Minebea intec
The true measure

Installation Manual

Load disc and mounting kits PR 6002

Translation of the Original Installation Manual 9499 053 00200 Edition 3.6.0 11/13/2024

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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

Table of contents

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 load disc and mounting kits PR 6002 are intended for weighing tasks, and must only be used as such.

The load disc and mounting kits PR 6002 are designed for installing the load cells PR 6202.

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

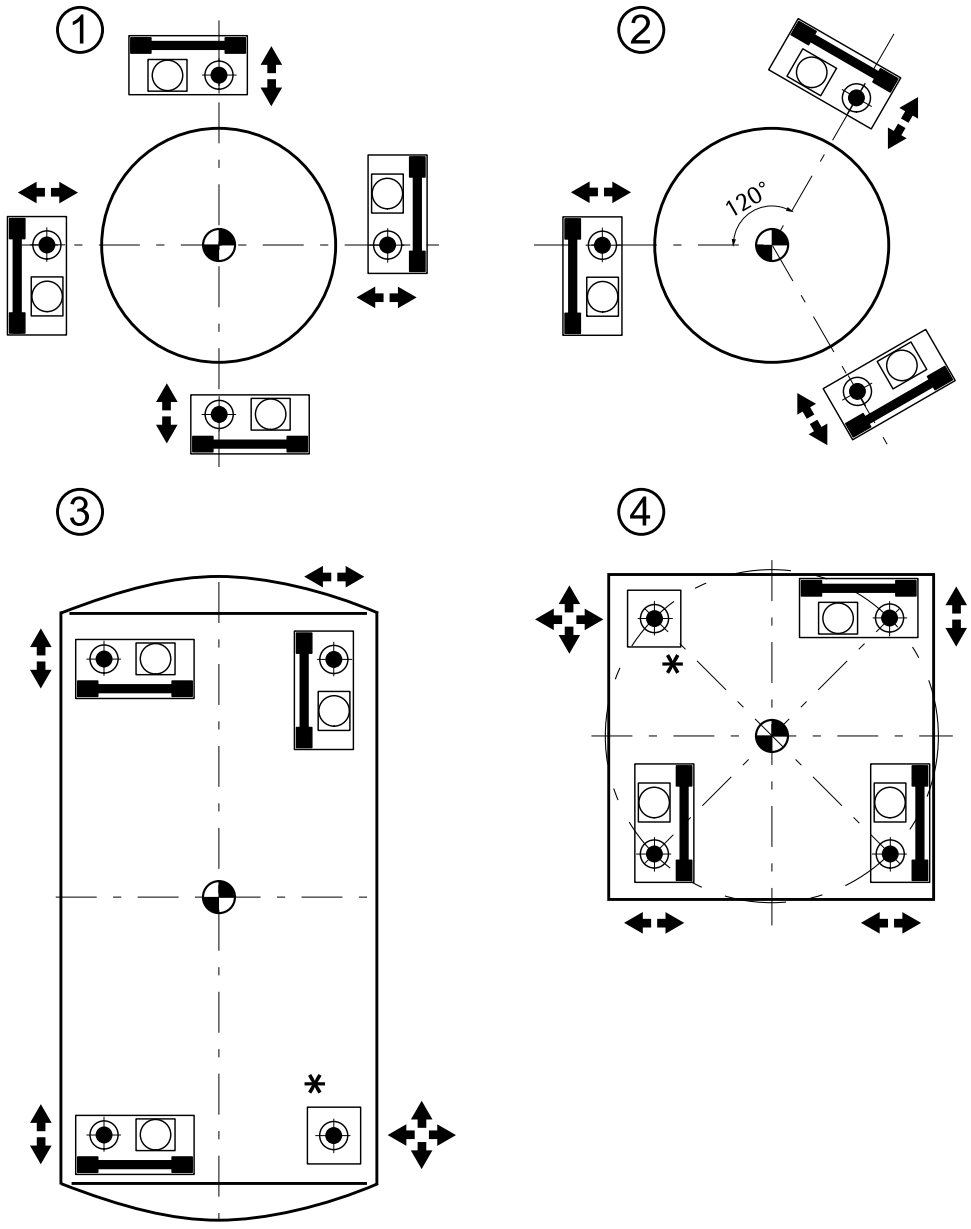
Perform visual inspection.

- Before operational startup as well as after storage or transport, inspect the mounting kit and load discs 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.

