

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:

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

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

In these installation and operating instructions, "product" refers to the product designation.

2. Safety notices

WARNING

Risk of injury during manual loading
Risk of injury during manual loading due to independent movement of parts after the failure of the power supply, switch-off of the power supply (including emergency stop), accidental or negligent actuation of the PLUS connection for clamping and accidental or negligent loosening actuation.

- ▶ Do not reach into the product.
- ▶ Do not reach between the clamping surfaces.
- ▶ Do not insert the clamping pin in or place it on a product that is clamped.

Risk of injury due to unauthorized intervention
Various components of the product are continuously under spring tension.

- ▶ Do not remove the cover.

⇒ Warranty and disclaimer

Risk of injury due to malfunctions
Use of the product on machine tables with magnetic clamping devices is not permitted.

- ⇒ It is possible for the magnetic forces to affect the mechanical system within the product.

CAUTION

Injuries or malfunctions can occur, especially with:

- Crushing during installation due to an unsecured mounting piece
- Improperly assembled electrical connections
- Power supply faults, e.g. due to pressure fluctuations
- Damaged or loose power lines
- Missing or loosened attachment screws
- Failure to switch off the working medium during assembly or repair work on the product
- Human error
- Failure to observe the safety and warning instructions during assembly and commissioning
- Failure to observe the safety regulations for operating the machine into which the product is to be installed

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

The product is used exclusively for the positioning and clamping of clamping pins that are connected with workpieces, clamping plates or other clamping devices.

The product is designed exclusively for use in industrial and industry-related applications and for operation with compressed air. The product is not suitable for operation with operating media other than compressed air. The product is designed exclusively for operation within the parameter limits and operating conditions stipulated in the order confirmation. For questions regarding use outside of the stipulated parameters, please contact Zimmer Customer Service.

Use is considered improper if:

- The product is mounted on an application other than what the manufacturer has specified.
- The product is installed in applications used for transporting people or in which people are located below the product.
- The product is used as a press tool, tool mount, load-carrying equipment or hoisting devices.
- The product is used in rotation applications with speeds greater than 80 rpm, without consultation with Zimmer GmbH.
- The product is used in an aggressive environment (acids, etc.) or comes in direct contact with food.
- The product is used in areas with a potentially explosive environment.
- The product is used in range of strong magnetic fields.

4. Personnel qualification

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

5. Product description

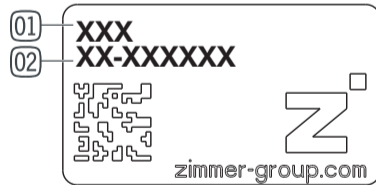
5.1 Forces and torques

INFORMATION

For information on the forces and torques for this product, please refer to our website www.zimmer-group.com. Please contact Zimmer Customer Service if you have any questions.

5.2 Type plate

A type plate is attached to the product. The article number ① and confirmation number ② are shown on the type plate.



INFORMATION

Please state the confirmation number ② in the event of damage or a complaint. Please contact Zimmer Customer Service if you have any questions.

Installation and Operating instructions SPN series	Im Salmenkopf 5 77866 Rheinau Germany
DDOC01239	+49 7844 9138 0
Index 0	info@zimmer-group.de
EN 2021-03-16	www.zimmer-group.com

5.3 Functional description

The pneumatically operated product is designed for clamping workpieces and workpiece-clamping devices with extremely high repeatability. Due to its structural design, it is clamped without pneumatic pressure applied. The clamping force can be significantly increased by using an additional impulse on the PLUS connection. The form-fit arrest cannot be released until the release connection is actuated, the clamp dog is pressurized and the PLUS connection is simultaneously vented.

When clamped, the seal on the contact surface prevents dirt or liquids from penetrating into the product. Safe operation can be verified by the following statuses by means of piston position sensing and a positioning check:

- Product opened
- Product closed (clamping pin clamped)
- Product closed (no clamping pin present)
- Workpiece present (rests upon the contact surface)

INFORMATION

More information can be found in the installation and operating instructions of the zero-point clamping system.

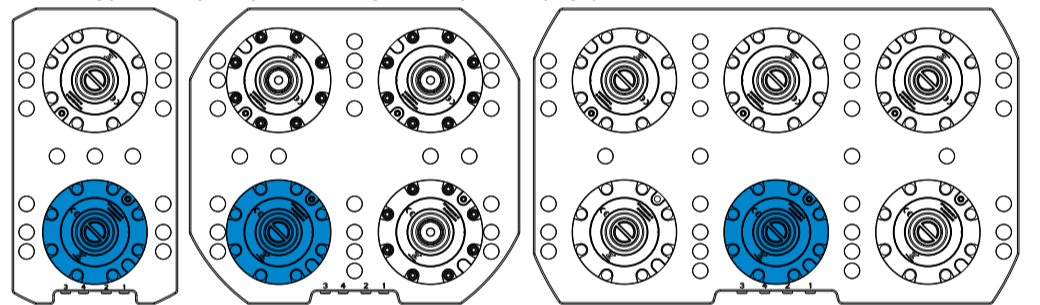
5.4 Design of the product

- ① Unlocking
- ② PLUS function Sensing: Zero-point clamping system closed (advanced)
- ③ Blowing out/cleaning/positioning check (advanced)
- ④ Sensing: Zero-point clamping system opened (advanced)
- ⑦ Transport threaded hole
- ⑧ Sealing cap
- ⑪ Pallet*
- ⑫ Centering pin*
- ⑬ Clamping plate
- ⑥ Attachment screw*
- ⑨ T-slot nut*
- ⑩ T-slot nut attachment screw*

