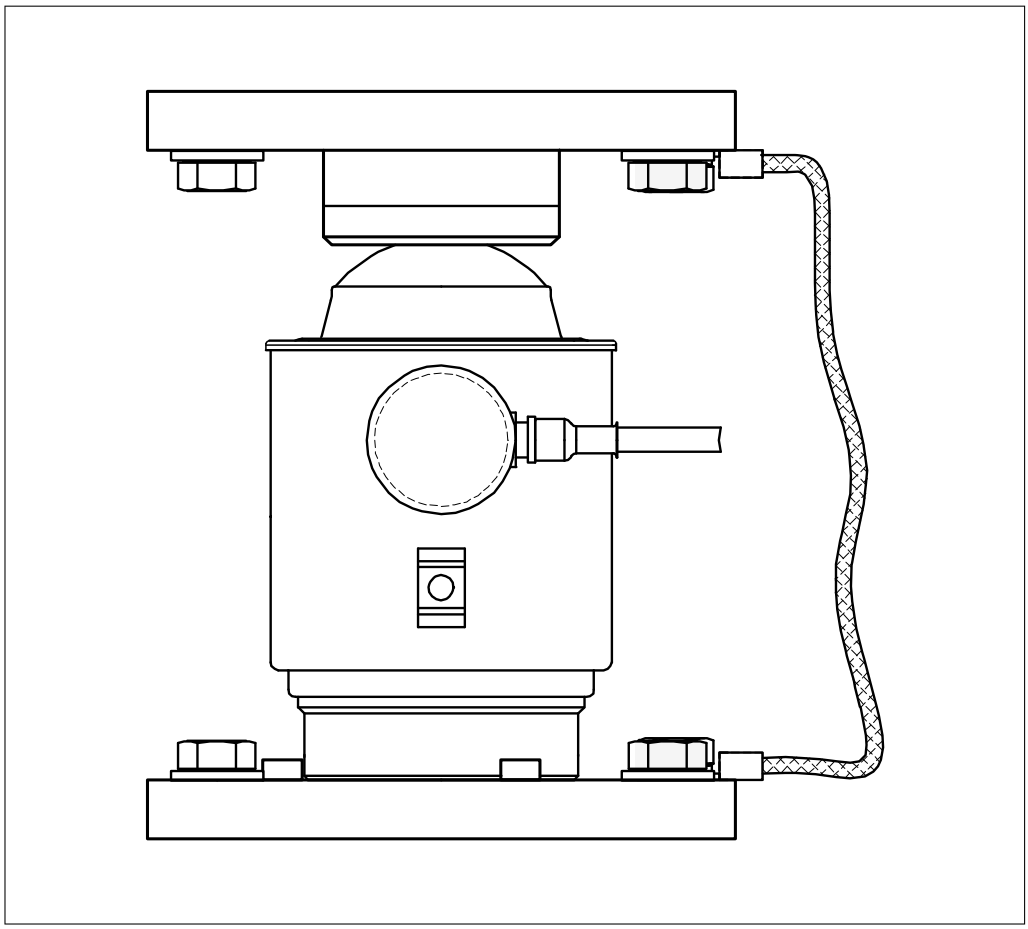
Minebea intec
The true measure

Installation Manual

Mounting kits PR 6145/00N, PR 6145/00S, PR 6145/08N, PR 6145/10N



Translation of the Original Installation Manual 9499 053 25700 Edition 7.5.0 12/15/2022

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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

This document is partially protected by copyright. It may not be changed or copied, and it may not be used without purchasing or written permission from the copyright owner (Minebea Intec). The use of this product constitutes acceptance by you of the abovementioned provisions.

Table of contents

1 Introduction ... 3
1.1 Read the manual ... 3
1.2 This is what operating instructions look like ... 3
1.3 This is what lists look like ... 3
1.4 This is what menu items and softkeys look like ... 3
1.5 This is what the safety instructions look like ... 3
1.6 Hotline ... 4

2 Safety instructions ... 5
2.1 General notes ... 5
2.2 Intended use ... 5
2.3 Initial inspection ... 5
2.4 Before operational startup ... 5

3 Recommendations for installation ... 6
3.1 Load cell and constrainer arrangement ... 6

4 Specifications ... 8
4.1 Equipment supplied ... 8
4.1.1 PR 6145/00, PR 6145/08, PR 6145/10 ... 8
4.2 Dimensions ... 9
4.2.1 Hole patterns ... 9
4.3 Technical data ... 10

