



MAC - srl

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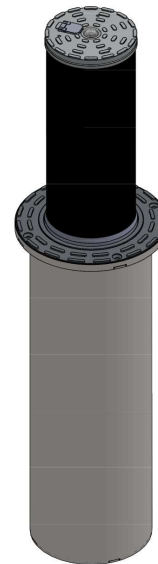
GBR

MANUAL

C275G

C200G

C140G



Customer:

Installing Company:

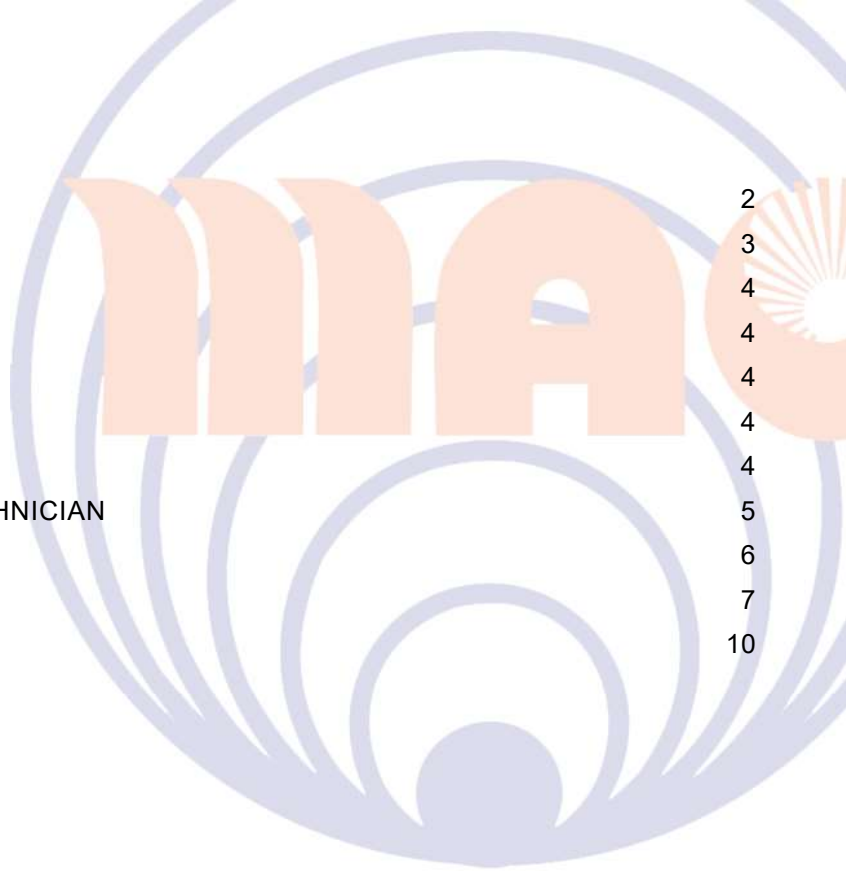
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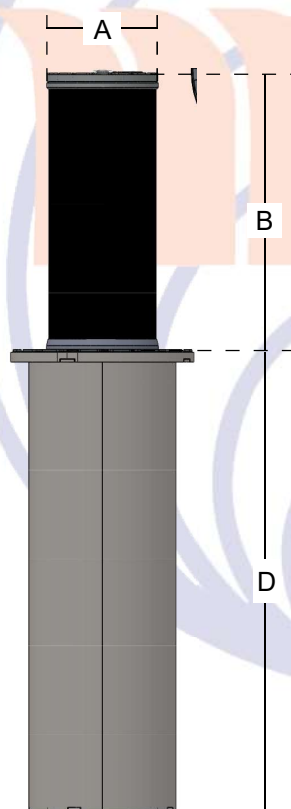
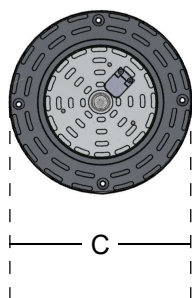
CAREFULLY READ THE MANUAL BEFORE USE

