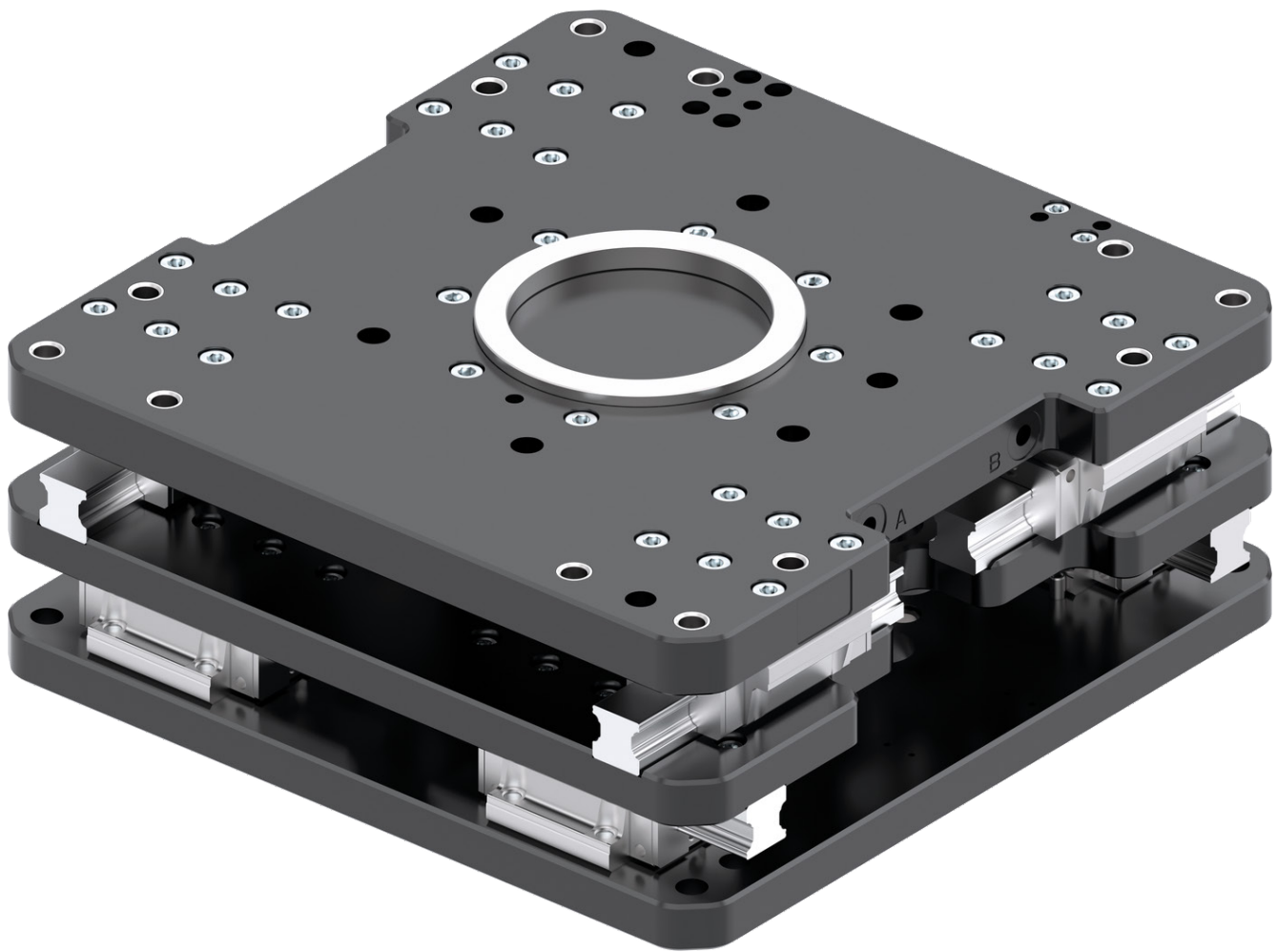




INSTALLATION AND OPERATING INSTRUCTIONS

Axis compensation module

XYR9000

DDOC02452

THE KNOW-HOW FACTORY

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1 Introduction

1.1 Supporting documents

NOTICE



Read through the installation and operating instructions before installing or working with 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 (GTCs), including warranty information.
- ⇒ Only the documents currently available on the website are valid.

In these installation and operating instructions, “product” replaces the product designation on the title page.

1.2 Notices and graphics in the installation and operating 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 people. 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.

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.

1.3 Figures

The figures may deviate from the actual state.

