

# **Wood-Mizer®**

## **Safety, Setup, Operation and Maintenance**

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**MP280**

**rev. A1.08**

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**Safety is our #1 concern!** Read and understand all safety information and instructions before operating, setting up or maintaining this machine.

Form# 2521

### **Original Instructions**

Please keep for future reference

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## **SECTION 1 INTRODUCTION**

Congratulations on your purchase of a Wood-Mizer Planer - Moulder!

Wood-Mizer is committed to providing you with the latest technology, best quality, and strongest customer service available on the market today. We continually evaluate our customers' needs to ensure we are meeting current wood-processing demands. Your comments and suggestions are welcome.

This documentation includes information on preparing the planer/moulder for operation and operating, servicing and repairing the machine.

### **GENERAL**

Check your planer/moulder as soon as you receive it. Report any transport damage to the transport company immediately.

Lift the planer/moulder using a forklift or pallet jack with lifting capacity of minimum 800kg.

When replacing spare parts, use only original parts and note that anything electrical must be assembled by a qualified electrician.

### **APPLICATIONS**

The planer/moulder can be used for planing/moulding/thicknessing and planing wood, chipboard, board, etc.

The planer/moulder can be used for planing/moulding wood, chipboard, board of dimensions listed in "Specification" section. Hard materials such as chipboard, teak, MDF, etc. require hard carbide tools.

It is not allowed to use this machine for planing/moulding any other material such as metal, ice etc.

The planer/moulder is designed for indoor use, with temporary outdoor use during good weather. It not allowed to use or store this machine outdoor when it is raining or snowing.

The planer/moulder should be operated only by an adult who has read and understood the entire operator's manual.

## REQUIREMENTS

Planer/moulder can be used in rooms with temperature range from -15°C to +40 C. Ventilation must be mechanical and in accordance with standards.

The planer/moulder must be connected to a dust/chip extractor. Extractor must be turned on when the machine is working. [See Section 5.3](#) for the dust extractor specification.

## SAFETY DISTANCE



**WARNING!** Other than the operator, no one should be within 3 meters of the planer/moulder's sides or 8 meters from the in-feed and 6 meters from out-feed sides during operation. Mark risk area on the floor.

**TIPS:** An extended infeed table is practical and prevents anyone coming into the risk area.

## 1.1 Machine description

The Wood-Mizer planer/moulder is designed for straight and profiled planing of wooden elements used for the production of wooden houses and other construction elements used in building industry and garden programs. All other uses of the planer are forbidden.

The MP280 is a planer/moulder that can work four sides of a workpiece in one action. The planer/moulder is contained in a stable and strong chassis. The table is made of planed cast iron.

The workpiece is fed, lying on the planer table, through the planer by feed rollers. The feed rollers are driven by a chain transmission with separate motor. The workpiece feed direction is controlled by adjustable fences and side press rollers.

All cutters are driven by separate motor, using a belt transmission.

Cutters working area is protected by cover with a safety switch.

A 100 mm (4") dia. hose is connected to the bottom and side cutters and a 125 mm (5") dia. hose is connected to the top cutter.

### TABLE SURFACE

Table is made with a highest quality cast. The table surface is specially processed for the highest precision and the best anti-friction qualities.

When the planer/moulder is new, it requires a breaking-in period until the table gets a slightly shinier surface to optimize the anti-friction qualities. During this period it is recommended to use a lubricant or wax on the table.

Using the machine correctly, you will obtain a perfectly smooth surface and a high degree of accuracy.

Planer/moulder is built to be durable and easy to operate and maintain.

## MACHINE AND SITE PREPARATION

The machine is delivered on pallet. Due to the weight, it has to be transported with auxiliary lifting equipment and in accordance with general safety rules.

Check your planer/moulder as soon as you receive it. Any transport damage must be reported to the transport company immediately.

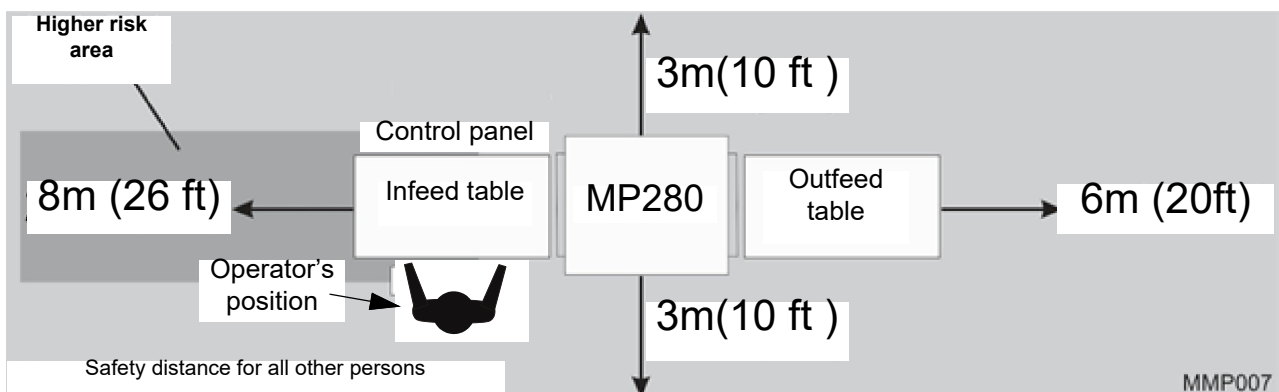
Most of the planer/moulder is protected against rust, but it will require extra maintenance in the form of lubrication for all the parts not protected against rust. See the Maintenance section.

- Place the planer on a stable and flat base.
- It is recommended to screw the planer/moulder down to the floor, if it does not have to be moved.
- Ensure that there is enough space for the longest boards you want to plane at the in and outfeed sides, and that there is enough space for maintenance and timber stocks.
- Connect the dust hoses and fix using the hose clips on the planer and fan.
- Hang the planer/moulder's electrical cable on the ceiling or protect it in another way. Never step on the cable. The planer/moulder should be connected via an earth-fault protection switch.
- CAUTION! The illumination at the operator's position should be at least 300lx. The light source can not cause stroboscopic effect. Ensure that there is no risk of glare.

## SPACE REQUIREMENTS

The planer/moulder needs a space of at least 3 m. wide.

The length required depends on the length of the workpieces you want to plane. The minimum length is 8 m.



## ANCHORING

It is recommended that the MP280 planer/moulder be anchored to the floor using 12 mm screws.

**ADDITIONAL PARTS KIT:**

- Hex key 4 mm (supplied)
- Hex key 5 mm
- Hex key 6 mm
- Open ended wrench 10 mm (supplied)
- Open ended wrench 30 mm (supplied)
- Adjustable wrench 8" or 10"
- Measuring tape or ruler
- Paraffin oil for the table
- 0,5 and 0,3 mm chip breaker
- Fence adjustment bar
- Knife alignment tool
- Nut M20x1,5 (left and right)

**FOLLOWING SPACER RINGS ARE SUPPLIED:**

- 2 x 40 mm height (per cutter)
- 2 x 20 mm height (per cutter)
- 4 x 2 mm height (per cutter)
- 2 x 1 mm height (per cutter)
- 2 x 0.5 mm height (per cutter)
- 2 x 0.2 mm height (per cutter)
- 2 x 0.1 mm height (per cutter)
- 2 x 0,3 mm height (per cutter)

These spacer rings are necessary to set the required height.

### 1.2 Chip Extractor MP280

MP280 planer/moulder must be connected to chip extractor with a capacity of at least 4 000m<sup>3</sup>/h. Remember that chip container has to be equipped with an air vent (e.g. a fine net or filter if dust are collected indoors). During work in heated rooms, it is necessary to remember that the fan will quickly cool the space if the filtered air will not be supplied back into the building.

Contact the local authorities for advice in designing a chip collection system to conform with national rules.

It is necessary to set the fan so that it will be easy to reach the switch.



**IMPORTANT!** Remove the chips from the planer/moulder when the work is finished.

#### CHIP EXTRACTOR TECHNICAL REQUIREMENTS<sup>1</sup>

- The chip extractor must be approved according to the CE-standard.
- The airflow "without external connection" must be approx. 4000 m<sup>3</sup>/hour. (The manufacturer's standard indication of airflow.)
- The chip extractor hose diameters for the planer/moulder = 100 mm (4") x 3 and 125 mm (5") x 1.
- Pressure drop should not exceed 1,5 kPa.



**IMPORTANT!** The dust extractor hoses must be grounded or made with materials not accumulating electrostatic charge.



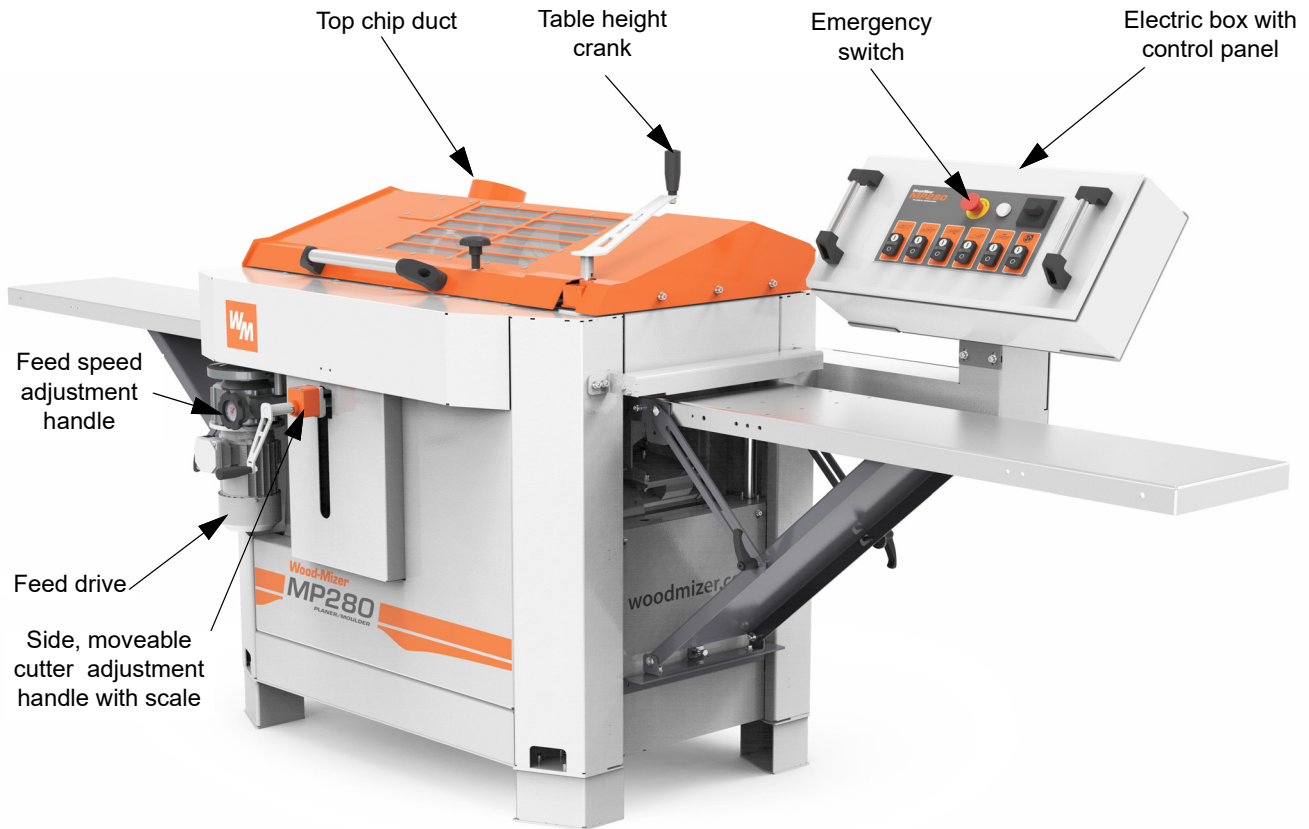
**CAUTION!** Always turn on the chip extractor before starting the machine

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1. EN 12779:2016-04 standard contains requirements for chip and dust extraction systems equipment with fixed installations.



### 1.3 Planer/moulder major components



**FIG. 1-1**

### 1.4 If You Need To Order Parts

From Europe call your local distributor or our European Headquarters and Manufacturing Facility in Kolo, Nagórna 114 St, Poland at +48-63-2626000. From the continental U.S., call our toll-free Parts hotline at **1-800-525-8100**. Please have the machine identification number and your customer number ready when you call. Wood-Mizer will accept these methods of payment:

- Visa, Mastercard, or Discover
- COD
- Prepayment
- Net 15 (with approved credit)

Be aware that shipping and handling charges may apply. Handling charges are based on size and quantity of order. In most cases, items will ship on the day they are ordered. Second Day and Next Day shipping are available at additional cost.

From the continental U.S., call our toll-free Parts hotline at **1-800-525-8100**.

## 1.5 If You Need Service

From Europe call your local distributor or our European Headquarters and Manufacturing Facility in Kolo, Nagórna 114 St, Poland at +48-63-2626000. From the continental U.S., call us toll-free at **1-800-525-8100**. Ask to speak with a Customer Service Representative. Please have your machine identification number and your customer number ready when you call. The Service Representative can help you with questions about the operation and maintenance of your sawmill. He also can schedule you for a service call.


### Office Hours:


Country	Monday - Friday	Saturday	Sunday
Poland	7 a.m.- 4 p.m.	Closed	Closed
US	8 a.m.- 5 p.m.	8 a.m.- 5 p.m	Closed


## SECTION 2 SAFETY


### 2.1 Safety Symbols


The following symbols and signal words call your attention to instructions concerning your personal safety. Be sure to observe and follow these instructions.


 **DANGER!** indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

 **WARNING** suggests a potentially hazardous situation which, if not avoided, could result in death or serious injury.

 **CAUTION!** refers to potentially hazardous situations which, if not avoided, may result in minor or moderate injury or damage to equipment.

 **IMPORTANT!** indicates vital information.


 **NOTE:** gives helpful information.

 Warning stripes are placed on areas where a single decal would be insufficient. To avoid serious injury, keep out of the path of any equipment marked with warning stripes.

### 2.2 Safety Instructions

**NOTE:** ONLY safety instructions regarding personal injury are listed in this section. Caution statements regarding planer/moulder damage appear where applicable throughout the manual.

- Observe Safety Instructions

 **IMPORTANT!** Read the entire Operator's Manual before operating the planer/moulder. Take notice of all safety warnings throughout this manual and those posted on the equipment. Keep this manual with this equipment at all times, regardless of ownership.

Read all additional manufacturer's manuals and observe any applicable safety instructions including dangers, warnings, and cautions!

**IMPORTANT!** Only adult persons who have read and understood the entire operator's manual should operate the planer/moulder. The planer/moulder is not intended for use by or around children. Never operate the planer/moulder under the influence alcohol or any other drugs.

**IMPORTANT!** The operator of the planer/moulder should get adequate training in the operation and adjustment of the machine.

**IMPORTANT!** It is always the owner's responsibility to comply with all applicable federal, state and local laws, rules and regulations regarding the ownership and operation of your Wood-Mizer planer/moulder. All Wood-Mizer planer/moulder owners are encouraged to become thoroughly familiar with these applicable laws and comply with them fully while using the planer/moulder.

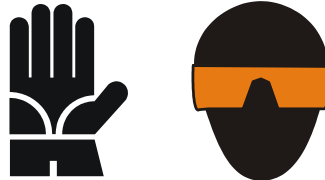


- Wear Safety Clothing



**WARNING!** Secure all loose clothing and jewelry before operating this machine. Failure to do so may result in serious injury or death.

**WARNING!** Wear safety goggles and gloves when operating machinery. Failure to do so may result in serious injury.



**WARNING!** Always wear ear, respiration and foot protection when operating planer/moulder.



- Keep the Machine And Area Around Clean



**DANGER!** Maintain a clean and clear path for all necessary movement around the planer/moulder and lumber stacking areas. Failure to do so will result in serious injury.

- Dispose of Sawing By-Products Properly



**IMPORTANT!** Always properly dispose of all sawing by-products, including sawdust and other debris.

- Check planer/moulder before operation.



**DANGER!** Make sure all guards and covers are in place and secured before operating planer/moulder. Check that knobs, screws, nuts, fences, sleeves, planing cutters, planing knives, etc. are properly tightened. Also check that the cutter can rotate freely and that there are no tools in or on the planer/moulder before it is started. Failure to do so may result in serious injury.



**WARNING!** Always shut off the motor to stop the cutter whenever the planer/moulder is not in use. Failure to do so may result in serious injury.

**WARNING!** Do not for any reason adjust the engine drive belts with the engine running. Failure to do so will result in serious injury.

- Keep all people away

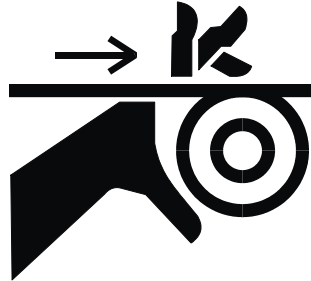


**DANGER!** Other than the operator, no one should be within 3 meters of the planer/moulder's sides during operation. Failure to do so will result in serious injury.

- Keep Hands Away

**DANGER!** Moving parts can cut or crush fingers or hand. Keep hands clear. Make sure all guards and covers are in place and secured before operating the planer/moulder. Failure to do so may result in serious injury.

**DANGER!** Always be aware of and take proper protective measures against rotating shafts, pulleys, fans, etc. Always stay a safe distance from rotating members and make sure that loose clothing or long hair does not engage rotating members resulting in possible injury.



**WARNING!** Beware of rotating parts. Shut down the planer/moulder and allow all moving parts to come to a complete stop before removing any guards and covers. Do NOT operate planer/moulder with any guards or covers removed.

**DANGER!** Before changing the knives or performing any service to planer/moulder, disconnect the power cord from the electric box.

**IMPORTANT!** Knife and feed assembly covers are equipped with limit switches. After opening the cover, engine will turn off and all moving parts will stop. Limit switches should be always in proper working condition.

### **Planer/moulder operation**



**CAUTION!** The workplace always should be good illuminated. The illumination at the operator's position should be at least 300lx. Never use the planer/moulder under the influence of strong medication, alcohol or any other strong drugs.




**WARNING!** Make sure the knives are properly fastened before starting the motor.



**WARNING!** Never place tools or hands into the in or outfeed areas when the planer/moulder is running.




**IMPORTANT!** When starting the machine for the first time, check that cutter rotation direction is as indicated by the arrow located on the side cover. If the rotation direction is incorrect, invert the phases in the phase inverter in the power socket (electric box). Setting the phases in the phase inverter correctly will ensure correct rotation directions of cutter.

 **DANGER!** Always measure the workpiece and set suitable thickness and width before planing. There is a risk of accident if you feed in a workpiece that is not high enough for the feed rollers to get hold of it.

When planing smaller material, it should be stiffened/extended, e.g. with a longer piece of wood.

Never stand in front of the material being fed or received, because it may suddenly kickback uncontrollably towards the operator. This applies to both the in and outfeed sides, although the risk is higher on the infeed side.

 **DANGER!** Planing/moulding is possible only in direction shown below. Arrow indicates planing direction. Never try planing/moulding in the opposite direction.

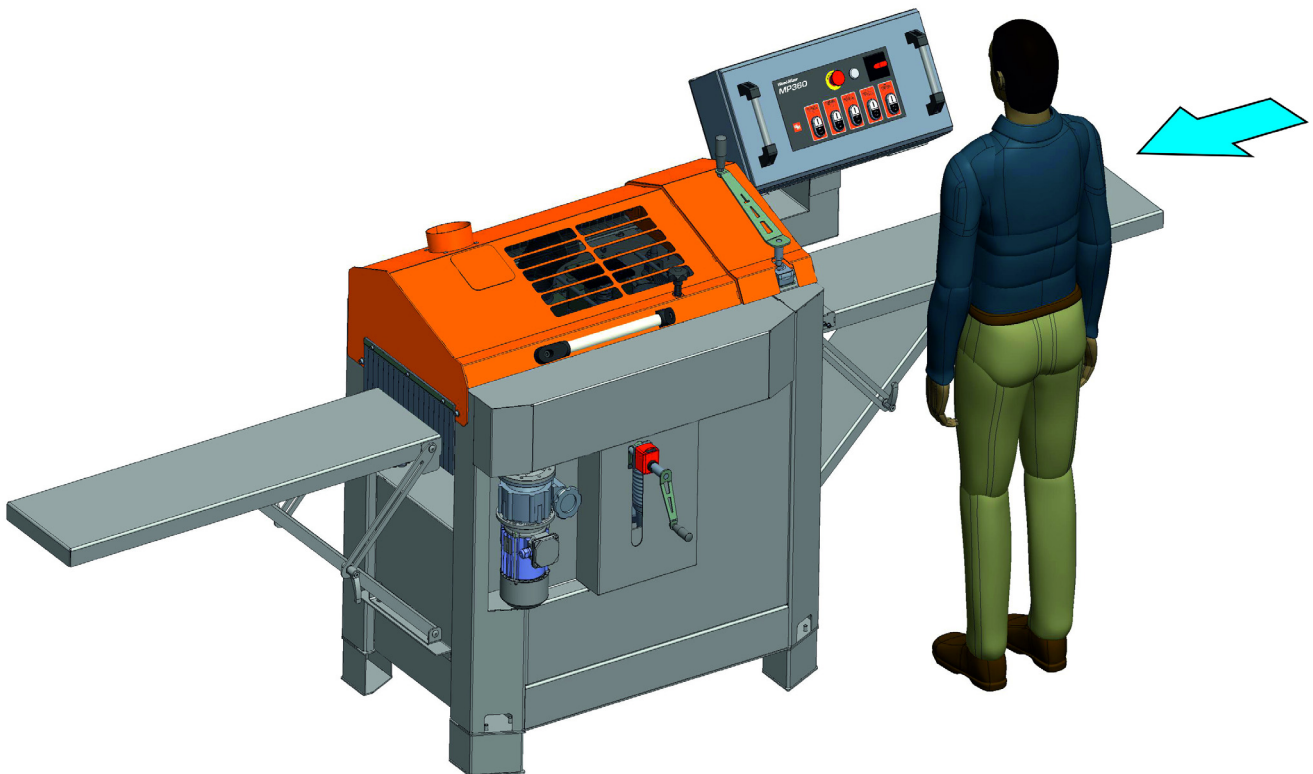


FIG. 2-1 MP280

- Use proper maintenance procedures



**DANGER!** Make sure all electrical installation, service and/or maintenance work is performed by a qualified electrician and is in accordance with applicable electrical codes.

**DANGER!** Hazardous voltage inside the electric boxes and at the motor can cause shock, burns, or death. Disconnect and lock out power supply before servicing! Keep all electrical component covers closed and securely fastened during planer/moulder operation.



**WARNING!** Consider all electrical circuits energized and dangerous.

**WARNING!** Never assume or take the word of another person that the power is off; check it out and lock it out.

**WARNING!** Do not wear rings, watches, or other jewelry while working around an open electrical circuit.



**IMPORTANT!** Planer/moulder is equipped with emergency switch. It is used to immediately stop the machine in case of emergency. Emergency switch should be always in good condition.

