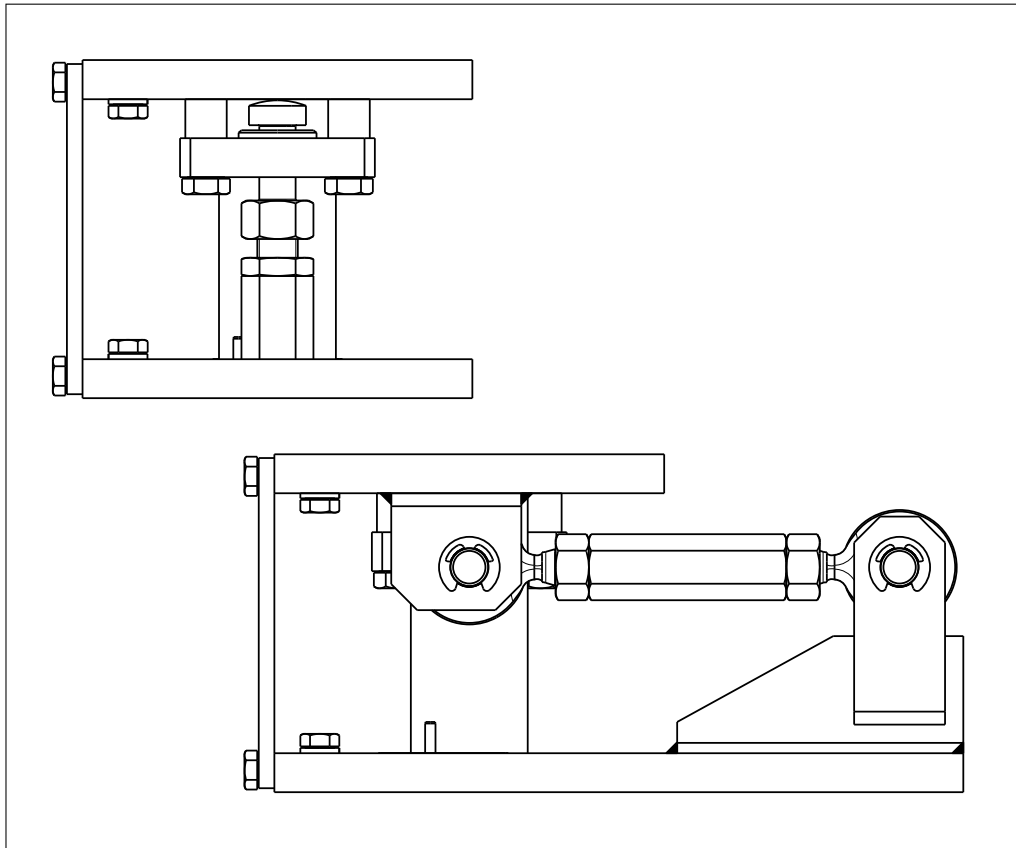


Installation manual

Maxi FLEXLOCK mounting kits PR 6044/00S, ../01S, ../10S, ../11S



Foreword

Must be followed!

Any information in this document is subject to change without notice and does not represent a commitment on the part of Minebea Intec unless legally prescribed. This product should only be operated/installed by trained and qualified personnel. In correspondence concerning this product, the type, name, and release number/serial number as well as all license numbers relating to the product have to be cited.

Note

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1 Introduction

1.1 Read the manual

- Please read this manual carefully and completely before using the product.
- This manual is part of the product. Keep it in a safe and easily accessible location.

1.2 This is what operating instructions look like

1. - n. are placed before steps that must be done in sequence.
 - ▶ is placed before a step.
 - ▷ describes the result of a step.

1.3 This is what lists look like

- indicates an item in a list.

1.4 This is what menu items and softkeys look like

[] frame menu items and softkeys.

Example:

[Start]- [Applications]- [Excel]

1.5 This is what the safety instructions look like

Signal words indicate the severity of the danger involved when measures for preventing hazards are not followed.

DANGER

Warning of personal injury

DANGER indicates death or severe, irreversible personal injury which will occur if the corresponding safety measures are not observed.

- ▶ Take the corresponding safety precautions.

WARNING

Warning of hazardous area and/or personal injury

WARNING indicates that death or severe, irreversible injury may occur if appropriate safety measures are not observed.

- ▶ Take the corresponding safety precautions.

CAUTION

Warning of personal injury.

CAUTION indicates that minor, reversible injury may occur if appropriate safety measures are not observed.

- ▶ Take the corresponding safety precautions.

NOTICE**Warning of damage to property and/or the environment.**

NOTICE indicates that damage to property and/or the environment may occur if appropriate safety measures are not observed.

- ▶ Take the corresponding safety precautions.
-

Note:

User tips, useful information, and notes.

1.6 Hotline

Phone: +49.40.67960.444

Fax: +49.40.67960.474

eMail: help@minebea-intec.com

2 Safety instructions

2.1 General notes

NOTICE

Warning of damage to property and/or the environment.

The product was in perfect condition with regard to safety features when it left the factory.

- To maintain this condition and to ensure safe operation, the user must follow the instructions and observe the warnings in this manual.

2.2 Intended use

The mounting kits PR 6044/00S, ../01S, ../10S, ../11S are intended for weighing tasks, and must only be used as such.

The mounting kits PR 6044/00S, ../01S, ../10S, ../11S are designed for installing the load cells PR 6241.

The dimensions of all mounting and structural components must be calculated so that sufficient overload capacity is ensured for all loads which may occur while taking the relevant standards into account. In particular, upright weighing objects must be safeguarded against the weighing installation turning over or being shifted, thus eliminating danger to people, animals, or goods even in the case of a break in a load cell or mounting element.

Installation and repair work must only be carried out by expert/qualified personnel.

The mounting kits reflect the state of the art. The manufacturer does not accept any liability for damage caused by third-party system components or due to incorrect use of the product.

2.3 Initial inspection

Check the contents of the consignment for completeness. Check the contents visually to determine whether any damage has occurred during transport. If there are grounds for rejection of the goods, a claim must be filed with the carrier immediately. The Minebea Intec sales or service organization must also be notified.