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 installation and 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 Group GmbH accepts 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, retrofitting or attachment work outside of the machine's danger zone when possible.
- ▶ Do not reach into the operational range of the product.
- ▶ Observe the specified maintenance intervals and specifications regarding the quality of the operating material.
- ▶ When using the product under extreme conditions, adjust the maintenance interval according to the degree of soiling.
- ▶ Check the completeness and tightening torques of all mounting screws.

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 secondary use is deemed 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 Group GmbH accepts no liability for any damage caused by improper use. The operator bears sole responsibility.

- The product is designed exclusively for pneumatic operation.
- This product is designed to compensate for position deviations in the horizontal position.
- The product is intended for industrial use.
- The product is designated for use in enclosed rooms.
- Direct contact with perishable goods/food is not permitted.
- The product is not suited for use in a potentially explosive atmosphere.

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 types of 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

Personnel 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.

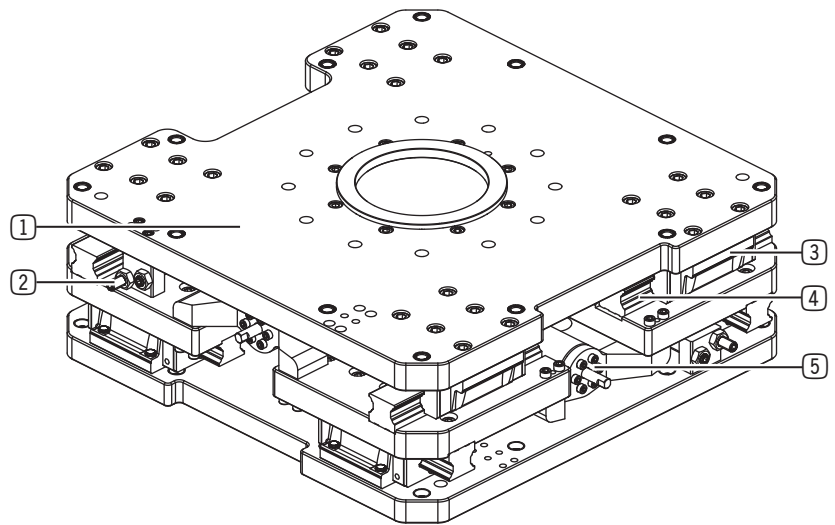
Personnel who work with the product must have facility-issued authorization to commission, program, configure, operate, maintain and also decommission this product.

5 Product description

The product is designed for compensation movements in the X and Y directions in order to compensate for deviations in the position.

The product is installed between the robot and the tool and can be combined with other axis compensation modules.

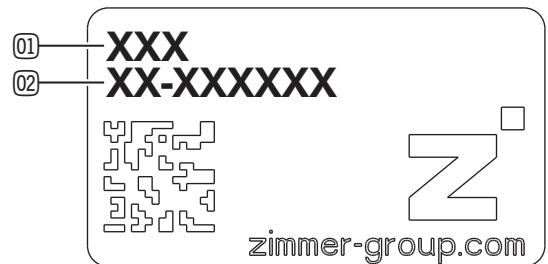
Depending on the variant selected, the product may be equipped with a clamping element. It can be used to clamp any position.



- ① Mounting plate
- ② Adjustment screw
- ③ Rail carriage
- ④ Guide rail
- ⑤ Clamping element

5.1 Type plate

A type plate is attached to the housing of the product.



- ① Part number
- ② Serial number

6 Functional description

The compensation movement is realized via three plates that are connected to each other via guide units. One of the outer plates is permanently mounted on the robot, while the tool is mounted on the other plate.

If the tool hits the workpiece and there are position deviations, the plates are moved accordingly via the guide units. This allows the tool position to be flexibly adjusted in the X and Y directions without placing any load on the robot.

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. The accessories from Zimmer Group GmbH are specifically tailored to the individual products.

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

9 Transportation/storage/preservation

- Transport and store the product only in the original packaging.
- During transport, make sure that no uncontrolled movements can occur if the product is already mounted on the higher-level machine unit.
 - Prior to commissioning and after transport, check all power and communication connections as well as all mechanical connections.
- Observe the following points when storing the product for longer periods of time:
 - Keep the storage location as dust-free and dry as possible.
 - Avoid temperature fluctuations.
 - Avoid wind, drafts and formation of condensation.
 - Avoid direct sunlight.
- Clean all components until all contamination has been removed.
- Visually inspect all components.
- Remove any foreign objects.
- Remove potential corrosion spots properly.
- Close off unused connections using pressure-resistant closures.

