Hammer®

A2-26

Planer thicknesser

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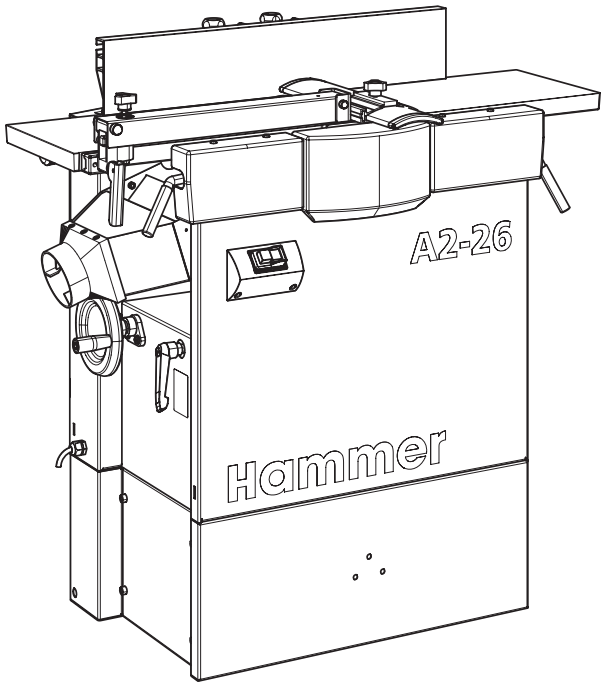

Keep this manual to hand and in good condition for future reference!
Please read this operating manual carefully before using the machine!

Translation of the original operating instructions

Operating instructions

511010-901, 5, 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
OK	Result is okay.
NOK	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 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.

2.2 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.

2.3 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.

2.4 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.

2.5 Personal protective equipment

2.5.1 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.

2.5.2 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).

	Please note
	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.

2.6 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 22*
- 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 associated with working with the planing unit

- Injuries due to coming into contact with the rotating cutterblock from above during planing.
- Injuries due to contact with the rotating tool during mortising.

- Injuries caused by kickback of the workpiece.
- Injuries due to ejected parts of workpieces and tools.

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 2.1 'Intended use' on page 9*

Incorrect selection of planing knives, blunt planing knives

Permanent hearing impairment, serious injuries and property damage.

Sharp planer knives reduce the risk of kickback, especially when planing.

Only use planer knives,

- that meet the requirements of these operating instructions.
- which are well sharpened and in good condition.

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.

Operating the machine without using the planer bridge guard, protective rail and cutterblock cover.

Operational safety is only guaranteed if a planer bridge guard, protective rail and cutterblock cover are used. People could be seriously injured.

- Use the planer bridge guard, protective rail and cutterblock cover.

Processing of several workpieces of varying thicknesses simultaneously (overlapping, next to each other)

Processing several workpieces of varying thicknesses simultaneously (overlapping, next to each other), can lead to workpieces being ejected from the machine and causing serious injuries.

- Feed workpieces of different thicknesses into the machine individually and one after the other.

Manually pulling/removing a workpiece from the machine that has already been taken by the feeding system

- Do not pull a workpiece out of the machine if it has already been taken by the feeding system.

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	Planer-Thicknesser
Brand	Hammer
Model type	A2-26
The following EU guidelines were applied	2006/42/EC 2014/30/EC
The following harmonised norms were applied:	EN ISO 19085-1:2017 EN ISO 19085-7:2019
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: 29082209142

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: 15.9.2022

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	Planer-Thicknesser
Brand	Hammer
Model type	A2-26
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 19085-1:2017 EN ISO 19085-7:2019

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: 15.9.2022

4 Technical information

4.1 Dimensions and weight

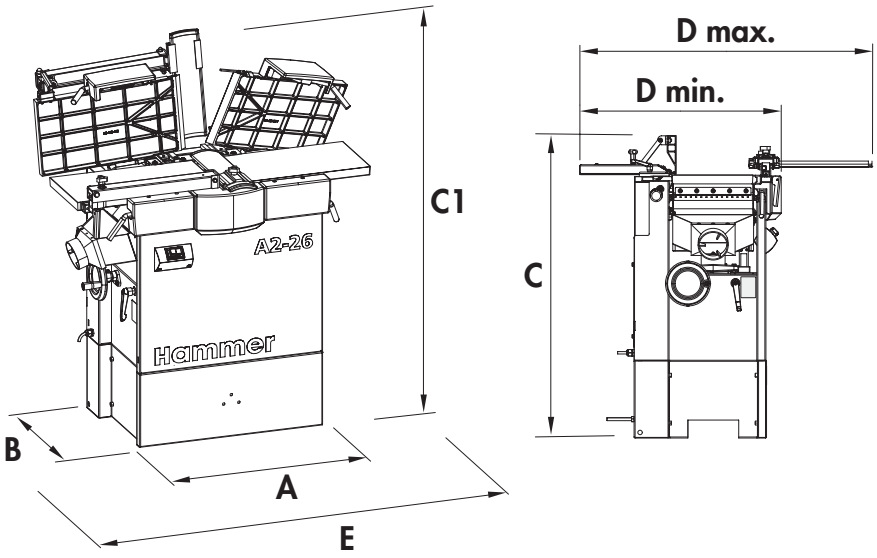

Fig. 1: Dimensions A2-26

Basic machine

Data	Value	Unit
Space requirement A x B	690 x 440	mm
Total height C (Planing)	1012	mm
Total height C1 (Thickness planing)	1300	mm
Total width D min. / max.	970	mm
Total length E	1130	mm
Net weight *)	150	kg

*) incl. planer fence

Packaging dimensions (incl. pallet)

Data	Value	Unit
Total height C	800	mm
Total width D	580	mm
Total length E	1100	mm
Net weight	175	kg

4.2 Operation and storage conditions

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

4.3 Electrical connection

Data	Value	Unit
Mains voltage according to specification plate	± 10	%
Frequency according to data plate	50 / 60	Hz
Power supply cable 1 x 230 V (H07 RN-F)	3 x 1.5	mm^2
Fuse protection	see the wiring diagram	
Triggering characteristic	see the wiring diagram	

4.4 Drive motor

The actual values of the components can be found on the data plate.

Alternating-current motor

Data	Value	Unit
Motor voltage (standard)	1 x 230 V	V
Motor frequency	50 / 60	Hz
Protection class	IP 54	
Motor power S6	1.9	kW

4.5 Planing unit

The machine is equipped with a machine specific, marked cutterblock,

- which has a permissible maximum rotation speed that is higher than the maximum possible rotation speed of the machine.
- which complies with the standard DIN EN 847-1:2013.
- which is marked with "MAN".

Cutterblock

Data	Value	Unit
Blade trajectory diameter	72	mm
Number of knives as standard	3	Qty
Rot. speed 50 Hz	5000	min^{-1}
Rot. speed 60 Hz	5000	min^{-1}

Planer

Data	Value	Unit
Length infeed planing table	507	mm
Length outfeed planing table	507	mm
Length total planing table	1045	mm
Surface planing width	260	mm
Planing fence - tilt range	0 - 45	°
Fence plate (length x height)	700 x 130	mm
Maximum depth of cut	3.0	mm

Thicknesser

Data	Value	Unit
Thicknesser table length	497	mm
Thicknesser width	254	mm
Thicknessing height min.–max.	3 - 184	mm
Feed speed 50 Hz	4.5	m/min
Feed speed 60 Hz	4.5	m/min
Maximum depth of cut	3.0	mm

4.6 Workpiece dimensions

Data	Value
Length	min. 145 mm
Width	max. 254 mm
Thickness	min. 5 mm / max. 184 mm

4.7 Dust extraction

Data	Value	Unit
Extraction connection diameter	100	mm
Min. air speed	20	m/s
Negative pressure planing min.	740	Pa
Negative pressure thicknessing min.	850	Pa
Min. volume flow*)	570	m^3/h

*) Data taken from the volume flow at 20 m/s.

4.8 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. This only applies if the conditions that are specified in the section "Extraction" are adhered to.

4.9 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:

ISO 7960:1995, Annex B and C

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

Tab. 1: ***Planing***

	Idle	Working
A-weighted sound power level, L_{WA}, in dB	101 / 85*)	103 / 91*)
A-weighted emission sound pressure level, L_{pA}, in dB at workplace A	87 / 75*)	88 / 82*)
Uncertainty K_{WA} / K_{pA} in dB	4 / 4	

Tab. 2: ***Thicknessing***

	Idle	Working
A-weighted sound power level, L_{WA}, in dB	99 / 84*)	101 / 92*)
A-weighted emission sound pressure level, L_{pA}, in dB at workplace:		
Working position 1 (infeed)	89 / 69*)	90 / 79*)
Working position 2 (outfeed)	89 / 71*)	93 / 79*)
Uncertainty K_{WA} / K_{pA} in dB	4 / 4	

*) = Reduced noise emission with the Silent-Power® spiral cutterblock.

5 Machine overview

5.1 Overview control elements

Customer specific machine configuration

Please note, that depending on the model of the machine, not all described functions are present, or additional functions and buttons are available (e.g. machines with special functions).

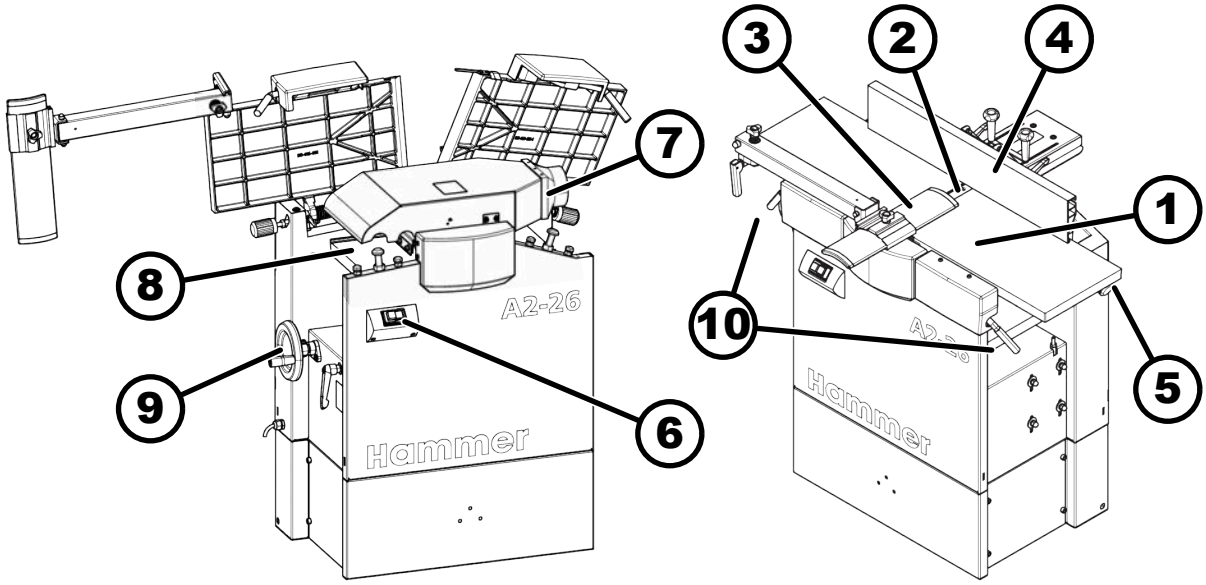

Fig. 2: Overview A2-26

1 Planer
2 Cutterblock
3 Cutterblock cover
4 Planer fence
5 Adjust the depth of cut (planer)
6 Switch
7 Extraction connection Ø
8 Thicknesser
9 Adjust the depth of cut (Thickness planer)
10 Planing table clamping levers

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.

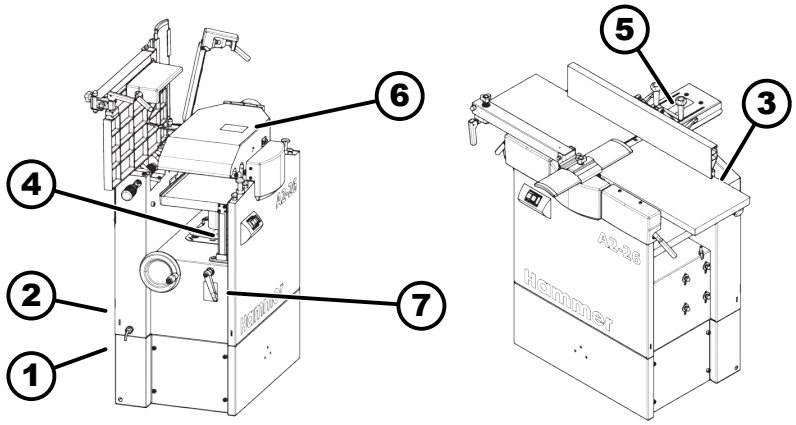

Fig. 3: Pictograms overview

1 Machine data plate (rear side)
2 Danger, electric current
3 Depth of cut scale (planer)
4 Scale workpiece thickness (thicknesser)
5 Scale angle adjustment (planer fence)
6 Changeover position information (thicknessing table)
7 Clamping information (thicknessing table)

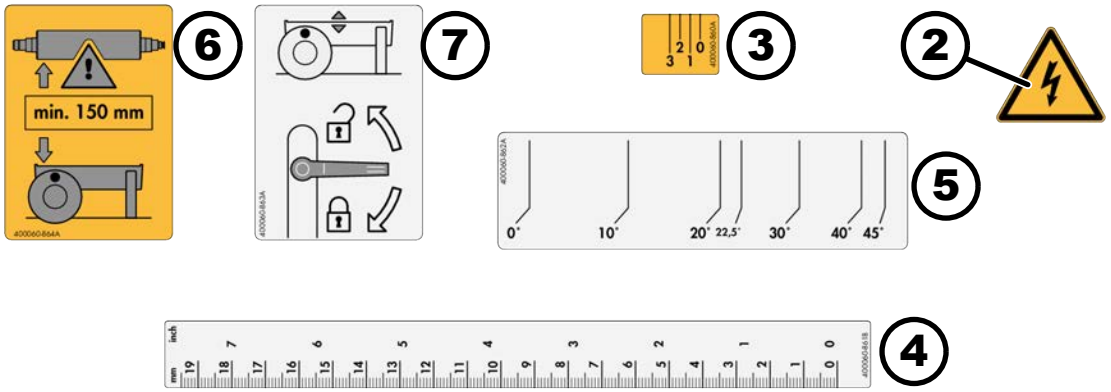

Fig. 4: Overview individual pictograms

5.3 Information on the machine data plate

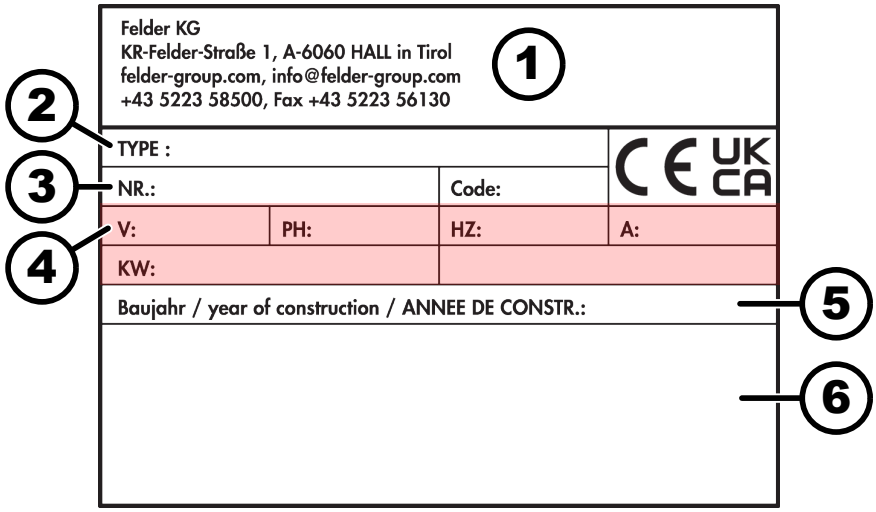

Fig. 5: Machine data plate

1 Manufacturer information
2 Model type
3 Serial number
4 Electrical connection

5 Year of construction
6 Additional information (optional)

5.4 Operation and display elements

5.4.1 Thicknessing unit controls

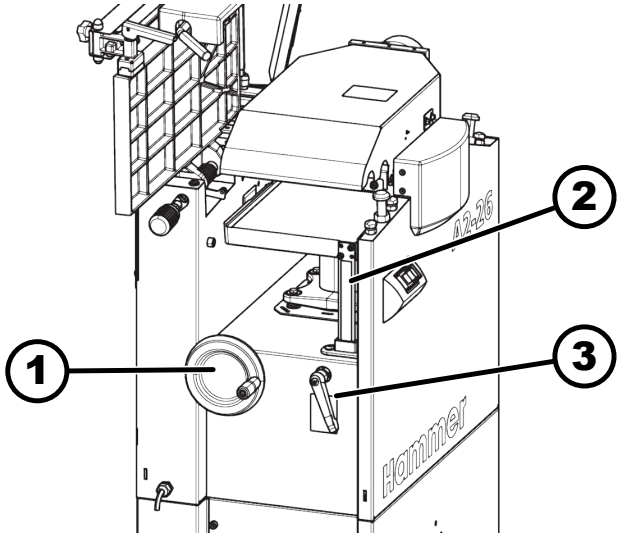

Fig. 6: Thicknesser controls

1 Height adjustment handwheel (thickness planing height)
2 Scale - Thicknessing passage information
3 Clamping lever - Clamping the thicknesser