**IMPORTANT!** Planer/moulder should not be modified by owner. Use only original spare parts.

- Keep safety labels in good condition.



**IMPORTANT!** Always be sure that all safety decals are clean and readable. Replace all damaged safety decals to prevent personal injury or damage to the equipment. Contact your local distributor or Wood-Mizer Customer Service to order more decals.

**IMPORTANT!** If replacing a component which has a safety decal affixed to it, make sure the new component also has the safety decal affixed in the same place.

- Fire protection

**CAUTION!** The work-stand of the planer/moulder should be equipped with a 4 kg or bigger dry powder extinguisher.



**Safety Labels Description**

See table below for safety labels description.

**TABLE 2-0**

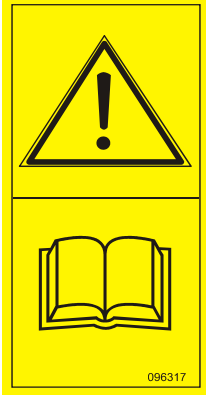


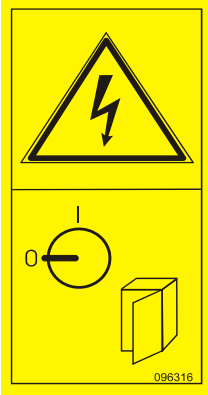
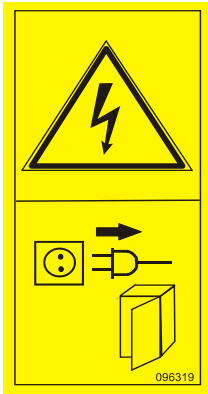





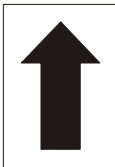

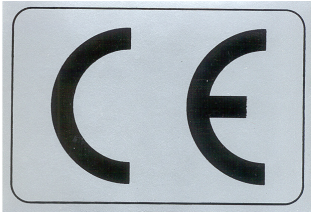
Label View	Label Number	Description
	096317	CAUTION! Carefully read operator's manual before handling the machine. Observe instructions and safety rules when operating.
	099220	Close guards prior to operating the machine
	099221	CAUTION! Keep safe distance when the machine is operating.

TABLE 2-0

	<p>096316</p>	<p>Electric box opening is possible with the switch in "0" position only.</p>
	<p>096319</p>	<p>Always disconnect the power cord before opening the electric box.</p>
	<p>524993</p>	<p>CAUTION! Hand injury hazard</p>
	<p>S12004G</p>	<p>Always wear safety goggles when operating the planer/moulder!</p>

**TABLE 2-0**

	S12005G	Always wear protective ear muffs when operating the planer/moulder!
	501465	Always wear safety boots when operating the planer/moulder!
	512107-1	Always wear safety gloves when operating the planer/moulder!
	S20098	Motor rotate direction
	087649 502481	Warning stripes
	P85070	CE safety certification

## SECTION 3 SETUP

### 3.1 MP280 Moulder Assembly

Some of the machine components need to be assembled by the user before first usage.

1. **Operator's panel.** Mount the operator's panel (A) using four M8x25 socket head bolts (B), flat and spring washers.

See Figure 3-1.

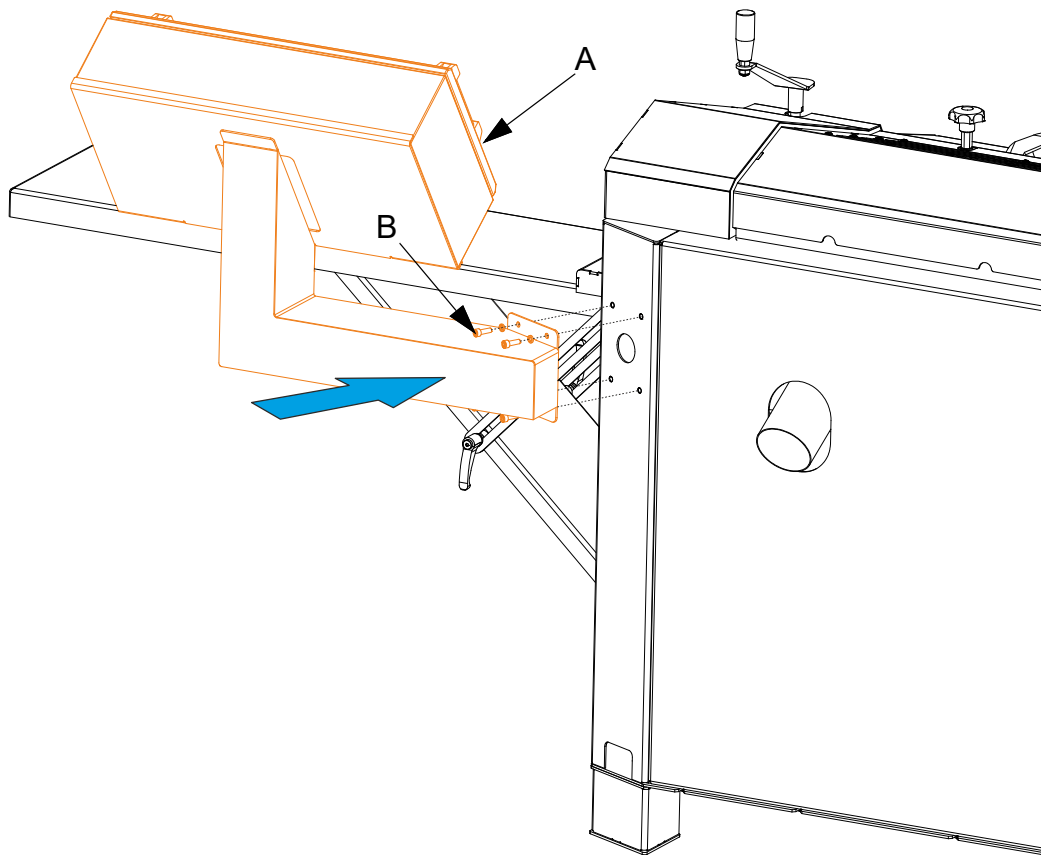


FIG. 3-1

2. **Infeed and outfeed table (optional equipment).** Install the infeed table to the moulder using M8x16 screws with hex socket head and washers (A). Then install the supporting plate (B) using existing bolts (C). Tighten all fasteners by hand. Using the adjusting screws (D) adjust the table, so is level and on the same height as the moulder cast iron table (double check this with a long, straight tube or flat board). Tables should also touch each other. Tighten all bolts and re-check the table level and height. Repeat all above steps for the outfeed table.

See Figure 3-2.

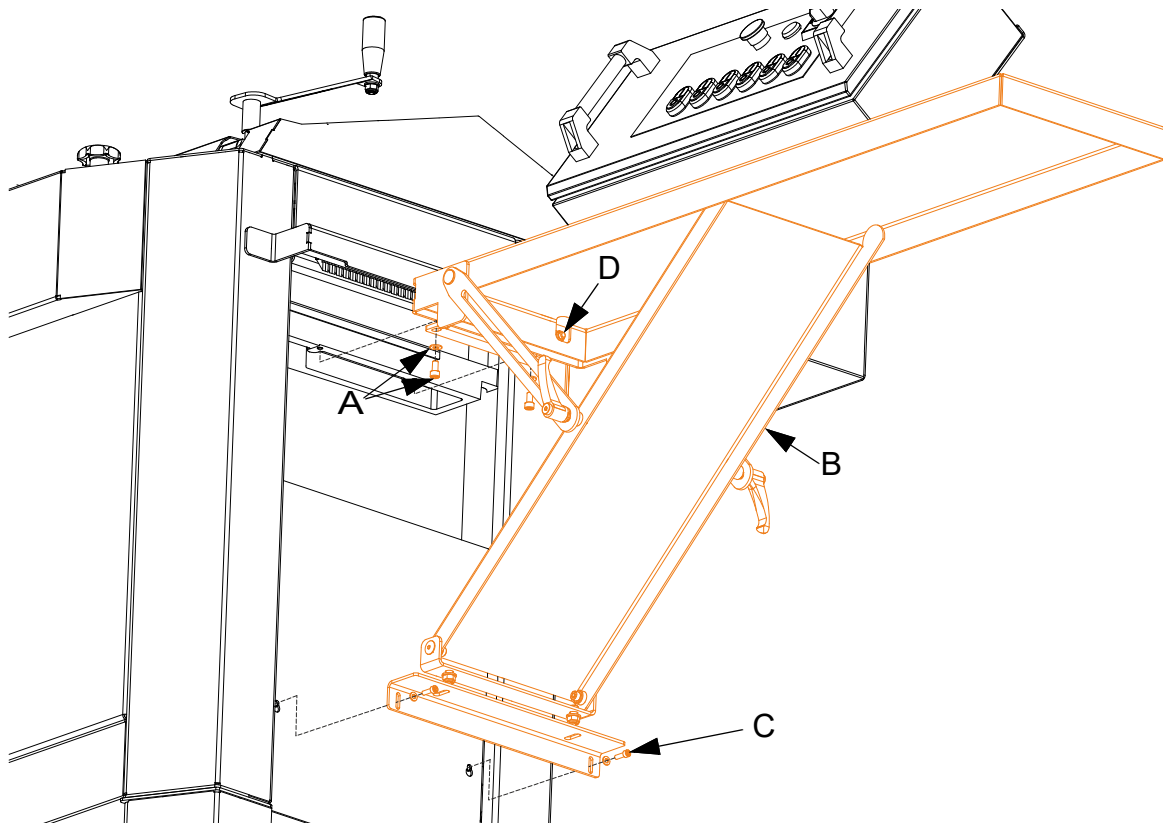


FIG. 3-2

## 3.2 Planer/moulder setup



**IMPORTANT!** Before starting to use the planer/moulder you have to meet the following conditions:

- Set up the planer/moulder on firm, level ground and level the planer/moulder. Secure the planer/moulder to the ground to prevent moving during operation. A cement pad with 12 mm diameter anchor bolts is recommended.
- Unscrew the feet. Screw the optional maneuvering wheels to the outer holes in the machine body. The maneuvering wheels must be locked before starting work
- Indoors the planer/moulder can be operated with the sawdust collection system only.
- The planer/moulder can not be operated when it is raining/snowing and in case of rain or snow the machine must be stored under roof or indoors.
- The planer/moulder can be operated in temperature range from  $-15^{\circ}\text{C}$  to  $40^{\circ}\text{C}$  only.
- The illumination at the operator's position should be at least  $300\text{lx}^1$ .
- The planer/moulder's operator position and E-Stop safety buttons location are shown below.

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1. Light source can not cause stroboscopic effect.

See Figure 3-3.

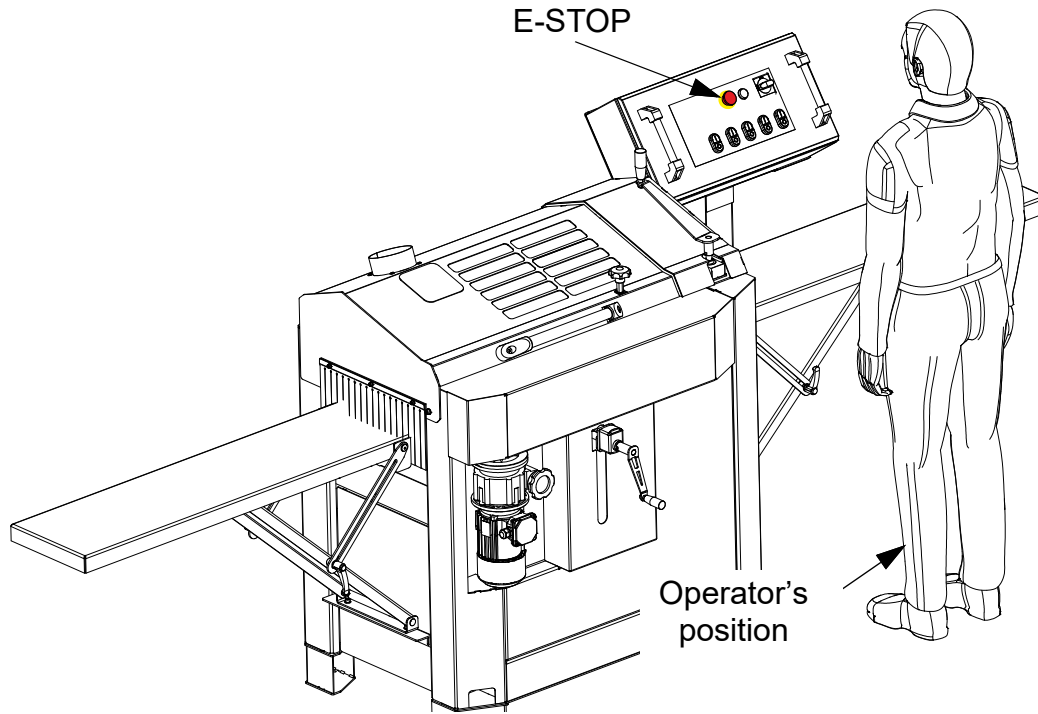


FIG. 3-3 MP280

# 3

## Setup

### Planer/moulder setup

See table 3-1. Have a qualified electrician install the power supply (according to EN 60204 Standard). The power supply must meet the specifications given below.

Model	Voltage	Total power	Total amperage
MP280EA12S-V	1X230V	14,05kW	83,5A
MP280EB13S-V	3X230V	17,75kW	60,9A
MP280EH13S-V	3X400V	17,75kW	34,7A

TABLE 3-1



**IMPORTANT!** It is recommended that a 30mA GFI (Ground Fault Interrupter) be used.



**IMPORTANT!** When starting the machine for the first time, check that main motor rotation direction is as indicated by the arrow located on the motor body (fan guard). If the rotation direction is incorrect invert the phases in the phase inverter in the power socket box). Setting the phases in the phase inverter correctly will ensure correct rotation directions of all planer/moulder motors.



**WARNING!** In case of a drive belt break, wait until all rotating parts are completely stop. Failure to do so may result in serious injury or death.



**DANGER!** Use the inspection window to check cutter rotation direction. To do it, look at the motor fan when planer/moulder is turning on or off. Do not check the cutter rotation direction by touching the cutter with any tool. Failure to do so will result in serious injury of death.



**EVERY TIME BEFORE STARTING THE MACHINE:**

- Check that no tools have been left in the planer/moulder.
- Check that the cutters can rotate freely before the safety doors are closed.
- Review the safety instructions!
- Be sure the emergency switch button is released;
- Be sure the upper cover is closed and the limit switch is activated. Be sure all machine's parts are tightened, especially working element covers.
- Be sure that no one than operator is in the high risk area.
- Turn on the chip extractor.



**DANGER!** Connect the planer/moulder electrical installation. Check the rotational direction. Looking from the transmission, the upper cutter must rotate in the opposite direction to the material feed direction (to the left).

### 3.3 Setup of upper and lower cutter heads



**WARNING!** Before adjusting the knives on this machine always turn off the electrical circuit supplying power to the machine. Failure to follow this may result in serious injury or death.



**WARNING!** Wear gloves when working with knives in the machine. Failure to follow this may result in serious injury or death.



**WARNING!** Check for tools used in the operation and remove from the machine before closing the lid. Failure to follow this may result in serious injury or death.



**CAUTION!** Check for free rotation of cutter heads before closing the lid.

The cutter heads come shipped with two straight planer knives pre-installed. Check these knives to ensure that the factory settings have not been altered during shipping.

# 3

## Setup

### Setup of upper and lower cutter heads

See Figure 3-4.

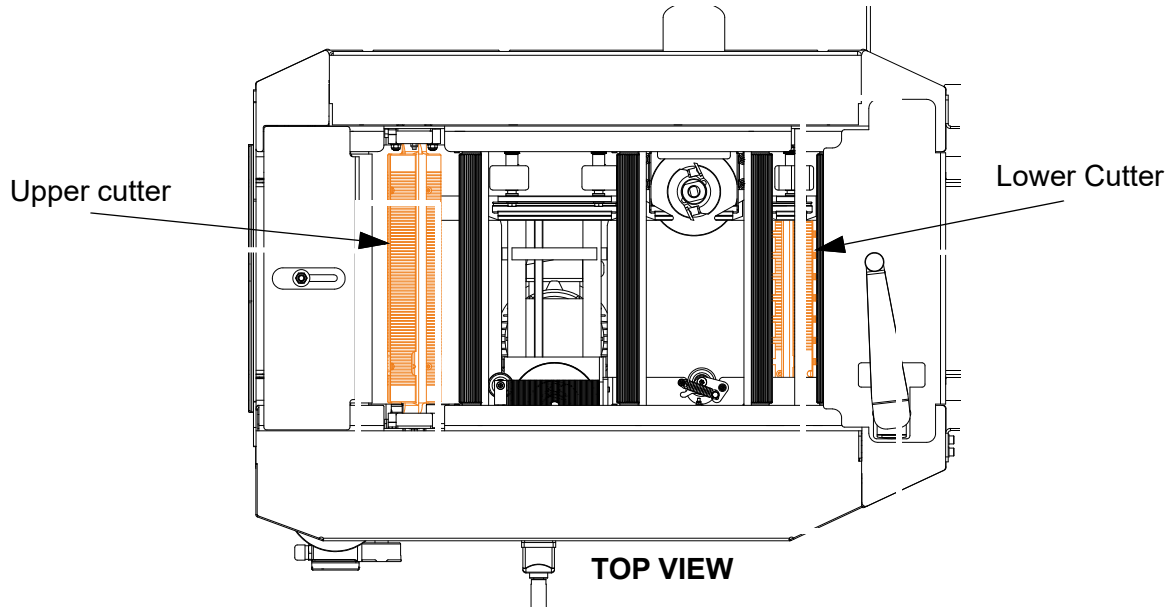


FIG. 3-4

### UPPER/LOWER CUTTER DESIGN

The cutter heads have the following specifications:

#### Lower Cutter

Diameter: 2 13/16" (72mm)  
Width: 11 13/16" (300mm)  
Rotation Speed: 7000 rpm  
4 slots for planer knives  
Planing Depth: 0 - 5/32" (0-4mm)

#### Upper Cutter

Diameter: 3,465" (88mm)  
Width: 16 3/16" (410mm)  
Rotation Speed: 7000 rpm  
4 slots for planer knives  
Planing Depth: Max 0,2" (5mm)  
Moulding Depth: Max. 0,7" (18mm)

The cutter heads are shipped with straight planer knives installed in two of the knife slots. The head can be fitted with 2 additional straight planer knives in the two empty slots.

See Figure 3-5.

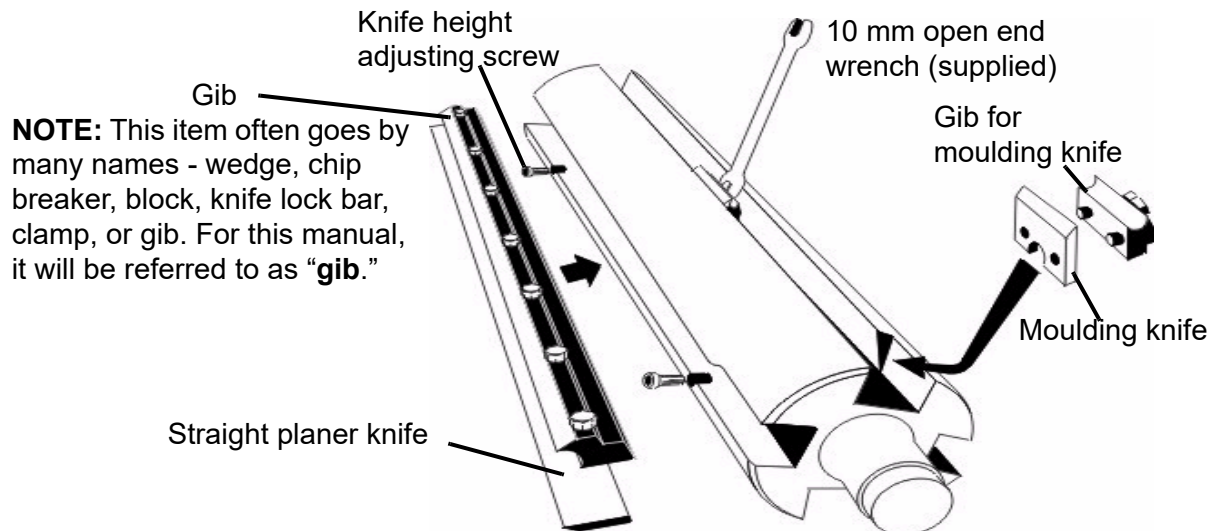


FIG. 3-5

### Leveling lower cutter straight planer knives

#### TOOLS NEEDED:

- 10 mm open-end wrench (supplied)
- 4 mm hex wrench (supplied)
- A straight edge (a carpenter's square is shown)
- Gloves

The lower cutter straight planing knives should be adjusted so they lie level with and parallel to the cast iron cutter table.

**WARNING!** Before adjusting the knives on this machine always turn off the electrical circuit supplying power to the machine. Failure to follow this may result in serious injury or death.

**IMPORTANT!** Do not put a straight edge through the machine across the nylon inserts to adjust these knives. Use the following procedure to set these knives accurately:

**NOTE:** You can use a short piece of straight metal or a metal block for this, just ensure that the metal part is **straight** and long enough to bridge across the planer opening as shown in pictures below. **A carpenter's square base is recommended.**

# 3

## Setup

### Leveling lower cutter straight planer knives

1. Place the straight edge (the base of a carpenter's square is shown) across the corner of the cast iron table bed as shown below.

See Figure 3-6.

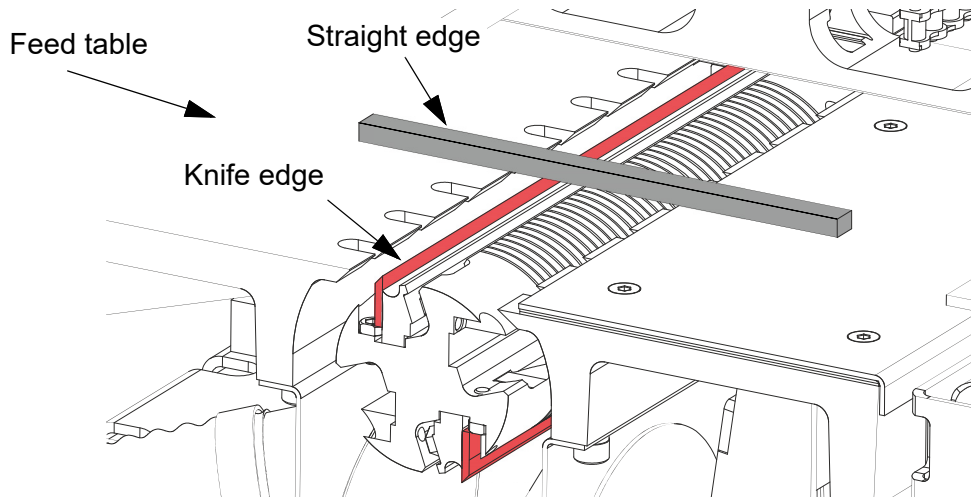


FIG. 3-6

2. Rotate the head so that the edge of the planer knife is directly under the straight edge.

If the knife is adjusted too high within the cutter head, the straight edge (base of carpenter's square) will be pushed out of position. If the knife is positioned too low in the cutter head, the planer knife will not make contact, and the straight edge will not move at all. The objective is to get the straight edge to **move slightly** when the knife edge passes beneath it.

