



DazePlug (B11)

Installation, use and maintenance manual

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1. Introduction

1.1. Warning on the properties of the information

The information contained in this manual belongs to DazeTechnology srl and can not be reproduced partially or integrally.

This manual is supplied with the machine to the Customer.

The Customer must follow the instructions for use and maintenance indicated in this manual; otherwise DazeTechnology srl declines all responsibility. It being understood that the Customer is also required to use the machine operating in the "intended use" conditions indicated in this manual in order to avoid damage to persons or things.

1.2. Declaration of conformity

DazeTechnology srl declares that the device DazePlug complies with the requirements for the release of the CE declaration of conformity, according to the Directive 2006/42/EC on machinery, the Low Voltage Directive 2014/35/UE and the EMC Directive 2014/30/UE.

1.3. Safety information

The device has been developed, constructed and checked in compliance with current safety regulations. Therefore, the product does not normally carry any danger to people or things. The machine and its components are designed in such a way that they cannot be used abnormally if this could lead to additional risks for the user.

DazeTechnology srl does not assume any responsibility for any damage to persons or things deriving from failure to comply with safety regulations and with these recommendations.

All machine installation, use and maintenance operations must be performed only by qualified and authorized personnel. DazeTechnology srl does not assume any responsibility for damage to persons or things deriving from the use of unqualified operators.

In normal operating conditions, the machine has no parts subject to dangerous voltages exposed or unintentionally accessible (when the machine is in operation it is unreachable because it is under a car being charged). Parts subject to dangerous voltages on the machine (terminal boards, cables ...) are protected by casings or electrical boxes.



Warnings!

- *Before working on the machine for maintenance or cleaning operations, disconnect the machine from the power supply line. All machine installation, use and maintenance operations must be performed only by qualified and authorized personnel.*
- *The owner of the machine (Customer) must ensure that it is always used in perfect condition. In this regard, always keep the device clean and periodically perform visual checks on the outside of the device and on the power cord, looking for any damage.*
- *If the robot is damaged, it must be immediately disconnected and replaced.*
- *The robot does not have its own network switch. The disconnection from the electrical network takes place via the RCBO switch of the building electrical system.*

- *Do not use extension cords to connect the device to power supply.*
- *Ensure that the robot's power cable is not damaged mechanically (by bending or crushing it with the vehicle).*
- *Be careful not to damage the device.*
- *Do not drag the device by pulling on the cable.*
- *The device is not carriageable. DazeTechnology srl does not assume any responsibility for any damage to the body of the robot due to accidents, for example the crushing of it by the wheels of the car.*
- *The use of the machine in an explosive atmosphere is not permitted.*
- *The modification of parts of the components or the addition of optional equipment to the device is not permitted.*
- *During operation, the device cannot be exposed to direct radiation such as sunlight, as these can produce overheating of the containers and therefore also of the internal environment, where the electrical equipment is located, degrading the insulating materials.*
- *The degree of protection of the machine is IP44; that is, the environment of use must be clean, in the absence of dust or vapors.*

1.4. Warranty

DazeTechnology Srl guarantees the regular operation of the machine (provided it is used in the conditions of intended use) for the period established in accordance with its Sales Department and regularly registered in the sales contract.

DazeTechnology Srl guarantees all its machines from factory defects for a period of 12 months starting from the delivery date for use in a daily shift. This guarantee consists in restoring efficiency, through free replacement or repair, of items that are unusable or inefficient due to factory defects and / or assembly errors. This warranty is void if the defect can be connected with:

- Failure to perform the minimum maintenance interventions prescribed in the manuals
- Carelessness
- Accident
- Late complaint of the defect
- Improper use
- Unauthorized modification
- Repair with non-original spare parts

For each component sent to DazeTechnology srl for inspection, repair or replacement, whether to be performed free of charge or against payment if the warranty period has expired, the Customer must compulsorily fill out a document with the identification data of the machine and the largest number of information relating to the fault. This will improve the "Customer Service" and minimize the costs and time required for the revision or replacement of defective parts.

We emphasize that if we do not receive the defective part, no later than 30 days from the shipping date of the new spare part, we will automatically proceed with billing.

2. Description

2.1. Description of the machine

DazePlug is a device for automatic charging of electric vehicles or plug-in hybrids.

For its operation *DazePlug* needs to be paired with a compatible interface module provided by DazeTechnology srl and installed on the vehicle. *DazePlug* and the on-board module, called *Inlet*, can be provided separately anyways.

When the car, equipped with *Inlet*, is parked in a parking area where *DazePlug* is installed, it wakes up (via a user activation signal) thanks to a radio signal and starts searching for the precise position of the *Inlet*. The accuracy of the search is entrusted to an infrared sensor, which guarantees a rapid *DazePlug*-vehicle connection.

The charging is carried out in mode 3, in compliance with the IEC / EN 61851-1 standard, which consists in connecting the electric or rechargeable hybrid vehicle to the AC mains supply using specific connectors, in compliance with IEC 62196-1 and 2, and in the presence of a pilot control circuit inside the station for checking the continuity of the protective conductor between the vehicle and the network during charging. This check is necessary to ensure that no dangerous voltage can be discharged through the accidental contact of unaware persons. Mode 3 is therefore recommended for its maximum degree of safety and also for its ability to deliver high currents.

