

Operating Instructions

Translation of original instructions

RoboTrex 52 **Pneumatic automation zero point** **clamping system**



Item no.
66600

Copyright:



LANG
TECHNIK

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Modifications to the product: In the event of modifications to the product by the customer, the warranty is void. No modifications may be made to the product without the manufacturer's approval.

Only use original spare parts. In the case of externally supplied parts, there is no guarantee that they have been designed and manufactured to withstand the stresses applied or to meet safety requirements.

The manufacturer provides a full warranty only and exclusively for the spare parts ordered from it.

The manufacturer is committed to improving its products. It reserves the right to make changes. This does not imply any obligation to make retrospective adjustments to the products already delivered.

General Terms and Conditions of Sale and Delivery:

Our General Terms and Conditions of Sale and Delivery apply as a matter of principle. These are available to the plant operator at the latest when the contract is concluded.

Warranty and liability claims for personal injury and property damage are excluded if they are caused by one or more of the following:

- Improper use
- Improper installation, commissioning, operation, or maintenance
- Operating the product in a defective state
- Inadequate monitoring of parts subject to wear and tear
- Failure to follow the instructions in the documentation
- Catastrophic events due to foreign bodies or force majeure

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1.1 UNIT

The RoboTrex 52 automation zero point clamping system is used to mount a LANG clamping device in a machine tool or machining center. The zero point unit combines the tried and tested Quick•Point® zero point clamping system with a pneumatically clamping mechanism, which makes workpiece clamping even safer thanks to a fail-safe function (clamped via spring force / released with energy).

It is possible to position the zero point unit directly on a Quick•Point® zero point plate with μ -accuracy or by means of individual locating holes, depending on the groove spacing, for direct mounting on the machine table.

The RoboTrex automation zero point clamping system can be controlled in two ways:

- Pneumatic control by the machine tool.
- Pneumatic control via an external interface.

1.2 AREAS OF APPLICATION

The spring assembly acts with pneumatic support on the piston, which actuates the Quick•Point® zero point clamping system via the pressure pins. Wedge-shaped pins move inside it to fix the clamping device placed on the plate at the zero point.



A pneumatic pressure surge increases the clamping force from 2000 N to approx. 8000 N.

1.3 ACCESSORIES

Ordering spare parts

Order original spare parts exclusively from the manufacturer.

Information required for an order:

- Designation: RoboTrex 52 automation zero point clamping system
- Item number 66600
- Order quantity

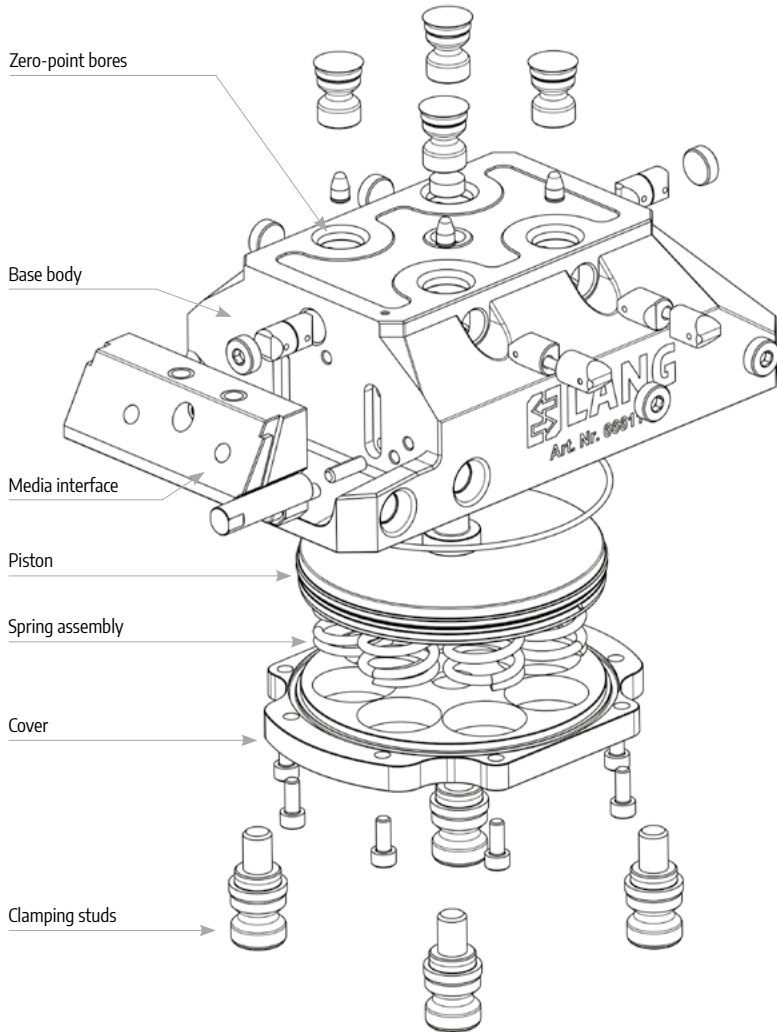
The contact details can be found on the back of these operating instructions.