9.1 Transporting the product

DANGER



Risk of fatal injury caused by suspended loads

Improper handling of suspended loads can cause fatal injury!



- ▶ Do not lift the product when it is connected.
- ▶ Use suitable lifting gear and attachment equipment with sufficient load capacity.
 - ▶ Refer to the type plate for the weight.
- ▶ Note the centers of gravity and secure the cable loops against slipping.
 - ▶ Note that the load capacity of the belt in the choke hitch can be reduced to 80% of the specified value.
- ▶ Secure the product from falling, dropping or slipping during transport.
- ▶ Always keep an adequate safety distance from swinging loads.

NOTICE

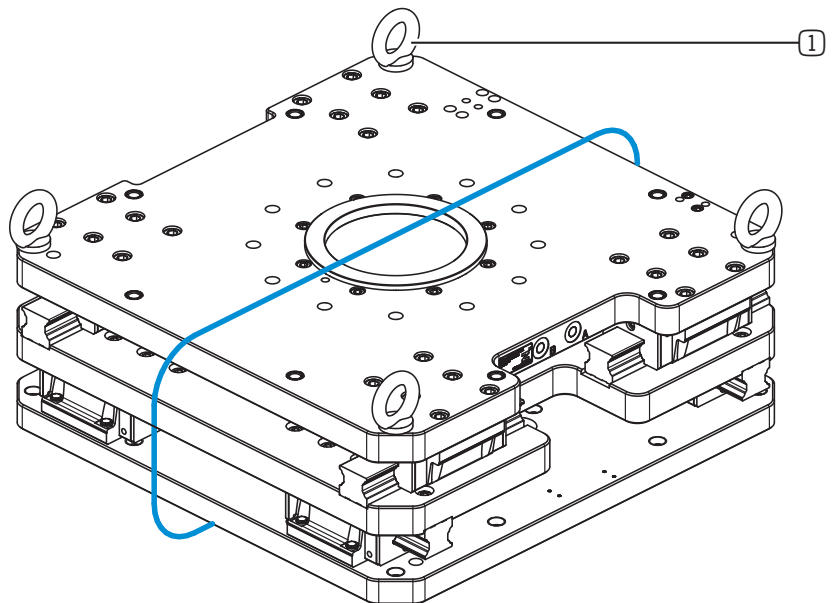


Material damage caused by suspended loads

Danger of unit damage if the product is lifted improperly.

- ▶ Use suitable lifting gear and attachment equipment with sufficient load capacity.
- ▶ Lift the product at the marked points only.
- ▶ Lift the product only when it is not connected.
- ▶ Make sure that cables and hoses are not damaged when attaching the lifting straps/attachment belts.
- ▶ Secure the product from falling, dropping or slipping during transport.

- ▶ Transport the product either on eye bolts or with lifting straps.
- ▶ Install eye bolts at the points marked in the image.
- ▶ Fasten the lifting gear to the eye bolts.
- ▶ Alternatively, route the lifting straps/attachment belts around the points marked in the image.
 - ▶ Make sure that you do not damage any sensors that have already been installed.
- ▶ Make sure that the lifting gear has sufficient load capacity.
- ▶ Lift the product with the lifting gear.
- ▶ Transport the product with a suitable floor-level conveyor.
- ▶ Set the product down on a flat surface or a suitable frame on which it cannot tip over.



① Eye bolt

10 Installation

WARNING



Risk of injury due to uncontrolled movement

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

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

CAUTION



Risk of injury due to uncontrolled movement

Risk of injury in the event of uncontrolled 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 product for any residual energy that may be present.

Assembly requirements

Permissible flatness tolerance [mm/m]	0.15
Strength class of the mounting screws	8.8

INFORMATION



Further installation information:

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

- ▶ 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.

10.1 Installing the product

NOTICE



- ▶ Use only suitable mounting screws.
- ▶ Comply with the tightening torques of the mounting screws.
 - ▶ Refer to our website for the recommended tightening torques:
 - <https://www.zimmer-group.com/en-us/td>
- ▶ Use threadlocker, for example, Loctite 242 screw glue (blue).

INFORMATION



- ▶ Use an adapter plate if necessary.
- ▶ For information on optional accessories and those included in the scope of delivery, refer to our website.

