HOLZMANN MASCHINEN GmbH
Marktplatz 4
4170 Haslach an der Mühl | AUSTRIA
+43 (0) 7289 71562-0 | FAX 7289 71562-4
info@holzmann-maschinen.at | www.holzmann-maschinen.at

CZ NÁVOD K OBSLUZE **FRÉZKA**

Překlad / Translation

EN OPERATING MANUAL **SPINDLE SHAPER**

FS160SOLID

Vydání: 16.06.2020 – Revize - 00 – RaR - CZ/EN

2 BEZPEČNOSTNÍ SYMBOLY / SAFETY SIGNS

CZ BEZPEČNOSTNÍ SYMBOLY
VÝZNAM SYMBOLŮ

EN SAFETY SIGNS
DEFINITION OF SYMBOLS

CZ **CE-SHODA!** - Tento výrobek je v souladu se směrnicemi ES.

EN **CE-Conformal!** - This product complies with the EC-directives.

CZ Použití rukavic je zakázané!

EN Do not use wearing gloves!

CZ Odpojte zástrčku od sítě

EN Disconnect mains plug from electrical outlet

CZ **Osobní ochranné pomůcky**

EN **Personal Protection Equipment**

CZ **Výstraha před řeznými zraněními!**

EN **Warning about cut injuries!**

CZ Poranění rukou pohyblivými částmi!

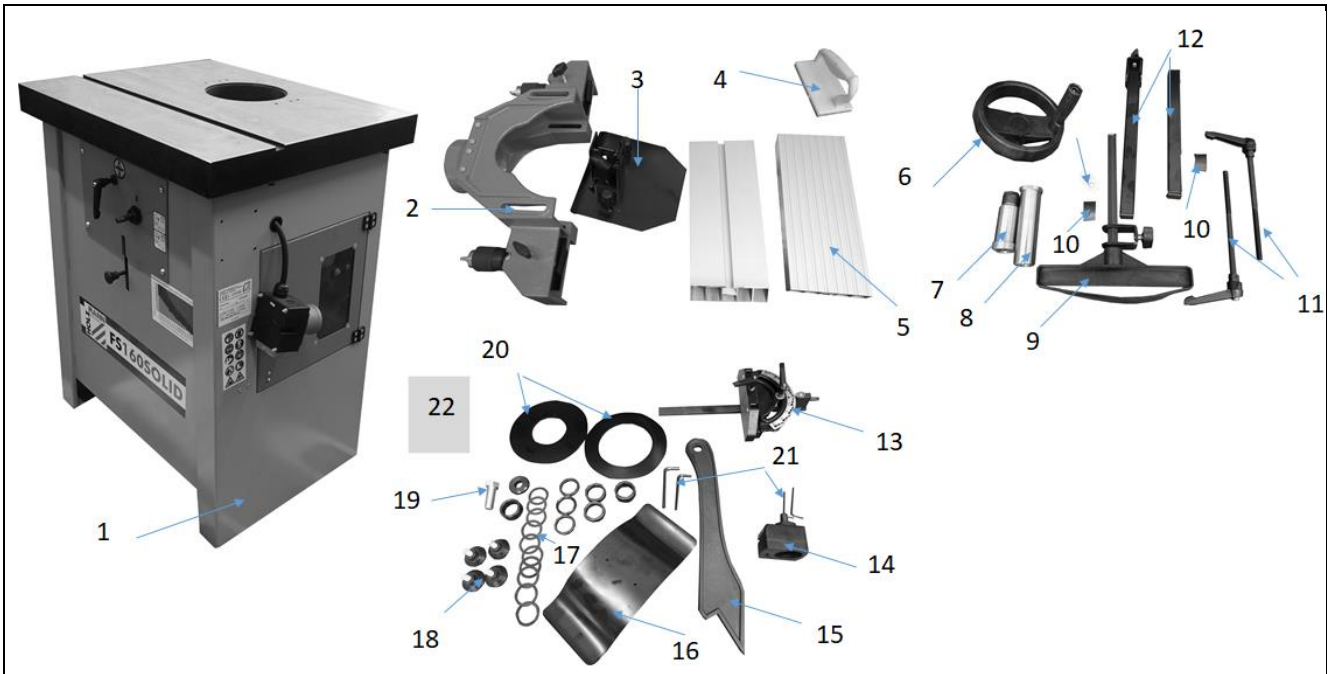
EN Hand injury due to moving parts!

CZ **Výstražné štítky a/nebo nálepky na stroji, které jsou již nečitelné nebo chybějí, musejí být okamžitě obnoveny!**

EN **Missing or non-readable security stickers have to be replaced immediately!**

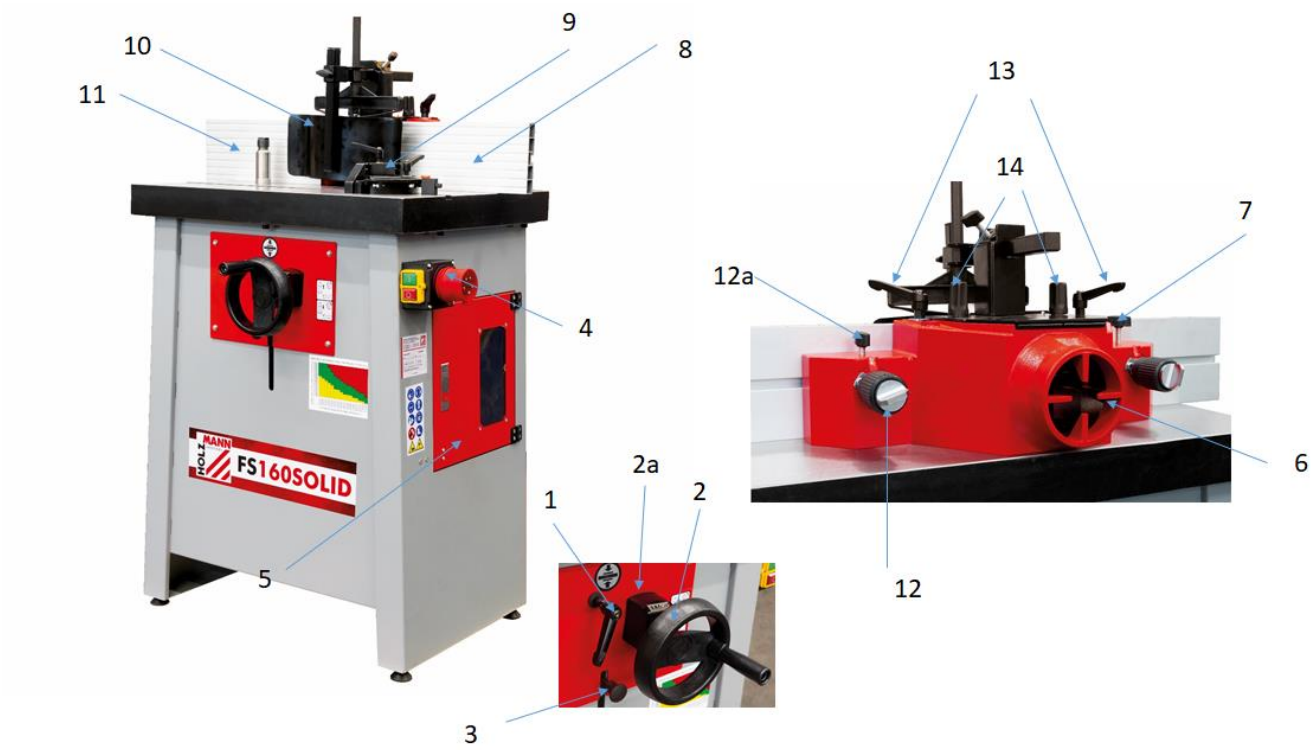
3 TECHNIKA / TECHNICS

3.1 Součást dodávky / Delivery content



#		#	
1	Stroj / machine	**12**	Tyč přítlačné patky / pressure shoe rods
2	Ochranný kryt frézy / protection hood	**13**	Úhlové pravítko / mitre gauge
3	Kryt ochranného krytu / Cover Protective hood	**14**	Počítadlo výšky vřetene / counter spindle height
4	Posunovač obrobku / sliding wood	**15**	Posunovač obrobku / push stick
5	Frézovací pravítko / workpiece stop (fence)	**16**	Přítlačná patka (frézovací pravítko) / hold down (fence)
6	Ruční kolo výškového nastavení vřetene / handwheel height adjustment spindle	**17**	Kroužky vřetene / spindle rings
7	Výměnné vřeteno pro kleštiny ø12 / Exchange-spindle for collets	**18**	Pryžové patky / rubber feet
8	Frézovací vřeteno / cutter spindle ø30mm	**19**	Šestihranný šroub vřetene / screw spindle
9	Přítlačná patka (stůl) / hold down (table)	**20**	Kroužky stolu / table inlet rings
10	Upínací plechy pro tyč přítlačné patky / Clamping plate for pressure shoe rods	**21**	Nářadí / tools
11	Aretační páky ochranného krytu / clamping rods protection hood	**22**	Návod k obsluze / manual