5 Installation ... 11
5.1 Prior to mounting ... 11
5.1.1 Preparing the foundation/substructure ... 11
5.2 Tightening torques ... 11
5.3 Assembly ... 12
5.3.1 Safety instructions ... 12
5.3.2 Installing the mounting kit ... 12
5.4 Check mounting ... 15

6 Cleaning ... 16

7 Disposal ... 17

8 Spare parts and accessories ... 18
8.1 Replacement parts ... 18
8.2 Accessories ... 18
8.2.1 Load discs ... 18

9 Certificates ... 19

9.1 CE-PR 6145 20
9.2 004/2021 21
9.3 2451-CPR-EN1090-2014.2089.005 23

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 6145/00N, PR 6145/00S, PR 6145/08N, PR 6145/10N are intended for weighing tasks, and must only be used as such.

The mounting kits PR 6145/00N, PR 6145/00S, PR 6145/08N, PR 6145/10N are designed for installing the load cells PR 6201, PR 6203, PR 6204.

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

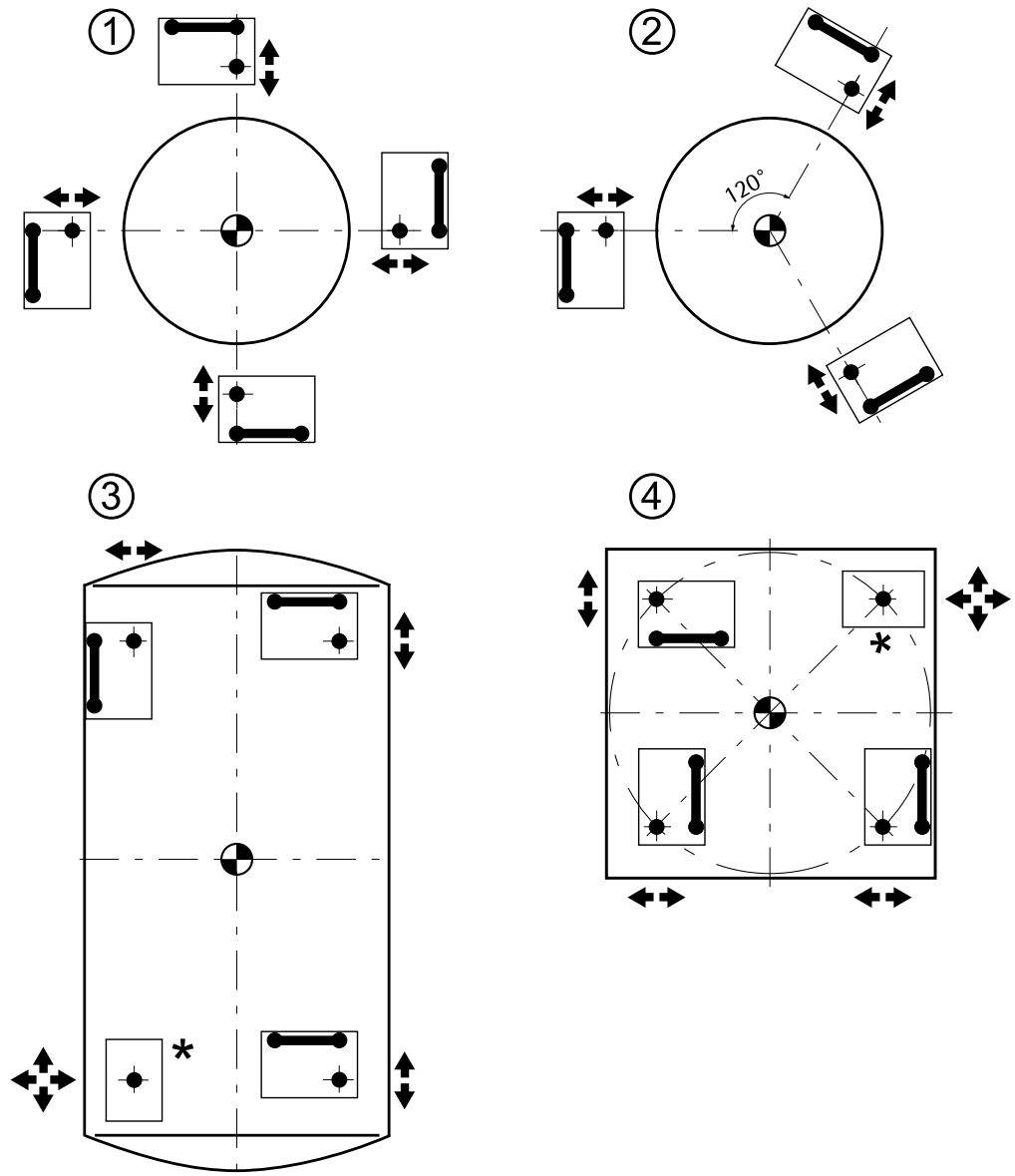
Perform visual inspection.

