TRANSLATION OF THE ORIGINAL VERSION

CE

Operating Manual

Slot Drilling and Mortising Machine

WOODPECKER LBM1-200

Machine Type:	**LBM1-200**

WOODPECKER
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Space for notes:

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Tel.: +49 (0)7571-755-0
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Handover Certificate

Machine type:			
Machine no.:			
Construction year:			
Customer address (location of the machine):			
Name:			
Street:			
Postcode/City:			
Phone:		**Fax:**	
E-mail:			

Warranty:

On the basis of our Terms and Conditions of Sale, Delivery and Payment of the respective current status, we assume a warranty of **12 months**, calculated from the day of delivery, for material defects and defects of title in connection with the delivery for the above-mentioned machine.

Warranty claims:

Warranty claims on the part of HOKUBEMA Maschinenbau GmbH only exist if we have received the signed handover certificate and the machine has been properly commissioned. We therefore ask for immediate return.

Important: Please read and follow the instructions in chapter ⇨ 1 ”**Liability and Warranty**“.

Confirmation of the buyer:

- ✓ The machine described above was purchased by me/us.
- ✓ Together with this handover certificate, I have received the operating manual valid for the machine (edition: _____).
- ✓ The operating instructions have been read and understood by me, as well as by all persons responsible for operating the specified machine. I will ensure that persons working on the machine at a later date are also instructed accordingly.

_____	_____	_____
Name and position	Date	Signature of the customer

Address of the dealer (company stamp):	The machine, including the operating manual, was handed over to the buyer and installed according to the specifications in the operating manual. _____ _____ Date Signature - Customer Service

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Revisions:

Revision	Editor	Modification	Date
000	AG	Original manual translated	14.09.2022
001	AG	Section 11.10 added.	09.01.2023

1 Liability and Warranty

When purchasing a machine or additional component (hereinafter referred to as “machine”), the General Terms and Conditions of Sale and Delivery of HOKUBEMA Maschinenbau GmbH generally apply. These are provided to the purchaser or operator at the latest when the contract is concluded.

☝	***IMPORTANT NOTE*: Liability and warranty claims shall only commence from the point in time at which the signed handover certificate (see ⇨ page 3 resp. 5) from the dealer and/or end customer for the delivered machine has been submitted to HOKUBEMA Maschinenbau GmbH in written form.**

Liability and warranty claims for personal injury and property damage are generally excluded if they are due to one or more of the following causes:

- Commissioning of the machine without prior machine instruction by an authorised and adequately trained specialist who is familiar with the function and dangers of the machine.
- Electrical connection as well as repair and/or maintenance work on electrical components by personnel who do not have the appropriate qualifications.
- Connection and repair and/or maintenance work on hydraulic or pneumatic components by personnel who do not have the appropriate qualifications.
- Non-observance of the instructions in the operating manual, in particular the chapter “Safety”.
- Improper use or operation in an unauthorised area of application.
- Improper assembly, commissioning, operation and maintenance of the machine.
- Unauthorised conversions or modifications to the machine or additional components.
- Operating the machine without using all the protective equipment available for the operation.
- Inadequate monitoring and maintenance of the machine components and protective devices.
- Continuing to operate the machine when faults, damage or defects are present.
- Processing materials that do not correspond to the machine's area of application.
- Carrying out operations that are not permitted for the machine supplied.
- Use of tools that are not permitted for the machine supplied.
- Operating the machine outdoors or in damp, wet or potentially explosive environments.
- Operation of the machine outside permissible ambient temperatures or humidity.
- Grossly negligent behaviour when handling or operating the machine.
- Impact by foreign bodies, e.g. stones, metal parts, etc.
- Improperly carried out repairs.
- Catastrophic events due to force majeure.

2 Introduction

This operating manual applies to the slot drilling and mortising machine WOODPECKER Type LBM1-200. The purpose of this document is to acquaint the user with the machine and enable him to use it to the full extent of its intended capabilities. Additionally it contains important information to operate the machine safely, properly and economically.

Observance of the manual helps to avoid hazards, reduce repair costs and downtimes and increase the reliability and service life of the machine.

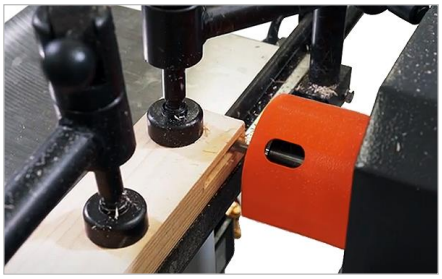


Figure 1: Typical application "mortising"

Furthermore, this operating manual serves to supplement instructions based on national regulations for accident prevention and environmental protection.

	This operating manual must always be available at the place of use of the machine. It must be read and followed by every person who is assigned to work on the machine, e.g. • *during operation, including set-up, troubleshooting in the work process, removal of production waste and maintenance,* • *during maintenance (servicing, inspection, repair)* • *and/or during transport.)*

Apart from the operating manual and the legally binding accident prevention provisions applicable in the country and place of use, the recognized technical regulations for safe and proper work must also be observed.

2.1 Legal Notice

2.2 Figures

All photos, figures and graphics contained in this document are for illustration and better understanding only and may differ from the current state of the product. Title photos and general views may also include optional components and special accessories.

3 Symbols

3.1 General Symbols

Symbol	*Meaning*
☝	Indicates passages within this operating manual that must be particularly observed in order to prevent malfunctions or damage to the machine.
⇨	Refers to chapters, sections, or figures within this document.
☞	Refers to an external document or a third-party source.

3.2 Symbols in Safety Instructions

Symbol	*Safety Instruction*
	General danger symbol, which requires the highest attention! *Failure to observe may result in damage to the equipment, serious injury or even death.*
	Warning of possible danger from forklift traffic! *Non-observance may result in life-threatening injuries.*
	Warning indicates a possible hazard under suspended loads! *Non-observance may result in life-threatening injuries.*
	Warning indicates a possible fall hazard! *Non-observance of these instructions may result in serious injuries.*
	Warning indicates a possible cutting hazard! *Risk of personal injury and possibly additional damage to equipment.*
	Reference to the obligation to wear protective gloves! *Non-observance of these instructions may result in personal injury.*
	Reference to the obligation to wear hearing protection! *Non-observance of these instructions may result in personal injury.*
	Reference to the obligation to wear protective goggles! *Non-observance of these instructions may result in personal injury.*
	Reference to the obligation to wear a respiratory protection mask! *Non-observance of these instructions may cause breathing difficulties and lung damage.*
	Reference to the obligation to wear safety shoes! *Non-observance of these instructions may result in personal injury.*
	Possible dangerous crushing hazard in the area of stationary objects! *Risk of personal injury and possibly additional equipment damage.*
	Reference to a possible crushing hazard! *Non-observance increases the risk of injury to hands and fingers!*
	This symbol warns of the dangers of electric voltage! *Failure to observe may result in damage to the equipment, serious injury or even death.*
	Fire hazard! Do not smoke and do not ignite open fire.
	Access for unauthorized persons prohibited! *Risk of personal injury and possibly additional equipment damage.*
	This safety notice indicates a possible dangerous pull-in hazard! Wearing loose clothing, jewellery as well as long untied hair is prohibited! *Risk of personal injury and possibly additional damage to property.*

4 General

The solidly constructed and high quality WOODPECKER slot drilling and mortising machine type LBM1-200 enables precise mortising and is equally suitable for use in joineries, workshops, training centres as well as in the do-it-yourself sector.

The machine is equipped with a cross-support that can be moved in longitudinal and transverse direction. This allows a maximum drilling depth of 205 mm and a maximum drilling length of 250 mm. The movement in longitudinal and transverse direction is done by one-hand operation.

The machine is already equipped with a mitre fence, a stop rod for serial machining, tiltable drilling unit (± 45°), two eccentric clamps and a Ø 0 - 20 mm Westcott drill chuck including a fixed saw blade guard. With the optional dowel indexing device, precise dowel holes can also be produced in the fixed grids 16, 22, 25 and 32 mm.

Figure 2: LBM1-200

4.1 Structure

- The table top made of sturdy cast iron is screwed to the machine stand.
- Two eccentric clamps supplied ensure secure workpiece fixing on the machine table.
- The stop rod, which can be mounted on both sides of the table top, facilitates series machining.
- The stop rail of the mitre fence supplied can be used on both sides and allows settings in the range of ±45°.
- The height adjustment (up to max. 150 mm) is carried out according to a scale with a handwheel.
- The drilling length and drilling depth can be limited by lateral stops.
- The speed of the drive motor is 2840 rpm.

4.2 Standard Equipment

- High-precision Westcott drill chuck (capacity 0 - 20 mm) including SW 8 spanner
- Stops for drilling depth and drilling length manually adjustable via knurled rings
- Mitre fence, usable on both sides of the stop rail, with variable ± 45° range and 22.5° / 45° / 0° fixed degree grid (pluggable to both sides via index bolt)
- Handwheel for height adjustment via laterally mounted millimetre scale
- Two robust hand lever eccentric clamps, infinitely adjustable in height
- Separate measuring scales for height and tilt adjustment
- Guard with clamping opening above the drill chuck
- Steplessly tiltable from -45° to +45° drilling unit
- Smooth-running one-handed lever operation
- Solid cast iron table 600 x 320 mm
- Laterally extendable stop rod
- Motor with 2.2 kW / 3.0 HP

4.3 Options and Accessories

Optionally available components and the corresponding article numbers for ordering can be found in the chapter ⇨ 16 “Options and Accessories”.

4.4 Purpose of the Slot Drilling and Mortising Machine

The WOODPECKER LBM1-200 slot drilling and mortising machine is used exclusively for drilling holes and mortises up to Ø 20 mm in solid wood and wood-like board materials. Metallic materials as well as materials and woods containing metal parts must not be machined with the slot drilling machine.

	***Improper use can lead to danger to persons and to a defect or damage to the machine.***

Please also read the section ⇨ 5 “Application Area and Intended Use”.

4.4.1 General Scope of Application

The general fields of application of the slot drilling and mortising machine are very versatile, for example

- in joineries and carpentry workshops,
- in industrial and craft enterprises,
- in schools and training centres,
- in model construction
- and in the do-it-yourself sector.

