- The efficiency and safety of the stair climbing trolley can be guaranteed only when all the instructions in this manual are observed.
- If the user has trouble understanding the concepts in this manual, he/she should not use the device.
- The product corresponds to the current state-of-the-art and to the related technical safety requirements. Nonetheless it is not possible to exclude a minimum of residual risks. In this regard, please comply with the safety indications.

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1 PREFACE

1.1 General information

This manual is an integral and essential part of the Domino Automatic Plasmoid (also called “Domino Plasmoid”) and Domino Plasmoid Stabilized (i.e. equipped with stabilizing arm) stair climbing trolley and must be delivered to the user.

The users must read, understand and strictly follow the instructions below before commissioning the product.

These instructions are binding. Accident prevention standards obligate workers to comply with these instructions. The employer is obliged to take measures to prevent accidents. Operators must be informed on the risks resulting from use of the work equipment, on the necessary safety measures and rules of conduct, including provisions in case of hazardous situations, on the type and mode of execution of the controls, on maintenance. The responsibility for use, handling and maintenance must be clearly and unambiguously established (and respected by all personnel), so as to avoid any misunderstanding on competences that could jeopardise safety. The operator must only use Domino Plasmoid if in perfect operating condition. The operator must also keep unauthorised personnel away from the trolley.

The manufacturer cannot be held liable for physical injury and/or damage to objects or to the stair climbing trolley in question when it is used without following the instructions.

The Manufacturer reserves the right to make changes to the Domino Plasmoid stair climbing trolley in keeping with technical developments, without notice and without automatically and promptly updating this manual. All of the images of the product below are for illustrative purposes only.

The main purpose of this manual is to simply and gradually make the operator acquainted with accident prevention standards and behavioural standards which are the foundation of a correct and safe use of the machine, preventing, insofar as possible, the occurrence of accidents.

The legal provisions are listed briefly so as not to burden the booklet structure, but are still a valid reference for those who want to examine the topic more closely. With the entry into force of Legislative Decree no. 626 of 19/09/1994 and subsequent amendments (81/08), the legislator introduced the principal whereby all equipment and machinery must only be used by the operator after adequate and specific training. This training must guarantee that the machine is used correctly, in relation to the risks that can be caused by oneself or by other persons. Therefore, use of this machine must be reserved only to appointed personnel.

Abroad, the buyer shall comply with occupational safety legislation in the Country where the product is sold.

1.1.1 Preserving the manual

The User Manual is an integral part of the stair climbing trolley; it must, therefore, be kept in perfect condition and in a safe place at all times. This manual must always be available for consultation.

1.1.2 Manufacturer and Assistance Service

If you have any difficulties or queries, please contact our Assistance Service which has a team of qualified and specialised personnel, specific equipment and original spare parts at its disposal.

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1.2 Graphic representation of the safety warnings

The following graphic symbols are used to identify the safety messages in this manual. These serve the purpose of drawing the attention of the reader / user to ensure a **correct** and **safe** use of the stair climbing trolley. Further graphical elements on safety warnings are in UPPERCASE, *italics* or **boldface** characters, even combined.



WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.



DANGER

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.



ATTENTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



INFORMATION

Introduces general information not related to physical injury.

2 SAFETY WARNINGS

2.1 Main safety standards



WARNING

Each user must first read and understand the instruction manual, and the chapter on safety in particular.

- Although the stair climbing trolley is fitted with safety devices, it is important to observe all the accident prevention rules in this manual in order to ensure safe use of the product.
- Always pay full attention when operating the stair climbing trolley and NEVER underestimate the residual risks associated with it.
- Failure to comply with all the safety indications can put the operator in danger and jeopardise operation. In case of breach, any warranty rights and all liability are excluded.



RESIDUAL RISKS: these residual risks are related to an incorrect use of the Stair climbing trolley and failure to comply with the instructions for use.

- Risks from overload;
- risk of tipping over due to unbalanced load;
- Risk of collision with fixed obstacles and equipment in motion
- Crushing of operator if the necessary manoeuvring spaces are not considered;
- Risk of load falling due to incorrect fixing on platform;
- Risk of load falling during loading/unloading stages.

You must observe the instructions in this manual and all other general precautions when operating an electric motor-powered device, even if you are already familiar with the use of electric trolleys. In particular:

- Familiarise yourself with all the aspects of the stair climbing trolley.
- Read the manual with care to familiarise yourself with operation, the safety devices and all the precautions required to ensure correct use.
- Keep the stair climbing trolley in good condition.



WARNING

IN THE EVENT OF PROBLEMS DERIVING FROM A POSSIBLE ELECTRICAL FAULT, SWITCH OFF THE MACHINE USING THE "NORMAL STOP" OR "EMERGENCY STOP" PROCEDURE.

2.2 Liability

The Manufacturer cannot be held in any way liable if the user fails to observe the operating instructions and safety rules in this manual. If the stair climbing trolley is serviced not regularly and not in compliance with the instructions provided, using for example non-original spare parts, or in a manner that can compromise the condition or original features of the product, the Manufacturer cannot be held responsible for the safety of people and the defective operation of the stair climbing trolley.

So as to guarantee maximum working reliability, Zonzini srl has carefully chosen the materials and components used in manufacturing Domino Plasmoid & Domino Plasmoid Stabilized, having it tested regularly before delivery. The long-lasting efficiency of the machine also depends on correct use and adequate preventive maintenance, according to the instructions in this manual.

The stair climbing trolley is guaranteed to comply with the technical specifications and instructions in the Manual as of its date of issue.



WARNING

Switch off the stair climbing trolley immediately if it makes any unusual noises or appears to be defective.

Contact the Assistance Service of the manufacturer to perform the appropriate checks.

You are advised to contact the Assistance Service directly if you require any information that is not provided in or that cannot be inferred from this manual.

2.3 Warnings for users

1. Do not load people or animals on the stair climbing trolley.
2. Do not load objects on the trolley beyond the maximum capacity indicated on its identification plate.
3. Do not operate the stair climbing trolley while under the influence of alcohol or narcotics.
4. Do not use portable communication devices, like CBs or mobile phones, when steering, because both hands must be kept on the control handle.
5. Do not attempt to climb stairs with the load facing the stairs.
6. Do not circulate on open roads where there is vehicular traffic.
7. Do not use when it is raining.
8. Do not use the stair climbing trolley when the battery is not sufficiently charged to power the trolley all the way.
9. Do not attempt to climb the stairs without having first strapped the load to the trolley. Before using the stair climber, it's mandatory to always tie the load with the supplied fastening strap.
10. Do not climb the stairs with the wheels used for flat surfaces assembled on the trolley.
11. When using the crawler track trolley, the operator must always remain in the control position, i.e. in front of the control handle.
12. Do not stop suddenly, make sharp turns or travel in a zig-zag formation.
13. Do not over-exert the stair climbing trolley.
14. Never drive the stair climbing trolley with parts of it disassembled.
15. Replace any worn and/or damaged parts and check that the protective devices and controls work correctly before use.

16. **It is absolutely prohibited for anyone to pass/be under and/or in the vicinity of the load and of the staircase during transport. The area downstream of the staircase must always be signalled, delimited and access prohibited by placing chains and stakes, so as to reduce any risks of interference and to prevent the access of bystanders. Everyone must be prohibited from accessing.**
17. It is PROHIBITED to use the device without full knowledge of the residual risks during all transport phases on staircases and flat surfaces.
18. It is PROHIBITED to use the device without perfectly understanding the controls for use, the manoeuvres to follow at the start of the staircase, on the staircase, at the end of the staircase and on the landing
19. It is PROHIBITED to put the stair climbing trolley to any uses other than intended, i.e. the transport of loads on flat surfaces and stairs.
20. It is PROHIBITED to use the trolley in areas where there is a risk of explosion.
21. It is PROHIBITED to try to load overly bulky objects in relation to the available space
22. It is PROHIBITED to travel on wet, slimy or slippery floors
23. It is PROHIBITED to reverse without checking for obstacles.
24. It is PROHIBITED to charge the battery in an area that is too hot or poorly ventilated.
25. It is PROHIBITED to cover the battery or trolley while the battery is charging.
26. It is PROHIBITED to smoke or use naked flames near the charging area.
27. It is PROHIBITED to perform any maintenance with the battery still connected.
28. It is PROHIBITED to use non-original spare parts.
29. It is PROHIBITED to insert limbs or fingers between the moving parts of the stair climbing trolley.
30. It is PROHIBITED to use the trolley in an ATEX environment
31. It is PROHIBITED to leave the trolley on the staircase either loaded or unloaded
32. It is PROHIBITED to move on the staircase without having correctly positioned the inclination of the load surface according to the gradient of the staircase and the position of the load's centre of gravity.
33. The trolley cannot be used on spiral staircases and/or anyhow on staircases or surfaces with more than a 2° lateral inclination. Stability could be jeopardised due to the external conditions depending on the type of surface.
34. **In case of excessive light and/or with direct light it may be necessary to create shade over the display with a hand in order to see properly.**
35. The direction of travel of the stair climber is only with man in the upstream control position. It is forbidden for the operator to use the trolley in reverse, or to climb or descend stairs or slopes with the operator downstream, i.e. under the trolley itself.
36. Whether climbing or descending, when you are approaching the staircase and/or on the landing, the crawler tracks must be parallel to the ramp.
37. As you are travelling on stairs or sloped surfaces, it is forbidden to excessively turn the crawler tracks right or left if this compromises stability.
38. Before initiating the transport, the operator must evaluate, possibly with the help of an external and expert technician if he deems it appropriate, depending on the load transported (weight/dimensions) and the measurements of the staircase/landing, to have enough space to maneuver, also considering the angle of the loading surface given by the system or set manually by the operator and that this does not compromise the stability and safety for the maneuvering of the trolley with the load.
39. **When the stairclimbing trolley is off, the red switch on the battery box must be pressed, then in the OFF position.**

2.4 Obligations for operators



WARNING

The trolley must only be used by one operator at a time. The operator must be qualified and trained in its use and have the psycho-physical ability to control the trolley easily with full load. It is PROHIBITED for children / persons not physically fit/unqualified persons/unauthorised persons to use the trolley.

2.4.1 Personal protective equipment

The operators who use and service the crawler track trolley must always use personal protective equipment such as:

- scratch and cut-resistant gloves;
- accident prevention shoes, with steel tip and non-slip sole and that discharges any electrostatic charges to the ground.
- securely fastened overalls or work clothes with close-fitting sleeves.

Refer to the pictograms below.



The personal protective equipment allows operators to work safely and to greatly minimise the residual risks that could not be eliminated during the design and construction of the machine.

The anti-crush gloves, safety footwear, coveralls and work clothing:

- must comply with the safety standards;
- must be of the right size to ensure that they cannot get in the way or get caught in the mechanisms;
- must be correctly worn and fastened to prevent them from slipping;
- must be replaced with new ones when worn or torn.

Maintenance warnings

1. All maintenance must be carried out with the battery disconnected from the trolley.
2. Operators must use the necessary safety equipment when performing maintenance.
3. The tools used for maintenance must be suitable and of good quality.
4. Do not use fuel or flammable solvents as detergents. Use only non-flammable and non-toxic solvents.
5. Limit the use of compressed air as much as possible (2 bar max) and wear goggles with side protections to protect your eyes.
6. Never use naked flames as a source of light when performing checks or maintenance.
7. Do not perform any maintenance without having the necessary technical training.
8. After performing any maintenance or checks, make sure that there are no tools or foreign bodies between the moving parts of the stair climbing trolley.
9. Do not attempt to open or tamper with the battery pack of the crawler track trolley. If the battery pack needs to be replaced, contact the ZONZINI S.r.l. assistance service.

**WARNING**

Use only original ZONZINI spare parts.

The Manufacturer cannot be held responsible for any damage or decline in efficiency due to the use of non-original accessories and parts.

Other provisions

Always check that the protective devices are fitted and in good condition and that the safety devices and controls work properly before using the trolley.

Do not use the stair climbing trolley if you notice any defects!

**DANGER**

It is strictly prohibited, therefore, to modify or remove the guards, controls, labels and data plates.

3 DESCRIPTION OF THE STAIR CLIMBING TROLLEY

3.1 Identification plates

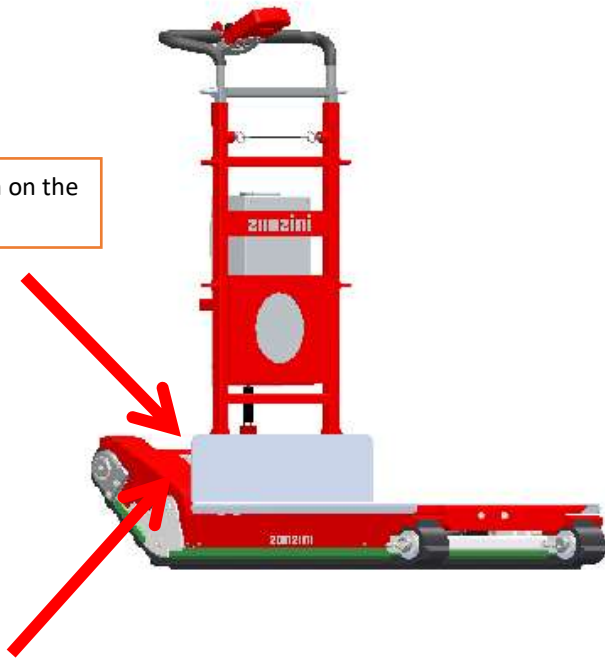
Check that the identification plate on the stair climbing trolley is perfectly legible. If it is not, request a new plate from ZONZINI S.r.l. and install it in place of the old one.

3.1.1 CE marking

The CE identification plate on the stair climbing trolley bears the following data:

- CE marking;
- Corporate name and address of the manufacturer;
- Model;
- Serial number;
- Year of manufacture;
- Maximum load-bearing capacity (kg).

Identification plate position on the machine



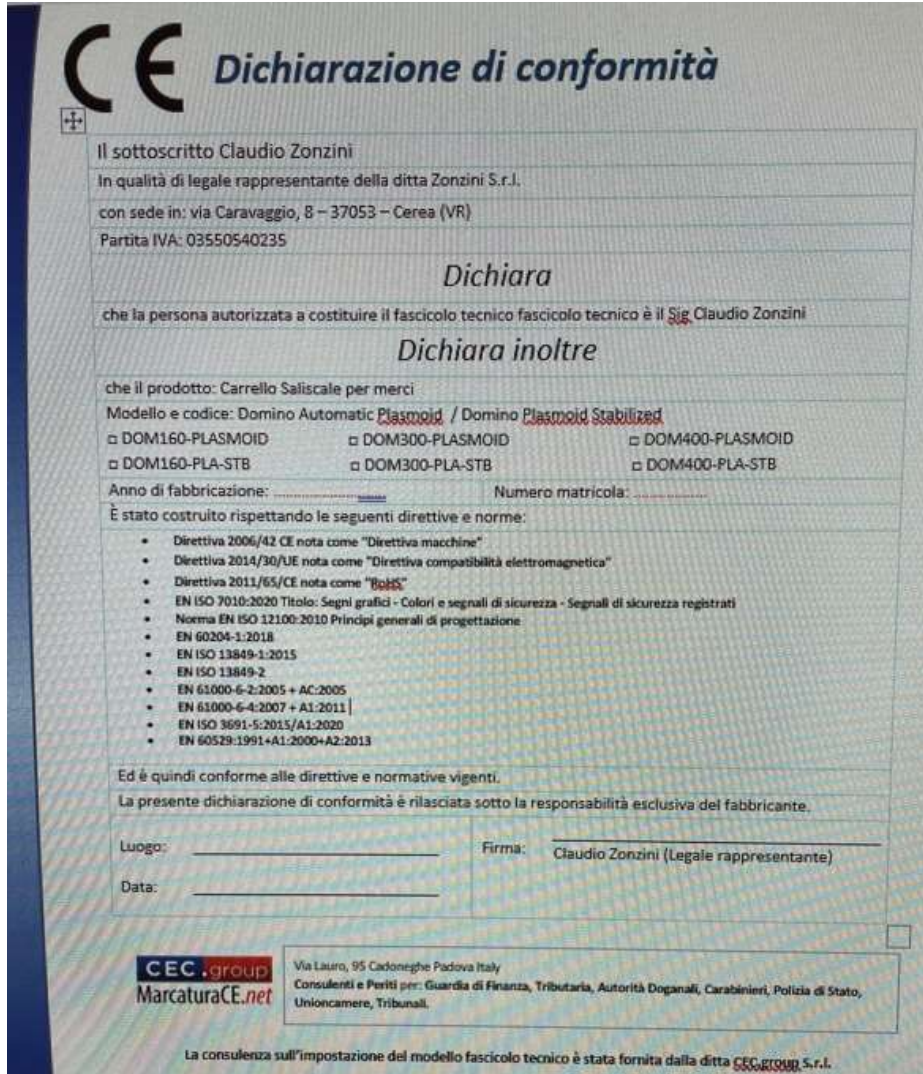
	<p>MODELLO / MODEL DOMINO AUTOMATIC PLASMOID</p>	<p>MATRICOLA / SERIAL N° PLA D</p>
<p>STAIRCLIMBERS</p>	<p>ANNO DI COSTRUZIONE / YEAR</p>	<p>PORTATA MAX / MAXIMUM LOAD (kg)</p>
<p>ZONZINI S.r.l. Via Caravaggio, 8 37053 Cerea (Verona) ITALY Telefono +39 0442 330421 info@zonzini.it - www.zonzini.it</p>	<p>MASSA A VUOTO CON BOX BATTERIA UNLADEN MASS WITH BATTERY BOX (kg) 99</p>	<p>MASSA A VUOTO SENZA BOX BATTERIA UNLADEN MASS WITHOUT BATTERY BOX (kg) 82</p>
<p>CARRELLI SAUSCALE PER MERCI Stairclimbing trolley for the transport of goods</p>	<p>CE</p> <p>IP 54</p>	<p>POTENZA / POWER (W)</p>

	<p>MODELLO / MODEL DOMINO PLASMOID STABILIZED</p>	<p>MATRICOLA / SERIAL N° PLA DS</p>
<p>STAIRCLIMBERS</p>	<p>ANNO DI COSTRUZIONE / YEAR</p>	<p>PORTATA MAX / MAXIMUM LOAD (kg)</p>
<p>ZONZINI S.r.l. Via Caravaggio, 8 37053 Cerea (Verona) ITALY Telefono +39 0442 330421 info@zonzini.it - www.zonzini.it</p>	<p>MASSA A VUOTO CON BOX BATTERIA UNLADEN MASS WITH BATTERY BOX (kg) 112</p>	<p>MASSA A VUOTO SENZA BOX BATTERIA UNLADEN MASS WITHOUT BATTERY BOX (kg) 95</p>
<p>CARRELLI SAUSCALE PER MERCI Stairclimbing trolley for transporting goods</p>	<p>CE</p> <p>950 x 556 x 1142 mm</p> <p>IP 54</p>	<p>POTENZA / POWER (W)</p>

Figure 1 FAC-SIMILE Machine identification plate

3.2 Declaration of conformity

In addition to the identification plate, the Domino Plasmoid stair climbing trolley comes with a Declaration of Conformity. This declaration loses validity in case of any modification made by the customer or third parties without the prior written authorization by Zonzini srl.



CE Dichiarazione di conformità

Il sottoscritto Claudio Zonzini
 In qualità di legale rappresentante della ditta Zonzini S.r.l.
 con sede in: via Caravaggio, 8 – 37053 – Cerea (VR)
 Partita IVA: 03550540235

Dichiara
 che la persona autorizzata a costituire il fascicolo tecnico è il Sig. Claudio Zonzini

Dichiara inoltre
 che il prodotto: Carrello Saliscale per merci
 Modello e codice: Domino Automatic Plasmoid / Domino Plasmoid Stabilized
 DOM160-PLASMOID DOM300-PLASMOID DOM400-PLASMOID
 DOM160-PLA-STB DOM300-PLA-STB DOM400-PLA-STB

Anno di fabbricazione: Numero matricola:

È stato costruito rispettando le seguenti direttive e norme:

- Direttiva 2006/42/CE nota come "Direttiva macchine"
- Direttiva 2014/30/UE nota come "Direttiva compatibilità elettromagnetica"
- Direttiva 2011/65/CE nota come "RoHS"
- EN ISO 7010:2020 Titolo: Segni grafici - Colori e segnali di sicurezza - Segnali di sicurezza registrati
- Norma EN ISO 12100:2010 Principi generali di progettazione
- EN 60204-1:2018
- EN ISO 13849-1:2015
- EN ISO 13849-2
- EN 61000-6-2:2005 + AC:2005
- EN 61000-6-4:2007 + A1:2011
- EN ISO 3691-5:2015/A1:2020
- EN 60529:1991+A1:2000+A2:2013

Ed è quindi conforme alle direttive e normative vigenti.
 La presente dichiarazione di conformità è rilasciata sotto la responsabilità esclusiva del fabbricante.

Luogo: Firma: Claudio Zonzini (Legale rappresentante)
 Data:

CEC.group MarcaturaCE.net Via Lauro, 95 Cadoneghe Padova Italy
 Consulenti e Periti per: Guardia di Finanza, Tributaria, Autorità Doganali, Carabinieri, Polizia di Stato, Unioncamere, Tribunali.

La consulenza sull'impostazione del modello fascicolo tecnico è stata fornita dalla ditta CEC.group S.r.l.