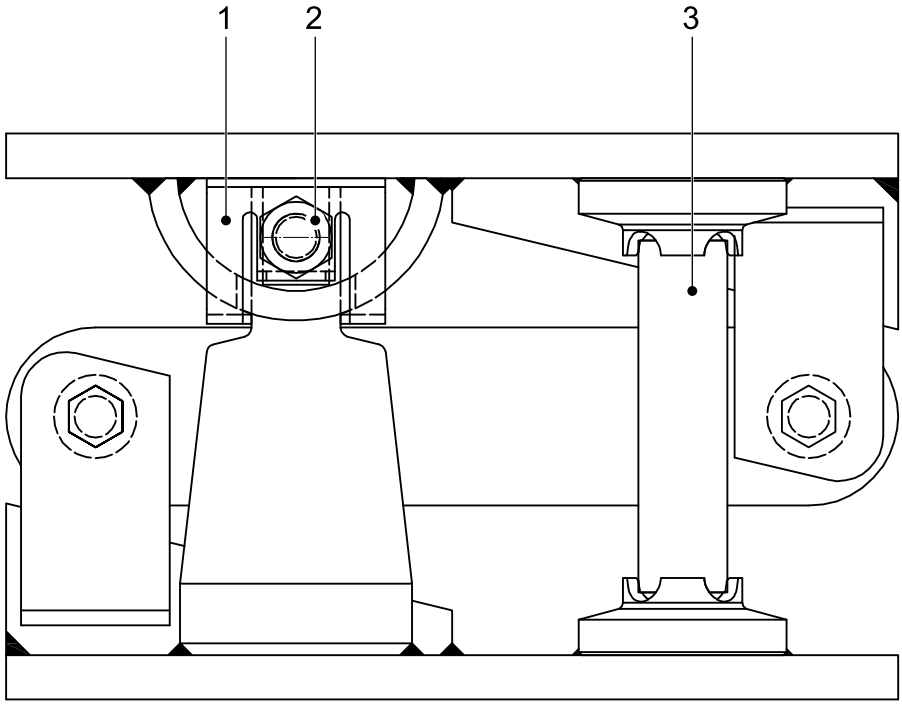
  Round containers are the exception (image ① and ②). In this case, any number of constrainers can be installed, provided that they are tangentially aligned.

  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 Transport locks

The mounting kits are supplied with transport locks.



Key

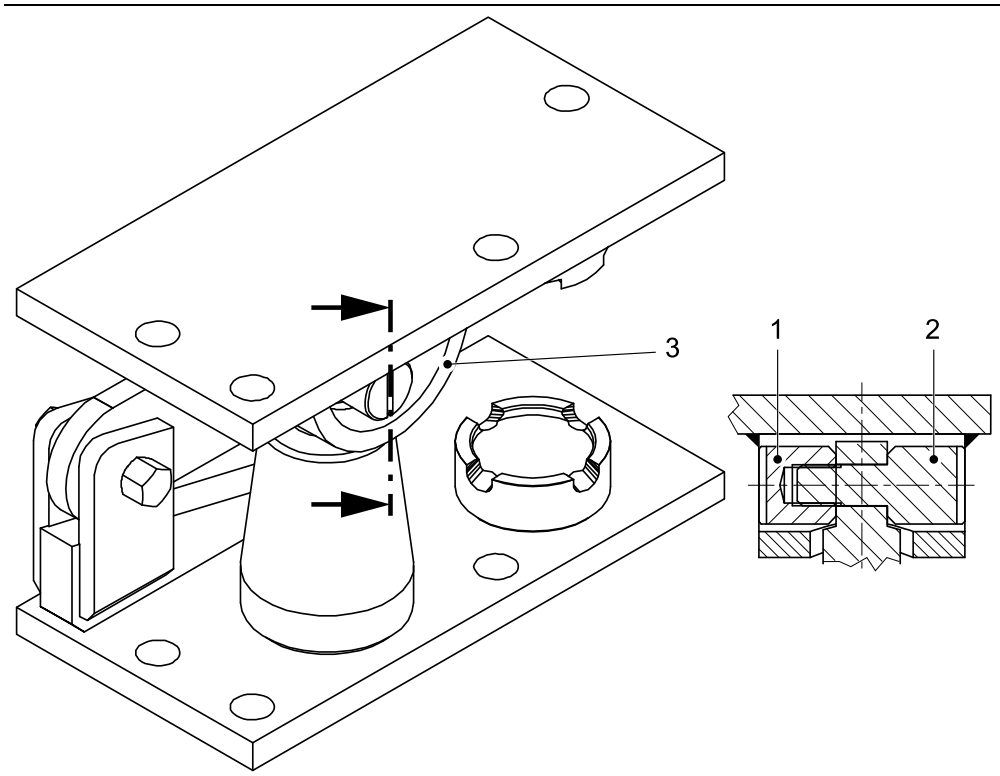
No.	Description
1	Tab (2×)
2	M16 screw connection
3	Support rod (designed as a metal tube for maximum capacities from 25 t)

The transport locks ensure that the installation height is complied with even without the load cell.

The transport locks must be removed after assembly of the mounting kit and before installation of the load cell.

