StradaPAL

Rapide, Transfer and Cashless

Installation manual

Parkeon S.A.S.

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Contents

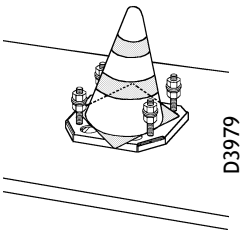
1. Safety

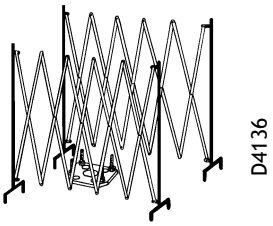
Parkeon products are designed to minimise risks to users and operators from electrical power supplies, high temperature, fires, mechanical injuries, radiation and chemicals.
The product complies with the following directive:

- **Directive 2004/40/CE** of the European Parliament and of the Council of 29 April 2004 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields) (18th individual directive within the meaning of article 16, paragraph 1, of Directive 89/391/EEC).

Take the basic precautions given below for the **safety of personnel and the environment.** The list is not comprehensive and is only aimed at drawing your attention to the potential risks of poorly performed work and negligence:

- Any work on the product may only be performed by appropriately trained personnel. Only correctly trained persons may work on the mains power supply.
- **Wear personal protective equipment appropriate for the type of work required.**
- Use appropriate tools that are in good condition, for the purpose for which they are designed.
- Mark out the anchoring system in the street while the concrete is setting in order to inform others of the risk of obstruction. The marking may be as shown below, providing it is in accordance with local regulations:





CE Marking - Europe
This product complies with CE marking regulations. The applicable directives depend on the radio communication option:

- **With a radio communication option (GPRS, Wi-Fi, short-range device etc.)**
  The product complies with the following standards:
  - **Directive 1999/5/EC** of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity.
  - **Council recommendation 1999/519/EC** of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz).
- **Without the GPRS option:**
  The product complies with the following standards:
  - **Directive 2006/95/EC** of the European Parliament and of the Council of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits.
  - **Directive 2004/108/EC** of the European Parliament and of the Council of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC.

Canada
This product complies with the Canadian standard ICES-003 (Interference Causing Equipment Standard).

Electricity

- Any work on the product may only be performed by appropriately trained personnel.
- Only correctly trained persons may work on the power supply.
- Protect personnel from electrical shocks with the help of appropriate electrical and earth connections.
- Always switch off the power before beginning some repairs, as instructed in this guide.
- Make sure that the electrical parts are installed in accordance with national standards.
- Keep the mains power supply disconnected throughout these operations. Protect all electrical wires from the rain. Never undertake repairs on equipment connected to the mains or the telephone network during thunderstorms.
- While repairing a circuit breaker installed in a machine, the main circuit breaker located in an equipment room must be disconnected and a **maintenance board** is to be put up to protect the worker from electric shocks.
- Isolate the mains power supply with a cut-out and switch off the low voltage with the on/off button of the main board.
- Make sure that the earth cable is in good condition.
- Follow the instructions relating to the earth connections of product components in order to ensure compliance with EMC immunity and emissions standards.
- The earth conductor that protects the power cable must be green and yellow.
- Minimum section of the incoming mains cable: 2.5 mm^2 (AWG 12).
- Depending on the country of installation, the equipment may be connected to a single-phase 230V IT network.
- Ask for a signed certificate from the contractor.

Mechanical parts

- Always remove any metal jewellery (rings, bracelets and wristwatches) before servicing the electrical parts (power supply, battery, wiring) or beginning work on or close to moving parts.
- Keep your hands away from moving and sharp parts, door hinges and locks, wheels and blades.
- Take care not to hurt yourself with the open door or any other projecting parts or parts fixed on the terminal.

Temperature

- Always wait for a few minutes after turning the Pay & Display machine off before you start working close to hot areas of the intermittent heating devices.

Dry cells/Batteries

- Always take care to comply with the polarity of batteries and cells.
- Do not obstruct the operating of the lithium cell of the main board. It may explode.
- Never discard burn or open the buffer batteries or cells. Use appropriate disposal procedures as recommended by the competent health and safety authorities. Comply with the applicable local regulations while disposing of these items.

IMPORTANT: Parkeon shall not be liable in the event of any changes or incorrect use of the Pay & Display machine other than as described in this document.

Environment

The product complies with the following standards:

- **Directive 2011/65/UE** of the European Parliament and of the Council of 08 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.
- **Directive 2012/19/UE** of the European Parliament and of the Council of 04 July 2012 on Waste Electrical and Electronic Equipment (WEEE).

Disposal of used equipment

The presence of this symbol on a product or its packaging means that it may not be disposed of with ordinary waste.
Products bearing this symbol require special treatment in accordance with European Directive 2012/19 on Waste Electrical and Electronic Equipment.

2. About this document…

This document is intended for:

- civil engineering and masonry personnel,
- personnel responsible for installing and starting up the terminal.

It describes the procedure and provides advice for the correct and efficient installation of a StradaPAL Transfer, Rapide and Cashless terminal.

Installation requires the simultaneous presence of a qualified electrician (for the connections) and a maintenance agent (for the general installation of the terminal).

These instructions reflect the procedure applicable on the date of publication. The data and illustrations in this document are subject to change. Please check with your Parkeon contact if your document is still valid.

The warranty on Parkeon equipment and software is dependent on compliance by the customer with the transport, storage, installation, operation and maintenance conditions set out by Parkeon in installation, operation and maintenance manuals.

- Please refer to the **Operation manual** for general instructions.
- Please refer to the **Maintenance manual** for terminal initialisation, troubleshooting and subassembly replacement.

Unless otherwise indicated, dimensions in this document are stated in millimetres.

3. Recommendations for terminal transport

3.1 Transport and storage conditions

- Tolerated transport and storage temperature: -40°C to +70°C
- Tolerated humidity: up to 95% RH at 55°C
- Solar radiation tolerated on the ground: 1120 kW/m² at +55°C

Follow the handling instructions below:

- transport the terminals in their original packaging,
- transport the terminals on their original pallets,
- do not put the terminals in the horizontal position,
- do not stack terminals,
- do not stack terminal pallets.

3.2 Transport of terminals after they are taken off the transport pallets

While moving terminals after they are taken off their transport pallets, Parkeon recommends the use of trucks:

- with star wheels in order to make it easier to move the terminal on the site (climbing onto pavements etc.),
- with a small base depth to make it easier to position the terminal on the threaded rods.

Example: truck with star wheels and small base depth

The terminal must be strapped onto the truck in order to keep it from tilting over.

4. Description of the terminal

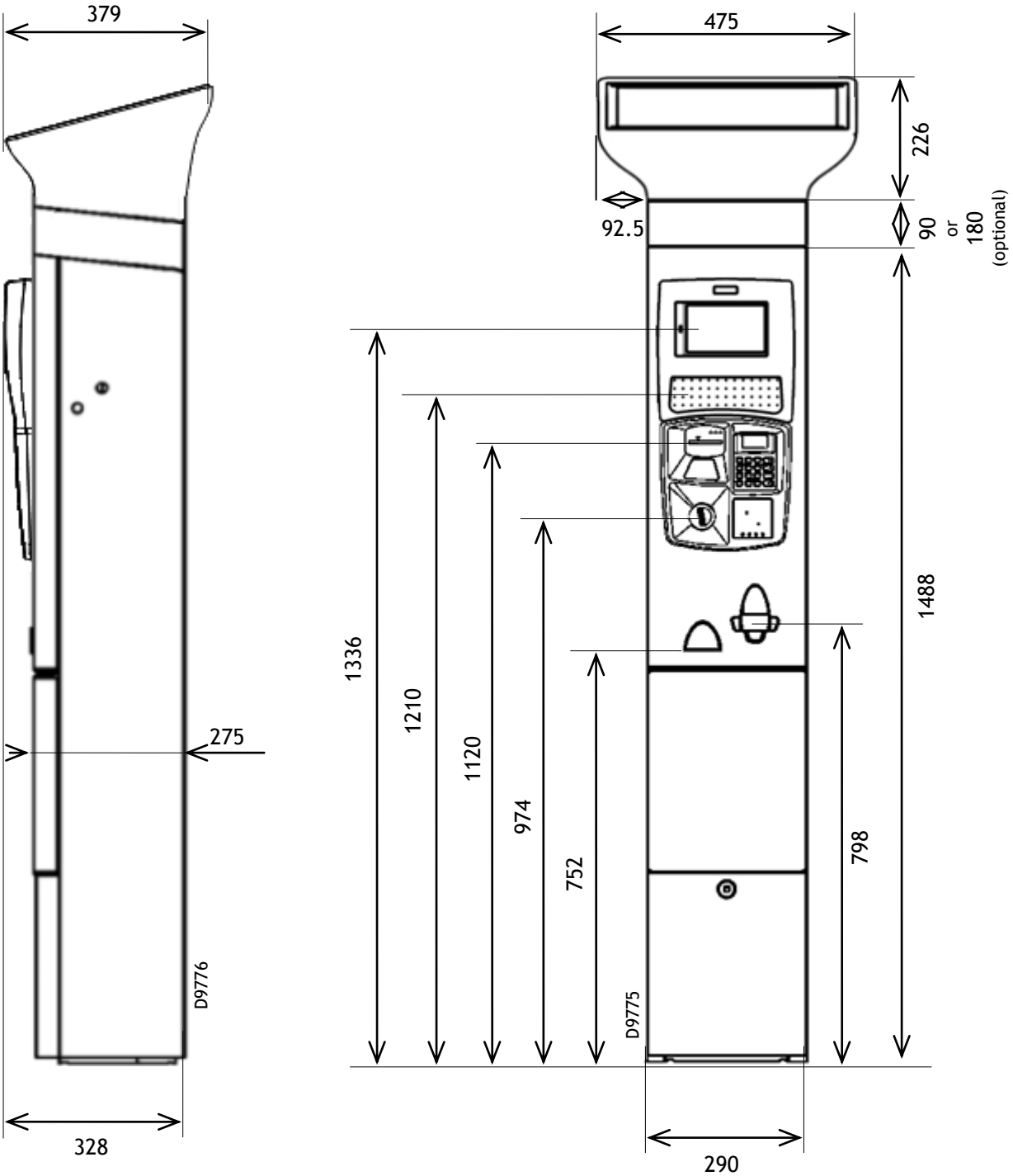
4.1 Overview

The terminal comprises four main areas:

- top,
- area devoted to the user interface and maintenance,
- collection compartment,
- power supply compartment.