3. Loosen (do not remove) the knife gib lock bolts.
4. Raise or lower the knife using a 4 mm hex wrench (supplied).

See Figure 3-7.

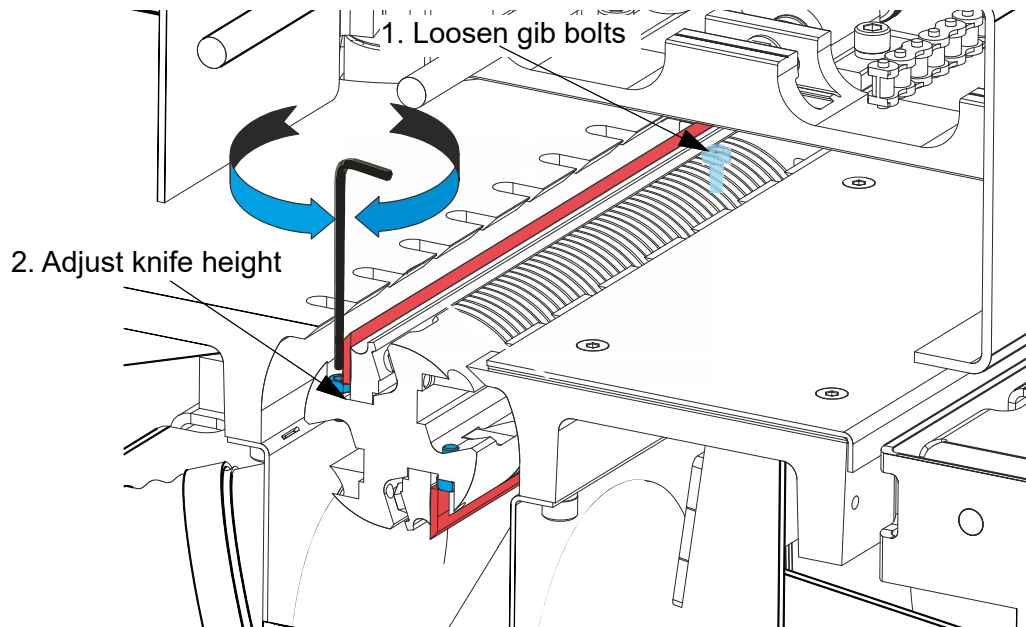


FIG. 3-7

5. Insert the 10 mm wrench in the track between the gib and the cutter.
6. Loosen (do not remove) the gib lock bolts that hold the knife.
7. Set the knife height by adjusting the two recessed adjustment screws next to the cutter track.

Check that the knife is level in the cutter head by rotating the head to see if the knife blade barely comes in contact with and moves the straight edge **very slightly**. (See Figure [3-6](#).) Adjust one side until correct, and then adjust the other side in similar fashion.



**IMPORTANT!** Adjusting the second side can cause the first side that you just adjusted to become a little bit off. Check the level of both sides of the knife again, and continue adjusting until the straight edge moves equally on both sides when the cutter head is rotated beneath it.

8. Securely tighten the gib lock bolts once the knife is adjusted correctly.

**NOTE:** Tighten all the bolts simultaneously, at the same rate, moving back and forth between both bolts. Continue repeating the procedure between both bolts until they are very tight.

# 3

## Setup

### *Initial setup of upper cutter*

---

9. When the gib lock bolts are tight, tighten the height adjusting screws until they touch bottom of the indentations of the knives.



**CAUTION!** If the height adjusting screws are screwed too tight, the knife will crack.

10. Repeat this procedure on all straight knives you have installed in the head.

11. Check that all knives are level with the cast iron table.



**WARNING!** Ensure that ALL of the gib lock bolts are very tight, and that all of the knives are secure in the cutter head and before using the machine! Rotate the cutter head completely to ensure it does not impact with anything when rotating. Failure to follow this may result in serious injury or death.



**WARNING!** Check that all parts and wrenches used to set the lower knives have been removed from the machine before closing the lid of the machine! Failure to follow this may result in serious injury or death.

### *Initial setup of upper cutter*



**WARNING!** Before adjusting the upper cutter on this machine always turn off the electrical circuit supplying power to the machine. Failure to follow this may result in serious injury or death.

See Figure 3-8. The upper cutter adjusting methods

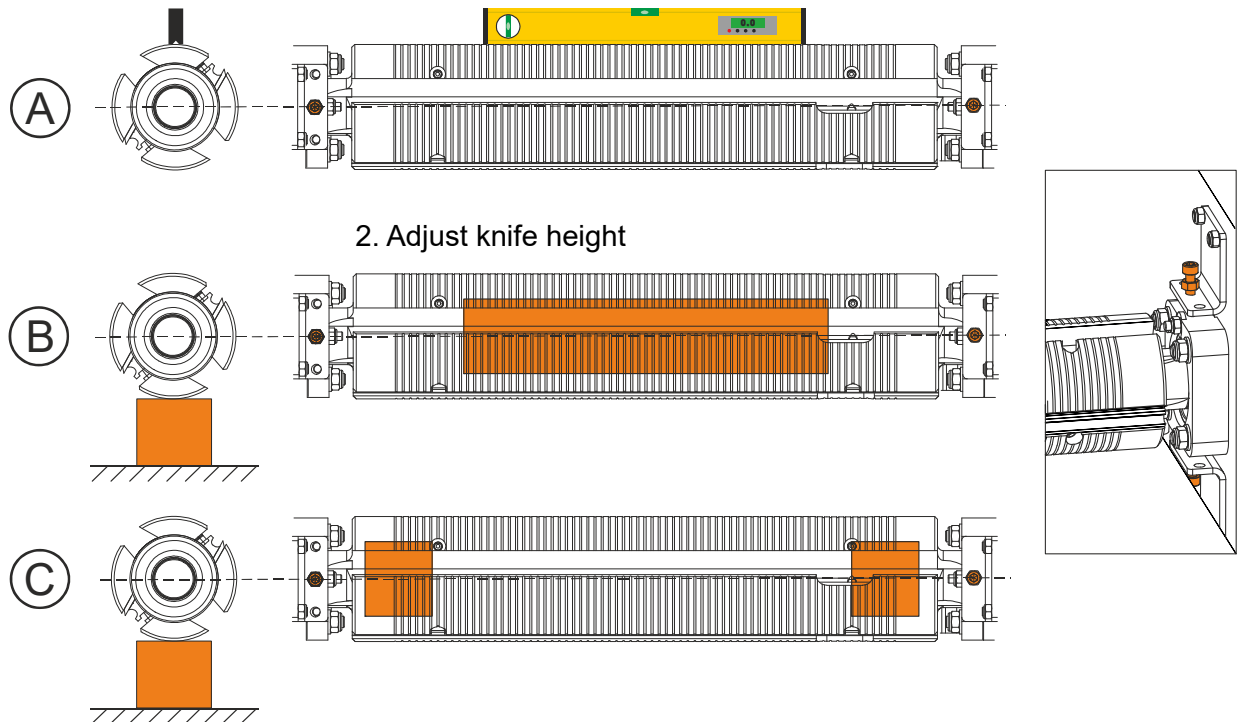


FIG. 3-8

The upper horizontal cutter should be parallel to the machine table. This is set from factory, but the setting can become maladjusted by rough handling during transport or by the machine being subject to impact.

- Loosen the screws of the bearing housings a couple of turns (four M8).

#### A. Adjustment with digital spirit level

- Calibration (set 0' on cast iron table)
- Put digital spirit level along the upper cutter
- By adjusting the right or left holder, (using the upper and lower adjustment screws) set the cutter parallel to the table.

**B. Adjustment with long block**

- Placing an absolutely level block on the machine table directly under the cutter head
- Turn the cutter head so that the block will not press against the knives or the knife slots.
- Turn the crank that adjusts the machine table height, so that the block slightly lifts the cutter head
- Tighten the screws of the bearing housings.

**C. Adjustment with two long blocks**

- Placing the absolutely level two blocks on the machine table directly under the cutter head
- Turn the cutter head so that the blocks will not press against the knives or the knife slots.
- Turn the crank that adjusts the machine table height, so that the blocks slightly lifts the cutter head
- Tighten the screws of the bearing housings.



**IMPORTANT!** When the bearing housings of the upper cutter have been adjusted, or when the takeoff of the planing knives has been changed, the position of the rotating scale must be calibrated. The height scale indicator on the front side of the machine may also need adjustment.

***Leveling the upper cutter straight planer knives***

The upper cutter knives are adjusted in a similar way to the lower cutter knives. However, there is an aluminum knife-setting block that is supplied with the machine for the purpose of setting the upper cutter knives. This setting block can be found in the parts box that is shipped with the machine.

1. Loosen (do not remove) the knife gib lock bolts.
2. Place the aluminum setting block (supplied) next to one of the knife adjustment screws.



See Figure 3-9.



FIG. 3-9

3. Adjust the knife up or down with the hex wrench until it just barely touches the underside of the setting block.
4. Securely tighten the gib lock bolts once the knife is adjusted correctly.

**NOTE:** Tighten all the bolts simultaneously, at the same rate, moving back and forth between both bolts. Continue repeating the procedure between both bolts until they are very tight.

5. When the gib lock bolts are tight, tighten the height adjusting screws until they touch bottom of the indentations of the knives.



**CAUTION!** If the height adjusting screws are screwed too tight, the knife will crack.

6. Repeat this procedure on all straight knives you have installed in the head.

### ***Replacing cutter straight planer knives***

This procedure is the same for upper and lower cutters.

1. Loosening the gib lock bolts.
2. Loosening the knife adjustment screws until the blade is free.
3. Clean any debris or residue from the cutter head, gibs, or knives, as needed.
4. Place the new knife in at the same orientation as the old knife.

**NOTE:** Always place the leading edge of the knife against the gib. This is true for both straight planing knives and moulding knives in all cutter heads.

5. Level the knives as described in [Leveling lower cutter straight planer knives](#) and [Leveling the upper cutter straight planer knives](#).

### ***Adjusting cutting depth of the lower cutter***

The cutting depth of the lower cutter is set by adding or removing the adjusting plates located on the cast iron planer table in front of the lower cutter.

There are three takeoff-adjusting plates available:

- 2 mm thick with beveled holes
- 1 mm thick with beveled holes
- 1 mm thick with flat holes



**IMPORTANT!** The 1mm plate with the flat holes should not be used alone. When used, it should be placed on the bottom or sandwiched between plates.

See Figure 3-10. The adjusting plates are held in place by countersunk screws.

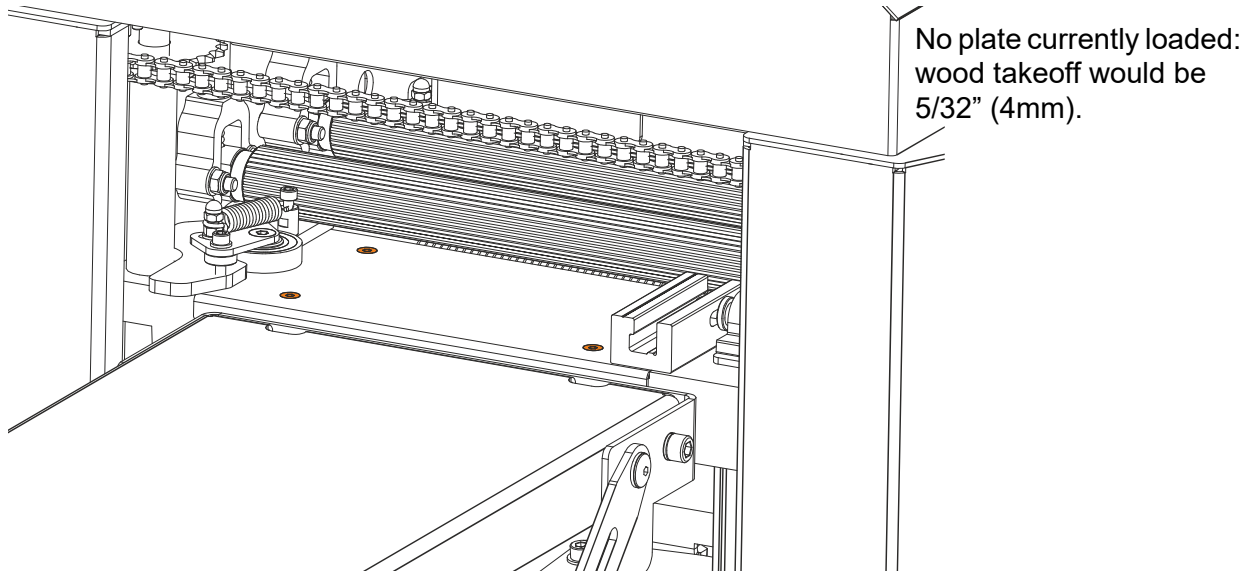


FIG. 3-10

The 2mm spacer is the most common setting.

Various configurations used to remove wood:

- 4 mm (5/32"), do not use any takeoff adjustment plate.
- 3 mm (1/8"), use the 1 mm takeoff adjustment plate with beveled holes.
- 2 mm (5/64"), use the 2 mm takeoff adjustment plate.
- 1 mm (1/16"), use the 1 mm takeoff adjustment plate with flat holes (on the bottom) AND the 2 mm takeoff adjustment plate.
- 0 mm, use the 1 mm takeoff adjustment plate with beveled holes, the 1 mm takeoff adjustment plate with flat holes (sandwiched), and the 2 mm takeoff adjustment plate.

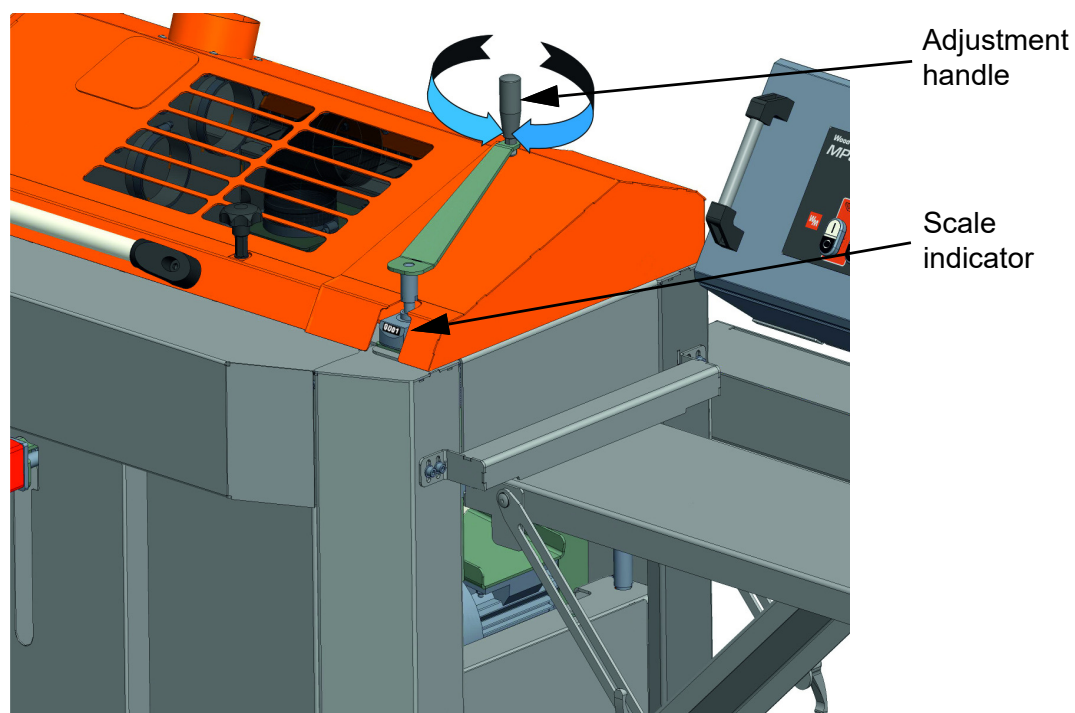
### 3 Setup

#### *Adjusting upper cutter depth*

#### *Adjusting upper cutter depth*

The cutting depth of the upper cutter is adjusted by turning the adjustment crank handle that raises and lowers the cast iron table in the planer.

See Figure 3-11.



**FIG. 3-11**

The depth of cut is determined by the thickness of the rough board before it enters the planer, less the amount of takeoff from the lower cutter, less the amount of the thickness of the finished board.

Examples:

Imperial		Metric	
Rough lumber thickness	1-1/16 "	Rough lumber thickness	26 mm
Takeoff of lower cutter	1/16"	Takeoff of lower cutter	2 mm
Upper cutter head removes	1/8"	Upper cutter head removes	3 mm
Resulting thickness	7/8"	Resulting thickness	21 mm

### **Moulding knives in upper and lower cutters**

Moulding knives can be mounted both in the lower and the upper cutter. The moulding knives must always be mounted in pairs and in the same lateral position in the opposite slots of the cutter head. A small degree of lateral deviation between the moulding knives can be accepted, as long as the cutter head stays balanced.

The lower and the upper cutter have four knife slots each. As mentioned above, the machine comes with two mounted planing knives in each horizontal cutter. In the two empty slots you can mount moulding knives of different sizes and profiles.



**WARNING!** Ensure the cutter head is balanced. Failure to follow this may result in serious injury or death.



**IMPORTANT!** If back relief knives are mounted in the lower cutter, these should be laterally positioned in such a way that they can pass through the tracks in the machine table.



**IMPORTANT!** Screwed to the chassis, above the machine table on the in-feed side, there is a limiting plate that, when it is turned up-side-down, limits the maximum takeoff of the upper cutter. This plate must be used when moulding knives are mounted in the upper cutter. If a work piece that is too thick is fed through the machine, the feed rollers can be pressed upwards so that they come in contact with the moulding knives.

1. Assemble the knife clamping gib and the moulder knife.
2. Insert the gib and the moulding knife in the wide end of the slot in the cutter head.
3. Push the knife and the gib along the slot, and then fasten them by turning the screw on the back of the gib counterclockwise so that it presses against the side of the slot.



**IMPORTANT!** The lock screw must be fixed in the narrow part of the slot. It must not be fixed in the wide end of the slot.

4. Measure the lateral position of the knife, and fit an identical knife in exactly the same position on the opposite side of the cutter head.

# 3

## Setup

### Side cutter setup

See Figure 3-12.

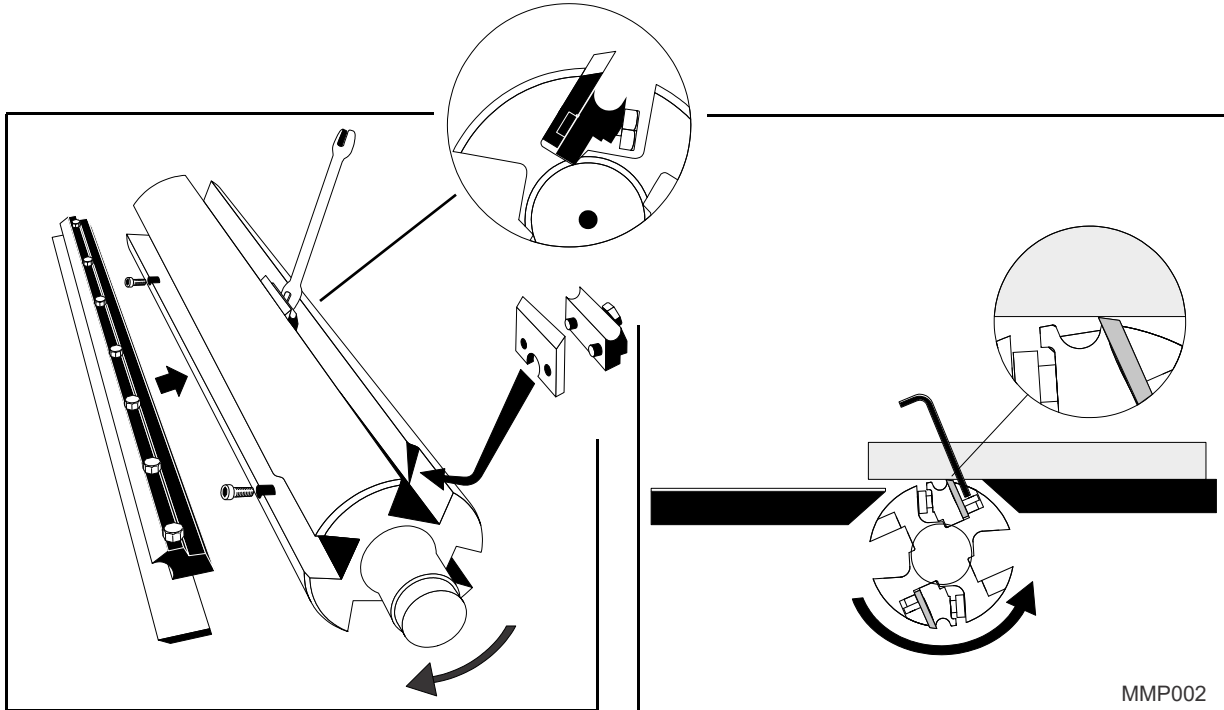






FIG. 3-12

### 3.4 Side cutter setup

 **WARNING!** Before adjusting the knives on this machine always turn off the electrical circuit supplying power to the machine. Failure to follow this may result in serious injury or death.

 **WARNING!** Wear gloves when working with knives in the machine. Failure to follow this may result in serious injury or death.

 **CAUTION!** Check for tools used in the operation and remove from the machine before closing the lid.

 **IMPORTANT!** Check for free rotation of cutter heads before closing the lid.

#### TOOLS NEEDED:

- 12 mm open-end wrench.
- 30 mm open-end wrench (supplied).
- 4 mm hex wrench (supplied).

- Gloves.

