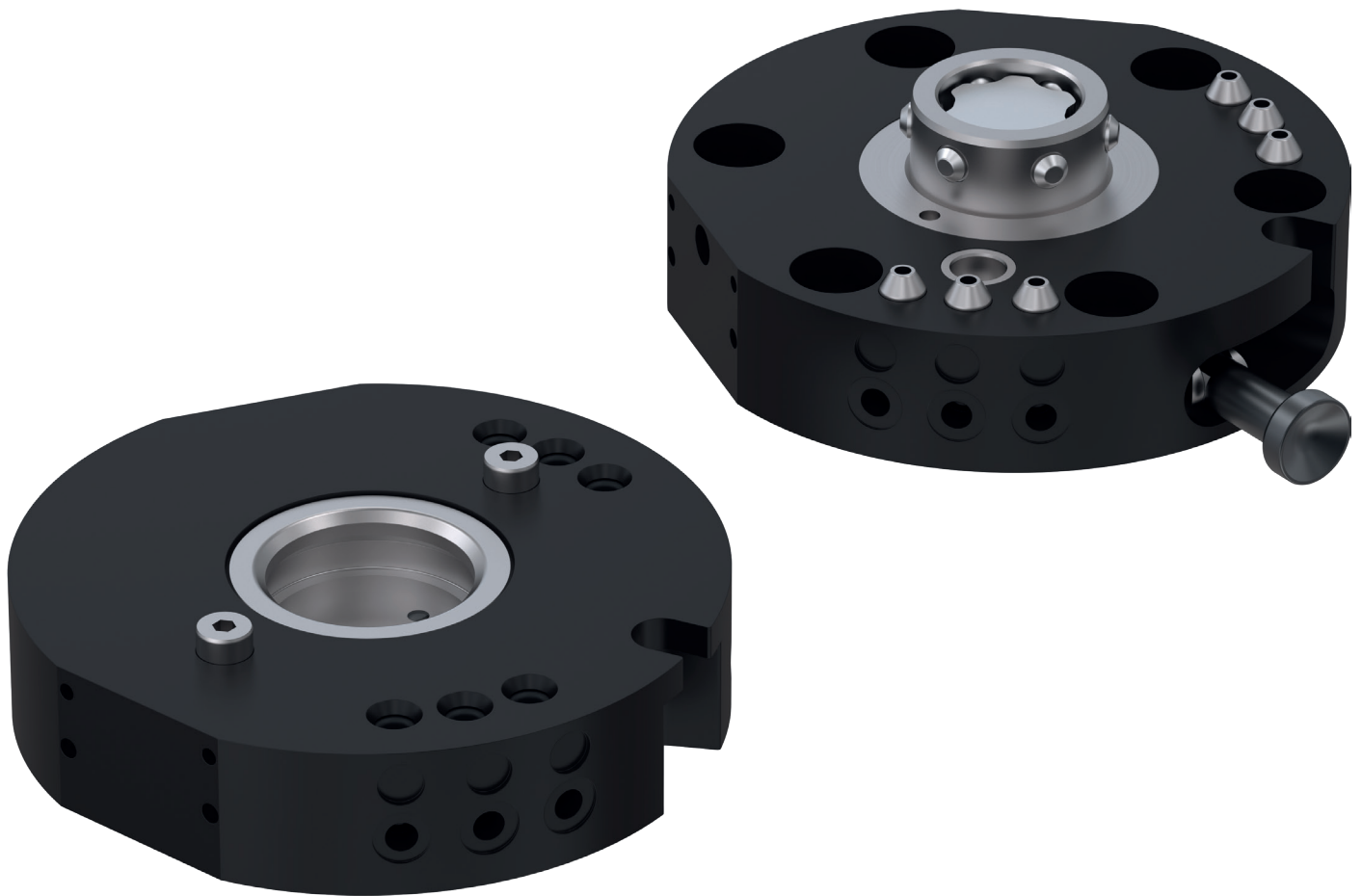




INSTALLATION AND OPERATING INSTRUCTIONS

Manual tool changers
HWR

DDOC00112

THE KNOW-HOW FACTORY

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1 Introduction

1.1 Supporting documents

NOTICE



Read through the instructions before installing or working with the product.

The 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.

- Instructions
 - Catalogs, drawings, CAD data, performance data
 - Information on accessories
 - Technical data sheets
 - General Terms and Conditions, including warranty information.
- ⇒ Only those documents currently available on the website are valid.

In these instructions, "product" refers to the product designation on the title page!