FAC- SIMILE Declaration of Conformity

3.3 Technical data sheet

Mechanical characteristics	
Dimensions (L x W x H)	950 x 556 x 1142 mm
Weight	82 kg (without battery box) 99 kg (with battery box)
IP Degree	IP54
Electrical characteristics	
Electric motor	<ul style="list-style-type: none"> • Motor 24V30G 300W (for 400 kg carrying capacity) • Motor 24V 45G 400W (for 300 kg carrying capacity) • Motor 24V 60G 400W (for 160 kg carrying capacity)
Battery	12V 20Ah/2h DC SILICON
Rated voltage	24 V D.C.
Number of conductors	2 (positive pole and negative pole)
Rated current	20 A

Radio characteristics	
Radio transmitter	GSM antenna name
Radio wave frequency	Frequency in GSM antenna number[900-960]/[1710-1800] Mhz
Other characteristics	
Width of the load surfaces	500 mm
Length of the crawler track support	770 mm
Maximum height of the handle above the ground	1590 mm
Minimum height of the handle above the ground	1070 mm
Maximum height of the back support of the load surface	1384 mm
Minimum height of the back support of the load surface	867 mm
Height of the load surface above the ground	132 mm
Maximum surmountable height of the first step	225 mm
Weight of the lead/gel battery	17 kg
Carrying capacity	<ul style="list-style-type: none"> • 160 kg • 300 kg • 400 kg
Dimensions of the wheels	200/50 mm
Battery lift	40 min
Battery charging time	5/6 h
Battery voltage /power (V/Ah)	24pc/20 (V/Ah)
Battery charger voltage/output current	24pc/4 (V/Ah)
Input voltage/frequency	110/240 V A.C. – 50 Hz
Weighted sound pressure level at operator station	70dBA
Hand-arm vibration level	< 2.5 m/s ²
Maximum gradeability on stairs or inclined surfaces (degrees)	45°

The noise level was calculated in compliance with EN ISO 11201:2010 (technical design procedure). When Normal distribution applies, the expanded uncertainty is estimated as $U(L_p) = 3 \text{ dB(A)}$, with a coverage factor of $k= 2$, equal to a 95% confidence interval.

**** Refer to the data on the identification plate of your trolley. The device can operate correctly at altitudes up to 1000 m above sea level.**

The device is capable of withstanding the effects of transport and storage temperatures, ranging from -25 °C to +55 °C and, for short periods no longer than 24 h, up to +70 °C

The manufacturer reserves the right to make technical changes to the product in view of its continual improvement.

3.4 General description

The Domino Plasmoid stair climbing trolley is designed and built to facilitate the transport of objects on stairs up to a maximum load of 400 kg, exploiting the properties of the crawler tracks. The machine is powered by a battery powered electric motor.

The machine can be equipped with a series of optional accessories, for which please refer to the instructions in the supplementary manual delivered together with this manual.

It must be used only in areas where there is no vehicular traffic: it is not intended for use on public roads because it does not fit the description of a "vehicle" provided in art. 46 of the Highway Code. The transport device is formed of the following main parts:

- Supporting frame of the trolley, on which the crawler tracks and electric traction motors are installed;
- Tilting load surface with actuator powered by the battery of the machine;
- The control handle, which can be height-adjusted or removed for transporting the trolley with ease;
- The control console of the trolley, at the top of the control handle;
- The removable battery pack;
- The battery charger;
- Wheels for moving the trolley on a level surface, with or without a load.

The crawler tracks on the trolley are designed to allow the trolley to move in all directions and on several types of stairs.

The trolley must move up the stairs with the control handle facing the first step of the staircase to be climbed, in order to make the most of the specific rear angle of the crawler tracks.

Once started climbing the staircase, it is mandatory to tilt the loading surface of the trolley so that the load is always inclined with respect to the ground, with a safety angle towards the operator. The operator must always check the correct stability of the load on staircases and inclined surfaces.

If there is a fault with the trolley, or the batteries run down, the two wheels can be fitted to move the trolley manually and easily on flat surfaces.

3.4.1 View of the assembled stair climbing trolley

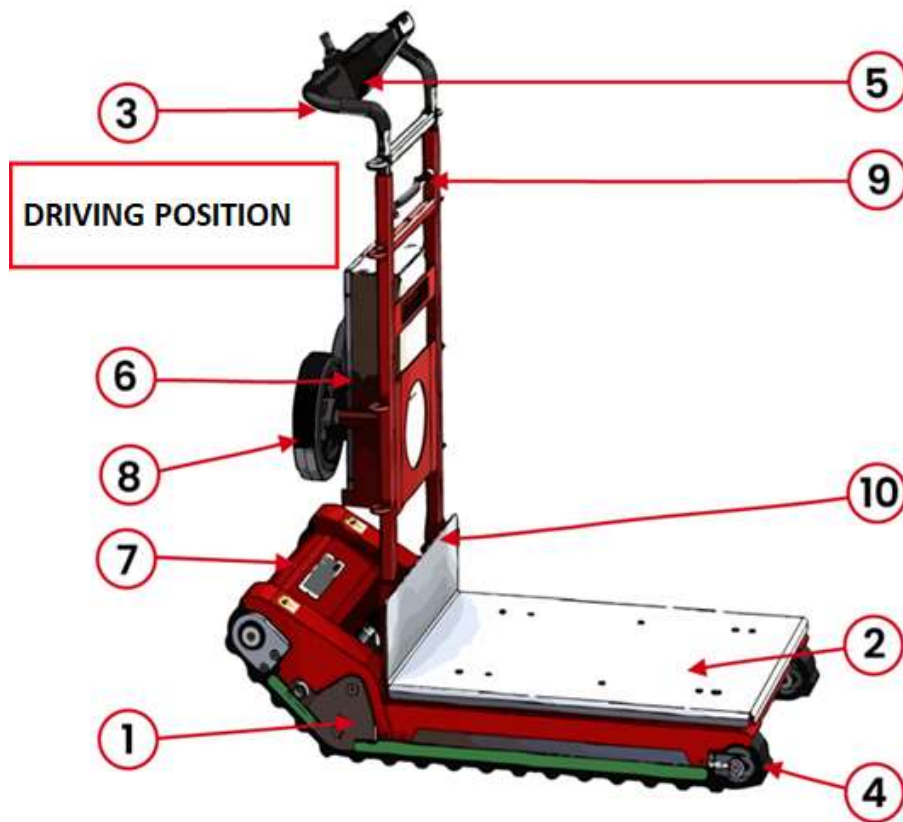


Figure 2 Main components of the DOMINO stair climbing trolley

Ref.	Description	Ref.	Description
1	Main frame	6	Battery pack
2	Tilting load surface	7	Motor guard
3	Control handle	8	Wheels for moving the trolley manually on flat surfaces
4	crawler tracks	9	Pistons for control handle height adjustment
5	Control console and joystick	10	Pins for locking the control handle

**DANGER: INCORRECT AND UNINTENDED USE**

The stair climbing trolley was designed and produced for a specific purpose. Any other use and failure to observe the set technical parameters and correct use as described in this manual by the Manufacturer (ZONZINI srl), can put the users at risk. In case of breach, any warranty rights and all liability are excluded.

3.5 Description of the controls

The device can be used in two different modes, "Manual" and "Automatic".

The control console for starting and controlling the stair climbing trolley has: a screen that displays battery charge status and trolley operating status; the start button; the proportional joystick for moving the trolley in all directions.

The control console is fitted at the top of the control handle, allowing you to control the trolley while always keeping one hand on the control handle.

The control console is connected to the electrical circuit of the trolley by cables and connectors.

The control system is comprised of a joystick for steering and controlling travel of the trolley in both directions.

The trolley travels in the same direction in which the joystick is moved, i.e. moving the joystick forward moves the trolley forward, and vice-versa.

Trolley speed increases as fast as the joystick is moved in the desired direction, up to the maximum permitted speed of the stair climbing trolley.

To slow down and stop the trolley, simply release the joystick and it promptly moves back to its central position, stopping the trolley.

To tilt the load surface in manual mode, simply press the OPEN and CLOSE button and move the joystick forward and backward to travel with the crawler tracks.

The device is in Manual mode when switched on. In this mode, the operator may activate some movements by pressing the specific buttons on the control display. Whereas Automatic mode is only activated and deactivated by pressing the specific button on the control display.

3.5.1 View of the control console (joystick):

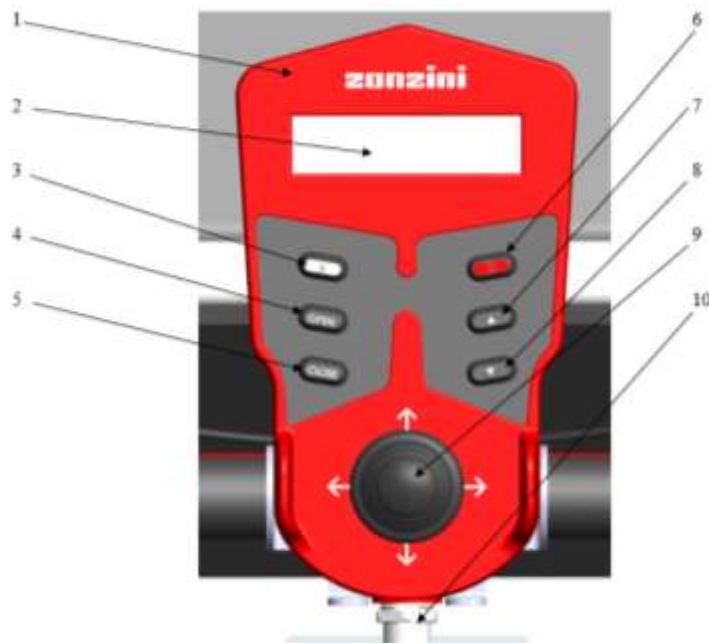


Fig. 3

1. Plastic Cover
2. Display: On the display the user can view the following information:
 - a. Battery level
 - b. Manual or Automatic Operating Mode
 - c. Inclination of the loading surface in degrees
 - d. Hours of use
 - e. Diagnostics
3. ON/OFF Automatic function.
4. Open: Opening the loading surface in Manual. Possibility of moving the crawler tracks simultaneously.
5. Close: Closing the loading surface in Manual. Possibility of moving the crawler tracks simultaneously.
6. General ON/OFF
7. UP arrow: allows you to recall the stabilizing arm. It also allows you to accept the messages that appear on the display for acknowledgment; and allows you to access menu functions if held pressed in combination with the DOWN arrow "key."
8. DOWN arrow: allows you to extract the stabilizing arm. Allows access to menu functions if held down in combination with the "UP arrow" key. "
9. Crawler control joystick: forward, backward, right and left
Clarification: the reference for the direction of the device refers to the movement of the rear part of the crawler tracks, i.e. the direction towards the control position.
10. Connector for joystick removal/replacement

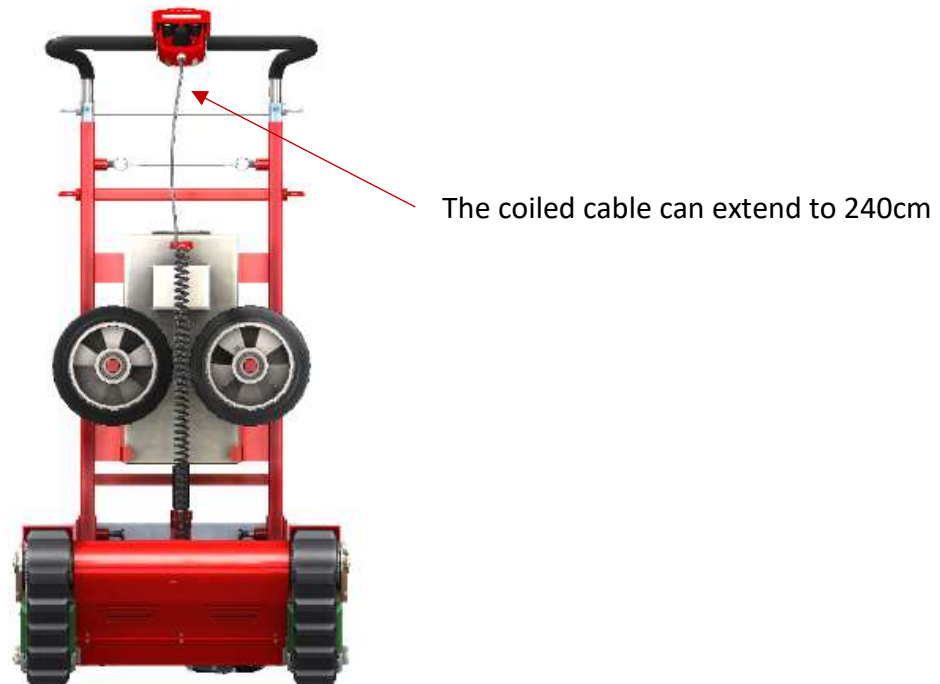


Fig. 4

3.6 Operating the controls:

The control console is used to operate the stair climbing trolley. It regulates the amount of power channelled from the battery to the electric motors for moving the trolley.

The control console allows you to turn the trolley on and off and to move it, to monitor battery charge status, to control the functions of the electronic system and the conditions of the electrical system.

The control console is comprised of an integrated electronic controller.

Joystick: this controls the direction and speed of the crawler tracks and tilting of the load surface with manual mode engaged.

Moving the joystick out of its central, neutral position moves the trolley. The speed of the trolley increases the further the joystick is moved out of its neutral position (proportional control).

By releasing the joystick, it returns to the neutral position and stops the trolley.

The trolley moves in the same direction that the joystick is moved in.

Reference for direction is the control position the operator is in:

Joystick forward - forward movement

Joystick backward - backward movement

Joystick forward to the right - movement forward to the left

Joystick forward to the left - movement forward to the right

Joystick backward to the right - movement backward to the right

Joystick backward to the left - movement backward to the left



WARNING: USE OF THE JOYSTICK

Adjust the maximum permitted speed according to steering capacity and apply experience, the type of stairs concerned, and the type of load on the trolley.

If the trolley moves unexpectedly, immediately release the joystick so that it goes back to the neutral position, stopping the stair climbing trolley almost instantly.

If the joystick is damaged, press the Off button immediately.

General ON/OFF button: the on/off button of the stair climbing trolley is depicted below. To start/stop the trolley, the button must be held down.



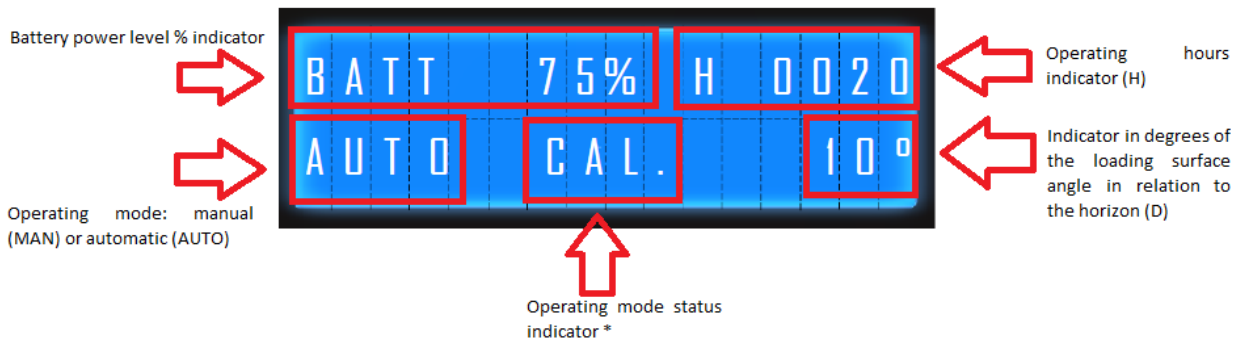
Fig. 5 General ON/OFF button

Display: It displays key information relating to the use of the stair climbing trolley. In particular, it displays the battery charge status, the total number of operating hours, the operating mode (manual or automatic) and the value expressed in degrees of the loading surface angle.

Please note: When the battery charge warning device on the display is below halfway, it is advisable to recharge it completely.

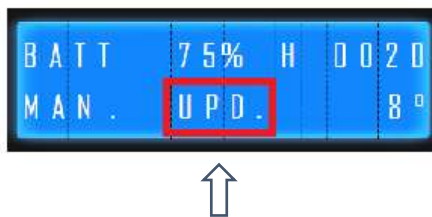
When the trolley is switched on, the manual mode is the one that appears by default and the number of degrees reported on the bottom right will be the effective number of the loading surface.





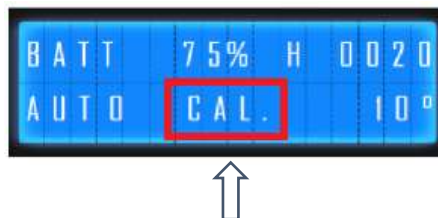
***POSSIBLE OPERATING MODE STATUS INDICATORS:**

MANUAL MODE:



Every time the operator presses the OPEN or CLOSE button on the control keyboard, the angle of the loading surface changes and the display will read "UPD" (UPDATE), a code meaning that the operator is changing the loading surface angle manually.

AUTOMATIC MODE:



Every time the trolley is started, every time the automatic mode is selected, the device runs a load calibration cycle (CAL), in order to identify the most suitable angle (D) for safe and comfortable transport of the load in question.

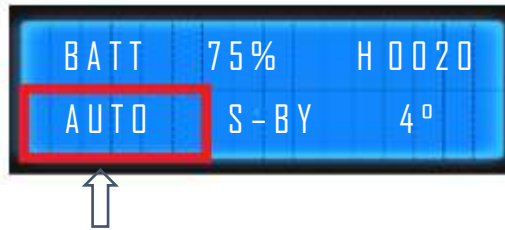


WARNING

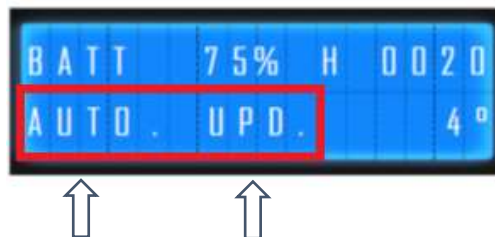
It is good practice to specify that the angle determined by the calibration stage is an angle recommended by the system. If the operator, based on the transported load conditions and slope of the stairs finds that the angle suggested by automatic calibration is not the most suitable for transport, he/she must edit the angle assigned by calibration by turning off the "automatic" function (pressing key A) and pressing the OPEN or CLOSE keys in order to adjust the inclination angle of the loading surface in the optimal way; then, proceed in manual operating mode.

This means that the operator always has the task of verifying the correctness of this angle based on the type of load and slope of the stairs and correct it if necessary to achieve a better position.

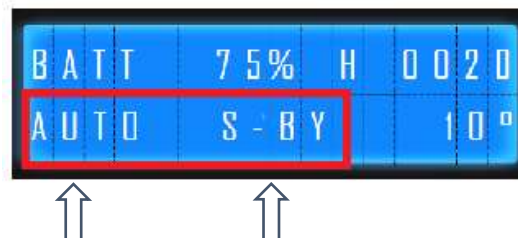
When the trolley is in “automatic” mode, at the end of calibration, if it is successful, the following screen will appear:



This screen means that calibration was completed successfully and that the machine is in automatic mode. When S-BY appears, the operator can start climbing or descending the stairs following the procedure stated in the pages below.



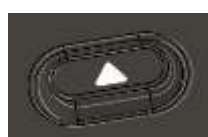
“AUTO. UPD.” This means that the device is making an adjustment to the load surface angle. After about 3 seconds without any changes to the load surface angle, the “automatic” mode status will switch back to STAND-BY (S-BY) meaning that no further adjustments will be made to the load surface.



If the calibration process is not successful due to the centre of gravity of the load being too far away from the control handle, the display will report this error signal:



This error signal means that transport is not safe and is therefore potentially dangerous. The trolley accordingly loses functionality which only returns once the operator has reset this error message by pressing the UP arrow key once:





WARNING

If the display reports “**UNCALIBRATED H**” it is advisable not to proceed with transport, not even in manual mode, as this is the only enabled function. Manual mode remains operational to allow the operator to move on the flat surface and/or place the trolley back in the vehicle.

Regardless the “**UNCALIBRATED H**” message, the operator must always check the stability of the load before starting to ascend and/or descend the staircase.

Manual operation: Manual function is enabled when the device is switched on. The operator can move the joystick in the various directions and move the crawler tracks; he/she can also change the angle of the load surface by pressing the relative OPEN/CLOSE buttons



Fig. 6 OPEN/CLOSE button

“Automatic” operation:

To activate the Automatic mode, press the relative key.



Fig. 7 Button “A” (Automatic)

When key “A” is pressed, every time it is switched on, the trolley will run a calibration cycle stated on the display by the following screen:



During calibration, the operator must not interfere with the stair climbing trolley. **Calibration must be carried out before beginning to climb the stairs, whether climbing or descending, after having correctly secured the load onto the trolley with the relative provided strap.** During the calibration process the stair climbing trolley will find the best recommended angle for transport on the stairs, that it will maintain for the entire route and until the machine is switched off. Accordingly, every time the operator changes type of load or changes the entity of the transported load, adding or removing weight or changing the geometry of the load, he/she must run the calibration process again (by switching off the trolley with the base completely closed, turning the trolley on and pressing “A”).

The “automatic” function was designed with the aim of making transport as safe as possible, therefore the positioning of the centre of gravity of the load directly affects the success of the calibration process; in fact, for some types of loads, i.e. for example when the centre of gravity is too far away from the control handle, calibration will not be successful and an error message will appear:



When this message appears it means that it is not possible to perform transport safely because the centre of gravity is too far away from the control handle.

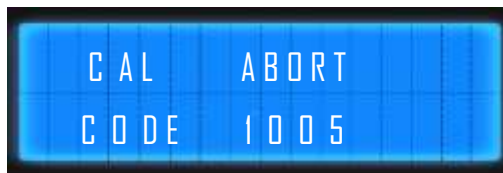
On any case, note that the angle set by the automatic calibration process is a recommended angle but the operator has the responsibility of checking that said angle is actually the most suitable for safe transport and possibly correct it by exiting “automatic” mode and pressing OPEN and CLOSE keys to set a new angle, then using the stair climbing trolley in manual mode.



This code appears on the screen when the operator, in automatic mode, wants to modify the calibration angle but he exceeds the limits of the automatic function, for example when he is on the stairs and he continues to press the CLOSE button till to reach an inclination of the loading platform more than ~ minus 3 degrees (i.e. ~ minus 4 degrees, ~ minus 5 degrees and so on).

Every time the stair climber is started and button "A" is pressed to enable the "automatic" function, if the base of the load surface is in a 0- to +5-degree angle position, automatic load calibration will be performed, according to which the device will suggest an angle to the operator for transport to be performed according to the type of load. Should the load surface be in a 0- to -3-degree (negative) angle position, the automatic function cannot be activated.

If the operator more or less intentionally presses the OPEN and CLOSE buttons during load calibration, the stair climber will detect a calibration function failure and the screen will display the message below. At this point, accept the message by pressing and holding the "UP" ARROW and press CLOSE to bring the base back to zero; switch off and restart the trolley and perform calibration without interfering.



UP arrow:

Allows you to recall the stabilizing arm. It also allows you to accept the messages that appear on the display for acknowledgment; and allows access to menu functions if held pressed in combination with the "DOWN arrow" key.