INFORMATION

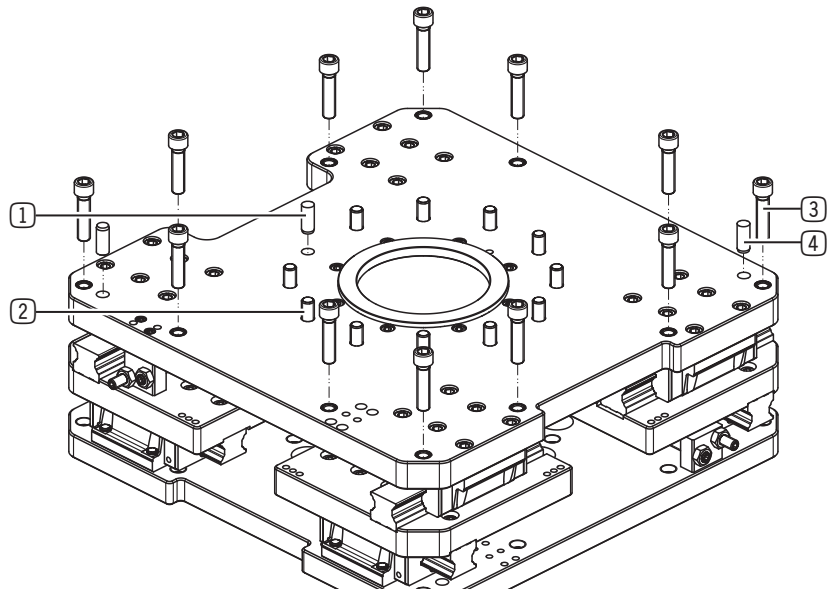


Installation recommendations

- ▶ When installing on a robot, use washers with a hardness of 300 HV.

- ▶ Select the appropriate drilling pattern depending on whether you are installing the product on a robot or on a portal.
- ▶ Insert the straight pins into the designated fits.
- ▶ Position the product on the mounting piece with the straight pins.
- ▶ Mount the product on the mounting piece with the mounting screws.

- ① Straight pin (robot)
- ② Mounting screw (robot)
- ③ Mounting screw (portal)
- ④ Straight pin (portal)



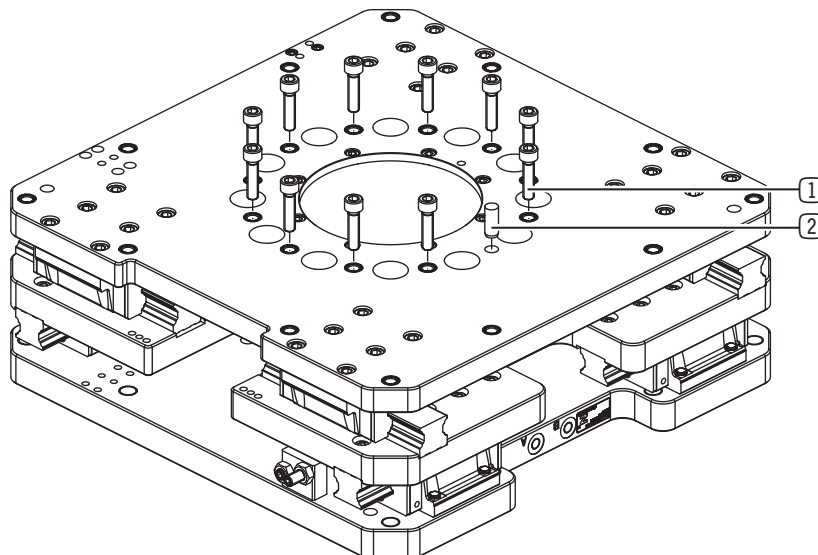
10.2 Installing the tool on the product

INFORMATION



- Use an adapter plate if necessary.
- For information on optional accessories and those included in the scope of delivery, refer to our website.

- Insert the straight pin into the designated fit.
- Position the tool on the product with the straight pin.
- Install the tool on the product using the mounting screws.



① Mounting screw

② Straight pin

10.3 Installing the power supply

NOTICE



Material damage in case of non-compliance

- ▶ You can find the information in the technical data sheet on our website.
- ▶ Close off unused connections using pressure-resistant closures.
- ▶ The authorized connections that are available can be found in the accessories list on our website. The necessary ordering information can also be found there.
- ▶ Use compressed air in accordance with DIN ISO 8573-1 [7:4:4].