### SIDE CUTTER DESIGN

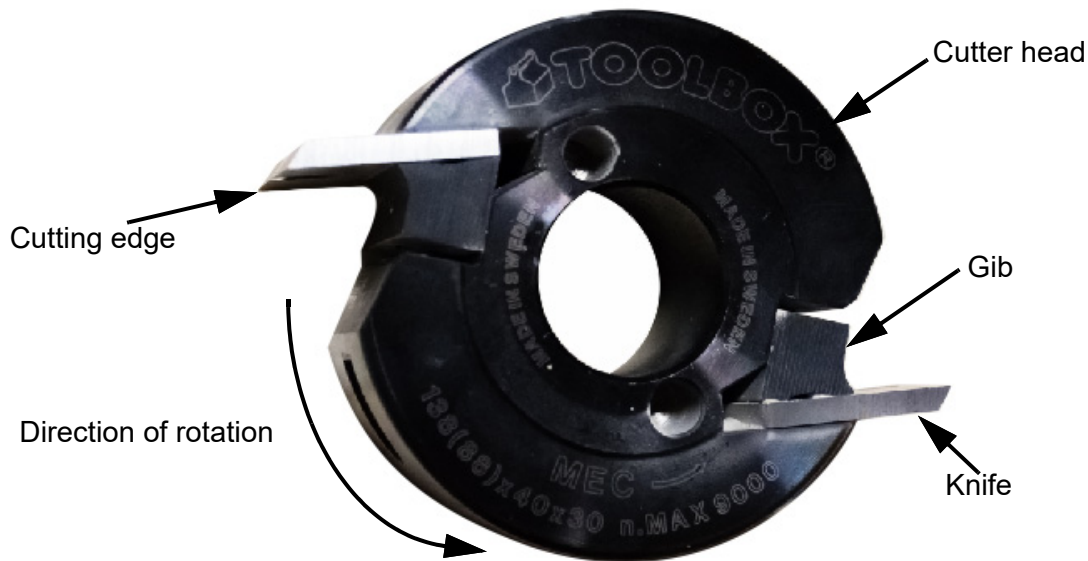
The side cutters have the following specifications:

- Spindle Axle: Diameter 30 mm
- Cutting Height: Maximum 3 15/16" (100 mm)
- Rotation Speed: 7000 rpm
- Cutting Depth: Maximum 1 3/32" (28 mm)

Specifications of the side cutter heads shipped with the machine:

- Diameter: Body 3 1/2" (90 mm)
- Height: Body 1 9/16" (40 mm)
- Planer Knives: HSS (High Speed Steel)
- Knives: Width 1 33/32" (50 mm)

**See Figure 3-13.** Anatomy of a side cutter head.



**FIG. 3-13**

### 3 Setup

#### Side cutter setup

See Figure 3-14.

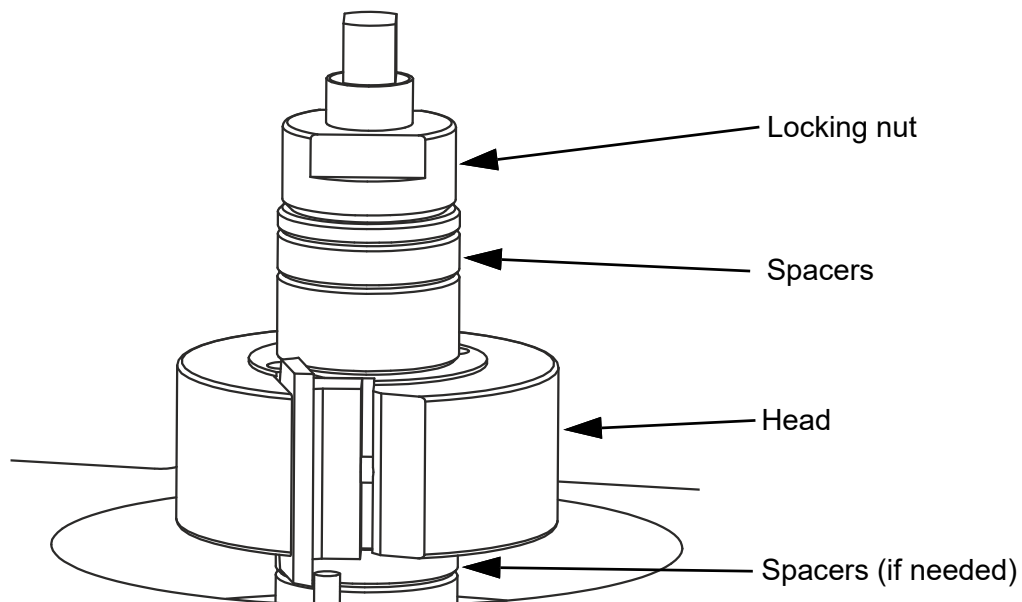



FIG. 3-14

#### REMOVING RIGHT OR LEFT SIDE CUTTER

 **WARNING!** Wear gloves when working with knives in the machine. Failure to follow this may result in serious injury or death.

See Figure 3-15. Location of the side cutters

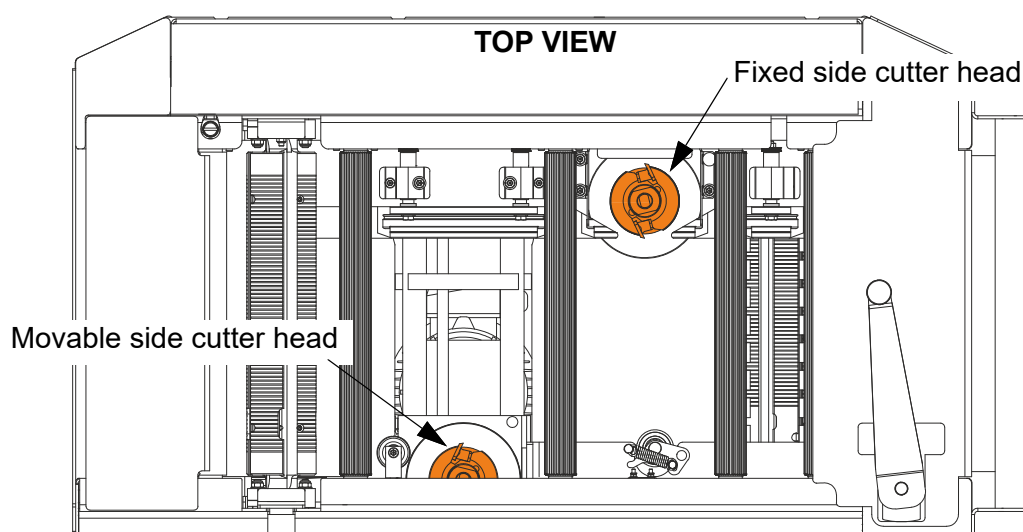
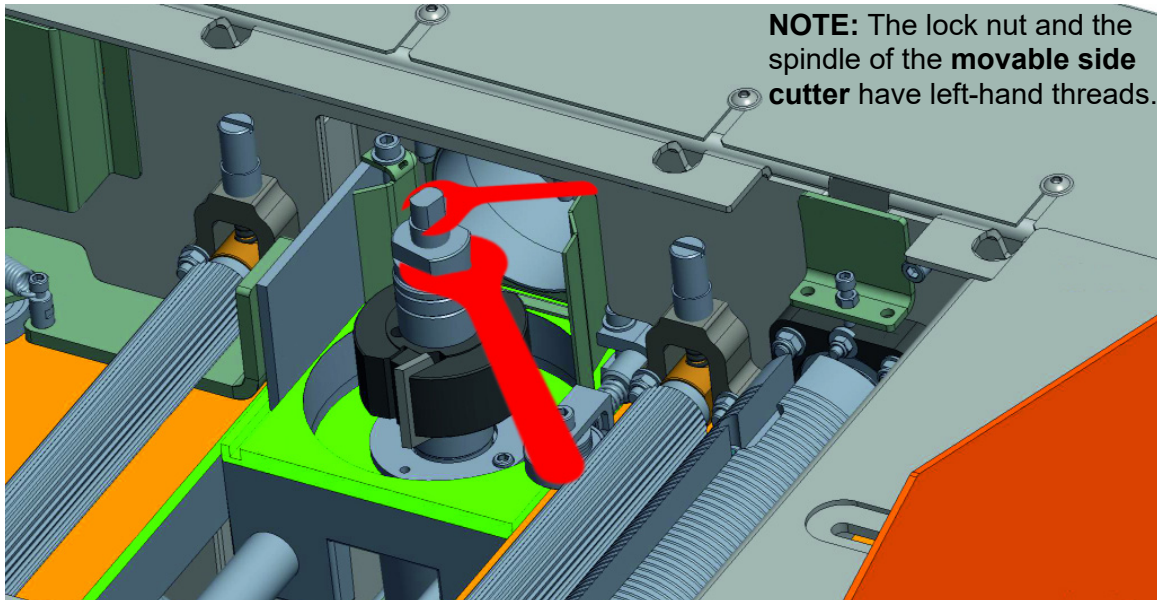


FIG. 3-15



See **Figure 3-16**. Use the 30 mm and 12 mm open-end wrench in combination to loosen the nut on the top of the shaft.



**FIG. 3-16**

Loosen the nuts on the side cutters by screwing them in the same direction as their respective cutter rotate.

# 3

## Setup

### Side cutter setup

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Chip breaker - mounting instructions:

Unscrew the M8x16 screws (A). Then place the chip breaker (B) in the place shown in the figure. Secure with the previously unscrewed screws.

See Figure 3-17.

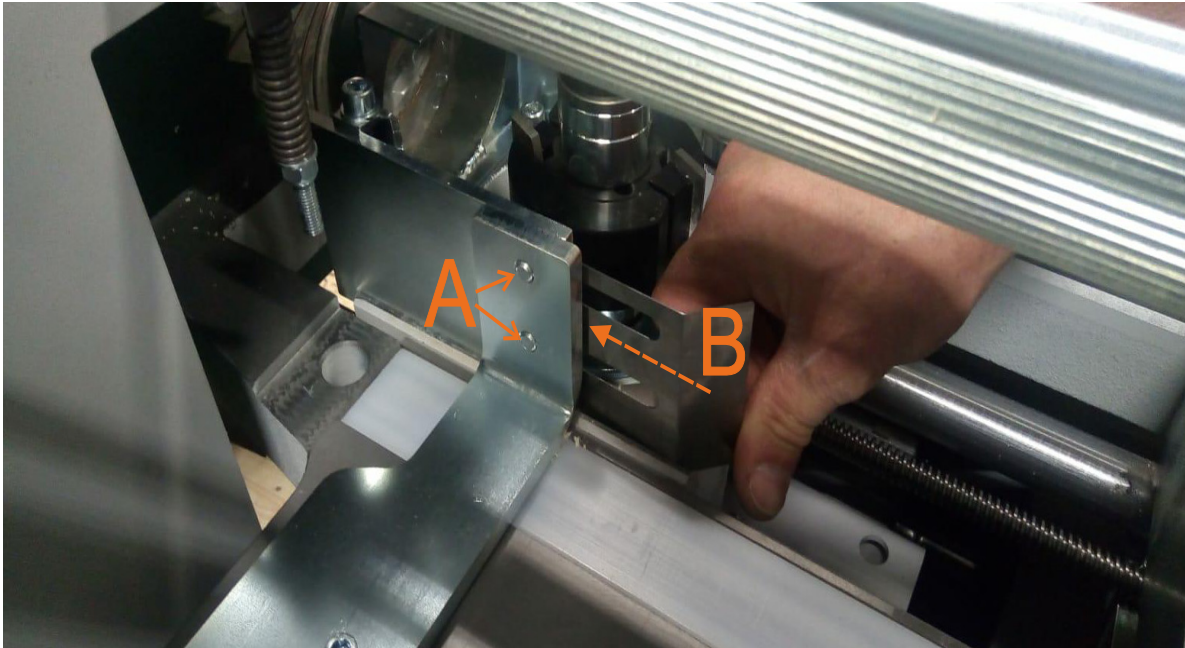


FIG. 3-17

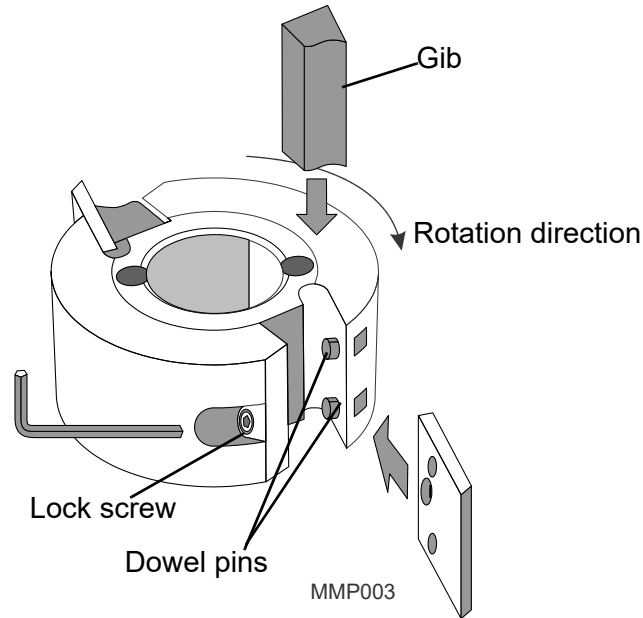
### REPLACING KNIVES

1. Loosen the lock screw with a 4 mm hex key (supplied).
2. Remove the gib.
3. Remove the knife from the dowel pins.
4. Insert a new knife and gib.
5. Screw the lock screws tight.



**IMPORTANT!** Ensure the knives are mounted in the proper orientations for the rotation of the head.

See Figure 3-18.



**FIG. 3-18**

Ensure that the chip deflector in front of the movable cutter does not get bent by the unplanned edge of the work piece coming in contact with the cutter. Be cautious processing work pieces of various widths.

Ensure that the cutter head can rotate freely, and that there is approximately 5 mm (0.2") between the outermost cutting diameter of the cutter and the chip deflector that works as a chip barrier behind the movable cutter.

### **SETTING SIDE CUTTER KNIFE HEIGHT**

Included with your planer is a package of shims/spacers of various thicknesses for the side cutter heads. These shims are packed in the parts box that is packed with your planer.

See Figure 3-19.



40 mm Spacer  
20 mm Spacer  
10 mm Spacer  
5 mm Spacer  
Set of Spacers (0.1 - 2.0mm)

**FIG. 3-19**

Side cutter shims are used to raise the cutter head up and down on the cutter shaft. Using shims allows the precise setting of the cutter head, and when locked in place, your setting will not change. Also, shims provide you the ability to easily change your settings, as well as the ability to return to specific settings, as long as you record the shims that are used in that particular setup.

### **RAISING OR LOWERING THE CUTTER HEAD**

Remove the cutter head and determine the amount of shims to place under the cutter head to achieve the correct height of the head.

You may have to try several combinations of shims in order to achieve the correct height setting for the side cutter knives.


Replace the cutter in the same orientation as it came out.



**IMPORTANT!** Replaced the cutter heads back in the machine with the knives facing the correct direction. The leading edge of the knife should always turn into the wood. Ensure this knife is cutting into the wood when the head is rotating.

### LOCK THE CUTTER HEAD IN POSITION

Place the large spacer rings above the cutter head. Only the threaded portion of the shaft should be visible.

 **CAUTION!** If the spacer rings are not stacked properly, the cutter head may spin on the shaft, causing the shaft to become scarred and damaged.

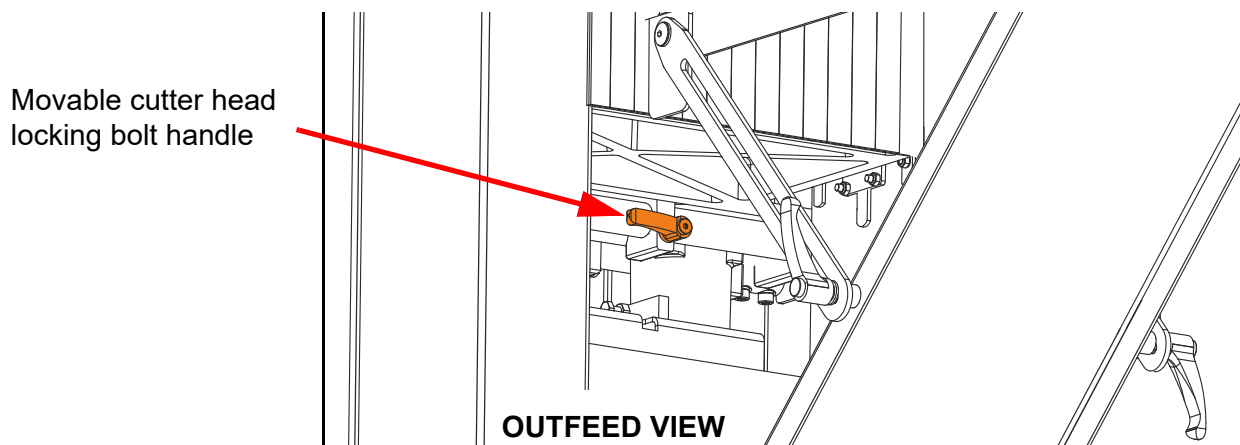
The top nut should then be replaced on the top of the shaft using two open-end wrenches – one to hold the shaft, and one to tighten the nut. (See figure [3-16](#).)

### *Setting the movable side cutter head*

The movable side cutter head has a locking bolt **under the table**, on the outfeed side.

Loosen the movable side cutter locking bolt by the handle.

See Figure 3-20.



**FIG. 3-20**

Use the crank on the front of the unit to move the side cutter in or out to the desired location to cut the left side of the board.

See Figure 3-21.

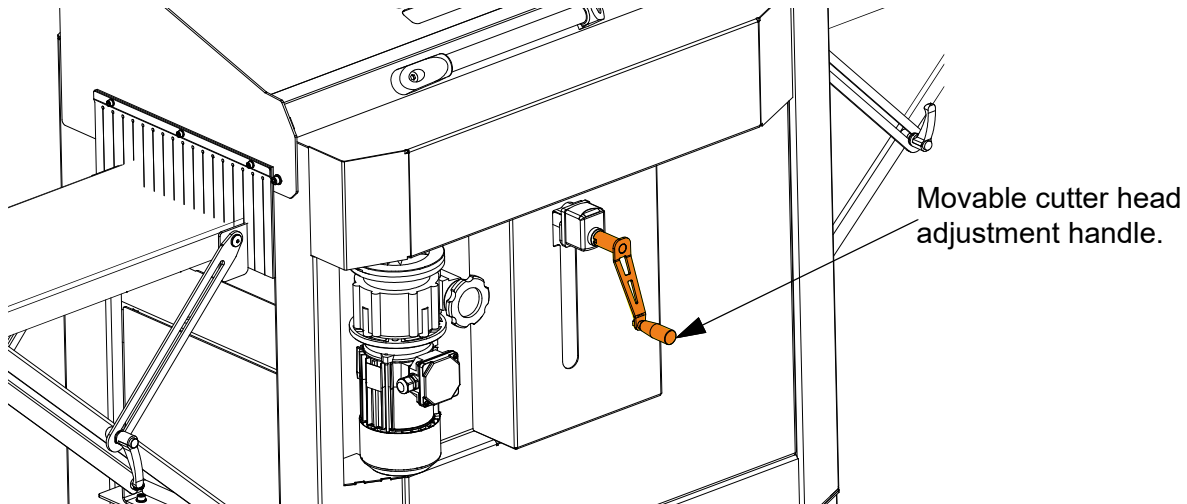


FIG. 3-21

This initial setting will only be an approximation; for now, we are mainly setting the second right side fence. Once this second right side fence is set, you will be able to accurately measure the desired width.

### SETTING THE LEFT SIDE PRESSURE ROLLERS

There are two pressure rollers on the infeed arm and one on the outfeed side of the movable cutter head. The pressure rollers hold the board against the side cutter fence.

The infeed pressure rollers are mounted on a bracket attached to the movable side cutter. It moves with the side cutter.

The pressure roller bracket fits into a groove just in front of the side cutter and can be moved in or out as needed to allow for varying width boards. Where this bracket is placed also determines the widest board the machine will accept. The pressure rollers should be set to approximately 1/8" less than the board width.

See Figure 3-22.

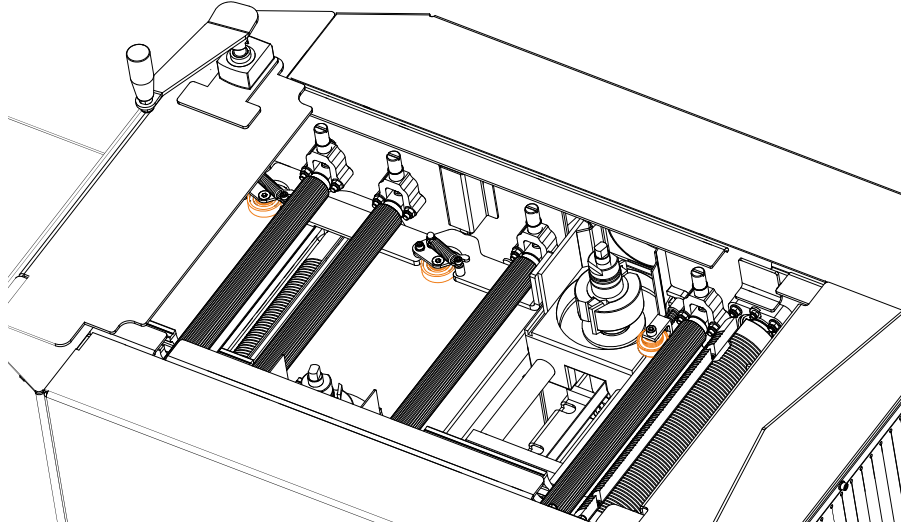


FIG. 3-22

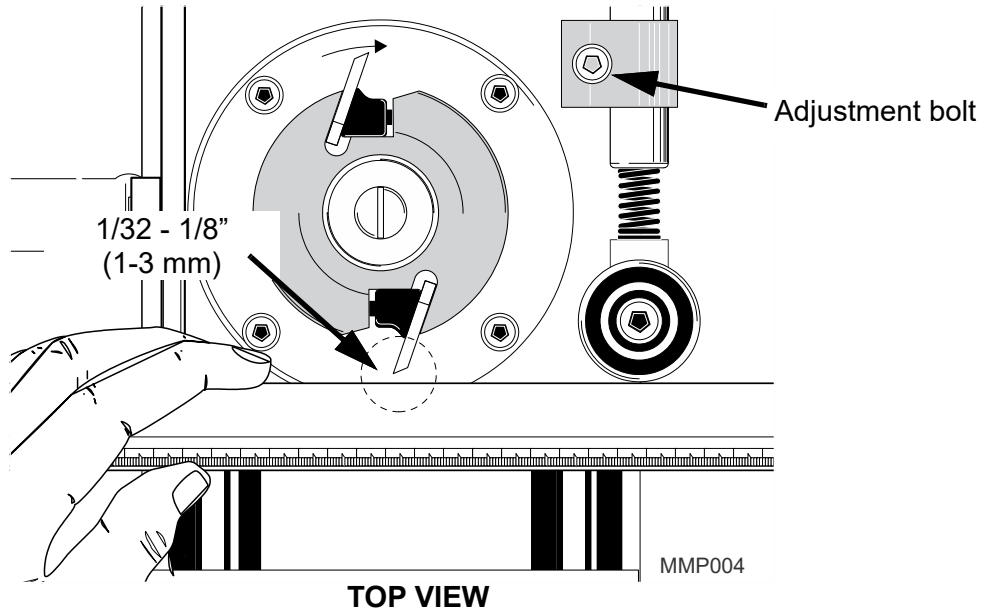
To set the pressure rollers, you loosen the screw (6 mm hex key) that **secures the roller bracket on the movable cutter carriage**. Adjust the bracket so that the pressure rollers are pressed in approximately 0.2" (5 mm) when the work piece is fed into the machine. The pressure rollers do not need adjusting.

Behind the movable cutter there is an additional pressure roller, which presses the work piece against the back fence. Set this pressure roller so that it extends approximately 1/32 - 1/8" (1-3 mm) past the cutting diameter at the level of the pressure roller.