Fig. 8 UP arrow

The UP arrow also makes it possible to exit a notification screen, keeping the button pressed.

The UP arrow also serves to recall the stabilizing arm when it is out.

Also, if you press and hold down the UP and OPEN arrows at the same time, after about 3 seconds you release the electromagnetic brakes on the gear motors allowing an extremely slow descent of the device from the stairs, in case of a hypothetical failure and getting stuck on the stairs.

DOWN arrow:

Allows you to extract the stabilizing arm. Allows access to menu functions if held down in combination with the "UP arrow" key.

Allows to change the batterie's technology (AGM- LITHIUM), pressing simultaneously the button "DOWN arrow" and the "CLOSE button" for about 2 seconds.

Allows to disable the stabilization function via software and therefore to use the "watchful man" mode control, pressing simultaneously "DOWN arrow" and the "OPEN button" for about 2 seconds. This could become necessary for example if the operator considers that there is not the necessary space that would be needed for stabilization to operate in "automatic" mode. Therefore, in this case the operator can consider to use the machine in "watchful man" mode control. In order to re-enable the stabilization function it's sufficient to turn the machine off and on again.



Fig. 9 DOWN arrow

UP / DOWN arrow:

By pressing the "UP arrow" and "DOWN arrow" keys simultaneously for a few seconds, you access the functions menu, within which you can navigate between the various items by pressing the "UP" and "DOWN" keys.

3.7 Climbing Procedure – Manual Mode



DANGER

IN ALL THE STAGES DESCRIBED IN THE FOLLOWING PARAGRAPHS (climbing/landing/descent procedure, both in manual and “automatic” mode) THE OPERATOR MUST NOT USE THE STAIR CLIMBING TROLLEY IF HE/SHE IS NOT ABLE TO ESTABLISH WHICH IS THE SAFE TRANSPORT ANGLE AND/OR THE CORRECT CENTRE OF GRAVITY OF THE LOAD.

IMPORTANT: in manual mode the automatic adjustment of the loading surface is not enabled.

Before using the stair climbing trolley, make sure that the battery is fully charged, that the device is perfectly operational and there are no signs of wear especially on the tracks and/or missing or damaged parts. Always make sure that the crawler tracks are properly dry in all stages (climbing/descent/landing).



WARNING

Always tie the load with the specific belt included in the supply both upward and downward (check that the belt is in good condition) and make sure that the centre of gravity is as far as possible in the middle of the load base, both lengthwise and widthwise.

The loading/unloading operations from the base are operations carried out by the user, during which the trolley must remain off. During these loading/unloading operations, it is recommended to follow the safety rules regarding the manual handling of loads.

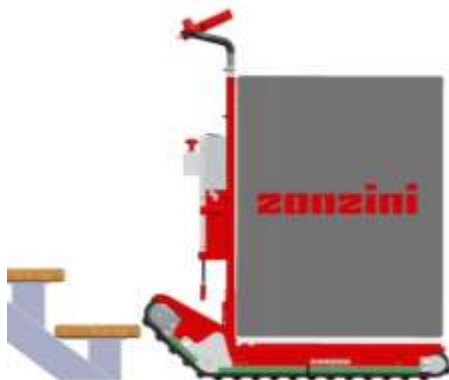
The manufacturer will not be held liable for any personal harm or property damage resulting from loading/unloading operations.

- The operator must always remain in the trolley steering position, i.e. in front of the control handle.
- The trolley must always be moved towards the flight of stairs from behind, as shown in figure above.
- The trolley must be handled by a single operator and there must not, therefore, be other people in the vicinity of the trolley while it is being moved.



DANGER

It is strictly prohibited to pass / stand under and near the load. For greater safety, isolate and mark off the operating area to prevent bystanders from passing. Everyone must be prohibited from accessing.



1. Adjust the height of the control handle and position the load properly on the trolley base (see chapter “Positioning of load centre of gravity. Use limits) and tie the load with the supplied belts.
2. Remove the black side wheels and place them in their housing.
3. Switch on the stair climbing trolley using the ON key and approach the step.
4. Start climbing with both crawler tracks parallel to the staircase.

Fig. 10



Fig. 11

5. Proceed with the joystick at slow speed and at the same time, pressing the OPEN key, duly adjust the inclination of the load surface. Make sure that the load position is correct and safe (ref. A “Example of correct positioning of the centre of gravity on the trolley”)



Fig. 12

6. Continue in the direction of travel at slow speed, adjusting the load surface's angle of inclination.



Fig. 13

7. When the front-most part of the crawler tracks has come off the ground by approximately 2/3 cm, the operator should make sure that the angle at which the load is adjusted is actually ideal for safe transport

Example of correct positioning of the centre of gravity on the trolley:

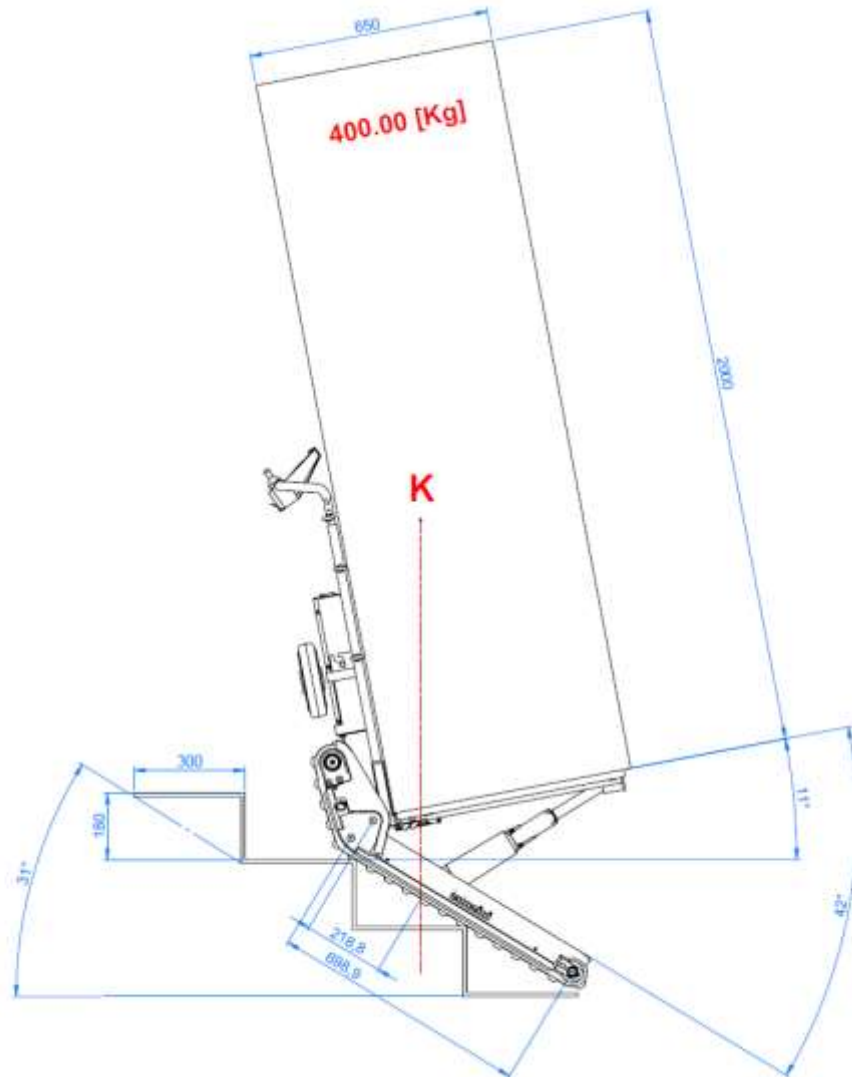


Fig. 14

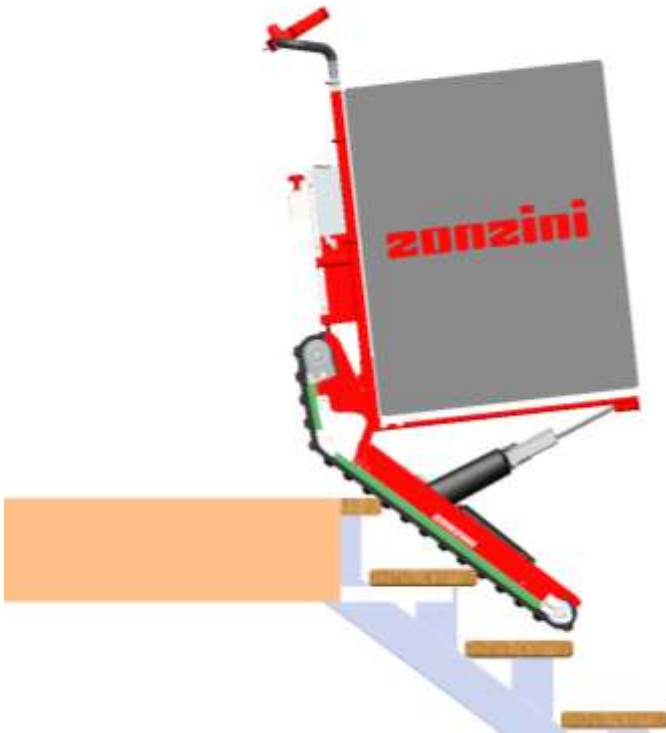


Fig. 15

8. Climb up the staircase **making sure that the load's centre of gravity is correct along the entire way. If not, you must correct the centre of gravity by pressing OPEN and opening the actuator.**

Always keep both hands on the control handle.

3.8 Landing Climbing Procedure – Manual Mode



WARNING

Pay attention when passing between the staircase and landing base, use all the precautions required for using the device indicated in this manual.



DANGER

IN ALL THE STAGES DESCRIBED IN THE FOLLOWING PARAGRAPHS (climbing/landing/descent procedure, both in manual and "automatic" mode) THE OPERATOR MUST NOT USE THE STAIR CLIMBING TROLLEY IF HE/SHE IS NOT ABLE TO ESTABLISH WHICH IS THE SAFE TRANSPORT ANGLE AND/OR THE CORRECT CENTRE OF GRAVITY OF THE LOAD.

IMPORTANT: in manual mode the automatic adjustment of the loading surface is not enabled.

Before using the stair climbing trolley, make sure that the battery is fully charged, that the device is perfectly operational and there are no signs of wear especially on the tracks and/or missing or damaged parts. Always make sure that the crawler tracks are properly dry in all stages (climbing/descent/landing).



WARNING

Always tie the load with the specific belt included in the supply both upward and downward (check that the belt is in good condition) and make sure that the centre of gravity is as far as possible in the middle of the load base, both lengthwise and widthwise.

The loading/unloading operations from the base are operations carried out by the user, during which the trolley must remain off. During these loading/unloading operations, it is recommended to follow the safety rules regarding the manual handling of loads.

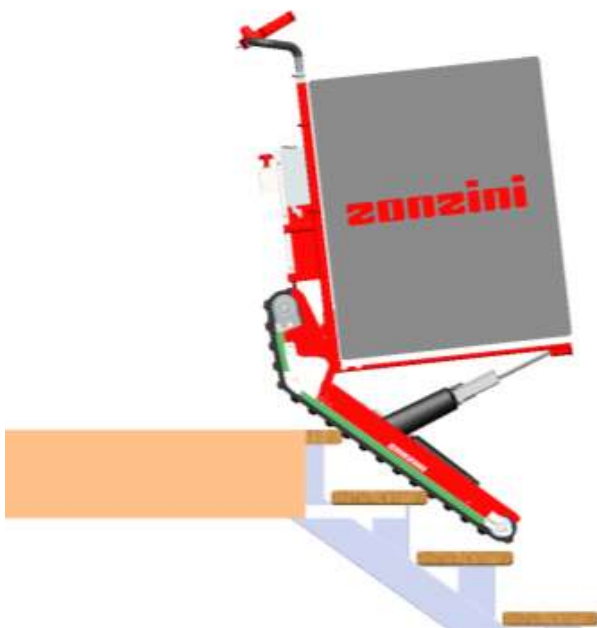
The manufacturer will not be held liable for any personal harm or property damage resulting from loading/unloading operations.

- The operator must always remain in the trolley steering position, i.e. in front of the control handle.
- The trolley must always be moved towards the flight of stairs from behind, as shown in figure above.
- The trolley must be handled by a single operator and there must not, therefore, be other people in the vicinity of the trolley while it is being moved.



DANGER

It is strictly prohibited to pass / stand under and near the load. For greater safety, isolate and mark off the operating area to prevent bystanders from passing. Everyone must be prohibited from accessing.



1. Stop at the edge of the last step with the longest part of the crawler tracks still resting on the last 2/3 steps of the staircase below.

Move the crawler tracks back at **low speed**, enter the landing by about 15 cm, **without resting the heel of the track** and **identify the correct centre of gravity of the load.**

Fig. 16

PLEASE NOTE: The center of gravity of the load is the point where the machine is balanced. To test the balance, hold the handle and make sure there is no pressure in pulling or pushing.



Fig. 17

2. When it has been identified, keep the stair climbing trolley in the correct centre of gravity point on the last step. Press the CLOSE key to close the crawler tracks, keeping the trolley at the centre of gravity until the curve of the crawler tracks (heel) rests on the landing (Fig. 18).

Then, promptly run the crawler tracks in reverse so that they are completely on the landing.

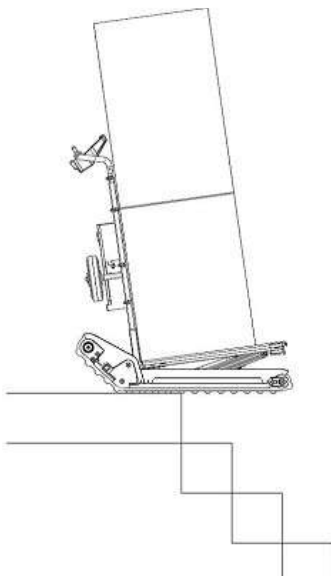


Fig. 18: crawler tracks curve (heel) resting on landing



Fig. 19

3. Make sure that the crawler tracks rest completely on the landing.

**WARNING:**

In all transport stages (climbing/descent/landing) both in manual and “automatic” mode, the operator must keep his/her hands on the control handle and pay the utmost attention.

3.9 Landing Descent Procedure – Manual Mode



WARNING

Pay attention when passing between the staircase and landing base, use all the precautions required for using the device indicated in this manual.



DANGER

IN ALL THE STAGES DESCRIBED IN THE FOLLOWING PARAGRAPHS (climbing/landing/descent procedure, both in manual and “automatic” mode) THE OPERATOR MUST NOT USE THE STAIR CLIMBING TROLLEY IF HE/SHE IS NOT ABLE TO ESTABLISH WHICH IS THE SAFE TRANSPORT ANGLE AND/OR THE CORRECT CENTRE OF GRAVITY OF THE LOAD.

IMPORTANT: in manual mode the automatic adjustment of the loading surface is not enabled.

Before using the stair climbing trolley, make sure that the battery is fully charged, that the device is perfectly operational and there are no signs of wear especially on the tracks and/or missing or damaged parts. Always make sure that the crawler tracks are properly dry in all stages (climbing/descent/landing).



WARNING

Always tie the load with the specific belt included in the supply both upward and downward (check that the belt is in good condition) and make sure that the centre of gravity is as far as possible in the middle of the load base, both lengthwise and widthwise.

The loading/unloading operations from the base are operations carried out by the user, during which the trolley must remain off. During these loading/unloading operations, it is recommended to follow the safety rules regarding the manual handling of loads.

The manufacturer will not be held liable for any personal harm or property damage resulting from loading/unloading operations.

- The operator must always remain in the trolley steering position, i.e. in front of the control handle.
- The trolley must always be moved towards the flight of stairs from behind, as shown in figure above.
- The trolley must be handled by a single operator and there must not, therefore, be other people in the vicinity of the trolley while it is being moved.



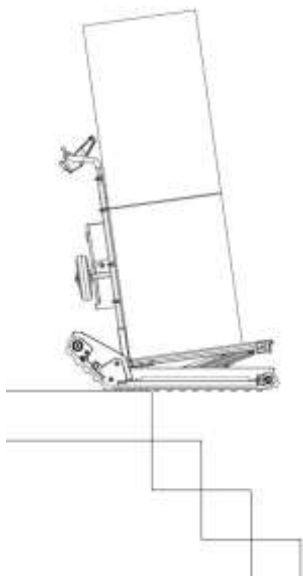
DANGER

It is strictly prohibited to pass / stand under and near the load. For greater safety, isolate and mark off the operating area to prevent bystanders from passing. Everyone must be prohibited from accessing.



1. Load correctly and strap the load with the specific belt supplied. The wheels must be removed and placed back in their housing.
2. Without leaving the landing with the crawlers (fig. 20) press OPEN to create a slight inclination in relation to the load surface.

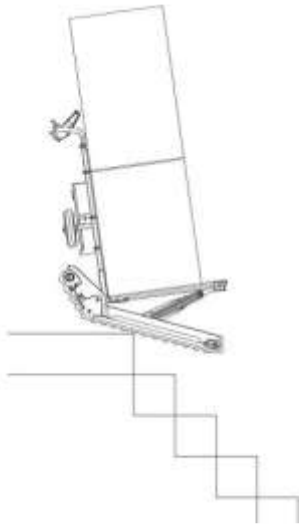
Fig. 20



3. Slowly begin to move the crawler tracks off the landing **by moving the joystick and stopping as soon as the load's correct centre of gravity is found.** (Fig. 21)

Fig. 21

PLEASE NOTE: The center of gravity of the load is the point where the machine is balanced. To test the balance, hold the handle and make sure there is no pressure in pulling or pushing.



4. Once identified, keep **control of the load** (Fig. 22) and press OPEN, to make the actuator open until the crawler tracks are resting on the steps underneath.

Fig. 22



WARNING

During the operation described in point 3 and 4, **the crawler track heel of the trolley must not rest on the landing**, as shown in figure 23

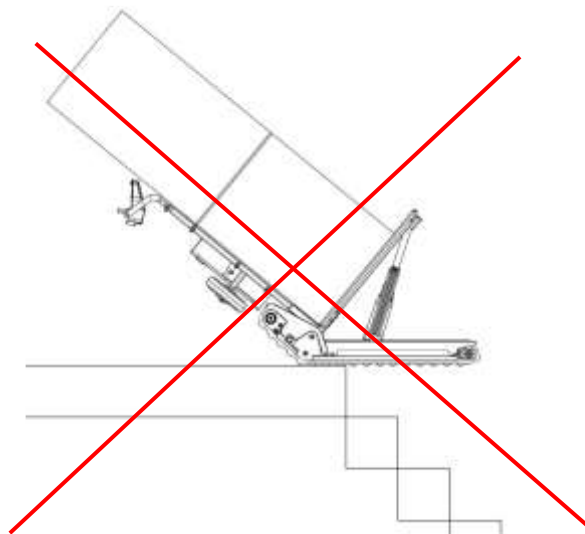
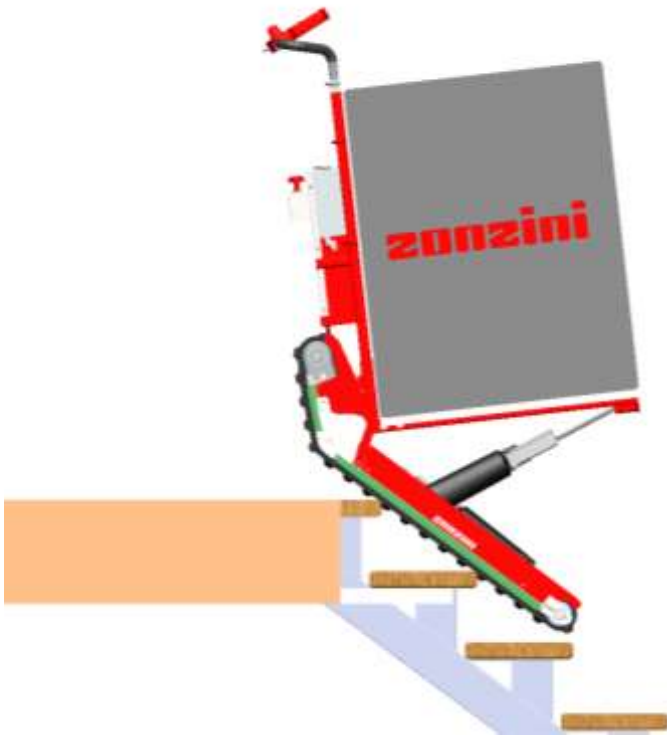


Fig. 23 Crawler track heel resting on staircase.



5. When both crawler tracks are resting fully on the steps underneath, in a safe position and well-balanced, slowly proceed in descent.

During the entire descent, make sure that the inclination given to the load is the most suitable for the stability of the load, so that it remains in a safe position for the entire flight of stairs, and, if needed, correct the inclination by pressing OPEN/CLOSE.

Fig. 24

3.10 Descent Procedure – Manual Mode



DANGER

IN ALL THE STAGES DESCRIBED IN THE FOLLOWING PARAGRAPHS (climbing/landing/descent procedure, both in manual and “automatic” mode) THE OPERATOR MUST NOT USE THE STAIR CLIMBING TROLLEY IF HE/SHE IS NOT ABLE TO ESTABLISH WHICH IS THE SAFE TRANSPORT ANGLE AND/OR THE CORRECT CENTRE OF GRAVITY OF THE LOAD.

IMPORTANT: in manual mode the automatic adjustment of the loading surface is not enabled.

Before using the stair climbing trolley, make sure that the battery is fully charged, that the device is perfectly operational and there are no signs of wear especially on the tracks and/or missing or damaged parts. Always make sure that the crawler tracks are properly dry in all stages (climbing/descent/landing).



WARNING

Always tie the load with the specific belt included in the supply both upward and downward (check that the belt is in good condition) and make sure that the centre of gravity is as far as possible in the middle of the load base, both lengthwise and widthwise.

The loading/unloading operations from the base are operations carried out by the user, during which the trolley must remain off. During these loading/unloading operations, it is recommended to follow the safety rules regarding the manual handling of loads.

The manufacturer will not be held liable for any personal harm or property damage resulting from loading/unloading operations.

- The operator must always remain in the trolley steering position, i.e. in front of the control handle.
- The trolley must always be moved towards the flight of stairs from behind, as shown in figure above.
- The trolley must be handled by a single operator and there must not, therefore, be other people in the vicinity of the trolley while it is being moved.



DANGER

It is strictly prohibited to pass / stand under and near the load. For greater safety, isolate and mark off the operating area to prevent bystanders from passing. Everyone must be prohibited from accessing.