4.5 Target Group and Previous Experience

This operating manual is intended for the operating and maintenance personnel of the machine. The operating personnel is to be determined by the operator and must further meet the following requirements:

- Basic technical knowledge (e.g. apprenticeship as carpenter, machine fitter, etc. and/or practice in operating tilting spindle moulders resp. woodworking machines)
- Reading and understanding these operating and maintenance instructions

In order to acquire the knowledge required to operate this machine, the operator must ensure the following measures:

- Product training for every operator (also possible external personnel)
- Regular safety instruction

4.6 Requirements for the Operators

- The machine may only be operated by trained personnel who have also read this manual.
- Inspection, maintenance, cleaning and repair may only be performed by technical specialists with product-specific training and mechanical and/or electrical training.
- Specialists with product-specific training are to be commissioned and held responsible for planning and checking the work.
- The national protective regulations for employees must be observed.
- The operator is responsible for the safe use of the machine.
- The legal minimum age must be observed.

4.7 Training of Personnel

All machine operators must be adequately trained in the operation and maintenance of the machine. In particular, the training must include the following:

- General rules for the use of the machine, proper operation, correct adjustment of the machine, clamping devices, fences, stop systems, cross-support and all protective devices.
- Proper handling of the workpieces during the machining process. Correct working position to the machine, to the workpiece and to the drill chuck during and after machining.
- The personnel must be informed about hazards, risks and appropriate protective measures.
- The personnel must be trained in the area of regular checks of the guards and protective devices.
- The personnel must be trained in the use of the guards and protective device.

4.8 Accident Prevention

- To avoid accidents, the following rules must be observed for operation:
- Prevent unauthorized persons from gaining access to the machine.
- Keep unauthorized persons away from the danger areas.
- Repeatedly inform present other persons about existing residual risks (refer to section ⇨ 5.1.3).
- Conduct and record regular training & instruction for persons who must be in the area of the machine.
- New employees must be trained internally to work on a thickener and this training must be documented.

4.9 General Safety Regulations

Generell gelten im Umgang mit der Maschine folgende Sicherheitsbestimmungen und Verpflichtungen:

⚠ A slot drilling and mortising machine may only be operated in a technically perfect and clean condition.
⚠ It is prohibited to remove, modify or bypass any protective, safety or monitoring equipment.
⚠ It is forbidden to modify or alter the machine without the written approval of the manufacturer / supplier.
⚠ Faults or damage must be reported to the operator immediately, eliminated without delay and repaired if necessary.
⚠ For repairs, only original spare parts may be used.
⚠ All protective, safety and monitoring devices must be regularly checked and maintained by the operator.
⚠ Only instructed, trained or qualified persons may work on this machine.
⚠ Maintenance work must be carried out and documented in accordance with the maintenance instructions.
⚠ After maintenance or repair, the machine may only be started with all protective devices fitted. A responsible person must be defined for this purpose, who checks that the guards have been properly installed.
⚠ For the operation of a slot drilling and mortising machine, the respective national safety regulations for employees as well as the national safety and accident prevention regulations apply.

5 Safety

5.1 Basic Safety Instructions

Woodworking machines can be dangerous if used improperly. Therefore, observe the safety instructions listed in this chapter and the accident prevention regulations of your employer's liability insurance association!

	***The manufacturer accepts no liability for damage and malfunctions resulting from failure to observe these operating instructions.***

5.1.1 Application Area and Intended Use

	• ***The slot drilling and mortising machine WOODPECKER LBM1-200 is used exclusively for drilling holes and mortises up to Ø 20 mm in solid wood and wood-like board materials.*** • ***Metallic materials or wood containing metal parts must not be machined with the slot drilling and mortising machine!*** • ***This machine may only be operated on a level, paved surface with a sufficient load capacity (net weight approx. 180 kg)!***

Any processing of other materials requires prior consultation with and approval of the manufacturer.

	***Improper use can lead to danger to persons and to a defect or damage to the machine.***

Only workpieces that can be safely placed and guided may be machined.
Metallic materials must not be machined.

The machine is not suitable for operation outdoors or in potentially explosive areas.

- Permissible altitude: max. 1000 m above sea level
- Permissible ambient temperature: +1 … +40° C
- Permissible humidity: max. 90 %

	***Intended use includes wearing a dust mask or, if possible, connecting the machine to an adequately dimensioned external extraction unit.***

In addition, all operating, maintenance and servicing conditions prescribed in the operating manual must be complied with.

5.1.2 Modifications and Conversions to the Machine

	***Unauthorised conversions and modifications to the machine are strictly prohibited for safety reasons. This will invalidate the CE declaration of conformity! The manufacturer is not liable for any resulting damage. The risk for this is borne exclusively by the operator/user.***

5.1.3 Residual Risks

The machine is built according to the latest state of the art and the recognised safety rules. Nevertheless, the use of the machine may cause danger to life and limb of the user or third parties or damage to the machine and other equipment. Due to the construction of the machine, the following residual risks can occur even when used as intended and despite compliance with all relevant safety regulations:

	Reading and applying the operating manual is mandatory for the operating personnel.
	Be alert to possible crushing hazards: a) when transporting the machine by forklift truck → between forks & pallet / machine b) when picking up the machine → between machine / pallet and floor c) when lowering the machine → between machine and fixed equipment
	Be alert to possible crushing hazards when lowering the machine (from the cargo pallet to the floor) with a forklift truck or overhead crane.
	Make sure that no objects fall from the forklift truck / crane. Do not leave any objects / tools on the machine.
	It is strictly prohibited to ride on the machine during a lifting operation (with the indoor crane or forklift). There is a danger of falling!
	Unauthorised persons are not allowed to enter the installation area of the machine (responsibility of the operator).
	Be aware of possible tripping and slipping hazards on the floor. Prevent possible hazards by keeping the floor dry and clean and by using anti-slip floor coverings around the machine.
	Be aware of the danger from falling objects such as workpieces, tools or similar. Therefore, wear safety shoes, especially when transporting and setting down the machine.
	Pay attention to the existing danger of cuts on the drilling bit. Never reach into the running drilling bit! Wear protective gloves when changing the tool.
	Be aware of the danger of cutting through chips and splinters and never remove them from the danger area by hand and/or while the machine is running. Use suitable aids, e.g. hand brushes.
	Danger of being drawn in and increased risk of injury when wearing watches and jewellery. Wearing watches and jewellery is prohibited on the slot drilling and mortising machine.
	Be aware of a possible danger of being drawn in by moving machine parts or tools. This can cause pieces of clothing or hair to be caught. Always wear tight-fitting clothing or avoid loose clothing and wear a hair net if necessary.
	Danger from electric shock! There are hazards when working on the electrical system. This work must only be carried out by qualified personnel!
	Danger from electric shock! It is strictly forbidden to bypass safety devices (e.g. safety switches).
	Electrical equipment must be maintained and cleaned regularly.
	Pay attention to the danger of crushing on workpiece guides and moving machine parts.
	Make sure that no unauthorised persons are in the area of the machine.
	Be aware of the risk of injury from flying tool parts in the event of tool breakage. Therefore wear protective goggles.
	Be aware of the risk of injury from flying workpiece parts and chips, splinters and dust coming out of the machine. Therefore wear protective goggles.
	Be aware of the increased noise emission and wear hearing protection.
	Pay attention to the increased dust formation and generally wear a dust protection mask. In addition, the machine can be connected to an external extraction unit.
	The emergency stop buttons must always be freely accessible. They must not be moved, e.g. with hopper boxes. Check the function of the emergency stop buttons daily (before starting work).
	Fire hazard due to wood dust in connection with flying sparks and/or open fire!
	Electrical equipment must be maintained and cleaned regularly.

5.1.4 Observe the Environmental Protection Regulations

During all work with the machine, the environmental protection regulations, obligations and laws for waste avoidance and proper recycling and/or disposal applicable at the place of use must be observed. This applies in particular to installation, repair and maintenance work involving substances that could pollute the groundwater (e.g. hydraulic oils and cleaning agents and liquids containing solvents). In any case, prevent them from seeping into the ground or entering the sewage system.

	***Store and transport the above-mentioned hazardous substances only in suitable containers. Avoid leakage of hazardous substances by using suitable collection containers. Ensure that the above-mentioned substances are disposed of by a qualified disposal company.***

5.1.5 Organisational Measures

- ⚠ Always keep this operating manual within easy reach and at the place of use of the machine.
- ⚠ In addition to the operating manual, observe and instruct on generally applicable legal and other binding regulations for accident prevention and environmental protection.
- ⚠ Supplement the operating manual with further instructions, including supervisory and reporting duties, to take account of special operational features (e.g. with regard to work organisation, work processes, personnel employed).
- ⚠ Before starting work on the machine, the person responsible for its operation must have read and understood the operating instructions, especially the chapter ⇨ 5 “Safety”. This applies in particular to personnel who only occasionally work on the machine.
- ⚠ Check that work is carried out in a safety-conscious and hazard-conscious manner and in compliance with the operating manual.
- ⚠ Operators must not wear open long hair, loose clothing or jewellery (including rings). There is a risk of injury, e.g. by getting caught or drawn in.
- ⚠ Observe the safety instructions and danger warnings on the machine and keep them complete and in legible condition.
- ⚠ In case of safety-relevant changes to the machine or its operating behaviour, shut down the entire system immediately and report the fault to the responsible office/person.
- ⚠ Use personal protective equipment as necessary or required by regulations.
- ⚠ Do not make any modifications, additional attachments or conversions to the machine without the manufacturer's approval! This will compromise safety and invalidate the manufacturer's warranty and any liability claim.
- ⚠ Spare parts must meet the technical requirements specified by the manufacturer. The exclusive use of original spare parts ensures this. Therefore, only use original spare parts from the manufacturer.
- ⚠ Observe the fire alarm and firefighting possibilities. Make the location and operation of fire extinguishers (fire class ABC) known. Do not use water!

5.1.6 Personnel Selection and Qualification - Basic Duties

- ⚠ The machine design and operation is intended for right-handers.
- ⚠ Work on and with the machine may only be carried out by reliable personnel.
  Observe the legal minimum age!
- ⚠ Only use trained or instructed personnel. Clearly define the responsibilities of the personnel for operating, setting up, maintaining and repairing!
- ⚠ Ensure that only authorised personnel work on the machine!
- ⚠ If personnel to be trained or apprenticed have to work on the machine, this may only be done under the constant supervision of an experienced resp. qualified person.
- ⚠ Work on the electrical equipment of the machine may only be carried out by a qualified electrician or by untrained persons under the direction and supervision of a qualified electrician in accordance with the electrotechnical regulations.