**3** Setup  
*Setting the movable side cutter head*

---

See Figure 3-23.



**FIG. 3-23**



## 3.5 Feed rollers

The MP280 has five feed rollers, which feed the work pieces through the machine. Four of these rollers are of ribbed metal and the last one has a rubber coating so that the surface of the work piece will not be marked when it exits the machine.

The feed rollers are run by a separate motor with a planetary gear. The rubber roller goes into the planetary gear. On the rubber roller there is a sprocket, which on its part runs the other four feed rollers via chain transmission.

### *Adjusting the feed roller pressure*

On each end of the feeding rollers, there is a spring mounted bearing housing. Under the bearing housing there is a spring on a threaded bar. The pressure the feed rollers apply to the work piece can be adjusted by turning the nut on the bottom of each threaded bar. Ensure the pressure is the same at both ends of the feed rollers.

Lubricate the bearing housings of the feed rollers with oil after each work session.

The rubber roller should also be adjusted so that it applies just the right pressure to the work piece. Remember that this feed roller should be set by the thickness the work piece has when leaving the cutters.



**IMPORTANT!** Wood debris can accumulate under the feed roller spring mounted bearings. This impairs the feeding and increases the risk of the work piece being hurled out of the machine. Check these areas and, if necessary, remove the wood debris that has accumulated there.

### *Adjusting the feeding speed*

The stepless feeding speed can be adjusted by turning the knob on the planetary gear. If the knob is turned clockwise the feeding speed is increased; if it is turned anticlockwise the feeding speed is lowered.



**CAUTION!** Do not adjust the feeding speed if the motor of the feed rollers is not running. Equipment damage may occur.

The optimum feeding speed varies depending on what sort of wood you are machining, the moisture content of the wood, and what type of moulding knives you have mounted in the machine. The feeding speed can be adjusted from 2 m/min. to 12 m/min.

### 3.6 Leveling the machine cast iron table



**IMPORTANT!** Leveling the machine table is a complicated operation. Ensure that this operation is necessary before beginning any adjustments.

The machine table is already leveled from factory, but the table can have changed its position by rough handling during transport or by the machine being subject to impact.

#### INDICATIONS THAT THE MACHINE TABLE IS NOT LEVEL

- The upper cutter cannot be adjusted so that it is parallel to the machine table
- The crank for raising and lowering the table is difficult or impossible to turn.
- The chain that connects the trapezoidal threaded bars that holds the machine table has come off or has moved incorrectly on a sprocket.

#### LEVELING THE MACHINE

1. Set the both bearing housings of the upper cutter in their lowest position. (See [Initial setup of upper cutter.](#))
2. Place an absolutely level block on the machine table directly head (not against the knives or the knife slots).
3. If possible, turn the machine table crank until the block comes very close to the cutter. If it is impossible to raise the table, you later have to take the measurement between the table and the cutter head instead of using the block. This operation is slightly more difficult.
4. Loosen the chain for the machine table by opening the chain lock (take the opportunity to clean and lubricate the chain).
5. Turn each of the threaded bars until the cutter head touches the block along its entire length (alternatively, measure between the table and the cutter head). Each threaded bar has to be turned a little at a time to avoid the table getting locked due to angular misalignment. Do not use force.
6. When you are satisfied with the table's lateral position, check the table's position length-wise in the machine by measuring its height against the upper edge of machine frame, and level the table in this direction as well.
7. Ensure that all the threaded bars are easy to turn. If any of the threaded bars is difficult to turn, it is due to angular misalignment of the table. Adjust this by slightly turning the difficult bar, even if this results in the table being not completely level. This deviation is taken care of by fine-tuning the position of the upper cutter. (See [Initial setup of upper cutter.](#))

8. Ensure that the table cannot be wobbled diagonally.
9. Place the chain on the sprockets and tension the chain using the chain tensioner on the out-feed side of the machine.



**IMPORTANT!** When the bearing housings of the upper cutter have been adjusted, or when the take-off of the planing knives has been altered, the rotating scale has to be calibrated. Possibly, the pointer on the height scale on the front side of the machine also has to be adjusted.

### 3.7 Running the first test board



**WARNING!** Check for tools used in the operation and remove from the machine before closing the lid. Failure to follow this may result in serious injury or death.



**IMPORTANT!** Check for free rotation of cutter heads before closing the lid.

Use a board approximately 3 feet (1m) in length and uniform in dimension for the first run of the machine. In order to set the second right side cutter fence this board should be stopped before it runs completely through the machine. Specifically, the board should be stopped just in front of the pressure roller located just after the left side cutter.

See Figure 3-24.

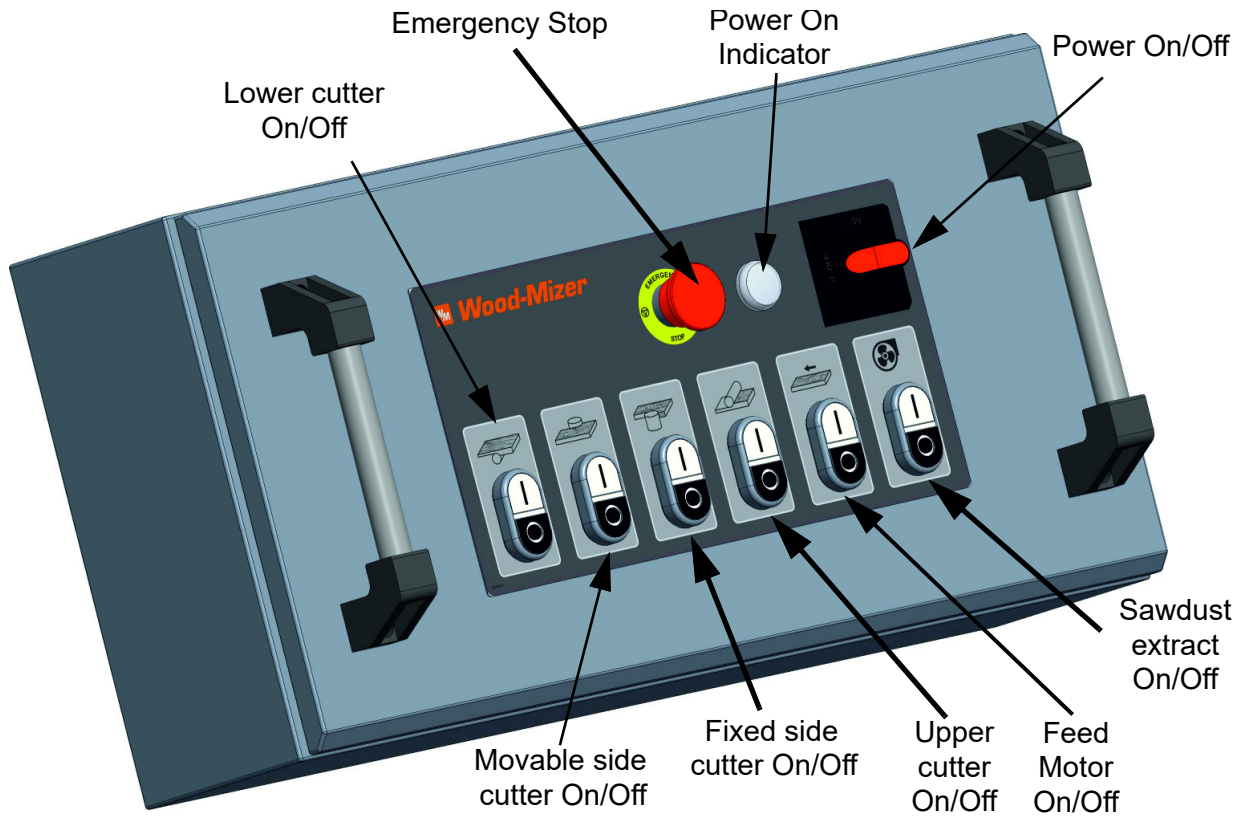


FIG. 3-24

1. Turn on the power. Power On Indicator should illuminate.
2. Turn on the chip extractor.
3. Start the cutter heads one at a time.
4. Start the feed motor.

Start buttons should illuminate as the motors are started.



**CAUTION!** Do not adjust the feeding speed if the motor of the feed rollers is not running. Equipment damage may occur.

5. Slow the speed of the feed rollers down using the knob on the planetary gear. Turn the knob until you see the rollers slow down to their lowest speed.

See Figure 3-25.

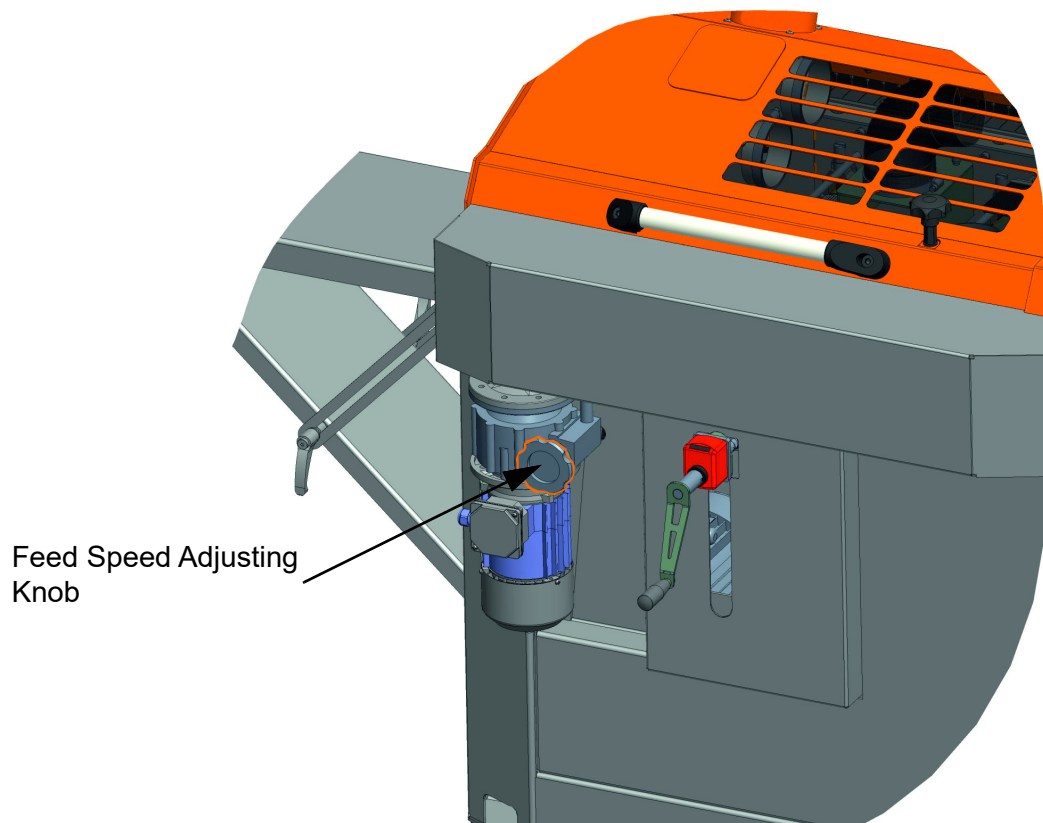


FIG. 3-25

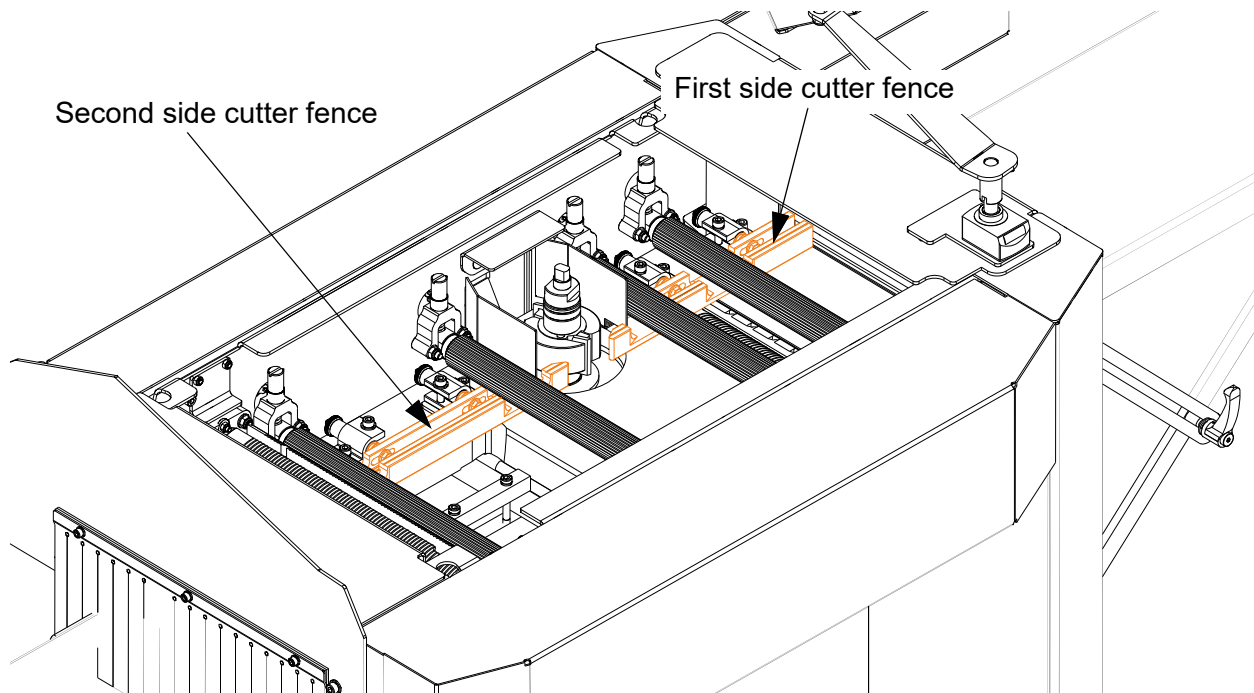
6. Place the board on the infeed side of the table against the fence.
7. Slide the board into the machine, with the right side firmly against the fence, until you feel the feed rollers begin to pull the board through the machine.
8. Watch the board feed through the planer through the observation window that is integrated into the lid.
9. Stop the machine with the stop button when the board gets just past the left side cutter, just before it comes in contact with the pressure roller next to the left side cutter.

Check the length of the fence. If needed, loosen the bolts holding the front of the fence to the mounting brackets, sliding the fence to the correct position. Be sure and check rotation of the right cutter head before setting.

### Side cutter fence setup

The right side cutter has two fences: the first and second side cutter fence. They are both attached in similar fashion to the cast iron table.

See **Figure 3-26**. Here are their locations in the machine:



**FIG. 3-26**

### SETTING THE SECOND SIDE CUTTER FENCE

The second side cutter fence is located on the far side of the stationary cutter (see [figure 3-26](#)). It is set back away from the path of the wood initially.

Pass a test board through the machine and then stop it in place.

Bring the second side cutter fence up to the wood and bolt it firmly against the wood.

See Figure 3-27.

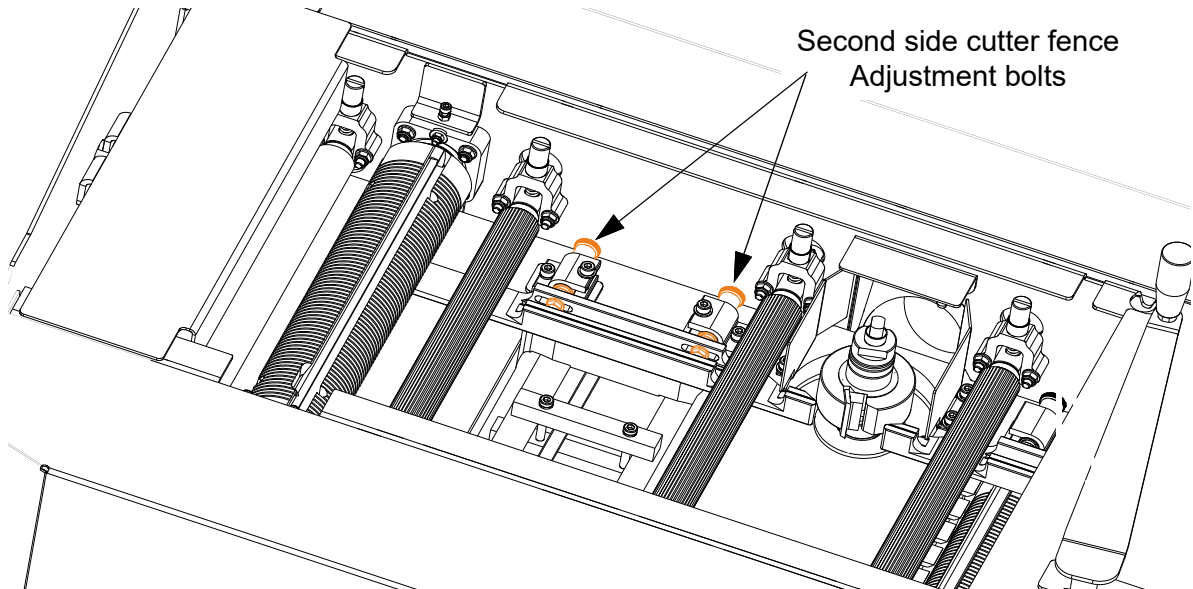


FIG. 3-27

When your test boards are complete, and you are satisfied with your setup, you can begin running material through the machine.

### FEEDING THE MACHINE

Ensure you have adequate room for the material that you will be putting in to and taking out of your planer. Your work area should be well lit, and clear of loose items on the floor, so there is little risk of tripping when handling long material. The paths to the infeed and outfeed ends of the machine should be clear.


Material should be placed close to the infeed end of the machine for quick feeding into the machine and a stacking area should be prepared at the outfeed end.


Once the machine is started and boards are fed into the machine, it is recommended to keep the material going through the machine one board after another, with the two boards touching.


Place the straightest edge of the material against the right side fence. Ensure it is fed into the machine with the edge against the first right side fence. Material that is fed into the machine at an angle will not straighten up in the machine and may cause problems with fences.


## SECTION 4 OPERATION

### 4.1 Operation

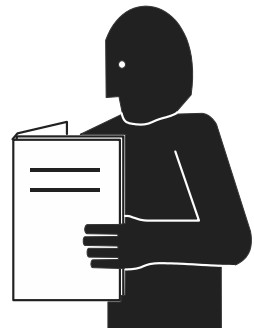
 **DANGER!** Keep hands away from the knives. Failure to follow this will result in serious injury or death.

 **DANGER!** Do not operate the planer moulder without all covers and guards in place. Failure to follow this will result in serious injury or death.

 **WARNING!** Do not operate the machine standing directly in front of the input or output tables; kickbacks may occur. Failure to follow this will result in serious injury or death.

 **WARNING!** Minimum length of the work piece is 24" (600 mm). Do not try to feed shorter pieces. Failure to follow this will result in serious injury or death.

Read and understand all information and warnings contained in the **Safety** section of this Operators Manual **before starting the planer**.



#### CONTROL PANEL OPERATION

The MP280 is operated via the control panel located at the infeed end of the machine. The top right light on the control panel will illuminate when power is being supplied to the machine. The bottom row of buttons starts each motor independently of the others. After you are certain the machine is correctly set up and clear of any tools or loose items, start only the motors you will be using.

**NOTE:** None of the motors will start if the planer's observation/protective lid is not securely closed, or if the Emergency Stop Button is depressed.

The MP280 is equipped with a lid switch that must be engaged before the machine can be started by the control panel buttons.



See Figure 4-1.

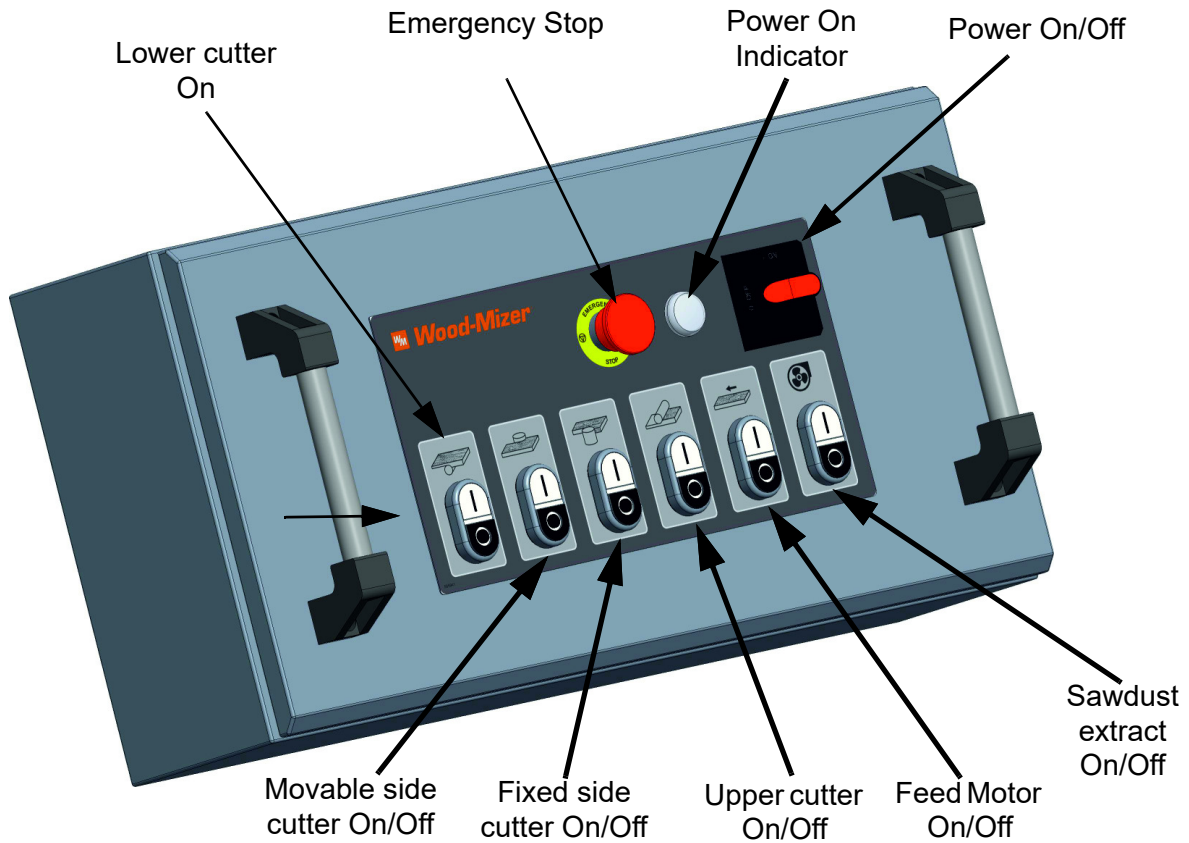



FIG. 4-1

### STARTING THE PLANER

 **IMPORTANT!** Read and understand all information and warnings contained in the **Safety** section of this Operators Manual **before starting the planer.**

Check for rotation of all cutter heads before closing the lid and starting the machine. Each cutter head should move freely and not impact any fences before starting.

