



INSTALLATION AND OPERATING INSTRUCTIONS

CSR series
Collision protection

DDOC00267

THE KNOW-HOW FACTORY

Contents

1	Supporting documents.....	4
2	Safety notes.....	4
3	Proper use.....	5
4	Personnel qualification.....	5
5	Product description.....	5
5.1	Forces and torques.....	5
5.2	Type plate.....	5
6	Function.....	6
7	Technical data.....	6
8	Installation.....	7
8.1	General installation information.....	7
8.2	Installing the product on the robot.....	8
8.3	Installing the custom application.....	8
8.4	Installing the power supply and sensor.....	9
8.5	Installing accessories.....	9
9	Maintenance.....	10
10	Accessories / scope of delivery.....	10
11	Transportation / storage / preservation.....	10
12	Decommissioning and disposal.....	10
13	Declaration of Incorporation.....	11

1 Supporting documents

NOTICE



Read through the installation and operating instructions before installing the product.

The installation and operating instructions contain important notes for your personal safety. They must be read and understood by all persons who work with or handle the product during any phase of the product lifetime.



The documents listed below are available for download on our website www.zimmer-group.com:

- Installation and operating instructions
- Catalogs, drawings, CAD data, performance data
- Information on accessories
- Technical data sheets
- General Terms and Conditions of Business, including warranty information

⇒ Only those documents currently available on the website are valid.

2 Safety notes

CAUTION



Risk of injury in the event of improper installation, commissioning or maintenance and improper use.

Non-compliance may result in severe injuries!

Installation, commissioning, maintenance and repairs may only be performed by qualified specialists in accordance with these installation and operating instructions.

The product is state-of-the-art. It is installed on industrial machines and used to hold tools or mounting pieces.

The following are examples of situations in which the product may cause a hazard:

- The product is not properly installed, used or maintained.
- The product is not used for its designated purpose.
- The locally applicable regulations, laws, directives or guidelines are not observed.
- The Accident Prevention Regulations and installation and operating instructions are not observed.

The product may only be used in accordance with these operating instructions and the product's technical data. Any changes or additions to the intended use of the product, as well as modifications to the product, such as those in the following examples, require the written permission of the manufacturer:

- Use of the product under extreme conditions, such as aggressive fluids or abrasive dusts
- Additional drilled holes or threads

⇒ Zimmer GmbH shall accept no liability for any damage caused by improper use. The operator bears sole responsibility.

Installation, commissioning, maintenance and repairs may only be performed by qualified specialists in accordance with these installation and operating instructions.

- ▶ Make sure that the power cables are disconnected before you install, retool, maintain or repair the product.
- ▶ When the product is used under extreme conditions, the maintenance interval must be adapted depending on the extent of the contamination.

3 Proper use

NOTICE



The product is only to be used in its original state with its original accessories, with no unauthorized changes and within the stipulated parameter limits and operating conditions. Any other or more extensive use is improper.

- ▶ Operate the product only in compliance with the associated installation and operating instructions.
 - ▶ Operate the product only when it is in a technical condition that corresponds to the guaranteed parameters and operating conditions.
- ⇒ Zimmer GmbH shall accept no liability for any damage caused by improper use. The user bears sole responsibility.

Use outside of the defined parameters is not permitted. Unauthorized electrical or mechanical modifications must not be made.

The product is not suitable for use as an active compensation module.

Direct contact with perishable goods/food is not permitted.

4 Personnel qualification

Installation, commissioning and maintenance may only be performed by qualified personnel. These personnel must have read and understood the installation and operating instructions in full.

5 Product description

5.1 Forces and torques

INFORMATION



For information on the forces and torques for the following product, please refer to our website at www.zimmer-group.com:

- CSR series

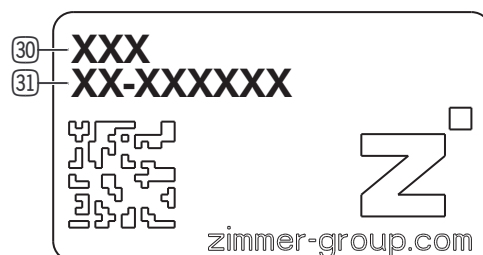
Please contact Zimmer Customer Service if you have any questions.

