TRANSLATION OF THE ORIGINAL VERSION

CE

Operating Manual

Combined surface planer and thicknesser

WOODPECKER ADH 5-410

Machine Type:	**ADH 5-410**

WOODPECKER
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Handover Certificate

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

Warranty:

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

Warranty claims:

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

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

Confirmation of the buyer:

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

Name and position	Date	Signature of the customer
_____	_____	_____

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

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Revisions:

Revision	Editor	Modification	Date
001	AG	German original version translated.	01.06.2022

1 Liability and warranty

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

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

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

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

2 Introduction

The purpose of this operating manual is to acquaint the user with the machine and enable him to use it to the full extent of its intended capabilities. Additionally it contains important information to operate the machine safely, properly and economically.

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

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

Figure 1: ADH 5-410 in surface planing mode

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

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

2.1 Legal notice

2.2 Figures

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

3 Symbols

3.1 General symbols

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

3.2 Symbols in safety instructions

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

4 General

This combined planer and thicknesser ADH 5-410 was produced according to the current state of the art and put into operation as a complete machine. All legal and normative regulations were complied with.

- The machine has a surface planing width of 410 mm and a thickness planing width of 406 mm.
- The maximum chip removal during thickness planing is 4 mm and during surface planing 5 mm.
- The thickness planer capacity is in the range of 4 to 225 mm.

4.1 Target group and previous experience

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

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

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

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

4.2 Requirements for the operators

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

4.3 Accident prevention

To avoid accidents, the following rules must be observed for operation:

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

4.4 General safety regulations

In general, the following safety regulations and obligations apply when handling the planer & thicknesser:

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

4.5 Standard equipment

- Powerful three-phase motor 5.5 kW (7.5 HP)
- Foldable bridge guard as cutter block cover
- Manual adjustment of the feed table during surface planing via scale
- Manual height adjustment of the thicknessing table via handwheel (with scale, fine adjustment to 0.1 mm via analogue display)
- Spiral cutterblock with 66 HM indexable inserts
  (3 rows of 22 knives each) 15 x 15 x 2.5 mm
  - 10 pieces replacement carbide inserts
  - 10 pieces matching T20 screws
  - Suitable torque spanner
- Thickness planer with driven infeed and outfeed rollers
- Surface planing fence with tilt adjustment (90° ... 45°)
- Serrated table lips for noise reduction
- Electric, wear-free motor brake
- 1 suction nozzle 120 mm Ø
- CE conform and GS tested

4.6 Options, accessories and spare knives

- Switching contact for automatic switching of the extraction system
- Spare indexable inserts for spiral cutter block
- Service and cleaning kit for spiral cutter block
- Planer guard SUVAMATIC
- Mobile base with lifting rod

Article numbers can be found in chapter ⇨ 18

5 Safety

5.1 Basic safety instructions

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

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

5.1.1 Application area and intended use

	***The combined surface plane & thicknesser "546l100" is used exclusively for surface planing, jointing and thicknessing of solid wood (soft and hard woods) as well as plastics and wood-containing board materials.*** ***This machine is not suitable for processing metal or scrap wood - which could contain nails, screws and other metal parts.*** ***The machine may only be operated on a firm, level surface with a minimum load-bearing capacity of 1,000 kg/m².***

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

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

	***Only the manufacturer's original planing cutter-blocks and replacement knifes according to EN 847-1 are permitted as tools. These must be marked with MAN!***

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

- Permissible ambient temperature: +5° ... +40° C
- Permissible humidity: 30 % ... 90 %
- Operating altitude: max. 1000 m above sea level

Intended use also includes the connection of the machine to an adequately dimensioned extraction system and compliance with the operating, maintenance and servicing conditions specified in the operating manual.

Any other use is not in accordance with the intended use and is therefore prohibited.

5.1.2 Modifications and conversions to the machine

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

5.1.3 Residual risks

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

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

5.1.4 Observe the Environmental Protection Regulations

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

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

5.1.5 Organisational Measures

⚠ Always keep this operating manual within easy reach and at the place of use of the machine.

⚠ In addition to the operating manual, observe and instruct on generally applicable legal and other binding regulations for accident prevention and environmental protection.

⚠ Supplement the operating manual with further instructions, including supervisory and reporting duties, to take account of special operational features (e.g. with regard to work organisation, work processes, personnel employed).

⚠ Before starting work on the machine, the person responsible for its operation must have read the operating instructions, especially the chapter ⇨ 5 "Safety Instructions". This applies in particular to personnel who only occasionally work on the machine.

⚠ Check that work is carried out in a safety-conscious and hazard-conscious manner and in compliance with the operating manual.

⚠ Operators must not wear open long hair, loose clothing or jewellery (including rings). There is a risk of injury, e.g. by getting caught or drawn in.

⚠ Observe the safety instructions and danger warnings on the machine and keep them complete and in legible condition.

⚠ In case of safety-relevant changes to the machine or its operating behaviour, shut down the entire system immediately and report the fault to the responsible office/person.

⚠ Use personal protective equipment as necessary or required by regulations.

⚠ Do not make any modifications, additional attachments or conversions to the machine without the manufacturer's approval! This will compromise safety and invalidate the manufacturer's warranty and any liability claim.

⚠ Spare parts must meet the technical requirements specified by the manufacturer. The exclusive use of original spare parts ensures this. Therefore, only use original spare parts from the manufacturer.

⚠ Observe the fire alarm and firefighting possibilities. Make the location and operation of fire extinguishers (fire class ABC) known. Do not use water!

5.1.6 Personnel Selection and Qualification - Basic Duties

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

5.1.7 Training of Personnel

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

- General rules for the use of the machine, proper operation, correct adjustment of the machine and surface planer fence as well as the use of other accessories (e. g.).
- Proper handling of workpieces during the machining process. Correct position of the hands to the workpiece and to the cutter block during and after machining.
- The personnel must be informed about hazards, risks and appropriate protective measures.
- The personnel must be trained in the area of regular checks of the guards and protective devices.
- The personnel must be trained in the use of the guards and protective devices.

5.2 Safety Instructions for Specific Phases of Operation

	***Defects and damage to the machine are to be reported immediately after detection.***
	***Any mode of operation that compromises safety is prohibited!***
	***Sufficient lighting around the machine must be ensured!***
	***The machine must not be used if the fingers of the anti-kickback system are damaged or do not fall back unhindered by their own weight!***

5.2.1 Normal Operation

Guards: Take measures to ensure that the machine can only be operated in a safe and functional condition. Only operate the machine when all guards and safety-related devices such as

- detachable guards,
- anti-kickback system,
- emergency stop units,
- noise insulations,
- extraction system

are available and functional.

⚠ **Adjustments:** Change and adjust the planing knives as described in chapter ⇨ 12.
The workpiece fence must always be securely fastened during this process.

⚠ **Workpiece:** Before the operation, check the workpiece for

- foreign inclusions
- knots
- twists (contortions)

and other irregularities.

Workpieces that are longer than the infeed or outfeed table must be additionally supported (e.g. with support rollers or similar).

Due to the automatic feed, make sure that there is sufficient space on the removal side in front of stationary obstacles (danger of crushing!).

⚠ **Auxiliary equipment:** For surface planing and jointing of short workpieces that do not allow a safe hand support, push blocks are to be used. The shape of the push block must be adapted to the workpiece. Feed workpieces with a length < 400 mm, thin workpieces or workpieces with a very smooth surface only with a push block or push stick.

⚠ **Jointing high workpieces:** Ensure controlled lateral pressure so that tilting is prevented. The cutter block must be completely covered.

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

⚠ **Extraction:** The machine must be connected to an effective extraction system. This requires an extraction rate of at least 1800 m3/hour at a speed of 25 ... 30 m/s.

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

⚠ **Planing area during operation:** Never try to remove offcuts, chips or other parts from the planing area while the machine is running! Never use your hands to remove!

⚠ **Chamfering and bevelling:** To produce chamfers or bevels, a corresponding template must be used to guide the workpiece and produce the desired angle. Fixed guides must be fitted to the template to prevent lateral movement of the workpiece. The base plate of the template must be provided with bars to hold the template on both sides of the thicknessing table against shifting during the workpiece feed.

⚠ **Workpiece inspection:** Inspect the workpiece for foreign inclusions, knots, twists and other irregularities.

⚠ **Workpiece feed:** Always feed the workpiece in a closed, flat hand position.

⚠ **Lighting:** The working area should be sufficiently bright due to general or local lighting.

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

⚠ **Leaving the machine:** Switch off the control voltage and main switch before leaving the machine. Never leave the machine unattended in an unsecured state.

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

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

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

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

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

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

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

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

⚠ Ensure safe and environmentally friendly disposal of operating and auxiliary materials (e.g. oils) and replacement parts (e.g. electronic components)!

5.2.3 Safe Working Practices

⚠ Wear personal protective equipment (safety goggles, safety shoes, hearing protection, dust mask)!
⚠ Always work with all protective devices! These must be in the intended places and in perfect working order. Defective guards must be replaced immediately.
⚠ Do not start planing until the motor / tool has reached full speed.
⚠ Do not use damaged tools resp. knifes or cutting blocks.
⚠ Do not exceed the permissible speed of the tool.
⚠ Damaged parts must be replaced with new ones.
⚠ Workpieces that are longer than the infeed or outfeed table must be supported additionally. (e.g. table extension, support rollers or similar).
⚠ Repairs may only be carried out by qualified personnel and with the main switch locked.
⚠ Unused areas of the cutter block must always be covered (also during combined operation).
⚠ During surface planing workpieces with a length < 400 mm, thin workpieces or workpieces with a very smooth surface are to be pushed forward with a push block or push stick.
⚠ When planing surfaces, always push the workpiece with the hand in a closed, flat position and the thumb resting against it. Advance the workpiece at a steady speed and with constant pressure on the table.
⚠ Do not remove splinters and chips by hand while the cutter is running.
⚠ When jointing high workpieces, ensure controlled lateral pressure (prevent tilting) and complete covering of the cutter block.
⚠ Danger from ejecting parts! Always keep the insertion shaft clear when the cutter is running and do not look into the opening

5.2.4 Construction-related Safety Devices

The machine construction already includes the following safety precautions:

- Microswitch that switches off the machine when the surface planer outfeed table is opened.
- Stopper for opening the surface planer infeed table before opening the outfeed table.
- Microswitch that is actuated when the chip collector is opened in the “thickness planing” mode. This prevents dangerous starting of the exposed cutter block.
- The machine cannot start if the surface planer tables and the chip collector are not closed in the “surface planing” mode.
- Chip collector for collecting dust and chips: This has an intermediate piece for fastening to the extraction system. The chip collector covers the cutter block from above when operating as a thickness planer and avoids access to the cutter block below the tables when operating as a surface planer. The chip collector can be attached for both modes of operation (see section ⇨ 8.6.2).
- Separators between the cutter block and the infeed resp. outfeed roller: These serve as contact protection for the cutter block underneath the tables of the surface planer.
- n thicknessing mode, the surface planer tables are in a vertical, folded-up position and are mechanically secured in this position by locking springs to prevent them from falling down unintentionally.
- The dressing machine's outfeed table has a stopper which, when set vertically, prevents the work surface from sinking lower than the upper point of the cutter block.
- The surface planing tables prevent rebate machining with the cutter block.
- Serrated table lips at the ends of the planing table directly on the cutter block. These dampen the noise and always remain at a distance of 1 to 5 mm from the cutting circle, regardless of the position of the tables.

- Anti-kickback fingers when operating as a thickness planer: This protection device against kickback is located on the infeed side in front of the feed roller of the thickness planer and covers the entire working width. The system consists of individual fingers that are mounted on a ø 20 mm shaft. The width of the fingers is 15 mm and the distance between the fingers is 6 mm. In the initial position, the fingers are 3 mm below the cutting circle. They are designed in such a way that - under the effect of their own weight - they always return to their initial position.
- On the infeed side of the thickness planer there is a stopper to limit the chip removal.
- The table of the thickness planer can be adjusted and locked in vertical direction.
- As a kickback protection, there is a stopper to limit the thickness planer table in vertical direction. This avoids contact between the feed and pull rollers and the anti-kickback device.
- The thickness planing table has side stops for limiting the working width and for workpiece guidance.
- Bridge guard for the cutter block in front of the fence for jointing: Covers the unused part of the cutter block in surface planing mode and can be height adjusted from 0 to 75 mm.
- Fence for jointing: Serves as a secure support and for the correct guidance of the workpieces when operating as a surface planer and jointer. The tilt angle can be adjusted between 90° and 45°. The fence can be moved over the entire working width of the surface planer tables.
- Protection of the cutter block behind the fence: Covers the cutter block behind the fence. The guard is mounted on the fence and moves with it.
- The dynamically balanced cutter block reduces vibrations and improves the planing pattern.
- When the cutter drive is switched off, the feed of the thickness planer is stopped at the same time.