- Loosen and remove the M16 screwed joint (2).
- Lift the upper part of the mounting kit and remove the tabs (1) and the support rod (3).

3.3 Internal lift-off protection



Key

No.	Description
1	Nut (not assembled delivered)
2	Screw (not assembled delivered)
3	Tie

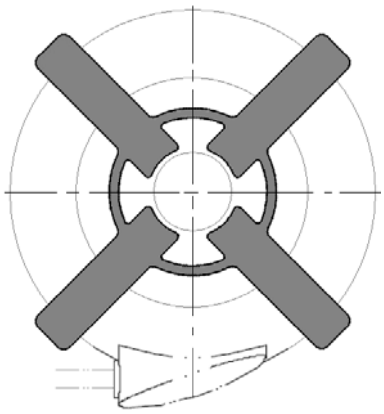
The mounting kits are equipped with internal lift-off protection, i.e. no additional borings are required in the vessel foot apart from the mounting holes.

The lift-off protection consists of a screw (2), a nut (1), and a tie (3).

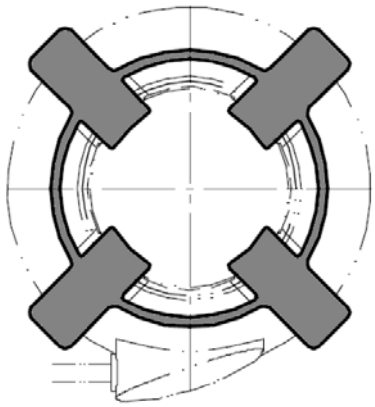
After installation/alignment of the load cell, the lift-off protection must be installed.

The slots must not be turned more than 30° from the vertical.

3.4 Installation aid



1...10 t



25...50 t

The installation aid is intended to facilitate the vertical installation of the load cell PR6202.

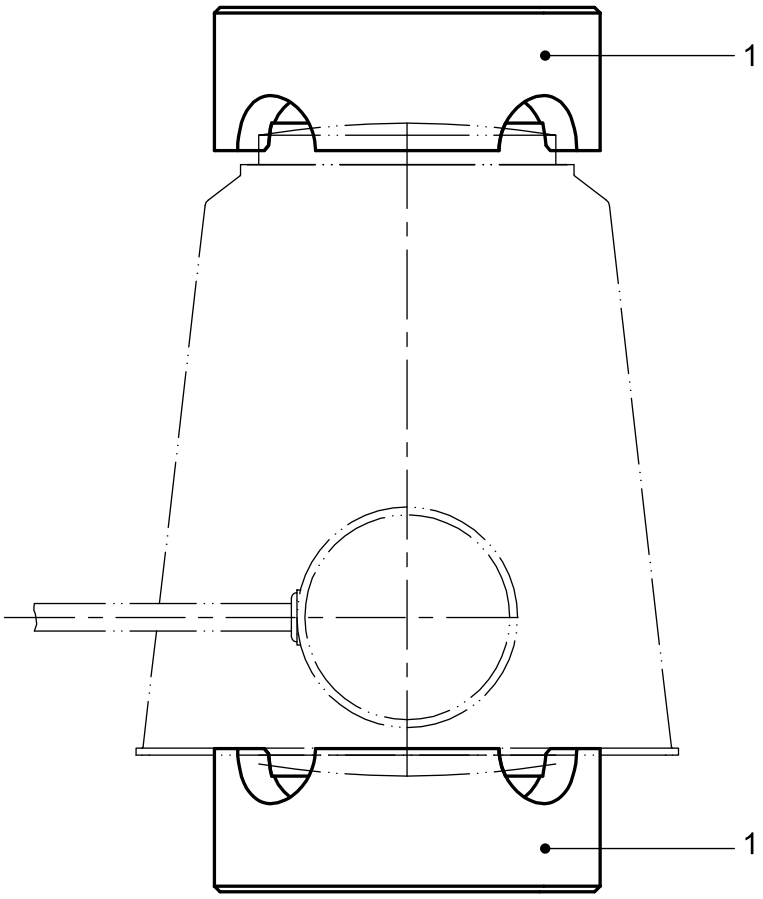
Procedure:

- Set the installation aid on the lower load disc.
- Position the load cell between the load discs.
- Lower the vessel and tighten the mounting screws.
- First pull out all of the tabs of the installation aid approx. 15 mm so that the installation aid can be removed between the load disc and the load cell.
- Finally, cut or tear apart the installation aid and remove completely.

