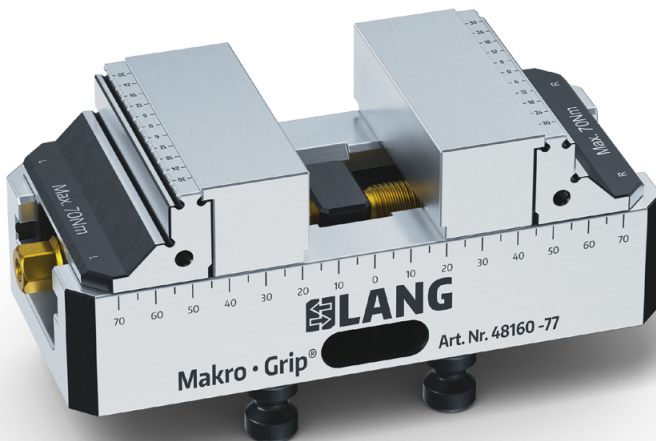


Operating Instructions

Original Instructions

Makro·Grip® Contour Jaws



Item number

48409-77

48409-125

48419-77

48419-125

48410

48420

Copyright:



LANG
TECHNIK

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Product modifications: Modifications to the product by the customer void the warranty. No modifications may be made to the product without the manufacturer's consent.

Use only original spare parts. There is no guarantee that parts sourced from third parties are designed and produced to withstand the intended use and safety requirements. The manufacturer provides full warranty coverage only and exclusively for spare parts ordered from him.

The manufacturer is continually working to improve his products and reserves the right to make modifications to them. The manufacturer is therefore under no obligation to make subsequent modifications to products already delivered.

General Terms and Conditions of Sale and Delivery:

Our General Terms and Conditions of Sale and Delivery generally apply. These terms and conditions are available to the operator upon the signing of the contract.

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

- Improper use
- Incorrect installation, commissioning, operation and maintenance
- Operation of the product when it is defective
- Inadequate monitoring of parts that are subject to wear
- Failure to follow the instructions in the documentation
- Catastrophic events caused by external influences or force majeure

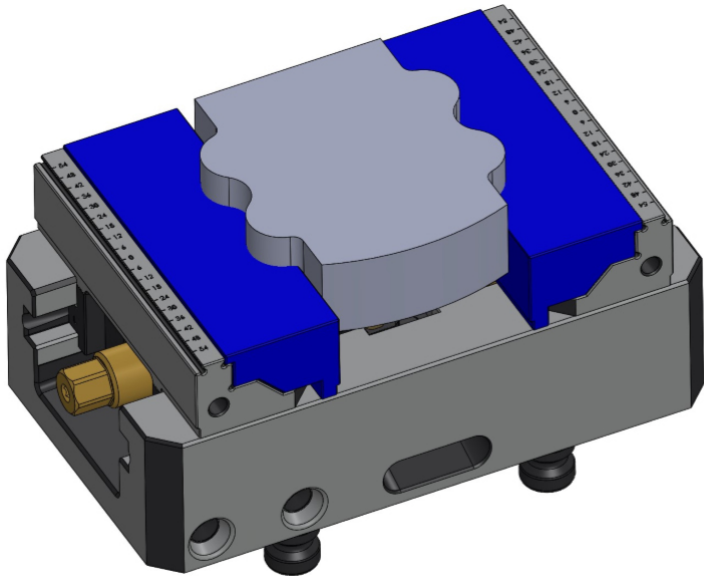
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1.1 UNIT

Our Makro•Grip® Contour Jaws are used to clamp workpieces such as those with pre-machined contours (see example).

Using the two magnets eliminates the need to screw down the contour jaws. Information on mounting and use can be found under 3.1. No special base jaws are required – only the standard Makro•Grip® Jaws.

The illustration below shows two pre-milled contour jaws (in blue), clamped in a Makro•Grip® 5-Axis Vise 48205-125.



1.2 AREAS OF APPLICATION

Using contour jaws, which are adaptable to any workpiece shape, the operator is able to clamp pre-machined contours with little effort.

1.3 ACCESSORIES

Two magnets in each jaw provide additional fixation and stabilization in the Makro•Grip® 5-Axis Vise. These can be removed when disposing of the jaws and can be reused with new jaws.