2.4 Before operational startup

NOTICE

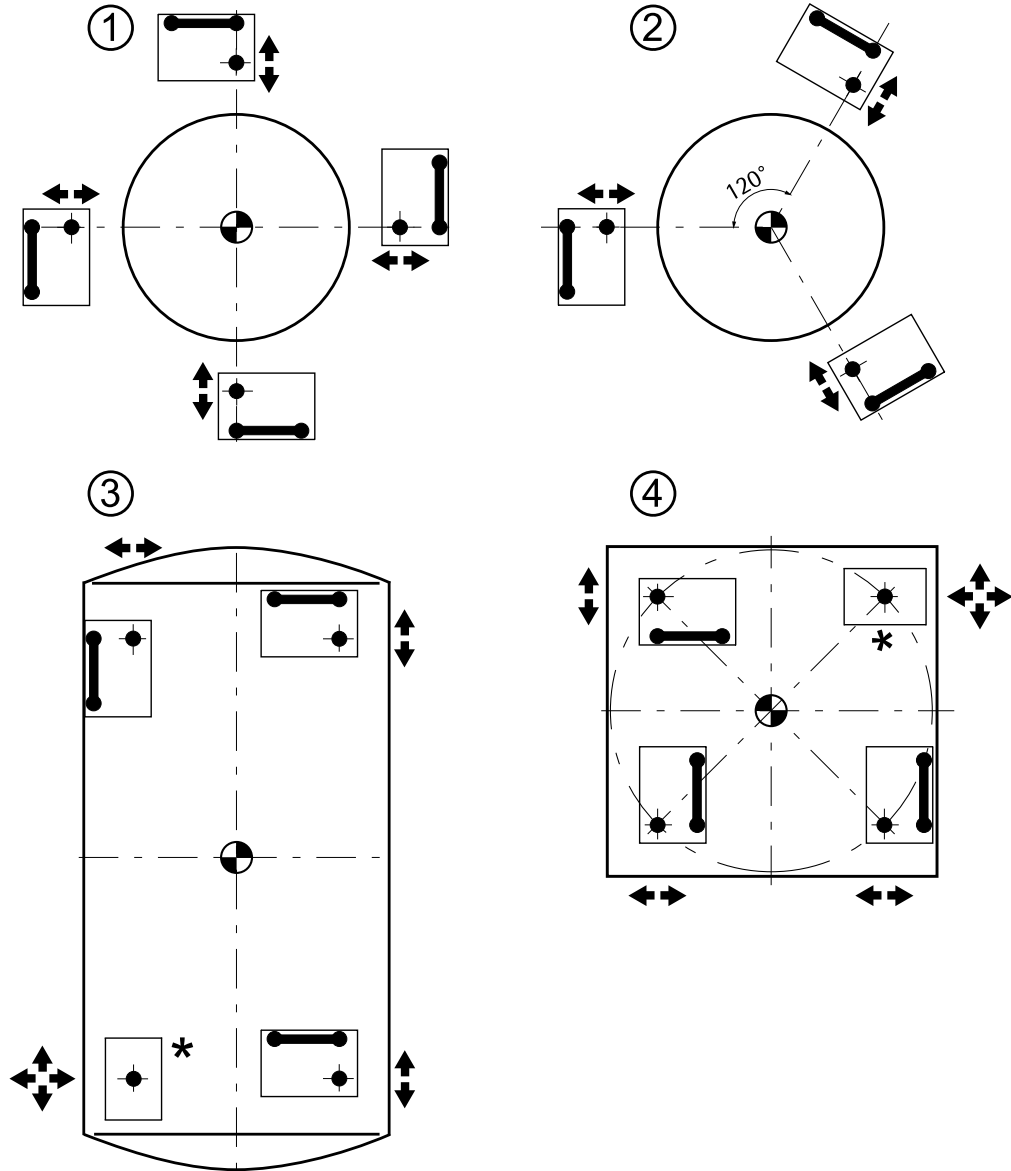
Perform visual inspection.

- Before operational startup as well as after storage or transport, inspect the mounting kit visually for signs of mechanical damage.

3 Recommendations for installation

3.1 Load cell and constrainer arrangement

Examples:



Key

*	Do not constrain this position.
	Constrainer
	Load application
	Possible direction of movement

- To ensure the required free moving space of the weighing facility, a maximum of 3 mounting kits with constrainer may be used to constrain a weighing object.

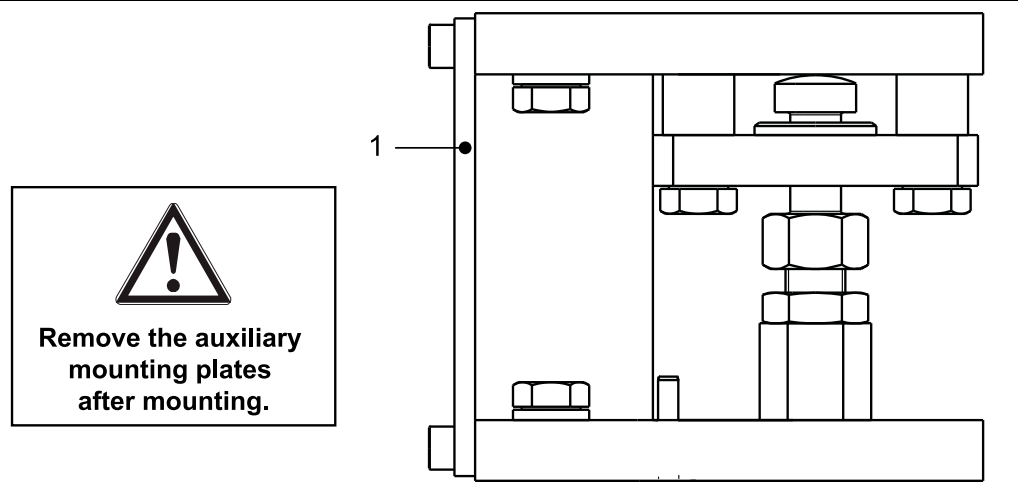
Round containers are the exception (image ① and ②). In this case, any number of constrainers can be installed, provided that they are tangentially aligned.

Special mounting kits are available for weighing points without constrainers. Alternatively, the constrainer can simply be removed.

With elastic constructions, it may be necessary to deviate from this recommendation in order to guarantee the weighing object has sufficient stability.

3.2 Mounting aid

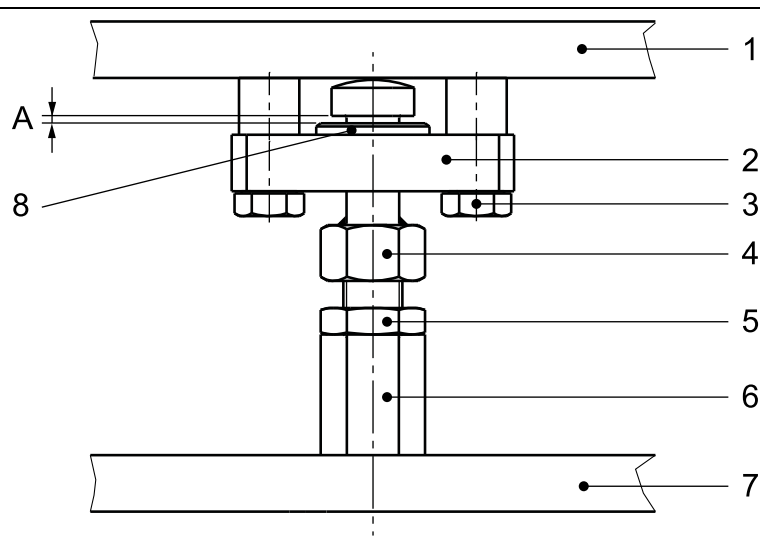
Example: PR 6044/00S



The auxiliary mounting plate (1) is intended to facilitate installation of the mounting kit and load cell.