5.3 Electrical Safety Devices

- Emergency stop push button: In the event of danger, the centrally accessible emergency stop button immediately puts the machine out of operation.
- Lockable main switch: The main switch can be locked with a padlock to protect the machine (e.g. during adjustment, repair and maintenance work) against unintentional or unauthorised restarting.
- Electronic brake for electrodynamic braking of the motor: This ensures the cutter block comes to a standstill in less than 10 seconds after the motor is switched off.
- Undervoltage protection: When the power is interrupted, the machine is brought to a standstill, where it remains when the power is restored. To put it back into operation, it must be switched on again.
- Protection against electric shock: The housing of the machine and the drives are protected against electric shock with a neutral line.
- Dust and water protection: The control cabinet and motor are protected against contact, dust and splash water on all sides with protection class IP54.
- Short circuit protection: The machine is equipped with overload protection for the motor (thermal switch).
- The internal safety switches on the surface planing tables prevent the machine from starting when the tables are open or when the chip collector is not set correctly.

5.4 Hazardous Areas

5.4.1 Danger Zones during Surface Planing

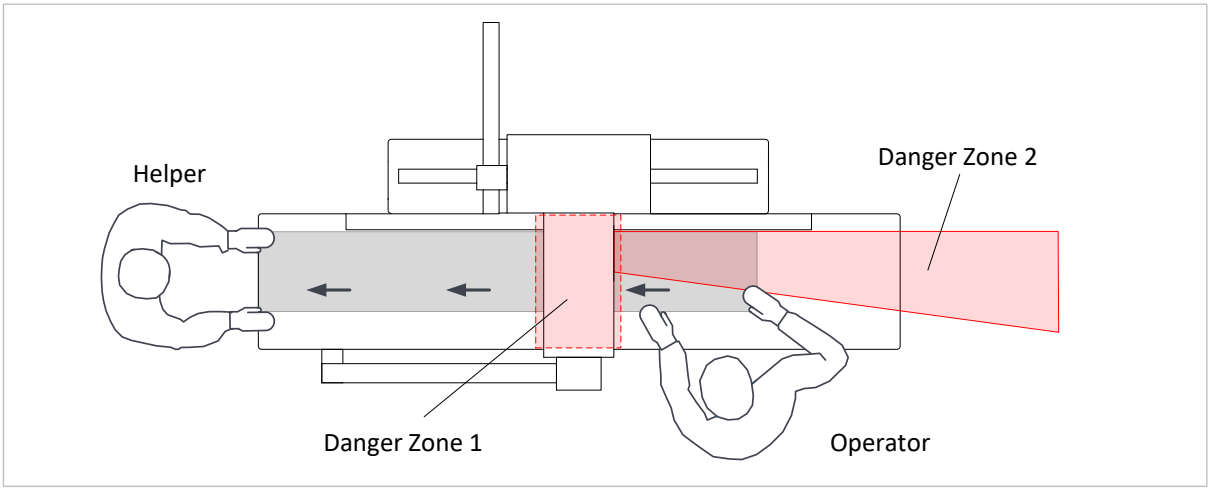

Figure 2: Danger zones during surface planing

Danger Zone	Type of hazard	Prevention
1 	***Danger of drawing in and cutting!*** *The area around the cutter block is considered an absolute danger zone. There is an increased risk of injury and even death when reaching into this area. There is also an increased risk of clothing, hair, watches and jewellery being pulled in.*	1. Never reach into the Danger Zone 1 when the cutter is running (see ⇨ Figure above). 2. Always cover the unused part of the cutter block with a planer guard. 3. To feed, the hands must lie flat on the workpiece with fingers closed and thumbs applied. Important: Do not grip the edges of the workpiece! 4. Wearing loose clothing, gloves, loose hair, watches and jewellery is prohibited. Suitable pushing aids must be used for short, very flat and narrow workpieces. 5. The operator must always stand in front of the planing & jointing table. It is forbidden to be in Danger Zone 2 (see ⇨ Figure above) when the cutter block is running. This applies equally to the operator and to any helper.
2 	***Risk of kickback!*** *Risk of injury due to the workpiece being kicked back or due to workpieces and workpiece or tool parts being catapulted away (e.g. tool breakage).*	

5.4.2 Working Areas & Protective Measures

- When surface planing & jointing, the operator of the machine must generally stand in front of the planing table, to the right of the cutter block resp. planer guard. It is forbidden to enter the Danger Zone 2 marked in ⇨ Figure 2 while the cutter is running.
- A required helper for workpiece removal must generally stand on the left side of the planing & jointing table. The helper does not intervene in the machining process, but only removes the finished workpieces. It is forbidden for helpers to stay on the infeed side or in the danger zone.
- Any observers must generally remain outside the danger zones. A sufficient distance is prescribed so that the operator of the machine and any assistant cannot be hindered in their work.

5.4.3 Danger Zones during Thicknessing

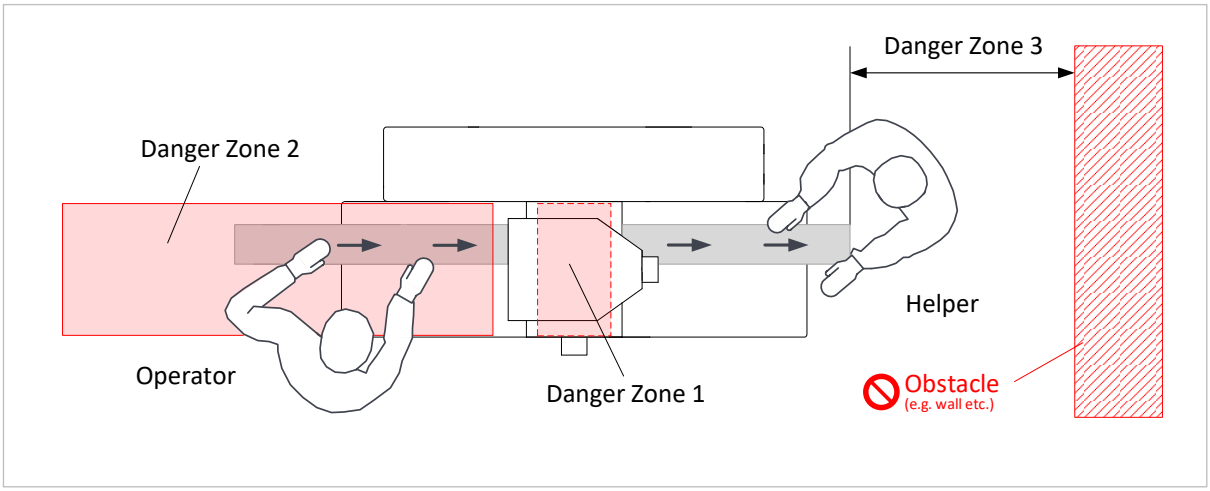

Figure 3: Danger zones during thicknessing

Danger Zone	Type of hazard	Prevention
1 	***Danger of drawing in and cutting!*** *Although the cutter block is not accessible from the outside, it is theoretically possible to reach into the infeed and outfeed opening of the machine and thus into the rotating cutter block. There is a high risk of injury and even death here!*	1. Never reach into the opening of the thickness planer while the cutter is running or the machine is switched on (see Danger Zone 1 above). 2. Before carrying out maintenance work or removing pieces of material, be sure to switch off the main switch and secure it with a padlock.
2 	***Risk of kickback!*** *Despite anti-kickback protection, in exceptional cases the workpiece can kick back dangerously and cause the most serious injuries and endanger the lives of people. This can be the case, for example, if the workpiece tilts in such a way that the anti-kickback system can no longer engage.*	1. The operator must always stand next to the machine and never in front of the infeed opening. In addition, the workpiece must never be pushed with the body. 2. It is forbidden to stay in Danger Zone 2 (see figure above) when the cutter block is running. This applies equally to the operator and to a helper.
3 	***Danger of crushing!*** *The processed workpiece is constantly pushed out of the outfeed side of the thickness planer by means of automatic feed. If there is an obstacle on the outfeed side, there is a risk of a person being crushed.*	Keep the outfeed side clear at all times and do not place any obstacles, such as walls, material handling trolleys, forklift trucks, etc. in the Danger Zone 3 shown in the figure above.

5.4.4 Working Areas & Protective Measures

- The operator of the machine must generally stand on the infeed side of the machine, in the cutting direction and with his body to the side of the machine table during thicknessing. Do not enter the Danger Zone 2 marked in ⇨ Figure 3 while the cutter is running.
- To avoid tipping of longer workpieces, a table extension should be used.
- A required helper for workpiece removal must generally stand on the outfeed side of the machine. The helper does not intervene in the machining process, but only removes the finished workpieces. It is forbidden for helpers to stay on the infeed side or in the danger zone.
- Any observers must generally remain outside the danger zones. A sufficient distance is prescribed so that the operator of the machine and any assistant cannot be hindered in their work.

6 Machine Data

6.1 Technical Specifications

Planing width (planer/jointer):	max. 410 mm
Planing width (thicknesser):	max. 406 mm
Passage height:	min. 4 mm / max. 225 mm
Table height:	850 mm
Table length (planer/jointer):	1800 mm
Table length (thicknesser):	700 mm
Chip removal (thicknesser):	max. 5 mm
Chip removal (planer/jointer):	max. 4 mm
Planer/jointer fence (L x W):	1100 x 155 mm
Fence tilt range:	90° ... 45°
Cutter block speed:	4600 rpm
Cutter block diameter:	100 mm
Motor power:	5.5 kW / 7.5 HP
Motor voltage:	400 V / 50 Hz
Feed rate:	8 m/min.
Protection class:	IP54
Dimensions:	see ⇨ Figure 6
Space requirement:	see section ⇨ 6.4
Net weight:	approx. 450 kg
Suction nozzle:	Ø 120 mm

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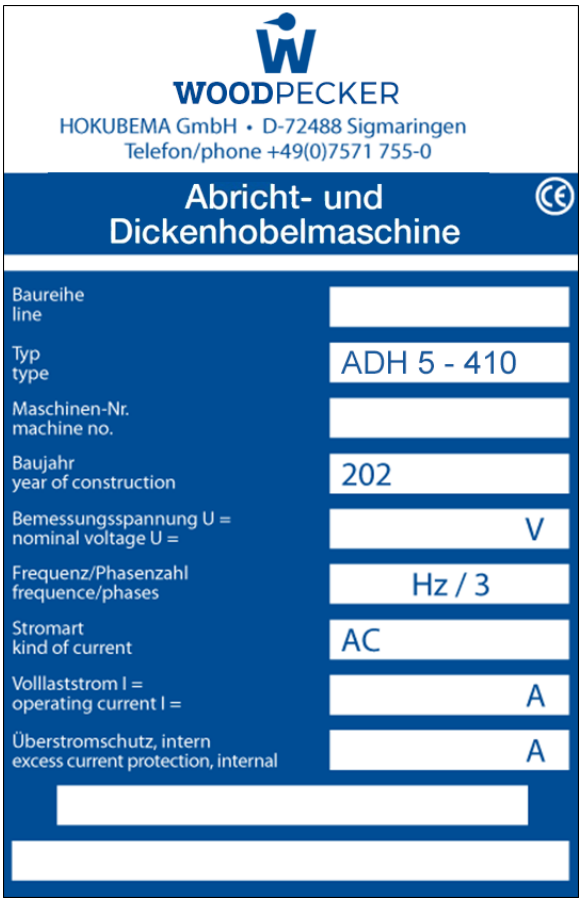


Figure 4: Name plate

6.2 Correspondence in the Case of Service

Please, in case of technical problems, contact your dealer or the manufacturer's service department. In correspondence or during a telephone call regarding the purchased machine, you should have the following data at hand:

- Manufacturer number of the machine
- Voltage and frequency
- Date of manufacture
- Detailed description of the fault
- Detailed description of the type of machining carried out
- General operating time of the machine in working hours
- In case of questions regarding the electrical system, the information on the machine's type plate is also required.

6.3 Emission Levels

6.3.1 Noise Information

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

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

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

6.3.2 Noise Emission Values

Explanation of noise emission	
Weighted level: Noise pressure in idle state	L_{pfA} = 82 dB Uncertainty: K = 2 dB
Weighted level of noise power at the workplace	Planer & Jointer: L_{wA} = 111 dB Thicknesser: L_{wA} = 110 dB Uncertainty: K = 2 dB at error limit interval 95 %

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

6.4 Workplace Requirements

The effective space requirement usually depends on the dimensions of the machine and the dimensions of the workpieces to be processed. In general, provide sufficient space around the machine and also calculate the required workplace for the operating, maintenance and auxiliary personnel as well as for the infeed and outfeed of the workpieces.

- Choose a suitable place for the machine and consider the working areas shown in the figure for thicknessing as well as for planing & jointing.
- Consider the existing hazardous areas (refer to section ⇨ 5.4).
- The chosen location must guarantee a suitable connection to the mains supply and to the extraction system.
- Make sure that the floor can support the load of the machine.