The control circuit also provides for the communication between the charging station and the vehicle through the PWM (Pulse Width Modulation) circuit described in Annex A of the IEC / EN 61851-1 standard: the station communicates to the vehicle the availability of the network through a frequency modulated signal, the vehicle adapts the load by returning its state through a voltage value (for mode 3 the function is performed by means of a "typical" pilot control circuit).

2.2. Structure

The *DazePlug* robot frame is made of steel, to ensure high stability and rigidity. The body and the shell parts are in plastic and steel.

The limited height of the robot allows any car on the market to be able to be stationed above it and be able to be charged from below through the crankcase. Each design element is the result of in-depth studies aimed at providing an ergonomic, agile and intelligent work tool.

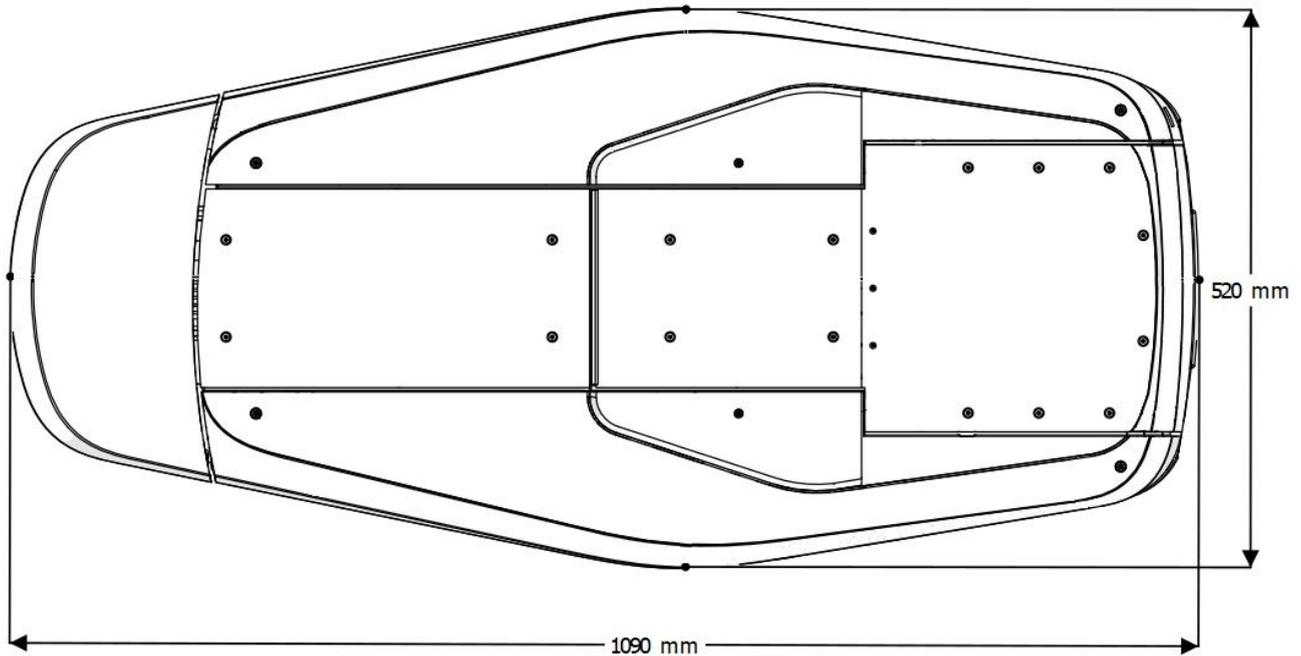
The machine does not need foundations for installation, but you can choose whether to use screws for fixing the base or simply lay it down on the floor.

2.3. Technical characteristics

Overall body dimensions: Length 1090 mm; Width 520 mm; Height 90 mm.

Weight: about 30 kg.





Body colors: Glossy white RAL9010; Dark gray textured RAL9005.

Research area: circular sector in which a square of 500x500 mm can be inscribed.

Cable routing: open, 5 meters of power cable

Network configuration: TT / TN / IT.

Environmental storage conditions: -30 ° C to + 80 ° C.

Operating temperature range at 32 A: from -25 ° C to + 40 ° C (without direct exposure to sunlight).

Degree of protection: IP44

Interface: USB type A socket

There are four types of DazePlug for four different charging powers.

| Model | DazePlug 22 | DazePlug 7 |
|---------------------|-------------------------------------|-----------------------------------|
| Max. charging power | 22 kW | 7,4 kW |
| Power supply | 400V 3-phase (3P+N+PE); 50/60 Hz | 230V 1-phase (2P+PE); 50/60 Hz |
| Rated current | 32 A | 32 A |

3. Use

3.1. Intended use

DazePlug, for indoor and outdoor applications, is suitable for charging in commercial or private parking lots of Plug-in electric and hybrid vehicles.

This manual and the functions described are valid for the device *DazePlug* coupled to electric and hybrid Plug-in vehicles which have installed the interface module (*Inlet*) developed by DazeTechnology Srl.

