

SIEMENS

SIWAREX WL230

Base plate and elastomeric bearing SB-S SA




Operating Instructions

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Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

| |
|--|
|  DANGER |
| indicates that death or severe personal injury will result if proper precautions are not taken. |
|  WARNING |
| indicates that death or severe personal injury may result if proper precautions are not taken. |
|  CAUTION |
| indicates that minor personal injury can result if proper precautions are not taken. |
| NOTICE |
| indicates that property damage can result if proper precautions are not taken. |


If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

Proper use of Siemens products

Note the following:

| |
|--|
|  WARNING |
| Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed. |

Trademarks

All names identified by ® are registered trademarks of Siemens AG. The remaining trademarks in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owner.

Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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Introduction

1.1 Purpose of this documentation

These instructions contain all the information you need for commissioning and using the device.

It is aimed at persons who install the device mechanically and commission it, as well as at service and maintenance engineers.

1.2 History

The following versions of this documentation have been released to date. The changes apply to the previous version:

| Edition | Comment / change |
|---------|------------------|
| 03/2013 | Initial release |

1.3 Product package

1.3.1 Product package for base plate

The product package consists of the following components:

- Information sheet
- Base plate

Note**Other product package information**

You can find sketches of the base plate parts in the section Installation (Page 23).

See also

Dimension drawings (Page 41)

1.3.2 Product package for elastomeric bearing

The product package consists of the following components:

- Information sheet
- Elastomeric bearing, retaining bracket

Note

Other product package information

You can find sketches of the elastomeric bearing parts in the section Installation (Page 23).

See also

Dimension drawings (Page 41)

1.4 Environmental protection

Recycling

Devices described in this programming manual can be recycled owing to the low content of noxious substances in their version.

Please contact a certified waste disposal company for eco-friendly recycling and to dispose of your old devices.

Notes on handling the product

Proper use

Proper use means that this product must only be used within the limits of the technical specifications and intended purposes of these operating instructions.

If this device is used properly in compliance with the safety notices, this device will not present any danger.

This device can only function correctly and safely if it is transported, stored, set up and mounted correctly.

Correct operation of the device must be ensured by complying with the technical specifications.

Improper handling can result in death, personal injury or property damage.

Notes on liability for defects

We expressly point out that the product quality is exclusively and conclusively described in the sales contract. The content of this product documentation is neither part of a previous or existing agreement, promise or legal relationship, nor is it intended to modify these. All obligations on the part of Siemens AG are contained in the respective sales contract, which also contains the complete and solely applicable liability provisions. The provisions defined in the sales contract for the responsibility for defects are neither extended nor limited by the remarks in this document.

Delivery information

The current product package is listed on the shipping documents enclosed with the delivery in accordance with the valid sales contract.

When opening the packaging, please observe the relevant information. Check the delivery for completeness and undamaged condition. In particular, the order number on the rating plate must be compared to the ordering data.

Before you start work, please read these operating instructions. They contain important information and data whose observation ensures the general safety and functionality of this device. The manual will help you to handle this product more easily and efficiently, allowing you to achieve reliable results.

Qualified personnel

In the context of this documentation, qualified personnel are people who are familiar with the installation, mounting, commissioning, and operation of the product.

These people must have the following qualifications:

- They must be trained, instructed and authorized to operate and maintain devices and systems in accordance with their place of work and in compliance with the safety engineering standards for
 - Electrical circuits
 - High pressures
 - Corrosive and hazardous media
- They must be trained, instructed and authorized to maintain and use appropriate safety equipment according to the standards for safety engineering.
- In the case of devices with explosion protection, qualified persons must be trained, instructed and authorized to perform work on electrical circuits in plants subject to explosion hazards.

Protection against explosion

There is no potential risk of ignition from base plates and elastomeric bearings of load cells. Therefore they are not subject to the EC directive 94/9 EC (ATEX).

Trademarks

SIWAREX ® is a registered trademark of Siemens AG.

All other names appearing in these instructions may be trademarks; use of such names by third parties for their own purposes may infringe upon owners rights.

Description

3.1 Application

3.1.1 Base plate and elastomeric bearing

Overview

Function

The elastomeric bearing is responsible for the direct transmission of force in the load cells. The base plate fixes the load cell to the foundation.

Features

The base plate and elastomeric bearing have the following features:

- Easy installation of the load cell
- Self-centering effect on the load bearing implement

Elastomeric bearing for SIWAREX WL230 SB-S SA

The self-centering elastomeric bearing for SIWAREX WL230 SB-S SA type load cells is especially well suited for installation in roller table, single-point and container scales.

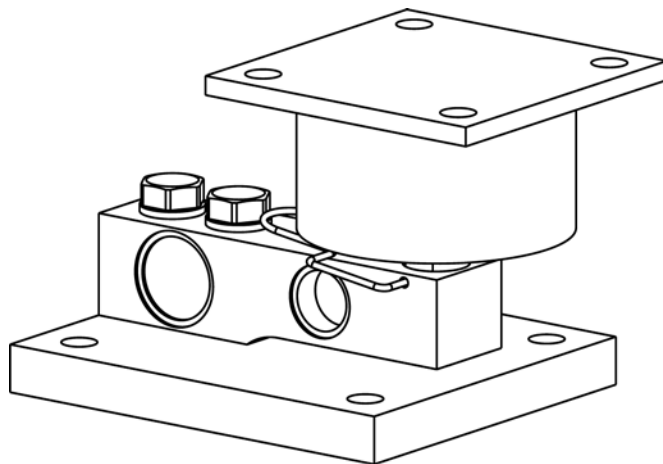


Figure 3-1 Base plate and elastomeric bearing with load cell

| |
|---|
| ⚠ WARNING |
| Danger to life from collapse of the structure |
| Without any protective measures the structure can collapse if the load cell is not installed correctly. Supporting structures complying with the general rules of mechanical engineering must therefore be designed by the customer for installing the base plate or elastomeric bearing. |
| As an alternative installation units from the product range of Siemens can be used. |

3.1.2 Lifting protection

The lifting protection prevents the load bearing implements from being lifted off of the load cells.