5.4.2 Planer controls

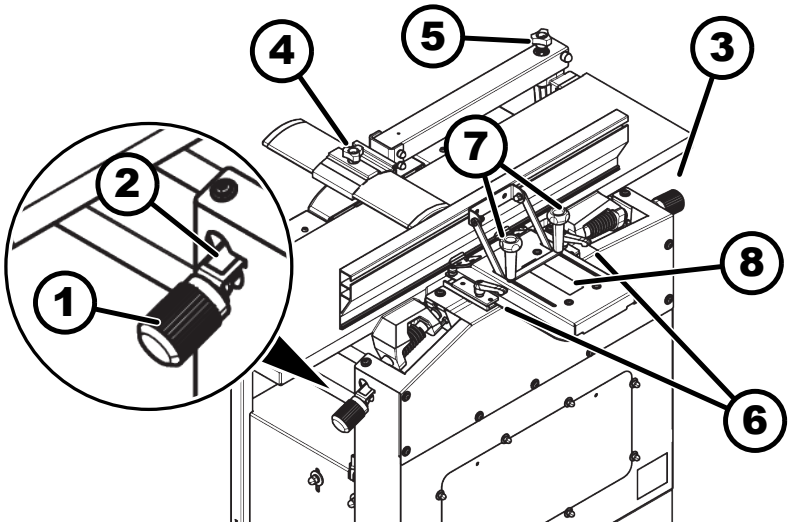

Fig. 7: Planer controls

1 Set the depth of cut (infeed planing table)
2 Depth of cut scale
3 Set the height (outfeed planer table)
4 Clamping the protective guard
5 Setting of the bridge guard
6 Clamping horizontal adjustment planer fence
7 Clamping angle adjustment planer fence
8 Scale angle adjustment planer fence

5.5 Safety devices

5.5.1 Safety limit switches

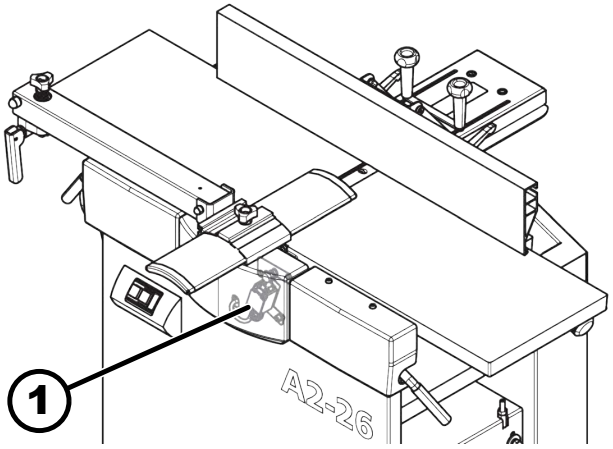

Fig. 8: Safety limit switches

1 Safety limit switches

- The machine is equipped with safety limit switches. The planer shaft can only run when the planer tables are closed or the extractor hood is tilted up.
- The machine is equipped with a motor protection device that switches the machine off in the event of an overload.

5.5.2 Cutterblock cover

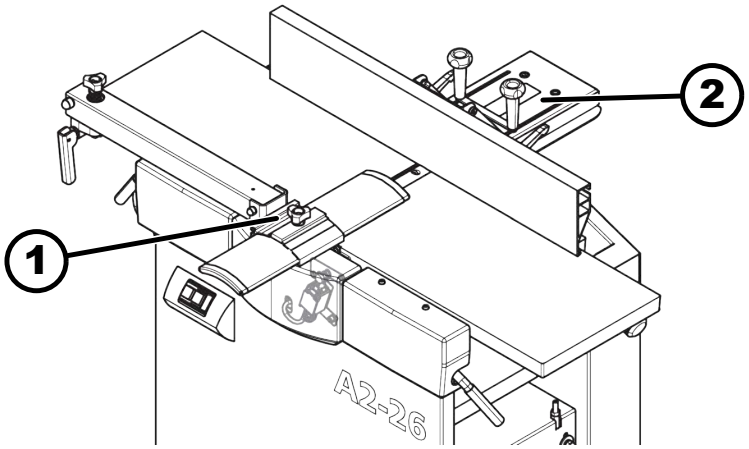

Fig. 9: Cutterblock cover

1 front cutterblock cover (bridge guard)
2 rear cutterblock cover

Bridge guard (front cutterblock cover)

The bridge guard covers the cutterblock when surface planing. Instructions to adjust the bridge guard are given in the respective working techniques descriptions.

Rear cutterblock cover

When surface planing, the rear cutterblock cover screens the part of the cutterblock that remains exposed behind the fence.

This cover is mounted to the planer fence and does not need to be adjusted separately.

5.5.3 Kickback guards

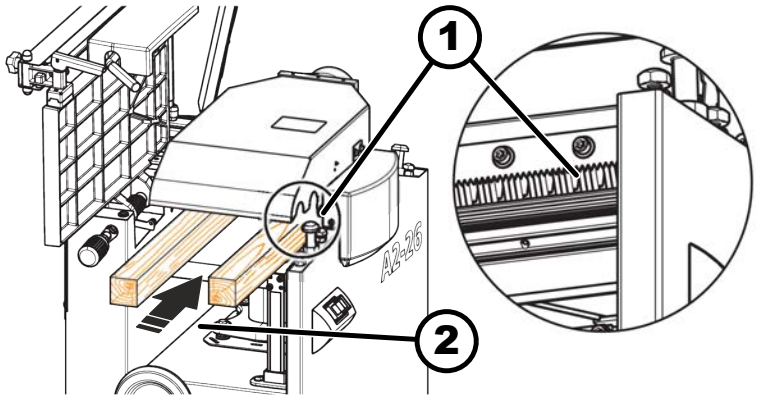

Fig. 10: Kickback guards
1 Kickback guards
2 Processing direction when thicknessing

When thicknessing, the kickback guards prevent the workpiece from kicking back.

The kickback guards must fall back in place after having been lifted.

Before each time the machine is put into operation, test the thicknesser kickback guards to ensure that they are functioning properly. ➦ *Chapter 10.5 'Transport rollers and kickback guards' on page 59*

5.6 Optional equipment and accessories

5.6.1 Digital display

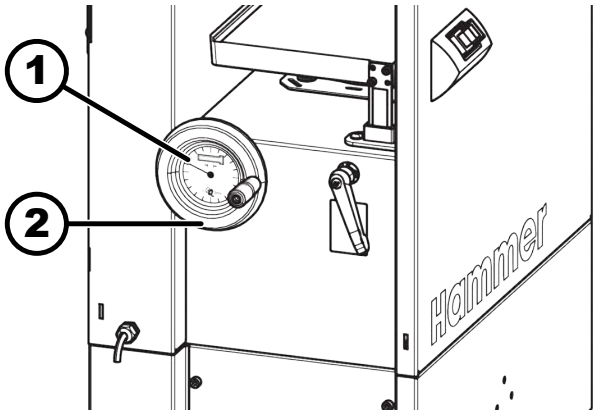

Fig. 11: Digital display
1 Digital display
2 ALU system handwheel

- Art.-No. 01.1.202 (display in "mm")
- Art.-No. 01.2.202 (display in "inches")

The digital display is built into both the thicknessing height adjustment system handwheel and the drilling height adjustment system handwheel (drilling support accessory).

Exact adjustments to one tenth of a millimetre are possible with the digital display.

5.6.2 Rolling carriage and lifting bar

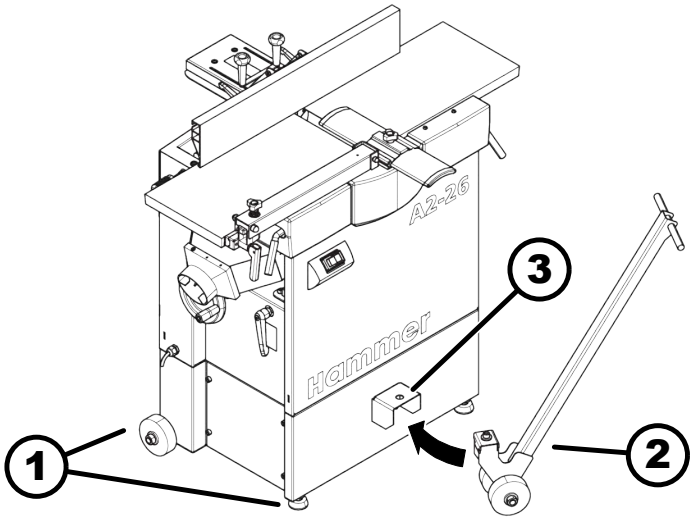

Fig. 12: Rolling carriage

1 Rolling carriage (Art no. 503-134)
2 Lifting bar (Art.-no. 500-149)
3 Lifting bar resting plate

The rolling carriage is mounted to the machine chassis. The rolling carriage facilitates the task of positioning the machine. (see assembly instructions "rolling carriage")

The lifting bar is hooked under the lifting bar plate of the rolling carriage (accessory). The lifting bar and the rolling carriage facilitate the task of manoeuvring the machine in the smallest of spaces. (See assembly instructions "lifting bar")

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.
- 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

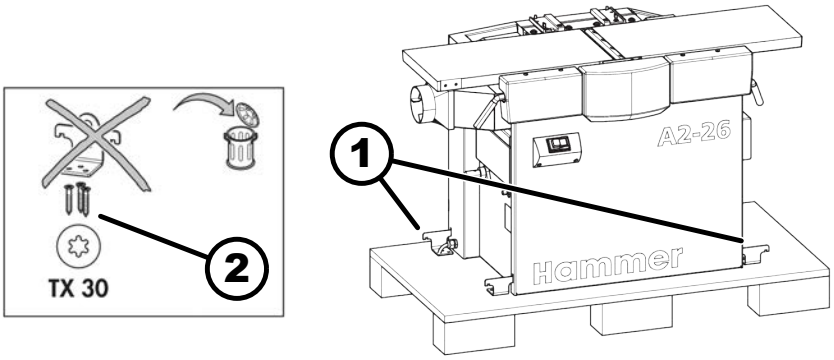

Fig. 13: Remove the transport bracket

1 Transport bracket
2 Chipboard screws TX 30

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

property damage

Damage and possible complete write-off of the machine.

- Only lift the machine using the positions marked.
- Never lift the machine using the machine table or the additional support tables.
- Never lift the machine using the work tables.
- Only transport the machine using a forklift or a pallet truck.

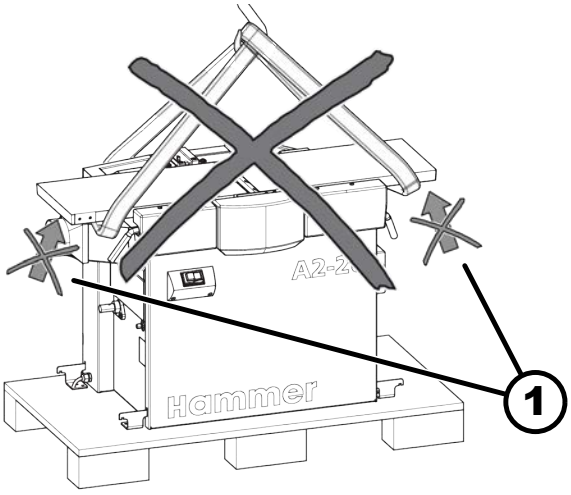

Fig. 14: Transportation and unloading

1 Do not lift!

6.6 Means of transportation

6.6.1 Unloading with a pallet truck

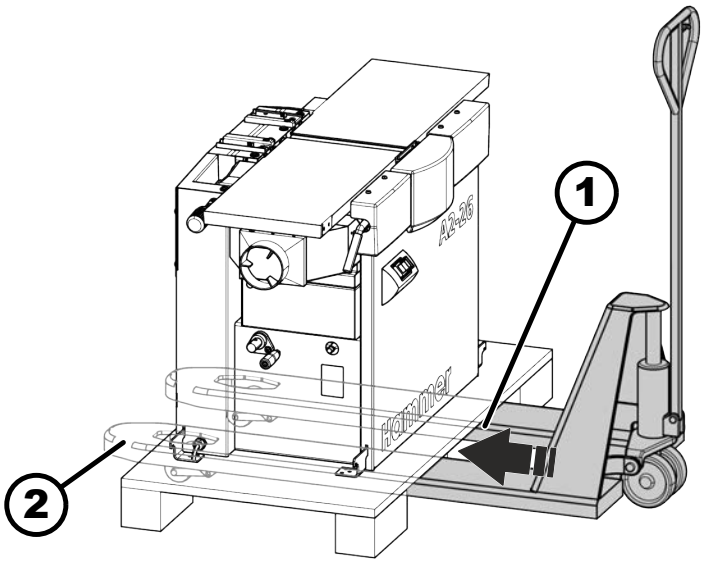

Fig. 15: Transport with a pallet truck

1 Pallet recesses
2 Pallet truck forks

A forklift truck must be used to unload from the pallet.

1. Push the forks into the recesses in the pallet.
2. Push the pallet truck in under the pallet until it reaches the back and lift the machine carefully.
3. Only lift the machine as little as possible.
4. Transport the machine to the unloading position using the pallet truck.

6.6.2 Transporting with a forklift

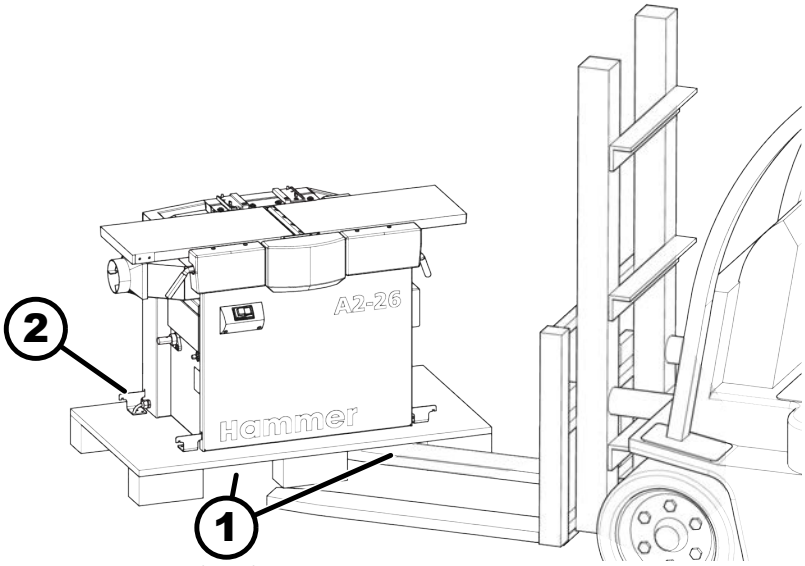

Fig. 16: Transport with a forklift truck

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.
- Insert the forklift forks as wide as possible into the pallet.

Personnel:

- Forklift driver:in

1. The transport locks can be removed, once the machine has been unloaded at the installation site.

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

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

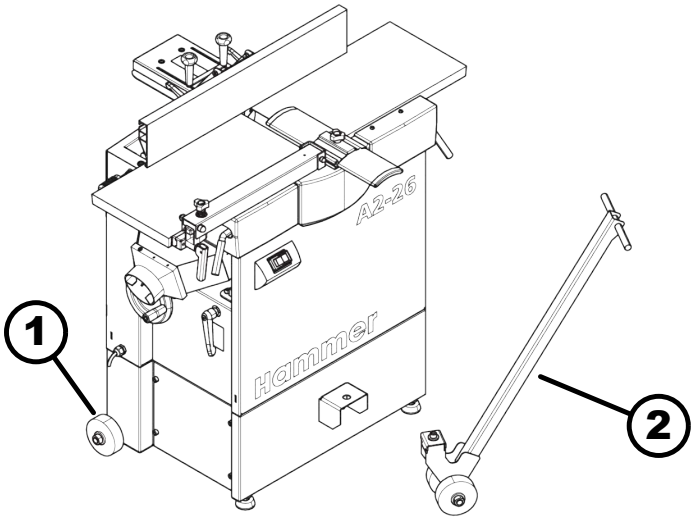

Fig. 17: Transporting the machine with the rolling carriage and lifting bar

1 Rolling carriage
2 Lifting bar

The rolling carriage is mounted to the machine chassis. (Assembly instructions "rolling carriage" and "lifting bar").