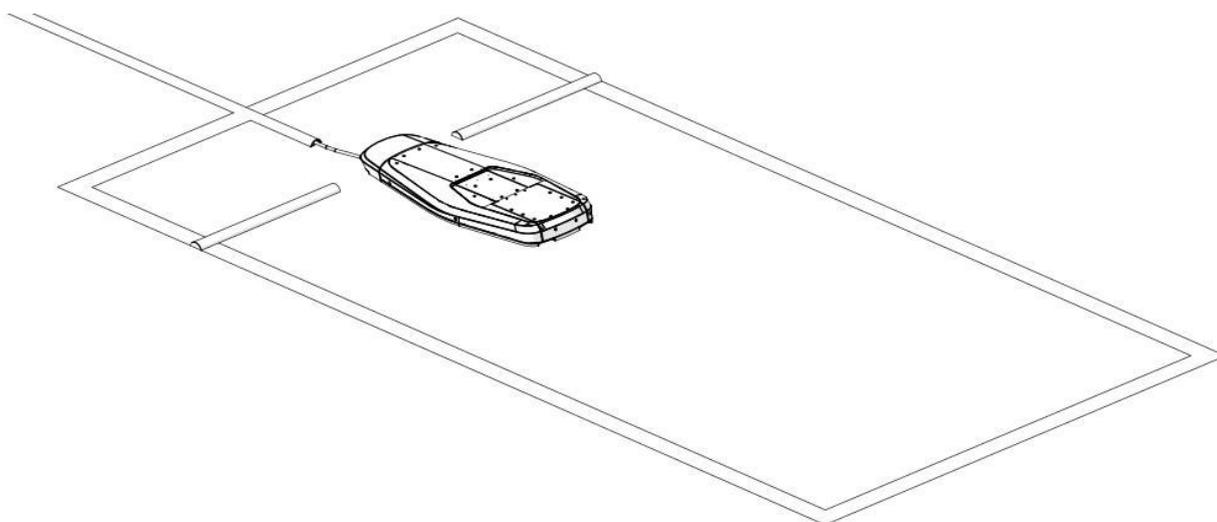


Figure 1. Parking area with *DazePlug* installed and waiting for a vehicle for charging.

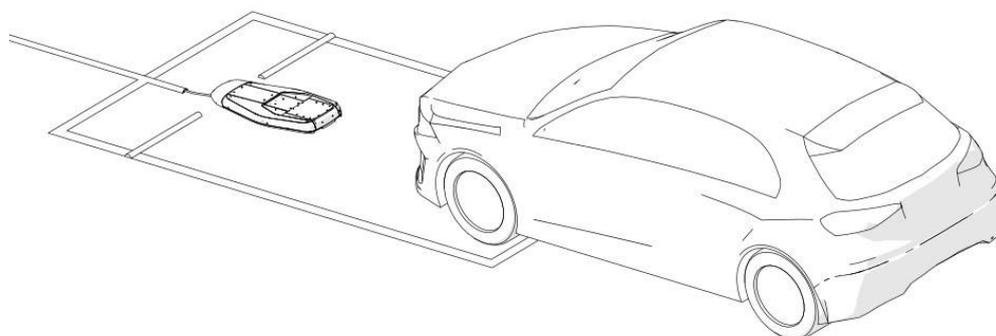


Figure 2. Vehicle being parked in a parking area where *DazePlug* is installed.

1. Park the car above the robot *DazePlug* so that it is approximately in the middle of the front wheels of the vehicle. To facilitate parking and therefore the connection between *DazePlug* and *Inlet*, the provision of a couple of parking stoppers suitable for the position of the front wheels can be helpful (see Chapter Installation). Turn off the vehicle.

2. Press the starting/disconnection button located on wall that communicates with the robot. The robot starts to open. The LED on the front of *DazePlug* emits a pulsed blue light to signal the search for *on-board module* located under the vehicle.

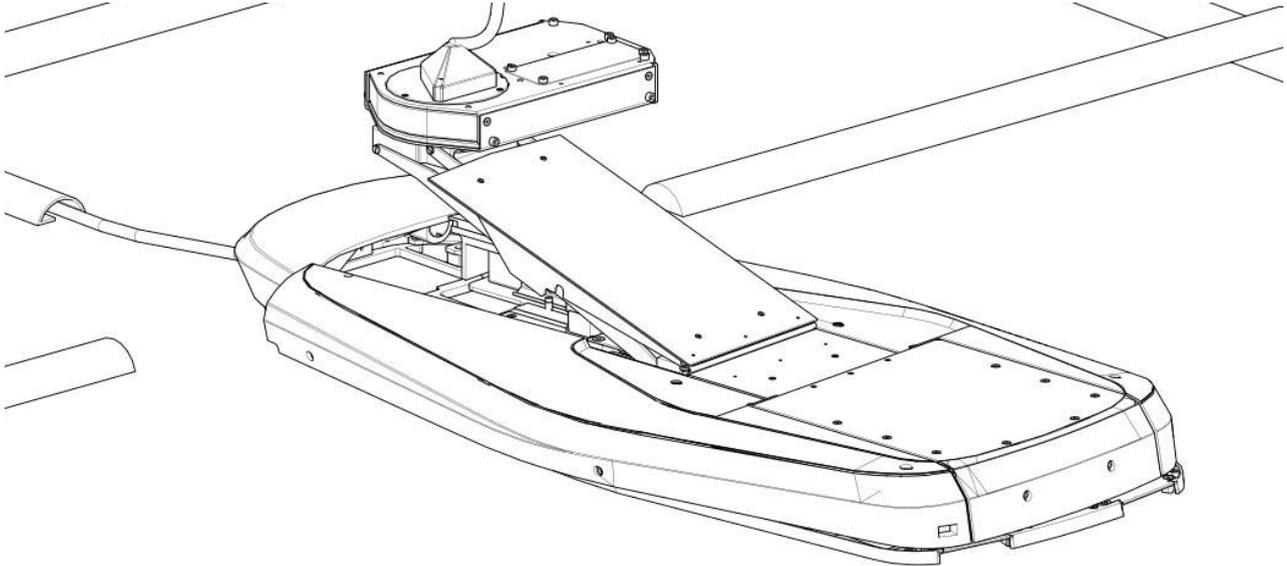


Figure 5. Assembly of *DazePlug* and *Inlets* installed under the vehicle (hidden for the representation).