If there is a risk of the load bearing implement being lifted or toppled, then lifting protection is required. This is required in the case of lightweight containers and tall, outdoor silos.

3.1.3 Overload protection

The overload protection protects load cells from a load that is too great.

There is overload protection against excessive loads in the measuring direction and overload protection against excessive transverse forces.

Transverse forces are caused by, for example, wind, filling processes, acceleration, or conveyor belt friction. If these forces exceed certain values, the load cells must be protected from them.

3.1.4 Use of the grounding cable

The grounding cable is used to protect the load cells from undesired currents. The causes of such currents are, for example:

- Equalizing currents with missing or faulty equipotential bonding conductors.
- A lightning strike nearby
- Welding work
- Static charge

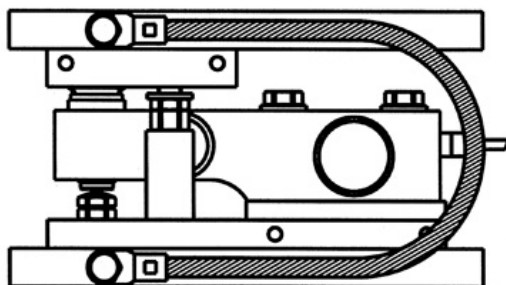


Figure 3-2 Example usage of the grounding cable

3.2 Layout and function

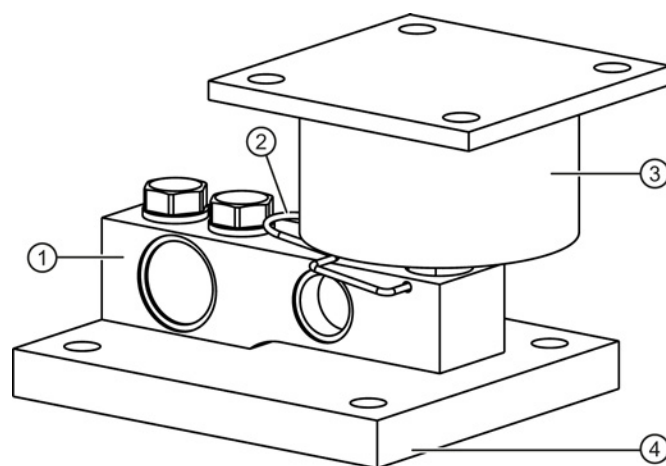
3.2.1 Design / function of base plate and elastomeric bearing

Design

The base plate and the elastomeric bearing consist of the following components:

- Elastomeric bearing
- Retaining bracket
- Base plate

Together with the load cell, the elastomeric bearing represents a self-centering bearing unit.



- ① Load cell, not included in the product package
- ② Retaining bracket for securing the elastomeric bearing
- ③ Elastomeric bearing
- ④ Base plate

Figure 3-3 Base plate and elastomeric bearing

Description

3.2 Layout and function

Function

Elastomeric bearings provide lateral guidance of the load cells and the base plate. Together with the load cell, both form a self-centering unit.

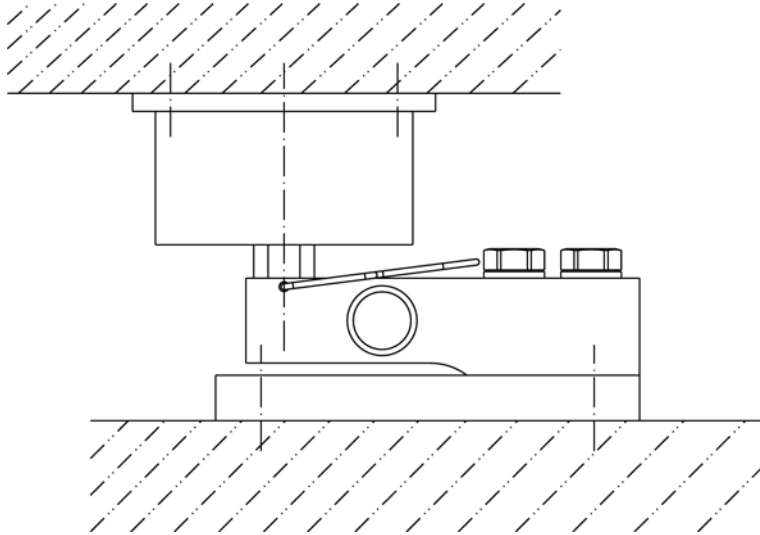


Figure 3-4 Sectional view

3.2.2 Design and function of the grounding cable

Design

The grounding cable consists of a fine-gauge copper wire with a cross-section of 50 mm² as well as two Ø 10 mm lugs.

Function

The grounding cable represents an electrical bypass via the load cell and elastomeric bearing unit. High weld currents can destroy the load cell and the electronics. The electronics can be affected by voltage sparkovers of static discharges.

Description

3.2 Layout and function

Application planning

4.1 Load cell dummies

Dummies

Load cells are sensitive sensors. We recommend the following to prevent damage during installation and transportation of load cells:

- Install the load cells at the latest possible time.
- Use so-called "dummies" or "phantoms" during installation or transportation.

The following can be used as dummies, for example:

- A copy of the installation unit by means of a welded construction for installation work
- A SIWAREX WL230 compact installation unit This option is only useful as an alternative to elastomeric bearings.

A copy of the installation unit by means of a welded construction

A piece of pipe or some other steel profile is welded between two plates with the hole pattern for the fixing screws. Installation work can be carried out with the welded construction.