Spare parts kit LANG Technik offers a spare parts kit as an order item, which covers the wear parts as a set.

This includes:

- **Pressure pin**
- **X-ring**
- **O-ring**
- **Sliding ring**
- **Compression springs (7 pieces)**

1.4 DESIGN OF AUTOMATION ZERO POINT CLAMPING SYSTEM



2.1 GENERAL DATA

Designation	Item number	Dimensions Width x depth x height	Weight
Automation zero point clamping system	66600	210 x 124 x 68 mm	8.7 kg

Designation	Item number	Quantity
Wear part kit for 66000	66600 kit	1

2.2 MATERIAL

Item	Material
General components	Steel, rubber (NBR), plastic (TPU / Irogran), lubricating oil (VpCI 322), aluminum, PTFE with bronze, brass, grease (K-05)

2.3 SCOPE OF DELIVERY

Inspection on delivery

Immediately on receipt of the automation zero point clamping system, check its condition, e.g. for possible transport damage. Inform the carrier and the manufacturer (LANG Technik GmbH) of any transport damage found. The address and telephone number can be found on the inside cover.



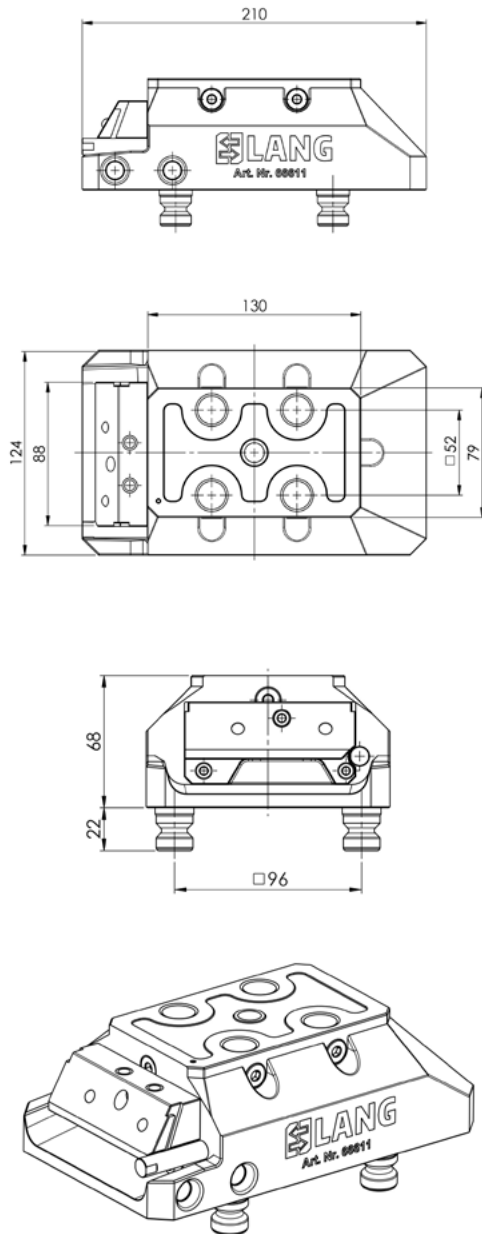
Damage caused during transport of the zero point system must be completely and properly repaired before commissioning.

2.4 MAINTENANCE AND REPAIR

In case of damage or faults, please contact LANG Technik GmbH directly.

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2.5 SKETCH



3.1 ASSEMBLY

Preparation

Clean the mounting surfaces for the automation zero point clamping system (e.g. zero point plate) on the machine tool or machining center. There must be no dirt or chips on the surfaces in question.

Mounting

There are two different mounting options for the automation zero point clamping system in the machine tool or machining center. Mounting option with zero point plate: Place the clamping studs of the pneumatic zero point unit on the Quick•Point® zero point plate. Tighten the screw firmly (tightening torque 30 Nm, 60 Nm for 2 and 4-fold plates). This fixes the automation zero point clamping system securely. Mounting option without zero point plate: Remove the sealing plugs from the base body. Screw the automation zero point clamping system directly onto the machine table. Observe the max. tightening torques of the screws. Insert all sealing plugs.

3.2 USE

Check that the automation zero point clamping system is properly installed. Check that the compressed air supply meets the requirements of DIN ISO 8573-1:2010-06-30 (Compressed air. Impurities and cleanliness classes).

3.2.1 WORK TO BE CARRIED OUT

The zero-point bores of the automation zero point clamping system are automatically blown through with compressed air during each fitting process. If the zero point unit is operated with customer-specific workpieces with at least 2 Quick•Point® clamping studs, you must carry out regular cleaning of the zero-point bores and the support surfaces, as there is no cleaning effect here due to the sealing air. Inspect for dirt at regular intervals. If necessary, interrupt operation and clean the clamping device or the machine.

