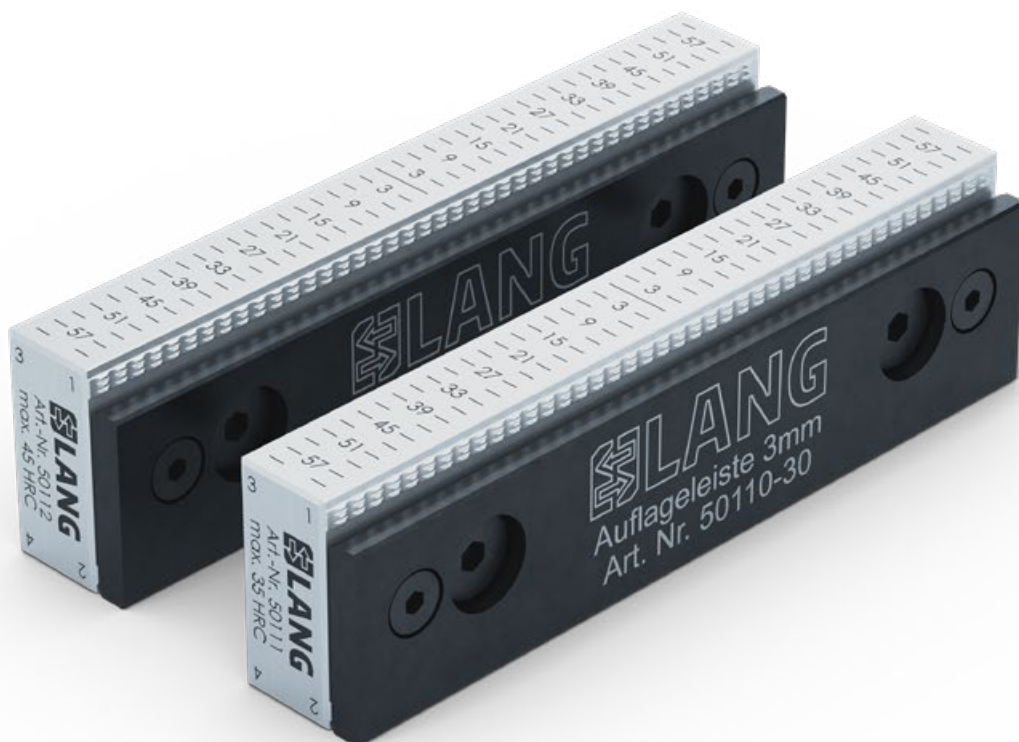


Operating instructions

Original Instructions

Makro·Grip® FS Stamping jaws 50111 · 51112



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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 shall 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 VERSIONS AND SCOPE OF DELIVERY

Makro•Grip® FS stamping jaws are available in two versions:

- "Standard" version - for materials up to 35 HRC (item no. 50111)
- "High-end" version - for materials up to 45 HRC (item no. 50112)

Makro•Grip® FS stamping jaws are supplied with mounted parallels. The clamping depth / support height of the workpiece is 3 mm.

Makro•Grip® FS stamping jaws are equipped with four serration rows and can be turned three times after one row of teeth is worn. This eliminates the need for reconditioning.



NOTE

If you pre-stamp workpiece blanks with the Makro•Grip® FS stamping unit, they can also be held by form fit in the holding serration of the previous Makro•Grip® 5-Axis Vise without any problems - even with even higher holding forces than before.

2 MOUNTING THE STAMPING JAWS

Requirements

Make sure that your stamping unit is designed for the Makro•Grip® FS stamping jaws. If you have a previous model, you can use our conversion kit Art. No. 51260-20 to convert to the new version.

2.1 MOUNTING THE STAMPING JAWS

1. Position the stamping jaws over the fitting bushes and screw them to the two carrier jaws. The corresponding parallels are already loosely mounted on the stamping jaws.
2. Press down the parallels so that they lie flush on the guide of the stamping base body and tighten the screws. If they are not flush, this will result in the workpiece being pre-stamped at an angle and then clamped incorrectly in the 5-Axis Vise.

3 MATERIAL INSTRUCTIONS

3.1 MATERIAL PROPERTIES

All non-brittle materials can be pre-stamped. Excluded are, for example, graphite, composite fiber materials such as carbon and, in some cases, cast iron. Hollow and thin-walled workpieces are only suitable for pre-stamping to a limited extent. Please carry out a test stamping in advance.

3.2 DEGREE OF HARDNESS OF THE MATERIALS

The degree of hardness of the material to be stamped must match the hardness properties of the stamping jaws designed for this purpose. Stamping jaws are available in two versions: Standard and High-End. The standard stamping jaws are suitable for materials up to 35 HRC. The High-End stamping jaws are suitable for materials up to 45 HRC.

Please refer to the following table for our recommendations on stamping depth. Further information can be found in the operating instructions for the stamping unit.

Tensile strength Rm	stamping depth
up to 550 N/mm ²	approx. 0.3 mm
550 N/mm ² - 1000 N/mm ²	approx. 0.2 mm
1000 N/mm ² - 1400 N/mm ²	approx. 0.1 mm

! NOTE

For hard materials, we recommend wetting the stamping serration with extrusion oil (included with high-end stamping jaws). This reduces frictional resistance and increases the service life of the stamping jaws.

4 MAINTENANCE AND CARE

4.1 WEAR OF THE STAMPING JAWS

The serration of the stamping jaws is subject to a certain amount of wear. Due to the fact that different materials and hardnesses are stamped with different stamping pressures, the service life of the stamping serration cannot be defined in general terms. Wear is shown by the fact that the serration becomes blunt. If a serration row is worn, the stamping jaw can be turned, as it has a total of four serration rows.