4 Specifications

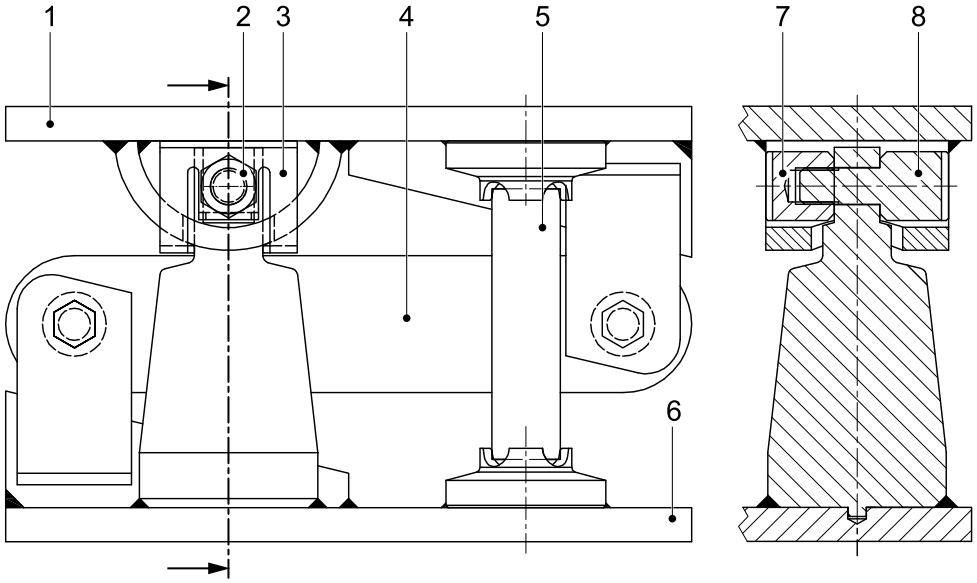
4.1 Equipment supplied

4.1.1 Load disc kits PR 6002/00S, ../01S



No.	Description
1	Load disc (2×)
Not shown:	
2	Mounting aid
3	Additional information

4.1.2 Mounting kits PR 6002/10S, ../11S

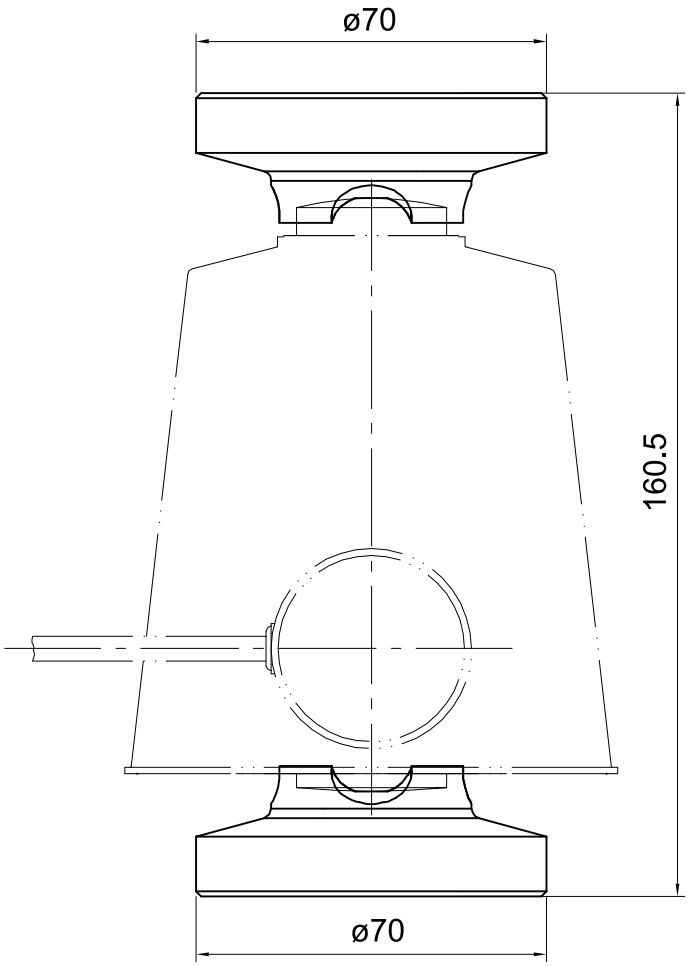


Section “A-A” shows the installed lift-off protection (7 + 8).