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DIMENSIONS



	<i>(u.m.=mm)</i>			
	A	B <i>(corsa)</i>	C	D
C275G	275	500	481	731
		700		931
		800		1031
C200G	200	500	330	735
		700		935
		800		1035
C140G	140	500	276	735
		700		935
		800		1035

WARNING

- To do a correct installation of the product, is important to read and follow the instructions below carefully.
- The company MAC s.r.l descends any responsibility in the case the manual is not updated.
- In case of manual or components' modifications, it is at discretion of the customer to ask about them.
- It is not allowed reproducing partially or publishing this document without the authorization of the company MAC S.r.l..
- Any infraction will be prosecuted in accordance with the procedure prescribed by law.
- MAC s.r.l. is exclusive owner of its registered trademark. The brand is affixed on labels with CE conformity and on seals and danger adhesives.
- The removal, cancellation or modification of the label MAC s.r.l. is strictly forbidden.
- An improper installation or use of the product may cause damage to people. Everything not expected in these instructions is not allowed.
- The user must abstain from any attempt to repair or direct intervention. Furthermore, the user must only call qualified and authorized staff.
- The transit on the bollard must only occur when the device is completely lowered and the traffic light is green.
- Keep out of reach of children remote controls or any other device of control in order to avoid the accidental activation of the automation.

SHIPPING

- All the products are accurately checked and tested by the manufacturer before the shipping.
- At the moment of delivery, check if the bollard has been damaged during the transport. Moreover, check that nothing has been rigged or removed. In case of noticing damages or missing parts, warn the courier and the manufacturer sending them related photo documentation.

WASTE DISPOSAL

- MAC s.r.l recommends to respect the environment by promoting recycling waste.
- All the components must be disposed following the regulations of the installation's place.
- Battery, electric and electronic elements may contain noxious and polluting substances. That components must be removed and consigned to companies specialized in recycling noxious waste as indicated in the directive 2012/19/UE.

TRANSPORT AND LIFTING

- The transport and lifting of the bollard must occur with specific equipment and in compliance with safety regulations in force in the area of the product's installation and by expert staff.
- Check the efficiency and the payload of the transportation before to proceed with the bollard's movement.
- To not cause damages to people or to materials it is necessary to implement any possible precaution. It is opportune to avoid abrupt movements that may ruin the bollard and cause damages to things or people.
- To lift the bollard or its parts, are needed means of transport with a minimum load larger than the declared weight. These means of transport must have the CE label with the related certificates in force, like cables and lifting eyebolts.
- To have a better load stability, it is necessary to keep the load as low as possible during the movements.
- Make sure that there are no people not involved in the work nearby during the installation and its operation.

D.P.I. FOR THE OPERATOR

Pictogram				
Description	SHOES	PROTECTION GLOVES	SUITABLE CLOTHES	GLASSES / GLASSES FOR WELDING

The personnel must use the required D.P.I. in these environments of working.

WARNINGS FOR THE MAINTENANCE TECHNICIAN

- The installation must be carried out by competent companies and experts in the field.
- The maintenance technician must be formed and informed about bollard installation.
- The maintenance technician must work using the specific protection devices and following the safety regulations in force in the place where the bollard is installed.
- To not cause damages, the maintenance technician must evaluate carefully the place where the bollard will be installed and check that all the moving parts are free from obstacles, by also checking that the handlings operate linearly.
- For what concerns the movement operations, make reference to the “Transport and lifting” chapter.
- MAC s.r.l. is not responsible about the non-compliance of its products and accessories installation methods.
- The maintenance technician must insert the protections against the indirect contacts upstream of the power line, following the regulations in force according to the installation place.
- Check that upstream of the plant there is a differential magnetomic switch with a 0,03 A threshold.
- The control unit main power line must be directly connected upstream of the specific main switch, placed inside the station itself.
- Use standard flameproof cables.
- To guarantee a correct power source (230V +/- 10% in movement); the main power line sizing must be at least 3x2,5 mm. Anyway, it must be meditated by the maintenance technician depending on the main switch sizing and on the distance from the distribution point.
- Check the grounding system is perfectly done.
- The maintenance technician must give to the client/user all the information about the bollard manual handling in case of emergency and give the user and maintenance manual.

