



# HEIDENHAIN



Product Information

## **Mechanical Reference Point**

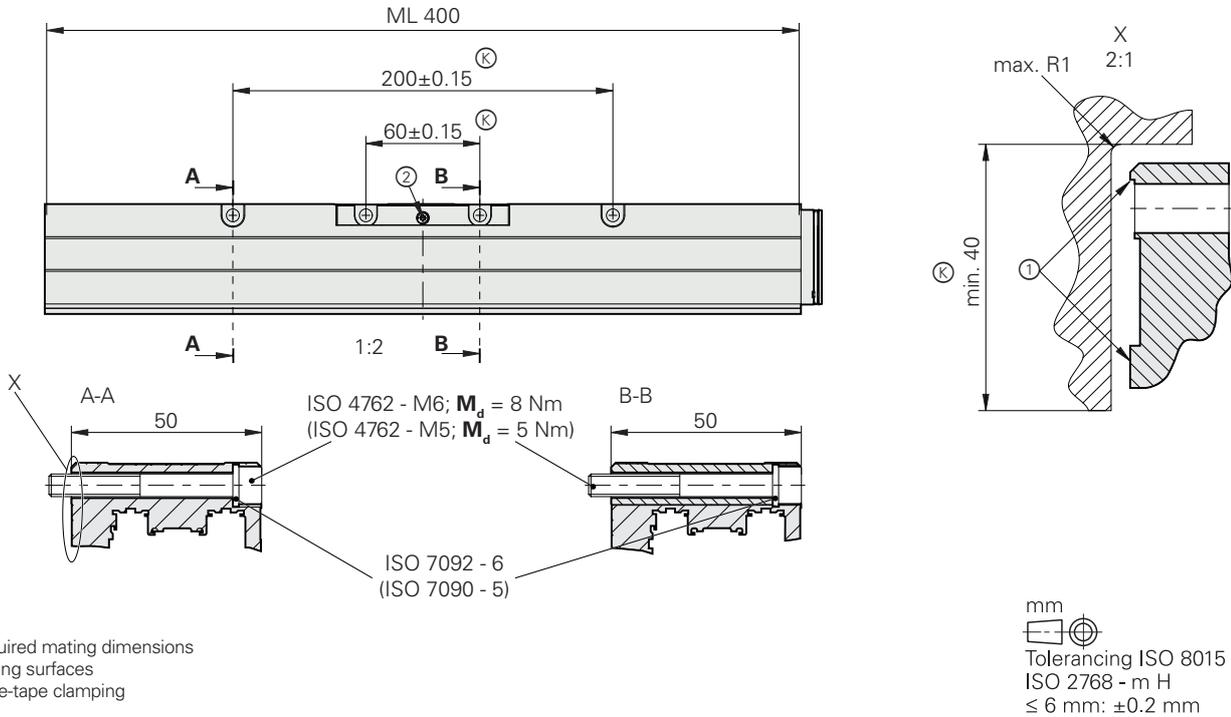
Accessory for Multi-Section  
Linear Encoders

# Mechanical reference point

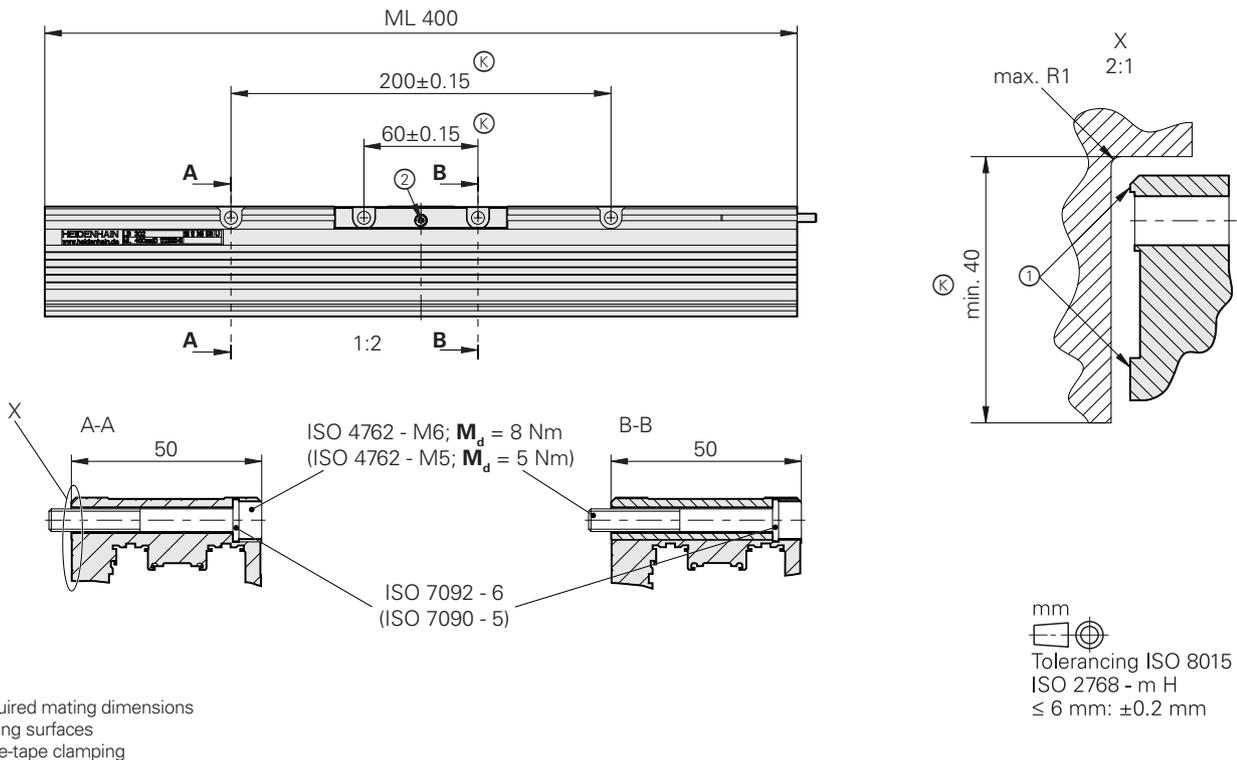
Accessory for multi-section linear encoders