No.	Description
1	Upper plate
2	Transport lock: M16 screw connection
3	Transport lock: Tab (2×)
4	Constrainer
5	Transport lock: Support rod
6	Lower plate
7	Internal lift-off protection: Nut
8	Internal lift-off protection: Screw
Positions not shown:	
9	Mounting aid
10	Quick guide

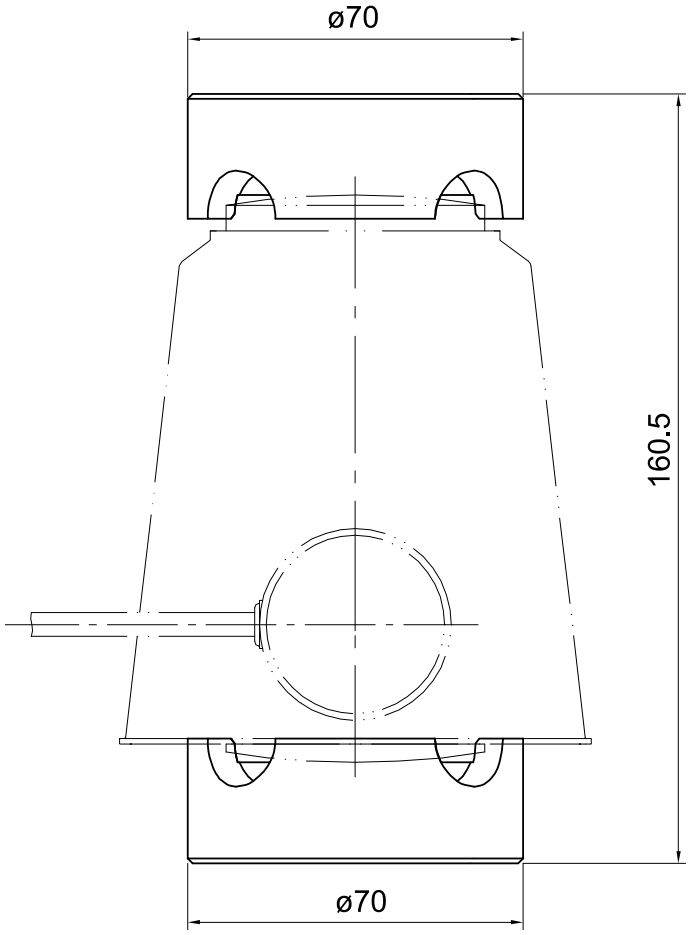
4.2 Dimensions

Load disc kit PR 6002/00S



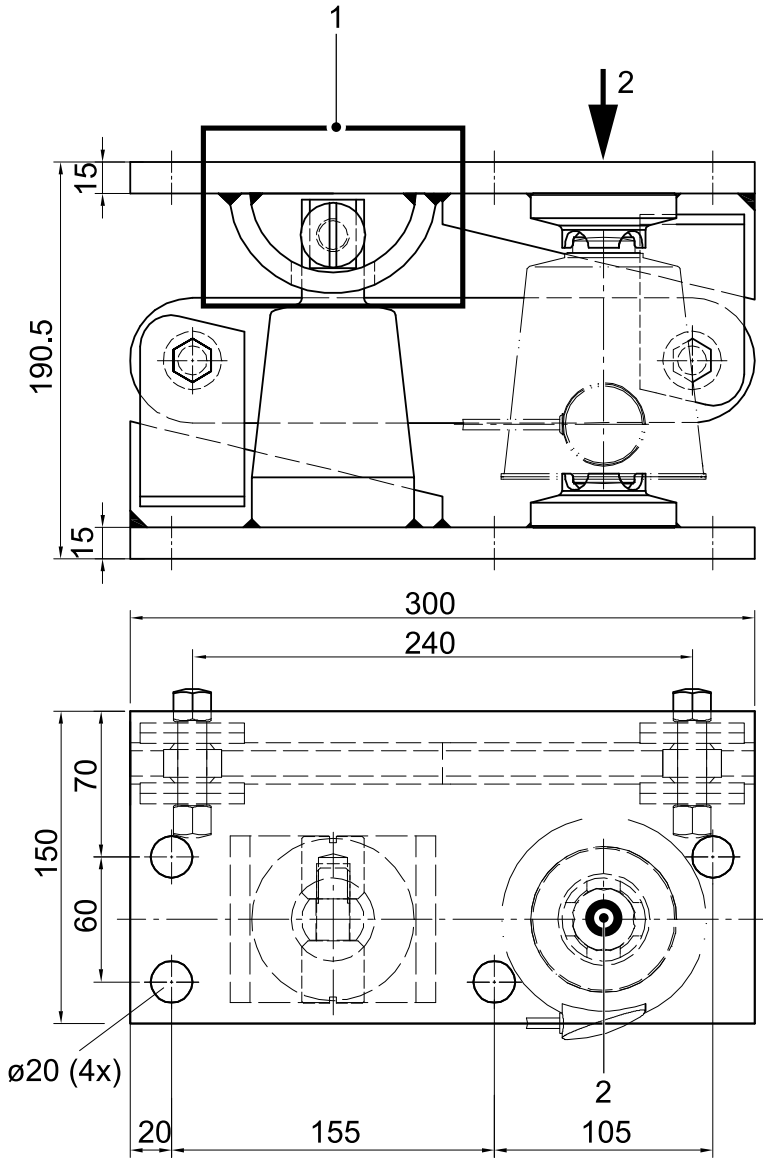
all dimensions in mm

Load disc kit PR 6002/01S



all dimensions in mm

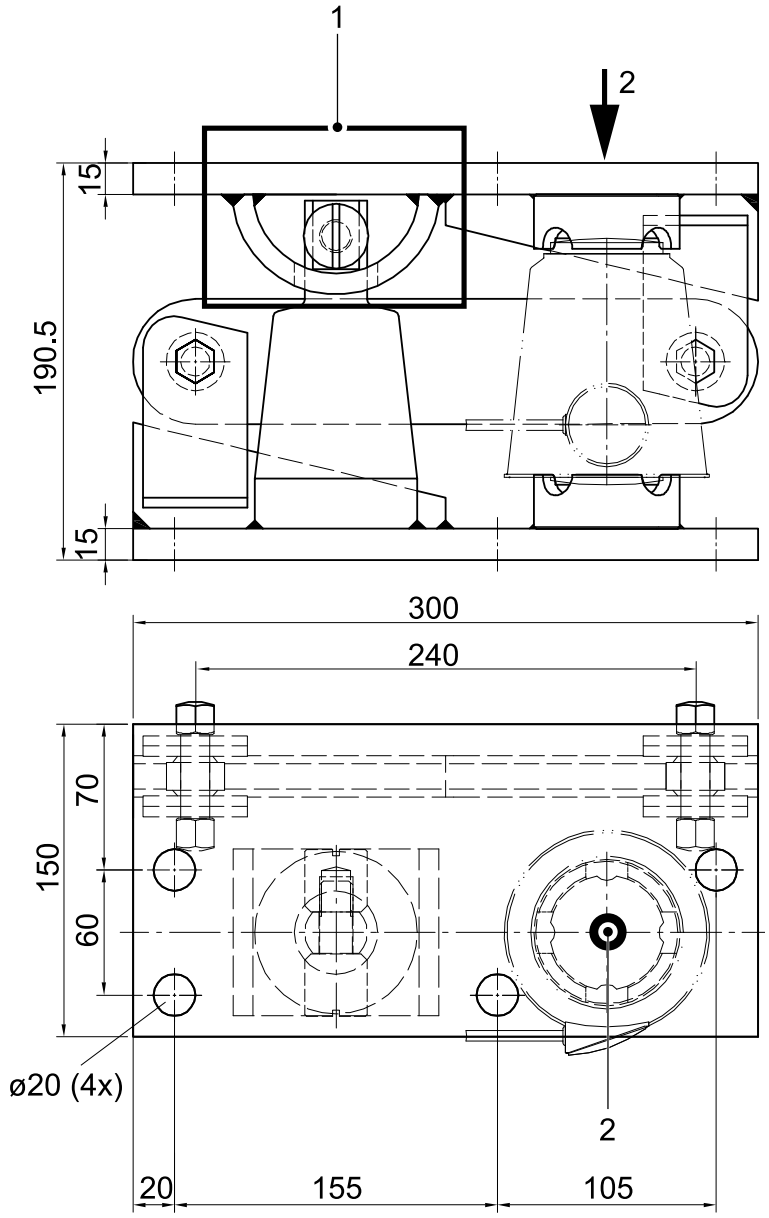
Mounting kit PR 6002/10S



all dimensions in mm

No.	Description
1	Integrated dummy and lift-off function
2	Load application

Mounting kit PR 6002/11S



all dimensions in mm

No.	Description
1	Integrated dummy and lift-off function
2	Load application

4.3 Technical data

Load disc kits PR 6002/00S, ../01S

	PR 6002/00S	PR 6002/01S
Maximum capacity of load cell	1...10 t	25...50 t
Perm. temperature range	-40 °C...+100 °C	-40 °C...+100 °C