5.2 Safety Instructions for Specific Phases of Operation

⚠	***Defects and damage to the machine are to be reported immediately after detection.***
⚠	***Any mode of operation that compromises safety is prohibited!***
⚠	***Sufficient lighting around the machine must be ensured (at least 500 Lux)!***

5.2.1 Permitted Operations

Only the following operations are permitted with the slot drilling and mortising machine:

- ✓ Drilling through holes
- ✓ Drilling blind holes
- ✓ Drilling mortises, slots and oblong holes in solid woods
- ✓ Producing dowel holes
- ✓ Boring and tenoning of knotholes

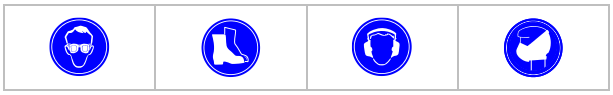
5.2.2 Prohibited Operations

The following operations are prohibited with the slot drilling and mortising machine:

- **X** Milling work of any kind with pure milling tools
- **X** Grinding and sawing work of any kind

5.2.3 Before Working

- ⚠ Wear personal protective equipment (safety goggles, safety shoes, ear protection, dust mask), close-fitting clothing and a hair net if necessary! Take off watches, necklaces and other jewellery.



- ⚠ Before starting work, check tools for operational safety (function and visual check). Protective devices must not be bypassed, removed or made inactive.
- ⚠ Clean the machine table from dirt and chips and provide containers for waste pieces.
- ⚠ Only use tools in perfect, sharpened condition and with clean clamping surfaces.
- ⚠ Only clamp permitted (approved) tools in the drill chuck.
- ⚠ Before starting the drill spindle, remove the drill chuck spanner.
- ⚠ Switch on and off only via the machine switch, not with the connector.
- ⚠ Always check workpieces to be machined for foreign objects, cracks and loose knots.
- ⚠ Only carry out adjustment work on the machine and the stop systems when the machine is at a standstill.
- ⚠ Use the necessary aids such as clamping devices, stop systems or mitre fences.
- ⚠ Place workpieces securely on the table top and on the fences / stops and clamp them firmly.
- ⚠ Remove any objects lying on the table (tools, loose parts, etc.) before drilling.
- ⚠ Observe the correct direction of rotation of the drilling bit.
- ⚠ Keep the floor in the area of movement around the machine free of tripping hazards.
- ⚠ Always wear a dust mask. In addition, it is recommended to equip the machine with a separate extraction unit (can be found in specialist shops for woodworking machines).
- ⚠ Wear tight-fitting clothing and safety shoes and use safety goggles and ear protection.
- ⚠ Take off scarves, watches, necklaces, hand and arm jewellery.
- ⚠ Secure longer hair with a hair tie, cap or hair net.
- ⚠ Do not wear gloves when working with a running slot drilling machine.

5.2.4 Normal Operation

⚠ **Protective devices:** Take measures to ensure that the machine can only be operated in a safe and functional condition. Only operate the machine when all guards and safety-related devices such as detachable guards, sound insulation etc. are present and in working order. Always work with all available protection devices!

⚠ **Workpiece check:** Before machining, inspect the workpiece for foreign inclusions, knots, twists, objects and other irregularities.

⚠ **Working area:** An obstacle-free work area around the machine is essential for safe operation. The floor should be level, well maintained and free from debris such as chips and cut-off workpieces.

⚠ **Drilling bit:** The drilling bit must correspond to the machine direction of rotation and the respective operation. Do not start drilling until the motor has reached full speed.

⚠ **Drilling range during operation:** Never attempt to remove splinters, chips or other parts from the cutting area while the machine is running! Never remove splinters and chips by hand! Clamp the drilling bit as deep as possible.

⚠ **Special tools:** For certain operating phases and operations it is necessary to use special tools, e.g. workpiece stop, frame stop, mitre fence and dowel drilling unit.

⚠ **Single pieces / samples:** Always use all protective devices and appropriate tools!

⚠ **Workpiece machining:** Only process workpieces that can be safely placed and clamped on the table top.

⚠ **Workpiece clamping:** The eccentric clamp or the optional pneumatic safety clamping cylinder must be used for all drilling work. The eccentric clamp must be clamped as close to the bore as possible.

⚠ **Tilt setting:** The tilt setting of the drilling unit may only be carried out using the tilt lever provided for this purpose (see section ⇨ 12.7).

⚠ **Eccentric clamp:** Place the clamping pad of the eccentric clamping device max. 2 mm above the workpiece to achieve an optimum clamping stroke.

⚠ **Clamping round workpieces:** Attach a template with guide trough to the machine table; clamp and machine the workpiece.

⚠ **Clamping long workpieces:** For the safe support of long workpieces, the appropriate equipment (e.g. support facilities such as roller blocks or table extensions) must be used for all drilling work.

⚠ **Drilling depth / mortise length:** Only set the drilling depth and drilling length when the tool is at standstill and with the aid of suitable measuring equipment or by marking on the workpiece.

⚠ **External extraction:** It is recommended to equip the machine with an external extraction unit. This must allow a flow rate of at least 20 m/s for dry chips and 28 m/s for moist chips (moisture 18 % or more).

⚠ **Machine condition:** Check the machine for externally visible damage and defects at least once per shift! Any changes that have occurred (including those in the operating behaviour) must be reported immediately to the responsible office or person! If necessary, stop and secure the machine immediately!

⚠ **Damage:** Damaged parts must be replaced immediately. Repair work may only be carried out by authorised specialists and with the main switch locked.

⚠ **Work interruptions:** Switch off the machine even during short interruptions! Never leave the machine running unattended!

5.2.5 Special work within the Scope of Maintenance Work as well as Troubleshooting in the Workflow

⚠ Observe maintenance and inspection activities prescribed in the operating manual!

⚠ These activities, as well as all other repair work, may only be carried out by qualified personnel!

⚠ For all work concerning operation, production adjustment, conversion or setting of the machine and its safety-related equipment as well as maintenance and repair, observe switch-on and switch-off procedures according to the operating manual and instructions for maintenance work!

⚠ Secure the machine against unexpected restarting during maintenance and repair work.

➔ **Lock the main switch with a padlock!**

⚠ Always tighten screw connections that have been loosened during maintenance and repair work!

⚠ If it is necessary to dismantle safety equipment during set-up, maintenance and repair, the safety equipment must be reassembled and checked immediately after completion of the maintenance and repair work!

⚠ Ensure safe and environmentally friendly disposal of operating and auxiliary materials (e.g. oils) and replacement parts (e.g. electronic components). See chapter ⇨ 17 “Disassembly and Scraping“.

5.2.6 After Work

⚠ Before leaving the machine, switch off the main switch and lock it with a padlock.

⚠ Secure the machine against unauthorised use and never leave it unattended in an unsecured condition.

⚠ Clean the machine with an industrial hoover (avoid compressed air!).

5.2.7 Operator Training

It is important that all users of table milling machines are adequately instructed in the use, setting and operation. This concerns in detail:

⚠ Possible hazards that may occur when working with the machine.

⚠ The basics of machine operation, correct setting and use of the fences, templates, aids and guards.

⚠ The correct selection of the tool for the respective processing.

⚠ The safe workpiece guidance and feeding.

⚠ The correct hand position and safe stacking and unstacking of the workpieces before and after machining.

5.2.8 Stability

⚠ For safe operation of the machine, it is necessary that it is placed in a stable position on a level, well-maintained and clean floor.

5.2.9 Setting up and Adjusting the Machine

⚠ Before starting the adjustment, the machine must be disconnected from the mains supply.

⚠ For tool clamping, refer to the recommendations of the tool manufacturer.

⚠ To ensure safe and effective machining, the tool must be suitable for the material to be machined.

⚠ Tools must be sharp and mounted on carefully balanced tool holders.

5.3 Construction-related Safety Equipment

- The drill spindle is protected by a fixed guard. An integrated clamping opening ensures permanent access for tool change with the spanner.
- The eccentric clamping devices supplied as well as the mitre fence ensure optimum fixing of the workpiece on the table top. The drilling length and drilling depth can be mechanically limited via manually adjustable stop nuts.
- The operating switches are easily and quickly accessible from the working position.

5.4 Electrical Safety Equipment

- Lockable main switch: The main switch can be locked with a padlock to protect the machine from unintentional or unauthorised restarting (e.g. during adjustment, repair and maintenance work).
- Undervoltage protection: In the event of a voltage interruption, the machine is brought to a standstill, where it remains even when the voltage is restored. To restart it, it must be switched on again.
- Protection against electric shock: The housing of the machine and the drives are protected against electric shock with a neutral line.
- Dust protection: The control cabinet and the drive unit(s) are protected against contact, dust and splash water on all sides with IP54 protection.
- Short-circuit protection: The machine has overload protection for the motor (thermal cut-out switch).

5.5 Hazardous Areas

Due to their design, slot drilling and mortising machines can be used for a wide range of tasks. Exact right-angled holes or the precise slotting of grooves can be precisely realised. With regard to occupational safety, the main hazards are the mostly freely rotating drilling bit and inadequate clamping of the workpiece on the table top.

Hazard	Area/Action	Risk	Avoidance
Cutting and stabbing hazard 	On the tool • During tool change • On contact with the rotating tool • Danger of stabbing due to protruding tool	Mild to severe injuries to hands and fingers.	• Wear gloves when changing tools. • Keep hands out of the rotating danger zone. • Use all available tool covers. • Remove the tool from the chuck after use.
Danger of being drawn in 	On the tool, chuck and spindle • Increased risk of drawing in due to rotation of the tool and drill chuck or spindle!	Increased risk of injury from hands, fingers, clothing, watches, jewellery and long hair being drawn in.	• Use all available tool covers. • Keep hands out of the rotating danger zone. • Never wear gloves when the drill spindle is running. • Watches, jewellery and long hair are prohibited! • Wear close-fitting clothing and hairnet if necessary.
Risk of crushing 	On all moving parts, guides, stops, fences and clamping devices • Danger of crushing between moving parts and in the clamping area of clamping devices	Mild to severe injuries, contusions and/or fractures of hands and fingers	• Keep hands out of the danger zones and clamping areas (e.g. between workpiece and clamping element and the movement range of the cross-support).
Tipping hazard 	On the tilt adjustment of the drilling unit • Increased risk of tipping and injury due to the very high dead weight of the drilling unit!	Increased risk of injury or even death as well as bruising, contusions, broken bones due to tipping of the drilling unit.	• Make the setting only with the tilt setting lever provided. • If the fixing nuts have loosened, hold the unit firmly by the tilt setting lever and, if necessary, call in a second person for support. • Keep body parts and persons out of the tilt range.
Risk of ejection 	On the tool chuck • Increased danger if the spanner is not removed and due to ejecting parts, e.g. in case of tool breakage!	Increased risk of injury or even death due to ejecting or flying off spanner and/or tool parts in case of tool breakage.	• Before switching on the drill spindle, always remove the spanner or make sure that the spanner is not on the chuck! • Wear safety goggles.
Electric shock hazard 	On the electrical system and all current-carrying components.	Electric shocks with an increased risk of injury up to death	• Avoid wetness / moisture • Have defective parts, cables and insulation repaired immediately (only by qualified personnel!). • Do not touch energised components. • Switch off and lock the main switch or disconnect the machine from the mains during any maintenance or repair work.