- Place the manual control unit on the pneumatic interface.
- Actuate the “Open” valve.
- The incoming compressed air (6 bar) presses the piston down, releasing the zero point clamping system.
- Remove the inserted clamping device. The outflowing air simultaneously cleans the zero-point bores and the support surfaces.
- Insert the clamping device required.
- Clamp the zero point unit in place by closing the “Open” valve and briefly actuating (approx. 1 sec.) the “Close” valve.



Brief actuation of the “Close” valve is important to guarantee the final clamping force (approx. 8000 N).

- Take off the manual control unit. The automation zero point clamping system is now ready for the automated machining process.

3.2.2 AUTOMATIC MODE

In automatic mode, the RoboTrex automation system docks with the pneumatic interface via the media interface and automatically performs the appropriate steps for changing the clamping device on the automation zero point clamping system.

3.3 MAINTENANCE

To ensure trouble-free operation, the automation zero point clamping system and the machine tool/machining center must undergo regular maintenance and servicing. This includes a functional test and a visual inspection for damage and wear. Always have the necessary materials ready for cleaning the components concerned.



In addition to these operating instructions, also observe the operating instructions for the machine tool/machining center on which the zero point unit is fitted.

3.3.1 TESTING WORK

The load-bearing and moving parts must be checked to ensure they are in perfect condition before each start-up.

Check their condition and functioning before each use.

Defective parts must be replaced immediately by parts in perfect working order.

During operation, you must carry out regular visual inspections for contamination and clean as necessary.



Repair and replacement work on the automation zero point clamping system may only be carried out by trained and instructed personnel who have also been trained and instructed in the operation of the machine tool/machining center.

After completion of the maintenance and repair work, check that all safety devices of the machine are functioning correctly. Protective panels and covers must be installed correctly. The pneumatic interface and the support surface of the zero point clamping system must also be kept clean at all times. Manual cleaning must be completed after each use of the machine. After an extended downtime, maintenance personnel must carry out a visual inspection of the condition and function of the automation zero point clamping system. The zero point unit must also be cleaned.

Lubrication: The automation zero point clamping system is supplied with permanent lubrication which does not require maintenance.

4.1 MALFUNCTIONS/ERRORS



A drop in the clamping force can have three possible causes:

- **Zero point unit is dirty:** Disassemble the automation zero point clamping system. Clean it thoroughly. Pay special attention to the pneumatic interface and the support surface of the zero point clamping system.
- **Compressed air supply is inadequate:** Carry out a pressure test and adjust as necessary. The compressed air quality must meet the requirements of DIN ISO 8573-1:2010-06-30 (Compressed air. Impurities and purity classes).
- **Zero point system function is faulty:** Check all components. Replace damaged components with original components only. If the fault persists, send the automation zero point clamping system to the manufacturer LANG Technik GmbH for inspection and repair.

5 WARNINGS

5.1 INTENDED USE

The plant operator is obliged to use the product properly, with due care and under appropriate conditions. No liability or claim for refund will be accepted following improper use.

5.2 REQUIREMENTS OF THE OPERATING PERSONNEL

The plant operator commits to:

- only to allow trained, adult specialists (specialization in metal), e.g. CNC mill operators, to work with the product.
- to define the responsibilities of personnel for installation, commissioning, operation, maintenance, and repair clearly.
- only to allow trainees to work with the product under the supervision of an experienced specialist (metal specialist) or a CNC mill operator.

5.3 PERSONAL PROTECTIVE EQUIPMENT AND PERSONAL SAFETY

- Personal protective equipment must be worn in accordance with the guidelines and regulations of the professional association and the company (work clothing, non-slip safety shoes, gloves, hair net, etc.). Check with your employer's safety officer.



6.1 DISPOSAL ACCORDING TO DIRECTIVE (EU) 2018/851

For disposal, observe the country-specific disposal regulations.



LANG Technik products do not belong in household waste.
Failure to comply is an offense.



Accessories and packaging are recycled in an environmentally friendly manner.

Product	Material	Disposal
Housing, screws, nuts etc.	Metal	Separation of materials Recycling by melting down
Protective screen	Plastic	Recycling
Hoses	Rubber, PVC, steel	Separation of materials Recycling
PE films	Plastic	Recycling
Packaging material	Pallet wood	Recycling
Hydraulic oil	Mineral oil	According to local regulations

7.1 SYMBOLS

Please pay attention to the following warning symbols

	<i>Read all the operating instructions carefully before commissioning for the first time and keep it in a safe place for future use</i>
	<i>Please read and follow the technical and safety instructions</i>
	<i>The use of protective gloves made of tough, resistant material is recommended</i>
	<i>A helmet and safety goggles are recommended for personal safety</i>
	<i>To reduce the risk of eye injuries, wearing protective goggles as specified in EN 166 is recommended</i>
	<i>Safety footwear are part of the protective equipment</i>
	<i>Materials are recycled in an environmentally friendly manner</i>
	<i>Do not dispose of the material in household waste</i>



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