1.2 Notices and graphics in the instructions

DANGER



This notice warns of an imminent danger to the life and health of people. Ignoring these notices can lead to serious injury or even death.

- ▶ You absolutely must comply with the described measures for avoiding these dangers!
- ⇒ The warning symbols are assigned according to the type of danger.

WARNING



This notice warns of a situation that is potentially hazardous to personal health. Ignoring these notices can cause serious injury or damage to health.

- ▶ You absolutely must comply with the described measures for avoiding these dangers!
- ⇒ The warning symbols are assigned according to the type of danger.

CAUTION



This notice warns of a situation that is potentially hazardous to persons. Ignoring these notices can cause minor, reversible injuries.

- ▶ You absolutely must comply with the described measures for avoiding these dangers!
- ⇒ The warning symbols are assigned according to the type of danger.

NOTICE



This notice warns of possible material and environmental damage. Ignoring these notices can result in damage to the product or the environment.

- ▶ You absolutely must comply with the described measures for avoiding these dangers!
- ⇒ The warning symbols are assigned according to the type of danger.

INFORMATION



This category contains useful tips for handling the product efficiently. Failure to observe these tips will not result in damage to the product. This information does not include any information relevant to health or workplace safety.

2 Safety notices

CAUTION



Risk of injury and material damage in case of non-compliance

The product is state-of-the-art.

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 product may only be used in accordance with these 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 Group GmbH shall accept no liability for any damage caused by improper use. The operator bears sole responsibility.
- ▶ Make sure that the power supply is disconnected before you mount, adjust, modify, maintain or repair the product.
- ▶ Whenever work is carried out on the product, make sure that the product cannot be actuated by mistake.
- ▶ Perform maintenance tasks, renovation work or attachment work outside of the machine's danger zone when possible.
- ▶ Always adhere to the required maintenance intervals.
- ▶ When using the product under extreme conditions, adjust the maintenance interval according to the degree of contamination.
- ▶ Check the completeness and tightening torques of all mounting screws.

3 Proper use

NOTICE



Material damage and malfunction in case of non-compliance

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 secondary use is deemed improper.

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

- The product is designated for use in closed facilities.
- The product is intended for industrial use.
- Direct contact with perishable goods/food is not permitted.

4 Personnel qualification

WARNING



Inadequate qualification can cause injury and material damage

If inadequately qualified personnel perform work on the product, this can cause serious injuries and significant material damage.

- ▶ All work on the product must be performed by qualified personnel.
- ▶ Before working with the product, read the document in its entirety and make sure that you have understood everything.
- ▶ Observe country-specific accident prevention regulations and the general safety notices.

The following qualifications are a prerequisite for performing various work on the product.

4.1 Electricians

Electricians are able to perform work on electrical systems, can recognize and avoid possible dangers and know the relevant standards and provisions due to their technical training, knowledge and experience.

4.2 Specialists

Specialists are able to perform the assigned work, can recognize and avoid possible dangers and know the relevant standards and provisions due to their technical training, knowledge and experience.

4.3 Instructed personnel

Instructed personnel have been trained by the operating company on the tasks and possible dangers of improper behavior.

4.4 Service personnel

Service personnel are able to perform the assigned work and can recognize and avoid possible dangers due to their technical training, knowledge and experience.

4.5 Additional qualifications

Persons who work with the product must be familiar with the valid safety regulations and laws as well as the standards, guidelines and laws listed in this document.

Personnel who work with the product must have facility-issued authorization to commission, program, configure, operate, maintain and also decommission this product.

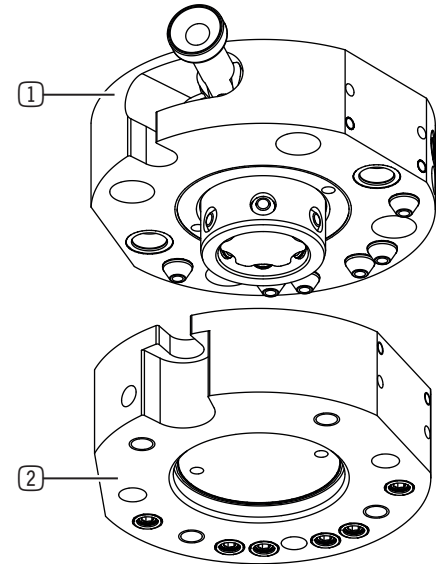
5 Product description

This product is a manual exchange system.

It consists of a stationary part and a loose part.