7 Setup and installation

7.1 Requirements of the location, where the machine is to be installed

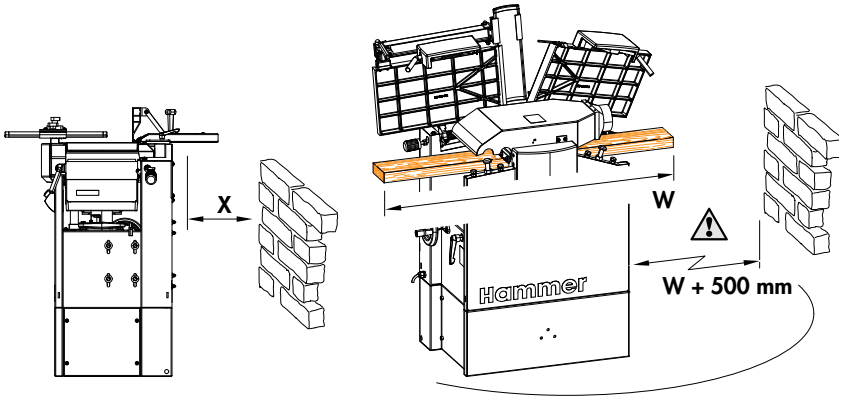

Fig. 18: Space requirement at the installation site

In order to be able to operate the machine trouble-free, efficient and ergonomically, the following conditions must be met:

- The machine may only be used in dry rooms, free from frost and not outside in the open.
- Sufficient stability and floor conditions of the foundation.
- Sufficient lighting of the working area.
- Sufficient clearance or screening from neighbouring workstations.
- The clearance in the processing direction is at least 500 mm greater than the workpiece length.
- The machine location must provide enough space for the machine operator. Consider the requirement of enough space for loading, working and stacking of workpieces.

  Ensure that there is at least 2000 mm of free space in the working area to operate the machine.
- For operation and maintenance, set up the machine at least 500 mm parallel to the machining direction (dimension X) away from a wall.

7.2 Setup and levelling

Unpack the machine and prepare for assembly

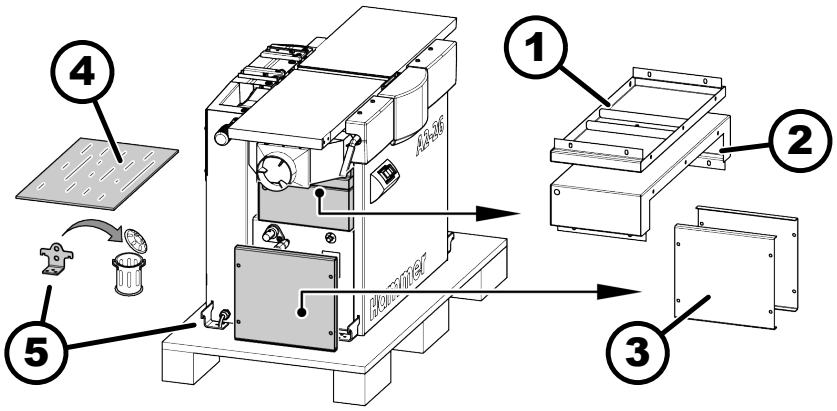

Fig. 19: Packaging - Machine base

1 Machine base - Front section
2 Machine base - Rear wall
3 Machine base - Side section
4 Wooden panel (packing material)
5 Pallet bracket

Unpack the machine base

Personnel:

- Trained machine operator

For transport reasons the machine base is delivered dismantled.

1. Remove the front section and rear wall from the machine.
2. Remove the wooden panel from inside the machine.
3. Remove the side section from the pallet.
4. Remove all pallet brackets.

Place the machine on its side and mount the base

⚠ 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.

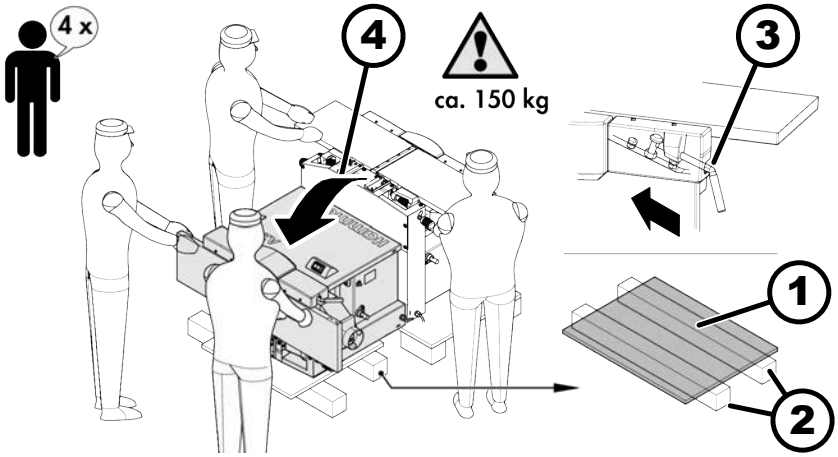

Fig. 20: Place the machine on its side

1 Panel: approx. 600 x 800 x 20 mm
2 Beam approx. 90 x 90 x 1000 mm
3 Lock the planing tables
4 Place the machine on its side

Place the machine on its rear side

Personnel:

- Trained machine operator
- 3 additional assistants

The machine base is to be screwed on to the underside of the machine chassis.

1. Place two beams and a panel or a second pallet behind the machine.
2. Push the clamping lever inwards and lock.
   ➡ Both planing tables must be shut completely.
3. Several people should be used to carefully place the machine on its back.

Screw the machine base together and assemble

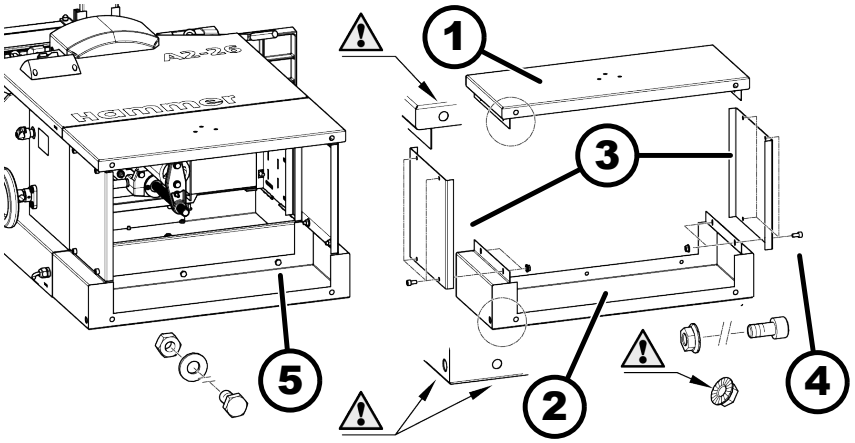

Fig. 21: Mount the base

1 Machine base - Front section
2 Machine base - Rear wall
3 Machine base - Side section
4 Hexagon socket screw and ribbed nut (8x)
5 Hexagon screw, washer and nut (6x)

Screw the machine base on whilst the machine is on its side

During the assembly of the machine frame, loosely connect all parts first. Finally, tighten all screws.

1. Screw the side sections to the rear wall using the hexagon socket screws and ribbed nuts (4x).
2. Screw the front section to the side sections using the hexagon socket screws and ribbed nuts (4x).
3. Screw the complete base to the machine chassis using the hexagon socket screws, washers and nuts to the machine chassis (6x).
4. Tighten all of the screw connections tightly.
5. Several people should be used to carefully lift the machine backup.

Level the machine at the installation location using a spirit level

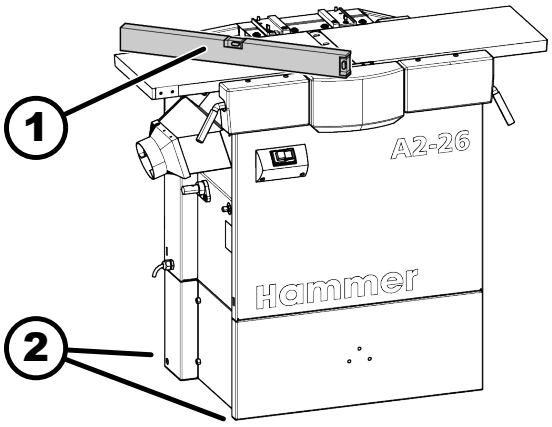

Fig. 22: Levelling the machine

1 Spirit level
2 Chocks (not included in the scope of delivery)

The floor space around the machine must be flat, well maintained, free of obstacles and cleared of waste material such as chips and offcuts.

Personnel:

- Trained machine operator

Tool:

- Spirit level
- Ring spanner set

Material:

- Chocks

The machine must be transported to the installation location following the instructions included in the transport and commissioning instructions. ➦ *Chapter 6 'Transporting, packing, storing' on page 29*

1. Level the main machine using a spirit level.
   ➡ The machine runs smoothly and precisely.
2. For uneven floors, level the machine using wheel chocks.
3. Remove anti-corrosion agent from all exposed machine parts.

7.3 Install

7.3.1 Assemble the planer fence

The planer fence is delivered partly assembled and must be completed.

Tool:

- Hex key
- Ring spanner set

Material:

- Machine Grease

1. Thread in the adjustment struts.

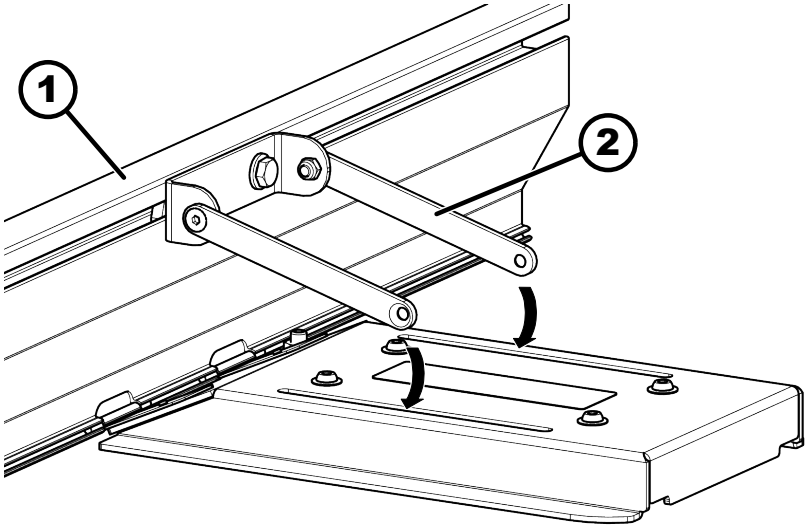

Fig. 23: Thread in the adjustment struts
1 Fence plate
2 Adjustment struts

2. Fix the struts with the spacer for easy movement. Adjust the play with the countersunk screw and fix with the safety nut.
   Lubricate the screw head and plastic washer with machine grease.

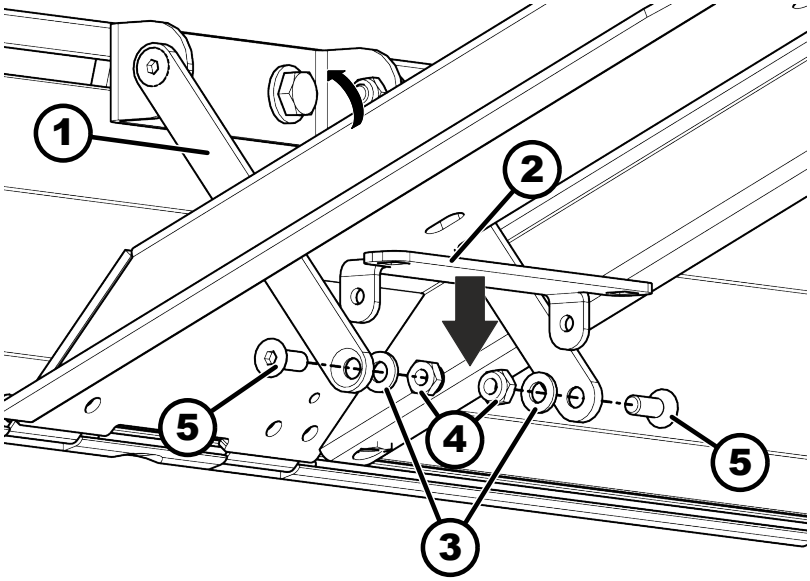

Fig. 24: Fixing the planing fence

1 Flat-head screw
2 Distance
3 Plastic washers
4 Safety nut

3. Mount the clamping screws.

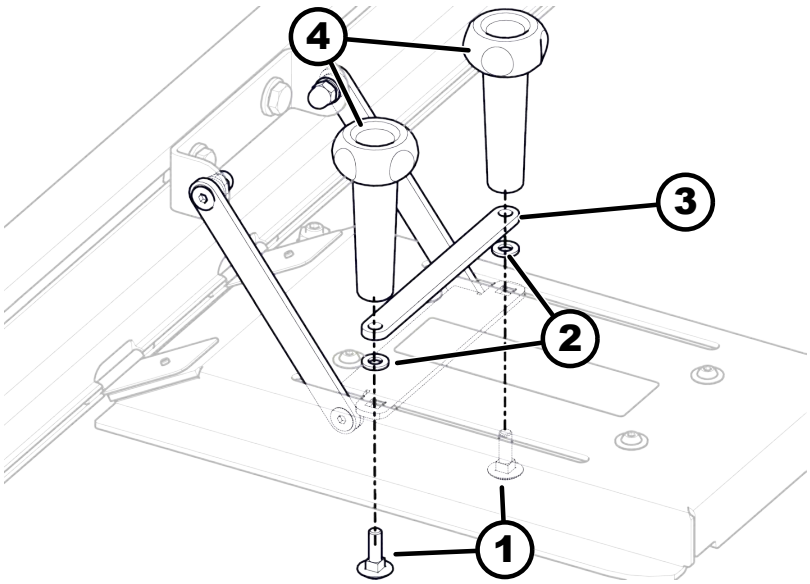

Fig. 25: Mount the clamping screws

1 Carriage bolt
2 Plastic washers
3 Indicator plate
4 Clamping screws

7.3.2 Mount the planer fence

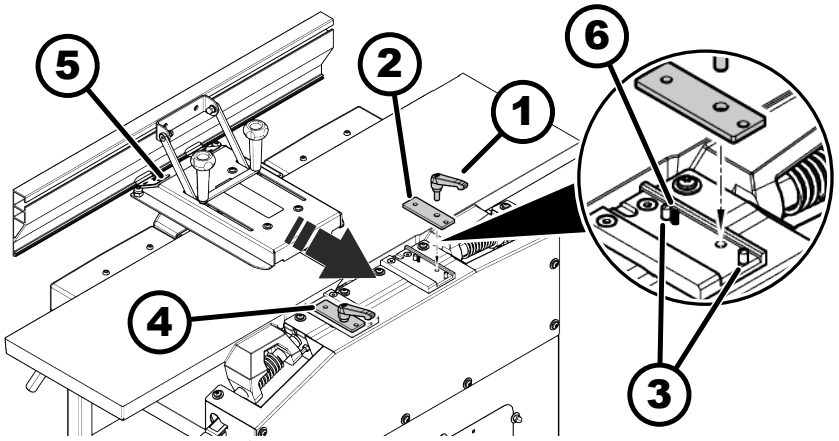

Fig. 26: Mount the planer fence

1 Clamping lever
2 Locking plate
3 Guide pins
4 Clamping lever and clamping plate
5 Planer fence
6 Pressure spring

1. Ensure, that the compression spring is correctly placed in the hole.
2. Position the clamping plate on both of the guide pins.
3. Screw the clamping lever in through the clamping plate in the machine chassis.
4. Fit the compression spring, clamping plate and clamping lever on the second side.
5. Slide the planer fence under both of the clamping plates from the front.
6. Slide the planer fence in until it hits the stop and clamp it into place using both of the clamping levers.