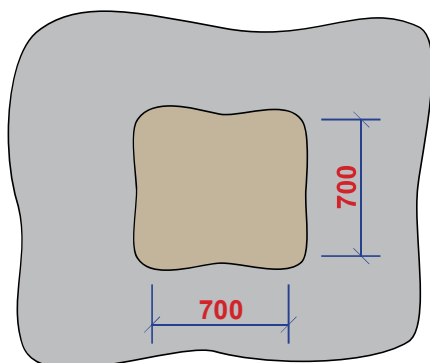


PREPARATION OF THE EXCAVATION

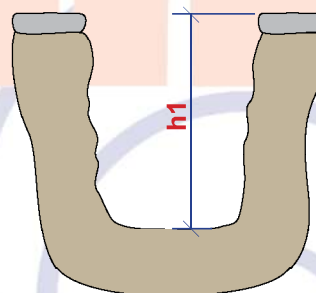
To do a proper installation of our product, we recommend to follow all the points below.

Excavate the land with the measures and depth indicated below.

Plan view



Sectional view

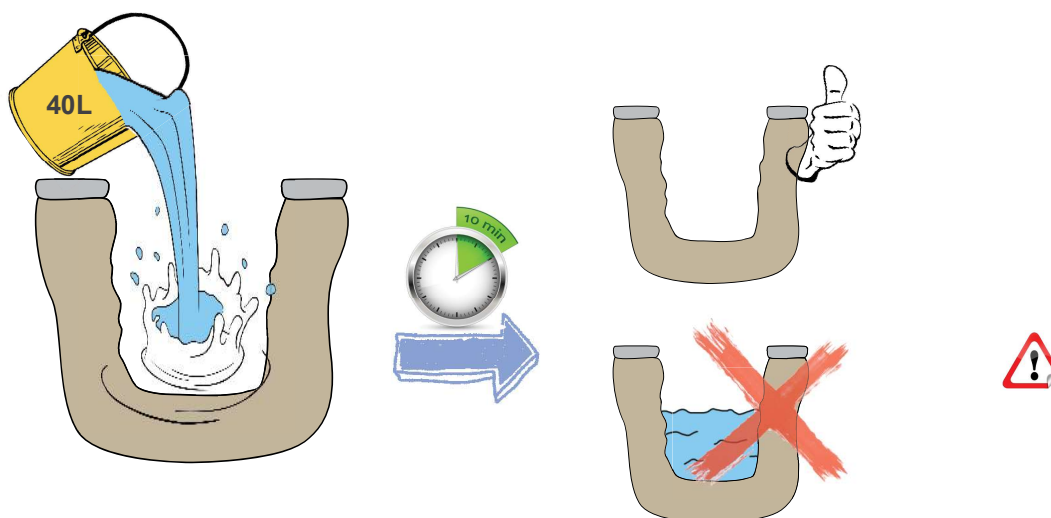


N.B.:
 -1130mm for installation stroke 500
h1 -1330mm for installation PALMO stroke 700
 -1430mm for installation PALMO stroke 800

Make sure that the interested soil for the installation of the product is draining by pouring 40 liters of water into the excavation.

If after 10 minutes the excavation has emptied, means that it isn't necessary to install a sewage network.

Individual cases should however be evaluated, considering the soil compliance and the meteorological situations. Eventually, create a sewer system.

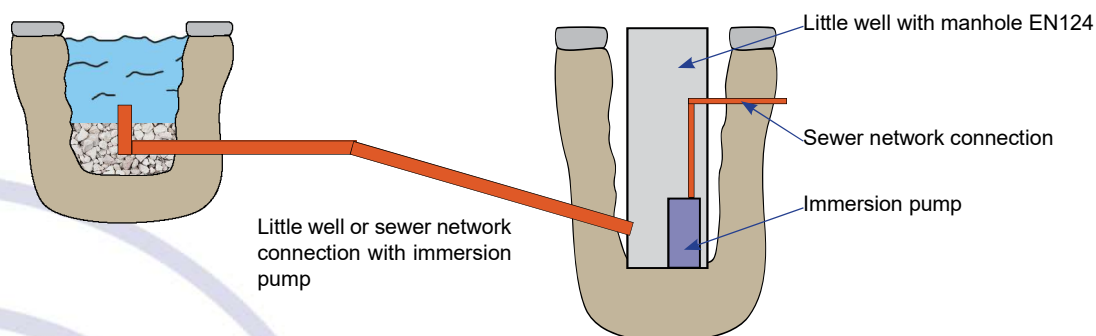


Caution:

This type of system has been thought for land with poor draining qualities, where, digging, water is immediately found and/or where there is not the possibility to carry everything in a sewer system. The bollard will be collocated in a waterproof concrete tank so if the water level raises, the bollard remain isolated from the surrounding land.

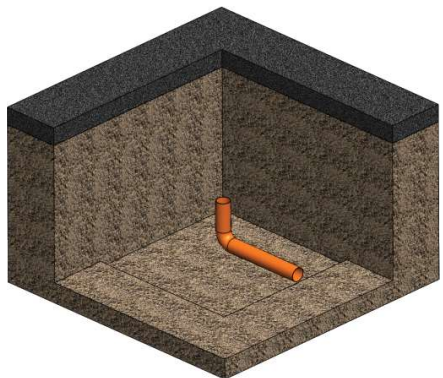
This drawing shows how to install a well for the discharge of the excessive water from the formwork of the bollard. All the concrete that covers the bollard and the well should contain special additives that isolate from water.

Even just one well can be installed to suck the water of all the bollards installed.



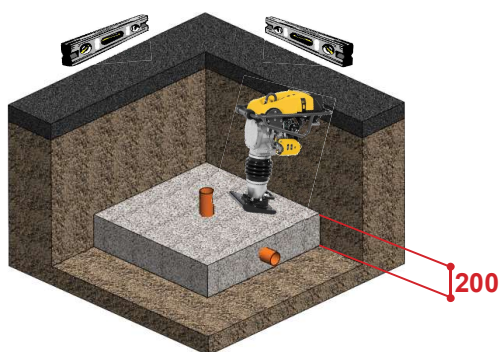
BOLLARD LAYING PROCEDURE

1



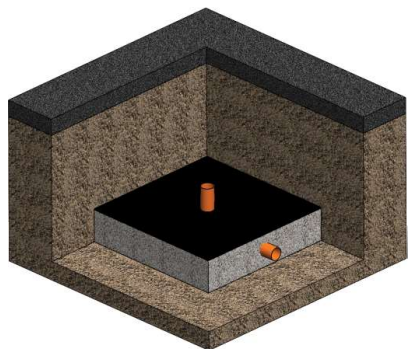
Proceed with the realization of the drain of the rainwater through the lay of a PVC pipe with 100mm diameter. This pipe must be connected to the sewer system or in alternative to a well equipped by an emptying system with a greater depth.

2



Insert gravel with grain 22/32 mm diameter and 220mm height. In order to avoid "retreats of settling", it is advisable to compact the gravel.

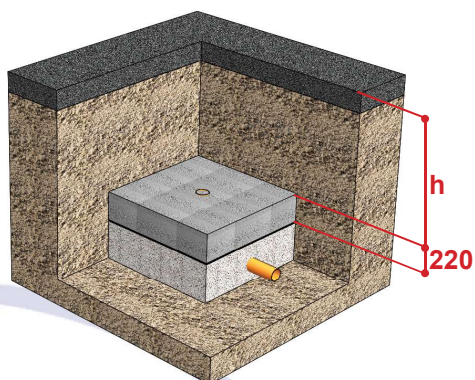
3



Insert a geotextile layer (gr. 300) on the compacted gravel.

Put the PVC pipe (diameter of 100 mm and length 200mm) in the middle of the dig on the geotextile (the PVC pipe is necessary for the passage of the rain-water).