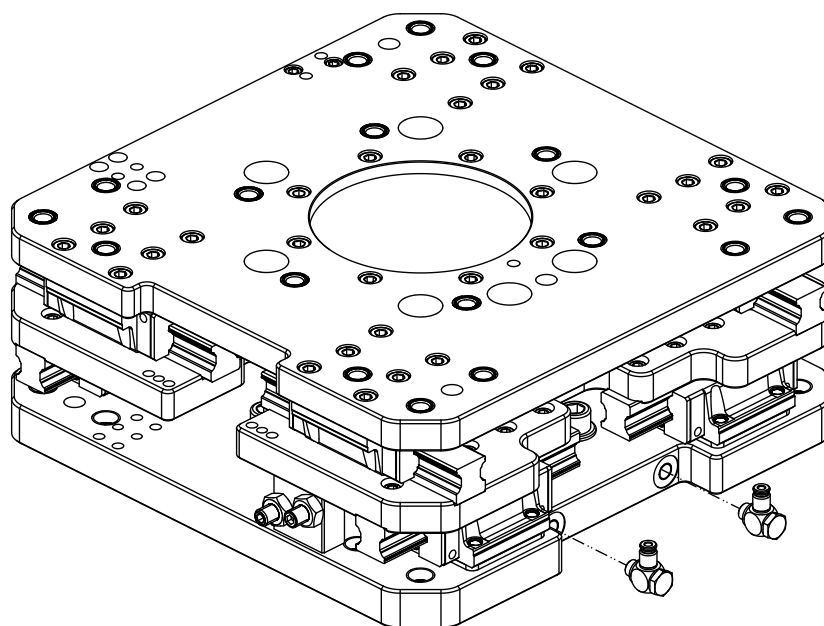
NOTICE



Material damage in case of non-compliance

- Operation without flow control valves leads to increased wear.
- ▶ Operate the product throttled by the air flow control valve and at a reduced speed.

- ▶ Mount the screw fittings in the provided connections.



10.4 Installing accessories

NOTICE



Material damage in case of non-compliance

- ▶ Before installing the accessories, check whether they are suitable for use with the selected variant.
- ▶ You can find more information on our website.

10.4.1 Installing the sensors

INFORMATION

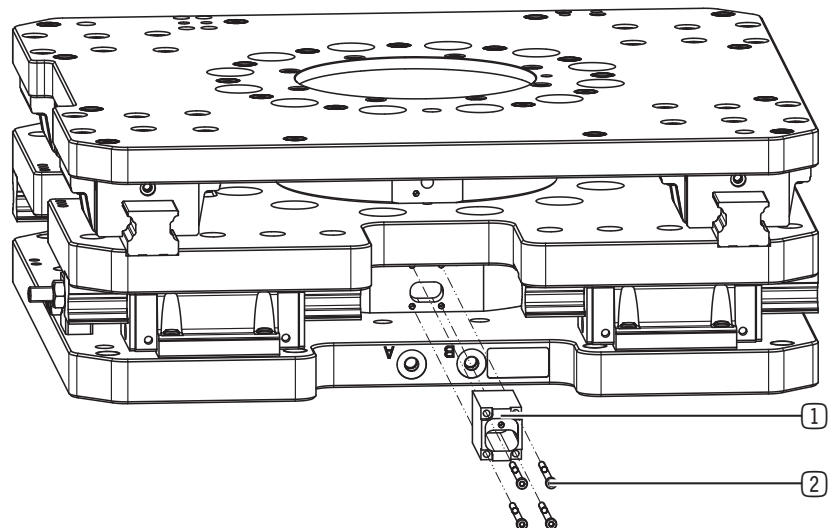


The status of the product can be queried in various ways.

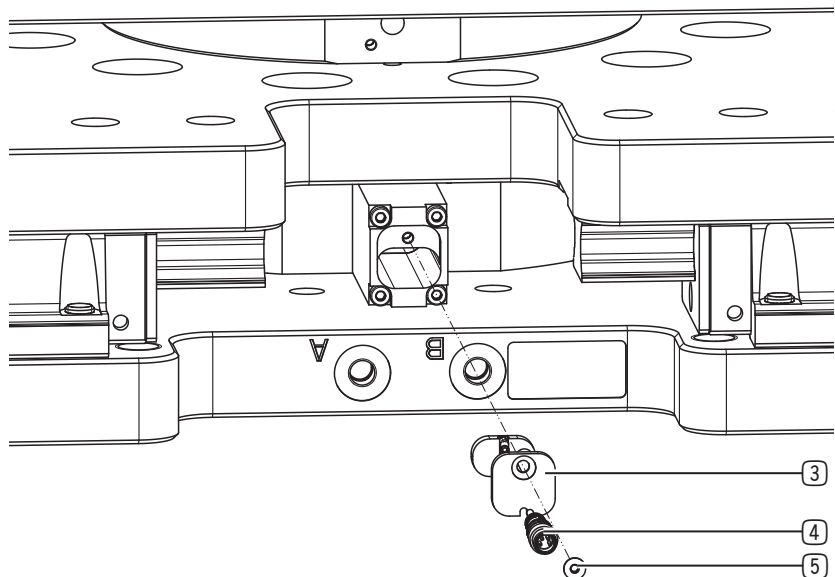
- Query set with magnetic field sensor for determining the piston position via a magnet
- Query set with inductive sensors to determine the piston position via a query plunger
- ▶ For further information on adjusting the magnetic field sensor, refer to the respective installation and operating instructions on our website:
 - Magnetic field sensor – MFS series