3.3 Internal lift-off protection with integrated jack-up

3.3.1 General instructions



No.	Description
1	Upper plate
2	Retaining plate
3	Screw (2x)
4	Threaded bolt
5	Nut
6	Threaded bush
7	Lower plate
8	Washer

The mounting kits are equipped with an internal lift-off protection, i.e. no additional borings apart from the mounting holes in the vessel foot are required.

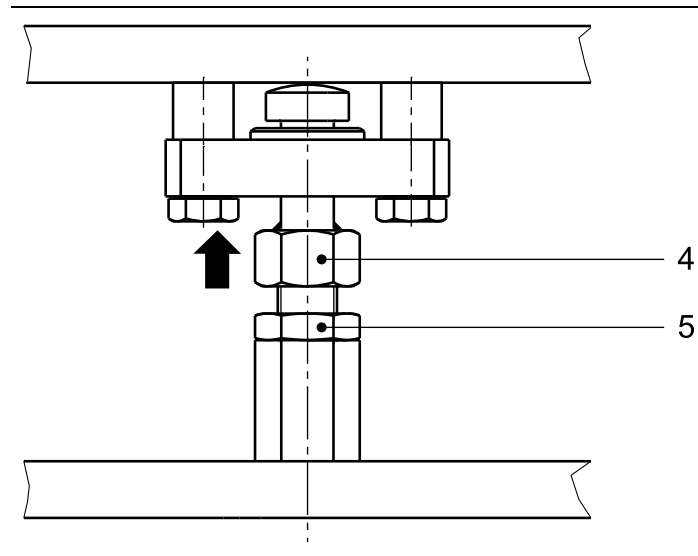
Moreover, the vessel can be lifted by turning the threaded bolt (4) (see Chapter [3.3.2](#)), e.g., when inserting the load cell.

The two screws (3) are firmly screwed into the upper plate (1).

That way, the safety clearance "A" can be adjusted (see Chapter [3.3.3](#)).

The threaded bush (6) of the jack-up is cemented firmly into the lower plate (7).

3.3.2 Jack-up



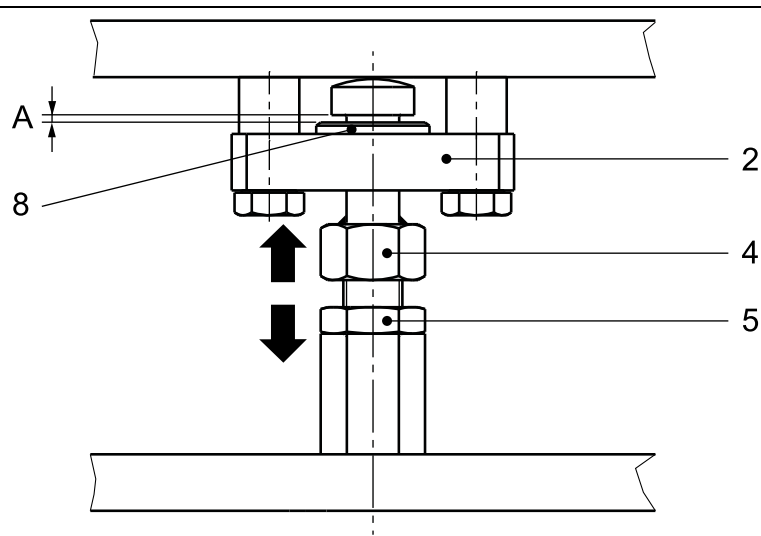
Lift the vessel as follows:

1. Loosen the nut (5).
2. Turn the threaded bolt (4) upwards at the hex to lift the vessel.
3. Turn the threaded bolt (4) until the load cell is unloaded and can be removed together with the upper load disc.

Use the load cell as follows:

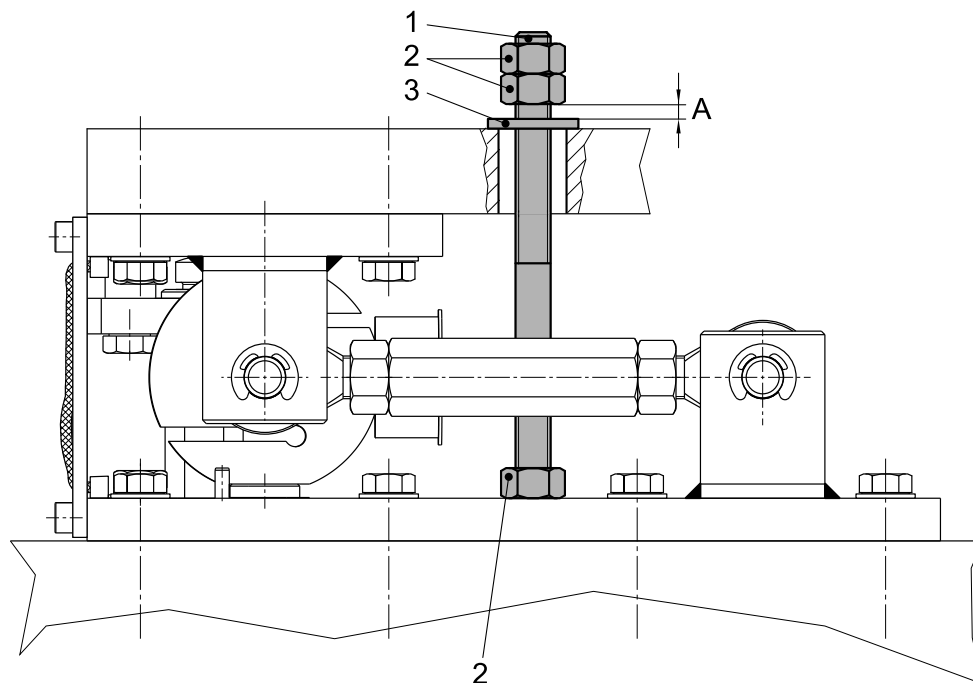
4. Insert the load disc into the load cell.
5. Insert the load cell into the mounting kit.
6. Load the load cell slowly and adjust the built-in lift-off protection as described in Chapter [3.3.3](#).

3.3.3 Adjusting the built-in lift-off protection



1. Loosen the nut (5).
2. Turn the threaded bolt (4) of the lift-off protection on the hex upwards until the safety distance "A" of 1.5–2.5 mm has been established between the washer (8) and retaining plate (2).
3. Re-tighten the nut (5).