4

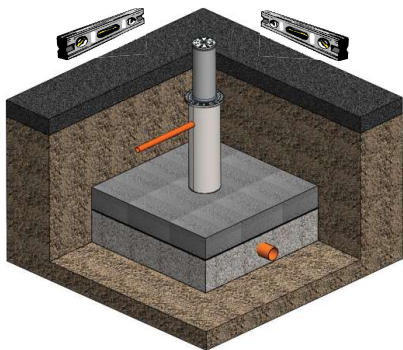


The size "h" are very important to ensure that the formwork protrudes 20mm from the trampling line.

mod.	B	h
Palmo	500	710
	700	910
	800	1010

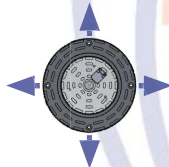


5



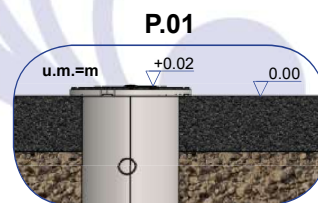
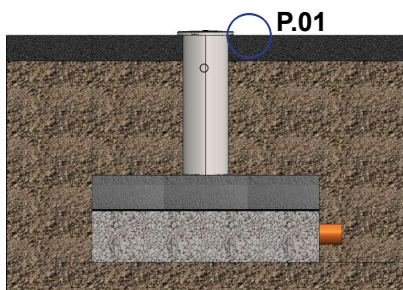
Collocate the formwork supplied taking care to place it flat (centre the bubble) compared to the road level.

Predispose a corrugated tube $\varnothing 80$ for the passage of the electrical power cables in the pre-holes of the formwork.



CAUTION: place the foundation formwork based on the direction of traffic as in the view from the above.

6

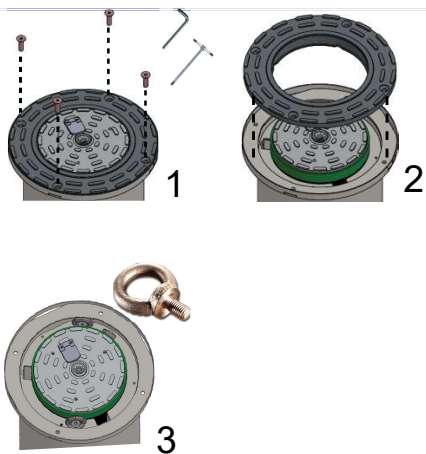


N.B:

Position the bollard so as to protrude 20mm from the floor level (in order to limit the enter of rainwater in the little well).



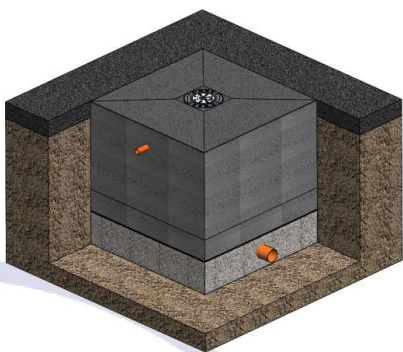
7



1. Screw off the 4 (four) bolts (using the Allen key).
2. Extract the trampling platform.
3. Insert the eyebolts.
4. Extract the extractable structure.

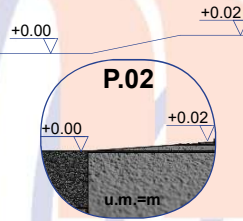
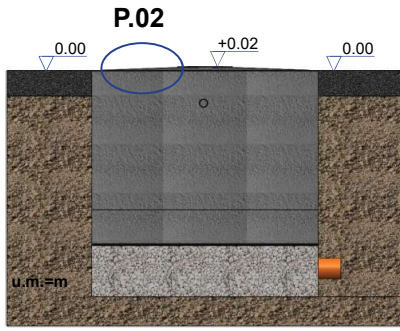
To lift the extractable structure, it is necessary a lifting arm. Lead the cables from the cockpit to the buried formwork.

8



Gradually insert the concrete verifying that the hole is filled uniformly. Deal the concrete so as to not to leave empty pockets of air, especially below the bollard.