The stationary part can be coupled to different loose parts.

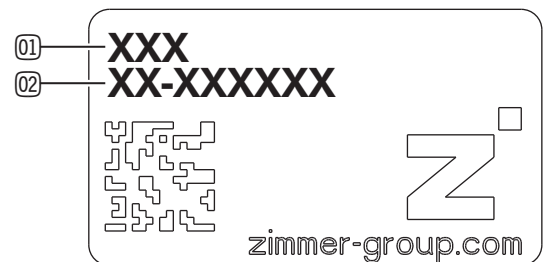
- ① Fixed part (HWRxxF-B)
- ② Loose part (HWRxxL-B)



5.1 Type plate

A type plate is attached to the product.

- ① Article number
- ② Confirmation number



5.2 Product variants and compatibility

INFORMATION



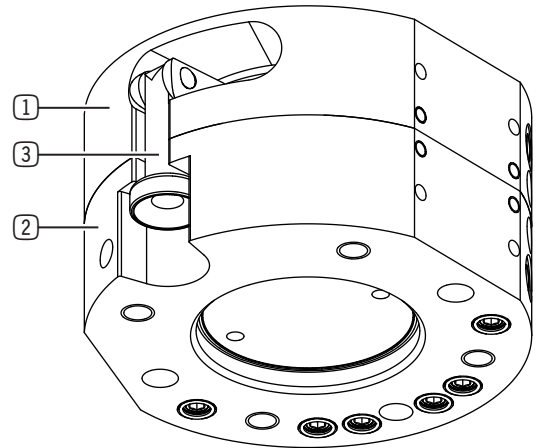
Energy elements can be installed on the product to supply power to the tools.

► For further information on the energy elements, refer to the corresponding instructions on our website.

6 Functional description

The stationary part is installed on a robot. It is used to hold a loose part.

The tool is mounted on the loose part. The loose part can be installed on the fixed part and locked manually.



- ① Stationary part
- ② Loose part
- ③ Locking lever

7 Technical data

INFORMATION



► You can find the information in the technical data sheet on our website.

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

8 Accessories/scope of delivery

INFORMATION



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

► For optional accessories and those included in the scope of delivery, refer to our website.

9 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 unexpected movements can occur.
 - Before commissioning the product and 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.
 - 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 components.
- Remove all foreign substances.
- Properly remove potential corrosion spots.

10 Installation

WARNING



Risk of injury due to uncontrolled movements

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

- ▶ Switch off the energy supply of the machine before any work.
- ▶ Secure the power supply against being switched on unintentionally.
- ▶ Check the machine for any residual energy that may be present.

INFORMATION



Further installation information:

- The mounting screws are not included in the scope of delivery.

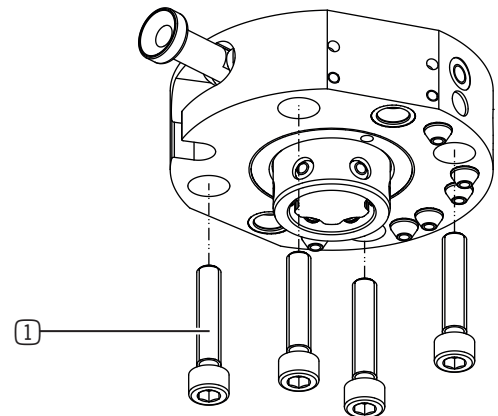
Assembly requirements

Permissible flatness tolerance [mm]	< 0.02
Strength class of the mounting screws	8.8

- ▶ Install the product on an appropriate mounting surface in accordance with the flatness specifications.
- ▶ Make sure that the mounting piece is sufficiently rigid.
- ▶ Ensure the cleanliness of the connection surfaces.
- ▶ Please note the permitted tightening torques of the mounting screws at www.zimmer-group.com/en/td.

10.1 Installing the stationary part on the robot

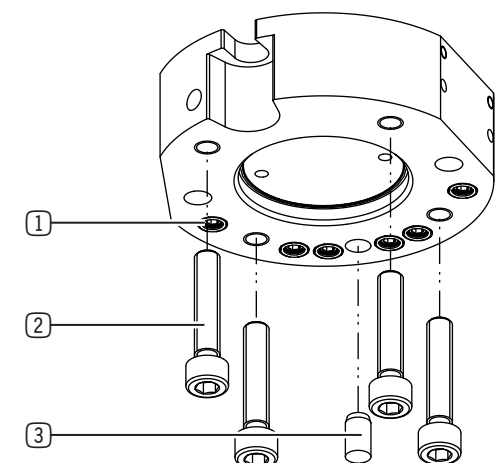
- ▶ Position the stationary part on the robot.
- ▶ If you are using a hoseless pneumatic feed-through, insert O-rings into the recesses on the housing.
- ▶ Loosely attach the mounting screws.
- ▶ Tighten the mounting screws without distortion.