1. Proceed with moving the trolley down to the bottom of the stairs, keeping both hands on the grip.

Fig. 25

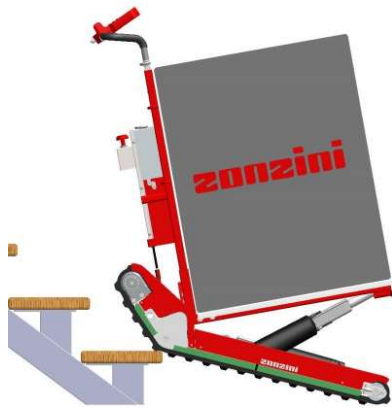


Fig. 26

2. As soon as the front-most part of the crawler tracks touches the ground below, stop and decrease tilting of the load surface by pressing CLOSE so that it remains upright. Perform this operation at the same time as the movement of the crawler tracks until reaching the bottom of the stairs.

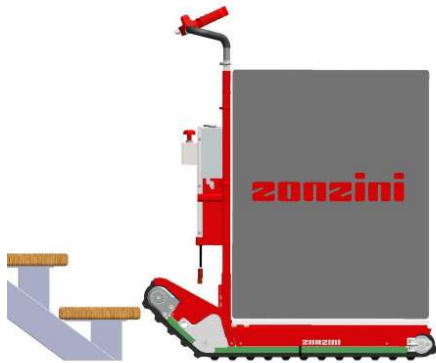


Fig. 27

3. When the trolley is completely on the ground, move the crawler track forward as far as needed to move away from the staircase and completely close the load surface with the CLOSE key so that the load is in the upright position. The operator may decide whether to move on flat surface with the crawler tracks or to apply the two wheels 200/50 in the side holes for manual handling on flat surface.

3.11 Climbing Procedure – Automatic Mode



DANGER

IN ALL THE STAGES DESCRIBED IN THE FOLLOWING PARAGRAPHS (climbing/landing/descent procedure, both in manual and “automatic” mode) THE OPERATOR MUST NOT USE THE STAIR CLIMBING TROLLEY IF HE/SHE IS NOT ABLE TO ESTABLISH WHICH IS THE SAFE TRANSPORT ANGLE AND/OR THE CORRECT CENTRE OF GRAVITY OF THE LOAD.

IMPORTANT: in manual mode the automatic adjustment of the loading surface is not enabled.

Before using the stair climbing trolley, make sure that the battery is fully charged, that the device is perfectly operational and there are no signs of wear especially on the tracks and/or missing or damaged parts. Always make sure that the crawler tracks are properly dry in all stages (climbing/descent/landing).



WARNING

Always tie the load with the specific belt included in the supply both upward and downward (check that the belt is in good condition) and make sure that the centre of gravity is as far as possible in the middle of the load base, both lengthwise and widthwise.

The loading/unloading operations from the base are operations carried out by the user, during which the trolley must remain off. During these loading/unloading operations, it is recommended to follow the safety rules regarding the manual handling of loads.

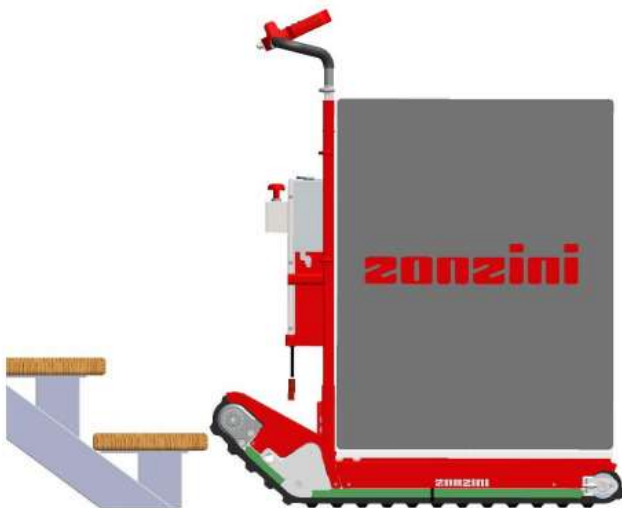
The manufacturer will not be held liable for any personal harm or property damage resulting from loading/unloading operations.

- The operator must always remain in the trolley steering position, i.e. in front of the control handle.
- The trolley must always be moved towards the flight of stairs from behind, as shown in figure above.
- The trolley must be handled by a single operator and there must not, therefore, be other people in the vicinity of the trolley while it is being moved.



DANGER

It is strictly prohibited to pass / stand under and near the load. For greater safety, isolate and mark off the operating area to prevent bystanders from passing. Everyone must be prohibited from accessing.



1. Adjust the height of the control handle and position the load properly on the trolley base (see chapter "Positioning of load centre of gravity. Use limits). Attach the load with the supplied belts.
2. Remove the black side wheels 200/50 and place them in their housing.
3. Switch on the stair climbing trolley by holding down the ON key and approach the step.

Fig. 28

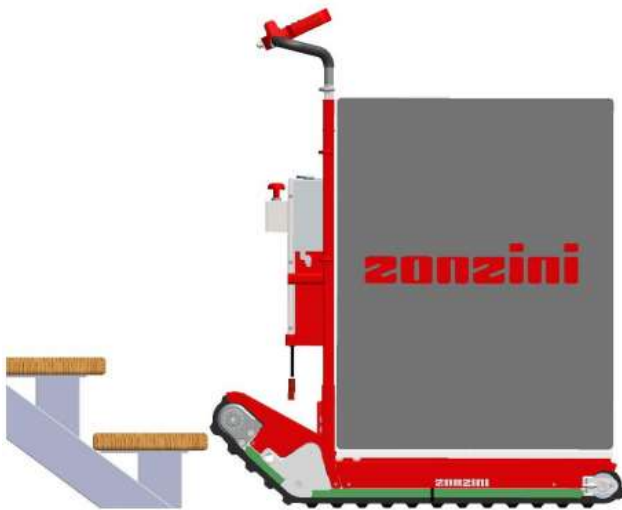
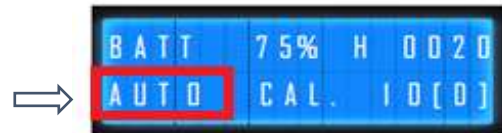


Fig. 29

4. Activate the automatic function
By the specific button "A".



By pressing the "A" button, the following screen will appear in the display:



The trolley will perform load calibration, therefore suggesting a recommended travel angle on the stairs to the operator.

Reverse slowly with the joystick. The model Domino Plasmoid, as soon as the load calibration is carried out, passes immediately in manual mode (so called "watchful man" control). **Keep pressing the "A" button till the machine climbs the first three/four steps. Releasing the "A" button, the machine switches from "automatic mode" to "manual mode".**

The model Domino Plasmoid Stabilized, once the machine is on the first steps and tracks are completely on the stair, after having carried out the adjusting of the loading platform's inclination, will switch autonomously in manual mode.

The operator must always make sure that the device has successfully switched from "automatic" mode to manual mode, checking that it appears on screen the message "MAN" instead of "AUTO".

INSTRUCTIONS ON AUTOMATIC MODE:

It is the operator's responsibility to check the correct position of the angle of the load surface before starting the flight of stairs and eventually change it with the relative OPEN or CLOSE keys, if necessary.

This may be necessary to ensure greater stability of the stair climbing trolley with particular loading conditions and inclination of the stairs to be climbed.

PLEASE NOTE:

The calibration stage is only and exclusively carried out every time the device is switched on, therefore, when the load is changed (geometry and weight) it is necessary to:

- completely close the load surface by placing it parallel to the ground,
- turning off the stair climbing trolley,
- turning the stair climbing trolley back on again,
- pressing "A" to start the "automatic" function and therefore allow calibration based on the new load.



WARNING: CALIBRATION PROCESS

It is recommended to run the calibration process at least 2 times for each type of load (therefore switching the device off and back on again each time), to check that the angle suggested for calibration is always the same, with a margin of 2 degrees more or less.

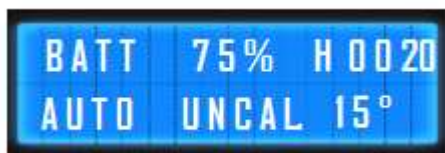


WARNING: USE IN "AUTOMATIC" MODE WITH LOAD CALIBRATION OR WITHOUT LOAD

CALIBRATION

The device can be used in "automatic" mode both by carrying out the load calibration and without carrying it out. It is always recommended to use the "automatic" mode WITH LOAD CALIBRATION. Therefore before beginning any type of stairs/slope, up or down, the loading platform must be closed completely, bringing it parallel to the ground. Switch the machine OFF and ON again, press the "A" button in order to activate the "automatic" function and to allow the calibration to the load. The calibration gives a suggested load's angle inclination. It is always up to the operator to check the correctness of this angle in relation to the type of transported load and the inclination of the stairs/slope.

When the operator uses the "automatic" mode WITHOUT having calibrated the load, it appears on the screen the message "UNCAL".



In this case it is the operator who has voluntarily chosen a transport angle without having used the calibration function suggested by the device. It's always up to the operator to make sure that the load's inclination angle is correct before proceeding with transport.

If when closing the stabilizing arm, the machine is in **AUTO UNCAL mode**, when it has finished tilting the load, the machine will immediately switch to manual mode.

If when closing the stabilizing arm, the machine is in **AUTO CAL mode**, when it has finished tilting the load, the machine will remain in automatic mode.



Fig. 30

5. Continue climbing at **low speed**. **PLEASE, NOTE:** When the front part of the crawler tracks has detached from the ground by approximately 2/3 cm, check that the inclination angle of the load surface given by the automatic system is the most suitable based on the type of staircase and the type of transported load.

The model Domino Plasmoid Stabilized, approximately in the first steps of the stair, it will independently perform a further speed slowdown, in order to allow the operator to check the correctness of the load's angle inclination. Subsequently the normal speed will be restored and the device will switch autonomously to manual mode.

Example of correct positioning of the centre of gravity on the trolley (example of safe transport angle):

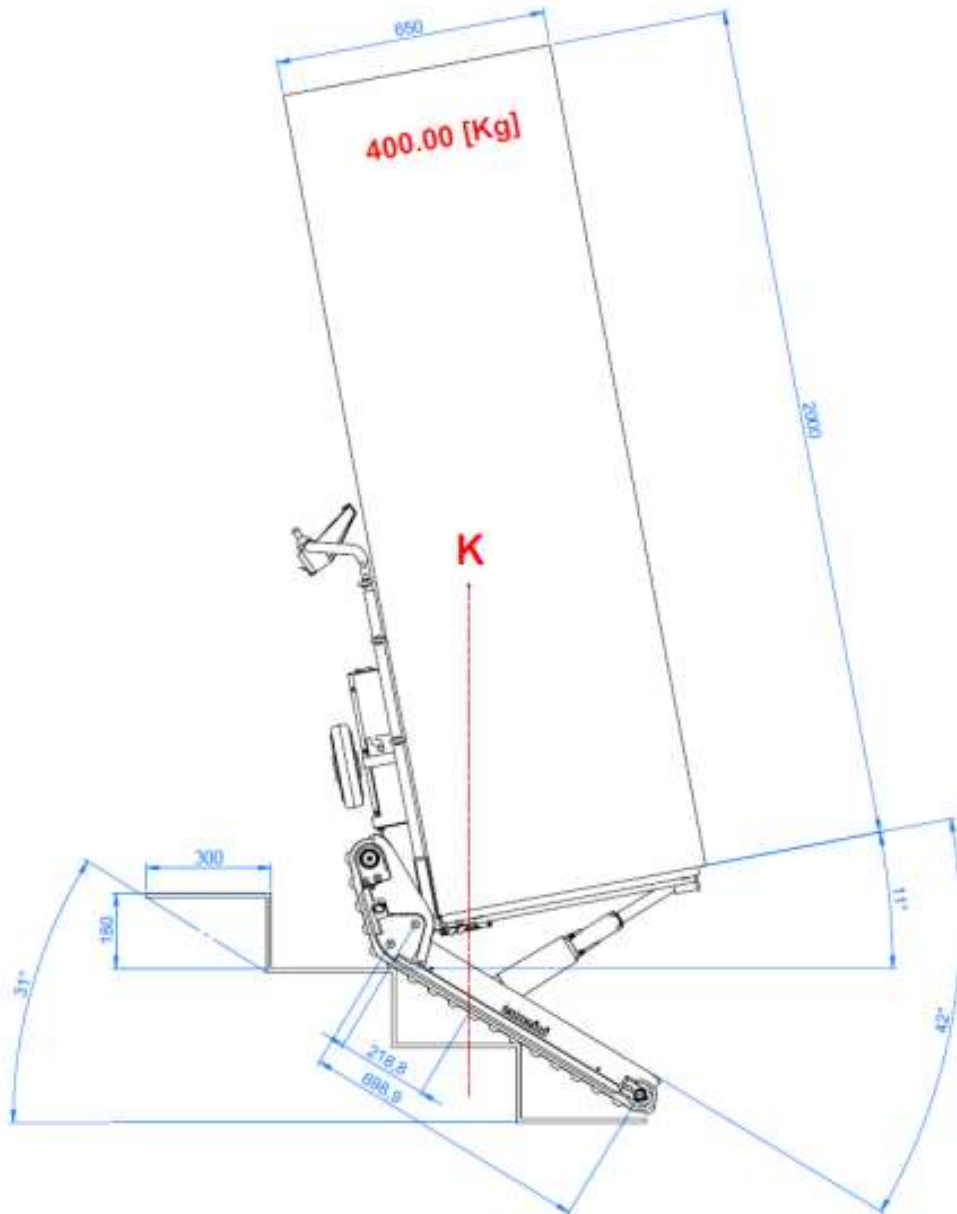


Fig. 31

3.12 Landing Climbing Procedure – Automatic Mode - without using the stabilizing arm



WARNING

Pay attention when passing between the staircase and landing base, use all the precautions required for using the device indicated in this manual.



DANGER

IN ALL THE STAGES DESCRIBED IN THE FOLLOWING PARAGRAPHS (climbing/landing/descent procedure, both in manual and “automatic” mode) THE OPERATOR MUST NOT USE THE STAIR CLIMBING TROLLEY IF HE/SHE IS NOT ABLE TO ESTABLISH WHICH IS THE SAFE TRANSPORT ANGLE AND/OR THE CORRECT CENTRE OF GRAVITY OF THE LOAD.

IMPORTANT: in manual mode the automatic adjustment of the loading surface is not enabled.

Before using the stair climbing trolley, make sure that the battery is fully charged, that the device is perfectly operational and there are no signs of wear especially on the tracks and/or missing or damaged parts. Always make sure that the crawler tracks are properly dry in all stages (climbing/descent/landing).



WARNING

Always tie the load with the specific belt included in the supply both upward and downward (check that the belt is in good condition) and make sure that the centre of gravity is as far as possible in the middle of the load base, both lengthwise and widthwise.

The loading/unloading operations from the base are operations carried out by the user, during which the trolley must remain off. During these loading/unloading operations, it is recommended to follow the safety rules regarding the manual handling of loads.

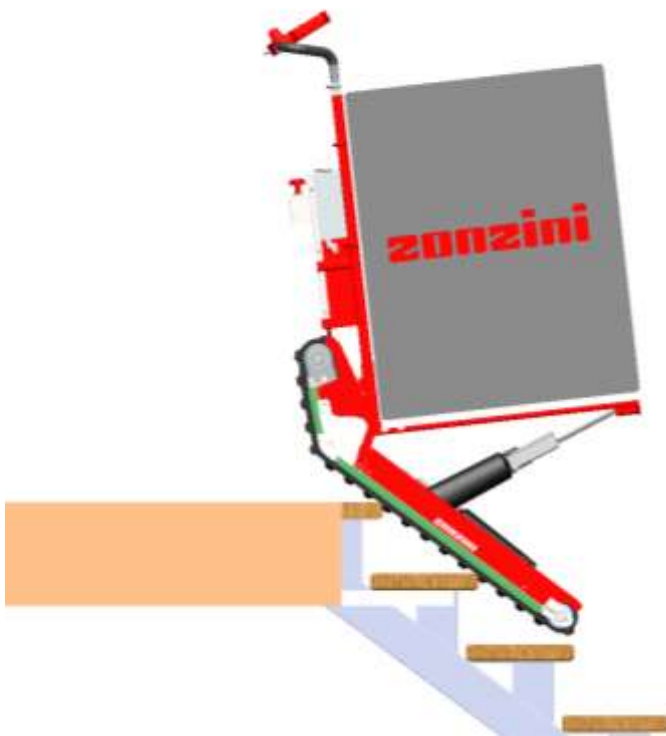
The manufacturer will not be held liable for any personal harm or property damage resulting from loading/unloading operations.

- The operator must always remain in the trolley steering position, i.e. in front of the control handle.
- The trolley must always be moved towards the flight of stairs from behind, as shown in figure above.
- The trolley must be handled by a single operator and there must not, therefore, be other people in the vicinity of the trolley while it is being moved.



DANGER

It is strictly prohibited to pass / stand under and near the load. For greater safety, isolate and mark off the operating area to prevent bystanders from passing. Everyone must be prohibited from accessing.



1. Stop at the edge of the last step with the longest part of the crawler tracks still on the last 2/3 steps of the staircase.

Move the crawler tracks back at **low speed**, enter the landing by about 15 cm, **without resting the heel of the track** and **identify the correct centre of gravity of the load**.

Fig. 32

PLEASE NOTE: The center of gravity of the load is the point where the machine is balanced. To test the balance, hold the handle and make sure there is no pressure in pulling or pushing.



2. When it has been identified, keep the stair climbing trolley in the correct centre of gravity point on the last step and gently pull the handle towards you.

Press and hold pressed the "A" button (automatic function – "watchful man" mode control) in order to allow the back of the crawler tracks on the landing.

The tracks, **indeed**, will then start closing until the **crawler track heel is resting on the landing (fig. 34). Only when the heel of the tracks is fully resting on the landing and the loading platform has stopped**

Fig. 33

regulating the inclination, release the "A" button (automatic mode – "watchful man" mode control).

Drive in reverse with the joystick on the landing (Fig. 35).

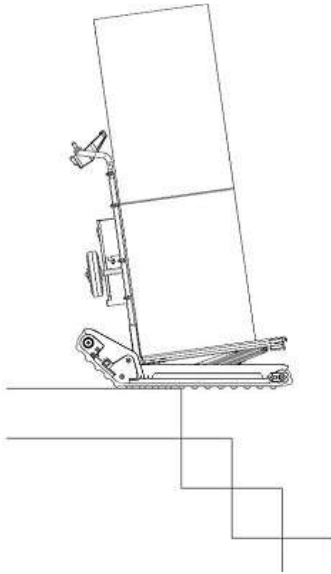


Fig. 34



Fig. 35

3.12.1 Landing Climbing Procedure – Automatic Mode – with the use of the stabilizing arm



WARNING

Pay attention when passing between the staircase and landing base, use all the precautions required for using the device indicated in this manual.



DANGER

IN ALL THE STAGES DESCRIBED IN THE FOLLOWING PARAGRAPHS (climbing/landing/descent procedure, both in manual and “automatic” mode) THE OPERATOR MUST NOT USE THE STAIR CLIMBING TROLLEY IF HE/SHE IS NOT ABLE TO ESTABLISH WHICH IS THE SAFE TRANSPORT ANGLE AND/OR THE CORRECT CENTRE OF GRAVITY OF THE LOAD.

IMPORTANT: in manual mode the automatic adjustment of the loading surface is not enabled.

Before using the stair climbing trolley, make sure that the battery is fully charged, that the device is perfectly operational and there are no signs of wear especially on the tracks and/or missing or damaged parts. Always make sure that the crawler tracks are properly dry in all stages (climbing/descent/landing).



WARNING

Always tie the load with the specific belt included in the supply both upward and downward (check that the belt is in good condition) and make sure that the centre of gravity is as far as possible in the middle of the load base, both lengthwise and widthwise.

The loading/unloading operations from the base are operations carried out by the user, during which the trolley must remain off. During these loading/unloading operations, it is recommended to follow the safety rules regarding the manual handling of loads.

The manufacturer will not be held liable for any personal harm or property damage resulting from loading/unloading operations.

- The operator must always remain in the trolley steering position, i.e. in front of the control handle.
- The trolley must always be moved towards the flight of stairs from behind, as shown in figure above.
- The trolley must be handled by a single operator and there must not, therefore, be other people in the vicinity of the trolley while it is being moved.



DANGER

It is strictly prohibited to pass / stand under and near the load. For greater safety, isolate and mark off the operating area to prevent bystanders from passing. Everyone must be prohibited from accessing.

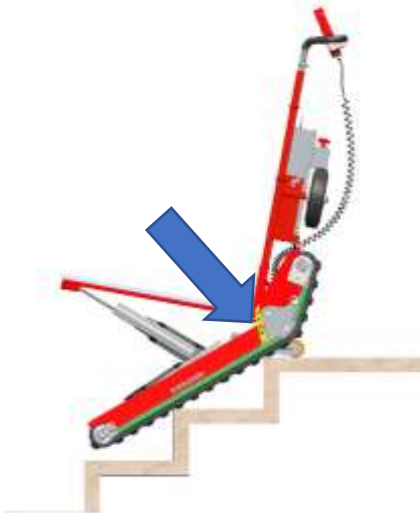


Fig. 36

1. Stop on the last step when the lateral indicator (STOP) placed on the casing is at the edge of the same

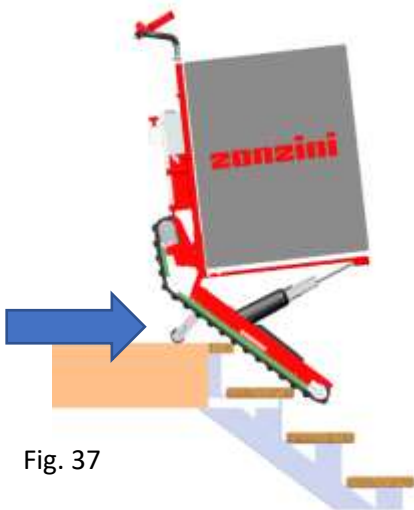


Fig. 37

2. Hold down the " DOWN arrow "button for a few seconds in order to activate the stabilizing arm. In the final portion of the arm there are two rollers that will come into contact with the landing base. The rollers in question are equipped with sensors which they will stop and reactivate the motion of the stabilizing arm automatically so that the roller is always in contact with the surface of the landing base.



