



## ***SPECTO/METRO*** Mounting Instructions

## Table of contents

<b>1</b>	<b>Basic information.....</b>	<b>3</b>
1.1	Validity of the documentation.....	3
1.2	Target groups of the Mounting Instructions.....	3
1.3	Notes on reading the documentation.....	4
1.4	Notes in this documentation.....	5
1.5	Units and tolerances.....	5
1.6	Symbols and fonts used for marking text.....	6
<b>2</b>	<b>Safety.....</b>	<b>7</b>
2.1	Personnel qualification.....	7
2.2	General safety precautions.....	7
<b>3</b>	<b>Items supplied and accessories.....</b>	<b>8</b>
3.1	Items supplied.....	8
3.1.1	Items supplied with the length gauge.....	8
3.1.2	Mounting accessories.....	8
<b>4</b>	<b>Mounting.....</b>	<b>9</b>
4.1	Mounting notes.....	9
4.2	Mounting the length gauge.....	10
<b>5</b>	<b>Connecting compressed air.....</b>	<b>11</b>
<b>6</b>	<b>Changing the measuring contact.....</b>	<b>12</b>
6.1	Removing the measuring contact.....	12
6.2	Inserting the measuring contact.....	12

## 1 Basic information

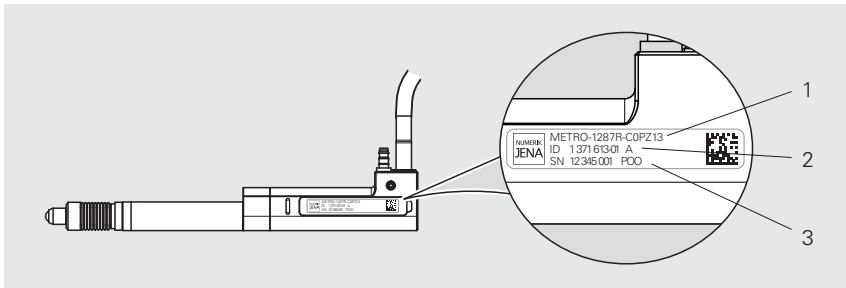
This chapter contains information about the product and the Mounting Instructions.

### 1.1 Validity of the documentation

These Mounting Instructions apply to encoders of the SPECTO/METRO series .

- Prior to using the documentation, check whether the documentation and encoder model match  
The encoder designation is printed on the ID label.

#### ID label



ID label with legend

- 1 Product name
- 2 Part number (ID)
- 3 Serial number (SN)

### 1.2 Target groups of the Mounting Instructions

The Mounting Instructions must be read and observed by every person who performs any of the following tasks:

- Design
- Mounting
- Removal

### 1.3 Notes on reading the documentation

#### **WARNING**

##### **Fatal accidents, personal injury or property damage caused by non-compliance with the documentation!**

Failure to comply with the documentation may result in fatal accidents, personal injury or property damage.

- ▶ Read the documentation carefully from beginning to end
- ▶ Keep the documentation for future reference

The following table lists the various parts of the documentation in their order of reading priority.

Document type	Description
Addendum	An Addendum supplements or supersedes the corresponding contents of the Operating Instructions and, if applicable, of the Mounting Instructions. If an Addendum is included in the shipment, it has the highest priority for reading. All other documentation content retains its validity.
Operating Instructions	The Operating Instructions contain all of the information and safety instructions for the proper and intended operation of the device. The Operating Instructions (English language version) are included in delivery and can also be downloaded in other languages from <b><a href="http://www.heidenhain.com/documentation">www.heidenhain.com/documentation</a></b> . The Operating Instructions must be read prior to commissioning the product. The Operating Instructions have the second highest priority for reading.
Mounting Instructions	The Mounting Instructions contain all the information and safety precautions needed for the proper mounting and installation of a product. The Mounting Instructions are not included in delivery and must be downloaded from <b><a href="http://www.heidenhain.com/documentation">www.heidenhain.com/documentation</a></b> . The Mounting Instructions have the third highest priority for reading.

## 1.4 Notes in this documentation

### Safety precautions

Precautionary statements warn of hazards in handling the product and provide information on their prevention. Precautionary statements are classified by hazard severity and divided into the following groups:

#### **DANGER**

**Danger** indicates hazards for persons. If you do not follow the avoidance instructions, the hazard **will result in death or severe injury**.

#### **WARNING**

**Warning** indicates hazards for persons. If you do not follow the avoidance instructions, the hazard **could result in death or serious injury**.

#### **CAUTION**

**Caution** indicates hazards for persons. If you do not follow the avoidance instructions, the hazard **could result in minor or moderate injury**.

#### **NOTICE**

**Notice** indicates danger to material or data. If you do not follow the avoidance instructions, the hazard **could result in property damage**.

