The background of the cover is a photograph of a band saw. A large white diagonal shape is overlaid on the image, containing the title and subtitle. The saw's blade and guides are visible in the background.

ACCESSORIES FOR BAND SAWS AND PARALLEL GUIDES

Operating instructions

Edition 09/2016

Article numbers:
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2 CONTACT ADDRESSES

2.1. ADDRESS OF MANUFACTURER

EXAKT Advanced Technologies GmbH
Robert-Koch-Straße 5
22851 Norderstedt
Germany

Phone: +49 40 529 560 - 0

Fax: +49 40 524 9959

Email: info@exakt.de

<http://www.exakt.de>

2.2. SERVICE AND ORDERING OF SPARE PARTS

If you have service inquiries or want to order spare parts, please contact the specialist dealer from which you have ordered the device.



Use the order form in the *Spare parts and accessories* chapter to order spare parts.

3 SAFETY

3.1. GENERAL INFORMATION ON SAFETY






Each person who is assigned to the installation, start-up, operation and maintenance of the device and its associated components has to have fully read and understood these instructions, and especially the Safety chapter.

Instruction may have to be provided taking into consideration the professional qualification of the respective persons.

Explanation of the symbols in these instructions:

	⚠ DANGER Indicates an extremely dangerous situation. Ignoring this instruction results in lethal or severe, irreversible injuries.
	⚠ WARNING Indicates an extremely dangerous situation. Ignoring this instruction may result in lethal or severe, irreversible injuries.
CAUTION Indicates risk of material damage. Ignoring this instruction may result in damage to property.	
	Here you will find important background information and explanations within a current context, or status information within a sequence of actions

3.2. SAFETY SYMBOLS

Symbol	Meaning
	Warning of electrical voltage
	Warning of general and non-categorized dangers
	Warning before automatic start-up
	Laser class 1 label When using the laser-optical cutting line indication
	Pull the mains plug

3.3. START-UP

Some of the accessories have guide signs providing additional safe operation.

Always observe all safety instructions for your own safety.

Before starting up the accessories, the operator must be convinced that all safety conditions are met.

Observe the pertinent accident prevention regulations and other generally acknowledged safety and occupational health regulations.

3.4. OPERATING SAFETY INSTRUCTIONS

Refrain from any activity that:

- > causes risks to life and limb of the user or of any other person,
- > impairs the accessory or any other material assets,
- > impairs the safety and function of the accessory,
- > does not observe the listed safety instructions.

The accessory components must only be maintained and repaired by persons that have been assigned with these tasks and that have been instructed on the associated risks and dangers, and who are appropriately qualified.



DANGER

Always pull the mains plug when working on live connections.
Carelessness can result in electric shock.

Observe the following when performing maintenance at electrical systems:

1. Disconnect the device.
2. Secure the device from being switched back on.
3. Check for absence of power.
4. Earth and short circuit.
5. Cover any adjacent live parts and secure the danger area.

3.5. HANDLING CHEMICAL SUBSTANCES

When handling oil, grease and other chemical substances, observe the respective safety data sheets and instructions for disposal of the respective manufacturer, as well as all local safety requirements.

3.5.1. CLEANING AGENT

When using cleaning agents, observe the respective safety data sheets and instructions for disposal of the respective manufacturer, as well as all local safety requirements.



WARNING

There is an increased risk of explosion when using explosive or highly flammable cleaning agents.

Do not use any explosive or highly flammable cleaning agents!

3.6. USE IN ACCORDANCE WITH THE INSTRUCTIONS (INTENDED USE)

The accessory described in this document must be used solely as described in the *Description* chapter with the devices delivered and approved by EXAKT. Any use which goes beyond these limits is not regarded as the intended use. The manufacturer does not accept any responsibility for damage resulting from this; the user/operator himself accepts the full risk in this case.

4 LASER-OPTICAL CUTTING LINE INDICATION

4.1. DESCRIPTION

The laser-optical cutting line indication is used for exact alignment of a test cut (sample) during the clamping process. The cross cut line of the band saw is thereby projected onto the sample by a laser beam.

The cross cut can therefore be made exactly according to the required cutting line.

4.2. SETUP

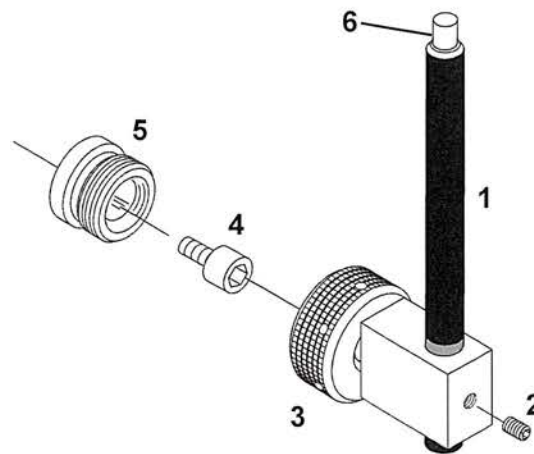


Fig. 1: Setup

Laser-optical cutting line indication, comprising:

1. Laser unit with linear lens optics
2. Clamping screw for laser unit
3. Holder with lock nut
4. M8x12 screw
5. Threaded bolt for lock nut
6. On/off switch for the laser optics

4.3. ASSEMBLY

4.3.1. FITTING THE MOUNTING HOLE

EXAKT 300:

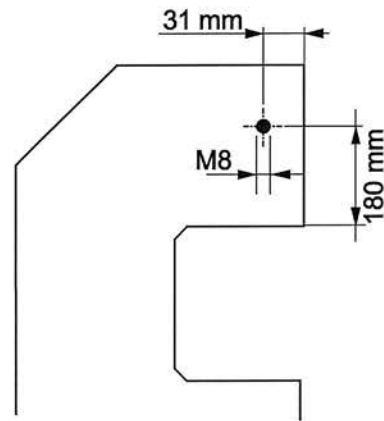


Fig. 2: EXAKT 300 mounting hole

EXAKT 310:

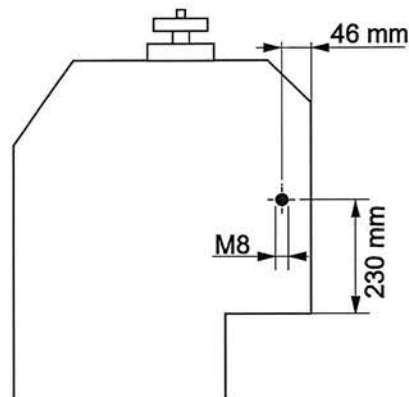


Fig. 3: EXAKT 310 mounting hole

Proceed as follows when retrofitting the laser-optical cutting line indication on the EXAKT abrasive grinding system:

1. Remove the housing cover.
2. Punch mark the bore center as per Fig. 2 and bore a 6.5 mm core hole.
3. Cut the M8 thread.
4. Then carefully clean the working area.
5. Re-attach the housing cover.