3. Once hooked to the *inlet*, the car is connected and charging; the LED emits a fixed blue light.
4. If the vehicle communicates full charge status the robot automatically disconnects (without the necessity of pressing the button on wall) and positions itself in the closed position. If you need to use the vehicle before its battery is fully charged, it is sufficient to press the starting/disconnecting button on wall, which allows the robot to disconnect and close.
5. When the vehicle is not under charging via *DazePlug*, it can be recharged at any time via the classic charging socket.

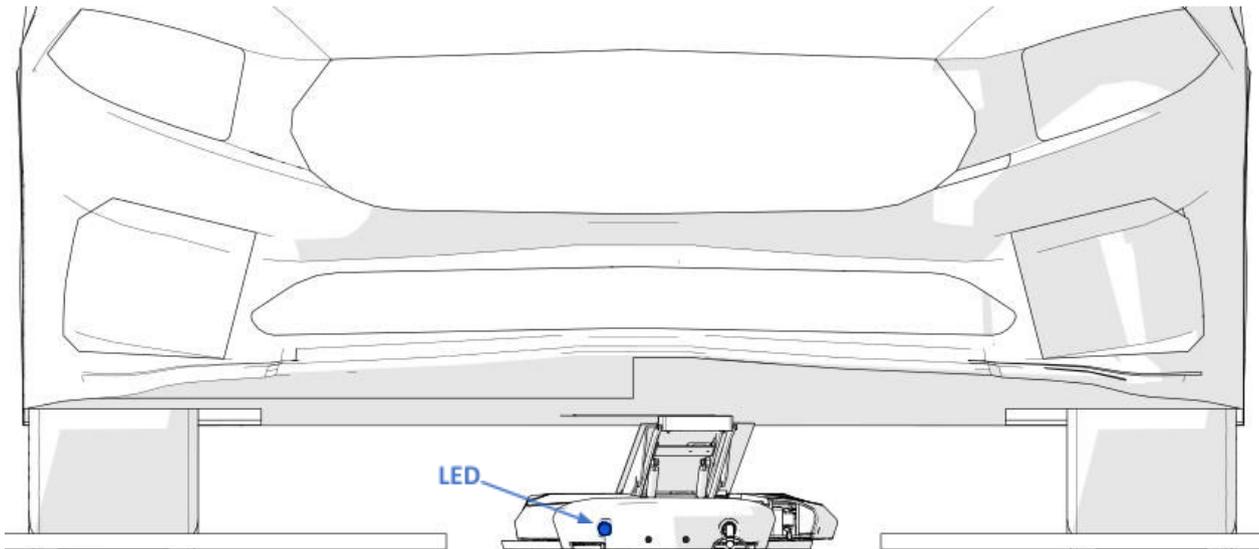


Figure 6. Front view of *DazePlug* connected to the vehicle. The blue LED is located on the front of the device so that the light emitted is visible on the floor in front of the vehicle.

3.2. Unintended use

It must to be considered unintended use any condition of use in which one or more of the conditions expressed in "Intended use" are not observed.

DazeTechnology srl does not assume any responsibility for damage to persons or things deriving from unintended use of the machine.

Do not step on the device or drive on it.

Do not try to open the device manually.

Do not place objects in the immediate vicinity of the device.

Do not charge with *DazePlug* other electric instruments different from electric vehicles equipped with the *Inlet* supplied by DazeTechnology Srl

4. Installation

The installation of *DazePlug* must be performed by qualified personnel and equipped with protective clothing. DazeTechnology Srl does not assume any responsibility for any damage to the device resulting from failure to comply with the instructions provided.

If the installation of *DazePlug* is not explicitly covered by the DazeTechnology srl sales contract, we will be happy to assist you in finding a qualified installer.

Do not make arbitrary changes to the device. Repairs may only be carried out by the manufacturer or by specialized personnel.

Do not remove safety symbols, danger warnings, cable labels or tags.

4.1. Supply

Inside the package is supplied:

- *DazePlug* with cable of 5 meters multipolar;
- Installation, use and maintenance(manualthis manual);
- 2 wheel stoppers;
- Control panel
- Screws and screw anchors.

4.2. Transport and storage

The machine parts are protected with a robust PVC sheet and sealed with adhesive tape. Everything is positioned in a 120x80 cm Europallet with wooden sides.



Do not place loads on the box. The box contains clearly visible signs with indications of the type shown in the figure:

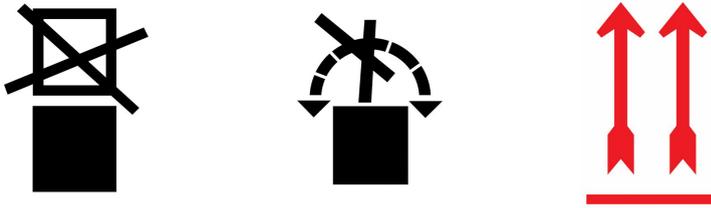


Figure 7. Pictograms on the packaging. Don the left: Do not place loads on the box; Do not overturn; High.