6 Machine Data

6.1 Technical Specifications

Machine type	WOODPECKER LBM1-200
Weight:	max. 245 mm
Drilling length:	max. 205 mm
Height setting:	150 mm via handwheel and scale
Westcott drill chuck:	0 - 20 mm clamping capacity
Table height:	870 mm
Table top size:	600 x 320 mm
Tilt range of drilling unit:	± 45° (variable)
Mitre fence:	Angle grid: ± 45° / ± 22.5° / 0° (pluggable) Angle setting range: ± 45° (variable)
Dowel indexing device (option) :	pitches 16, 22, 25 and 32 mm via indexing barrel
Motor power:	2.2 kW (3.0 HP)
Motor voltage:	400 V / 50 Hz
Spindle speed:	2840 rpm
Protection class:	IP54
Dimensions:	L x W x H = 1160 x 750 x 1080 mm
Space requirement:	refer to section ⇨ 6.3
Weight:	approx. 180 kg (net) / approx. 280 kg (packaged)

Name plate:

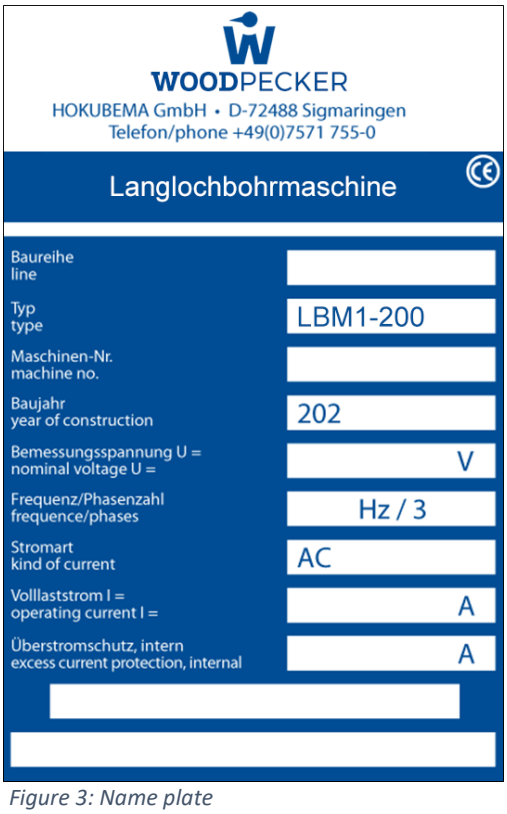


Figure 3: Name plate

Manufacturer:

HOKUBEMA Maschinenbau GmbH
Graf-Stauffenberg-Kaserne
Binger Str. 28 | Halle 120
DE-72488 Sigmaringen
Tel.: +49 (0) 7571 / 755-0
Fax: +49 (0) 7571 / 755-2 22

Expandability:

The machine is prepared for the later addition of special accessories (see chapter ⇨ 16) from the extensive manufacturer portfolio.

If you would like to retrofit your machine, please request documentation from us about the accessories you require.

Please indicate the following data:

1. **Type**
2. **Machine No.**
3. **Voltage (V)**
4. **Motor power (kW)**
5. **Year of manufacture**

6.2 Emission Levels

6.2.1 Noise Information

The values given are emission levels and therefore do not necessarily represent safe workplace values. Although there is a correlation between emission and immission levels, it cannot be reliably deduced whether additional precautionary measures are necessary or not.

Factors that may affect the current immission level at the workplace include the duration of exposure, the nature of the workspace, other noise sources, etc., e.g. the number of machines and other activities in the vicinity. The permissible workplace values can also vary from country to country.

However, this information should enable the user to make a better assessment of hazard and risk.

6.2.2 Noise Emission Values

Explanation of noise emission	
Weighted level: Noise pressure in idle state	L_{pfA} = 73 dB Uncertainty: K = 2 dB
Weighted level of noise power at the workplace	L_{wA} = 93 dB Uncertainty: K = 3 dB at error limit interval 95 %

	***The workplace-related noise emission values of the machine exceed 85 dB(A)! Therefore, suitable hearing protection must be provided to the personnel!***

6.3 Workplace Requirements

The working area is the position from which the machine is operated during machining. On the slot drilling machine, this position is on the left-hand side of the machine (see ⇨ Figure 4), so that the movement handle for the longitudinal and transverse movement of the drill motor as well as all operating switches are easily accessible.

The effective space requirement generally depends on the maximum external dimensions of the machine (depending on the position of the drilling unit, fence and stop rod) and the dimensions of the workpieces to be processed. Therefore, provide sufficient space around the machine and also calculate the required working area for the operating and auxiliary personnel as well as for the infeed and outfeed of long and wide workpiece.

- Choose a suitable location for the machine and consider the working areas shown in the figure for the drilling work.
- Consider the existing hazardous areas (see section ⇨ 5.5).
- A clearance of at least 0.8 m must be ensured around the machine.
- Sufficient space must be ensured for the infeed and outfeed of long workpieces
- Sufficient lighting (min. 500 lux) must be ensured. The lighting must not dazzle and a stroboscopic effect must be avoided.
- Make sure that the floor can support the load of the machine. The machine must be levelled with a machine spirit level.
- The chosen location must guarantee a suitable connection to the mains supply and to an external extraction unit.

Figure 4: Working area

7 Installation and Connection

7.1 Check Delivery Conditions

Check the consignment for completeness and possible transport damage. In case of transport damage, please keep the packaging and inform the shipping company and the manufacturer immediately! Later complaints cannot be accepted.

7.2 Transport to the Installation Site

The machine is delivered on a transport pallet and is bolted to the pallet floor.

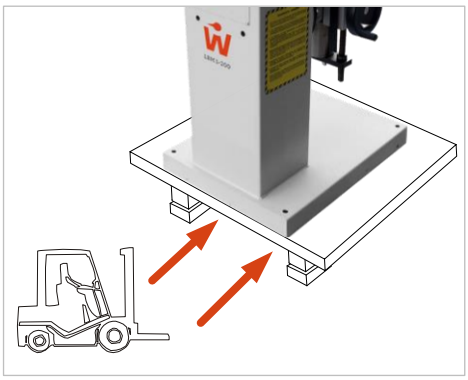


Figure 5: Transport pallet

- Drive between the pallet timbers with a forklift truck or pallet truck suitable for the weight of the machine (see ⇨ Figure 5), lift the pallet only a few centimetres and move it to the immediate vicinity of the installation site.
- Then remove the transport locks and screw connections between the machine and the pallet and store them well.
- Lift the machine off the pallet with the forklift truck or a lifting device suitable for the weight and place it on the level workshop floor.

	***Pay attention to the existing danger of tipping over when transporting with the forklift truck! The forks of the forklift truck must be at least 1.20 m long!***

	***Be aware of possible crushing hazards when placing the machine (from the pallet to the floor) by means of a forklift truck or similar. Pay particular attention to your hands and feet and wear safety shoes and protective gloves as a precaution.***

	***Danger to life when using a forklift truck! Keep a sufficient distance from the forklift truck and watch its speed. Vehicles with combustion engines also produce toxic exhaust gases. Wear a breathing mask if necessary.***

7.3 Machine Installation

- The slot drilling machine must be placed on a level, solid and vibration-free surface. The place of installation or operation must be dry and well ventilated.
- A foundation is not required. The floor must have a load-bearing capacity corresponding to the weight of the machine. The net weight of your machine can be found in section ⇨ 6.1 and may be more depending on the equipment.
- **It is essential that the machine is level! Check with a spirit level**!
  → Level out any unevenness of the floor with underlays and with the aid of a machine spirit level.
- There are four holes in the machine base. If required, the machine can be bolted to the workshop floor via these holes if it is to be operated in a stationary position.
- The bare parts of the machine are greased to protect against corrosion. Carefully degrease the parts protected against rust with petroleum or benzine.

	***Fire hazard! Do not smoke and do not light an open fire.***

	***Do not use nitro thinner for cleaning. Painted surfaces of the machine can be damaged.***

	***Dispose of the packaging material in an environmentally friendly way!***

7.4 Temporary Storage

If the machine is not put into operation immediately after delivery, it must be stored carefully in a protected place. Carefully cover the entire machine so that neither dust nor moisture can penetrate.

The bare, non-surface-treated parts are provided with a preservative. This must be checked regularly for effectiveness and renewed if necessary.

7.5 Lashing in a Transport Vehicle

For transport in a transport vehicle, the machine must be bolted to a transport pallet (as on delivery), lashed upright on the vehicle loading surface and properly secured.

The responsibility for safe loading is borne by the respective shipper!

	***At least two lashing straps must be used, each of which must be individually tensioned on the loading area of the transport vehicle! The palletised machine must be additionally secured against slipping and tipping over in the vehicle.***

Please note the following when lashing in the transport vehicle:

- Use the transport locks supplied, which you removed when unpacking, to secure the machine. All movable components must be locked during transport and explicitly secured against slipping and moving back and forth by themselves.
- The cross-support that cannot be locked must be provided with a separate transport lock and secured against slipping and moving back and forth by itself.
- Accessories (e.g. fence, stop rod, eccentric clamping devices) should not be on the machine table for transport. These can, for example, be packed individually in cardboard boxes and separately lashed lying on the floor or table top of the machine. Use a separate lashing strap for this purpose. In addition, the one-handed movement handle must be removed and transported separately on the pallet.
- The loading area of the transport vehicle must always be clean and dry.
- The lashing straps used must be suitable for the total weight of the machine (see section ⇨ 6.1).
- Fastening on the loading area is done by lashing down: This means that the transport pallet is secured by frictional locking. The load is pressed so firmly onto the loading surface that it can no longer slip. The clamping tool should have a high STF value at the frictional connection, e.g. long-lever ratchets.
- In addition, anti-slip mats should be used to provide even more safety.
- The ideal lashing angle (α) for tie-down lashing is 83° to and 90°. Therefore, the lashing straps should pull downwards approx. vertically. As the angle decreases, the pretensioning force of the lashing is reduced.
- When tensioning the lashing straps, make sure that no parts of the machine can be crushed or damaged.
- Observe the permissible total weight of the transport vehicle.
- Ensure that the permissible axle loads of the transport vehicle are observed. The load must be distributed evenly on all axles of the vehicle.

