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Originalfassung

DE BETRIEBSANLEITUNG

Übersetzung / Translation

EN OPERATING MANUAL

ABRICHT-DICKENHOBELMASCHINE

COMBINED PLANER AND THICKNESSER



HOB305PRO_230V
HOB305PRO_400V

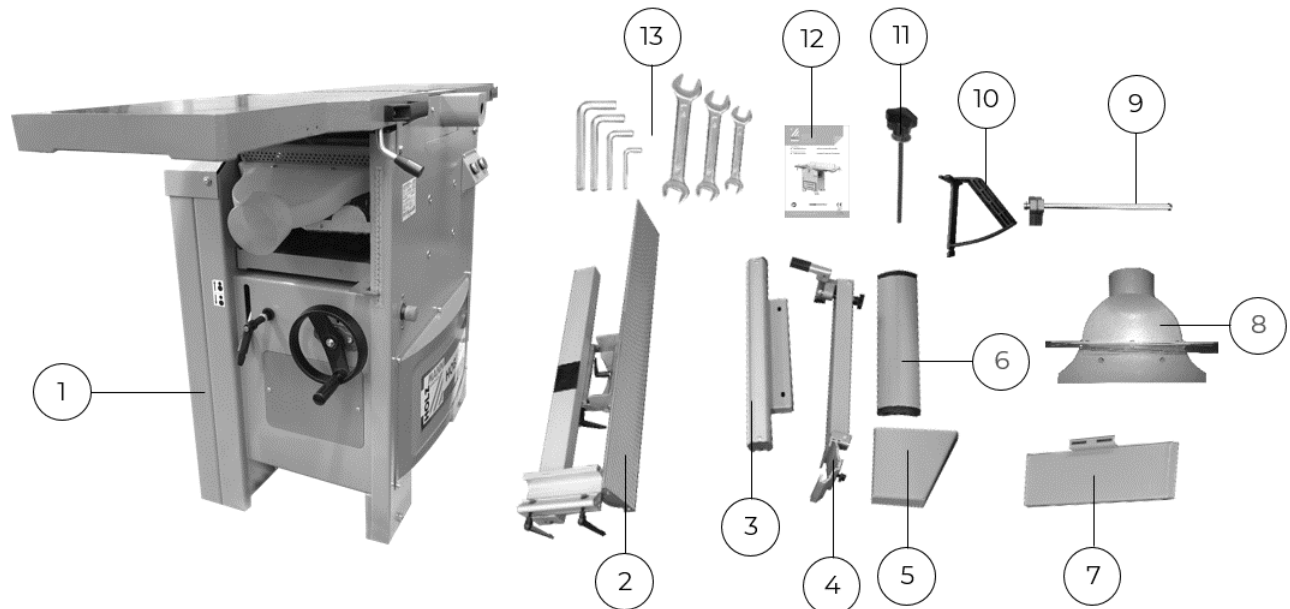


**YOUR
JOB.
OUR
TOOLS.**



3 TECHNIK / TECHNICS

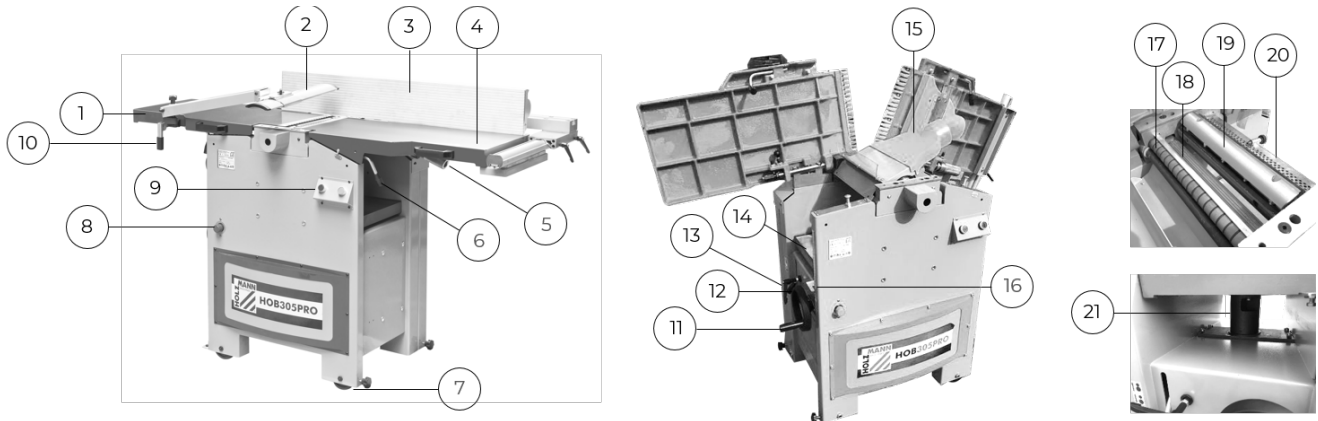
3.1 Lieferumfang / Delivery content



#	Beschreibung / Description	Qty.
1	Maschine / machine	1
2	Abrichtanschlag / planer fence	1
3	Halterung Abrichtanschlag / bracket planer fence	1
4	Arm Brückenschutzabdeckung / arm planer knife cover	1
5	Anschlagauflage / fence support	1
6	Brückenschutzabdeckung / planer knife cover	1
7	Hintere Schutzabdeckung / rear protective cover	1
8	Absaughaube / dust collector hood	1
9	Einstelllehre Hobelmesser / setting gauge planer knives	1
10	Schiebehholz / sliding wood	1
11	Riemenspannschraube / V-belt tensioning screw	1
12	Betriebsanleitung / user manual	1
13	Werkzeug / tools	1



3.2 Komponenten / Components



#	Beschreibung / Description
1	Abnahmetisch / exit planer table
2	Brückenschutzabdeckung / blade guard
3	Abrichtanschlag / planer fence
4	Aufgabetisch / entry planer table
5	Einstellknopf Abricht Hobeldicke / adjustment knob planer cutting depth
6	Klemmhebel Abrichttische / fixation handle planer tables
7	Fahreinrichtung / moving device
8	Not-Halt Schalter / emergency stop button
9	EIN-AUS-Bedieneinheit / ON-OFF-control unit
10	Klemmhebel Arm Brückenschutzabdeckung / clamping lever arm planer knife cover
11	Handrad Höhenverstellung Dickenhobel / handwheel height adjustment thicknesser
12	Hebel für Dickenhobelvorschub / handle for thicknesser feeder
13	Klemmhebel Höhenverstellung Dickenhobel / clamping lever height-adjustment thicknesser
14	Dickenhobeltisch / thicknesser table
15	Absaughaube / dust collector hood
16	Skala Höhenverstellung / scale for height adjustment
17	Rückschlaggreifer / anti-kick-back device
18	Einzugswalze / feed roller
19	Hobelwelle / planer shaft
20	Auszugswalze / pull-out roller
21	Höhenverstelleinheit Dickenhobeltisch / height adjustment unit thicknesser



3.3 Technische Daten / Technical Data

Allgemein / general	HOB305PRO_230V	HOB305PRO_400V
Spannung / Voltage	230 V/50 Hz	400 V/50 Hz
Motorleistung S1 (100%) / Motor power S1 (100%)	2,2 kW	
Hobelwelle / planer shaft	Ø 74 x 304 mm	
Anzahl Hobelmesser / quantity of blades	4	
Hobelwellendrehzahl / blade shaft speed	4000 min ⁻¹	
Hobelmesserdimension (Streifenmesser) / planer knife dimension	304 x 25 x 3 mm	
Absauganschluss / dust collector plug	Ø 100 mm	
notwendiger Luftvolumenstrom Absauganlage / necessary air volume	min. 1000 m³/h	
notwendiger Unterdruck Absauganlage / vacuum dust collector	800 Pa	
Maschinenmaße (LxBxH) / machine dimensions (LxWxH)	1665 x 575 x 930 mm	
Verpackungsmaße (LxBxH) / packaging dimensions (LxWxH)	1650 x 650 x 1150 mm	
Gewicht Brutto / weight gross	292 kg	
Gewicht Netto / weight net	258 kg	
Schallleistungspegel L _{WA} (ISO 3746) / sound power level L _{WA}	93,0 dB(A)	k: 4 dB(A)
Schalldruckpegel L _{PA} (ISO 11202) / sound pressure level L _{PA}	87,3 dB(A)	k: 4 dB(A)
Abrichthobel / planer		
Tischgröße / planer table size	1512 x 400 mm	
Tischhöhe / table height	901 mm	
max. Abrichtbreite / max planing width	304 mm	
Schwenkbereich Anschlag / angle range of angle stop	90° - 45°	
max. Spanabnahme / max depth of cut	3 mm	
Abrichtanschlag Dimension / planer fence dimension	1000 x 160 mm	
Dickenhobel / thicknesser		
Tischgröße / table size	585 x 300 mm	
max. Hobelbreite / max. thicknessing width	300 mm	
min. Werkstückdicke / min. thickness of workpiece	6 mm	
max. Werkstückdicke / max. thickness of workpiece	225 mm	
max. Spanabnahme / max. depth of cut	3 mm	
Vorschubgeschwindigkeit / feed speed	5,5 m/min	

(DE) Hinweis Geräuschangaben: Die angegebenen Werte sind Emissionswerte und müssen damit nicht zugleich auch sichere Arbeitsplatzwerte darstellen. Obwohl es eine Korrelation zwischen Emissions- und Immissionspegeln gibt, kann daraus nicht zuverlässig abgeleitet werden, ob zusätzliche Vorsichtsmaßnahmen notwendig sind oder nicht. Faktoren, welche den am Arbeitsplatz tatsächlich vorhandenen Immissionspegel beeinflussen, beinhalten die Eigenart des Arbeitsraumes und andere Geräuschquellen, d. h. die Zahl der Maschinen und anderer benachbarter Arbeitsvorgänge. Die zulässigen Arbeitsplatzwerte können ebenso von Land zu Land variieren. Diese Information soll jedoch den Anwender befähigen, eine bessere Abschätzung von Gefährdung und Risiko vorzunehmen.

(EN) Notice noise emission: The values given are emission values and therefore do not have to represent safe workplace values at the same time. Although there is a correlation between emission and immission levels, it cannot be reliably deduced whether additional precautions are necessary or not. Factors influencing the actual immission level at the workplace include the nature of the workspace and other noise sources, i.e. the number of machines and other adjacent operations. The permissible workplace values may also vary from country to country. However, this information should enable the user to make a better assessment of hazard and risk.



12 PREFACE (EN)

Dear Customer!

This manual contains information and important notes for safe commissioning and handling of the combined planer and thicknesser HOB305PRO_230V and HOB305PRO_400V, hereinafter referred to as “machine” in this document.



This manual is part of the machine and must not be removed. Save it for later reference and if you let other people use the machine, add this manual to the machine.

Please read and note the safety instructions!

Before first use read this manual carefully. It eases the correct use of the machine and prevents misunderstanding and damages of machine.

Due to constant advancements in product design, construction, illustrations and contents may deviate slightly. If you notice any errors, please inform us.

We reserve the right to make technical changes!

Check the goods immediately after receipt and note any complaints on the consignment note when taking over the goods from the deliverer!

Transport damage must be reported to us separately to us within 24 hours.

HOLZMANN MASCHINEN GmbH cannot accept any liability for transport damage that has not been reported.

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The place of jurisdiction is the regional court Linz or the court responsible for 4170 Haslach is valid.

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13 SAFETY

This section contains information and important notices for safe commissioning and handling of machine.



For your own safety, read these operating instructions carefully before putting the machine into operation. This will enable you to handle the machine safely and prevent misunderstandings as well as possible damage to property and persons. Also observe the symbols and pictograms used as well as the safety instructions and hazard warnings!