3.2 Komponenty / Components



Čís.	Popis / description	Čís.	Popis / description
1	Aretační páka výšky vřetene / locking lever spindle height	**8**	Frézovací pravítko (přední) / milling *fence (front)*
2	Ruční kolo nastavení výšky vřetene / spindle height adjustment wheel	**9**	*Úhlové pravítko / miter gauge*
2a	Počítadlo výšky vřetene / counter spindle height	**10**	*Přítlačná patka / hold downs*
3	Zámek rotace vřetene / spindle rotation lock	**11**	Frézovací pravítko (zadní) /milling *fence (rear)*
4	Hlavní vypínač ZAPNUTO-VYPNUTO / ON-OFF-switch	**12**	*Jemné nastavení frézovacího* pravítka / *fine-adjusment milling fence*
5	Přístup k přestavbě otáček vřetene / Access to adapted spindle speed	**12a**	*Zajišťovací šroub frézovacího* pravítka / *fixation screw milling fence*
6	Přípojka odsávání / dust collector port	**13**	*Aretační páka ochranného krytu / clamping rod protection hood*
7	Ochranný kryt frézy / protection hood	**14**	*Zámek krytu ochranného krytu / protection hood cover lock-fixation*

3.3 Technické údaje / Technical Data

Napětí Voltage	230V / 50Hz 400V/3p/50Hz
Výkon motoru S1 Motor power	2,2 kW
Otáčky vřetene - 4 stupně spindle speeds - 4 steps	1400 / 4000 / 6000 / 9000 min^{-1}
Max. zdvih vřetene / max. spindle travel	100
Vřeteno Ø / spindle Ø	30
Max. upínací výška / max. clamping height	105 mm
Otvor stolu / table opening	160 mm
Max. Ø nástroje pod stolem / max. tool Ø below table	150 mm
Max. Ø nástroje nad stolem / max. tool Ø above table	160 mm
Pracovní stůl / work table	620 x 510
Výška stolu / table height	860
Potřebný objem vzduchu odsávacího zařízení / necessary air volume	>570 m³/h (suchý, dry 20m/s) > 790 m³/h (mokrý, wet 28m/s)
Potřebný podtlak odsávacího zařízení / vacuum dust collector	1000 Pa
Přípojka odsávání ø / dust collector port-ø	100 mm
Rozměr stroje (LxBxH) machine dimension (LxWxH)	640 x 660 x 1250mm
Rozměr balení / packaging dimension	720 x 550 x 960 mm
Hladina akustického výkonu L_{WA} / sound power level L_{WA}	103 dB(A) k: 3dB(A)
Hladina akustického tlaku L_{PA}/ Sound pressure level L_{PA}	89,5 dB(A) k: 3dB(A)
Hmotnost netto net Weight	104,5 kg
Hmotnost btto gross-weight	124,5 kg

(CZ) Poznámka k emisím hluku: Uvedené hodnoty jsou emisní hodnoty, a proto nemusí být nutně bezpečnými hodnotami na pracovišti. Ačkoli existuje korelace mezi úrovní emisí a imisí, nelze spolehlivě odvodit, zda jsou nutná dodatečná preventivní opatření nebo nikoliv. Mezi faktory, které ovlivňují úroveň imisí skutečně přítomných na pracovišti, patří povaha pracovního prostoru a další zdroje hluku; tj. počet strojů a dalších pracovních procesů. Povolené hodnoty na pracovišti se mohou v jednotlivých zemích lišit. Tyto informace by však měly uživateli umožnit lepší odhad nebezpečí a rizik.

(EN) Notice noise emission: Operating conditions for noise measurement comply with annex B of ISO 7960. 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.

11 PREFACE (EN)

Dear Customer!

This manual contains information and important instructions for the installation and correct use of the spindle shaper FS160SOLID.
Following the usual commercial name of the device (see cover) is substituted in this manual with the name "machine".

This manual is part of the product and shall not be stored separately from the product. Save it for later reference and if you let other people use the product, add this instruction manual to the product.

Please read and obey the security instructions!

Due to constant advancements in product design, construction pictures and content may diverse slightly. However, if you discover any errors, inform us please.

Technical specifications are subject to changes!

Please check the product contents immediately after receipt for any eventual transport damage or missing parts.

Claims from transport damage or missing parts must be placed immediately after initial product receipt and unpacking before putting the product into operation.

Please understand that later claims cannot be accepted anymore.

Copyright

Customer service contact

HOLZMANN MASCHINEN GmbH
4170 Haslach, Marktplatz 4
AUSTRIA
Tel +43 7289 71562 - 0
Fax +43 7289 71562 – 4
info@holzmann-maschinen.at

12 SAFETY

This section contains information and important notes on safe commissioning and handling of the machine.

For your personal safety, please read these operating instructions carefully before commissioning. This will enable you to handle the machine safely and prevent misunderstandings as well as personal injury and damage to property. Also observe the symbols and pictograms used on the machine as well as the safety and danger information!

12.1 Intended Use of the Machine

The machine is intended exclusively for the following activities:

Milling/Spindle shaping at the fence (lengthwise and crosswise) of wooden workpieces and materials with similar physical properties to wood.

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

12.1.1 Technical Restrictions

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

Rel. Humidity:	max. 65 %
Temperature (operational)	+5° C bis +40° C
Temperature (Storage, Transport)	-20° C bis +55° C

12.1.2 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 in a potentially explosive environment (machine can generate ignition sparks during operation)
- Operation of the machine in closed rooms without chip and dust extraction (a normal household vacuum cleaner is not suitable as an extraction device).
- Operating the machine outside the limits specified in this manual
- Remove the safety markings attached to the machine.
- Modify, circumvent or disable the safety devices of the machine.
- Cutting of materials with dimensions outside the limits specified in this manual
- Use of tools which do not meet the safety requirements of the standard for machine tools for woodworking (EN847-1).
- For curved work and tenoning.

The improper use or disregard of the versions and instructions described in this manual will result in the voiding of all warranty and compensation claims against Holzmann Maschinen GmbH.

12.2 User Requirements

The physical and mental suitability as well as knowledge and understanding of the operating instructions are prerequisites for operating the machine. Persons who, because of their physical, sensory or mental abilities or their inexperience or ignorance, are unable to operate the machinery safely must not use it without the supervision or instruction by a responsible person.

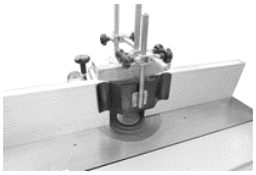
Please note that local laws and regulations may stipulate the minimum age of the operator and restrict the use of this machine!

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

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

12.3 Safety Devices

The machine is equipped with the following safety devices:

Hold downs/ dust collector/protection hood cutter 	• Separating protective device (fixed)
Access spindle speed adjustment 	• Moveable guard (with sensor monitored).

12.4 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 must be observed:

- Before commissioning, check the machine for completeness and function.
- 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!
- Only use perfect tools that are free of cracks and other defects (e.g. deformations).
- Remove setting tools from the machine before switching 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. If necessary, stop the machine before leaving.
- The machine may only be operated, serviced 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 an appropriate safety distance from the machine and, in particular, 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 wear loose clothing, ties, jewellery, etc. - danger of being drawn in!
- Work with gloves on rotating parts is not permitted!
- 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!
- Do not remove splinters and chips by hand! Use a sliding stick for this purpose!
- 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 you are 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)!
- Do not use the machine if it cannot be switched on and off with the ON/OFF switch.
- Make sure that the device 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 any work on the machine, wait until all tools or machine parts have come to a complete standstill and secure the machine against unintentional restarting.