3.4 Additional lift-off protection



To increase the permissible lifting force for the mounting kits with constrainer, an additional lift-off protection can be installed.

For this purpose, the simplest version requires the following components:

- 1× threaded bar (1)
- 3× nut (2)
- 1× washer (3)

Assembly:

- Mount the threaded bar (1) so that it has sufficient free moving space in the drill hole.
- Lock the nuts (2) so that there is a remaining distance A^* from the washer (3).

$$* A = 2 \text{ mm}$$

This distance is essential to avoid force shunts.

The required tightening torques are given in the following table.

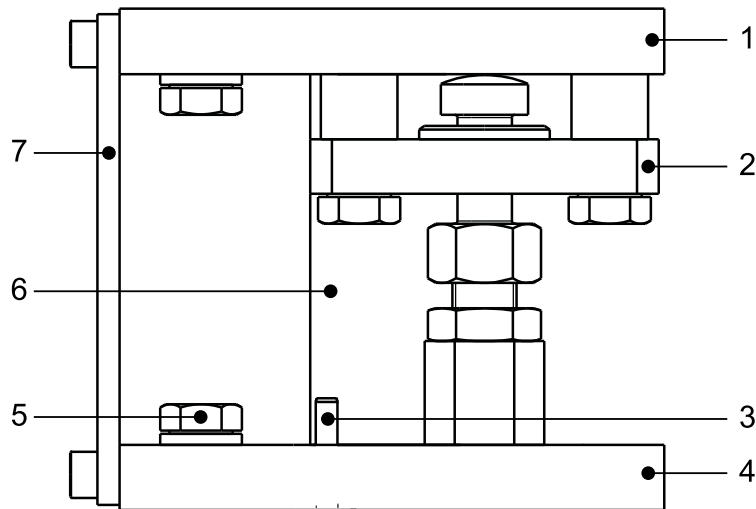
Mounting kit	Threaded bar/ nuts	Property class	Tightening tor- que	Perm. overall lift-off force
PR 6044/10S	M12	A2-70	56 Nm	24 kN
PR 6044/11S	M16	A2-70	135 Nm	45 kN

4 Specifications

4.1 Equipment supplied

4.1.1 Mounting kits PR 6044/00S and PR 6044/01S

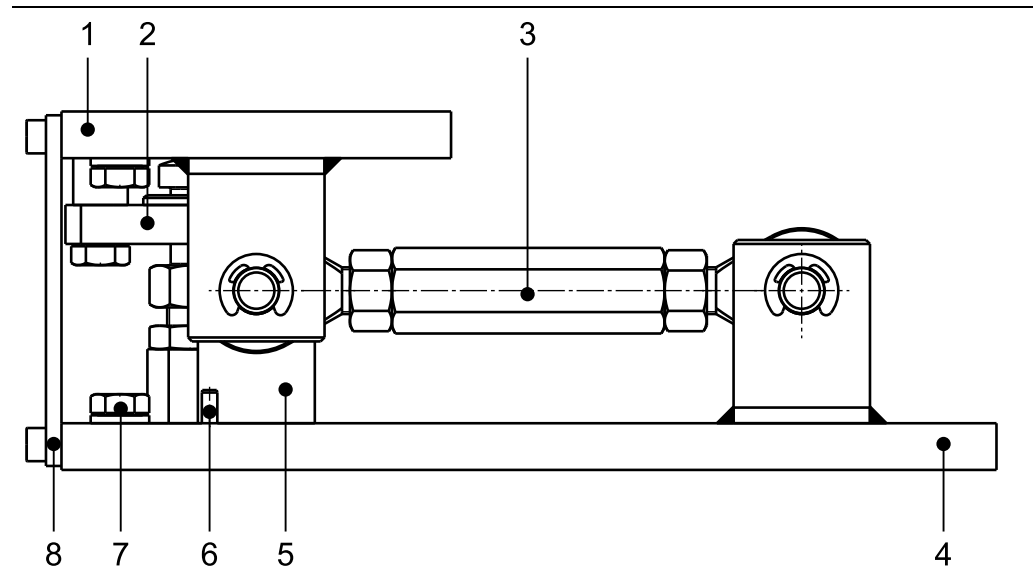
Example: Mounting kit PR 6044/00S



No.	Description
1	Upper plate
2	Built-in lift-off protection with jack-up
3	Pin (2x)
4	Lower plate
5	Screw (2x), spring washer (2x), and washer (2x) for the equipotential bonding cable (supplied with the load cell)
6	Spacer
7	Auxiliary mounting plate
The following items are not shown:	
8	Load disc kit
9	Included in scope of supplies only with PR 6044/00S: Bush (2x); only for load cells PR6241/12...52
10	Quick guide

4.1.2 Mounting kits PR 6044/10S and PR 6044/11S

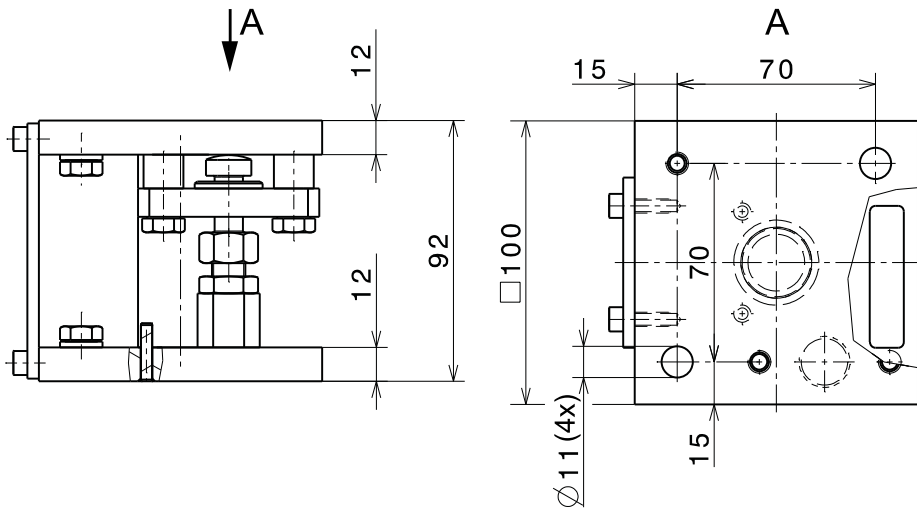
Example: Mounting kit PR 6044/10S



No.	Description
1	Upper plate
2	Built-in lift-off protection with jack-up
3	Constrainer with joint head (2x), screwed joint, nut (2x), bolts (2x), and locking washer (4x)
4	Lower plate
5	Spacer (transport aid)
6	Pin (2x)
7	Screw (2x), spring washer (2x), and washer (2x) for the equipotential bonding cable (supplied with the load cell)
8	Auxiliary mounting plate
The following items are not shown:	
9	Load disc kit
10	Included in scope of supplies only with PR 6044/10S: Bush (2x); only for load cells PR6241/12...52
11	Quick guide