Use of a SIWAREX WL230 compact installation unit

The compact installation units are delivered pre-assembled. Compact installation units are set to the installation height of the operational unit. Compact installation units can be used to perform light assembly work.

4.2 Lifting protection

The following figure shows a proposed solution for lifting protection. The X designates the possible lifting path of the load bearing implement. The bore $\varnothing D$ must be larger than the diameter of the bolt $\varnothing d$. The movement of the load bearing implement must not be hindered.

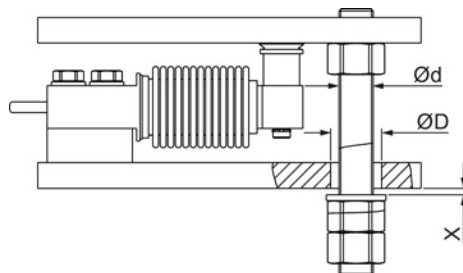


Figure 4-1 Proposed solution for lifting protection

4.3 Load pick-up

Mounting surfaces

The following requirements apply for the mounting surfaces of base plates and elastomeric bearings:

- The positional and angular deviations of the mounting surfaces to each other should correspond to the general tolerances for welded constructions in EN ISO 13920.
- Ensure that the foundations are absolutely firm and free of depressions. The base plate should be mounted on flat steel plates installed in concrete foundations.
- The mounting surfaces must be vertical to the measuring direction and preferably in one plane.
- A plane of ≤ 0.2 mm is required for the mounting surfaces.

More than three support points

The bearing is usually statically indeterminate with more than three support points. With firm foundations and load bearing implements, the load is not evenly distributed to all load cells. The same applies to unstable mounts such as a steel construction. Two diagonal load cells bear the main load. The other cells only support the load bearing implement.

There are two ways to take this into consideration:

- Over-dimensioning of the load cells
- Height compensation of the support points

Over-dimensioning of the load cells

The rated load of the load cells is calculated such that with, for example, four support points the entire weight can be borne by two load cells.

This also prevents an overload of the load cells if depressions in the foundation have to be taken into consideration, e.g. for racks in the steel structure.

Height compensation of the support points

With this method, the output signals of all of the load cells are attuned to each other under a load. To ensure that all of the load cells receive approximately the same load, spacer plates are used to compensate the heights.

The output signals of the individual load cells correspond to the load distribution.

Proceed as follows to measure the output signals:

1. Disconnect the load cell wires SIG+ and SIG-.
2. Supply the load cells with power from the power supply.
3. Measure the output voltage between SIG+ and SIG- of each individual load cell.
4. Place spacing plates under the load cell bracket with the lowest value until the output voltages are equal.

4.4 Overload protection

| NOTICE |
|--|
| <p>Irreparable faults and damage to the load cells</p> <p>When using load cells with small rated loads, always provide overload protection in order to protect the cells from becoming damaged. This applies both to the measuring direction and the transverse direction.</p> <p>If load cells are used beyond the maximum working load or the maximum transverse load, this can cause irreparable faults and even fracturing of the load cell or the installation unit.</p> |

Overload protection in the measuring direction

Load cells can be protected against vertical overload by limiting the measuring path with stops.

For load cells with high rated loads, the risk of an unintentional overload is not as great. Possible additional loads can already be taken into consideration during the dimensioning of the load cells.

Another method for protecting load cells from an overload is to over-dimension the load cells.

Overload protection in the transverse direction

For the elastomeric bearings of SB-S SA load cells, the weight force is transmitted in the load cells via elastomer packets. Up to a certain degree, these elastomer packets allow lateral movement of the load bearing implement or a change in its length as a result of expansion due to heat. They generate a restoring force corresponding to the deflection, which re-centers the load bearing implement. This freedom of movement is desired and necessary for accurate weighing.

If the transverse force is so great that it exceeds the restoring force of the load cell (and thus the deflection limit), then corresponding protective measures are required. Pendulum limiters or guide elements are suitable for this, for example.

Pendulum limiters must be constructed or set in such a way that the maximum deflection cannot be exceeded in any direction. This is shown in two examples in the following figure.

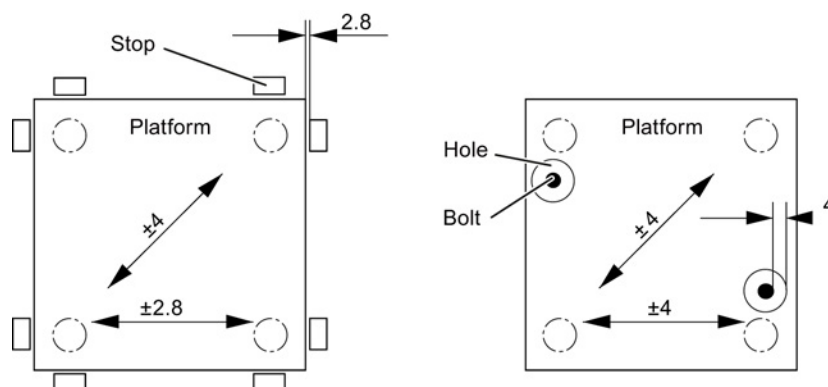


Figure 4-2 Pendulum limitation with a maximum deflection of 4 mm as exemplified by two weighing platforms

4.5 Guide elements

Use the guide elements in the following cases:

- A weight should be determined under the influence of transverse forces.
- Horizontal movement of the load bearing implement should be prevented.

A change in the distance between the support points, for example as a result of expansion of the load bearing implement due to heat, must not lead to mutual tensioning of the guide elements.

The following figure shows the ideal arrangement of guide elements.