- ① Mounting screw

10.2 Installing the tool to the loose part

- ▶ Insert the straight pin into the designated fit on the loose part.
- ▶ If you are using a hoseless pneumatic feed-through, insert O-rings into the recesses on the housing.
- ▶ Position the loose part on the tool.
- ▶ Loosely attach the mounting screws.
- ▶ Tighten the mounting screws without distortion.



- ① O-ring
② Mounting screw
③ Straight pins

10.3 Installing the energy supply

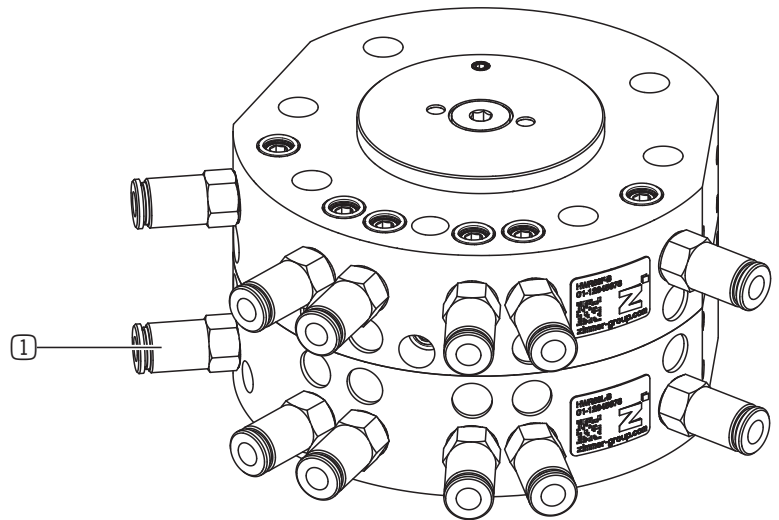
INFORMATION



Pneumatic connections and energy elements can be mounted on the product to supply power to the tools.

- ▶ If you are using the tubeless pneumatic feed-through, insert O-rings into the pockets of the air holes on the customer-side mounting surface.
- ▶ For further information on the energy elements, refer to the corresponding instructions on our website.
- ▶ Please contact Customer Service if you have any questions.

- ▶ Mount the screw fittings in the provided connections.



1 Screw fitting

10.4 Adjusting the clamping force on the loose part

CAUTION



Risk of injury in case of non-compliance

An incorrect clamping force setting can result in faulty locking.

- ▶ Please note that when operating with multiple loose parts, the clamping force may only be adjusted for those parts.

INFORMATION



When shipped, the fixed part and the loose part are adjusted so that the locking bolts on the fixed part fit precisely into the annular groove of the sleeve on the loose part.

- ▶ Make sure that the clamping force on the locking lever is between 30 N and 50 N.

INFORMATION



The pitch of the sleeve is 1 mm.

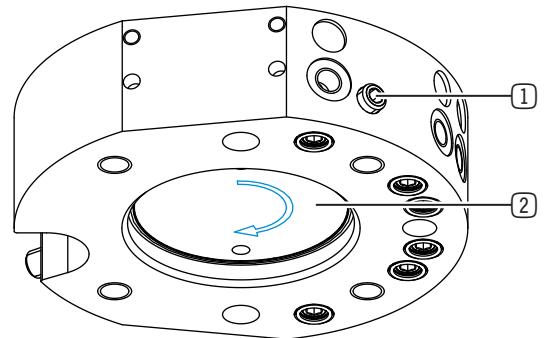
Half a turn of the sleeve corresponds to a 0.5 mm height adjustment.

10.4.1 Adjusting the clamping force from the outside

- ▶ Release the locking lever on the fixed part by moving it into a horizontal position.
 - ▶ Loosen the grub screws on the loose part.
 - ▶ Make sure the grub screws are not completely unscrewed.
 - ▶ Turn the sleeve clockwise.
- ⇒ The tension between the locking bolts on the fixed part and the annular groove on the loose part increases.
- ▶ Fold the locking lever down.
 - ▶ Repeat the process until the required clamping force is achieved.
 - ▶ Tighten the grub screws using an Allen key.