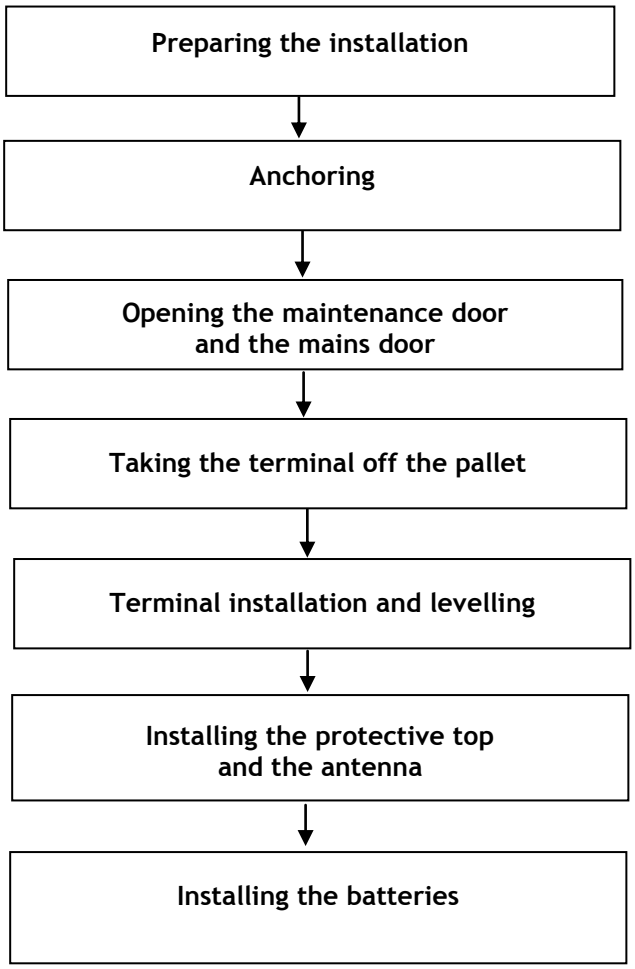
4.2 Dimensions and weight of the terminal

The terminal has the following dimensions:



The terminal weighs approximately **90 kg** (without the battery - the weight may vary depending on the optional equipment present).

5. Installation chart



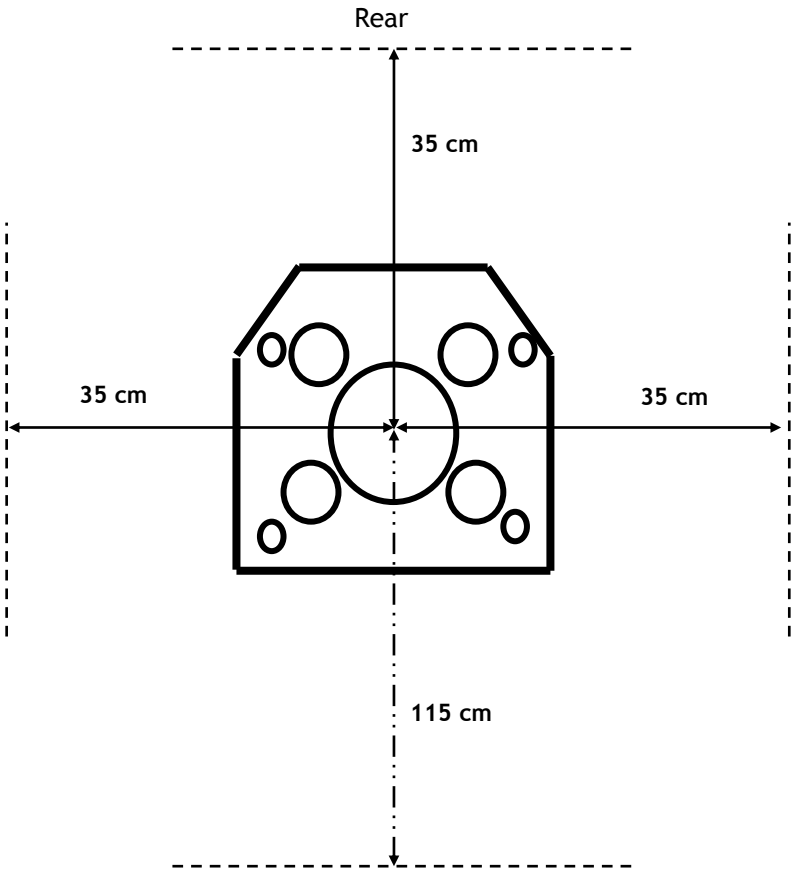
6. Preparing the installation

6.1 Dimensions

Make sure that there is sufficient space around the terminal to allow use by maintenance agents and motorists:

- 20 cm at the rear and on the sides of the terminal,
- 1 metre in front of the terminal.

That means that the space stated below must be provided in relation to any obstacles that may be present (walls, trees etc.):



Dimensions
from the centre of the base of the terminal

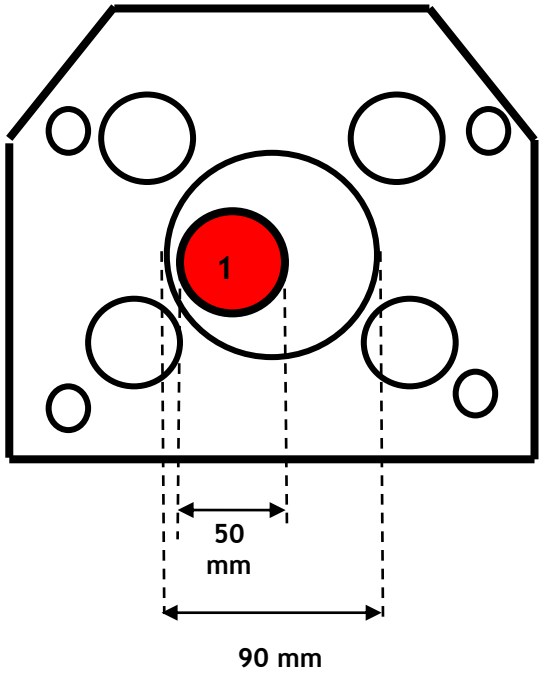
6.2 Mains supply cable passage (if present)

Carry out the required civil engineering works in order to route the cable in its tube so that it arrives at the centre of the underside of the housing.

Recommended characteristics of the mains supply cable:

- 60 cm length available outside the anchoring in order to allow connection to the electrical equipment.
- Mains supply cable tube: 50 cm diameter.
- Minimum mains supply cable section: 2.5 mm² (AWG 12).

Overview of the arrival of the tube at the centre of the housing:



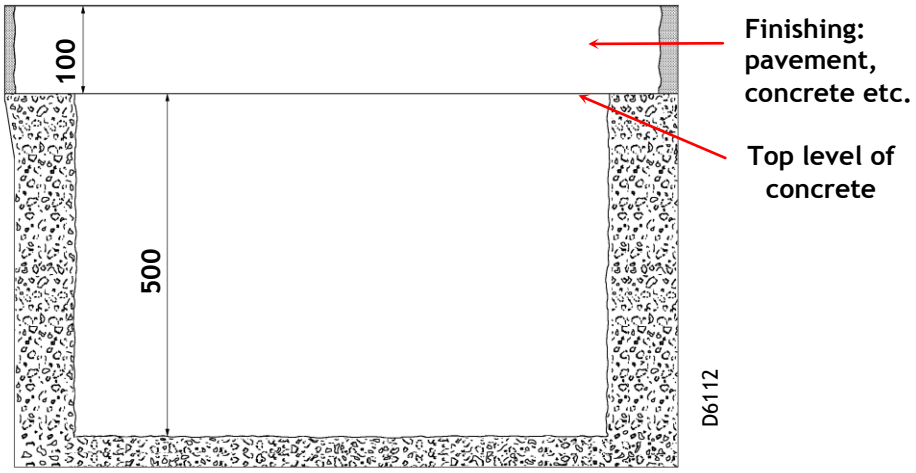
1: mains supply cable tube

Terminal base (top view)

7. Excavation anchoring

7.1 Earth work

Make a hole measuring 600 x 600 x 600 mm in accordance with the dimensional constraints of the terminal specified in the relevant section.