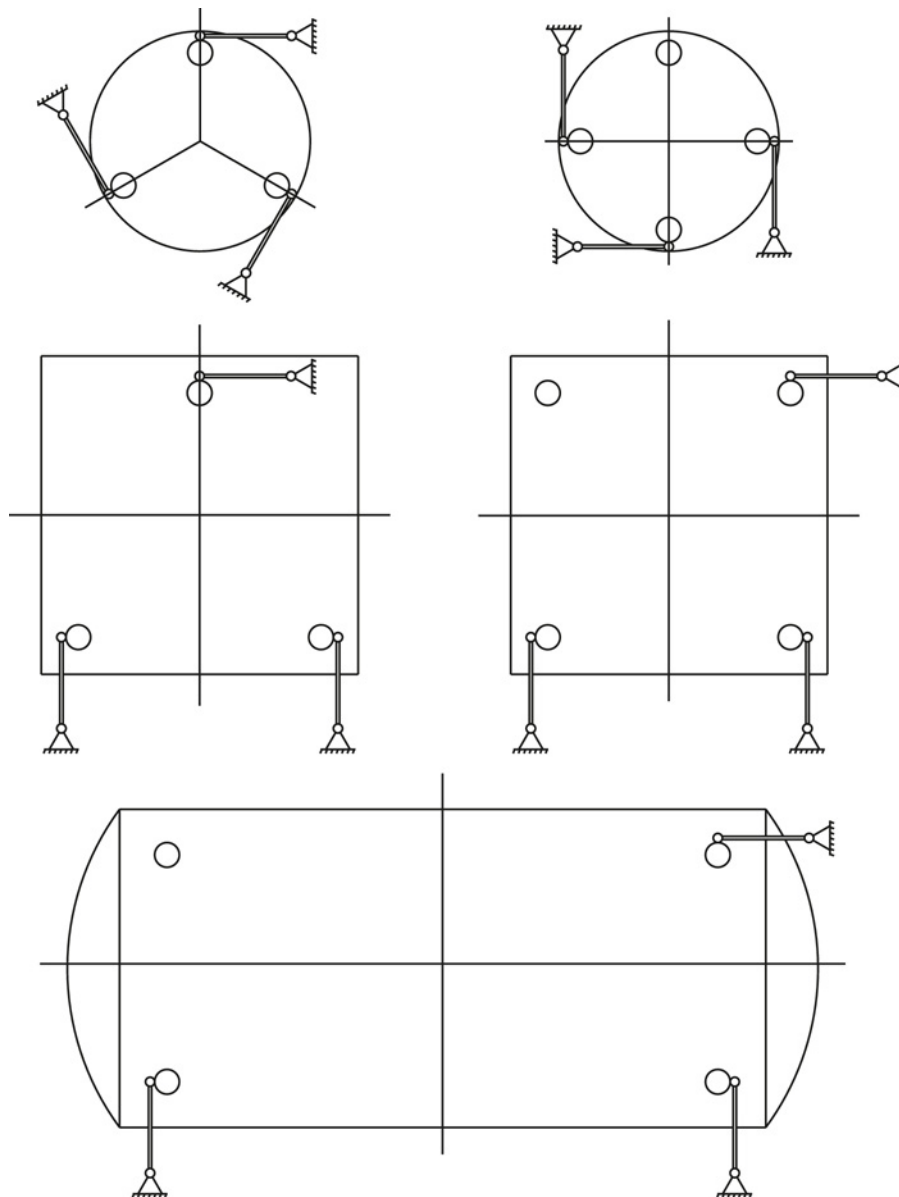


Figure 4-3 Arrangement of guide elements

To ensure that no force components occur in the measuring direction, you must install guide elements at precise right angles to the effective direction of the load cells.

Three guide elements are sufficient to statically fix a weighing platform or container.

Note

Weighing errors

With four guide elements, there is a risk of the guide elements mutually tensioning, which in turn induces weighing errors. If you nevertheless want to use four guide elements, the guide elements must be installed with a sufficient amount of play.

Guide elements are critical in conjunction with elastomeric bearings. Guide elements must be installed exactly horizontal so that they do not affect the weighing result. This cannot be guaranteed across the weighing range with soft elastomeric bearings.

Ensure that the guide elements to be used comply with the principles applicable to weighing technology.


4.6 Protection against explosion

Protection against explosion

There is no potential risk of ignition from the base plates and elastomeric bearings of load cells. This means base plates and elastomeric bearings are not subject to the EC Directive 94/9 EC (ATEX).

5.1 Safety information/instructions

Load cells are precision components and must therefore be handled carefully. Particular care must be taken during transport and installation.

| |
|---|
|  WARNING |
| Danger to life from falling loads <ul style="list-style-type: none">• Load cells are not machine components which have been constructed with the normal safety factors. For this reason, appropriate protection against falling and catastrophes must be implemented in accordance with the potential risks.• Use suitable hoisting equipment to lift the load carrier. Observe the appropriate safety regulations. |

| |
|---|
| NOTICE |
| Damage to load cells through incorrect handling <ul style="list-style-type: none">• SIWAREX load cells are only permitted to be mounted and connected by qualified personnel.• Mechanical shocks or falls can irreparably damage the load cell.• When mounting the load cell, ensure that you do not damage or cut the cables of the load cell. Load cells must not be carried by their connecting cables.• Protect the load cells from shocks and welding currents. Replace the load cells with dummies until the installation work on the scale structure is completed. |

| |
|--|
| NOTICE |
| Damage to load cells through high currents <ul style="list-style-type: none">• If welding is undertaken after the load cells have been installed, ensure that the welding current is not diverted through the load cells.<ul style="list-style-type: none">– You can do this by attaching the grounding clamp of the welding unit making reliable contact close to the weld.– Bridge the load cells with a grounding cable, see Installing the grounding cable (Page 33).– Disconnect the individual load cells.• Undesirable electrical currents can arise during lightning. To protect the load cell against such currents, bridge the load cells using highly flexible grounding cables, see also Installing the grounding cable (Page 33). |