4.3.2.ASSEMBLE THE CUTTING LINE INDICATION

CAUTION

When inserting the laser unit into its holder, only push it in up to the stop and never beyond it.

Always handle the laser unit with the greatest care.

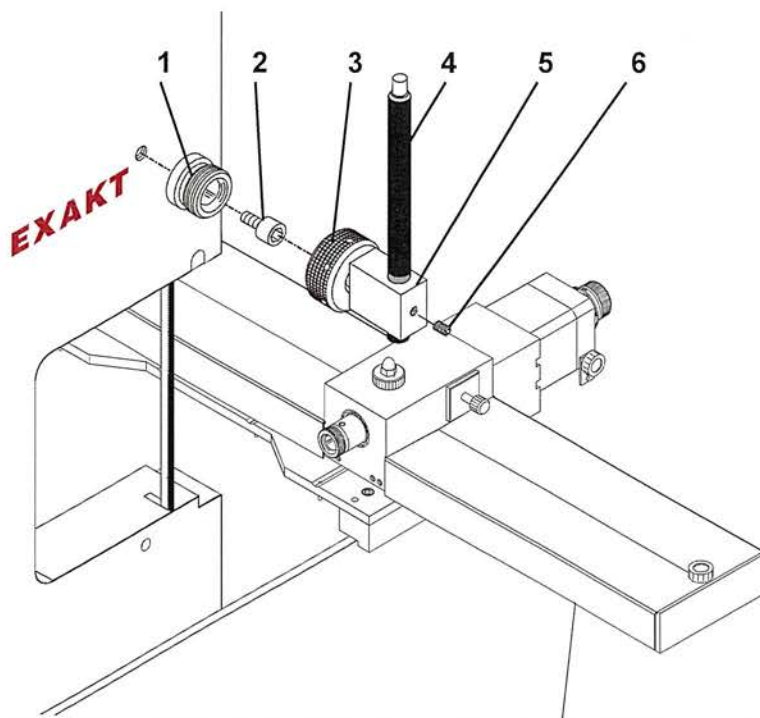


Fig. 4: Laser assembly

LASER CLASS 1

1. Stick the enclosed sticker (Laser pictogram and warning "Laser Class 1") visibly onto the cover of the housing.
2. Fix the threaded bolt (1) with its screw (2) onto the housing cover.
3. Screw the holder lock nut (3) onto the threaded bolt and only tighten slightly. The holder (5) must still be able to be rotated.
4. Align the holder (5) vertically (mounting hole for the laser unit pointing upwards).
5. Insert the laser unit (4) from above into the mounting hole of the holder (5) and push in until you hear it lock on. (second chrome ring on the laser as seen from below).
6. Only slightly tighten the clamping screw (6) so that the laser unit can still turn in the bore hole.

4.3.3.ADJUSTMENT

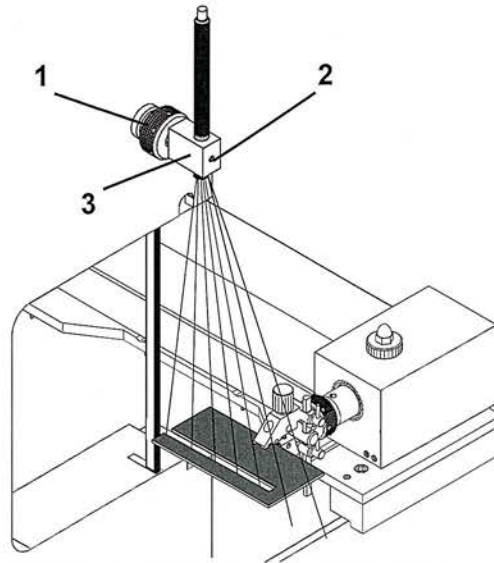


Fig. 5: Adjusting the laser optics

CAUTION

Over-tightening the clamping screw (2) can damage the laser unit. Only slightly tighten the holder in the laser unit.

The laser optics is adjusted by a reference cut on a plastic slide (50x100mm). The lock nut (1) and the clamping screw (2) must not be fully tightened to ensure that the holder and the laser unit can still turn.

1. Switch on the laser optics.
2. Align the laser unit so that the laser beam is parallel to the reference cut in the plastic slide.
3. Slightly tighten the clamping screw (2).
4. Using the EXAKT abrasive grinding system, cut an approx. 8 – 9 cm slit in the slide.
5. Turn the holder (3) until the laser beam hits the cutting band. Manually tighten the lock nut in this position.
6. Saw an approx. 8 – 9 cm slit in the slide (see Figure 3).

CAUTION

Always switch off the laser unit after using it. This prevents excessive load to the battery.

5 AUTOMATIC POSITIONER

5.1. DESCRIPTION

The automatic positioner prevents the sleeve from being positioned beyond its mechanical limits. It is mainly comprised of the sensor-sleeve lock with two end position sensors evaluated by a CP control electronics.

5.2. SETUP

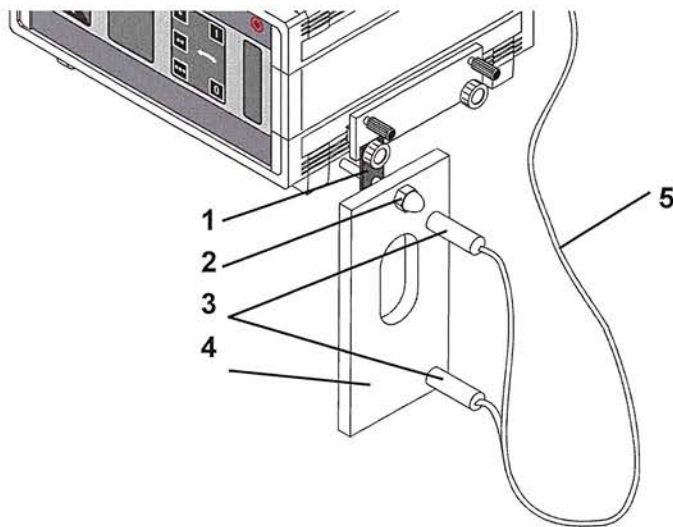


Fig. 6: Setup

The automatic positioner is comprised of:

1. Holder for automatic positioner
2. Sleeve lock
3. End position sensors
4. Base plate
5. Sensor cable

5.3. FUNCTION

Different functions can be used depending on the operating condition.