13.1 Intended use of the machine

The machine is intended exclusively for the following activities:

The planing (wide and narrow side as well as chamfering of the edges of a workpiece) and thickness planing of sawn timber within the specified machine limits.

NOTE



HOLZMANN MASCHINEN GmbH assumes no responsibility or warranty for any other use or use beyond this and for any resulting damage to property or injury.

13.1.1 Technical Restrictions

The machine is intended for use under the following ambient conditions:

Relative humidity:	max. 65 %
Temperature (for operation)	+5° C to +40° C
Temperature (for storage and/or transport)	-20° C to +55° C

13.1.2 Prohibited Use / Forseeable Misuse

- Operation of the machine without adequate physical and mental aptitude
- Operating the machine without knowledge of the operating instructions
- Changes in the design of the machine
- Operating the machine under explosive conditions
- Operating the machine in closed rooms without chip and dust extraction device (a normal household vacuum cleaner is not suitable as an extraction device)
- Operating the machine outside the specified power range
- Remove the safety markings attached to the machine.
- Modify, circumvent or disable the safety devices of the machine.
- Machining of materials with dimensions outside the limits specified in this manual.
- Use of tools that do not meet the safety requirements of the standard for woodworking machine tools (EN847-1).
- Removal of the blade guard during planing.
- Synchronous planing
- Application work (workpiece only machined over a partial length)
- Planing of strongly curved workpieces

The prohibited/hazardous use or disregard of the information and instructions presented in this manual will result in the voiding of all warranty and damage claims against Holzmann Maschinen GmbH.

13.2 User requirements

The machine is designed to be operated by one person. The prerequisites for operating the machine are physical and mental fitness as well as knowledge and understanding of the operating



instructions. Persons who, due to their physical, sensory or mental capabilities, inexperience or lack of knowledge, are unable to operate the machine safely must not use the machine without supervision or instruction by a responsible person.

Basic knowledge of woodworking especially the correlation of material, tool, feed and speeds.

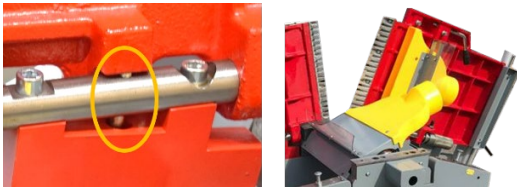
Please note that locally applicable laws and regulations determine the minimum age of the operator and may restrict the use of this machine!

Work on electrical components or equipment may only be carried out by a qualified electrician or under the guidance and supervision of a qualified electrician.

Put on your personal protective equipment before working on the machine.

13.3 Safety devices

The machine is equipped with following safety devices:

	• A self-locking Emergency Stop button to stop dangerous movements at any time.
Blade guard (covering blade shaft)	• Separating protective device (fixed)
V-Belt / chain-drive guard	• Separating protective device (fixed)
Separating protective device behind planer stop (fixed)	• Separating protective device (fixed) To be remove before changing to thicknesser mode
Thicknesser 	• Moveable guard with safety switch for monitoring
Anti-kick-back device	• The anti-kickback device prevent the workpiece from kicking back
Drill chuck guard	• Separating protective device

13.4 General safety instructions

To avoid malfunctions, damage and health hazards when working with the machine, in addition to the general rules for safe working, the following points in particular must be observed:

- Before connecting the machine to the main power supply, make sure all the safety items are in the working position and check their working conditions, if necessary, to remove the door or protective cover, cut off the main switch and lock it and cut off the power supply.
- Choose a level, vibration-free, non-slip surface for the installation location.
- Ensure sufficient space around the machine!
- Ensure sufficient lighting conditions at the workplace to avoid stroboscopic effects!
- Ensure a clean working environment!
- Only use perfect tools that are free of cracks and other defects (e.g. deformations).
- Remove adjustment tools from the machine before switching it on.
- Keep the area around the machine free of obstacles (e.g. dust, chips, cut workpiece parts etc.).
- Check the strength of the machine connections before each use.
- Never leave the running machine unattended. The machine must be stopped if it is unattended.



- The machine may only be operated, maintained or repaired by persons who are familiar with it and who have been informed of the dangers arising in the course of this work.
- Ensure that unauthorised persons maintain a safe distance from the machine and keep children away from the machine.
- Wear suitable protective equipment (eye protection, dust mask, respiratory protection, ear protection, gloves when handling tools) as well as close-fitting work protective clothing - never loose clothing, ties, jewellery, etc. - danger of being drawn in!
- Hide long hair under hair protection.
- Do not remove any sections or other parts of the workpiece from the cutting area while the machine is running!
- Always work with care and the necessary caution and never use excessive force.
- Do not overload the machine!
- Do not work on the machine if it is tired, not concentrated or under the influence of medication, alcohol or drugs!
- Do not use the machine in areas where vapours from paints, solvents or flammable liquids represent a potential danger (danger of fire or explosion!).
- Do not smoke in the immediate vicinity of the machine (fire hazard)!
- Make sure that the main switch is in the "O" position before connecting the machine to the power source.
- Ensure that the machine is earthed.
- Only use suitable extension cords.
- Always shut down the machine before carrying out any conversion, adjustment, measuring, cleaning, maintenance or repair work and always disconnect it from the power supply for maintenance or repair work. Before starting work on the machine, wait until all tools or machine parts have come to a complete standstill and secure the machine against unintentional restarting.

13.5 Electrical safety

- Make sure that the machine is earthed.
- Only use suitable extension cords.
- A damaged or tangled cable increases the risk of electric shock. Handle the cable with care. Never use the cable to carry, pull or disconnect the machine. Keep the cable away from heat, oil, sharp edges or moving parts.
- Proper plugs and sockets reduce the risk of electric shock.
- Water that enters the machine increases the risk of electric shock. Do not expose the machine to rain or moisture.
- The machine may only be used if the supply is protected by a residual current circuit breaker.
- Use the machine only when the ON-OFF switch is in good working order.

13.6 Special safety instructions for that machine

- Work with gloves on rotating parts is not permitted!
- Wood dust is generated when the machine is in operation. Therefore, connect the machine to a suitable extraction system for dust and chips during installation!
- Always switch on the dust extraction device before you start machining the workpiece!
- Never remove chips or other parts of the workpiece from the cutting area while the machine is running.
- When using milling tools with a diameter of ≥ 16 mm and circular saw blades, these must comply with EN 847-1:2013 and EN 847-2:2013; tool carriers must comply with EN 847-3:2013;
- Excessive noise can cause hearing damage and temporary or permanent hearing loss. Wear hearing protection certified to health and safety regulations to limit noise exposure.
- Only use blades that are suitable for that machine.
- For handling short and narrow workpieces use sliding wood.



13.7 Hazard warnings

Despite its intended use, certain residual risks remain:

- Risk of injury to fingers and hands from the rotating blades if the workpiece is guided improperly.
- Injuries caused by the workpiece being thrown away by improper mounting or guidance, such as working without a stop.
- Danger to health from wood dust or chips. It is essential to wear personal protective equipment such as eye protection and a dust mask. Use a dust collection system!
- Injuries due to defective blades. Check the saw blade regularly for damage.
- Risk of injury from tools, especially when changing tools.
- Risk of injury due to kick back of the workpiece.
- Risk of electric shock if incorrect electrical connections are used.

Residual risks can be minimized if the "Safety instructions" and the "Intended use" as well as the operating instructions are observed.

Due to the design and construction of the machine, hazardous situations may occur when handling the machines, which are identified as follows in this operating instruction:

DANGER



A safety instruction designed in this way indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING



Such a safety instruction indicates a potentially hazardous situation which, if not avoided, may result in serious injury or even death.

CAUTION



A safety instruction designed in this way indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTE



A safety notice designed in this way indicates a potentially hazardous situation which, if not avoided, may result in property damage.

Irrespective of all safety regulations, their sound common sense and corresponding technical suitability/training are and remain the most important safety factor in the error-free operation of the machine. Safe working depends first and foremost on you!

14 TRANSPORT

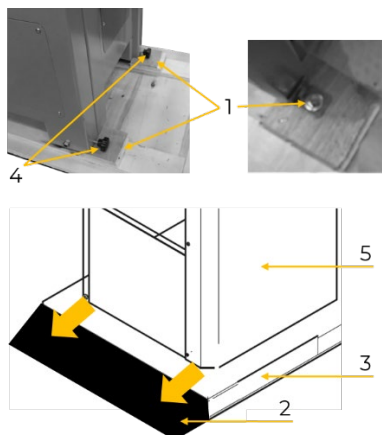
To ensure proper transport, also observe the instructions and information on the transport packaging regarding centre of gravity, weight, means of transport to be used and the prescribed transport position, etc. Lifting and transporting the machine may only be carried out by qualified personnel with appropriate training for the lifting equipment used.



Transport the machine in its packaging to the installation site. To manoeuvre the machine in the packaging, a pallet truck or a forklift with appropriate lifting power can be used.

NOTE: To transport the machine, you need a forklift truck with the appropriate load capacity and a fork of at least 1200 mm length. The fork of the truck should be positioned under the machine.

In the installation site proceed as follows:



- Open the transport packaging
- Remove the transport securing devices (1)
- Place a transport ramp (2) or similar in front of the transport pallet (3) to make it easier to move down
- Loosen the clamping screws of the moving device (4).
- Gently move the machine (5) off the transport pallet

NOTE: Do not lift the machine at the work tables, these are not designed to withstand the tensile load of the machine weight.

15 ASSEMBLY

15.1 Check scope of delivery

Always note visible transport damages on the delivery note and check the machine immediately after unpacking for transport damage or missing or damaged parts. Report any damage to the machine or missing parts immediately to your retailer or freight forwarder.

15.2 Requirements for the place of installation

Choose a suitable place for the machine. Pay attention to the safety requirements and the dimensions of the machine. The selected location must ensure a suitable connection to the power supply as well as the possibility of connection to an extraction system. Make sure that the floor can support the load of the machine. The machine must be levelled simultaneously at all support points. It is also necessary to guarantee a distance of at least 0.8 m around the machine. In front of and behind the machine, the necessary distance must be provided for the feeding of long workpieces.

15.3 Preparation of the surface

NOTE



The use of paint thinners, gasoline, corrosive chemicals or abrasive cleaners will result in damage to the surface! Therefore use only mild cleaning agents.

Before you install and commission the machine at the intended location, carefully remove the anti-corrosion protection and grease residues. This can be done with the usual solvents. Under no circumstances should you use nitro thinner or other cleaning agents that could attack the machine's paint.



15.4 Removing the transport locks



Unscrew the marked transport locks from the planer tables

15.5 Assembling the machine

The machine is pre-assembled. The parts that have been disassembled for transport must be assembled before use. Follow the instructions below:

NOTE

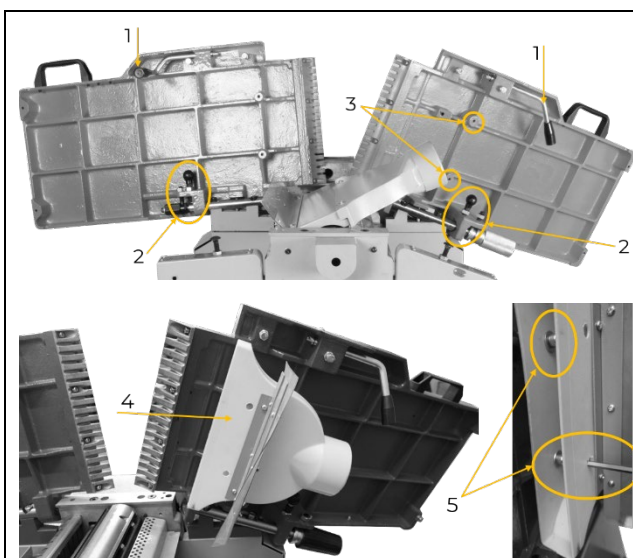


The machine and machine components are heavy!
2 persons are required to assemble the machine.