Sectional view of excavation hole

7.2 Choice of installation height with excavation anchoring

Excavation anchoring allows different terminal installation heights (base box buried at variable depths):

- For minimum installation height, the terminal is installed level with the ground.
- For variable-height installation, the terminal is raised in relation to the ground.

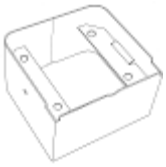
The type of installation is to be chosen depending on the type of use: access to persons with reduced mobility, etc.

For more details about the various installation heights, please refer to the section "Final installation diagram and user interface height".

7.3 Equipment required (other than for construction work)

Tools required:

- *rule,*
- *spirit level,*
- *excavation fastening kit,*
- *one or two removal protection nuts (optional).*

	Quantity	Description	Illustration
Excavation fastening kit	1	Pedestal	
	1	Form	
	16	M16 nut	
	4	M16 washer	
	4	M16 anchoring rod (length: 500 mm)	
	1	Anchoring guard plate (for variable height installation only)	
Removal protection nuts	1 or 2 (optional)	Removal protection nut(s)	

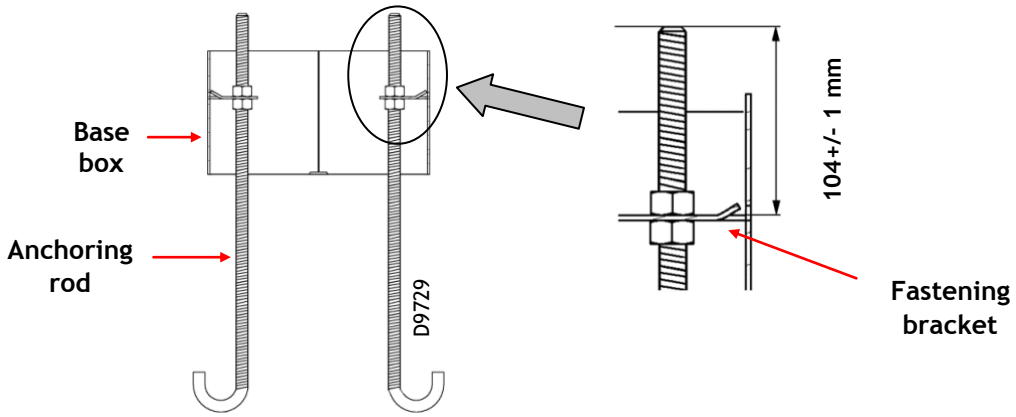
The removal protection nut (or nuts) is (are) not supplied with the excavation fastening kit, but with the terminal.

7.4 Anchoring in an excavation at minimum height

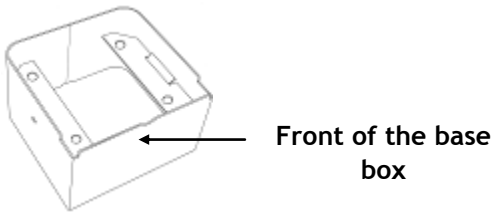
For this installation height (minimum height):

- The form may be used but is not indispensable.
- The anchoring guard plate is not used.

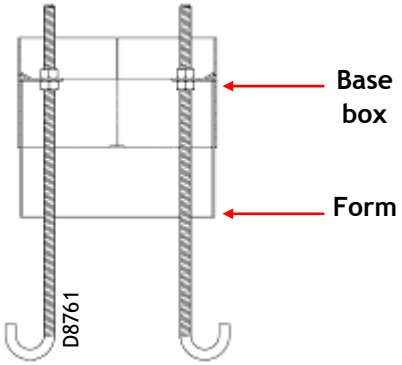
- Fix the anchoring rods to the base box using 8x M16 nuts so that the ends of the rods are **104 mm** away from the fastening brackets.



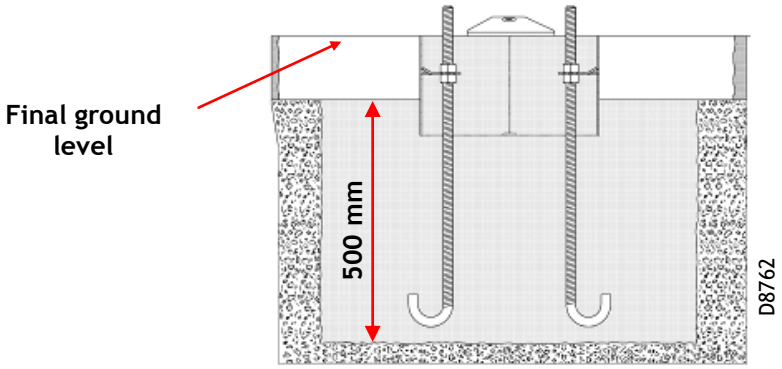
- The nuts are to be placed (104 mm away from the end of the anchoring rods) as instructed for secure installation.
- Mind the positioning direction: the front of the base box must be placed according to the direction of the terminal to be installed on it.



- Put in place the form in the base box (if used).

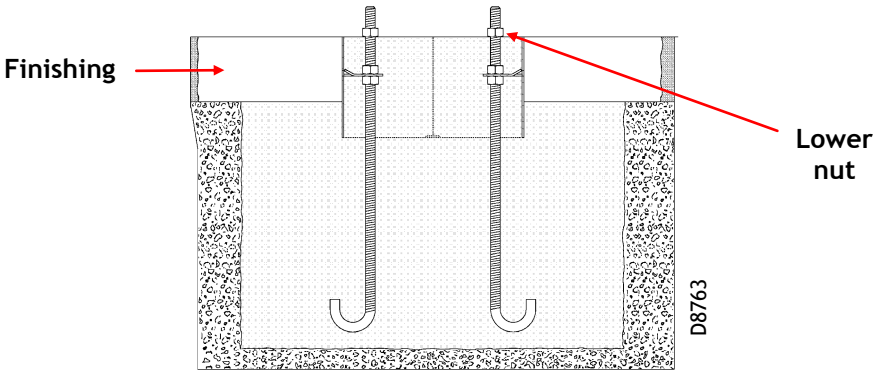


- Fill the hole with concrete (B25 quality as a minimum) over a height of 500 mm.
- Set in the base box, pushing the anchoring rods into the concrete so that the top of the base box is at the final ground level.
- With the help of a spirit level, level the base box.
- Fill the base box with concrete.



View of the base box in place before finishing

- Comply with the setting time recommended by the concrete supplier.
- Finish the ground (if the ground has a concrete or pavement finish, you need not wait for the concrete to set).
- Screw 4 nuts on the anchoring rods up to the base box.



→ These 4 nuts, which are used to level the terminal, are called "lower nuts" in the rest of the procedure.

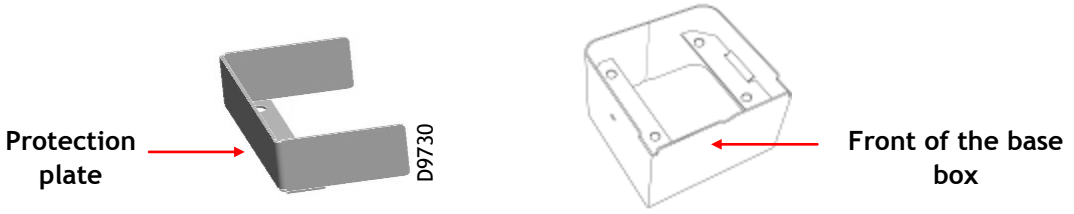
7.5 Anchoring in an excavation at variable height

This type of installation makes it possible to raise the terminal by 41 to 137 mm in relation to the height of the ground.

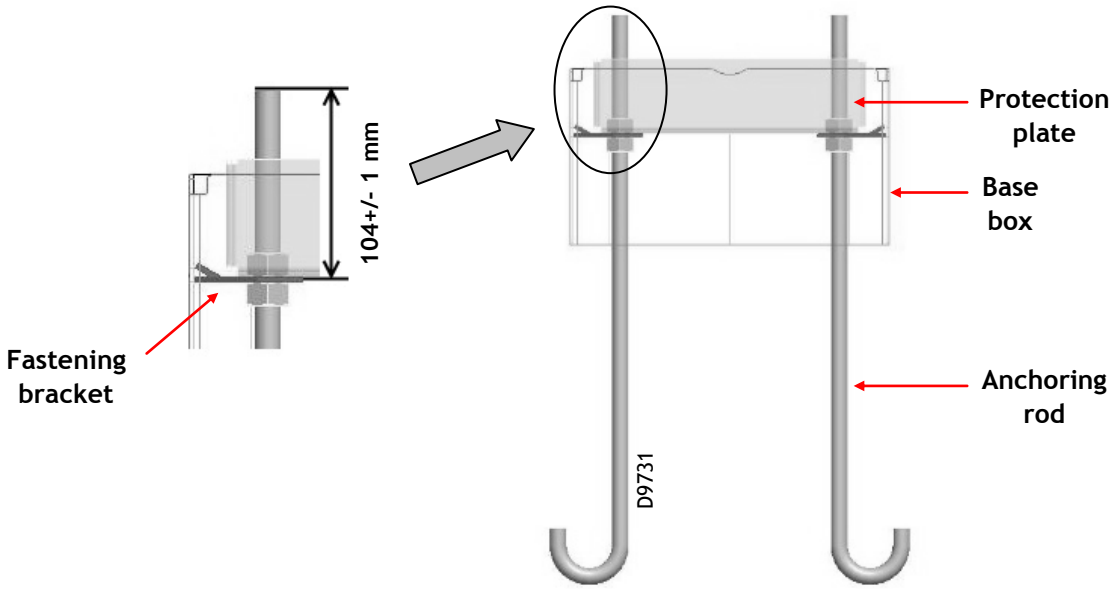
Installation at variable height:

- The form may be used but is not indispensable.
- The anchoring protection plate is required.