7.3.3 Mount the cutterblock cover

WARNING
Extremely sharp planer knife cutters
Cut injuries to hands and fingers
- Before changing the planer knives switch off and disconnect the machine from the mains power supply.
- Wear protective gloves.
- Be particularly careful when working with the cutterblock.

Front cutterblock cover (bridge guard)

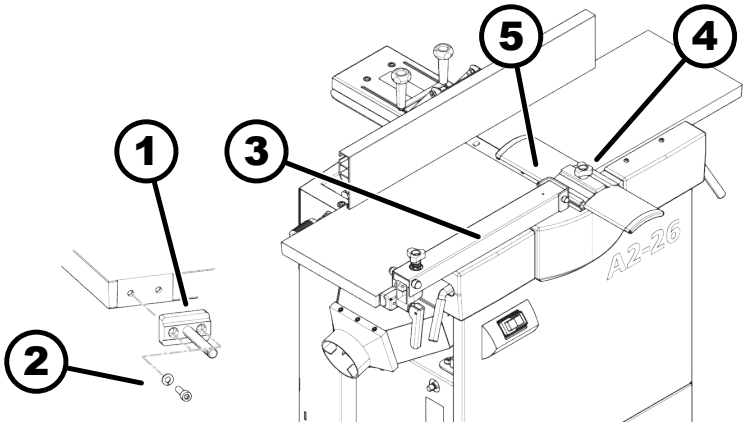

Fig. 27: Planer guard protective guard

1 Mounting jaw (bridge guard arm)
2 Hex screws (2x)
3 Bridge guard arm

4 Clamping screws
5 Protective guard

Tool:

- Hex key

1. Loosen the clamping screw.
2. Slide the protective guard into the arm of the bridge guard.
3. Tighten the clamping screw.

7.3.4 Mount the handwheel

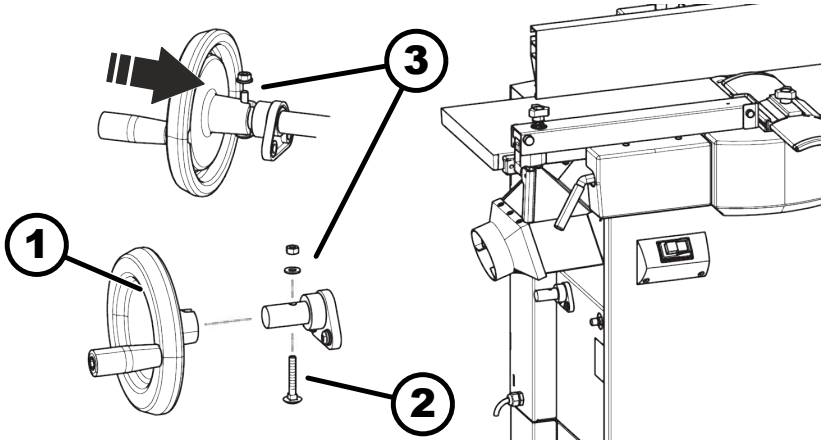

Fig. 28: Mount the thicknesser handwheel

1 Hand wheel
2 Carriage bolt
3 Nut and washer

Tool:

- Ring spanner 10 mm

1. Insert the carriage bolt through the arbour.
2. Insert the handwheel on to the arbour.
   ➡ The handwheel sits flush between the insert and the bolt.
3. Place the nut and washer on and tighten.

7.4 Install the dust extraction

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!

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

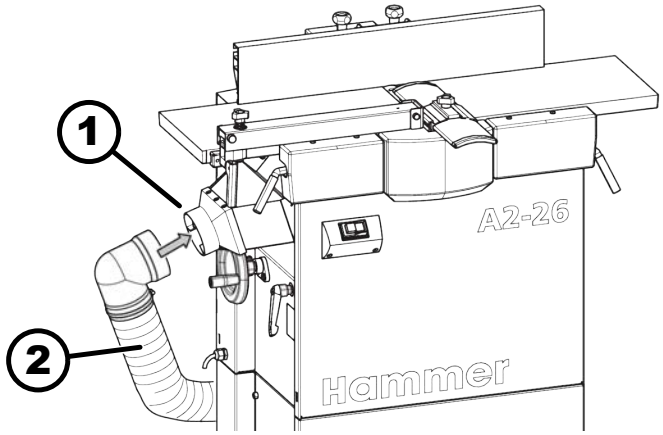

Fig. 29: Extraction connection

1 Ø 100 mm extraction connection
2 Extraction hose

Material:

- Hose clamp

1. Connect the extraction hose to the extraction connection.

2. Fix the hose clamps in place.

7.5 Connect electrics

7.5.1 Connect the machine plug

⚠ WARNING

Electric current

Serious injury or death

- Changes to the connection cable can only be carried out by a trained electrician.
- Checking the loop impedance and the suitability of the overcurrent protective device must take place at the location where the machine is to be commissioned by a qualified electrician.

The machine is equipped with a plug with an earth contact. If required the customer must fit the machine cable with a suitable plug that is in accordance with country specific regulations.

8 Adjustments and tool changes

8.1 Adjusting the planer unit

8.1.1 Adjust the planer cutterblock depth of cut

The maximum depth of cut of each pass is directly related to the following factors:

- Width and surface composition of the workpiece
- Wood type (hard or soft wood) and wood moisture content
- Motor power and feed speed
- Type and number of planer knives

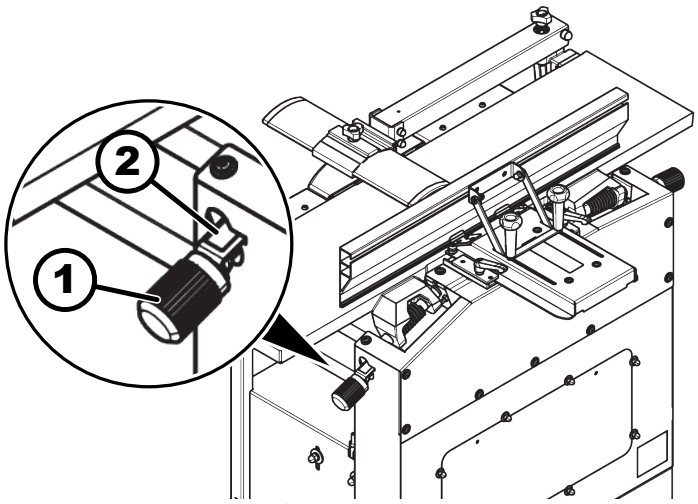

Fig. 30: Adjust the depth of cut

1 Set the depth of cut (infeed planing table)
2 Depth of cut scale

The depth of cut is adjusted with the adjustment wheel on the infeed side of the planer table.

1. Loosen clamp.
2. Turn the wheel until the desired value is displayed on the scale.
3. Tighten the clamp.

8.1.2 Adjusting the joint

In particular cases (extremely conical or concave or straight joints) the position of the infeed planer table can be adjusted (angled) in relation to the blade trajectory.

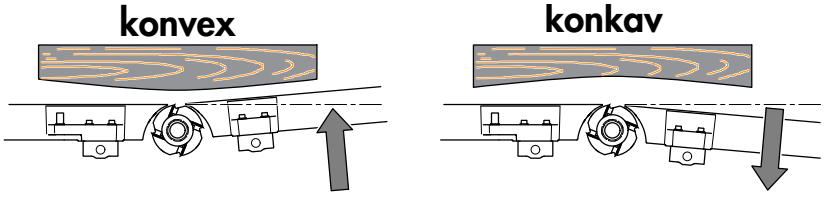

Fig. 31: Adjust infeed planing table

The planer table is set so that with a workpiece length of 1 m, a concave joint of approximately 0.1 to 0.2 mm is produced (standard setting).

Modification by the customer is not intended, but can be carried out by Felder-Group service centre.

8.1.3 Adjust outfeed planer table

NOTICE

Malfunction due to improper adjustment

When surface planing, workpiece stops when it reaches the outfeed side of the planer table.

- The outfeed planer table must lay below the trajectory of the blades.
- The setting must be checked with a gauge. ➦ *Chapter 8.1.4 'Check the setting of the planer table on the outfeed side' on page 43*

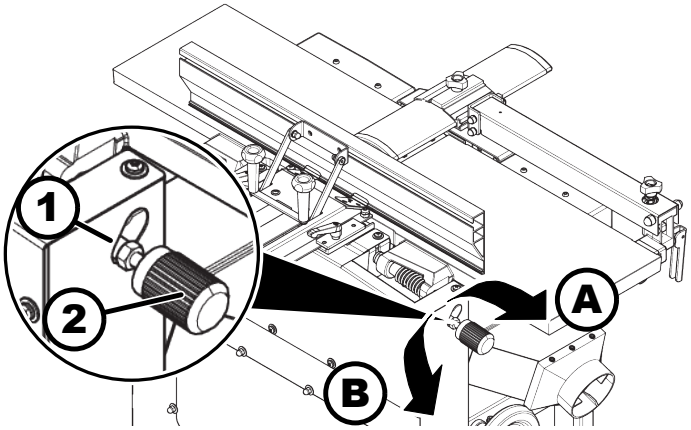

Fig. 32: Adjusting the height of the outfeed side of the planer table

1 Lock nut
2 Adjust height (infeed planing table)
A Planing table upwards adjustment
B Planing table downwards adjustment

Tool:

- Ring spanner set

1. Switch off the machine and secure it from being switched on again.
2. Loosen the lock nuts (17 mm open-end spanner).
3. Turn the wheel to make fine adjustments.
   - Set the planer table upwards: Turn the handwheel clockwise (direction A).
   - Set the planer table downwards: Turn knurled screw anticlockwise (direction B).
4. Tighten the lock nuts (17 mm open-end spanner).
5. Check the adjustment with a gauge.

8.1.4 Check the setting of the planer table on the outfeed side

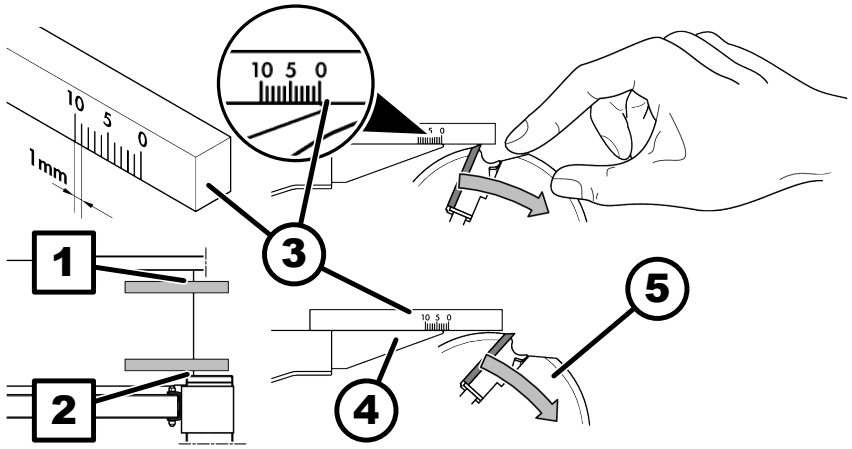

Fig. 33: Check settings

1 Position 1 (rear side - planer fence)
2 Position 2 (front - protective rail)
3 Gauge
4 Receiver-side of the planer table
5 Turn the cutterblock

WARNING
Extremely sharp planer knife cutters
Cut injuries to hands and fingers
- Before checking the planer knives switch off and disconnect the machine from the mains power supply.
- Be particularly careful when working with the cutterblock.

Tool:

- Gauge with millimetre markings

1. Switch off the machine and secure it from being switched on again.
   Disconnect the machine from the mains power supply.
2. Slide the planer fence all the way to the back, move the protective guard all the way to the front.
3. Prepare the gauge as shown in the illustration.
4. Check the setting at the rear end of the planing shaft (position 1): Place the gauge at "0" on the edge of the planing table on the take-off side.
5. Turn the cutterblock manually.
6. Turn the cutterblock until the gauge is no longer lifted.
   ➡ The planer knife should carry the gauge for 2-3 mm (factory setting).
   Knife projection of 0.01 mm - 0.05 mm above the outfeed planer table.
7. Repeat the check of the settings at the front end of the planer shaft (position 2).

8.1.5 Adjusting the planer fence

The machine is equipped with a fence to guide the workpiece.

The planer fence can be used across the entire planing width of the machine.

The planer fence can be swivelled from 90° - 45°.

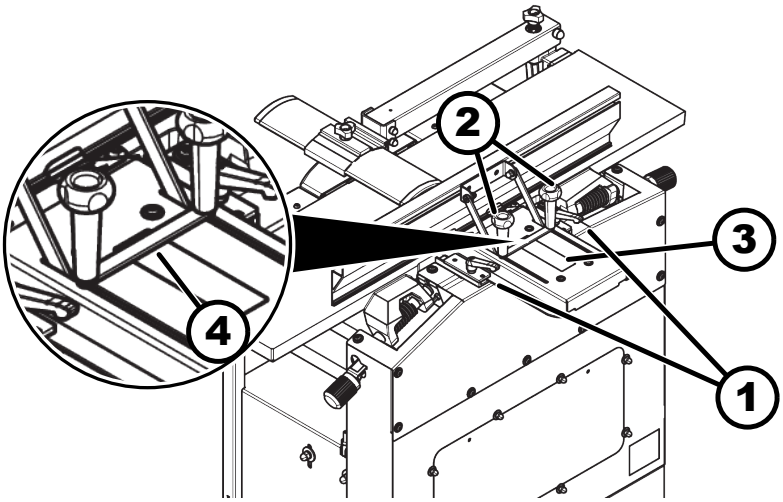

Fig. 34: Adjusting the planer fence

1 Clamping horizontal adjustment
2 Clamping angle adjustment
3 Scale angle adjustment
4 Read angle adjustment

Tilt planer fence 90° - 45°

1. Switch off the machine.
2. Open angle adjustment clamp.
3. Set the required angle (tilt the fence plate using both hands).
4. Read the angle from the scale.
5. Lock the clamp.

Slide the planer fence forwards or backwards:

1. Switch off the machine.
2. Open the clamp for the horizontal adjustment.
3. Move the planer fence to the desired position.
4. Lock the clamp.

8.1.6 Changing over from a planer to a thicknesser

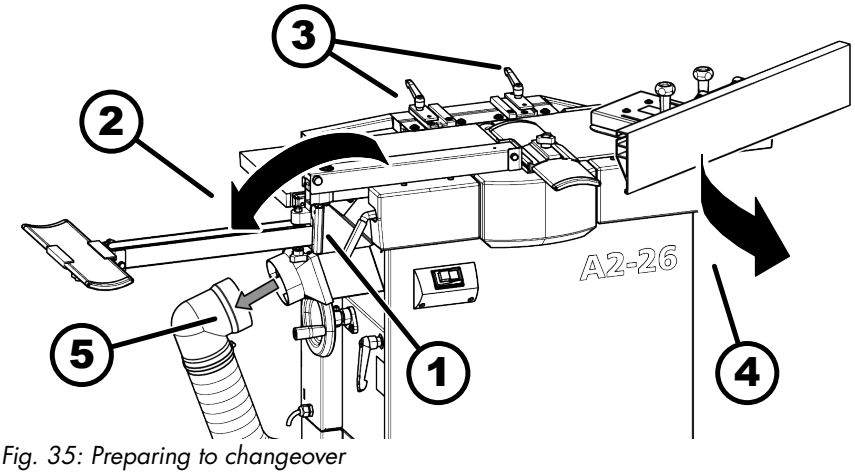

Fig. 35: Preparing to changeover

1 Planer guard clamp
2 Tilt the bridge guard away
3 Planer fence clamp
4 Remove the planer fence
5 Loosen the extraction hose

Preparing the machine to changeover

1. Switch off the machine and secure it against being switched on again.
2. Release the planer guard clamp.
3. Turn the bridge guard by 180° and clamp again.

4. Release the planer fence clamp.
5. Pull the planer fence all the way to the front and remove it.
6. Remove the extraction hose from the extraction hood.