2.1 GENERAL DATA

Description	Item number	Dimensions Width x Depth x Height	Weight (grams)
Contour jaws for the inside: for Makro-Grip® 77	48409-77	77 x 30 x 28 mm	155 g
Contour jaws for the inside: for Makro-Grip® 125	48409-125	125 x 30 x 33 mm	299 g
Contour jaws for the outside: for Makro-Grip® 77	48419-77	77 x 33 x 28 mm	136 g
Contour jaws for the outside: for Makro-Grip® 125	48419-125	125 x 43 x 33 mm	307 g
Magnet set	48410	ø 20 x 21 mm	6 g
Mounting tool	48420	77 x 10 x 3 mm	6 g

2.2 MATERIAL

Item	Material
General components	Aluminum and neodymium

2.3 SCOPE OF SUPPLY

The scope of supply includes only the items you ordered. The Makro-Grip® 5-Axis Vise as well as the mounting magnets and the mounting tool must be ordered separately in the correct quantity and size.

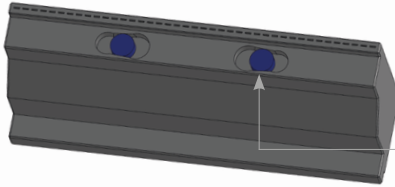
2.4 MAINTENANCE AND REPAIR

Please contact LANG Technik GmbH directly if any item is damaged or malfunctioning.

LANG Technik GmbH • Albstraße 1-6 • D-73271 Holzmaden, Germany • Phone: +49 7023 9585-0

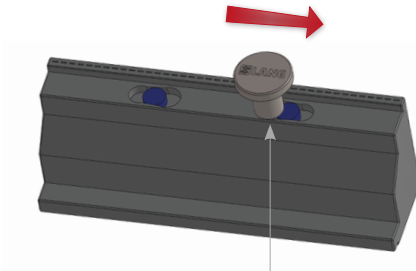
3.1 ASSEMBLY

PREPARING THE MAKRO•GRIP® CONTOUR JAWS:



Magnet

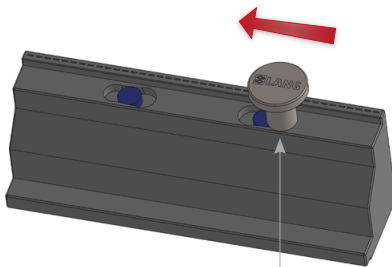
- 1. The magnets (2x) are inserted by hand into the slots of the top jaw and pushed toward the outer surfaces.



Mounting tool, inward

- 2. The mounting tool is then positioned with the pin in the slot facing inward between the magnet and contour jaw.
- 3. Next, the magnet is pushed outward using the mounting tool. The slant helps secure it in this position.

3.2 DISASSEMBLY



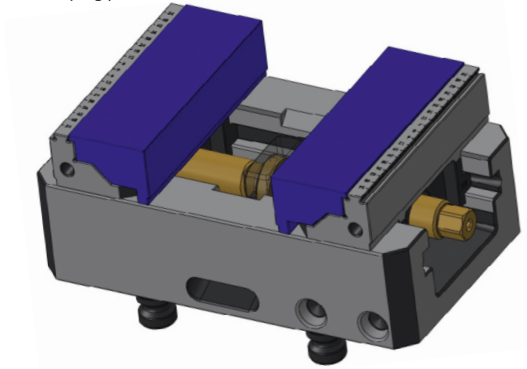
Mounting tool, outward

- 1. The mounting tool is also used for removal, however this is done via the slot facing outward between the magnet and contour jaw.

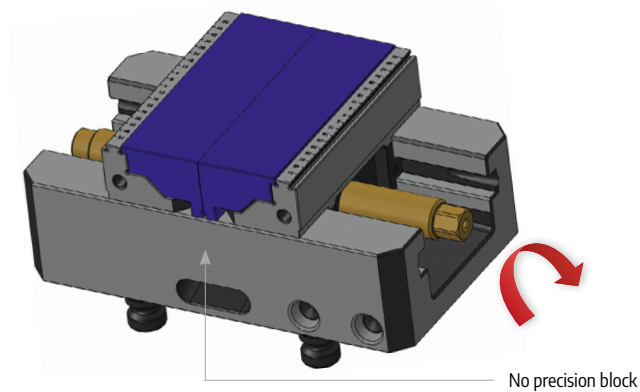
3.3 Use

SETTING UP THE MAKRO•GRIP® CONTOUR JAWS ON THE MAKRO•GRIP® 5-AXIS VISE:

- 1. Place the contour jaws precisely and accurately on the Makro•Grip® Jaws. The pre-stamped contour must engage and lock into the serration of the clamping jaws.

