

Roller Stopper installation manual

Read this manual carefully before performance of work

There are three different methods to mount the Roller Stopper:

1. To a concrete surface with self-tapping anchors (Fig. 1).
2. To a concrete insert preliminary covered with concrete (Fig. 2).
3. To a driven pile (Fig. 3).



Figure 1. Self-tapping anchor

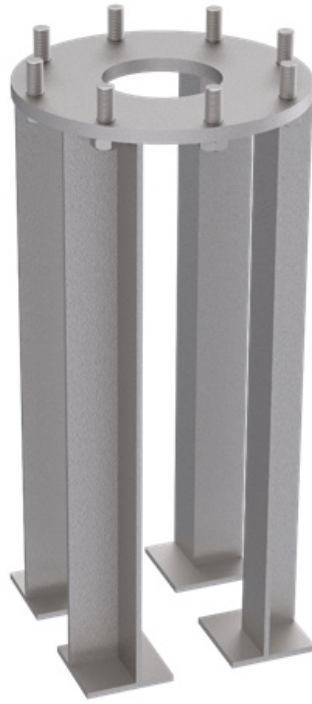


Figure 2. Concrete insert



Figure 3. Driven pile.

1. In the case of mounting the Roller Stopper posts with **self-tapping anchors**, it is recommended to use the holes in the metal supports of the barrier as templates to mark the holes. After marking, before drilling the mounting surface, put the supports aside. Drilling should be performed with a 10 mm drill bit to a depth of at least 120 mm (Fig. 4.1). If larger diameter drill bits are used, the anchor will lose its efficiency during the barrier service. Drilling products must be removed from the holes in the foundation (Fig. 4.2). Install the barrier posts in loco and tighten the anchors. The properly installed self-tapping anchor will screw in tightly, so it is recommended to use an impact wrench with a flexible shaft (Fig. 4.3 and 4.4). The impact wrench for screwing the self-tapping anchors which are supplied as component parts must provide a torque of 950 Nm and higher.

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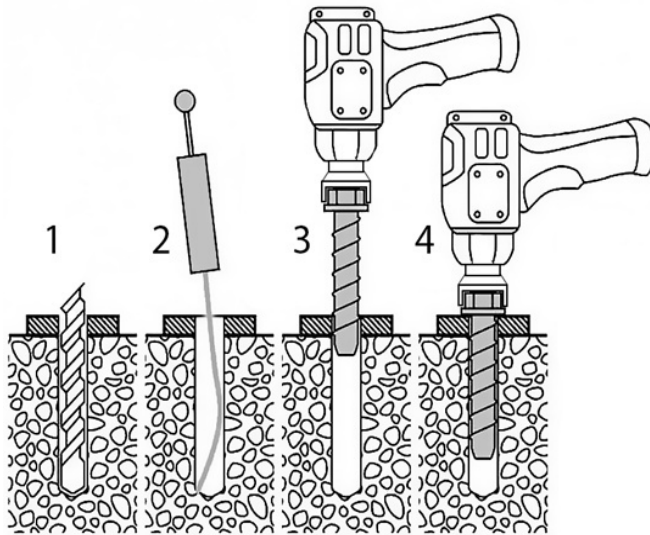


Figure 4. Barrier fixing with self-tapping anchors.

2. It is better to **pour concrete into concrete inserts** pre-assembled with a post or posts connected by bonds. It will make it easier to ensure the correct geometrical arrangement of concrete inserts.

The algorithm of concreting metal **inserts** for fixing Roller Stopper barriers is the following:

- 2.1. Mark the mounting locations. To do this, it is necessary to first place the assembled barrier in the place of future mounting and circle the support (supports) with at least 400-500 mm circle (circles).
- 2.2. Remove the flexible safety barrier from the mounting location.
- 2.3. Carefully remove asphalt or tiles from the mounting location if any present.
- 2.4. Remove crushed stone or gravel, if any present.
- 2.5. Use a hand drill or a drilling rig to drill holes in the soil with a diameter of at least 350 mm and a depth of at least 600 mm.
- 2.6. Lay a drainage layer of gravel 100 mm high at the bottom of each hole.
- 2.7. Put the inserts into the prepared hole. Check and ensure the correctness of their spatial orientation (verticality and height difference). The upper plane of the concrete insert should be located a few millimeters above the future level of concrete or coincide with it. The difference between the upper planes of the concrete inserts of one barrier should not be more than 3-5 mm.
- 2.8. Prepare 500 fiber-reinforced concrete mix.
- 2.9. Pour concrete into the hole.
- 2.10. Leave the concrete foundations until the concrete hardens completely.
- 2.11. If there was a tile at the mounting location, then at this stage it is necessary to put the tile back in place around the mounted support.

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3. Where that is not possible to use self-tapping anchors or concreting inserts, it is necessary to use **driven piles**.
 - 3.1. Remove tiles or asphalt from places where piles are driven.
 - 3.2. Mark the places where piles are driven.
 - 3.3. Drive piles using a hydraulic digger.
 - 3.4. Install the Roller Stopper posts on the pile flange.
 - 3.5. Tighten the fastening nuts.

If it is necessary to assemble the Roller Stopper, this procedure is performed in the following sequence:

1. Insert M14 pins into the lower holes of the posts (Fig. 5).
2. Put on the lower bonds and tighten the cap nuts (Fig. 6).
3. Put the rollers on the posts (Fig. 7).
4. Insert M14 pins into the upper holes of the posts (Fig. 8).
5. Put on the upper bonds and tighten the cap nuts (Fig. 9).