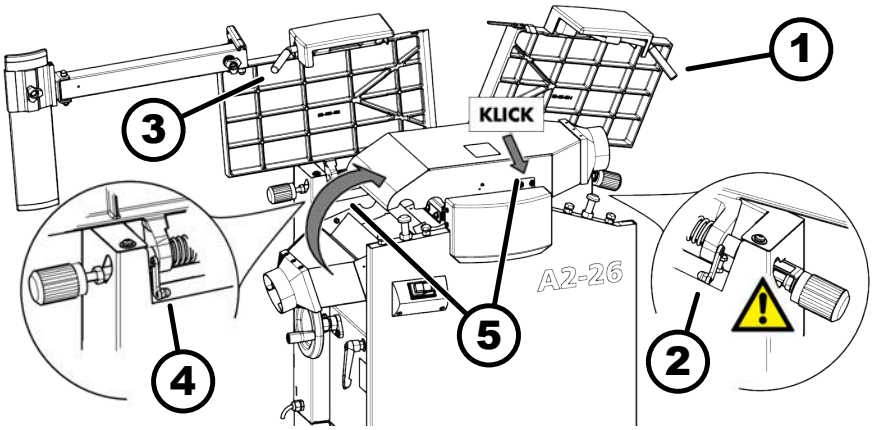

Fig. 36: Open planer table

1 Planer table clamping lever (infeed side)
2 Safety catch (infeed side)
3 Planer table clamping lever (outfeed side)
4 Safety catch (outfeed side)
5 Swing up the extraction hood

Open the planer tables and prepare the machine to operate

1. Release the planer table clamping levers and pull out.
2. Tilt the infeed planer table up.
3. Tilt the outfeed planer table up.
4. Ensure that the safety latch slots correctly into place.
5. Swing the extraction hood upwards and lock in place.
6. Connect the extraction hood to the extraction supports.

8.2 Changing over from the thicknesser to the planer

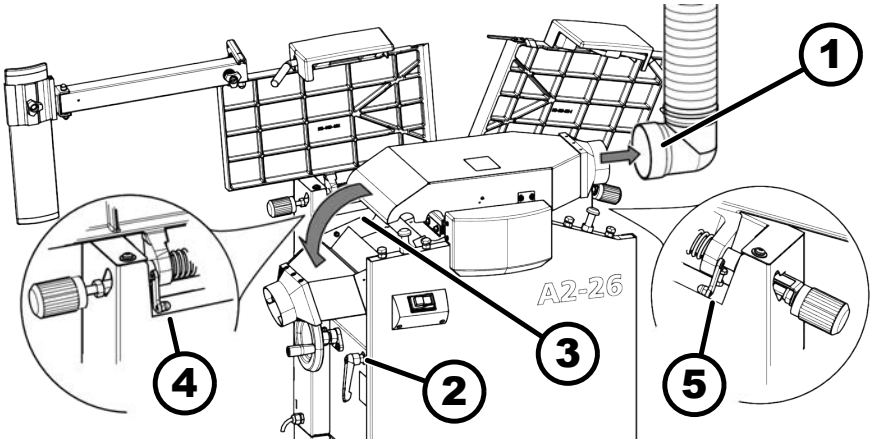

Fig. 37: Preparing to changeover

1 Extraction pipe
2 Thicknesser opening height mind. 150 mm
3 Swing the extraction hood downwards
4 Safety catch (outfeed side)
5 Safety catch (infeed side)

Preparing the machine to changeover

1. Switch off the machine and secure it against being switched on again.
2. Remove the extraction hose from the extraction hood.
3. Adjust the thicknessing height.
   ➡ The thicknesser must be at least 150 mm below the cutterblock.
4. Swing the extraction hood downwards.

Close the planer tables and prepare the machine to operate

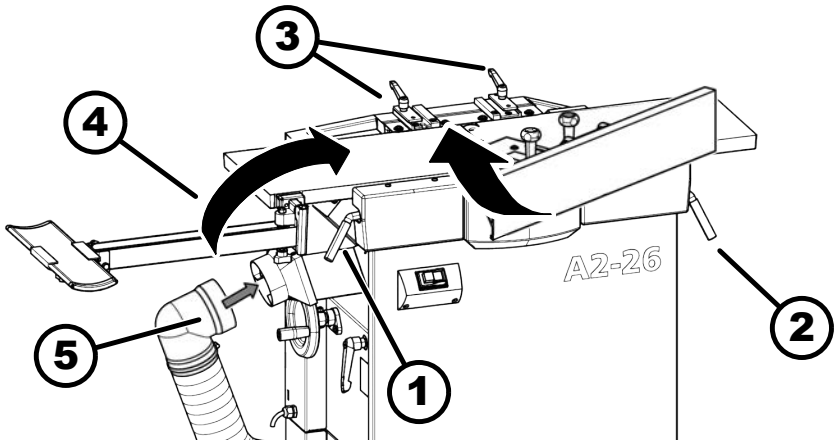

Fig. 38: Close planer tables

1 Planer table clamping lever (outfeed side)
2 Planer table clamping lever (infeed side)
3 Planer fence clamp
4 Tilt the bridge guard back in place
5 Connect extraction hose

1. Lift the safety catch.
2. Close the outfeed planer table.
3. Close the infeed planer table.
4. Push the planing table clamping lever in and lock in place.
5. Slide the planer fence under both of the clamping plates from the front.
6. Slide the planer fence in until it hits the stop and clamp it into place using both of the clamping levers.
7. Release the planer guard clamp.
8. Turn the bridge guard by 180° and clamp again.
9. Connect the extraction hood to the extraction supports.

8.3 Adjust the thicknesser unit

8.3.1 Thicknesser clearance height - general information

NOTICE

Damage due to restriction of the movement direction

Danger of wedging when moving the thicknesser downwards.

- Ensure that the thicknessing table movement is not restricted.
- Do not place any workpieces or other items under the thicknesser.

When adjusting the thicknessing infeed height (particularly when lowering), ensure that no workpieces or other objects have been placed beneath the table (wedging threat). To compensate for any play in the thread, adjust the thicknessing table moving it upwards.

The thicknessing height can be adjusted to any position between the minimum and maximum value. ➦ *Chapter 4.5 'Planing unit' on page 20*

- Width and surface composition of the workpiece
- Wood type (hard or soft wood) and wood moisture content
- Motor power and feed speed
- Type and number of planer knives

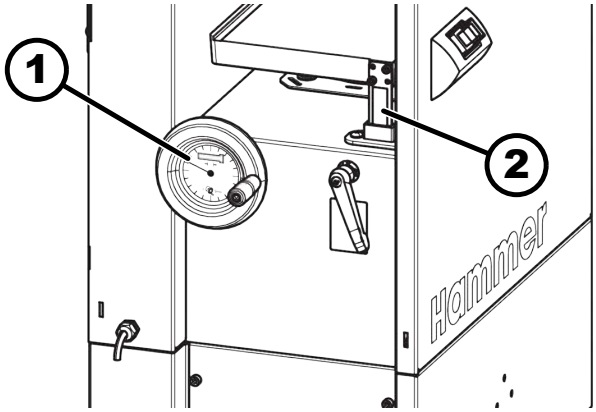

Fig. 39: Digital display

1 Digital display
2 Thickness planing height scale

Depending on the configuration the specified value can be read on the scale (accurate to 1.0 mm) or on the digital clock or digital display (accurate to 0.1 mm)

8.3.2 Thicknessing bed adjustment with handwheel

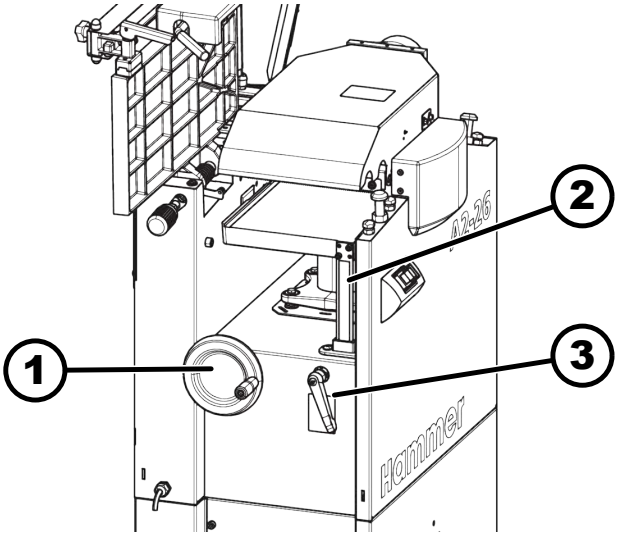

Fig. 40: Adjust the thicknessing height

1 Height adjustment handwheel (thickness planing height)
2 Scale - Thicknessing passage information
3 Clamping lever - Clamping the thicknesser

The thicknessing opening is equal to the final processed workpiece dimension.

The adjustment of the thicknesser is done using the handwheel.

1. Switch off the machine.

2. Loosen the clamping lever.

3. Measure the thickness of the workpiece.

4. Use the system handwheel to set the desired dimension.

➡ Depth of cut = Thickness of the workpiece minus the value set.

5. Clamp the clamping lever.

9 Operate

9.1 Auxiliary aids for safe operation

- When planing long workpieces (longer than the planing table on the infeed and outfeed side), assist with additional supports (e.g. table extensions, trolley).
- 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
Wrong operating/room temperature
Damages due to storage, material damage
- The machine may only be operated in dry and frost-free rooms at temperatures between +10 and +40 °C.

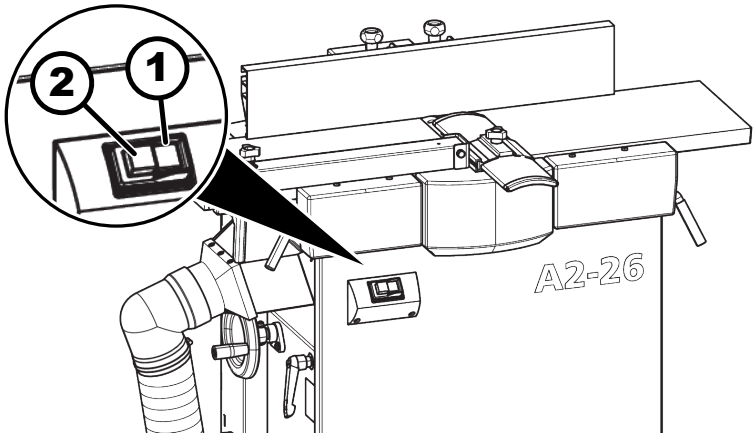

Fig. 41: Switching on and off
1 Green start button
2 Red stop button - switch machine off

Switching on

1. Connect the machine to the main power supply.
2. Switch on the cutterblock and feed with the green *[Start]* key.

Switch off

1. Press the red *[Stop]* button.
2. Disconnect the machine from the main power supply.

Emergency stop (depending on equipment)

The machine is equipped with either one or several *[emergency stop]* buttons, depending on the configuration.

Alternatively, machines without a separate feed motor can be equipped with red

 *[Stop]* buttons instead of the *[Emergency Stop]* buttons.

1. Press the *[emergency stop]* or the red  *[stop]* key.
   ➡ The machine stops immediately.
2. Unlock the *[Emergency stop]* button by turning it.

9.3 Planing - General information

9.3.1 Working positions - Planing

WARNING
Ejected workpieces / workpiece parts
Severe injuries and damage to property
- Assume the correct working position.
- Never stand directly within the line of sight of the machining units when the machine is switched on (regardless of whether the machine is working or idling).
- Only process the workpiece by feeding in against the direction of rotation.

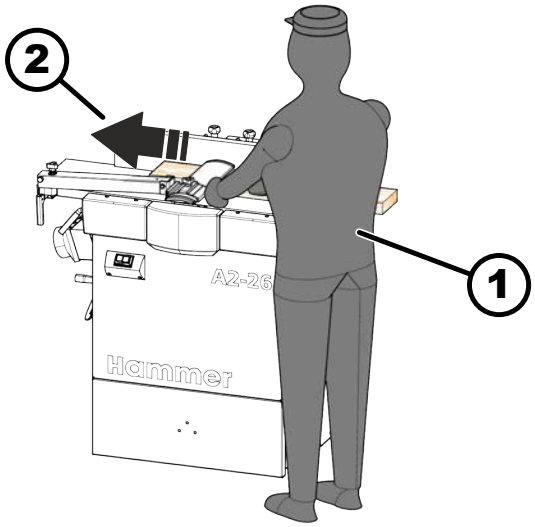

Fig. 42: Working position - Planing
1 Working position - Planing
2 Processing direction

9.3.2 Permitted processing techniques planing

Surface planing evens irregular workpiece surfaces. The workpieces are guided over the cutterblock and only their undersides are machined.

Only the following working techniques are permitted with the planer unit:

- Planing the broadside of a workpiece.
- Planing the narrow side of a workpiece.
- Bevelling the narrow side of a workpiece.
- Chamfering the edges of a workpiece.
- Always work from right to left in front of the machine.

9.3.3 Prohibited work techniques planing

The following working techniques are absolutely forbidden with the planer unit:

- Synchronous planing (the rotational direction of the cutterblock is the same as that of the feed direction).
- Insert sanding (the full length of the workpiece is not machined).
- Planing workpieces that are very warped.
- Rabbet planing using the end of the cutterblock.

9.3.4 Workpiece dimensions (planing)

WARNING

Risk of injury from workpiece parts

Splintering workpieces when working at a larger depth of cut (4mm)

- When processing workpieces that are thinner than 10 mm, only set a small depth of cut (max. 10% of the workpiece thickness).
- The finished planed workpiece must not be thinner than 6 mm.

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

Length less than 250 mm	only work with special equipment (e.g. push stick).
Length longer than 1500 mm	only work with table extensions or with a second person.
Width	max. 260 mm
thickness	min. 10 mm (without suitable auxiliary material)

9.3.5 Work process with permitted working methods

Personnel:

- Trained machine operator

Protective equipment:

- Push stick, push grip

Requirements

- Switch the machine off before you start.
- Extraction system is connected.
- Close the planer tables or tilt away the extraction hood.

1. Ensure there are sufficient support surfaces (accessories).
2. If necessary change the machine over.
    1. Changing over from thicknesser to planer. ➥ *Chapter 8.2 'Changing over from the thicknesser to the planer' on page 45*
    2. Adjust the planer fence.
    3. Adjust the depth of cut.
3. Before switching on the machine, always check to make sure that there are no other people in the immediate vicinity of the machine.
4. Only switch the machine on once the workpiece has been placed in the correct machinable position.
5. When planing, lead the workpiece evenly with closed fingers.
6. Never place your hands on the workpiece over the cutterblock.
7. Use a push stick at the end of the planing process if necessary.
8. If you are not going to continue working, switch off the machine and secure it against being turned on again.

9.4 Processing techniques when planing

9.4.1 planing

Adjust the cutterblock protective guard

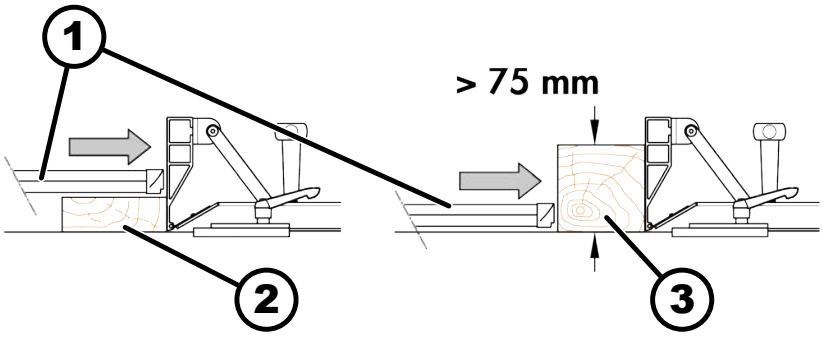

Fig. 43: Planing - protective guard

1 Protective guard
2 Workpiece thickness less than 75 mm
3 Workpiece thickness greater than 75 mm

Workpiece thickness less than 75 mm:

→ Cover the entire planer with the guard and set it only slightly higher than the thickness of the workpiece.

Workpiece thickness greater than 75 mm:

→ Move the guard up against the workpiece and let it rest on the planer table.

Machining the workpiece

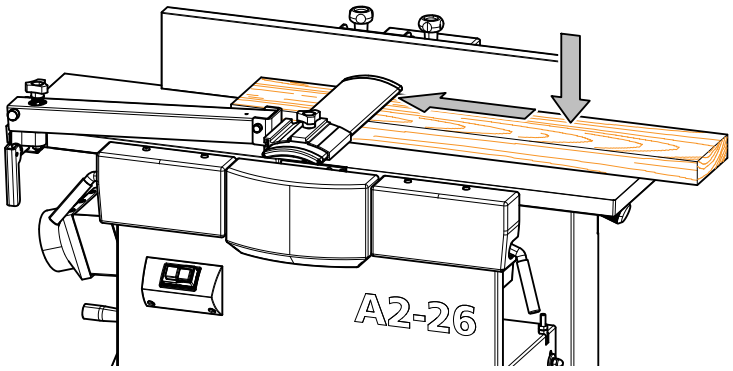

Fig. 44: Planing

1. → Take note of general procedures for permitted working methods. ➥ *Chapter 9.3.5 'Work process with permitted working methods' on page 50*
2. → Place hands on the workpiece in a closed position with the thumbs firmly against them.
3. → Push the workpiece under the protective guard with both hands.
4. → As soon as the workpiece has moved far enough onto the outfeed planer table, place your left hand onto it and push it evenly over the cutterblock.
5. → Move the workpiece back over the protective guard into the starting position.