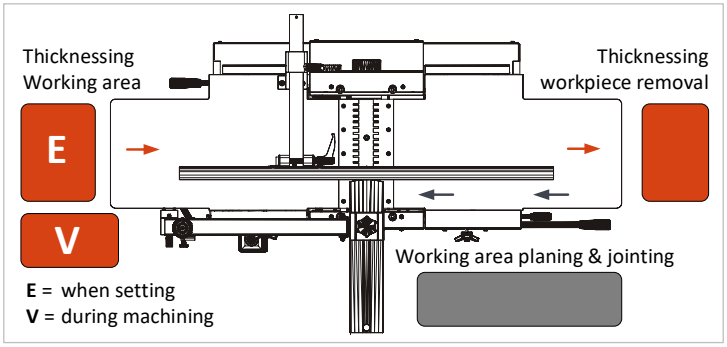


Figure 5: Working areas

- The machine must be levelled with a machine spirit level.
- A clearance of at least 0.8 m must be ensured around the machine.
- Sufficient space must be ensured for the feeding of large and long workpieces.
- Sufficient lighting (min. 500 lux) must be ensured. The lighting must not dazzle and a stroboscopic effect must be avoided.

7 Dimensions

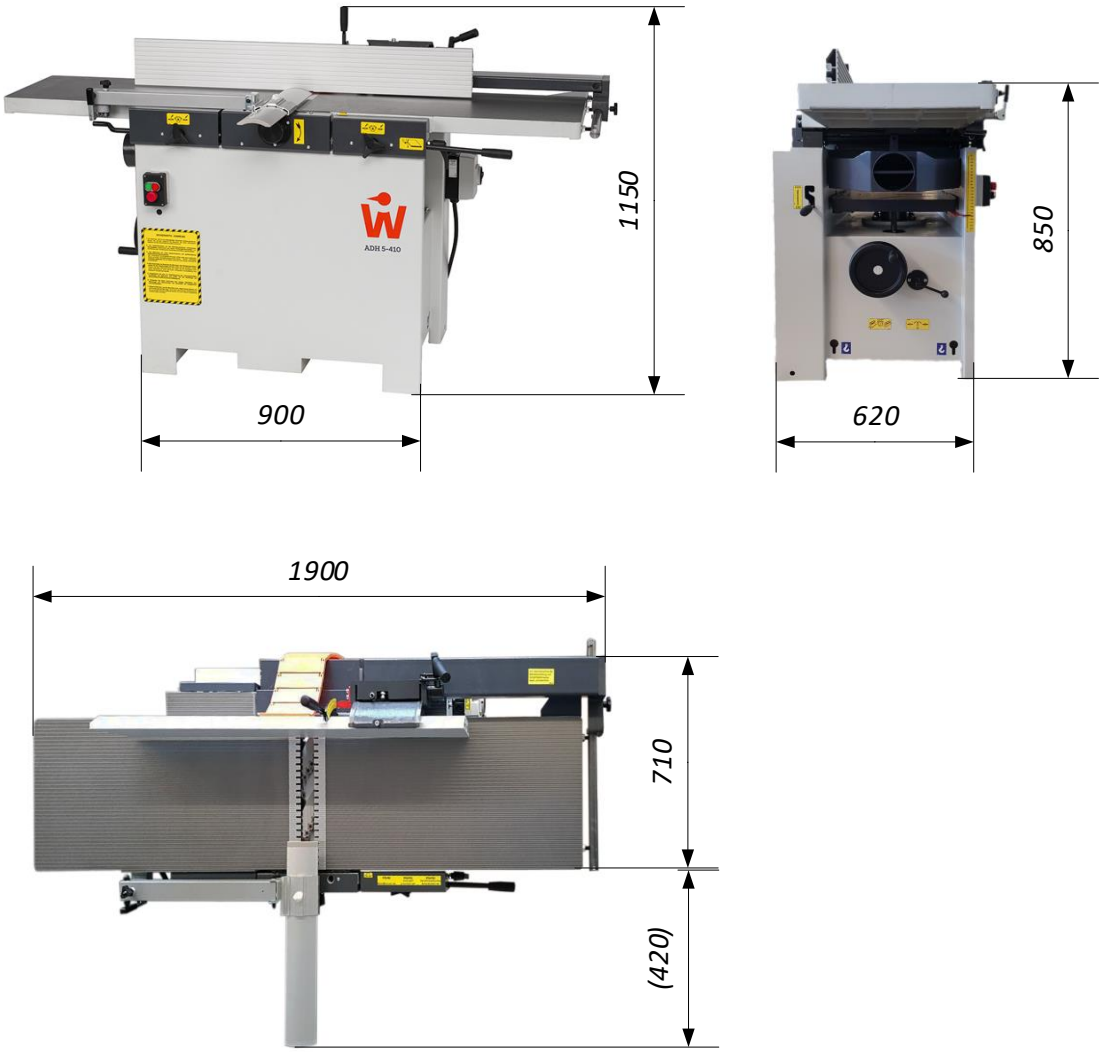


Figure 6: Dimensions

Subject to design and dimensional changes!

8 Installation and Connection

8.1 Check Delivery Conditions

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

8.2 Transport

Lifting and transporting the machine must be carried out by qualified persons who have the required experience and equipment.

⚠	***Please take great care when loading and unloading the machine. The necessary measures must be taken to avoid impacts, damage as well as injuries to persons. When transporting, also pay attention to the existing danger of tipping over!***

The machine is delivered on a transport pallet and is bolted to the bottom of the pallet. The centre of gravity of the machine is approximately in the middle of the pallet. The machine may only be transported using suitable aids, e.g. a forklift truck, lift truck or overhead crane with a load capacity sufficient for the weight of the machine (net 450 kg).

⚠	***Danger to life under suspended loads when transporting with a forklift truck or crane. Staying under a suspended load is prohibited! In addition, make sure that no objects fall down during transport by forklift truck / crane. Do not leave loose objects, accessories or tools on the machine.***

8.2.1 Unloading with a Forklift Truck

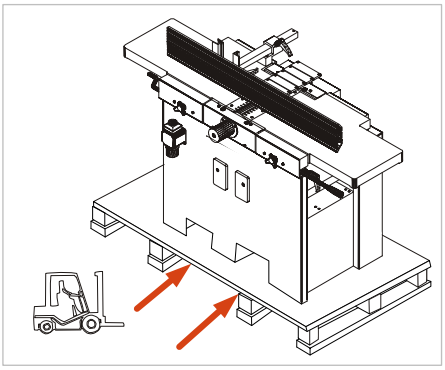


Figure 7: Unloading with a forklift truck

⚠	***Caution! The forks of the forklift truck must be at least 1200 mm long!***

- Move the forks of the forklift truck centrally between the pallet timbers and feed the forks as shown in ⇨ Figure 7.
- Lift the pallet by a few centimetres and move the machine to the immediate vicinity of the installation site.

8.2.2 Setting down with a Forklift Truck

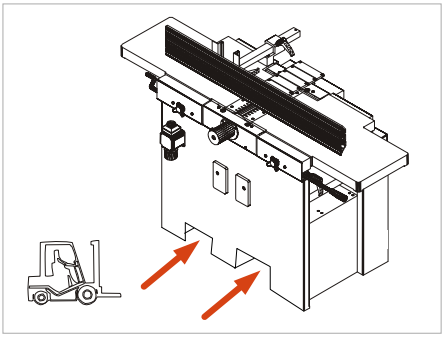


Figure 8: Setting down with a forklift truck

- Remove the screw fastenings, transport plates and transport straps on the feet required for transport on the pallet.
- Lift the machine off the pallet with the forklift and refit the four levelling supports to the feet (see ⇨ Figure 10). Feed the forks of the forklift truck as shown in ⇨ Figure 8.
- Then move the machine to the final installation site and park it at the final place of use.

8.2.3 Unloading and setting down with Overhead Crane

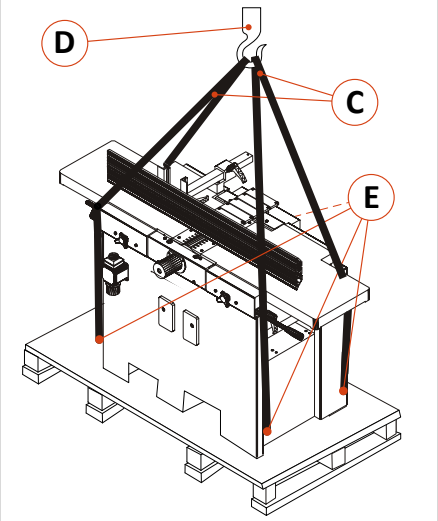


Figure 9: Unloading / setting down with crane

- Prepare four tension belts or nylon slip ropes (**C**) with the required load capacity and in sufficient length and hang them on the crane hook (**D**) as shown in ⇨ Figure 9.
- Then fasten the belts (**C**) in the four eyelets (**E**) of the machine.
- Adjust the belts or ropes well and, if necessary, move the crane a little to ensure vertical and stable lifting. Do not tilt the machine!

⚠ ***Before lifting, check that the belts or ropes are securely fastened in the four eyelets.***

- Lifting the machine must be done slowly, gently and without bumping and swinging.
- Remove the screw fastenings, transport plates and transport straps on the feet required for transport on the pallet, remove the pallet and refit the four levelling supports to the feet (⇨ Figure 10). Then place the machine with the crane at the final place of use.

8.3 Machine Installation

Remove the preservative that was applied at the factory to protect the parts against corrosion without painting. This can be done with commercially available solvents. Please do not use nitro solvents or similar solvents and never use water to remove the preservative!

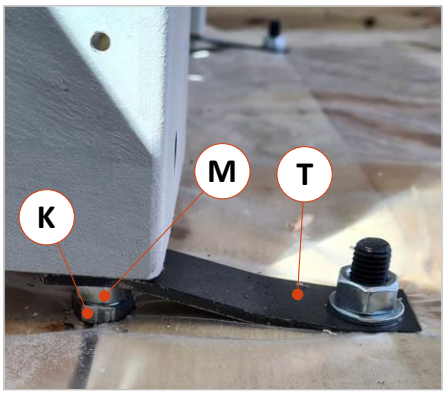


Figure 10: Remove transport straps

- Due to the solid machine construction, no special foundation is required to ensure good levelling and vibration-free operation of the machine. In addition, a device for transporting the machine inside the production hall can be installed.
- After the four transport straps (**T**) have been removed and all levelling supports, including nuts (**M**) and lock nuts (**K**), have been refitted, the machine must be levelled.
- To do this, level out any unevenness of the ground with a machine spirit level 0.1 mm/1 m using the nuts (**M**) until a stable and horizontal stand is achieved. Then lock all four supports with the lock nuts (**K**).

	***Be aware of possible crushing hazards when placing the machine (from the pallet to the floor) by means of a forklift truck or overhead crane. Pay particular attention to your hands and feet and wear safety shoes and protective gloves as a precaution.***
	***Danger to life when using a forklift truck! Keep a sufficient distance from the forklift truck and watch its speed. Vehicles with combustion engines also produce toxic exhaust gases. Wear a breathing mask if necessary.***
	***It is essential that the machine is level! Check with spirit level!***
	***Dispose of the packaging material in an environmentally friendly way!***
	***Do not use nitro thinner for cleaning. Painted surfaces of the machine can be damaged.***
	***Fire hazard! Do not smoke and do not light an open fire.***

8.4 Temporary Storage

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

The bare, non-surface-treated parts (e.g. the cast iron tabletop) are provided with a preservative. This must be checked regularly for effectiveness and renewed if necessary.

8.5 Lashing on a Transport Vehicle

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

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

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

Please note the following when lashing in the transport vehicle:

- The loading area of the transport vehicle must always be clean and dry.
- The lashing straps used must be suitable for the total weight of the machine (net weight approx. 450 kg).
- For transport, loose assemblies, accessories or tools must be removed from the machine table or from the machine. These can, for example, be packed individually in cardboard boxes and lashed separately to a free area of the pallet (e.g. with another lashing strap).
- Fastening on the loading area is done by lashing down: This means that the transport pallet is secured by frictional locking. The load is pressed so firmly onto the loading surface that it can no longer slip. The clamping tool should have a high STF value at the frictional connection, e.g. long-lever ratchets.
- In addition, anti-slip mats should be used to provide even more safety.
- The ideal lashing angle (α) for tie-down lashing is 83° to and 90°. Therefore, the lashing straps should pull downwards approx. vertically. As the angle decreases, the pretensioning force of the lashing is reduced.
- Observe the permissible total weight of the transport vehicle.
- Ensure that the permissible axle loads of the transport vehicle are observed. The load must be distributed evenly on all axles of the vehicle.

8.6 Connecting the Extraction Unit

- The machine must be connected to an effective extraction system on-site.

  Installation only by a qualified electrician!

- The foldable chip collector has a suction nozzle with a diameter of 120 mm.
- All parts of the extraction system, incl. hoses, must be included in the earthing measure.