- Install the protection plate in the base box, against the front.

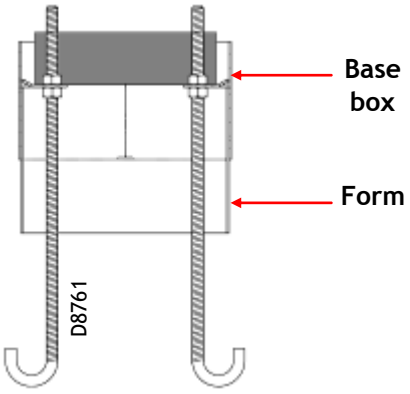


- Fix the anchoring rods to the base box using 8x M16 nuts so that the ends of the rods are **104 mm** away from the fastening brackets.



The nuts are to be placed (104 mm away from the end of the anchoring rods) as instructed for secure installation.

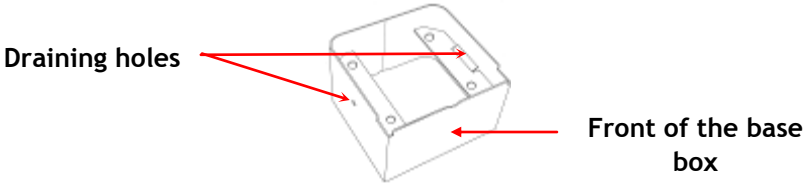
- Put in place the form in the base box (if used).

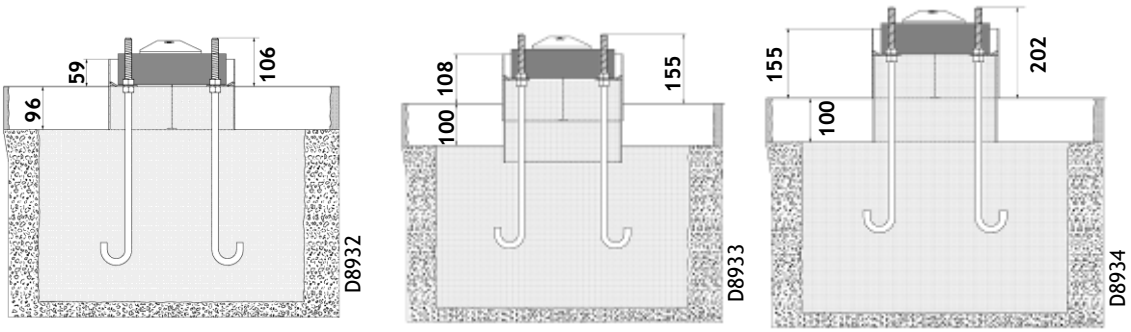


- Fill the hole with concrete (B25 quality as a minimum) over a height of 500 mm.
- Lower the base box to the required height (see examples below), pushing the anchoring rods into the concrete.
- With the help of a spirit level, level the base box.
- Fill the base box with concrete (fill the base box according to its position in the hole) and level it.

- Mind the positioning direction: the front of the base box must be placed according to the direction of the terminal to be installed on it.

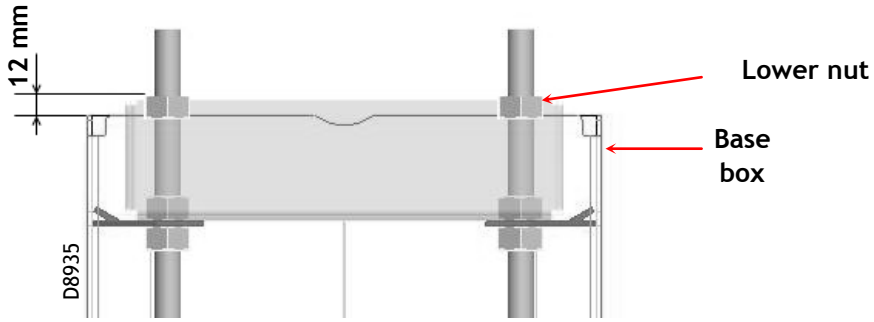
- Check that the holes for letting water out of the base box are not blocked.





Height 1 **Height 2** **Height 3**

- Comply with the setting time recommended by the concrete supplier.
- Finish the ground (if the ground has a concrete or pavement finish, you need not wait for the concrete to set).
- Screw 4 nuts on the anchoring rods up to 12 mm above the base box.



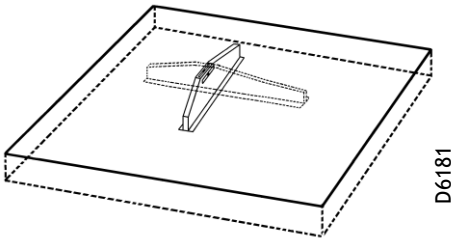
→ These 4 nuts, which are used to level the terminal, are called "lower nuts" in the rest of the procedure.

8. Chemical anchoring on flat ground

8.1 Recommended ground

For best anchoring on flat ground, Parkeon recommends the following:

- a concrete base, B25 quality as a minimum,
- minimum concrete thickness 500 mm (250 mm drilling depth) over a minimum area of 600 mm x 600 mm,
- a perfectly horizontal surface: check if the ground is level using a spirit level.

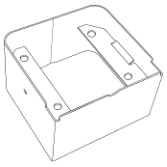


8.2 Equipment required

Tools required:

- *impact drill,*
- *Ø20 concrete bit, at least 300 mm long,*
- *rifle type brush,*
- *blow nozzle,*
- *rule,*
- *spirit level,*
- *rubber mallet,*
- *masking tape,*
- *chemical anchoring kit (not supplied),*
- *kit for fastening on flat ground (with or without base box according to the selected option),*
- *one or two removal protection nuts (optional).*

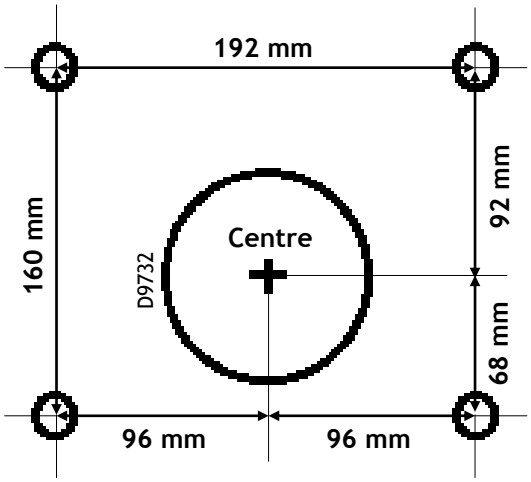
IMPORTANT:
The chemical anchoring kit is not supplied by Parkeon.
Parkeon recommends the use of a SPIT C mixplus chemical anchoring kit.
Check the drilling diameter required depending on the type of chemical anchoring required.

	Quantity	Description	Illustration
Fastening kit for flat ground without base box	8	M16 nut	
	4	M16 washer	
	4	M16 threaded rod (310 mm)	
Fastening kit for flat ground with base box	1	Pedestal	
	1	Anchoring guard plate	
	16	M16 nut	
	4	M16 washer	
	4	M16 threaded rod (450 mm)	
Removal protection nuts	1 or 2 (optional)	Removal protection nut(s)	

The removal protection nut (or nuts) is (are) not supplied with the excavation fastening kit, but with the terminal.

8.3 Chemical anchoring on flat ground without base box

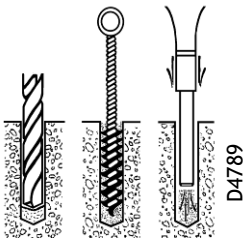
- Identify the location of the future centre of the terminal in accordance with the dimensional requirements detailed in the "Dimensions" section.
- Drill 4x Ø20 holes in the floor over a depth of 250 mm, on the basis of the drawing below:



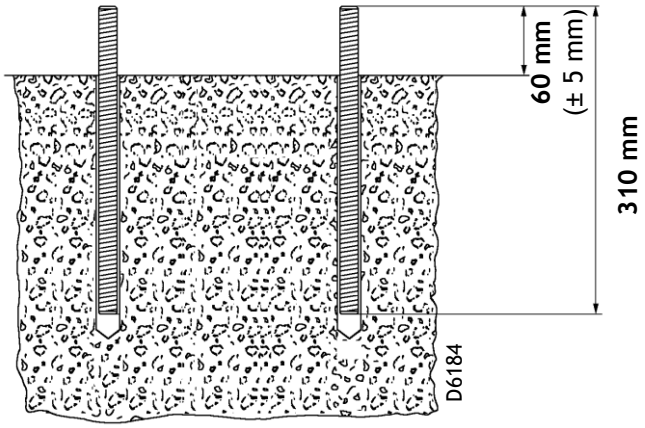
Important: position the future centre of the terminal in accordance with the dimensional constraints

Make sure that the drilled holes are perfectly vertical, so that the terminal is correctly installed on the threaded rods.