9.4.2 Planing the narrow edge

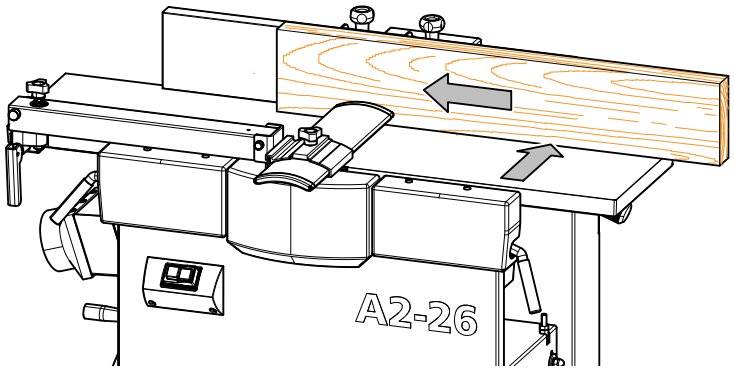

Fig. 45: Planing - Planing the narrow edge

1. Take note of general procedures for permitted working methods. ➦ *Chapter 9.3.5 'Work process with permitted working methods' on page 50*
2. Place the protective guard on the planer table and cover all the cutterblock, with the exception of the width of the workpiece.
3. Press the workpiece against the planer fence and guide evenly over the cutterblock.
4. As soon as the workpiece has moved far enough onto the outfeed planer table, place your left hand onto it and push it evenly over the cutterblock.
5. Move the workpiece back over the protective guard into the starting position.
6. Ensure that your hands are placed on the workpiece in a closed position with the thumbs against the closed hands.

Requirements of the workpiece

To obtain exact joints, use only evenly grown wood without any knots.

9.4.3 Planing of smaller workpieces

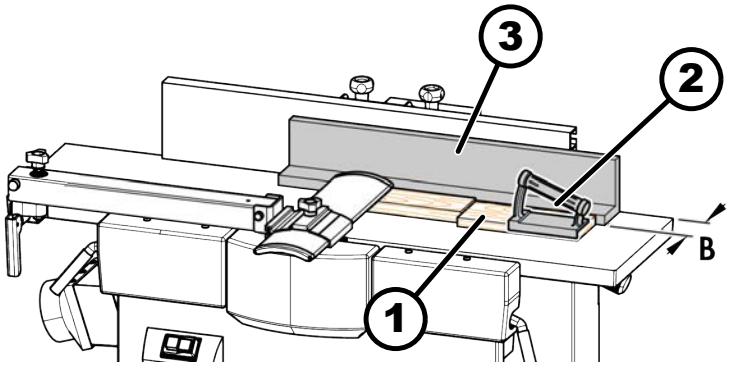

Fig. 46: Planing - Processing of smaller workpieces

1 Push block
2 Pushing grip
3 Auxiliary fence (W = min. 60 mm)

WARNING

Serious hand injuries due to insufficient preparation

Contact with the rotating cutterblock

- Use a push block and pushing grip
- Use an auxiliary fence that has a width of at least 60 mm

Protective equipment:

- Push stick, push grip

1. Take note of general procedures for permitted working methods. ➦ *Chapter 9.3.5 'Work process with permitted working methods' on page 50*

2. Adjust the cutterblock protective guard. ➦ *Chapter 9.4.1 'planing' on page 51*
3. Push the workpiece under the protective guard using the pushing stick and push block. The pushing stick should not be thicker than the workpiece.
4. Move the workpiece back over the protective guard into the starting position.

9.4.4 Bevelling and chamfering

Bevelling using the planer fence

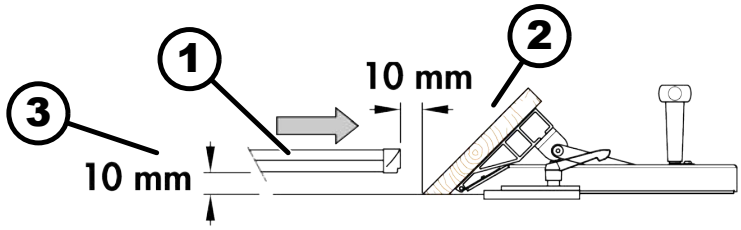

Fig. 47: Bevelling - protective guard

1 Protective guard
2 Distance to workpiece
3 Distance to planer table

1. Take note of general procedures for permitted working methods. ➦ *Chapter 9.3.5 'Work process with permitted working methods' on page 50*
2. Adjust the angle of the planing fence.
3. Adjust protective guard as per diagram. Pay attention to the distance to the workpiece and planing table.
4. To prevent the workpiece from slipping from the angled surface, press the workpiece predominantly against the fence and only lightly against the planer tables.
5. Additional procedures as described in the chapter "Planing narrow edges". ➦ *Chapter 9.4.2 'Planing the narrow edge' on page 52*

Bevelling and chamfering of smaller workpieces

You must always use a special jig for chamfering or bevelling small, narrow workpieces.

This jig can also be used to chamfer long workpieces.

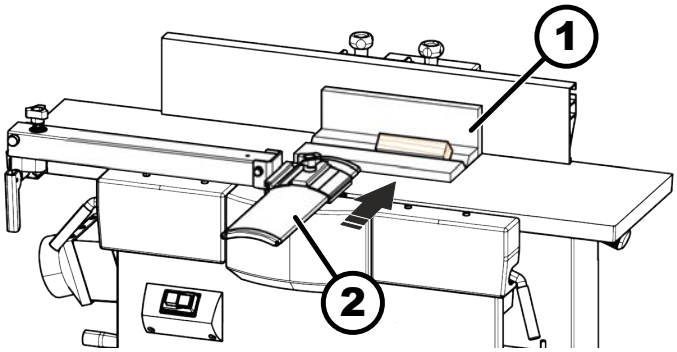

Fig. 48: Bevelling - processing smaller workpieces

1 Jig
2 Protective guard

1. Take note of general procedures for permitted working methods. ➦ *Chapter 9.3.5 'Work process with permitted working methods' on page 50*
2. Set the planing fence at a 90° angle.
3. Attach the jig to the planer fence.
4. Place the protective guard all the way down and let it rest against the jig.
5. Additional procedures as described in the chapter "Planing narrow edges". ➦ *Chapter 9.4.2 'Planing the narrow edge' on page 52*

9.5 Thickness planing

9.5.1 Working positions - thickness planing

CAUTION

Wedging of drive fed workpieces when thicknessing

Injuries and material damage. Insufficient distance to adjacent machines, walls etc. can lead to wedging or splintering of the workpieces.

– Ensure sufficient distance to neighbouring machines, to walls or other solid objects.

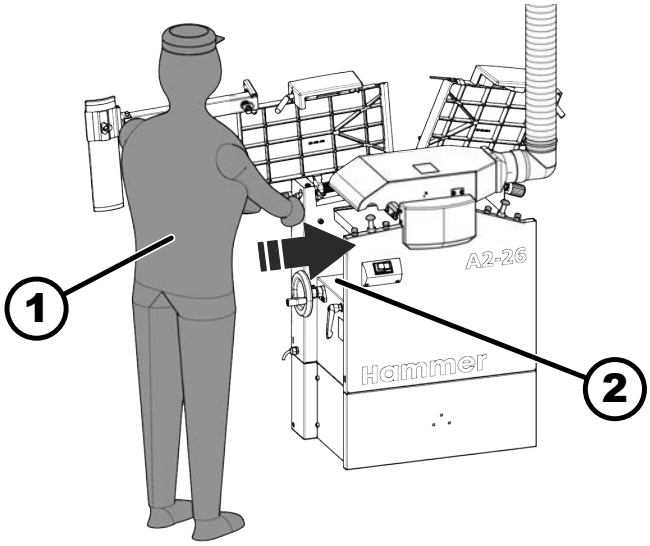

Fig. 49: Working position - thickness planing

1 Working position - thickness planing
2 processing direction

9.5.2 Authorised thickness planing working methods

During thickness planing, workpieces with an already planed surface are planed thinner in parallel. Precise parallel thicknesses can only be obtained if the workpiece was precisely surface-planed beforehand to ensure that it can lie flat on the thicknesser table.

Only the following working techniques are permitted with the thickness unit, depending on the configuration:

- Infeed roller - standard:
  - A maximum of 2 workpieces can be thickness-planed simultaneously.

9.5.3 Prohibited thickness planing working methods

With the thickness unit, the following working techniques are generally prohibited:

- Thicknessing several workpieces of varying thicknesses (depending on configuration).
- Simultaneous planing (the direction of the cutterblock rotation is the same as the feed direction).
- Insert sanding (the full length of the workpiece is not machined).

9.5.4 Workpiece dimensions (thickness planing)

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

The minimum workpiece length is determined by the distance between the two transport rollers. Smaller workpieces can only be processed by using extra tools (e.g. wooden pushing stick).

Minimum workpiece dimensions ➦ *Chapter 4.6 'Workpiece dimensions' on page 21*

9.5.5 thicknessing

NOTICE
Large differences in workpiece thicknesses
Damage to the infeed rollers
- If machining several workpieces simultaneously, the max. difference in thickness from workpiece to workpiece may only amount to 1 mm!

WARNING
Serious hand injuries / danger of being pulled in
Contact with the rotating cutterblock
- Assume the correct working position.
- Never reach into the infeed or outfeed whilst the machine is running (during the process or running idle).
- Do not overload the machine. Process workpieces several times, with a small depth of cut.

WARNING
Risk of injury from workpiece parts
Splintering workpieces when working at a larger depth of cut
- When processing workpieces that are thinner than 10 mm, only set a small depth of cut (max. 10% of the workpiece thickness).
- The finished planed workpiece must not be thinner than 5 mm.

Thickness planing step 1 - infeed side

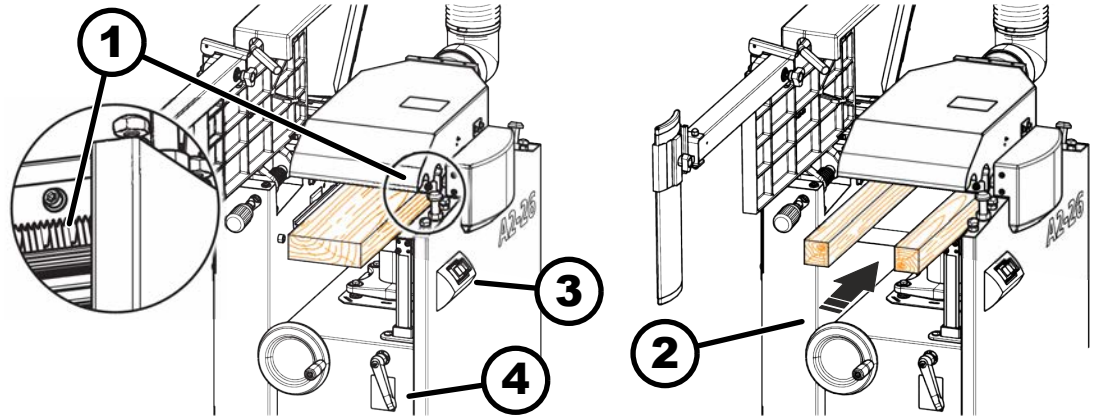

Fig. 50: Thickness planing - infeed side
1 Kickback guards
2 Processing direction when thicknessing
3 Start the cutterblock and feed
4 Lock the clamping lever (thicknessing table adjustment)

Material:
- Super-Gleit

1. Take note of general procedures for permitted working methods. ➥ *Chapter 9.5.2 'Authorised thickness planing working methods' on page 54*
2. Every time the machine is put into operation, test the kickback guards to ensure that they are functioning properly.
3. Switch on the machine, start the drive motor.
   The feed gear runs automatically when the drive motor is switched on.
6. Place the surface-planed side of the workpiece on the thicknesser table and push into the machine until it is drawn in by the feed rollers.
7. Processing several workpieces at the same time:
   - Infeed roller standard:
     Insert the two workpieces at each end of the transport roller.

Thickness planing step 2 - outfeed side

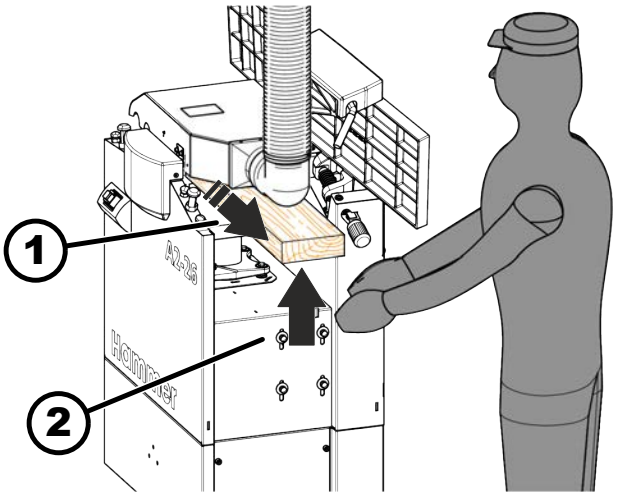

Fig. 51: Thickness planing - outfeed side

1 Processing direction when thicknessing
2 Support the workpiece

1. The workpiece must be supported when it comes out of the rear of the machine to prevent it from tipping over.

2. Remove the workpiece from the machine.

3. Adjust the thicknessing height before planing again.
Pay attention to maximum depth of cut.

4. Push the workpiece back into the machine on the infeed side.

10 Maintenance

10.1 Maintenance schedule

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

Chap.	Task to execute	Daily	Every 8 operating hours	Every 80 operating hours	Monthly	Twice a year	If required	Page
10.3	Clean the machine		X					58
10.5	Check kickback guards/clean transport rollers	X			X			60
10.6	Check belt tension and belt condition				X			61
10.7	Drive chain feed rollers			X		X		62
10.8	Lubricate the thicknessing table height adjustment spindles				X			62
10.9	Lubricate planer fence						X	63
10.10	Check safety devices (emergency stop)					X		64
10.10	If the machine is equipped with an *[emergency stop]* button, test the functionality				X			64
10.10	Check the red *[stop]* button and the emergency stop on machines not equipped with an *[emergency stop]* button				X			65
11.7.3	Instructions for use and maintenance						X	72

10.2 Cleaning and lubricating

NOTICE

Do not use graphite and MoS2 sprays

Guide tracks could be destroyed.

– Only use High Performance Grease (Art. Nr. 10.2.001) for lubrication.

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).

- 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.

10.3 Clean the machine

NOTICE
Poor cleaning
Chips ignite, fire
– Regularly clean the machine of dust and chips.

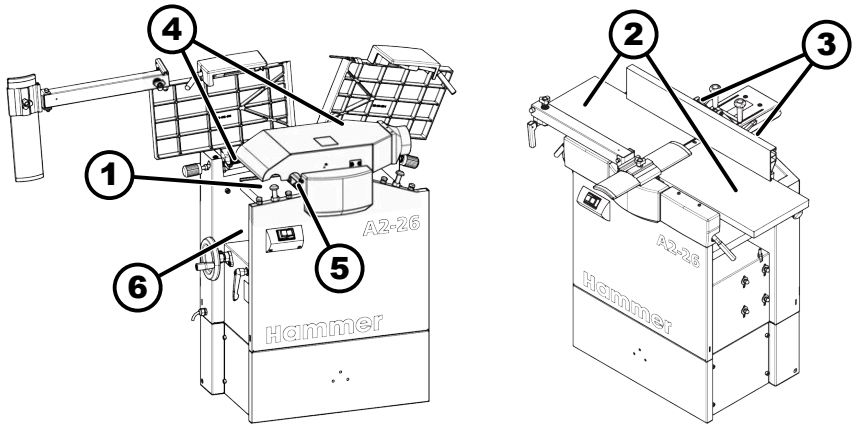

Fig. 52: Overview - cleaning
1 Table surface - thicknesser table
2 Table surfaces - planer tables
3 Guiding surfaces - planer fence
4 Guiding surfaces - thicknesser table
5 Transport rollers and kickback guards
6 Space under the thicknesser table

Personnel:

- Trained machine operator

Protective equipment:

- Protective clothing
- Protective gloves
- Safety goggles

Tool:

- Cleaning cloths
- Resin remover
- Vacuum cleaner

1. Switch off the machine and secure it against being switched on again.
2. Clean the machine of dust, shavings, waste material and other contaminants.
3. Clean the machine, table and guide surfaces or chips and dust.
4. Clean the planing fence and the cutterblock cover and check for correct function.
5. Clean transport rollers and kickback guards and check that they are working.
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.