5.2 Type plate

A type plate is attached to the housing of the product (see the image on the right for an example). The article number and the confirmation number are shown on the type plate.

The confirmation number is assigned to the project. This ensures unambiguous and consistent classification in the event of an update or an overhaul.

- ⇒ Example of an article number: 30
- ⇒ Example of a confirmation number: 31



INFORMATION



Please state the confirmation number in the event of damage or a complaint.

Please contact Zimmer Customer Service if you have any questions.

6 Function

The piston is moved into its home position by filling the internal pneumatic cylinder. It can be pressed out of this position by external forces. Air flows over the pressure membrane into the surroundings during this process.

This causes a pressure drop inside the pneumatic cylinder. The pressure drop actuates the integrated proximity switch.

The signal from the integrated proximity switch can be used as an EMERGENCY STOP signal for the machine.

After activation, the compensating flange must be put into the home position by hand.

The home position is reached once the triangles applied on the housing and the compensating flange align with each other again.

①	Robot flange
②	Power supply
③	Pressure differential switch
④	Sensors
⑤	Drive
⑥	Force transmission
⑦	Connecting flange
⑧	Overload recognition

Fig. 1: CSR series collision protection

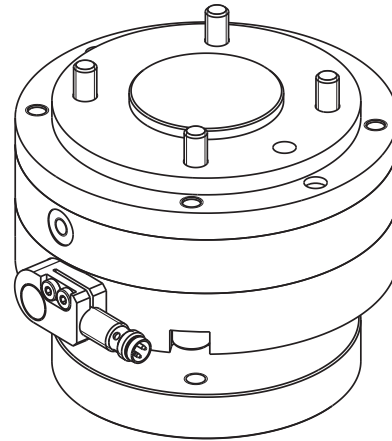
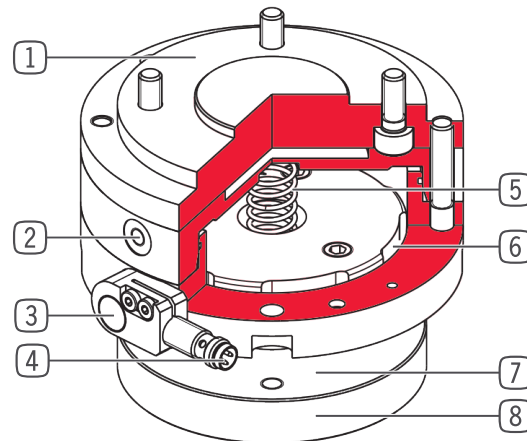


Fig. 2: Cutaway view of the CSR series collision protection



7 Technical data

INFORMATION



For technical data, please refer to our website at www.zimmer-group.com:

- Collision protection

This data varies within the series, depending on the specific design.

Please contact Zimmer Customer Service if you have any questions.

8 Installation

8.1 General installation information

WARNING



Risk of injury in case of unexpected movement of the machine or system into which the product is to be installed.

- ▶ Switch off the power supply to the machine before all work.
- ▶ Secure the machine against being switched on unintentionally.
- ▶ Check the machine for any residual energy.

CAUTION



Risk of injury in the event of unexpected movement of the product when the power supply is connected.

- ▶ Switch off the power supply to the product before all work.
- ▶ Secure the power supply against being switched on unintentionally.
- ▶ Check the power supply for any residual energy.

Non-compliance may result in severe injuries!

Spring-loaded components can jump out when installing or uninstalling the device.

⇒ Risk of injury

NOTICE



Switch off the power supply before any assembly, installation or maintenance work.

The product must be installed on a suitable mounting surface in accordance with the flatness specifications.