After storage and transport to the place of installation and immediately before installation, prepare the machine by removing it from the box and removing the packaging sheet.

4.3. Preliminary

checks Check that the various parts of the machine do not exhibit physical damage due to bumps, tears or abrasions. In particular, check the integrity of the plastic body of the robot.

In the event that damage is found, interrupt the installation procedure and report the nature of the damage found to the person in charge of the machine. If necessary, contact the DazeTechnology Srl sales office.

Clean the machine, removing dust and residues of PVC sheets and adhesive tapes.

Clean well and clear the area around the robot (within 1 meter).

Transport the machine manually (three people are needed) using the four handles located in the base and place it on the garage floor (see Figure 8).



Caution: During the handling by hand there is the risk of the robot's hand slipping off during handling and tripping on the power cable.

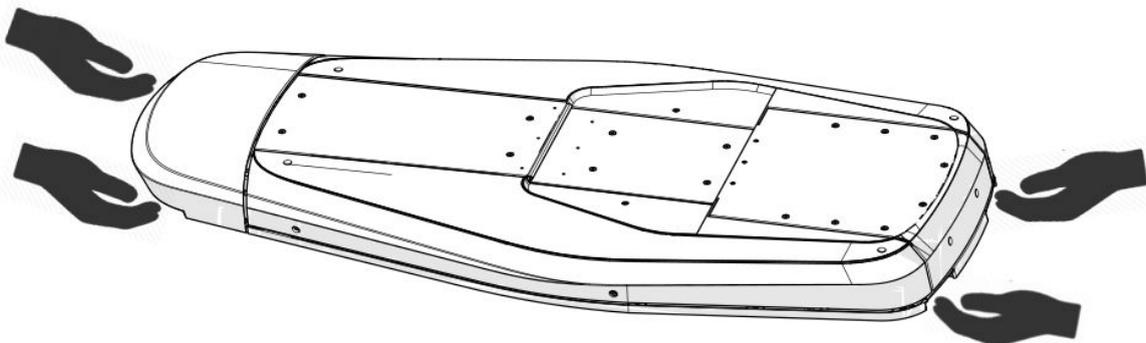


Figure 8. Manual handling of DazePlug for installation in the garage. This transport requires 3 people: two of them take the device through the four special handles located on the front and rear of the base and the third person carries the power cable to avoid tripping.

4.4. General criteria for choosing the place of installation

Before starting to transport the machine parts from the storage area to the place of installation, check the feasibility of the place of installation. The place of installation must be suitable and free of materials and equipment on the entire surface required for handling, between the place of storage and the place of installation (included).

- The position chosen for installing the machine must allow easy connection to the power supply line.
- Respect the local regulations in force for electrical installations, fire prevention measures and rescue ways at the place of installation.
- Do not install the device in places:
 - at risk of explosion (EX environment).
 - used for escape routes.
 - where objects can fall (eg hanging stairs or car tires).
 - in which it is possible that it is hit by jets of water under pressure (eg due to washing systems, high pressure cleaners, garden hoses).
- If possible, install the device so that it is protected from direct exposure to rain, to avoid for example deterioration due to inclement weather, freezing, damage due to hail or similar.
- If possible, install the device so that it is protected from direct sunlight.
- Respect the allowed environmental conditions (from -10 ° C to +55° C).
- The floor must always be well cleaned. Do not install on a gravel-covered floor.
- The surface on which the device is placed must be flat.
- Comply with the national and international regulations in force concerning construction and the directives, for example IEC 60364-1 and IEC 60364-5-52.

Correct positioning of the robot is very important for the operation of the equipment. Therefore, below we list the rules for a correct installation:

- The part of the front robot (where the power cable starts) must be oriented on the opposite side with respect to the garage entrance (see figure 8).
- The robot must be positioned under the center of the front wheel axis of the vehicle, in the floor area where the car is usually parked.
- If the parking area is very large, it is useful to draw strips on the floor to facilitate the driver in parking and thus avoid trampling of the robot.
- To facilitate parking and thus the connection between can be helpful *DazePlug* and the *on-board module*, the provision of two dossetti (or two wheeled cable glands) at the position of the front wheels which allow to stop when the vehicle is stationary. the *module on-board* is located above the Daze Plug B, slightly behind the "front cover", ie within the search area of the device (500 x 500 mm). This is shown in Figures 3 and 4.

For greater stability and to avoid unwanted removal of the robot (especially in public spaces) it is possible to fix the base to the parking floor using screws and holes on the floor.

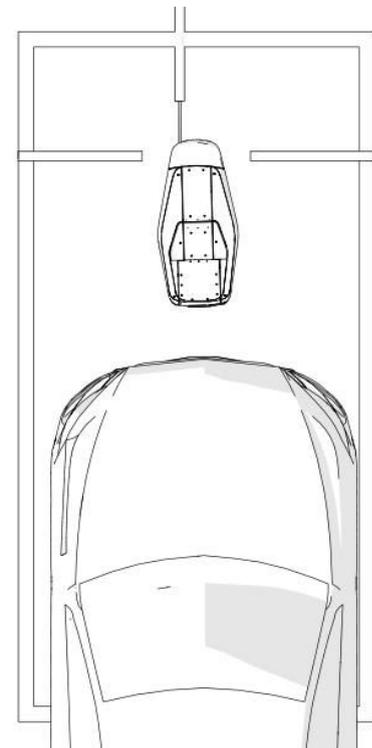


Figura 9. Disposizione del robot nel garage, con strisce di delimitazione del parcheggio e dossetti per posizionamento facilitato della vettura.

