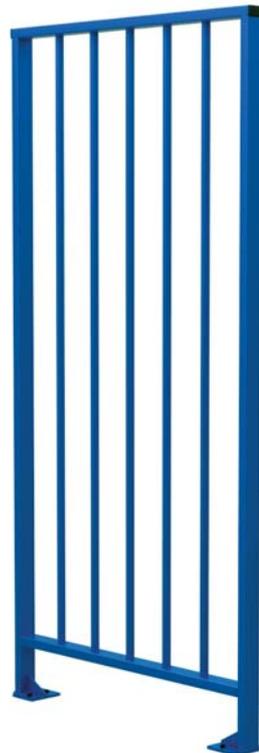




Full Height Railings

MB-16

INSTALLATION AND OPERATION MANUAL



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Installation & Operation Manual



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Dear Customers!

We thank you for choosing the railings manufactured by PERCo. You have purchased the high quality product which will be long lasting in operation provided that installation and operation rules are observed.

The installation manual (hereinafter – the Manual) for **MB-16** full height railings contains data necessary for transportation, storage, installation and maintenance of this product as well as the warranty obligations of **PERCo**.

1 APPLICATION

The **MB-16 full height railings** (hereinafter referred to as the “*Railings*”) are meant to separate the functional area at entrance points of facilities with high security requirements.

The railings are available in two modifications:

- main section **MB-16R**;
- extension section **MB-16D** (the latter does not have any fittings to be independently fixed to the floor, but is used to fill gaps of not standard size).

The railing sections of both modifications are made of a strong steel profile and steel pipes and have an effective combined coating for protection against external climatic influences.

It is possible to use the railings in two ways:

- As a separate railing system regardless of any access control device.
- As an option to **PERCo** full height access control devices (full height rotor turnstiles of **RTD-16** series, hereinafter referred to as the “Turnstile” and **WHD-16** full height electromechanical security gate, hereinafter referred to as the “Security gate”). The railings have the same design with the named devices and can be joined with them in a single construction.

The required quantity of the railing sections is calculated based on their dimensions (Ref. Section.

2 OPERATION CONDITIONS

The railings on resistance to environmental exposure are compliant with GOST 15150-69, category N2 (for outside usage under the roof protection).

Operation of the railings is allowed at ambient temperature between -40°C and +55°C and relative air humidity of up to 98% at +25°C.

3 TECHNICAL SPECIFICATIONS

Characteristics	Railings Modification	
	MB-16R	MB-16D
Length, mm	1000	700 ¹
Width, mm	120	60
Height, mm	2093	2093
Weight, kg	31	9

4 DELIVERY SET

4.1 Standard delivery set

The delivery set depends on the list and the number of fencing sections ordered by the customer.

Main Equipment:

MB-16R railing determined by the customer

MB-16D extension section determined by the customer

Documentation:

Installation & Operation Manual..... 1

Packaging:

Transportation box for **MB-16R** railing 1 pcs. for one section

Transportation box for **MB-16D** extension section 1 pcs. for one section

¹ When mounting can be reduced to 260 mm.

4.2 Optional equipment supplied on request

Additional mounting tools can be added to the standard delivery set upon request:

PFG IR 10-15 anchor with bolt M10	4 pcs. for one section MB-16R
Auxiliary support for railing	1 pcs. for one section MB-16R
Jagged barrier	1 pcs. for one section
Connecting components ² :	
brackets for connection of railing sections together, with a turnstile (or its canopy), with a gate or with a wall.	

5 PRODUCT DESCRIPTION

5.1 Main features

- Two possible ways of use – as a separate railing located on the passageway regardless of any other access control devices used or in addition to **PERCo** full height turnstiles and security gates making a joint construction with them.
- High corrosion resistance of the product, which is made of an aluminum alloy, ensures a long term service even in unfavorable environment.
- High strength polymer powder coating keeps surface undamaged even under heavy use.

5.2 Design and use cases

Design and dimensions of the railings is shown in Fig. 1. The options for using the railings sections and connecting elements are shown in the Figures 2, 3 and 4.