12.5 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 power tool. Keep the cable away from heat, oil, sharp edges or moving parts.
- Proper plugs and sockets reduce the risk of electric shock.
- Water entry into machine increases the risk of electric shock. Do not expose machine to rain or moisture.
- The machine may only be used in humid environments if the power source is protected by a residual current circuit breaker.
- Do not use the machine if it cannot be turned on and off with the ON/OFF switch.

12.6 Special Safety Instructions for Woodworking machines

- Work with gloves on rotating parts is not permitted!
- During operation of the machine wood dust is generated. Therefore, connect the machine to a suitable dust collection system for dust and chips during installation!
- Always switch on the dust collection system before you start machining the workpiece!
- Never remove sections 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 milling cutters approved for the machine!
- At manual feed, place hands flat on the workpiece with closed fingers and feed steadily.
- For long workpieces, use optional workpiece supports to reduce the risk of tilting.

12.7 Hazard Warnings

Despite their intended use, certain residual risks remain. Due to the structure and construction of the machine, hazardous situations may occur when handling the machines.

12.7.1 Residual risk:

- Risk of injury from tools, especially when changing tools
- Risk of injury from workpieces/workpiece parts that can be thrown away
- Risk of injury due to recoil of the workpiece

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.

NOTICE

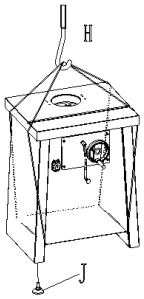
A safety notice designed in this way indicates a potentially hazardous situation which, if not avoided, may result in property damage.

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!

13 TRANSPORT

WARNING

Damaged or insufficiently strong hoists and load lifting equipment may result in serious injury or even death. Always check hoists and load lifting equipment for adequate load-bearing capacity and perfect condition, secure the loads carefully and never stand under lifting loads.



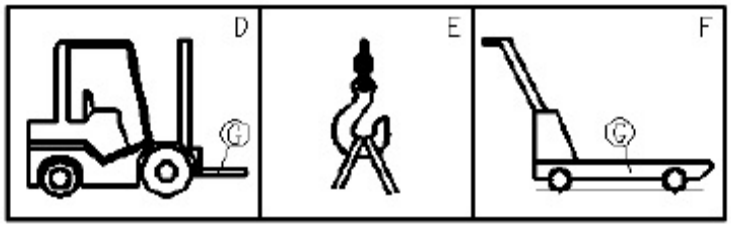
To ensure proper transport, also observe the instructions and information on the transport packaging regarding centre of gravity, attachment points, weight, means of transport to be used and the prescribed transport position, etc..

NOTICE: To lift the machine, you need a forklift truck (D), pallet truck (F) with the appropriate load capacity and a fork of at least 1200 mm length or a crane.

The fork (G) of the truck should be positioned under the machine as shown in the illustration on the left.

If you are using a crane (E), proceed as follows:

- Prepare two pieces of ropes or belts (H) with appropriate load-bearing capacity and length;
- Hook the ropes to the crane hook;
- Attach the ropes as shown on the picture above.
- Position the crane so that the machine can be lifted without tipping.
- Gently lift the machine to avoid shocks and load fluctuations and carefully transport it to the installation site.



14 ASSEMBLY

14.1 Checking Scope of Supply

Check the machine immediately after delivery for transport damage and missing parts.

14.2 The workplace

Choose a suitable place for the machine.

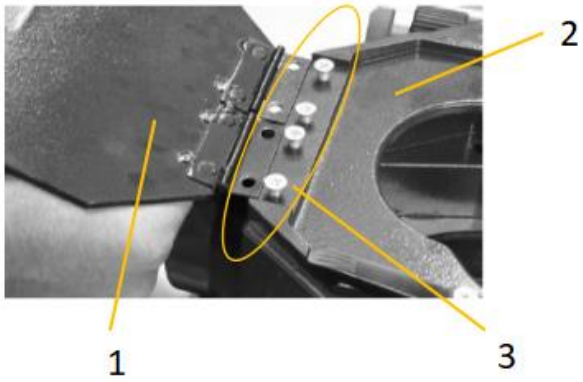
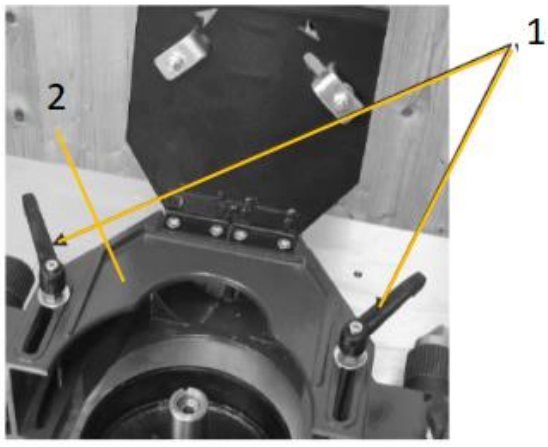
Pay attention to the safety requirements and the dimensions of the machine.

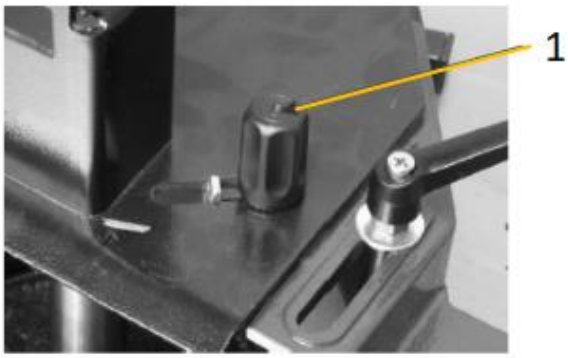
The selected location must ensure a suitable connection to the electrical supply as well as the possibility of connection to an extraction system. Make sure that the floor can support the load of the machine. The machine must be levelled simultaneously at all support points. It is also necessary to guarantee 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.

Always work in front of the machine from right to left.

14.3 Assembling the machine

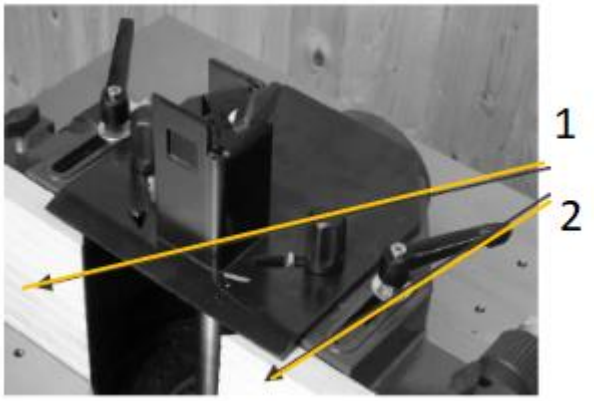
The machine is pre-assembled, the parts removed for transport must be assembled according to the following instructions and the connection to mains have to be made.

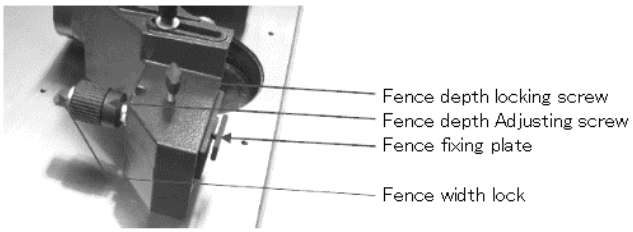
	1. <u>Assembly Cover</u> There are four screws (3) on the top of the protective hood (2). Remove the screws (3) and attach the hinged top cover (1) as shown.
	2. <u>Assembly Protective hood</u> Assemble the protective hood (2) to the machine table using the two screws (1). The protective hood (2) can be fixed here at different positions adapted to the workpiece to be machined.



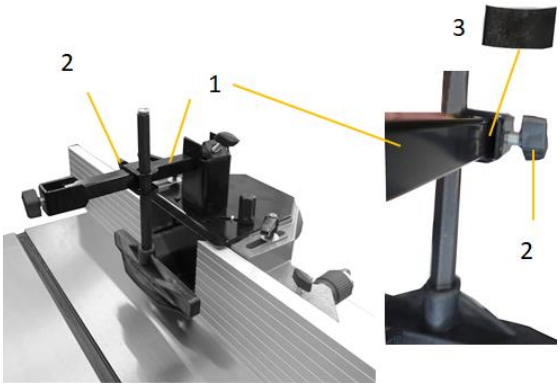
3. <u>Locking the cover</u>
   To lock the cover, release the lock button (1), slide the clamp away from the center of the hood so that the tongue is under the hood, and retighten the lock button (1). Repeat the same procedure on the other side.