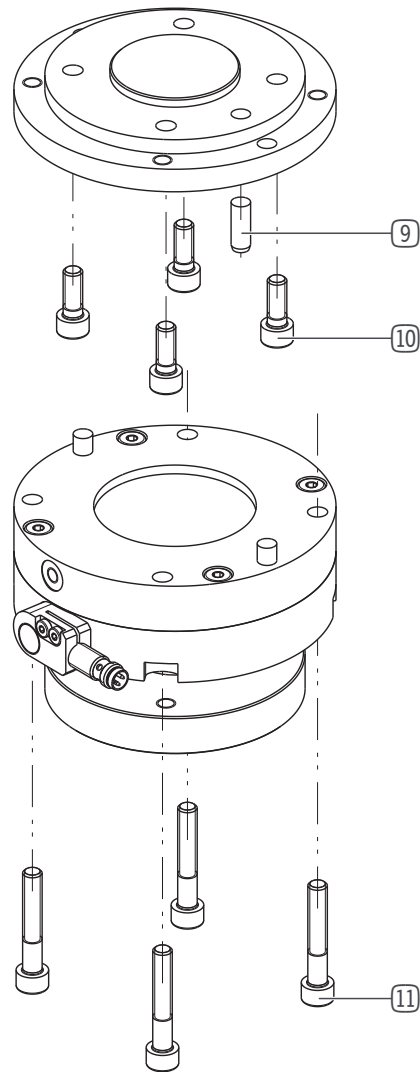
⇒ Permissible flatness imperfection: 0.03

- Mounting screws are included in the scope of delivery.
 - Strength class of the mounting screws ≥ 8.8 (DIN EN ISO 4762)
 - Observe the tightening torque of the mounting screws.
- ⇒ Zimmer GmbH recommends verifying the permitted load-carrying capacity of the required screw connections in accordance with VDI 2230.
- The exact installation positions can be found on the technical data sheet on our website.

8.2 Installing the product on the robot

The following work steps must be observed during installation:

- ▶ Remove the robot flange from the collision protection.
- ▶ Position the robot flange on the robot arm using the straight pin 9.
- ▶ Mount the robot flange on the robot using the mounting screws 10.
- ▶ Reinstall the collision protection on the robot flange using the mounting screws 11.

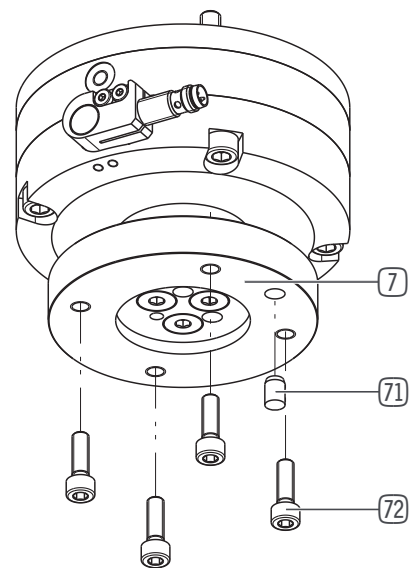


8.3 Installing the custom application

Before installing the custom application, check whether its weight and dimensions are suitable for the selected collision protection.

To install the custom application, perform the following work steps:

- ▶ Position the custom application on the connecting flange 7 using the straight pin 71.
- ▶ Secure the custom application using cylinder screws 72 with a strength class of 8.8.



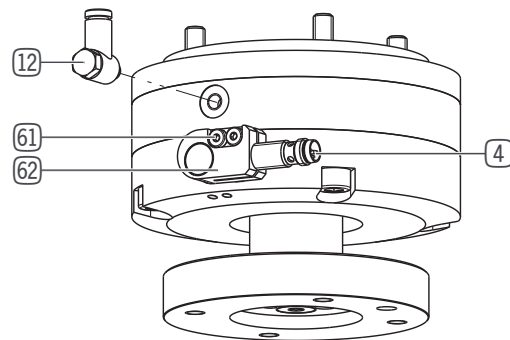
8.4 Installing the power supply and sensor

- ▶ Insert the screw connection (12) into the designated connectors.

The inductive proximity switch (4) generates a signal that can be evaluated to recognize an overload.

This can be used to initiate an automatic emergency-stop on the system.

- ▶ Insert the inductive proximity switch into the holder (62).
 - ▶ Clamp the proximity switch using the screws (61) to a maximum of 0.8 Nm.
 - ▶ Attach the connecting cable to the sensor and screw it into place.
- ⇒ The respective connecting cables are available as accessories.



8.5 Installing accessories

NOTICE



Before installing an accessory, make sure it is suitable for use with the selected variant.

For information on all available accessories, please visit our website.

Zimmer Customer Service is available to provide you with assistance if you have any further questions.