	***If flexible suction hoses are used, they must be flame-retardant.***

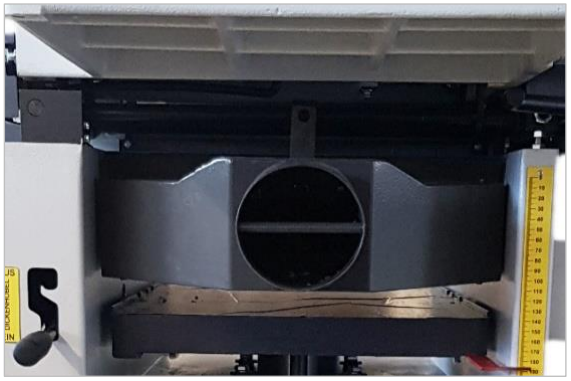


Figure 11: Chip collector in "surface planing" position

- The extraction system for chips and dust must have an extraction capacity of at least 1800 m^3/h at a speed of 25 ... 30 m/s.
- The chip collector must be folded to the correct position when switching between the surface planer or thicknesser operating modes (see also section ⇨ 8.6.2).
- Use a 120 mm diameter suction hose to connect the extraction system to the machine's suction nozzle.

	• ***The air velocity must be checked before initial commissioning and after significant changes.*** • ***The extraction system must be checked daily for obvious defects after initial commissioning and monthly for effectiveness.***

	***When the machine is switched on, the extraction system must start automatically.***

8.6.1 Automatic switching of the Extraction System (Option)

If this option is available, two signal transmitter lines for automatic switching of the extraction system can be connected to the contacts **63** and **64** of the contactor **-K2** (see also chapter ⇨ 16 “Circuit Diagram”).

8.6.2 Convert Chip Collector

If the machine is changed from surface planing to thicknessing (or vice versa), the chip collector (**S**) must be converted accordingly.

Switch to thickness planing mode:

- After folding up the two surface planing tables, fold down the chip collector (**S**) into the horizontal position (see direction of arrow in photo on the right) until it engages in the latch (**K**).
- The suction hose can be hung over the right, folded-up table half.

Switch to surface planing mode:

- Before folding down the two surface planing tables, lower the thicknessing table by at least 180 mm so that the chip collector does not hit the table.
- Then release the catch (**K**) and fold the chip collector (**S**) in the other direction.

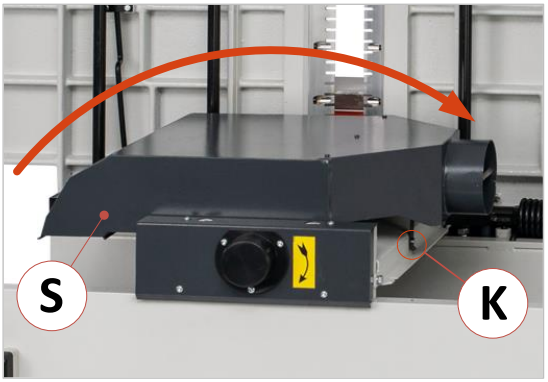


Figure 12: Chip collector in "thicknessing" position

8.7 Electrical Connections

⚠	***The connection must be carried out by an authorised electrician!***

You will find the electrical circuit diagram in the chapter ⇨ 16.

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

- The supply cable is inserted through the cable gland at the bottom of the main switch housing.
  Recommended cable type: H07RN (WDE0282), whereby additional measures must be taken to protect against mechanical damage.
- The connection to the mains (3 phases) is made at the main switch in the main switch housing. The 3 phases are to be connected to the terminals "**L1**", "**L2**" and "**L3**".
- The protective earth wire (yellow/green) is to be connected to the terminal marked "**PE**".
- Then close the cable gland again so that it is dust-tight.
- Observe the direction of rotation of the cutter block!

Figure 13: Main switch housing

⚠	***If the direction of rotation of the cutter block is wrong, the connections of the phase lines L1 and L2 must be interchanged.***

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

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

8.7.1 Supply Cable and External Fuse Protection

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

The electrical cabling and the connection must be performed by a specialist according to the applicable local EVU, VDE, and EN provisions. To determine the required cross-section of the supply cable and the external fuse, use the data from the following table:

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

9 Machine Overview

9.1 Main Components 1

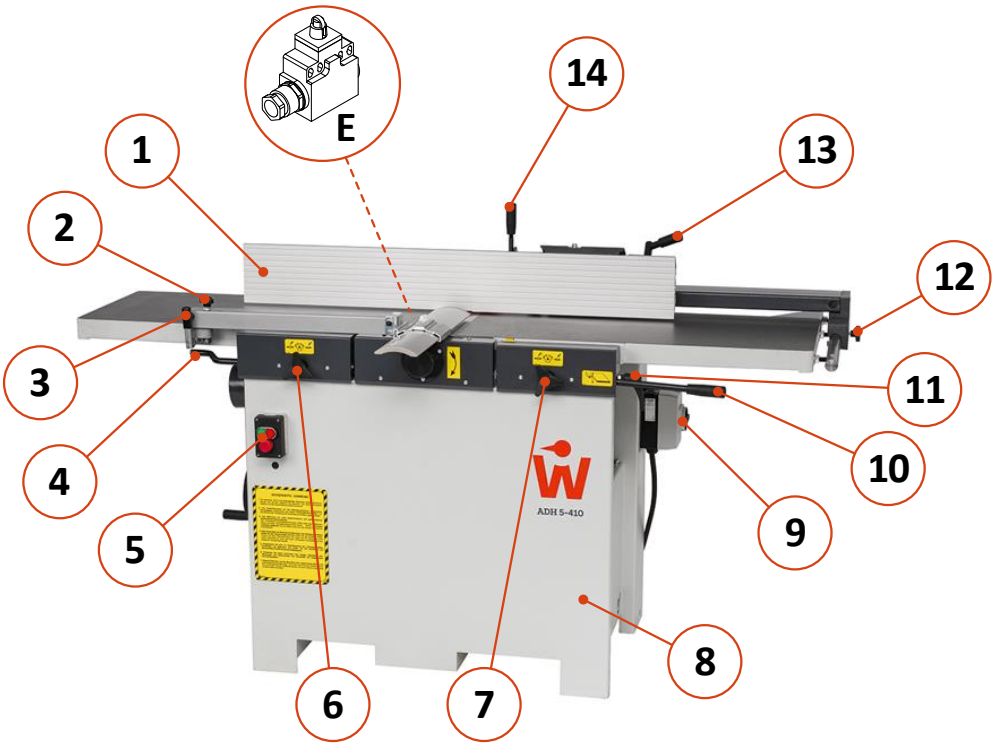


Figure 14: Machine overview - main components 1

No.	*Description*	*No.*	*Description*
1	Surface planer fence	**8**	Machine body
2	Height adjustment bridge guard	**9**	Main switch
3	Swing-away arm clamping for bridge guard	**10**	Height adjustment lever for infeed table
4	Height adjustment of the outfeed table	**11**	Height adjustment clamping infeed table
5	Control unit with on/off switch & emergency stop	**12**	Clamping depth adjustment for fence
6	Clamping outfeed table	**13**	Clamping angle adjustment for fence
7	Clamping infeed table	**14**	Angle adjustment lever for fence
E	Limit switch (switches the machine off when the table top is open and the chip collector is incorrectly set).		

9.2 Main Components 2

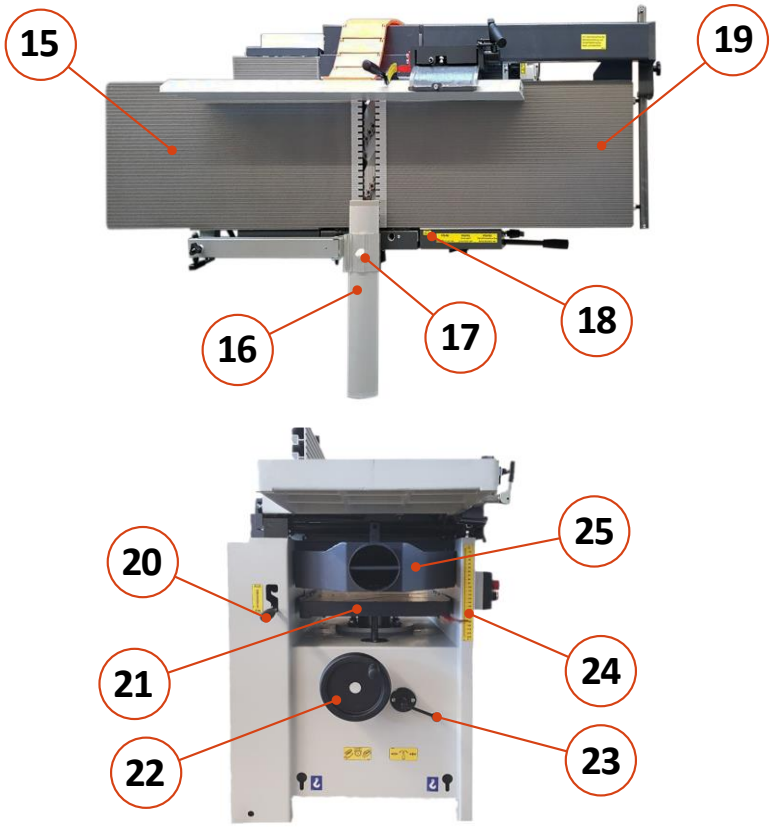


Figure 15: Machine overview - main components 2

No.	Description	No.	Description
15	Outfeed table (planer & jointer)	**21**	Thickness planing table (thicknesser)
16	Bridge guard (planer & jointer)	**22**	Handwheel for passage height (thicknesser)
17	Bridge guard clamping (planer & jointer)	**23**	Clamping for height adjustment (thicknesser)
18	Scale for chip removal (planer & jointer)	**24**	Scale for height adjustment (thicknesser)
19	Infeed table (planer & jointer)	**25**	Chip collector (extraction unit)
20	Feed On/Off switch lever (thicknesser)		

10 Machining Options

⚠	***Do not perform machining operations on the machine that do not involve machining the entire length of the workpiece.***

⚠	***Heavily curved workpieces that cannot rest well on the table tops of the surface planer and on the fence must not be machined.***

⚠	***During operation as a thickness planer, workpieces with cross-sections that cannot be completely encompassed by the anti-kickback fingers must not be processed.***

10.1 Surface Planing

This operation is performed to machine a wooden workpiece on the flat side.

Figure 16: Surface Planing

- The workpiece is placed with its flat side on the table top of the surface planer.
- Machining is carried out on the underside of the workpiece with the horizontally arranged cutter block.
- Workpiece feeding is usually done manually by hand feed and in fibre direction.
- The bridge guard for the cutter block and the workpiece fence are used during machining.
- Machining takes place over the entire length of the workpiece.
- Place curved workpieces with the hollow side on the table top and start planing with low chip removal.

10.2 Jointing

This operation is carried out to machine a wooden workpiece on the narrow side.

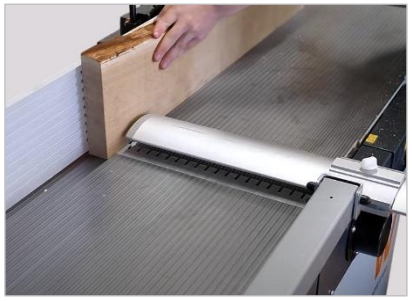


Figure 17: Jointing

- The workpiece is guided along the workpiece fence on edge for jointing.
- Machining is carried out with the horizontally arranged cutter block.
- Workpiece feeding is usually done manually by hand feed and in fibre direction.
- The bridge guard for the cutter block and the workpiece fence are used during machining.
- Machining takes place over the entire length of the workpiece.

10.3 Thickness Planing

This operation is carried out on the thickness planer unit.

Figure 18: Thickness planing

- The workpiece is placed with the previously surface planed side on the thickness planing table.
- Machining is carried out on the upper side of the workpiece with the horizontally arranged cutter block.
- The distance between the cutting circle and the surface of the thicknessing table is adjustable.
- The workpiece is fed mechanically by driven infeed and outfeed rollers.
- Machining takes place over the entire length of the workpiece.

10.4 Workpiece Requirements

	***The user is solely liable for any personal injury or damage to machinery caused by the processing of unauthorised materials (see section ⇨ 5.1.1).***

10.4.1 Machining as a Surface Planer & Jointer

Maximum dimensions of workpieces that can be machined on the machine:

1800 x 410 mm

When machining very long or wide workpieces, roller supports must be used to support the workpiece.

Minimum dimensions of workpieces that can be machined on the machine:

450 x 50 x 30 mm

Workpieces with smaller dimensions can basically only be machined using additional auxiliary devices, e.g.

- Device for planing short workpieces
- Wooden piece (e.g. push block) for planing small workpieces
- The workpieces are fed above the cutter block only by the auxiliary device.

10.4.2 Machining as a Thickness Planer

Maximum dimensions of workpieces that can be machined on the thickness planer:

1800 x 406 x 225 mm

When machining very long or wide workpieces, roller supports must be used to support the workpiece.

Minimum dimensions of workpieces that can be machined on the thickness planer:

300 x 20 x 4 mm

11 Operating the Machine

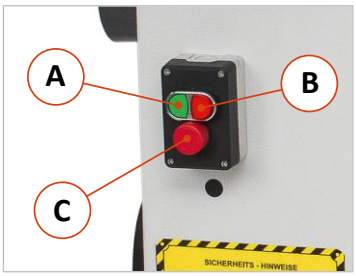
Before commissioning, carefully read and observe the operating manual and the safety instructions ⇨ 5.

