

DR-46

Motorcycle Barrier Attenuator

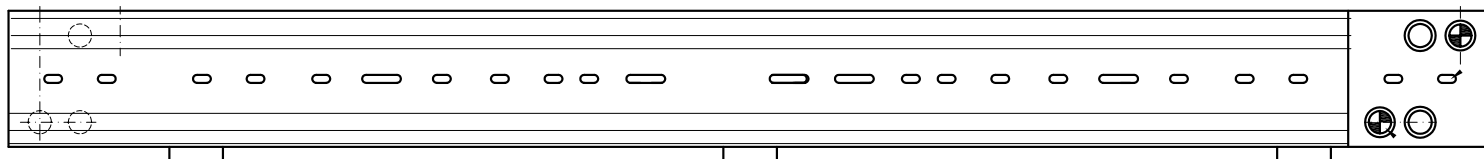


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Introduction

The DR46® Motorcycle Barrier Attenuator (MBA) consists of a series of hollow body modules with a specially designed “double wave” cross-section made from 5 mm polyethylene for outdoor applications (figure 1), end modules and necessary hardware to install the barrier. Each module is 3320 mm [10'-11"] long, 330 mm [13"] high and 215 mm [8.5"] thick. The effective installed length of a standard module is 3 m [9'-10"] (figure 2). Modules are held together by round bolts (M16x80), a nut, a flat washer and slot cover plate (figure 3).

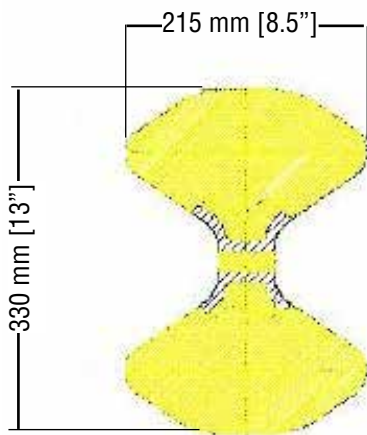


Figure 1: Cross-section of the DR46 module

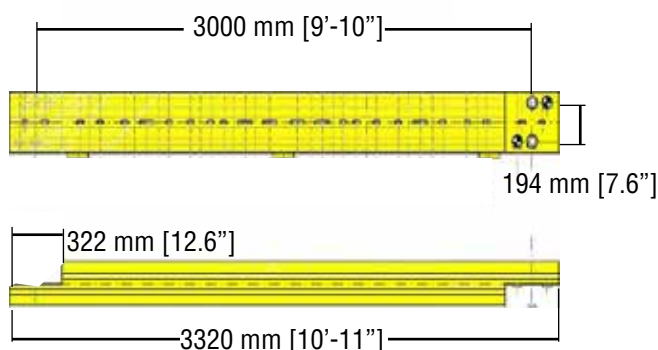


Figure 2: Standard module

The DR46 MBA is easy to install on steel guard rail posts. The system can follow a curve with a radius of 15 m [50']. Shorter, 1 m [3'-2"] modules are available and can be special ordered for tighter radius curves. Contact BSI Customer Service for more details.

The DR46 MBA is available in yellow or can be specified in other colors if necessary. The yellow color can also act as a warning for road users and is well received for context sensitive design projects.



Figure 3: Connection between modules

Recommended Tools

- Manufacturer's installation manual
- An assembly team (foreman and 4 workers)
- Two (2) pliers (BSI recommends using tie-pullers, available on request, if assembling large stretches)
- Two (2) CH24 Spanner wrenches for M16 bolts
- 1/2" [12.7 mm] drive Ratchet w/ attachments
- Shovel or spade
- Long pry bar
- Compressor
- Kneepads
- Traffic control equipment

Site Preparation

Begin preparing for the installation by thoroughly reviewing the specified barrier location and layout. Determine the number of segments required for the installation. The installed length of each DR46 Module is 3320 mm [10'-11"], with an effective length of 3 m [9'10"].

