Hammer®

K2 M

Circular saws

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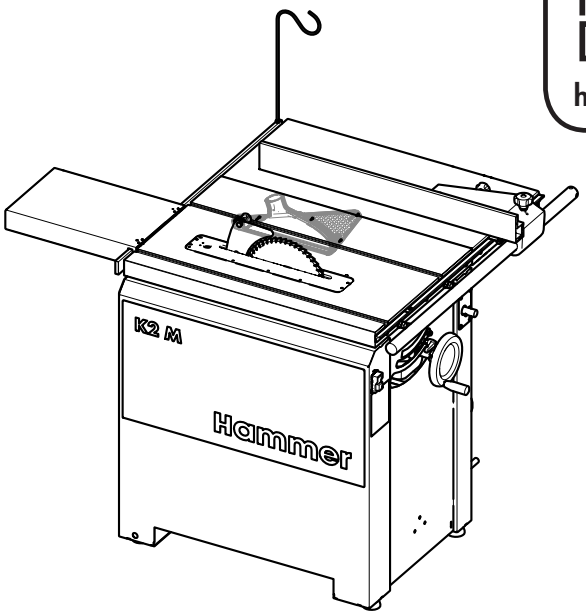

Keep these operating instructions to hand and in good condition for future reference! Read the operating instructions carefully before using the machine!

Translation of the original operating instructions

Operating instructions

510010-901, 1, en_GB

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Table of contents

1 Information about the manual

1.1 Explanation of symbols

Safety instructions

Safety instructions in this manual are indicated with symbols. The safety instructions are introduced by key words which state in words the extent of the hazard.

Comply with safety instructions under all circumstances, and act with care in order to avoid accidents, personal injury, or material damage.

DANGER

… indicates a situation of immediate danger which will result in death or severe injuries if it is not avoided.

WARNING

… indicates a situation of possible danger which can result in death or severe injuries if it is not avoided.

CAUTION

… indicates a situation of possible danger which can result in minor or slight injuries if it is not avoided.

NOTICE

… indicates a situation of possible danger which can result in material damages if it is not avoided.

Tips and recommendations

… emphasises useful tips and recommendations as well as information for efficient and trouble-free operation.

OK / NOK

Symbols	Explanation
	Result is okay.
	Result is not okay. Procedure when troubleshooting.

Safety instructions symbol

The following symbols may appear in the operating instructions.

Icon	Object description
	General warnings
	Warning of electrical voltage
	Warning of dangers due to charging batteries
	Warning of obstacles in the head area
	Warning of falling objects
	Warning about falling loads
	Warning of suspended loads
	Warning against crushing
	Warning of hand injuries due to crushing
	Warning of hand injuries due to cutting
	Warning of hot surfaces

The following symbols may appear in the description of operating equipment.

Icon	Object description
	Warning about hazardous substances
	Warning of environmentally hazardous substances
	Warning of flammable substances

1.2 Contents of the operating manual

- This operating manual describes the safe and proper use of the machine.
- All instructions in this manual must be strictly followed without exception.

- The operating manual is an integral part of the machine. It must therefore be kept in the direct vicinity of the machine and be accessible at all times.
- The operating manual must always accompany the machine.

1.3 Liability and warranty

- The contents and instructions in this manual have been compiled in consideration of current regulations and state-of-the-art technology as well as based on our know-how and experience acquired over many years.
- The manufacturer shall not be liable for damage and/or faults resulting from the disregard of instructions in the manual.
- The text and images do not necessarily represent the exact product that has been delivered. The images and graphics are not depicted on a 1:1 scale. The product that has been delivered, may have custom-built specifications, add-on options or recent technical modifications and may therefore deviate from the descriptions, instructions and images contained in the manual.
- We reserve the right to make technical changes to the product in order to improve the properties of use and further product development.
- The guarantee period is in accordance with national guidelines. Details may be found on our website, www.felder-group.com.
- Should any questions arise, please contact the manufacturer.

1.4 Copyright

- This manual should be treated as confidential. It is intended solely for those people who are to work on or with the machine.
- All descriptions, texts, drawings, photos and other depictions are protected by copyright and other commercial laws.
- Any unauthorised use is prohibited.
- This manual, in its entirety or parts thereof, may not be transferred to third parties or copied in any way or form, and its contents may not be used or otherwise communicated without the express written consent of the manufacturer. Infringement of these rights may lead to a claim for compensation. The right to further claims is reserved.
- We reserve all rights to exercise industrial property rights.

1.5 Training

- All those appointed to work on or with the machine must have fully read and understood the manual before commencing any work. This requirement must be met even if the appointed person is familiar with the operation of such a machine or a similar one, or has been trained by the manufacturer.
- Knowledge about the contents of this manual is a prerequisite for protecting personnel from hazards and avoiding mistakes so that the machine may be operated in a safe and trouble free manner.
- It is recommended that the operator requests proof from the personnel that the contents of the manual have been read and understood.

1.6 Contact Felder-Group service centre

In the event of faults, problems and questions about your machine, please contact the local Felder-Group service centre. You can find the contact details on our website: ➦ *www.felder-group.com*

2 Safety instructions

2.1 Personal protective equipment

2.1.1 Prohibitions

When working on or with the machine, the following must be strictly observed:

	Please note
	Long, loose hair is forbidden. A hair net must be worn with long hair and beards.
	It is prohibited to wear gloves whilst working with the machine. It is only allowed to wear gloves whilst carrying out tool changes and maintenance work.
	Wearing watches, rings and other jewellery is forbidden. Remove all jewellery, bracelets, watches and rings when operating the machine or carrying out maintenance work.

2.1.2 Mandatory safety equipment

When working on or with the machine, the following must always be worn by personnel:

	Please note
	Protective clothes: Sturdy, tight-fitting clothing (tear-resistant, no wide sleeves).
	Protective footwear: To protect feet from heavy falling objects and prevent from slipping on slippery floors.
	Ear protection: To protect against loss of hearing.
	Safety goggles: Protection to prevent damage to eyes.
	Respiratory mask: To protect from dust when carrying out cleaning and maintenance work.

2.2 Intended use

- The machine described in this manual is intended solely for the processing of wood, synthetic materials, and similar machinable materials. Operational safety is only guaranteed when the machine is used for the intended purposes.
- Any use, other than that of the machine's intended purpose shall be considered improper and is therefore not permitted. All claims regarding damage resulting from improper use that are made against the manufacturer and its authorised representatives will be rejected.
- The operator is solely liable for any damage that results from improper use of the machine.
- The term "proper use" also refers to correctly observing the operating conditions as well as the specifications and instructions in this manual. The machine may only be operated when using parts and accessories recommended by the manufacturer.

2.3 Making changes and modifications to the machine

In order to avoid potential hazards and to ensure optimum performance, no modifications, alterations or changes may be made to the machine that have not been explicitly approved by the manufacturer.

Unauthorised modifications, conversions and extensions to the machine

Modifications, conversions and extensions to the machine may jeopardise the functionality and operational safety of the machine. This can seriously injure or kill people.

- Modifications, conversions and extensions may only be carried out by an authorised specialist with the express permission of the manufacturer.

Deactivated or defective protective devices

The machine is equipped with diverse protective devices with safety function. When protective devices are decommissioned, the safety function is no longer ensured. Deactivated or defective protective devices can cause serious injuries.

- The safety equipment required for processing must be in good working conditions and properly maintained.
- Check all required safety devices to ensure good working condition.
- Do not switch off, bypass or disable protective and safety equipment.
- Do not deactivate protective devices.
- Do not intentionally trigger safety equipment.

Missing or illegible safety stickers

Pictograms, signs and labelling on the machine warn of hazards and misuse and are an important part of the safety equipment. Missing or illegible safety stickers increase the risk of serious and fatal injuries.

- Keep all pictograms, signs and labelling on the machine in a legible condition. ➥ *Chapter 5.2 'Pictograms, signs and labels' on page 24*
- Damaged or illegible pictograms, signs and labelling must be replaced immediately.
- Label spare parts with the safety stickers provided.

2.4 Responsibilities of the operator

- The machine may only be operated if it is in proper working order and in safe condition.
- The machine must be inspected for visible defects and damage each time before it is switched on.
- Do not leave the machine running unattended.
- Secure the switched-off machine against unauthorised operation (padlock on the main switch, remove the key from the operating mode selector switch, block off the area around the machine, pull out the mains plug etc.).
- In addition to the safety advice and instructions specified in this operating manual, any local accident prevention regulations and general safety regulations applicable to the machine's area of use, as well as any applicable environmental protection regulations, must be observed and complied with.
- The operator and designated personnel are responsible for the trouble-free operation of the machine as well as for clearly establishing who is in charge of installing, servicing, maintaining and cleaning the machine. Keep children away from machines, tools and accessories.

2.5 Requirements of the personnel

- Only authorised and trained personnel may work on and with the machine. "Qualified personnel" is a term that refers to those who – due to their professional training, know-how, experience, and knowledge of relevant regulations – are in a position to assess delegated tasks and recognise potential risks.
- Personnel must be briefed about all potential dangers of the machine.
- Personnel must be familiar with the functions of the machine's guards and protective devices and their regular inspection.
- If the personnel lack the necessary knowledge for working on or with the machine, they must be trained. Responsibility for working with the machine (installation, service, maintenance, overhaul) must be clearly defined and strictly observed.
- Only those people who can be expected to carry out their work reliably may be given permission to work on or with the machine.
- Personnel must refrain from working in ways that could harm others, the environment or the machine itself.

- It is absolutely forbidden for anyone who is under the influence of drugs, alcohol or reaction-impairing medication to work on or with the machine.
- When appointing personnel to work on the machine, it is necessary to observe all local regulations regarding age and professional status.
- The machine may only be operated by an adult, that is without mental limitations or under the supervision of such a person.
- The operator must ensure that unauthorised persons maintain a sufficient safety distance from the machine.
- Personnel are obliged to immediately report any irregularities with the machine that might compromise safety to the operator.

2.6 Basic safety instructions

The machine has undergone a hazard analysis. The design and construction of the machine are based on the results of this analysis and correspond to state-of-the-art technology. The machine is considered operationally safe when used properly. Even if the safety measures are complied with, there are still certain associated risks that must be considered when working on the machine. This information should enable operators to better assess hazards and risks and avoid foreseeable misuse.

Generally applicable residual risks

- Crushing by being caught between moving parts.
  - Do not reach into the area of moving parts.
- Whilst processing, sparks can be created.
  - Carefully inspect workpieces for foreign matter (nails, screws) which might impair processing.
- Risk of damage to health from dust especially when processing hard woods.
  - Connect the dust extraction system in accordance with the instructions and make sure that it is working properly.
- Injury from flying workpieces and parts of the workpieces.
  - Wear personal protective equipment (protective work clothing and safety goggles)
- Cut or crush injuries, when changing the tools.
  - Wear protective gloves.
- Injury caused through being crushed, cut, caught or bumped into.
  - Pay particular attention when the machine is running.
- In the event of power supply failure, the machine will come to a stop without applying the brakes (no electric brake action).
  It takes longer than normal for tools to come to a stop.
  - Do not reach into the area of the running tool.

Disregarding operating instructions

The operational safety of the machine is only guaranteed if the operating instructions are observed. People could be seriously injured or killed.

- Read and observe the operating instructions in full before commissioning.
- Only the equipment, tools and procedures specified in the operating instructions are safe.
- Do not operate the machine if, the operating instructions are not complete, or if it isn't available in the language of the country of operation.
- Keep the operating instructions with the machine and keep them available.

Incorrect work on the electrical units

Work on the electrical equipment may only be carried out by qualified personnel. People could be seriously injured or killed.

- Work on electrical equipment may only be carried out by qualified personnel and in strict observance of the safety instructions.
- Disconnect machine from power supply and secure against restarting before carrying out work on electrical equipment.

Does not comply with technical limits

If the technical limits of the machine are not complied with, people could be seriously injured or killed.

- Comply with limit values according to technical data. ➦ *Chapter 4 'Technical information' on page 19*
- Technical limit values include: speed, tool diameter, workpiece dimensions, load capacities, etc.

Noise / high sound level

Continuous work with the machine can cause damage to health due to noise.

- Use suitable hearing protection depending on ambient conditions, working hours, operating conditions and the materials to be processed.
- Take the sound pressure level into account. ➦ *'Noise emission values' on page 23*
- Sound level depends on the tool used. ➦ *Chapter 4.4 'Saw unit and tools' on page 20*
- Observe the operating and installation conditions, as a different work process can lead to higher noise emissions, for example.

Dust deposits

Dust build-ups can ignite when in contact with hot parts or cause an explosive atmosphere due to resuspension. Fire or explosion events can cause serious injuries.

- Clean production area as needed.
- Open fire, smoking and cleaning with compressed air forbidden.
- Only carry out spark-producing work and hot work after work release process.

Noise and dust exposure

Serious injuries

Factors that influence noise exposure:

- the selection of low-noise tools,
- choosing the right speed,
- the maintenance of the tools and the machine,
- the type of material to be processed,
- the use of all available covers and
- the use of hearing protection.

Factors that influence dust exposure:

- the quality of tool and machine maintenance,
- the material to be processed,
- local extraction (capture at the source),
- the correct setting of the extraction hoods/guiding elements/collection channels,
- connecting the machine to an external chip and dust extraction system.

Damage to electrical components or their insulation

Damaged electrical components or damage to their insulation cause deadly electric shocks.

- Work on electrical fittings may only be carried out by qualified personnel and in strict observance of the safety instructions.
- Disconnect machine from power supply and secure against restarting before carrying out work at electrical devices.

Standing on the machine

The covers or projecting components of the machine are not suitable for standing on them. Falling off the machine can result in serious injury.

- It is forbidden to climb onto the machine.

2.6.1 Transport, setup, installation and disposal

Incorrect setup and installation

Incorrect setup and installation of the machine can cause serious injury because unstable, damaged or incorrectly placed machines can tip, vibrate or malfunction, resulting in accidents due to falls, electrical hazards or uncontrolled movements.

- Machine may only be set up by authorised, trained personnel who are familiar with how to operate the machine and are in strict observance of all safety instructions.
- Before assembling and installing the machine, check to make sure it is complete and in good condition.
- Only assemble and install the machine if the machine and all of the parts are complete and intact.
- Use safety equipment according to regulations and check proper functionality.
- Do not setup machine in areas with high electromagnetic fields.
- Do not setup machine in escape routes.
- Only place machine within buildings.
- Place the machine on a level, sufficiently stable, non-slip and vibration-free surface.
- The load-bearing capacity, coating and surface of the floor must remain constant in the long term.
- The floor space around the machine must be flat, well maintained, free of obstacles and cleared of waste material such as chips and offcuts.
- The working area must be adequately lit.

Exceeding or falling below the permissible ambient temperature

If the permissible surrounding temperature is not complied with, malfunctions and unpredictable machine movements may occur. This can lead to serious personal injury and damage to property.

- Only operate machine within the listed temperature range.
- Follow operation and storage conditions in accordance with the technical information. ➦ *Chapter 4 'Technical information' on page 19*

Insufficient space available for force-guided workpieces.

If there is not sufficient distance between the machine and neighbouring machines, walls or other solid objects, the rail-guided workpieces pose a potential risk during the machining process.

The approximation of a workpiece to a fixed object or building structure can lead to severe crushing of limbs as well as the entire body.

- Observe minimum distances to spatial boundaries.
- Ensure that there is sufficient space to work around the machine.
- Keep sufficient distance from moving workpieces.
- Keep enough distance to adjacent machines or other static objects.

Insufficient lighting of the installation site

Tripping and falling due to inadequate lighting can lead to serious injuries.

- Illuminate installation site sufficiently.

Disorder at the workplace

Loose objects or objects that are lying around can cause severe injuries.

- Ensure that there is sufficient space to work around the machine.
- Remove loose objects and tools from the work area.
- Keep the work area orderly and clean.

Indirect touch with residual currents

If the power supply of the machine is not equipped with a residual current circuit breaker, this can lead to serious injury from electric shocks, particularly in the event of insulation faults or short circuits.

- Equip the machine's power supply with a fault-current circuit breaker.

Electrostatic charging of the extraction hoses

Burns or electric shock caused by unearthed, or low quality extraction hose.

- Always ensure continuous electrostatic earthing when connecting machines.
- Only use dust extraction hose approved by the manufacturer.

Using unsuitable equipment

Equipment that does not meet the manufacturer's specifications may compromise the operational safety. People could be seriously injured or killed.

- Only use authorised, approved equipment approved by the manufacturer.
- Do not use any modified equipment.

Handling of equipment and auxiliary materials

Improper handling of equipment and auxiliary materials can cause serious injury or death.

- Observe the manufacturer's safety data sheets.
- Store equipment and auxiliary materials in a secure, locked area.
- Store equipment and auxiliary materials in their original containers.
- Wear personal protective equipment.
- Do not breathe in fumes.
- Avoid skin contact.
- Do not swallow equipment or auxiliary materials.
- Dispose of equipment and auxiliary materials in accordance with regulations.

2.6.2 Adjustments and tool changes, operation

Improper adjustment and setup

The operational safety of the machine is only guaranteed if the settings and set-up work are carried out correctly. People could be seriously injured or killed.

- Adjustment and setup may only be carried out by authorised, trained personnel who are familiar with how to operate the machine and are in strict observance of all safety instructions.
- Before beginning any maintenance work on the machine, switch it off and secure it against accidentally being switched on again.
- Adjustments to or equipping of the machine may only be done once the machine is at a standstill.
- Before commencing any work with the machine, inspect it to ensure that it is complete and in technically good condition.
- Ensure that there is sufficient space to work around the machine.
- Mount safety equipment according to regulations and check proper functionality.

During operation

Serious injuries

- Offcuts or other parts of the workpiece must not be removed from the working area whilst the machine is still running.
- Injury from flying workpieces and parts of the workpieces (e.g. knots, offcuts).
- Do not lean over the working area.
- Only remove chips when the machine is at a standstill.

Residual risks applicable when working with the circular saw unit

- Injuries due to contact with the rotating circular saw blade and/or scoring blade.
  - The danger zone is the area 120 mm to the left, right, in front of and behind the saw blade.
  - Do not reach into the danger zone with your hand.
- Injuries caused by ejected tool bits (e.g. cutting edges).
  - Never stand directly in the cutting line of the machine whilst it is operating (in machining or idle mode).

Foreign objects in the workpiece

Serious injuries

- Carefully inspect workpieces for foreign matter (nails, screws) which might impair processing.

Processing unsuitable materials

Serious injuries

- Only process authorised, approved materials approved by the manufacturer.
- Comply with the intended use. ➦ *Chapter 2.2 'Intended use' on page 9*

Improper selection of saw blades and grooving tools

Permanent hearing impairment, serious injuries and property damage.

Sharp tools reduce the risk of kickback, especially when working with grooving tools.

Only use saw blades and grooving tools,

- that comply with EN 847-1 in the current version.
- which are marked with "MAN".
- that meet the requirements of these operating instructions.
- which are well sharpened and in good condition.

Only use grooving tools,

- which are suited to manual operation.
- that are suitable for woodworking.

Process large or small workpieces without assistance

Serious injuries

- Ensure that there is sufficient space to work around the machine.
  Drive fed workpieces could be a hazard when processing. Keep sufficient distance from walls, machines and fixed objects.
- Support long workpieces with additional supports (e.g. table extensions, roller supports).
- Use auxiliary equipment for machining short and narrow workpieces (e.g. push grip, pushing stick, workpiece holder).
- Only process workpieces that can be safely placed on the machine and guided.

Process workpieces in the same direction as the rotation of the tool

When processing the workpieces in the same direction, the feed direction corresponds to the movement direction of the cutters in the area of contact. Serious injury caused through kickback of the workpiece could be the consequence.

- Always process workpieces in the direction opposite to the cutting direction.
- Pay attention to ensure the correct rotation direction of the tool.

Operate machine without saw blade guard or grooving tool cover and "saw boy" auxiliary stop

Operational safety is only guaranteed if a safety device is used above the circular saw blade or grooving tools. People could be seriously injured.

- Use a circular saw guard, circular saw top guard or grooving tool cover and "saw boy" auxiliary fence.

2.6.3 Maintenance and troubleshooting

Incorrect maintenance on the machine

Maintenance work may only be carried out by qualified and trained personnel. Failure to follow the instructions may result in serious personal injury and material damage.

- Work on the machine may only be carried out by authorised, trained personnel who are familiar with how to operate the machine and are in strict observance of all safety instructions.
- If possible, only perform work when the machine is disconnected from all energy sources and an unintentional restart is prevented.
- The machine has to be switched off when carrying out any work on the machine.
- Disconnect machine from power supply before carrying out work on electrical devices.
- Disconnect the machine from the compressed air supply before working on pneumatic equipment.
- Do not deactivate or bypass protective devices.
- Maintenance personnel need to be fully aware of how the machine operates and moves, and they must be familiar with the exact operating sequence.
- Whilst maintenance work is being carried out, secure the area around the machine.
- Whilst maintenance work is being carried out, put up a sign that states "Machine under maintenance".
- To ensure quick and unmistakable communication, visual contact with the operators must be kept at all times.
- Operators should repeat and confirm instructions before they are carried out.
- Only start the machine when there is no one within the safety zone.
- Properly reinstall all components after the maintenance work and check functionality.
- As part of the machine maintenance, the whole machine, including the safety devices, must be checked regularly for damage.
- Keep a record of all maintenance work.

Exceeding the lifespan of protective devices that carry out a safety function

Serious injuries

The safety devices have a lifespan of 20 years. If safety devices are used exceeding their lifespan, the proper function of the safety devices can not be guaranteed. Deficiently maintained safety devices can cause severe injury.

- Safety devices have to be replaced by expert personnel from Felder Group before the end of the lifespan.

Improper replacement or reparation of safety devices with safety function

Serious injuries

- Only let safety devices be replaced or repaired by expert personnel of the Felder Group.

Incorrect rectification of malfunctions

Incorrect rectification of malfunctions will impair operational safety. People could be seriously injured or killed.

- Wait for all moving parts to come to a standstill.
- Disconnect machine from all power sources and secure against restarting.

Use incorrect or faulty spare parts

Spare parts that do not meet the manufacturer's specifications may compromise the machine's operational safety and result in accidents.

- Only use authorised, approved spare parts approved by the manufacturer.
- In case of doubt, have it confirmed by the dealer or manufacturer.
- Only use technically perfect spare parts.
- See spare parts list.

3 Declaration of Conformity

EU-Declaration of Conformity

CE	EU-Declaration of Conformity according to Machine Guidelines 2006/42/EC **Note on the serial number:** The serial number is printed on the cover sheet of the operating manual.

We hereby declare that the machine indicated below, which corresponds to the design and construction of the model we placed on the market, conforms with the health and safety requirements as stated by the EU guidelines (see table).

Manufacturer	FELDER KG KR-Felder-Straße 1 6060 Hall in Tirol, AUSTRIA
Product designation	Circular saws
Brand	Hammer
Model type	K2 M
The following EU guidelines were applied	2006/42/EC 2014/30/EC
The following harmonised norms were applied:	EN ISO 19085-1:2021 EN ISO 19085-5:2017
EU type examination was carried out by:	Testplus Teknïk Kontrol ve Belgelendïrme Tïc. Ltd . Ştï. Abdurahmangazi Mh. Ebubekir Cad. No: 34/15 34887 Sancaktepe / İstanbul, Türkei NB 2908
Compliance with the EC Machinery Directive is certified by:	EC type-examination certificate number: 29082305045

This EU-Declaration of Conformity is valid only if the CE label has been affixed to the machine. Modifying or altering the machine without the express written agreement of the manufacturer shall render the warranty null and void. The signatory of this statement is the appointed agent for the compilation of the technical information.

Prof. h. c. Ing. Johann Georg Felder
CEO FELDER KG
KR-Felder-Straße 1, 6060 Hall in Tirol, AUSTRIA
Date: 17.05.2023

UK CA	Declaration of Conformity according to UK Directive S.I. 2008/1597 **Note on the serial number:** The serial number is printed on the cover sheet of the operating manual.

We hereby declare that the machine indicated below, which corresponds to the design and construction of the model we placed on the market, conforms with the health and safety requirements as required by the following UK guidelines (see table).

Manufacturer	FELDER KG KR-Felder-Straße 1 6060 Hall in Tirol, AUSTRIA
Product designation	Circular saws
Brand	Hammer
Model type	K2 M
The following UK guidelines were applied	S.I. 2008/1597 - Supply of Machinery (Safety) Regulations 2008 S.I. 2016/1091 - Electromagnetic Compatibility Regulations 2016
The following harmonised norms were applied:	EN ISO 19085-1:2021 EN ISO 19085-5:2017

This Declaration of Conformity is only valid if the UKCA label is affixed to the machine. Modifying or altering the machine without the express written agreement of the manufacturer shall render the warranty null and void. The signatory of this statement is the appointed agent for the compilation of the technical information.

Prof. h. c. Ing. Johann Georg Felder
CEO FELDER KG
KR-Felder-Straße 1, 6060 Hall in Tirol, AUSTRIA
Date: 17.05.2023

4 Technical information

4.1 Dimensions and weight

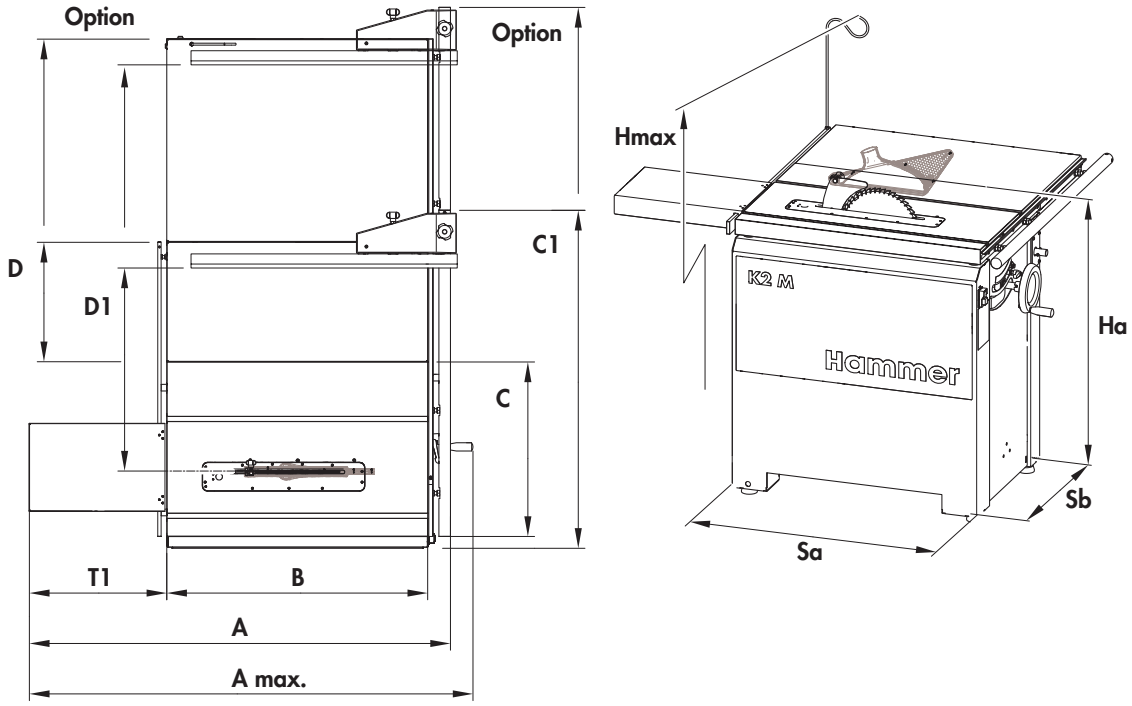

Fig. 1: Dimensions K 2 M

Machine table and cutting width

Data	Value	Unit
Total length A	1270	mm
Max. total length A	1330	mm
Machine table length B	785	mm
Machine table width C	525	mm
Table extension length T1	414	mm
Overall width C1	1016 / 1626 *)	mm
Cutting width max. D	360 / 970 *)	mm
Average cutting width max. D1	610 / 1220 *)	mm

*) optional cutting width 1220

Basic machine

Data	Value	Unit
Space requirement Sa x Sb	785 x 555	mm
Max. total height H	1240	mm
Working height Ha	880	mm
Net weight	145 *)	kg

*) with standard equipment

Packaging dimensions (incl. pallet)

Width = Open side of the pallet for the forklift

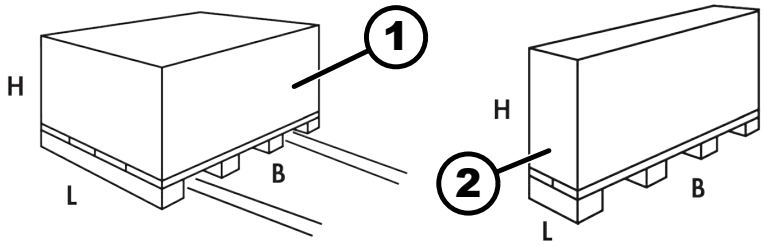

Fig. 2: Pallet info

1 Machine packaging
2 Packaging cutting width 1220 (option)

Data	Value	Unit
Length x width x height (var. 1)	875x600x1210	mm
Length x width x height (var. 2)	1070x730x130	mm
Net weight (var. 1)	150	kg
Net weight (var. 2)	35	kg

4.2 Operation and storage conditions

Data	Value	Unit
Operating/room temperature	+10 - +40	°C
Storage temperature	-10 - +50	°C
Humidity (non-wetting)	90	%

4.3 Drive motor

See wiring diagram for electrical details.
The actual values of the components can be found on the data plate.
All data in the S6 operating mode = Load and intermittent operation.
Relative operating duration = 40%.