10.4.1.1 Installing the magnetic field sensor

- ▶ Install the housing on the product using the mounting screws.



- ▶ Insert the assembly consisting of sensor, spacer bolt and cover into the opening on the housing.
- ▶ Make sure that the cable lies in the groove on the cover.
- ▶ Mount the cover on the housing with the countersunk screw.



- ① Housing
- ② Mounting screw
- ③ Cover
- ④ Sensor
- ⑤ Countersunk screw

10.4.1.2 Installing inductive sensors

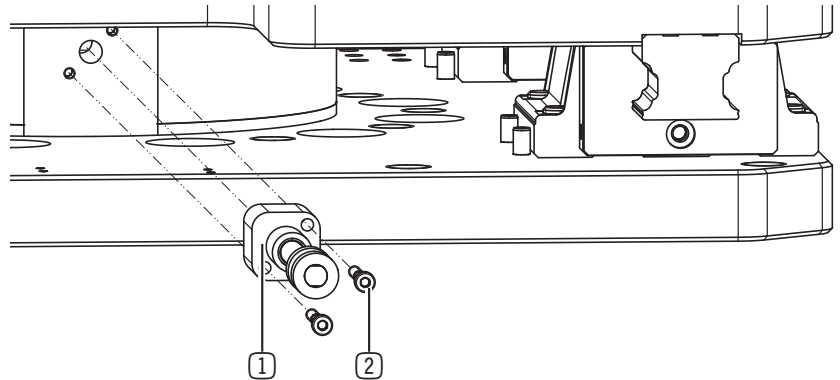
INFORMATION



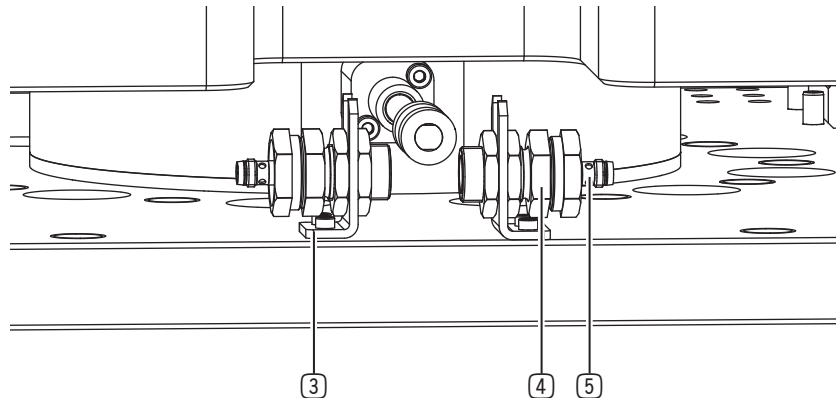
Of the two positions available for installing a sensor, only one can be used as required.

- The drilled holes, which are offset further inwards, are used to attach the sensor that detects the freely compensating position.
- The drilled holes closer to the edge are used to attach the sensor that detects the centered position.

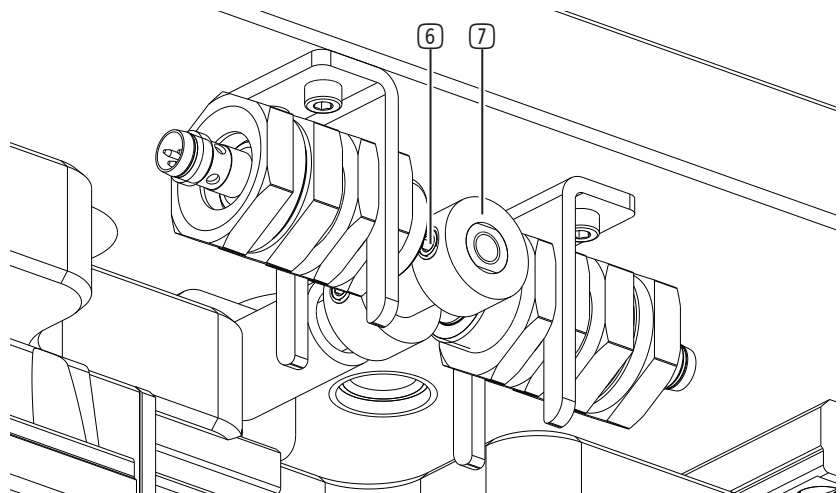
- Insert the query plunger through the drilled hole in the product.
- Install the query plunger on the product using the mounting screws.