7.6 External Extraction Unit

It is recommended to retrofit the machine with an external extraction unit, which can be obtained from specialised shops for woodworking machines. The capacity of the extraction device must be at least 1800 m^3/h at a speed of 25 to 30 m/s.

	***If it is not possible to connect to an external extraction unit, ensure good room ventilation. The wearing of a respiratory and dust protection mask is mandatory!***

8 Electrical Connection

⚠	***The connection must be carried out by an authorized electrician in accordance with the valid local EVU, VDE and EN regulations! Turn main switch to "O" before connecting.***

Please observe the specified nominal voltage 400 VAC / 50 Hz (3 phases / N / PE)!

Figure 6: Main switch housing

The supply cable is inserted through the cable gland on the underside of the main switch housing. This is located on the operating side of the machine (see ⇨ Figure 6).

- Use a supply cable as described in section ⇨ 8.1.1 below.
- The connection to the mains (3 phases) is made in the housing of the terminal box. The 3 phase cables must be connected to the terminals marked **L1** / **L2** / **L3**.
- The protective earth wire (yellow/green) must be connected to the terminal marked **PE**.
- Then close the cable gland again so that it is dust tight.

☝	***The fault loop impedance and the suitability of the overcurrent protection device must be checked at the installation site of the machine.***

Only if the connection is carried out by an authorised electrician can a guarantee be given for the motor. In the event of a complaint, the electrician must confirm in writing that he has connected the machine in accordance with the regulations.

8.1.1 Supply Cable and External Fuse Protection

Use a Cu, 5-core cable. The wire cross section must be determined on site by a qualified electrician!

The electrical cabling and the connection must be performed by a specialist according to the applicable local EVU, VDE, and EN provisions. We recommend the use of a rubber cable type H07RN (WDE0282), whereby additional measures must be taken to protect against mechanical damage. To determine the required cross-section of the supply cable and the external fuse, use the data from the following table:

Consumption current (A)	Required wire cross-section	Required external fuse
up to 10	2.5 mm^2	12 A (slow)
from 10 to 14	4.0 mm^2	16 A (slow)
from 14 to 18	6.0 mm^2	20 A (slow)
from 18 to 22	6.0 mm^2	25 A (slow)
from 22 to 28	10.0 mm^2	32 A (slow)
from 28 to 36	10.0 mm^2	40 A (slow)
from 36 to 46	16.0 mm^2	50 A (slow)

8.1.2 Check Direction of Rotation

After connection in the main switch housing, check the correct direction of rotation.

→ The drill spindle must rotate clockwise ↻ (right-hand rotation).

⚠	***If the direction of rotation is incorrect, the phases L1 and L2 must be interchanged.***

☝	***Important: During initial commissioning and after any change to the connections, the correct direction of rotation of the drill spindle must be checked!***

9 Components and Controls

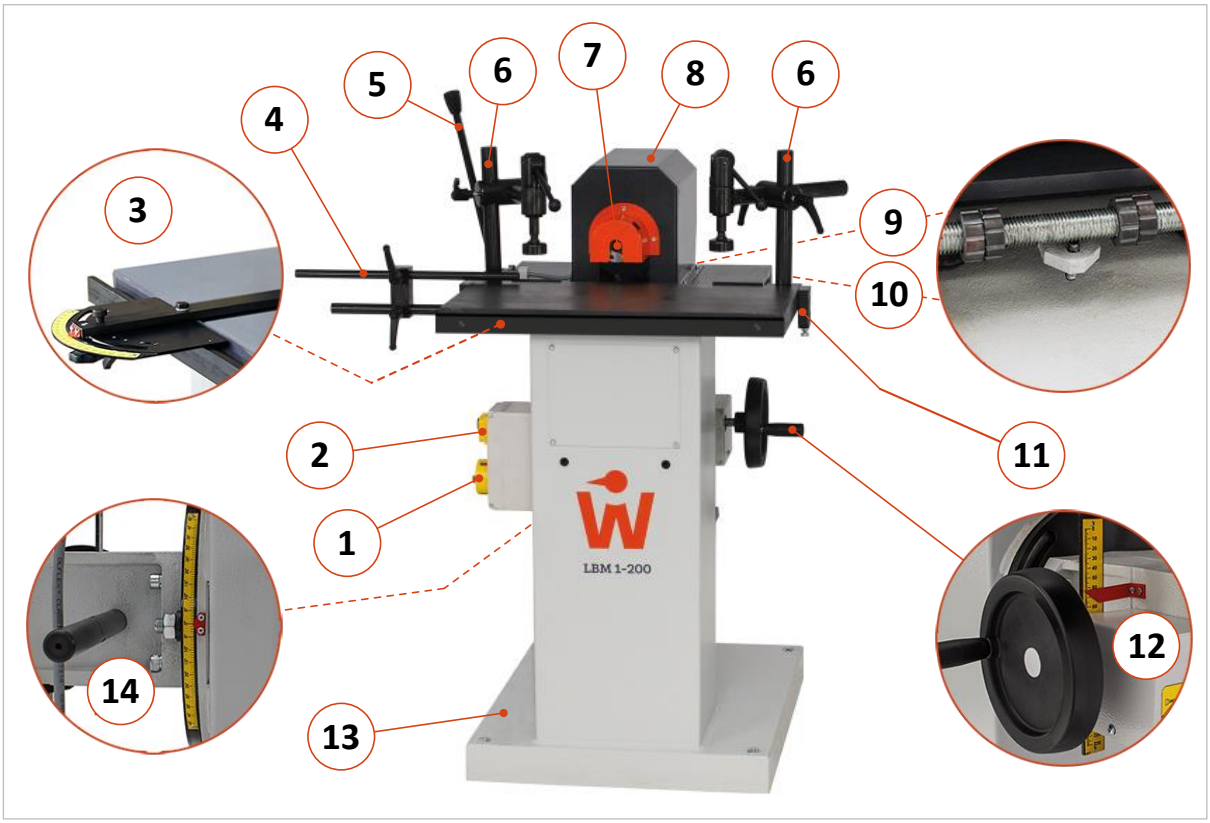


Figure 7: Components and controls

No.	*Description*	*No.*	*Description*
1	Main switch (lockable)	**8**	Drive motor housing
2	Switching unit drilling spindle ON/OFF	**9**	Drilling length limitation (rear)
3	Mitre fence	**10**	Drilling depth limitation (lateral)
4	Stop rod for serial production	**11**	Holder for stop rod (**4**)
5	Movement handle for the drill unit	**12**	Handwheel + scale for height setting
6	Eccentric clamping device	**13**	Machine base
7	Drill spindle with guard	**14**	Lever with angle scale for tilt setting

10 Mounting and Preparation

	Mounting work may only be carried out by trained specialist personnel.

Before the machine can be put into operation, the supplied components must be mounted, which (depending on the type of transport) have not yet been attached to the machine. The procedure is described in detail in the following sections.

10.1 Fitting the Stop Rod

The supplied stop rod (**A**) is an ideal tool when workpieces are to be machined in series. It can be mounted either on the left or right side of the drilling table..

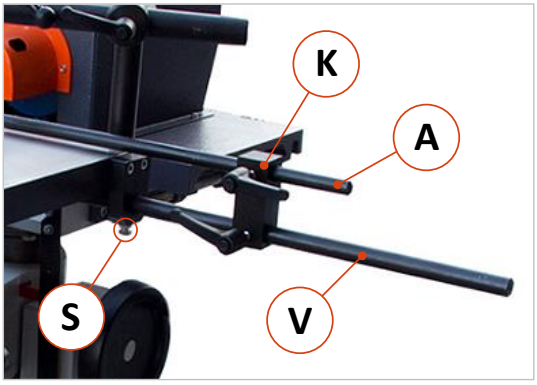


Figure 8: Fitting the stop rod

- Open the clamping screw (**S**) on the corresponding side of the drilling table.
- Insert the extension rod (**V**) into the side receptacle of the table top and fix it with the clamping screw (**S**).
- Push the clamping unit (**K**) onto the extension rod (**V**) and fix it together with the stop rod (**A**) in the desired position using the clamping lever.
- The extension rod (**V**) can be pulled out accordingly for large workpieces.

10.2 Fitting the Movement Handle

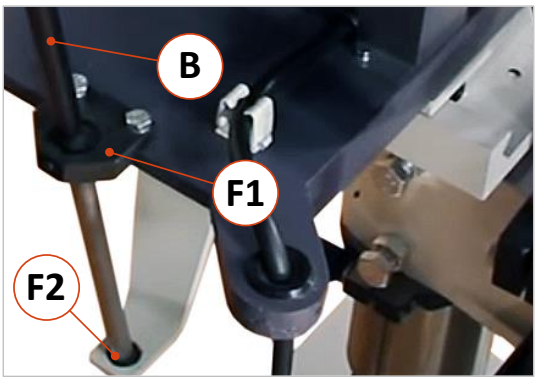


Figure 9: Fitting the movement handle

The one-handed movement handle (**B**) is used for longitudinal and transverse positioning of the drilling unit. Fit the movement handle as follows to the machine.

- Push the movement lever (**B**) through the upper guide bearing (**F1**) and screw it into the lower bearing (**F2**).
- The longitudinal movement ↓↑ when drilling into the workpiece is towards the drilling table.
- The transverse movement ⇆ when drilling a mortise is towards both sides.

10.3 Fitting the Eccentric Clamps

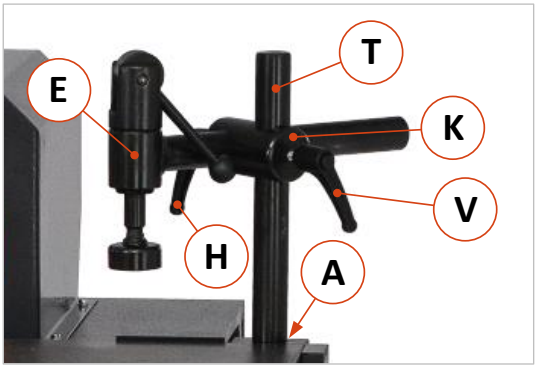


Figure 10: Fitting the eccentric clamps

- Fit the two eccentric clamps on the right and left in the holders (**A**) behind the table top.
- Then push the cross piece (**K**) onto the support bolt (**T**), adjust it vertically to the desired height and fix it with the clamping lever (**V**).
- Insert the eccentric clamp (**E**) into the cross piece (**K**), adjust it horizontally to the desired position and fix it with the clamping lever (**H**).