4.4 Saw unit and tools

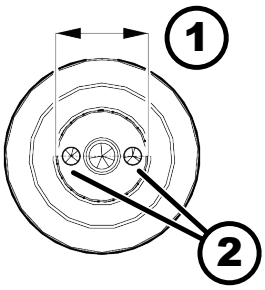

Fig. 3: Anti-rotation saw shaft

1 Saw shaft diameter
2 Anti-rotation saw flange

Only use saw blades and grooving tools,

- which have an authorised speed higher than the speed of the saw arbour
- and comply with the norm DIN EN 847-1
- which are marked with "MAN"

Only use grooving tools,

- which are suited to manual operation
- which are suitable to work with wood

Note

We recommend you use manufacturer original Felder Group tools exclusively.

The processing of workpieces at the maximum cutting height indicated is only possible under certain conditions. Whether it is possible is in direct relation to the following factors:

- Type of wood (hardwood or softwood)
- Wood dampness
- Feed speed
- Saw blades
- The motor power of your machine

Saw unit

Data	Value	Unit
Saw arbour diameter (CE)	30	mm
Saw arbour diameter (US)	5/8	inch
Rotation speed	5000	min^{-1}
Tilt range	0° - 45°	
Saw table (length x width)	785 x 525	mm
Fence plate (length x height)	800 x 82	mm
Cutting height max. *)	80.5	mm

*) with a 254 mm saw blade diameter (10 inch)

Saw blades

Data	Value	Unit
Max. diameter (CE)	250 - 254	mm
Max. diameter (US)	10	inch
Bore (CE without pin *)	30	mm
Bore (US without pin *)	15.88	mm

*) The circular saw flange is secured against rotating through the pin in the centre of the saw arbour.

Adjustable grooving tool to use with the sliding table panel saw

Data	Value	Unit
Max. diameter	180	mm
Width	5 - 20	mm

Data	Value	Unit
Diameter Felder Group	180	mm
Adjustment range (Art. no. 500-03-019)	8.0 - 15.0	mm
Extension (Art. no. 500-03-020)	15.5 - 19.5	mm

4.5 Dust extraction

- The machine has 2 separate extraction connections.
- Extract from both of the extraction connections (aggregate and saw guard) with a single extraction hose (ø 120 mm). ➦ *Chapter 7.4 'Dust extraction' on page 46*

Saw aggregate extraction

Data	Value	Unit
Connection diameter	100	mm
Min. air speed	20	m/s
Min. vacuum	1250	Pa
Min. volume flow (at 20 m/s)	565	m^3/h

Saw guard extraction

Data	Value	Unit
Extraction connection diameter	50	mm
Min. air speed	20	m/s
Min. vacuum	953	Pa
Min. volume flow (at 20 m/s)	141	m^3/h

4.6 Dust emission

The working areas of this machine are considered dust-minimised according to DGUV Information 209-044. The maximum concentration level of 2 mg/m^3 of inhalable dust in the air will not be exceeded. The slight dimensional deviation of the connecting nozzles has no significant impact on the suction effect. This only applies if the conditions that are specified in the section "Extraction" are adhered to. ➦ *'Dust extraction'*, ➦ ''

4.7 Noise emissions

Basic standards and measurement methods

If the stated noise emission values are to be checked, then the measurements must be taken following the same procedure and in the same operating and installation conditions as described.
The measurements are carried out in accordance with the following standards:

Measurement conditions / additional information EN ISO 19085-5:2017, Annex E

ISO 7960:1995, Annex A

with ISO 11202:2010 for the emission sound pressure at accuracy class 3
Note: It was not possible to measure the sound level Lp(A) with accuracy class 2 because background noise could not be reduced.

and ISO 3746:2010 for the sound power at accuracy class 3
Note: It was not possible to measure the sound level Lw(A) with accuracy class 2 because background noise could not be reduced.

WARNING: The noise emission values stated are only valid, when the same operating and installation conditions apply.
Other operation and installation conditions, e.g. a different work process, can lead to higher noise emission values with the danger of underestimation.

WARNING: The noise emission values stated are not exposure level values.
Although there is a correlation between emission and exposure levels, the emission values can not be used to reliably determine whether increased safety measures are required.
Factors that influence the actual degree of exposure are the actual work process, the exposure time, the characteristics of the workplace and other neighbouring noise sources in the workshop.

Noise emission values

Specification of noise emission values in two-number form according to ISO 4871:1996

	Idle	Operation
A-weighted sound power level L_{WA} in dB	99	102
A-weighted emission sound pressure level L_{pA} in dB at workplace A	87	90
Uncertainty K_{WA} / K_{pA} in dB	4 / 4	

5 Machine overview

5.1 Overview

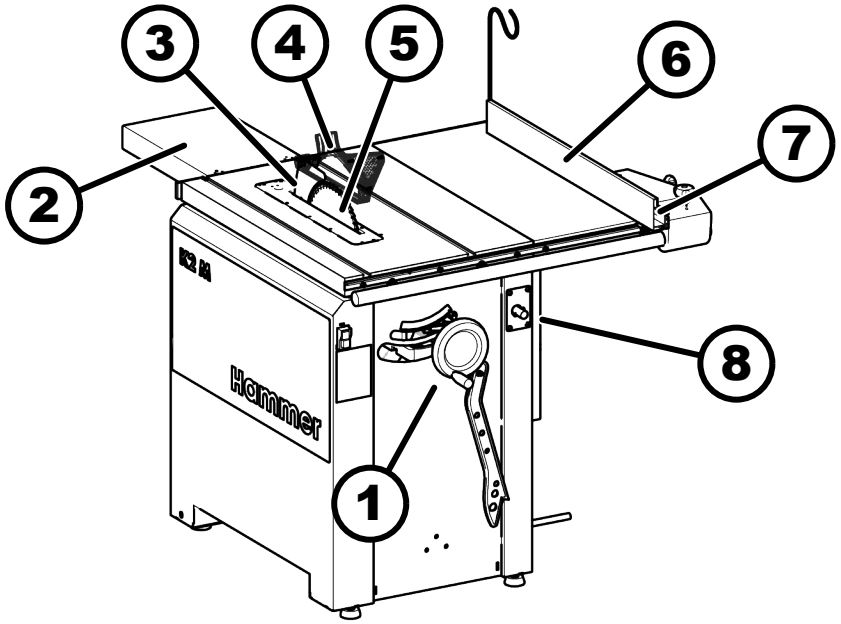

Fig. 4: Overview front side

1 Saw aggregate - height adjustment
2 Table extension
3 Riving knife
4 Saw guard
5 Saw blade
6 Fence plate
7 Rip fence
8 Saw aggregate - angle adjustment

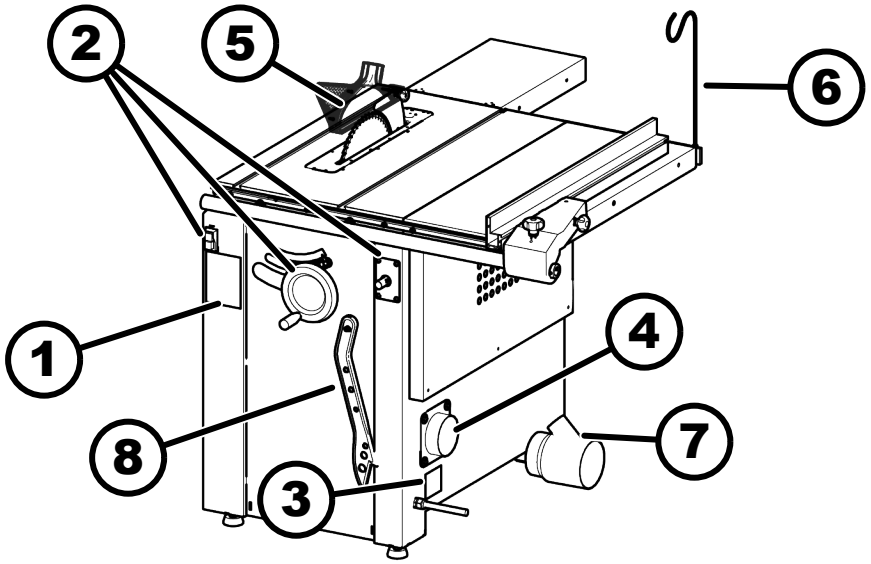

Fig. 5: Overview rear side

1 Pictogram - Operating elements
2 Saw aggregate operating elements
3 Data plate
4 Dust extraction connection (Ø 100 mm)
5 Dust extraction connection (Ø 50 mm)
6 Extraction hose holding spring
7 Extraction distributor accessories (Art. no. 500-07-211)
8 Push stick

5.2 Pictograms, signs and labels

All the pictograms, signs and labels affixed to the machine must be kept visible, readable and must not be removed.

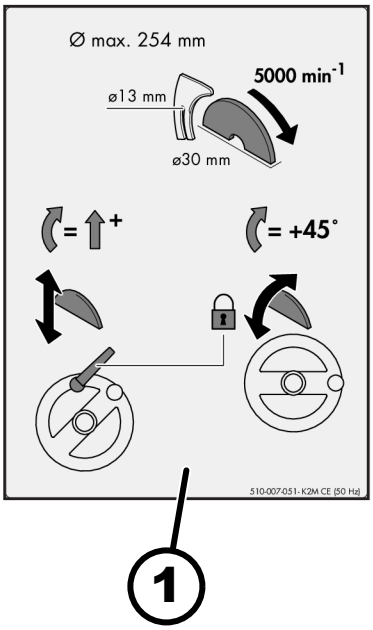

Fig. 6: Pictograms overview

1 Pictogram - Operating elements

5.3 Data plate

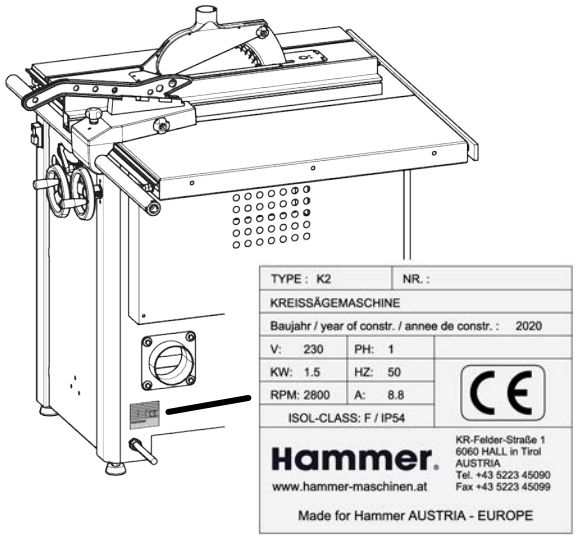

Fig. 7: Layout of the data plate

The data plate is mounted to the back of the machine.

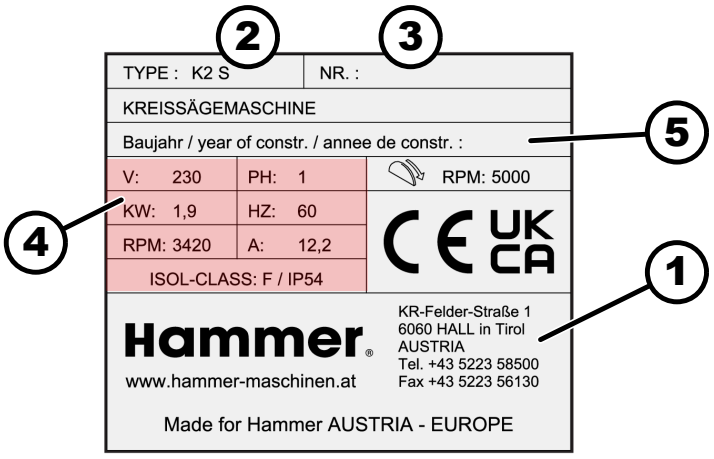

Fig. 8: Data plate

1 Manufacturer information
2 Model type
3 Serial number
4 Electrical connection
5 Year of construction

5.4 Accessories

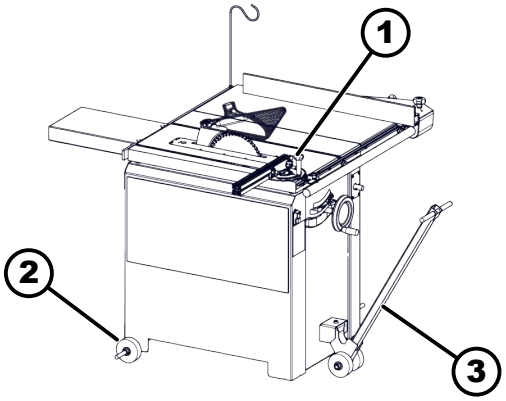

Fig. 9: Accessories overview

1 Mitre fence with mitre guide (Art.-no. 423-043)
2 Rolling carriage (Art no. 503-134)
3 Lifting bar (Art.-N+no. 500-149)

Note

For further accessories and dust extraction equipment see the tools and accessories catalogue / Online-shop: www.felder-group.com.

Mitre fence

- Mitre fence with precision mitre guide for table grooves.
- Thanks to the pins, a wide variety of polygons can be produced.

Rolling carriage

- The rolling carriage facilitates the task of positioning the machine.
- The lifting bar makes manoeuvring of the machine easy, even in the smallest of spaces.

5.5 Operation and display elements

5.5.1 Operating element saw aggregate and rip fence

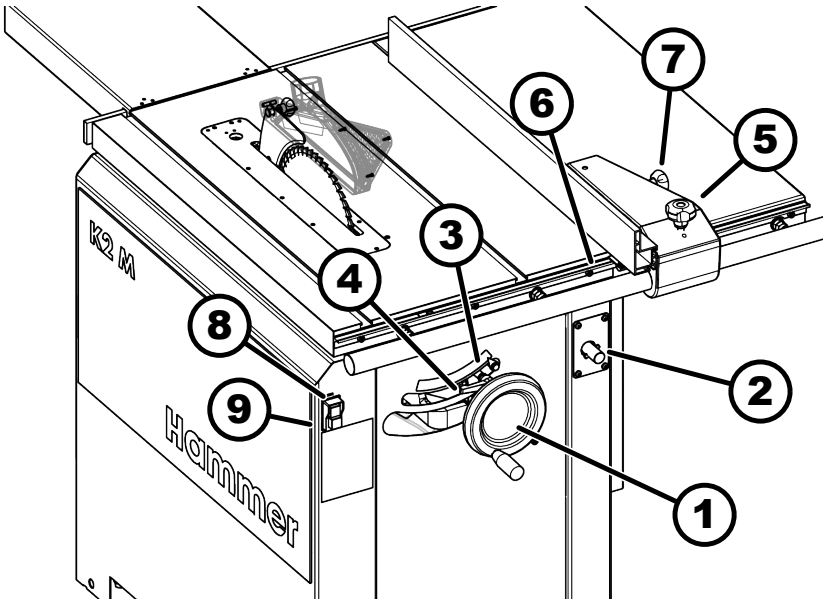

Fig. 10: Overview control elements

1 Saw aggregate - height adjustment
2 Saw aggregate - angle adjustment
3 Scale - Saw angle specification
4 Clamping lever - Angle adjustment
5 Rip fence clamping
6 Scale - Cutting width specification
7 Clamping fence plate
8 Green start button - Saw blade ON
9 Red stop button - Saw blade OFF

5.6 Safety devices

5.6.1 Safety switch

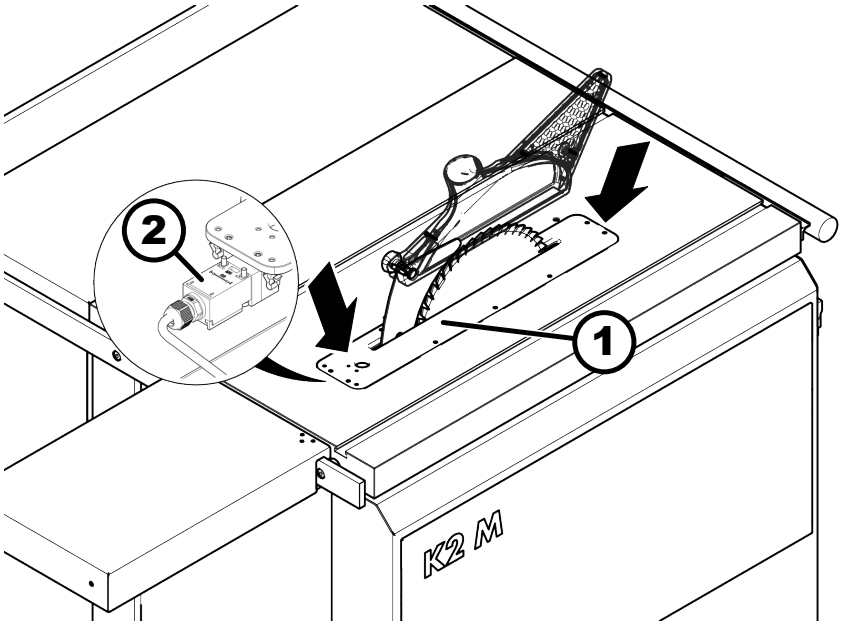

Fig. 11: Interlock switch - Insert board

1 Insert board
2 Safety switch

The machine is equipped with an interlock switch. The circular saw blade only runs when the limit switch inside the machine is actuated (insert board must be installed).

- Ensure that the insert board locks in place correctly on the right and the left side.

5.6.2 Saw guard

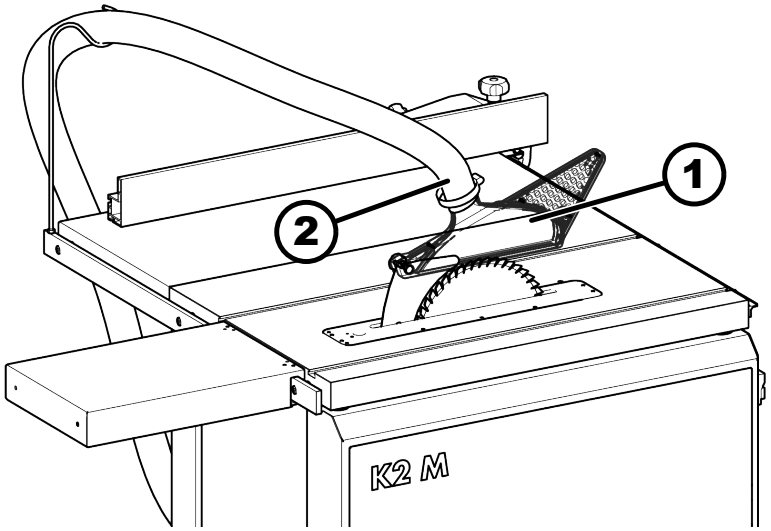

Fig. 12: Saw guard

1 Saw guard
2 Dust extraction connection (Ø 50 mm)

To prevent injuries when using the saw, the machine must be equipped with a protective hood which is positioned over the saw blade.

When using scoring saw blades, the additional scoring saw guard must be used.

- The saw guard has to be installed and adjusted correctly.
- Extraction must be connected to the saw guard.
- Extraction connection diameter = 50 mm.

6 Transporting, packing, storing

6.1 Transport inspection

1. Upon arrival, inspect the shipment to ensure that it is complete and has not suffered any damage.
2. If any transport damage is visible from the outside, do not accept the delivery or only accept it with reservation.
3. Record the scope of the damage on the transport documents/hauliers delivery note.
4. Initiate the complaint process.
5. Any defects that are not discovered upon delivery, must be reported immediately once they have been identified as damage claims are only valid if claimed within the valid complaint period.

6.2 Packaging

If no agreement has been made with the supplier to take back the packaging materials, help to protect the environment by reusing the materials or separating them according to type and size for recycling.

When using overseas transport the machine must be tightly packed and protected from corrosion. Use desiccant.

Environmental protection

Packaging materials are valuable raw materials and in many cases they can be used again, reprocessed or recycled.

ENVIRONMENT

Dispose of the packaging in an environmentally friendly manner

- Dispose of packaging materials in an environmentally friendly manner and in accordance with the applicable local disposal regulations.
- Contract a recycling company.

6.3 Storage

Keep items sealed in their packaging until they are assembled/installed and be sure to observe the stacking and storage symbols on the outside of the packaging.

Storage conditions

- Do not store outdoors.
- Store in a dry and dust-free environment. Use desiccant if necessary.
- Pay attention to the storage conditions. ➥ *Chapter 4.2 'Operation and storage conditions' on page 20*
- Protect from direct sunlight.
- Avoid mechanical vibration.
- Avoid extreme temperature fluctuations (condensation build-up).
- Apply a coat of oil to all exposed machine parts (corrosion protection).
- Regularly check the general condition of all parts and the packaging during longer storage (> 3 months). If necessary, refresh or re-apply the coat of anti-corrosive agent.

6.4 Transport bracket

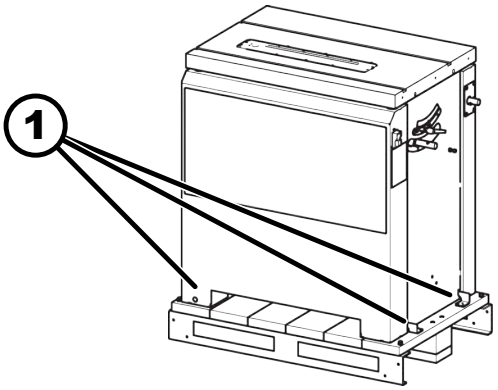

Fig. 13: Remove the transport bracket

1 Transport bracket

The machine is delivered partially assembled on a pallet.

The machine is attached to the pallet with several transport brackets. Only remove the transport bracket when the machine is to be lifted from the pallet.

6.5 Information relating to transportation and unloading

NOTICE

Material damage

Damage and possible complete write-off of the machine.

- Only lift the machine using the positions marked.
- Do not lift the machine using the machine table or by using the hand grips.
- Only transport the machine using a forklift or a pallet truck.

Remove machine attachments

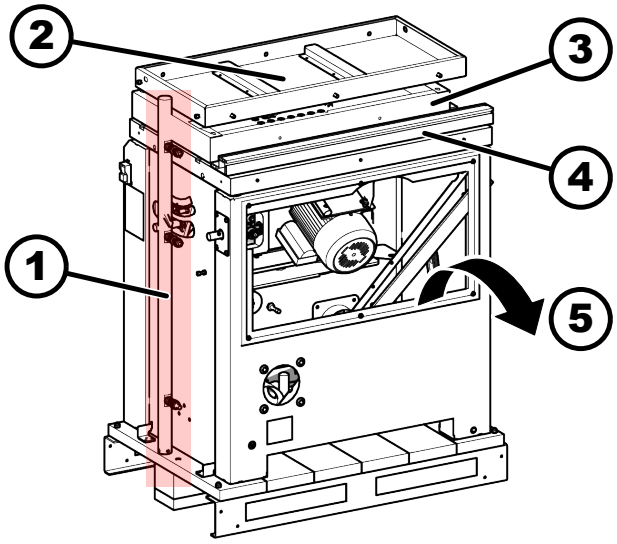

Fig. 14: Remove attachments

1 Fence support bar
2 Table extension
3 Back cover
4 Fence plate
5 Additional attachments and accessories

Remove all of the machine attachments from the machine and pallet before assembly.

1. Remove the fence support bar and table extension.
2. Remove the back cover and fence plate.

3. Remove all of the rest of the accessories and other machine components from the inside of the machine.

Prepare to offload and setup the machine

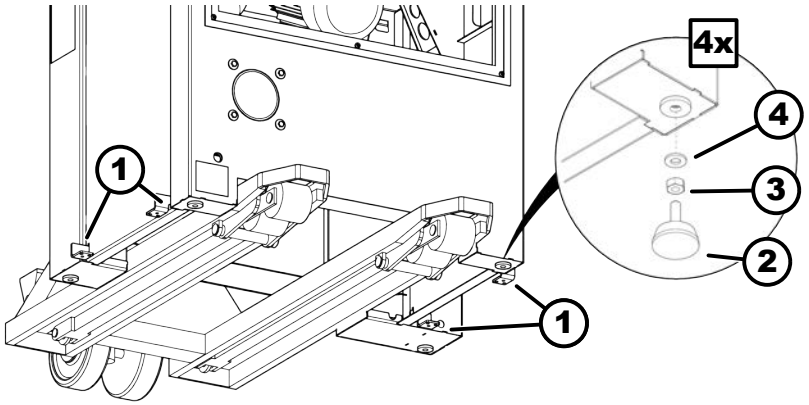

Fig. 15: Preparation for transporting with a pallet truck

1 Transport bracket
2 Adjusting screw
3 Lock nut
4 Serrated washers

⚠ WARNING

Tipping over of the machine

Serious injury due to the high machine weight.

- Consider the machine weight and centre of gravity of the machine.
- Ensure that several additional assistants are on hand.

Personnel:

- Additional support assistants

Tool:

- Ring spanner 17 mm

1. Remove all transport brackets from the machine.
2. Prepare the adjustment screws for installation (4x):
   - Open the nut for the adjustment screw fully.
   - Thread on the serrated washers.
3. Carefully tilt the machine forward and keep it kipped.
4. Mount the adjustment screw from below on the rear side of the machine.
   1. Screw in the adjusting screws with lock nuts and washers by hand as far as they will go.
   2. Secure the adjustable feet with locking nuts.
5. Tilt the machine the other way.
6. Tighten the adjusting screws with lock nuts and washers at the front side of the machine.

6.6 Means of transportation

6.6.1 Unloading with a pallet truck

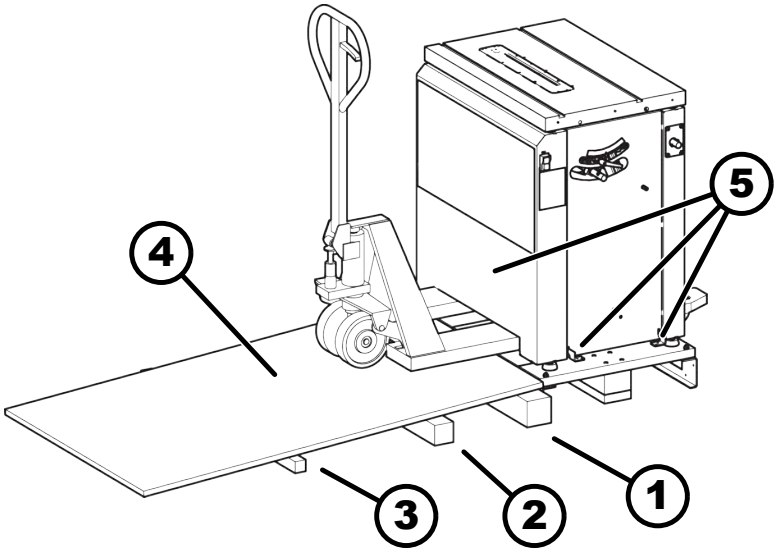

Fig. 16: Unloading with a pallet truck

1 Squared timber 90 x 90 mm
2 Squared timber 70 x 70 mm
3 Squared timber 40 x 40 mm
4 Panel 1500x900x20 mm
5 Transport bracket

⚠ WARNING

Tipping over of the machine

Serious injury due to the high machine weight.