! NOTE: RECONDITIONING

Makro•Grip® FS stamping jaws are not reconditioned due to their quadruple serration and long service life!

4.2 USE OF THE GAUGING BLOCKS

To ensure consistent holding forces during subsequent workpiece clamping in the 5-Axis Vise, regularly check the wear of the stamping serration using the supplied gauging blocks.

Procedure: Check the wear of the stamping serration:

Place the two gauging blocks with the grooves at the outer ends of the stamping jaws and clamp them lightly. Make sure that the stamping serration engage in the grooves of the gauging blocks. If the measuring stone (without groove) fits between the stamping serration, the jaws should be turned over.



5.1 SPARE PARTS LIST

Pos	Item number	Designation
1	50110-30	Parallels 3 mm
2	50110-50	Parallels 35 mm
3	50153	Gauging blocks
4	KT1001241	Extrusion oil

6 WARRANTY AND LIABILITY

6.1 TO THE DOCUMENTATION

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6.2 CHANGES TO THE PRODUCT

Changes by the customer: The warranty is void if the customer makes changes to the product.



CAUTION: CHANGES TO THE PRODUCT

No modifications may be made to the product without the manufacturer's approval. Only use original spare parts. There is no guarantee that externally sourced parts are designed and manufactured to withstand the stresses and ensure safety.

NOTE Warranty Service:



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

6.3 CHANGES BY THE MANUFACTURER

The manufacturer endeavors to improve its products. He reserves the right to make changes. This does not entail any obligation to subsequently adapt the stamping unit already supplied.

6.4 GENERAL TERMS AND CONDITIONS OF SALE AND DELIVERY

In principle, our General Terms and Conditions of Sale and Delivery apply. These are available to the operator at the latest when the contract is concluded. Warranty and liability claims for personal injury and damage to property are excluded if they are attributable to one or more of the following causes:

- Non-intended use
- Improper installation, commissioning, operation and maintenance
- Operating the stamping unit in a defective condition
- Inadequate monitoring of parts that are subject to wear and tear
- Failure to observe the instructions in the documentation
- Catastrophes caused by foreign bodies and force majeure

7.1 PLEASE NOTE IN ADVANCE

Read the operating instructions completely. Observe all safety instructions listed in this chapter. Make sure that everyone who works with the stamping unit has read these operating instructions in full.
Handling the documentation: Always keep the instructions to hand in the immediate vicinity of the stamping unit.

NOTE: TRAINING

Training of personnel by the manufacturer can only be regarded as the passing on of individual pieces of information. They do not release the operator from reading the operating instructions.

7.2 INTENDED USE

7.2.1 INTENDED USE

The stamping unit is intended exclusively for stamping suitable workpieces using hydraulic pressure. Any other use is considered improper use. The manufacturer is not liable for any resulting damage.

7.2.2 SUITABILITY OF THE STAFF

The operator undertakes to only allow persons to work with the stamping unit who:

- have been instructed in the operation of the Makro•Grip® FS stamping units
- are familiar with the basic regulations on safety and accident prevention
- have read and understood the operating instructions in full

GENERAL DANGER

The operator bears the ultimate responsibility for safety. This responsibility cannot be delegated!

7.2.3 INCORRECT OPERATION AND MISUSE

There is a risk of danger in the event of incorrect operation or misuse:

- for the health of the operator, third parties and animals in the immediate vicinity of the stamping unit
- for the stamping unit itself and other tangible assets of the operator

7.3 DANGERS DURING STAMPING PRESSURE ADJUSTMENT

- In addition to the instructions in the documentation, observe the generally applicable local safety and accident prevention regulations. Check the stamping unit for operational safety before each commissioning. Any faults that occur must be rectified immediately. Damaged parts must be replaced immediately. The stamping unit must not be operated until the fault has been rectified.
- Workplace ergonomics: The workstations must be designed in accordance with ergonomic guidelines. The operator must ensure free access, adequate lighting, etc.
- Personal protective measures: Personal protective equipment must be worn in accordance with the guidelines and regulations of the employers' liability insurance association and the company (work clothing, non-slip safety shoes, hairnet, safety goggles, etc.).



8.1 STORAGE

We want to ensure that your stamping jaws remain in the best possible condition and are guaranteed a long service life. It is therefore crucial that you use the correct storage procedures to prevent corrosion.

TO PREVENT CORROSION, WE RECOMMEND THE FOLLOWING STORAGE METHODS:

Oil film: Before storing the stamping jaws, it is advisable to coat them with a thin film of oil. The oil film forms a protective layer against moisture and humidity, which are potential causes of corrosion. Make sure that the oil film is applied evenly and covers all surfaces.

Packaging: Store the steel parts in suitable packaging that protects them from environmental influences such as moisture and dirt. Use materials that do not absorb moisture to ensure continuous dryness.

Room humidity and temperature: Ensure that the storage area has an appropriate humidity and temperature. Ideally, the humidity should be below 60% to prevent condensation from forming. The temperature should be kept constant to minimize temperature fluctuations that can lead to moisture condensation

8.2 DISPOSAL

The individual parts of the stamping unit can be recycled if disposed of properly and are therefore environmentally friendly. Details on disposal and recyclability can be found in the table.

Observe the country-specific disposal regulations when disposing of the product.











LANG Technik products do not belong in household waste.
Non-observance is an administrative offense.



Accessories and packaging are recycled in an environmentally friendly way.

Product	Material	Waste disposal
Stamping jaws	Metal	Separation of materials Feed for recycling by melting down
Screws	Metal	Feeding for recycling
Support strips	Metal	Separation of materials Feeding for recycling
PE films	Plastic	Feeding for recycling
Packaging material	Paper, cardboard	Feeding for recycling

9.1 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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