Check that all tools used in the setup of the machine are removed from the machine before starting any of the motors.

The lid must be securely fastened down before the MP280 can be operated.

The Emergency Stop Button must be pulled out to allow motors to be started.

**NOTE:** The best way to ensure that it is in the correct position is to depress the Emergency Stop Button in and then pull it out until you hear a click.

### STOPPING YOUR PLANER UNDER NORMAL OPERATING CONDITIONS

Under normal operating conditions, use the top left red button to stop the machine. This stops all motors at once. All of the motors can be restarted again after this stop button is pressed.

### STOPPING YOUR PLANER IN AN EMERGENCY

The Emergency Stop button stops all motors. If an emergency occurs, and you need to quickly stop the machine, press the large red Emergency Stop button until you hear it click. Once this button is pressed, the machine cannot be restarted until this button is turned 90° and pulled out to reset.



**CAUTION!** After every emergency stop wait at least 10 seconds before restarting the machine. If you do not wait, the fuse on the brake card may blow or, if that fuse fails, you will damage the brake card.

## 4.2 Planing tips

### *General recommendations*

- If the knives in the upper cutter protrude too much, the last feed roller will not take hold of the workpiece. Recommended protrusion is 1 mm.
- A planer/moulder is not a jointer; it only dimensions and moulds the workpiece. Planing and other mouldings are normally not machined in a jointer.
- Keep the feed rollers clean from wood debris. The out-feed roller is especially important, since wood debris on this roller can make marks in the planed surface of the workpiece.
- For slightly convex boards, feed the board with the convex side upwards. Set the first feed roller so that its pressure is somewhat lower than the pressure of the feed roller behind the first planing cutter.
- Be careful when adjusting the side fences. The back fence is to be level with the outermost cutting diameter of the cutter. The two fences should be parallel with each other and set so that the board is fed slightly diagonally (totally about 5 mm towards the left) through the machine. By this the feed rollers will press the board against the fences.

- If you are going to produce a large amount of a moulding there is an additional locking screw to secure cutter 3. The locking screw is recessed in a hole on the top of the carriage.
- Use in- and out-feed tables. Ensure that they are mounted exactly at the same height as the machine table. Set the out-feed table so that it slants upwards a couple of degrees. By this the board will be pressed down against the table when reaching the last cutter, which reduces the risk of out-feed marks.
- Reduce the air flow in the chip hose at cutter 2 when this cutter is to take off little wood from the work piece. This will increase the air flow at the other cutters.
- If you want to keep a roughly sawn surface on one side of the board, e.g. when making outdoor siding that is to be painted, you let that side face the machine table and do not start the lower cutter.
- If you want to produce thinner three-sided mouldings than the machine is designed to make, you can place a flat board on the machine table which will make the workpiece come in a higher position in the machine.
- The pressure springs of the feed rollers are to be set so that the feed rollers balance on the workpiece. If the feed rollers lie diagonally over the workpiece they can pull askew and, in addition, the grooves in the rollers will make deep marks in the workpiece. Balancing the feed rollers is extra important when thin workpieces are machined. When changing from the 2-12 m/min. feeder to the 4-24 m/min. feeder, the pressure of the last feed roller has to be adjusted due to the weight of the planetary gear.
- The chip extractor moves a large amount of air. If you blow the wood debris out of a heated room, the room will quickly become cold.

### **Sizing stock**

This planer/moulder works best as a finishing planer/moulder. You can take rough lumber right out of the stack and plane it smooth. However, to achieve the best results with this machine, it is best to have your stock as close to the size of the finished product as possible. If you are planing with lumber that has a wide variance on thickness, it is best to run this lumber through either this planer or another planer to size it to a uniform thickness before finish planing and moulding it with this planer.

Some types of wood are prone to splintering. If you are taking too deep of a side cut, the wood can splinter and pull into the left side cutter. You can prevent this by reducing the depth of cut that is taken off of that side of the stock.

For certain applications such as flooring, the lumber might need to have one side ripped to provide a straight edge. Your planer will not make a crooked board straight. If straight

material coming out of the planer is a requirement, then straight material will have to be fed into the machine. Subjecting lumber to a straight-line rip will take the wane out of a board. Place the ripped edge against the right side fence when feeding this ripped material through the machine.

### ***Planing narrow stock***

The MP280 can process very narrow stock. However, a motion-limiting block is positioned in the machine between the two tubes that the left side vertical cutter head moves on. This limiting block is held in place by two bolts that are accessible underneath the block. Take out the two bolts that hold the upper and lower halves of this block together, and remove the block.

Replace the motion-limiting block back into the machine when you are not planing narrow stock, as this block provides additional support to boards as they move through the machine, and across the width of the cast iron table.

### ***Planing stock thicker than 2 Inches***

The planer can mould and plane stock thicker than two inches with the side heads. To accomplish this two cutter heads must be stacked. When placing these cutter heads in the machine, be sure to place the cutting knives on the second head halfway between the two knives on the first cutter head on that spindle.

Spacers can be used to add height to the upper cutter head; however, it is best if there is some overlap of the knives, especially with straight knives.

### ***Saving a moulding pattern***

If you have produced a moulding that you know you will produce in the future, it can be wise to take some measures before removing the mounted knives. This will ensure that you can quickly set the machine for making the same moulding again.

1. Save a 0.5 (1.6 ft) long piece of the machined moulding.
2. Keep the spacers you have used together with the knives for the right and the left side cutter respectively.
3. Note the setting of the height scale of the table and the rotating scale on the height adjusting crank, i.e. exactly note to what height the machine table is set. Also measure the machined moulding. Note the measurements of the saved piece of moulding.

### ***Tongue and groove***

When setting up this machine for tongue and groove material, start with several short pieces of stock similar in size (width and thickness) to your finished product.

For tongue and groove that you have kept a sample from a previous run of this material, place the tongue and groove board from this previous run in the machine and match the knife height to match this original board.

1. Set the side cutters to the initial height by measuring with straight edges from the cast iron table to the bottom of the groove.
2. Run a short test board through the planer.
3. Cut the test board in half and test the match.
4. To correct a mismatch, lay the two boards together on a flat surface. Slide a thickness spacer ring(s) under the lower board until it is level. Use that spacer or combination of spacers to level the cutting head.

## SECTION 5 MAINTENANCE



**DANGER!** Remove power before clearing debris or **any other maintenance activity**. Failure to follow this will result in serious injury or death.

Follow the OSHA lockout procedures given at the end of this section.

### 5.1 Overview

Your planer is a precision machine, and will provide you with professional results if kept in good condition. Proper setup, alignment, cleaning, and lubrication are essential to the successful operation of the machine. All knives must be kept sharp and uniform to ensure the quality of cut and efficiency of operation. Operating your planer with dull knives will put undue stress on the machine, shortening its life.

### 5.2 Workspace



**DANGER!** Maintain a clean and clear path for all necessary movement around the planer moulder, tools, and material stacking areas. Failure to follow this will result in serious injury or death.

Having a clean and organized work area helps prevent most of the types of accidents that commonly occur in a workshop environment.

Your work space should have designated areas for tools, knives, shims, cleaning rags, scraps of material, or anything else that can either accidentally get placed/left in the machine. Constructing a tool board with designated spaces is an excellent way to always know where your planer tools and accessories are located. Locate your tool board close by your planer. That way, before you start your machine, you can look at the tool board and see if any tools are missing, and possibly left in your machine.

### 5.3 During use

Clean the machine from wood debris.

Ensure that wood debris has not accumulated under the machine. This can interfere with the cooling of the motors and lead to a motor breakdown or, at worst, fire. Furthermore, the belt under cutter 4 can become slack if wood debris accumulates under its motor.

Ensure that all chip outlets are connected to the chip extractor.

Ensure that all feed rollers can move.

The machine table should regularly be cleaned and treated with a lubricant, for example low-viscosity oil, silicon lubricants, or wax (3-1 oil, ChuteLube, silicon sprays, etc.).

## 5.4 After each use

1. Clean the machine from wood debris. Also check the chip outlets and the hoses. Remove wood debris that has accumulated under the machine.
2. Clean the cutters and the feed rollers from resin and accumulated wood debris. Use mineral spirits.
3. Ensure that wood debris has not accumulated behind the right side bearing housing of the upper cutter. If so, clean away the debris.
4. Ensure that wood debris has not accumulated in the springs under the bearing housings of the feed rollers. If so, clean them. Sometimes the spring must be removed from the threaded bar to be cleaned. **Note the setting of the spring before removing it.**
5. Clean the machine table and treat it with a lubricant (described above).
6. Clean and lubricate the three pressure rollers so that they can move easily.
7. Check belt tensions.
8. Make sure that all screws and bolts are tight.
9. Make sure that all cables and connections are in good condition.
10. Check the lamps by pressing down the emergency stop button and then the start button of the feeder.



**IMPORTANT!** Wood debris can accumulate under the spring mounted bearings of the feed rollers. This impairs the feeding and increases the risk of kickbacks.

## 5.5 Lubrication points

Ensure that the following parts are well lubricated. Use a chain/gear oil with ISO Viscosity Grade 68.

## 5 Maintenance

### Lubrication points

1. The bearing holders and springs of the feed rollers.

See Figure 5-1. Total of 10 - four steel rollers and one rubber

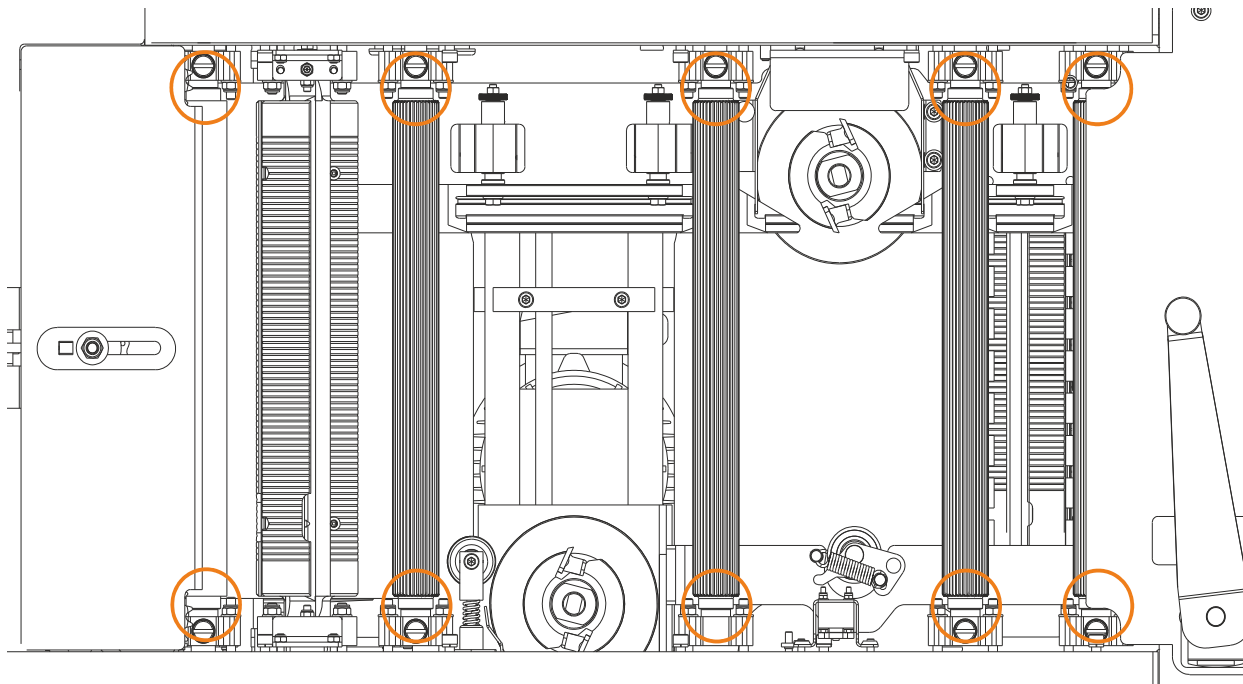


FIG. 5-1

2. Lubricate the trapezoidal threaded bars.

See Figure 5-2. Located at all four corners

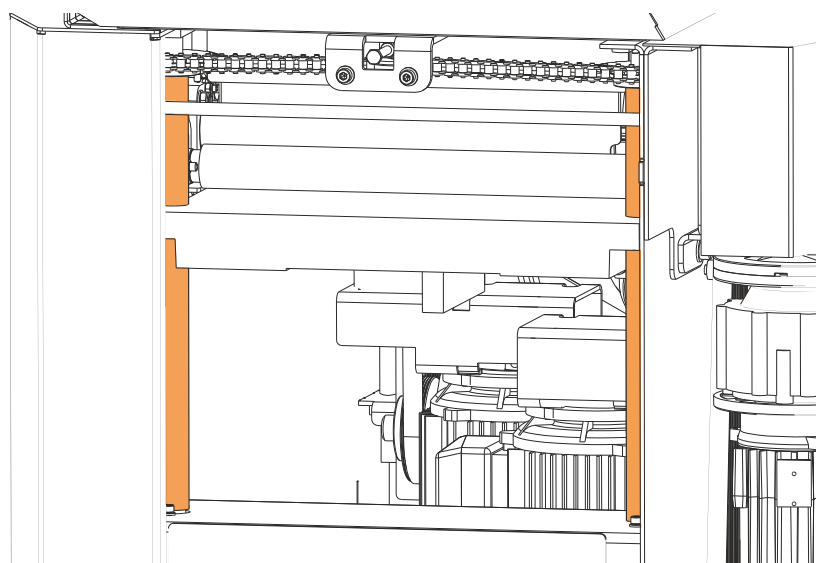


FIG. 5-2



3. Lubricate the chain and sprockets for height adjusting the table. Check the tension of the chain.)

See Figure 5-3. View from bottom, looking up; outfeed side; cover panel removed.

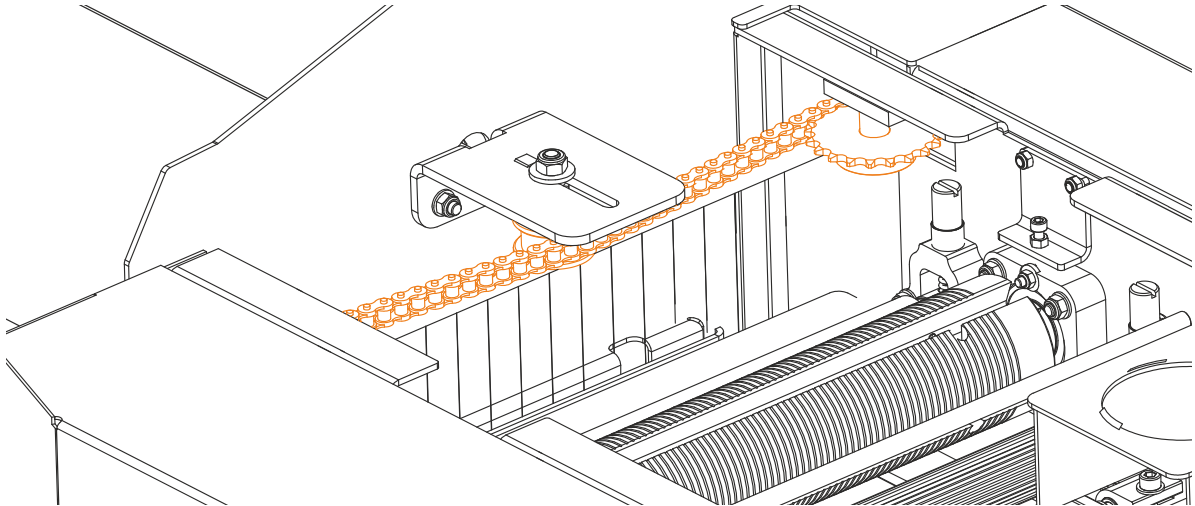


FIG. 5-3

4. The carriage of the movable cutter.

See Figure 5-4. Lubricate position bars and the threaded rod.

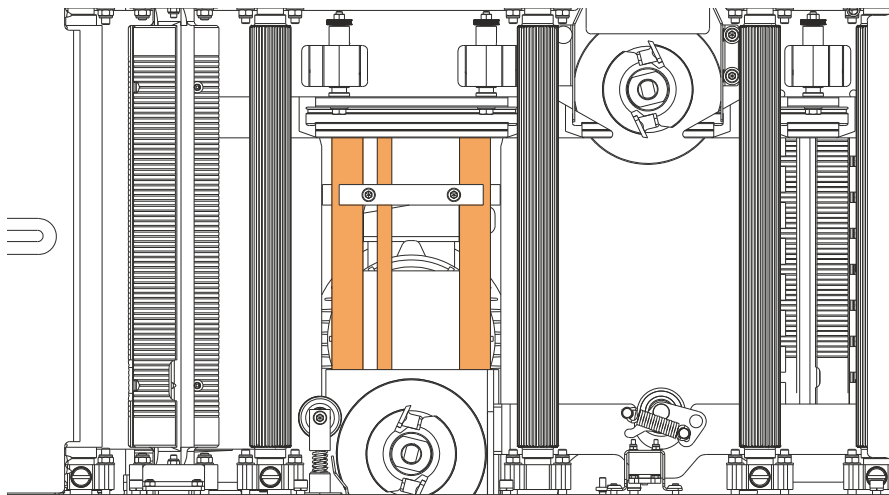


FIG. 5-4

If the movable cutter is set in the same position for a long time (e.g. when producing long series of the same moulding) it can rust. Set the cutter so that it is in its outermost and innermost position one or two times every month, and lubricate the threaded bar of the crank and the position bars of the carriage.

## 5 Maintenance

### Lubrication points

5. The chain transmission of the feed rollers.

See Figure 5-5. Cover removed.

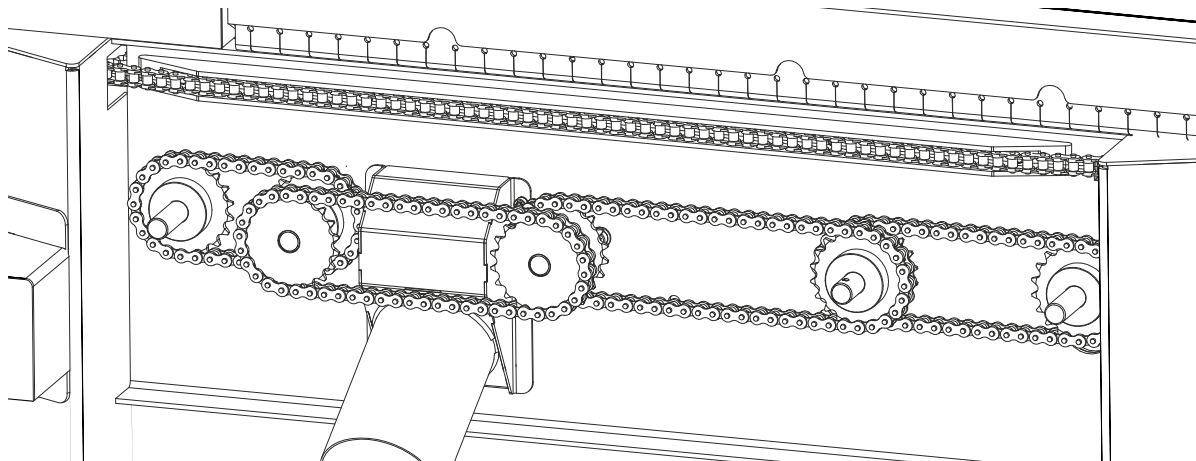


FIG. 5-5

6. Knives, spacers, pressure rollers and side rollers.

See Figure 5-6.

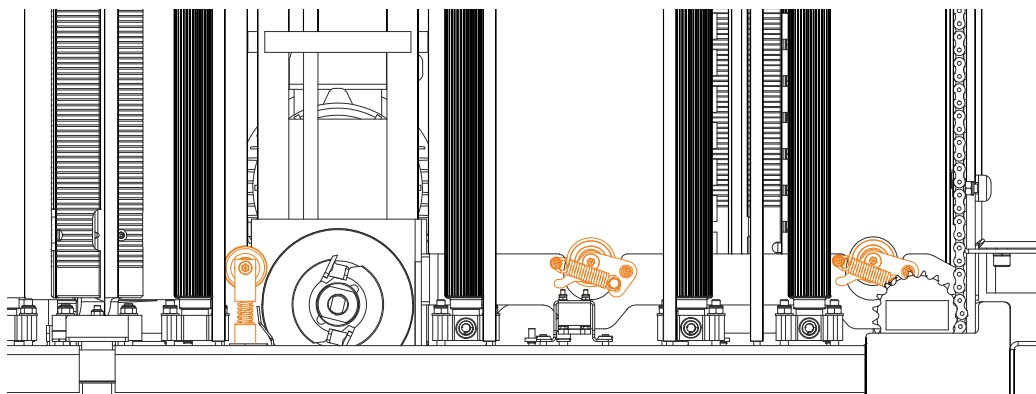


FIG. 5-6

## 5.6 Cleaning the metal feed rollers

Pitch may build up on the metal feed rollers if you are planing wood that has high resin content.

1. Clean pitch buildup from the feed rollers with a soft wire brush (i.e. a brush with brass bristles) and some cleaning solvent to assist in loosening the pitch.



**CAUTION!** Do not spray/pour cleaning fluid directly on to the feed rollers. This may enter areas of the machine where it can cause damage or remove necessary lubricant.

2. Place the cleaning fluid on a high-nap cloth and wipe down the rollers with it.
3. Use a wire brush to assist in removing the pitch from the grooves on the roller.
4. When the rollers are completely clean, wipe them down again with a high nap cloth.
5. Finish by spraying a cloth with lubricant (high-quality silicone spray or WD-40) and wiping down the rollers to prevent the future buildup of pitch.



**DANGER!** Dispose of cloths/rags used with flammable cleaning or lubricating fluid **properly** to avoid spontaneous combustion. Failure to follow this will result in serious injury or death.



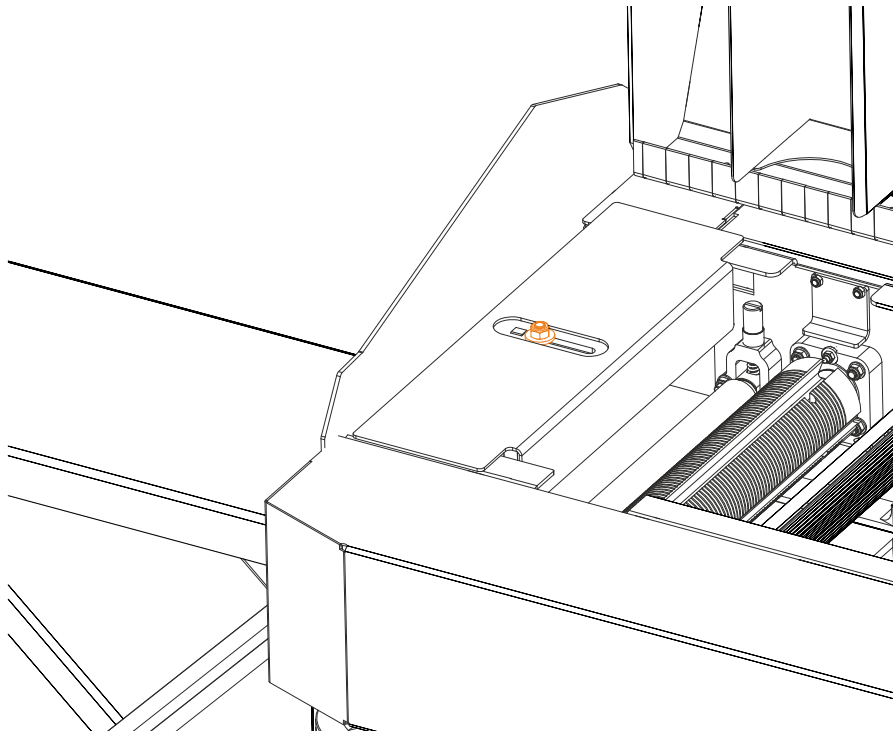
**IMPORTANT!** If you are selling your shavings for livestock purposes, this may limit the type of cleaning fluid you can use for this purpose.