⚠	***Before switching on, check that*** • *there are no loose parts on the table top and all tools have been removed,* • *the guards and covers are fitted in accordance with the regulations,* • *the extraction system is connected and functional,* • *the direction of rotation of the cutter block is correct,* • *and no persons are in a danger zone of the machine* • *the V-belts are perfectly tensioned* • *and no persons are in a danger zone of the machine.*

11.1 Switching the Machine ON and OFF

11.1.1 Control Switches

- The main switch (see left photo) is located on the right side of the machine.
- The control unit (see right photo) is located on the left front of the machine.



9 Main switch
A Switch on cutter block
B Switch off cutter block
C Emergency stop button (snap-in)
E Internal safety switch (switches off the machine if the table is open and the chip collector is not set correctly)

Figure 19: Control switches

11.1.2 Switching ON

- Before starting the cutter block, turn the main switch (**9**) to position "**I**" and, if necessary, make sure that the emergency stop button is not locked.
- Start the cutter block drive with the green push button (**A**).

☝	***The cutter block can only be started when the chip collector and the surface planer tables are in the correct working position. This is monitored by the internal safety switch (E).***

11.1.3 Switching OFF

- Regular switch off: Switch off the cutter block with the red push button (**B**).
- Switch off in an emergency: Press the emergency stop button (**C**) → The motor stops immediately (< 10 s).
- Before leaving the machine or at the end of work, turn the main switch (**9**) back to the "**O**" position and secure it with a padlock against unauthorised restarting.

11.2 Operating Mode Surface Planing & Jointing

11.2.1 Operating Elements for Surface Planing & Jointing

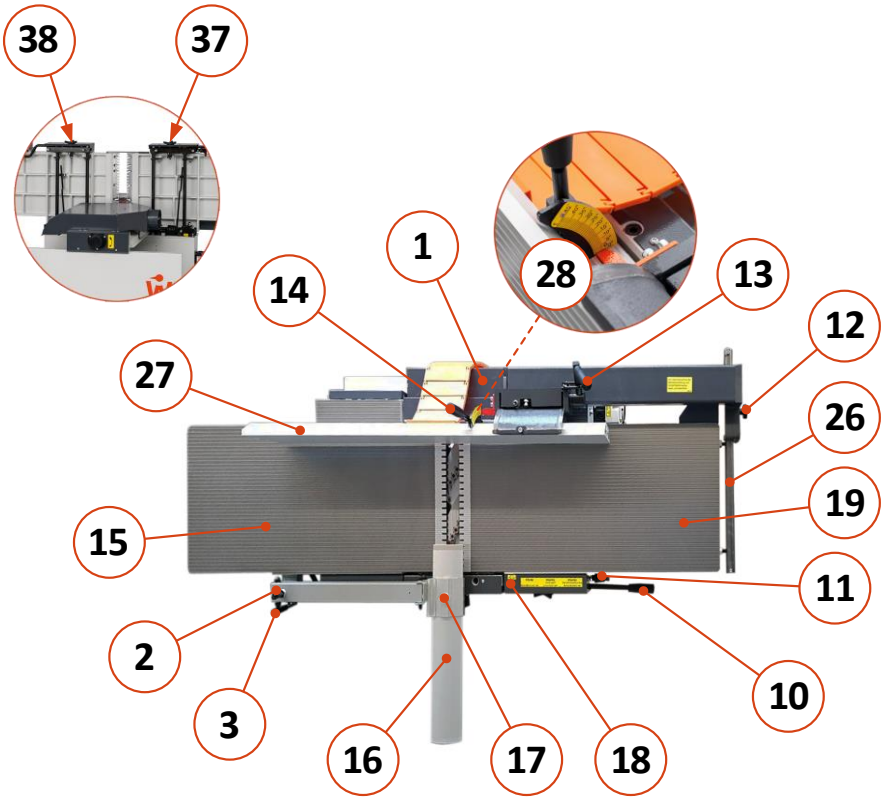


Figure 20: Operating elements during planing & jointing

No.	Description	No.	Description
1	Workpiece fence	16	Bridge guard
2	Height adjustment for the bridge guard	17	Bridge guard clamping
3	Swing-away arm clamping for bridge guard	18	Scale for chip removal
10	Height adjustment lever for infeed table	19	Infeed table
11	Clamping for height adjustment (infeed table)	26	Guide for depth adjustment (workpiece fence)
12	Clamping depth adjustment (workpiece fence)	27	Workpiece fence plate
13	Clamping angle adjustment (workpiece fence)	28	Angle scale for workpiece fence
14	Angle adjustment lever (workpiece fence)	37	Infeed table clamping
15	Outfeed table	38	Outfeed table clamping

11.2.2 Conversion from Thicknesser to Surface Planer & Jointer

⚠	***Before converting from thicknesser to surface planer & jointer, turn off the main switch (9) and secure it against unauthorised restarting by locking it.***

Important: To change the machine from thicknessing to planing mode, the thicknessing table must first be adjusted downwards by at least 180 mm using the handwheel. This allows the chip collector to be folded to the left into the lower position without bumping against the table.

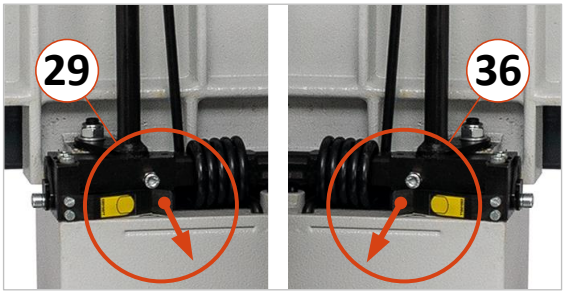


Figure 21: Locking springs for planing tables

- Then fold the chip collector (**25**) all the way to the left (see ⇨ Figure 11), close the infeed table (**19**) and clamp it with the clamping screw (**37**). Next, close the delivery table (**15**) and clamp it with the clamping screw (**38**).

  Note: The tables are mechanically locked. To be able to fold them down, the corresponding locking springs (**29**) and (**36**) must be pulled forward (see ⇨ Figure **21**).

☝	***Important! When folding down the tables, the following sequence must generally be observed:*** ***→ Fold down the outfeed table first (on the left side) and then the infeed table.***

- After opening the clamping handle (**11**), the infeed table (**19**) can be adjusted to the desired chip removal (max. 5 mm). For this, use the height adjustment lever (**10**) until the desired position is set on the scale (**18**).
- The outfeed table (**15**) is already correctly adjusted and locked at the factory. It must not be adjusted.
- The workpiece fence (**1**) can be adjusted steplessly over the entire working width of the machine by opening the clamping wheel (**12**).
- To adjust the inclination of the workpiece fence, loosen the clamping lever (**13**) and set the desired angle in the range of 0° to 45° with the lever (**14**). When the fence (**1**) is moved, the bridge guard also moves with it.
- The bridge guard (**16**) for covering the cutter block is adjustable over the entire length of the cutter block and can be locked in the set position by means of a clamp (**17**).
- By means of the height adjustment screw (**2**), the bridge guard (**16**) can be adjusted in a range of 0 … 75 mm relative to the table tops of the surface planer & jointer.
- By opening the clamp (**3**), the entire bridge guard can be folded 180° to the left.

⚠	***After conversion from thicknesser to surface planer & jointer, all securing and fastening elements must be tightened again.***

11.2.3 Surface planing and jointing: Preparation and Guidelines

- Observe the procedural and safety instructions for working on the surface planer & jointer.
- Observe the working direction of the surface planer & jointer (see direction of arrow in ⇨ Figure 5).
- It is essential to cover the cutter block with the bridge guard (**16**).
- When machining short or narrow workpieces, use safety accessories (e.g. device for surface planing short workpieces, push stick, push block etc.).
- Check the workpieces for defects and foreign inclusions (e.g. free knots or loose knots, adhesions, cracks, nails, metal objects and other foreign bodies).
- For warped or curved workpieces, place the hollow side on the infeed table.
- Start with low chip removal when machining curved surfaces.
- In case of a sudden stop of the machine (e.g. power failure, broken V-belt, etc.) stop feeding the workpiece immediately.

	Be aware of a possible danger of being drawn in by the rotating cutter block. This can cause items of clothing, hair, watches and jewellery to be caught. • ***The use of the bridge guard is mandatory in planing and jointing mode!*** • ***Always wear close-fitting clothing and wear a hair net if necessary.*** • ***Wearing watches and jewellery etc. is prohibited on the machine.***

	Be aware of the acute cutting hazard at the cutter block and never reach into the rotating cutter block with your hand. The use of the bridge guard is mandatory!

11.2.4 Surface Planing of Workpieces up to 65 mm Thickness

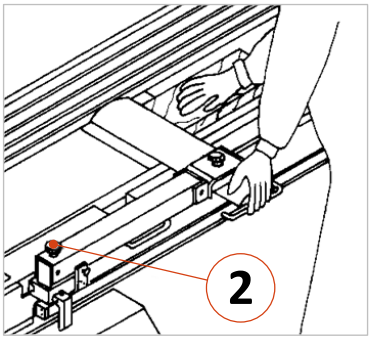


Figure 22: Surface planing preparation

Surface planing preparation:

- The bridge guard is struck with the left hand up to the workpiece fence and adjusted in height by turning handle (**2**) according to the thickness of the workpiece.
- With the right hand, the workpiece is pushed just under the bridge guard. The hand remains on the workpiece (⇨ Figure 22).

Surface planing up to 65 mm:

- Push the workpiece with both palms on the infeed table towards the cutter block by passing the hands one after the other over the bridge guard (⇨ Figure 23 / ⇨ Figure 24).
- As soon as it is possible, the workpiece is only pushed forward on the outfeed table (see ⇨ Figure 25).
- To feed, place the hands flat on the workpiece with closed fingers.
- During machining, only apply pressure to the workpiece on the outfeed table.

⚠ **Never return the workpiece via the free cutter block!**

⚠ **Never lift off the machined workpiece by hand on the rear side (in the direction of the cutter block)!**
Long workpieces can be pushed over the edge of the table for removal and tilted upwards at the edge so that the rear side can be safely gripped by hand.

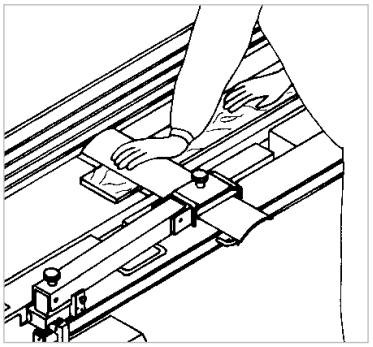


Figure 23: Planing up to 65 mm (1)

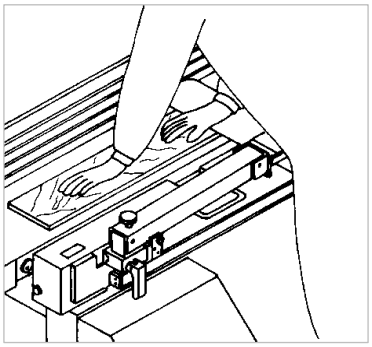


Figure 24: Planing up to 65 mm (2)

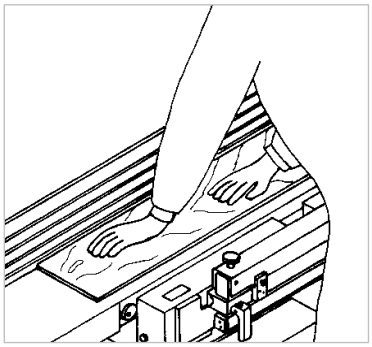


Figure 25: Planing up to 65 mm (3)

11.2.5 Jointing of Workpieces up to 65 mm Thickness

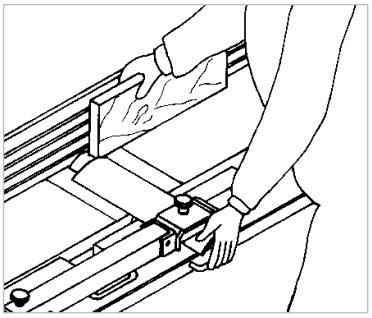


Figure 26: Jointing preparation

Jointing preparation:

- For jointing, the workpiece is placed with the right hand against the workpiece fence and pressed forward onto the infeed table approximately to the front edge of the table lip.
- With the left hand, the bridge guard of the cutter block lying on the table top is pushed up to the workpiece and placed there.

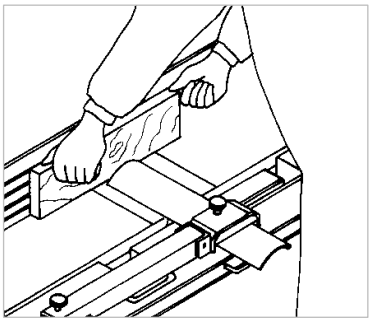


Figure 27: Jointing up to 65 mm

Jointing up to 65 mm:

- With the left hand the workpiece is pressed against the workpiece fence and the table by resting the thumb on the workpiece.
- With the right hand the workpiece is pushed forward by resting the thumb on the workpiece.