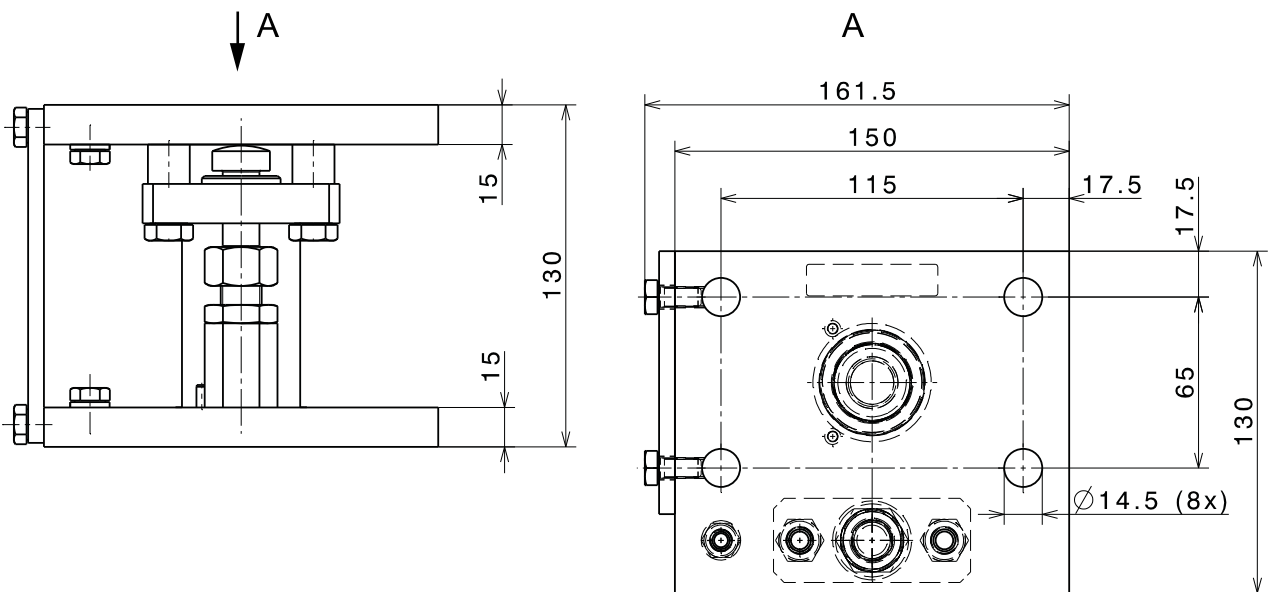
4.2 Dimensions

PR 6044/00S



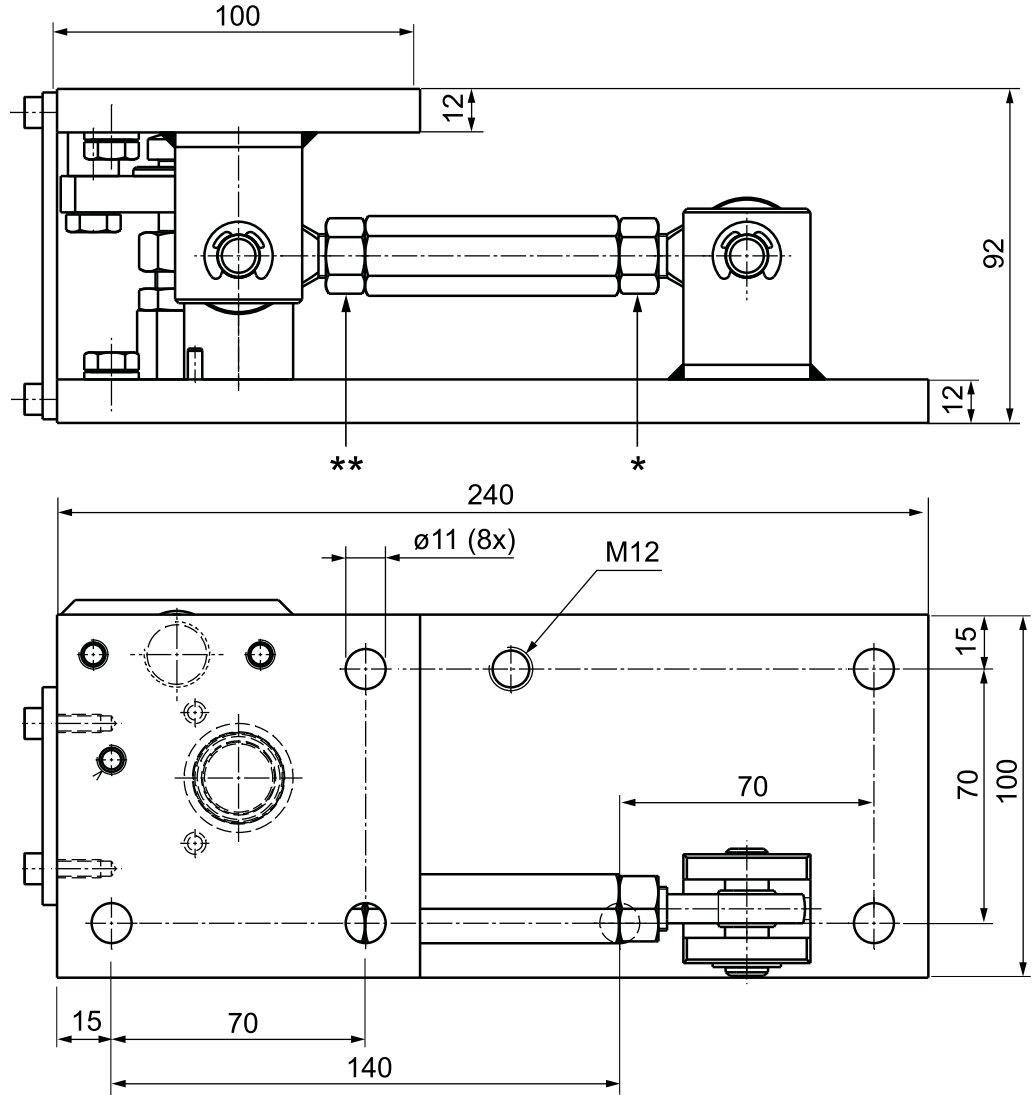
all dimensions in mm

PR 6044/01S



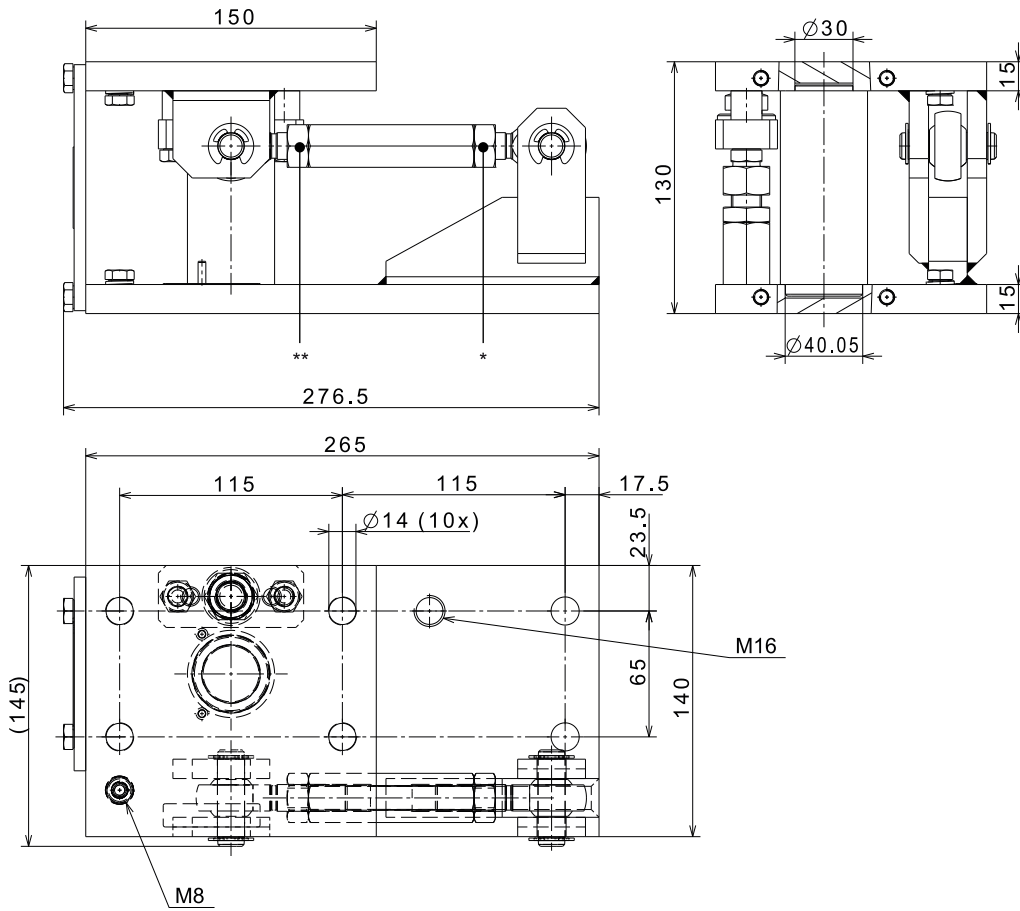
all dimensions in mm

PR 6044/10S



* Right-hand thread, ** left-hand thread
all dimensions in mm

PR 6044/11S



* Right-hand thread, ** left-hand thread
all dimensions in mm

4.3 Technical data

PR 6044/00S and PR 6044/01S

	PR 6044/00S	PR 6044/01S
Max. capacity of load cell	100 kg–2 t	3 t, 5 t
Permissible lifting force	max. 10 kN	max. 20 kN
Permissible vertical load without load cell	max. 2 t	max. 5 t
Permissible temperature range	-40 °C...+80 °C	-40 °C...+80 °C
Material	Stainless steel 1.4301 as per DIN EN 10088-3	Stainless steel 1.4301 as per DIN EN 10088-3
Weight net/gross	2.7 kg/3.2 kg	6.9 kg/7.5 kg

PR 6044/10S and PR 6044/11S

	PR 6044/10S	PR 6044/11S
Max. capacity of load cell	100 kg–2 t	3 t, 5 t
Permissible horizontal force	max. 6 kN	max. 18 kN
Horizontal destructive force	>20 kN	>50 kN
Permissible lifting force	max. 10 kN	max. 20 kN
Permissible vertical load without load cell	max. 2 t	max. 5 t
Permissible temperature range	-40 °C...+80 °C	-40 °C...+80 °C
Material	Stainless steel 1.4301 as per DIN EN 10088-3	Stainless steel 1.4301 as per DIN EN 10088-3