Operating condition	Influence on the CP control electronics
Automatic positioner is mounted on its holder.	Sleeve pendulum function is possible.
Automatic positioner is placed on the tailstock.	Sleeve pendulum function is not possible. Automatic positioning is possible.
Automatic positioner is placed on the tailstock and the front or rear end position has been detected by the end position sensors.	A currently automatic positioning of around 1 mm will be run to its conclusion. However, an additional automatic positioning in this direction is no longer possible after this. Caution In this condition the step motor acts like a brake. Resistance can be felt when turning the graduated button. However, the sample can still be fine-positioned manually by max. 1 mm.

5.4. ASSEMBLY

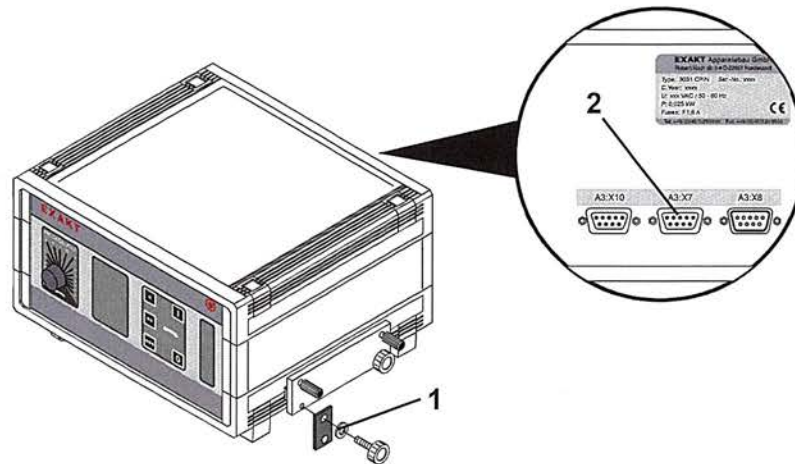


Fig. 7: Installation

1. Mount the holder for the automatic positioner (1) onto the carrier of the controller.
2. Mount the automatic positioner into its holder.
3. Connect the cable for the end position sensors (marked by A3:X7) at the similarly named bushing (2) to the rear of the CP controller.

CAUTION

If the automatic positioner cable is not connected or is connected incorrectly, the pendulum movement of the sleeve cannot be started.

5.5. POSITIONING USING THE AUTOMATIC POSITIONER

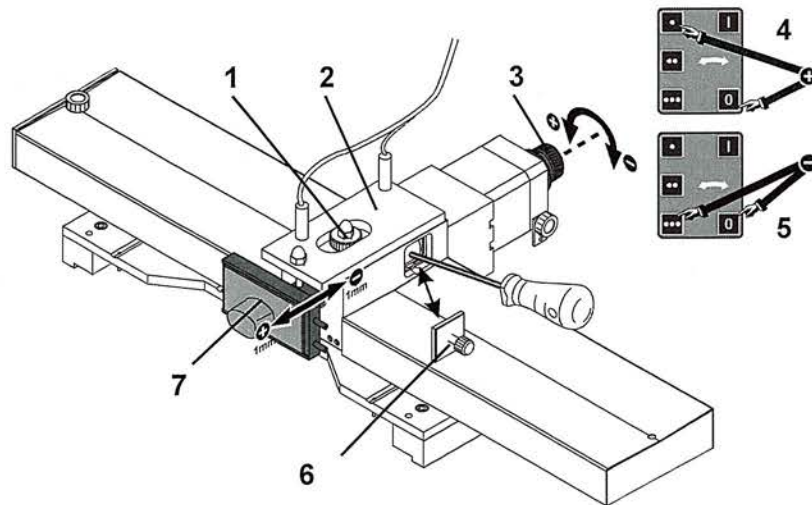


Fig. 8: Installation

1. Loosen the friction damper (1) until there is no more friction.
 > **Only loosen – do not unscrew!**
2. Insert the automatic positioner (2).
3. Remove the cover for the sleeve coupling (6).
4. Release the inside sleeve coupling.
5. Position the sample to the cutting band.
- > Rough positioning:
 - Press the 1-point button and the **O** button (4) simultaneously to move the sample forwards by 1 mm.
 - Press the 3-point button and the **O** button (5) simultaneously to move the sample to the rear by 1 mm.
- > Fine positioning:
 - Adjusting at the setting wheel (3): 1 turn positions the sample by 0.1mm = 100 µm.
6. Close the sleeve coupling once the sample is correctly positioned.
7. Insert the cover for the sleeve coupling (6).
8. Remove the automatic positioner (2).
9. Close the friction damper (1).

5.6. REMEDYING MALFUNCTIONS

Description	Cause	Remedy
Sleeve (sample) pendulum movement does not function	The automatic positioner is not mounted in its holder and is on a metal surface (the end position sensors react to metal).	Mount the automatic positioner in its holder at the controller.
	The cable for the end position sensors (A3:X7) is not connected, or is incorrectly connected.	Connect the cable correctly – see Page Fehler! Textmarke nicht definiert..
The automatic positioner does not function in either direction	Pendulum movement is still operating (pendulum speed = 0)	Remove the automatic positioner. Switch off the pendulum movement (make sure that the pendulum movement stops in its starting position).
Automatic positioning does not function	Defective automatic positioning sensor(s)	Contact Service.

6 DIGITAL MICROMETER

6.1. DESCRIPTION

Samples can be positioned with extreme accuracy using the digital micrometer. The adjustment can be read off directly on the display.

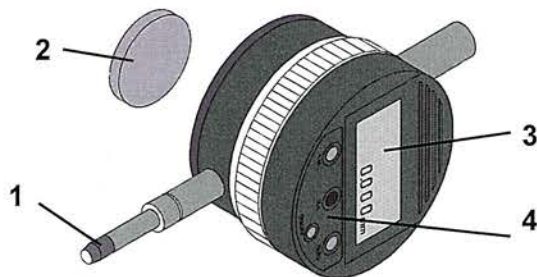


Fig. 9: Digital micrometer

The digital micrometer is comprised of:

1. Measuring tip
2. Magnetic holder
3. Display
4. Operating buttons



A detailed description is in the separate instructions of the manufacturer of the micrometer.