WARNING

- The stabilizing arm is an optional that has the function of further simplifying the procedure for getting on and off the landing base. It is recommended to use the stabilizing arm only if the context allows its use (i.e. enough space, straight stairs and so on).
- The stabilizing arm must be used only if the crawler tracks are perpendicular to the steps (Fig. 38- YES)
- The stabilizing arm must be used to simplify the procedure for getting on and off the landing base. It must not be used in the other stages of the staircase or flat surfaces transportation.



Fig. 38

When the rollers, equipped with sensors, come into contact with the landing, the operator can see that contact has been made since the top right panel of the display that usually indicates the working hours will temporarily display information regarding the RIGHT "R" and LEFT "L" microswitches, as shown in the next screen.



SW = switch / L = left / R = right.

Upon contact of the stabilization arm with the landing, the device will re-activate the "automatic" mode (if the "DOWN arrow" button has been pressed).

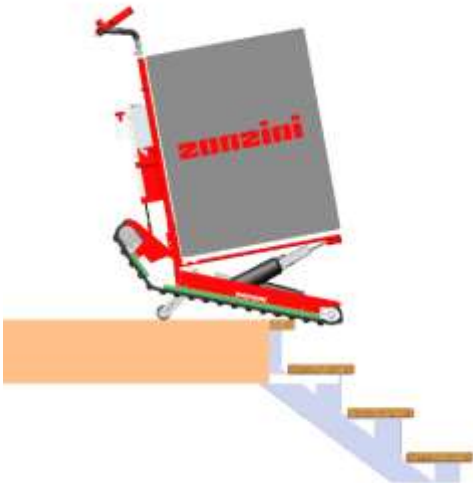


Fig. 39

3. The operator, once the "DOWN arrow" key has been pressed and making sure that the stabilizing arm has reached the surface of the landing base, must proceed backwards with the joystick until the entire section of the track is inside the landing.



Fig. 40

4. Once the track section has completely entered the landing, the operator must press the "UP arrow" button in order to fully recall the stabilizing arm. The operator must also make sure that the "automatic" function is still activated in order to adjust the angle of the loading surface appropriately.



WARNING

Entrance to the landing is performed by using the stabilising arm and consists of a well-defined cycle that has a beginning and an end. It is extremely important to make sure there is sufficient space on the landing to complete the stabilising operation once it has been started. The stabilising operation starts when the operator, having reached the last step, presses the "DOWN" ARROW, and ends when the operator, once completely on the landing, presses the "UP" ARROW and the stabilising arm goes back to its original rest position.

**DANGER**

It is extremely important for the operator to make sure there is sufficient remaining space between the stair climber handle and the wall behind, **before retracting the stabilising arm by pressing the “UP” ARROW**. In all cases, **only and exclusively when the crawler tracks are completely on the landing and always before retracting the stabilising arm**, it is recommended for the operator to remove the joystick from the handle and to **stand to the side of the device**. Only then can the operator retract the stabilising arm, after having confirmed that there is sufficient space between the stair climber handle and the wall behind. The space required in order to perform the retraction may vary based on the following factors:

- Height of the load
- Height of the handle
- Size of the landing

3.13 Landing Descent Procedure – Automatic Mode - without using the stabilizing arm



WARNING

Pay attention when passing between the staircase and landing base, use all the precautions required for using the device indicated in this manual.



DANGER

IN ALL THE STAGES DESCRIBED IN THE FOLLOWING PARAGRAPHS (climbing/landing/descent procedure, both in manual and “automatic” mode) THE OPERATOR MUST NOT USE THE STAIR CLIMBING TROLLEY IF HE/SHE IS NOT ABLE TO ESTABLISH WHICH IS THE SAFE TRANSPORT ANGLE AND/OR THE CORRECT CENTRE OF GRAVITY OF THE LOAD. IMPORTANT: in manual mode the automatic adjustment of the loading surface is not enabled.

Before using the stair climbing trolley, make sure that the battery is fully charged, that the device is perfectly operational and there are no signs of wear especially on the tracks and/or missing or damaged parts. Always make sure that the crawler tracks are properly dry in all stages (climbing/descent/landing).



WARNING

Always tie the load with the specific belt included in the supply both upward and downward (check that the belt is in good condition) and make sure that the centre of gravity is as far as possible in the middle of the load base, both lengthwise and widthwise.

The loading/unloading operations from the base are operations carried out by the user, during which the trolley must remain off. During these loading/unloading operations, it is recommended to follow the safety rules regarding the manual handling of loads.

The manufacturer will not be held liable for any personal harm or property damage resulting from loading/unloading operations.

- The operator must always remain in the trolley steering position, i.e. in front of the control handle.
- The trolley must always be moved towards the flight of stairs from behind, as shown in figure above.
- The trolley must be handled by a single operator and there must not, therefore, be other people in the vicinity of the trolley while it is being moved.



DANGER

It is strictly prohibited to pass / stand under and near the load. For greater safety, isolate and mark off the operating area to prevent bystanders from passing. Everyone must be prohibited from accessing.



1. Carry out the load calibration by pressing “A” key.

2. The device, after having calibrated, automatically switches to the manual mode. Start to move the crawler track **slowly off the landing** by actuating the knob on the Joystick and **identify the correct load centre of gravity.**

Fig. 41

PLEASE NOTE: The center of gravity of the load is the point where the machine is balanced. To test the balance, hold the handle and make sure there is no pressure in pulling or pushing.



Fig. 42

3. When the correct centre of gravity is identified, **re-activate the automatic mode by pressing and keeping pressed the “A” button (“watchful man” mode control) and maintain the balance position until the crawler tracks are resting completely on the steps underneath.**



Fig. 43

4. You can proceed with the descent stage by actuating the joystick knob, only when the crawler tracks are fully resting on the steps.

3.13.1 Landing Descent Procedure – Automatic Mode – with the use of the stabilizing arm



WARNING

Pay attention when passing between the staircase and landing base, use all the precautions required for using the device indicated in this manual.



DANGER

IN ALL THE STAGES DESCRIBED IN THE FOLLOWING PARAGRAPHS (climbing/landing/descent procedure, both in manual and “automatic” mode) THE OPERATOR MUST NOT USE THE STAIR CLIMBING TROLLEY IF HE/SHE IS NOT ABLE TO ESTABLISH WHICH IS THE SAFE TRANSPORT ANGLE AND/OR THE CORRECT CENTRE OF GRAVITY OF THE LOAD. IMPORTANT: in manual mode the automatic adjustment of the loading surface is not enabled.

Before using the stair climbing trolley, make sure that the battery is fully charged, that the device is perfectly operational and there are no signs of wear especially on the tracks and/or missing or damaged parts. Always make sure that the crawler tracks are properly dry in all stages (climbing/descent/landing).



WARNING

Always tie the load with the specific belt included in the supply both upward and downward (check that the belt is in good condition) and make sure that the centre of gravity is as far as possible in the middle of the load base, both lengthwise and widthwise.

The loading/unloading operations from the base are operations carried out by the user, during which the trolley must remain off. During these loading/unloading operations, it is recommended to follow the safety rules regarding the manual handling of loads.

The manufacturer will not be held liable for any personal harm or property damage resulting from loading/unloading operations.

- The operator must always remain in the trolley steering position, i.e. in front of the control handle.
- The trolley must always be moved towards the flight of stairs from behind, as shown in figure above.
- The trolley must be handled by a single operator and there must not, therefore, be other people in the vicinity of the trolley while it is being moved.



DANGER

It is strictly prohibited to pass / stand under and near the load. For greater safety, isolate and mark off the operating area to prevent bystanders from passing. Everyone must be prohibited from accessing.



Fig. 44

1. Activate the "automatic" function and check that the load calibration is successful. Otherwise, if the message "uncalibrated H" appears on the display, do not proceed with the transport, as indicated in the previous section.

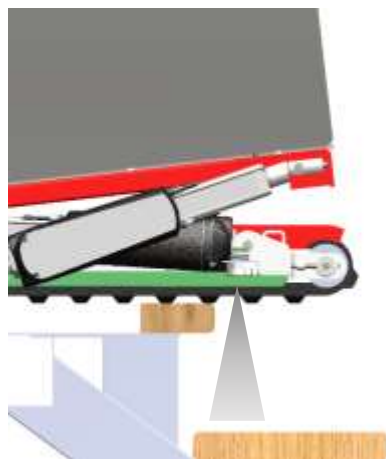


Fig. 45

2. Operate the joystick forwards until the special sensor, located in the front part of the tracks, which detects the presence of the step below, intervenes. The message "STEP DETECTED" will appear on the display and the motion of the trolley will stop.



Fig. 46

3. Press the "DOWN arrow" key to enable the motion of the stabilizing arm. Then proceed forward with the joystick making sure that the "automatic" function is correctly activated and that therefore the angle of the loading surface is automatically corrected by the system as you go downward.

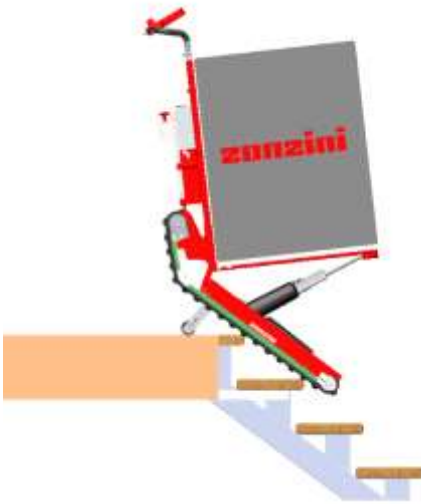


Fig. 47

4. The stabilizing arm will close automatically when the crawler tracks are in contact with the staircase below. **At this point the device switches automatically to manual mode (when the stabilizing arm lifts off the ground).** The operator must always make sure that the device has successfully switched from “automatic” mode to manual mode, checking that it appears on screen the message “MAN” instead of “AUTO”.



WARNING

It is mandatory to make sure that the stabilizing arm is fully closed before proceeding with the descent.

The stabilising arm automatic retraction phase is achieved through an ultrasonic sensor and thus relies, in general, on the sound bouncing off the surface and returning to it by passing information. For that reason, the sensor may not 'read' certain floorings (and/or step conformations). Some examples include, but are not limited to:

- Sound-absorbing surfaces
- Steps with unusual angles
- Steps shorter than standard (about less than 30 cm)
- Metallic emergency stairs and in general perforated surfaces.

In such particular cases, the **automatic** retraction of the stabilising arm cannot be performed. Therefore, the operator is in charge of **manually retracting** the stabilising arm by holding down the 'UP' arrow key for as long as it takes to complete the operation. **There is an additional safety function that allows the stabilizing arm to be recalled if the front sensor fails to correctly detect the step.**

Generally speaking, if the stabilising arm is NOT retracted **automatically**, the operator must manually retract it no further than the STOP signal on the side of the crawler cover.



WARNING

All the sensors fitted to the device are driving aids and in no way serve as a substitute for the operator, who must comply with the instructions provided and become familiar with all the machine’s functions before using it.



5. Once the stabilizing arm is completely closed, you can proceed in descent by operating the joystick **and the device switches automatically to manual mode.** Observe the procedure described in this manual.

Fig. 48

3.14 Descent Procedure – Automatic Mode – **reaching the end of the staircase**



WARNING

Pay attention when passing between the staircase and landing base, use all the precautions required for using the device indicated in this manual.



DANGER

IN ALL THE STAGES DESCRIBED IN THE FOLLOWING PARAGRAPHS (climbing/landing/descent procedure, both in manual and “automatic” mode) THE OPERATOR MUST NOT USE THE STAIR CLIMBING TROLLEY IF HE/SHE IS NOT ABLE TO ESTABLISH WHICH IS THE SAFE TRANSPORT ANGLE AND/OR THE CORRECT CENTRE OF GRAVITY OF THE LOAD. IMPORTANT: in manual mode the automatic adjustment of the loading surface is not enabled.

Before using the stair climbing trolley, make sure that the battery is fully charged, that the device is perfectly operational and there are no signs of wear especially on the tracks and/or missing or damaged parts. Always make sure that the crawler tracks are properly dry in all stages (climbing/descent/landing).



WARNING

Always tie the load with the specific belt included in the supply both upward and downward (check that the belt is in good condition) and make sure that the centre of gravity is as far as possible in the middle of the load base, both lengthwise and widthwise.

The loading/unloading operations from the base are operations carried out by the user, during which the trolley must remain off. During these loading/unloading operations, it is recommended to follow the safety rules regarding the manual handling of loads.

The manufacturer will not be held liable for any personal harm or property damage resulting from loading/unloading operations.

- The operator must always remain in the trolley steering position, i.e. in front of the control handle.
- The trolley must always be moved towards the flight of stairs from behind, as shown in figure above.
- The trolley must be handled by a single operator and there must not, therefore, be other people in the vicinity of the trolley while it is being moved.



DANGER

It is strictly prohibited to pass / stand under and near the load. For greater safety, isolate and mark off the operating area to prevent bystanders from passing. Everyone must be prohibited from accessing.

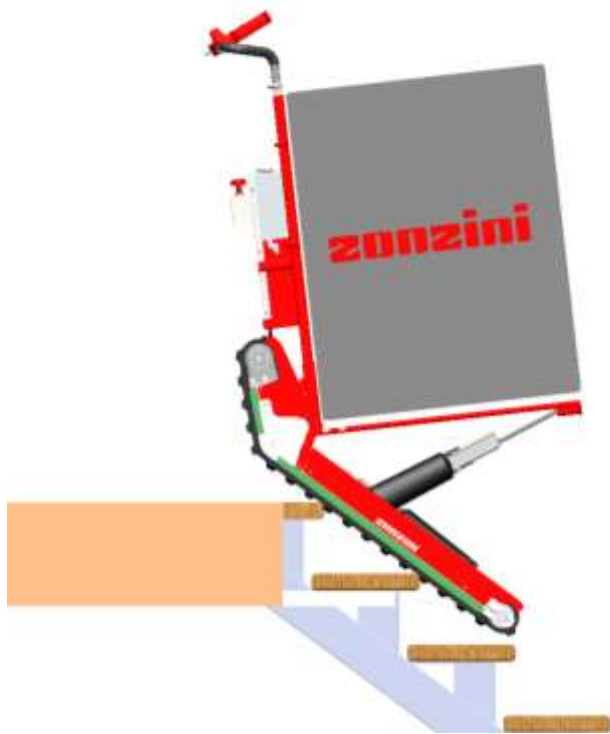


Fig. 49

1. The device will be in manual mode during the whole staircase phase. Always make sure that the inclination is the most suitable based on the type of load and staircase, otherwise change the safety angle with the buttons. Then proceed moving the trolley down to the bottom of the steps, using the joystick, keeping both hands on the grip.

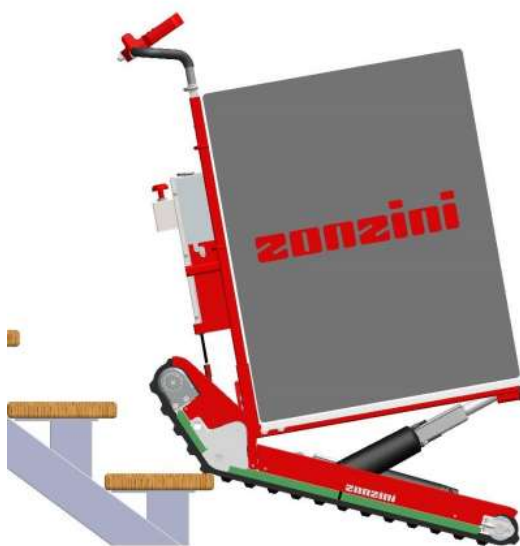


Fig. 50

2. With Domino Plasmoid Stabilized, as soon as the front part of the crawler tracks is touching the surface the "automatic" mode will be re-activated by the device and it allows the automatic adjustment of the load surface. With Domino Plasmoid (not Stabilized) the operator must press and keep pressed the "A" button (automatic, "watchful man" mode control) and operate the joystick knob until the device has completed the descent and the loading platform has completed the adjustment.

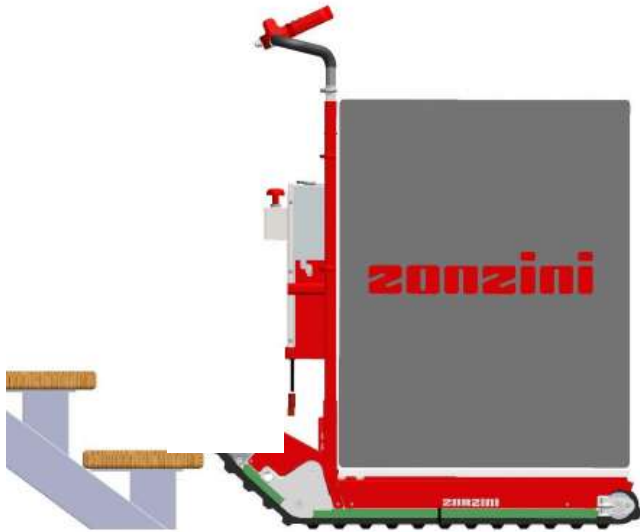


Fig. 51

3. When the trolley has completely reached the floor below, move it away from the staircase as far as necessary.
4. To close the loading platform completely and unloading the goods from the trolley, turn off the automatic mode, then press CLOSE and use the joystick to close the loading platform to the "0" position, i.e. parallel to the ground.

3.14.1 DRIVING AIDS DURING USE OF THE STABILISING ARM

This part of the manual applies only if the stair climber mod. DOMINO PLASMOID is equipped with a stabilising arm. The DOMINO PLASMOID model with a stabilising arm (also called STABILIZED DOMINO PLASMOID) is equipped with some driving aids that assist but do not replace the operator at the controls. Below in detail:

1. **“STEP DETECTED” message:** this message is displayed thanks to a signal from the sensor placed on the front part of the stair climber and instantly locks the driving motion of the crawler tracks **in descent**. This sensor detects distances greater than or approximately equal to 160 mm and its main function is to identify the first descending step of the staircase to tackle.



WARNING

This sensor works only with the automatic function enabled. Therefore, there is no STEP DETECT signal if the automatic function is disabled.

This sensor’s efficiency is not guaranteed if the steps, **including but not limited**, have grated, carpeted, sound-absorbing surfaces or irregular shapes. The operator must always check the device and the type of staircase. **It is recommended to always perform a no-load trial to check correct operation of the driving aids on the staircase.**

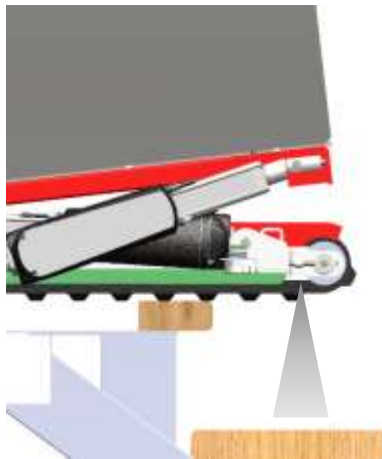


Fig. 52



INFORMATION: automatic adjustment of the load surface is not enabled in manual mode.

2. **LOAD STABILISATION ACTIVATION IN MANUAL MODE:** load stabilisation can also be activated in manual mode by pressing the DOWN ARROW (to start it) and the UP ARROW (to retract it). Upon contact of the stabilizing arm with the ground, the device will autonomously activate the "automatic" function in order to appropriately adjust the angle of the loading platform. With the stabilising arm extended, the operator can adjust the load surface angle by pressing CLOSE, as long as the 8-degree angle between the crawler tracks and the load surface is respected - for mechanical safety reasons, it will therefore be impossible to close the base completely. Therefore, it is necessary to retract stabilisation completely in order to manage to close the base completely.
3. **"STEP NOT DET" MESSAGE:** if the automatic function is active on the surface and you try to activate the stabilising arm by pressing "DOWN" arrow key, the "STEP NOT DETECT" message will be displayed every time the front aid sensor fails to detect a sufficient minimum measurement to intervene. Therefore, in this case, you must disable the "automatic" function and proceed with adjustment using the manual controls.

**WARNING: SENSORS**

All the sensors fitted to the device are driving aids and in no way serve as a substitute for the operator, who must comply with the instructions provided and become familiar with all the machine's functions before using it.

3.15 Charging the battery

In order to preserve performance of the battery pack over time, we offer the following recommendations:

- Never leave the battery pack flat after use
- Do not keep the batteries in rooms below 14°C except during use
- Charge the batteries at least once every 15 days while the stair climbing trolley remains idle.

Power supply and battery charging connector _ the connector for supplying power to the electric motors of the stair climbing trolley is the same for connecting the battery pack to the battery charger provided with the trolley.

To charge the battery of the trolley, simply disconnect the battery pack from the connector of the trolley; connect the battery pack to the connector of the battery charger; and plug the battery charger into a 230VAC power socket.



Connector for supplying power to the motors and charging the battery

Fig. 53

Battery charger _ the battery charger is supplied with a cooling fan that switches on when connected to the electrical mains.

The charge status of the battery is displayed on the battery charger, in particular:

- Steady red light** → Battery flat or damaged.
- Steady Yellow Light** → Battery charging
- Steady green light-** → Battery fully charged
- Blinking red or yellow light** → Charging fault



WARNING: CHARGING THE BATTERIES

- Use only the battery chargers provided with the trolley to charge the batteries.
- Disconnect the battery charger as soon as the batteries are fully charged or, at any rate, no more than two hours afterwards.
- If non-original batteries are installed on the device, namely not supplied by the manufacturer, the warranty on the batteries and on the electromechanical parts of the device terminates immediately.
- **While charging the battery pack, the red switch on the battery pack must be in ON-position, otherwise the batteries will not charge properly.**



Fig. 54 Battery charger and battery box supplied with stair climbing trolley

If the stair climber is left stationary, with the battery connected and the % of the battery level is less than 30%, the message that appears on the full-screen display is **"BATTERY LOW"** (as shown below) which indicates that the battery voltage of the stair climber is too low and, therefore it's necessary to proceed to charge it as per the instructions in the use and maintenance manual.



If the stair climber is on the staircase and moving, the message that may appear on the display is **"BATT LOW"** (as shown below). This message indicates that the battery voltage is low, and the battery needs to be recharged as soon as possible. In addition to the message, the user will notice a reduction in speed directly proportional to the available voltage, this condition is necessary to preserve the battery integrity.