   This cover MUST be closed and locked when the machine is in operation.

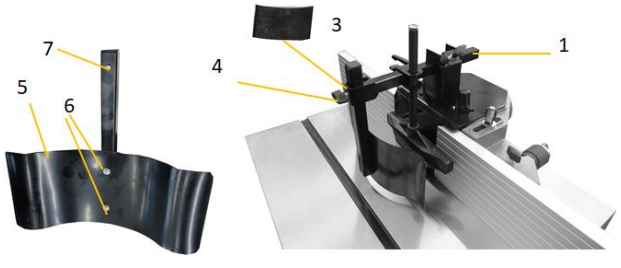




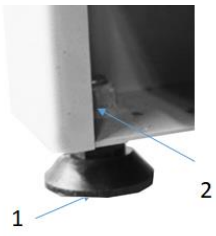
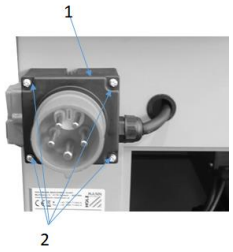
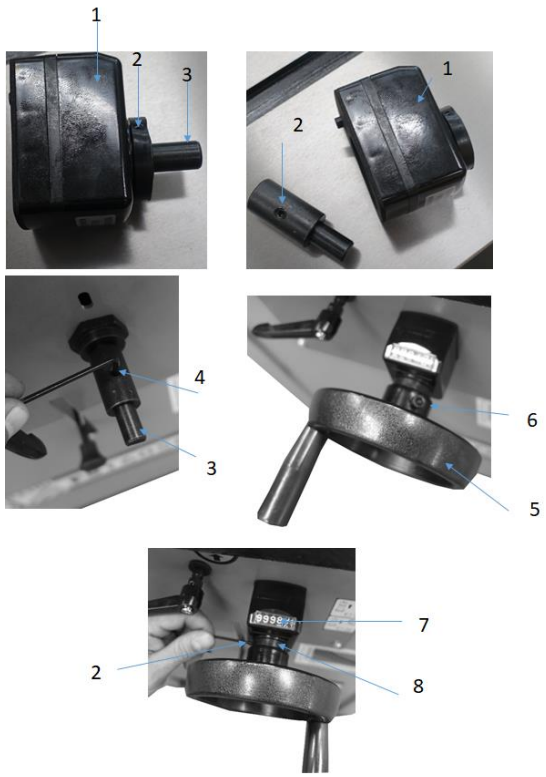
4. <u>Assembly fence</u>
   Loosen the fixing screw of the fence depth adjustment and the fixing screw of the fence width adjustment. Slide the fence over the fixing plate so that the mitred end of the stop is in the middle of the hood.
   Screw the fence firmly to the hood using the adjusting screw. After completing the adjustment work, lock both fixing screws to hold the fence in position.



5. Assembly hold down (table):
   Insert the rectangular bar (1) into the protective hood cover and lock it with the thumbscrew. Insert the pressure plate (3) between the thumb screw and the rectangular bar (1) and slide the table pressure shoe (2) onto the rectangular bar (1) and secure it with the thumb screw.



6. Assembly hold dowwn (fence)
   Assemble the fence hold down (5) on the rectangular bar using the two screws (6) as shown. Remove the screw (7), insert the pressure plate (3) between the thumb screw and the rectangular bar (4) and slide the milling fence hold down (4) onto the rectangular bar

	(1) and secure it with the thumb screw. Reassemble the screw (7). With correct adjustment, the workpiece is held firmly both on the table and on the stop
	7. Assembly rubber feet The rubber foot (1) is attached to each corner of the machine (2).
	8. Assembly switch unit The switch unit (1) is attached to the machine by means of four screws (2) and nut. (To tighten the nut, open the door to get accesss).
	9. Assembly counter and handwheel Spindle height adjustment By loosening the grub screw (2), the fixing bolt (3) can be pushed out of the counter and fixed to the machine by means of the grub screw (4). Then fix the handwheel to the bolt (3) using the cap screw (6). The counter can still be adjusted to the correct height by turning the ring (8). Then tighten the grub screw (2) so that the counter can count the height.

15 ELECTRICAL CONNECTION

WARNING

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

NOTE
Immediately after making the electrical connection, check the running direction of the band saw rollers. Observe the direction arrow on the machine. The running direction is correct if the saw band runs from top to bottom. If this is not the case, swap two phases, e.g: L1 and L2, on the mains plug.

The electrical connection is made via a switch-plug combination. This device must be operated via a residual current circuit breaker.

15.1.1 Establishing a 400 V connection

To connect the machine to the electrical mains, proceed as follows:

- Use a suitable device to check the functionality of the zero connection and earthing.
- Check that supply voltage and current frequency correspond to the specifications on the machine nameplate. A deviation of ± 5 % from the value of the supply voltage is permissible. For example, a machine with a working voltage of 380 V can work in the voltage range from 370 to 400 V. The machine can be operated with a working voltage of 380 V in the voltage range from 370 to 400 V. The machine can also be operated with a working voltage of 380 V in the voltage range from 370 to 400 V. There must be a short-circuit fuse in the power supply of the machine!
- For the required cross-section of the supply cable please refer to the current-carrying capacity table.
- It is recommended to use a cable of type H07RN (WDE0282), which must be protected against mechanical damage.
- Connect the supply cable to the appropriate terminals in the input box (L1, L2, L3, N, PE) - see the figure below. If a CEE plug is present, the connection to the mains is made via an appropriately supplied CEE coupling (L1, L2, L3, N, PE).

Voltage		
Plug connection 400V:	5-wire: **with** N conductor 	4-wire: **without** N conductor 

15.2 Connecting to a dust collection system

NOTE
The machine must be connected to dust collection system. The system must start up at the same time as the motor of the band saw starts. For materials with a humidity <12 %, the air velocity at the dust collector port and in the hoses must be at least 20 m/s (for moist chips with a humidity >12 %, at least 28 m/s). The suction hoses used must be flame-retardant (DIN4102 B1), permanently antistatic (or grounded on both sides) and comply with the relevant safety regulations. Requirements for the dust collection system refer to the technical data.

16 OPERATION

16.1 Initial check before start

- Check that the selected speed is appropriate for the tool being used.
- Check that the guards are in place and that they are set appropriately for the machining operation.
- Check whether auxillaries like push stick, sliding wood, work piece holder are available.
- Check the spindle height and angle.
- Check whether the connection to an dust collection system is available.

16.2 Operation

16.2.1 Starting the machine

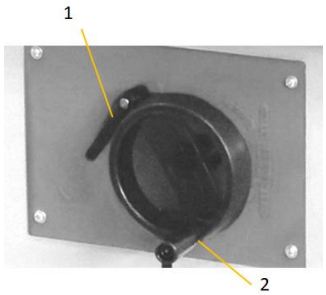
1. Switch on the spindle by pushing ON-Button I (1).
2.

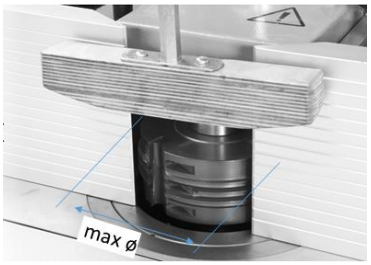
16.2.2 Stopping the machine

Normal Stopp:
Press the OFF-button (2). Motor stops.

16.2.3 Height adjustment spindle

Lose the fixing screw (1) and turn the handwheel (2) counter-clockwise to lift the spindle upwards. Clockwise rotation lowers the spindle.