WARNING



Handling the machine with the power supply intact can result in serious injury or death. Therefore, do not connect the machine to the power supply before completing the assembly.



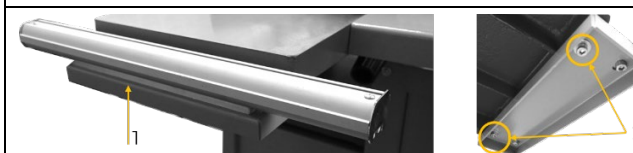
1. Assembly dust collector hood

- Unlock the fixation handles planer tables (1) of the planer tables. Therefore pull out and turn the handle
- Unfold the planer tables (1) completely and ensure that the locks (2) engages
- Fix the dust collector hood (4) on the threads of the entry planer table (3) using washers and screws (5) as shown



2. Assembly fence support

- Fix the fence support (1) on the threads of the entry planer table (2) using washers and screws (3) as shown



3. Assembly planer fence

- Fix the bracket planer fence (1) on the threads of the entry planer table using washers and screws (2) as shown



	- Slide the planer fence (1) with the fixture onto the bracket NOTE: First loosen screw (3) and remove end plate (4) of the bracket. After mounting the planer fence, fix the end plate again. - Fix the planer fence in desired position with clamping levers (5)
	4. Assembly rear protective cover Fix the rear protective cover (1) to the holding rail of the planer fence using screws (2) as shown
	5. Assembly arm planer knife cover Push the arm planer knife cover (1) onto the bracket (2) on the exit planer table (3) and fix it with the clamping lever arm planer knife cover (4)
	6. Assembly planer knife cover Insert planer knife cover (1) into the holder (2) and fix it in desired position with the fixing knob (3)

15.6 Electrical connection

WARNING



Dangerous electrical voltage!

- The machine may only be connected to the power supply and the associated checks carried out by a qualified electrician or under the instruction and supervision of a qualified electrician!



- Check, whether the neutral connection (if existing) and the protective grounding function properly.
- Check, whether the supply voltage and the frequency correspond to the specifications of the machine.

NOTE



Deviation of the supply voltage and frequency!

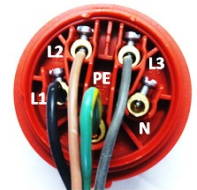
A deviation from the value of the supply voltage of $\pm 5\%$ is permissible.
A short-circuit fuse must be provided in the power supply system of the machine!

- Use a supply cable that fulfils the electrical requirements (e.g. H07RN, H05RN) and take the required cross-section of the supply cable from a current carrying capacity table. Pay attention to the measures for protection against mechanical damage.
- Make sure that the power supply is protected by a residual current circuit breaker.
- Connect the device only to a properly grounded outlet.
- When using an extension cable, make sure that the dimension matches the connected load of the machine. The connection power can be found in the technical data, the correlation of cable cross-section and cable lengths can be found in the technical literature or obtain information from a specialist electrician.
- A damaged cable must be replaced immediately.

15.6.1 Setting up a 400 V machine

- The grounding conductor is yellow-green.
- Connect the supply cable to the corresponding terminals in the input box (L1, L2, L3, N and PE), see the figure below. If a CEE plug is available, the connection to the mains is made through an appropriately powered CEE coupling (L1, L2, L3, N and PE).

Plug connection 400V:	5-wire: with N-conductor	4-wire: without N-conductor
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- After the electrical connection, check the correct running direction. If the machine runs in the wrong direction, swap two conductive phases, e.g. L1 and L2, at the connection plug.

NOTE



- Operation is only permitted with residual current device (RCD) with maximum residual current of 30 mA.

15.7 Connecting to a dust collection system

The machine must be connected to a dust collection system for dust and chips. The dust collection system must start up at the same time as the machine's engine. The air speed at the suction connection and in the exhaust air lines must be at least 20 m/s for materials with a moisture $<12\%$ (at least 28 m/s for moist chips with a moisture $>12\%$). The hoses used must be flame-retardant (DIN4102 B1) and permanently antistatic (or earthed on both sides) and comply with the relevant safety regulations. For information on air volume flow, negative pressure and suction connection, please refer to the technical specifications.



16 OPERATION

16.1 Operating instructions

WARNING

**Danger due to electrical voltage!**

Handling the machine with connected power supply may result in serious injury or death.

- Always disconnect the machine from the power supply before carrying out any modification and secure it against unintentional reconnection.

CAUTION

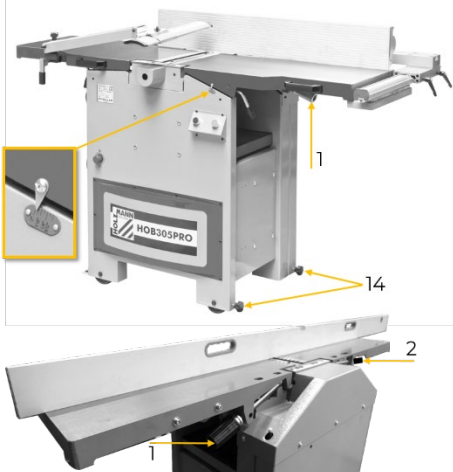
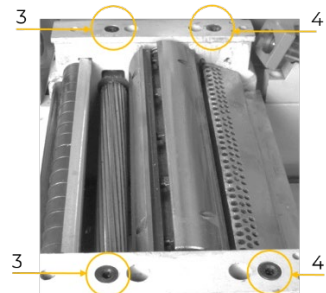


- Never start the machine with a workpiece pressed down!
- Long workpieces must be supported
- Property damage and injury by bouncing up the workpiece or tilting of the machine possible!

16.2 Initial check before start

- Check that all guards are installed.
- Check whether suitable planing knives have been correctly assembled.
- Check whether the connection to a dust collection system is available.
- Check that the planer shafts rotate in the correct direction.
- Check whether the moving device is braked.

16.3 Settings

	1. Height adjustment of the planing tables Entry planer table The cutting depth is set with the adjustment knob planer cutting depth (1) Exit planer table The height of the back planer table can be adjusted with the adjusting screw (2) and should only be adjusted to the planer shaft if necessary. Check scale knife entry planer table = 0 If necessary, adjust the arrow of the scale 2. Moving device The moving device is braked with clamping screws (14)
	3. Setting infeed / oufeed roller The pressure force of the spring-mounted infeed and outfeed roller is factory-set. If it is necessary to change the pressure force, it can be adjusted with the screws (3 and 4).



	4. Setting arm and planer knife cover Height - Set the desired height with the adjusting screw (5) Planer knife cover - Loosen the clamping screw (6) - The planer knife cover can be moved and adapted to the size of the workpiece - Relock the clamping screw (6) when the desired position is reached.
	5. Setting planer fence Angle: - Loosen clamping levers (7) - Set planer fence to desired angle position - Relock clamping levers (7) when the desired angle position is reached Rear protective cover (11): - Loosen screws (10) and set the rear protective cover as near as possible to the planer fence - Retighten the screws Moving left / right - Loosen clamping levers (8) - Set planer fence to desired position - Relock clamping levers (8) Moving forward / backward - Loosen clamping screws (9) - Set planer fence to desired position - Relock clamping screws (8)
	The alignment of the planer fence at right angles should be checked again before initial operation and readjusted if necessary to achieve an exact planing result. - The angle is measured with a protractor (13). This is placed on the planer table and applied to the planer fence. - If it is not possible to place the protractor completely against the planer fence, the planer fence is not set exactly at right angles and an adjustment is necessary. - The angle is adjusted with the screw (12).

16.4 Handling

16.4.1 Switch the machine on and off

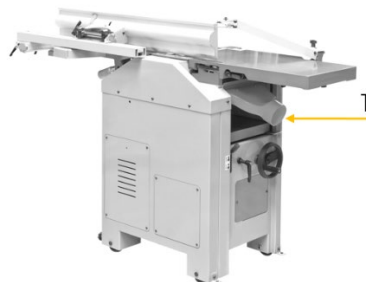
	Switch on Push green ON-button (I) Switch off Push red OFF-button (0) or in emergency situations the emergency-stop button CAUTION: The emergency stop button can only be unlocked after the emergency situation has been eliminated.
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16.4.2 Activating/Deactivating the thicknesser feed rate

	Activate feed: Swivel the lever for thicknesser feeder (1) upwards. Feed is activated Deactivated feed: Swivel the lever for thicknesser feeder (1) downwards. Feed is deactivated.
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16.5 Dust collection plug

	Planer: The extraction connection (1) is under the planer tables (exit planer table) NOTE: see chapter Assembling the machine => Assembly dust collector hood
	Thicknesser: After the conversion to thicknessing, fold down the dust collector hood (2).

Do not operate the machine without the dust collection system connected to it and switched on. The dimensions of the dust collection plug can be found in the technical data.

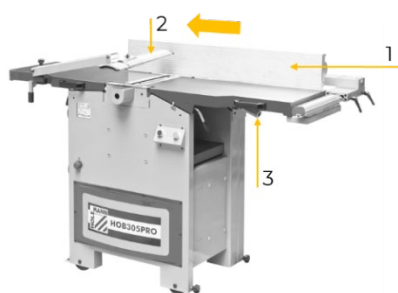
16.6 Planing

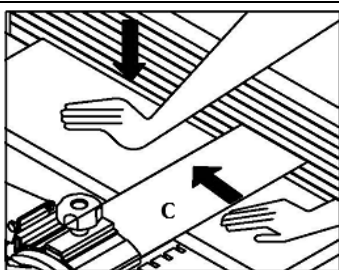
WARNING



The unused part of the planing shaft for machining the workpiece must be covered by the covers (planer knife cover, guidance planer fence). Never touch the edges of the workpiece with your fingers, but always leave both hands on the workpiece with your fingers when planing. If the workpiece is short and narrow, use the sliding wood.

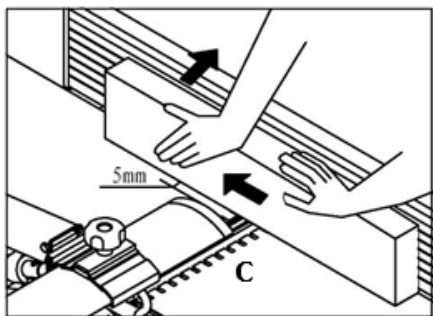
Only plane workpieces that rest firmly on the machine and that can be guided safely!

 ← working direction	• Fix the planer fence (1) in the desired working position. • Set the desired planing thickness on the adjusting screw (3). • Adjust the planer knife cover (2) so that the distance between the cover and the workpiece is approx. 5mm. • Set rear protective cover to the planer fence • Start machine
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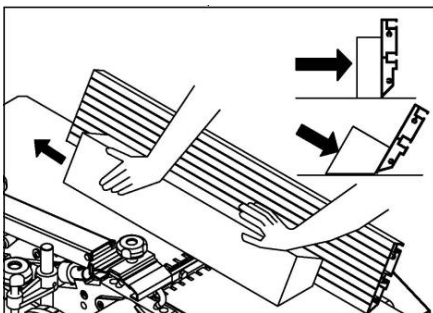
- Press the workpiece against the planer table with one hand.
- Push the workpiece slowly and evenly over the shaft with the second hand.
- After finishing the operation switch off the machine.
- Wait until the shaft has come to a standstill before proceeding with any further work!