6.2. ASSEMBLY

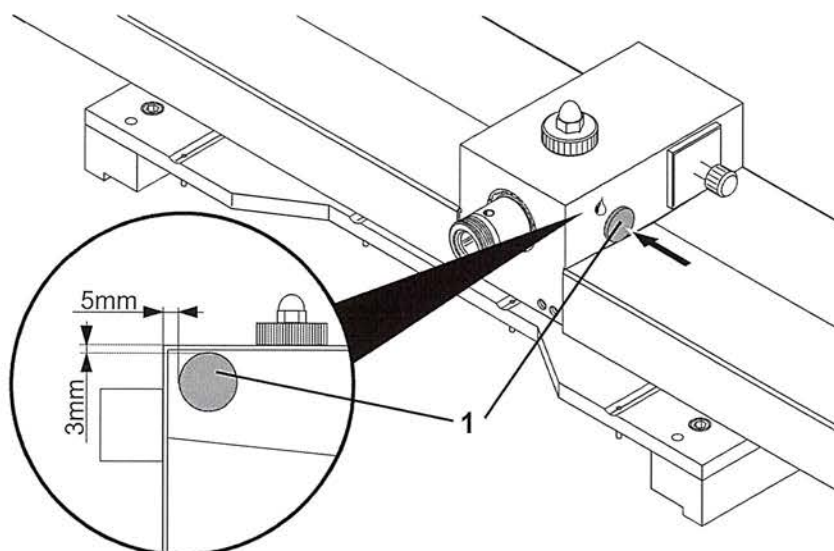


Fig. 10: Assembly

Attach the magnet to the tailstock.

1. Grease the gluing surfaces with a suitable solvent.
2. Apply 2-3 drops of cyanoacrylate glue to the magnet (1).
CAUTION! Wear protective goggles and gloves!!
3. Place the magnet onto the tailstock as per the figure above.

CAUTION

Allow the glue to harden for approx. 2 hours before fixing on the digital micrometer.

6.3. OPERATION

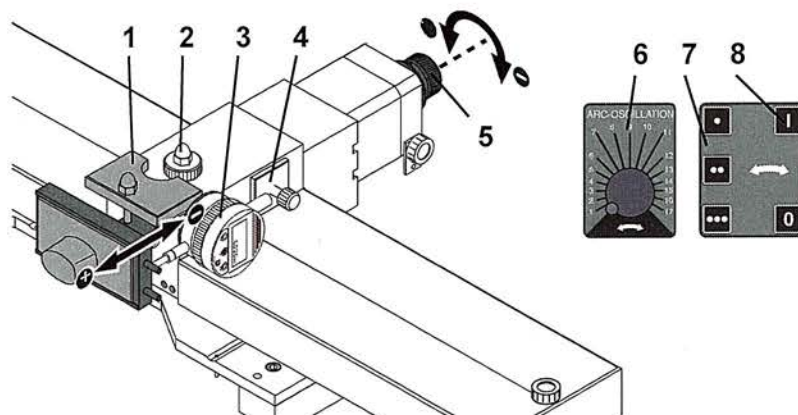


Fig. 11: Operation

1. Loosen the friction damper (2) until there is no more friction.
 Only loosen – do not unscrew!
2. Insert the sleeve lock (1).
3. Remove the cover for the sleeve coupling (4).
4. Release the inside sleeve coupling. If the screw cannot be seen, turn the sleeve until the screw is seen in the window.
5. Switch on the digital micrometer (3).
6. Set the display to zero with the zero button.
7. Place the digital micrometer onto the magnet and position it so that the measuring tip is in the center of the measuring range (approx. 5000).
8. Set the display to zero with the zero button.
9. Turn the hand wheel (5) in the required direction and check the positioning on the display of the digital micrometer.

CAUTION

Observe the cutting loss of the cutting band when positioning.

10. Close the sleeve coupling.
11. Check the display after closing the sleeve coupling. If necessary, re-open the sleeve coupling and adjust the sleeve.
12. Remove the digital micrometer (3).
13. Insert the cover for the sleeve coupling (4).
14. Remove the sleeve lock (1).
15. Switch on the CP controller (8).
16. Start cutting in CL mode (line contact). Set the pendulum speed (6) to zero.
17. Then switch to CP mode. Adjust the pendulum speed (6) and angle (7).

7 UNIVERSAL SAMPLE HOLDER

7.1. DESCRIPTION

Using the universal sample holder, the most varied sample shapes can be cut at an angle of 90°. Using the available stops, several consecutive cuts can be made at the same sample thickness.

Furthermore, there is an optional clamping device with which additional sample shapes can be securely clamped.

7.2. SETUP

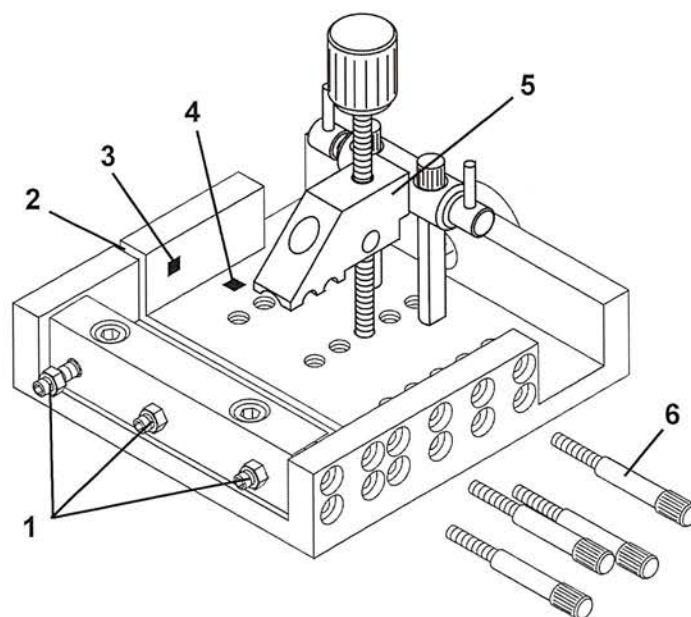


Fig. 12: Universal sample holder

The universal sample holder is comprised of:

1. Stop screws
2. Slit for cutting band
3. Placing-on plane
4. Clamping plane
5. Clamping device (optional)
6. Fixing screws

7.3. ACCESSORIES

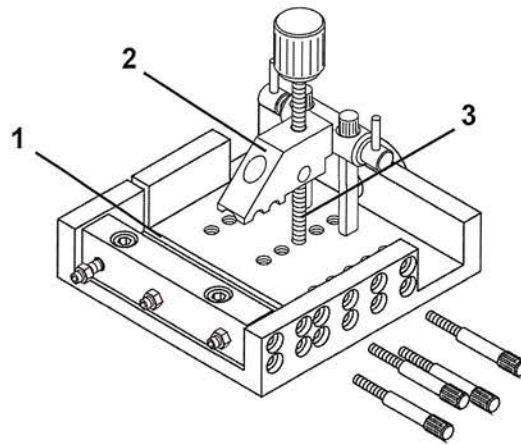


Fig. 13: Accessories

The clamping device (2) is used to clamp samples onto the placing-on plane of the universal sample holder. Observe the following when clamping-on samples:

- > The clamping jaw must not protrude into the separation slit (1), otherwise the clamping jaw will be sawed off.
- > When cutting, no parts should block the cutting process, e.g. the clamping rod (3) strikes against the lower guide roller of the cutting band.