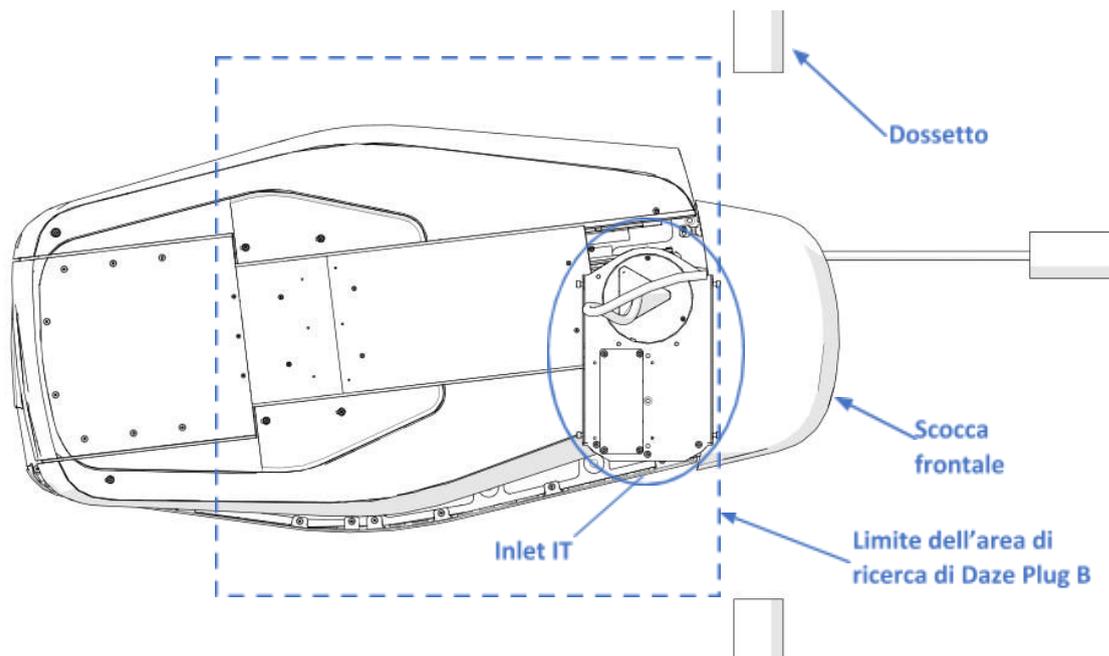


Figure 10. Top view of the Daze Plug B and Connected IT Inlets set.

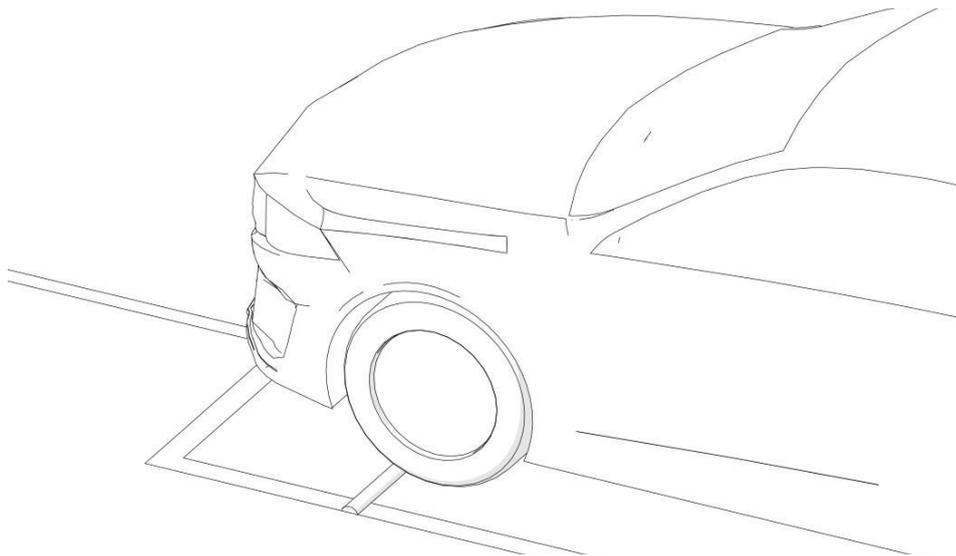


Figure 11. The stopping of the vehicle in the optimal position is facilitated by the presence of two dossetti on the sides of the device.

4.5. Control panel installation

Fix the robot's control panel, which consists in a on/off button and in a state LED, on the wall next the device. The suitable location for the installation of the control panel is usually on the wall which is near the driver door of the car after the parking, for a comfortable operation.

The control panel is fixed to the wall through 2 screw anchors diam. 6 mm and with 2 screws M4 on the white part. After that the black flange is screwed with 4 countersunk screws M4x6mm (Figure 12).