11.2.6 Surface Planing of Workpieces over 65 mm Thickness

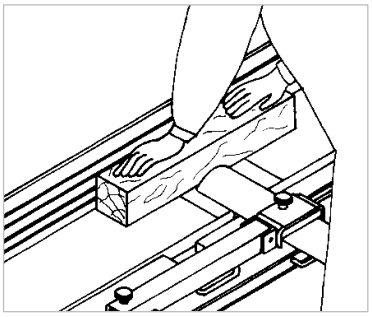


Figure 28: Planing over 65 mm

Surface planing over 65 mm:

- Push the bridge guard up to the workpiece.
- Push the workpiece with the palms of both hands and with pressure to the front over the cutter block along the fence.

11.2.7 Jointing of Workpieces over 65 mm Thickness

Jointing over 65 mm:

- Feed the workpiece with both hands by pressing the workpiece against the workpiece fence and at the same time onto the table top with the left hand.
- The left thumb is on the workpiece and the right palm rests from above on the workpiece.

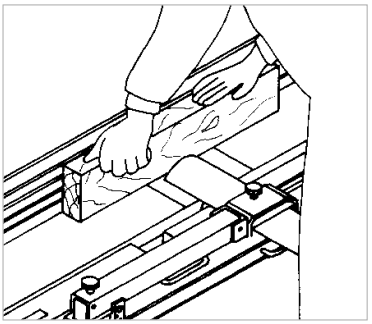


Figure 29: Jointing over 65 mm (1)

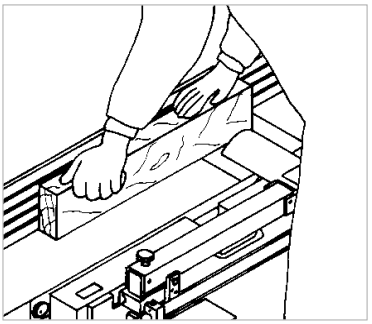


Figure 30: Jointing over 65 mm (2)

- Towards the end of machining (outfeed side) the right palm must still be on the workpiece from above (see ⇨ Figure 30).

11.2.8 Surface Planing and Jointing of Small Cross Sections (e.g. Strips)

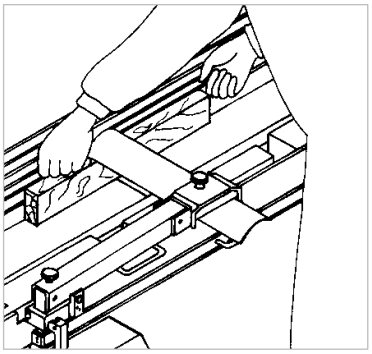


Figure 31: Jointing small cross-sections

Surface planing (small cross-sections):

- Push the workpiece forward with both palms (as for workpieces up to 65 mm thickness).

Jointing (small cross-sections):

- Push the workpiece against the workpiece fence and the table top and press it down with both hands clenched in a fist.
- Push the bridge guard for the cutter block up to the workpiece fence and leave it on the workpiece.

11.2.9 Surface Planing of short Workpieces

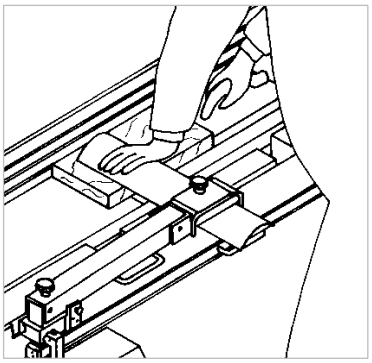


Figure 32: Planing short workpieces

Surface planing (short workpieces):

- Press the workpiece on the infeed table against the workpiece fence with the palm of the left hand and push it forward in the direction of machining with a push stick in the right hand.
- Place the left hand on the bridge guard for the cutter block and press it down as soon as the workpiece appears on the outfeed side of the table top.
- The push stick must not be thicker than the workpiece to be machined.

11.2.10 Jointing short Workpieces

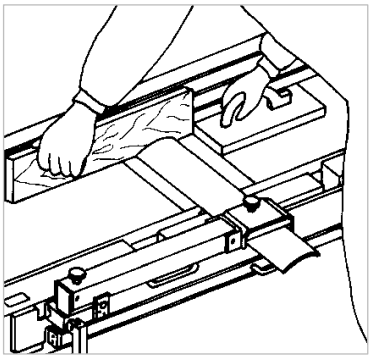


Figure 33: Jointing short workpieces

Jointing (short workpieces):

- Press the workpiece against the workpiece fence with the left hand clenched in a fist, with the thumb resting on the workpiece.
- Use a push block with the right hand to push the workpiece in the machining direction.

11.2.11 Surface Planing under Inclination or Bevelling

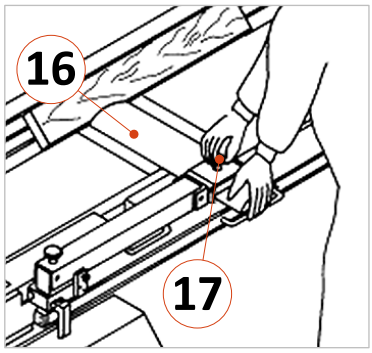


Figure 34: Inclined surface planing

- Loosen the clamping lever (**13**) on the workpiece fence and set the desired angle using the swivel lever (**14**) and angle scale (**28**). Then push the workpiece with the right hand to the inclined fence.
- Position workpiece and bridge guard according to ⇨ Figure 34.
- Push the bridge guard up to the workpiece and press on lightly.
- In this position, fix the guard (**16**) by using clamping wheel (**17**).

11.2.12 Safety Accessories for small, short or narrow Workpieces

⚠	***Increased risk of accidents due to restricted guidance of the workpiece when machining small, short or very narrow workpieces. Use suitable pushing devices!***

When machining small, short or very narrow workpieces, always use a pushing device suitable for the respective operation to protect your hands (e.g. push stick, push block or similar aids).

Various safety accessories for surface planing and jointing, e.g. pushing devices and feeding aids of the SI-TEC brand, can be found in the section ⇨ 13.3 and in the ☞ HOKUBEMA online shop.

Recommendation: For very narrow workpieces, it is advisable to use a self-made auxiliary fence which is attached to the workpiece fence (see example in the following figure).

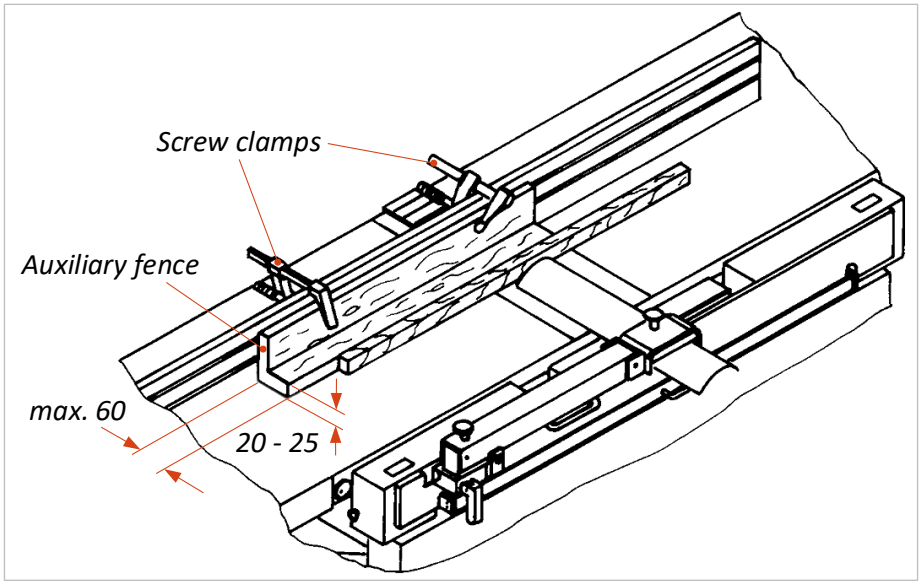


Figure 35: Self-made auxiliary fence (example)

11.2.13 Adjusting the Parallelism of the Planing Tables

If the parallelism of the planing tables should ever become misaligned after prolonged use of the machine, the two table halves can be readjusted individually using the adjusting screws (**S**).

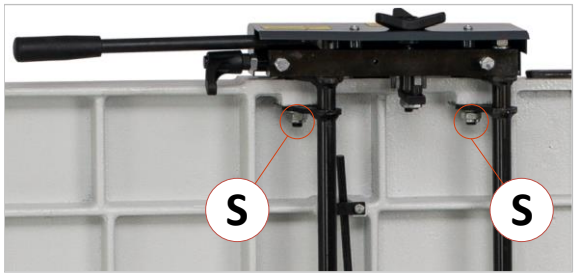


Figure 36: Adjustment screws on the outfeed table

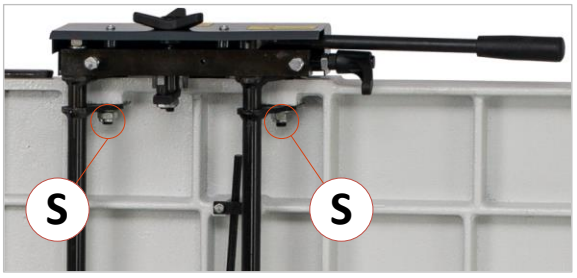


Figure 37: Adjustment screws on the infeed table

11.3 Operating Mode Thickness Planing

11.3.1 Operating Elements for Thickness Planing

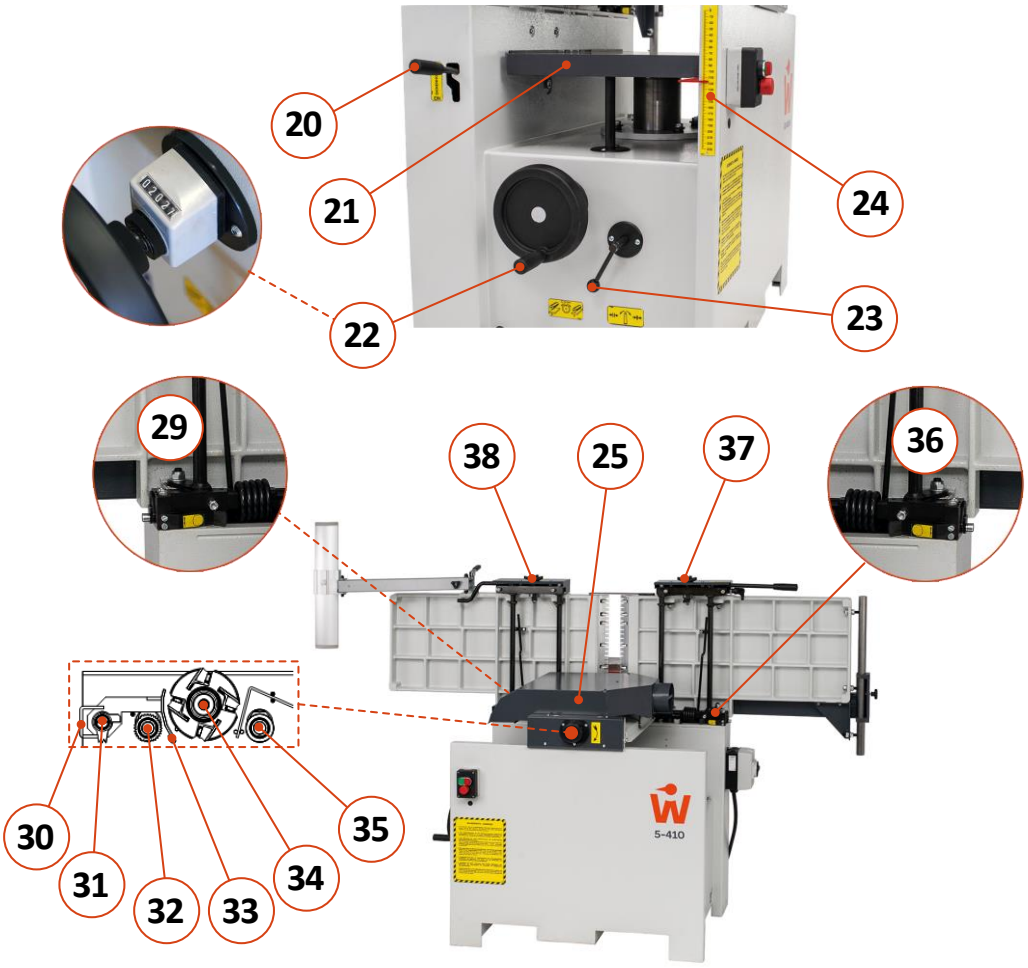


Figure 38: Operating elements for thickness planing

No.	Description	No.	Description
20	Feed On/Off switch lever	**31**	Anti-kickback fingers
21	Thickness table	**32**	Infeed roller
22	Handwheel with display for passage height	**33**	Front pressure bar
23	Clamping for height adjustment	**34**	Cutter block
24	Scale for height adjustment (thicknesser)	**35**	Outfeed roller
25	Chip collector (extraction)	**36**	Locking spring (locking infeed table)
29	Locking spring (locking outfeed table)	**37**	Clamping infeed table
30	Maximum chip limiter	**38**	Clamping outfeed table

11.3.2 Conversion from Surface Planer & Jointer to Thicknesser

⚠	***Before converting from surface planer & jointer to thicknesser, turn off the main switch (9) and secure it against unauthorised restarting by locking it.***

- First, the two planing tables must be folded all the way up in the correct order. **Important:** Please make sure beforehand that the workpiece fence has been fixed on the table by means of the clamping screw (**12**) and that there are no loose parts on the tabletop that could fall off.