7.4. ASSEMBLY

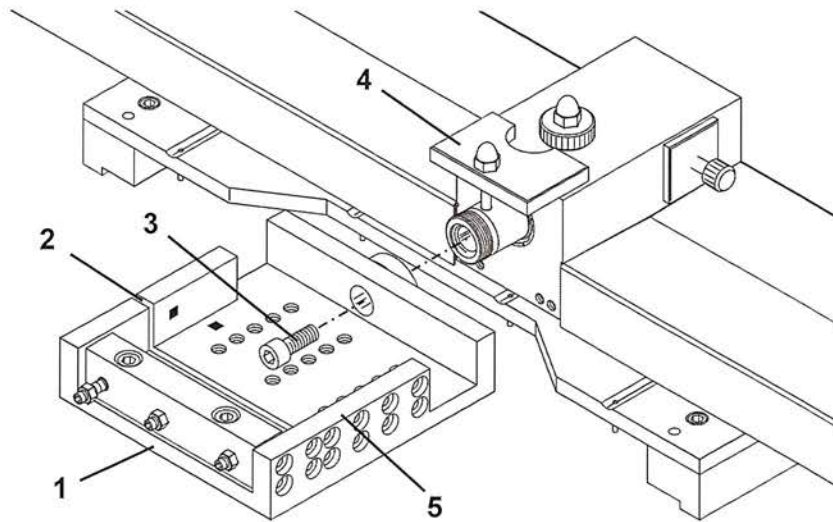


Fig. 14: Assembly

1. Insert the sleeve lock (4).
2. Screw the universal sample holder (1) with an Allen screw (3) onto the sleeve of the parallel guide. Only tighten loosely!
3. Align the universal sample holder (1) parallel to the guide axes of the parallel guide.

7.4.1. ALIGNING THE UNIVERSAL SAMPLE HOLDER

Align the parallel guide with the universal sample holder onto the bearing surfaces of the tank so that the cutting band runs freely in the slit (2) of the universal sample holder.

Adjust the front-left adjusting ring to the parallel guide so that the bracket (5) is not reached or broached by the cutting band.

CAUTION

If the front adjusting ring is incorrectly set, there is a risk of the universal sample holder being cut into two pieces (adjust the limit with the front-left adjusting ring)

When cutting or adjusting, make sure that the cutting band does not reach the bracket.

7.4.2.ALIGNING THE CUTTING BAND

For cross cuts 90° to the clamping plane, the cutting band must be aligned at a right angle or suchlike.

Using the angle bracket, align the cutting band at the top support roller to the clamping plane (see Fig. 14) of the universal sample holder.

7.4.3.ALIGNING THE SAMPLES

For cross cuts 90° to the clamping plane:

- > Clamp the sample from above using a holder, e.g. via the threaded bores or using the optional clamping device.

For cross cuts 90° to the lay-on edge:

- > Align the sample to the front edge of the universal sample holder and fix with the clamping screws. Clamp smaller samples with suitable spacers between the sample and the clamping screws.

7.5. MAKING SAMPLES OF THE SAME THICKNESS

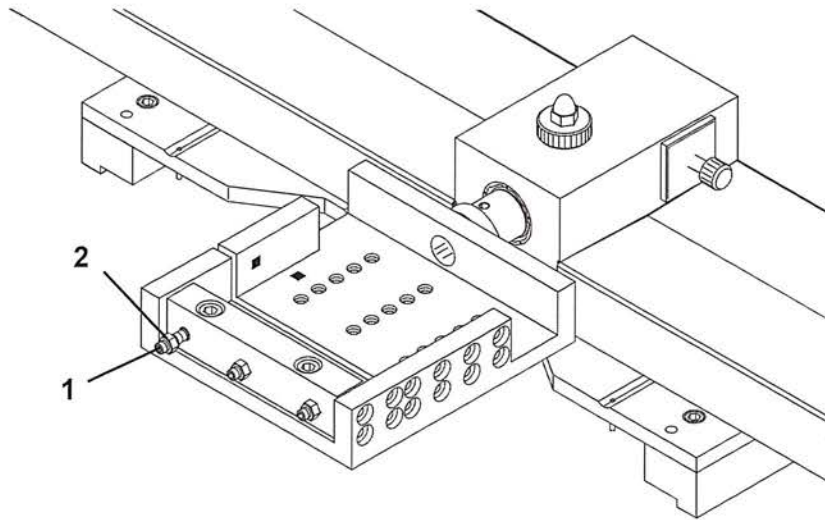


Fig. 15: Assembly

Use the stop screws to make samples of the same thickness.

1. Measure the distance between the cutting band and the stop screws.
2. Release the stop screw nuts (2).
3. Adjust the stop screws (1) and lock with the nuts.
4. Lay the sample on up to the stop screws and clamp on.
5. Run a test cut and check the thickness of the sample; re-adjust the stop screws if necessary.

8 BASKETS

8.1. DESCRIPTION

The baskets are used to catch the sawn off samples. There are different baskets for different band saws.

8.2. SETUP

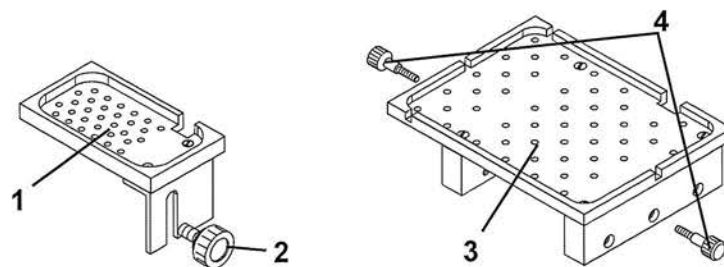


Fig. 16: Basket

1. Basket for EXAKT 300
2. Fixing screw
3. Basket for EXAKT 310
4. Fixing screws

8.3. ASSEMBLY

8.3.1. BASKET FOR EXAKT 300

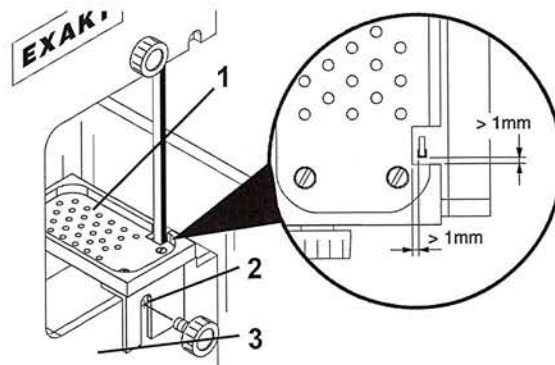


Fig. 17: Assembly for EXAKT 300

1. Make sure that the cutting band is correctly adjusted before assembling the basket.
2. Align the basket (1) correctly to the cutting band. The distance between the cutting band and the basket should be at least 1 mm (see Magnifier).
3. Mark the center point (2) on the cover.
4. Remove the cover (3).
5. Attach a 5 mm-diameter bore and cut the M6 thread.
6. Re-attach the cover.
7. Fix the basket (1) to the housing with the fixing screw.
8. Make sure that the cutting band runs freely after assembly.