## 5.7 Table lift assist chain adjustments

The height of the cast iron table on your machine is adjusted by operating the removable crank handle located on the infeed end of the machine. The crank handle is connected to a chain, which in turn is connected to the four threaded steel rods, which are threaded through the cast iron table. Eventually, through use, the chain will stretch slightly.

If this chain becomes stretched/slack, a sprocket (located at the bottom of the threaded rods) may skip a link during operation. When this occurs, the threaded rods will not be synchronized with each other and the cast iron table will not be level. Another way to say it is that the “timing” of the four threaded rods is now out of synchronization, and the four corners of the cast iron table will not raise and lower at the same rate.

**See Figure 5-7.** Outfeed view, chain adjustment sprocket lock nut - use 17mm wrench.



**FIG. 5-7**

See Figure 5-8. View from bottom, looking up; outfeed side; cover panel removed.

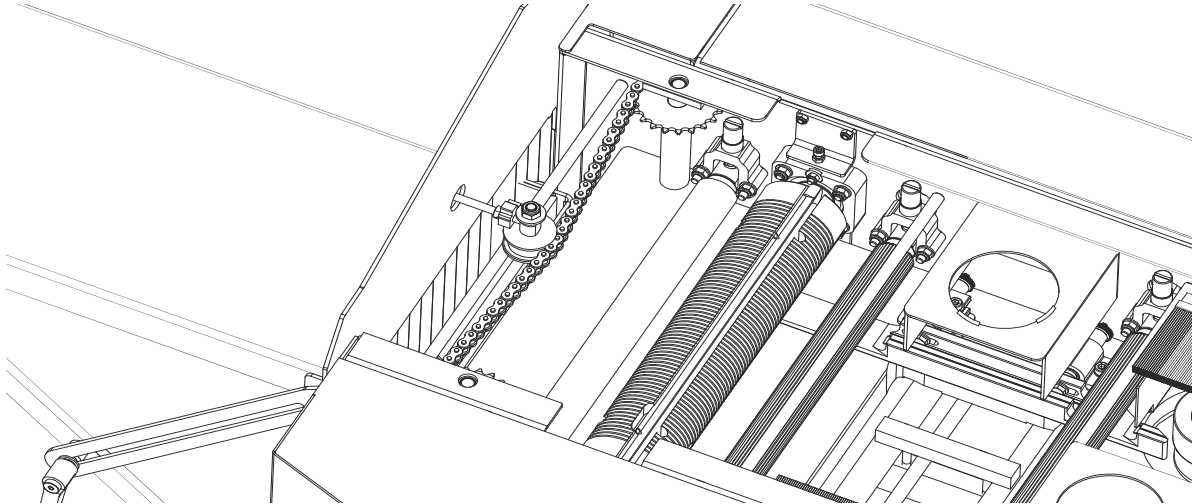


FIG. 5-8

1. Remove the cover panel by using a 5 mm hex wrench.
2. Loosen the sprocket nut by using a 17 mm wrench.
3. Move the adjustment sprocket to take any slack out of the chain, and then retighten the sprocket nut.

## 5.8 Replacing feed chain gear sprocket set screw

The feed roller sprockets in the MP280 are equipped with set screws that are designed to shear off their heads when the feed system is overloaded. For example, if the size of the material being fed into the machine is more than the machine can handle, the feed roller sprocket set screw will break off to protect the feed motor and drive train of the machine.

See Figure 5-9. Use a 4 mm hex wrench to remove set screws.

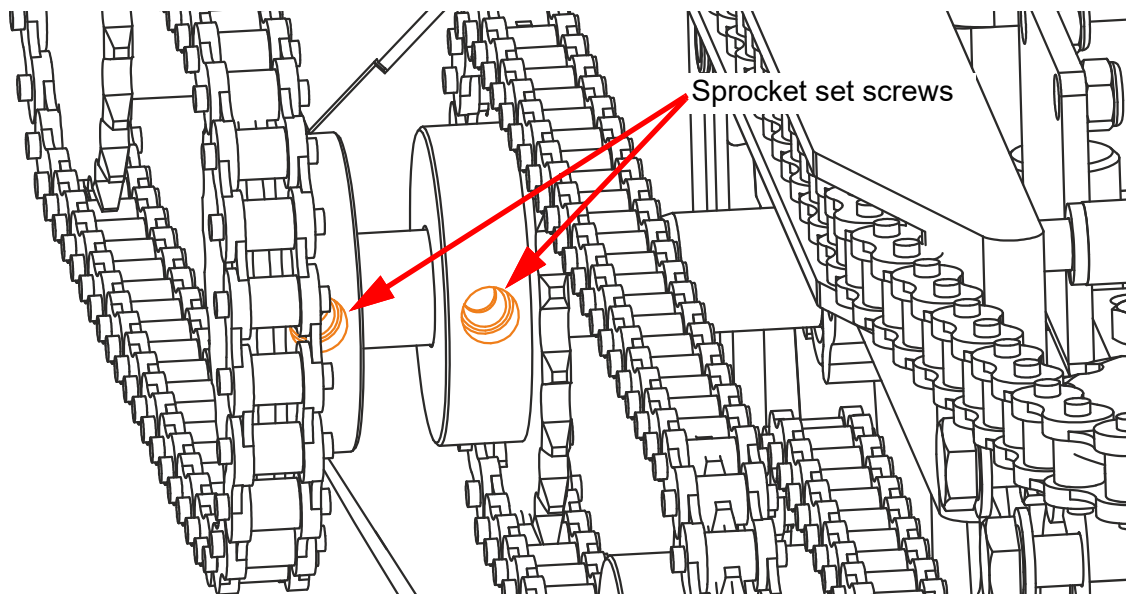


FIG. 5-9

If sheared, remove these set screws and reinstall new set screws in the feed roller sprocket (the set screw heads must enter the cutouts for them located in the shaft).

**NOTE:** If the sprocket rotated on the shaft, it must be removed and re-aligned. Use a common automotive gear puller for this purpose. Ensure that you do not place the gear puller arms behind any of the sprocket/gear teeth, possibly bending or damaging them.

During the assembly process, a rust preventing varnish was applied to the feed sprocket and the feed roller shaft. Before replacing the feed sprocket, it is recommended that this varnish be removed to assist reassembly. Use emery cloth to lightly polish and remove the varnish that is on/around the shaft. Lightly polish and remove the varnish that is on the inside of the hole in the feed sprocket/gear. After this has been done, place the feed sprocket on the shaft. Pay close attention to lining up the set screw hole on the feed sprocket to the channel on the shaft.

## 5.9 Removing and replacing feed chains

Each chain has a master link, which must be disassembled in order to remove the chain. The master links come from the factory facing outward, and they are easily recognizable because they look different from the rest of the links.

See Figure 5-10.



FIG. 5-10

Remove the master link by placing a flat tip screwdriver behind the ends of the C-clip, apply pressure, and carefully push the C-clip off of its mounting points.



**IMPORTANT!** The C-clip is made from spring steel and can easily fly off, getting lost during the removal operation. Perform this operation in a clean, well-lit area.



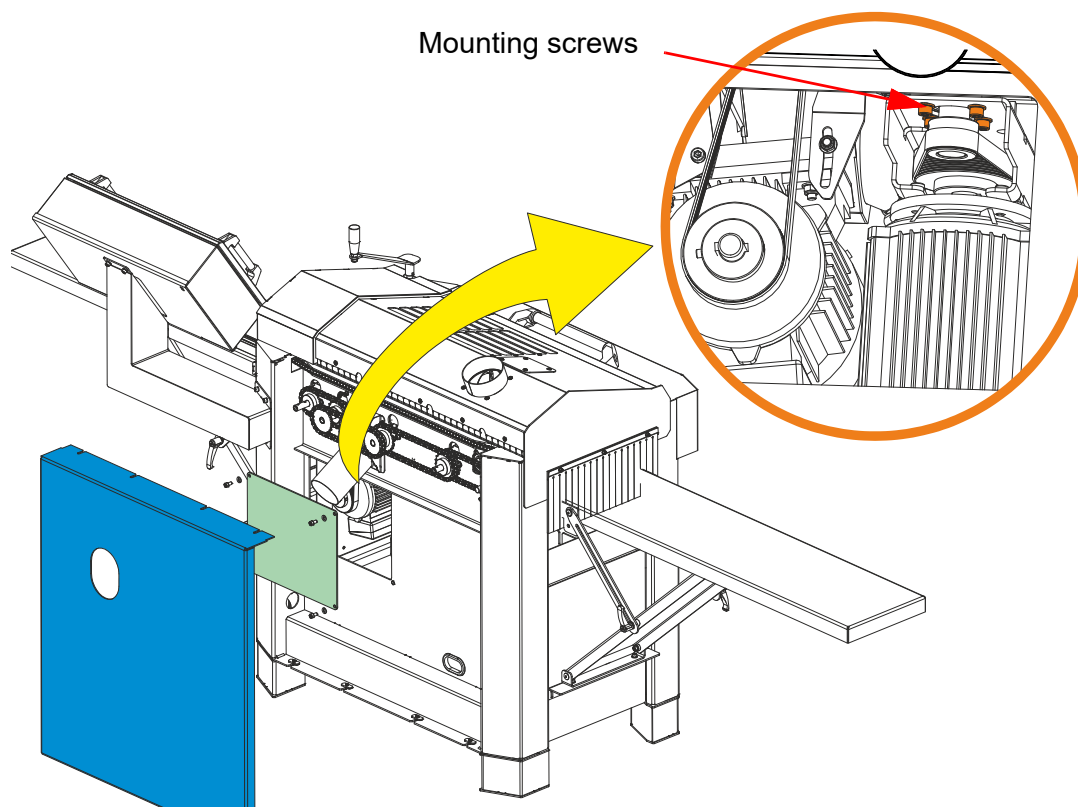
## 5.10 Replacing Belts

The power to your machines vertical and horizontal cutters is transferred from electric motors via multi-ribbed rubber belts. These belts will stretch and wear from a combination of time and use, and may periodically require replacement.

### *Replacing stationary vertical cutter belt*

1. Remove the collection hose and cover plate on the back of the MP280.
2. Remove plate with inspection window.
3. Loosen (**do not remove**) 4 cap head mounting screws holding the pulley of the stationary vertical cutter. These screws pass through slots in the motor mount and fasten into the cast iron table.

**See Figure 5-11.** Use a 6 mm hex wrench to loosen mounting screws one turn



**FIG. 5-11**

4. Use a 13mm open-end wrench to loosen the locking nut that secures the tension adjusting bolt in place.



5. Loosen (**do not remove**) the belt tension adjustment bolt to remove the tension from the drive belt.

See Figure 5-12. Viewed from outfeed side

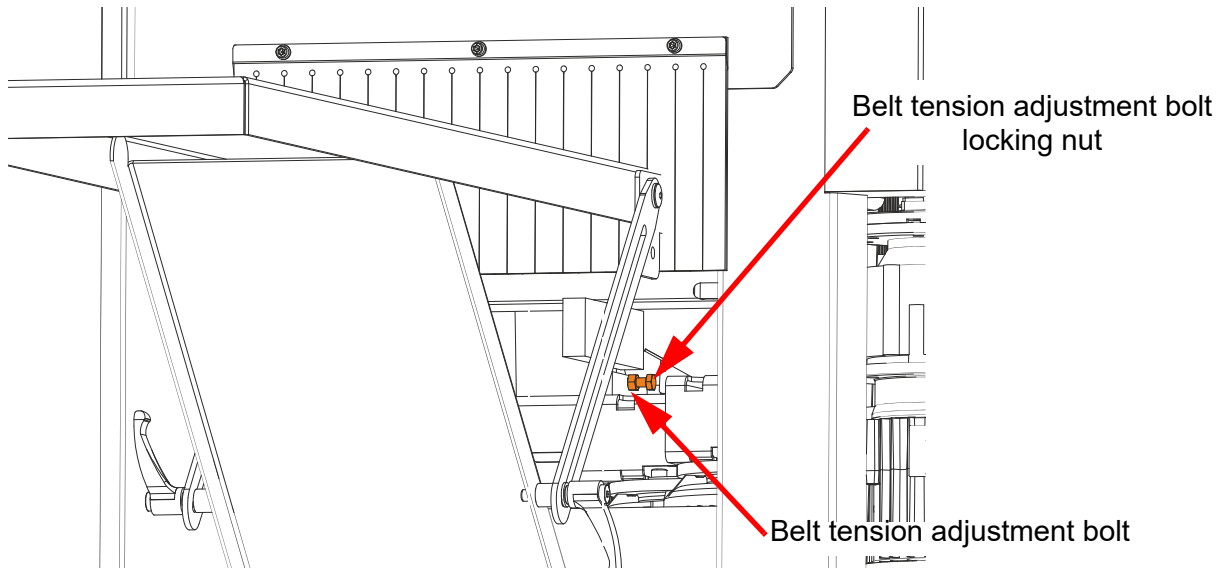


FIG. 5-12

6. Back out the tension adjusting bolt until **the front of the bolt is flush with the front of the belt tension bolt bracket**, but do not remove the bolt from the bracket.
7. From the front of the machine, pull the motor mount assembly towards you.

**NOTE:** The motor mount assembly's movement towards you is limited to approximately  $\frac{1}{2}$  inch (13 mm) before the tension adjustment bolt bracket makes contact with the cast iron table.

**NOTE:** The belt must be finessed over the top of the drive (motor) pulley and under the bottom of the cutter pulley to come straight out. The clearances are tight but it will come out.

8. Replace the belt in the reverse order of how you removed it.
9. Ensure the belt is aligned on both pulleys.
10. Push the motor mount back until there is sufficient tension on the belt for operation.
11. Set the belt tension adjustment bolt to hold the tension.
12. Set the belt tension adjustment bolt locking nut to secure the adjustment bolt.

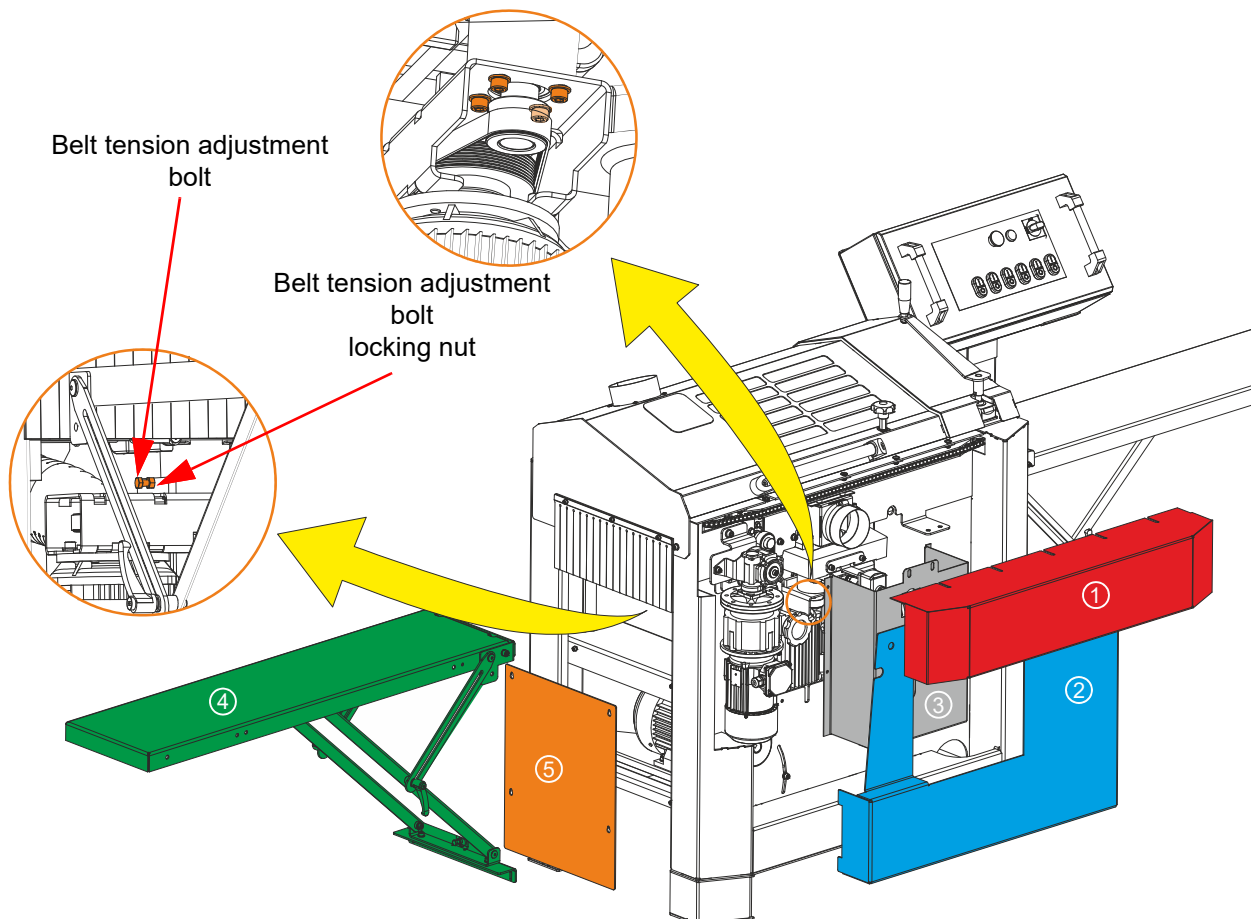
13. Retighten the 4 mounting screws holding the pulley of the stationary vertical cutter.
14. Replace the cover plate and collection hose.

### **Replacing movable vertical cutter belt**

This process is very similar to removing and replacing the stationary vertical cutter belt, but with a few minor differences related to the exterior parts of the machine you need to remove to gain access to the belt.

1. Remove covers as shown below (1, 2, 3, 4 and 5).

See Figure 5-13.



**FIG. 5-13**

The remaining steps in this process are the same as explained in the section [“Replacing stationary vertical cutter belt”](#) on page 11.

### ***Replacing top horizontal cutter belt***



Check top cutter drive belt tension after first 20 hours of operation and every 50 hours of operation thereafter.

1. Remove covers as shown on the figure below (1, 2, 3, 4 and 5).
2. Loosen four mounting bolts (A). Two for each side of the moulder.
3. Tighten the tension bolts (B). The motor will be lifted and the belt will be loosened.
4. Mount the new belt.
5. Loosen the tension bolts to lower the motor and tighten the belt. Do not over-tighten the belt. Properly tightened belt should be deflected by 6 mm with a force of 1,4 kg.
6. Check motor and top cutter pulleys alignment. Both pulleys should be in line to avoid premature drive belt wear. Loosen pulley screw on the motor shaft to move pulleys. After pulleys alignment, recheck the belt tension.
7. Install all covers.

# 5 Maintenance

## Replacing top horizontal cutter belt

See Figure 5-14.

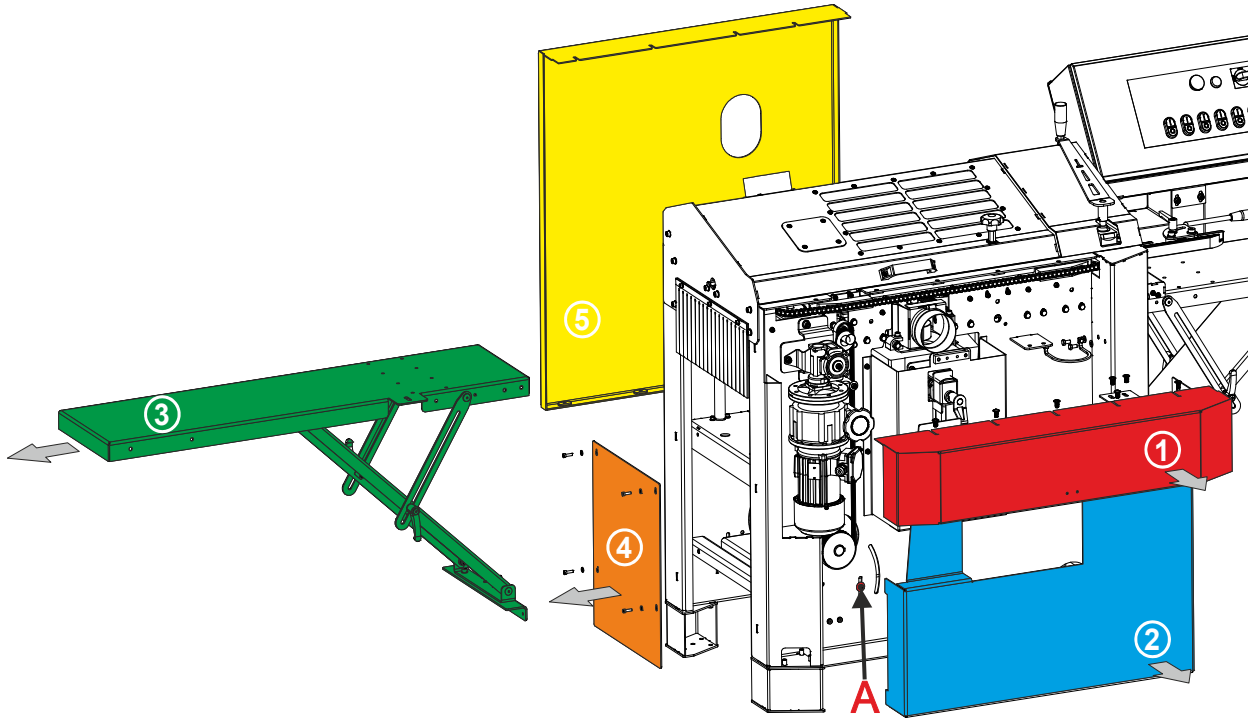


FIG. 5-14

See Figure 5-15.