- Consider the machine weight and centre of gravity of the machine.
- Ensure that several additional assistants are on hand.

Personnel:

- Additional support assistants

Material:

- Solid construction timber (squared timber)
- Multi-layer glued wood panel (Multiplex)

Use a ramp as shown in the illustration for unloading from the pallet.

Use stable solid construction timber (squared timber) and a multi-layer glued laminated timber panel (multiplex panel) that is resistant to compression and bending.

1. Remove all transport brackets from the machine.
2. Prepare to transport the machine with a pallet truck or fork-lift truck.
   ➥ *Chapter 6.5 'Information relating to transportation and unloading' on page 30*, ➥ *'Prepare to offload and setup the machine' on page 31*
3. Screw the ramp panel on to the squared timber.
4. Attach the ramp to the machine pallet and ensure that it cannot slip.
5. Push the forks under the recess in the machine frame.
6. Unload the machine from the pallet with the pallet truck.

6.6.2 Transporting with a forklift

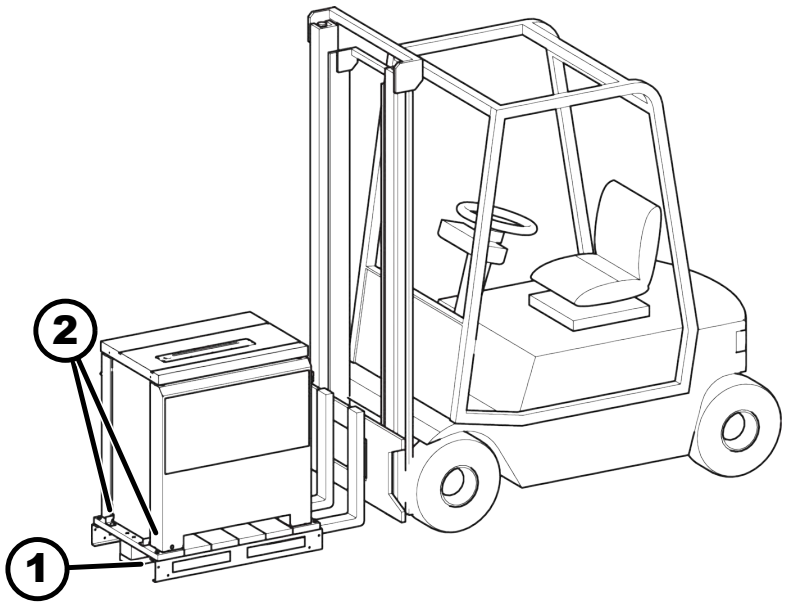

Fig. 17: Transport with a forklift truck

1 Recesses in the pallet
2 Do not remove the transport brackets

⚠ WARNING

Tipping over of the machine

Serious injury due to the high machine weight.

- Consider the centre of gravity of the machine.
- Depending on the equipment, two or three additional helpers are required when unloading.
- Lifting material (straps, chains and fork lifts) must be positioned as far apart away from the centre of gravity as possible.

Personnel:

- Forklift driver:in

1. Only remove the transport bracket when the machine is to be lifted from the pallet.
2. Move the forks of the forklift truck so they fit into the machine frame or pallet recesses.

6.6.3 Transport with a rolling carriage

Note

The rolling carriage and the lifting bar (option) facilitate the task of transporting the machine.

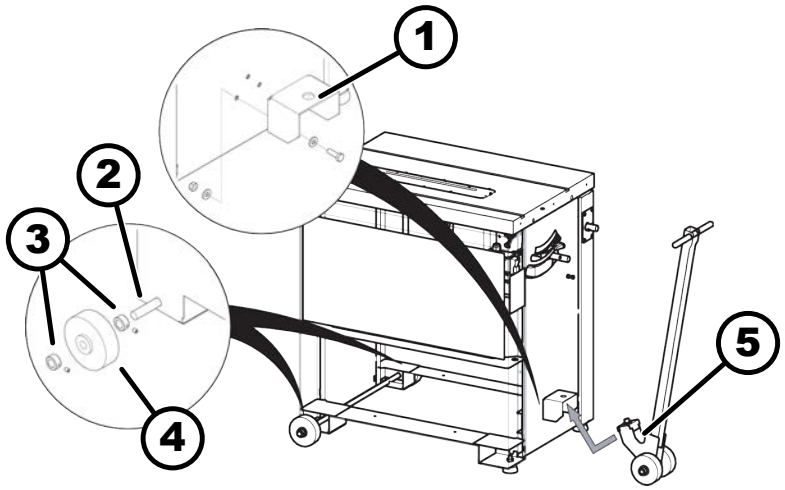

Fig. 18: Unloading with rolling carriage

1 Lifting bar resting plate
2 Wheel axle
3 Set collars
4 Wheel
5 Lifting bar

The rolling carriage can be attached with ease to the machine.

1. Screw on the lifting bar resting plate with M8x25 screws, washers and nuts to the front side of the machine.
2. Slide the wheel axle through the machine chassis.
3. Position the set collars and wheels on the wheel axle.
4. Clamp the set collars using the grub screws.
   ➡ The wheels must be able to rotate easily.
5. Tilt the lifting drawbar and hook it in to the lifting bar resting plate.

7 Setup and installation

7.1 Floor space requirement

For operation and maintenance, setup the machine at least 500 mm away from a wall, parallel to the processing direction (dimension X).

There must be enough space for the processing of workpieces (Y dimension).

Maintain a clearance of at least 2000 mm around the machine for operation and maintenance.

When installing the machine, ensure that there is sufficient space for the operators, also taking into account the necessary space for moving the workpieces (loading, processing, stacking).

The machine may only be used in dry rooms, free from frost and not outside in the open.

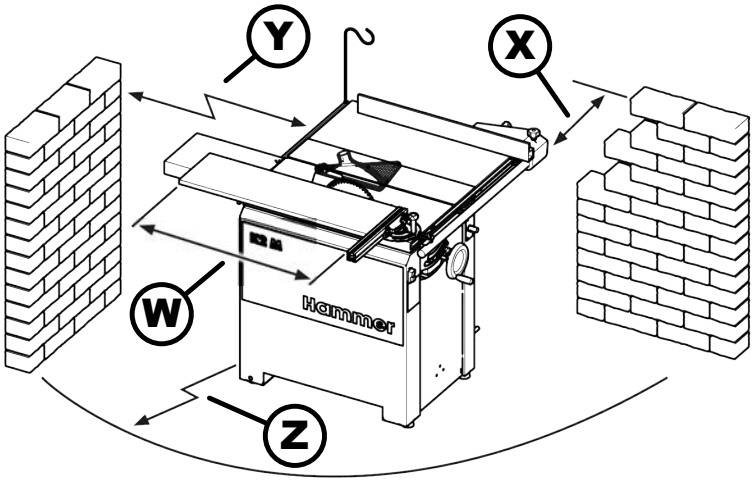

Fig. 19: Space requirement K2 M

W Workpiece length
X Distance from the wall
Y Workpiece length + 500 mm
Z Free space for operation

7.2 Setup and aligning the machine (levelling)

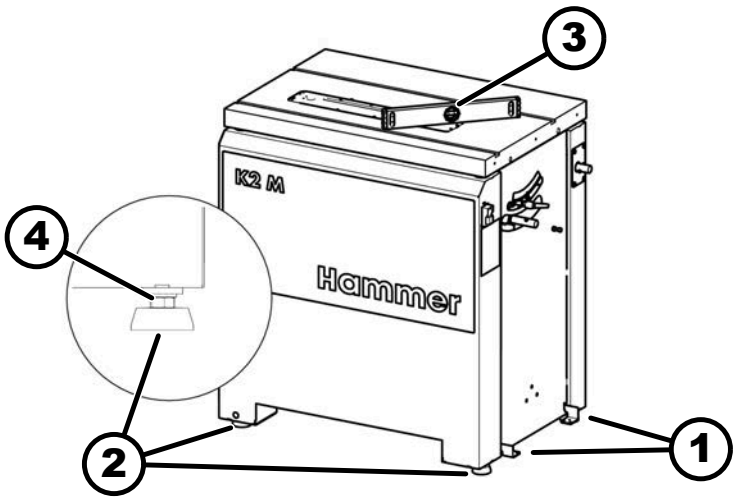

Fig. 20: Align the machine

1 Transport bracket
2 Adjusting screws
3 Spirit level
4 Lock nut

Tool:

- Spirit level
- Ring spanner 17 mm

To ensure precise operation and smooth running of the machine, align it at the installation site using a spirit level.

1. Compensate for uneven floors with the adjusting screws.
    1. Loosen locking nut.
    2. Turn the adjustment screw.
    3. Tighten locking nut.
2. If necessary, bolt the machine to the floor with transport brackets.
3. Remove anti-corrosion agent from all exposed machine parts.

7.3 Install

7.3.1 Saw aggregate transport safety locks and extraction

Remove the saw aggregate transport brackets

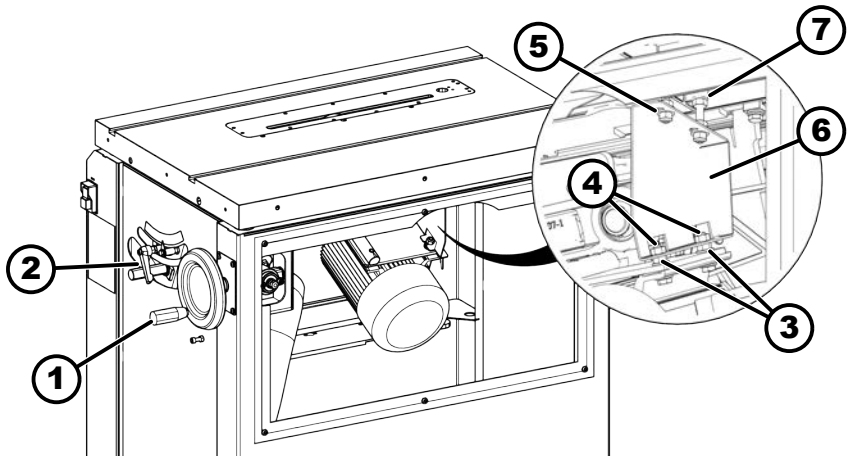

Fig. 21: Remove aggregate transport bracket

1 Hand wheel angle adjustment
2 Clamping lever cutting angle adjustment
3 Rocker motor nut
4 Lock nuts
5 Washers and nuts transport bolts (2x)
6 Transport bracket
7 Locking nuts / transport bolts

Tool:

- Ring spanner 13 mm

The saw aggregate is secured for transport to avoid misalignment.

This transport bracket must be removed before moving the saw unit.

Keep all of the parts for any future transportation of the machine.

1. Hold the nuts on the motor rocker (lower) and loosen the lock nuts.
2. Release the nuts on the transport bolts (upper) and remove them together with the washers.
3. Push the hand wheel onto the shaft of the angle adjustment.
4. Release the cutting angle adjustment clamping lever.
5. Tilt the saw unit towards 45°.
6. Remove transport bracket, lock nuts and upper washers.
7. Loosen the transport bolt lock nuts.
8. Remove the transport bolts.
9. Remove the sticker that is located on the front of the machine.
    ➡ The saw unit can now be adjusted.

Mount the saw aggregate extraction connection

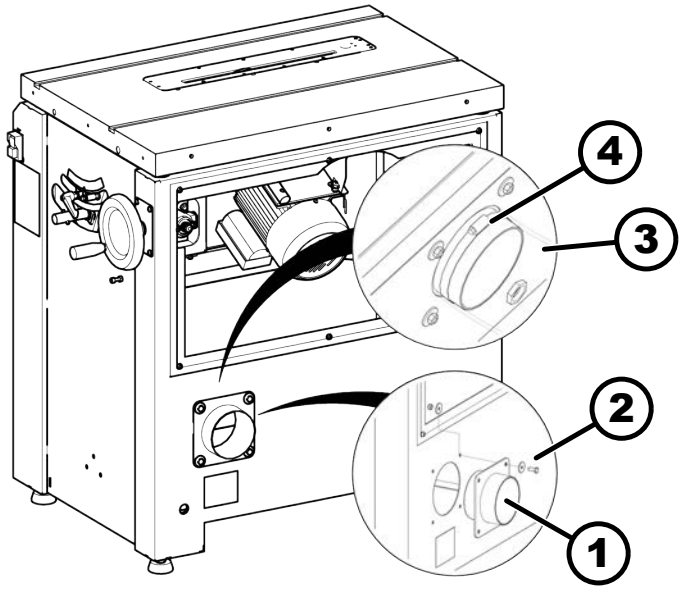

Fig. 22: Mount the extraction connection

1 Extraction connection
2 Screws M8 x 16 (4x)
3 Saw aggregate extraction pipe
4 D90-110 hose clamp

Tool:

- Ring spanner 10 mm
- Socket wrench 7 mm

1. Position the extraction connection on the machine chassis from the outside using M8x16 screws and washers.
2. Attach the extraction connections from the inside with washers and nuts.
3. Attach the saw unit extraction hose to the extraction connection in the machine interior using a hose clamp.

➡ The machine can now be connected to the dust extractor.

7.3.2 Mounting the scale track

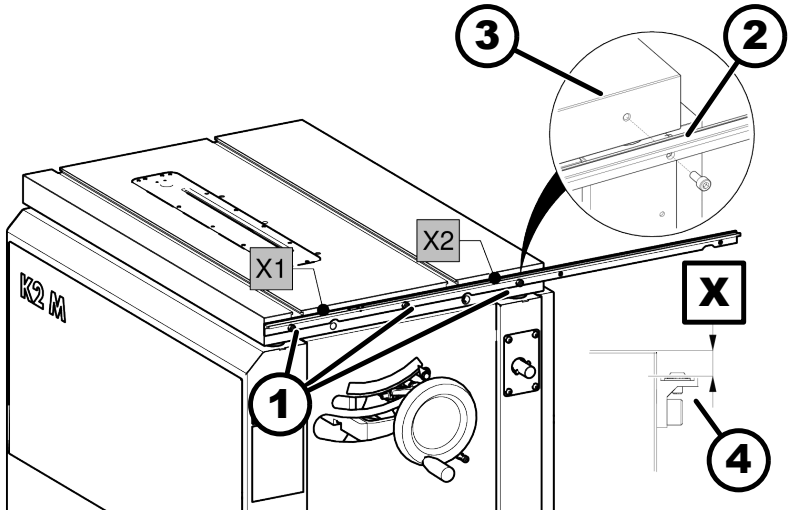

Fig. 23: Mounting the scale track

1 Scale track screws (3x)
2 Scale track
3 Machine table
4 Take note of the assembling position
X Distance scale track to the table level

Tool:

- Hex key 5 mm
- Callipers

1. Position the scale track on the machine table.
   Note the installation position: The scale must be mounted rising from left to right.
2. Screw the M6 x14 socket head cap screws into the machine table slightly.
3. Adjust the distance to the table level exactly: X1 = X2 = 10.0 mm.
4. Tighten allen screws securely.

7.3.3 Mounting the fence support bar

Mount the fence support bar to the machine table

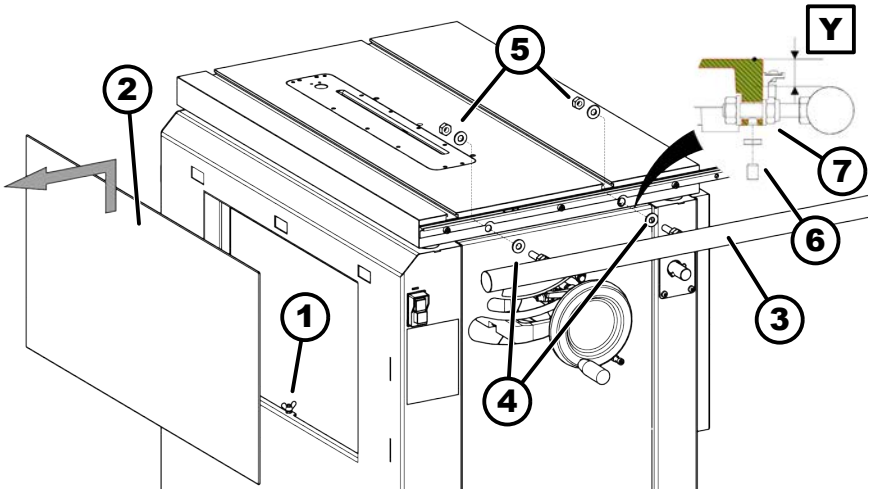

Fig. 24: Mounting the fence support bar

1 Wing nut
2 Cover plate
3 Fence support bar
4 Washers
5 Locking nuts and washers
6 Adjustment screw and locking nut
7 Safety hexagon nut
Y Distance fence support bar to the table level

Tool:

- Callipers
- Bracket

The rear safety hexagon nuts are preset and must not be adjusted.

These nuts define the angle between the rip fence and the circular saw blade (free cut).

1. Remove the cover plate from the front side:
   1. Loosen the wing nut inside the machine.
      The wing nut can be reached from the rear side of the machine.
   2. Pull the cover upwards and remove it from the front.
2. Remove the lock nuts and serrated washers from the threaded pins.
3. Position bar on machine table using the threaded screws.
4. Loosely secure the bar with washers and locking nuts on the rear side of the machine.
5. Adjust the distance to the table level exactly.
   ➡ Check Y1 = 20.0 mm with calipers and stop angle.

Check distance from fence support bar to machine table

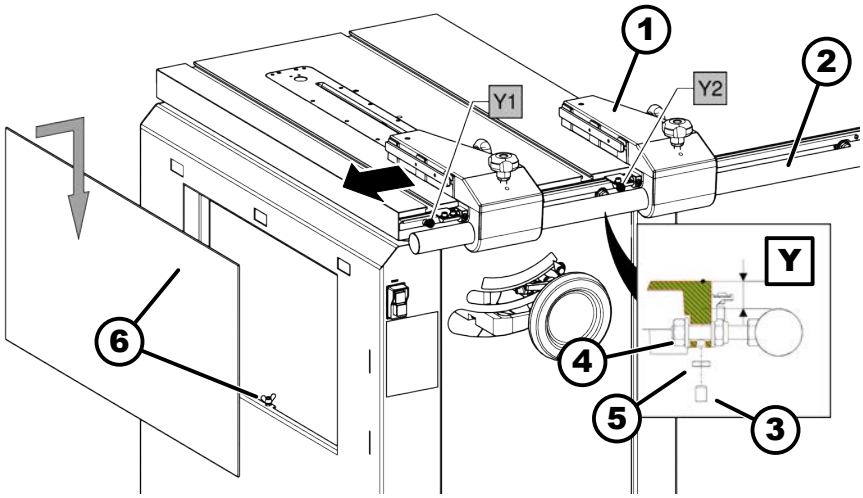

Fig. 25: Fence support bar - Check

1 Rip fence
2 Fence support bar
3 Adjusting screw
4 Locking nut (fence support bar)
5 Locking nut (adjustment screw)
6 Cover plate / Wing nut
Y Distance fence support bar to the table level

Tool:

- Callipers
- Bracket
- Hex key 4 mm
- Ring spanner 13 mm
- Ring spanner 17 mm

1. Push the rip fence onto the bar from behind.
2. Adjusting the distance at the front of the bar to the table:
   1. Move the rip fence to the front.
   2. Adjust the distance to the table level exactly using the adjusting screw.
      ➡ Y1 = 20.0 mm.
   3. Lightly tighten the front locking nut.
3. Adjusting the distance at the rear of the bar to the table:
   1. Move the rip fence back.
   2. Adjust the distance to the table level exactly using the adjusting screw.
      ➡ Y2 = 20.0 mm.
   3. Lightly tighten the rear locking nut.
4. Check the setting in several positions and readjust if necessary.
   ➡ Distance to the table level Y1 = Y2 = 20.0 mm.
5. Tighten both of the locking nuts tightly.
6. Mount the cover plate on the front side:
   1. Hang the cover plate from the top down on the chassis.
      ➡ The cover plate must be in contact with the machine chassis on all sides.
   2. Tighten the wing nut inside the machine.
      The wing nut can be reached from the rear side of the machine.

7.3.4 Mount table extension

Mounting table extension variant 610 (standard)

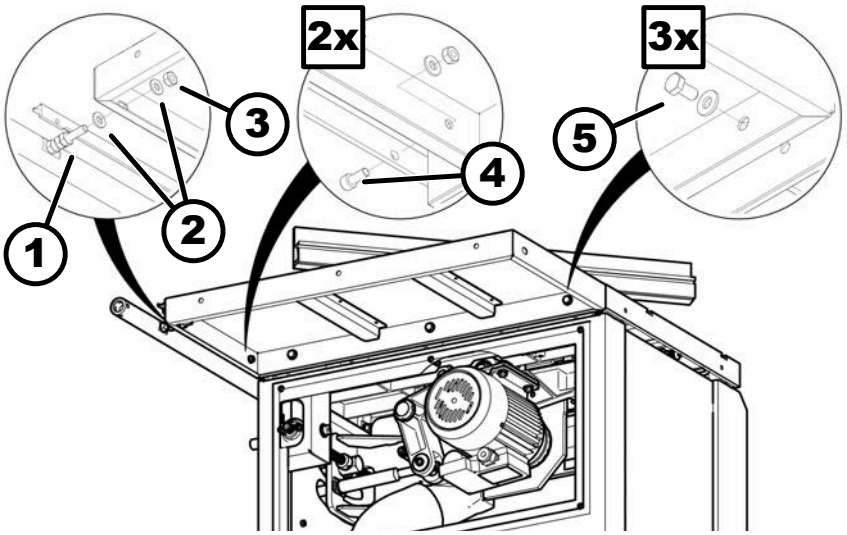

Fig. 26: Mounting table extension - variant 610

1 Grub screws fence support bar
2 Washers
3 Lock nut
4 Scale track screw M6x14 (2x)
5 Screws / washers M8x16 (3x)

Tool:

- Hex key 5 mm
- Ring spanner 10 mm
- Ring spanner 17 mm

The 610 table extension is mounted to the rear side of the machine.

1. Remove the lock nuts and serrated washers from the grub screw of the fence support bar.
2. Position a washer on the grub screws (fence support bar).
3. Position the table extension on the grub screws (fence support bar) and on the machine table.
4. Loosely tighten the table extension on to the machine table using M8x16 screws and washers (3x).
5. Adjust the vertical position of the table extension:
   1. Place the fence plate on the machine table.
   2. Slide the table extension upwards to the fence plate.
   3. Tighten the screws.

   ➡ The upper edge of the table extension must be at the same level as the machine table.
6. Screw the table extension to the grub screws of the fence support bar using the washers and nuts.
7. Screw the scale track to the table extension using the screws, washers and nuts (2x).

Mount the cover plate at the rear

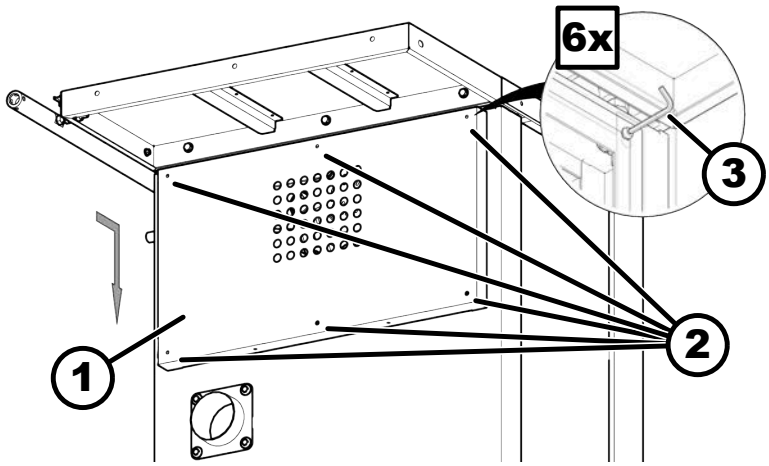

Fig. 27: Mount the cover plate

1 Cover plate
2 Hex screws M6 x 30
3 Hex key 4 mm

Tool:

- Hex key 4 mm

1. Release the hex screws (6x).
2. Place the cover plate in position and hang it on the screws.
   ➡ The cover plate must be in contact with the machine chassis on all sides.
3. Tighten the hex screws (6x).

7.3.5 Mount 1220 table extension (Option)

Mounting the 1220 variant fence support bar

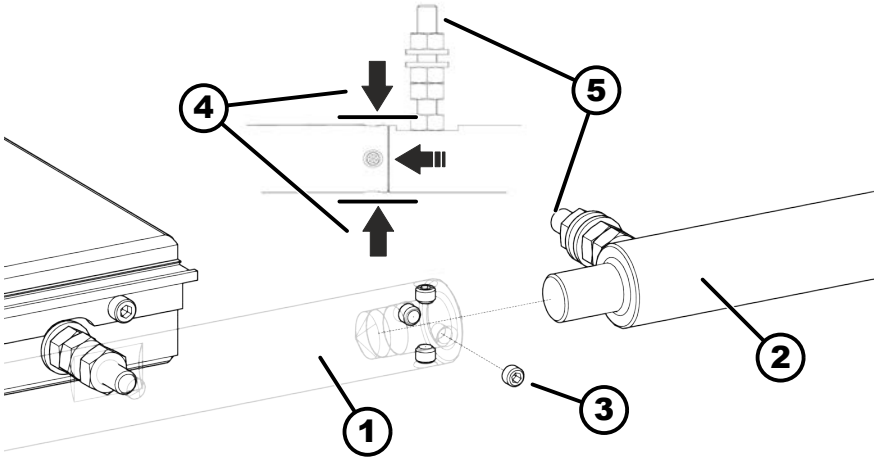

Fig. 28: Mount the 1220 extension bar

1 Fence support bar
2 Extension bar
3 Clamping screws (M8x6)
4 Extension bar central
5 Grub screws horizontally downwards

Personnel:

- Additional assistant

Tool:

- Hex key 4 mm

An additional helper is required for problem-free installation.

1. Slide the 1220 extension bar into the already mounted support bar until it reaches the stop.

2. Rotate the 1220 extension bar until the grub screws face horizontally downwards.
3. Screw the clamping screws M8x6 into the fence support bar (4x).
4. Adjust the clamping screws in such a way, that the 1220 extension bar is positioned centrally to the already mounted support bar.
5. Tighten all of the clamping screws.
6. Hold the extension bar in position at the end by the assistant.
   ➡ Screw the extension bar to the table extension 1220.