*Not included in delivery

5.5 Advanced clamping plate

In the advanced version of the clamping plate, an advanced zero-point clamping system is mounted in the clamping plate. When using pneumatic piston position sensing, this zero-point clamping system must be used.



6. 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. Please contact Zimmer Customer Service if you have any questions.

7. Technical data

INFORMATION

For technical data, please visit our website. This data varies within the series, depending on the specific design. Please contact Zimmer Customer Service if you have any questions.

8. Installation

WARNING

Risk of injury due to uncontrolled movement
Risk of injury in case of uncontrolled movement 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 machine's power supply against being switched on unintentionally.
- ▶ Check the machine for any residual energy that may be present.

Risk of injury in the event of uncontrolled movement of parts 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.

NOTICE

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

The product must be mounted on a suitable mounting piece (made of steel).

- Mount the product to the mounting piece from above using the installation holes.
- Strength class of the 8.8 attachment screws (DIN EN ISO 4762)
- Observe the tightening torques of the mounting screws.

⇒ Zimmer GmbH recommends verifying the permitted load-carrying capacity of the required screw connections in accordance with VDI 2230.

- You can find the exact installation positions in the technical datasheet on our website.
- Check the product for possible transport damage before assembly.
- Recommendation: As a principle, only use tested compressed air hoses.
- Seal unused pneumatic connections.

8.1 Assembly of a zero-point clamping system to the clamping plate

NOTICE

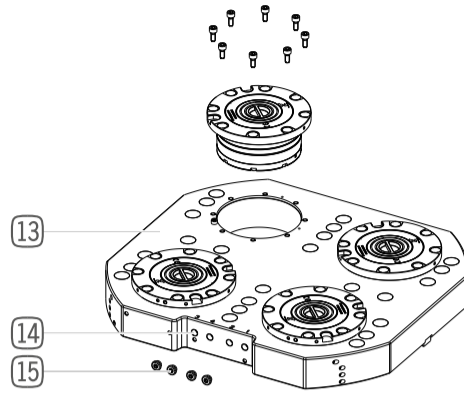
For individual assembly, follow the instructions in the installation and operating instructions of the zero-point clamping system.

8.2 Assembly of the clamping plate

For the zero-point clamping system, clamping plates (13) are offered. These clamping plates are available for two, four or six zero-point clamping systems.

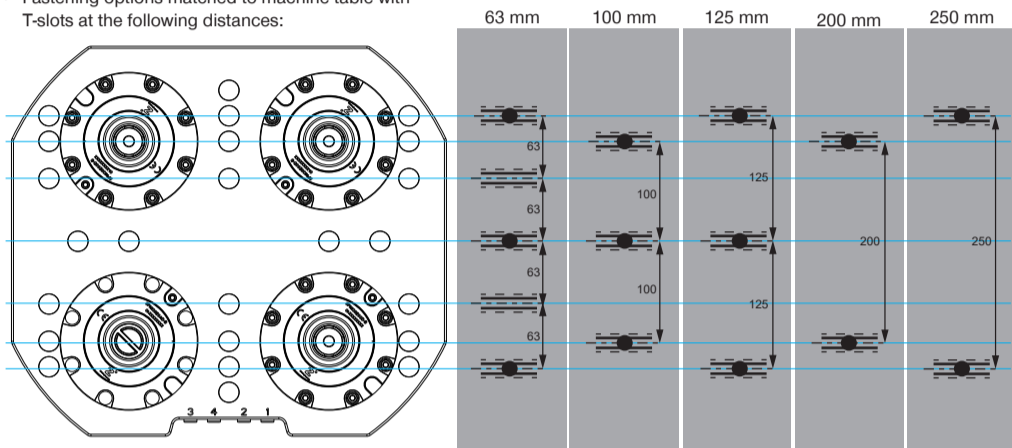
The clamping plates are equipped with options for fastening to machine tables with T-slots at various distances. Within the clamping plate, the zero-point clamping systems are connected with pneumatic channels. For all zero-point clamping systems, the connection takes place at the central connections (14).

Before assembly, remove the locking screw (15) in the respective connection (14).



Example:

- Clamping plate for four zero-point clamping systems
- Fastening options matched to machine table with T-slots at the following distances:



8.3 Checking operational readiness

After the product has been properly installed, the following properties must be checked to verify operational readiness:

- Check pneumatic connections for leaks by looking and listening
- All mounting screws are checked for their prescribed tightening torque
- Check the product for leaks while it is pressurized by looking and listening

8.4 Disassembly

Disassembly is carried out in the reverse order of that described in Section "Assembly of the clamping plate".