### Informational notes

Informational notes ensure reliable and efficient operation of the product. Informational notes are divided into the following groups:



The information symbol indicates a **tip**.  
A tip provides important additional or supplementary information.



The book symbol indicates a **cross reference**.  
A cross reference leads to external documentation, for example: further documentation from NUMERIK\_JENA or another supplier.

## 1.5 Units and tolerances

Unless otherwise specified, the dimensions stated in these Mounting Instructions are given in millimeters.

Unless otherwise specified, the tolerances stated in these Mounting Instructions conform to ISO 8015 and ISO 2768 standards.

mm



Tolerancing ISO 8015  
ISO 2768:1989-mH  
≤ 6 mm: ±0.2 mm

## 1.6 Symbols and fonts used for marking text

In these instructions the following symbols and fonts are used for marking text:

Format	Meaning
▶ ... > ...	Identifies an action and the result of this action Example: ▶ Click <b>OK</b> > The function display is activated.
■ ... ■ ...	Identifies an item of a list Example: ■ TTL interface ■ EnDat interface ■ ...
<b>Bold</b>	Identifies elements of the user interface (e.g. menus, displays and buttons) Example: ▶ Click <b>Exit</b> > The verification has been completed.

### Have you found any errors or would you like to suggest changes?

We are continuously striving to improve our documentation for you. Please help us by sending your suggestions to the following e-mail address:

**userdoc@numerikjena.com**

## 2 Safety

This chapter provides important safety information needed for the proper mounting and installation of the product.

### 2.1 Personnel qualification

Mounting, initial configuration and removal must be conducted by a qualified specialist under compliance with local safety regulations.

### 2.2 General safety precautions

#### **WARNING**

##### **Danger of electric shock due to connection to unsuitable downstream electronics!**

If you connect unsuitable downstream electronics to the product, fatal accidents or severe personal injuries can occur.

- ▶ Connect the product only to downstream electronics whose supply voltage comes from PELV systems
- ▶ Pay attention to the "Prerequisites for the downstream electronics" section

#### **WARNING**

##### **Live plug connections**

If you disengage plug connections while the equipment is under power, this may result in fatal accidents or severe personal injury.

- ▶ Do not engage or disengage any connecting elements while the product is under power

#### **NOTICE**

##### **Property damage due to mechanical stress**

- ▶ Do not drop the product or subject it to major vibration
- ▶ Do not expose the product to mechanical stress

#### **NOTICE**

##### **Property damage due to electrical stress**

- ▶ Do not engage or disengage any connecting elements while the product is under power
- ▶ Do not touch the contacts of the plug connections

#### **NOTICE**

##### **Electrostatic discharge (ESD)!**

This product contains electrostatic sensitive components that can be destroyed by electrostatic discharge (ESD).

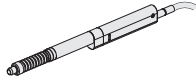

- ▶ It is essential to observe the safety precautions for handling ESD-sensitive components
- ▶ Never touch connector pins without ensuring proper grounding
- ▶ Wear a grounded ESD wristband when handling the connections of the product

### 3 Items supplied and accessories

This chapter contains information on the items supplied and the available accessories of the product.




#### 3.1 Items supplied

##### 3.1.1 Items supplied with the length gauge

Component	Figure
Length gauge	
Quality Inspection Document	

##### 3.1.2 Mounting accessories

The following accessories can be obtained separately from NUMERIK JENA.

Component	ID number	Figure
Clamping bush	1177968-02	
Clamping sleeve	386811-01	
Clamping sleeve (10 units)	386811-02	

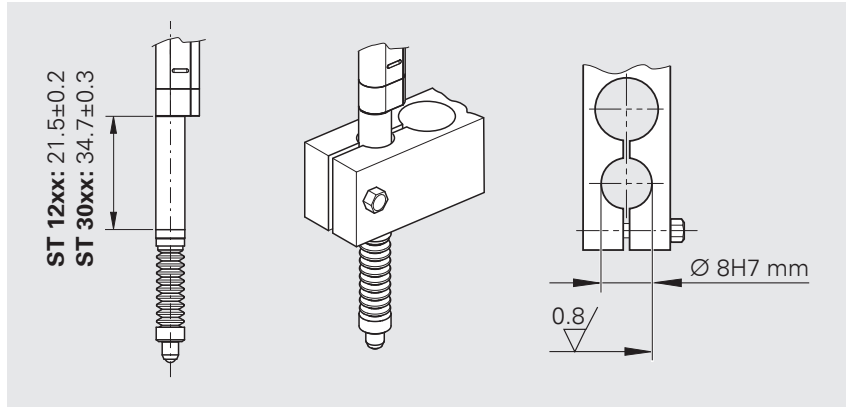


## 4 Mounting

This chapter includes notes on mounting and describes the proper mounting of the length gauge.