Mounting table extension variant 1220

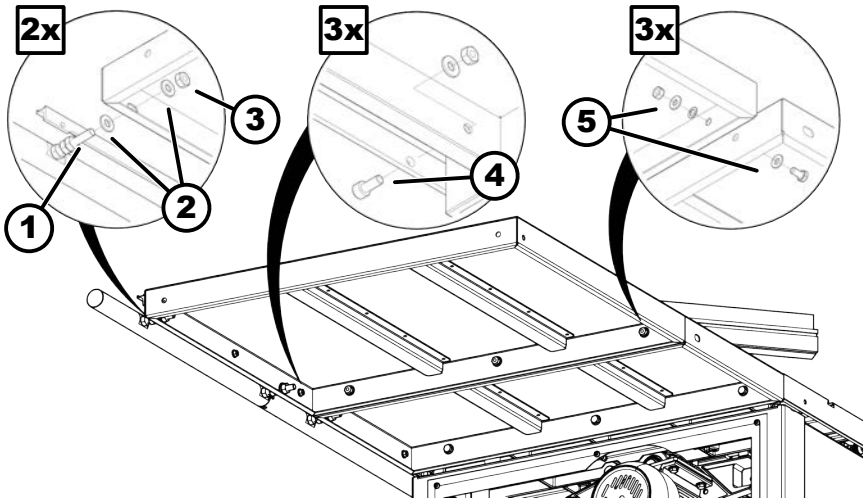

Fig. 29: Mounting table extension - variant 1220

1 Grub screws fence support bar
2 Washers
3 Lock nut
4 Scale track screw M6x14 (2x)
5 Screws / washers M8x16 (3x)

Personnel:

- Additional assistant

Tool:

- Hex key 5 mm
- Ring spanner 10 mm
- Ring spanner 17 mm

The 1220 table extension is mounted to the rear side of the 610 table extension.

1. Remove the lock nuts and serrated washers from the grub screw of the fence support bar (2x).
2. Position a washer on the grub screws (fence support bar) (2x).
3. Position the table extension on the grub screws (fence support bar) and on the machine table.
4. Loosely tighten the table extension on to the machine table using M8x16 screws, washers and nuts on to the 610 table extension (3x).
5. Adjust the vertical position of the table extension:
   1. Place the fence plate on the machine table.
   2. Slide the table extension upwards to the fence plate.
   3. Tighten the screws.

   ➡ The upper edge of the table extension must be at the same level as the machine table.
6. Screw the table extension to the grub screws of the fence support bar using the washers and nuts (2x).
7. Screw the scale track to the table extension using the screws, washers and nuts (3x).
   ➡ Ensure that the two scale tracks are perfectly aligned at the transition.

8. Hold the table extension in position at the end by the assistant.
   ➡ Screw the table extension to the support feet.

Mounting the 1220 table extension variant support leg

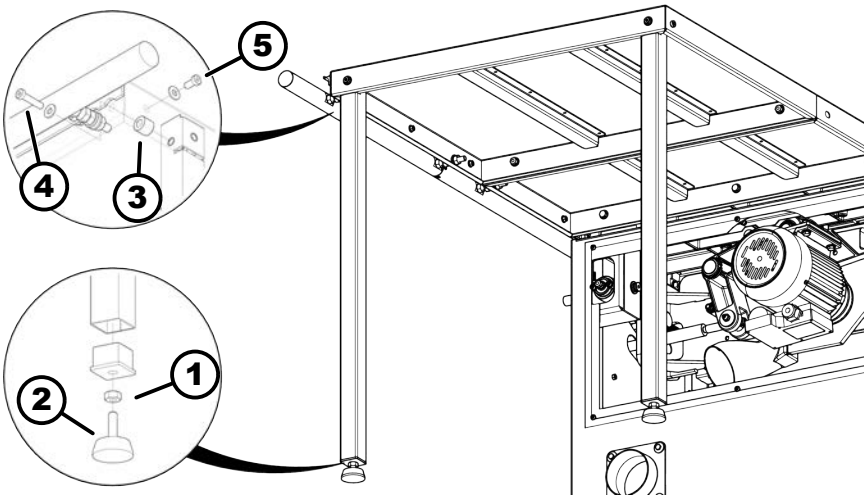

Fig. 30: Fitting the support foot

1 Lock nut
2 Adjusting screw
3 Spacer sleeve
4 M8X35 screw
5 M8X16 screw

Tool:

- Hex key 5 mm

The 1220 table extension is supported by two support legs at the rear to stop it from tipping.

1. Open the adjustment screws fully (2x).
2. Screw the adjustment screw fully into the support leg (2x).
3. Mount the left support leg to the side of the table extension using the M8x35 screws, washers and spacer sleeves.
4. Screw the table extension from the rear to the support leg using the M8x16 screws.
5. Mount the right hand support leg in the same manner (mirrored).

Replace scale and check evenness of table extension 1220

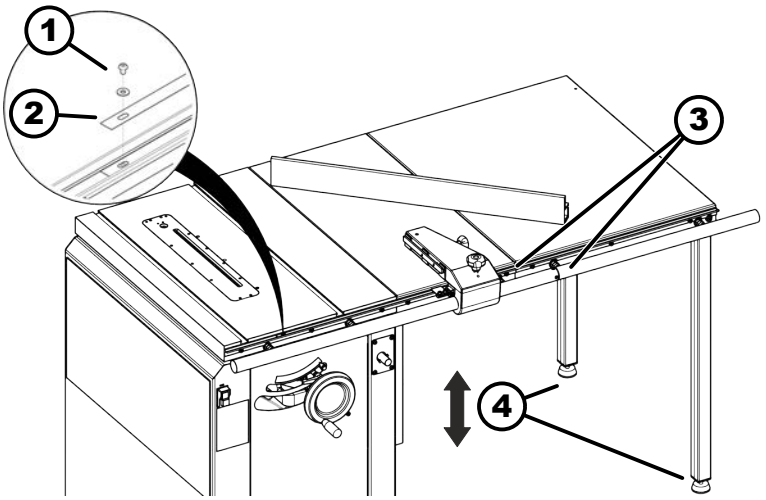

Fig. 31: Table extension 1220

1 Clamping screws / washers
2 1220 rip fence scale
3 Check the transition of the components
4 Adjustable screws / locking nuts

Tool:

- Allen key 2.5 mm
- Ring spanner 10 mm
- Ring spanner 17 mm

1. Loosen and remove the clamping screw and serrated washers.
2. Exchanging the scale:
   1. Pull the scale backwards out of the scale track.
   2. Slide the 1220 scale into the scale rail.
   3. Push the scale forwards until the slot with the labels "K2M" is centred over the hole.
3. Screw in using the clamping screws and washers.
4. Check the evenness of the table extension with the fence plate.

   OK — The upper edges of the two table extensions are level with the machine table.

   NOK — Adjust the vertical position of the table extension using the setscrews.

   → Loosen lock nut, turn adjustment screw, tighten lock nut.

7.3.6 Table extension

Mount the table extension coupling system to the machine table

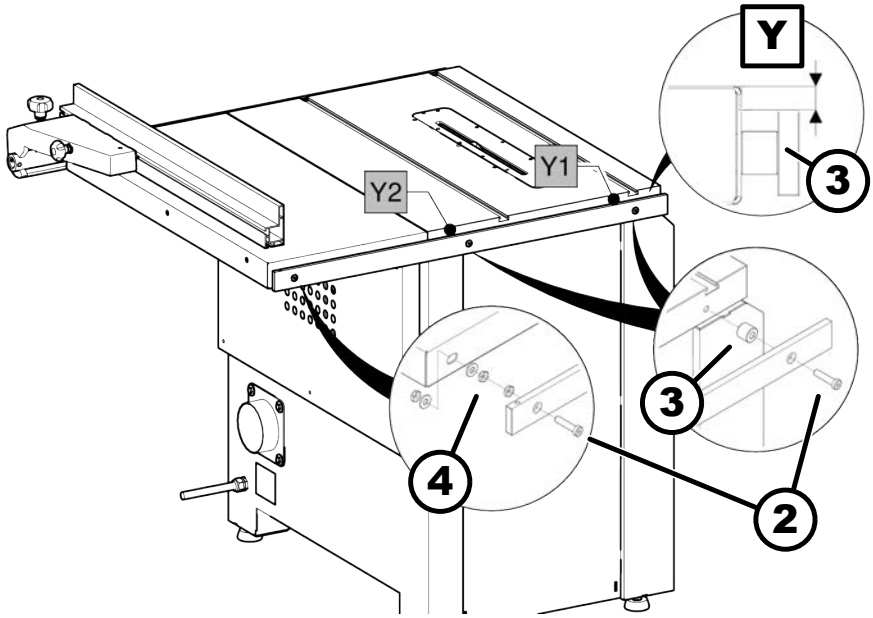

Fig. 32: Mount the coupling system

2 Screws (M8x35)
3 Spacer sleeve
3 Table rail
4 Nuts / washers
Y Distance rail to the table level

Tool:

- Callipers
- Soft-face hammer
- Hex key 5 mm
- Ring spanner 17 mm

1. Loosely tighten the table rail and spacer sleeves to the machine table using M8x35 screws.

2. Adjust the distance to the table level exactly.
   This setting has to be exact, check with the calliper gauge.
   1. Adjust the table rail with a soft-face hammer.
      ➡ Distance Y1 = distance Y2 = 11.0 mm.
   2. Tighten the screws.
3. Screw the table rail to the rear end of the table extension using the screws, washers and nuts.
4. Check the setting and readjust if necessary.

Attach the table extension to the coupling system and adjust

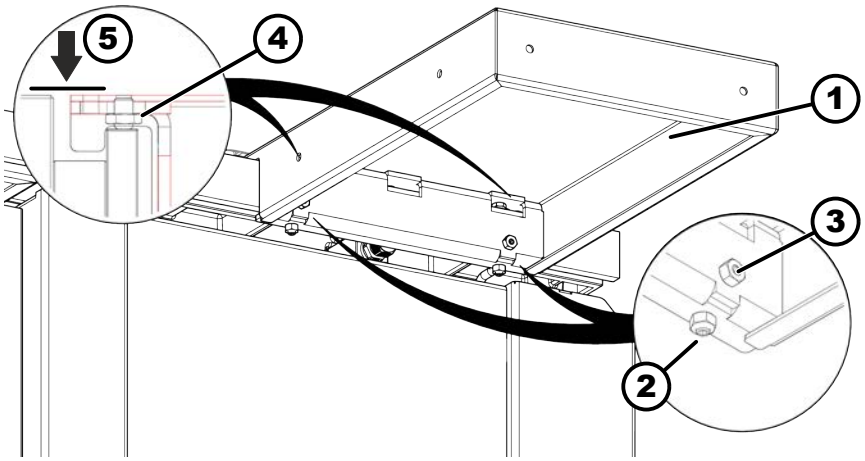

Fig. 33: Setting the table extension

1 Table extension
2 Clamping screws / locking nuts
3 Adjusting screws / lock nuts (angle adjustment)
4 Adjusting screws / lock nuts (height adjustment)
5 Check height and evenness

Tool:

- Hex key 3 mm
- Ring spanner 10 mm

1. Release the locking nuts and clamping nuts on the underneath.
2. Attach the table extension to the coupling system as shown in the illustration.
3. Check the height and angle setting of the table extension using the fence plate.

   OK The upper edge of the table extension is at the same height and level as the machine table.

   NOK Adjust the height and angle of the table extension using the adjustment screws.

   Loosen lock nut, turn adjustment screw, tighten lock nut.
4. Tighten the clamping screws underneath, tighten the locking nuts.
5. Check the setting when clamped and readjust if necessary.

7.3.7 Mount the holding spring for the extraction pipe guide

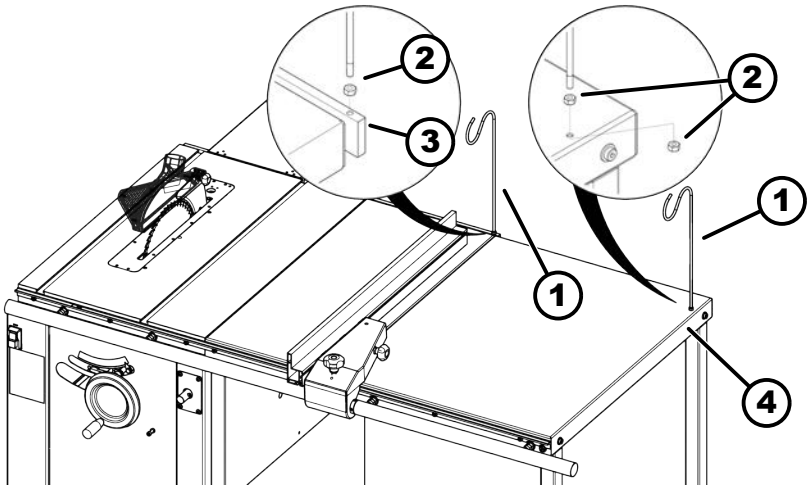

Fig. 34: Mount the extraction pipe holding spring

1 Extraction hose holding spring
2 Lock nut
3 Table rail
4 Table extension 1220

Tool:

- Ring spanner 10 mm

The holding spring acts as the extraction pipe guide.

The extraction hose is hung into the saw protective hood through the upper bend.

1. Unscrew the locking nut on the holding spring.

2. Table extension variant 610:

Screw in the holding spring at the end of the table rail.

3. Variant table extension 1220:

Insert the retaining spring into the table extension and screw on the lock nuts from below.

4. Align the retaining spring straight and tighten the lock nuts.

7.4 Dust extraction

Dust extraction system requirements

Every machine that uses an extraction system shall be extracted in accordance with EN 12779:2015 or EN 16770:2018.

- The extraction performance must be sufficient to achieve the negative pressure and air speed required at the connection point (see technical data or layout).
- Check extraction power before initial start-up and after significant changes (to the machine and / or extraction system).
- Before the machine is put into operation for the first time the dust extraction setup must be checked. Check for obvious defects on a daily basis and the efficiency on a monthly basis.
- Depending on the equipment, the dust extractor can be connected to the machine in such a way that it runs in unison with the machine (potential-free contact).
- On machines without extraction system control, switch on the extraction system before starting processing.
- The dust extraction hose must be electroconductive and grounded to prevent electrostatic build up.
- Only use flame-retardant extraction hoses.
- Use extraction with reduced dust emission to clean dust from the machine.

Connection to the extractor

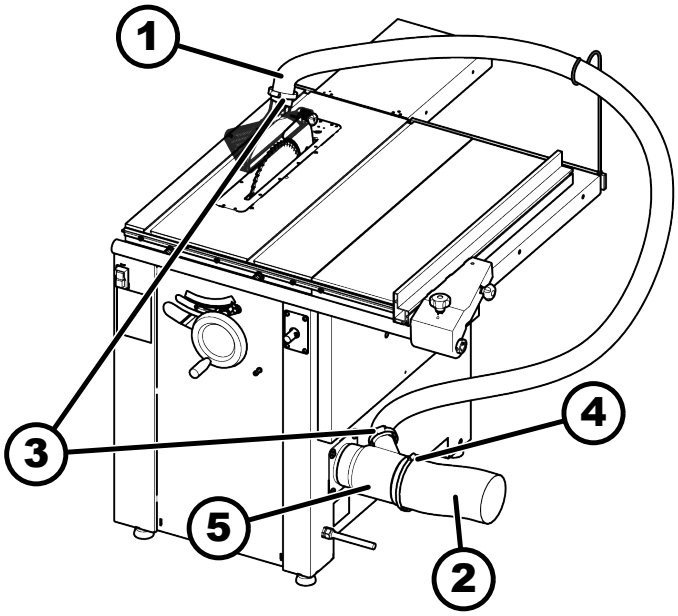

Fig. 35: Extraction connection

1 Circular saw guard Ø 50 mm
2 Total connection Ø 120 mm
3 D50-70 hose clamps
4 D120-140 hose clamp
5 Extraction distributor accessories (Art. no. 500-07-211)

CAUTION
Electrostatic charging

Burns or electric shock caused by unearthed, or poor quality extraction hose.

- Only use dust extraction hose approved by the manufacturer.
- Always ensure continuous electrostatic earthing when connecting machines.
- The dust extraction hose must be flame resistant and electroconductive. For this reason we recommend that you only use Felder Group dust extraction hose!

An extraction distributor is available as an accessory (Ø 100 mm + Ø 50 mm).

With this, both of the extraction connections (aggregate and saw guard) can be extracted using a single extraction hose (ø 120 mm).

1. Fix the extraction distributor to the extraction connections.
2. Attach the Ø 50 mm to the extraction distributor and to the saw guard using hose clamps.
3. Attach the Ø 120 mm to the extraction distributor with the hose clamps or quick connector.

7.5 Connect electrics

7.5.1 Safety instructions - Connect electrics

NOTICE

Electric current

Damage due to incorrect power supply.

- The electrical connection of the machine must be carried out by a licensed electrician on the day of installation.
- Before connecting the machine to the power supply, compare the information on the nameplate with that of the power supply. Only connect the machine if the two sets of data correspond to each other.
- It is forbidden to open or to tamper with the electrical box on the machine without the express authorisation from Felder-Group service centre. Violating this stipulation will invalidate any guarantee claims.

Electrical connection requirements:

- The machine must be earthed with electrical conductors.
- Pay attention to the technical data relating to the electrical components of the machine.
- The on-site electric cabinet must be fitted with a circuit breaker (DIN VDE 0641).

  There must be a separate switch contact for each live phase.
- The unit must only be used in TN-Systems (neutral connected to earth).
- For permissible voltage fluctuation, fuse protection and connection cable, see wiring diagram.
- The power supply cable must be protected against damage (e.g. armoured conduit).
- The power supply cable must be laid in such a way so that is does not bend or chafe and that there is no risk of tripping over it.
- The power cable should be inspected regularly for signs of damage or ageing. The machine must not be used if the power cable is not in perfect condition.
- Only connect the power plug once the machine is positioned in its operating location. Connect to CEE outlet (e.g. wall outlet).

7.5.2 Connect the machine plug

Machine power supply cable

DANGER

High electrical voltage in the connection cable

Serious injury or death when touching live cables.

- Changes to the connection cable can only be carried out by a trained electrician.

Configuration variant 50 Hz: The machine power cable is equipped with a European CEE plug.

Configuration variant 60 Hz: The machine power cable does not have a plug attached.

The customer is responsible for fitting the machine's power cable with a suitable plug in accordance with country specific regulations.

Check the rotation direction of the saw arbour

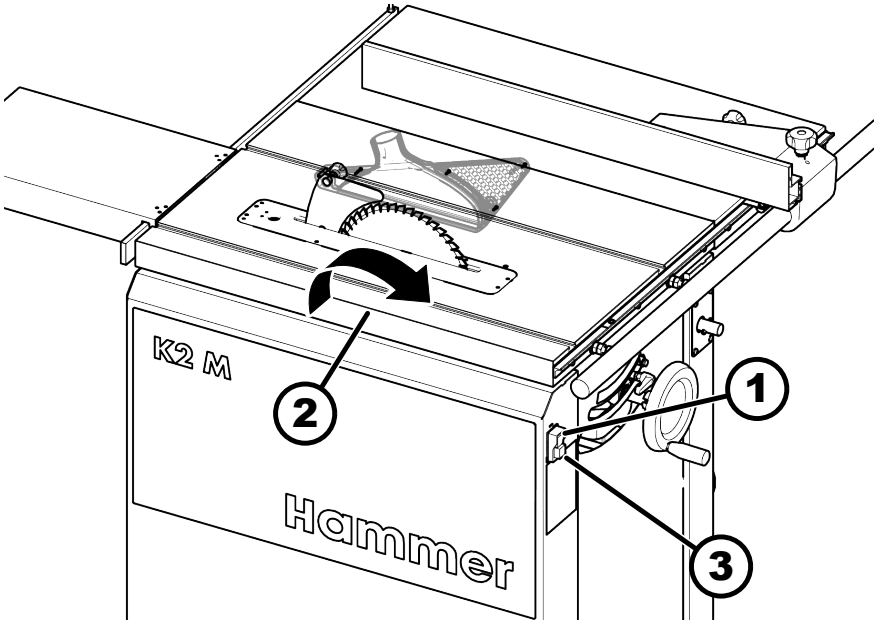

Fig. 36: Motor rotation direction

1 Green start button - Saw blade ON
2 Rotation direction of the saw arbour
3 Red stop button - Saw blade OFF

The correct rotation direction of the machine is set at the factory.

Should a change in the direction be necessary, then immediately contact a Felder-Group service centre.

1. Connect the plug to the power supply.
2. Press the green *[Start]* button on the control panel and release.
3. Let the machine run briefly.
4. Press the red *[stop]* button.
5. As the motor is slowing down, check the rotational direction of the saw arbour.

   OK The rotation direction of the saw arbour is in the opposite direction to the processing direction of the workpiece.

   NOK The rotation direction of the saw arbour is in the same direction to the processing direction of the workpiece.

   → Contact Felder-Group service centre.
6. Disconnect the machine from the main power supply.

8 Adjustments and tool changes

8.1 Rip fence

8.1.1 Position the rip fence

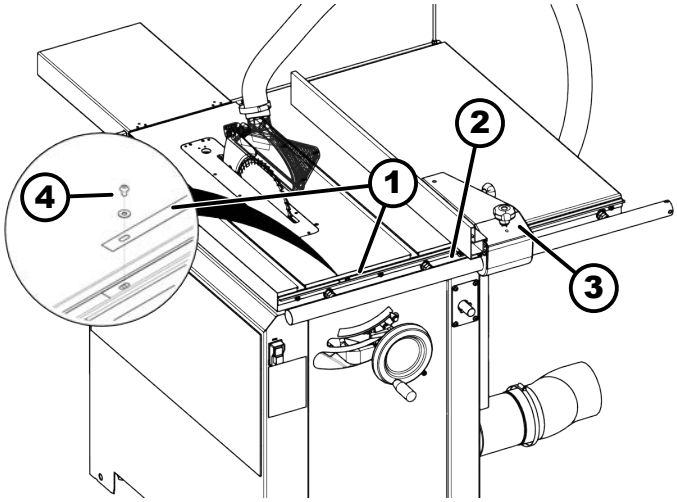

Fig. 37: Position the rip fence

1 Scale
2 Indicator
3 Thumb screw (clamping of the rip fence)
4 Clamping screws

1. Switch off the machine.
2. Loosen the thumb screw.
3. Read the measurement set using the scale.
   ➡ Read the measurement from the front edge of the indicator.
4. Adapting the scale to different saw blade thicknesses:
   1. Loosen the clamping screw.
   2. Move the scale by the missing dimension.
   3. Tighten the clamping screw.
5. Tighten the thumb screw.

8.1.2 Convert fence plate to narrow fence edge

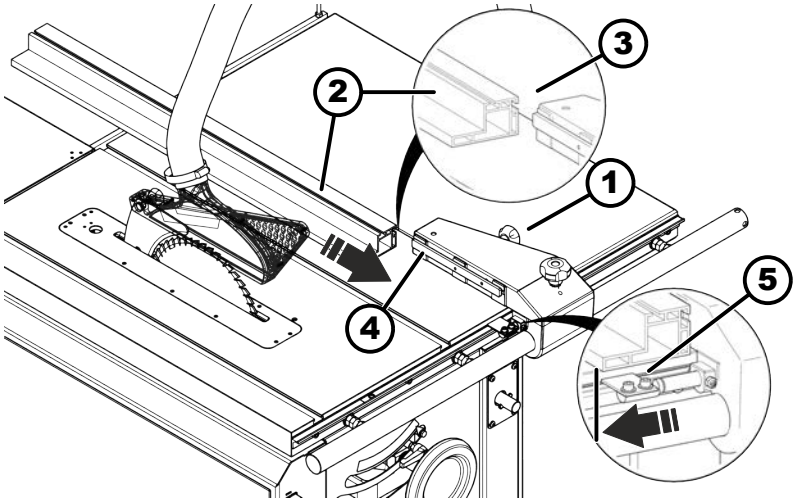

Fig. 38: Mount the guide in a flat position

1 Thumb screw (clamping fence plate)
2 Fence plate
3 Groove
4 Clamping rail
5 Scale indicator

To cut narrow workpieces, convert the fence plate to the narrow fence edge.

If the fence plate is installed horizontally, the distance to the saw blade changes. By moving the scale indicator, the change in the cutting width can be corrected.

1. Loosen the thumb screw.
2. Pull the fence plate out to the rear.
3. Turn the fence plate (lay it flat on the table) and thread it onto the clamping rail with the corresponding groove.
4. Tighten the thumb screw.
5. Slide the scale indicator in the direction of the saw blade until it reaches the locking point.
   ➡ Read off the corrected dimension at the front edge of the scale pointer.

8.1.3 Remove rip fence

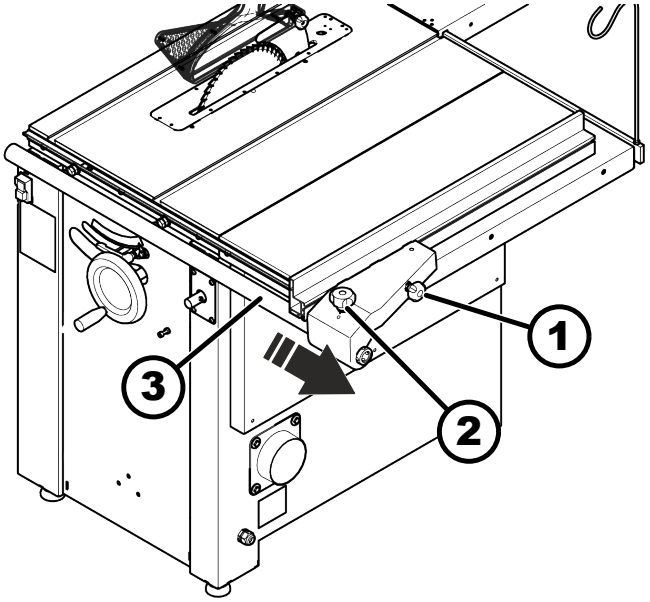

Fig. 39: Remove rip fence

1 Thumb screw 1 (clamping fence plate)
2 Thumb screw 2 (clamping of the rip fence)
3 Fence support bar

WARNING
Uncontrolled movement of the workpiece
Serious injuries due to kickback if the workpiece slips and tilts during processing.
– Always use a cross fence or rip fence to guide the workpiece.

When processing long panels with the crosscut fence (accessory) or when carrying out maintenance work, it may be necessary to remove the rip fence.

1. Tighten thumb screw 1.
2. Loosen the thumb screw 2.
3. Push the rip fence right to the back.
4. Lift the rip fence slightly and pull it backwards off the fence support bar.
   ➡ Long workpieces can protrude beyond the table extension.

8.1.4 Swing the rip fence out

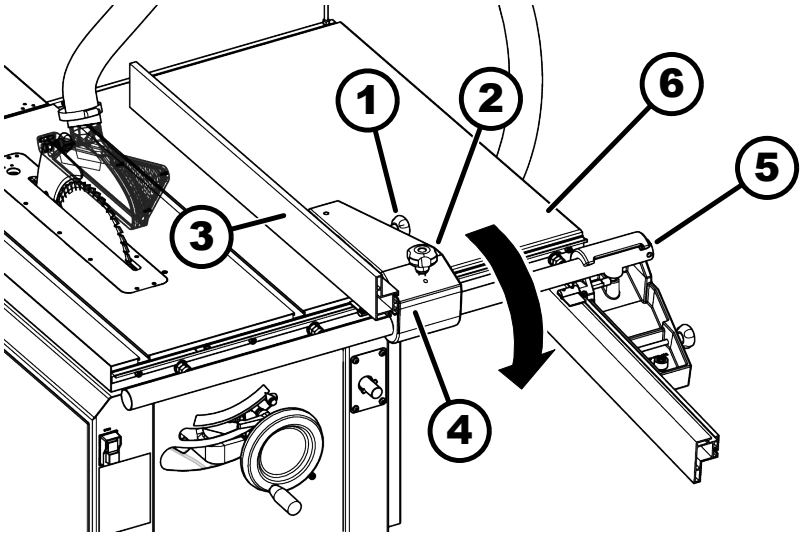

Fig. 40: Swing the rip fence out

1 Thumb screw 1 (clamping fence plate)
2 Thumb screw 2 (clamping of the rip fence)
3 Fence plate
4 Rip fence
5 Fence support bar
6 Table extension

WARNING
Uncontrolled movement of the workpiece
Serious injuries due to kickback if the workpiece slips and tilts during processing.
– Always use a cross fence or rip fence to guide the workpiece.

When processing longer workpieces with the crosscut fence, the rip fence can be swung away underneath the table level.