9 Maintenance

The CSR series product is maintenance-free.

The maintenance-free period may shorten under the following circumstances:

- Operation with compressed air that does not comply with DIN ISO 8573-1 [2:4:1]
- Dirty environment
- Improper use and use that does not comply with the power specifications
- Observe the ambient temperature; lubricants harden faster!

Even though the product is maintenance-free as mentioned above, perform a regular visual inspection to check for any corrosion, damage or contamination.

We recommend using Zimmer Customer Service for maintenance and the replacement of seals.

Dismantling and reassembling the product without authorization may result in complications, as special installation equipment is required in some cases.

Zimmer GmbH shall not be liable in the event of unauthorized dismantling and reassembling of the product or in the event of any malfunction or damage resulting from this.

10 Accessories/scope of delivery

INFORMATION



If any accessories not sold or authorized by Zimmer Group are used, the function of the product cannot be guaranteed. Zimmer Group accessories are specifically tailored to the individual products.

Optional accessories and those included in the scope of delivery can be found at www.zimmer-group.com.

11 Transportation/storage/preservation

- ▶ Transport and storage of the product must be done only with the original packaging.
- ▶ If the product has already been installed on the superordinate machine unit, care must be taken during transport to ensure that no unintentional movements can occur. Before commissioning the machine after transport, check all power and communication connections as well as all mechanical connections.
- ▶ If the product is stored for an extended period, the following points are to be observed:
 - Keep the storage location as dust-free and dry as possible.
 - Avoid temperature fluctuations/observe and adhere to the temperature range.
 - Avoid wind/drafts/water condensation formation.
 - Pack the product and do not expose it to direct sunlight during storage.
- ▶ Clean all components. There must be no soiling left on the components.
- ▶ Visually inspect all of the components.
- ▶ Remove all foreign substances.
- ▶ Properly remove potential corrosion spots.
- ▶ Close electrical connections using suitable covers.

12 Decommissioning and disposal

INFORMATION



When the product reaches the end of its operational phase, it can be completely disassembled and disposed of. Completely disconnect the product from the power supply. The product can be disassembled and properly disposed of according to material groups. When disposing of it, observe the locally applicable environmental regulations and codes and regulations for disposal.

13 Declaration of Incorporation

In terms of the EU Machinery Directive 2006/42/EC (Annex II 1 B)

Name and address of the manufacturer:

Zimmer GmbH

📍 77866 Rheinau, Germany, Im Salmenkopf 5

☎ +49 7844 9138 0

📠 +49 7844 9138 80

www.zimmer-group.com

We hereby declare that the incomplete machines described below

Product designation: Collision protection, pneumatic

Type designation: CSR series

conform to the requirements of the Machinery Directive, 2006/42/EC, Article 2g, Annex VII.b – Annex II.b, in its design and the version we put on the market.

Basic health and safety requirements:

No. 1.1.2, No. 1.1.3, No. 1.1.5, No. 1.3.1, No. 1.3.2, No. 1.3.4, No. 1.3.7, No. 1.5.1, No. 1.5.3, No. 1.5.4, No. 1.6.4, No. 1.7.1, No. 1.7.3.

The following harmonized standards have been used:

DIN EN ISO 12100:2011-03 Safety of machinery – General principles for design – Risk assessment and risk reduction

DIN EN ISO 13849-1 Safety of machinery – Safety-related parts of control systems

DIN EN ISO 13849-2 Safety-related parts of control systems

We also declare that the specific technical documents were produced in accordance with Annex VII Part B of this Directive. We undertake to provide the market supervisory bodies with electronic versions of special documents for the incomplete machine through our documentation department, should they have reason to request them.

The incomplete machine may only be commissioned if it has been ascertained, if applicable, that the machine or system in which the incomplete machine is to be installed satisfies the requirements of Directive 2006/42/EC on Machinery and an EC Declaration of Conformity has been drawn up in accordance with Annex II 1 A.

A full list of applied standards can be obtained from the manufacturer.

Authorized representative for the compilation of relevant technical documents



Kurt Ross	See manufacturer's address	Rheinau, Germany, 2020-09-15	Martin Zimmer
First name, last name	Address	(Place and date of issuance)	(Legally binding signature) Managing Partner