10.4 Fitting the Mitre Fence

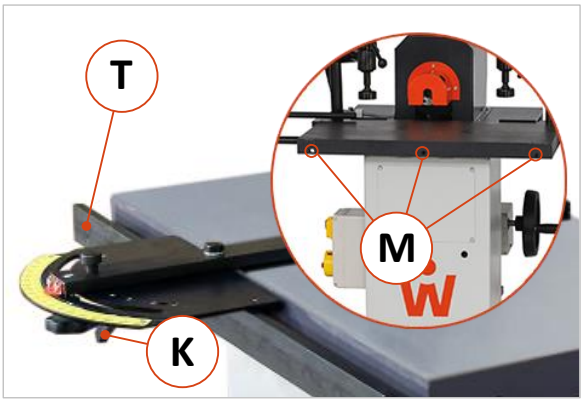


Figure 11: Fitting the mitre fence

- If not yet fitted at the state of delivery, the support rail (**T**) for the mitre fence must be screwed to the table top. For this purpose, there are three threaded holes (**M**) on the front side.
- The mitre fence can then be pushed onto the mounted support rail (**T**) and fixed in the desired position using the clamping lever (**K**) on the underside.

11 Commissioning

Before commissioning, the accident prevention regulations and chapter (⇨ 5) must be observed!

⚠	***Before switching on, check that*** • *the drilling bit has been clamped firmly and centrically and the spanner has been removed,* • *the table top, fences, stop systems and clamping devices are clean and free of objects,* • *all clamping levers and clamping screws (height and tilt adjustment) are tightened,* • *the drilling bit used is suitable for the respective operation and* • *the guard is fitted as prescribed.*

11.1 Control Panel

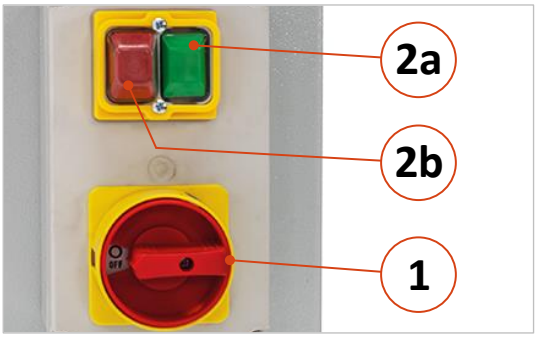


Figure 12: Control switches

Available control switches:

No.	*Description*
1	Main switch (lockable)
2	Push switch “Drill spindle ON”
3	Push switch “Drill spindle OFF”

11.2 Switching the Machine ON and OFF

The main switch (**1**) on the control panel is used to switch the machine's power supply on and off:

- **Switching ON:** Turn main switch (**1**) to position “**I**”.
- **Switching OFF:** Turn main switch (**1**) to position “**O**”.

11.3 Switching the Drill Spindle ON and OFF

⚠	***Before switching on, clamp the drilling bit centrally and remove the spanner!***

- **Switch ON drill spindle:** Press the green switch (**2a**).
- **Switch OFF drill spindle:** Press the red switch (**2b**).

12 Adjustment and Operation

12.1 Clamping and Replacing a Drilling Bit

With the Westcott drill chuck installed in the slot drilling machine, drilling bits with a diameter of 0 to 20 mm can be clamped. For this purpose, the guard does not have to be removed.

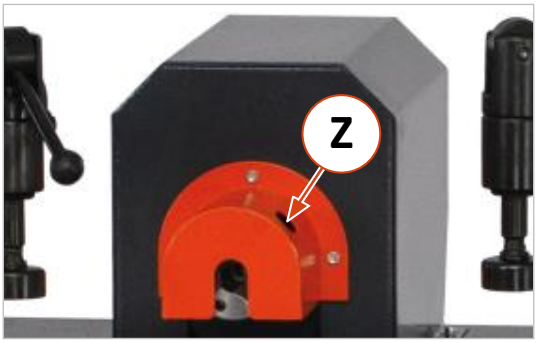


Figure 13: Drill chuck with guard

- To loosen or tighten a drilling bit, use the SW8 spanner supplied.
- Turn the drill spindle by hand until the clamping screw of the chuck is accessible through the hole (**Z**) on the guard and insert the spanner.
- The drill bit must be clamped as deep as possible (over the entire length of the drill chuck).
- Before switching on the machine, make sure that the drill bit is securely and firmly clamped.

⚠	***After changing the tool, the spanner must be removed again immediately!***

⚠	***When the drilling work is finished, the drilling bit must be removed, as there is an increased risk of injury from a protruding tool.***

12.2 Pre-setting's for Mortising

1. Set the drill length stops (**9**) to the desired length of the mortise and lock them (see ⇨ 12.8.1).
2. If necessary, set the drilling depth stop (**10**) to the desired drilling depth and lock it (see ⇨ 12.8.2).
3. Use the handwheel (**12**) to set the drill support to the appropriate height and clamp it (see ⇨ 12.6).
4. Set the drilling unit to the desired angle with the tilt adjustment (**14**) if necessary (see ⇨ 12.7).
5. Place the workpiece against the fence and clamp it tightly (see ⇨ 12.5).
6. If workpieces are to be machined in series, also set the stop rod (see ⇨ 10.1).
7. Use the movement handle (**5**) to move the drill support in transverse or longitudinal direction (see ⇨ 9).
8. Detailed procedure for making a mortise see section ⇨ 12.9.

12.3 Operating the Eccentric Clamps

First mount the eccentric clamping device(s) on the machine table (see section ⇨ 10.3).

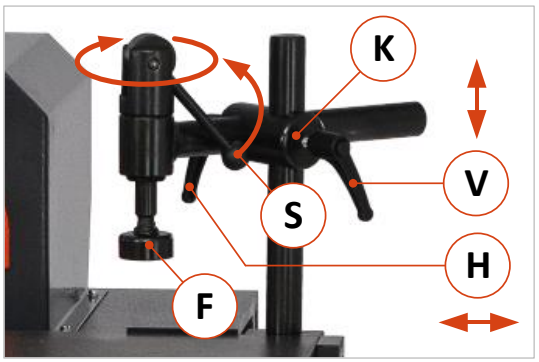


Figure 14: Operating the eccentric clamps

- After opening clamping lever (**V**), the cross piece (**K**) can be adjusted vertically, and after opening clamping lever (**H**), it can be adjusted horizontally. After adjustment, tighten both clamping levers again.
- Swivel the clamping lever (**S**) slightly upwards and position the clamping pad (**F**) approx. 2 mm above the workpiece by turning it clockwise ↻. This ensures an optimum clamping stroke.
- Fix the workpiece with clamping lever (**S**).

12.4 Operating the Mitre Fence

First mount the mitre fence to the front of the machine table (see section ⇨ 10.4).

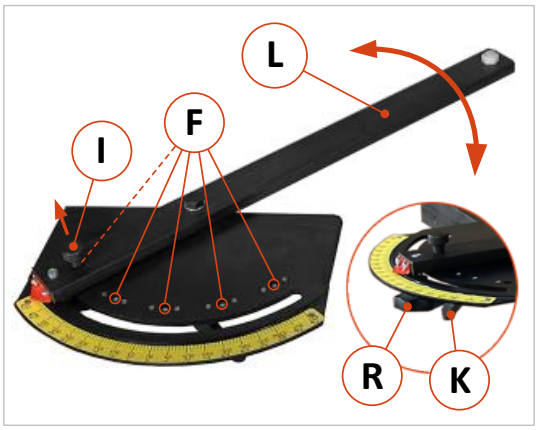


Figure 15: Operating the mitre fence

- To move the complete fence transversely to any position, open the clamping lever (**K**) on the underside. Then tighten the lever (**K**) again.
- To set one of the fixed degrees 45° / 22.5° / 0°, loosen the clamping wheel (**R**) on the underside and pull the index bolt (**I**) upwards. Swivel the stop rail (**L**) to the desired angle and engage the index bolt in the corresponding fixing point (**F**). Then tighten the clamping wheel (**K**) again.
- To adjust the stop rail steplessly to an intermediate degree, pull out the stop bolt (**I**) completely.

12.5 Clamping Workpieces at the Mitre Fence

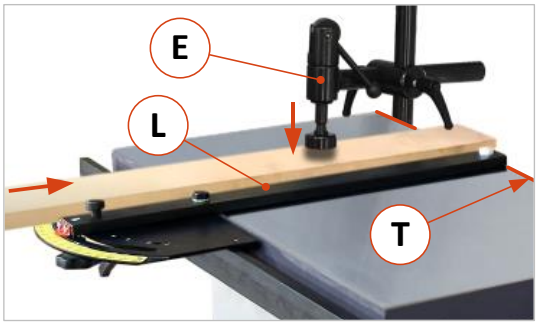


Figure 16: Clamping with mitre fence in 90° position

- Place the workpiece on the table top and simultaneously position it against the table edge stop (**T**) and the against desired side of the stop rail (**L**). Then clamp it with the eccentric clamp (**E**).

  Remark: If the workpiece is not to be clamped at a 90° angle, set the desired angle on the fence before clamping.

12.6 Height Setting via Handwheel

Figure 17: Height setting with handwheel and scale

The height of the drill support is set via the handwheel (**12**) on the right-hand side of the machine.

- Open clamping lever (**H**) and set the height with the handwheel (**12**) and scale (**S**):

  Moving upwards → Crank clockwise ↻
  When cranking upwards, move beyond the position and then back (to compensate for spindle play).

  Moving downwards → Crank anticlockwise ↺
- Fix set position with clamping lever (**H**) again.

Note: Setting 0 on the scale means that the tip of the drill is exactly at the level of the top edge of the table.

☝	***When adjusting the height, make sure that it is not set too low, otherwise there is a risk of collision between the table edge stop and the drilling tool.***

12.7 Tilting the Drilling Unit

The drilling unit of the machine can be adjusted to any angle within the range ± 45°.