1. Loosen the thumb screw 1.
2. Place the fence plate in the centre and tighten thumb screw 1.
3. Loosen the thumb screw 2.
4. Move the rip fence right up to the end of the bar.
5. Tilt the rip fence away and let it rest with the crosscut fence against the underside of the table extension.
   ➡ Long workpieces can protrude beyond the table extension.

8.1.5 Mounting the "Sägeboy" auxiliary fence on the rip fence

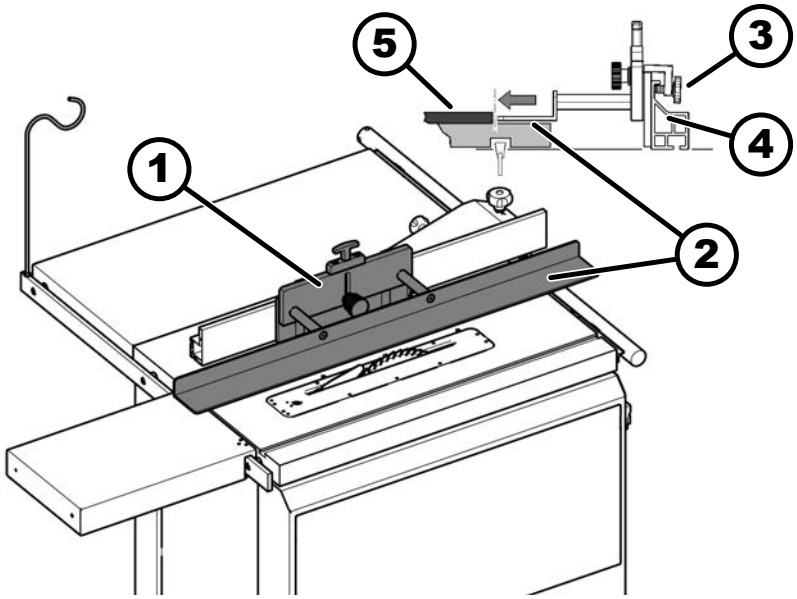

Fig. 41: Mount the auxiliary fence "Sägeboy"

1 Auxiliary Fence "Sägeboy" (Art.-No. 01.0.022)
2 Guide rail
3 Thumb screws
4 Fence plate
5 Template (mounted to the workpiece)

Grooving tool cover and auxiliary fence "Sägeboy"

On machines without overhead saw guard, covered cuts and grooving work may be carried out if the auxiliary fence "Sägeboy" is placed over the saw blade.

Assembly, operation and adjustment: See own operating instructions.

The auxiliary fence "Sägeboy" is an additional, anodised aluminium fence and is mounted to the saw rip fence.

The Sägeboy guide rail also serves as a fence for sawing with templates.

1. Clamp the Sägeboy auxiliary fence to the fence plate with thumb screws.
2. Adjust the rip fence so that the tool is covered by the Sägeboy guide rail.
3. For settings on the Sägeboy auxiliary fence, see specific operation instructions.

8.2 Setting the cutting height/angle (standard configuration)

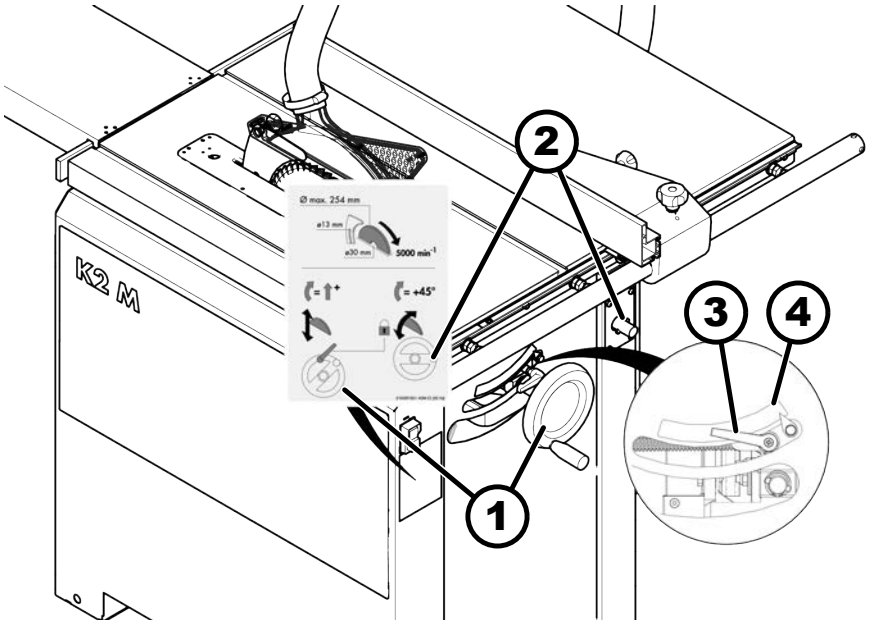

Fig. 42: Adjusting the cutting height / cutting angle

1 Hand wheel height adjustment
2 Hand wheel angle adjustment
3 Clamping lever cutting angle adjustment
4 Scale cutting angle

Adjusting the cutting height

Only adjust the cutting height to the height actually required.

1. Set the cutting height using the height adjustment hand wheel on the side.
   - Clockwise: higher
   - Anti-clockwise: lower
2. Check the cutting height that has been set with a measuring device on the saw blade.

Adjusting the cutting angle

When tilting beware of any possible collisions between fences, workpieces etc.

1. Pull off the hand wheel and put it on the tilt arbour.
2. Release the cutting angle adjustment clamping lever.
3. Set the cutting angle using the angle adjustment hand wheel.
   - Clockwise: towards 45°
   - Anti-clockwise: towards 0°
4. Read the cutting angle set on the scale.
5. Lock the clamping lever for cutting angle adjustment.

8.3 Tool change

8.3.1 General information relating to saw blades and grooving tools

NOTICE

Danger of collision when using grooving tools

Damage to the grooving tools and machine table.

- Do not adjust the 90° angle when working with grooving tooling.
- A spacer ring has to be placed onto the saw arbour before using grooving tooling with a width measuring less than 10 mm.

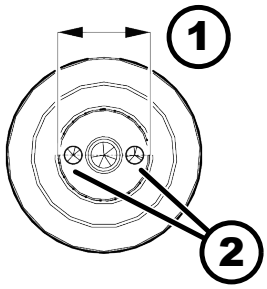

Fig. 43: Anti-rotation saw shaft
1 Saw shaft diameter
2 Anti-rotation saw flange

Only use saw blades and grooving tools,

- which have an authorised speed higher than the speed of the saw arbour
- and comply with the norm DIN EN 847-1
- which are marked with "MAN"

Only use grooving tools,

- which are suited to manual operation
- which are suitable to work with wood

Note

We recommend you use manufacturer original Felder Group tools exclusively.

The processing of workpieces at the maximum cutting height indicated is only possible under certain conditions. Whether it is possible is in direct relation to the following factors:

- Type of wood (hardwood or softwood)
- Wood dampness
- Feed speed
- Saw blades
- The motor power of your machine

8.3.2 Prepare to change tooling

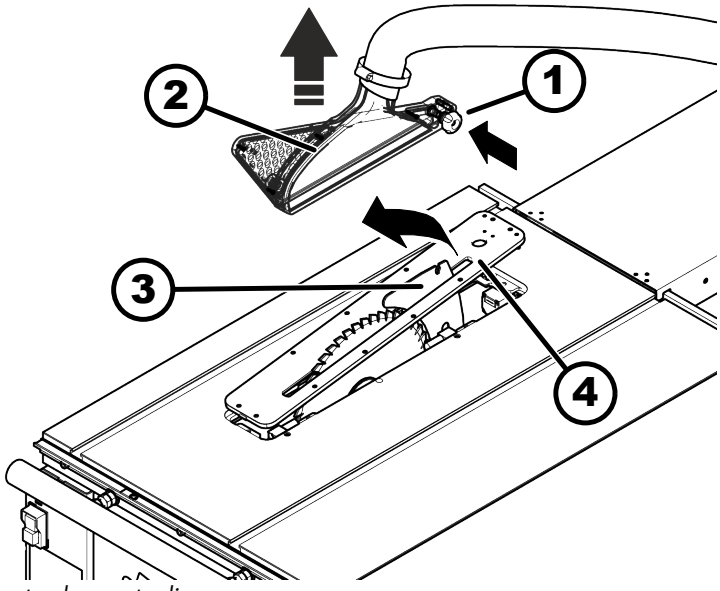

Fig. 44: Prepare to change tooling
1 Thumb screws
2 Saw guard
3 Riving knife
4 Insert board

1. Position the saw aggregate in the 90° position (cutting angle 0°) and move to the uppermost position.
2. Switch off the machine and secure it from being switched on again.
3. Loosen the thumb nut and push it in.
4. Pull the protective hood upwards off of the riving knife.
5. Remove insert board.
   ➡ Pull upwards over the riving knife.

8.3.3 Prepare the machine for operation

Operational readiness when using saw blades

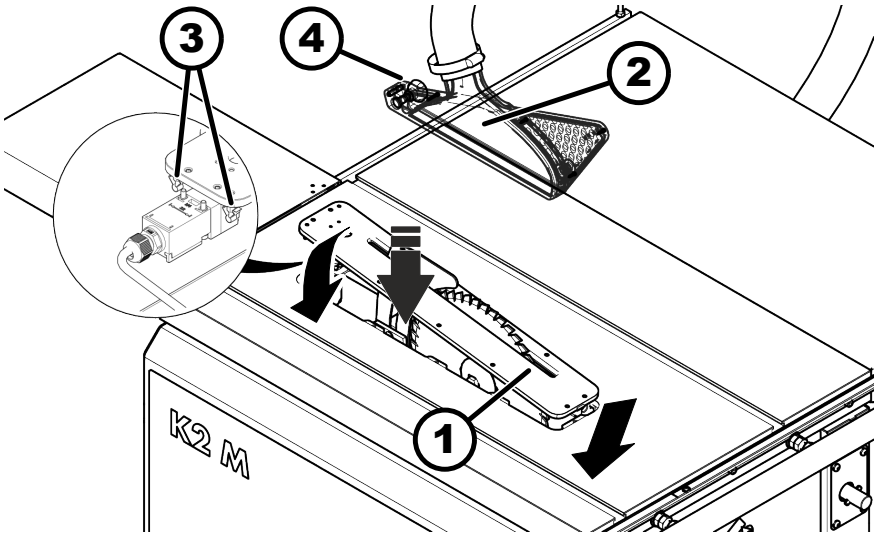

Fig. 45: Operational readiness - Saw blade work

1 Insert board
2 Saw guard
3 Spring catches
4 Thumb nut

Operational readiness

The circular saw blade only runs when the limit switch inside the machine is activated.

Ensure that the insert board locks in place correctly on the right and the left side.

1. Inserting the insert board.
   - Hook the insert board into the machine table on the right (front).
   - Engage the insert board on the left (rear) in the snap springs.

   ➡ The insert board must sit flush with the machine table.
2. Place the saw guard on the riving knife from above.
3. Check settings of the protective hood. ➦ *Chapter 8.6 'Fitting and adjusting the circular saw guard' on page 66*
4. Tighten thumb nut.

Operational readiness when using grooving tools

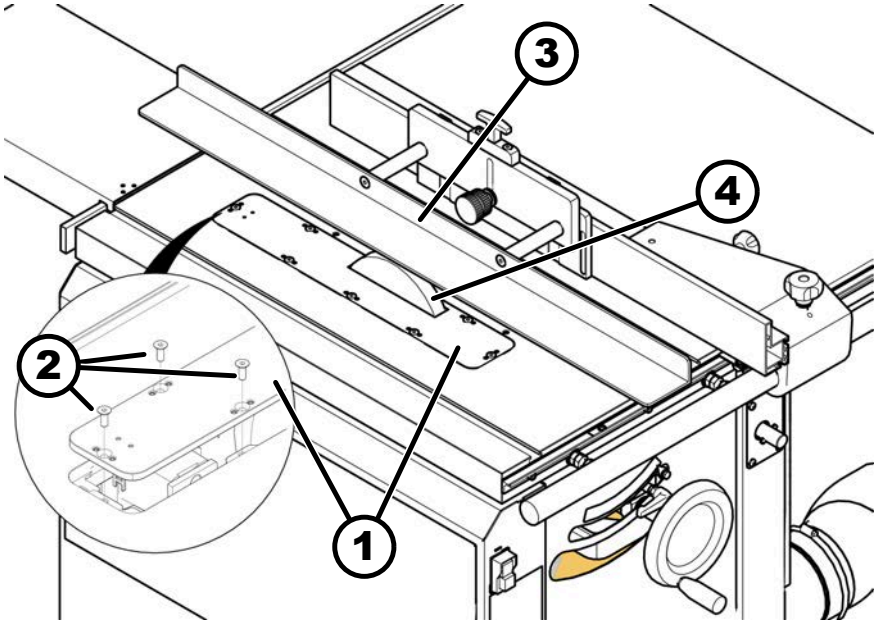

Fig. 46: Operational readiness - grooving tool

1 Insert board (Art.-no. 500-07-206)
2 Flat head screws M6x16
3 Auxiliary Fence "Sägeboy"
4 Grooving tool

Operational readiness

The saw blade only operates if the limit switch inside the machine frame has not been actuated by the locking system.

Tool:

- Hex key 4 mm

1. Inserting the insert board.

- Position the insert board in the machine table from above.
- Screw in 7 countersunk screws with an Allen key.

➡ The insert board must sit flush with the machine table.

2. Mounting the "Sägeboy" auxiliary fence on the rip fence. ➦ *Chapter 8.1.5 'Mounting the "Sägeboy" auxiliary fence on the rip fence' on page 53*

- Clamp the Sägeboy to the rip fence with thumb screws.
- Adjust the rip fence so that the tool is covered by the Sägeboy guide rail.

➡ Assembly, operation and adjustment: See own operating instructions.

8.4 Changing the saw blade

8.4.1 Installing the saw blade in the machine

Note:

For precision cutting, we recommend you to use the smallest saw blade possible.

See technical data for authorised saw blades.

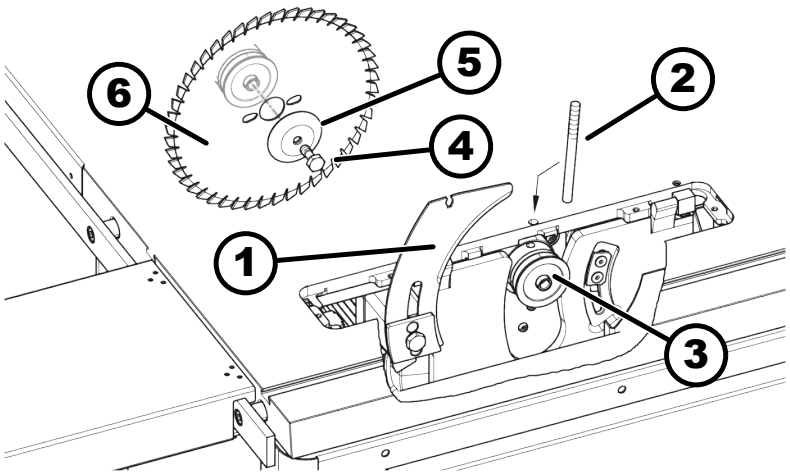

Fig. 47: Changing the saw blade

1 Riving knife
2 Locking pins
3 Saw arbour
4 Clamping screw (M10x27 L)
5 Saw blade flange
6 Saw blade

WARNING
Sharp and hot tool cutting edges
Cuts and burns due to sharp and hot tools.
- Wear protective gloves.
- Adjustments to the machine or changing the tools may only be done once the machine has stopped.

Tool:

- Ring spanner 17 mm
- Locking pins

1. Preparing the machine for a tool change. ➥ *Chapter 8.3.2 'Prepare to change tooling' on page 55*
2. To install a larger saw blade loosen the riving knife. ➥ *Chapter 8.4.2 'Loosen / adjust riving knife' on page 59*
3. Secure the saw arbour against rotation.
   1. Insert the locking pin into the hole on the circular saw table.
   2. Turn the circular saw shaft until the locking pin engages.
4. Loosen the clamping screw with a spanner.
   Left screw thread, loosen by turning clockwise.
5. Remove the clamping bolt and saw flange.
6. Remove the old saw blade and place the new saw blade on the arbour.
7. Replace the flange (take note of the assembling position).
   ➡ Insert the flange with the drivers into the holes of the saw arbour.
8. Hold the circular saw flange and fit the clamping screw.
9. **WARNING!** Ejected parts
   Severe injuries and damage to property.
   ► Observe the minimum tightening torque.

   Tighten the clamping screw with a minimum tightening torque of 20 Nm.
   Left screw thread, tighten by turning counter clockwise.
10. Remove the locking pin from the hole.
11. Adjust the riving knife if a larger or smaller saw blade has been fitted.
12. Prepare the machine for operation. ➥ *Chapter 8.3.3 'Prepare the machine for operation' on page 56*

8.4.2 Loosen / adjust riving knife

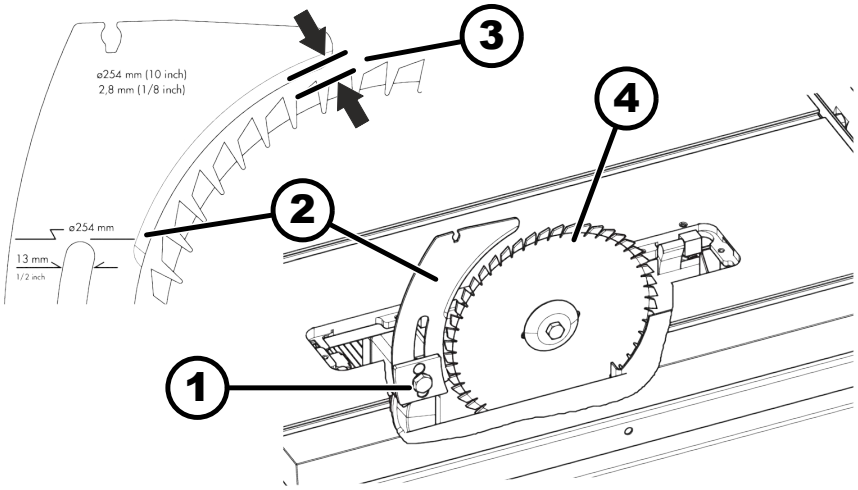

Fig. 48: Adjust the riving knife

1 Clamping screws
2 Riving knife / markings
3 Distance
4 Saw blade

NOTICE

Incorrectly adjusted distance between the saw blade and riving knife

Material damage and possible malfunction with covered cuts.

- Set the riving knife so that the distance to the saw blade is between 3 and 8 mm.
- When making concealed cuts, position the riving knife so that its highest point is 0 to 2 mm below the highest point of the saw blade.

Tool:

- Ring spanner 17 mm

1. Preparing the machine for a tool change. ➦ *Chapter 8.3.2 'Prepare to change tooling' on page 55*
2. Loosen the clamping screw.
3. Move the riving knife so that there is, at any given point, a distance of 3 to 8 mm between the saw blade and the riving knife.
4. The marking on the riving knife must match the top edge of the machine table at the max. cutting height (independently of the saw blade used).
5. When carrying out covered cuts, the highest point of the riving knife must be 0-2 mm below the highest point of the saw blade.
6. **WARNING!** Ejected parts
   Severe injuries and damage to property.
   ► Observe the minimum tightening torque.

   Tighten the clamping screw with a minimum tightening torque of 25 Nm.

8.4.3 Fit /change the riving knife

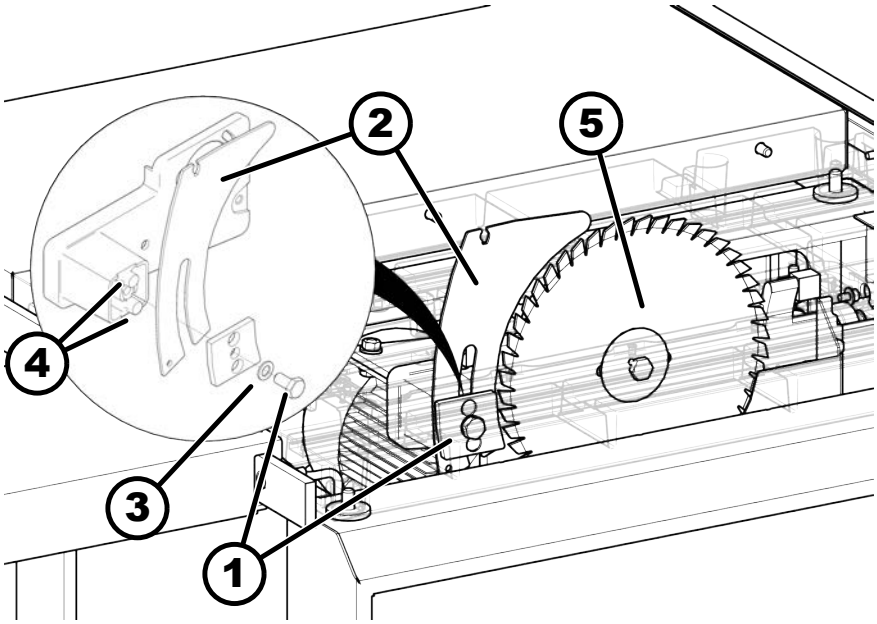

Fig. 49: Fit the riving knife

1 Clamping screws
2 Riving knife
3 Serrated washers
4 Bolts
5 Saw blade

Tool:

- Ring spanner 17 mm

1. Loosen the clamping screw.
2. Remove the riving knife if required.
3. Insert the riving knife into the holder.
   ➡ The riving knife holder bolt must sit in the riving knife groove.
4. Move the riving knife into the correct position. ➥ *Chapter 8.4.2 'Loosen / adjust riving knife' on page 59*
5. **WARNING!** Ejected parts
   Severe injuries and damage to property.
   ► Observe the minimum tightening torque.

   Tighten the clamping screw with a minimum tightening torque of 25 Nm.

Correct selection of the riving knife

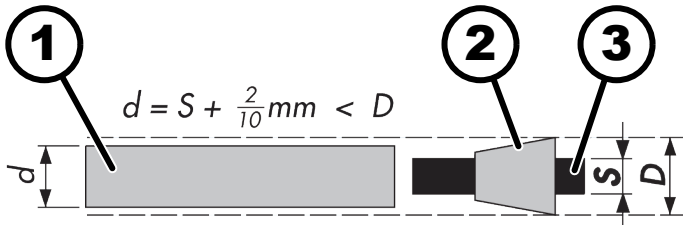

Fig. 50: Suitable riving knife for the saw blade

1 Riving knife thickness (d)
2 Saw tooth width (D)
3 Saw blade body (S)

The riving knife has to be adapted to the thickness of the saw blade. The thickness of the riving knife must be between that of the saw blade body and the width of the saw tooth.

The riving knife must be adapted to the saw blade diameter. Observe the markings on the riving knife.

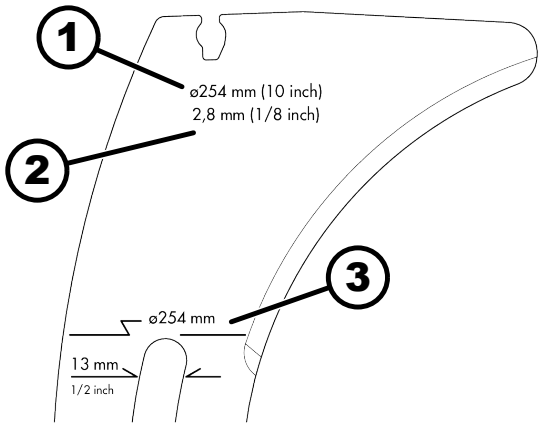

Fig. 51: Riving knife markings

1 Saw blade diameter
2 Riving knife thickness
3 Saw blade diameter markings

8.4.4 Remove the riving knife

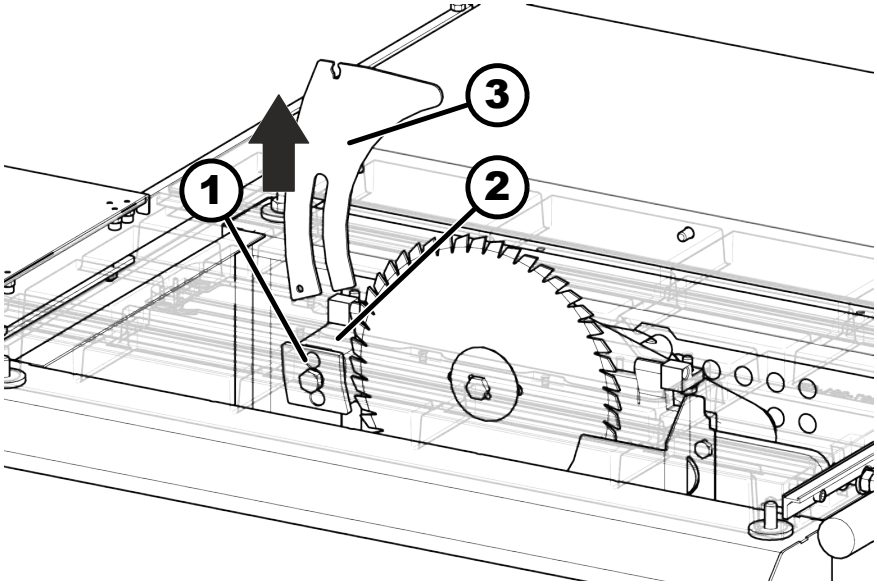

Fig. 52: Remove the riving knife

1 Clamping screws
2 Riving knife holder
3 Riving knife

WARNING
Cutting without riving knife
If working without a riving knife, the workpiece could become jammed after the saw blade.
Serious injury arising from contact with the rotating saw blade if the workpiece kickbacks.
- Operation without the riving knife is only allowed when using grooving tools.
- A riving knife is required when working with circular saw blades.

Tool:

- Ring spanner 17 mm

1. Preparing the machine for a tool change. ➥ *Chapter 8.3.2 'Prepare to change tooling' on page 55*
2. Loosen the clamping screw.
3. Pull the riving knife upwards out of the riving knife holder.

4. **WARNING!** Ejected parts
Severe injuries and damage to property.
► Observe the minimum tightening torque.

Tighten the clamping screw with a minimum tightening torque of 25 Nm.

8.5 Grooving tools

8.5.1 Convert to an operation with grooving tools

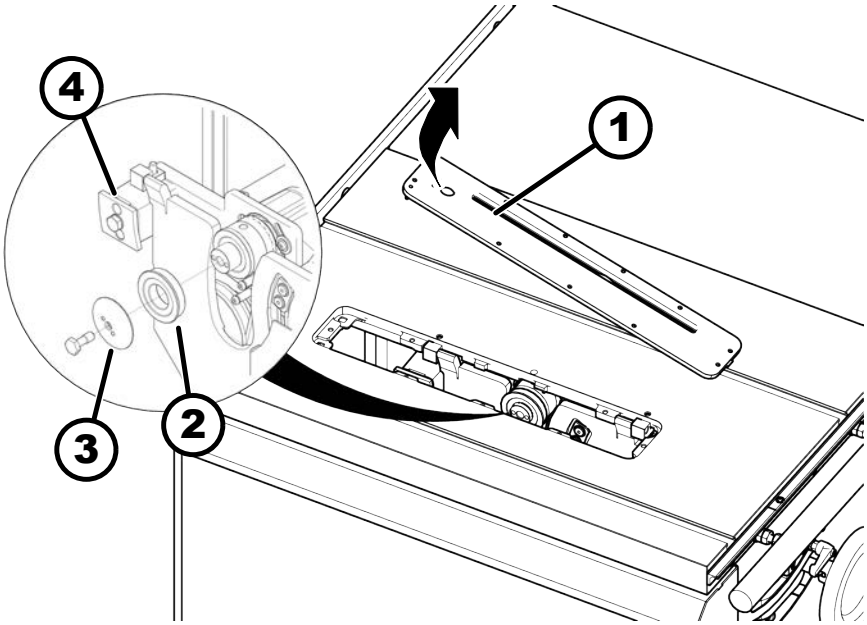

Fig. 53: Rear flange / riving knife holder / insert board

1 Insert board
2 Rear flange
3 Flange for circular saw blades
4 Riving knife removed

WARNING
Sharp and hot tool cutting edges
Cuts and burns due to sharp and hot tools.
– Wear protective gloves.
– Adjustments to the machine or changing the tools may only be done once the machine has stopped.