16.61 Planing small workpieces



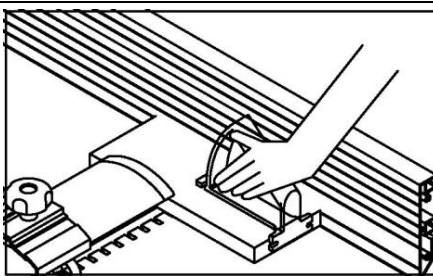
- Lower the planer knife cover (C) so that the planing shaft is covered.
- Move the planer knife cover to the workpiece and fix it with a distance of approx. 5mm.
- When planing, place the workpiece with the small side on the planer table and press with one hand against the planer fence and planer table.
- Push the workpiece slowly and evenly over the shaft with the second hand.

16.62 Planing with tilted planer fence



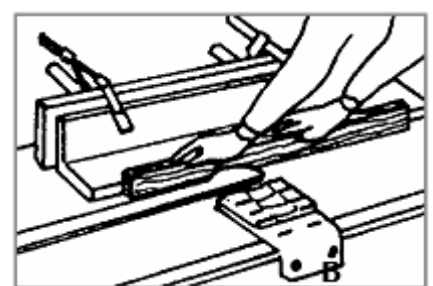
- Lower the planer knife cover so that the planing shaft is covered.
- Move the planer knife cover to the workpiece and fix it with a distance of approx. 5mm.
- When planing, place the workpiece with the small side on the planer table and press with one hand against the planer fence and planer table.
- Push the workpiece slowly and evenly over the shaft with the second hand.

16.63 Planing short workpieces



- When planing short workpieces, a sliding wood or similar device should be used!
- Adjust planer fence and blade guard to the size of the sliding wood.
- Place the workpiece on top and push it slowly and evenly over the shaft using the sliding wood.
- After use, the sliding wood must be reattached on his place on the side of the machine.

16.64 Planing the workpiece with small cross section



- When planing workpieces with a small cross-section, an additional wood angle must be mounted!
- Fasten the wood angle to the planer fence as shown using lever clamps.
- When planing, place the workpiece on the planer table and press it against the additional wood angle and planer table.
- Place the workpiece on top and push it slowly and evenly over the shaft using the sliding wood.



16.7 Thicknessing

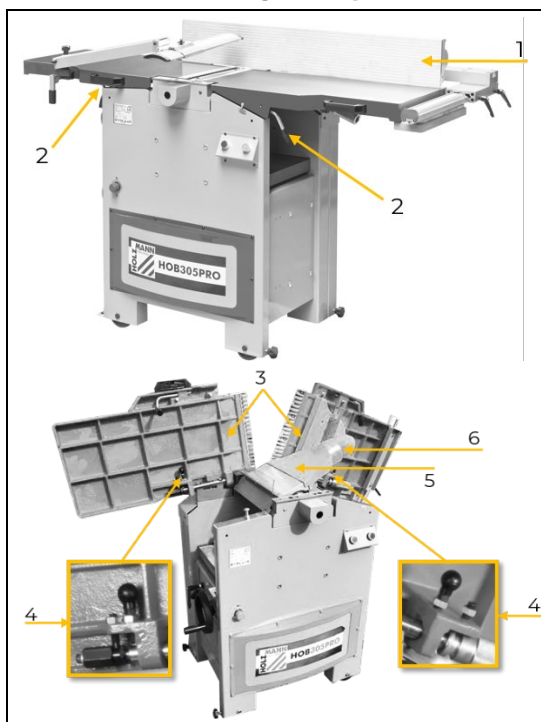
NOTE



It is necessary to modify/adjust the machine before using as a thicknesser.

- Long, protruding workpieces must be sufficiently supported! Use suitable aids such as roller blocks etc. for this purpose. If you do not follow these instructions, there is a danger of the workpiece being raised up quickly and/or the machine being tilted!
- Use the thicknessing function only to reduce the thickness of a workpiece with an already surface planed facing!
- For workpieces with a difference in thickness, the chip removal must be measured at the maximum thickness and the workpiece machined with this side first.
- Make sure that the workpiece to be machined is free of foreign objects and/or knots in order to avoid dangerous fractures.
- Only plane workpieces that rest firmly on the machine and can be guided safely!
- If several workpieces are to be processed in series, all pieces of the same thickness should be run through in succession without changing the setting.
- Perform the machining process from the beginning until the desired thickness is achieved.

16.7.1 Converting from planer to thicknessing



- Disassemble the planer fence (1) and slide the planer knife cover all the way to the back.
- Disassemble the hose of the dust collector plug.
- Unlock the fixation handles planer tables (2) of the planer tables. Therefore pull out and turn the lever
- Unfold the planer tables (3) completely and ensure that the locks (4) engages
- Turn down the dust collector hood (5).
- Mount hose to the dust collector plug (6).

Proceed in reverse order to readjust to the planer mode.

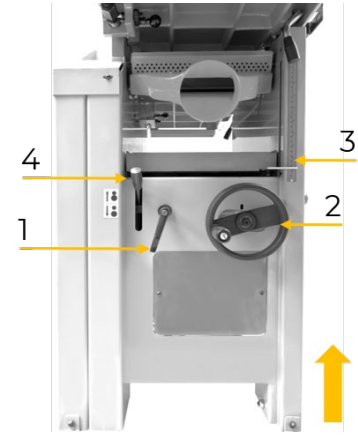
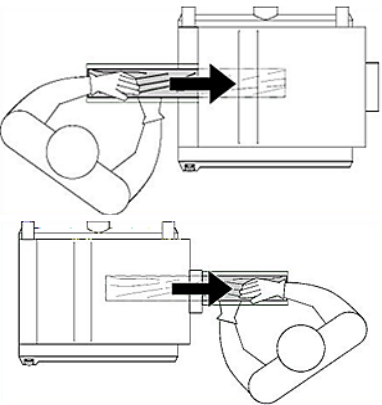
NOTE



For readjusting to planer mode please lower the thicknesser table to lowest position to avoid any damages.



16.72 Thicknessing of workpieces

 ← working direction	• Unlock the locking lever height adjustment thicknesser (1) and set the required height of the thicknessing table with the handwheel (2). • The height will be shown on the scale (3). • Set the thicknessing table height to the workpiece height minus the requested cutting depth. • Maximum cutting depth refer to the technical data! NOTE: At the beginning of the thicknessing process, the workpieces may still have very different thicknesses - this must be taken into account in the set cutting depth in order not to overload the machine. • Fix the thicknessing table height with the locking lever height adjustment. • Switch on the machine. • Put the lever for thicknesser feeder (4) to the upper position to start the feed.
	• Insert workpiece so that the surface to be machined facing upwards and push forward • The workpiece is pulled through of the automatic feed • As soon as the half of the workpiece has been processed change to the opposite operator side of the machine and take on the finished workpiece. • After operation switch off the machine. • Before further activities wait until blade shaft is at a standstill!

NOTE



- In the case of resin residues on the wood, it may be advisable to apply a thin layer of a special lubricant to the machine table in order to ensure that the workpiece slides evenly through the thickness planer.
- If the workpiece is no longer moved by the automatic feed, pull out the workpiece manually.
- After operation switch off the machine and set the lever for thicknesser feeder to position "OFF".
- Before further activities wait until blade shaft is at a standstill!

16.8 After working process

NOTE



After the working process the planer and thicknesser must be turned off:

- Switch off the machine and disconnect the machine from the power supply.
- After operation set the lever for thicknesser feeder to position "OFF".
- Adjust the planer knife cover so that the planer shaft is completely covered



17 OPERATION MORTISING UNIT (OPTIONAL)

	Step 1: Step 2: Step 3:
• Assembly see HOB305PROLL • Clamp the milling tool required for drill chuck (1) of the planer shaft • Lay up the workpiece on the mortising table (2) • Tilt the downholder (3) to the middle of the workpiece • Push the lever of the downholder down to clamp the workpiece • Loosen the locking screw (4) and adjust the table height with the handwheel (5) to the requested height of the milling tool • Adjust the horizontal travel of the table with both set screws (6) • Start the machine (see operation planer and thicknesser) • Move the table with the operating lever (8) in left direction to the limiter • Press down the workpiece carefully on the milling tool and up to max. penetration depth of milling (depending on the milling tool) with operating lever (7) • Move the operating lever (8) carefully to the right direction to the limiter • Repeat this process until the requested cutting depth has been reached • Move the operating lever (7) backwards to release the milling tool out of the workpiece • After the working process switch of the machine (see operation planer and thicknesser) • Before further activities wait until blade shaft is at a standstill!	

17.1 After working process

NOTE



After the working process the planer and thicknesser must be turned off:

- Switch off the machine and disconnect the machine from the power supply.
- Dismount the milling tool.

18 CLEANING, MAINTENANCE, STORAGE, DISPOSAL

WARNING



Danger due to electrical voltage!

Handling the machine with connected power supply may result in serious injury or death.

- Always disconnect the machine from the power supply before maintenance or repair work and secure it against unintentional reconnection.



18.1 Cleaning

Regular cleaning guarantees the long service life of your machine and is a prerequisite for its safe operation.

NOTE



Incorrect cleaning products can attack the finish of the machine. Do not use any solvents, nitro thinners or other cleaning products that could damage the machine's finish.
Observe the specifications and instructions of the cleaning agent manufacturer.

- Remove chips and dirt particles from the machine after each use with a proper tool.
- Prepare the surfaces and lubricate the bare machine parts with an acid-free lubricating oil (e.g. WD40 rust inhibitor).

18.2 Maintenance

The machine is low maintenance and only a few parts require maintenance. Malfunctions or defects that are likely to impair your safety must be rectified immediately!

- Check that the safety devices are in good condition before each operation.
- Check the connections at least once a week for a tight fit.
- Check the correct and readable status of the Machine's warning and safety labels on a regular basis.

18.2.1 Maintenanceplan

Wear of machine depends strongly on operation condition. The following intervals are valid when using the machine within the operation limits

Interval	Componente	Activity
Before every usage	Anti-kick-back device	At least once per work-shift by inspection to verify that they are in good working condition, eg have no impact damages to the surface and that the anti-kick back device fall back freely due to its own weight after lifting.
	Machine	Cleaning (from dust and chips)
monthly	V-Belt	Check retighten or replace if necessary.
	Feed/Pull-out roller	Check and clean thoroughly
	Height adjustment	Control, lubrication
Half yearly	Chain-drive (feed)	Check for damage/wear, lubricate, replace if necessary
	Friction wheel (feed)	Check for damage/wear and replace if necessary.

18.3 Checking/adjusting/replacing the V-Belt

The belt tension is set correctly for new machines ex factory. By stretching the belts over the running time, retensioning of the belt is necessary.

To check/adjust or replace the belt, remove the belt/chain cover (1). Loosen the screws and remove the cover.



	NOTE ! Do not over-tension the V-belt! Tension the V-belt only until sufficient power transmission is ensured. max. 2-5mm
Increase belt tension: Loosen nuts (2) and unscrew slightly. The motor (3) can now be shifted by turning the V-belt tensioning screw (4) in the direction (+) of more belt tension. When correct tension is reached. Tighten the nuts (2) firmly again.	Decrease belt-tension: Loosen nuts (2) and unscrew slightly. The motor (3) can now be shifted by turning the V-belt tensioning screw (4) in the direction (-) of less belt tension. When correct tension is reached. Tighten the nuts (2) firmly again.
For changing the V-belt, completely de-tension the belts and pull them over the tension pulleys and insert new belts. Then establish correct belt tension again.	

After completion, remount the cover and fix it with the screws.

18.4 Lubricate height adjustment (thicknesser)

Remove chips and dust from the machine.