After prolonged use of the trolley in which "BATT LOW" is shown, the message **"BATTERY EMPTY"** could appear in full display which indicates that it is no longer possible to carry out the transportation without damaging the battery and the stair climbing trolley stops.



3.16 Safety equipment

3.16.1 Casings and protective guards

The stair climbing trolley has been designed to minimise the risk of crushing between the moving parts of the trolley.

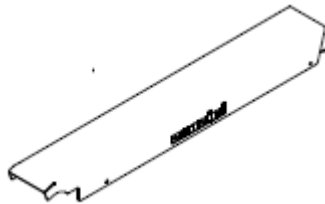
All the potentially hazardous parts of the trolley, like the electric motors, crawler tracks, pulleys, etc. are fitted with fixed guards and devices to guarantee that limbs cannot get crushed between these moving parts.



WARNING: IT IS MANDATORY TO WEAR ALL OF THE PPE REQUIRED BY STANDARDS IN FORCE BEFORE USE.



DOM-STB-CRT-002-P-01



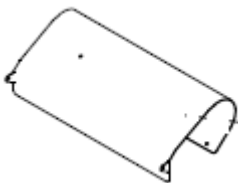
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DOM-STB-CRT-004-P-00



DOM-STB-CRT-003-P-00



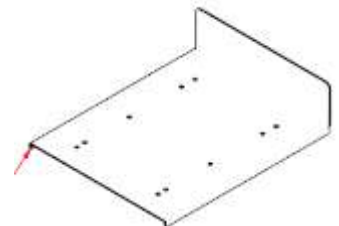
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Guards and protective devices of the stair climbing trolley

All live electrical parts, mobile parts and parts that reach dangerous temperatures are protected by suitable fixed guards.

The fixed guards are secured by systems that require the use of tools to be opened or disassembled. The fastening systems remain attached to the guards or machine when the guards are removed. The guards do not remain in place in the absence of their fastening devices.

3.16.2 Protection and safety devices

The safety devices installed on the machine are:

- Emergency STOP button
- 80 Ah fuse in the battery pack.

3.16.3 Warning pictograms

The following warning and caution pictograms are on the stair climbing trolley. The pictograms must be kept clean and restored whenever they are removed or damaged.

OBLIGATIONS:



Obligation to read the use and maintenance manual



Obligation to wear work clothes (PPE)



Obligation to use safety footwear (PPE)



Obligation to wear a helmet (PPE)

PROHIBITIONS:



Do not remove guards



Do not adjust or lubricate the machine during its use

HAZARDS:



Electrocution hazard Live zone



Hands/feet crushing hazard



Moving parts hazard. There is a high risk of being entangled and injured



Generic Hazard



Batteries recharging hazard



ATTENTION!
The pictograms that perform a safety function must not be removed, covered or damaged.

 IL PACCO BATTERIE IMPORTANTE	 BATTERY PACKAGE IMPORTANT
1) Ricaricare il pacco batterie dopo ogni utilizzo . 2) NON attendere che il pacco batterie si scarichi completamente prima di ricaricarlo.	1) Charge the battery package after every use . 2) DO NOT wait that the battery is totally flat before charging it.
 CAJA DE BATERIAS IMPORTANTE	 BATTERIEBOX ACHTUNG
1) Recargar la caja de baterias después de cada utilización . 2) NO esperar que la caja de baterias se descarga por completo antes de recargarla.	1) Laden Sie die Batterie nach jeder Benutzung auf . 2) Warten Sie NICHT darauf, dass die Batterie ganz leer ist, bevor sie wieder auszuladen.

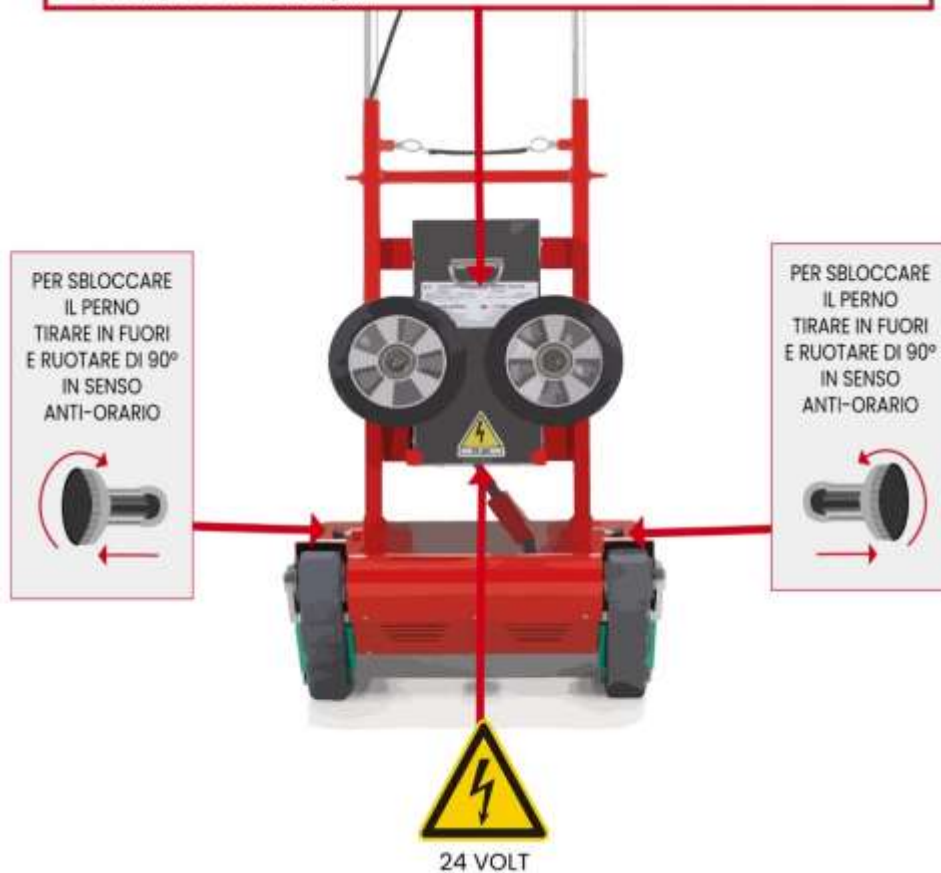


Fig. 55

3.16.4 Battery compartment

The Lead gel battery (AGM) or Lithium Ion Battery (LITH) is fitted in a metal compartment sealed with rivets that can be removed only by destroying them.

The battery compartment is tamper-proof and prevents projection towards the operator of fragments of the battery in the event that it overheats and explodes.

If the stairclimber is equipped with lithium ion batteries, it's necessary to follow these general instructions:

- Monitor storage temperatures
- Do not subject the lithium ion battery box to shocks (in this case it must be promptly isolated)
- Do not store the lithium ion battery box near flammable materials or dangerous chemical agents (at least 5 meters far)
- Do not completely discharge the lithium ion battery box (otherwise the lithium battery becomes unstable)
- Important to ensure that the battery contacts cannot short-circuit by protecting the battery contacts

At each change of battery on the machine, the operator must check that on the screen it appears the proper battery technology (AGM or LITHIUM) installed on the machine; i.e. if the device is equipped with standard battery (AGM), on the screen must be the message "AGM", otherwise if the device is equipped with Lithium ion battery (LITH), on the screen must be the message "LITH".



Stair climbing trolley battery pack

Fig. 56

4 INTENDED CONDITIONS OF USE AND ENVIRONMENT

4.1 Intended use

The stair climbing trolley was designed and constructed to facilitate the transport of heavy and bulky objects up and down all types of stairs, exploiting the properties of the crawler tracks. It must be used only in areas where there is no vehicular traffic: it is not intended for use on public roads because it does not fit the description of a "vehicle" provided in art. 46 of the Highway Code.

Any changes made to the structure could compromise the use, safety and stability of the stair climbing trolley and cause accidents.

All uses other than the intended one are not permitted and the Manufacturer cannot be held in any way responsible for damage caused as a result.

4.2 Environment of use

The stair climbing trolley can also be used outdoors when there are no adverse weather conditions (rain, hail, snow, strong winds, etc.):

- Maximum permitted temperature: +40 °C
- Minimum permitted temperature: -10 °C
- Maximum permitted humidity: 90%

The stair climbing trolley can be used in complete safety on a variety of surfaces thanks to the traction of the rubber crawler tracks. In particular, the trolley can be used to easily transport loads on flat surfaces at an angle.

Be careful on rough or uneven ground, on cobbles, etc. which can damage the base of the trolley or the mechanical parts like the actuator of the tilting surface or the crawler tracks. Another thing to avoid when using the trolley is crossing waterways or pools of water which could damage the electrical parts of the stair climbing trolley. The place of use must also be well lit, by the sun or with artificial lighting, to guarantee complete visibility of the path ahead and of the controls of the stair climbing trolley.



DANGER:

It is absolutely prohibited for anyone to pass/be under and/or in the vicinity of the load and of the staircase during transport. The area downstream of the staircase must always be signalled, delimited and access prohibited by placing chains and stakes, so as to reduce any risks of interference and to prevent the access of bystanders. Everyone must be prohibited from accessing.



WARNING: ENVIRONMENTS TO BE AVOIDED

The stair climbing trolley must not be used:

- in areas where there is a risk of fire or explosion;
- in environments where there is a corrosive and/or chemically active atmosphere;
- in poorly lit environments;
- on particularly uneven ground, such to endanger safety;
- on wet, slippery, frozen surfaces.

4.3 Improper use, contraindications and prohibited use

The actions described below are to be considered **absolutely prohibited**.



WARNING: PROHIBITED ACTIONS

- The warranty is terminated if any of the prohibited actions are performed.
- The Manufacturer cannot assume any responsibility for damage and physical injury attributable to prohibited actions.



DANGER: IT IS STRICTLY PROHIBITED

- To use the stair climbing trolley for uses other than those for which it was built, namely to transport loads on flat surfaces and staircases.
- To put the stair climbing trolley to heavier than intended uses.
- To exceed the maximum weight-bearing capacity of the stair climbing trolley indicated on the identification plate.
- To use the trolley in areas where there is a risk of explosion.
- To use the trolley in poor weather conditions (rain, hail, snow, strong winds, etc.).
- To load people or animals on the stair climbing trolley.

- To load objects that are very bulky, fragile, not in safety containers, stacked or loose or arranged in a manner that could put the operator at risk.
- To operate the stair climbing trolley under the influence of alcohol or narcotics
- To use portable communication devices like CBs or mobile phones when moving the stair climbing trolley.
- To use the stair climbing trolley on roads where there is vehicular traffic.
- To use the stair climbing trolley on surfaces or stairs that are icy, wet, slimy or slippery.
- To reverse without checking for obstacles.
- To use the stair climbing trolley on surfaces or stairs that cannot ensure safety due to their weight-bearing capacity or dimensions, or due to the size and weight of the load.

PLEASE NOTE: Refer to an expert technician to assess the possibility of using the stair climbing trolley on any such surfaces or stairs.

- To stop suddenly, make sharp turns or travel in a zig-zag formation.
- To let go of the control handle of the stair climbing trolley while travelling on a staircase.
- To steer the stair climbing trolley with its parts disassembled.
- To charge the battery in an area that is too hot or poorly ventilated.
- To cover the battery or trolley while the battery is charging.
- To smoke or use naked flames near the charging area.
- To perform any maintenance with the battery still connected.
- To use non-original spare parts.
- To insert limbs or fingers between the moving parts of the stair climbing trolley.
- To transport loads not properly strapped down on the trolley.
- It is absolutely prohibited for anyone to pass/be under and/or in the vicinity of the load and of the staircase during transport. The area downstream of the staircase must always be signalled, delimited and access prohibited by placing chains and stakes, so as to reduce any risks of interference and to prevent the access of bystanders. Everyone must be prohibited from accessing.
- IT IS PROHIBITED TO USE THE TROLLEY IN AN ATEX ENVIRONMENT.



DANGER

Never leave the trolley on the staircase either loaded or unloaded.

ONLY THE MANUFACTURER CAN ACCESS THE CLOSED, PROTECTED OR INTERNAL PARTS OF THE MACHINE.

5 LIFTING AND TRANSPORT

5.1 Lifting

The weight of the stair climbing trolley is about 82 kg, excluding the battery pack.



DANGER: CRUSHING AND IMPACT

Use the stair climbing trolley with care to avoid physical injury and damage.

The manufacturer cannot be held liable for damage attributable to lifting and/or transport of the trolley after delivery.

5.2 Handling the unladen trolley

The stair climbing trolley is supplied with two 200/50 puncture-resistant wheels that must be applied to the trolley for transport on flat ground, so as to speed up transport operations and to preserve the trolley battery charge.

Fit the wheels on the stair climbing trolley as follows:

1. Remove the wheels one at a time from the control handle of the stair climbing trolley, pressing the button at the centre of the wheel and remove it from its housing (as shown in the picture below).



Fig. 57 Removing the wheels

2. Fit the wheels in the holes at the sides of the trolley, near the crawler tracks, making sure they fit all the way in (as shown in the pictures below).



Fig. 58 - Inserting the wheels on the stair climbing trolley



Fig. 59 Wheels correctly fitted on the stair climbing trolley

3. To remove the wheels from the stair climbing trolley, press the central button and slide off the wheel, and then insert it on the relative support on the control handle near the battery pack.



WARNING: WHEELS FOR MOVING

- Do not attempt to climb stairs with the wheels fitted on the trolley because they are not designed for this purpose. It is mandatory to remove both wheels before moving up/down the staircase.
- Do not move up/down the staircase without first having removed both wheels of the trolley.

5.3 Transport

The stair climbing trolley must be secured to ensure its safety when transported in a van. It should be secured with straps or cords that are in good condition.

The fastening devices must be fitted making sure not to damage the frame and other parts of the stair climbing trolley.

There are two knobs on the stair climbing trolley for releasing and removing the control handle, in order to greatly reduce the overall size of the trolley for transport.

To remove the control handle, simply pull the knobs outwards and turn them 90 degrees anticlockwise. **During transport on motor vehicle, the trolley must be off.**

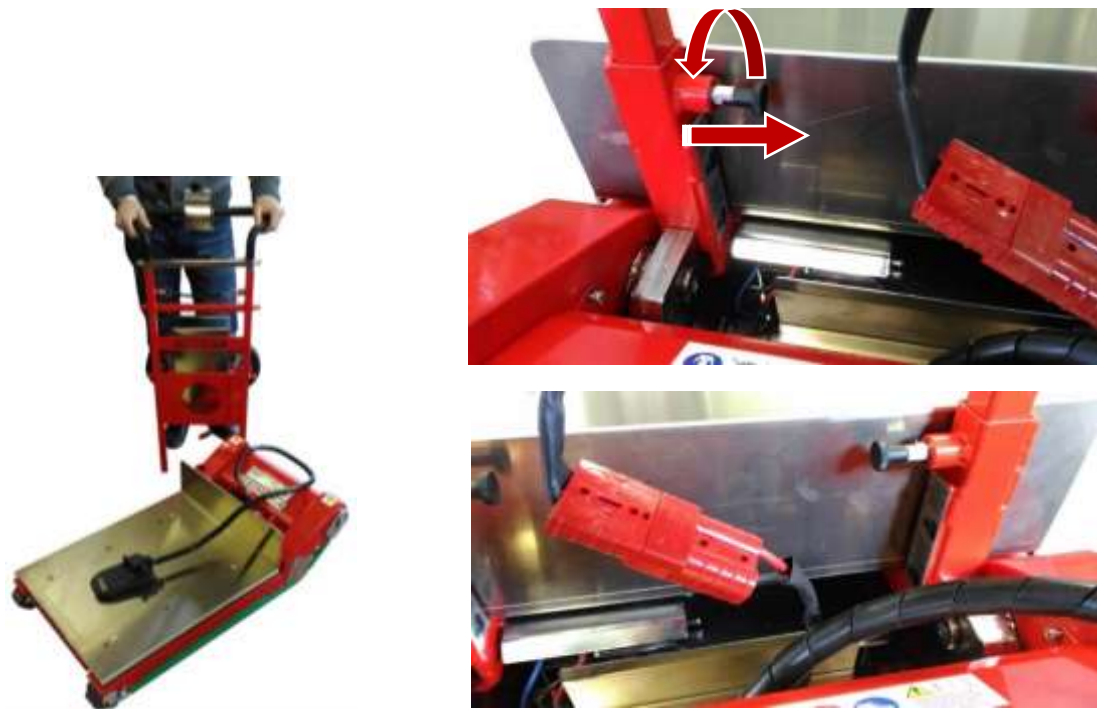


Fig. 60 Stair climbing trolley in transport configuration / Control handle locking pins

6 COMMISSIONING

6.1 Charging the batteries

Before using the stair climbing trolley for the first time, you need to fully charge the battery using the battery charger provided.

The stair climbing trolley is powered with 24V batteries.

The average autonomy of the trolley is about 40 minutes of continuous operation. The average charging time is about 5 to 6 hours; it is advisable, therefore, to leave the batteries to charge overnight.

The batteries should be charged in a well ventilated indoor area, with the battery charger plugged into a compatible power socket.

To charge the batteries, you need to:

- Disconnect the battery pack from the connector on the stair climbing trolley;
- Connect the battery pack to the connector of the battery charger provided with the stair climbing trolley;
- Plug the battery charger into a compatible power socket (230 VAC/50 Hz), checking also that the electrical system that the battery charger is connected to complies with the safety standards in force and is equipped with an equipotential ground system.

A light on the battery charger indicates when the batteries are charged. **Do not exceed 1 month between charges, even if not used.**



DANGER: PRECAUTIONS TO BE TAKEN DURING CHARGING

- Always connect the battery pack to the battery charger before plugging it into the power socket.
- After charging, always unplug the battery charger before disconnecting the battery package.
- Always fully charge the batteries.
- Always use the original power supply unit.
- Always charge the batteries in a ventilated area.
- Never charge the batteries in an overly hot area.
- Do not place flammable liquids near the batteries while they are charging.
- Do not cover the batteries in any way during charging.
- If the batteries release an unpleasant smell, unplug the charger from the socket immediately and ventilate the room. Do not touch the batteries.

6.2 Preliminary functional checks

Before each use, the operator must check that the stair climbing trolley is safe and should, therefore, perform the following inspections before using the stair climbing trolley.

6.2.1 Control devices

Check the condition and charge status of the battery to make sure that it is sufficiently charged for the work at hand.

N.B.: using the trolley in very cold conditions may cause the batteries to run down quickly.

6.2.2 Crawler tracks

Check the wear of the crawler tracks: there must not be any cuts, cracks, foreign bodies, missing teeth or other signs of damage to the crawler tracks.

6.2.3 Braking system

Test the brakes while moving the trolley at slow speed in an area free of obstacles. The trolley should stop almost instantly when the joystick is released. Similarly, the stair climbing trolley should also remain still when turned off and when the joystick is in its central position.



WARNING: UNSUCCESSFUL TEST

- DO NOT USE THE STAIR CLIMBING TROLLEY if any defects are found during the preliminary tests and even if only one of the tests fails.
- Take all appropriate measures to repair the trolley and contact the Assistance Service if necessary.

6.2.4 Load fastening straps

Thoroughly check the good condition of the fixing straps, which must be free of cuts, abrasions, fraying (even minimal) and the metal hooks and buckles must have perfectly working spring levers.



Fig. 61

7 USING THE STAIR CLIMBING TROLLEY

7.1 Adjusting the height of the control handle

The control handle of the stair climbing trolley can be adjusted according to the height of the operator.

To change the height of the control handle, simply act on the appropriate release pins of the control handle and adjust the height as desired. Fig. 62 indicates 2 pins, Fig. 63 pin **DOES NOT LOCK** extension, Fig. 64 pin **LOCKS** extension, Fig. 65 pin **DOES NOT LOCK** extension.

FIGURE 62

FIGURE 63

FIGURE 64

FIGURE 65



Pistons connected one to another with steel cable (or chain) could be installed in place of the unlock pins. In this case the height of the control handle can be adjusted with one hand only. The operator must always **make sure that the lock pins of the extension are perfectly inserted in the holes applied on the extension, risk of accident.**

**ATTENTION: HEIGHT OF THE CONTROL HANDLE**

- If the pins are not inserted correctly, the extension is NOT blocked.
Therefore there is a risk of detachment and/or sudden movement of the control handle.

Do not lift the control handle beyond the length of the Joystick cable, because doing so could pull out or damage the connecting cable of the control panel, making the trolley unusable.

**DANGER: LOCKING PINS**

Before using the trolley in any way, check that the locking pins of the control handle are correctly inserted in the relative holes and that the control handle is securely in place.

7.2 *Placing the load on the trolley and harnessing*



WARNING: POSITIONING THE LOAD

- To place large loads properly on the trolley, it is recommended to use a forklift truck or similar.
IMPORTANT: Make sure that the load's centre of gravity is perfectly centred in the middle of the load surface.



DANGER

It is absolutely prohibited for anyone to pass/be under and/or in the vicinity of the load and of the staircase during transport. The area downstream of the staircase must always be signalled, delimited and access prohibited by placing chains and stakes, so as to reduce any risks of interference and to prevent the access of bystanders. Everyone must be prohibited from accessing.

**It is mandatory to monitor the work area to keep bystanders away.
No one is allowed downstream of the device.**

7.3 Loading objects to be transported on stair climbing trolley.

Loading/unloading of objects to be carried is a manual operation depending on the operator. It is therefore extraneous to the features of the device regarding the capability of tackling staircases while transporting this heavy object.

The operator must therefore comply with standards in force regarding the manual handling of loads and should never carry a load heavier than 25 kg if a healthy adult male. For further details, see the standards of reference.

If the weight of the load is excessive, it is recommended to use approved lifting devices, both electric and hydraulic.



DANGER: FALLING OF THE LOAD

It is strictly prohibited to transport loads without first having correctly secured them by means of the specific belts supplied. Falling hazard!

The load could fall if not properly secured with the supplied belts!



