

MS magnetic scale installation guide for LM10 and LM15 readheads

EMC compliance



The LM10 and LM15 encoder systems conform to the relevant harmonised European standards for electromagnetic compatibility as detailed below.

BS EN 61326

Patents

Features of RLS's encoder systems and similar products are the subjects of the following patents and patent applications:

GB 0720972.9	EP 0514081
EP 0388453	US 5,241,173
US 5,063,685	JP 3,202,316
JP 2837483	

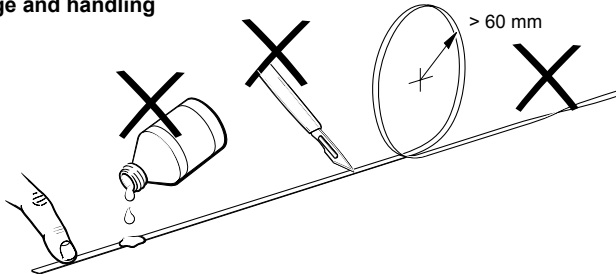
Further information

For further information relating to the installation of LM10 or LM15 encoder systems, see also the LM10 or LM15 Data sheet (part no. LM10D01 and LM15D01) and the LM10 or LM15 installation guide (part no. LM10D06 and LM15D02). These can be downloaded from www.rls.si.

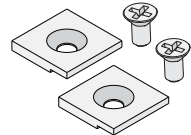
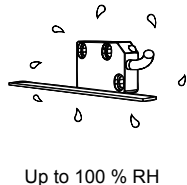
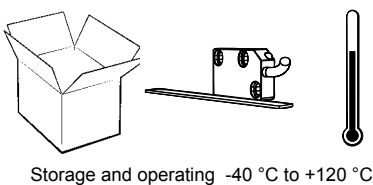
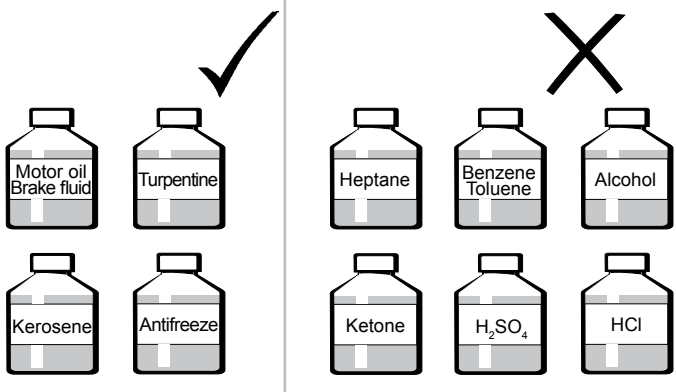
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Storage and handling



WARNING: The MS magnetic scale should not be exposed to magnetic field densities higher than 50 mT on its surface. Magnetic fields higher than 50 mT can damage the scale.



System description

The LM10ASC00 applicator tool for magnetic scale is mounted in place of any RLS[®] LM10 or LM15 readhead and uses motion of the axis to apply the MS magnetic scale parallel to the guideway – a one man, one hit operation. The scale applicator tool consists of a guide plate, 2 spacers and 2 mounting screws.

The LM10ARM00 applicator tool is a self-aligning tool for stick-on reference mark.

The LM10ECL00 end clamp kit has been designed to anchor the ends of the scale. Included in the kit are 2 end clamps and 2 screws M2.5 × 6 DIN 965. Depending on the specific installation end clamps may or may not be suitable or required.

Scale installation (including instructions for optional end clamps and cover foil)

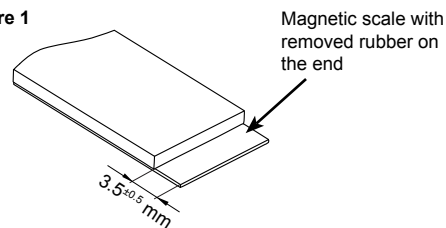
1. Prepare the mounting surface

If you are using the original RLS[®] end clamp kit LM10ECL00, drill the holes to the mounting surface according to the Scale and end clamp installation drawing on Page 2. Otherwise, proceed with the magnetic scale installation from step 3 onwards.