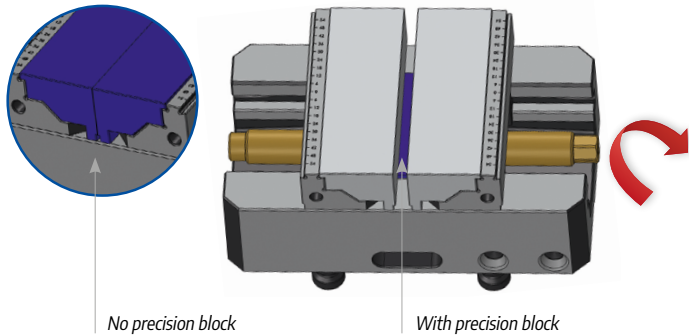


- 2. To ensure that the contour jaws are ideally positioned, they must be tightened to the maximum torque ($M = 70\text{Nm} / 100\text{Nm}$) of the clamping device before they are used for the first time. This positions them accurately on the Makro•Grip® Jaws with no clearance.



- 3. Before placing the milling contour, a precision block must be clamped between the contour jaws. This block is tightened with the torque defined and specified for the future part. Thus the conditions created are the same as those created when manufacturing the component to be machined.

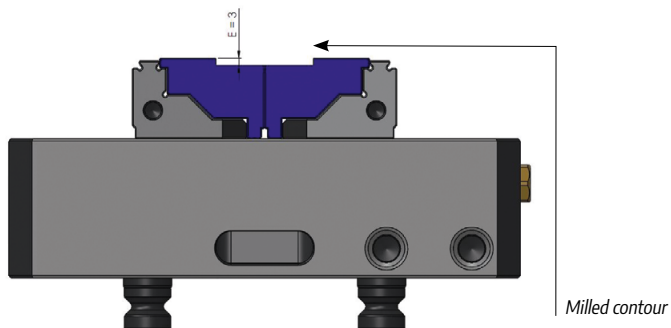
If there is no precision block, the jaws are clamped against each other. To do this, the milling contour must be adjusted accordingly.



LANG TECHNIK SAFETY INFORMATION

The minimum clamping depth (E) is limited to 3 mm. In this regard, applying force above the 3 mm clamping depth is not permitted.

- 4. The final step is to place the desired workpiece contour into the top jaws. To avoid future confusion, we recommend engraving/labeling the jaws "left" and "right" or with the serial number of the clamping device.



4.1 MALFUNCTIONS/ERRORS



Caution! The component and clamping device can become magnetized. The inserted magnets, as well as the part, can become magnetized as a result of using the Makro•Grip® 5-Axis Vise several times. Particles from milling can remain stuck on the device. Regular cleaning of the elements is necessary to ensure a perfect fit without interference. The magnets can be removed as necessary for cleaning.

5 WARNINGS

5.1 INTENDED USE

The operating company is responsible for using the product as intended, with caution and under the appropriate conditions. In the event of improper use, no liability shall be assumed by the manufacturer, nor shall any refund be provided.

5.2 PERSONNEL REQUIREMENTS

Operating company responsibilities:

- Only trained personnel with the relevant background knowledge (specializing in metal), e.g. CNC operators, are authorized to work with the product.
- Personnel responsibilities with regard to installation, commissioning, operation, maintenance and repair must be clearly defined.
- Trainees may work with the product only when supervised by an experienced professional (specializing in metal) or by a CNC operator.

5.3 PERSONAL PROTECTIVE EQUIPMENT AND SAFETY OF PERSONNEL

- Personal protective equipment (work clothes and non-slip safety footwear, gloves, hair net, etc.) must be worn as specified in the guidelines and regulations of the employer's liability association and the operating company. Obtain information from your employer's safety officer.



6.1 DISPOSAL AS SPECIFIED IN EU DIRECTIVE 2018/851

Comply with country-specific disposal regulations when disposing of equipment.



LANG Technik products are not considered household waste.
Failure to comply with disposal requirements is a regulatory offense.



Accessories and packaging are recycled in an environmentally friendly manner.

Product	Material	Disposal
Housing, screws, nuts, etc.	Metal	Separation of materials Recycle by melting down
Protective shield	Plastic	Recycle
Hoses	Rubber, PVC, steel	Separation of materials Recycle
PE film	Plastic	Recycle
Packing material	Pallet wood	Recycle
Hydraulic oil	Mineral oil	As per 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>Direction indicator</i>
	<i>Direction indicator, correct rotation</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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