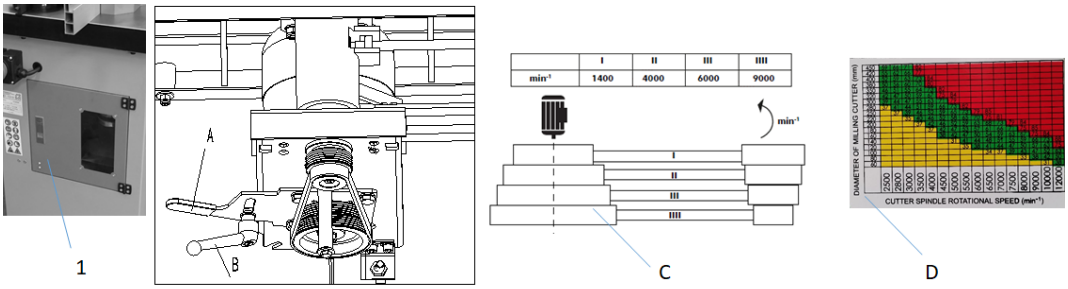
NOTICE

With mounted tool and the maximum rings removed, cutters can be countersunk under the table up to a maximum diameter (see technical data).

16.2.4 Spindle speed adjustment

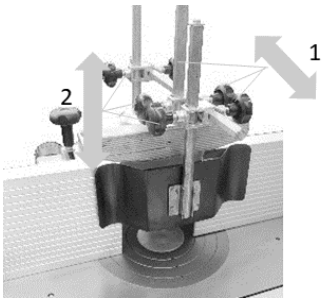
NOTICE

The cutting speed must be selected between 40m/s and 70m/s to reduce the risk of kick-back. For this purpose, the speed diagram on the machine is used as a function of the cutter diameter used.

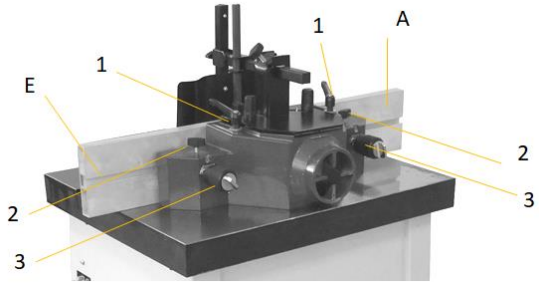


1. Stop the machine
2. Open the door (1)
3. To change the spindle speed, release the locking handle (B) and release the belt tension by moving the handle (A).
4. Set the belt to the desired speed position, consider the selection options according to sticker (C) and technical data, as well as the valid speed range for the selected cutter see table (D).
5. Then tension the belt again and fix the locking lever (B) to hold in place.

16.2.5 Adjustment down holds

	The down holds can be shifted in the vertical (2) and horizontal (1) position on the rods, allowing them to be adapted to the workpiece to be machined.

16.2.6 Adjustment fence



The fence part (E) and fence part (A) can be adjusted in their position relative to each other. For this purpose:

1. Select the appropriate working position for the selected cutter using the screws (1). There are 2 positions available on the worktable.
2. Loosen the clamping screw (2) and set the desired position of the fence with the knob (3) and then fix the clamping screw (2) again.

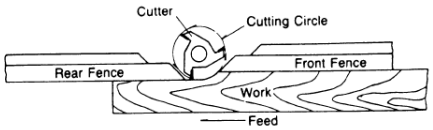
16.3 Application note

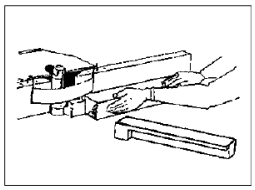
16.3.1 Working at the fence (milling of long sides and profiles)

When performing this operation, the following equipment must be used for safe work:

- the fence
- the cross-cut fence, if necessary
- the protective hood
- the hold downs (table,fence)
- the inlays in the table
- push stick, sliding wood for guiding the workpiece

Long sides:
Additional settings required before commissioning:
- Set the fence (A) exactly to the cutter's flying circle.
- Set the required chip removal with the fence (E).
- Press the workpiece against the fence and the table and guide it past the tool. Ensure that all body parts, especially the fingers, are at a sufficient distance from the tool.





Profiles:
- Set the required chip removal by means of the fence (E) and align the fence (A) exactly with the fence (E) .
- Press the workpiece against the fence and the table and guide it past the tool. Ensure that all body parts, especially the fingers, have sufficient clearance from the tool.
Switch off the machine after completion of the operation.

17 CLEANING, MAINTENANCE, STORGE, DISPOSAL

17.1 Cleaning

NOTE

Wrong cleaning agents can attack the varnish of the machine. Do not use solvents, nitro thinners, or other cleaning agents that could damage the machine's paint. Observe the information and instructions of the cleaning agent manufacturer!

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

- Therefore, clean the machine after each use and remove any sawdust with a brush, broom or vacuum cleaner.

17.2 Maintenance

WARNING

Handling the machine with the power supply up can lead to serious injuries or even death. Always disconnect the machine from the power supply before servicing or maintenance work and secure it against unintentional or unauthorised reconnection!

The machine is low-maintenance and only a few parts have to be serviced. Nevertheless, malfunctions or defects which could impair the safety of the user must be rectified immediately!

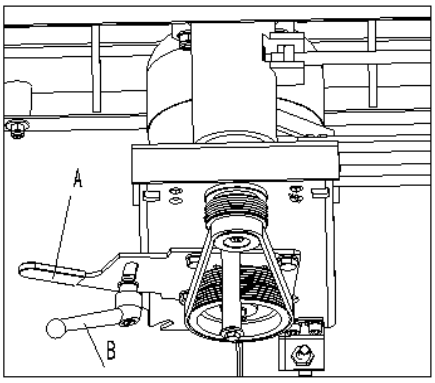
- Before each operation, check that the safety devices are in perfect condition.
- Check the connections for tightness at least once a week.
- Regularly check that the warning and safety labels on the machine are in perfect and legible condition.

17.2.1 Maintenance schedule

The type and degree of machine wear depend on the operating conditions. The following intervals apply when the machine is used within the specified limits:

interval	components	activity
Before usage	machine	Cleaning the machine
Before usage	machine	Removal of all loose parts / tools
1 x week	V-Belt tension	Check and readjust belt tension if necessary.
1 x month	Moving parts	Greasing / lubrication of guides / gear racks / wheels
1x month	break	Function test to determine that the spindles have come to a standstill within the specified time (8-10seconds).
1x month	Interlocked movable guards	interlocked movable guards - by means of a sequential opening of each guard to stop the machinery and checking that it is not possible to start the machinery with each guard open

17.2.2 Tensioning the V-Belt



1. Open the door (1) to get access to the V-Belt drive.
2. Loose fixation lever (B) and adjust correct belt-tension with Lever (A). Sufficient belt tension is achieved when the belt yields approx. 10 mm when loaded with approx. 20N (2 kg). Please make sure that the belt is not over-tensioned.
3. When belt-tension is correct fix the fixation lever (B) and close the door (1) again.

17.2.3 V-Belt change

1. Open the door (1) to get access to the V-Belt drive.
2. Fully loosen the belt-tension.
3. Lift the belt (2) from the drive roller (3) and replace it with a new one.
4. Adjust /Check correct V-Belt tension and assemble cover (1) again.

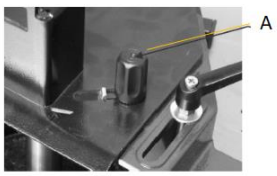
17.2.4 Tool exchange

CAUTION

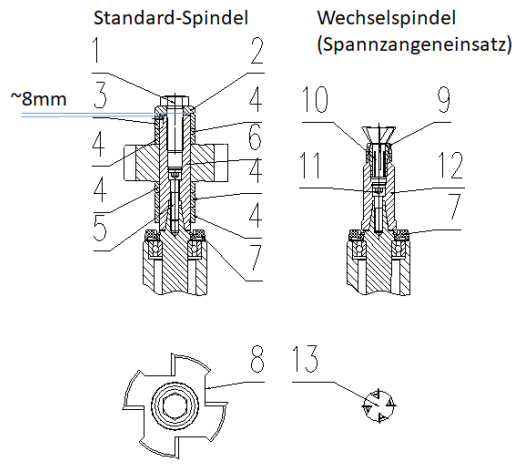
Before any manual tool change, stop the spindles, wait for all tools to come to a standstill and prevent unintentional restart.

CAUTION

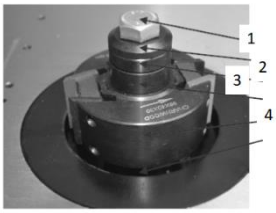
Tools are razor-sharp for protection when changing tools wear gloves and observe proper handling of tools so that damage to the cutting surfaces is prevented (no storage on a metal surface only in special boxes).