2. Prepare the magnetic scale

If the scale has not been ordered prepared for installation with end clamps, please ensure the rubber surface of the scale ends has been cut and removed according to Figure 1.

Figure 1



3. Install the applicator tool

Mount the applicator tool to the readhead bracket as shown in Figure 2. Use two screws as per readhead mounting configuration (Figure 3). Ensure the mounting surface for the magnetic scale has been cleaned and degreased before proceeding.

Figure 2

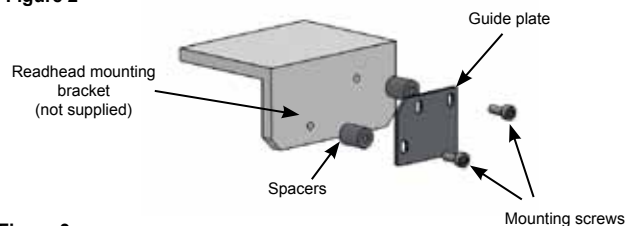
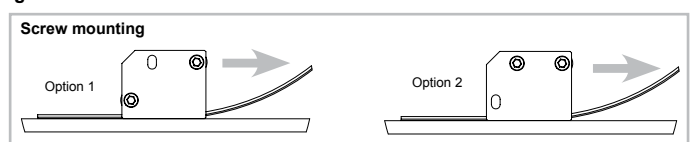
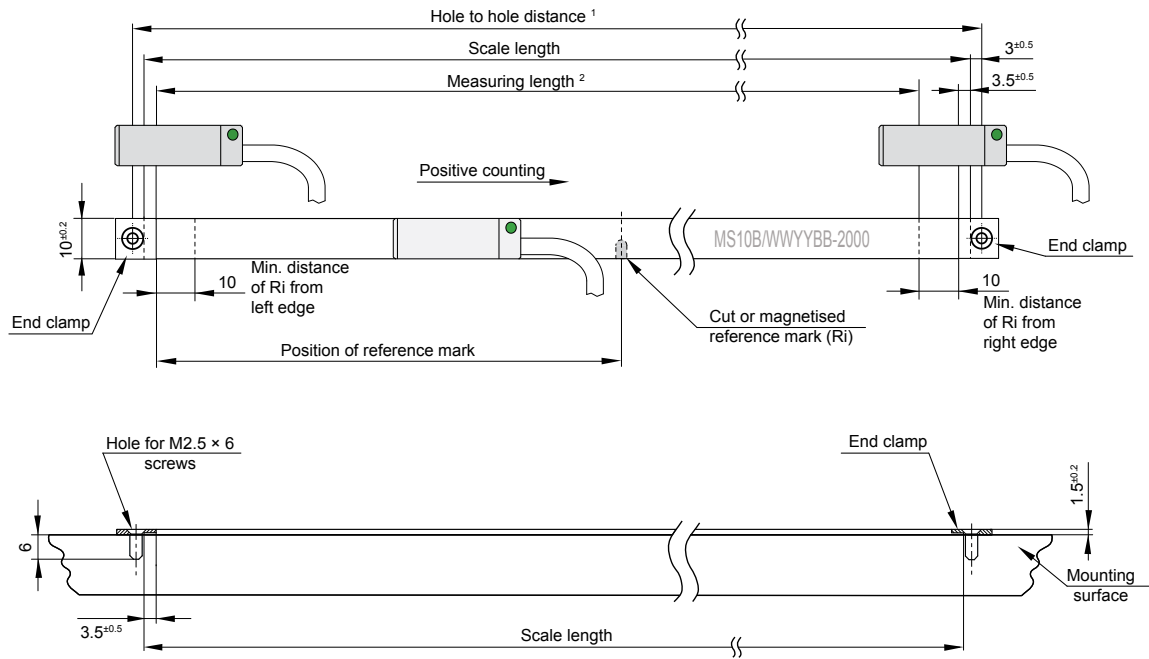


Figure 3



Scale and end clamp installation drawing



- ¹ Hole to hole distance = scale length + 6^{±1} mm
² Measuring length = scale length - 17 mm

4. Load the scale into the applicator tool

Separate the backing paper from the first 40 mm of scale and feed it into the applicator tool.
Push the scale carefully through to the end of scale mark, ensuring that it does not stick to the mounting surface until it is in position.