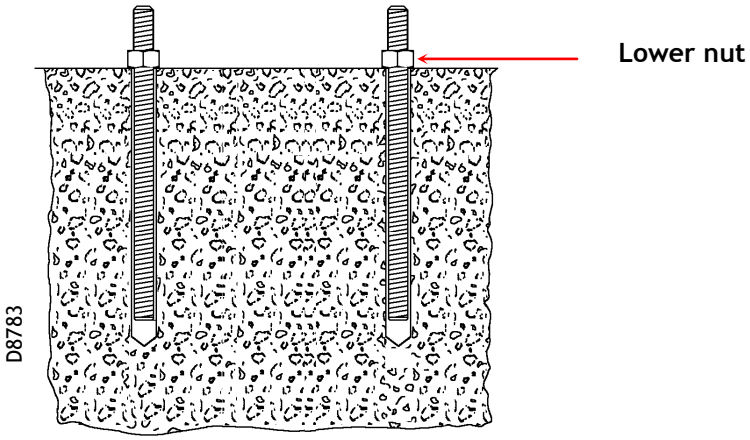
- After drilling, clean the holes with the rifle brush and then the blow nozzle in order to remove dirt.



- Check the drilled holes by inserting the threaded rods in the holes and checking that 60 mm of rod is emerging.



- Protect the upper part of the threaded rods from surplus anchoring resin (with masking tape for example).
- Inject the anchoring resin in the four holes.
- Insert the four threaded rods (310 mm long) in the holes so that they emerge over 60 mm.
- Wipe the threaded rods clean of any surplus anchoring resin.
- Using a spirit level, check if the rods are vertical; if not, make them vertical with the rubber mallet.
- Let dry according to the instructions of the chemical anchoring kit.
- When the anchoring has set, screw 4x M16 nuts on the threaded rods up to the ground level.

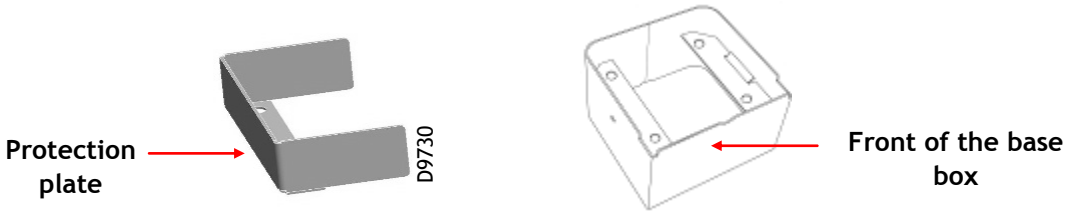


→ These 4 nuts, which are used to level the terminal, are called "lower nuts" in the rest of the procedure.

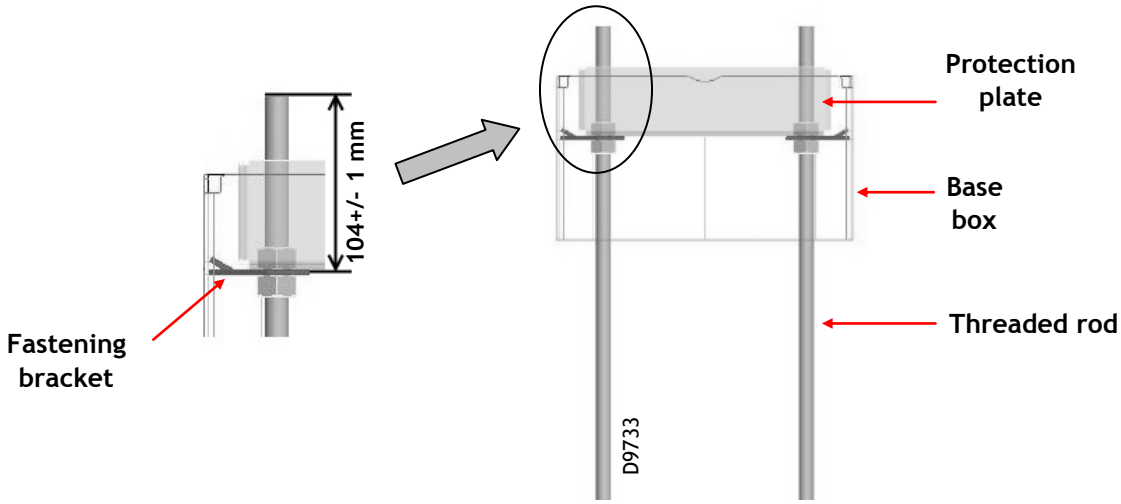
8.4 Chemical anchoring on flat ground with base box

This type of installation makes it possible to raise the terminal by 137 mm in relation to the height of the ground.
For installation with base box, the use of the protective plate for the anchoring is required in order to ensure the safety of the installation.

- Install the protection plate in the base box, against the front.

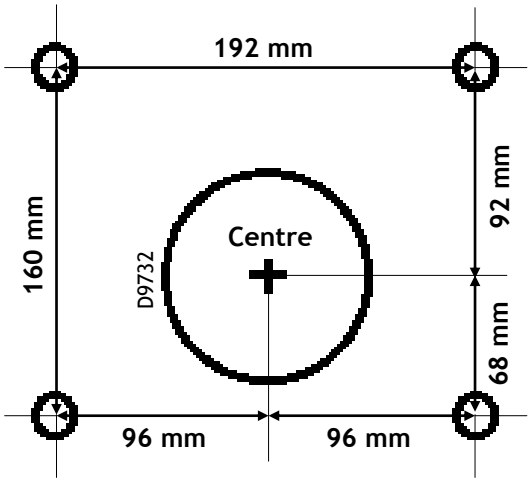


- Fix the anchoring rods (450 mm long) to the base box using 8x M16 nuts so that the ends of the rods are **104 mm** away from the fastening brackets.



The nuts are to be placed (104 mm away from the end of the threaded rods) as instructed for secure installation.

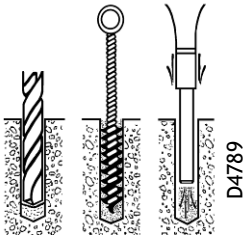
- Identify the location of the future centre of the terminal in accordance with the dimensional requirements detailed in the "Dimensions" section.
- Drill 4x Ø20 holes in the floor over a depth of 250 mm, on the basis of the drawing below:



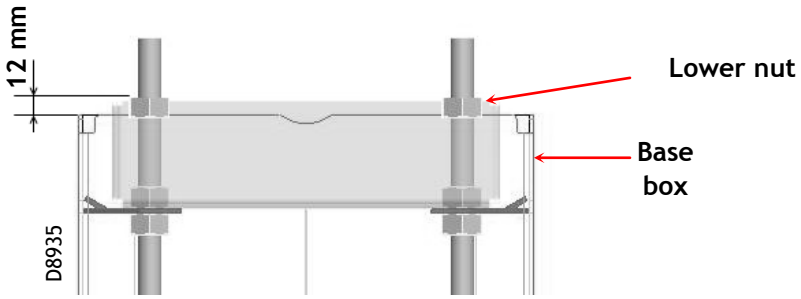
Important: position the future centre of the terminal in accordance with the dimensional constraints

Make sure that the drilled holes are vertical in order to allow proper installation.

- After drilling, clean the holes with the rifle brush and then the blow nozzle in order to remove dirt.



- Check the drilled holes by putting in place the base box with the rods and checking that the bottom of the base box rests fully on the ground.
- Remove the base box and inject the anchoring resin in the four holes.
- Install the base box with the rods in the holes and check if it is horizontal, using a spirit level.
- Let dry according to the instructions of the chemical anchoring kit.
- When the anchoring has set, screw 4 nuts on the threaded rods up to 12 mm above the base box.



→ These 4 nuts, which are used to level the terminal, are called "lower nuts" in the rest of the procedure.

9. Recommendations for anchoring protection

To protect anchoring standing by for terminal installation, Parkeon recommends the use of anchoring protection, placed on the threaded rods.

Anchoring protection

10. Opening the maintenance door

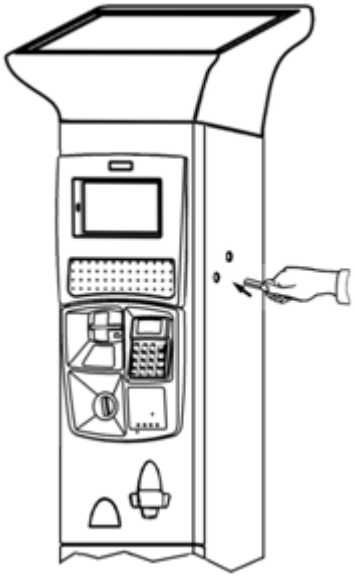
Tools required:

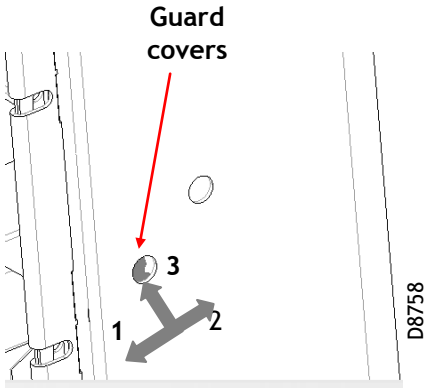
- *mechanical key of the maintenance door,*

Opening:

The mechanical lock of the terminal has lock guard covers to reduce the risk of vandalism.

- Insert the end of the key in the lock opening.
- With the end of the key, push the first guard cover to the left **(1),** then the second one to the right **(2)**.
- When the lock is accessible, insert the key and unlock the door **(3).**
- Open the maintenance door.