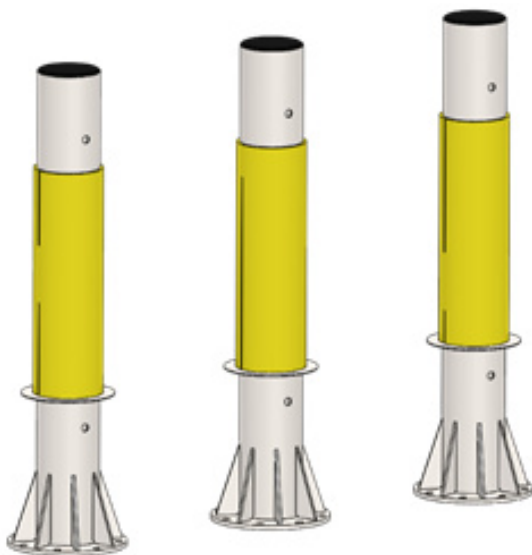


Figure 5.1. Prepare the posts for assembly.

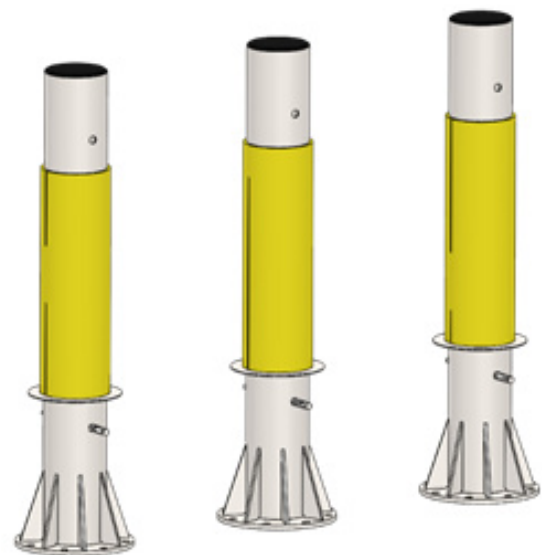


Figure 5.2. Insert M14 pins into the lower holes of the posts

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Figure 6. Put on the lower bonds and tighten the cap nuts

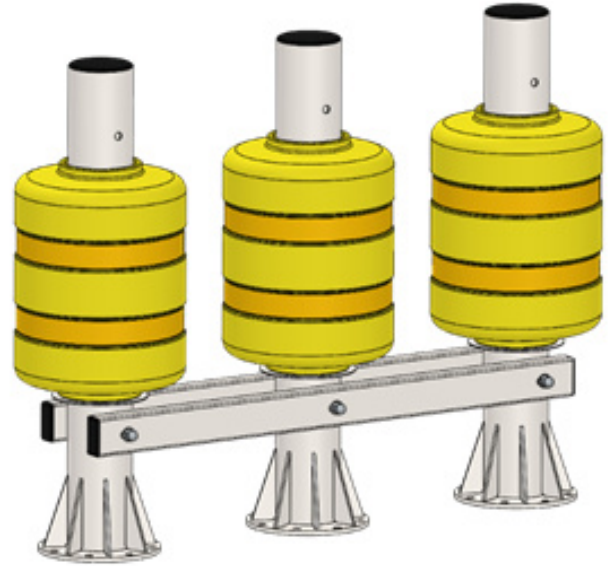


Figure 7. Put the rollers on the posts.

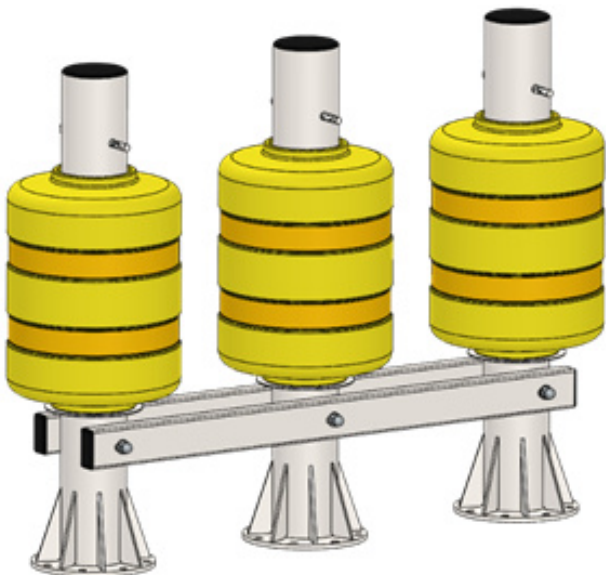


Figure 8. Insert M14 pins into the upper holes of the posts.

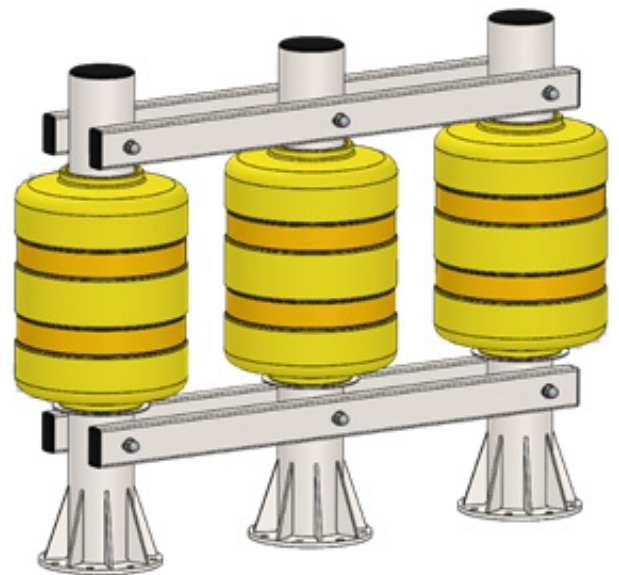


Figure 9. Put on the upper bonds and tighten the cap nuts.