① Grub screw

② Sleeve

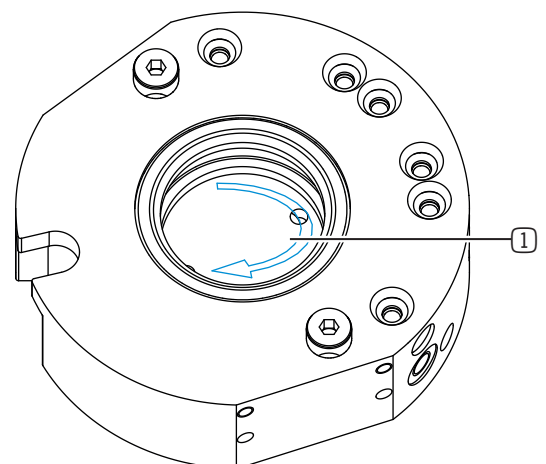


10.4.2 Adjusting the clamping force from the inside

If the tool is already mounted on the loose part, the clamping force can be adjusted on the inside of the loose part.

- ▶ Turn the sleeve clockwise.

① Sleeve



10.5 Adjusting the clamping force on the fixed part

CAUTION



Risk of injury in case of non-compliance

An incorrect clamping force setting can result in faulty locking.

- ▶ Please note that when operating with multiple loose parts, the clamping force may only be adjusted for those parts.

INFORMATION



When shipped, the fixed part and the loose part are adjusted so that the locking bolts on the fixed part fit precisely into the annular groove of the sleeve on the loose part.

- ▶ Make sure that the clamping force on the locking lever is between 30 N and 50 N.

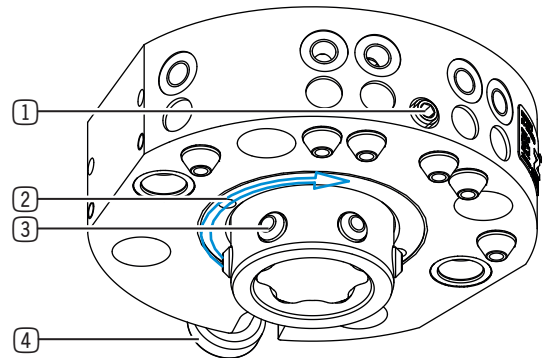
INFORMATION



The pitch of the sleeve is 1 mm.

Half a turn of the sleeve corresponds to a 0.5 mm height adjustment.

- ▶ Release the locking lever on the fixed part by moving it into a horizontal position.
- ▶ Loosen the grub screw.
 - ▶ Make sure that the grub screw is not unscrewed completely.
- ▶ Turn the sleeve clockwise.
- ⇒ The tension between the locking bolts on the fixed part and the annular groove on the loose part increases.
- ▶ Fold the locking lever down.
- ▶ Repeat the process until the required clamping force is achieved.
- ▶ Tighten the grub screw again.



- ① Grub screw
- ② Sleeve
- ③ Locking bolt
- ④ Locking lever

11 Operation

WARNING



Risk of injury caused by falling parts

If the locking lever is not retracted and is accidentally activated, the loose part and the tool may fall.

- ▶ Push the locking lever inward.
- ▶ Do not operate the locking lever until the loose part is secured.

NOTICE



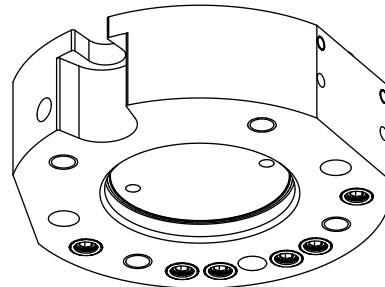
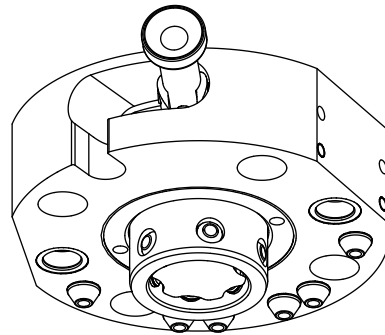
Malfunction in case of non-compliance

The fixed and loose parts of the energy elements are fully connected only if the fixed and loose parts of the tool changer are correctly connected.