1. Move the spindle the max. uppermost position.
2. Release the protective hood lock (A) and flip the protective hood (B) up.
3. Engage spindle lock.
4. Release the fixing and slide the fences towards each other to gain access to the cutter/spindle.



1..Hex bolt
2..washer
3..spindle ring with pin
4..spindle ring
5..screw
6…spindle (upper-part) „standard
7..chip deflector
8..cutter
9..router collet nut
10..router collet
11..screw
12..spindle (uper-part) "exchange spindle)
13..router bit



5. Cutter disassembly/assembly for standard spindle
   Loosen the screw (1) on the spindle using a fork wrench.
   Remove the washer (2) and the spindle rings (3,4), clean the spindle and remove any dust and assemble the tool. The following instructions must also be observed.

NOTE

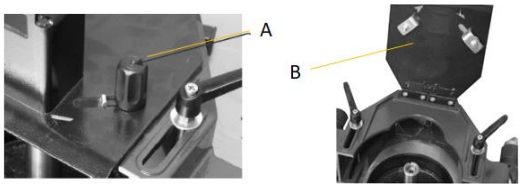
Make sure that the direction of rotation is correct.
Mount the cutter as deep as possible on the spindle to avoid vibrations. Fit the appropriate number of spindle rings so that there is still a minimum clamping length of 8 mm. When installing the cutter, put all spindle rings back on again, observe the minimum clamping length again and ensure that the ring (3) with the roll pin is in the uppermost position below the washer (2).
Close table opening as far as possible with insert rings (4).

   Then tighten screw (2). (Note the tightening torque of 32Nm). Close the cover again and set the fence and hold downs as well as the correct spindle speed according to the used tool-diameter.
6. Cutter disassemble/assemble exchange spindle (with collets)
   Loosen the collet nut (9) and remove the tool. Insert new tool and fix with collet nut (9) again.

   ATTENTION: Loosen spindle lock before switching on.

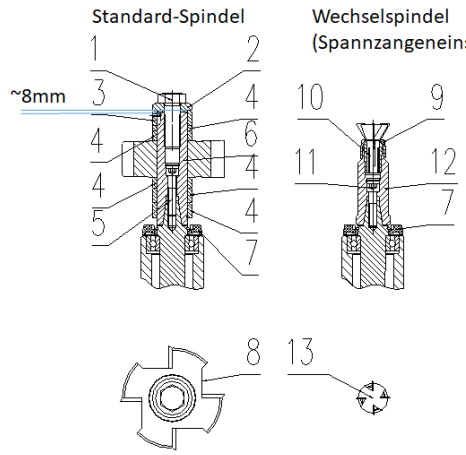
17.2.5 Changover between the two spindles

The spindle is made of two segments. The upper tool clamping area is separated and connected to the main spindle by a screw. This two-parted design allows easy changeover between the two spindle variants.

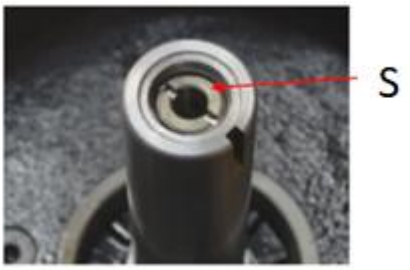


1. Move the spindle the max. uppermost position.
2. Release the protective hood lock (A) and flip the protective hood (B) up.
3. Engage spindle lock.
4. Release the fixing and slide the fences towards each other to gain access to the cutter/spindle.

5. Disassemble/Assemble spindle upper-part:
   Changing from standard (6) to exchange spindle (12):
   Loosen hexagon head screw (1), remove washer (2), spindle rings (3,4) and cutter (8).
   Using a screwdriver, remove the lock nut (S) and replace the screw (5), loosen the upper part of the standard spindle (6) and exchange with that of the exchange spindle (12).



1..Hex bolt
2..washer
3..spindle ring with pin
4..spindle ring
5..screw
6…spindle (upper-part) „standard
7..chip deflector
8..cutter
9..router collet nut
10..router collet
11..screw
12..spindle (uper-part) "exchange spindle)
13..router bit



Then tighten the screw (11) and secure it with the lock nut (S). Insert and tighten the collet insert (10), collet nut (9) and router bit (13).

To convert the exchange spindle to standard, proceed in reverse order.

17.3 Storage

NOTE

Improper storage can damage and destroy important machine parts. Store packed or unpacked parts only under the intended ambient conditions!

In case of a longer interruption of operation or shutdown, clean the machine and then store it out of the reach of children in a dry place protected from frost and other weather influences!

17.4 Disposal

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

If you buy a new machine or an equivalent device from your specialist retailer, he is obliged in certain countries to dispose of your old machine properly.

18 Troubleshooting

WARNING

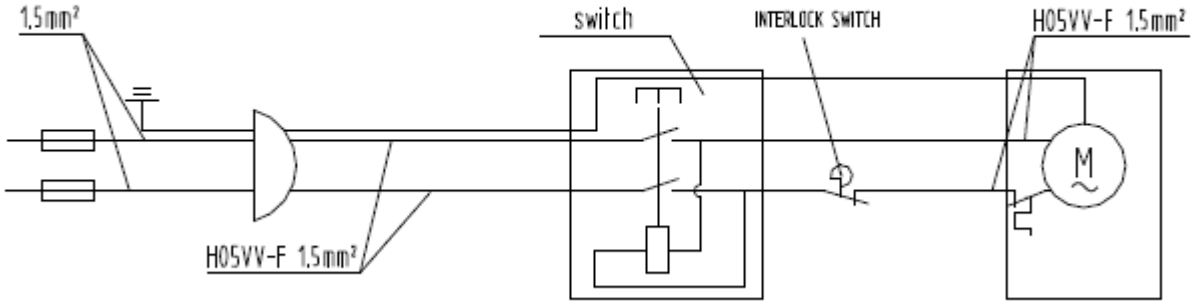
Handling the machine with the power supply up can lead to serious injuries or even death. Always disconnect the machine from the power supply before servicing or maintenance work and secure it against unintentional or unauthorised reconnection!

Many possible sources of error can be excluded in advance if the machine is properly connected to the mains. 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!

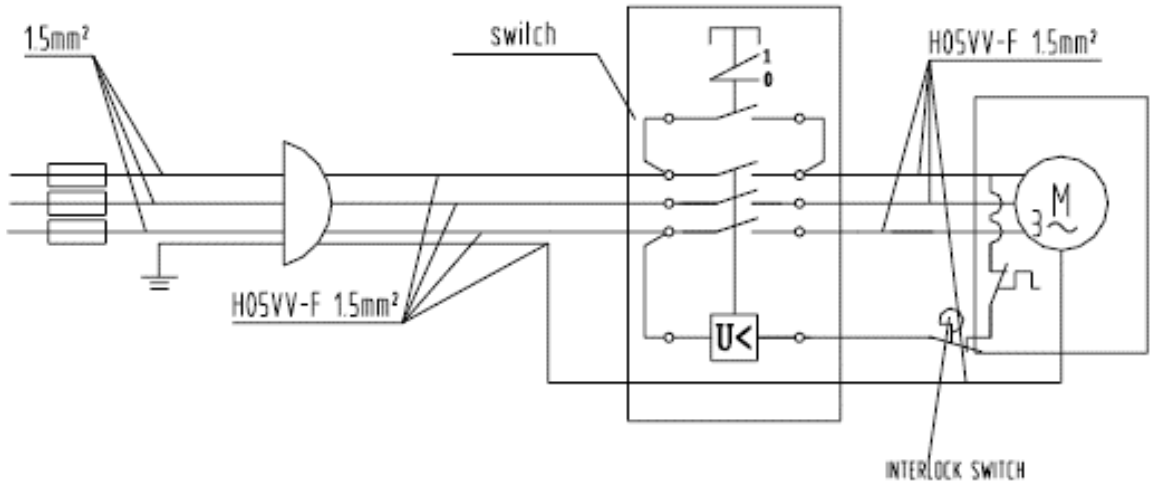
Trouble	Possible cause	Solution
Machine does not start	• switch or a phase is broken • Fuse activate • Open door for V-Belt access	• Repair the defective circuit or the faulty phase • Replace/check the fuse • Close the door
No/too slow spindle rotation	• V-Belt tension too low or cracked V-Belt	• Tensioning / replace V-Belt
Squeaking noise when machine is switch on	• V-Belt tension too low	• Tensioning V-Belt
Machine vibrates	• Damages tools • Machine not levelled	• Replace tool • Level machine
Workpiece shows burn traces	• Cutting depth too high • Feeding speed too high	• produce the desired depth in several steps • reduce feeding speed
Bad cutting surface	• blunt tool • dirt or pitch on cutter • feeding work in the wrong direction	• replace tool • clean tool • feed work against the cutter rotation (right to left)

19 PLÁN ZAPOJENÍ / WIRING DIAGRAM

230V



400V



20 NÁHRADNÍ DÍLY / SPARE PARTS

20.1 Objednávka náhradních dílů / spare parts order

(CZ) Použitím originálních dílů od společnosti HOLZMANN používáte díly, které spolu dokonale sedí a jejich montáž je časově méně náročná. Originální náhradní díly jsou zárukou delší životnosti stroje.