| |
|--|
| NOTICE |
| Damage to load cells through incorrect mounting |
| <ul style="list-style-type: none">• Provide indented claws or crane eyebolts on the load carrier to ensure that hoisting gear can be used safely.• Load cells must never be overloaded. Put the load carrier down slowly for this reason. With load cells of smaller rated loads in particular, there is a risk of stretching the load cell bodies when attaching force transfer devices, for example, when tightening locknuts.• Adjust the existing overload protection to ensure that it can still reliably sense transfer of the required load. The overload protection must permit a rise in weight unhindered until the setpoint weight is reached.• Protect the gap above the overload protection from deposits of dirt and ice.• The load must be introduced in the measuring direction of the load cell. Torsional and bending moments, eccentric loads and transverse loads are disturbances. These disturbances cause errors in the measuring result and can damage load cells and elastomeric bearings if the maximum limits are exceeded. <p>The mounting components normally allow so much room for movement that heat expansion will not result in lateral loading.</p> |

See also

Design and function of the grounding cable (Page 15)

Use of the grounding cable (Page 12)

5.2 Installing the base plate and elastomeric bearing

5.2.1 General installation information

The installation conditions vary widely. The dead load of the load bearing implement can be very low or relatively high. You might be dealing with a container, platform or a roller table. The following installation instructions can therefore only describe the general procedures.

Always set up the load bearing implement on dummies to protect the load cells from damage during installation.

The load bearing implement then only has to be raised a few millimeters from bracket to bracket to position the elastomeric bearing unit. The following description of the installation is based on this assumption.

Note

Maintenance-friendly design

When planning the layout, ensure that the load cells are easily accessible once they are installed.

Depending on the installation conditions, the detailed procedure may deviate from the following description.

5.2.2 Procedure

Overview

The following actions are required to install the elastomeric bearing.

1. Prepare the load cell
2. Prepare the base plate
3. Prepare the elastomeric bearing
4. Bolt the load cell to the base plate
5. Install the elastomeric bearing in the load cell
6. Install the elastomeric bearing unit
7. Check the installation

The actions are described in detail in the following.

5.2.3 Preparing the load cell

| |
|---|
| NOTICE |
| Damage to the load cell |
| The following applies to prevent damage to the load cells: |
| <ul style="list-style-type: none">• Observe the operating instructions for the load cell.• Do not carry the load cell by its connection cables.• When mounting the load cell, ensure that you do not damage or cut the cables of the load cell. |

1. Unpack the load cell.

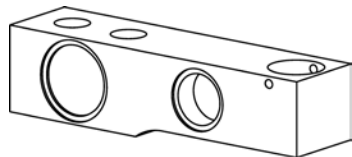
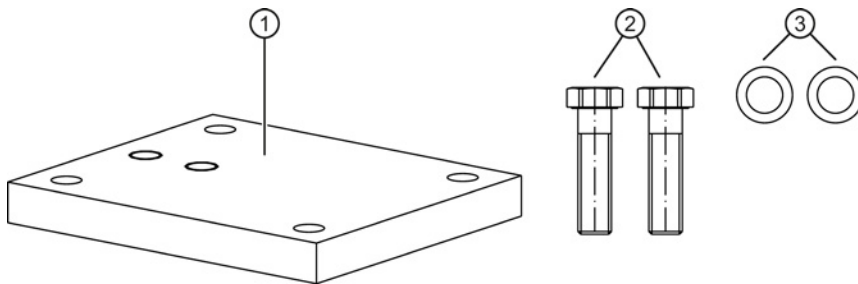