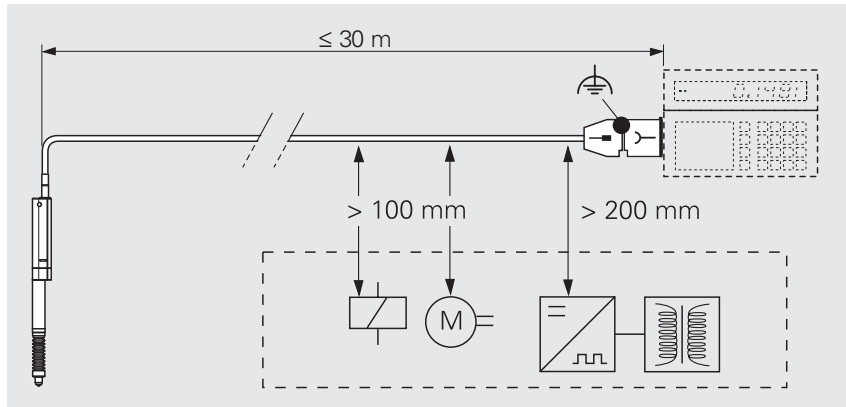
### 4.1 Mounting notes

**i** Observe the clamping area of the plunger.



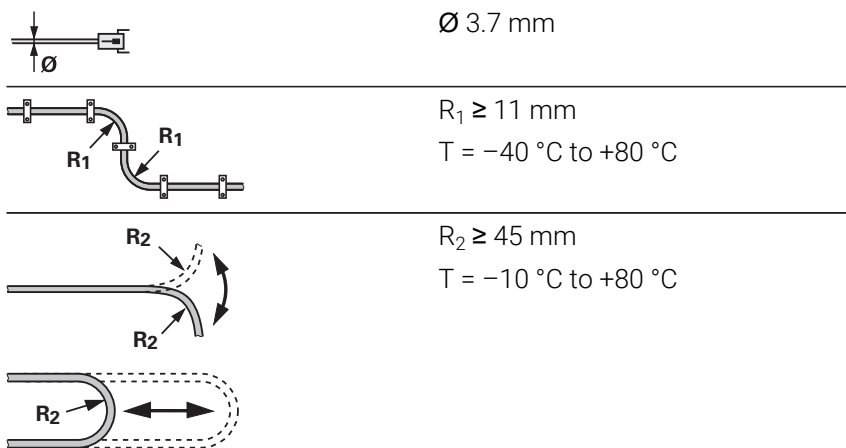
Clamping area of length gauge

**i** Observe the minimum clearance from noises of interference.



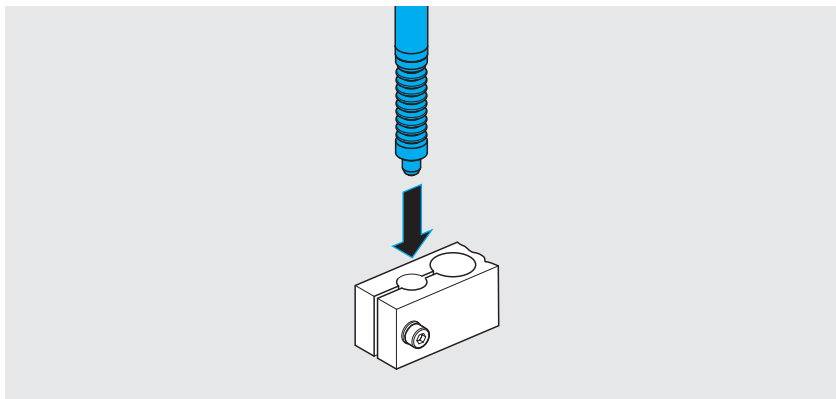
Minimum clearance from sources of interference

**i** Keep in mind the maximum permissible bend radii when routing the cable.



## 4.2 Mounting the length gauge

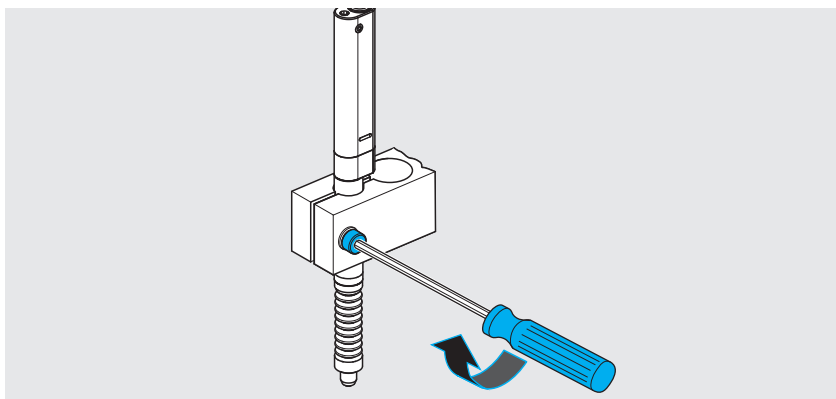
- ▶ Insert the length gauge in the fixture