⚠	***Increased risk of injury from tipping when nuts (M) are loosened due to the heavy weight of the drilling unit! Hold the drilling unit firmly with the tilting lever (H) as soon as the nuts are loosened and use only the tilting lever (H) for the setting.***

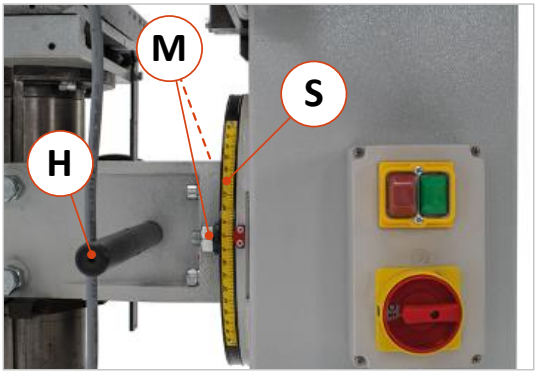


Figure 18: Tilting lever with angle scale

The tilt setting of the drilling unit is made using the scale (**S**) and the tilt lever (**H**) on the left side of the machine.

- Loosen the two nuts (**M**) securing the drilling unit to the machine column with an open-end spanner. At the same time, hold the drilling unit firmly with the tilting lever (**H**). If necessary, involve a second person for support.
- Set the desired angle using the tilting lever (**H**) via the angle scale (**S**).
- Then tighten the two nuts (**M**) again.

12.8 Setting the Drilling Length and Drilling Depth Stops

The two stops for the drilling length (**9**) and drilling depth (**10**) are each set via knurled adjusting rings, which are located on the rear resp. side of the machine.

12.8.1 Set Drilling Length Stop

The drilling length stops are set on the limiting rod (**9**) located on the rear of the machine.

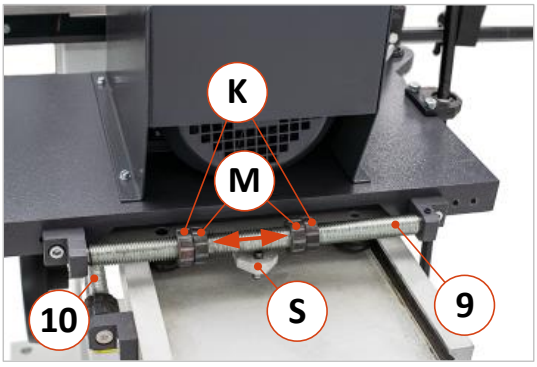


Figure 19: Drilling length stops

- Loosen the two locking rings (**K**) on the rear limiting rod (**9**).
- First mark the centres of the start and end hole for the mortise length to be made on the workpiece and clamp it on the table top.
- Move the drilling unit to both sides in order to adjust the limit rings (**M**) for the stop bolt (**S**) to the start and end dimensions of the mortise.
  → **Drilling bit centre ≙ Stop bolt position (S)**
- Fix the defined positions with the knurled rings (**K**).

12.8.2 Setting the Drilling Depth Stops

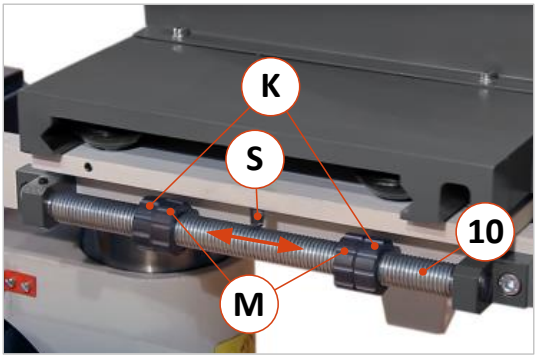


Figure 20: Drilling depth stops

The adjustment of the drilling depth stops is done via the limiting rod (**10**) on the right side of the machine.

- Loosen the two locking rings (**K**) on the lateral limiting rod (**10**).
- Set the drilling depth limit for the stop bolt (**S**) by adjusting the limit rings (**M**).
- Fix the defined positions with the locking rings (**K**).

12.9 Mortising

The drilling of a mortise is carried out according to the sequence shown in ⇨ Figure 21:

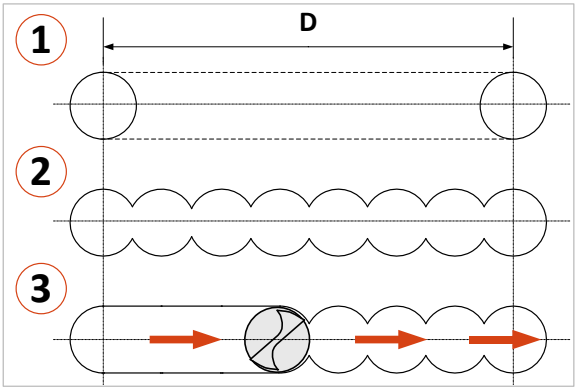


Figure 21: Mortising sequence

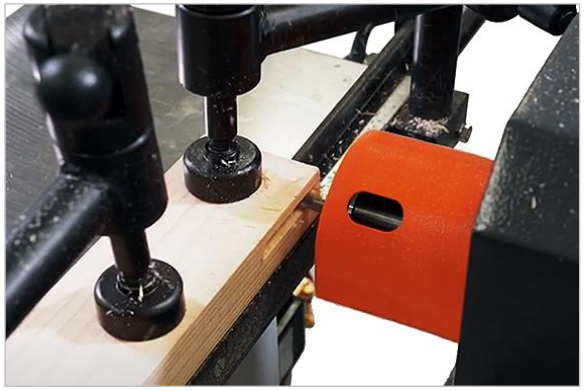


Figure 22: Drilling out a mortise

1. After the pre-settings (see ⇨ 12.2) a hole is drilled into the workpiece to the set depth at the start and end position (see distance "**D**") of the two drill length stops (**M**) shown in ⇨ Figure 19.
2. Then drill several intermediate holes over the entire mortise width to the depth set on the drill depth stop (see ⇨ Figure 20). Choose the hole spacing so that the holes do not run into each other, see ⇨ Figure 21 (**2**).
3. Then drill out the mortise by moving back and forth several times against the two drill length stops (**M**) in the transverse direction ⇆ (see ⇨ Figure 19). Repeat the process until all intermediate holes form a clean and continuous mortise.

☝	***Please note: For deep mortises, gradually increase the depth when connecting the intermediate holes together (see ⇨ Figure 21). Drilling too deep in one step can destroy the tool and/or overload the motor.***

12.10 Characteristic when drilling dowel holes at an angle to the wood fibre

When drilling dowel holes in mitred surfaces at 45° to the wood grain, the drill can be pushed away in height. This is caused by drilling at an angle to the wood grain. When the parts are joined together, there is then an offset in height. Drilling tests in the factory have shown that the best results are achieved with a conventional metal drill.

13 Dowel Indexing Device (Option)

13.1 Fitting the Dowel Indexing Device

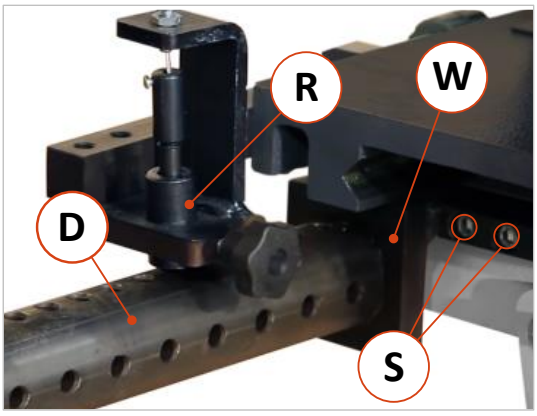


Figure 23: Fitting the dowel indexing device

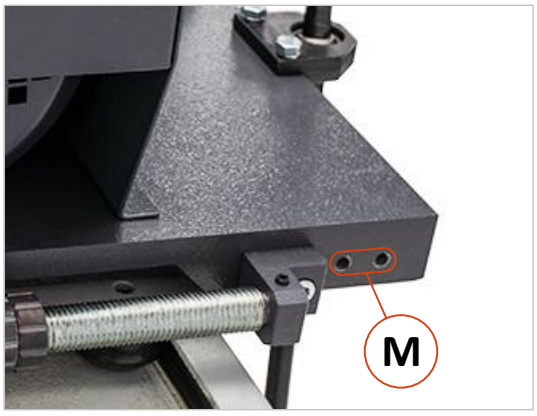


Figure 24: Mounting holes on the rear

- Fit the mounting bracket (**W**) of the indexing barrel (**D**) into the threaded holes on the drill table using the Allen screws (**S**) supplied (see ⇨ Figure 23) → Do not fully tighten the Allen screws (**S**) yet, as you will have to adjust the position to suit the locking mechanism.
- Now attach the locking bolt handle (**H**) to the end of the movement handle (**B**) as shown in ⇨ Figure 25 and fasten it with the Allen screw provided.
- Fit the locking mechanism (**R**) into the threaded holes (**M**) on the rear of the machine using the Allen screws supplied (see ⇨ Figure 24 / ⇨ Figure 25). Adjust both the indexing barrel (**D**) and the locking mechanism (**R**) so that the locking bolt can engage and disengage freely.
- Now all side and rear screws can be tightened.

13.2 Using the Dowel Indexing Device

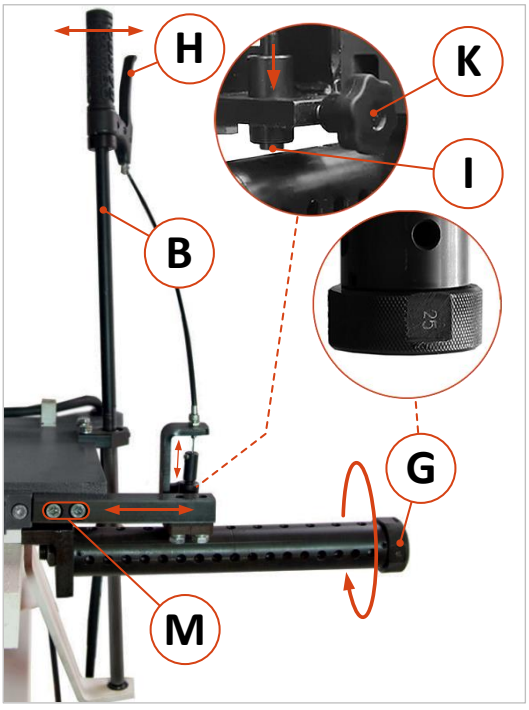


Figure 25: Using the dowel indexing device

With the dowel indexing device, precise hole line drillings can be made at pitches of 16 / 22 / 25 / 32 mm.