8.3.2. BASKET FOR EXAKT 310

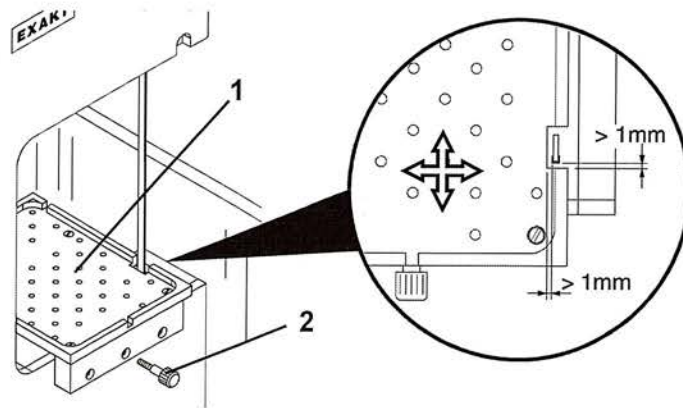


Fig. 18: Assembly for EXAKT 310

1. Make sure that the cutting band is correctly adjusted before assembling the basket.
2. Fix the basket (1) to the housing with the fixing screw (2). The distance between the cutting band and the basket should be at least 1 mm (see Magnifier).
3. Make sure that the cutting band runs freely after assembly.

9 VACUUM PLATE

9.1. DESCRIPTION

The vacuum plate allows various samples to be fixed to the parallel guide. The samples are thereby glued onto an slide plate. The slide plate is then held onto the vacuum plate by the vacuum. A large or small vacuum plate can be used, depending on the size of the sample.

A vacuum pump is required to generate the vacuum. This is not included in the scope of delivery.

9.2. SETUP

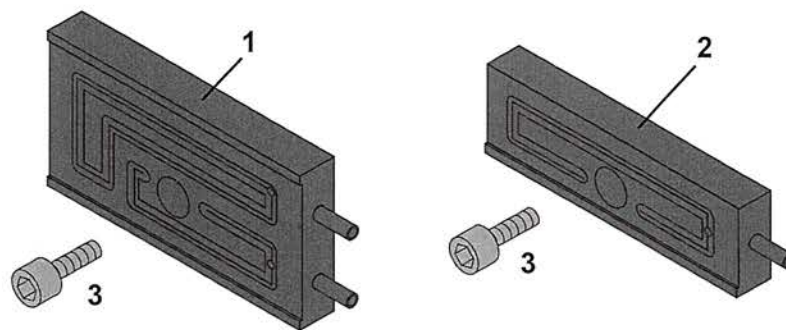


Fig. 19: Basket

1. Large vacuum plate
2. Small vacuum plate
3. Fixing screw

9.3. ASSEMBLY

9.3.1. VACUUM PLATE AT THE SLEEVE

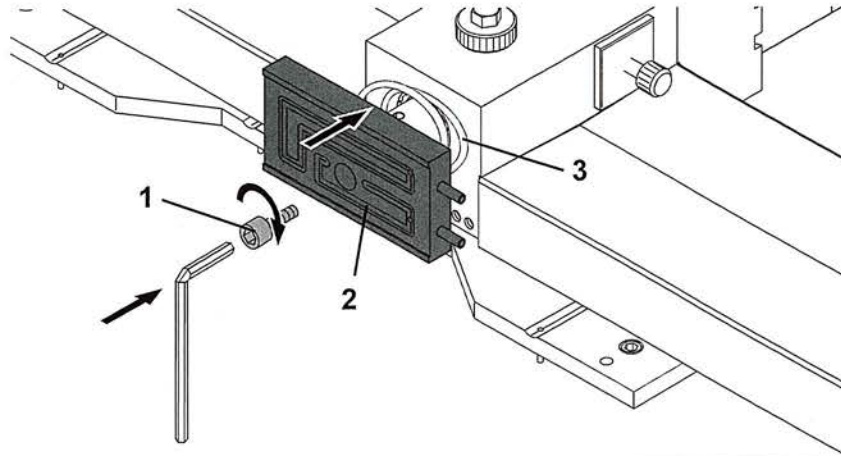


Fig. 20: Assembly

1. The abutting surface of the sleeve and the bearing surface of the vacuum plate must be clean.
Fix the vacuum plate (2) onto the sleeve with the Allen screw (1). Only tighten loosely!
2. Lay the vacuum hose (3) in the ring around the sleeve and plug into the connections.
3. Secure the vacuum hose to the motor housing with a plastic screw.
4. Check the connection to the water trap.

CAUTION

The vacuum hose must not impair the freedom of movement of the parallel guide.

9.3.2.SLIDE PLATE ON THE VACUUM PLATE

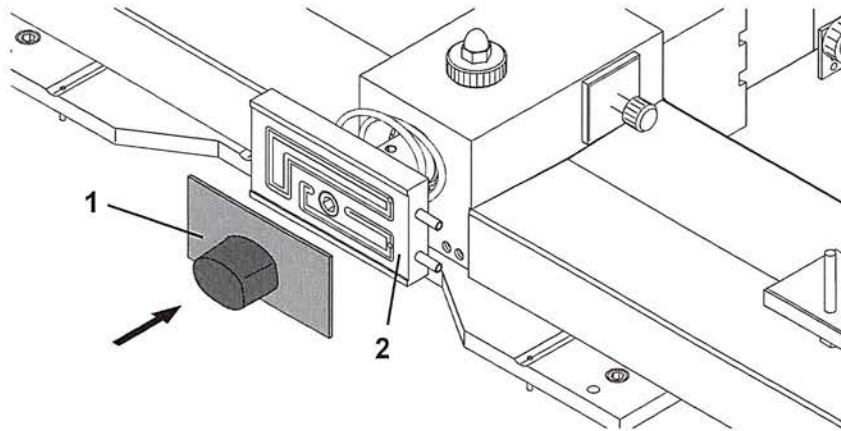


Fig. 21: Assembly

To achieve good adhesion, the surfaces of the vacuum plate (2) and of the slide plate (1) must be clean and undamaged.