Material	Stainless steel 1.4542 as per DIN EN 10088-3	Stainless steel 1.4542 as per DIN EN 10088-3
Weight net	1.0 kg	1.3 kg
Weight gross	1.1 kg	1.4 kg

Mounting kits PR 6002/10S, ../11S

	PR 6002/10S	PR 6002/11S
Maximum capacity of load cell	1...10 t	25...50 t
Perm. horizontal force	max. 25 kN	max. 25 kN
Horizontal destructive force	>50 kN	>50 kN
Perm. lifting force	max. 25 kN	max. 25 kN
Lifting destructive force	>40 kN	>40 kN
Perm. vertical load without load cell	max. 2.5 t	max. 2.5 t
Perm. vertical load with transport lock (support rod)	max. 2.5 t	max. 10 t
Perm. horizontal displacement	max. ±5 mm	max. ±5 mm
Perm. temperature range	-40 °C...+100 °C	-40 °C...+100 °C
Material	Stainless steel 1.4301 as per DIN EN 10088-3	Stainless steel 1.4301 as per DIN EN 10088-3
Weight net	21.7 kg	22.3 kg
Weight gross	22.0 kg	22.6 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.
- The surfaces for the load discs must be horizontal, flat, and rigid. They must be able to withstand the pressure loads that occur.