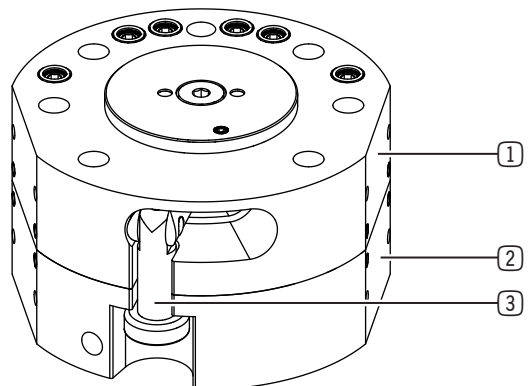
- ▶ Make sure there is no gap between the fixed and loose parts.

11.1 Coupling the stationary part and loose part

- ▶ Position the stationary part above the loose part.
- ▶ Lower the stationary part.
- ▶ Make sure there is no gap between the fixed and loose parts.



- ▶ Lock the product by moving the locking lever to the left.
 - ▶ Fold the locking lever down.
- ⇒ The product is securely locked.



- ① Stationary part
- ② Loose part
- ③ Locking lever

11.2 Uncoupling loose parts

- ▶ Make sure the loose part is secured.
- ▶ Release the locking lever on the fixed part by moving it into a horizontal position.
- ▶ Unlock the product by moving the locking lever to the right.
- ▶ Separate the stationary part from the loose part.

12 Maintenance

NOTICE

**Material damage resulting from blowing out with compressed air**

Blowing out the product with compressed air can cause malfunctions.

- ▶ Never purge the product with compressed air.

NOTICE

**Material damage caused by unsuitable cleaning materials**

Seals, insulation, coatings and other surfaces may be damaged by solvent-based cleaning agents.

- ▶ Make sure that no liquids penetrate the product.
- ▶ Use chemically and biologically neutral cleaning agents.
- ▶ Use cleaning agents that are categorized as being nonhazardous to health.
- ▶ Use soft, lint-free cloths for cleaning the surface.

The use of the following cleaning agents is strictly prohibited:

- Acetone
- Cleaning solvent
- Nitrocellulose thinner/turpentine oil (solvents)

Operation of the product is maintenance-free.

- ▶ Note that the product could become damaged under the following circumstances:

- Dirty environment
- Improper use and use that does not comply with the performance data
- Permissible temperature range not observed

- ▶ Have maintenance work that requires disassembly of the product and which is not described in these instructions performed by Customer Service only.

⇒ Dismantling and reassembling the product without authorization may result in complications, as special installation equipment is required in some cases. Zimmer Group GmbH accepts no liability for any resulting malfunctions or damage.

13 Decommissioning/disposal

INFORMATION



When the product reaches the end of its operational phase, it can be disposed of.

- ▶ Disconnect the product completely from the power supply.
- ▶ Comply with the locally applicable environmental and disposal regulations.

14 Declaration of Incorporation (Machinery Directive)

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

Name and address of the manufacturer:

Zimmer Group GmbH



Am Glockenloch 2

77866 Rheinau, Germany



+49 7844 9138 0



info@zimmer-group.com



www.zimmer-group.com

We hereby declare that the incomplete machine described below

Product designation: Tool changer

Type designation: HWR

conforms 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.

We hereby confirm that all the relevant basic health and safety requirements for the product have been observed and implemented.

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

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.

Kurt Ross

Authorized representative for
compiling the relevant technical
documents

Rheinau, Germany, 2020-01-15

(Place and date of issuance)

Martin Zimmer
(Legally binding signature)
Managing Partner

15 Declaration of Incorporation

In terms of the EU Machinery Regulation 2023/1230, Annex V, Part B

Name and address of the manufacturer:

Zimmer Group GmbH

📍 Am Glockenloch 2
77866 Rheinau, Germany

☎ +49 7844 9138 0

✉ info@zimmer-group.com

🌐 www.zimmer-group.com

We hereby declare that the incomplete machine described below

Product designation: Tool changer

Type designation: HWR

in their design and in the version we have placed on the market comply with the requirements of Regulation 2023/1230, Article 3.10, Annex III, Annex IV, Part B and Annex V, Part B.

A complete list of the standards applied and the essential health and safety requirements is available from the manufacturer.

The incomplete machine must not be commissioned until it has been determined that - where applicable - the machine into which the incomplete machine is to be incorporated complies with the provisions of EU Machinery Regulation 2023/1230 and the EC Declaration of Conformity has been issued in accordance with Annex V, Part A.

Kurt Ross

Authorized representative for
compiling the relevant technical
documents

Rheinau, Germany, 2027-01-20

(Place and date of issuance)



Martin Zimmer
(Legally binding signature)
Managing Partner