Tool:

- Ring spanner 17 mm

1. Preparing the machine for a tool change. ➦ *Chapter 8.3.2 'Prepare to change tooling' on page 55*
2. Remove insert board.
3. Remove the saw blade.
4. Remove the riving knife.
5. Remove the rear flange.
6. Position the saw aggregate in the 90° position (cutting angle 0°).

8.5.2 Clamping the grooving tool

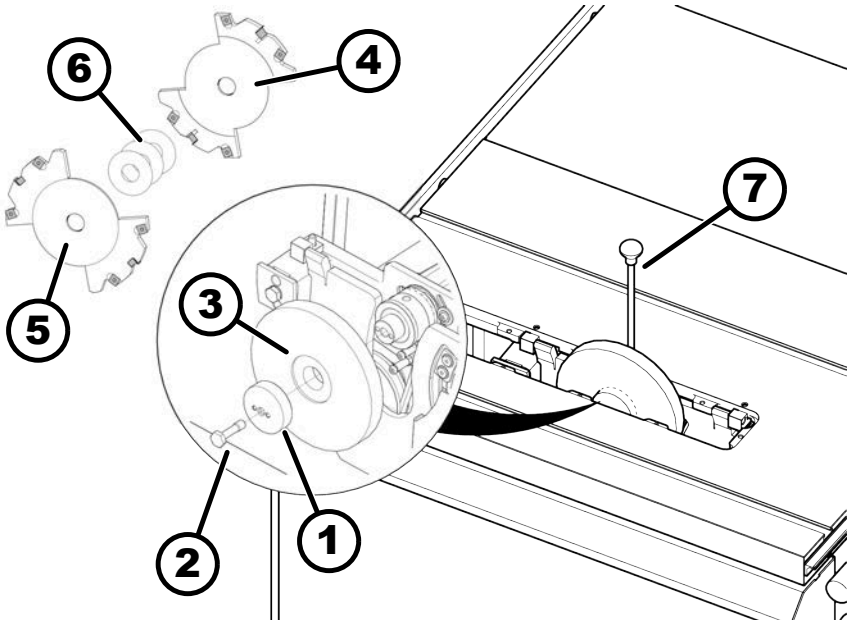

Fig. 54: Insert grooving tool

1 Flange for grooving tools
2 Clamping screw grooving tool (M10x40 L)
3 Grooving tool
4 Grooving tool part 1
5 Grooving tool part 2
6 Spacing discs
7 Locking pins

WARNING
Incorrect clamping of the grooving tool
Severe injuries caused by rotating or colliding tools
- Do not use a tool-free clamping system.
- Always use the grooving tool flange.

Tool:

- Ring spanner 17 mm
- Locking pins

1. Machine preparation for working with grooving tooling. ➥ *Chapter 8.5.1 'Convert to an operation with grooving tools' on page 62*
2. Position the saw aggregate in the 90° position (cutting angle 0°).
3. Place grooving tool part 1 on the saw shaft.
   ➡ Pay attention to ensure the correct rotation direction of the tool.
4. Adjust the grooving width with spacer discs.
5. Place grooving tool part 2 on the saw shaft.
   ➡ Both tool halves must engage with each other.
6. Attach the grooving tool flange.
7. Secure the saw arbour against rotation.
   1. Insert the locking pin into the hole on the circular saw table.
   2. Turn the circular saw shaft until the locking pin engages.
8. **WARNING!** Ejected parts
   Severe injuries and damage to property.
   ► Observe the minimum tightening torque.

   Tighten the clamping screw with a minimum tightening torque of 20 Nm.
   Left screw thread, tighten by turning counter clockwise.
9. Remove the locking pin from the hole.

Insert the insert board to reduce the gap between the tool and machine table

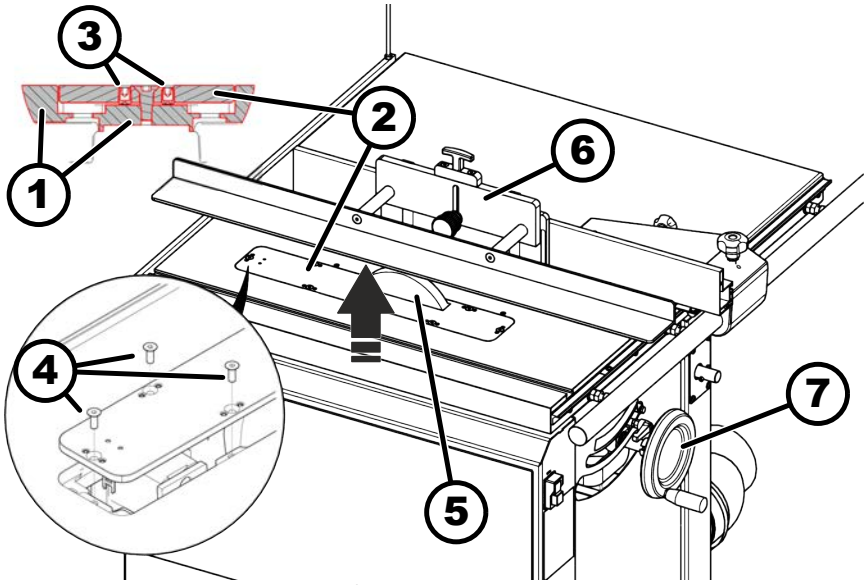

Fig. 55: Inserting the insert board for grooving tool

1 Machine table
2 Insert board (Art.-no. 500-07-206)
3 Grub screws
4 Countersunk head screws M6x16
5 Grooving tool
6 Auxiliary Fence "Sägeboy"
7 Hand wheel height adjustment

Tool:

- Hex key 4 mm
- Hex key 3 mm

1. Move the saw unit all the way down.

2. Inserting the insert board for grooving tool.

  1. Position the insert board in the machine table from above.

  2. If necessary, correct the position of the insert board with the grub screws.

  3. Screw in 7 countersunk screws with an Allen key.

  ➡ The insert board must sit flush with the machine table.

  Under no circumstances should workpieces be allowed to stick to the insert board.

3. Prepare the machine for operation. ➦ *'Operational readiness when using grooving tools' on page 57*

4. Set the "Sawboy" auxiliary stop to the maximum cutting height.

5. Switch machine on. ➦ *Chapter 9.2 'Switch on / switch off / shutdown due to an emergency stop' on page 68*

6. Slowly move the saw unit all the way up.

  ➡ The insert board slot will milled out by the grooving tool.

8.5.3 Removing the grooving tool - Retool to a saw blade operation

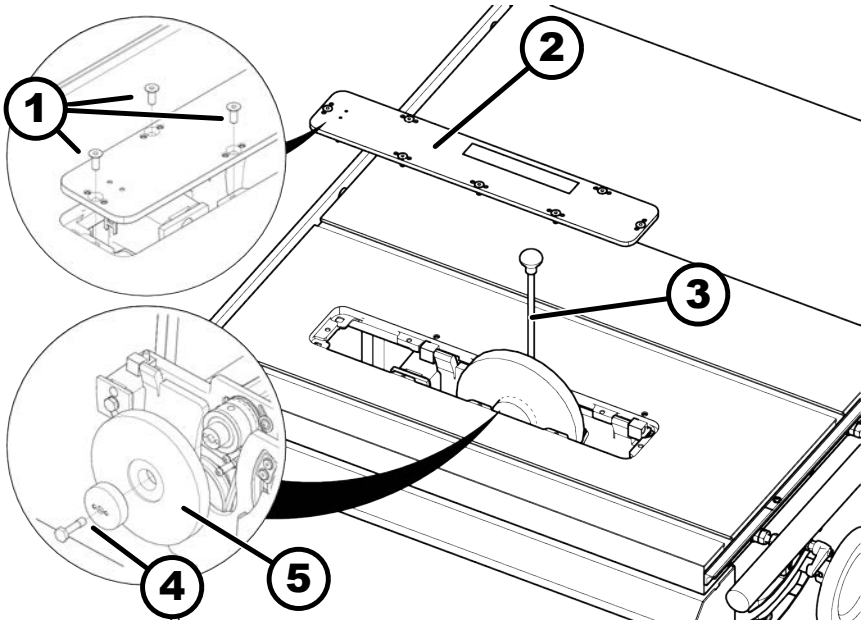

Fig. 56: Remove grooving tool

1 Flat head screws M6x16
2 Insert board (Art.-no. 500-07-206)
3 Locking pins
4 Flange for grooving tools and clamping screws
5 Clamping screw grooving tool (M10x40 L)

Tool:

- Hex key 4 mm
- Ring spanner 17 mm
- Locking pins

1. Remove the insert board.

- Unscrew the 7 countersunk screws with an Allen key.
- Remove insert board from the machine table.

2. Secure the saw arbour against rotation.

- Insert the locking pin into the hole on the circular saw table.
- Turn the circular saw shaft until the locking pin engages.

3. Loosen the clamping screw with a spanner.
Left screw thread, loosen by turning clockwise.

4. Remove the grooving tool clamping screws and flange.

5. Remove the grooving tool.

Fit the saw insert board and saw blade

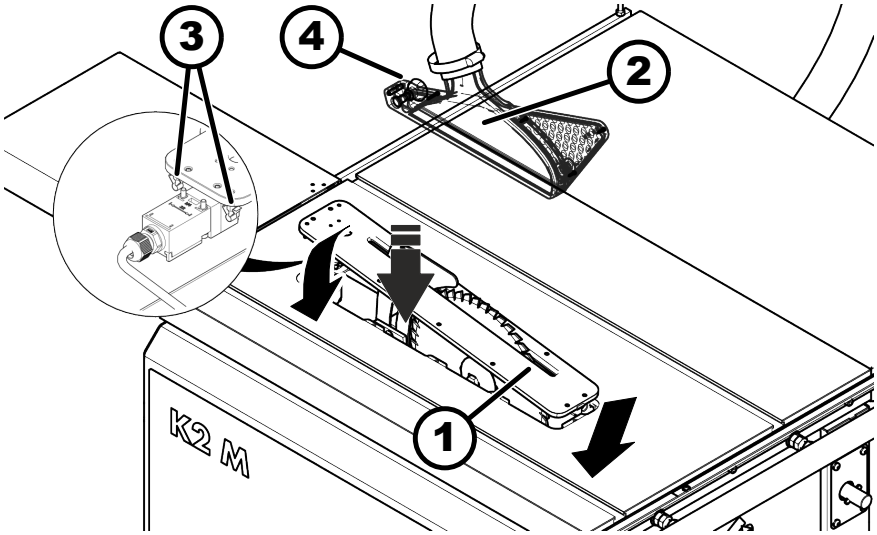

Fig. 57: Operational readiness - Saw blade work

1 Insert board
2 Saw guard
3 Spring catches
4 Thumb nut

1. Mount the rear flange.

2. Install the saw blade in the machine. ➦ *Chapter 8.4.1 'Installing the saw blade in the machine' on page 57*, ➦ *Table on page 63*

3. Fit the riving knife. ➦ *Chapter 8.4.3 'Fit /change the riving knife' on page 60*

4. Inserting the insert board.

- Hook the insert board into the machine table on the right (front).
- Engage the insert board on the left (rear) in the snap springs.

➡ Ensure that the insert board locks in place correctly on the right and the left side.

5. Fitting and adjusting circular saw guard. ➦ *Chapter 8.6 'Fitting and adjusting the circular saw guard' on page 66*

6. Prepare the machine for operation. ➦ *'Operational readiness when using saw blades' on page 56*

8.6 Fitting and adjusting the circular saw guard

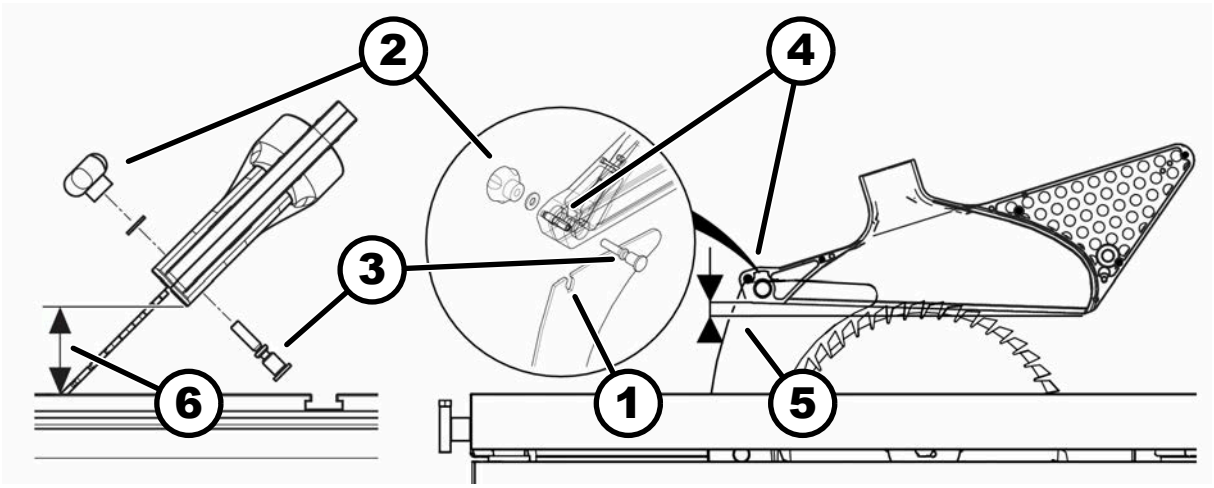

Fig. 58: Adjust circular saw guard

1 Riving knife (recess)
2 Thumb nut and washer
3 Hood stud
4 Adjustment screw (inclination)
5 Distance (inclination - min. 2 mm / max. 4 mm)
6 maximum cutting height

To prevent injuries when using the circular saw, the machine must be equipped with a protective hood which is positioned over the saw blade.

To utilise the maximum cutting height when the saw blade is swivelled, the hood bolt can also be mounted from the rear of the circular saw guard.

Install circular saw guard

1. Loosen the thumb nut.
2. Press the hood stud forwards with the thumb nut.
3. Place the saw guard on the riving knife from above.
   ➡ Make sure that the cover bolts sit correctly in the slot of the riving knife.
4. Secure the thumb nut.

Adjust the inclination of the circular saw guard:

Tool:

- Hex key 3 mm

1. Loosen the thumb nut.
2. Adjust the inclination of the saw guard with the adjusting screw.
   ➡ Pay attention to setting value of the distance in the graphic.
3. Secure the thumb nut.

9 Operate

9.1 Auxiliary aids for safe operation

Note

When using appropriate auxiliary equipment and observing the safety distances to the surroundings, there are no limits to the workpiece dimensions.

- Support long workpieces with additional supports (e.g. table extensions, roller supports).
- Keep tools for processing short and narrow workpieces close at hand (e.g. push grip, push stick, workpiece holder).

9.2 Switch on / switch off / shutdown due to an emergency stop

WARNING

Insufficient preparation

Severe injuries and damage to property

- Do not start the machine until all prerequisites have been met and all preparatory work has been completed.
- Read the instructions for setup, adjustment and operation before turning on the machine.

NOTICE

Operating/room temperature

Damages due to storage, material damage

- The machine may only be operated in dry and frost-free rooms at temperatures between +5 and +40 °C.

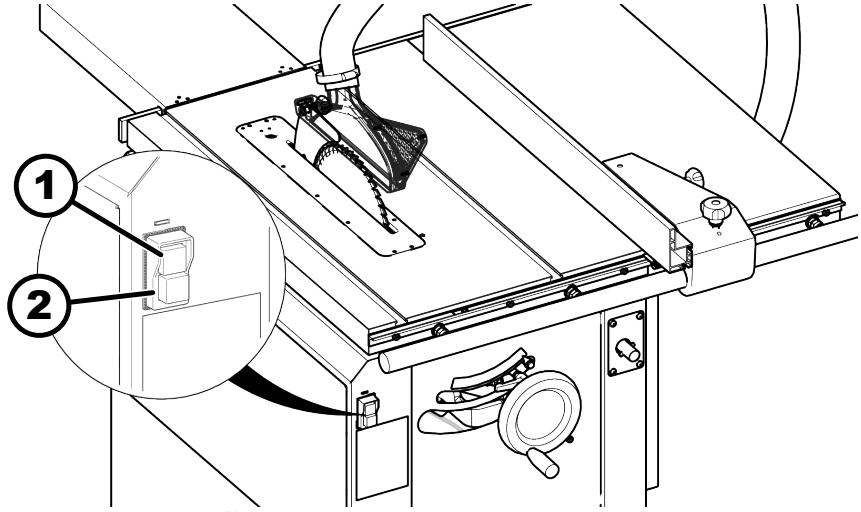

Fig. 59: Switch on / off

1 Green start button - Saw blade ON
2 Red stop button - Saw blade OFF

Switching on

1. Connect the plug to the power supply.
2. Press the green *[Start]* button on the control panel and release.

Switch off / Emergency stop

1. Press the red *[stop]* button.
   ➡ The machine stops immediately.
2. Disconnect the machine from the main power supply.

9.3 Working techniques

9.3.1 Working positions

WARNING

Ejected workpieces / tool parts

Injuries caused by ejected workpieces and workpiece parts (e.g. branches, offcuts, blade parts).

Injury due to kickback from cut workpiece parts.

- Never stand directly in the cutting line of the saw blade whilst it is operating (when machining or in idle).
- Assume the correct working position.

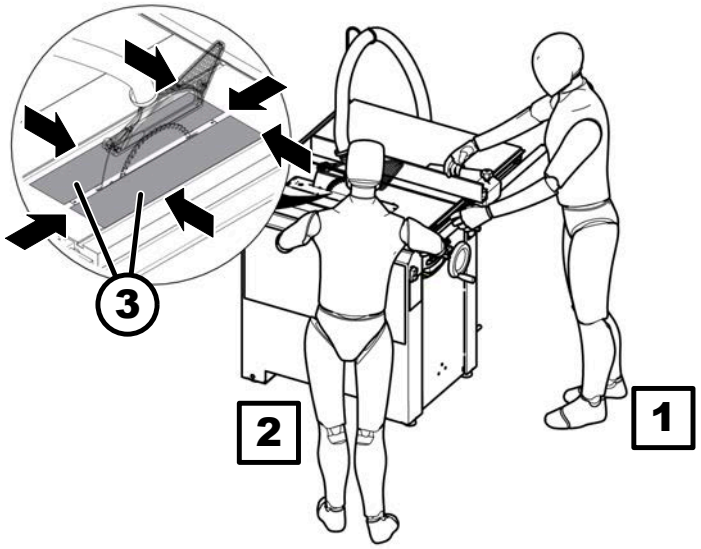

Fig. 60: Working positions

1 Working position when operating with the rip fence
2 Main working position for all other operations
3 Danger zone - 120 mm

The danger zone is the area 120 mm to the left, right, in front of and behind the saw blade.

Do not reach into the danger zone with your hand.

Never place your hands on the workpiece in the danger zone.

9.3.2 Permitted working methods

Only the following working techniques are allowed with the panel saw:

- Trimming only with the use of a trimming device.
- Crosscutting, with parallel or crosscut fence.
- Longitudinal cut 90° to 45°, with a parallel cutting fence.
- Splitting of large-format panels.
- Covered cuts / rebate on the parallel cutting fence.
- Covered cuts / grooves on the parallel cutting fence with grooving tools.

9.3.3 Prohibited working techniques

The following working processes are prohibited on this panel saw:

- All work techniques without the use of the parallel cutting fence, crosscut fence or trimming unit.
- Cutting of round workpieces (in the longitudinal direction).
- Removing the riving knife for insert cuts *).
- Covered cuts *).

*) The following deviations apply to the scope of the Holz-Berufsgenossenschaft (BG) in the Federal Republic of Germany: Insertion cuts and covered cuts are permitted if the operating regulations corresponding to the Employer's Liability Insurance Association (BG) are observed (BG No. 96.18).

9.3.4 General procedures for authorised working techniques

CAUTION

Cutting circular work-pieces

Injuries due to ejected workpieces and workpiece parts or twisting of the workpiece.

- Secure round workpiece against turning by using a template or holding device.
- Work with the crosscut fence especially with round workpieces.
- Use a suitable saw blade for cross sections.

Protective equipment:

- Protective clothing
- Ear Protection
- Safety goggles

Carry out all adjustment work and preparations for cutting only when the saw blade is stationary.

1. Ensure there are sufficient support surfaces (accessories).
2. Keep handling accessories at hand:
   - Push stick, push grip
   - Deflector with holding magnets
3. If required: Set the cutting height, cutting angle and if necessary scoring blade.
4. With machines that have an overhead saw guard:
   1. For angle cuts, convert the overhead saw guard to the wide guard.
   2. Lower the protective hood to the workpiece height.
5. Before cutting check the collision zone between crosscut fence and saw blade.
6. Before switching on the machine, always check to make sure that there are no other people in the immediate vicinity of the machine.
7. On machines without automatic extraction system control, switch on the extraction system.
8. Only switch the machine on once the workpiece has been placed in the correct position.
9. Place your hands flat on the workpiece with your fingers closed.
   1. Never place your hands on the workpiece in the danger zone.
   2. Place the left hand only up to a maximum of 120 mm from the front edge of the guard for lateral guidance of the workpiece.
   3. Place the left hand on the machine table or sliding table for further processing.
10. Guide the workpiece evenly through the saw blade.
11. Use the push stick once you are at the end of the cut.
12. Once the cut is finished, switch the machine off.

9.3.5 Longitudinal cut / cutting of strips

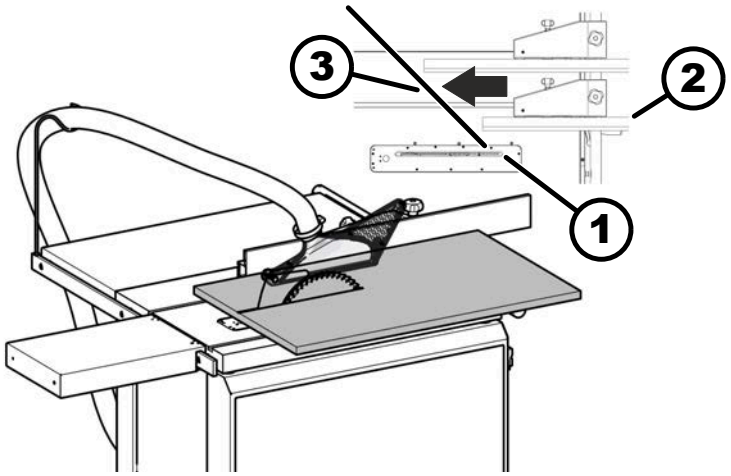

Fig. 61: Rip cut

1 Saw blade
2 Fence plate
3 imaginary 45° line

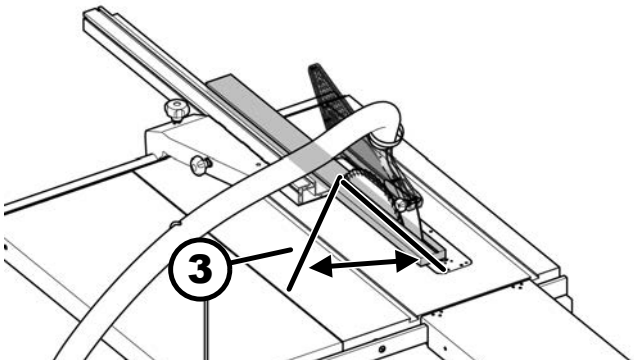

Fig. 62: Cutting strips

WARNING
Rotating saw blade
Severe injury caused by contact with a rotating saw blade.
- Never place your hands on the workpiece in the danger zone.
- Push the workpiece past the saw blade with the push stick.

1. Take note of general procedures for permitted working methods.
2. If required and only when cutting strips:
   Convert the fence plate on the rip fence to a narrow fence edge.
3. Adjust the rip fence to the desired position.
4. Set the fence plate:
   Slide the fence plate forwards and clamp it in place (see illustration).
   The end of the fence plate abuts an imaginary line that starts at the front edge of the saw blade and runs backwards at 45° across the machine table.
   ➡ This prevents the workpiece from jamming between the fence and the saw blade.
5. On machines with sliding table:
   1. Lock the sliding table into a centre position.
   2. Remove the crosscut fence.
      ➡ A collision with the crosscut fence is prevented when working with long workpieces.
6. Place the workpiece against the rip fence.
7. Switch the saw on.

8. Place your hands flat on the workpiece with your fingers closed.
   1. Place the left hand only up to a maximum of 120 mm from the front edge of the guard for lateral guidance of the workpiece.
   2. Place the left hand on the machine table or sliding table for further processing.

9.3.6 Cutting short, narrower workpieces

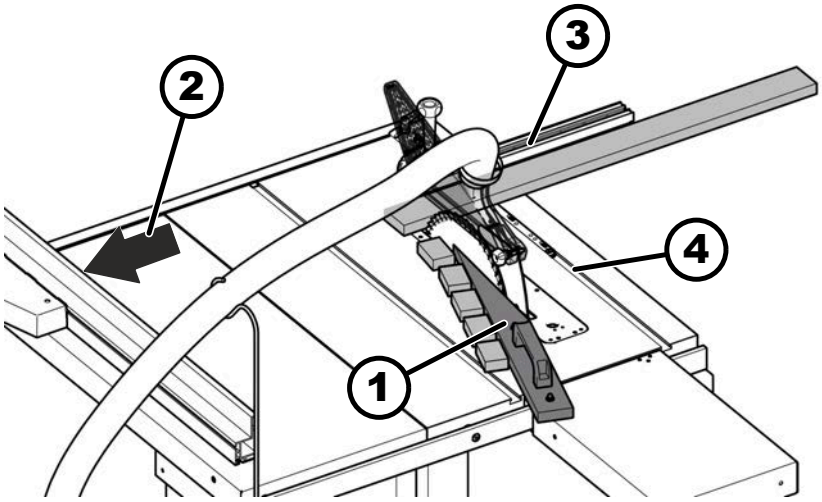

Fig. 63: Cutting short, narrow workpieces

1 Deflector wedge
2 Move the rip fence away
3 Crosscut fence
4 Slot in machine table

1. Take note of general procedures for permitted working methods.
2. Move the rip fence as far away as possible from the saw blade.
3. Attach the off-cut deflector to the machine in such a way that the sawed off pieces do not collide with the rising part of the saw blade.
4. Slide the crosscut fence into the slot in the machine table.
5. Place the workpiece against the crosscut fence.
6. Switch the saw on.
7. Press the workpiece hard against the crosscut stop using both hands.
   ➡ Never place your hands on the workpiece in the danger zone.
8. Guide the workpiece evenly through the saw blade.
9. Pull the workpiece a few millimetres away from the saw blade and move the crosscut fence into the initial position.

9.3.7 Crosscutting with the crosscut and rip fence

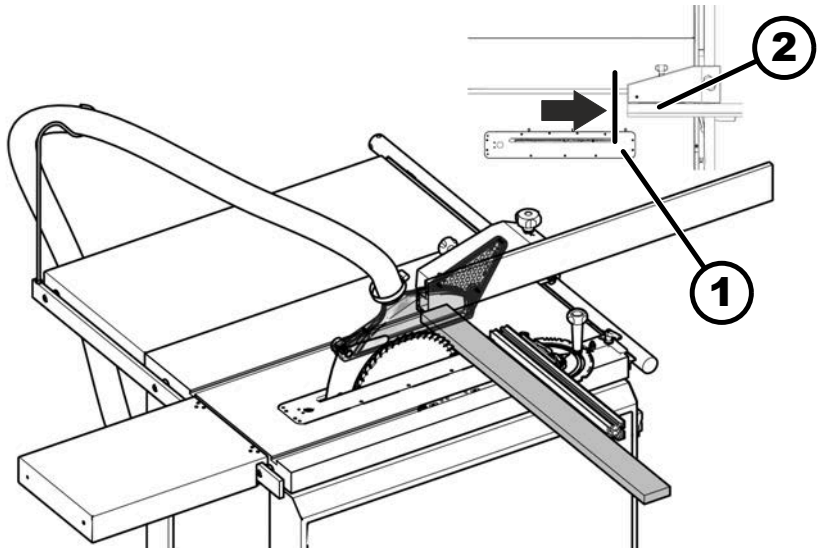

Fig. 64: Crosscutting using the rip fence

1 Saw blade front edge
2 Fence plate

1. Take note of general procedures for permitted working methods.
2. Slide the crosscut fence into the slot in the machine table.
3. Adjust the rip fence to the desired position.
4. **WARNING!** Wedging of the fence plate on the rip fence.
   Serious injuries due to kickback if the workpiece jams and jams during processing.
   ► Pull the fence plate back as far as the front edge of the rip fence.