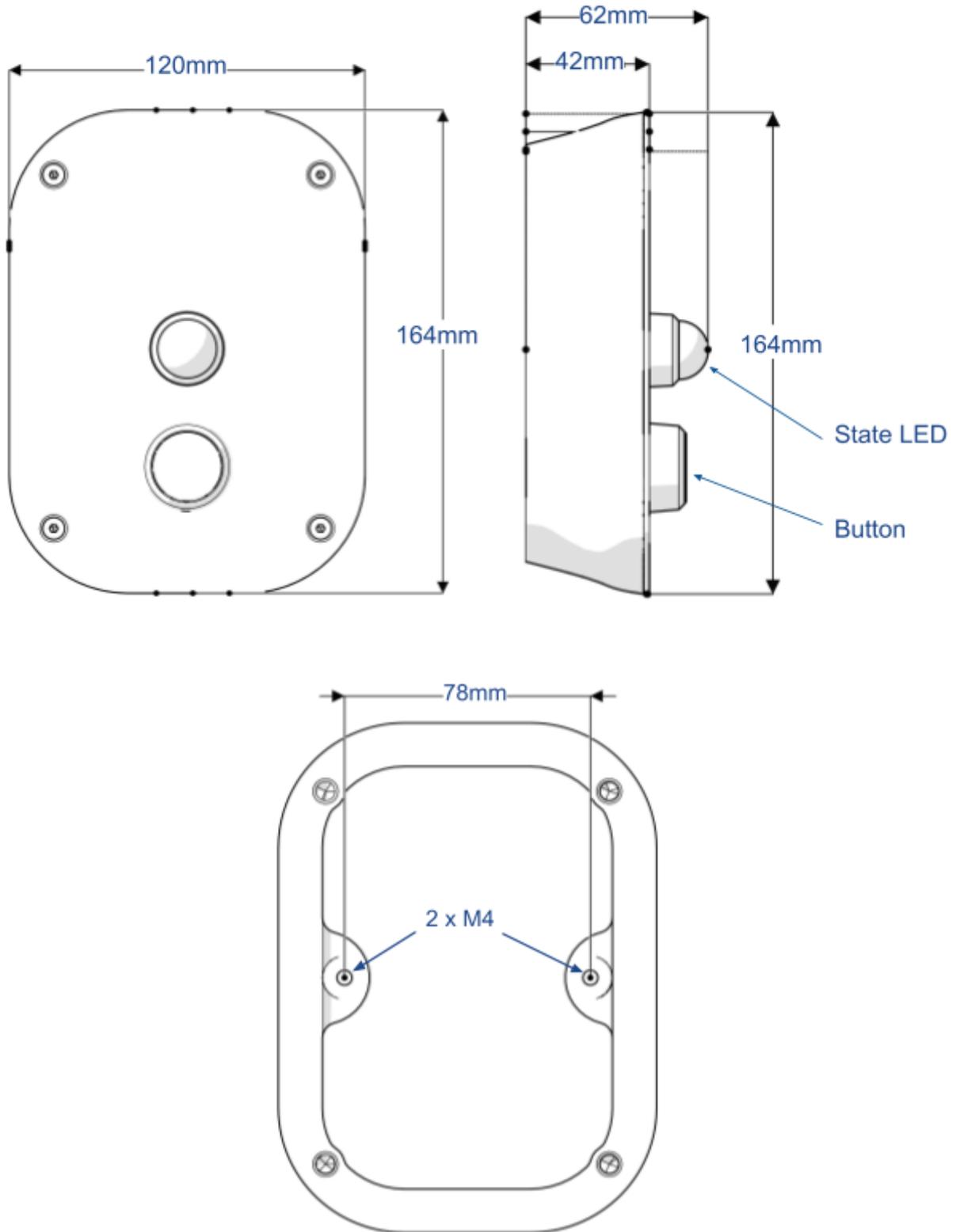


Figure 12. Overall dimensions and measurements of the 2 holes for the installation of the control panel. The two holes with center distance 78 mm for M4 screws allow to install the control panel to the wall through two screw anchors diam. 6 mm.

4.6. Electrical connection

Selection of the differential switch

The power supply line must be installed and permanently wired in the already existing domestic system to comply with the national laws in force.

- The device *Daze Plug* it must be connected via its own differential switch. No other electrical circuits must be connected to this differential switch.
- The differential switch must be at least type A (30 mA tripping current) for installation in Italy. For installation in another country of the European Community, a type B differential is required.
- In addition, the differential switch can be of type A for single-phase installations, while it must necessarily be type B for three-phase installations (CEI 64-8-7 -722).
- The nominal current chosen must be suitable for the circuit breaker and the pre-fuse.

The earth connection is ensured by the user's system. The earth connection of the machine is located on the robot.

The device does not have its own network switch. The differential switch and / or the magnetothermal switch of the power supply line act as a network separation device.

The electrical connection (power supply line) must have been prepared.

Unwind the cable and connect it to the building's power supply. When laying the cable, observe the allowed bending radii (equal to the cable diameter multiplied by about 10).

Place the power cable in a cable gland to prevent people from tripping over.

5. Maintenance

Before intervening on the machine for any maintenance operation, wait for the machine to stop completely and switch it off by activating the main stop switch. Disconnect the machine from the power supply line by operating the main switch on the electrical cabinet.



Safety warnings

- Disconnect the device from the mains
- Check that there is no voltage
- Make the earthing and short-circuit the installation
- Mark the danger points



Warnings for authorized personnel when opening the device

- Take care not to damage the device after opening the body
- Do not open the device in outdoor locations in rainy conditions
- Danger of breaking the plastic housing:
 - Pay attention to the reuse of the same screws for the various fixing points (Figure 10).
 - Screw carefully with the risk of stripping the body fixing plate.
 - Do not tighten the fixing screws with force
- Electronic components may be irreparably damaged in the event of contact.
- Before handling the groups, discharge the electric charges by touching a metal object and grounded.