- Definite reference between scale tape and machine base
- Increases repeatability when positioning
- Reduces deviations resulting from a unilateral thermal load

## Mechanical reference point for LC 201



## Mechanical reference point for LB 302



### Thermal characteristics

Machine parts expand under the influence of heat, thus causing position deviations during machining. In order to minimize these thermal influences, linear encoders are mounted on the machine base in such a way that the measuring standard of the linear encoder adapts itself to the actual thermal expansion of the machine base. However, on machine components with large dimensions, asymmetrical temperature influences can lead to deviations if, for example, the machine base heats up on only one side. The mechanical reference point can be used to establish a stable fixed point relative to the machine base at any location (e.g. center of a rotary table). This increases the reproducibility at this fixed point even under unstable thermal conditions.

### Function

The mechanical reference point clamps the scale tape of multi-section linear encoders at a freely selectable location on the machine base. This establishes a definite reference between the scale tape and the machine base. The mechanical reference point is used when increased repeatability is required when moving to a certain position relative to the machine base.

### Technical description

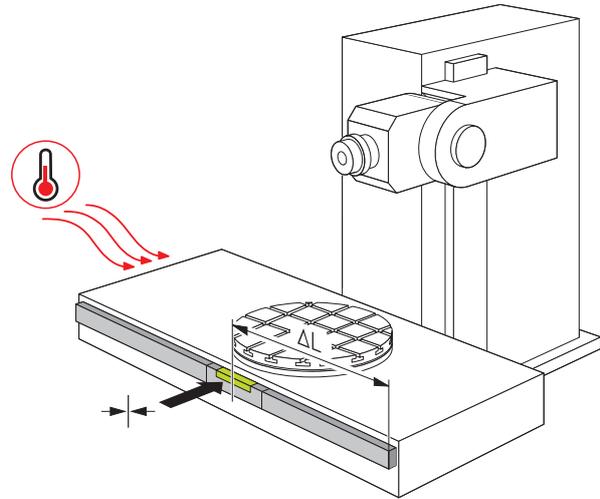
The mechanical reference point consists of a 400 mm long scale-housing section with a steel clamping device in the middle (see figures 1 and 2). The clamping device and housing are connected through solid-state joints in order to avoid thermal influences between the clamping device and housing. The scale-tape housing and the clamping device are each screwed to the machine base. After the multi-section linear encoder has been completely mounted, the scale tape is clamped with the clamping screw of the clamping device, thus creating a fixed connection between the scale tape and the machine base.

Features of the mechanical reference point for multi-section systems:

- Can be mounted at any position
- Easy and reliable mounting
- Provides a stable fixed point relative to the machine base over the entire operating temperature range of the machine

### Mechanical reference point

LC 201 ID 1200973-01  
LB 382 ID 1223300-01



Mechanical reference point on a machine tool



Figure 1: Mechanical reference point for LC 201



Figure 2: Mechanical reference point for LB 382

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# HEIDENHAIN

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## Further information:

Comply with the requirements described in the following documents to ensure correct operation of the encoder:

- Brochure: *Linear Encoders for Numerically Controlled Machine Tools* ID 571470-xx
- Mounting Instructions: *Mechanical Reference Point for LC 201* ID 1210007-90
- Mounting Instructions: *Mechanical Reference Point for LB 382* ID 1234488-90