Remove the belt/chain cover (loosen the screws and remove the cover).

Set the thickness table all to the top.

Clean spindle/height adjustment unit and then grease with machine grease.

Move the thickness planing table 1x up and down to distribute the grease.

Mount the cover again (hang in the cover and tighten the screws).

18.5 Check/clean anti-kick-back device

Check: Lift up Anti-kick back device, it must fall back on your own.

Cleaning: Remove dust and chips or resin residues.

18.6 Check/replace friction wheel (feed)

The friction surfaces of the wheel become worn over time. If the wear is too worn or damaged, the wheel must be replaced.

1. Remove V-Belt
2. Put the lever for the thicknesser planer feed to the lower position (deactivated)
3. Remove the screw for the belt-pulley and replace the wheel and fix it again.
4. Insert V-Belt and re-establish the correct belt tension.



18.7 Check/lubricate chain-drive (feed)

Check the chain for any damage (cracks, break-outs). The chain can be moved by turning the friction wheel to view all parts. Lubricate chains with normal machine grease.

18.8 Replacing/adjusting the planing knife

NOTE

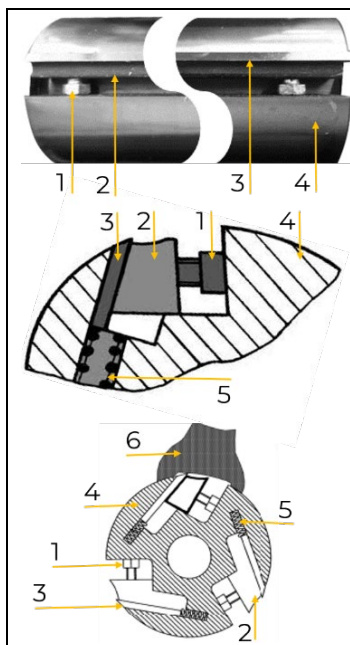


The planer shaft is suitable for strip knives.
If the planing surface is bad, the planing knives must be replaced. The appropriate dimensions can be found in the technical data.

WARNING



Danger from cutting edges! Always wear protective gloves when working on the planing shaft! Injuries to hands due to sharp cutting edges



1. Adjust the machine to thickness planing mode
2. The dust collection hood must be open in order to have access to the shaft
3. Loosen the gib screws (1)
4. The planing knife (3) will be pushed up by the pressure springs (5)
5. Remove the gib (2) and the planing knife (3)
6. Clean the planer shaft (4) and gibs (2)
7. Replace sharp/new planing knife (3) and gib (2)
8. Slightly tighten the gib screws (1) and perform the adjustment procedure.
9. Place the setting gauge (6) on the planing shaft and adjust the correct height.
10. Tighten the gib screws (1) to fix the gib (2) (recommended minimum tightening torque 20Nm)
11. Do not use planing knives with a height of less than 19mm due to the too small clamping surface
12. Repeat procedure for all planing knives.

18.9 Storage

Store the machine in a dry, frost-proof and lockable place when not in use. Disconnect the machine from the power supply. Make sure that unauthorised persons and especially children do not have access to the machine.

Prepare the surfaces and lubricate the bare machine parts with an acid-free lubricating oil (e.g. WD40 rust inhibitor).

NOTE



Improper storage can damage and destroy important components. Only store packed or already unpacked parts under the intended ambient conditions!



18.10 Disposal



Observe the national waste disposal regulations. Never dispose of the machine, machine components or operating equipment in the residual waste. If necessary, contact your local authorities for information regarding available disposal options.

If you purchase a new machine or equivalent equipment from your specialist dealer, he is obliged in certain countries to dispose of your old machine properly.

19 TROUBLESHOOTING

WARNING



Danger due to electrical voltage!

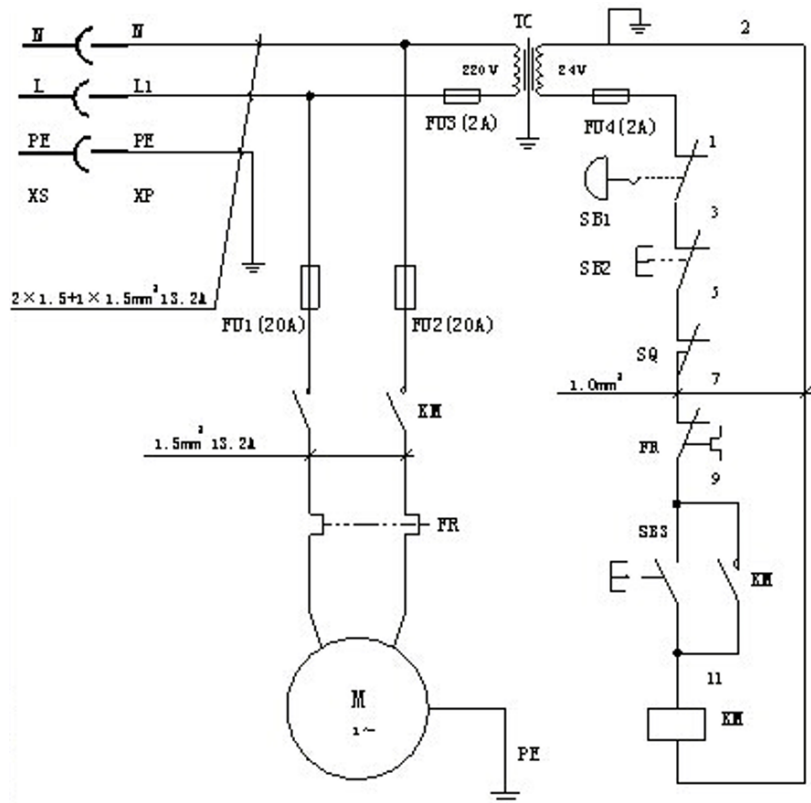
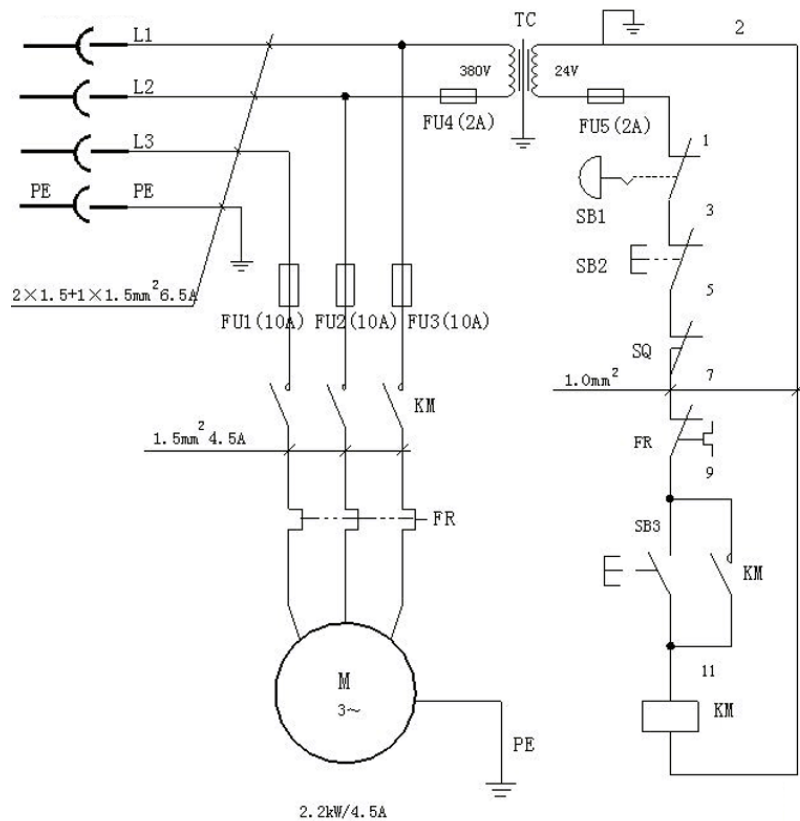
Handling the machine with connected power supply may result in serious injury or death.

- Always disconnect the machine from the power supply before maintenance or repair work and secure it against unintentional reconnection.

Many possible sources of error can be excluded in advance if the machine is properly connected to the power supply. If you are unable to carry out necessary repairs properly and/or do not have the required training, always consult a specialist to correct the problem.

Problem	Possible cause	Solution
Machine does not start or shuts down automatically during idling	▪ Power supply outage ▪ Damaged or incorrect connected extension cable ▪ Damaged switch or motor	▪ Check fuse of the power supply ▪ Check plug or extension cable ▪ Contact customer support
Machine stops during operation	▪ Blunt blade ▪ Feeding speed too high ▪ Motor protection triggered	▪ Check blade ▪ Work with lower feeding speed ▪ Let the motor cool down
Machine vibrates during operation	▪ Wrong adjusted blade ▪ Ground not flat or base feet wrong adjusted	▪ Check the setting of the blades ▪ Set the base feet correct
Workpiece clamps during thicknessing	▪ Cutting depth too high ▪ Dirty thicknessing table	▪ Set the correct cutting depth and operate in more steps ▪ Clean and apply the table surface with lubricant
Bad surface condition after operating	▪ Blunt blade ▪ Uneven feed of the workpiece	▪ Check blade ▪ Feed workpiece evenly and with constant pressure
Rough surface after operating	▪ Workpiece too moist	▪ Use drier workpiece
Cracked surface after operating	▪ Workpiece was processed against the direction of growth ▪ Cutting depth too high	▪ Proceed the workpiece in opposite direction ▪ Set the correct cutting depth and operate in more steps

20 ELEKTRISCHER SCHALTPLAN / WIRING DIAGRAM

HOB305PRO_230V:**HOB305PRO_400V:**



21 ERSATZTEILE / SPARE PARTS

21.1 Ersatzteilbestellung / spare parts order

(DE) Mit HOLZMANN-Ersatzteilen verwenden Sie Ersatzteile, die ideal aufeinander abgestimmt sind. Die optimale Passgenauigkeit der Teile verkürzen die Einbauzeiten und erhöhen die Lebensdauer.

HINWEIS



Der Einbau von anderen als Originalersatzteilen führt zum Verlust der Garantie! Daher gilt: Beim Tausch von Komponenten/Teile nur vom Hersteller empfohlene Ersatzteile verwenden.

Bestellen Sie die Ersatzteile direkt auf unserer Homepage – Kategorie ERSATZTEILE.
oder kontaktieren Sie unseren Kundendienst

- über unsere Homepage – Kategorie SERVICE – ERSATZTEILANFORDERUNG,
- per Mail an service@holzmann-maschinen.at.

Geben Sie stets Maschinentype, Ersatzteilnummer sowie Bezeichnung an. Um Missverständnissen vorzubeugen, empfehlen wir, mit der Ersatzteilbestellung eine Kopie der Ersatzteilzeichnung beizulegen, auf der die benötigten Ersatzteile eindeutig markiert sind, falls Sie nicht über den Online-Ersatzteilkatalog anfragen.

(EN) With original HOLZMANN spare parts you use parts that are attuned to each other shorten the installation time and elongate your products lifespan.

NOTE



The installation of parts other than original spare parts leads to the loss of the guarantee! Therefore: When replacing components/parts, only use spare parts recommended by the manufacturer.