DR46 MBA must not interfere with the performance of a guardrail end terminal system. Do not install the DR46 MBA within the specified length of a guardrail end terminal system. A visual inspection should be carried out to confirm the suitability of all modules. Should visible damage be evident in any modules, they should be sent for inspection and refurbishment prior to use. Contact Barrier Systems Customer Service immediately.

Some problems may arise when positioning the MBA on a slope, mainly due to uneven terrain. Guardrail posts also may have "sunk" into the ground over time, thus greatly reducing the space available for installation of the DR46 MBA. Take these problems into consideration when assessing the suitability of the existing guardrail for installation of the DR46 Motorcycle Barrier Attenuator.

Estimated Time for Installation

With the use of proper tools and trained crew of 4 workers, the estimated time for installation is 15 minutes for every 100 m [328'] of DR46 Motorcycle Barrier Attenuator.

Installation

1) Determine Location and Position of Modules



Figure 4: Position the DR46 MBA modules where they will be installed

2.) Install Spacers if Applicable

If the DR46 MBA is to be installed on a wall or building that requires the use of spacers or shims, place the spacers and then fix them to the barrier posts using metal ties, passing them through the slots provided; the cushion modules should then be fixed to the spacers using the metal ties and the slot mentioned above (figure 5).

Note: To ensure proper performance of the DR46 MBA when installed to a wall or a building, please send drawings and/or pictures to Barrier Systems Customer Service Department for evaluation and recommendations.



Figure 5: Approved custom installation using spacers

3.) *Connect DR46 MBA Modules*

Starting from one end of the area, proceed by joining the modules together using the supplied bolts (figure 3). The bolts should be tightened by hand in order to speed up the process and to allow for movement of the modules as required during installation. Always use two M16x80 screws with the relevant nuts and washers for joining the modules.

The DR46 modules are centered for 2205 mm [7'-3"] post spacing. If post spacing is less, pass the supplied clamps through the holes and turn the clamps around the posts (figure 6). If post spacing is greater, additional posts should be installed on 2205 mm [7'3"] centers.



Figure 6: Pass cable ties through DR46 modules and attach to guardrail posts.

If installing the Motorcycle Barrier Attenuator on a slope, fix the modules directly to the guardrail posts using the ties and clamps supplied. In this phase the ties should only be tightened enough to keep the DR46 MBA in place and allow for alignment in a second phase (figure 7).



Figure 7: Position and attach the DR46 modules

4.) *Connect DR46 MBA End Modules*

Connect end modules at the beginning and end of the installation using M16x80 bolts. If placed at the start of a guardrail, first line the module up with the first post and attach with metal ties (figure 8).



Figure 8: Connect DR46 MBA end modules

5.) *Level the Ground Area Under the Modules*

The ground below the modules must be sufficiently flat, without any protruding objects or items that may interfere with DR46 MBA installation under the guardrail.

6.) *Secure Bolts and Ties*

Once all of the modules have been attached, ensure that the bottom edge of the modules rest on the ground or slightly above the ground.

At this point another person should then tighten and secure all the bolts and ties (fig. 9).



Figure 9: Secure all bolts and ties

Carry a shovel or spade with you to remove any soil at the bottom of the guardrail that may cause problems when installing the DR46 MBA. A long pry bar may be needed to pull the modules up against the guardrail posts before and during tightening of the ties so there is only a small gap between the ground and the guardrail.

Note: If modules are to be installed on guardrails that are flared from the road, please notify Barrier Systems, Inc. Engineering.

Maintenance

To ensure proper performance of the DR46 MBA System, routine inspections are required.

Routine Maintenance

- Remove any build up of dirt, debris and soil around or under the DR46 MBA modules.
- Remove any material that has settled on the DR46 MBA modules.
- Remove any other obstacles that might interfere with the proper performance of the barrier.

In the event of an impact;

- Remove and replace any damaged modules.
- Return undamaged modules to original position and retighten.

Spare Parts

A Standard Spare Parts Kit is available through Barrier Systems Customer Service Department.