Figure 5-1 Load cell SB-S SA

2. Read the accompanying information sheet.
3. Read the operating instructions for the SIWAREX WL load cells.

5.2.4 Prepare the base plate

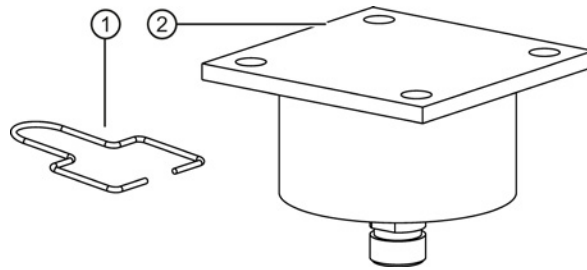


- ① Base plate
- ② Hexagon bolts
- ③ Washers

Figure 5-2 Product package for base plate

1. Unpack the base plate.
2. Read the accompanying information sheet.
3. Check the delivered unit.

5.2.5 Prepare the elastomeric bearing



- ① Retaining bracket
- ② Elastomeric bearing

Figure 5-3 Product package for elastomeric bearing

1. Unpack the elastomeric bearing.
2. Read the accompanying information sheet.
3. Check the delivered unit.

5.2.6 Bolt the load cell to the base plate

Procedure

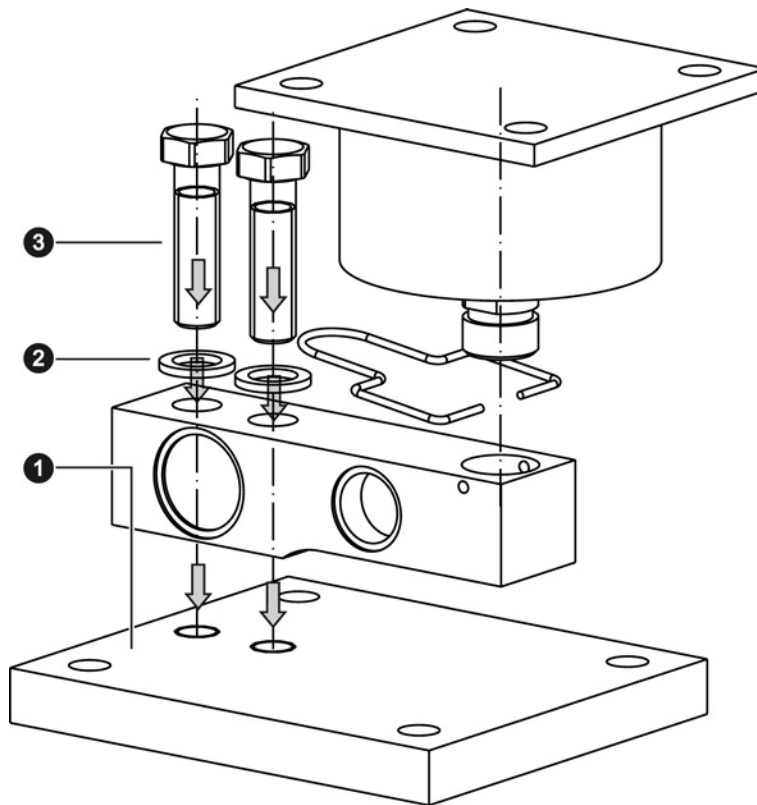


Figure 5-4 Bolt the load cell to the base plate

1. Place the load cell on the base plate in alignment with the drill holes.
2. Position the washers.
3. Screw in and tighten the hexagon bolts.

NOTICE

Damage to the load cell

When tightening the bolts, do not hold the load cell to counter the force. This will prevent damage to the load cell.

Adhere to the tightening torques:

- SIWAREX WL230 SB-S SA load cell with a rated load of 0.5 t, 1 t, 2 t: 80 Nm
- SIWAREX WL230 SB-S SA load cell with a rated load of 5 t: 391 Nm

5.2.7 Install the elastomeric bearing in the load cell

Procedure

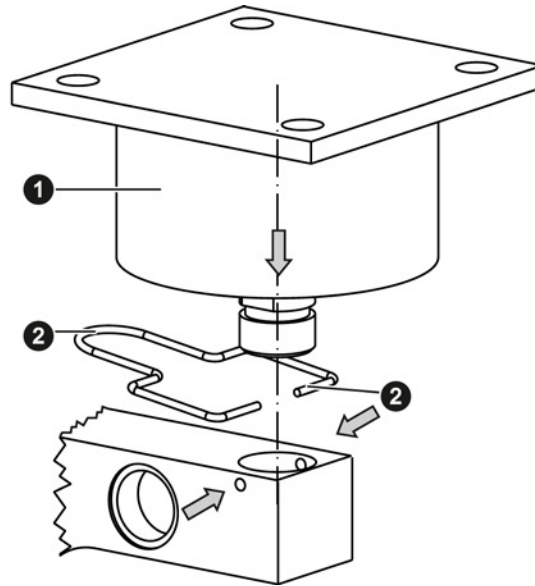




Figure 5-5 Install the elastomeric bearing in the load cell

1. Position the elastomeric bearing and insert into the receptacle of the load cell.
2. Attach the retaining bracket with the open ends into the mounting holes of the load cell.

5.2.8 Install the load cell with elastomeric bearing unit

Safety guidelines

| |
|--|
|  WARNING |
| Death or serious bodily injury A falling load bearing implement can lead to serious bodily injury or considerable material damage depending on the potential risk. |
|  CAUTION |
| Personal injuries, damage to the load cells Insufficiently secured loads can fall and cause injuries or material damage. Therefore, appropriate lifting tools must be used to lift the load bearing implement. The corresponding safety regulations must be observed. |
| NOTICE |
| Damaging of load cells Incorrect or incomplete installation can result in damage to the load cells, installed parts and the load bearing implement. Observe the warning notices at the start of the chapter, see: Safety information/instructions (Page 23) |
| NOTICE |
| Damage of the load cells and the elastomeric bearing <ul style="list-style-type: none">• Check that the load cells and installation unit are installed correctly, e.g. by checking the mounting dimensions and oscillation distances. Incorrect assembly can result in damage to the load cell and the installation unit.• Ensure that the cable does not become damaged or is cut off.• Lay the cables through cable glands in the form of a vertical downwards loop to discourage the penetration of water. |

Installation requirements

- Flatness of the mounting surfaces: The flatness of mounting surface planes must be ≤ 0.2 mm.
- Compressive strength of the mounting surfaces: The compressive strength of the mounting surfaces has to be appropriate for the contact surface pressure of the base plate and elastomeric bearing.

Install the elastomeric bearing unit

Adapt the procedure to the installation conditions.

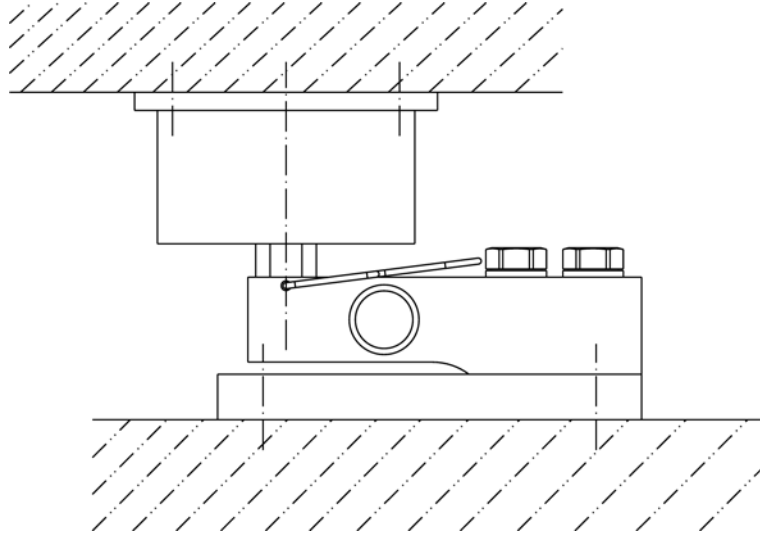


Figure 5-6 Insert the elastomeric bearing unit

1. Insert the elastomeric bearing unit.
2. Bolt the base plate to the bottom mounting plate.
3. Align the elastomeric bearing with the top mounting plate.
4. Lower the load bearing implement onto the elastomeric bearing.
5. Bolt the elastomeric bearing to the mounting plate.