6 MARKING AND PACKAGING

Railings in standard delivery set are packed in transportation boxes in order to protect them from the damage during transportation and storage.

Refer to Table 1 for overall dimensions and weight of transportation boxes (as standard).

Boxes are labeled with the packaged product's name and additional marking stickers with a number of characters.

Table 1. Transport boxes for railing sections

Packaging Type	Box dimensions (length × width × height), mm	Weight of a box, kg
MB-16R	2200×1110×210	53
MB-16D	2080×767×133	23

7 SAFETY REQUIREMENTS

7.1 Installation safety requirements

The installation should be carried out only by the qualified personnel after the careful study of this manual.



Warning!

- Use only serviceable tools for installation.
- During the installation of the railing sections one should be especially careful to prevent them from falling.

7.2 Operation safety requirements



Don't!

- Do not subject the railings to jerks and hits;
- Avoid using substances that can cause surface damage when cleaning.

² For a list, see Fig. 4.

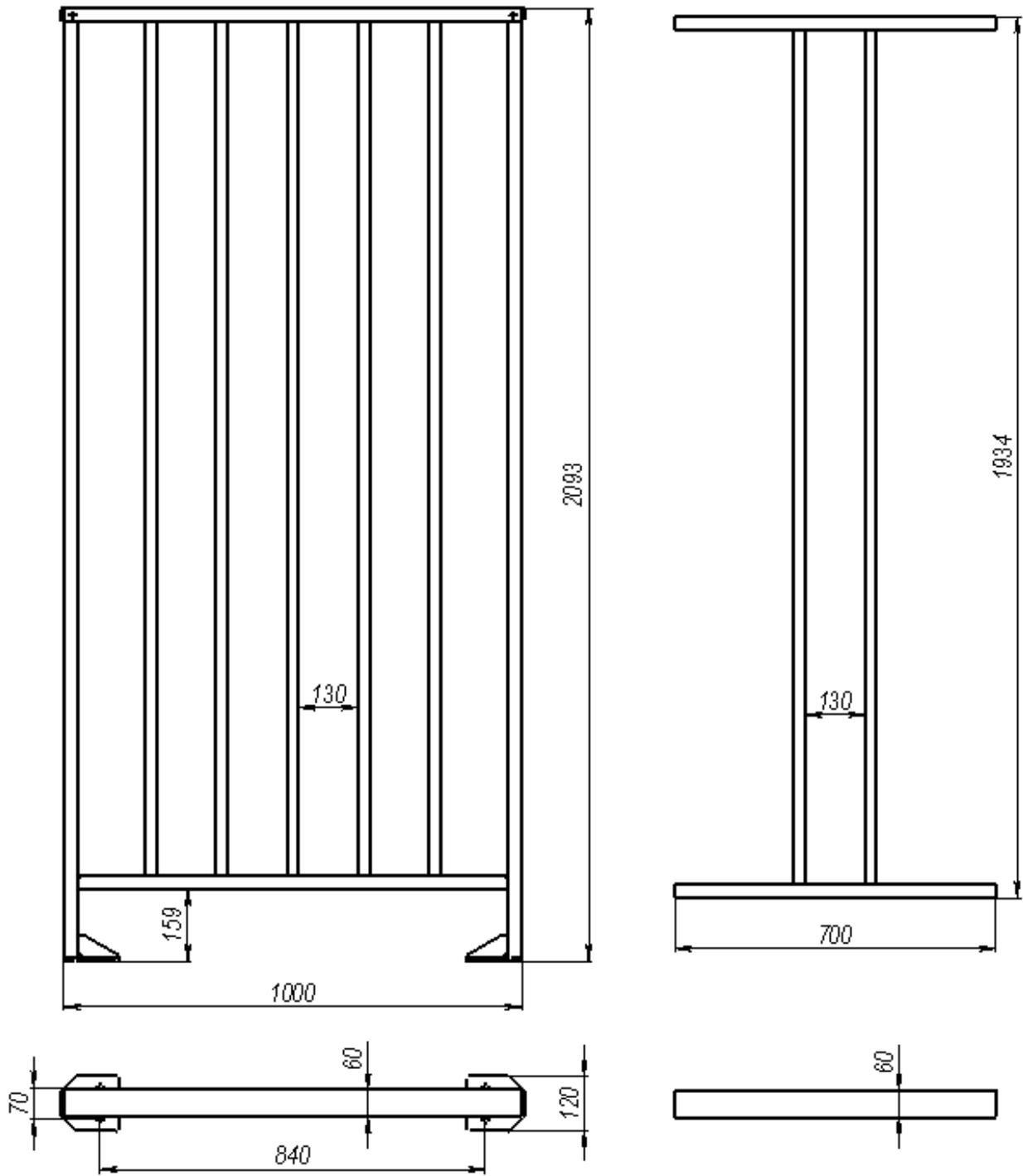


Figure 1. Overall view and dimensions *MB-16R* railing and *MB-16D* extension section ³

³ Distance between holes for fixing the main section to the extension section is shown on Fig. 5.