To use the dowel indexing device, first loosen the clamping wheel (**K**) and press down the spring-loaded locking bolt (**I**). Then tighten the clamping wheel (**K**) again.

Set hole pitch:

- Press the locking bolt handle (**H**) to lift off the locking bolt (**I**) and at the same time select the desired hole pitch by turning the handle wheel (**G**).
- Release the locking bolt handle (**H**) again.

Mortising:

- Press the locking bolt handle (**H**) to lift off the locking bolt (**I**) and then approach the first hole by moving the lever (**B**) horizontally.
- Release the locking bolt handle (**H**) and engage the locking bolt (**I**) in the first hole.
- Drill the first hole and repeat the process with all the other holes to be drilled.

Switch back to mortising operation:

If the dowel indexing device is no longer required, simply lift off the locking bolt (**I**) via the clamping wheel (**K**) and fix it in the lifted-off position.

14 Troubleshooting

Proceed systematically when searching for the cause of a malfunction. If you are unable to find the fault or to remedy the malfunction, contact our customer service department (phone number: 0049 7571 / 755 - 0).

Before you call us, please follow these steps:

- Make a note of the type, machine number and year of production (see nameplate).
- Keep this operating manual (and any circuit diagrams) to hand.
- Describe the fault to us in detail so that a competent remedy can be found.

Fault	Possible Cause	Remedy
The machine does not start	No voltage External fuse defective Main switch defective Drive motor defective	→ Check power supply (electrician!) → Replace fuse (electrician!) → Replace main switch (electrician!) → Contact customer service
Motor power is not sufficient, or motor stops during machining	Incorrect or defective drill bit Drilling depth too high for mortising Motor defective or wired incorrectly Motor overheated	→ Use a different/new drill → Increase the depth gradually → Contact customer service → Switch off the machine and allow the motor to cool down. Only then switch it on again.
Machine does not stop when switching off	Red push switch (stop) defective	→ Replace push switch (electrician!) (contact customer service if necessary)
Squeaking noises with running motor	Fan has contact with housing Bearing defective	→ Check the fan freewheel → Contact customer service
Poor drilling result / ejection of wooden parts	Workpiece incorrectly clamped Defective drill Drill speed too high	→ Clamp workpiece correctly → Use new drill → Reduce speed
Handwheel for height setting is stiff	Handwheel clamp tightened	→ Loosen clamping
The cross table has too much play	Guide play must be readjusted	→ Readjust according to section ⇨ 15.3 (contact customer service if necessary)
Machine vibrates	Machine stands unevenly	→ Level out unevenness → Bolt the machine in place if necessary

15 Maintenance and Inspection

	***Before carrying out any maintenance and inspection work, chapter ⇨ 5 "Safety" must be read carefully and observed!***

Breakdowns caused by inadequate or improper maintenance can result in very high repair costs and long machine downtimes. Regular maintenance is therefore essential.

	***Switch off the machine during all maintenance and repair work and secure it against being switched on again unexpectedly! Lock the main switch with a padlock!***

Due to the different operating conditions, it is not possible to determine in advance how often a wear check, inspection or maintenance is required. Appropriate inspection intervals should be determined considering your operating conditions.

- Clean the machine regularly (see section ⇨ 15.1).
- Remove and replace defective or damaged parts. Never work with defective or damaged parts!
- Replace defective or damaged guards immediately. Never work with defective or damaged guards!
- Inspect electrical equipment/components weekly for externally visible damage and have any damage repaired by a qualified electrician if necessary.
- Do not use the machine until these conditions are met.
- Our specialists will be happy to provide you with further advice.

15.1 Cleaning

Regular and thorough cleaning guarantees a long service life of the machine and also contributes to safety.

- After each work shift, the machine and all its parts must be thoroughly cleaned by removing dust, dirt and chips from the surface of the table top, fence, stop rod and clamping devices.
- Clean all moving parts every week with turpentine or other suitable and safe solvents.
- Pay special attention to the thorough cleaning of the cross-support guides and clean them weekly with a soft brush and turpentine or other suitable and safe solvents.

	***Avoid cleaning with compressed air, as the wood dust produced can penetrate the bearings and guides of the machine and is also distributed in the workshop!***

15.2 Lubrication

The machine was subjected to a test run at the factory for a longer period of time and was already lubricated ready for operation. Relubrication before commissioning is therefore not necessary.

- Clean all sliding/rolling parts weekly and check for smooth running. If necessary, lubricate with a thin oil.
- Apply a few drops of oil weekly to the threads of the limiting rods as well as clamping and adjusting levers.

Lubricate the machine only with special grease, e.g.

- **ARCANOL BN 102**
- **CALIPSOL H442B**
- **Shell Gadus S2 V100 3 (formerly SHELL Alvania 3)**

For oil lubrication we recommend: **Motor oil type 20 W 40**

Always use the same grease/oil.

15.3 Checking the Safety Labels

- Check regularly that all safety labels on the machine are present and in good legible condition.
- The safety labels must be completely present and always clearly legible.
  This applies especially to the safety instructions.

15.4 Readjusting the Guide Play of the Cross-support

The play between the guide rods and the guide rollers of the cross-support can become misaligned when the machine is used for a long time. The clearance between the guide rollers and the guide rods should not be too large, but the rollers should not be seated too tightly on the guide rods.

The roller spindle is eccentric and changes the play between the guide rod and the roller when turning. To adjust it, loosen the clamping screw of the roller spindle. Turn the spindle with a spanner until the correct clearance is achieved and lock it again with the clamping screw.

15.5 Taking the Machine out of Operation / Storage

- When putting the machine out of operation, switch off the electrical system.
- If the machine will not be used for a long time, clean the machine carefully after switching off the electrical system and treat the worktable and the other bare parts with an anti-corrosion agent.
- The machine must not be stored in a damp room and must be protected against the effects of the weather.

15.6 Defects and their Remedy

- In case of defects and pending repair work, switch off the machine, lock the main switch and disconnect the machine from the mains by pulling out the supply plug. Attach an appropriate sign, e.g. "Defect / Repair Work", to the machine so that it is clearly visible.

15.7 Average Situations / Emergencies

	• ***In case of flooding of the work area, switch off the power supply immediately!*** • ***In case of fire, immediately switch off the power supply and use a class A fire extinguisher. Alternatively, fight the fire with a fire blanket. If the power cannot be switched off, you need a class C powder extinguisher.*** • ***Never extinguish burning electrical equipment with water!***
	• ***Before the machine is put back into operation, it must be checked by a trained and approved technician.*** • ***The working area around the machine (see section ⇨ 6.3) always be clear.***
	• ***The machine must not be used in potentially explosive atmospheres!***

16 Options and Accessories

	***Use only the tools, accessories and spare parts specified by the manufacturer. The use of other tools, accessories or spare parts may cause injury to persons and damage to the machine. The manufacturer accepts no liability for any damage resulting from the use of tools, accessories or spare parts not specified by the manufacturer or from additional components supplied by third parties!***

Article	Description	Art. No.
Motor with two speeds	2.4 kW / 3.3 PS, instead of standard motor	LBM1-200-002
Dowel Indexing Device	engageable, available pitches 16 / 22 / 25 / 32 mm	LBM1-200-003
6-piece mortising bit set in wooden case	Ø 6, 8, 10, 12, 14, 16 mm, shaft diameter 13 mm	LBM1-200-004
Table widening	extendable, including castor support	on request
Mobile base	with castors and 2 lifting rods for steering and lifting	on request

17 Disassembly and Scrapping

When dismantling and scrapping the machine, the current EU regulations or the respective regulations and laws of the country of operation, which are prescribed for proper dismantling and disposal, must be observed. The aim is to dismantle the machine and its various materials and components properly, to recycle all possible parts and to dispose of non-recyclable components in the most environmentally friendly way.

	***Please pay particular attention to*** • *the dismantling of the machine in the working area* • *proper dismantling of the machine and accessories* • *a safe and proper removal of the machine* • *proper separation of all components and materials.*

When dismantling and disposing the machine, the laws and regulations in force at the place of use concerning health and environmental protection must be observed.

	***Remove all residues of oil, grease and other lubricants and have them disposed of properly by a qualified disposal company.***

When separating, disposing of or recycling the machine materials, comply with the environmental protection laws in force at the place of use regarding the disposal of industrial solid waste toxic and hazardous waste.

	• ***Hoses and plastic parts as well as other components that are not made of metal must be dismantled and recycled or disposed of separately.*** • ***Electrical components such as cables, switches, connectors, transformers, etc. must be removed and (if possible) recycled or otherwise disposed of in a qualified manner.*** • ***Pneumatic and hydraulic parts such as valves, solenoid valves, pressure regulators, etc. must be removed and (if possible) recycled or otherwise disposed of in a qualified manner.*** • ***Dismantle the base frame and all metal parts of the machine and sort them according to material type. Metals can be melted down and recycled.***

In the event of improper disposal of lubricants, the following residual risks to the environment and health exist:

	***Pollution of the environment by seepage into groundwater or sewage system.***
	***Poisoning of the personnel contracted for the disposal.***

Note: The disposal of lubricants considered toxic and hazardous must be carried out in accordance with the regulations and laws in force at the respective place of use. Only qualified disposal companies that have the appropriate permits for the disposal of used oil and lubricants are to be commissioned with the disposal.

CE EU - Declaration of Conformity

in accordance with the EU Machinery Directive 2006/42/EC Annex II A

The manufacturer,
HOKUBEMA Maschinenbau GmbH
Graf-Stauffenberg-Kaserne
Binger Str. 28 | Halle 120
DE 72488 Sigmaringen (Germany)

Phone: +49 (0) 7571 / 755 - 0
Fax: +49 (0) 7571 / 755 - 222

hereby declares that the manufactured machine

SLOT DRILLING & MORTISING MACHINE WOODPECKER TYP LBM1-200

Machine-No.: .....

Year of manufacture: .....

in the version provided complies with the following directives:

- Machinery Directive 2006/42/EC

- EMC Directive 2014/30/EU

Mr. Andreas Ganter, Graf-Stauffenberg-Kaserne, Binger Str. 28 | Halle 120,
72488 Sigmaringen (Germany), is authorised to compile the technical documentation.

Sigmaringen, 14.09.2022

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R. Beck

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Reinhold Beck
Business Manager