Weight net/gross	5.1 kg/5.6 kg	11.0 kg/11.4 kg

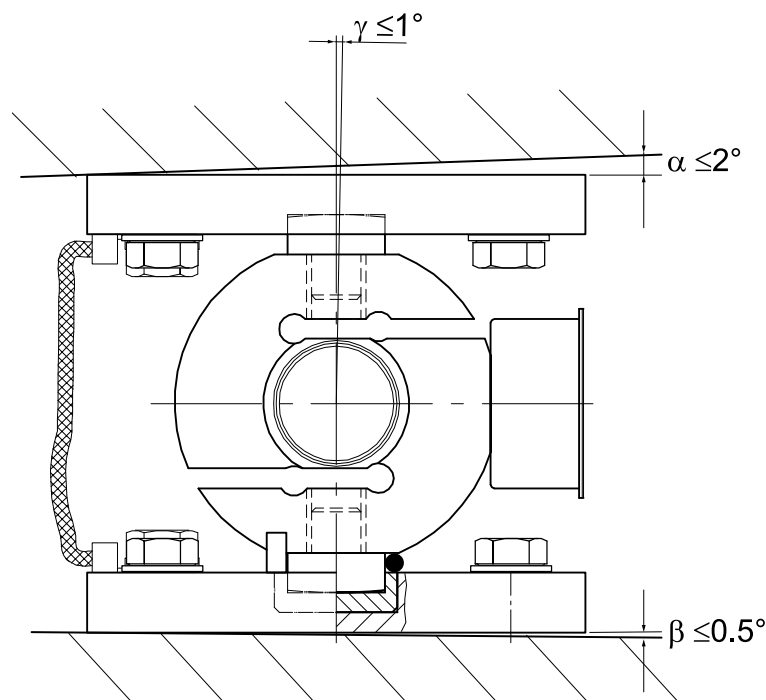
5 Installation

5.1 Prior to mounting

5.1.1 Preparing the foundation/substructure

- The foundation for the mounting kit must be horizontal (use spirit level), flat, and rigid for the intended loads.
- The load distribution on the available load cells must be as even as possible to prevent overload of the individual load cells.
- The substructure foundations/supporting surfaces for the mounting kits should be at the same level, and the supporting surfaces of the weighing object (e.g. vessel feet) must be arranged in parallel.
- **For screw mounting of the upper and lower plates:**
 - Generate the drilling pattern of the upper plate of the mounting kit (see Chapter 4.2) according to the weighing system arrangement for each vessel lug or vessel foot.
- If soft filler layers (e.g. made from rubber or plastic material) are used between the mounting kit and vessel/or between the mounting kit and substructure for vibration dampening or for temperature insulation, a load compensating plate must be provided between this soft filler layer and the mounting kit to ensure even load application into the mounting kit.