Lock detail

Closing:

- Close the door and lock it with the mechanical key.
- Remove the mechanical key from the lock.

11. Opening the power supply door

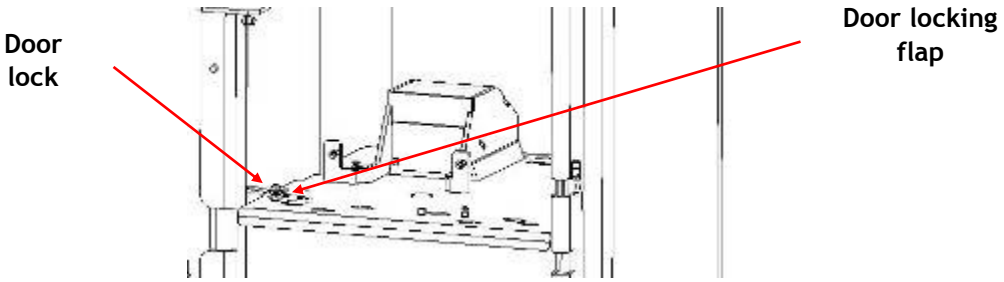
Tools required:

- *square key for door (if the optional door lock is present)*

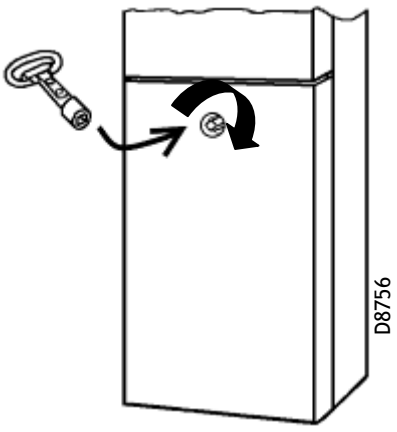
The mains door has a locking system at the bottom of the maintenance compartment for secure access.

To open the mains door:

- Open the maintenance door.
- Unlock the flap that holds the door locking system.
- Lift the door lock.



- If there is a lock, unlock the door using the square key.



After installing the terminal, put the door lock back down to lock access to the door.

12. Taking the terminal off the pallet

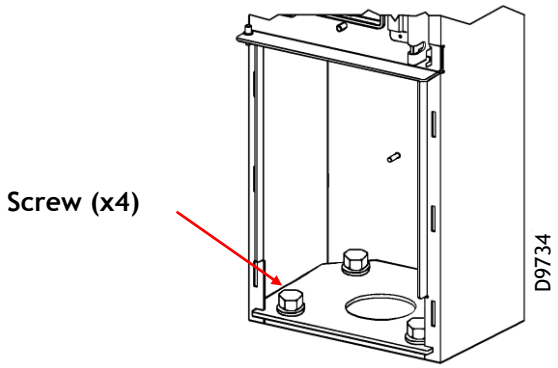
Install and secure the terminal as soon as it is taken off the pallet.

Tools required:

- *16-mm key*

After opening the power supply door:

- Unscrew the four screws that are used to fasten the terminal to the pallet (16-mm key) **taking care not to allow the terminal to tip over**.
- Take the terminal off the pallet.



13. Terminal installation and levelling

Tools required:

- *24-mm torque wrench,*
- *4x M16 nuts and 4x washers (included in the fastening kit),*
- *spirit level.*

Never install the terminal on a concrete surface before it has set; otherwise, the terminal may sink into the concrete (making it impossible to open the mains door or dismantle the terminal later on).

Putting in place the terminal:

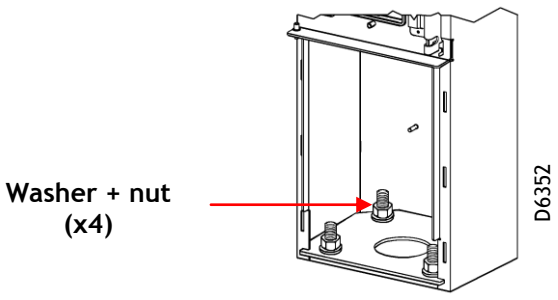
- Using the spirit level, check that the four lower nuts form a horizontal support plane.
- Set the terminal on the threaded rods.
- Put the 4x washers and 4x M16 nuts on the anchoring rods, but do not tighten them.

Levelling:

- Check if the terminal is vertical in the front/back direction using a spirit level positioned on the rear of the terminal.
- Check if the terminal is vertical in the left/right direction using a spirit level placed on a side of the terminal.
- **If the terminal is not fully vertical:** remove the terminal, adjust the position with the 4 lower nuts and repeat the installation procedure.

Fastening:

- After the terminal has been levelled correctly, fasten the 4x M16 nuts on the threaded rods (24 mm key) to 20 daN/m tightening torque.

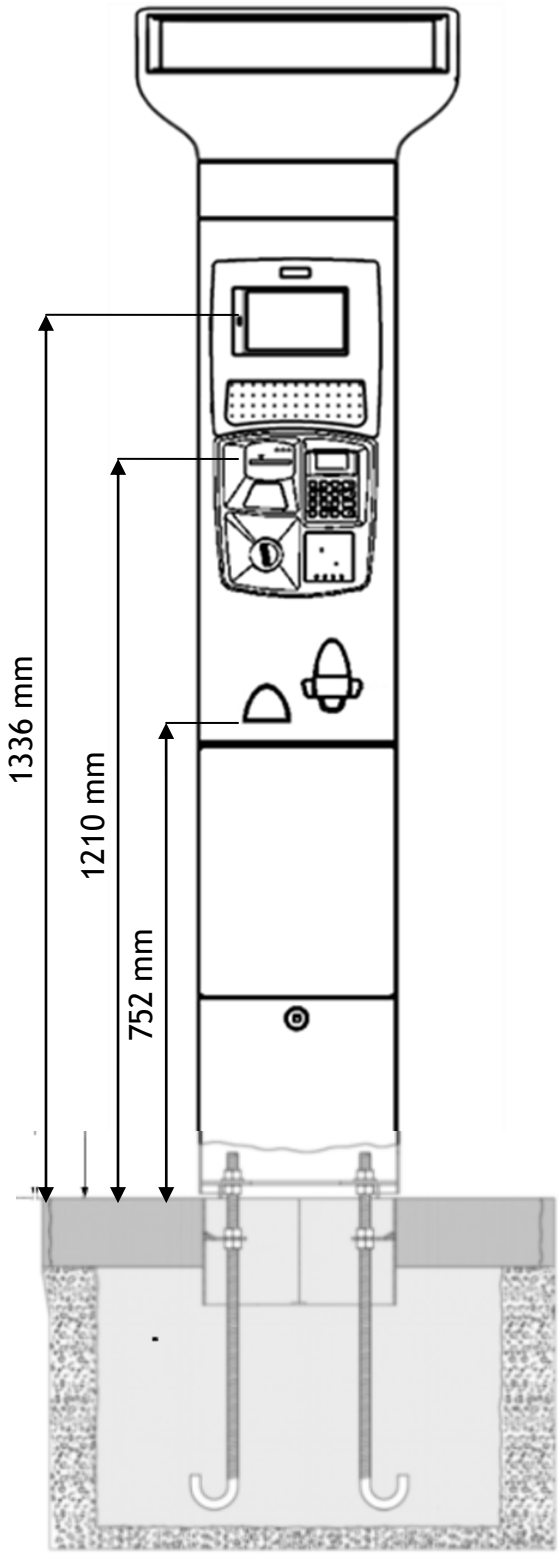


If removal protection nuts are being used:

- Use the removal protection nuts instead of the plain upper nuts, the first one on the front left threaded rod and the second one (if used) on the threaded rod to the right at the rear.
- Screw the removal protection nut (or nuts) with a 24-mm spanner up to the breaking point.