   Set the fence plate:

   Pull back the fence plate and clamp it (see illustration).

   The end of the fence plate abuts an imaginary line that starts in front of the front edge of the saw blade and runs backwards at 90° across the machine table.

   ➡ This prevents the workpiece from jamming between the fence and the saw blade.
5. Place the workpiece against the crosscut fence.
6. Switch the saw on.
7. Push the workpiece forward from the rip fence up to the crosscut fence.
8. Press the workpiece hard against the crosscut stop using both hands.
   ➡ Never place your hands on the workpiece in the danger zone.
9. Guide the workpiece evenly through the saw blade.
10. Pull the workpiece a few millimetres away from the saw blade and pull the crosscut fence back into the starting position.

9.3.8 Covered cuts ("Sägeboy" auxiliary fence)

WARNING
Non-covered, rotating saw blade
Without safety devices, serious injuries can occur when performing covered cuts.
- Use the auxiliary fence "Sägeboy" (Art.-No. 01.0.022).
- Do not pull the rip fence plate backwards.
- Do not remove the riving knife.

The offcut strip falls off on the right side of the saw blade. Because of the high risk of kickback, use a push stick to push the workpiece forward or use the crosscut fence.

1. Take note of general procedures for permitted working methods.

2. Remove circular saw guards.
3. Adjust riving knife: When carrying out covered cuts, the highest point of the riving knife must be 0-2 mm below the highest point of the saw blade.
4. Adjusting the rip fence: The front edge of the saw blade must be flush with the Sägeboy guide rail.

Carry out covered cuts with help of templates

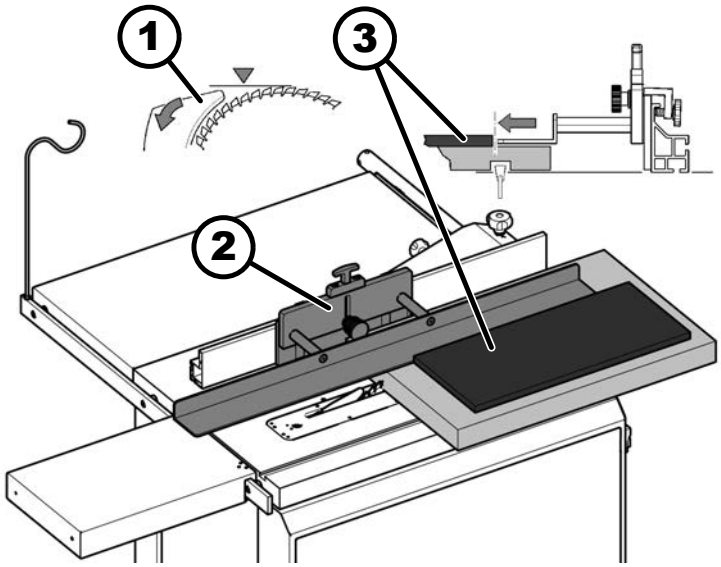

Fig. 65: Covered cut with template

1 Riving knife
2 Auxiliary fence "Sägeboy" (accessory)
3 Template (mounted to the workpiece)

1. On machines with sliding table:
   1. Lock the sliding table into a centre position.
   2. Remove the crosscut fence.
      ➡ A collision with the crosscut fence is prevented for long cuts.
2. Mount the template to the workpiece.
3. Place the workpiece with the template on to the Sägeboy guiding plate.
4. Use a push stick to move small workpieces forward.

Carry out covered cuts with the help of a crosscut fence

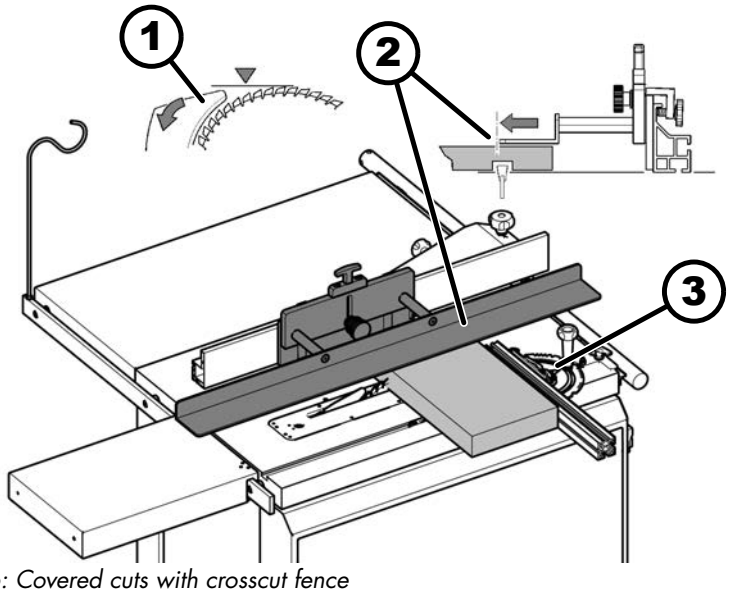

Fig. 66: Covered cuts with crosscut fence

1 Riving knife
2 Sägeboy guiding plate
3 Crosscut fence

1. On machines with sliding table:
    1. Mount the crosscut fence to the sliding table.
    2. Release the sliding table catch.
2. Slide the crosscut fence into the slot in the machine table.
3. Place the workpiece against the crosscut fence.
4. Press the workpiece hard against the crosscut fence using both hands.
    ➡ Never place your hands on the workpiece in the danger zone.
5. Guide the workpiece evenly through the saw blade.

9.3.9 Working with grooving tools ("Sägeboy" auxiliary fence)

WARNING
Non-covered, rotating grooving tools
Without safety devices, serious cuts can occur when working with grooving tools.
- Use the auxiliary fence "Sägeboy" (Art.-No. 01.0.022).
- Do not pull the rip fence plate backwards.
- Remove the riving knife.

NOTICE
Collision between machine components
Material damage when swivelling the saw unit.
- Position the saw aggregate in the 90° position (cutting angle 0°).
- Do not adjust the 0° angle when operating with grooving tooling.

For grooving work using the crosscut fence and sliding table we recommend to use an eccentric clamp.

1. Take note of general procedures for permitted working methods.
2. Convert machine to operation with grooving tools.
3. Adjusting the rip fence: The front edge of the saw blade must be flush with the Sägeboy guide rail.
4. Always use the crosscut fence when making transverse grooves.

Carry out grooving work with the help of templates

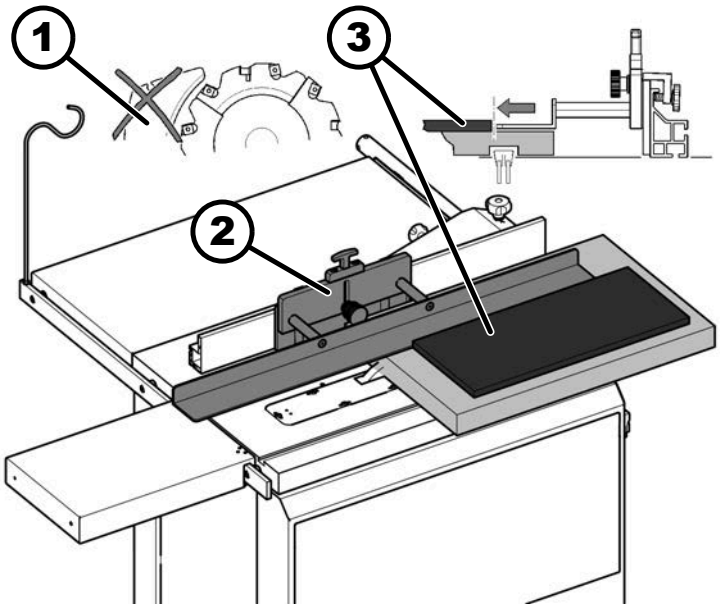

Fig. 67: Grooving work with templates

1 Remove the riving knife
2 Auxiliary fence "Sägeboy" (accessory)
3 Template (mounted to the workpiece)

1. On machines with sliding table:
    1. Lock the sliding table into a centre position.
    2. Remove the crosscut fence.
        ➡ A collision with the crosscut fence is prevented when working with long workpieces.
2. Mount the template to the workpiece.
3. Place the workpiece with the template on to the Sägeboy guiding plate.
4. When feeding the workpiece forward, press it hard onto the machine table or sliding table.

Carry out grooving work using the crosscut fence

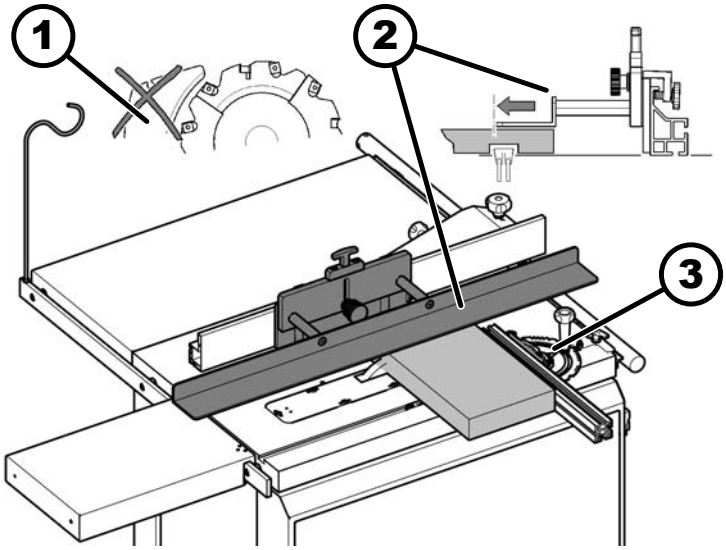

Fig. 68: Grooving work with crosscut fence

1 Remove the riving knife
2 Sägeboy guiding plate
3 Crosscut fence

1. On machines with sliding table:
    1. Mount the crosscut fence to the sliding table.
    2. Release the sliding table catch.
2. Slide the crosscut fence into the slot in the machine table.
3. Place the workpiece against the crosscut fence.
4. Press the workpiece hard against the crosscut fence using both hands.
5. When feeding the workpiece forward, press it hard onto the machine table or sliding table.

10 Maintenance

10.1 Maintenance plan

The following maintenance work must be performed at the prescribed intervals.

Chap.	Task to execute	Every 8 operating hours	Every 160 operating hours	Monthly	Twice a year	If required	Page
10.4.1	Clean the machine thoroughly	X					80
10.4.3	Check dust extractor for any damage	X					80
10.4.3	Check the effectiveness of the dust extractor		X				80
10.4.3	Check extraction hose and pipe		X			X	81
10.4.4	Check safety devices (emergency stop)			X			81
10.4.4	If the machine is equipped with an *[emergency stop]* button, test the functionality			X			81
10.4.4	Check the red *[stop]* button and the emergency stop on machines not equipped with an *[emergency stop]* button			X			81
10.4.5	Check the effectiveness of safety devices (safety switches)			X			82
10.4.6	Lubricate the height guide of the circular saw unit				X		83
10.4.7	Lubricating the circular saw height adjustment spindle and tilt adjustment spindle				X		84
10.5.1	Check belt tension and belt condition				X		85

10.2 Preparations for maintenance work / removing covers

Instructions to maintenance technicians

If the maintenance technician has to check whether they have carried out their work correctly or troubleshoot whilst the machine is running, the following instructions must be followed:

- To ensure quick and unmistakable communication, visual contact between the operators must be kept at all times.
- Operators should repeat and confirm instructions before they are carried out.
- Wait for all the moving parts to come to a standstill.
- Only start the machine when there is no one within the safety zone.
- Maintenance technicians need to be fully aware of how the machine operates and moves, and they must be familiar with the exact operating sequence.
- Keep a record of all maintenance work.

Remove the covers on the back and front

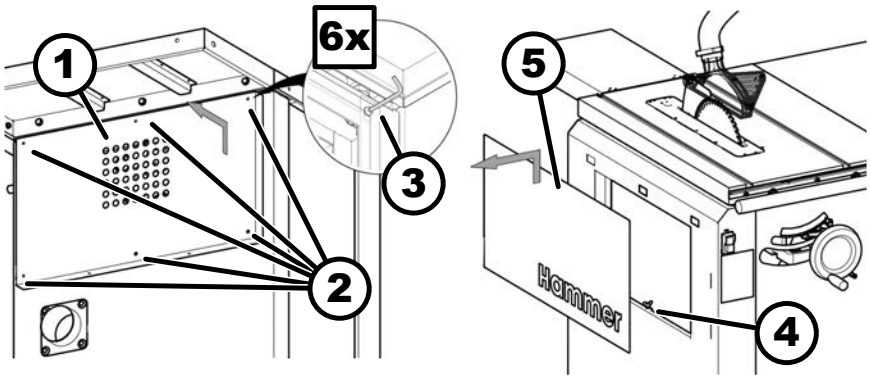

Fig. 69: Remove the cover

1 Cover (rear)
2 Hex screws M6 x 30
3 Hex key 4 mm
4 Wing nut
5 Cover (front)
6x

The two covers must be removed for the following maintenance work.

Tool:

- Hex key 4 mm

1. Switch off the machine and secure it from being switched on again.

2. Disconnect the machine from the mains power supply.

3. Remove the cover at the rear:

- Release the hex screws (6x).
- Slide the cover upwards and remove it.

4. Remove the cover on the front:

- Loosen the wing nut inside the machine.
  The wing nut can be reached from the rear side of the machine.
- Slide the cover upwards and remove it towards the front.

5. To reassemble, follow the instructions in the reverse order.

➡ The cover must be in contact with the machine stand on all sides before tightening.

10.3 Cleaning and lubricating

- Do not use compressed air to clean, as this will blow dust and shavings into the various ball bearings and guides.
- Only use low dust emission vacuum to remove dust deposits.
- Carry out cleaning when required, after each workday or at the very latest after 8 hours of operation.

NOTICE

Caustic or abrasive cleaning detergents

Damage to the surface of the machine

– Never use caustic or abrasive cleaning detergents.

Note

Cleaning and care products are available as accessories (see: Tools and accessories catalogue / Online shop: www.felder-group.com).

10.4 General maintenance procedures

10.4.1 Clean the machine thoroughly

CAUTION
Sharp tools
Cut injuries
- Use tools carefully.
- Wear gloves.
- Use safety equipment.

Personnel:

- Trained machine operator

Protective equipment:

- Protective clothing

Tool:

- Cleaning cloths
- Vacuum cleaner

1. Switch off the machine and secure it from being switched on again.
2. Clean the machine of dust, shavings, waste material and other contaminants.
3. Cleaning the table surface and the guide tracks. Remove any resin residue.
4. Clean the rip fence incl. guide shaft and circular saw guard and check for correct functions.
5. Carry out a visual check of all machine parts.
   ➡ If any damage is identified on the machine or of the components, then these are to be fixed immediately.

10.4.2 Belt tension

The belt tension is factory set to the ideal value.

In time, the belt can stretch, causing the power transmission to reduce. The belt tension must be corrected in such a case. ➥ *Chapter 10.5.3 'Re-tensioning the drive belt' on page 86*

If rips or tears are discovered during the monthly inspection, the belt must be replaced immediately.

10.4.3 Check dust extractor

Check dust extractor for any damage

1. Switch off the machine and extraction systems.
2. Carry out a visual inspection of all suction hoses, extraction pipes and connecting parts.
3. Check that the entire dust extractor is in perfect condition.
4. For machines with effectively connected potential-free contact to the extraction system control:
   1. Switch machine on.
   2. Check whether the dust extractor starts up with the machine.
5. On machines without extraction system control:
   1. Switch on the dust extractor.
   2. Switch machine on.
6. Perform a visual inspection of all machine parts.
   ➡ If any damage is identified on the machine or of the components, then these are to be fixed immediately.

Check the effectiveness of the dust extractor

1. Measure air flow and air speed.

2. The extraction performance must be sufficient to achieve the negative pressure and air speed required at the connection point (see technical data or layout).

Check extraction hose and pipe

1. Preparing the machine for a tool change. ➦ *Chapter 8.3.2 'Prepare to change tooling' on page 55*
2. Remove the dust extraction hose from the extraction connector.
3. Remove any chips, dust and material cuttings from the extraction hose and extraction funnel.
4. Attach the extraction hose to the extraction connection.
5. Prepare the machine for operation. ➦ *Chapter 8.3.3 'Prepare the machine for operation' on page 56*

10.4.4 Check safety devices (emergency stop)

Safety devices(*[emergency stop]* buttons) must be checked monthly. The saw shaft must come to a standstill within 10 seconds with the tools clamped.

Machines without separate feed motor or scoring motor

Machines of this type of construction can alternatively be equipped with red *[stop buttons]* instead of *[emergency stop]* buttons.

If the machine is equipped with an *[emergency stop]* button, test the functionality

Carry out emergency stop test with all red *[Emergency stop]* buttons on the machine.

1. Prepare the machine for operation.
2. Switch machine on.
3. Push the *[Emergency stop]*.

   OK Machine stops immediately.
   - Continue with next step.

   NOK Machine does not stop immediately.
   1. If present: Switch off *[Main switch]*(position *"O" / "OFF"*).
   2. Disconnect the machine from the mains power supply.
   3. Contact Felder-Group service centre.
4. Switch the machine on using the green *[start]* button with the *[emergency stop]* button locked.

   OK Machine does not start.
   1. Unlock the *[Emergency stop]* button by turning it.
   2. Repeat with all *[Emergency Stop]* buttons on the machine.

   NOK Machine can be started.
   1. Press the red *[stop]* button.
   2. If available: Turn the *[main switch]* off (position *"O" / OFF*) and secure it.
   3. Contact Felder-Group service centre.

Check the red *[stop]* button and the emergency stop on machines not equipped with an *[emergency stop]* button

Carry out emergency stop test with all red *[Stop]* buttons on the machine.

1. Prepare the machine for operation.
2. Switch machine on.

3. Press the red *[stop]* button.

OK Machine stops immediately.

1. Repeat the test on the next red *[Stop]* button.
2. Repeat with all red *[Stop]* buttons on the machine.

NOK Machine does not stop immediately.

1. If present: Switch off *[Main switch]*(position *"O" / "OFF"*).
2. Disconnect the machine from the mains power supply.
3. Contact Felder-Group service centre.

Check the time it takes for the machine to come to a stop

Configuration of the machine without a motor brake:

The machine is not equipped with a motor brake. The design of the machine guarantees that the saw arbour comes to a standstill within the legally applicable standstill time of 10 seconds.

1. Prepare the machine for operation.
2. Switch the machine on and briefly let it run.
3. Switch machine off with the red *[Stop]* button.

   The saw shaft must come to a standstill within 10 seconds with the tools clamped.

OK Machine comes to a standstill within 10 seconds.

→ Checking the time for the machine to come to a stop completed.

NOK Machine takes longer than 10 seconds to come to a standstill.

1. If present: Switch off *[Main switch]*(position *"O" / "OFF"*).
2. Disconnect the machine from the mains power supply.
3. Contact Felder-Group service centre.

➡ The time in which the machine requires to come to a standstill is checked.

10.4.5 Check the effectiveness of safety devices (safety switches)

Safety devices (safety switches) must be checked monthly. The circular saw blade only runs when the safety switch inside the machine is actuated by the interlock. The shelf must be installed for this.

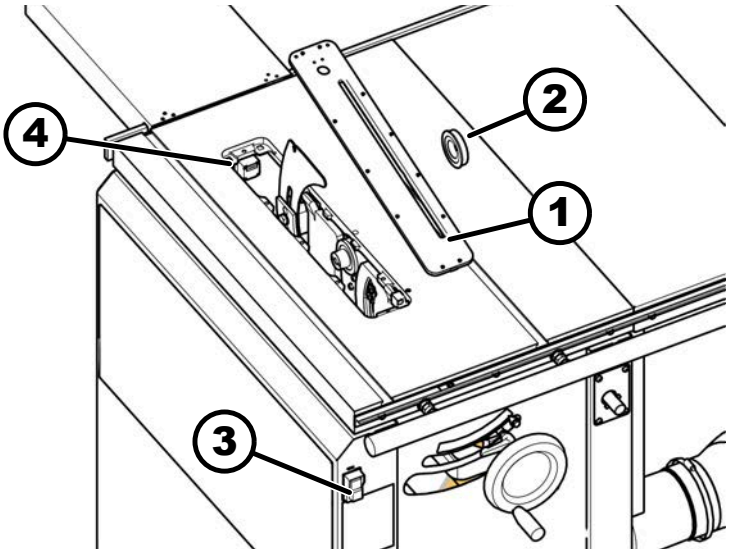

Fig. 70: Interlock switch Insert board

1 Insert board
2 Rear flange
3 Green start button - Saw blade ON
4 Safety switch

Check interlock switch for functions

1. Switch off the machine and secure it from being switched on again.
2. Preparing the machine for a tool change. ➦ *Chapter 8.3.2 'Prepare to change tooling' on page 55*
3. Remove the insert board, saw blade and rear flange.
4. Press the green *[Start]*-button on the control panel.

OK: Machine does not start.

→ Prepare the machine for operation. ➦ *Chapter 8.3.3 'Prepare the machine for operation' on page 56*

NOK: Machine can be started.

1. Press the red *[stop]* button.
2. Contact Felder-Group service centre.

➡ The safety switch has been tested.

10.4.6 Lubricate the height guide of the circular saw unit

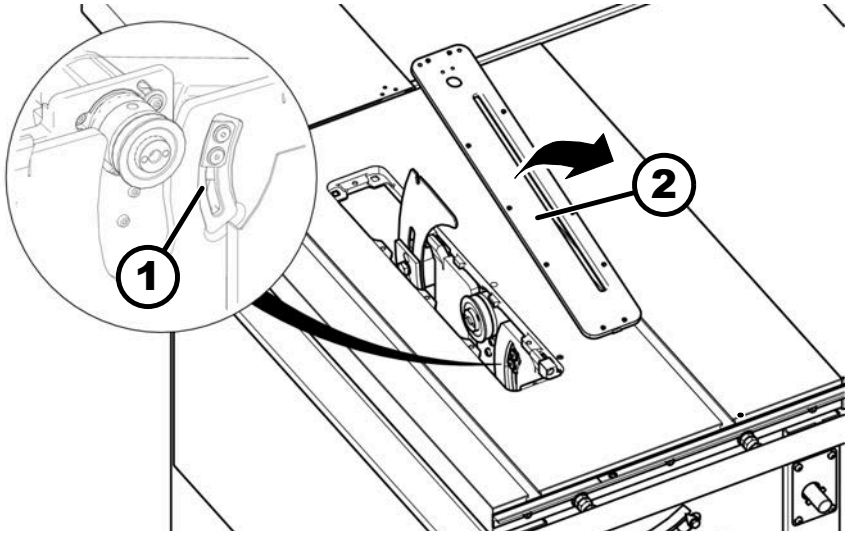

Fig. 71: Lubricate the height guide

1 Height guide
2 Insert board

Tool:

- Brush

Material:

- Machine Grease

1. Switch off the machine and secure it from being switched on again.
2. Preparing the machine for a tool change. ➦ *Chapter 8.3.2 'Prepare to change tooling' on page 55*
3. Remove insert board and saw blade.
4. Thoroughly clean the height guide from chips, dust and grease residues.
5. Lubricate the height guide with normal machine grease using a brush.
6. Move the saw unit to the lowest position and then back to the highest position.
7. Fit the saw blade. ➦ *Chapter 8.4.1 'Installing the saw blade in the machine' on page 57*, ➦ *Table on page 63*
8. Prepare the machine for operation. ➦ *Chapter 8.3.3 'Prepare the machine for operation' on page 56*

10.4.7 Lubricating the circular saw height adjustment spindle and tilt adjustment spindle

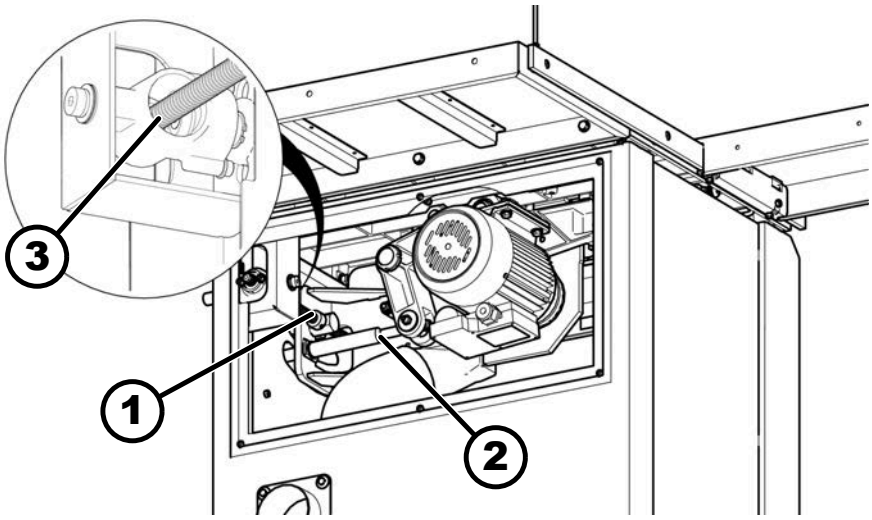

Fig. 72: Lubricate adjustment spindle

1 Tilting spindle
2 Height control spindle
3 Bevel gearbox (angle adjustment)

Tool:

- Grease gun

Material:

- Machine Grease

1. Switch off the machine and secure it from being switched on again.
2. Disconnect the machine from the mains power supply.
3. Remove the rear cover. ➦ *Chapter 10.2 'Preparations for maintenance work / removing covers' on page 78*
4. Lubricating the height adjustment spindle:
   - Position the saw aggregate in the uppermost position.
   - Lubricate height spindle with normal machine grease.
5. Lubricating the tilt adjustment spindle:
   - Tilt the saw aggregate in the 90° position (cutting angle 0°).
   - Lubricate the swivel spindle with normal machine grease.
6. Lubricating the bevel gearbox:
   - Insert the flexible hose of a grease gun into the gearbox housing.
   - Lubricate the gearbox with a press stroke.
7. Tilt the saw unit to the 45° position and then back to the 90° position.
8. Move the saw unit to the lowest position and then back to the highest position.
9. Attach the cover and hang it on the screws.
   ➡ The cover must be in contact with the machine chassis on all sides.
10. Tighten screws (6x).