DŮLEŽITÉ

Použití jiných než originálních náhradních dílů má za následek ztrátu záruky!

Platí: Při výměně komponent/dílů používejte pouze originální náhradní díly

Při objednávání dílů použijte servisní formulář, který najdete na konci tohoto návodu na obsluhu. Vždy uvádějte typ stroje, číslo náhradního dílu a jeho název. Aby se předešlo neshodám, doporučujeme společně s objednávkou zaslat i kopii výkresu rozpadu náhradních dílů, na kterém Vámi požadované díly označíte.

Nebo využijte možnost online objednávky prostřednictvím katalogu náhradních dílů nebo formuláře žádosti o náhradní díly na naší domovské stránce.

Adresu pro objednání dílů naleznete v kontaktech na zákaznický servis.

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

IMPORTANT

The installation of other than original spare parts voids the warranty!

So you always have to use original spare parts

When you place a spare parts order please use the service formula you can find **in the last chapter of** this manual. **Always take a note of the machine type, spare parts number and part name. We recommend to copy the spare parts diagram and mark the spare part you need.**

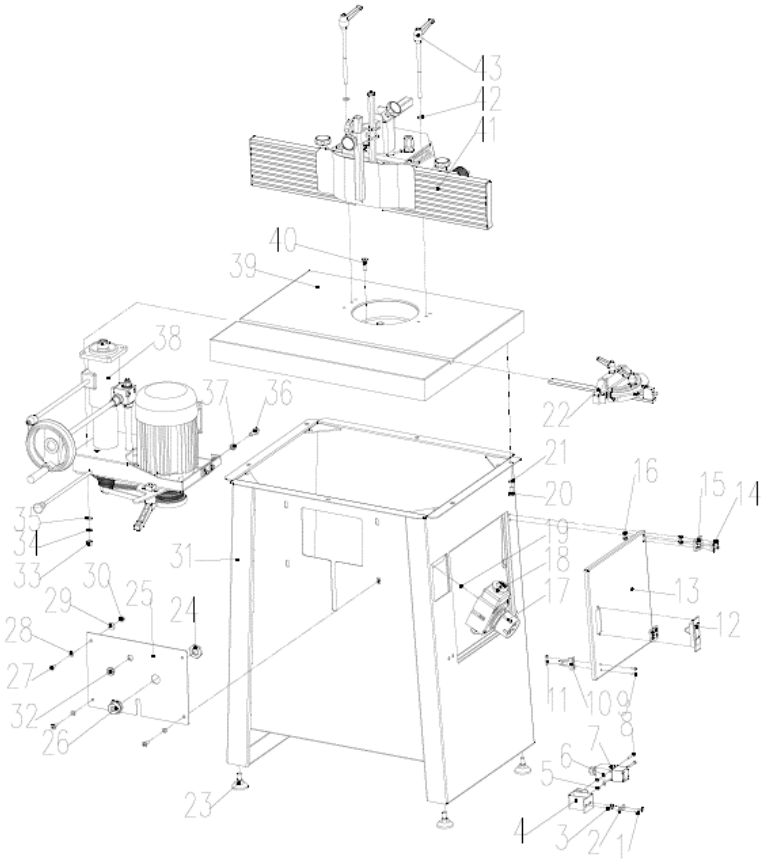
Or use the electronic ordering opportunity via the spare parts catalogue or spare parts request form on our homepage

You find the order address in the preface of this operation manual.

(DE) Den elektronischen Ersatzteilkatalog finden Sie auf unserer Homepage (Ersatzteile)

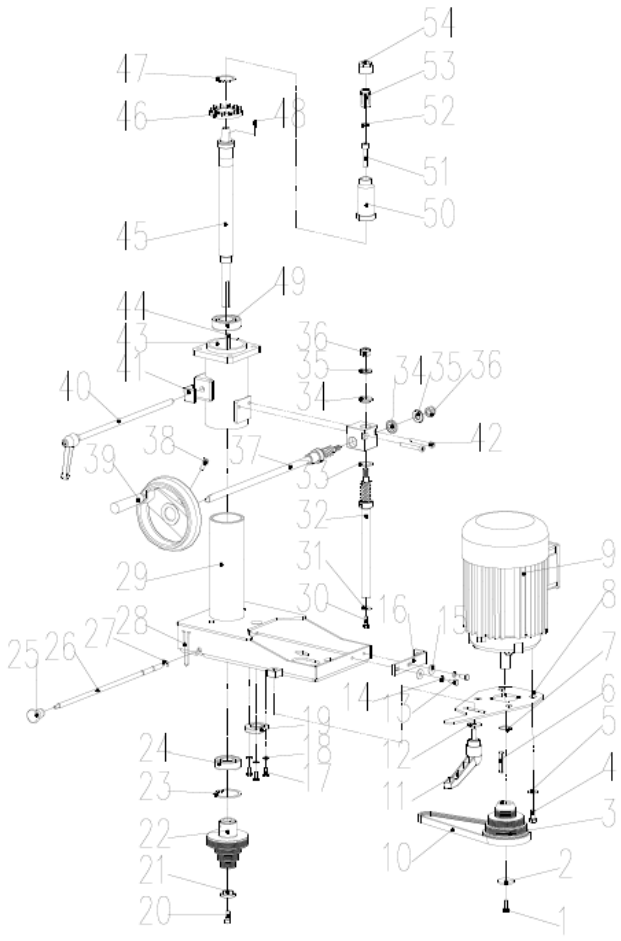
(EN) For electronic spare-parts catalogue please refer to our homepage (spare-parts

20.2 Rozpadový výkres / Exploded View



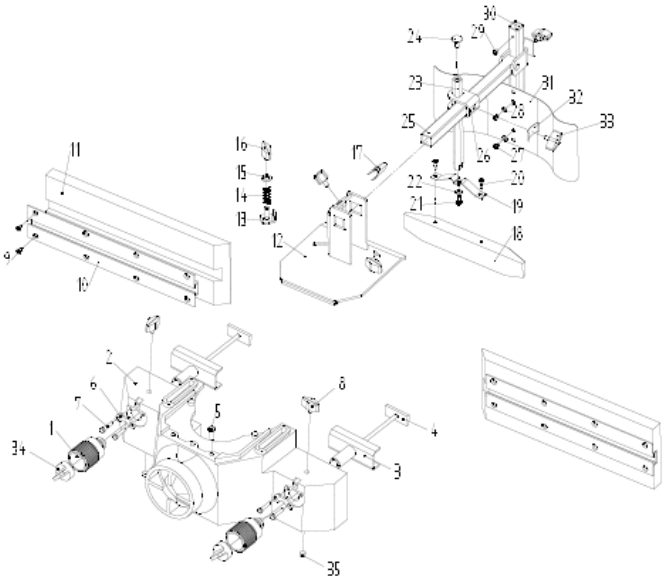
Index No.	Part No.	Description	Size	Qty
1		Screw	M5X10	2
2		Large Washer	Φ5	2
3		Hex nut	M5	2
4	MX16LT-06-07	Switch plate		1
5		Hex nut	M4	2
6		Washer	Φ4	2
7	QKS8	Micro-switch		1
8		Screw	M4X30	2
9		Screw	M4X10	2
10		Key	QKS8	1
11	TS200-07-48	Key fixing plate		1
12	703-2	Door lock		1
13	MX16LT-06-11	Door		1
14		Screw	M5X10	8
15		Plastic hinge	30X40	2
16		Hex locking nut	M5	8
17		Screw	M4X60	2
18		Switch		1
19		Hex nut	M4	2
20		Hex bolt	M8X16	6
21		Washer	Φ8	6
22	MX16LT-05	Mitre gauge		1
23	TS200-08-14	Supporting leg		4
24	MX16-09	Hex bolt		1
25	MX16LT-04	Face plate		1
26	MX16-08	Hex nut		1
27		Screw	M6X16	4
28		Washer	Φ6	4
29		Large washer	Φ6	4
30		Hex nut	M6	4
31	MX16LT-06	Box Assembly		1
32	MX16-05	Bush		1
33		Hex nut	M8	4
34		Spring washer	Φ8	4
35		Washer	Φ8	4
36		Hex bolt	M8X25	1
37		Hex nut	M8	1
38	MX16LT-10	Moulder assembly		1
39	MX16LT-01	Table		1
40		Screw	M8X30	4
41	MX16-03	Exhaustion socket assembly		1
42		Washer	Φ8	2
43	MX16-11	Locking shaft		2