☝	***Important! When folding up the tables, the following sequence must generally be observed: → Fold down the infeed table first (on the right side) and then the outfeed table.***

- To fold up the infeed table, release the eccentric clamping handle (**37**) and fold the table upwards until the locking spring (**36**) engages → The table is now fixed at the top and can no longer fall down.

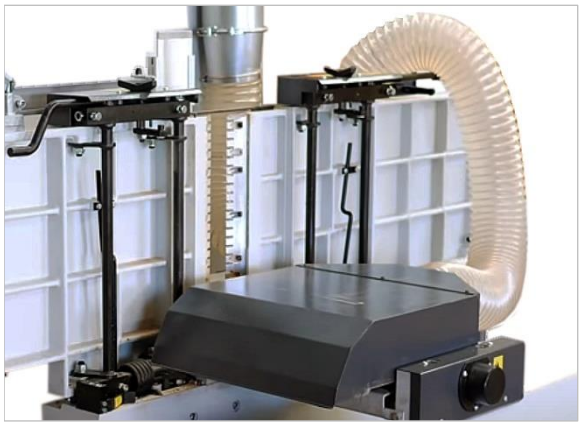


Figure 39: Suction hose position in thickness planing mode

- Only then fold the outfeed table upwards in the same way and let it engage via the locking spring (**29**) by releasing the eccentric clamping handle (**38**) first.
- Then fold the chip collector (**25**) all the way to the right into the upper position so that it engages over latch (**K**) shown in ⇨ Figure 12.
- The suction hose can be hung over the raised infeed table as shown in ⇨ Figure 39.

⚠	***Danger of crushing! Before you start thickness planing, make sure that both halves of the table are secured against accidental falling down by means of locking springs (29) and (36).***

11.3.3 Thickness Planing Procedure

☝	***Note: Before a workpiece is thickness-planed, it should be surface-planed (see ⇨ 11.2)!***

After the machine has been converted from surface planing to thickness planing mode, workpiece machining can begin. Proceed as follows:

- For rough adjustment of the passage height, use the handwheel (**22**) and the measuring scale (**24**) located on the side of the thicknessing table (**21**).
- For fine adjustment, the exact position can be read off the analogue display of the handwheel (**22**) with an accuracy of 0.1 mm.

☝	***To compensate for the play of the spindle, the height adjustment should always be made from the bottom upwards.***

- After adjusting the passage height, clamp the thicknessing table with the clamping lever **(23)**.

Figure 40: Display for fine adjustment of the height

- Now activate the feed. To do this, you must move the switch lever (**20**) downwards.
- Switch on the main switch (**9**).
- Start the cutter block via the green push button (**B**).
- Place the workpiece with the already surface planed side on the thicknessing table (**21**) and push it manually up to the infeed roller (**32**) → The workpiece is automatically transported to the cutter block, machined and can then be removed on the outfeed side (see ⇨ Figure 41).

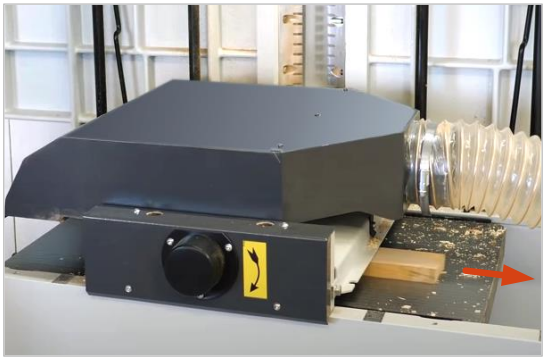


Figure 41: Thickness planing

11.3.4 Safe Working on the Thicknesser

For safe working with the thicknesser, please observe the following instructions and also read the chapter⇨ 5 "Safety" and the section ⇨ 5.4 "Hazardous Areas".

- For workpieces with different thickness at both ends, feed the end with the higher thickness first to avoid wedging.
- If the chip removal setting is > 4 mm, the workpiece cannot be fed because the maximum chip limiter (**30**) prevents this.
- If chip removal > 4 mm is required, this can be done in several steps up to max. 4 mm. The last chip removal should be approx. 2 mm to ensure a good planing pattern.
- If a workpiece is wedged and does not move, the chip removal must be reduced.
- The thickness planing table must be cleaned regularly. Use a cloth moistened with turpentine for cleaning.
- Never treat the table with oil or grease. Oils and greases are absorbed by the wooden workpiece and make it unusable for gluing, staining or varnishing.
- For workpieces longer than the maximum length of 1800 mm, use additional roller supports or table extensions to support the workpiece and prevent it from tipping over.
- The workpiece dimensions according to section ⇨ 10.4.2 in this manual must be observed.
- Before machining, workpieces must generally be checked for foreign inclusions (e.g.: nails, free knots, adhesions, cracks and other foreign bodies).
- Workpieces with lengths < 300 mm and thicknesses < 5 mm must not be processed as they cannot be safely transported by the machine rollers.

12 Changing the Planer Knives

	***Switch off the machine during maintenance and repair work and secure it against being switched on again unexpectedly! Lock the main switch with a padlock!***
	***Even when stationary, cuts from the knives are possible!***
	***Always wear protective gloves when changing the knives!***

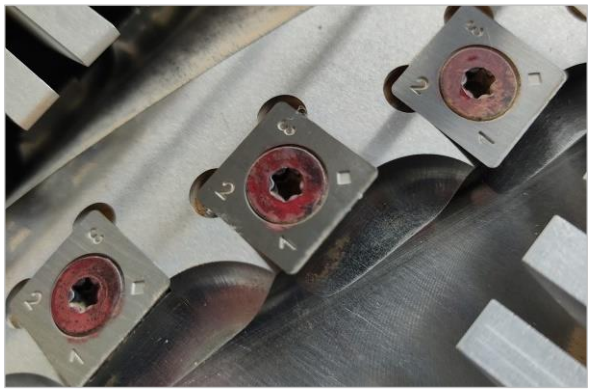


Figure 42: Indexable inserts of the spiral cutter block

The optionally available spiral cutter block consists of 3 spiral-shaped rows of cutters, each segmented with 22 special 4-fold carbide inserts.

	***Only use the torque spanner supplied to change and turn the inserts. The manufacturer is not liable for any damage caused by a deviating or improper procedure!***

12.1.1 Procedure for Changing the Knives

Changing or turning the cutting inserts is very simple:

- Unscrew the Torx screws of the cutting insert and remove it from the socket.
- Clean the insert holder with the accessories included in the set.
- If the plate is to be turned over, clean it from all sides (the plates are numbered for better orientation).
- Now replace the cutting insert or turn it to the position of the next number. Then tighten it with the torque spanner until it locks into place.

12.1.2 Advantages of the Spiral Cutter Block

1. The “pulling cut” significantly improves the cutting quality and thus the planing result.
2. Another advantage is the simplified knife replacement due to segmentation and reduced knife changing times. In the case of minor damage or blunt spots, it is usually sufficient to simply turn or replace the cutting inserts at the damaged spots. It is not necessary to replace the entire blade.
3. A spiral cutter block produces much smaller chips and thus additionally protects the extraction unit.
4. The use of a spiral cutter block ensures lower power consumption and also reduced noise emission.

12.1.3 Service Set for Spiral Cutter Blocks

Figure 43: Service set for spiral cutter blocks

We also recommend the optional service and cleaning set for spiral cutter blocks. This includes 1 litre of resin dissolving concentrate, one cleaning brush each of steel and brass, 10 pieces of indexable HM inserts (15 x 15 x 2.5 mm), 5 pieces of Torx screws (M 6 x 15) as well as two T20 bit inserts for the torque spanner. The set is supplied in a practical storage case.

- Service set for spiral cutter blocks Art. No.: 4647
- More accessories can be found in section ⇨ 18.1.

13 Optional Components

13.1 Bridge Guard SUVAMATIC

Optionally, the planer guard SUVAMATIC with two-part fold-down cover and with spring-loaded contact pressure is available.

For article number refer to section ⇨ 18.2.

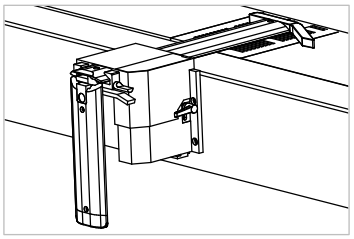


Figure 44: Bridge guard SUVAMATIC

- **Secure cutter block cover**
  The entire planing area is secured with one single cutter block cover. It can be folded down via a hinge lock system.
- **Practical workpiece infeed**
  The bridge guard is provided with a pressure shoe and a foldable inlet beak on the side of the workpiece fence.
- **Contact pressure to support work**
  During jointing, the bridge guard generates a contact pressure against the workpiece fence. After jointing, it automatically returns to the protective position.
- **Automatic lifting and lowering**
  During surface planing, the bridge guard is automatically raised by the infeed beak. It then lowers again into the protective position.
- **Fixable for series work**
  For series work, the bridge guard can be fixed at workpiece height.

For information on the operation and maintenance of the bridge guard, please refer to the enclosed ☞ Operating instructions of the manufacturer.

13.2 Mobile Base

With the optionally available mobile unit, you can easily and quickly make your stationary surface planer and thicknesser mobile. This allows you to flexibly determine where the machine is to be used and to set it up wherever it is needed.

The undercarriage has two fixed wheels on the side. In order to be able to lift, move and steer the machine, the corresponding lifting rod with double wheel is hooked onto the opposite side.

Article number see section ⇨ 18.4 “Special Accessories”.

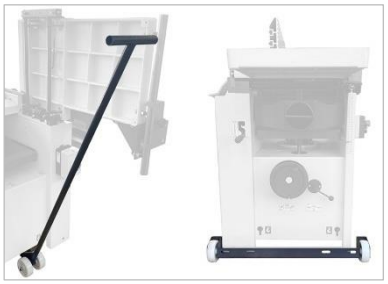


Figure 45: Mobile base

13.3 Pushing Devices and Feeding Aids

Figure 46: Push stick

Figure 47: Push block

Figure 48: Push handle

Figure 49: Infeed system

Figure 50: Reversible infeed system

With the SI-TEC pushing devices and feeding aids you effectively increase the safety during surface planing on your machine.

Article numbers see ⇨ 18.3.

14 Troubleshooting

Proceed systematically when searching for the cause of a malfunction. If you are unable to find the fault or to remedy the malfunction, contact our customer service department.

Phone number: 0049 - 7571 / 755 - 0

Before you call us, please follow these steps:

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

Fault	Possible Cause	Remedy
The cutter block does not start	No voltage	→ Power supply / connections / check phases (electrician!)
	Main switch (**9**) defective	→ Replace main switch (electrician!)
	Push button (**A**) defective	→ Replace push button (electrician!)
	External main fuse defective	→ Replace fuse
	Motor defective	→ Replace motor (customer service!)
	Broken V-belt	→ Replace the V-belt (see ⇨ 15.5)
	Emergency stop button pressed	→ Pull/unlock button
	Internal safety switch active	→ Close planing table(s) → Position the chip collector correctly
Motor no longer brakes in intended time (10 sec.)	Electrical braking device defective	→ Contact customer service!
The cutter block does not run up cleanly or squeaking noises when starting	Insufficient V-belt tension	→ Retighten the V-belt (see ⇨ 15.3)
Bad planing pattern	Planer knives worn	→ Turn or change carbide insert(s) (procedure see chapter ⇨ 12)
The machine stops stops during work	Machine is overheated or over-loaded. The thermal switch of the motor has been triggered.	→ Switch off the machine completely and allow the engine to cool down. Then switch the machine on again.
	Insufficient V-belt tension	→ Retighten the V-belt (see ⇨ 15.3)
	V-belt worn / sagging	→ Replace the V-belt (see ⇨ 15.5)
Handwheel display of the thicknesser does not count	Display defective	→ Contact customer service!
Impacts in the wood on the first or last approx. 50 mm	Rear pressure bar is misaligned	→ Contact customer service!

15 Maintenance and Inspection

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

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

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

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

15.1 Cleaning

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

- After each working shift, the machine and all its parts must be thoroughly cleaned by removing the machine base all other waste.
- At least every six months or after 200 completed working hours, the side covers of the machine should be removed to perform a complete machine cleaning.

15.2 Lubrication

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

- After approx. 200 hours of operation, but after 6 months at the latest, clean the V-belts with a soft brush to remove dust and chips.
- Clean the machine and its parts and apply a thin layer of oil or grease to all moving parts of the machine.
- Cover the V-belts and pulleys beforehand to avoid contamination by oil and grease.
- Check all sliding or rolling parts weekly for ease of movement and, if necessary, lubricate with a thin oil. Lubricate the feed chain every 6 months with a suitable grease.
- Apply a few drops of oil weekly to the threads of clamping and adjustment levers.