  If soft filler layers are present, external load distribution plates must be provided.

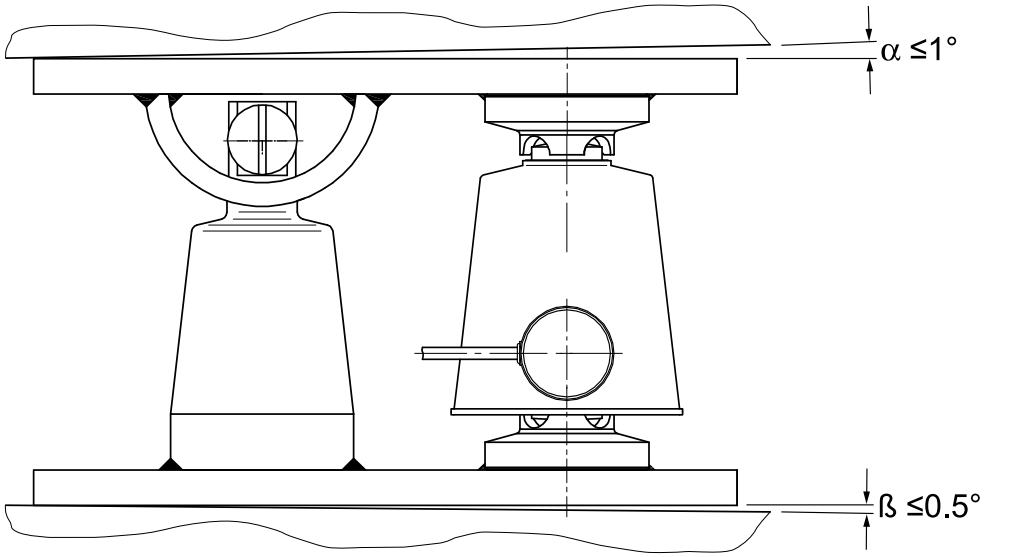
Note:

The material properties and the shape of the load cells and load discs are perfectly matched to one another.

Load discs from Minebea Intec must be used.

- **For screw mounting of the upper and lower plates**:
  - Generate the drilling pattern of the lower plate of the mounting kit (see Chapter 4.2) according to the weighing system arrangement on the foundation/ substructure.
- 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.



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 parts	Thread	Tightening torque
Upper plate	M12-A2-70	60 Nm
Lower plate	M12-A2-70	60 Nm
Recommendation for the washers of M12 mounting screws	13×30×6-A2 DIN 7349	

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.

5.3.2 Installing mounting kit PR 6002/10S, ../11S 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 lower plate are available in the foundation/substructure (see Chapter 4.2).
- All threaded holes for the upper plate are available in the vessel lug/vessel foot (see Chapter 4.2).

Note:

The mounting kit must be installed such that the operator side is freely accessible (in most cases it will face outwards). The load cell is accessible from the operator side. The transport locks can be removed easily.

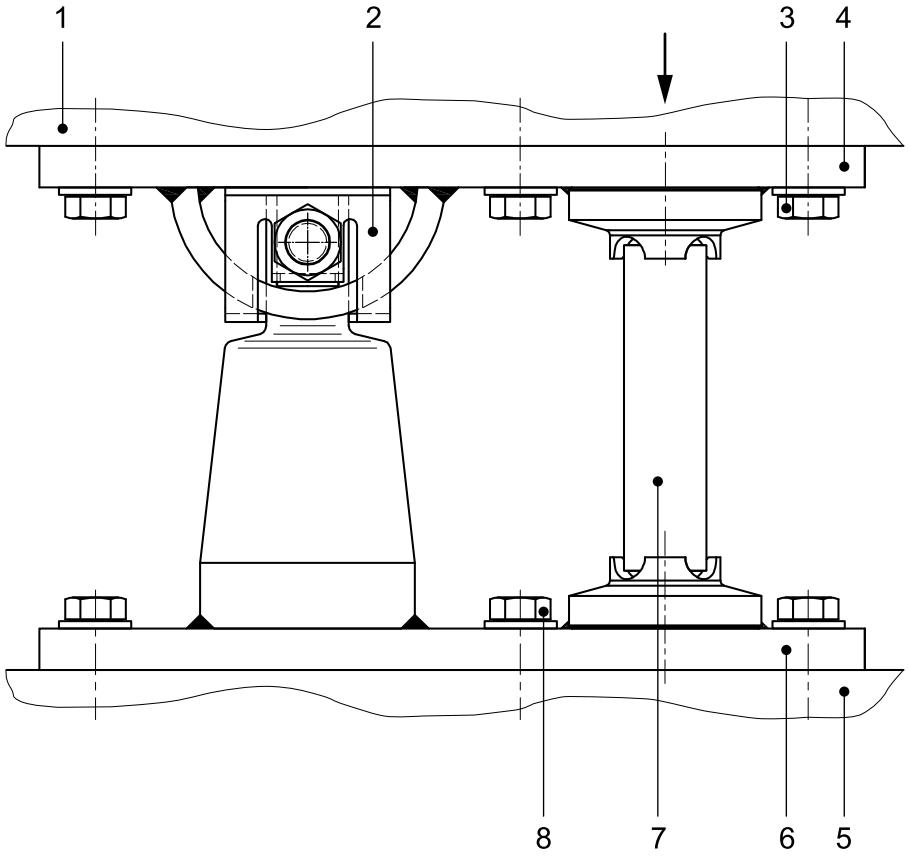
The constrainer must **not** be adjusted.