Order the spare parts directly on our homepage – category SPARE PARTS or contact our customer service

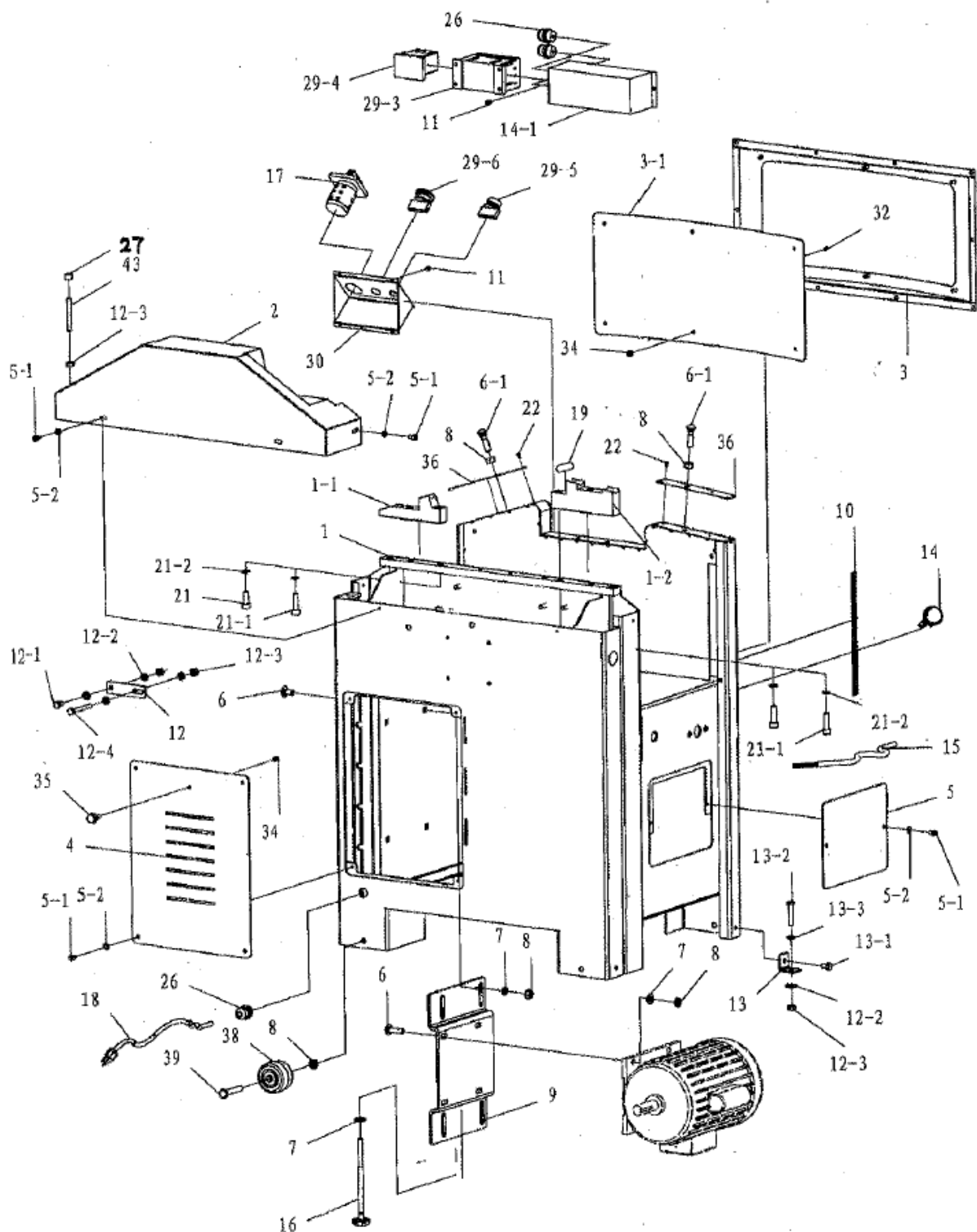
- via our Homepage – category SERVICE - SPARE PARTS REQUEST,
- by e-mail to service@holzmann-maschinen.at.

Always state the machine type, spare part number and designation. To prevent misunderstandings, we recommend that you add a copy of the spare parts drawing with the spare parts order, on which the required spare parts are clearly marked, especially when not using the online-spare-part catalogue.



21.2 Explosionszeichnung / Exploded view

Stand assembly:

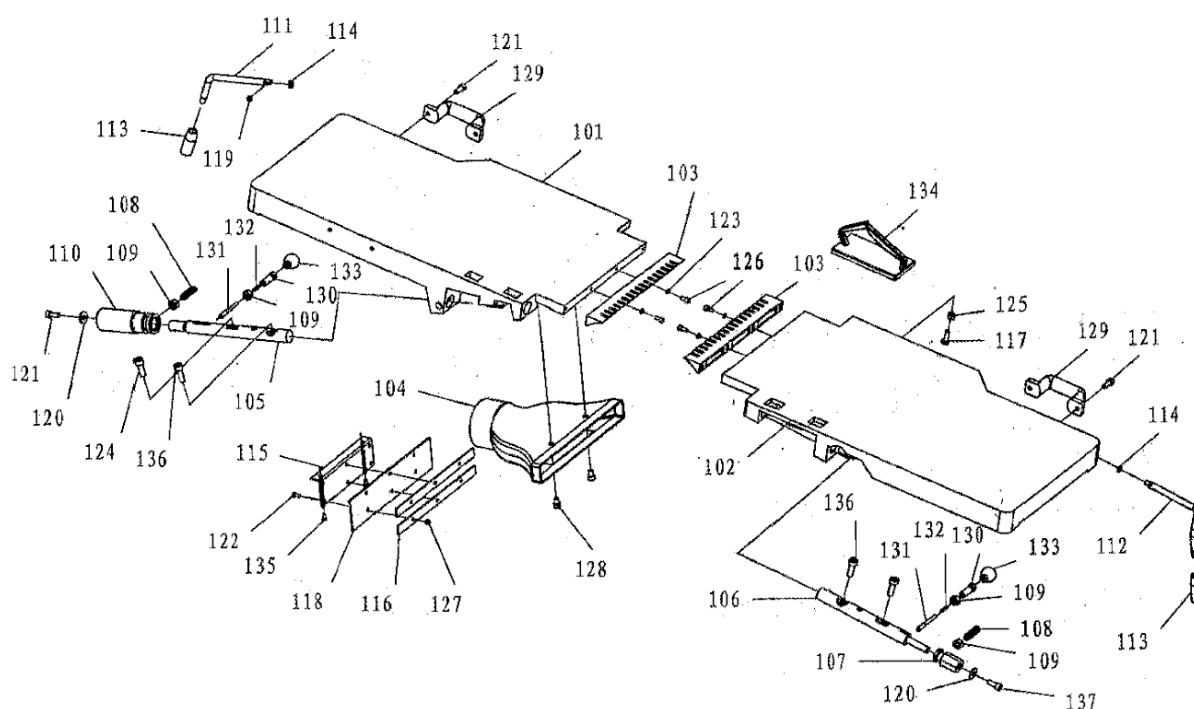


No.	Description	No.	Description
1	Frame	13-3	Flat washer 8
1-1	Hinge shaft bracket (right)	14	Emergency stop switch
1-2	Hinge shaft bracket (left)	14-1	Protect cover



2	Drove shaft cover	16	Knob bolt M8
3	Cover frame	17	Switch
3-1	Cover	18	Power cord
4	Door	19	Depth scale
5	Side opening cover	21	Cap screw M10x25
5-1	Hex bolt M6x10	21-1	Cap screw M10x35
5-2	Flat washer M6	21-2	Lock washer 10
6	Carriage bolt M10x25	22	Philips head screw M4x10
6-1	Special screw M10x40	26	Strain relief
7	Flat washer M10	27	Plastic nut
8	Hex nut M10	29-3	Contactor
9	Motor bracket	29-4	Thermal relay
10	Planer scale	29-5	On button
11	Philips head screw M5x10	29-6	Off button
12	Reinforcement plate	30	Switch box
12-1	Hex bolt M8x16	32	Philips head screw M6x16
12-2	Flat washer 8	34	Hex nut M6
12-3	Hex nut M8	35	Knob M6x17
12-4	Hex bolt M8x60	36	Protection plate
13	Square support	38	Wheel
13-1	Hex nut M8x12	39	Axis
13-2	Tap screw M8x40	43	Special screw
15	Emergency stop switch cord		

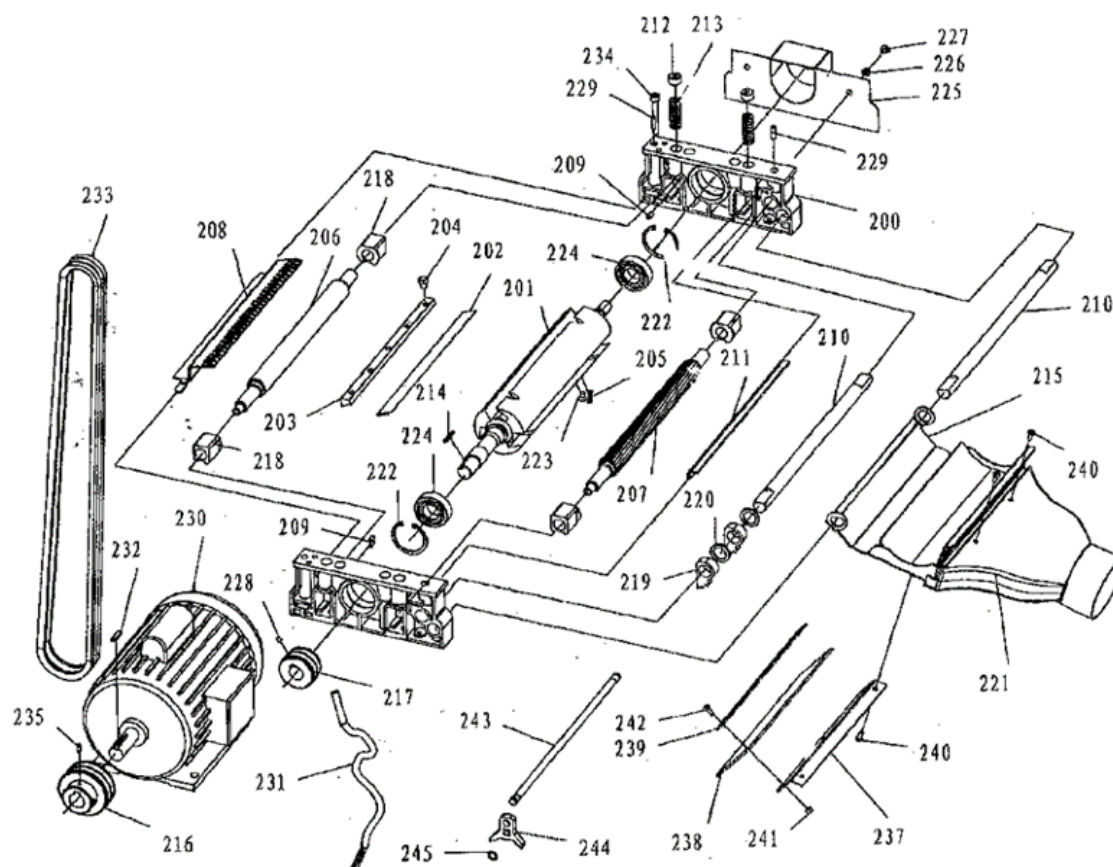
Table assembly:





No.	Description	No.	DescriptionQty
101	Entry planer table	120	Washer 8
102	Exit planer table	121	Cap screw M8x20
103	Table lip	122	Philips head screw M5x12
104	Jointer dust port	123	Lock washer 6
105	Hinge shaft A	124	Cap screw M10x25
106	Hinge shaft B	125	Hex nut M8
107	Outfeed table adjusting knob	126	Cap screw M6x16
108	Guide screw	127	Hex nut M5
109	Hex nut M12	128	Cap screw M8x12
110	Infeed handgrip	129	Handle
111	Infeed lock lever	130	Special screw M12
112	Outfeed lock lever	131	Plunger
113	Plastic knob M10	132	Spring
114	Retaining ring 12 mm	133	Knob M6
115	L-bracket	134	Sliding wood
116	Plate	135	Philips head screw M5x10
117	Hex bolt M8x25	136	Cap screw M10x30
118	Plate	137	Cap screw M8x16
119	Philips head screw M5x6		