The design of the insulation and compensation plates depends on the respective application.



Shown without lift-off protection.

The maximum permissible inclination must be strictly observed in order to keep the impact on the measuring accuracy to a minimum (see figure).

5.2 Tightening torques

The corresponding tightening torques are given in the following table.

Mounting kit	Mounting parts	Thread	Washer	Tightening torque
PR 6044/00S, PR 6044/10S	Upper plate	M8-A2-70	*	16.5 Nm
	Lower plate	M8-A2-70	*	16.5 Nm
	Internal lift-off protection	M12-A2-70		56.0 Nm
PR 6044/01S, PR 6044/11S	Upper plate	M12-A2-70	**	56.0 Nm
	Lower plate	M12-A2-70	**	56.0 Nm
	Internal lift-off protection	M16-A2-70		135.0 Nm

*

Recommendation for the washers of M8 mounting screws: DIN 7349 (d = 21, h = 4) or DIN 9021 or ISO 7093-2 (d = 24, h = 2)

**

Recommendation for the washers of M12 mounting screws: DIN 7349 (d = 30, h = 6) or DIN 9021 or ISO 7093-2 (d = 37, h = 3)

5.3 Assembly

5.3.1 Safety instructions

WARNING

The vessel may turn over during mounting.

Securing the vessel against tipping is imperative.

- ▶ Use an appropriate lifting jack.

WARNING

Warning of hazardous area and/or personal injury

The locking washers of the constrainers may only be used once.

- ▶ Insert new washers in case they have been damaged or removed. Spare parts, see Chapter 8.1.

NOTICE

Welding or lightning strike current flowing through the cell can damage it.

All electrical welding on the weighing system must be finished before mounting the load cells.

- ▶ When installing the load cell, immediately bypass the load cell with a flexible copper strap (included in the load cell equipment).

During any additional electrical welding work near the load cell:

- Disconnect the load cell cables.
- Bypass the load cell using the flexible copper strap.
- Make sure that the grounding clamp of the welding set is fitted as closely as possible to the welding joint.

5.3.2 Installing the mounting kit and inserting the load cell

Note:

Screw mounting of the upper and lower plates is described below.

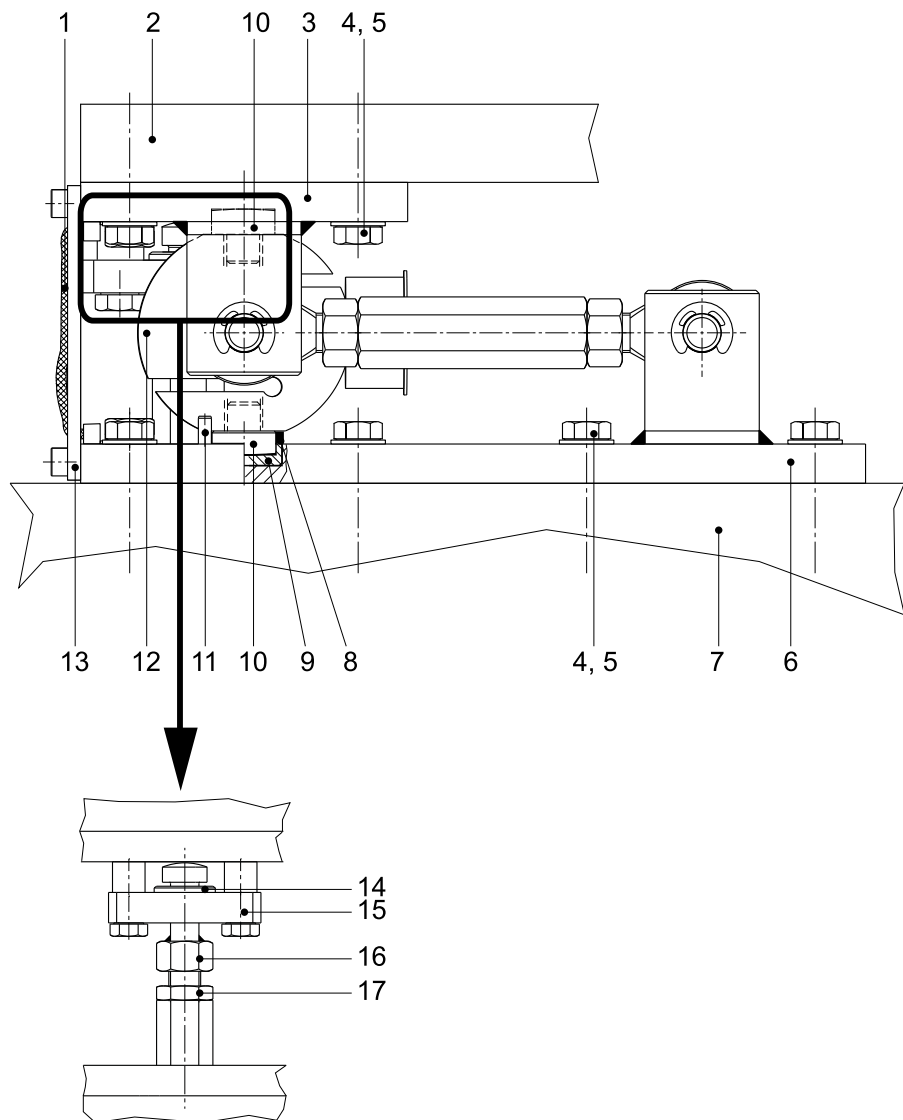
The operations must be performed at all supporting points (e.g., vessel) of the weighing object.

Requirements:

All threaded holes for the upper plate are available in the vessel lug/vessel foot (see Chapter 4.2).

Procedure:

Example: PR 6044/10S



1. Fit the mounting kit to the vessel foot (2). It is essential to observe the property classes and tightening torques of the screws (4) and washers (5) (refer to Chapter 5.2).

2. Place the vessel and mounting kit in the required position on the foundation/substructure (7). Always make sure that the plates are parallel and seated vertically above each other.
3. Mark mounting holes for the lower plate (6).
4. Position the vessel with the mounting kit so that the drilling can be performed.
5. Secure the mounting kit to the foundation/substructure (7). Make sure to use the correct tightening torques (see Chapter 5.2).
6. Connect an equipotential bonding conductor (1) (not included) between the upper plate (3) and the lower plate (6).
7. Once all welding near the load cell and mounting work on the weighing object is complete, clean the recess for the load disc (10) in the upper plate (3) and the recess for the load plate (9) in the lower plate (6).