10.4 Preparation - Remove the maintenance cover

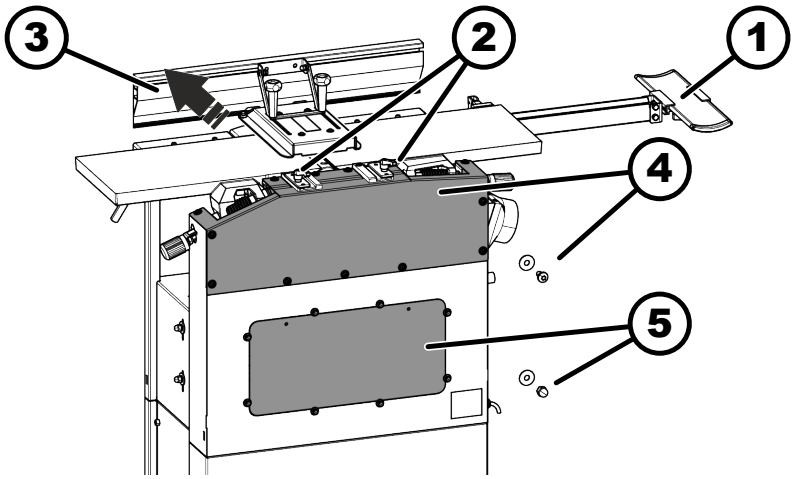

Fig. 53: Remove the maintenance cover

1 Fold down bridge guard
2 Planer fence clamp
3 Remove the planer fence
4 Remove transport rollers cover (pan-head screws)
5 Drive belt cover (nuts)

The maintenance cover for the transport rollers drive as well a the belt drive can be found at the rear of the machine.

Tool:

- Hex key 4 mm
- Ring spanner 10 mm

1. Switch off the machine and secure it from being switched on again.
Disconnect the machine from the mains power supply.

2. Tilt down the bridge guard.

3. Release and remove the planer fence clamp.

4. Remove transport rollers cover:
- Loosen the screw and take the cover off.

5. Remove the drive belt cover:
- Loosen the nuts and take the cover off.

10.5 Transport rollers and kickback guards

NOTICE

Damage to the workpieces due to improper maintenance

- Check the running surface of the in and outfeed rollers regularly for signs of wear and tear.
- If there are pressure marks in the planing pattern or poor feed, clean the transport rollers immediately.
- Test the function of the kickback guard devices before each use of the thicknessing unit.

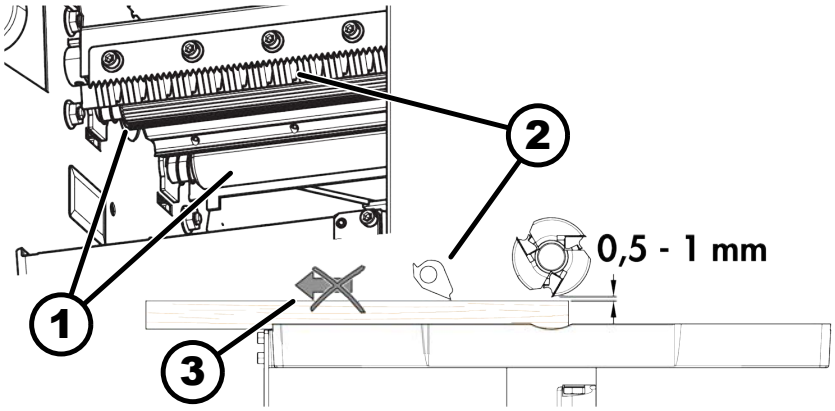

Fig. 54: Transport rollers and kickback guards

1 Feed rollers
2 Kickback guards
3 Planed panel

Check kickback guards/clean transport rollers

Personnel:

- Trained machine operator

Protective equipment:

- Protective clothing
- Protective gloves
- Safety goggles

Tool:

- Cleaning cloths
- Resin remover
- Vacuum cleaner

1. Remove resin residues from feed rollers.
2. Check condition of kickback guards.

   OK **There is no damage to the kickback guards.**
   → Continue with next step.

   NOK **The kickback guards show signs of damage.**
   → Contact Felder Group service centre.

3. Test the function on a daily basis and remove traces of resin if necessary.

   OK **The kickback guards fall back into place by themselves after having been lifted.**

   NOK **Kickback guards do not fall back on their own.**
   1. Remove resin residues and other impurities.
   2. Contact Felder Group service centre.

Testing the kickback guard function

1. Switch off the machine and secure it against being switched on again.
2. Push a planed board into the machine.
3. Adjust the height of the thicknessing table so that there is 0.5 to 1 mm gap between the board and the cutterblock blade trajectory.
   ➡ Thicknesser opening height = workpiece thickness + 0.5 - 1 mm
4. The attempt to pull the board out of the machine again is prevented by the kickback guards.

   OK **It should not be possible to pull the board out of the machine.**
   → Continue with next step.

   NOK **Board can be pulled out of the machine.**
   → Contact Felder Group service centre.

5. Push the board out the front of the machine.

10.6 Check belt tension and belt condition

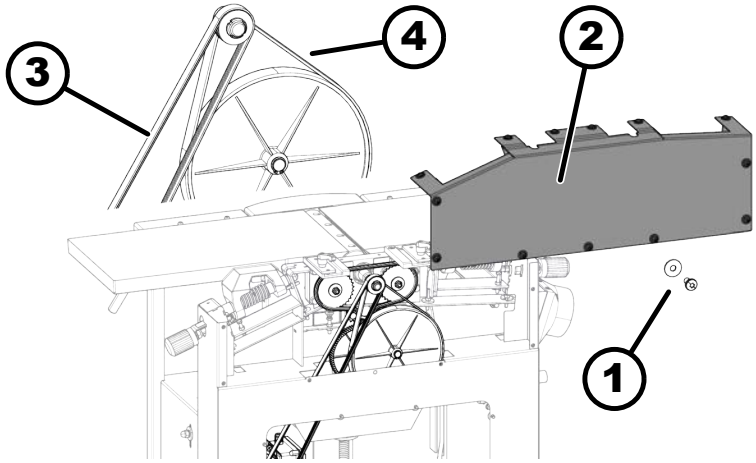

Fig. 55: Checking the drive belt

1 Nuts and washers
2 Cover plate
3 Drive belt tension 74 - 80 Hz
4 Drive belt

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

Personnel:

- Trained machine operator

Tool:

- Ring spanner set

1. Switch off the machine and secure it against being switched on again.
2. Disconnect the machine from the mains power supply.
3. Loosen and remove the screws and washers (13x)
4. Remove side cover plate (drive belt access).
5. Check belt tension and belt condition.

   OK **No rips or tears detected.**
   → Continue with next step.

   NOK **Rips or tears detected.**
   → Replace the belt immediately.

6. Mount the cover. ➥ *Chapter 10.4 'Preparation - Remove the maintenance cover' on page 59*

10.7 Drive chain feed rollers

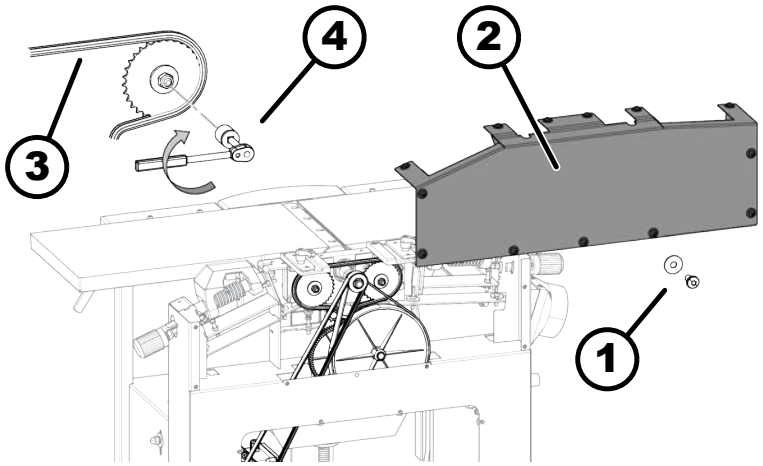

Fig. 56: Lubricate the feed roller chain

1 Screws and washers
2 Cover plate
3 Drive chain
4 Socket wrench

Personnel:

- Trained machine operator

Tool:

- Socket wrench

Material:

- Machine Grease

1. Switch off the machine and secure it against being switched on again.
2. Disconnect the machine from the mains power supply.
3. Release and remove the planer fence clamp.
   Loosen and remove the screws and washers.
4. Remove lid. ➦ *Chapter 10.4 'Preparation - Remove the maintenance cover' on page 59*
5. Clean the drive chain and then reapply machine grease lubrication.
   Slowly turn the chain in a clockwise direction using a socket wrench.
6. Repeat the process, until the whole chain is lubricated.
7. Mount the cover. ➦ *Chapter 10.4 'Preparation - Remove the maintenance cover' on page 59*

10.8 Lubricate the thicknessing table height adjustment spindles

Depending on how often the machine is used, dust and chips have to be periodically cleaned out from the space under the thicknesser table.

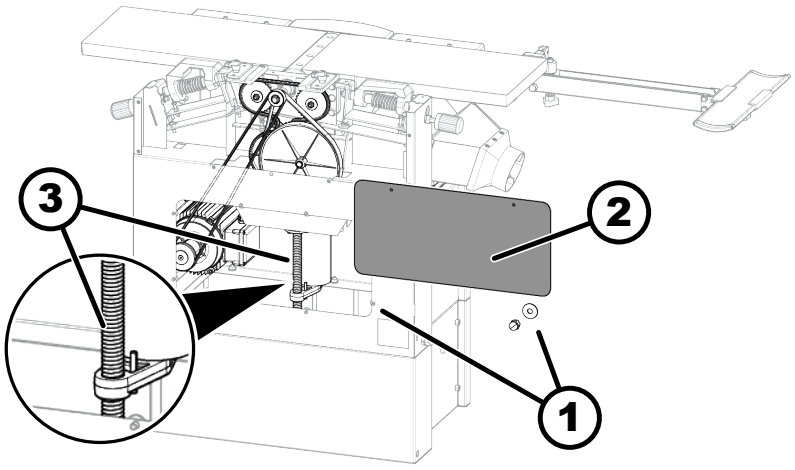

Fig. 57: Lubricating the height adjustment spindles

1 Nuts and washers
2 Cover plate
3 Thicknesser table height spindles

Personnel:

- Trained machine operator

Protective equipment:

- Protective clothing
- Protective gloves

Tool:

- Cleaning cloths
- Resin remover
- Vacuum cleaner

Material:

- Machine Grease

1. Move the thicknesser table fully upwards. ➦ *Chapter 8.3.1 'Thicknesser clearance height - general information' on page 46*
2. Switch off the machine and secure it against being switched on again.
3. Disconnect the machine from the mains power supply.
4. Loosen and remove the nuts and washers (8x).
5. Mount the cover. ➦ *Chapter 10.4 'Preparation - Remove the maintenance cover' on page 59*
6. Remove lid. ➦ *Chapter 10.4 'Preparation - Remove the maintenance cover' on page 59*
7. Clean the spindles and then reapply machine grease lubrication.
8. Prepare the machine for operation.
9. Move the thicknessing bed all the way down and then all the way back up again. ➦ *Chapter 8.3.1 'Thicknesser clearance height - general information' on page 46*

10.9 Lubricate planer fence

The adjusting struts of the planer fence must be lubricated with machine grease if necessary.

Personnel:

- Trained machine operator

Protective equipment:

- Protective gloves

Material:

- Machine Grease

→ Lubricate the hinges of the levelling struts of the planer fence with machine grease.

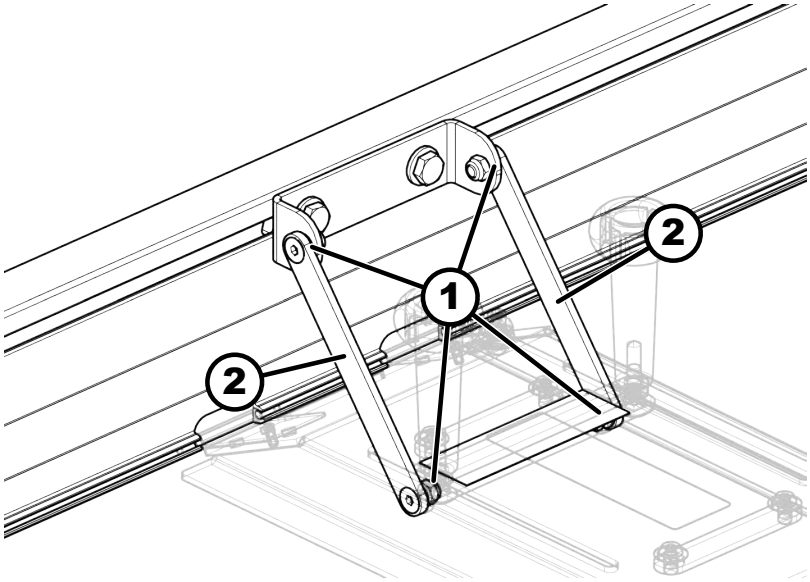

Fig. 58: Planer fence
1 Lubrication point
2 Adjustable strut

10.10 Check safety devices (emergency stop)

Safety equipment must be checked every six months. The cutterblock with clamped planing knives must be brought to a complete stop within 10 seconds. In the event of any problems or malfunctions, please contact a member of Felder-Group service centre.

Alternatively, machines without a separate feed motor can be equipped with red *[Stop]* buttons instead of the *[Emergency Stop]* buttons.

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

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]* key 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]* key.
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 cutterblock comes to a standstill within the legally applicable standstill time of 10 seconds.

The cutterblock with clamped planing knives must be brought to a complete stop within 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]* key.

OK **Machine comes to a standstill within 10 seconds.**
Test for machine standstill 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.

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

Fault description	Cause	Remedy
The red *[Stop]* button will not stop the machine immediately.	Fault in the electrical system	**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.
Safety limit switch without function	Fault in the electrical system	**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.
Machine cannot be switched off.	Fault in the electrical system	**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.
Machine is not functioning.	*[Main switch]* is off (position *"O" / "OFF"*)	Switch on the main switch (position *"I" / "ON"*).
	Error in the electrical connection	Check the electrical connection (power cable, fuses).
Cutterblock does not start.	*[Motor safety switch]* has been triggered.	**depending on the equipment:** **1.** Activate *[motor protection switch]*. **2.** Switch off main switch, restart the machine. **3.** Let the motor cool down, restart the machine.
The belts squeal when switched on or started	The belt tension is too slack	Re-tensioning the drive belt.
	The drive belt is worn out	Replace the drive belt.
Cutterblock cannot be brought to a stop within 10 seconds.	Fault in the electrical system / brake	Contact Felder-Group service centre.

Malfunctions during workpiece processing

Fault description	Cause	Remedy
Poorly planed surface	Planer blades are worn out.	**1.** Replace the planer blades. **2.** Depending on the configuration: adjust planer blades.
The joint is not true (extremely concave or convex)	Infeed planer table misaligned.	Adjusting the joint.
	Planer blades are heavily worn.	Replace the planer blades.
When surface planing, workpiece stops when it reaches the outfeed side of the planer table.	Outfeed planer table is too high in relation to the trajectory of the knives	Adjust the outfeed planer table.

Fault description	Cause	Remedy
"Straight cut" at the end of the workpiece when surface planing	Outfeed planer table is too low in relation to the trajectory of the blades.	→ Adjust the outfeed planer table.
The planer fence angle is not correct	The angle adjustment is misadjusted.	→ Correct the planing fence angle.
Workpiece is not transported evenly through the machine during thickness planing.	Workpiece is not properly positioned on the thicknessing table.	→ First machine the workpiece on the planer unit.
"Straight cut" at the beginning of the workpiece when thickness planing	Insufficient spring pressure on the infeed side feed roller	→ Contact Felder-Group service centre.
"Straight cut" at the end of the workpiece when thickness planing	Insufficient spring pressure on the outfeed side feed roller	→ Contact Felder-Group service centre.
"Oblique cut" at the beginning of the workpiece when thickness planing	Insufficient spring pressure on one side of the infeed side feed roller	→ Contact Felder-Group service centre.
"Oblique cut" at the end of the workpiece when thickness planing	Outfeed roller spring pressure too low on one side	→ Contact Felder-Group service centre.