- 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.

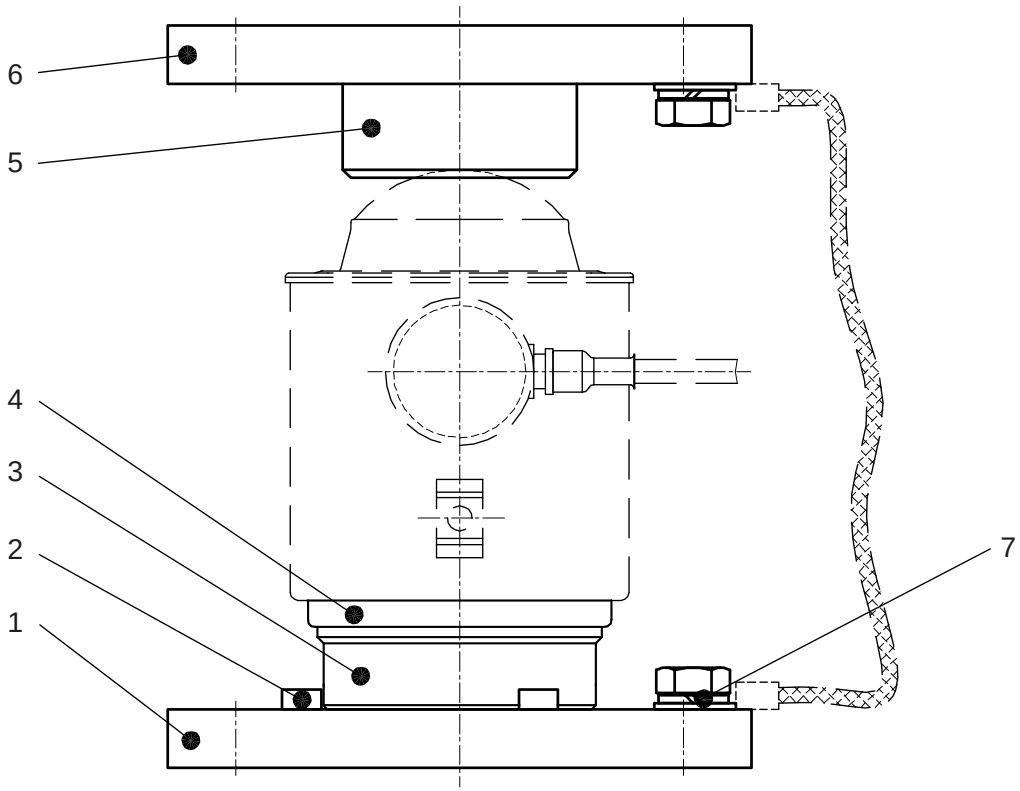
  Special mounting kits are available for weighing points without constrainers. Alternatively, the constrainer can simply be removed.