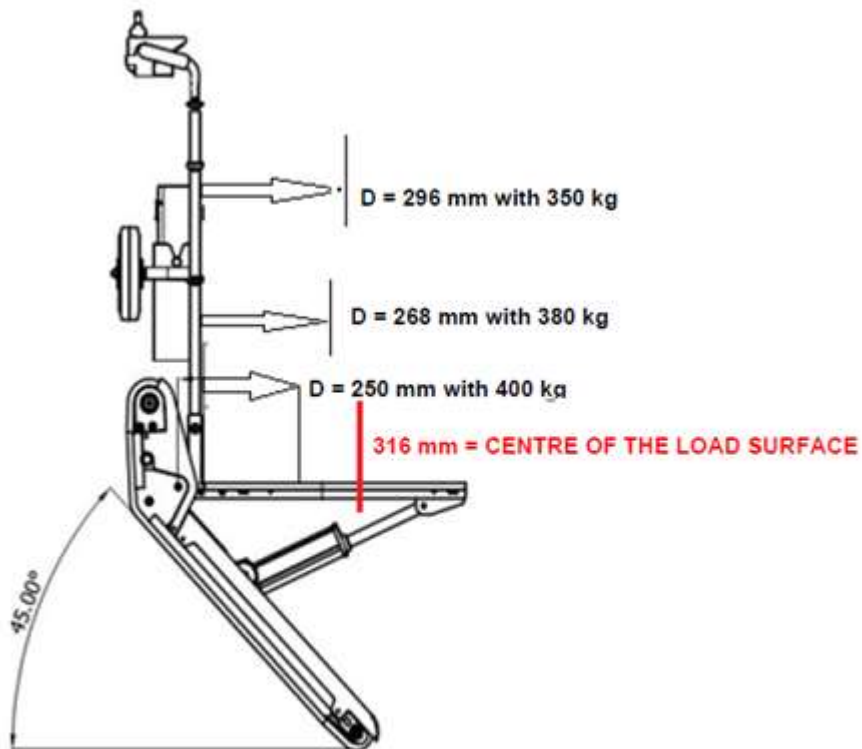
Fig. 66 –
Sequence:
fastening belt

7.4 Positioning of load centre of gravity. Use limits.



WARNING: CENTRE OF GRAVITY OF THE LOAD

- To position the load on the trolley, proceed as follows. Falling hazard.
- Place the centre of gravity of the load as close as possible to the control handle of the stair climbing trolley.



ATTENTION: arrows and lines are approximate. For exact values, refer only to the measurements expressed in mm.

Fig. 67

The figure above represents the use limits of the device in relation to the position of the load's centre of gravity. Values different than those indicated do not reflect a safe transport and must therefore be avoided.

Load	D
400 kg	250 mm
380 kg	268 mm
350 kg	296 mm -> ATTENTION: in this case it exceeds the stability limit.

In general terms, to achieve a stability condition during transport on a staircase, the operator must make sure to have positioned the load and therefore the relative centre of gravity so that the value D is as close as possible to the centre of the load surface (namely 316 mm).

**WARNING**

The use limits, in addition to depending on the correct positioning of the centre of gravity, also depend on the gradient of the staircase, which inevitably varies the values D. If the operator is not able to realise what the stability condition is, he must **NOT PERFORM THE TRANSPORT OPERATION**.

7.5 External electromagnetic interference

The stair climbing trolley can be susceptible to electromagnetic interference, i.e. the electromagnetic waves emitted by sources like radio stations, television stations, home radio-transmitters and the antennas of mobile phones.

Interference (generated by sources of radio waves) can cause the trolley to move by itself or to move in unwanted directions and, in worst case scenarios, can permanently damage the control system of the trolley.

The stair climbing trolley can withstand electromagnetic interference of up to a certain intensity known as the level of immunity. The level of immunity of the stair climbing trolley ensures sufficient protection against common sources of electromagnetic interference.

Observe the rules below to help minimise the risk of electromagnetic interference:

- Locate any nearby sources like radio and television antennas and mobile phone repeaters, and avoid getting too close to them.
- Switch off the trolley and disconnect the battery in case of unwanted movements, disconnecting the battery connectors.



Fig. 68

- Do not add electrical accessories or modify the stair climbing trolley without requesting the manufacturer’s authorisation.
- Contact the assistance service to report any unexpected movement of the stair climbing trolley, however infrequent.



WARNING: ELECTROMAGNETIC INTERFERENCE

If the stair climbing trolley does not respond to the controls or does not move as expected, stop the stair climbing trolley by pressing the OFF button, remove the battery and contact the ZONZINI Assistance Service to resolve the problem.

8 MAINTENANCE

8.1 General



DANGER: RISK OF ACCIDENTS

Always take the necessary safety measures during maintenance. All maintenance must be performed with the stair climbing trolley turned off, the battery disconnected and the trolley on a flat, stable surface.

Before carrying out maintenance operations on the machine, eliminate the supply of all types of energy (electricity) and make sure that the machine is cold.

Attention:

Important:

- Do not wet the electrical connections and the control panel with water or other liquids.
- Make sure that the machine installation and maintenance zone has at least 200 lux lighting.
- Maintenance must be carried out only and exclusively by following the instructions in the manual.

OPERATIONS INVOLVING RISKS FOR THE OPERATOR:

During use, comply with the general accident-prevention regulations.

In particular:

- if working on electrical parts, make sure they are not live.
- Make sure that the machine components are cold. In any case, always wear PPE.

Already during the design phase, solutions were adopted to make using the machine safe in all phases: transport, adjustment, activity and maintenance. Nevertheless, not all possible risks for operators and the environment have been eliminated, both for technological reasons (reliability of the devices) and for management reasons (excessive difficulties in eliminating them), consequently the residual risks present are indicated, e.g.: electrocution, etc.

Do not introduce hands, feet or other body parts inside a moving part of the system when it is in use. There is a high danger of crushing and/or cutting a limb.



Do not introduce hands, feet or other body parts inside a moving part of the system when it is in operation. There is a high danger of being entangled and seriously injured.



Some system parts reach high temperatures, even above 50°. Do not touch them and do not place them near flammable materials.



It is necessary that each operator who must use or service the system pays particular attention to where he/she walks (risk of tripping).



All the live electrical components of the system are isolated and precluded from contact and can never be reached by an operator during the normal and correct performance of an operational activity. The live electrical components are always indicated by the following pictogram.

To perform ROUTINE maintenance, the operator must make sure that the machine is kept clear of foreign materials such as oil, debris or other, in addition to performing daily, weekly and monthly checks.

Maintenance must be carried out as instructed and in a careful and professional manner, in order to maintain the full efficiency and durability of your stair climbing trolley.

Always check that all the controls work perfectly after performing any routine maintenance.

The lifetime of the battery pack varies depending on the intensity of use of the stair climbing trolley and compliance with the charging cycles and usage temperatures.

This manual does not cover disassembly and supplementary maintenance because this must only ever be done by ZONZINI Assistance Service personnel.

The Assistance Service is happy to provide any information and to help care for and maintain the perfect efficiency of your stair climbing trolley.

The warranty will be terminated if any non-original parts are assembled or the trolley is modified without the prior authorisation of ZONZINI S.r.l..



WARNING: UNSUCCESSFUL TEST

- Do not use the stair climbing trolley if even only one of the tests fails.
- Immediately implement all the measures to perform repairs, and, if necessary, contact the ZONZINI S.r.l. Assistance Service.

8.2 Daily maintenance and checks

8.2.1 Checking the plates and pictograms

Check that the CE plate and warning labels are all on the stair climbing trolley and are legible.

8.2.2 Checking the crawler tracks

Check the condition of the crawler tracks, guides and pulley. The crawler tracks should not feature any cuts, cracks or missing parts, etc. Also make sure that the crawler tracks are correctly tightened.

Contact the ZONZINI Assistance Service if the crawler tracks need to be replaced.

It is recommended to replace the crawler tracks at least once every 24/36 months, even if not worn.

It is prohibited to use the crawler tracks if they have even small superficial cuts.

The warranty will be terminated if any non-original parts are assembled or the trolley is modified without the prior authorisation of ZONZINI S.r.l.

8.2.3 Crawler tracks operation check

The stair climbing trolley should always move in the same direction as the joystick. If the stair climbing trolley moves in an irregular manner, you must stop the trolley immediately and contact the ZONZINI srl Assistance Service to have it checked as soon as possible.

8.3 Weekly maintenance and checks

8.3.1 Washing and cleaning

The stair climbing trolley should be cleaned not only for reasons of decorum, but also to immediately identify any defects.

Certain precautions should be taken while cleaning to avoid damaging or reducing the efficiency of the various components, especially the electrical parts. It is strictly prohibited to aim jets of pressurised water at the electrical parts, motors and battery, which should preferably be cleaned with compressed air.

8.3.2 Checking the frame and bolts

The supporting frame of the stair climbing trolley and the welds must not have any visible defects like: cracks, deformities, cuts, corrosion, etc. Check that all the bolts on the stair climbing trolley are securely fastened.

8.4 Monthly maintenance and checks

8.4.1 Checking the electrical circuits and components

Check the good condition of the electric control and connection cables with the battery. The sheathing must be perfectly intact and all the connections must be secure and not bear signs of corrosion.

8.5 Checks performed by the manufacturer

It is mandatory to have the stair climbing trolley undergo periodical checks at the manufacturer's site every 12 months so as to guarantee proper operation of the device. The general conditions of the trolley will be examined, in particular the components subject to wear, assessing whether or not they need to be replaced.

In case of heavy-duty use of the trolley (constant use at maximum capacity) or use in particularly heavy duty places or situations, such as outdoor stone steps, or dusty worksites and environments, more maintenance interventions than the mandatory ones could be necessary.

**WARNING: PERIODIC INSPECTIONS**

The manufacturer cannot be held responsible for personal harm or property damage if the stair climbing trolley has not been periodically inspected.

9 TECHNICAL ASSISTANCE AND SPARE PARTS

Please make sure you have this information on hand when requesting technical assistance:

- Stair climbing trolley model;
- serial number;
- year of manufacture;

**WARNING: ORIGINAL SPARE PARTS**

The Manufacturer cannot be held responsible for any damage attributable to the use of non-original spare parts, including the batteries.

10 STORAGE IN THE WAREHOUSE

Instructions on preparing the stair climbing trolley for a long period of storage:

- Put the trolley in a dry and clean area.
- Give the stair climbing trolley a general clean before storing it.
- Periodically charge the battery.
- Put a waterproof cover on the trolley to protect its structure against dust, dirt and humidity.

11 PROCEDURE IN CASE OF GETTING STUCK ON STAIRS

If the trolley gets stuck along the stairs, whether climbing or descending, it is possible to electrically release the brakes of the gear motor and press gently on the control handle, in relation to the weight being handled, and direct the stair climbing trolley downwards at a very slow rate.

To do so it is necessary to press the two following buttons at the same time (and hold them down). The brakes will be released after about 3 seconds from pressing these keys at the same time. If one or both buttons are released, the gear motor brakes will immediately start operating again and block motion.



Fig. 69



This operation must only be carried out in case of emergency and if necessary.

Also, during emergency manoeuvres such as this one, the operator must make sure that there is no one downhill of the stairs.

11.1 Stairclimber’s functioning in case of stabilization failure (GEAR)

Should a communication anomaly occur between the electronic board of the trolley (called "plasmoid") and the electronic board of the stabilized arm (called "GEAR"), it will appear on the screen the message "AUX HW FAILURE" and, after having accepted the message (by holding down the DOWN arrow button) the device will operate in "watchful man" mode control.

12 DISPOSAL OF COMPONENTS AND MATERIALS



INFORMATION: DISPOSAL OF MATERIALS

Dispose of the packaging, waste and dust, replaced parts and eventually the entire stair climbing trolley at the end of its useful life in an environmentally friendly manner, without contaminating the land, water or air, and observing the applicable domestic and local regulations in force

Instructions on the recycling of waste:

- Materials made of iron, aluminium and copper: take to an authorised recycling centre;
- Plastics, fibreglass, seals, tyres: take to a waste disposal site or a recycling centre.
- The battery of the trolley must be taken to COBAT or a local battery recycling centre.

Sort the materials according to type, hiring companies specialised in disposal in accordance with the law.



13 WARRANTY

Check the trolley upon receipt for any signs of damage sustained during transport. Any damage must be reported to Zonzini S.r.l. in writing within 8 days of receipt of the trolley.

The warranty is valid for 12 months from the date of purchase, and covers the battery pack for a period of 6 months.

Under the terms of the warranty, only parts found to be defective after inspection by Zonzini S.r.l. will be replaced or repaired free of charge, excluding shipping costs.

The purchaser covers the cost of replacing worn parts, excise duty and VAT. The purchaser is not offered compensation for direct or indirect damage or for termination of the contract, or for a reduced sales price or for payments put on hold, which can result in immediate forfeiture of the warranty.

Replacement or repair of the parts under the terms of the warranty does not extend the period of validity.

As regards the crawler tracks, since they are in direct contact with different types of surfaces, the warranty does not cover damage that occurs to the rubber in direct contact with the floor. The operator must verify the surfaces where the trolley works.

Returns without the manufacturer's written authorisation are not accepted. The warranty is forfeited if:

- The purchaser falls behind in payments;
- The instructions in this use and maintenance manual are not followed;
- Changes are made without the prior written authorisation of Zonzini S.r.l.;
- Repairs are carried out by unauthorised personnel;
- The trolley is put to uses other than the intended one;
- Original parts are replaced with ones of another manufacturer.

The warranty does not cover any of the pneumatic components.

Disputes will be settled at the court of Verona.

14 Errors to be avoided when using the device:**Error 1: To start climbing the stairs without tilting the load.**

MANUAL MODE: It is mandatory to adjust the inclination of the load surface by means of the joystick knob, when the trolley starts climbing, according to the procedure in the user manual in chapter “3.7 climbing procedure – manual mode”.



Fig. 70 - Error: To start climbing the staircase without tilting the load surface.

“AUTOMATIC” MODE: This mistake is not possible in automatic mode, since the load surface is tilted automatically.

Error 2: Not stopping in the load centre of gravity position (whether going up or down).

MANUAL MODE: when you reach the last step of the flight of stairs (or when in descent you are on the landing and approaching the flight of stairs) you must identify the load's centre of gravity and **close the crawler tracks by pressing CLOSE (when climbing) or open the crawler tracks by pressing OPEN (when descending)**. Comply with the procedure described in this manual in chapter "landing climbing procedure – manual mode" and "landing descent procedure – manual mode".



Fig. 71

AUTOMATIC MODE: when you reach the last step of the flight of stairs (or when in descent you are on the landing and approaching the flight of stairs) you must identify the load's centre of gravity and wait for the **automatic closing** of the load surface **when climbing** or wait for the **automatic opening** of the load surface **when descending**. Comply with the procedure described in this manual in chapter "landing climbing procedure – automatic mode" and "landing descent procedure – automatic mode".

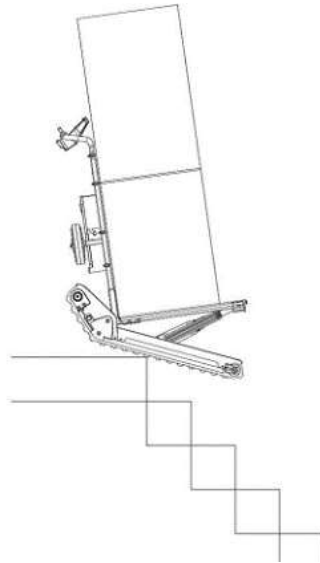
EXAMPLE OF CENTRE OF GRAVITY OF THE LOAD:

Fig. 72

The figure above shows an example of the stair climbing trolley with the centre of gravity on the last step of the flight of stairs.

PLEASE NOTE: The center of gravity of the load is the point where the machine is balanced. To test the balance, hold the handle and make sure there is no pressure in pulling or pushing.

Error 3: Going down the flight of stairs without adjusting the load inclination**MANUAL MODE:**

When the front-most part of the crawler track touches the floor below when descending a staircase, the operator must close the inclination of the load surface by pressing M. Follow the procedure described in this user manual.



Fig. 74

“AUTOMATIC” MODE:

This mistake is not possible in automatic mode because the trolley closes the load automatically.

15 Tips when manoeuvring on landing

The rotation manoeuvre on the landing is carried out by properly turning the joystick to safeguard the stability of the load and to avoid any obstacles, such as perimeter walls, windows, lamps, railings etc.

The following are examples of how to manoeuvre on the landing:

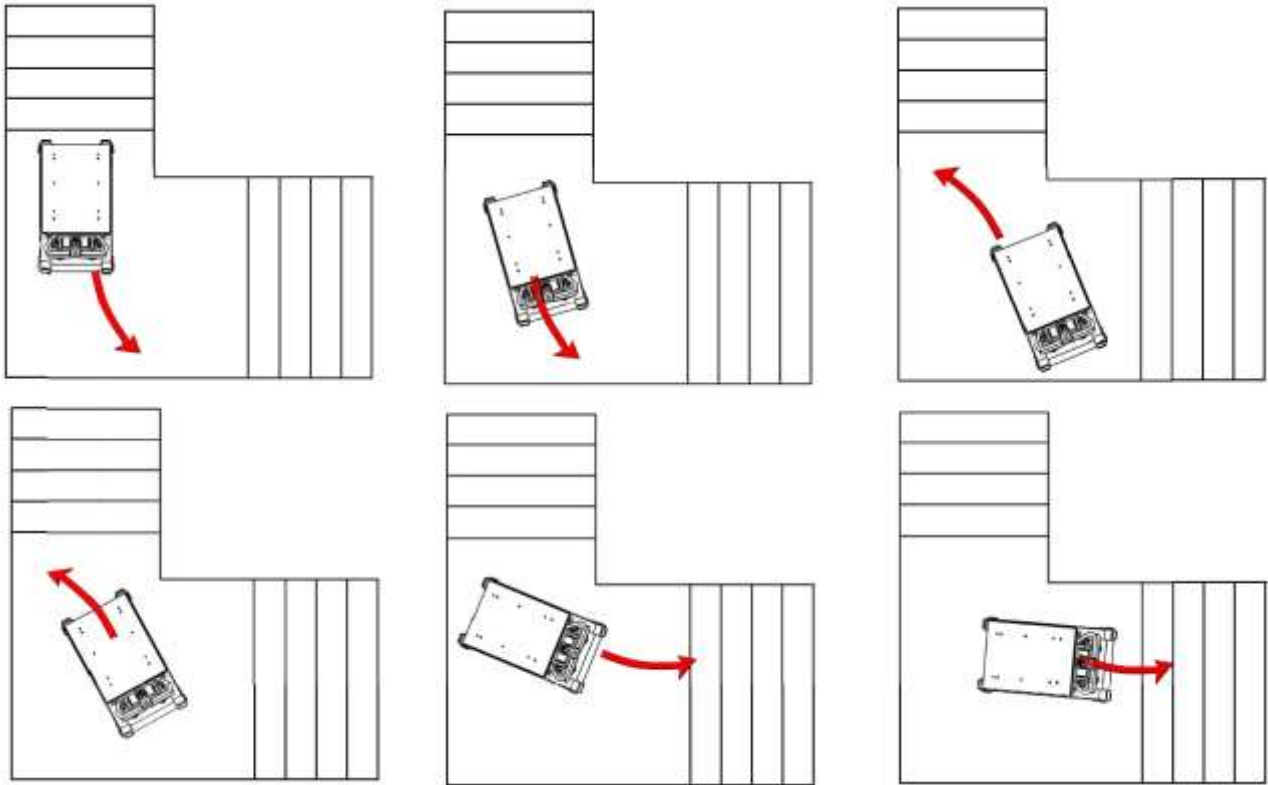
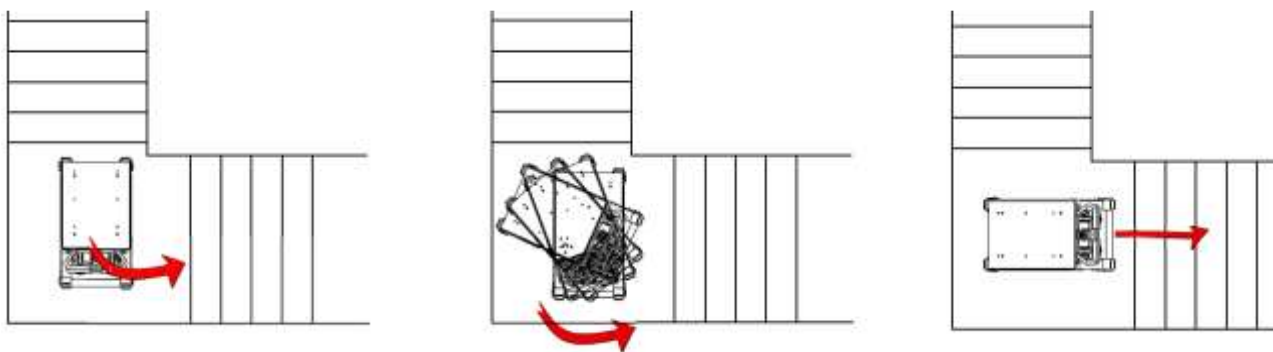


Fig. 75

If there is too little space without the possibility of performing several manoeuvres for rotation (which is recommended to avoid wearing out the crawler tracks under conditions of full load and friction with the floor), 360° rotations can also be performed:



N.B. During rotation, in order not to wear the crawler tracks excessively, it is recommended to keep the load tilted by about 20° so that the weight is concentrated in the back section of the crawler tracks and not along their entire section.