To reach the electrical box inside the device, simply remove the left-hand body parts by unscrewing 5 Allen screws.

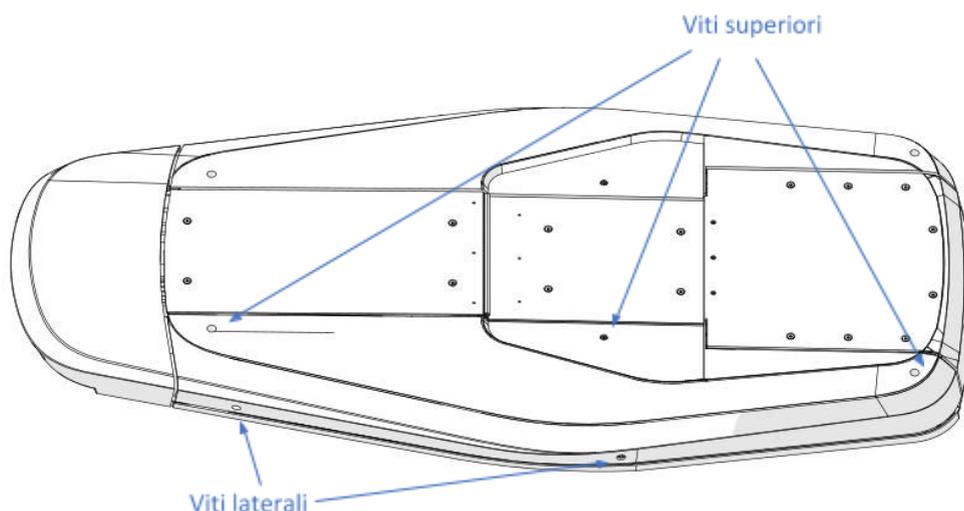


Figure 13. Removing the left body to reach the electrical box.

5.1. Routine maintenance

Always keep the floor area around the machine (1 meter radius from the device) and the outside of the machine clean. Proper cleaning allows:

- Correct operation of the moving parts of the machine (pebbles or dirt on the floor could prevent optimal movement of the robot arms).
- a more efficient machine and less degradation of all organs.

During cleaning, avoid possible damage due to aggressive solvents, water jets or abrasive materials. Clean with a damp cloth.

5.2. Extraordinary

maintenance Extraordinary maintenance interventions are those that are carried out following failures or breakages or due to foreseeable technical updating.

Note: Before starting an extraordinary maintenance operation, it is recommended to proceed with the definition of the following information:

Qualification required from the operator.

Special tools and equipment required during the intervention.

5.3. Differential protection test

To guarantee an adequate service it is recommended to supply the station with a dedicated line as well as each socket equipped inside is individually protected with magnetothermal differential switches. The differential devices must be checked periodically according to the regulations in force; in the absence of national regulations, manufacturers recommend checking each month.

Acting on the test button the device must intervene immediately and otherwise contact your trusted technician because the safety of the system is no longer guaranteed and people are not protected against direct and indirect contacts.

The presence of such a protection device does not exempt from observing all the precautions connected to the use of electric current.

Assistance

In case of need for assistance, contact the Daze Technology Technology Assistance Service or (after the expiry of the warranty period) the manufacturer of the part of the machine concerned not built by Daze Technology.



Attention: Access to the inside of the electrical box is allowed only to qualified and authorized service personnel.

5.4. Maintenance of the DazePlug Inlet

Being positioned under the car and being part of it, the Inlet is a very solid component, made by satisfying the most stringent safety standards.

However it is necessary to carry out periodic checks and visual inspections during normal car maintenance. See the maintenance manual provided by the car manufacturer.

In general the maintenance of the DazePlug Inlet consists of:

1. Visual control of the body of the DazePlug Inlet in search of damage or corroded parts.
2. Visual inspection of the vehicle fixing system: make sure that the flanges that fix the Inlet to the frame through the vehicle underbody are well screwed. Make sure that the installation does not protrude from the underbody of the car beyond the tolerance limits specified in the Inlet installation manual.
3. Inspection of the Inlet mouth to assess whether the sliding lid is properly sealed to prevent dust or foreign material from entering the connection area.
4. If the Inlet is dirty, clean it with an air gun.

6. Visual signals and alarms

On the front of the control panel on the wall there is a LED that signals the operating situations:

- Pulsed green: stand-by;
- Pulsed red: error;
- Pulsed blue light: device in operation, searching for the Inlet located under the car;
- Fixed blue light: device in operation, connected to the car, charging in progress;

7. Disposal

This chapter explains how to deactivate, dismantle and dismantle the machine, indicating the residual risks that occur in these situations and the necessary precautions to neutralize these risks.

Once the end of its technical and operational life has been reached, the machine must be deactivated, or taken out of service.

Switching off the electricitythe power supply

Disconnectcable from the machine side and the fabricated side. Before starting the procedure, check that the terminal of the power supply network is not live.

After a correct execution of the deactivation procedure just indicated, there are no particular risks and the machine can be disposed of and set aside or dismantled.

Disposal of packaging

The materials used for packaging this product are recyclable and must be disposed of in accordance with the regulations in force in the country of use.

Decommissioning and disposal of the product

When the equipment is disposed of all components and materials must be identified and separated to allow their reuse and / or recycling in an environmentally friendly manner. Waste electrical and electronic equipment (WEEE) must be treated and disposed of in compliance with current legislation, separate from normal household waste (crossed-out garbage bin symbol).



Contacts

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