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

4 Specifications

4.1 Equipment supplied

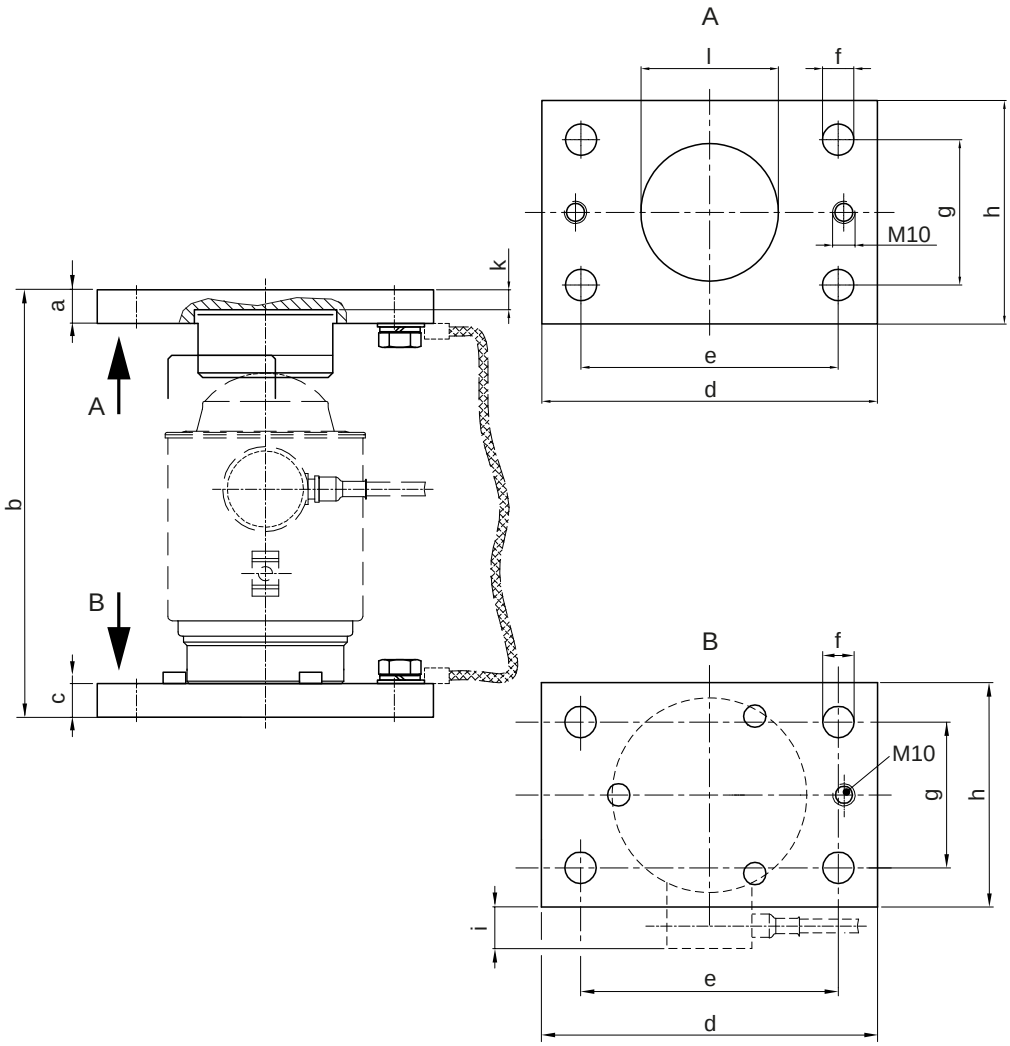
4.1.1 PR 6145/00, PR 6145/08, PR 6145/10



No.	Description
1	Lower plate
2	Centering device (3× pin)
3	**Only for PR 6145/00S** for 0.5 to 10 t: Lower load disc (order no. for 20 to 75 t, see Chapter 8.1)
4	**Only for PR 6145/00S** for 0.5 to 10 t: Supporting ring (order no. for 20 to 300 t see Chapter 8.1)
5	Upper load disc
6	Upper plate
7	Screw (2×) and spring washer (2×) for the equipotential bonding cable (supplied with the load cell)
8	Quick guide (not shown)

4.2 Dimensions

4.2.1 Hole patterns



All dimensions in mm

Mounting kit	a	b	c	d	e	f	g	h	j	k	l
PR 6145/00N+S	15	190.5	15	150	115	14	65	100	18	9	61.5
PR 6145/08N	30	290.0	30	180	145	18	95	130	18	22	86.5
PR 6145/10N	40	385.0	40	220	185	24	135	180	14	28	109.5

4.3 Technical data

Mounting kit	PR 6145/00N	PR 6145/00S	PR 6145/08N	PR 6145/10N
Max. capacity of load cell	500 kg...75 t	500 kg...75 t	100 t	200 t, 300 t
Permissible temperature range	-40 °C...+100 °C	-40 °C...+100 °C	-40 °C...+100 °C	-40 °C...+100 °C
Material	*	**	*	*
Weight net/gross	4.00 kg/4.50 kg	4.67 kg/5.16 kg	12.1 kg/12.5 kg	27.1 kg/27.4 kg

* Steel galvanized, chromated and sealed (ROHS-compliant)
** Stainless steel 1.4301 acc. to DIN EN 10088-3

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.
- 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.