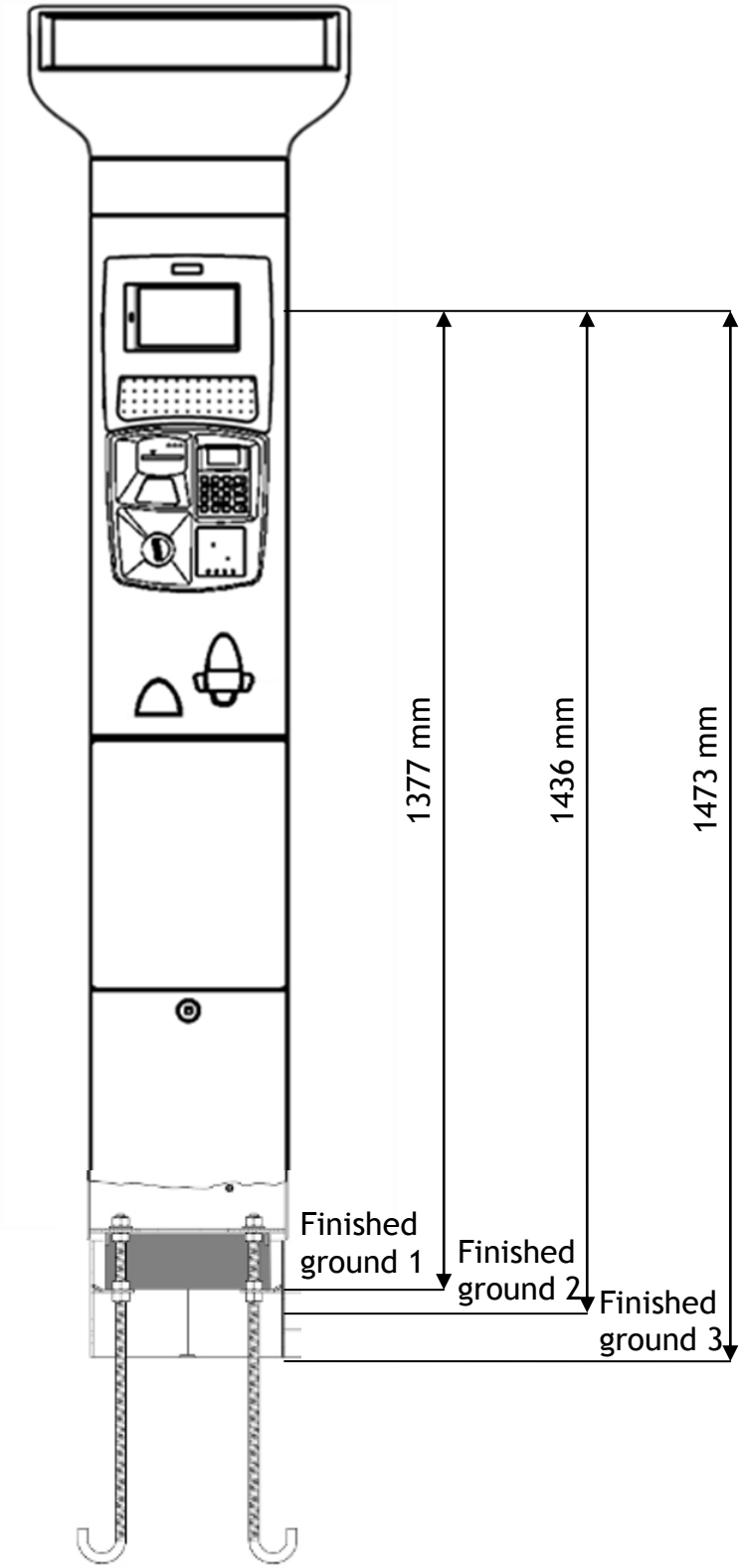
14. Final installation diagram and user interface height

14.1 Installation with excavation anchoring at minimum height



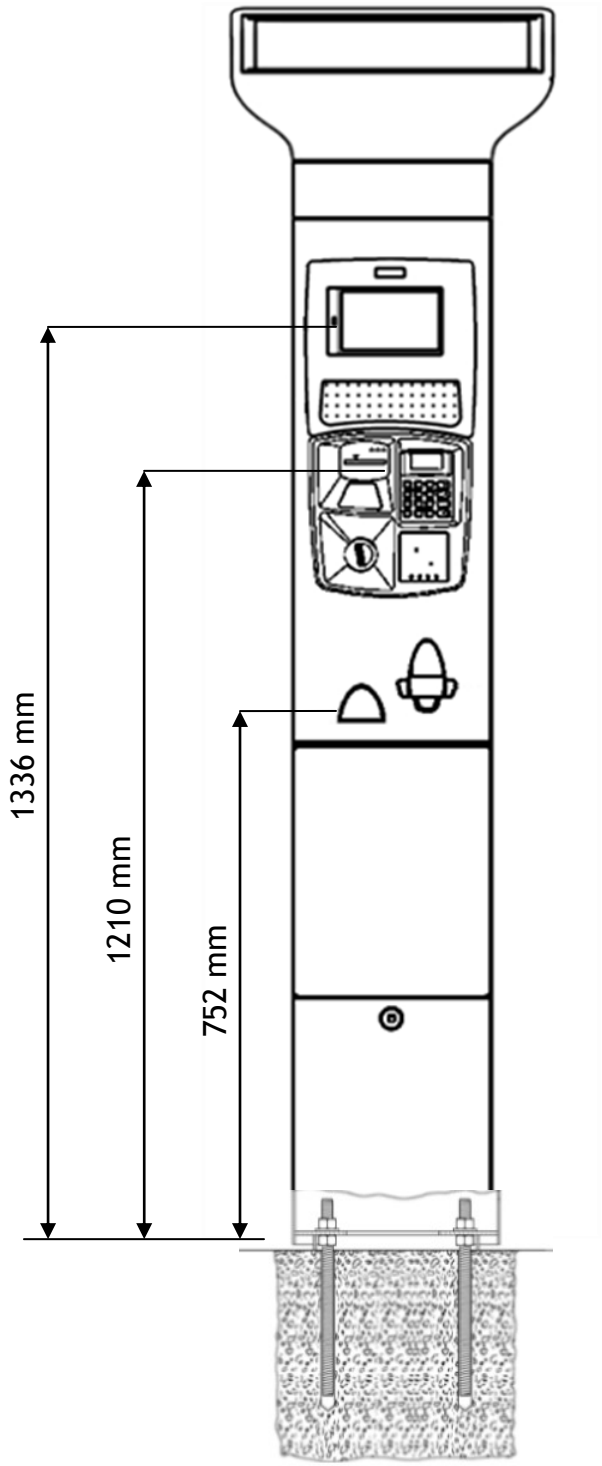
Installation in excavation at minimum height

14.2 Installation with excavation anchoring and variable height

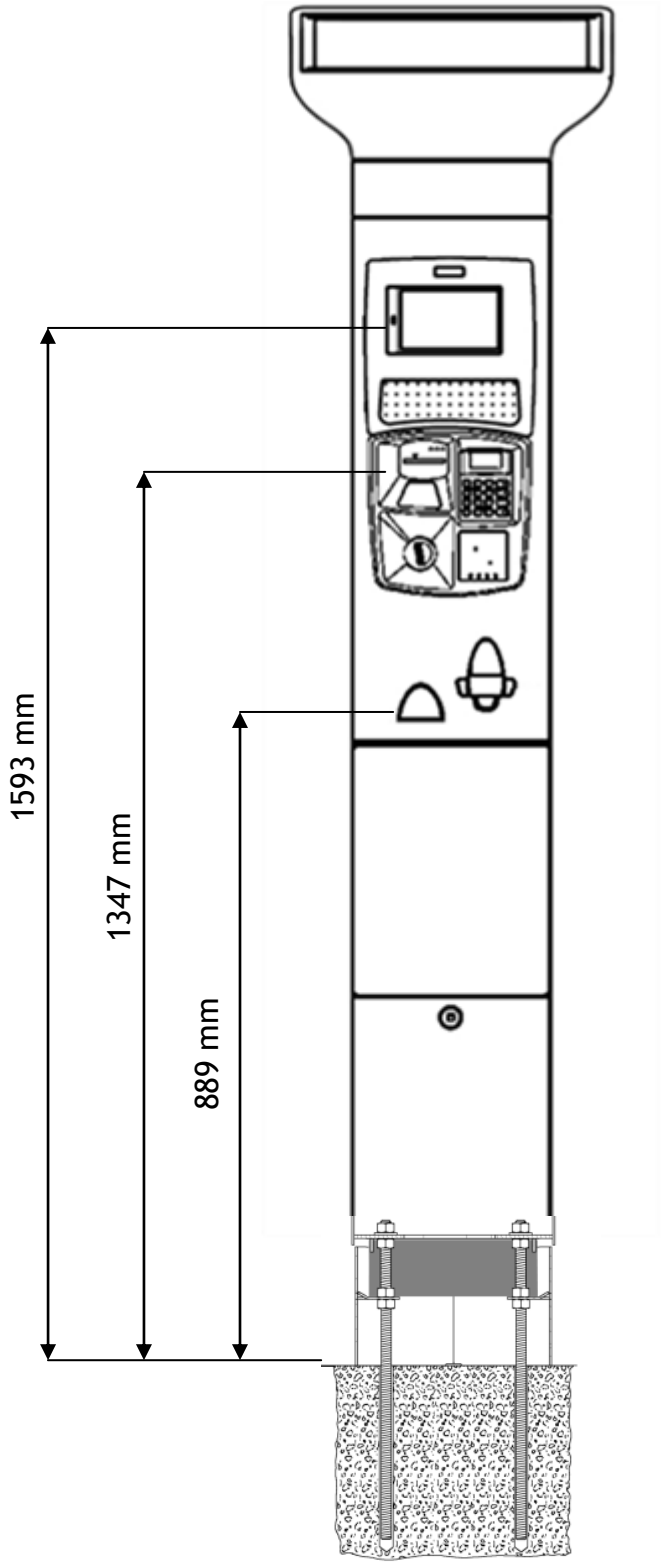


Installation in excavation with variable height

14.3 Installation with chemical anchoring on flat ground without base box



14.4 Installation with chemical anchoring on flat ground with base box



15. Installing the protective top and the antenna with or without zone indicator

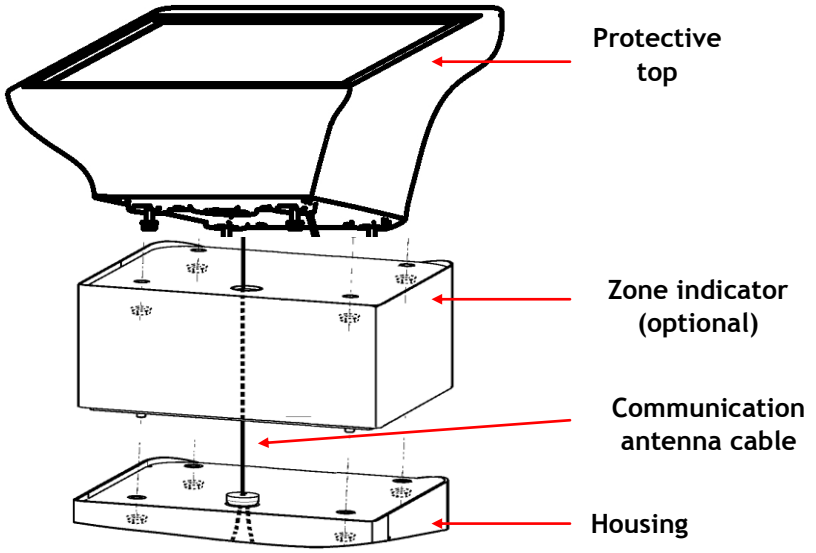
Check that the unused holes present on the top of the housing are protected with the capping assemblies (1 screw, 2 washers and 1 nut) that keep them sealed (2 holes unused with Ethernet communication, 1 hole otherwise).