10 SPARE PARTS

10.1. ORDERING SPARE PARTS

Use this chapter as a fax template to order spare parts. Enter all required data in the following table and send these pages with the ticked spare parts to your specialist dealer.

	Sender	Recipient	
Company			
Surname, first name			
Address			
City/Location			
Telephone			
Fax			
Name of device		Type	
Serial number		Date of purchase	

10.2. LASER-OPTICAL CUTTING LINE INDICATION

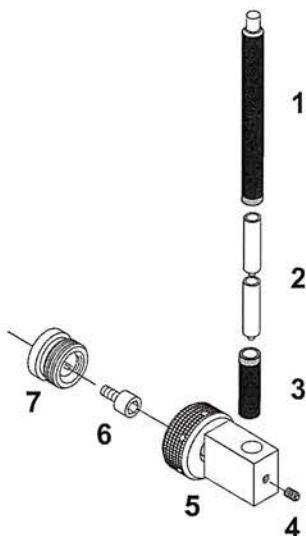


Fig. 22: Laser-optical cutting line indication

Pos.	Art. No.	Description	Quantity
1-7	3296 0	Laseroptische Schnittorientierung komplett <i>LASER - cutting line indication</i>	
1, 2, 3	3296 1	Ersatz-Lasereinheit komplett Replacement Laser	

10.3. AUTOMATIC POSITIONER

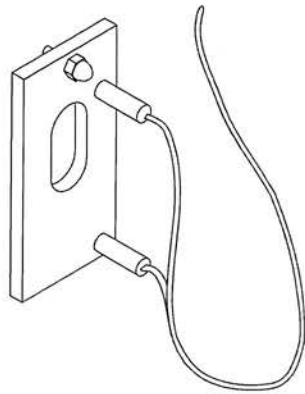


Fig. 23: Automatic positioner

Pos.	Art. No.	Description	Quantity
1	3305 0	Autom. Probenzustellung für CP <i>Auto. sample positioning f. CP</i>	

10.4. DIGITAL MICROMETER

Pos.	Art. No.	Description	Quantity
1	3301 0	Batterie für Digitalmikrometer <i>Battery for digital micrometer</i>	
2	3302 0	Ersatzmagnet <i>Retrofit magnet</i>	

10.5. UNIVERSAL SAMPLE HOLDER

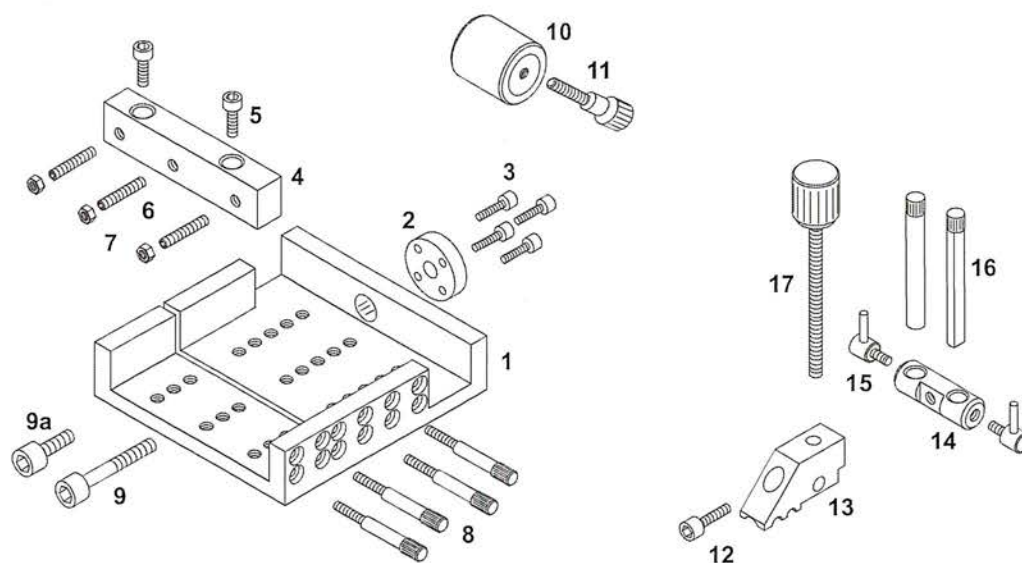


Fig. 24: Universal sample holder

Pos.	Art. No.	Description	Quantity
1-11	3260 0	Universal-Probenaufnahme für 90°-Schnitte <i>Universal sample holder, 1 set for 90° cuts</i>	
8	3056 0	Feststellschraube, schwarz <i>Set screw, black</i>	
11	3745 0	Rändelschraube, M6, schwarz <i>Knurled screw, black, M6</i>	
12-17	3264 0	Klemmvorrichtung <i>Universal Fixture Clamp Unit</i>	

10.6. BASKETS

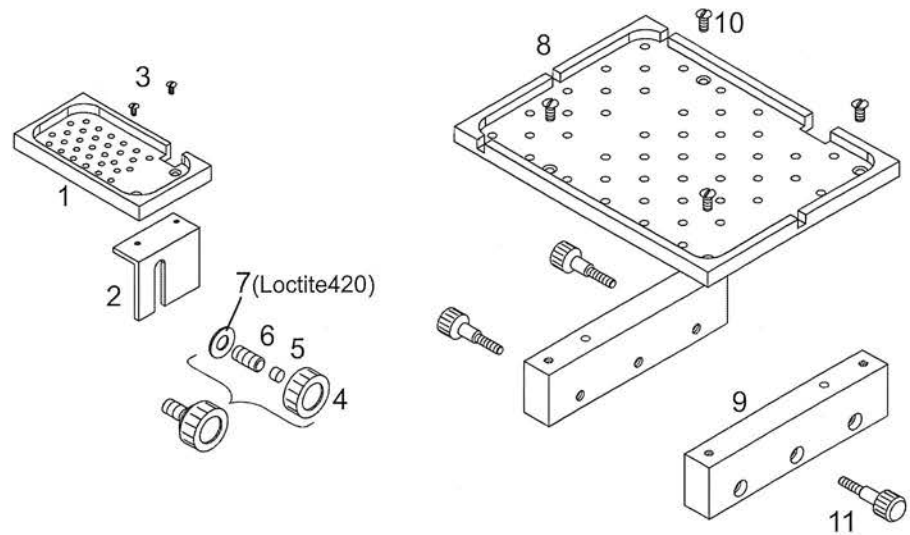


Fig. 25: Baskets

Pos.	Art. No.	Description	Quantity
1-7	3153 1	Auffangkorb für EXAKT 300 (SN >1000) <i>Basket for cut samples for E300 SN > 1000</i>	
8-11	3753 0	Auffangkorb für Proben 310 <i>Basket for cut samples 310</i>	
11	3745 0	Rändelschraube, schwarz, M6 <i>Knurled screw, black, M6</i>	