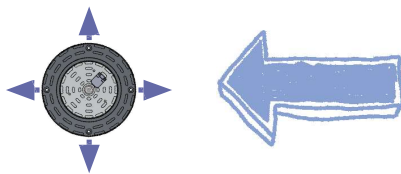
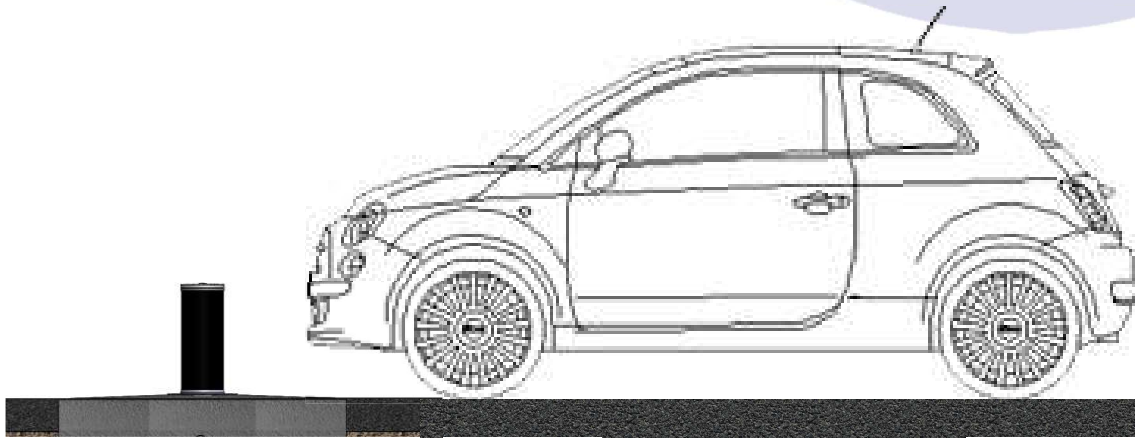
9



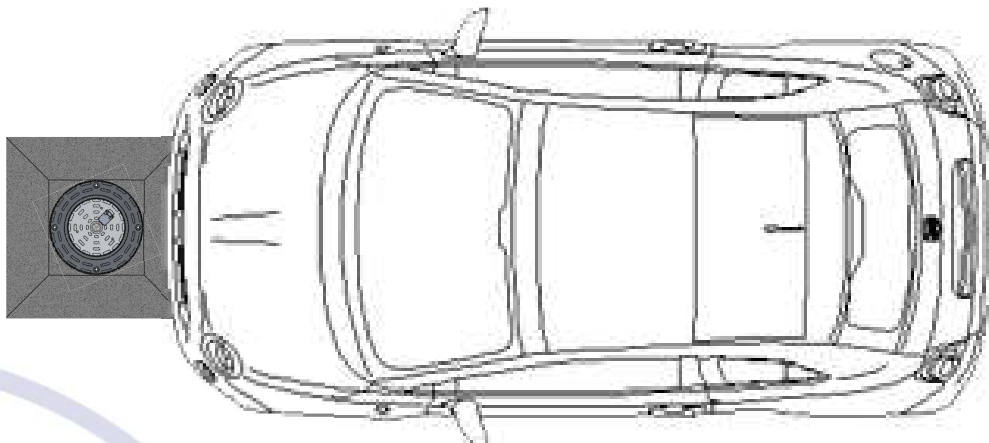
N.B. Make the connection



Make sure that the concrete is solidified before to insert the extractable structure.



N.B.:
Remove the protections of polystyrene from the runner

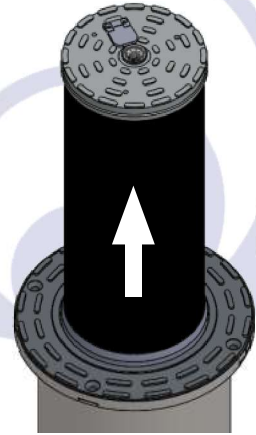


OPERATION OF ASCENT AND DESCENT



Ascent of the bollard:

- open the cover on the head of the bollard
- insert the key supplied
- push the head of the bollard and at the same time, turn the key counterclockwise until the stop (be careful, in the opening mechanism there is a gas spring)
- the bollard goes up.



Descent of the bollard:

- open the cover on the head of the bollard
- insert the key supplied
- push the head of the bollard and at the same time, turn the key counterclockwise until the stop (be careful, in the opening mechanism there is a gas spring)
- lower the bollard by pushing it down until its closing.