5.2 Tightening torques

The corresponding tightening torques are given in the following table.

Mounting kit	Thread	Washer	Tightening torque
PR 6145/00N	M12-8.8	*	85 Nm
PR 6145/00S	M12-A2-70	*	60 Nm
PR 6145/08N	M16-8.8	**	210 Nm
PR 6145/10N	M20-8.8	***	300 Nm

*	
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)
**	
Recommendation for the washers of M16 mounting screws:	DIN 7349 (d = 40, h = 6) or ISO 7093 (d = 50, h = 3)
***	
Recommendation for the washers of M20 mounting screws:	DIN 7349 (d = 44, h = 8) or ISO 7093 (d = 60, h = 4)

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.

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

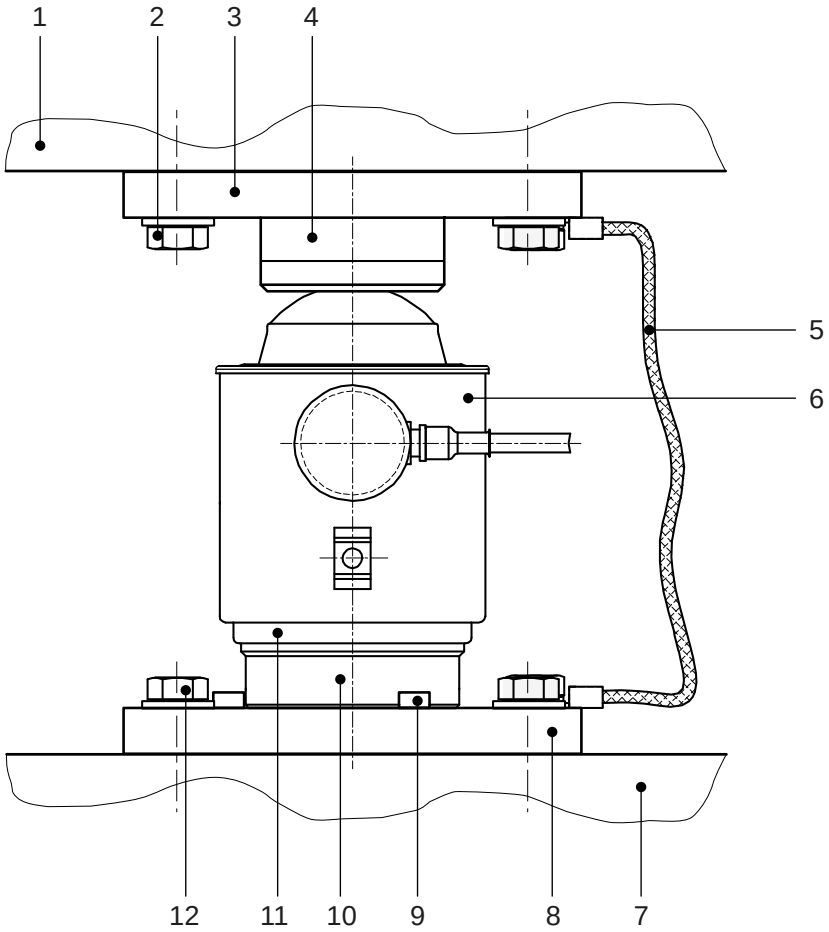
Note:

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

The work steps must be carried out on all support points of the vessel.

Requirements:

- All threaded holes for the lower plate are available in the foundation/substructure (see Chapter 4.2.1).
- All threaded holes for the upper plate are available in the vessel bracket/vessel foot (see Chapter 4.2.1).



Procedure:

1. Screw the lower plate (8) to the foundation (7) and screw the upper plate (3) to the weighing object support (1). The property classes and tightening torques of the screws (2 and 12) must be observed; see Chapter 5.2. Ensure that the plates are parallel and seated vertically above each other.
2. Connect an equipotential bonding conductor (5) (supplied with the load cell) between the upper and lower plates.
3. Clean the load cell base on the lower plate (8) and the recess for the upper load disc (4) in the upper plate (3).
4. Apply sufficient grease to the contact surfaces between load cell/load disc and upper plate/load disc.
5. Insert the load cell (6) with lower load disc (10) and supporting ring (11) (supplied with the load cell) vertically in the centering device (9) on the lower plate (8).