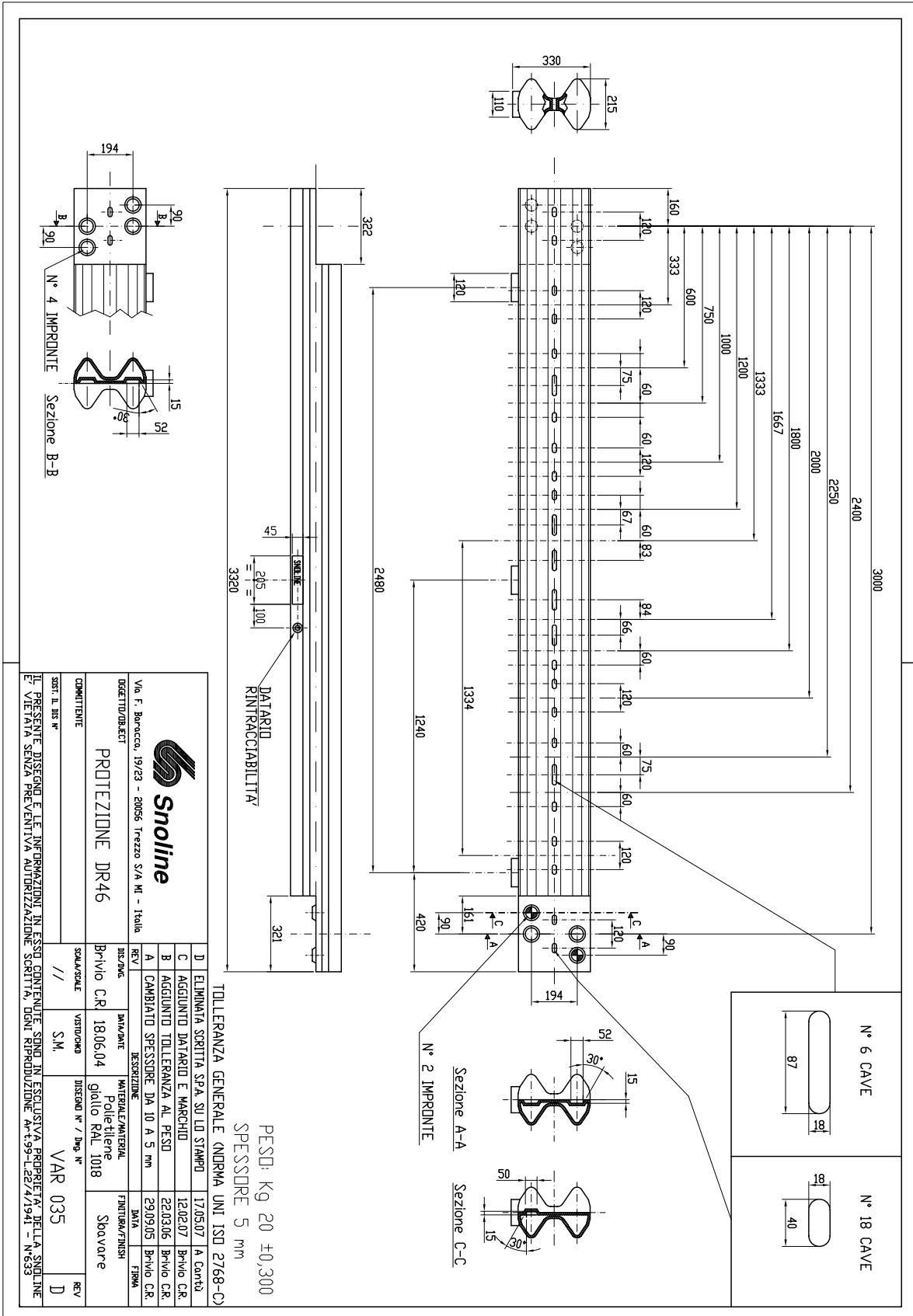
The spare parts kit includes

- Five (5) Standard modules
- Ten (10) Slot cover plates
- Nuts, bolts, washers and ties

If you need additional information please contact your distributor or customer service at 1-888-800-3691 or 1-707-374-6800.

Notes

Appendix





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Installation manual details for the DR-46 System are subject to change without notice to reflect improvements and upgrades.
Additional information is available from Barrier Systems Sales and Service © Lindsay Transportation Solutions