Fig. 76

16 WARNINGS AND ALARMS

#FAULTS	DISPLAY MESSAGE	PLASMOID'S LOG	CAUSE	REMEDY
3001	BRAKE 1 FAILURE CODE 3001	BRAKE 1 FAILURE	<p>It appears for a several reasons:</p> <p>A. The brake_1 (right) has one cable or both broken</p> <p>B. The brake_1 (right) has one cable or both disconnected</p> <p>C. The output of the Plasmoid relating to the brake_1(right) has a fault.</p>	<p>1. Check wirings and connexions, than accept the message by long pressing the up arrow key and try to move.</p> <p>2. Replace the gearmotor.</p> <p>3. Replace the Plasmoid.</p>
3002	BRAKE 2 FAILURE CODE 3002	BRAKE 2 FAILURE	<p>It appears for a several reasons:</p> <p>A. The brake_2(left) has one cable or both broken</p> <p>B. The brake_2(left) has one cable or both disconnected</p> <p>C. The output of the Plasmoid relating to the brake_2(left) has a fault.</p>	
3003	MOTOR 1 OVERCURRENT CODE 3003	MOTOR 1 OVERCURRENT	<p>It appears for a several reasons:</p> <p>A. One brake or both are stuck or do not release well</p> <p>B. The maximum load of the machine is exceeded</p> <p>C. The output of the Plasmoid relating to the motor_1(right) has a fault.</p> <p>D. When battery percentage is < 30% and you're carrng an heavy load (more than 300 Kg)</p>	<p>1. Accept the message by long pressing the up arrow key and double check that the machine is working properly. Otherwise email the Zonzini assistance service.</p> <p>2. Check that you have not exceeded the maximum capacity of the machine</p> <p>3. Check if the brakes release properly. You should be able to hear a "click" when releasing the joystick.</p> <p>4. Replace the gearmotor.</p> <p>5. Replace the Plasmoid</p>
3004	MOTOR 2 OVERCURRENT CODE 3004	MOTOR 2 OVERCURRENT	<p>It appears for a several reasons:</p> <p>A. One brake or both are stuck or do not release well</p> <p>B. The maximum load of the machine is exceeded</p> <p>C. The output of the Plasmoid relating to the motor_2(left) has a fault.</p> <p>D. When battery percentage is < 30% and you're carrng an heavy load (more than 300 Kg)</p>	
3005	ACTUATOR OVERCURRENT CODE 3005	ACTUATOR OVERCURRENT	<p>It appears for a several reasons:</p> <p>A. The tilting actuator has one cable or both broken</p> <p>B. The tilting actuator has one cable or both disconnected</p> <p>C. The output of the Plasmoid relating to the tilting actuator has a fault.</p> <p>D. When battery percentage is < 30% and you're carrng an heavy load (more than 300 Kg)</p>	<p>1. Accept the message by long pressing the up arrow key and double check that the machine is working properly. Otherwise email the Zonzini assistance service.</p> <p>2. Check that you have not exceeded the maximum capacity of the machine</p> <p>3. Replace the tilting actuator.</p> <p>4. Replace the Plasmoid</p>
3006	MOTOR 1 FAILURE CODE 3006	MOTOR 1 FAILURE	<p>It appears for a several reasons:</p> <p>A. The motor_1(right) has one cable or both broken</p> <p>B. The motor_1(right) has one cable or both disconnected</p> <p>C. The output of the Plasmoid relating to the motor_1(right) has a fault.</p>	<p>1. Check wirings and connexions, than accept the message by pressing the up arrow key and try to move.</p> <p>2. Replace the motor.</p> <p>3. Replace the Plasmoid.</p>
3007	MOTOR 2 FAILURE CODE 3007	MOTOR 2 FAILURE	<p>It appears for a several reasons:</p> <p>A. The motor_2(left) has one cable or both broken</p> <p>B. The motor_2(left) has one cable or both disconnected</p> <p>C. The output of the Plasmoid relating to the motor_2(left) has a fault.</p>	
3008	ACTUATOR FAILURE CODE 3008	ACTUATOR FAILURE	<p>It appears for a several reasons:</p> <p>A. The actuator has one cable or both broken</p> <p>B. The actuator has one cable or both disconnected</p> <p>C. The output of the Plasmoid relating to the actuator has a fault.</p>	<p>1. Check wirings and connexions, than accept the message by pressing the up arrow key and try to move.</p> <p>2. Replace the actuator.</p> <p>3. Replace the Plasmoid.</p>

#ALARMS	DISPLAY MESSAGE	PLASMOID'S LOG	CAUSE	REMEDY
2001	BATTERY EMPTY CODE 2001	BATTERY EMPTY	It appears when the dynamic voltage (voltage of the battery when the machine is working) dropped below the lower limit	1. Charge the battery pack immediately.
2005	BATTERY LOW CODE 2005	BATTERY LOW	It appears when the battery percentage drops below 30%	1. Accept the message by long pressing (3 sec) the up arrow key and then recharge battery pack as soon as possible. 2. Accept the message by long pressing (3 sec) the up arrow key and then use another battery pack (fully charged).

17 INSTRUCTION MANUAL FOR THE OPTIONAL ACCESSORIES

IMPORTANT: While assembling the accessory or positioning the load, the machine must be turned off.

ADJUSTABLE BASE WITH and WITHOUT WHEELS FOR PHOTOCOPIERS

The adjustable base for photocopiers is available in **two versions, with or without wheels.**

Version with wheels with retracted load sliders:



Fig. 77

Version with wheels with load sliders pulled out:



Fig. 78

Version without wheels with retracted load sliders:



Fig. 79

Version without wheels with load sliders pulled out:



Fig. 80

ATTENTION: Switch the machine off before assembling the accessory on the stair climbing trolley and positioning the load (photocopier) onto it.

In order to correctly install the photocopier base with and without wheels on the Domino Automatic stair climbing trolley, it is necessary to remove the standard aluminium base and screw the photocopier base onto the stair climbing trolley's supporting frame with four bolts, as shown in the figure below.

IMPORTANT: The operator must ensure that the bolts are properly tightened.

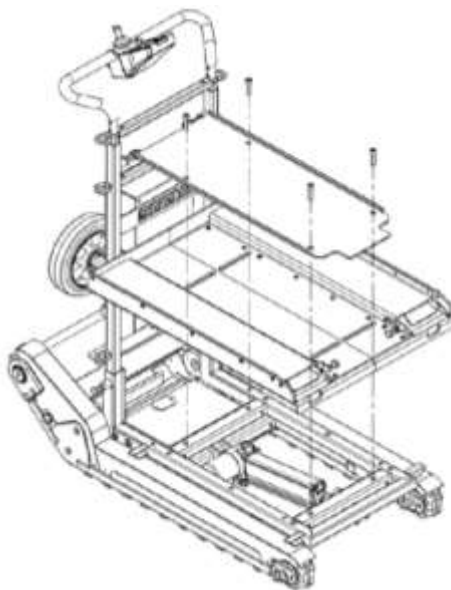


Abbildung 2

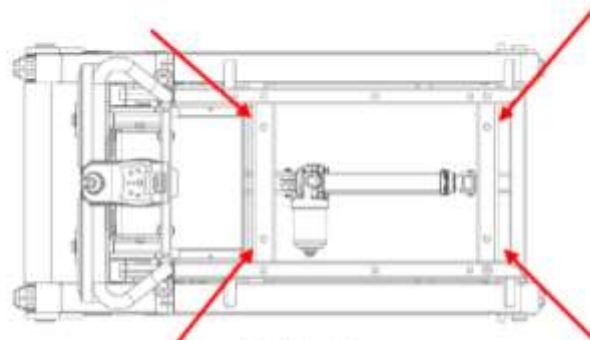


Abbildung 3

Fig. 81



The loading and unloading ramps of the photocopier must be positioned in the central seat of the base itself, and are held in position by two harmonic steel plates.

Make sure to position them correctly in the slots at the ends of the base, so that they can form an unobstructed inclined surface in order to make the copier loading procedure as easy as possible.



Fig. 82

In the version with wheels, there is a **mechanical brake in the central swivel wheel**. It is necessary to **lock the wheel by means of the brake before loading the photocopier onto the trolley**, in order to stabilise the stair climbing trolley and prevent it from moving backwards. Before moving the stair climbing trolley and inclining the base, the load sliders must be retracted into their seats and the front swivel wheel released from the brake.

The base for photocopiers, in both versions with or without wheels, is adjustable both in width and in length; in particular, it can be enlarged from 59 to 76 cm and extended from 68 to 83 cm, in order to adapt it to the different types of photocopiers available on the market.



DANGER

- Once the photocopier has been loaded, immediately incline the loading surface of the stair climbing trolley in order to prevent it from accidentally sliding down from the base, and immediately secure the load using the special strap provided.
- The photocopier may be unbalanced during the transitional loading phase onto the base.
- The user may bump the machine while installing the accessory onto it.



WARNING

MAXIMUM CAPACITY: when the stairclimbing trolley is used in combination with this accessory, the max load on the machine cannot be more than 375 kg.

Please refer to the following paragraphs of the user manual of the Domino Automatic trolley:

- << ENVIRONMENTS TO BE AVOIDED >>
- << PROHIBITED ACTIONS >>
- << IT IS STRICTLY PROHIBITED >>
- << PLACING THE LOAD ON THE TROLLEY AND HARNESSING >>
- << PERSONAL PROTECTIVE EQUIPMENT >>

**DANGER**

- **STAY AWAY FROM MOVING PARTS.**
- **CARRYING PEOPLE IS NOT ALLOWED.**
- **BEFORE ANY MOVEMENT, always tie up the goods according to the instructions specified in the user manual for mod. Domino Automatic.**
- **The accessory must always be installed on the trolley without any load.**

ADJUSTABLE BASE FOR BULKY LOADS

The adjustable base for bulky loads (Fig. 83 below) is used to increase the loading surface of the stair climbing trolley mod. Domino Automatic.

Screw directly on the standard sheet metal base which, therefore, will not be removed. To do so, use the six bolts on the load-bearing frame of the stair climbing trolley.

To adjust the opening of the stretchable base, which extends up to 80 cm, loosen the fixing screws (without unscrewing them completely), and adjust the base to the desired size; then tighten the fixing screws firmly, so that the adjustable base fully adheres to the standard one.

**DANGER**

If the clamping screws are not properly fastened, even very dangerous accidents may occur, so the operator must ensure that they are always properly tightened.



Fig. 83: Adjustable base for bulky loads

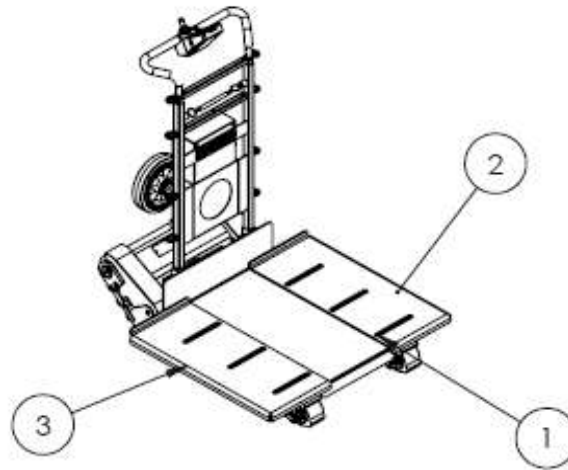


Fig. 84: 1- Bolt fixing seats 2- extendable left side 3- extendable right side



WARNING

MAXIMUM CAPACITY: when the stairclimbing trolley is used in combination with this accessory, the max load on the machine cannot be more than 390 kg.

Please refer to the following paragraphs of the user manual for the Domino Automatic trolley:

- << ENVIRONMENTS TO BE AVOIDED >>
- << PROHIBITED ACTIONS >>
- << IT IS STRICTLY PROHIBITED >>
- << PLACING THE LOAD ON THE TROLLEY AND HARNESSING >>
- << PERSONAL PROTECTIVE EQUIPMENT >>

The base opening must be suitable for the size of the load. If the size of the load does not require it, the base must be closed again.



DANGER

- STAY AWAY FROM MOVING PARTS.
- CARRYING PEOPLE IS NOT ALLOWED.
- BEFORE ANY MOVEMENT, always tie up the goods according to the instructions specified in the user manual for mod. Domino Automatic.
- The user may bump the machine while installing the accessory onto it.
- The load may be unbalanced during the transitional phase of loading the goods onto the base.
- The accessory must always be installed on the trolley without any load.
- When ascending / descending on the accessory, always climb up with both crawler tracks in parallel.

WHEELED BASE

The wheeled base is useful to improve the flat transport condition of the stair climbing trolley, as it provides support on 4 wheels, 2 fixed and 2 swivel ones, so the operator can push the trolley (with or without the load) more comfortably than with the 2 wheels supplied.

Place the wheeled base behind the Domino Automatic stair climbing trolley, activate the “Automatic” function and slowly move the joystick backwards. Then climb on the base, making sure that the crawler tracks are aligned and centred with respect to the supporting frame.



DANGER

Never use the wheeled base on inclined surfaces, as there may be loss of control due to the acceleration that would result from moving on an inclined plane. The wheels are unbraked, so use them only and exclusively on flat, obstacle-free ground, and not on pavements or surfaces with steps or other architectural barriers.



Fig. 85



WARNING

The part on which to go up backwards with Domino Automatic is the one where the wheels with a larger diameter are, that is the one with the lower difference in height with respect to the ground (indicated by the arrow).

Stop only when the stair climbing trolley as well as the load are reasonably well distributed over the entire surface, with an optimal centre of gravity position for flat transport.

MAXIMUM CAPACITY: 480 kg

Once the stair climbing trolley has been placed onto the wheeled base, it must be switched off.

When positioning the stair climbing trolley onto the wheeled base, if a load is fixed to the trolley, pay attention to its balance.

The stair climbing trolley must be moved slowly during positioning onto the wheeled base.

Please refer to the following paragraphs of the user manual for the Domino Automatic trolley:

- << ENVIRONMENTS TO BE AVOIDED >>
- << PROHIBITED ACTIONS >>
- << IT IS STRICTLY PROHIBITED >>
- << PLACING THE LOAD ON THE TROLLEY AND HARNESSING >>
- << PERSONAL PROTECTIVE EQUIPMENT >>

**DANGER**

- STAY AWAY FROM MOVING PARTS.
- CARRYING PEOPLE IS NOT ALLOWED.
- BEFORE ANY MOVEMENT, always tie up the goods according to the instructions specified in the user manual for mod. Domino Automatic.
- The user may bump the machine while using the accessory.
- The load may be unbalanced when the trolley is transferred from the ground to the accessory.
- The trolley may fall off the accessory while the crawler tracks are transferred from the ground to the accessory, if the operator improperly climbs onto the accessory.
- When ascending / descending on the accessory, always climb up with both crawler tracks in parallel.

ALUMINIUM RAMP:

The aluminium ramp is used to load/unload the stair climbing trolley mod. Domino Automatic into/from the van with or without load.

The ramp in the standard version is 2 metres long.

It is suitable for loading/unloading into/from the cargo area of the van at a maximum 1 metre height.



Fig. 86

Rest the ramp to the van cargo area with the rounded snap-on part. There is a hole in the middle of the snap-on part. The operator must provide the van cargo area with the same hole on the side he/she wants to climb up from, and use a hexagon socket countersunk flat head cap screw 10X50 to stop the ramp at the cargo area, so as to prevent any accidents resulting from the ramp sliding off during loading/unloading.



WARNING

You must secure the ramp with the screw. If the ramp is not properly secured to the cargo area by means of a screw, even very severe accidents could occur due to the risk of the ramp slipping off the cargo area of the van.

MAXIMUM CAPACITY: Please refer to the operating instructions and EC certification provided with the ramp.



DANGER

The load may be unbalanced when the trolley is transferred from the ground to the accessory.

BASE FOR NARROW LANDINGS

The base for narrow landings (Fig. 87) offers the advantage of avoiding the first step of the next flight of stairs and to manoeuvre the load in even narrower spaces.

When the operator, during the ascent phase, is preparing to perform the landing operation specified in the user manual of the Domino Automatic trolley (chapter 7.4), you must position the narrow landing base onto the landing so that the crawler tracks of the trolley can climb directly onto this accessory, instead of resting on the ground (see Fig. 88 below).



DANGER: RISK OF ACCIDENTALLY PUSHING THE LOAD!

After the crawler tracks of the trolley have gone up onto the narrow landing base, the load will be on 4 wheels; therefore, the operator must be careful not to push the load down the stairs. While moving the base, the crawler tracks of the stair climbing trolley must not be operated by the operator.



Fig. 87: narrow landing base



WARNING

The part on which to go up backwards with Domino Automatic is the one where the wheels with a smaller diameter are, that is the one with the lower difference in height with respect to the ground (indicated by the arrow).

Stop only when the stair climbing trolley as well as the load are reasonably well distributed over the entire surface, with an optimal centre of gravity position for flat transport.



Fig. 88: The tracks of the Domino Automatic trolley are positioned above the "narrow landing base" accessory.



Fig. 89: base plate for narrow landings on a landing.



WARNING

MAXIMUM CAPACITY: when the stairclimbing trolley is used in combination with this accessory, the max load on the machine cannot be more than 380 kg.

Please refer to the following paragraphs of the user manual for the Domino Automatic trolley:

- << ENVIRONMENTS TO BE AVOIDED >>
- << PROHIBITED ACTIONS >>
- << IT IS STRICTLY PROHIBITED >>
- << PLACING THE LOAD ON THE TROLLEY AND HARNESSING >>
- << PERSONAL PROTECTIVE EQUIPMENT >>



DANGER

- STAY AWAY FROM MOVING PARTS.
- CARRYING PEOPLE IS NOT ALLOWED.
- BEFORE ANY MOVEMENT, always tie up the goods according to the instructions specified in the user manual for mod. Domino Automatic.
- The user may bump the machine while installing the accessory.
- The load may be unbalanced when the trolley is transferred from the ground to the accessory.
- The trolley may fall off the accessory while the crawler tracks are transferred from the ground to the accessory, if the operator improperly climbs onto the accessory.
- When ascending / descending on the accessory, always climb up with both crawler tracks in parallel.

CENTRAL ARM FOR VANS

The central arm for vans (Fig. 90) is used to move the load in a tilted position on the van. It is ideal for long loads on relatively low vans. It is attached directly to DOMINO AUTOMATIC's frame and is equipped with swivel wheels.



Fig. 90: Central arm for vans.



Fig. 91: Central arm for vans secured to Domino Automatic's structure



Fig. 92: Central arm for van to carry the load in a tilted position in the van.



WARNING

MAXIMUM CAPACITY: when the stairclimbing trolley is used in combination with this accessory, the maximum carrying capacity is 400 kg.

Hook the “central arm” accessory to the stair climbing trolley before tilting the load, and make sure it is correctly positioned.

Please refer to the following paragraphs of the user manual for the Domino Automatic trolley:

- << ENVIRONMENTS TO BE AVOIDED >>
- << PROHIBITED ACTIONS >>
- << IT IS STRICTLY PROHIBITED >>
- << PLACING THE LOAD ON THE TROLLEY AND HARNESSING >>
- << PERSONAL PROTECTIVE EQUIPMENT >>

**DANGER**

- STAY AWAY FROM MOVING PARTS.
- CARRYING PEOPLE IS NOT ALLOWED.
- BEFORE ANY MOVEMENT, always tie up the goods according to the instructions specified in the user manual for mod. Domino Automatic.
- The user may bump the machine while installing the accessory onto it.
- The load and trolley may be unbalanced during the transitional tilting phase of the central arm until the arm touches the ground.

TILTED BASE FOR VAN PHOTOCOPIERS

The inclined base for van photocopiers is useful for vans with low loading height. This accessory allows you to load/unload the photocopiers into/from the van from outside (Fig. 94 below), so that the overall clearance limits will depend on the photocopier, without the trolley influencing them.



WARNING

DOMINO directly climbs up onto it by using the crawler tracks (Fig. 93 below) and moves on swivel wheels. The rear ones are equipped with brakes, which must be engage whenever one climbs on this accessory.

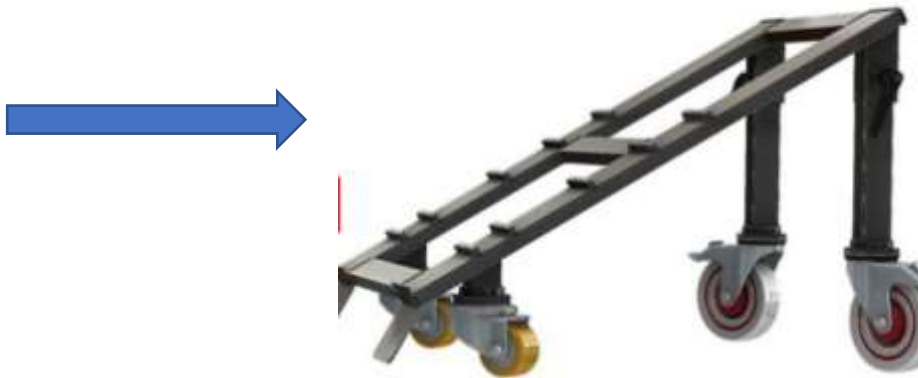


Fig. 93: Van photocopiers tilted base



Fig. 94: Loading/unloading a photocopier into/from the van while staying outside the vehicle.



WARNING

Before placing the load onto the stair climbing trolley, it is necessary to lock the rear wheels with the brake fitted on them.

Adjust the height of the telescopic feet before positioning the stair climbing trolley onto the base plate

Adjust the stair climbing trolley's base plate tilting so that it is aligned with the van.

MAXIMUM CAPACITY: when the stairclimbing trolley is used in combination with this accessory, the max load on the machine cannot be more than 480 kg.

The "tilted base plate for van photocopiers" may only be used with the stair climbing trolley going up the base plate from the lowest part of the accessory.

Please refer to the following paragraphs of the user manual for the Domino Automatic trolley:

- << ENVIRONMENTS TO BE AVOIDED >>
- << PROHIBITED ACTIONS >>
- << IT IS STRICTLY PROHIBITED >>
- << PLACING THE LOAD ON THE TROLLEY AND HARNESSING >>
- << PERSONAL PROTECTIVE EQUIPMENT >>



DANGER

- STAY AWAY FROM MOVING PARTS.
- CARRYING PEOPLE IS NOT ALLOWED.
- BEFORE ANY MOVEMENT, always tie up the goods according to the instructions specified in the user manual for mod. Domino Automatic.
- The user may bump the machine while using the accessory.
- The load and the trolley may be unbalanced while the trolley is transferred from the ground to the accessory.
- When ascending / descending on the accessory, always climb up with both crawler tracks in parallel.

ACCESSORY FOR DOORS AND WINDOWS

An accessory for carrying doors, windows and very heavy loads in general can be installed on the Domino Automatic stair climbing trolley. It features the possibility of being directed in one way or another with respect to the main control structure of the stair climber.

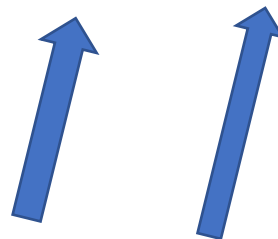
To install this accessory correctly on the stair climbing trolley, it must be positioned above the load surface and the fixing screws secured near the bolts applied:



Fig. 95



Fig. 96



DANGER

While assembling the accessory or positioning the load, the machine must be turned off.

Make sure that all of the fixing screws are properly clamped to the load surface. Always tie the load with the supplied fixing strap before starting transport.

Always make sure that the centre of gravity of the load is within the crawler tracks, as close to the middle of the load surface as possible.



WARNING: MAXIMUM CAPACITY

When the trolley is used in combination with this accessory, the maximum transportable load cannot exceed 370 kg.

18 FIGURES INDEX

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