Tools required (excluding work before replacement):

- *13-mm open-ended spanner.*

Installation:

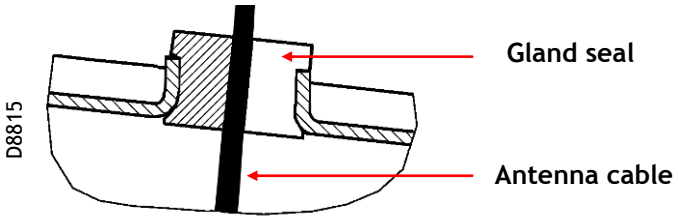
- Route the cable of the communication antenna through the hole provided in the zone indicator (if present).
- Install the protective top on the zone indicator (if present) by inserting the four threaded rods (with a cone of sealing filler) in the four holes provided.
- Fasten the four collar nuts from below the zone indicator (if present) using a 13-mm key.
- Route the cable of the communication antenna through the hole provided on the top of the housing.
- Fit the top/zone indicator assembly (if present) on the top of the housing by inserting the four threaded rods (with a cone of sealing filler) in the four holes provided.
- Fasten the four collar nuts from the maintenance compartment using a 13-mm key.



Installing with indicator

Installing the cable gland seal:

- From the inside of the housing, fit a foam gasket around the communication antenna cable (if present) and the solar panel cable.

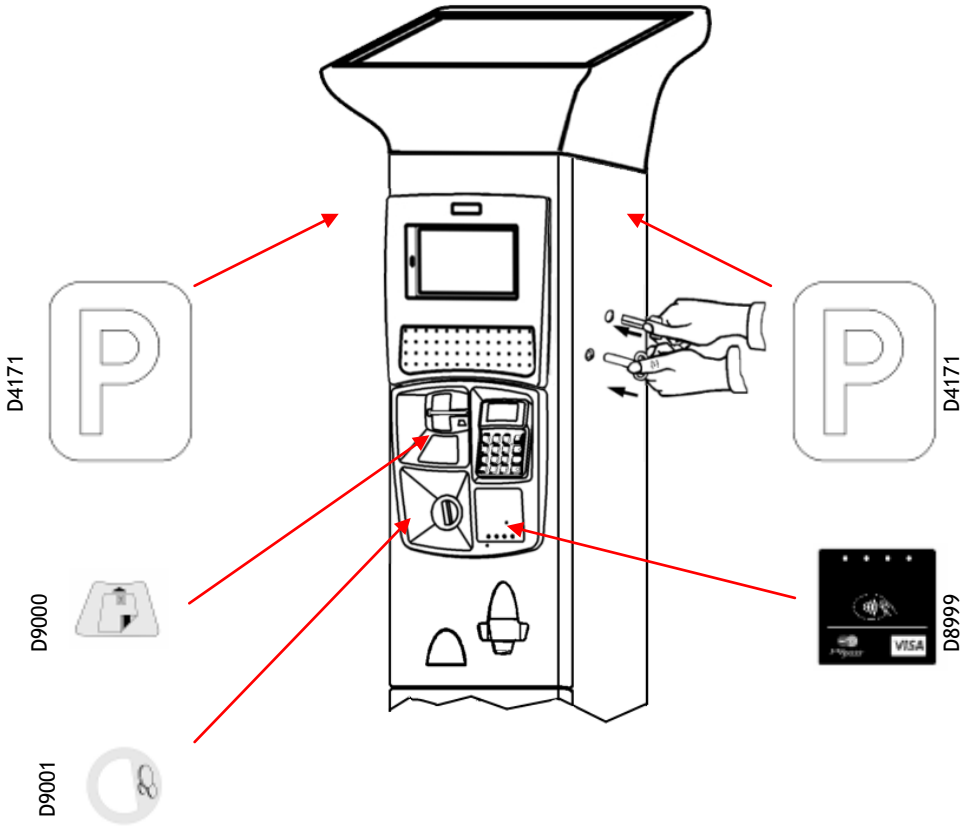


Connecting the communication antenna:

- Route the cable of the communication antenna along the left-hand panel of the housing.
- Hold in place with plastic ties.
- Connect the communication antenna to the connector of the modem present in the intelligence module.

16. Applying the stickers

- If they have not been applied, apply the various stickers on the terminal as illustrated below.



17. Installing the batteries

Safety information:

Remove all metal objects (watch, jewellery etc.) from your hands, wrists and neck before starting to work.

Wear appropriate safety equipment: goggles and safety gloves.

In order to avoid electrostatic discharges while handling the battery:

- Do not wear clothes or shoes that could create electrostatic charge.
- Clean the battery with absorbent cloth moistened with water only.

If the electrolyte comes accidentally in contact with the eyes, wash your eyes immediately with large quantities of water.

17.1 Installing the mains battery (if present)

Make sure that the battery is properly charged before you install it.

Tools required: *none*

- Open the maintenance door.
- Install the mains battery in the support present in the rack.
- Connect the mains battery cable to the battery, minding the polarities (quick type lugs).

Connecting the mains battery cable

- Close the maintenance door.

17.2 Installing the solar batteries (if present)

In solar configuration, the terminal has two batteries:

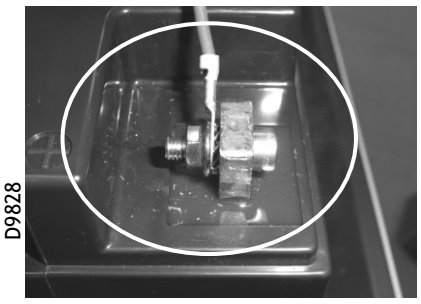
- a first 12V 27Ah battery located in the maintenance compartment,
- a second 12V 42Ah battery located in the power supply module.

- The battery voltage test does not make it possible to determine if only one of both batteries is discharged.
- **Always replace both batteries at the same time by well charged batteries.**

Tools required: *none*

Installing the first battery:

- Open the maintenance door.
- Install the first battery on its support.
- Connect the solar battery cable to the first battery, minding the polarity.
- Stack the following while connecting both lugs (starting from the edge of the battery): screw/battery lug/tooth lock washer/cable lug/toothed collar nut.

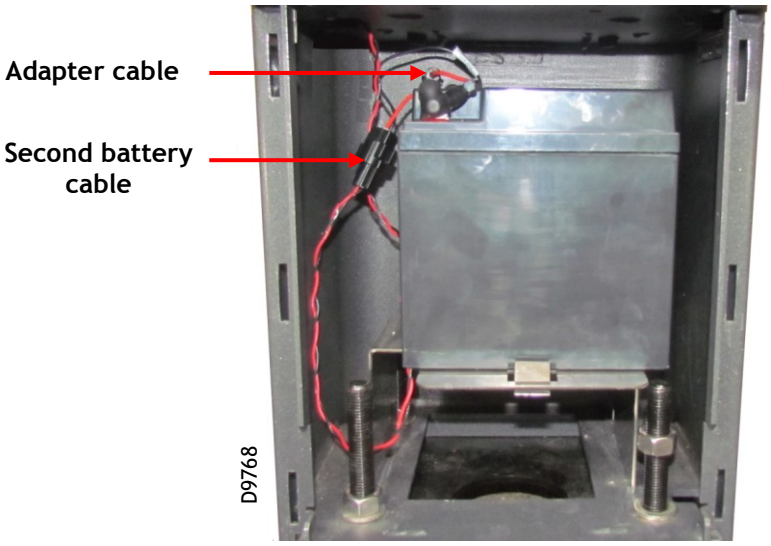


Stack

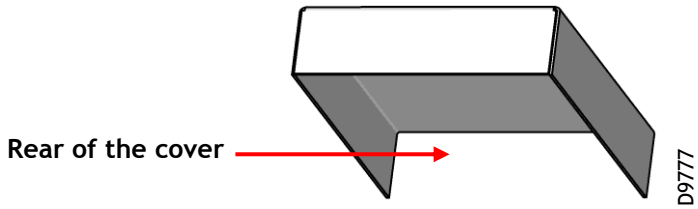
- Close the maintenance door.

Installing the second battery:

- Open the power supply compartment door.
- Place the second battery so that the cable is to the left-hand side.
- Connect the adapter cable of the second solar battery to the second battery cable present in the power supply compartment.



- Put the protective cover in place on the battery, routing the cables through the open side at the rear of the cover.



Battery cover

- Close the power supply compartment door.

18. Putting into service

Please refer to the StradaPAL maintenance manual for the starting up procedure.