11.4 Correct the planing fence angle

An exact angle between the fence guide bar and planing table is very important when planing the narrow edge and chamfering.

The 0° and 45° position are ensured by stop bars on the underside of the fence.

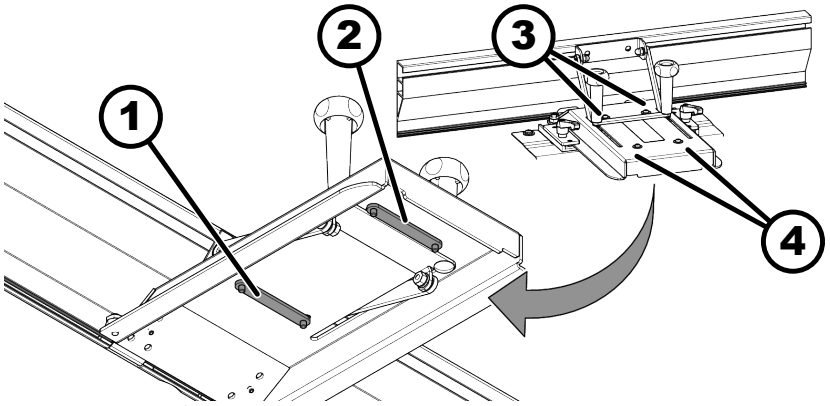

Fig. 59: Planing fence - angle correction

1 front stop bar (0° angle)
2 rear stop bar (45° angle)
3 Clamping screws (0° angle)
4 Clamping screws (45° angle)

Tool:

- Hex key

1. → Switch off the machine and secure it from being switched on again.
2. → Loosen the clamping screws of the required stop bar.
3. → Set the 0° and the 45° angle by moving the stop bar.
4. → Tighten clamping screws.
5. → Adjust planing fence angle.➥ *Chapter 8.1.5 'Adjusting the planer fence' on page 43*
6. → Check settings with a test workpiece.

11.5 Tighten/replace the drive belt

NOTICE
Drive belt overstretched
Drive belt can tear or cause bearing damage.
- Do not over-tension the drive belt.
- Only tighten the belt-tensioning screw as far as is needed to reach the specified value.
- The belt tension is specified as the oscillation frequency in Hertz (Hz).
- The correct belt tension can only be checked with a measuring device.

If any rips or tears are discovered during the monthly tests, the belt must be changed.

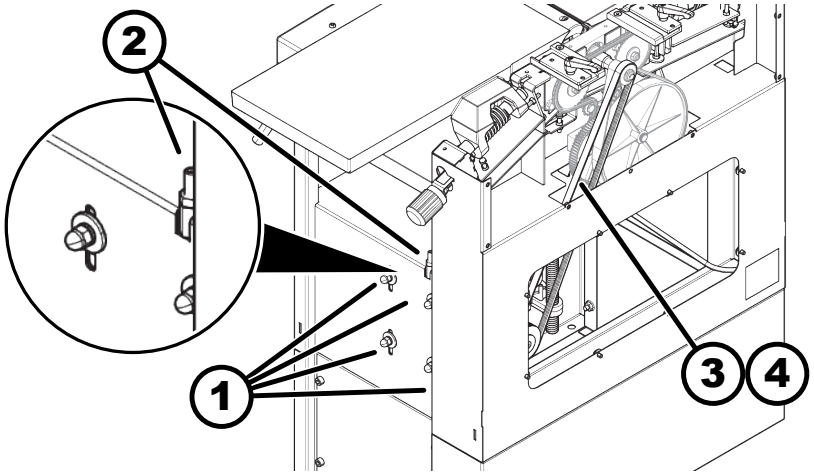

Fig. 60: Adjust the drive belt tension

1 Motor clamping nut
2 Tightening screw
3 Belt tension during operation 74 - 80 Hz
4 Belt tension during installation 85 - 90 Hz

Re-tensioning the drive belt

Tool:
- Ring spanner set
- Hex key

1. Switch off the machine and secure it from being switched on again. Disconnect the machine from the mains power supply.
2. Loosen the motor clamping nuts (4x).
3. Tighten the belt tensioning screw clockwise.
4. Tighten the motor clamping nuts (4x).

Replace the drive belt

Tool:
- Ring spanner set
- Hex key

Material:
- Poly-V drive belt

1. Loosen the motor clamping nuts (4x).
2. Loosen the belt tensioning screw anticlockwise.
3. Remove the old belt.
4. First hang the new belt on the drive motor.
5. Pull the drive motor and the drive belt upwards.
6. Hook the drive belt onto the cutterblock.
7. Ensure that the belt is seated properly by carrying out a couple of manual turns.

8. Re-tensioning the drive belt.
9. Tighten the motor clamping nuts (4x).

11.6 Reversing/replacing the system planer blades

NOTICE

Incorrect planing knives

Damage to the machine, malfunction or poor planing result.

- Only use original Felder Group planer knives.
- Only use machine specific planer knives.
- Execute the following instructions exactly.

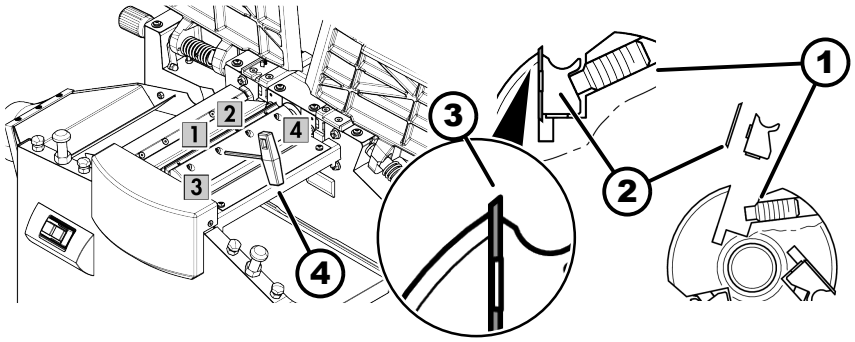

Fig. 61: System Planer Knife

1 Blade-holder screws
2 Blade holder
3 Planer Knives
4 Hex key

WARNING

Extremely sharp planer knife cutters

Cut injuries to hands and fingers

- Before changing the planer knives switch off and disconnect the machine from the mains power supply.
- Wear protective gloves.
- Be particularly careful when working with the cutterblock.

Personnel:

- Trained machine operator

Protective equipment:

- Protective clothing
- Protective gloves

Tool:

- Cleaning cloths
- Resin remover
- Vacuum cleaner
- Hex key
- System Planer Knife HS-M42
- Standard system planer knife

Turn or replace the planer knives if the planing results are no longer satisfactory.

1. Switch off the machine and secure it against being switched on again.
2. Disconnect the machine from the mains power supply.

   Change the machine over for thickness planing, swing the extraction hood up. ➥ *Chapter 8.1.6 'Changing over from a planer to a thicknesser' on page 44*
3. Release all the blade holder screws of a blade and remove the blade holder and planer blades.
   - Release all the blade holder screws of a blade and remove the blade holder and planer blades. Repeat this process with all blades.

4. **NOTICE!** Do not use compressed air when cleaning.
   Material damage due to dirt being forced into bearings and guides.
   ► Use cleaning cloths, resin remover and a vacuum cleaner for cleaning.

   Clean the planer blades, blade holders and cutterblock of traces of resin as thoroughly as possible.
5. Reverse the planer knife (if only one cutting edge is worn).
6. Insert the planer knife and knife holder again.
   - Ensure correct installation position of the planing knives (direction of rotation of the cutterblock).
   - Tighten the blade holder screws lightly at first, then firmly.
7. Release all the blade holder screws of a blade and remove the blade holder and planer blades. Repeat this process with all blades.
8. **WARNING!** Ejected parts
   Severe injuries and damage to property.
   ► Minimum tightening torque of the blade holder screws: 20 Nm.

   Always tighten the blade holder screws from the inside outwards.

11.7 Cutterblock - Silent-Power®

11.7.1 Information about the Silent-Power® cutterblock

The Silent-Power® cutterblock is a high precision tool for woodworking. This cutterblock was designed in conformity with the standard EN 847-1.
BG-Test tested - Test number: 139-063 US Pat. No. 7,708,038 and other patents pending.

11.7.2 safety instructions

- To obtain perfect working results it is necessary to strictly observe the manual guidelines and maintenance instructions.
- Only change the carbide inserts if the main switch of the machine is on off.
- Due to specific geometry only original carbide inserts and carbide clamping screws from the Felder Group are to be used (see spare part list).
- Only use the cutterblock with the appropriate safety equipment. This applies particularly to the planer guard.
- The tightening torque of the clamping screws has to be in the specified torque range and should neither be below nor exceed this range. It is strongly recommended to use a torque wrench. Check the correct setting of the torque wrench before each use (see spare parts list).
- The use of a motorized or pneumatically powered screwdriver to tighten the inserts is not allowed.
- Check whether all screws are tightened correctly before switching on the machine.
- Operating the Silent-Power® cutterblock is only allowed if all pockets are equipped with carbide inserts.
- Check the carbide inserts and clamping screws for damages with each change. If any damage occurs, do not use the carbide inserts or clamping screws.
- Check the threads of the pockets for damage and ease of glide with each change. The machine may not be switched on if the threads do not glide easily or the required torque is not achieved.
- Ensure that the carbide inserts are aligned correctly and are placed into the pocket at the correct angle prior to tightening the clamping screw.
- Examine the pockets of the cutterblock for damages when changing the carbide inserts.
- If there are any damages of the pockets recognisable, the machine must not be switched on. Damaged pockets may lead to the carbide inserts breaking.
- It is not authorised to use spanner-extensions to tighten the carbide insert clamping screws. It is also not permitted to tighten the insert clamping screws using a hammer for beating.

11.7.3 Instructions for use and maintenance

NOTICE
Unsuitable solvents
Material damage
- Only use suitable solvents (resin remover) to clean the cutterblock, which do not affect the mechanical properties of the cutterblock material.

- Every carbide insert is equipped with 4 cutting edges which are marked with F/1/2/3. When inserting the carbide inserts, ensure that the blades with the same labelling are used.
- No further adjustments are required. Make sure that the carbide inserts are positioned in the pocket properly and screwed in tightly.

Tool:

- Resin remover
- Cleaning cloths

→ Clean and dry all carbide inserts with resin remover.

11.7.4 Changing/replacing (carbide inserts) blades

WARNING
Extremely sharp planer knife cutters
Cut injuries to hands and fingers
- Before changing the planer knives switch off and disconnect the machine from the mains power supply.
- Wear protective gloves.
- Be particularly careful when working with the cutterblock.

CAUTION
Tighten the screws with a torque spanner
Loose or broken replaceable knives.
- Use torque spanner.
- Adhere exactly to the tightening torque of 5 Nm.

NOTICE
Incorrect planing knives
Damage to the machine, malfunction or poor planing result.
- Only use original Felder Group planer knives.
- Only use machine specific planer knives.
- Execute the following instructions exactly.

Turn or replace the planer knives if the planing result is no longer satisfactory.
Carefully carry out the steps described below for each planing knife individually.

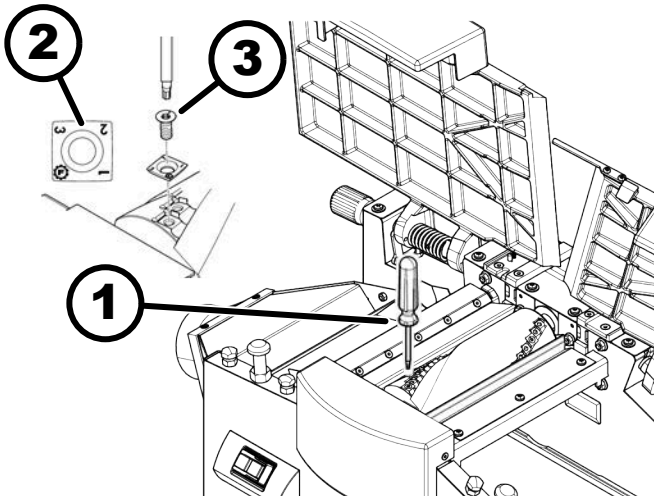

Fig. 62: Cutterblock - Silent-Power®

1 Torque wrench 5 Nm
2 Silent-Power® replacement knives
3 Clamping screw T20

Protective equipment:

- Protective clothing
- Protective gloves

Tool:

- Cleaning cloths
- Resin remover
- Vacuum cleaner
- Torque screwdriver, 5 Nm
- Silent-Power® HW replacement knives - 13.8x13.8x2.5
- Silent-Power® HW (c-tech) replacement knives - 13.4x13.4x2.5

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

2. Disconnect the machine from the mains power supply.

3. Loosen the clamping screw and remove from the thread.

  1. Pay attention to the numbering of the cutting edge.

  2. If necessary, note the cutting number used.

4. Remove carbide insert from the pocket and clean the pocket with compressed air.

5. Clean pocket with suitable cleaning agent (resin remover).

  - It is recommended to use a small cleaning brush (toothbrush) or a cotton swab.

6. Clean the carbide insert with a suitable cleaning agent (resin remover) before installation.

  - Note the build-up of wood dust.
  - Thoroughly remove resin residues.

7. Insert the carbide insert into the seat, paying attention to the numbering of the cutting edge.

  - Used inserts, for example, should always be turned clockwise by one cutting edge.
  - When using new inserts, always use the same cutting edge number.

8. Check the clamping screws for damage on the thread, clamping surface or of the tool holder (Hexagon socket T20) and clean.

  Replace defective screws immediately.

9. Screw the clamping screw without moving the carbide insert.

10. **WARNING!** Ejected parts
Severe injuries and damage to property.
► Minimum tightening torque of the clamping screws: 5 Nm.

Tighten the clamping screws gently at first, then tighten it with a torque wrench with a torque of 5 Nm.

11.7.5 Possible application errors and solutions

Improper operation may cause increased ripples or stronger longitudinal grooves on the planed surface. These may be caused by the following:

- Improper cleaning of the pockets when changing cutters/inserts.
- Improper cleaning of the carbide inserts (resin- or dust residues on the carbide inserts when changing them).
- Ensure that the carbide inserts are aligned correctly and are placed into the pocket at the correct angle prior to tightening the clamping screw.
- Under or over-tightened clamping screws.
- Damaged pocket due to improper insertion and tightening of the carbide insert.
- Damaged clamping screw.
- Changing one single carbide insert. All carbide inserts should be changed or turned to the next mark simultaneously.
- Changing or turning just one of the carbide inserts because of damage may create a small gap in the planed surface at this position.

11.7.6 Spare parts

Due to the specific geometry of the carbide inserts, only original carbide inserts from Felder Group may be used. Due to safety reasons only use genuine Felder Group carbide clamping screws for carbide inserts.

Spare parts
Replacement blade for Silent-Power® Spiral Blade Planer Shaft13.8 x 13.8 x 2.5 mm (10 pieces) (Art.-no.: 07.0.020)
Replacement blade for Silent-Power® Spiral Blade Planer Shaft13.8 x 13.8 x 2.5 mm (500 pieces) (Art.-no.: 07.0.02050)
HW Replacement Blade for Silent-Power® "c-tech" Spiral Blade Planer Shaft13.4 x 13.4 x 2.5 mm (10 pieces) (Art.-no.: 07.0.022)
Replacement screws for Silent-Power® spiral cutterblockM5x10 TX20 (10 pieces) (Art.-no.: 07.0.021)
Torque screwdriver, 5 Nm (Art.-no.: 12.0.324)
Resin remover (0.5 l) (Art.-no.: 10.0.022)

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

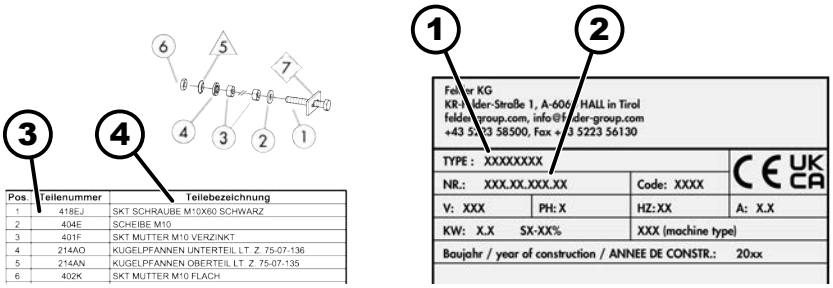

Fig. 63: Spare parts list / data plate

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.)

Hammer®

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