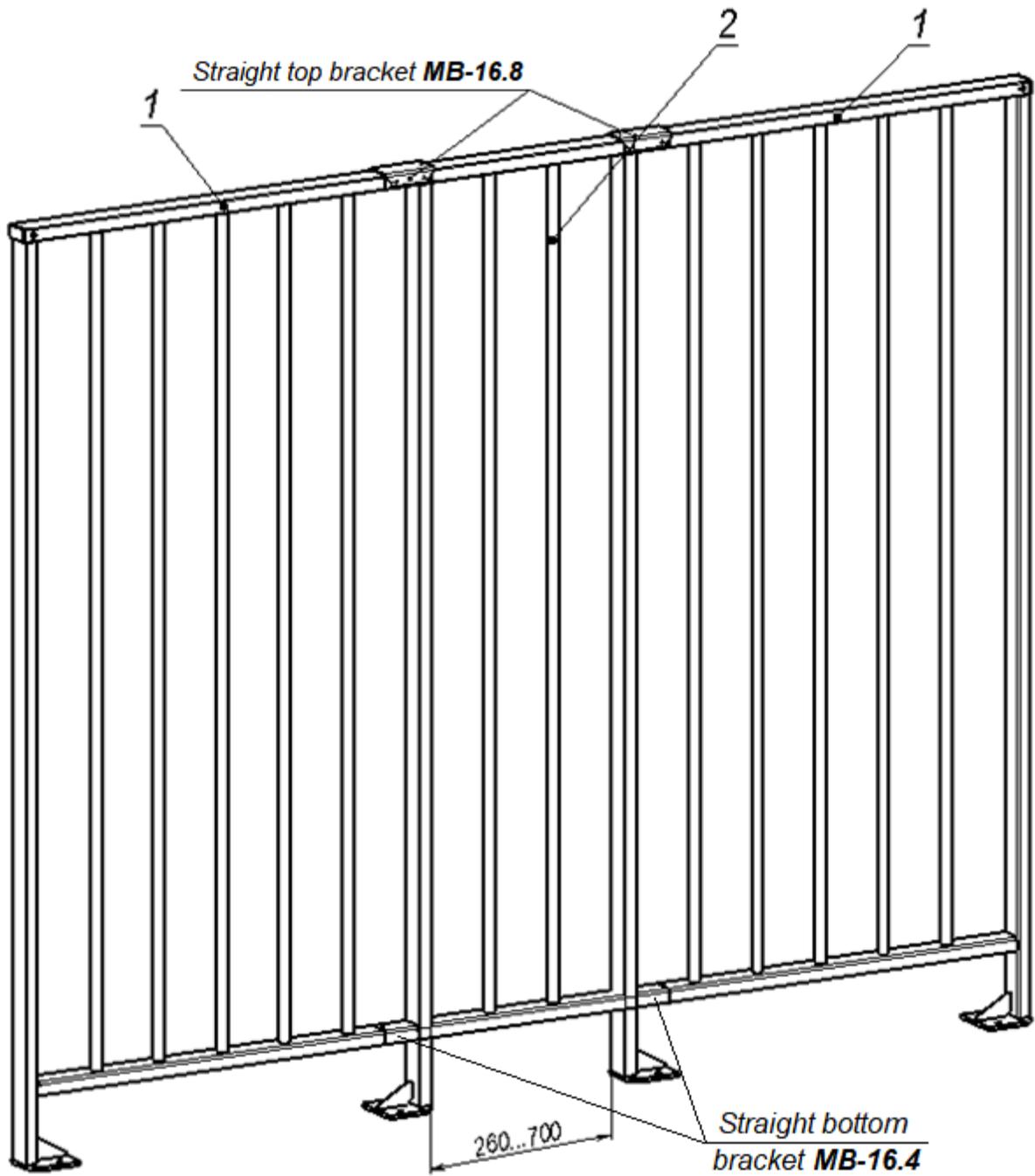


Figure 2. Sample design of the railings:

- 1 – **MB-16R** railings;
- 2 – **MB-16D** extension section

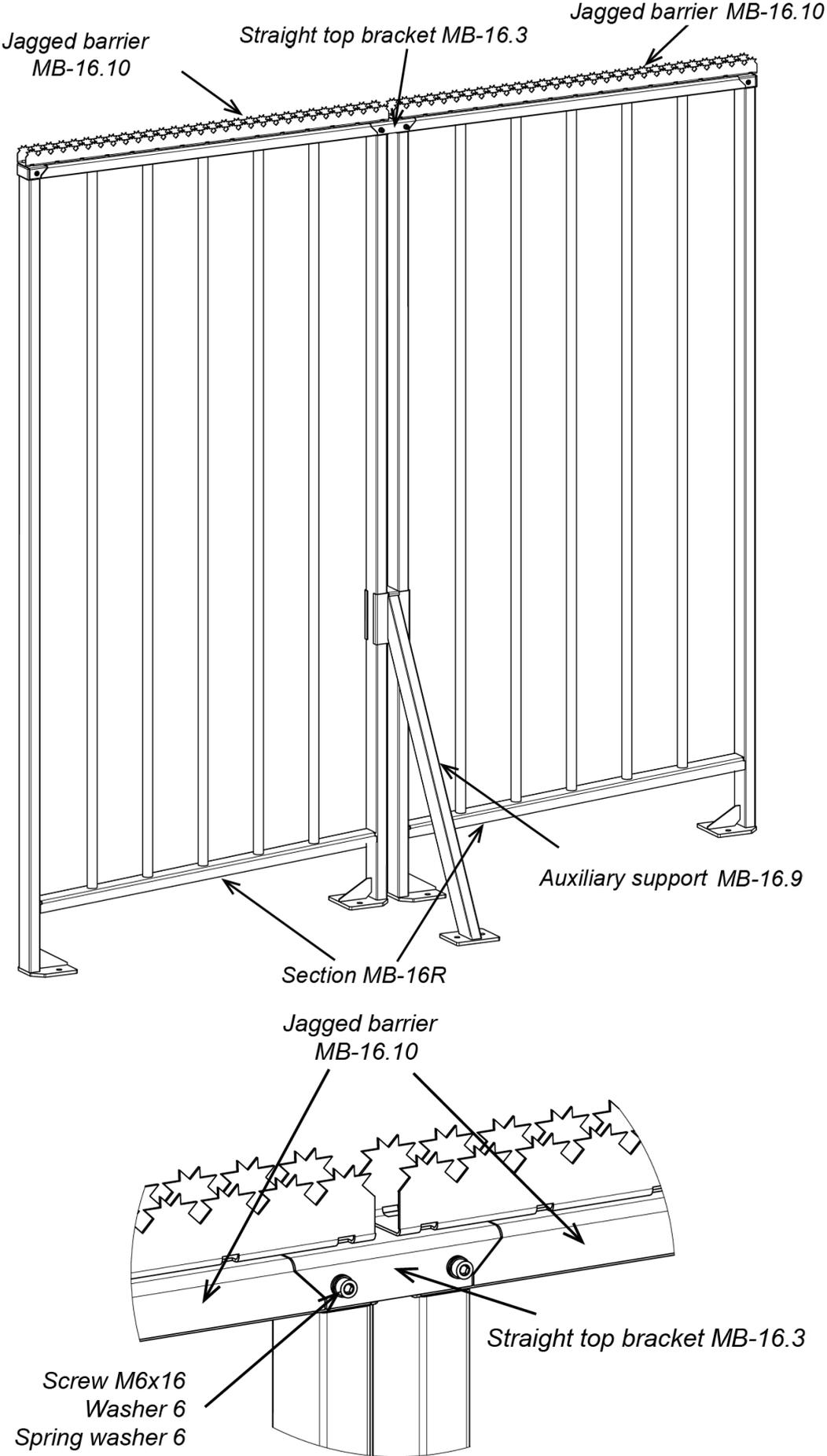


Figure 3. Sample design of the railings

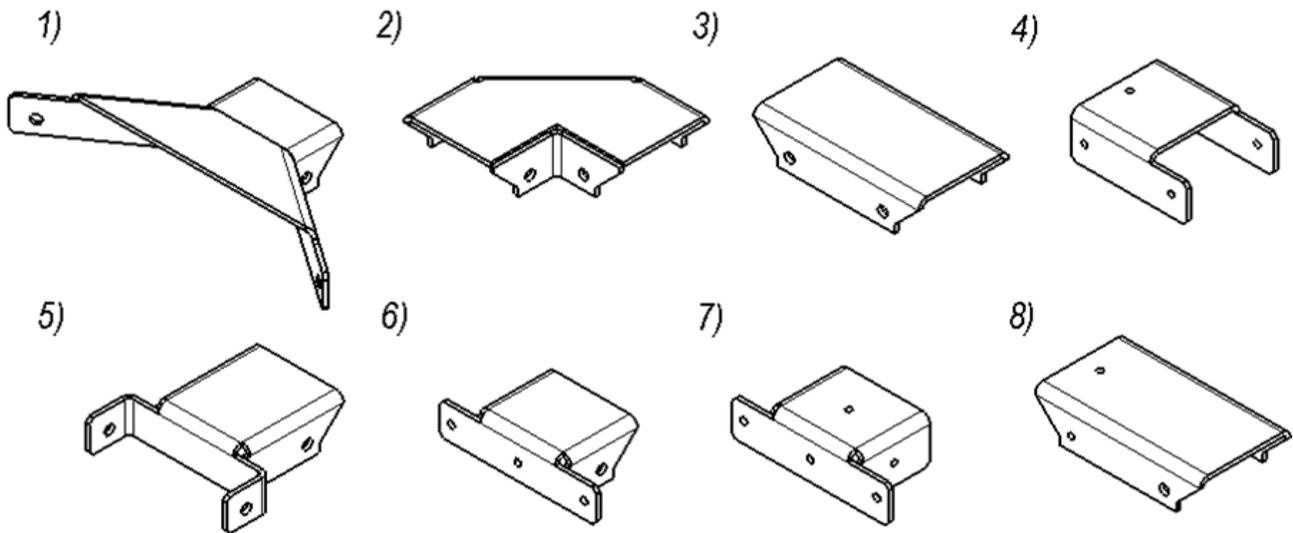


Figure 4. Types of connecting components:

- 1 – Y-shaped bracket **MB-16.1** (connection "section-turnstile");
- 2 – right angle bracket **MB-16.2** (connection "section-section");
- 3 – straight top bracket **MB-16.3** (connection "section-section");
- 4 – straight bottom bracket **MB-16.4** (connection "extension section-section");
- 5 – H-shaped bracket **MB-16.5** (connection "section-turnstile");
- 6 – T-shaped bracket **MB-16.6** (connection "section-wall");
- 7 – T-shaped bracket **MB-16.7** (connection " extension section-wall");
- 8 – straight top bracket **MB-16.8** (connection "extension section- section")

8 INSTALLATION

8.1 General recommendations

Installation of railings is an important operation which impacts serviceability and life time of the product. Prior to installation works carefully study this section and follow the instructions given here.



Warning!

The manufacturer is not liable for the damage of railings or any other equipment, as well as for other damages caused by improper installation and rejects any claims of the customer if installation was performed with violation of the manual instructions.