Note:

If required, the threaded bar, washers, and nuts can be mounted as additional lift-off protection (see Chapter 3.4).

8. Loosen the nut (17).
9. Turn the threaded bolt (16) upwards at the hex until the auxiliary mounting plate (1) is unloaded.
10. Position the lifting gear on the weighing object.
11. Remove the auxiliary mounting plate (13).
12. Remove the spacer (see Chapter 4.1).
13. **Only for Maxi FLEXLOCK mounting kits with load cells PR 6241/12...52:** Take the two bushes out of the bag and fit them on the two pins (11).
14. Insert load plate (9) into the lower plate (6).

⚠ CAUTION

Do not damage the membrane at the load cell side.

- Carefully insert the load cell.
-

15. Use appropriate lifting gear to lift the weighing object so that the load cell (12) can be positioned vertically with the two load discs in the mounting kit using the supporting ring (8)*.

The load cell must be seated centrally between the pins/bushes.

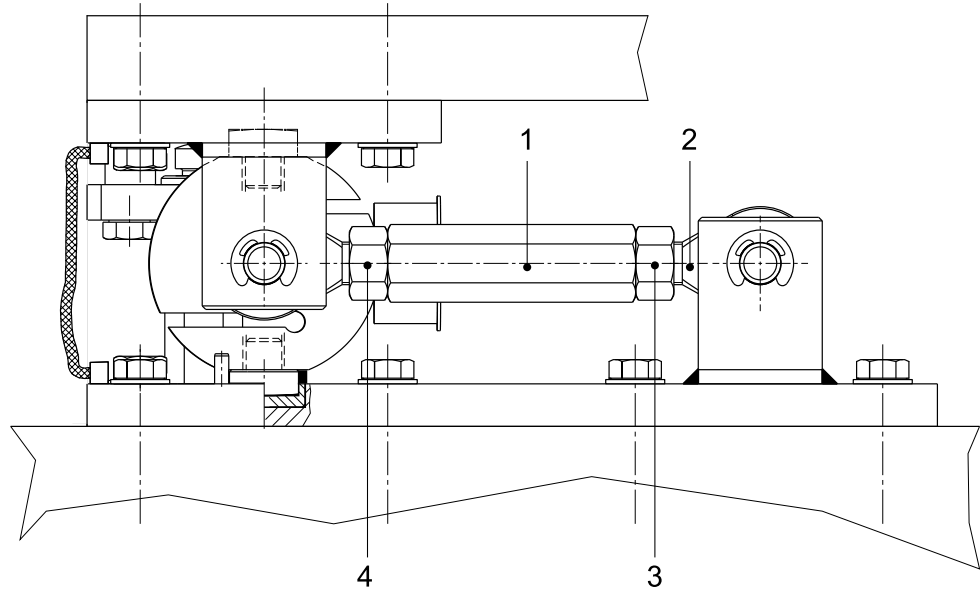
16. Load the load cell slowly and adjust the internal lift-off protection as described in Chapter 3.3.3. It is essential to ensure that the load cell is vertical and not jammed after loading.
17. Check that the washer (14) is not wedged by the retaining plate (15) of the lift-off protection.
18. If necessary, re-adjust the upper plate (3) and the lower plate (6).
19. If necessary, adjust the additional lift-off protection (see Chapter 3.4).

* PR 6044/00, ../10: O-ring, PR 6044/01, ../11: silicone ring

5.4 Check mounting

When all mounting kits have been installed, check them for proper mounting. In particular, force shunts should be avoided.

Example: PR 6044/10S



It is essential to check:

- whether the auxiliary mounting plate has been removed.
- whether the load cell has been inserted in the mounting kit vertically and without being canted.
- whether the washer is tilted or not in relation to the retaining plate of the lift-off protection.
- whether the upper and lower plates are mounted in a horizontal position.
- whether free moving space and the required play for thermal expansion are provided.
- **For PR 6044/10S and ../11S only:**
whether the constrictors (2) have sufficient clearance; if necessary, loosen nuts (3* and 4**), adjust using the screwed joint (1) and retighten the nuts.

* Right-handed thread, ** Left-handed thread

The free moving space which is required for displacement of the measured object due to thermal expansion, vibration, etc. can be utilized without reducing the measuring accuracy only if the load cell and constraining unit have been installed exactly.

To avoid force shunts, all incoming and outgoing lines (hoses, pipes, cables) must be connected to the measured object with the greatest flexibility possible.

The entire load must be supported by the load cells!

6 Cleaning

The mounting kit is easy to clean. It can be spray-washed with water (see IP68 specification).

NOTICE

Some cleaning agents may not be compatible with the mounting kit material.

- ▶ When using cleaning agents, ensure that their compatibility with the mounting kit material has been tested and approved (see Chapter [4.3](#)).
-

7 Disposal

Our products and their packaging should not be disposed of in municipal waste (e.g. garbage can for recyclable packaging, garbage can for paper packaging, etc.). They can either be recycled by the customer themselves, providing this complies with requirements set out by electrical or electronic waste or packaging waste laws, or sent back to Minebea Intec at a charge.

This option of returning the product is intended to provide proper recycling or reuse in a manner that is collected separately from municipal waste.

Before disposing of or scrapping the old products, any single-use or rechargeable batteries should be removed and taken to a suitable collection point. The type of battery used is specified in the technical data.

Please see our General Terms and Conditions for further information.

Service addresses for repair acceptance and collection points can be found on the product information enclosed with the product as well as on our website (www.minebea-intec.com).

Should you have any further questions, please contact your local service representative or our service center.

Minebea Intec GmbH

Repair center

Meiendorfer Strasse 205 A

22145 Hamburg, Germany

Phone: +49.40.67960.333

service.HH@minebea-intec.com

We reserve the right not to accept products that are contaminated with hazardous substances (ABC contamination).

8 Spare parts and accessories

8.1 Replacement parts

No.	Description	Max. capacity	Order no.
1	Flexible copper strap, 250 mm long		5312 321 28056
2	Load disc set (incl. O-ring)	100 kg...2 t	5312 693 98132
3	Load disc set (incl. silicon Load disc)	3 t, 5 t	5312 693 98076
4	2xlocking washer, 9 mm, DIN 6799 9-A2	for PR 6044/10	5312 530 78001
5	2x locking washer, 12 mm, DIN 6799 12-A2	for PR 6044/11	5312 530 78003

8.2 Accessories

8.2.1 Load discs

To install the load cell, the following load discs are recommended:

No.	Description	Max. capacity	Order no.
1	Load disc kit PR 6043/31S (incl. O-ring)	100 kg–2 t	9405 360 43312

S = stainless steel

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