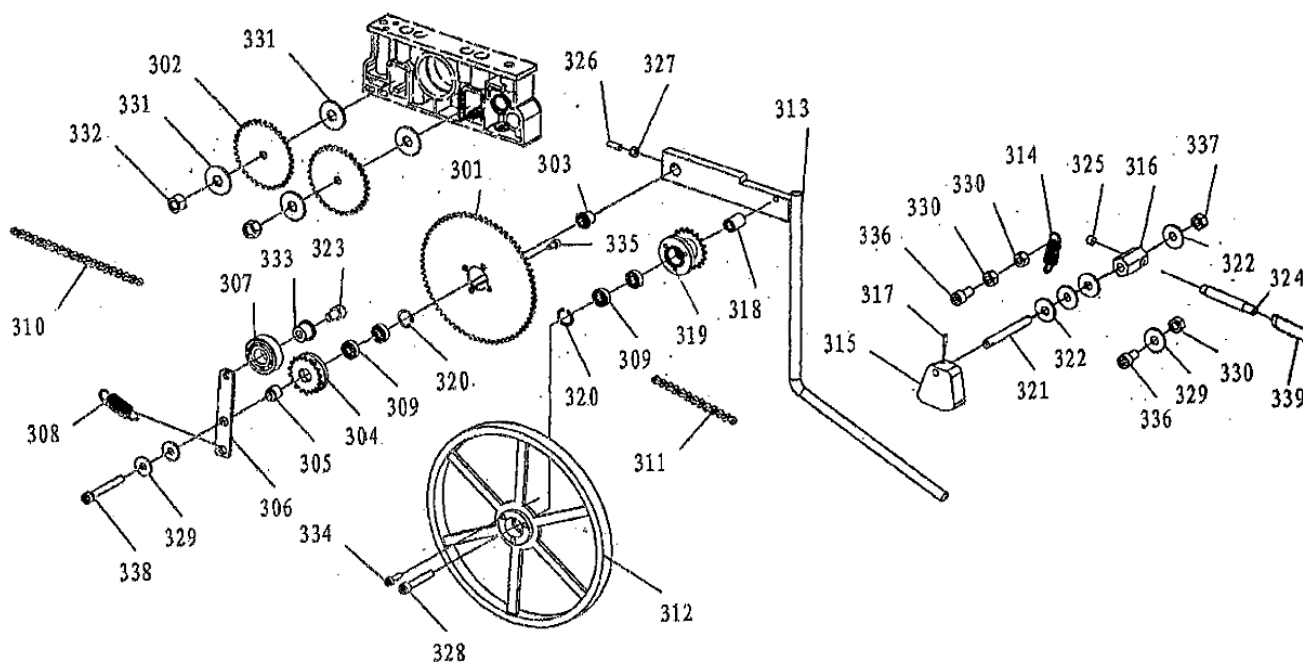
Cutter head and motor:





No.	Description	No.	Description
200	Cutter head block	223	Flat head allen screw M5x16
201	Cutter head	224	Ball bearing 6205
202	Blade	225	Guard
203	Gib	226	Flat washer 6
204	Gib bolt M8x10	227	Hex bolt M6x8
205	Spring	228	Set screw M6x6
206	Put-out roller	229	Set screw M6x20
207	Feed roller	230	Motor
208	Cover	231	Motor cord
209	Alignment pin Ø 5x16	232	Pivot pin 8x35
210	Pivot pin	233	V-belt 01300
211	Square support	234	Cap screw M8x80
212	Dowel	235	Set screw M6x10
213	Compression spring	237	Bracket
214	Key 6x20	238	Plate
215	Dust chute plate	239	Plate
216	Motor pulley	240	Philips head screw M5x12
217	Pulley	241	Hex nut M5
218	Support	242	Philips head screw M5x10
219	Anti kick back finger	243	Knife gauge bar
220	Spacer	244	Knife gauge
221	Dust hood	245	Retaining ring 10 mm
222	Retaining ring 52 mm		

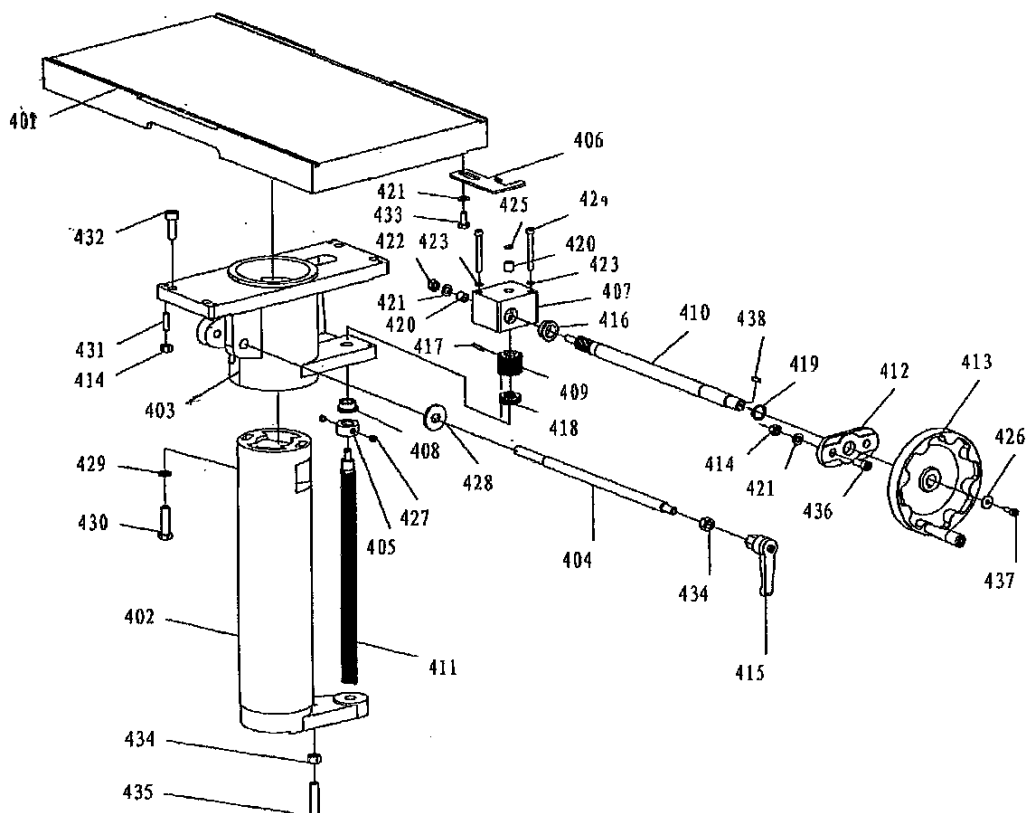
Drive assembly:





No.	Description	No.	Description
301	Sprocket 66t	321	Stud
302	Sprocket 34T	322	Flat washer 10
303	Bushing	323	Cap screw M10x12
304	Sprocket 18T	324	Lever
305	Spacer	325	Set screw M10x12
306	Arm	326	Set screw M6x12
307	Ball bearing 6204	327	Hex nut M6
308	Tension ring	328	Cap screw M8x50
309	Ball bearing 608	329	Flat washer 8
310	Roller chain	330	Hex nut M10
311	Roller chain	331	Flat washer 12
312	Contract wheel	332	Hex nut M12
313	Lever	333	Bushing
314	Tension ring	334	Cap screw M5x20
315	Cam	335	Cap screw M6x10
316	Cam shaft	336	Cap screw M8x20
317	Roll pin Ø 3x16	337	Lock nut M10
318	Spacer	338	Cap screw M*x65
319	Sprocket 19T	339	M10 plastic knob
320	Retaining ring 22 mm		

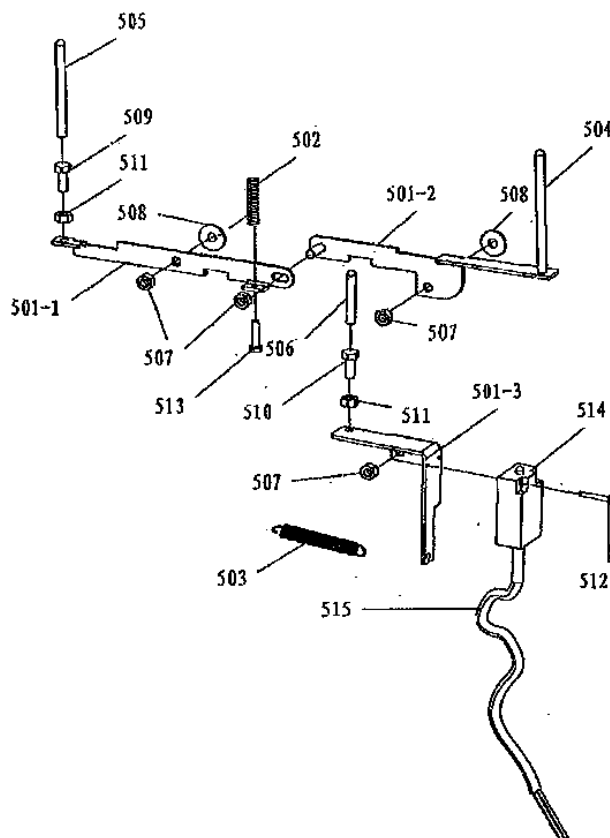
Thicknesser table:





No.	Description	No.	Description
401	Thicknesser table	420	Bushing
402	Column	421	Flat washer 8
403	Cylinder liner	422	Lock nut M8
404	Lock screw	423	Lock washer 6
405	Collar	424	Cap screw M6x55
406	Thickness pointer	425	Retaining ring 8
407	Gear box	426	Big washer 6
408	Bushing	427	Set screw M8x6
409	Gear	428	Flat washer 12
410	Worm shaft	429	Lock washer 10
411	Elevation lead screw	430	Hex bolt M10x35
412	Shield plate	431	Set screw M8x35
413	Handwheel	432	Cap screw M10x30
414	Hex nut M8	433	Hex bolt M8x12
415	Universal lock lever	434	Hex nut M10
416	Bushing	435	Set screw M10x50
417	Roll pin 4x25	436	Philips head screw M8x20
418	Thrust bearing 51102	437	Cap screw M6x16
419	Retaining ring 19 mm	438	Key 5x20