NOTE: To prevent the scale sticking to the mounting surface during this operation it may be necessary to re-apply approximately 20 mm of backing paper to the end of the scale before inserting through scale guide.

Attach the end of the scale to the mounting surface with light finger pressure.

5. Apply the scale

Traverse the axis through its full travel at a slow, steady speed. While moving the axis:

- Apply a light finger pressure to the scale behind the applicator tool to attach it to the mounting surface.
- Gently pull the backing paper away from in front of the applicator tool as it is separated.

6. Remove the applicator tool

When the applicator tool has reached the limit of its travel, lock it in place and unbolt it from the readhead mounting bracket.

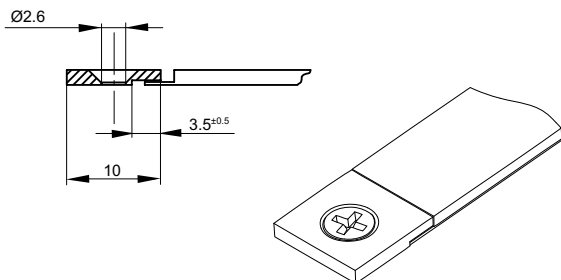
7. Ensure complete adhesion

Apply firm finger pressure along the full length of the scale from the centre outwards to each end.

8. Install the end clamps (if used)

Use the enclosed screws and screw the end clamps ensuring the end of magnetic scale is held under the clamp (Figure 4).

Figure 4



9. Apply cover foil (if used)

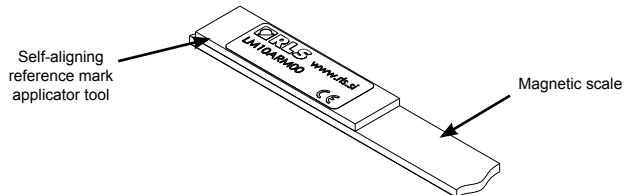
Degrease the scale surface with alcohol and install as per scale installation instructions in step 3 onwards.

The following steps apply for LM10 system only

10. Apply the stick-on reference mark (if used)

Place the LM10ARM00 reference mark applicator tool on scale in the correct orientation/required position along the length (Figure 5).

Figure 5

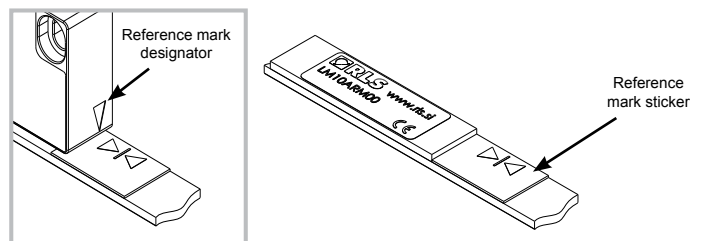


11. Stick the reference mark on the scale

Remove the backing tape from the reference mark sticker and carefully attach it to the surface of the scale by placing it next to the applicator tool (Figure 6).

NOTE: The correct orientation of reference mark is crucial. The mark on the sticker should be on the same side as the reference mark designators.

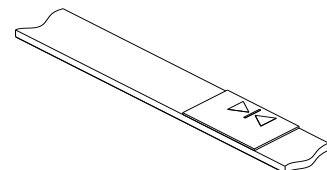
Figure 6



12. Remove the stick-on reference mark applicator tool

Remove the applicator tool leaving the reference mark sticker in the desired position (Figure 7).

Figure 7



DO NOT remove the scale for refitting or use elsewhere once it has been applied to the mounting surface. The scale can be applied once only.