

1 Supporting documents

NOTICE:



Read through the installation and operating instructions carefully 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 life time. The documents listed below are available for download on our website.



⇒ www.zimmer-group.de
Only the documents currently available on the website are valid.

- Catalogs, drawings, CAD data, performance data
- Detailed installation and operating instructions
- General Terms and Conditions of Business with specifications for the warranty entitlement

2 Safety notices

CAUTION:



Non-compliance may result in severe injuries! The following notes shall be taken into account in order to reduce the likelihood of injuries/malfunctions:

1. Installation, commissioning, maintenance and repairs may only be performed by qualified experts in accordance with these installation and operating instructions.
2. The linear cylinder is state-of-the-art. It is mounted on industrial machines.
3. The linear cylinder may be used only in accordance with its intended purpose and technical data. ZIMMER GmbH shall accept no liability for any damage caused by improper use.
4. Any use other than the intended use requires written approval from ZIMMER GmbH.
5. Do not reach into the operating range of the linear cylinder.
6. Make sure that the power cables are disconnected before you fit, set, retool, maintain or repair the linear cylinder.
7. In case of maintenance, retrofitting or expansion work, remove the linear cylinder from the machine and carry out the work outside the danger zone.
8. When commissioning or testing, make sure that the linear cylinder cannot be actuated by mistake.
9. Modifications to the linear cylinder, such as adding drilled holes or threads, may be made only with prior approval from ZIMMER GmbH.
10. The specified maintenance intervals and compressed air quality specifications are to be observed; also refer to the Maintenance section. Please contact Customer Service for this purpose.
11. Use of the linear cylinder under extreme conditions, such as aggressive liquids and abrasive dusts, is subject to prior approval from ZIMMER GmbH.

3 Proper use

NOTICE:



The SHX series linear cylinder is only to be used in its original state with its original accessories, with no unauthorized changes and within the scope of its defined parameters for use. ZIMMER GmbH shall accept no liability for any damage caused by improper use.

The linear cylinder is designed for operation with compressed air only. It is not suited for operation with other media such as liquids or gases. The linear cylinder is intended for use in closed rooms for the variable compensation of forces and torques.

Proper use of the linear cylinder also includes the forces and torques that may be acting in addition to the cutting force (see technical data sheets at www.zimmer-group.de).

4 Personnel qualification

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

5 Product description

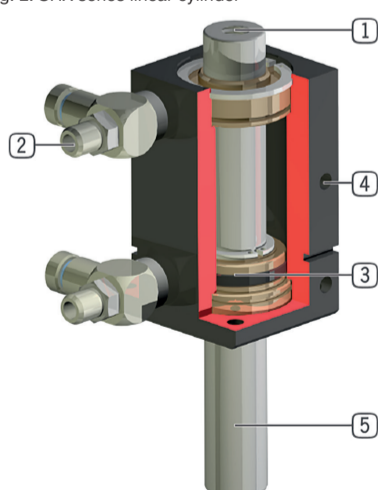
As a result of its small structure, the SHX series linear cylinder reduces interference contours, thereby enabling simple integration into the machine design.

The SHX series enables increased process safety of the machine concept at equal force and travel time when retracting and extending.

Fig. 1: SHX series linear cylinder

①	Connection to customer specific application
②	Power supply
③	Drive
④	Mounting and positioning
⑤	Piston rod
⑥	Attachment for mounting block
A	Connection A = (retract)
B	Connection B = (extend)

Fig. 2: SHX series linear cylinder



6 Installation

WARNING:



Risk of injury in case of unexpected movement of the machine or system into which the linear cylinder 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 case of unexpected movement of the linear cylinder when pneumatic energy is connected.

- ▶ Switch off the pneumatic energy before all work.
- ▶ Secure the pneumatic circuit against being switched on unintentionally.
- ▶ Check the pneumatic circuit for any existing residual energy; bleed if necessary.

The linear cylinder must be installed on a mounting surface in accordance with the levelness specifications.

Diameter < 100 mm → permitted non-levelness < 0,02 mm

Diameter < 100 mm → permitted non-levelness < 0,05 mm

6.1 Installation positions

A drawing of an SH-X25 is shown as an example in the adjacent images.

You will find the matching dimensional drawing of the linear cylinder on our website:

⇒ www.zimmer-group.de.

The linear cylinder can be mounted upon the mounting structure on the housing either laterally or from above using the threads. After successful installation, screw the pneumatic screw connections into the designated threads.

- Mounting and positioning (④).
- Power supply (②).

The dimensions for the mounting piece structure can be found on the respective data sheet on our website.

You can download any necessary CAD data in all formats from our website:

⇒ www.zimmer-group.de

Make the following selections:

Handling technology/linear module/linear cylinder/SHX series

For the design sizes, M4 mounting screws of strength class 8.8 must be used.

The following tightening torques must be observed during installation:

Screw size		M4
Permitted tightening torque	[Nm]	6,4

6.2 Installing the energy supply

The power supplies (②) are located laterally on the housing.

- Connection A = retract
- Connection B = extend

⇒ You can find these positions in the example figure in Section 6.1 and on our website

⇒ www.zimmer-group.de (see technical data sheets)

NOTICE:



Close off the unused pneumatic connections with dummy plugs.

⇒ Use compressed air in accordance with DIN ISO 8573-1 quality class 4.

6.3 Installation of accessories

NOTICE:



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

You can find more information on available accessories on our website ⇒ www.zimmer-group.de.

7 Technical data

INFORMATION:



Refer to our website ⇒ www.zimmer-group.de for technical data.

This data varies within the type series depending on the specific design. If you should have further questions about products or technical data, please contact ZIMMER GmbH Customer Service.

8 Maintenance

Maintenance-free operation of the linear cylinder is guaranteed for up to **10 million cycles**.

The maintenance interval may shorten under the following circumstances:

- Operation with compressed air that does not comply with DIN ISO 8573-1 quality class 4.
- Dirty environment
- Improper use and use that does not comply with the performance data.
- Ambient temperature of more than 60°C; lubricants harden faster!

Dismantling and reassembling the linear cylinder 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 reassembly of the linear cylinder or in the event of any malfunctions or damage resulting from this.

ZIMMER GmbH recommends having repairs be carried out by ZIMMER Customer Service.

INFORMATION:



Even though the linear cylinder is, as mentioned, maintenance-free, perform a regular visual inspection to check for any corrosion, damage or contamination. Clean the linear cylinder as needed using a commercially available cleaning agent for machines.

9 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 • Im Salmenkopf 5 • D-77866 Rheinau, Germany • Phone: +49 7844 9138 0 • Fax: +49 7844 9138 80
Web: www.zimmer-group.de

We hereby declare that the incomplete machine described below

Product designation: Linear cylinder, pneumatic

Type designation: SH-X□□

satisfies the following basic requirements of the Machinery Directive 2006/42/EC:

No. 1.1.2., No. 1.1.3., No. 1.1.5., No. 1.3.2., No. 1.3.4., No. 1.3.7., No. 1.5.3., No. 1.5.4., No. 1.5.8., No. 1.6.4., No. 1.7.1., No. 1.7.4

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.

Authorized representative for the compilation of relevant technical documents

Kurt Ross	See manufacturer's address	Rheinau, Germany, 2019-03-26	Martin Zimmer, Managing Director
First name, last name	Address	Place and date of issuance	Legally binding signature