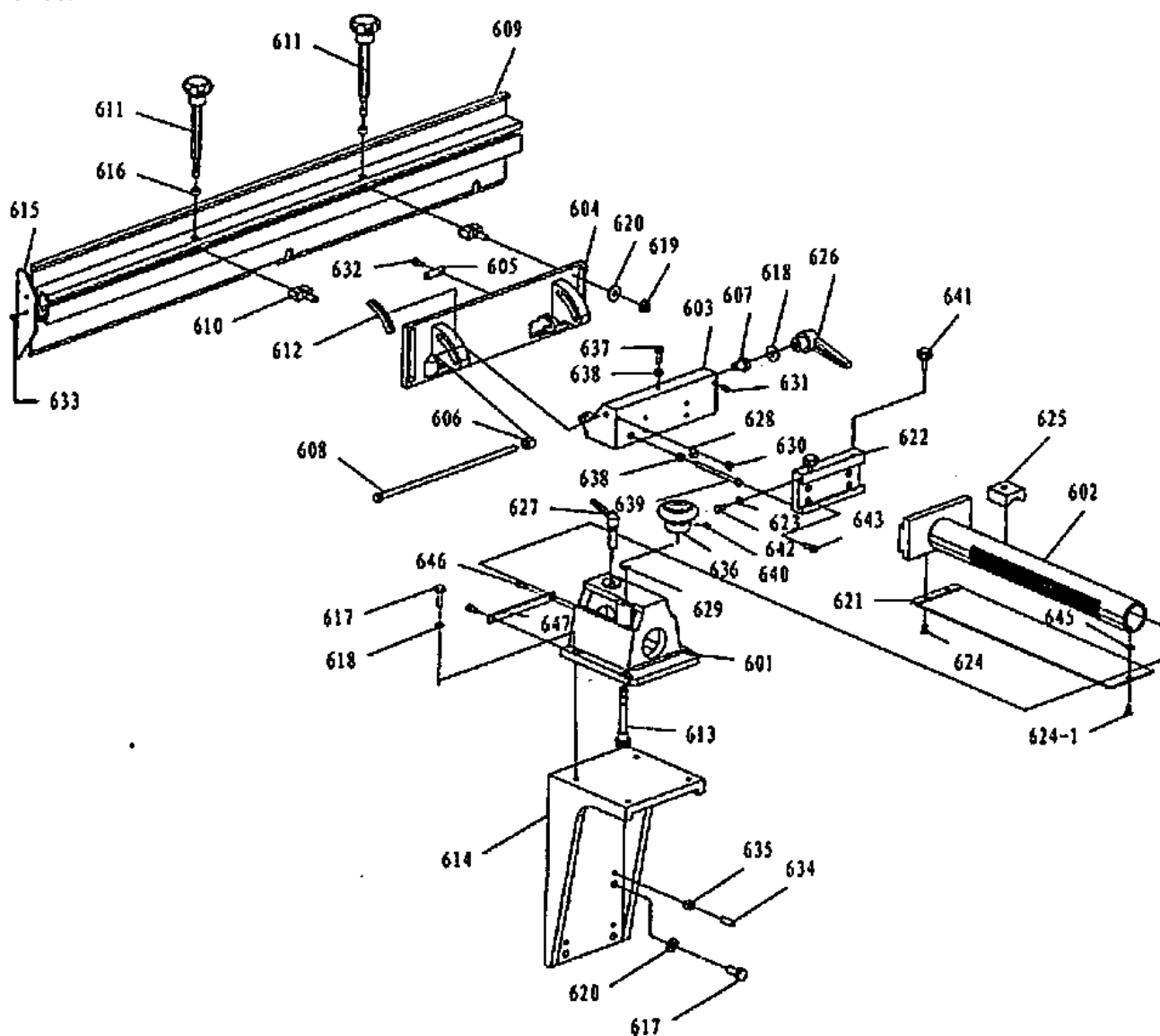
Limit switch:





No.	Description	No.	Description
501-1	Swing lever (F)	508	Flat washer 8
501-2	Swing lever (M)	509	Hex bolt M8x25
501-3	Limit switch bracket	510	Hex bolt M8x16
502	Compression spring	511	Hex nut M8
503	Extension spring	512	Cap screw M4x30
504	Switch activation rod	513	Cap screw M6x20
505	Switch activation rod	514	Limit switch
506	Switch activation rod	515	Limit switch control cord
507	Lock nut M8		

Fence:

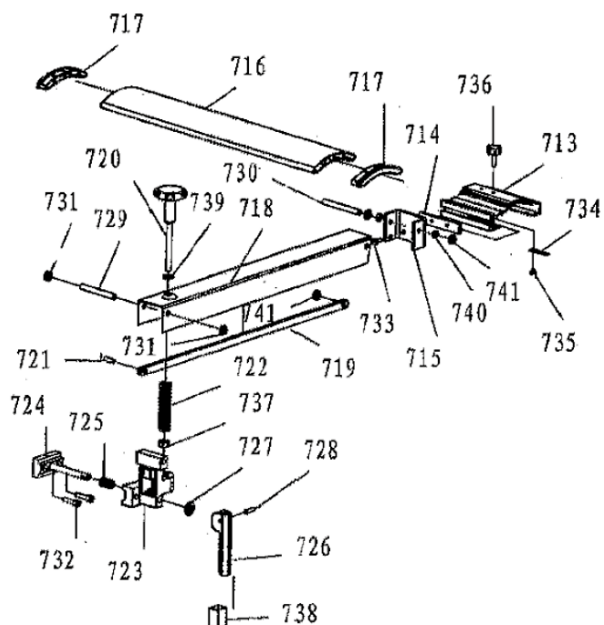
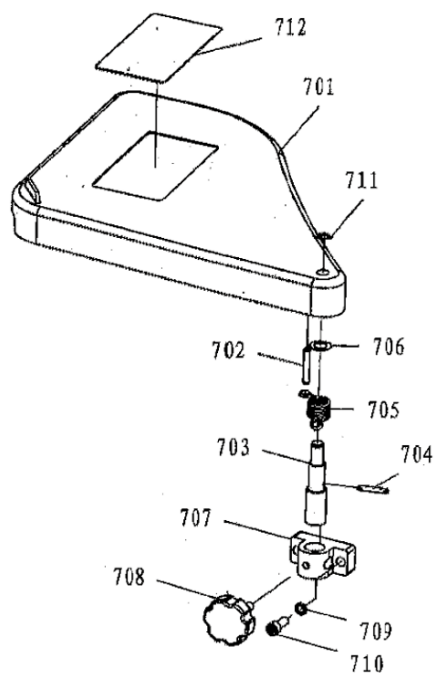


No.	Description	No.	Description
601	Fence base	624	Philips head screw M6x10
602	Adjustment tube w/rack	625	Tube locking shoe
603	Trunnion bracket	626	Universal lock lever M8x63



604	Trunnion	627	Universal lock lever M10x80x50
605	Pivot stud	628	Pointer
606	Spacer	629	Returning ring 10
607	Adjustment screw	630	Philips head screw M5x6
608	Adjustment rod	632	Philips head screw M5x16
609	Fence	633	Philips head screw ST3.9x10
610	Sliding bolt	634	Set screw M8x25
611	Eccentric shaft	635	Nut M8
612	Fence angle scale	636	Handle
613	Pinion shaft	637	Hex bolt M6x20
614	Fence support	638	Nut M6
615	Side plate	639	Hex nut M6x90
616	Bushing	640	Set screw M6x6
617	Hex bolt M8x30	641	Knob screw M6x25
618	Washer 8	642	Hex bolt M6x12
619	Lock nut M8	643	Cap screw M6x25
620	Big washer 8	645	Washer 4
621	Cutter knife guard	646	Philips head screw M5x10
622	Dovetail bracket	647	Fence
623	Washer 6	624-1	Philips head screw M6x12

Cutterhead guard assembly:

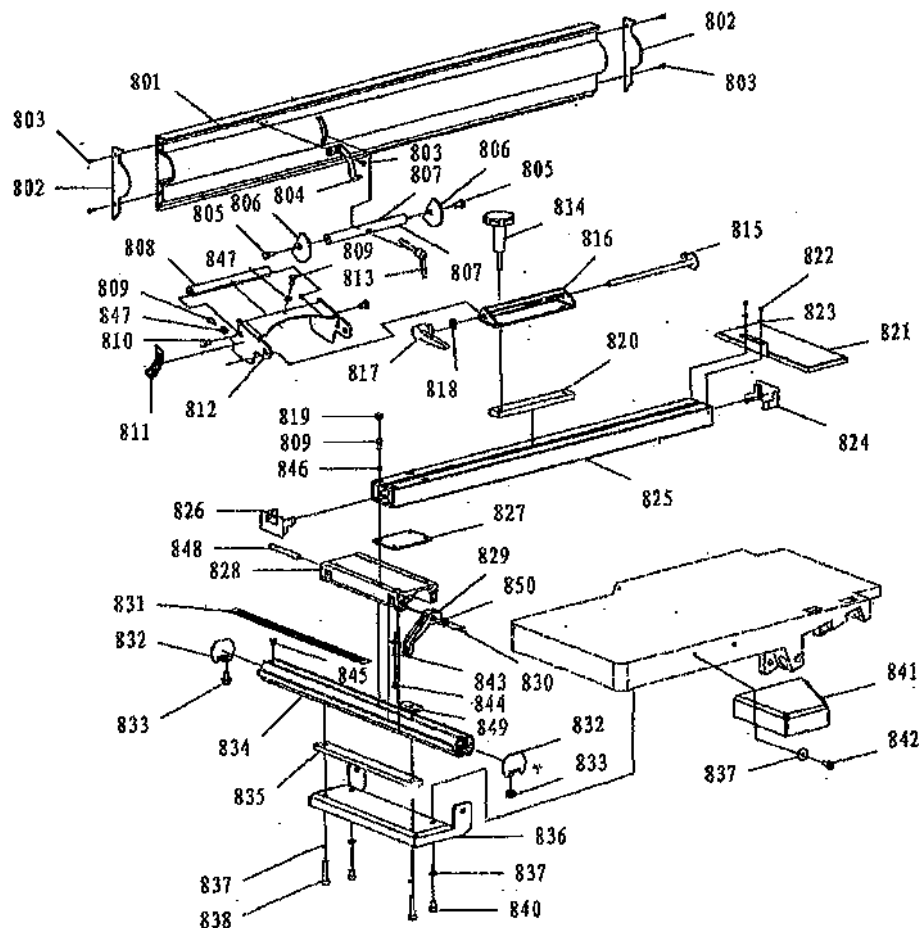


No.	Description	No.	Description
701	Cutter head guard	722	Hex nut M6x90
702	Roll pin 6x40	723	Adjustment base
703	Stud	724	Unmove base



704	Roll pin 6x40	725	Lock spring
705	Torsion spring	726	Lock handle
706	Load washer 18	727	Washer
707	Guard bracket	728	Spring pin Ø 5x20
708	Knob screw M8x20	729	Stud I
709	Lock washer	730	Stud II
710	Cap screw M8x25	731	Lock nut M8
711	Ext. retaining ring 12	732	Cap screw M6x20
712	Warning label	733	Philips head screw M5x10
713	Blade guard base	734	Protect plate
714	Sliding plate	735	Philips head screw M4x6
715	Blade guard plate	736	Knob M6x17
716	Blade guard	737	Nut M8
717	Blade guard lid	738	Rubber handle
718	Square tube	739	Washer 8
719	Link	740	Washer 6
720	Adjustment knob	741	Lock nut M6
721	Set screw M6x20		

Fence assembly:





No.	Description	No.	Description
801	Fence	826	Block
802	Slide palte	827	Sliding bar
803	Philips head screw M5x16	828	Carriage
804	Scale pointer	829	Lock handle
805	Cap screw M8x20	830	Roll pin
806	Support plate	831	Length scale
807	Support rod	832	Block
808	Lock rod	833	Hex bolt M8x12
809	Cap screw M6x16	834	Rail
810	Special bolt	835	Pad
811	Angle scale	836	Support plate
812	Turning base	837	Washer 8
813	Adjusting bolt M10x65	838	Cap screw M8x25
814	Lock handle M8x20	840	Cap screw M8x16
815	Lock bar	841	Side support plate
816	Lock base	842	Cap screw M4x8
817	Adjusting bolt M10x95	843	Spring plate
818	Washer 10	844	Philips head screw M4x8
819	Plastic insert	845	Cap screw M5x12
820	Sliding bar	846	Lock washer 6
821	Protect plate	847	Nut M6
822	Cap screw M4x8	848	Lock pin
823	Washer 4	849	Rail insert
824	Block	850	Spring washer
825	Cross beam		

Mortiser assembly (optional):