Inserting the length gauge

**i** When tightening the screw, check the plunger for ease of movement. Excessive force jams the plunger.

- ▶ Tighten the clamping screw



Tightening the clamping screw

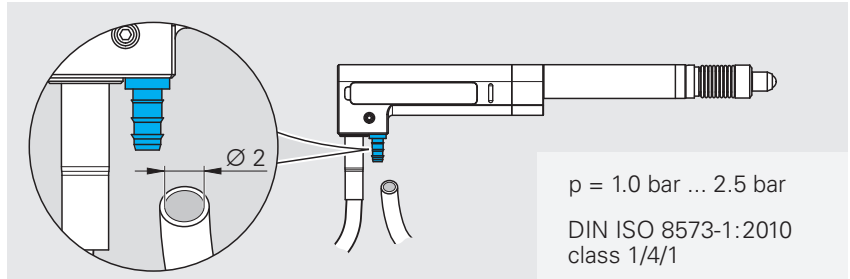
## 5 Connecting compressed air

This note applies only to pneumatic length gauges



Use a tube with an inside diameter of 2 mm when connecting compressed air.

- ▶ Connect the pressure tubing



## 6 Changing the measuring contact

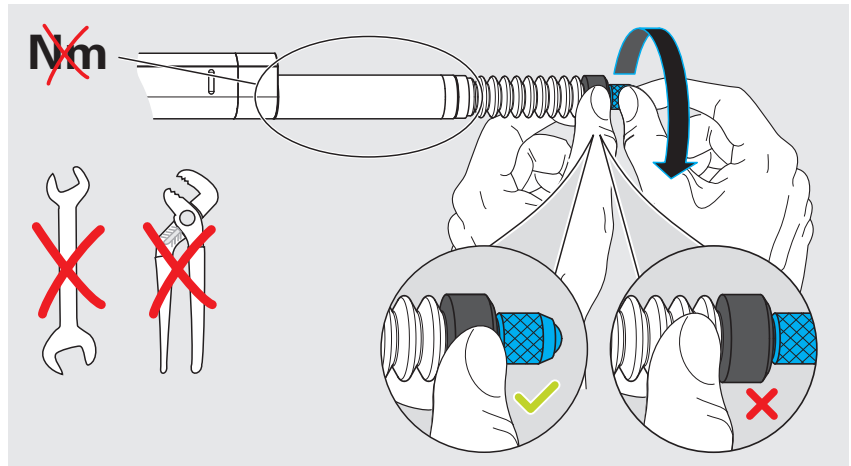
Change the measuring contact only if required.

### 6.1 Removing the measuring contact

**i** Avoid applying torque in the area of the shank.

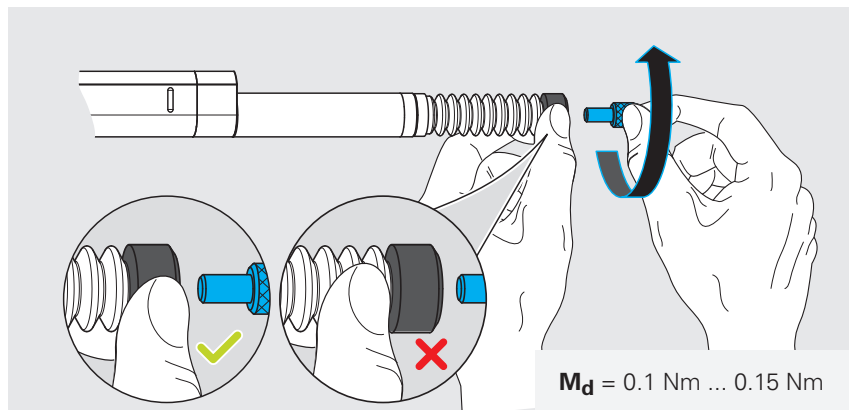
**i** Do not use tools.

- ▶ Unscrew the measuring contact



### 6.2 Inserting the measuring contact

- ▶ Tighten the new measuring contact until it is hand-tight





**NUMERIK JENA** GmbH  
Im Semmicht 4  
07751 Jena, Germany

[info@numerikjena.com](mailto:info@numerikjena.com)  
[www.numerikjena.com](http://www.numerikjena.com)