For PR 6145/00S only:

Note:

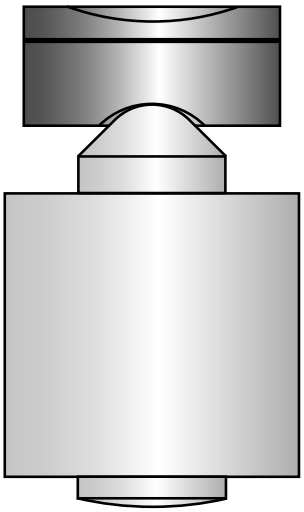
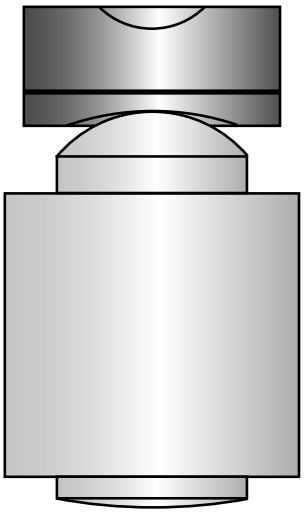
When installing 20 to 75 t load cells, the lower load disc must be used with supporting ring PR 6143/54S; for order no. see Chapter 8.1.

Insert the load cell (6) with the lower load disc (10) marked "SS" and the associated food-safe supporting ring (11) (light beige) vertically in the centering device (9) on the lower plate (8).

Note:

Stainless steel load discs are marked with a double groove.

The following images show a schematic representation of the load cell and upper load disc.

Small load cell radius (15 mm)	**Large load cell radius (35 mm)**
E_{max} = 500 kg to 10 t	E_{max} = 20 to 75 t
	

6. Carefully lower the vessel to insert the upper load disc (4) into the recess of the upper plate (3) and to position it on the load cell (6).

   Ensure the upper load disc is in the correct position – see image.

   It is essential to ensure that the load cell is inserted in the mounting kit vertically and without being canted.

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.

  If necessary, loosen the screws in the upper and lower plates slightly and move the plates.

- 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.

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 has 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 Spare parts and accessories

8.1 Replacement parts

No.	Description	Max. capacity	Order no.
1	Upper load disc (for PR 6145/08N)	100 t	5322 520 10552
2	Upper load disc (for PR 6145/10N)	200 t, 300 t	5322 520 10553
3	Flexible copper strap, 400 mm long		5312 321 28057

N = steel zinc plated, passivated and sealed (RoHS-compliant)

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	Upper load disc, standard PR 6143/50N	500 kg–75 t	9405 361 43501
2	Upper load disc, PR 6143/50S	500 kg–75 t	9405 361 43502
3	Lower load disc with supporting ring PR 6143/24S	500 kg–10 t	9405 361 43242
4	Lower load disc with supporting ring PR 6143/54S	20–75 t	9405 361 43542

N = steel zinc plated, passivated and sealed (RoHS-compliant)

S = stainless steel

9 Certificates

Ser. no.	Description	Document no.	see Chapter
1	CE marking	CE-PR 6145	9.1
2	Declaration of Performance	004/2021	9.2
3	Conformity of the Factory Production Control	2451-CPR-EN1090-2014.2089.005	9.3

9.1 CE-PR 6145

European Standard EN 1090

Since July 2014, load-bearing parts made of steel have required EN 1090 certification to obtain general technical approval.

The standard applies in the following countries:

Belgium, Bulgaria, Denmark, Germany, Estonia, Finland, France, Greece, Ireland, Iceland, Italy, Croatia, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Austria, Poland, Portugal, Romania, Sweden, Switzerland, Slovakia, Slovenia, Spain, the Czech Republic, Hungary, the United Kingdom and Cyprus

CE

2451

Minebea Intec GmbH
Meiendorfer Strasse 205 A, 22145 Hamburg, Germany

14

2451-CPR-EN1090-2014.2089.004

EN1090-1+A1:2011

Mounting kit PR6145/xxN

Geometric tolerances: EN 1090-2

Supplementary tolerances: ISO 2768 – cL

Weldability:	Steel S235JR in accordance with EN 10025-2
Fire behavior:	Material classified in category A1
Durability:	galv. zinc coating, passivated and sealed in accordance with DIN EN ISO 19598

Load capacity characteristics:

Load capacity:	Measurement carried out in accordance with EN 1993-1
Manufacturing:	In accordance with component specification 940536145xx1 and EN1090-2, design class EXC2