10.7. VACUUM PLATE

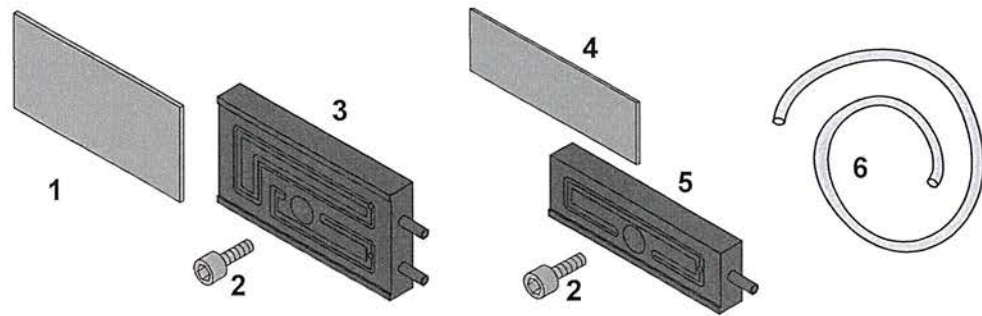


Fig. 26: Vacuum plate

Pos.	Art. No.	Description	Quantity
1	4151 0	Objektträger (50x100x1,5mm) 25 St. <i>Slide (50x100x1.5mm) 25 pcs</i>	
	4152 0	Objektträger (50x100x2mm) 25 St. <i>Slide (50x100x2mm) 25 pcs</i>	
2-3	3320 0	Vakuumpalte kompl., 100x50mm <i>Vacuum plate compl., 100x50mm</i>	
4	4150 0	Objektträger (50x100x2mm) 25 St. <i>Silde (25x75x1.5mm) 25 pcs</i>	
2, 5	3330 0	Vakuumpalte kompl., 76x25mm <i>Vacuum plate compl., 76x25mm</i>	
6	3328 0	Schlauch PVC, (4x6), L=1m <i>Hose PVC, (4x6), L=1m</i>	

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12 APPENDIX

12.1. WARRANTY CONDITIONS

The manufacturer's guarantee is canceled if the equipment is used incorrectly by:

- > Non-observance of these operating instructions;
- > Use of non-qualified personnel;
- > Unauthorized modifications to the device and its components.

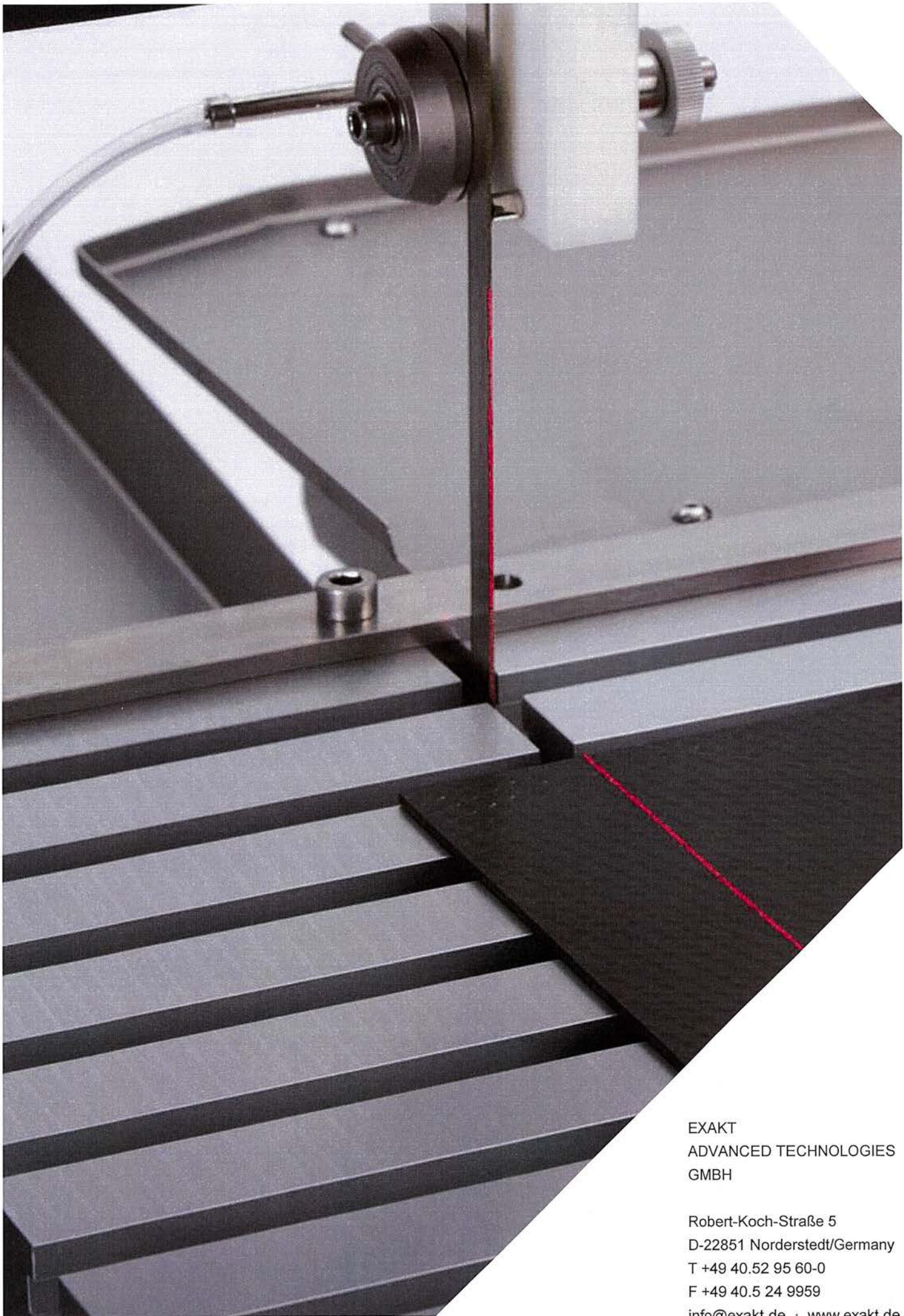
The manufacturer is not liable for any resulting damages.

CAUTION

Impairment of the function of the device by use of incorrect spare parts or lubricants; manufacturer's warranty is canceled!

Correct device function is not guaranteed if non-approved spare parts or lubricants are used, and the warranty is canceled.

Only use original spare parts and lubricants or spare parts and lubricants approved by EXAKT.



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