9. Maintenance

Maintenance-free operation of the product is guaranteed for up to 750,000 million cycles.

The product must be checked by visual inspection at regular intervals for possible damage and contamination.

The maintenance interval may shorten under the following circumstances:

- Compressed air purity does not correspond to ISO 8573-1 [4:4:4]
- Dirty environment
- Improper use and use that does not comply with the performance data

NOTICE

Even though the product is maintenance-free as mentioned above, perform a regular visual inspection to check for function, damage or contamination. We recommend a visual inspection at least every 2 weeks or after 5,000 clamping cycles. Shut down the product immediately if you notice any damage or malfunction.

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. Troubleshooting

NOTICE

For error-free function of the product, it is necessary that the contact surface is always completely covered. This prevents dirt from penetrating the product and causing malfunctions.

Error/malfunction	Possible cause	Measure
Product does not open	• Operating pressure is too low	▶ Increase operating pressure (4 to 6 bar)
	• Leakage/blockage/pinching of the power supply lines	▶ Check power supply lines
	• Excess force is acting upon the centering pin.	▶ Reduce the tensile load or compressive load on the product.
Long response time (too little air is fed in)	• Clamping piston does not move.	▶ Vent the PLUS connection
	• Valve is too small (product opens after a delay)	▶ Choose a larger valve accordingly
Air leak or blow-off noise	• Power supply lines from the valve to the product are too long (product opens after a delay)	▶ Shorten the power supply lines (keep the distance from the product to the valve as short as possible). ▶ Enlarge the cross-section of the power supply lines.
	• Connections are leaky.	▶ Check the connections. ▶ Open/close the product several times.
Dimensional deviations/chatter marks	• Connecting cables are leaky.	▶ Check power supply lines.
	• Centering pin is not correctly retracted.	▶ Clean the product.
	• Contamination of the product	▶ Completely replace the product.
	• Product worn	▶ Completely replace the product.

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11. Transportation/storage/preservation

- ▶ The product must be transported and stored only in 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 and after transport, check all power connections and 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.
- ▶ Clean all components. There must be no contamination left on the components.
- ▶ Close pneumatic connections using suitable covers.
- ▶ Observe the required temperature.

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 them, observe the locally applicable environmental regulations and codes and regulations for disposal.

13. RoHS declaration

In terms of the EU Directive 2011/65/EU

Name and address of the manufacturer:

Zimmer GmbH
Im Salmenkopf 5, 77866 Rheinau, Germany
+49 7844 9138 0
+49 7844 9138 80
www.zimmer-group.com

We hereby declare that the incomplete machine described below

Product designation: Clamping plate, pneumatic
Type designation: SPN series

conforms to the requirements of the directive in its design and the version we put on the market.

Michael Hoch Rheinau, Germany, 2020-03-31
Authorized representative for compiling the relevant technical documents (Place and date of issuance)

Martin Zimmer
Martin Zimmer
(Legally binding signature)
Managing Partner

14. REACH declaration

In terms of the EU Regulation 1907/2006

Name and address of the manufacturer:

Zimmer GmbH
Im Salmenkopf 5, 77866 Rheinau, Germany
+49 7844 9138 0
+49 7844 9138 80
www.zimmer-group.com

REACH stands for Registration, Evaluation, Authorisation and Restriction of Chemicals.

A full declaration of REACH can be obtained from the manufacturer due to the duty to notify in accordance with Art. 33 of the REACH regulation ("Duty to communicate information on substances in articles").

Michael Hoch Rheinau, Germany, 2020-03-31
Authorized representative for compiling the relevant technical documents (Place and date of issuance)

Martin Zimmer
Martin Zimmer
(Legally binding signature)
Managing Partner

15. Declaration of Conformity

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

Name and address of the manufacturer:

Zimmer GmbH
Im Salmenkopf 5, 77866 Rheinau, Germany
+49 7844 9138 0
+49 7844 9138 80
www.zimmer-group.com

We hereby declare that the following, identically constructed safety components

Product designation: Zero-point clamping system, pneumatic
Type designation: SPN series

conform to the requirements of the 2006/42/EC directive in its design and the version we put on the market.

The following harmonized standards have been used:

Basic health and safety requirements:

- DIN EN ISO 12100:2011-03 Safety of machinery – General principles for design – Risk assessment and risk reduction
- DIN EN ISO 13849-1/-2 Safety of machinery – Safety-related parts of control systems
- EN 349:1993+A1:2008 Safety of machinery – Minimum gaps to avoid crushing of parts of the human body

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

Michael Hoch Rheinau, Germany, 2020-03-31
Authorized representative for compiling the relevant technical documents (Place and date of issuance)

Martin Zimmer
Martin Zimmer
(Legally binding signature)
Managing Partner