9.2 004/2021

Minebea intec

Declaration of Performance

in accordance with Annex III of regulation (EU) no 305/2011
(Building Products Regulation)

No 004/2021

1.	ID code of product type:	Mounting kit
2.	ID to identify the building product in accordance with article 11, paragraph 4:	PR 6145/xxN
3.	Intended use:	The mounting kit is used in combination with a PR 6201/PR 6203/PR 6204 load cell for container and silo weighing.
4.	Manufacturer in accordance with Article 11, Paragraph 5:	Minebea Intec GmbH Meiendorfer Strasse 205 A 22145 Hamburg, Germany
5.	System to evaluate and check the constancy of performance of the building product in accordance with Annex V:	System 2+
6.	The notified location:	DVS ZERT GmbH has carried out the first inspection of the plant and in-house production control, as well as continuous monitoring, assessment and evaluation of the in-house production control in accordance with system 2+ and issued the following: **Certification of Conformity for In-House Production Control**
	Harmonized standard:	**EN 1090-1:2009+A1:2011**
	Certificate number:	**2451-CPR-EN1090-2014.2089.004**
7.	Performance declaration:	

Essential features	Performance/classification
Geometric tolerances	EN 1090-2
Extended tolerances	ISO 2768 - cL
Weldability	Steel S235JR in accordance with EN 10025-2

Fracture toughness	27J at 20°C
Fire behavior	Material classified in category A1
Durability	galv. zinc coating, passivated and sealed in accordance with DIN EN ISO 19598
Load capacity	Measurement carried out in accordance with EN 1993-1
Manufacturing	In accordance with component specification 940536145xx1 and EN1090-2, execution class EXC2

8. The performance of the product in accordance with numbers 1 and 2 corresponds to the performance declaration in number 7. The manufacturer in accordance with number 4 is solely responsible for creating this performance declaration.

Signed for the manufacturer and on behalf of the manufacturer by:

Minebea Intec GmbH
Hamburg, June 21, 2021

Dr. Karl Christoph Sommer
Managing Director

Robert Fuchs
Responsible for in-house production control (according to DIN EN 1090)

9.3 2451-CPR-EN1090-2014.2089.005

DVS ZERT

CERTIFICATE

Conformity of the Factory Production Control

2451-CPR-EN1090-2014.2089.005

In compliance with Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the following construction product:

Construction product	**Structural components and kits for steel structures to EXC2 according to EN 1090-2**
Intended use	for load-bearing structures in all types of buildings
CE - marking method	ZA.3.2 to ZA.3.5 acc. to EN 1090-1:2009+A1:2011
	produced by or for
Manufacturer	**Minebea Intec GmbH** **Meiendorfer Straße 205 A** **22145 Hamburg** **GERMANY**
Manufacturing plant Production facility of the manufacturer	HW-1
Confirmation	This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the harmonised standard **EN 1090-1:2009+A1:2011** under system 2+ are applied, and that the factory production control fulfills all the prescribed requirements stated therein.
Date of first issue	11.11.2014
Next Surveillance audit	10.11.2023
Period of validity	This certificate will remain valid as long as the test methods and/or the factory production control requirements included in the harmonised standard used to assess the performance of the declared characteristics do not change, and the product and the manufacturing conditions in the plant are not modified significantly.
Remarks	see reverse
Place and date of issue	Düsseldorf, 02.08.2021 Bullert

Dipl.-Ing. Gurschke
Head of certification body

DAkkS Deutsche Akkreditierungsstelle D-ZE-16083-01-00

DVS ZERT GmbH, Aachener Straße 172, 40223 Düsseldorf, GERMANY

Certificate number: 2451-CPR-EN1090-2014.2089.005

Remarks

The Notified Body - 2451 DVS ZERT GmbH has performed the initial inspection of the/of manufacturing plant(s) and of the factory production control and performs the continuous surveillance, assessment and approval of the factory production control.

General provisions

The conditions of the standard EN 1090-1:2009+A1:2011, from section B. 4.1 until including section B. 4.4, must be fulfilled.

The requirements of EN 1090-1:2009 + A1: 2011, section B. 4.3 are observed. These refer to the annual statements to be submitted in writing of the manufacturer to the Notified Body.

The General Terms and Conditions of the DVS ZERT GmbH apply in the currently valid version.

DVS ZERT GmbH, Aachener Straße 172, 40223 Düsseldorf, GERMANY

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