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

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

For oil lubrication we recommend:

- **Motor oil type 20 W 40**

Always use the same grease/oil.

15.3 Tensioning the V-Belts

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

After the first ten hours of operation, check the V-belt tension. If the two belts are too loose, they must be retightened as follows:

- Turn the main switch (**9**) to the O position and lock it.
- Remove the rear cover of the machine.
- To **retension**, loosen the lock nut (**K**) and tension the engine block including the belt via the adjusting nut (**S**). Use a suitable open-end spanner and turn clockwise ↻.
- Then tighten the lock nut (**K**) again.

  Important: Do not tension the V-belts too much. The V-belts are correctly tensioned when they can be pressed through between the pulleys by about 1 cm with a lateral force of approx. 2 kg.
- Finally, refit the rear cover.

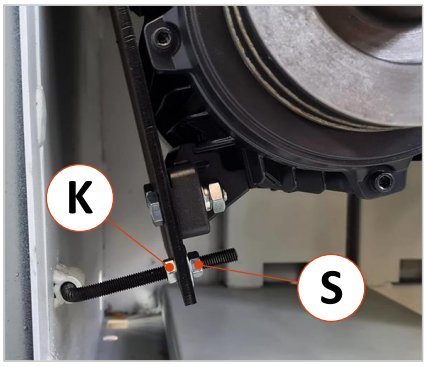


Figure 51: Tensioning the V-belts

☝	***To avoid damage to the bearing, increased wear and excessive heat generation, the belts must never be tensioned too much!***

☝	***The tension of the belts and the chain must be checked at least monthly and retensioned if necessary!***

15.4 Maintaining the V-Belts

Contamination of the V-belts with oil, grease, solvents, paint, etc. must be avoided. Clean and dry the belts and pulley channels only with a soft brush or a clean cotton or paper towel. Do not use solvents or similar cleaning agents and never use water.

15.5 Changing the V-Belts

- To replace the two V-belts, turn the adjusting screw (**S**) anticlockwise ↺ until the belts can be removed easily and without jamming. Then the new belts can be put on.
- To tighten, proceed as described in section ⇨ 15.3.
- V-belts to be used: 2 pieces A 1400 LW 13x1370 Li (A54).

☝	• ***Only V-belts with the same cross-section and of the same length may be used.*** • ***Always replace both V-belts together!***

15.6 Checking the Electronic Motor Brake

The machine is equipped with an electronic brake for electrodynamic stopping of the motor. The braking time until the cutter block comes to a complete standstill must not exceed 10 seconds from the time the motor is switched off.

- Check the braking time at least 1 x per month.
- If the braking time is longer than 10 seconds, the brake must be checked by a qualified electrician and, if necessary, adjusted or repaired. Please contact our customer service.
- The electronic brake is designed for a maximum of 10 braking operations per hour. Braking too frequently can damage the motor or the brake electronics due to the resulting overheating.

15.7 Checking the Anti-Kickback Fingers

The anti-kickback fingers installed in the machine serve to protect the operating personnel from dangerous workpiece kickbacks. For this reason, it is of elementary importance that their functionality is checked at regular intervals.

- Each individual anti-kickback finger, after being turned upwards, should move back to the lower starting position by its own weight.
- The teeth of the anti-kickback fingers must always be sharp. Otherwise there is an increased risk of the workpiece kicking back.
- Anti-kickback fingers that are difficult to move and contaminated with resin can be cleaned with a brush and turpentine and dried with compressed air to make them moveable again.
- Damaged anti-kickback fingers must be replaced immediately with new ones.

15.8 Checking the Function of the Emergency Stop Button

- Check the function of the emergency stop button weekly.
  Press the emergency stop button while the machine is running
  → The machine must stop immediately (< 10 s).

15.9 Checking the Safety Labels

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

15.10 Taking the Machine out of Operation / Storage

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

15.11 Average Situations / Emergencies

- ***In case of flooding of the work area, switch off the power supply immediately!***
- ***In case of fire, immediately switch off the power supply and use a class A fire extinguisher. Alternatively, fight the fire with a fire blanket. If the power cannot be switched off, you need a class C powder extinguisher.***
- ***Never extinguish burning electrical equipment with water!***

- ***Before the machine is put back into operation, it must be checked by a trained and approved technician.***
- ***The working area around the machine (see section ⇨ 6.4) always be clear.***

- ***The machine must not be used in potentially explosive atmospheres!***

16 Electrical Circuit Diagram

	Work on the electrical components of the machine may only be carried out by an authorised electrician!

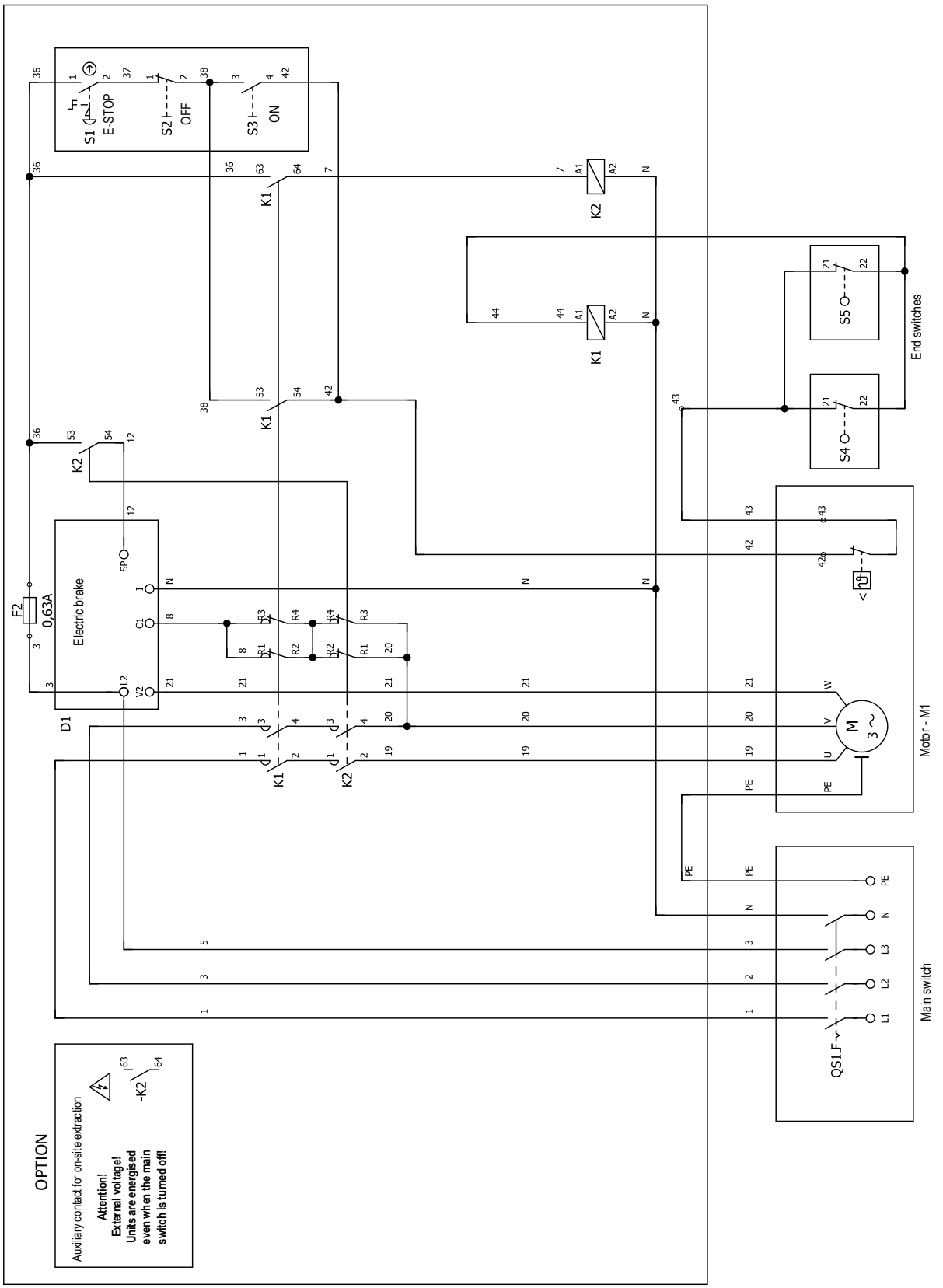


Figure 52: Electrical circuit diagram

17 Disassembly and Scrapping

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

Please pay particular attention to

- *the dismantling of the machine in the working area*
- *proper dismantling of the machine and accessories*
- *a safe and proper removal of the machine*
- *proper separation of all components and materials.*

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

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

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

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

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

Pollution of the environment by seepage into groundwater or sewage system.

Poisoning of the personnel contracted for the disposal.

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

18 Options and Accessories

⚠	***Only use the accessories and spare parts specified by the manufacturer. The use of other accessories or spare parts may cause injury to persons and damage to the machine. The manufacturer accepts no liability for any damage resulting from the use of non-authorised accessories and spare parts or additional components from third parties!***

18.1 Spiral Cutter Block

Article	Description	Art. No.
Spiral cutter block as a replacement	With 66 HM inserts (3 rows with 22 inserts each), 15 x 15 x 2.5 mm, for improved cutting quality through “pulling cut”, longer tool life and enormous noise reduction.	ADH5-410-009

18.1.1 Accessories for Spiral Cutter Block

Article	Description	Art. No.
Spiral cutter replacement carbide inserts	10 pieces HM replacement inserts, rotatable and exchangeable, 15 x 15 x 2.5 mm, 30°, with 4 cutting edges.	4641
Spiral cutter replacement carbide inserts	66 pieces HM replacement inserts, rotatable and exchangeable, 15 x 15 x 2.5 mm, 30°, with 4 cutting edges, for the complete cutter block.	4641.7
Spiral cutter replacement carbide inserts, including screws	Consisting of 66 pieces HM replacement inserts (see above), including matching screws, 1 torque spanner as well as 2 matching bits.	4641.8
Service set for spiral cutter blocks	Case with 1 litre resin dissolving concentrate, 1 cleaning brush each of steel and brass, 10 reversible carbide inserts (15 x 15 x 2.5 mm), incl. 5 screws (Torx M6 x 15 mm), 1 torque spanner and 2 bit inserts.	4647
Spare screws for spiral cutter blocks	10 pcs. spare screws (Torx M6 x 15 mm).	4642

18.2 Optional Bridge Guard

Article	Description	Art. No.
Bridge Guard SUVAMATIC	With 2-part fold-down cover and spring-loaded contact pressure, suitable mounting plate for attaching to the surface planing & thicknesser type ADH 5-410 included. Details see section ⇨ 13.1.	3291

18.3 SI-TEC - Pushing Devices / Feeding Aids

Article	Description	Art. No.
Infeed system (with wide infeed beak)	With universal infeed beak that does not have to be folded down for surface planing and joining work. Especially suitable for use in carpentry shops. For folding up the table, the beak can be set up so that the bridge guard can be pulled back completely. **Note:** Can only be used in combination with SUVAMATIC Art. No. 3291!	4041
SUVAMATIC infeed system as a spare part	Spare part for the foldable infeed system, of the SUVAMATIC planer guard (see Art. No. 3291).	4161
Wooden Push Block 1515	With fixing magnets for storage on the metal machine body. Used to safely guide narrow workpieces during surface planing, reducing the risk of accidents.	3052
Wooden Push Stick 2391	For safe surface planing of narrow workpieces (e.g. mouldings etc.). (1 pcs.) (5 pcs.)	 3416 3417
Push Handle 2390	To prevent accidents on planing machines. Self-made bumpers can be individually adapted to the shape of the workpiece. Tips penetrating deep into the wood guarantee a secure hold of the handle. (1 pcs.) (2 pcs.) (5 pcs.)	 3328 3327 3330

18.4 Special Accessories

Article	Description	Art. No.
Mobile Base	With castors and lifting rod for steering and lifting.	ADH5-410-Fahrwerk
Spare V-belt (1 piece)	Spare V-belt A 1400 LW 13x1370 Li (A54). **Note:** Please order 2 pieces, as both belts should be renewed at the same time.	7400.0410
Switching contact for extraction system	Switch contact for automatic switching of the extraction system (on/off).	ADH5-410-007

CE EU - Declaration of Conformity

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

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

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

hereby declares that the manufactured machine

Combined Surface Planing & Thicknessing Machine WOODPECKER ADH5-410

Machine-No.: .....

Year of manufacture: .....

in the version provided complies with the following directives:

- **Machinery Directive 2006/42/EC**
- **EMC Directive 2014/30/EU**

Harmonised standards applied, in particular:

- EN 60204-1: 2007-06	Safety of machinery - Electrical equipment of machines Part 1: General requirements (IEC 60204-1:2005)
- DIN EN ISO 12100: 2011-03	Safety of machinery - General principles for design - Risk assessment and risk reduction

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

Sigmaringen, 01.06.2022

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R. Beck

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Reinhold Beck
Business Manager