5.2.9 Checking the installation

| |
|---|
| NOTICE |
| Damage to the load cell and elastomeric bearing |
| Ensure that the load cells and elastomeric bearing are installed correctly, for example, by checking the mounting dimensions and oscillation distances. Incorrect assembly can result in damage to the load cell and elastomeric bearing. |

- Check the installation of the load cell:
The load bearing implement must be able to oscillate freely.

5.3 Installing the grounding cable

1. Prepare a permanently contacting bolted connection such as M10 on the load bearing implement and foundation for securing the grounding cable.
2. Screw the grounding cable tight.

5.4 Dismantling

For the disassembly of load cells, the same safety rules and requirements apply as for installation and assembly.

1. Disconnect all the supply voltages and auxiliary voltages.
2. Secure the load carrier against falling.
3. Use appropriate hoisting gear and tools.
4. Take the load off the load cell.
5. Carefully remove the load cell without using force. Do not pull on the cable of the load cell.
6. Do not cut the cable if the load cell is to be re-used or sent in for repair.
7. Do not carry the load cell by the cable.

Service and maintenance

6.1 Servicing and maintenance

Important notes on cleaning

NOTICE

Damage to load cells, measurement errors

- Dirt must not be allowed to accumulate in the vicinity of a load cell.
- Do not subject cable glands and seals directly to the jet of a pressure washer.
- Do not clean the load cell and installed parts with aggressive cleaning agents. This can even cause corrosion to stainless steel if not used correctly.

Elastomeric bearing

- Check the elastomeric bearing in relation to the ambient conditions. Select the servicing intervals based on the emergence of dust, dirt and moisture.
- Keep the elastomeric bearing free of dirt.
- You can find more information on servicing, maintenance and care of elastomeric bearings in the section Care and maintenance of elastomer components (Page 36).

Overload protection

WARNING

Personal injury and damage to property

Dirty, frozen or incorrectly adjusted overload protection elements lead to erroneous measurements due to blockage or to an overflow of the scale. Personal injury and material damage may occur.

- Regularly check the existing overload protection elements:
 - Select the servicing intervals based on the emergence of dust, dirt and moisture.
 - Keep the overload protection elements free of dirt and ice.
 - Check the settings for the overload protection elements.
 - Re-adjust (correct) the overload protection as needed.

Grounding cable

- Check the connecting points at regular intervals for corrosion and conductivity.

6.2 Care and maintenance of elastomer components

General information

The physical properties of most rubber products change under poor storage conditions or with improper treatment. The following examples of changes, however, can make them unusable:

- Excessive hardening
- Softening
- Permanent deformation
- Peeling, cracking and/or other surface damage

Such changes may be caused by external influences, for example:

- Environmental factors (ozone, heat, light, humidity)
- Solvents
- Storage under stress

Properly stored and treated rubber products will remain unchanged in their properties for a period of several years.

Service life and inspection

The service life of elastomer components depends on the design and the stress it experiences. Rubber is subject to a natural aging process. If it is stressed within a permitted range, you can expect a service life of more than 6 years.

The rubber-metal parts are maintenance-free during their operational use. The spherical surface of the pendulum bolt may need to be regreased.

Components should be visually inspected 6 months after installation and once a year thereafter.

The bonding between rubber and metal can be inspected by checking the mechanical bond manually. The rubber can be pressed with a blunt "metal probe" (curved radius). If there are partial edge separations in the bonding zone between elastomer and metal, or surface cracks in the individual layers of elastomer, you must check these spots regularly.

Replacement

Replacement must be performed in the following cases:

- When several substantial cracks have formed in each square centimeter of the rubber surface due to weathering.
- When the item has swollen greatly due to improper oil wetting.
- When there is a loss of rubber-metal bonding.
- When there is mechanical damage that can lead to further damage to the product due to the notch sensitivity of the rubber.

Cleaning

The following applies to cleaning:

- We recommend the use of a pH-neutral detergent. Do not use cleaning agents containing non-polar solvents (e.g., gasoline)!
- Rinse the components with water after cleaning, if needed.
- Protect the rubber-metal bonding from contact with detergents using constructive measures.
- Do not clean with sharp objects, for example, a wire brush or sandpaper.
- Check the overload protection for contamination.

Technical specifications

Elastomeric bearing

| Variable | Value at rated load | | | |
|--------------------------------------|---------------------|------------|-------------|-------------|
| | 500 kg | 1 t | 2 t | 5 t |
| Maximum permitted lateral deflection | ±4 mm | ±4 mm | ±4 mm | ±4 mm |
| Vertical stiffness | 5.9 kN/mm | 5.9 kN/mm | 28.98 kN/mm | 28.98 kN/mm |
| Horizontal stiffness | 0.16 kN/mm | 0.16 kN/mm | 0.54 kN/mm | 0.54 kN/mm |
| Deflection at rated load | 0.68 mm | 1.28 mm | 0.62 mm | 1.46 mm |

Dimension drawings

8.1 Dimensional drawing of base plate / elastomeric bearing

The following dimensional drawing shows the SIWAREX WL230 SB-S SA base plates and elastomeric bearing. All dimensions are in millimeters.