Moulding spindle unit assembly



1		Hex bolt	M6X16-L 1
2	KITY439-06-17	Large Washer	1
3	MX16-10-08T	Motor pulley	1
4		Hex bolt	M8X16 4
5		Washer	Φ8 4
6		Key	6X40 1
7		"C"ring	Φ19 1
8	MX16LT-10-20	Rotation plate	1
9	MX16LT-10-06	Motor	1
10		Cuneal belt	5PJ546 1
11	MX16-10-28	Locking handle	1
12		Large washer	Φ8 1
13		Hex bolt	M6X12 2
14		Spring washer	Φ6 2
15		Large washer	Φ6 2
16	MX16LT-10-14	Angle plate	1
17		Hex bolt	M5X12 3
18		Washer	Φ5 3
19	MX16-10-10(A)	Nut bush	1
20		Screw	M6X16 1
21	MX16LT-10-17	Circular washer	1
22	MX16-10-07T	Driven pulley	1
23		"C"ring	Φ47 1
24		Bearing	6204 1
25	TS200-07-21	Handgrip	1
26	MX16LT-10-12	Locking pole	1
27		"E"ring	Φ6 1
28	MX16LT-10-04	Spring clip	1
29	MX16LT-10-03	Motor rack	1
30		Hex bolt	M6X16 1
31		Large washer	Φ6 1
32	MX16LT-10-05	Gear shaft	1
33	MX16-07-03	Thin washer	2
34	MX16-16	Gear bush	2
35		Bearing	AXK1024 2
36		Hex locking nut	M10 2
37	MX16LT-10-25	Gear shaft	1
38		Screw	M6X20 1
39	TS200-07-32	Handwheel	1
40	MX16LT-10-09	Locking pole	1
41	MX16-10-18	Locking block	1
42		Screw	M6X45 2
43	MX16-10-02	Oriented stand	1
44		Key	5X50 1
45	MX16LT-10-01	Spindle	1
46	MX16-02	Fan cap	1
47		"C"ring	Φ30 1
48		Pin	3X12 1
49		Bearing	6205 1
50	MX16-10-01T3	Interchangeable spindle	1
51		Screw	M8X35 1
52		"C"ring	Φ13 1
53		Router collet	1
54		Router collet nut	1

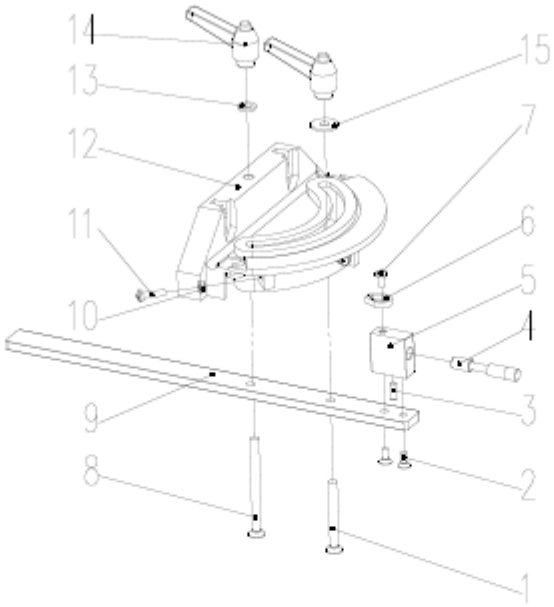
MOULDING EXHAUSTION SOCKET ASSEMBLY



PARTS LIST FOR MOULDING EXHAUSTION SOCKET ASSEMBLY

1	MX16-03-24	Adjusting wheel	2
2	MX16-03-16	Exhaustion socket	1
3	MX16-03-22	Guide rack	2
4	MX16-03-20	T-shaped bolt	2
5		Screw	M6X10 4
6	MX16-03-23	Metal plate	2
7		Hex bolt	M5X12 4
8	MX16-03-13	Rhombic handgrip	3
10	MX16-03-08L	T-shaped rail	2
12	MX16-03-15	Turing rack	1
13	MX16-03-18	Locking sheet metal	2
14	MX16-03-19	Spring	2
15		Washer	Φ8 2
16	MX16-03-25	Rhombic handgrip	2
17	MX16-03-14	Saucer	2
23	MX16-03-07	Hexangular leader	1
24		Bolt	M8X10 1
25	MX16-03-10	Square leader assembly	1
26	MX16-03-06	Capstan	1
27		Screw	M4X6 2
28		Washer	φ4 2
29		Screw	M4X6 1
30	MX16-03-02	Standpipe	1
31	MX16-03-04	Spring protective broad	1
32	MX16-03-11	Locking patch	2
33	MX16-03-01	Rhombic handgrip	2
34	MX16-03-22	Locking knob	2
35		Set screw	M8X10 2

MITRE GAUGE ASSEMBLY



1	Screw	M6X50	1
2	Screw	M4X10	2
3	Set screw	M4X12	1
4	TS200-05-02	Stopping pole	1
5	TS200-05-03	Fixed support	1
6	TS200-05-08	pointer	1
7	Screw	M4X8	1
8	Screw	M6X70	1
9	MX16LT-05-01	T-shaped plate	1
10	Hex nut	M4	3
11	Screw	M4X16	3
12	TS200-05-04	Mitre gauge	1
13	Washer	Φ6	1
14	KITY419-01-02	Small handle	2
15	Large washer	Φ6	1

21 PROHLÁŠENÍ O SHODĚ / CE-CERTIFICATE OF CONFORMITY

CE	**Dovozce / Distributor / Dystrybutor** HOLZMANN MASCHINEN® 4170 Haslach, Marktplatz 4, AUSTRIA Tel.: +43/7289/71562-0; Fax.: +43/7289/71562-4 www.holzmann-maschinen.at
Název / Name	
Frézka / spindle shaper	
Typ / Model	
FS160SOLID	
Směrnice ES / EC-directives	
▪ 2006/42/ES; ▪ 2014/30/ES;	
Použité normy / applicable Standards	
▪ EN ISO 19085-1-2017; EN ISO 12100:2010; EN60204-1:2018 ▪ EN55014-1:2017, EN55011-2:2015, EN6100-3-2:2014 EN61000-3-3:2013	

(CZ) Tímto prohlašujeme, že výše uvedený typ stroje splňuje bezpečnostní a zdravotní požadavky směrnic ES. Toto prohlášení ztrácí svou platnost, pokud by došlo ke změnám nebo úpravám stroje, které námi nebyly odsouhlaseny.

(EN) Hereby we declare that the above mentioned machines meet the essential safety and health requirements of the above stated EC directives. Any manipulation or change of the machine not being explicitly authorized by us in advance renders this document null and void.

Technische Dokumentation

HOLZMANN-MASCHINEN GmbH
4170 Haslach, Marktplatz 4

Haslach, 10.12.2019
Místo/Datum place/date

HOLZMANN MASCHINEN GmbH
Marktplatz 4, 4170 Haslach
weiterer Standort:
Gewerbepark 8, 4707 Schlüsselberg
www.holzmann-maschinen.at

DI (FH) Daniel Schörgenhuber
Jednatel / Director