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

ISO 4762 - M6; \( M_d = 8 \text{ Nm} \)  
ISO 4762 - M5; \( M_d = 5 \text{ Nm} \)

Mechanical reference point for LB 302

ISO 4762 - M6; \( M_d = 8 \text{ Nm} \)  
ISO 4762 - M5; \( M_d = 5 \text{ Nm} \)

K = Required mating dimensions  
1 = Mating surfaces  
2 = Scale-tape clamping

Tolerancing ISO 8015  
ISO 2768 - m H  
\( \leq 6 \text{ mm}; \pm 0.2 \text{ mm} \)
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
This Product Information document supersedes all previous editions, which thereby become invalid. The basis for ordering from HEIDENHAIN is always the Product Information document valid when the contract is made.

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