- Mount the clamping brackets on the product using the mounting screws.
- Mount the sensor brackets in the clamping brackets.
- Mount the sensors in the sensor brackets.
- Set the appropriate switching distance.



- Adjust the switch cams as needed.
 - Loosen the grub screw.
 - Move the switch cam.
 - Tighten the grub screw.



- ① Query plunger
- ② Mounting screw
- ③ Clamping bracket
- ④ Sensor bracket
- ⑤ Sensor
- ⑥ Grub screw
- ⑦ Switch cam

10.5 Flow chart of pneumatic system and sensors

The illustrations and status plots schematically illustrate the pneumatic power supply and sensor monitoring.

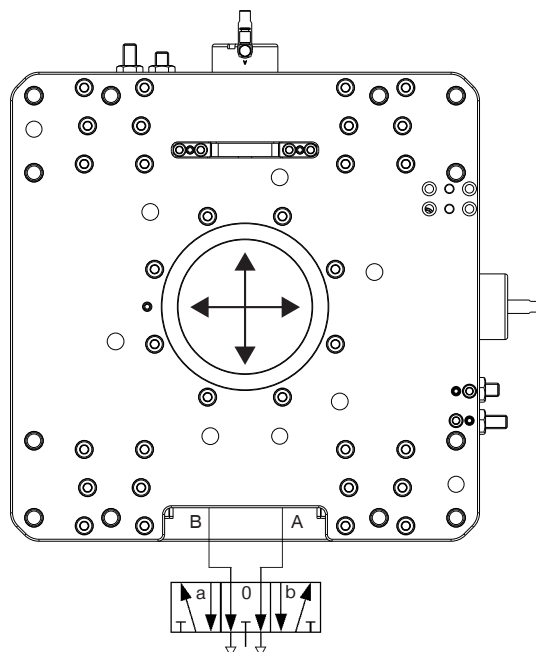
10.5.1 Locking piston

State	Locking piston locked	Locking piston unlocked
a		
0		
b		

Sensing	Signal	
Inductive sensor A*	1	
	0	
Inductive sensor B*	1	
	0	
Magnetic field sensor	1	
	0	

*Two inductive proximity switches can be used to detect the status.

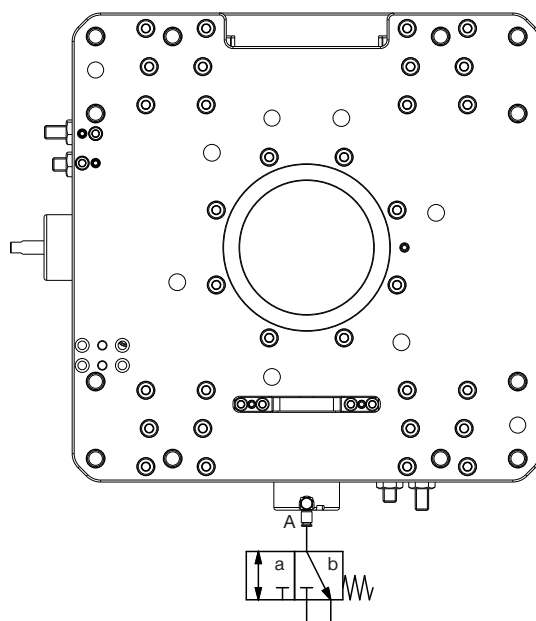
► Please note section "10.4.1.2 Installing inductive sensors".