Installation recommendations:

- At least two qualified installers should carry out installation works.
- Install railings on strong and level concrete or stone foundations (concrete with characteristics not less than mark 400, strength B22.5), at least 150 mm thick.
- If the foundation is not strong and level enough use reinforced foundation plates of 300×300×300 mm size.
- Before the railings installations check the horizontality and flatness of the foundation and align it if necessary; the maximum allowable deviation is 1.5 mm.

Recommendations for preparing of holes for installation of **MB-16R** are given on condition that PFG IR10-15 (16×60 mm) anchor bolts for concrete floors are used. 4 anchor bolts shall be used for installation of one section.

8.2 Installation tools

- 1.2 – 1.5 kW hammer drill;
- Angular cutting machine 0.6 kW;
- An electric drill 0.6 kW;
- Ø16 mm hard alloyed drill bits;
- Drill bit Ø3.5 mm;

- Socket wrench S13; S17;
- Allen key SW4; SW6; SW14;
- Cross-head screwdriver №2 150 mm;
- Flat slot screwdriver № 5 150 mm;
- Measuring tape 3 m;
- Plumb line and level;
- Two ladders with at least four steps.

**Note:**

The application of other instruments is allowed if it doesn't reduce the quality of installation works.

8.3 Installation of railings

Further in this section the installation operations are described in accordance with the recommendations given above.

1. Unpack the railings and check the delivery set compliance.
2. Mark out the installation holes on the mounting surface as per Figure 5.

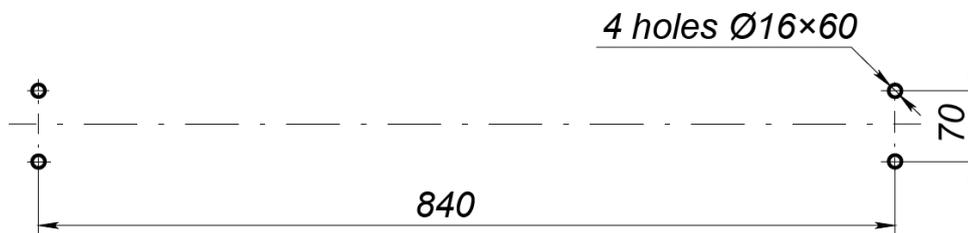


Figure 5. Installation holes for the MB-16R railing

3. Prepare the mounting holes. Insert the anchors as deep as possible into the holes prepared.

**Warning!**

In carrying out further works before fastening the railing sections be very careful to protect sections from falling.

4. Fasten the **MB-16R** railing with bolts, tighten it only preliminary using little efforts, providing an opportunity of the deviation from the vertical section.
5. Check with the level if the section is installed vertically (mounting pads can be used.) Fasten the bolts properly.
6. The **MB-16D** extension section can be cut according to the gap width. The length of the additional section can be reduced to 260 mm if necessary (Ref. Figure. 2).

**Note:**

The manual provides information on connection of railing sections together with corresponding brackets. Different types of connection with a turnstile (or its canopy), with a gate or with a wall and necessary tools, and also the installation order are not provided. This information is provided by assembly documents for specific complex order of equipment.

7. To the joints between the sections apply corresponding fastening brackets and mark $\text{Ø}3.5$ mm through the existing holes in the brackets for screws).
8. Drill holes according to the marked out pattern $\text{Ø} 3.5$ mm, and connect the **MB-16R** railing and **MB-16D** extension section together using fastening brackets and screws.
9. Check all the bolted connections of the railings and fasten them if necessary. The railing is installed.

Please contact **PERCo** technical department if you need assistance.

9 TRANSPORTATION AND STORAGE

Railings in the original package should be transported in closed type cargo transport units only (trains, containers, closed vehicles, in the holds, planes, etc.).

During the transportation the boxes can be stacked in 2 rows.

Storage of the railings is allowed indoors at ambient temperature between -40°C and +55°C and at relative air humidity up to 98% at +25°C.

The storage room should be free from acid vapors, alkalis and gases that can cause damage.

After the transportation and storage of the railings at low temperatures or at high air humidity it must be kept unpacked for not less than 24 hours indoors within normal climate conditions corresponding to the operation conditions prior to installation.

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