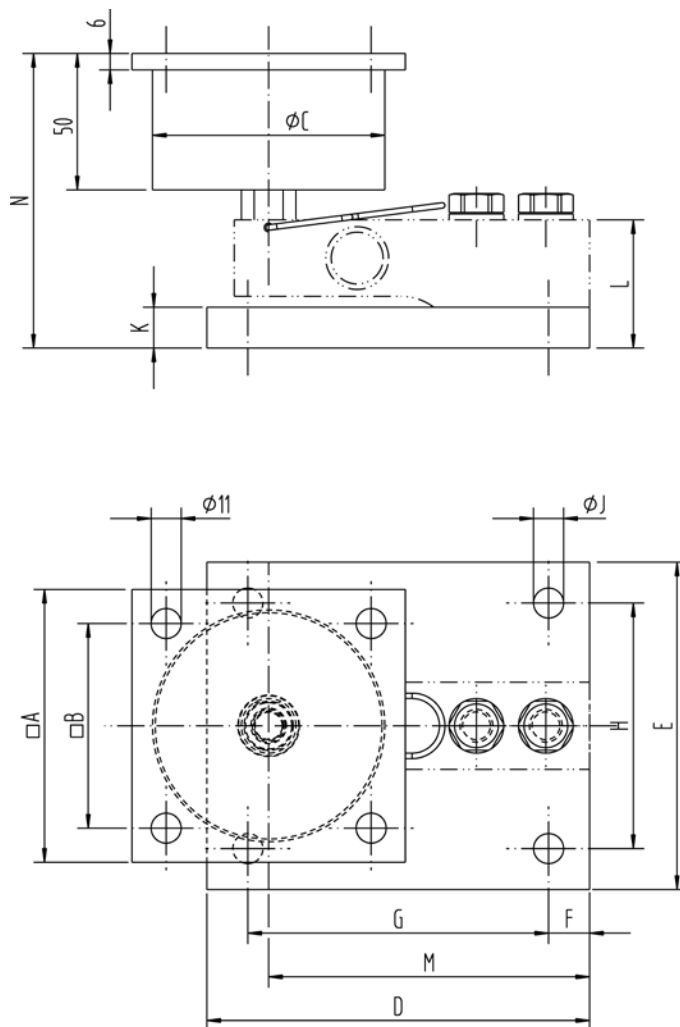


Figure 8-1 Dimensional drawing of base plate and elastomeric bearing

Table 8- 1 Dimensions SB-S SA 0.5 t / 1 t, 2 t, 5 t

| | A | B | øC | D | E | F | G | H | øJ | K | L | M | N |
|------------------------|-----|----|-----|-----|-----|----|-----|-----|------|----|----|-------|-----|
| SB-S SA 0.5 t / 1 t | 100 | 75 | 85 | 140 | 120 | 15 | 110 | 90 | 11 | 15 | 47 | 117.4 | 108 |
| SB-S SA 2 t | 120 | 90 | 100 | 140 | 120 | 15 | 110 | 90 | 11 | 15 | 51 | 117.4 | 112 |
| SB-S SA 5 t | 120 | 90 | 100 | 185 | 150 | 20 | 145 | 110 | 13.5 | 25 | 69 | 153.1 | 134 |

8.2 Dimension drawing of the grounding cable

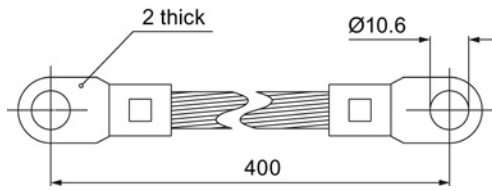


Figure 8-2 Dimension drawing of the grounding cable

Ordering data

Table 9- 1 Ordering information for base plate

| Base plate | | |
|-----------------------|-------------------|---------------------|
| Designation | Rated load | Order number |
| SB-S SA ¹⁾ | 500 kg / 1 t | 7MH5707-4AB00 |
| | 2 t | 7MH5707-4GB00 |
| | 5 t | 7MH5707-4PB00 |

¹⁾ The load cells are not included.

Table 9- 2 Ordering information for elastomeric bearing

| Elastomeric bearing | | |
|----------------------------|-------------------|---------------------|
| Designation | Rated load | Order number |
| SB-S SA ¹⁾ | 500 kg / 1 t | 7MH5707-4AC00 |
| | 2 t | 7MH5707-4GC00 |
| | 5 t | 7MH5707-4PC00 |

¹⁾ The load cells are not included.

Table 9- 3 Ordering information for grounding cable

| Highly flexible grounding cable | | |
|--|--|---------------------|
| Designation | Description | Order number |
| SIWAREX R grounding cable | Highly flexible grounding cable for diverting parasitic currents | 7MH3701-1AA1 |

Appendix

A.1 Technical support

Technical Support

You can contact Technical Support for weighing technology:

- E-mail (<mailto:support.automation@siemens.com>)
- Phone: +49 (721) 595-2811

You can contact Technical Support for all IA and DT products:

- Via the Internet using the **Support Request:**
Support request (<http://www.siemens.com/automation/support-request>)
- Phone: +49 (911) 895-7222
- Fax: +49 (911) 895-7223

Additional information about our Technical Support is available on the Internet at
Technical Support (<http://www.siemens.com/automation/csi/service>)

Service & Support on the Internet

In addition to our documentation, we offer a comprehensive knowledge base online on the Internet at:

Services & Support (<http://www.siemens.com/automation/service&support>)

There you will find:

- The latest product information, FAQs, downloads, tips and tricks.
- Our newsletter, providing you with the latest information about your products.
- A Knowledge Manager to find the right documents for you.
- Our bulletin board, where users and specialists share their knowledge worldwide.
- You can find your local contact partner for Industry Automation and Drives Technologies in our partner database.
- Information about field service, repairs, spare parts and lots more under "Services".

Additional Support

Please contact your local Siemens representative and offices if you have any questions about the products described in this manual and do not find the right answers.

Find your contact partner at:

Partner (<http://www.automation.siemens.com/partner>)

A signpost to the documentation of the various products and systems is available at:

Documentation (<http://www.siemens.com/weighing/documentation>)

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