NOTICE

Potential instability of the weighing object

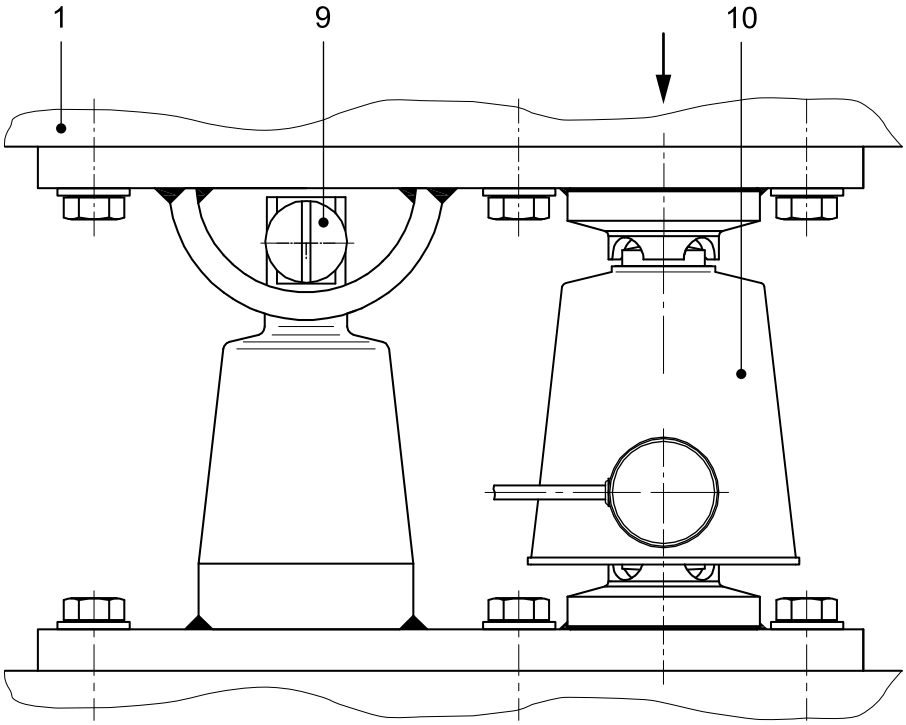
▶ The position of the load application (see arrow in the figure) must be observed.

Procedure:



1. Place the mounting kit on the foundation (5) and tighten the screws (8) slightly.
2. Place the weighing object (1) on the mounting kit and align using the holes.
3. Align the washers over the holes such that they are covered.

4. Tighten the screws (3) in the upper plate (4) and the screws (8) in the lower plate (6). It is essential to observe the property classes and tightening torques of the screws and the property classes of the washers (refer to Chapter 5.2).
5. Lift the weighing object (1) approximately 5 mm using an appropriate hoist.
6. Remove the transport locks (2) and (7); refer to Chapter 3.2.



7. Clean the load cell base in the two load discs.
8. Apply a sufficient quantity of grease to the contact surfaces between the load cell and load discs.
9. Position and install the load cell (10) using the mounting aid; refer to Chapter 3.4.
10. Lower the weighing object (1) back onto the mounting kit using an appropriate hoist.
11. Remove the mounting aid; refer to Chapter 3.4.
12. Install the internal lift-off protection (9); refer to Chapter 3.3.

5.4 Check mounting

When all mounting kits have been installed, check them for proper mounting.

In particular, force shunts should be avoided.

It is essential to check:

- whether the load cell has been inserted in the mounting kit vertically and without being canted.
- 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.
- whether the constrainers have sufficient clearance.

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.

For this purpose, spray the water jet from top to bottom and around the mounting kit.

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 Replacement parts

No.	Description	Max. capacity
1	Mounting aid	1...10 t
2	Mounting aid	25...50 t
3	Lift-off protection	

Published by
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