

L1W4 BOX Barrier for central lane

INSTALLATION MANUAL

Name of the system: L1-DS-MARC



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Installation manual Rev.001 - February 2024

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1. General information

This document represents the assembly manual of the box beam steel barrier called L1-DS-MARC.

In detail, the device (see drawing MB-7680) consists of:

- | | |
|--|-------------|
| - T-profile beam thk. 4 mm | Dwg MB-1624 |
| - C post 120x80x30 thk.5 mm | Dwg MB-7618 |
| - Connection sleeve to the post thk. 5 mm. | Dwg MB-2047 |

CE N. 0402-CPR- C500447 with valid revision issued by RI.SE.

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All the operations described in this document and the operational phases have been studied for the correct assembly and functioning of the barrier, any modification must be agreed upon and authorized by Marcegaglia Buildtech srl.

Careful attention must be paid to the operations and sequences of complete tightening of the screws in order to avoid assembly problems in subsequent stages.

2. Assembly conditions

The L1-DS-MARC barrier has been specifically designed for use as central lane system for installation in the ground.

The accessibility to the installation area has to be verified by means of a pile-driver, as well as the absence of obstacles above and underneath the surface (trees, walls or pipes, channels, etc.).

3. Preliminary operations

For an efficient installation we recommend starting by placing the necessary material on the ground along the barrier installation line.

In particular, after having defined the section to install, it is recommended to position horizontally on the ground the T-profile (*part. 3*) with the wire along the positioning line of the posts.

Positioning must be carried out precisely, especially at the ends connected by the U-shaped sleeve (*part. 2*).

At this point you can proceed to drive the first post (*part. 1*) of the section with the pile driver and then a line is stretched which ensures the correct alignment of the subsequent posts. During the driving of the first post the height must also be taken care of in order to obtain the correct height of the finished barrier.

Normally, once the required quota is reached, the position of the pile-driver is marked, in order to have a precise reference for the driving of all the next posts.

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4. Installation of the posts

Having observed the above requirements, the positioning of the poles becomes quick and precise because:

- the longitudinal pitch is given by the position of the U-shaped sleeve connecting the beams
- alignment is ensured by the line
- the driving height is ensured by the reference on the pile driver.

The vertical height of the post head can vary with a tolerance of +/- 1 cm and must be checked carefully as it determines the height of the barrier.

The verticality of the post in the two directions (axial and orthogonal) must be taken care of and is obtained through appropriate movements of the pile driver machine. Deviations of 3° are tolerable, higher inclinations must be evaluated depending on the position and distribution of the posts concerned.

5. Installation of the barrier

The connection sleeve (*part. 2*) is positioned on the head of the post and fixed to the latter with two M12x50 bolts (*part. 4*). Then you lift the T-beam and place it on the sleeves of two consecutive posts. Proceed with the insertion of the 16 M16x35 bolts (*part. 5*) at the rate of n. 8 bolts for each post. At this point it is also possible to position and fix the subsequent sleeves and thus the corresponding beams. Vertical alignment is ensured by the correct preliminary positioning of the posts. The tolerance of the distance between the poles depends on the slots of the sleeve for a value of +/- 15 mm.

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6. Tightening of the bolts

The M12 x 50 bolts (*part. 4*) that connect the U-shaped sleeve (*part. 2*) to the post (*part. 1*) must be tightened with a torque greater than or equal to 10 Nm.

Subsequently it is possible to tighten the M16 x 35 bolts (*part. 5*) connecting the T-profiles and sleeves with a torque greater than or equal to 50 Nm.

7. Installation on curves

This barrier can also be mounted in curved sections with a minimum radius of curvature equal to 40 m, there are appropriate slots that allow installation using the standard components.

Below the indicated measurement, an on-site survey and a specific drawing with possible sleeve adjustments are necessary.

8. Inspection and maintenance

This barrier does not require maintenance under normal conditions of use. It is recommended to check the tightening of the bolts every two years because in the event of vibrations due to traffic, loosening may occur.

In this case, subsequent tightening is required to bring the torque back up to the required torque.

9. Device restore

In the event of an accident, the damaged device must be restored.

Depending on the severity of the impact suffered, it is possible to replace the damaged elements, both the longitudinal profiles and the corresponding sleeves and posts.

In principle, it is recommended to replace the entire damaged barrier starting one span before the first deformed element (4.5 m) and up to one span after the last damaged element.

It is also advisable to compact the ground where the posts to be replaced are extracted.

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10. Durability

All elements are treated with a hot-dip galvanising process in accordance with UNI 1461, with minimum thicknesses and coatings depending on the thicknesses of the various elements.

11. Technical standards

UNI EN 1317-5 /2007 (road safety barriers)

UNI EN 22768: 1996 (tolerances)

12. Attachments and annexes

Assembly drawing MB-7680

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