10.5.2 Clamp

State	Clamping active	Clamping deactivated
a		
b		

Sensing	Signal	
Magnetic field sensor	Q1	
	Q2	



10.6 Setting the compensation stroke

INFORMATION

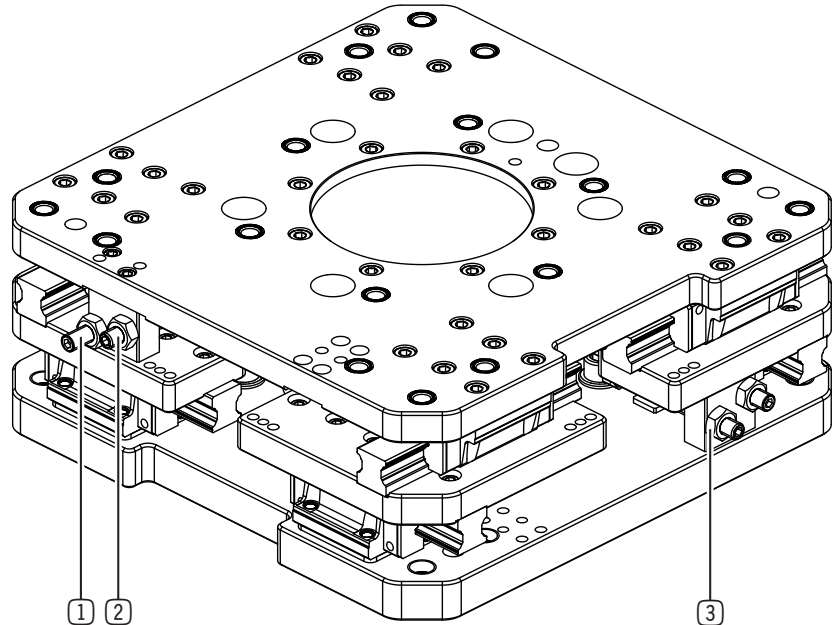


The compensation stroke is set to the maximum value when delivered.

The compensation stroke can be adjusted with two adjustment screws in the X and Y directions.

- ▶ Loosen the lock nut.
- ▶ Turn adjustment screw A counterclockwise and adjustment screw B clockwise to increase the compensation stroke.
 - ▶ Make sure not to unscrew adjustment screw A completely.
- ▶ Turn adjustment screw A clockwise and adjustment screw B counterclockwise to reduce the compensation stroke.
- ▶ Tighten the lock nut.

- ① Adjustment screw A
- ② Adjustment screw B
- ③ Lock nut



11 Commissioning

INFORMATION



The product is centered when delivered.

WARNING



Risk of injury from crushing

- Injuries can occur due to crushing and clamping during compensation movements on the product.
- ▶ Make sure that there are no parts of the body in the range of movement of the product.

NOTICE



Property damage caused by centering when clamped

Centering product variants using a clamping element when they are clamped may result in damage to the product.

- ▶ Center the product only when it is not clamped.

- ▶ Slowly fill the pneumatic circuit with appropriately processed compressed air.
- ▶ Carry out a trial run in manual mode.
- ▶ Connect the supply voltage for the sensors.
- ▶ Check the switching behavior.
 - ▶ Readjust the switching distance if necessary.

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.

- ▶ 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.

Use of the following cleaning agents is strictly prohibited:

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

Maintenance-free operation of the product is guaranteed for up to 1 million cycles for the XYR9100, XYR9150 and XYR9200 models.

Maintenance-free operation of the product for installation sizes XYR9050 and XYR9075 is guaranteed for up to 5 million cycles.

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

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

- ▶ Visually check the product regularly for damage and dirt.

- ▶ Have maintenance work that requires disassembly of the product 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 Systems GmbH accepts no liability for any resulting malfunctions or damage.

13 Decommissioning/disposal

INFORMATION



When the product reaches the end of its service life, it can be completely disassembled and disposed of.

- ▶ Disconnect the product completely from the power supply.
- ▶ Dispose of the components properly according to the material groups.
- ▶ Comply with the locally applicable environmental and disposal regulations.

14 Declaration of Incorporation (Machinery Directive)

In terms of 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: Axis compensation module

Type designation: XYR9000

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.

Commissioning of the incomplete machine is prohibited until it has been found that – where applicable – the machine in which the above-mentioned incomplete machine is to be installed complies with the Machinery Directive (2006/42/EC) and an EC Declaration of Conformity has been drawn up in accordance with Annex II 1 A.

Christian Bosse
Authorized representative for
compiling the relevant technical
documents

Rheinau, Germany, 2025-06-16
(Place and date of issue)



Martin Zimmer
(Legally binding signature)
Managing Partner

15 Declaration of Incorporation (Machinery Regulation)

In terms of 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: Axis compensation module

Type designation: XYR9000

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.

Christian Bosse

Authorized representative for
compiling the relevant technical
documents

Rheinau, Germany, 2027-01-20

(Place and date of issue)



Martin Zimmer
(Legally binding signature)
Managing Partner