10.5 Checking/changing the circular saw drive belt

10.5.1 Check belt tension and belt condition

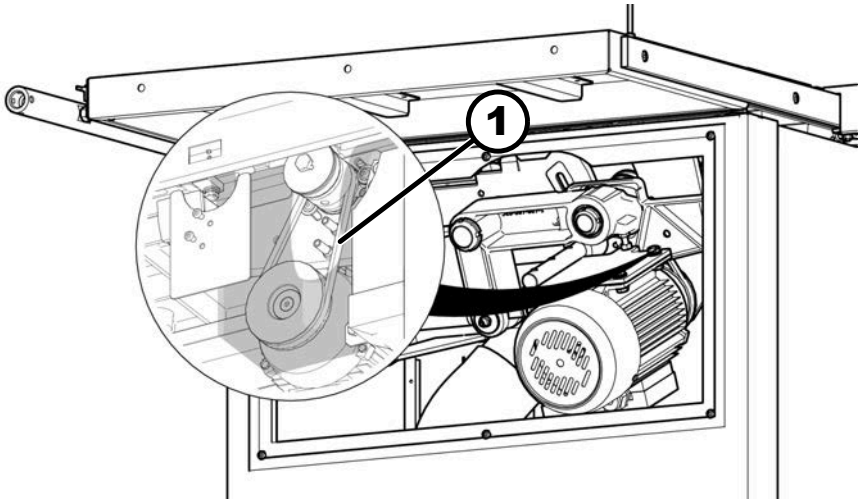

Fig. 73: Check the drive belt

1 Drive belt tension 210 - 230 Hz

- The belt tension is factory set to the ideal value.
- The belt tension is specified as an oscillation frequency in hertz (Hz).
- The correct belt tension can only be checked with a measuring device.

1. Tilt the saw to the approx. 30° position. Move the circular saw all the way down.

2. Switch off the machine and secure it from being switched on again.

3. Disconnect the machine from the mains power supply.

4. Remove the rear cover. ➦ *Chapter 10.2 'Preparations for maintenance work / removing covers' on page 78*

5. Check the condition of the entire belt with a few manual turns.

OK No damage, cracks or lateral tears.
→ Continue with next step.

NOK Cracks on the back of the belt, lateral tears or brittle areas.
→ Replace the drive belt. ➦ *Chapter 10.5.2 'Replace the drive belt' on page 86*

6. Check the belt tension with a measuring device.

OK Drive belt tension 210 - 230 Hz

NOK Vibration frequency in Hertz (Hz) is not within the specified range.
→ Re-tensioning the drive belt. ➦ *Chapter 10.5.3 'Re-tensioning the drive belt' on page 86*

7. Attach the cover and hang it on the screws.
➡ The cover must be in contact with the machine chassis on all sides.

8. Tighten screws (6x).

10.5.2 Replace the drive belt

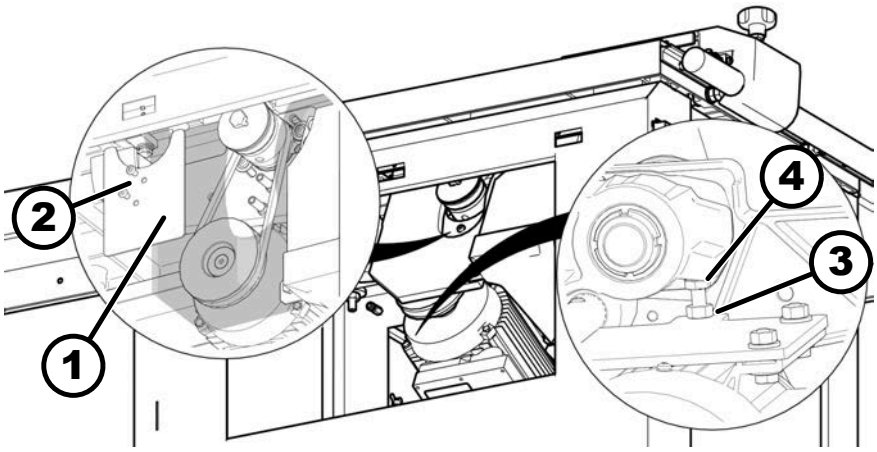

Fig. 74: Replace the drive belt

1 Guard plate
2 Screws M6x10
3 Lock nut
4 Tightening screw

Tool:

- Ring spanner 13 mm
- Hex key 4 mm

1. Tilt the panel saw to the approx. 30° position. Move the circular saw all the way down.
2. Switch off the machine and secure it from being switched on again. Remove the saw blade.
3. Disconnect the machine from the mains power supply.
4. Remove the front and rear cover plate. ➦ *Chapter 10.2 'Preparations for maintenance work / removing covers' on page 78*
5. Loosen the screw and remove the guard plate.
6. Loosen the lock nuts and loosen the clamping screw.
7. release the tension on the old drive belt.
8. Remove the old drive belt.
9. Hook the new drive belt into place:
    - First hook onto the saw shaft.
    - Pull the drive motor upwards.
    - Hook the drive belt on the drive motor.
10. Tension drive belt. ➦ *Chapter 10.5.3 'Re-tensioning the drive belt' on page 86*
11. Place the guard plate and screw on.
12. Fit the front and rear covers. ➦ *Chapter 10.2 'Preparations for maintenance work / removing covers' on page 78*

10.5.3 Re-tensioning the drive belt

NOTICE
Drive belt tension is too high
Bearing damage to the saw shaft or motor
- Stop turning the belt-tensioning screw once the drive belt is tensioned sufficiently, enabling it to transmit power effectively.
- Check the drive belt using a frequency measurement device.

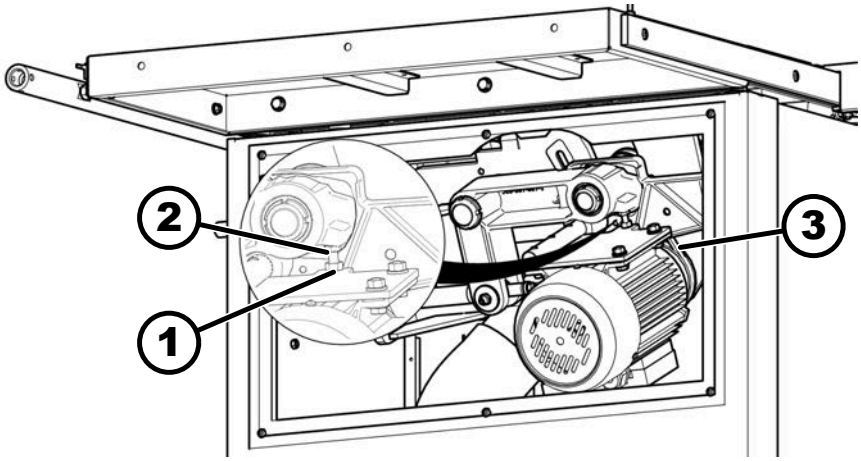

Fig. 75: Re-tensioning the drive belt

1 Lock nut
2 Belt-tensioning screw
3 Drive belt tension 210 - 230 Hz

Tool:

- Ring spanner 13 mm

1. Tilt the saw to the approx. 30° position. Move the circular saw all the way down.
2. Switch off the machine and secure it from being switched on again.
3. Disconnect the machine from the mains power supply.
4. Remove the rear cover. ➦ *Chapter 10.2 'Preparations for maintenance work / removing covers' on page 78*
5. Loosen locking nut.
6. Tension the drive belt with the belt tensioning screw.
7. Tighten locking nut.
8. Attach the cover and hang it on the screws.
   ➡ The cover must be in contact with the machine chassis on all sides.
9. Tighten screws (6x).

11 Troubleshooting

11.1 What to do in the event of malfunction

WARNING
Improper troubleshooting
Severe injuries and damage to property
– Troubleshooting may only be carried out by authorised, trained personnel who are familiar with how to operate the machine and are in strict observance of all safety instructions.

Malfunctions and faults on the machine (including the guards and tools) must be reported immediately after they have been noticed.

In the event of malfunction that poses an immediate danger to persons, equipment or operational safety:

1. Stop the machine immediately pressing either the *[Emergency Stop]* or the red *[Stop]* button.
2. Disconnect the machine from the mains and ensure it can not be switched on again.
3. Contact Felder-Group service centre and solve the fault.

11.2 What to do after rectifying the fault

Check,

1. if the malfunction and cause of the malfunction have been professionally remedied.
2. whether all safety equipment has been installed in accordance with regulations and are technically and functionally in perfect condition.
3. whether, there are no individuals located within the danger area of the machine.

11.3 Faults, causes and repairs

The following examples highlight possible undesired conditions of the machine. This list makes no claim to completeness.

This information is designed to help operators recognise faults when operating the machine and to rectify them.

Fault on the machine - saw unit

Fault description	Cause	Remedy
The red *[Stop]* button will not stop the machine immediately	Fault in the electrical system	1. Disconnect the machine from the mains power supply. 2. Contact Felder-Group service centre.
Safety switch without functions	Fault in the electrical system	1. Disconnect the machine from the mains power supply. 2. Contact Felder-Group service centre.
Machine cannot be switched off	Fault in the electrical system / *[Emergency stop]*- command chain	1. Disconnect the machine from the mains power supply. 2. Contact Felder-Group service centre.
Machine is not functioning	Error in the electrical connection	Check the electrical connection (power cable, fuses).
Circular saw shaft doesn't start	Safety switch not actuated (insert board removed)	Prepare the machine for operation.
	[Motor safety switch] has been triggered	Let the motor cool down, restart the machine.

Fault description	Cause	Remedy
The motor is running but the saw blade is not rotating	The drive belt is torn	→ Replace the drive belt.
The belts squeal when switched on or started	The belt tension is too slack	→ Check belt tension, retighten if necessary.
	The drive belt is worn out	→ Replace the drive belt.
Saw blade does not come to a stop within 10 seconds	Fault in the electrical system / brake	→ Contact Felder-Group service centre.

Fault on the machine - mechanical

Fault description	Cause	Remedy
Height of rip fence above the machine table not correct	The height adjustment is misadjusted	→ Adjust the height of the fence plate.
Angle of rip fence not correct	The angle adjustment is misadjusted	→ Adjust / correct the angle of the parallel fence.
Unsatisfactory cuts	Saw blade is blunt or incorrectly selected for the workpiece	→ Changing the saw blade.
	Cutting height is set too high	→ Only set the cutting height to the height actually required.

11.4 Adjust the height of the rip fence above the machine table

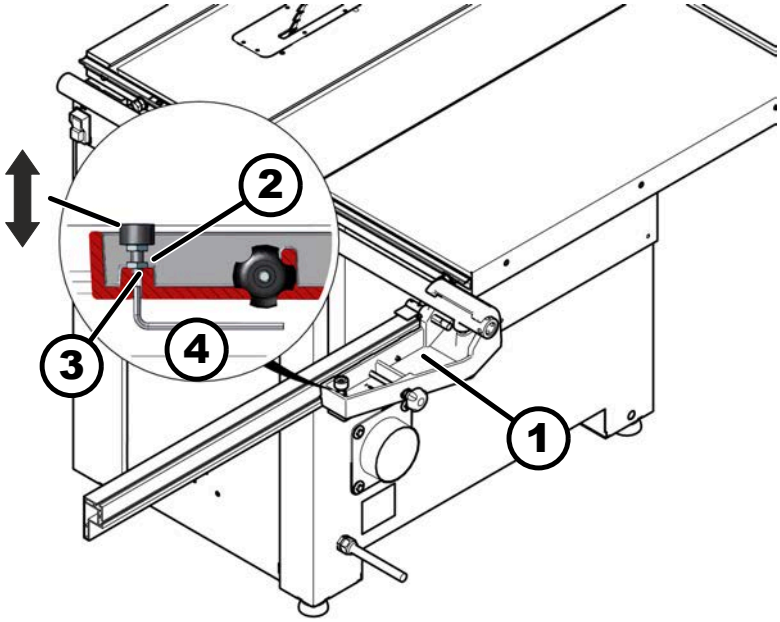

Fig. 76: Readjusting the rip fence height

1 Rip fence
2 Lock nut
3 Adjustment screws
4 Hex key 4 mm

Tool:

- Hex key 4 mm
- Ring spanner 13 mm

The fence plate should be parallel to the machine table. This setting is important when working with the "Sawboy" auxiliary fence on the rip fence.

1. → Switch off the machine and secure it from being switched on again.

2. → Move the rip fence to the end of the bar and outwards.

3. → Tighten the adjustment screws with an Allen key to prevent them from turning.

4. → Loosen locking nut.

5. Adjust the height of the fence with the grub screws.
6. Tighten the lock nut again.
7. Swing the rip fence to the rear.
8. Check the height setting.

OK Fence plate with an even distance parallel to the machine table.

NOK Fence plate not parallel to the machine table.
→ Adjust the height of the rip fence with the adjustment screw.

11.5 Correcting the rip fence angle (adjust free cut)

The angle between the fence plate and the machine table or saw blade cutting line is also called the free cut.

A correctly adjusted clearance cut is important so that the workpiece is not burnt or damaged by the rising part of the saw blade during rip cutting.

If the free cut is set correctly, very little dust will be produced during processing.

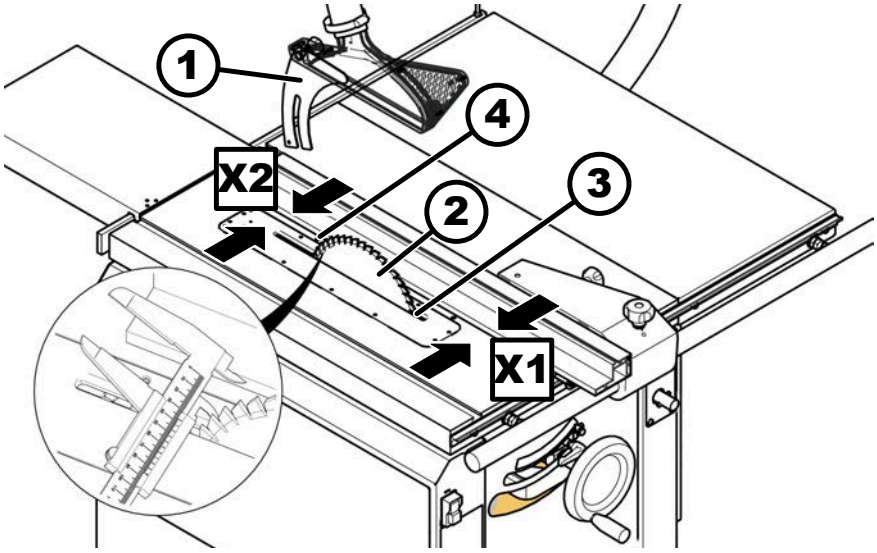

Fig. 77: Free cut preparation

1 Riving knife and saw guard
2 Saw blade ø253 mm
3 cutting saw teeth
4 high running saw teeth
X1 Rip fence setting
X2 Free cut adjustment

Prepare the machine for adjustment

The free cut dimension is measured between the saw tooth and the fence plate on the rip fence.

1. Switch off the machine and secure it from being switched on again.
2. Disconnect the machine from the mains power supply.
3. Remove riving knife and saw guard.
4. Insert a ø253mm saw blade.
5. Tilt the saw aggregate in the 90° position (cutting angle 0°) and move to the uppermost position.
6. Convert fence plate to narrow fence edge.
7. Set the rip fence to an even measurement and fix in place (for example 30 mm).
   ➡ Check dimension X1 = 30.0 mm with digital calliper.
8. Check the free cut dimension between the saw tooth and the fence plate on the rip fence using the digital caliper.
   ➡ X2 dimension = X1 dimension + 0.07 mm.

Correcting the rip fence angle (adjust free cut)

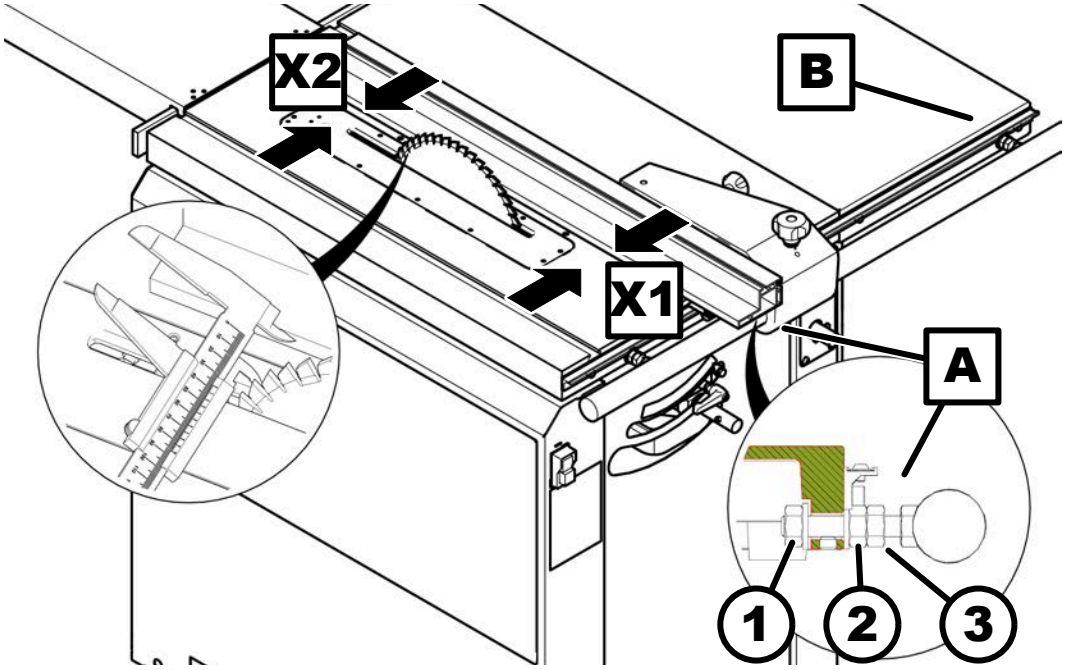

Fig. 78: Adjust free cut

1 Lock nut
2 front adjusting nut
3 rear locking nut
A Adjustment point (machine table)
B Adjustment point (table extension)
X1 Rip fence setting
X2 Free cut adjustment

Tool:

- Ring spanner 17 mm
- Callipers

Material:

- MDF-panel

The free cut dimension is measured between the saw tooth and the fence plate on the rip fence.

1. Loosen the lock nuts at the adjustment points "A" and "B".
2. On setting point "A" (machine table):
   1. Loosen the rear locking nut.
   2. Adjust the free cut accurately using the front adjustment nut.
      ➡ X2 dimension = X1 dimension + 0.07 mm.
   3. Lightly tighten the fixing nut and the locking nut.
3. At set point "B" (cutting extension):
   1. Loosen the rear locking nut.
   2. Turn the adjusting nut by hand to the cutting extension.
   3. Lightly tighten the fixing nut and the locking nut.
4. At adjustment points "A" and "B", tighten the lock nuts and fixing nuts firmly.
5. Prepare the machine for operation. ➦ *Chapter 8.3.3 'Prepare the machine for operation' on page 56*
6. Check settings with a sample cut using an MDF panel.

   OK Very little dust is produced during processing

   NOK Workpiece is burnt or damaged by the rising part of the saw blade.
   Correcting the rip fence angle (adjust free cut).

11.6 Correct crosscut fence settings

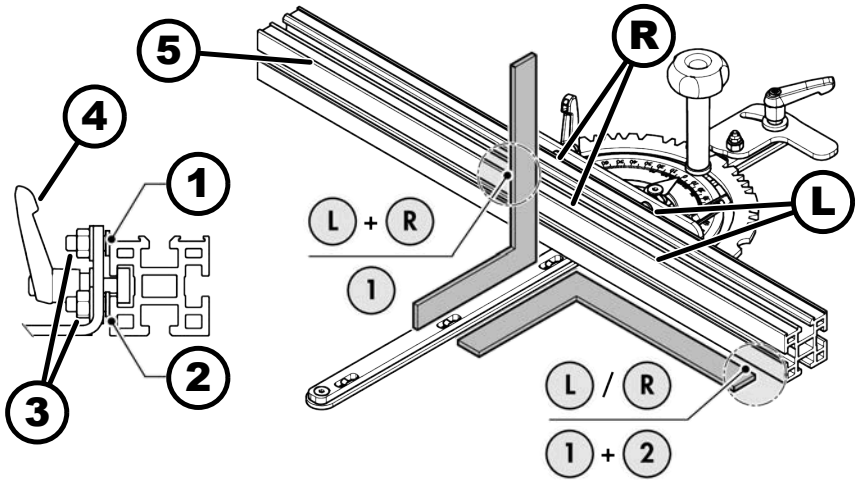

Fig. 79: Crosscut fence - Angle correction

1 Upper adjustment screw
2 Lower adjustment screw
3 Lock nut
4 Clamping lever
5 Fence plate
L Left adjustment screws
R Right adjustment screws

0°-angle adjustment (readjust)

Tool:

- Precision bevelled steel square
- Ring spanner 10 mm
- Hex key 3 mm

1. Release both clamping levers (left and right) and remove the fence plate.
2. In case of vertical angle misalignment, turn the upper and adjustment screws. Make correction left and right.
3. For horizontal angle errors, turn the upper and lower adjustment screws. Make correction left or right.
4. Angle correction with adjustment screws:
   1. Hold the set screws with an Allen key.
   2. Loosen locking nut.
   3. Rotate adjustment screw.
   4. Tighten the lock nut.
5. Thread in the fence plate and clamp both clamping levers (left and right).
6. Check the result with precision horizontal and vertical hair angles.

OK The fence plate is positioned both horizontally and vertically at a 90° angle to the guide rail.

NOK Incorrect angle setting can be recognised by the precision hair angle.

1. 0°-angle adjustment (readjust).
2. Check the setting by making a 2-sided sample cut.

Check the setting by making a 2-sided sample cut

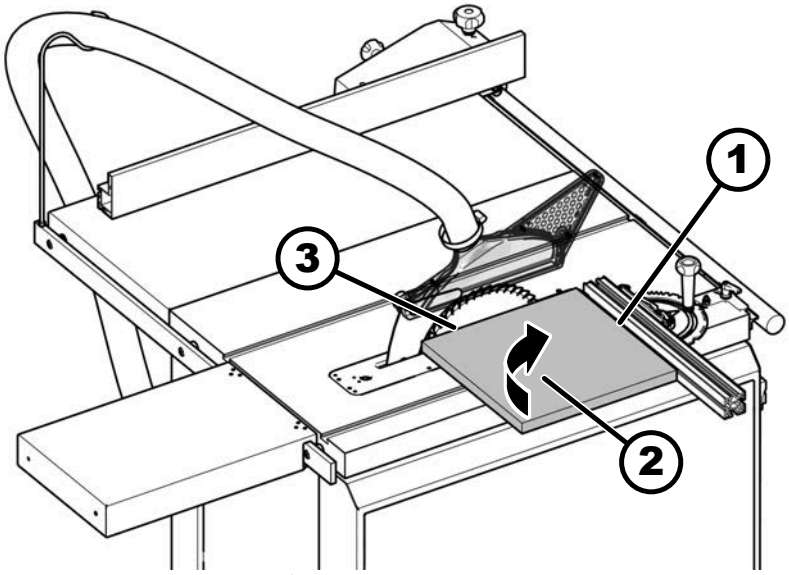

Fig. 80: Sample cut - Crosscut fence angle

1 First cut (reference cut)
2 Rotate the workpiece in a clockwise direction
3 Second cut (control cut)

Tool:

- Precision bevelled steel square

Material:

- Test workpiece (panel material)

1. Set saw cutting angle and crosscut fence to 0°.
2. Carry out sample cut (reference cut).
3. Turn the test workpiece 90° in a clockwise direction.
   ➡ Let the workpiece rest with the cut side against the stop.
4. Carry out a sample cut again (control cut).
5. Check the result with a precision hair angle.
   ➡ Allow the precision hair angle to rest against the two cut surfaces.

Width adjustment of the guide rail

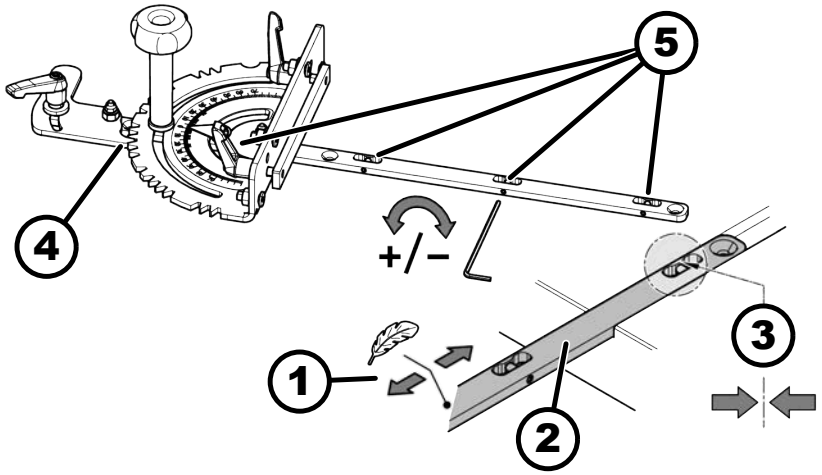

Fig. 81: Crosscut fence - Adjust the rail width

1 Ease of operation
2 Guide rail
3 Play (guide rail / machine table)
4 First grub screw
5 Grub screws two to five

Tool:

- Hex key 1.5 mm

The width of the guide rail can be adjusted on the machine table by using the 5 grub screws.

1. Check ease of movement by pushing back and forth.
2. Remove the crosscut fence from the guide slot in the machine table.
3. Adjust the distance between the guide rail and machine table.
   Turn the first grub screw with an Allen key:
   - clockwise: reduce ease of movement (less gap)
   - counterclockwise: set more clearance
4. Slide the crosscut fence into the guide slot in the machine table.
5. Check the setting and adjust if necessary.
6. Repeat the adjustment on the remaining grub screws.
   ➡ The fence should slide smooth but without side play in the guiding groove.

12 Attachment

12.1 Information relating to spare parts

Use incorrect or faulty spare parts

Spare parts that do not meet the manufacturer's specifications may compromise the machine's operational safety and result in accidents.

- Only use authorised, approved spare parts approved by the manufacturer.
- In case of doubt, have it confirmed by the dealer or manufacturer.
- Only use technically perfect spare parts.
- See spare parts list.

If unauthorised spare parts are fitted into the machine, all warranty, service, compensation and liability claims against the manufacturer and their contractors, dealers and representatives will be rejected.

Use original spare parts

The original spare parts that have been authorised for use are listed in a separate spare parts catalogue, enclosed in the documentation package supplied with the machine.

Spare part orders

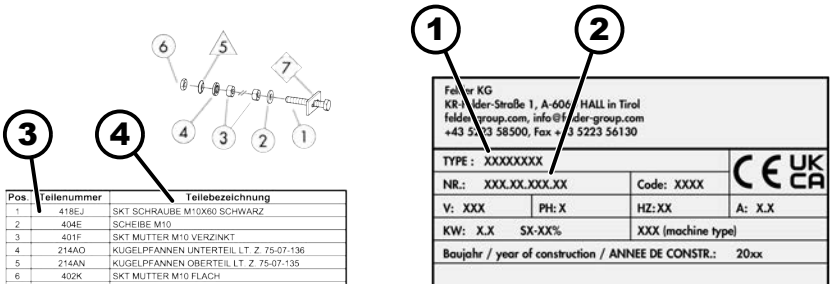

Fig. 82: Spare parts list / data plate

1 Model type
2 Serial number
3 Article number
4 Article description

The following information is required when ordering spare parts:

- Type description and serial number as per type plate
- Article number, article description and required quantity
- Shipping address
- Shipping mode (mail, freight, sea, air, express)

Orders for spare parts, which do not include the required details, will not be processed. Unless specific dispatch instructions are given, the manufacturer / supplier standards shall apply.

12.2 Disposal

ENVIRONMENT

Disposal of machine components

Used electrical materials, electronic components, lubricants and other auxiliary substances must be treated as special waste and may only be disposed of by specialised, licensed firms.

The machine consists of many different materials for which different disposal conditions may apply depending on national legislation.

1. Separate all machine components into material groups.
2. When disposing, pay attention to international regulations, standards and environmental protection norms.

ENVIRONMENT

Disposing of batteries

Batteries are subject to special waste treatment regulations and must be disposed of in accordance with locally enforced regulations.

The improper handling of batteries, can due to their potentially dangerous substances, have a negative environmental effect and consequences for human health.

For this reason, follow the advice relating to batteries exactly:

- do not open or short circuit
- do not throw them into fire or expose them to high temperatures
- protect from getting wet and do not place them in water
- do not store them together with electroconductive items (e.g. chains, screws, metal waste etc.)

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