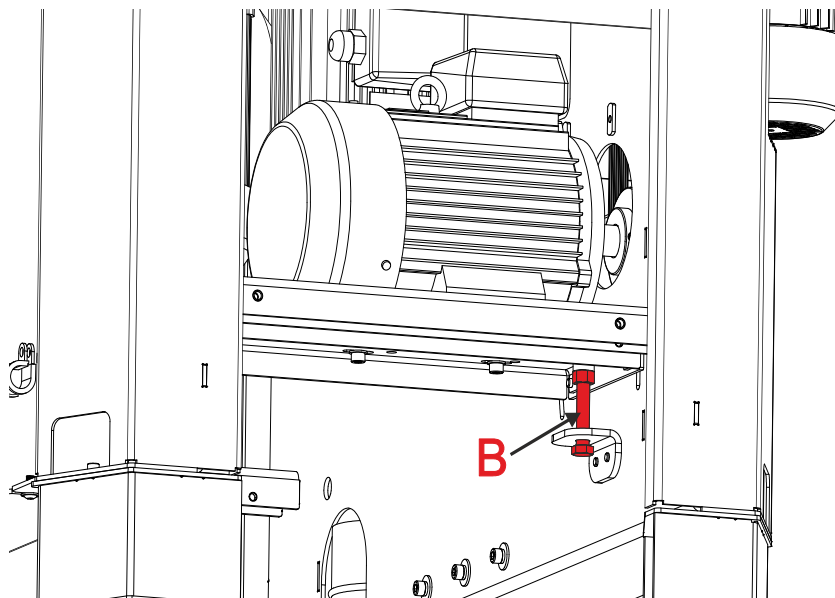


FIG. 5-15

### Replacing bottom horizontal cutter belt

1. Loosen and remove mounting bolts (A) with washers. Remove the belt cover (B).
2. Loosen the locking nut (C).
3. Pull the motor with pulley up and remove the belt.
4. Mount the new belt and slowly lower the motor with pulley to tighten the belt.
5. Tighten the belt properly. Do not over-tighten the belt. Properly tightened belt should be deflected by 1,5cm with a force of 10 kg.
6. Check motor and bottom cutter pulleys alignment. Both pulleys should be in line to avoid premature drive belt wear. Loosen pulley screw on the motor shaft to move pulleys. After pulleys alignment, recheck the belt tension.

See Figure 5-16.

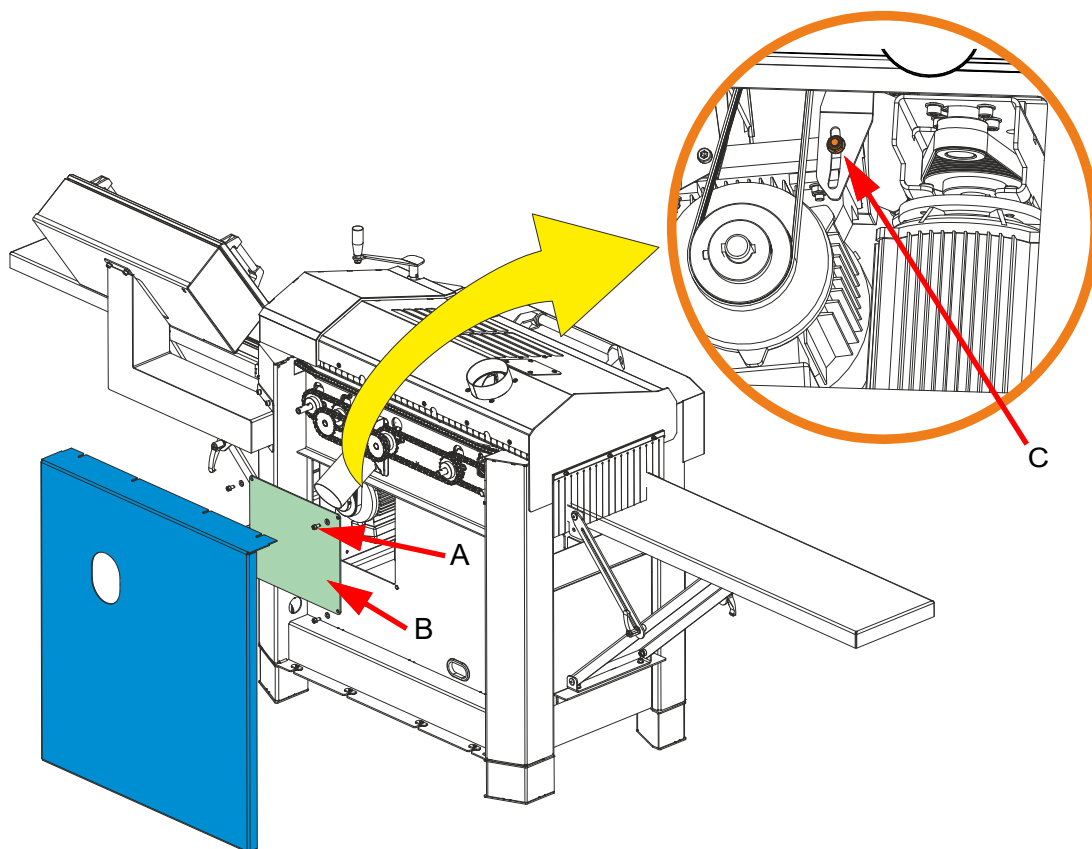


FIG. 5-16

## 5.11 Sharpening Knives

The condition of your machine's knives will affect the quality and precision of the cut. Pay close attention to the quality of the cut to get an idea about the condition of the machine's knives. Dull knives will tear, not cut the wood fibers, producing a fuzzy appearance on the wood. A raised ridge (or ridges) running along the length of a wood plank can occur when a nicked knife impacts the wood.

On planer knives and moulding knives, it is possible to bring the knives back to a sharp condition by **sharpening the face of the knife**. Running a diamond stone against the face will bring knives back to a sharp condition. This can be done about 3 times before the knives will need to be sharpened by a sharpening machine.

If a raised ridge occurs the entire length of the plank that you are processing, then the knife/knives have been nicked. Sharpened the knife/knives to remove the nick.

Knives that are not sufficiently sharp will heat up when cutting. If you see blackened edges on moulding knives, this is an indication that the knives are not sharp. Continuing to use these knives will cause excessive wear on the machine, and will further degrade the knives themselves. Remove and sharpen the knives.

**NOTE:** The speed of the material that is being fed through the machine can have an affect on knife life. Ideally, with each revolution of the cutting head, the planer knife should be removing new material. The new material will absorb a portion of the heat created by the knife cutting the wood, and will cool the knife as it is cut away. However, if the knife is not cutting new material each time the cutting head makes a revolution, the friction created will cause the knife to heat up. Excessive heat will dull your machines knives, and shorten their life.

Utilizing a test board, set the feeding speed of the machine so that chatter marks become visible, and then reduce the speed until a smooth finish is seen. This method will ensure that the knives are cutting new wood on each revolution. The optimal feeding speed will vary between the type of wood being processed, and the type of moulding knives being used.

## 5.12 Long-term storage

If the machine is not used for a long period of time, do as follows:

- Disconnect the power cord.
- Perform all routine actions described above.
- Remove the knives with mounting strips or clamping wedges and store them well lubricated in above zero temperature.
- Loosen the motor belt tension.
- Spray a thin layer of anti-rust coating (such as P.D.R.P) onto the places not protected against rusting.
- Store the machine in a well ventilated room.
- Cover the planer/moulder.

## 5.13 Safety Devices Inspection (European Union Market only)

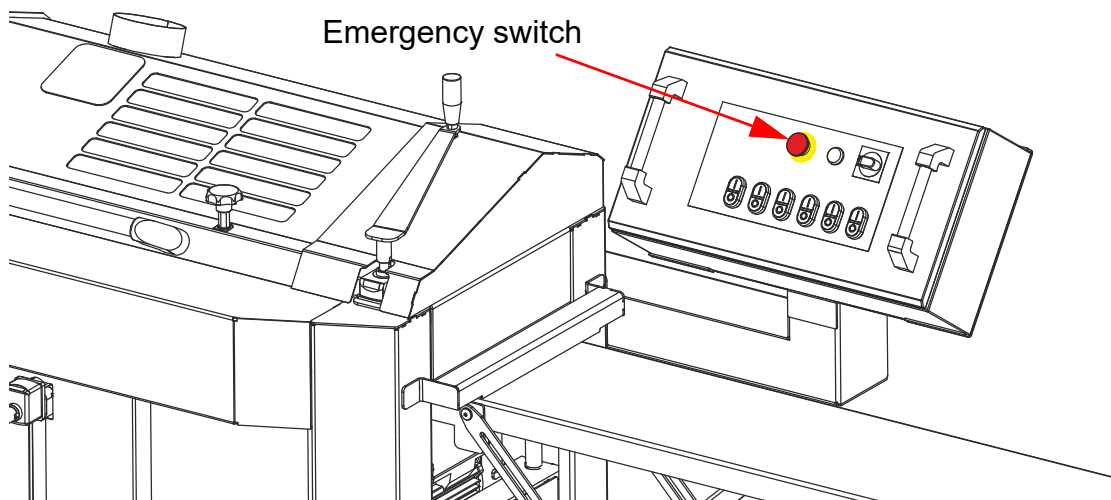
### *MP280S Moulder – Safety Devices Inspection*

Safety devices on the machine which must be checked before every shift:

- E-STOP button and its circuit inspection,
- Cutter cover safety switch and its circuit inspection.

#### 1. E-STOP button and its circuit inspection

- Use “I” buttons to start all cutters and next feed rollers. The motors should start.
- Press the E-STOP button located on the control box. All motors should be stopped. Pressing any of “I” buttons should not start any motor until the E-STOP button is released.



**FIG. 5-1**



## 2. Cutter cover safety switch and its circuit inspection



**CAUTION!** Use extreme caution when opening cutter housing cover if any of the cutters are working (to inspect safety devices).

- Be sure the emergency switch button is released;
- Use “I” buttons to start all cutters and next feed rollers. The motors should start.
- Open the cutter housing cover;
- All motors should be stopped.
- Pressing any of “I” buttons should not start the motors.
- Close the cutter housing cover.
- Motors should remain stopped until they are restarted with any of “I” buttons.

## 5.14 Electrical lockout procedures (US Market only)

### RULES FOR USING LOCKOUT PROCEDURE

The equipment shall be locked out to protect against accidental or inadvertent operation when such operation could cause injury to personnel. Do not attempt to operate any switch or valve bearing a lock. Lockout procedures must be used during:

Changing or adjusting blades	Electrical maintenance
Unjamming operations	Retrieval of tools/parts from work area
Cleaning	Activities where guards or electrical panel guard is open or removed
Mechanical repair	

Maintenance	hazards	include:
Blade contact	Missiles (thrown blades/wood chips)	
Pinch points	Electrical	
Kickbacks		

Failure to lockout may result in:

Cut	Serious injury and death
Crush	Amputation
Blindness	Burn
Puncture	Shock
Electrocution	

To control maintenance dangers:

- Lockout procedures must be followed (see OSHA regulation 1910.147).
- Never rely on machine stop control for maintenance safety (emergency stops, on/off buttons, interlocks).
- Do not reach into moving blades or feed systems. Allow all coasting parts to come to a complete stop.
- Electrical power supply and air supply must both be locked out.

- Where established lockout procedures cannot be used (electrical troubleshooting or mechanical dynamic troubleshooting), alternative effective protective techniques shall be employed which may require special skills and planning.
- Always follow safe operations practices in the workplace.

## **LOCKOUT PROCEDURE**

Lockout procedures per OSHA regulation 1910.147, appendix A:

### **GENERAL**

The following simple lockout procedure is provided to assist owner/operators in developing their procedures so they meet the requirements of OSHA regulation 1910.147. When the energy isolating devices are not lockable, tagout may be used, provided the owner/operator complies with the provisions of the standard which require additional training and more rigorous periodic inspections. When tagout is used and the energy isolating devices are lockable, the owner/operator must provide full operator protection (see OSHA regulation 1910.147, paragraph (c)(3)) and additional training and more rigorous periodic inspections are required. For more complex systems, more comprehensive procedures may need to be developed, documented, and utilized.

### **PURPOSE**

This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment. It shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before personnel perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

### **COMPLIANCE WITH THIS PROGRAM**

All personnel are required to comply with the restrictions and limitations imposed upon them during the use of lockout. The authorized personnel are required to perform the lockout in accordance with this procedure. All operators, upon observing a machine or piece of equipment which is locked out to perform servicing or maintenance shall not attempt to start, energize, or use that machine or equipment.

**SEQUENCE OF LOCKOUT**

1. Notify all affected personnel that servicing or maintenance is required on a machine or equipment and that the machine or equipment must be shut down and locked out to perform the servicing or maintenance.
2. The authorized employee shall refer to the company procedure to identify the type and magnitude of the energy that the machine or equipment utilizes, shall understand the hazards of the energy, and shall know the methods to control the energy.
3. If the machine or equipment is operating, shut it down by the normal stopping procedure (depress the stop button, open switch, close valve, etc.).
4. De-activate the energy isolating device(s) so that the machine or equipment is isolated from the energy source(s).
5. Lock out the energy isolating device(s) with assigned individual lock(s).
6. Stored or residual energy (such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc.) must be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.
7. Ensure that the equipment is disconnected from the energy source(s) by first checking that no personnel are exposed, then verify the isolation of the equipment by operating the push button or other normal operating control(s) or by testing to make certain the equipment will not operate.



**CAUTION!** Return operating control(s) to neutral or "off" position after verifying the isolation of the equipment.

8. The machine or equipment is now locked out.

**RESTORING EQUIPMENT TO SERVICE**

When the servicing or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the following steps shall be taken.

1. Check the machine or equipment and the immediate area around the machine to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.
2. Check the work area to ensure that all personnel have been safely positioned or removed from the area.

3. Verify that the controls are in neutral.
4. Remove the lockout devices and re-energize the machine or equipment.

**NOTE:** The removal of some forms of blocking may require re-energization of the machine before safe removal.

5. Notify affected personnel that the servicing or maintenance is completed and the machine or equipment is ready for use.

#### **PROCEDURE INVOLVING MORE THAN ONE PERSON**

In the preceding steps, if more than one individual is required to lock out the equipment, **each shall place his own personal lock on the energy isolating devices.**

## SECTION 6 TROUBLESHOOTING



**DANGER!** Disconnect power before clearing debris or **any other maintenance activity**. Failure to follow this will result in serious injury or death.

Follow the OSHA lockout procedures reprinted in the Safety section.

Keep hands away from the knives.

Do not operate the planer moulder without all covers and guards in place.

### OPERATION PROBLEMS

Problem	Possible Cause	Remedy
In-and out-feed marks (snipes).	<ol style="list-style-type: none"> <li>1. Incorrectly adjusted in- and out-feed tables.</li> <li>2. The workpieces are not butted when being fed into the machine.</li> <li>3. The feeding pressure of the feed rollers is incorrectly adjusted.</li> <li>4. The workpiece is bent or warped.</li> <li>5. There is play in the suspension of the machine table.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust the in- and out-feed tables so that they are set to the same height as the machine table. The tables must also be in line with the machine table or somewhat higher at the outer ends.</li> <li>2. Butt the workpieces end to end when feeding them into the machine. This will eliminate the variations of the feeding pressure that can occur the moment the feed rollers grab the workpiece.</li> <li>3. Make sure that the feeding pressure is sufficient and that the rollers are balancing horizontally over the workpiece.</li> <li>4. Slightly lift the back end of the workpiece when it is being fed into the machine. This will make it possible for the feed rollers to press the workpiece flat against the machine table.</li> <li>5. By using little force, check if the machine table can be wobbled in any direction. If this is the case, see <a href="#">Leveling the machine</a>.</li> </ol>

Problem	Possible Cause	Remedy
The entire surface is fuzzy.	<ol style="list-style-type: none"> <li>1. The workpiece has high moisture content.</li> <li>2. The knives have lost their sharpness.</li> </ol>	<ol style="list-style-type: none"> <li>1. Dry the timber before machining it.</li> <li>2. Grind the knives. It is especially important that the knives are sharp when soft or moist wood is being machined.</li> </ol>
Fuzzy surface around knots, where the direction of the fibers can vary.	<ol style="list-style-type: none"> <li>1. The workpiece has high moisture content.</li> <li>2. The knives have lost their sharpness.</li> <li>3. The workpiece is of a too soft sort of wood.</li> </ol>	<ol style="list-style-type: none"> <li>1. Dry the timber before machining it.</li> <li>2. Grind the knives. It is especially important that the knives are sharp when soft or moist wood is being machined.</li> <li>3. Choose another material, or sand the workpiece after it has been machined.</li> </ol>
The thickness of the board does not correspond to the setting of the scale.	<ol style="list-style-type: none"> <li>1. The takeoff of the knives in the upper cutter are set incorrectly.</li> <li>2. The pointer of the height scale is set incorrectly.</li> </ol>	<ol style="list-style-type: none"> <li>1. Set the takeoff of the planing knives to 1 mm, using the setting block supplied, or a straightedge.</li> <li>2. Machine a test board, measure it and set the pointer to this measurement. Fine-tuning of measurements should always be done using the rotating scale of the height-adjusting crank, which can easily be reset. The scale shows 1 mm every quarter of a turn.</li> </ol>
The edges of the molding knives are visible in the machined moulding profile.	<ol style="list-style-type: none"> <li>1. The planing knives do not cut away enough wood.</li> <li>2. The moulding knives are ground incorrectly</li> </ol>	<ol style="list-style-type: none"> <li>1. Set the takeoff of the planing knives to 1 mm, using the setting block supplied, or a straightedge.</li> <li>2. Regrind the moulding knives so that their edges do not protrude over the level of the planing knives, or use adjustable, short knife clamping gibs to adjust the moulding knives correctly.</li> </ol>

# 6

## Troubleshooting

Problem	Possible Cause	Remedy
The width of the machined board differs.	<ol style="list-style-type: none"> <li>1. The workpiece moves away from the side fences.</li> <li>2. The locking handle of the movable cutter has not been tightened.</li> <li>3. The pressure rollers are set incorrectly.</li> <li>4. The spring mechanism of the pressure rollers is stiff.</li> <li>5. The workpiece is too small for the measurement the machine is set to.</li> <li>6. The stationary side cutter cuts away too much wood.</li> </ol>	<ol style="list-style-type: none"> <li>1. The right-side fences are set incorrectly. Adjust them according to the instructions.</li> <li>2. Pull the handle tight before planing/moulding.</li> <li>3. Adjust the L bracket on which the first two pressure rollers are mounted and also adjust the pressure roller behind cutter 3.</li> <li>4. Clean and lubricate the spring mechanisms of the three pressure rollers.</li> <li>5. Choose a wider workpiece or set the machine to less width.</li> <li>6. Decrease the feeding speed or the takeoff of the stationary cutter.</li> </ol>
The surface of the workpiece's right side is below par.	<ol style="list-style-type: none"> <li>1. The locking handle of the movable side cutter has not been tightened.</li> </ol>	Pull the handle tight before planing/moulding.
Splinters are being battered out of the workpiece when it reaches the movable side cutter.	<ol style="list-style-type: none"> <li>1. Too much takeoff.</li> <li>2. The chip deflector is incorrectly mounted.</li> </ol>	<ol style="list-style-type: none"> <li>1. Plane the workpiece into size before the final machining.</li> <li>2. Mount the chip deflector so that it presses against the workpiece in front of the cutter.</li> </ol>



## 6.1 Mechanical or electrical problems

Problem	Possible Cause	Remedy
None of the motors can be started.	<ol style="list-style-type: none"> <li>1. The cover is not entirely closed.</li> <li>2. The emergency stop button is pressed down.</li> <li>3. No power is supplied to the machine.</li> <li>4. One of the motors is overheated.</li> <li>5. Fault in the electrical system of the machine.</li> <li>6. A fuse has blown in the electric box of the machine.</li> <li>7. Wood debris has accumulated in the cover's safety switch.</li> </ol>	<ol style="list-style-type: none"> <li>1. Firmly tighten the locking knob on the cover. You can hear a soft click when the safety switch is activated.</li> <li>2. Reset the emergency stop button by pulling it outwards.</li> <li>3. Check the residual circuit breaker and the fuses in the building. Also check the connecting cable.</li> <li>4. Wait until the overheating protection of the motor automatically resets (see the point, "<a href="#">The motor gets overheated.</a>").</li> <li>5. The electrical system may only be opened by a qualified electrician: First of all, check the safety hold circuit. This circuit includes, among other things, the emergency stop button and the overheating protections in the connection block on each motor.</li> <li>6. The machine has one or two automatic fuses. Reset the fuse that has blown. If the problem recurs, let a qualified electrician find the cause of the problem and, if necessary, replace the fuse.</li> <li>7. The electrical system may only be opened by a qualified electrician: Open and clean the safety switch from wood debris.</li> </ol>

# 6

## Troubleshooting

### *Mechanical or electrical problems*

Problem	Possible Cause	Remedy
The workpiece is fed poorly or not at all through the machine.	<ol style="list-style-type: none"> <li>1. The shear pin in the out-feed roller is broken.</li> <li>2. Wood debris and resin have accumulated in the grooves of the feed rollers and on the out-feed roller.</li> <li>3. The pressure of the feed rollers is too low.</li> <li>4. The vertical movement of the feed rollers is obstructed by wood debris that has got stuck in the vertically movable bearing housings of the feed rollers or in the springs under these.</li> <li>5. Wood debris has accumulated around the upper cutter.</li> <li>6. The machine table is covered with resin or rust.</li> <li>7. The sliding strips under the feed rollers are defective.</li> <li>8. One (or several) of the sprockets in the chain transmission of the feeder has come loose from the shaft.</li> </ol>	<ol style="list-style-type: none"> <li>1. Remove the planetary gear and replace the broken shear pin.</li> <li>2. Clean the feed rollers.</li> <li>3. Increase the feeding pressure and make sure the feed rollers are balancing horizontally over the workpiece.</li> <li>4. Clean the bearing housings of the feed rollers, especially check the movable part of the bearing housing. Remove wood debris that has got stuck in the springs of the feed rollers.</li> <li>5. Remove the wood debris and increase the air flow in the chip extractor of the upper cutter.</li> <li>6. Clean and lubricate the table.</li> <li>7. Replace the sliding strips and fasten the new ones with double coated tape, if necessary in several layers, so that the the sliding strips are about 0.5 mm above the surface of the machine table.</li> <li>8. Check the locking screws of the sprockets and tighten them against the flat part of the shaft.</li> </ol>
The upper cutter rotates a long time after the machine has been shut off (the deceleration should be max. 10 seconds).	<ol style="list-style-type: none"> <li>1. The fuse on the brake card has blown.</li> <li>2. The brake card is defective.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace the glass fuse on the card.</li> <li>2. Replace the defective brake card. On the new brake card there is a potentiometer that has to be adjusted (about 1/4 turn from 0).</li> </ol>
One of the motors will not start.	<ol style="list-style-type: none"> <li>1. Defective contact.</li> <li>2. Defective motor.</li> <li>3. A cable to the contact or to the motor is loose.</li> </ol>	<ol style="list-style-type: none"> <li>1. The electrical system may only be opened by a qualified electrician: Replace the defective contact.</li> <li>2. The electrical system may only be opened by a qualified electrician: Replace the defective motor.</li> <li>3. The electrical system may only be opened by a qualified electrician: Ensure that all cables are correctly connected.</li> </ol>

Problem	Possible Cause	Remedy
The workpiece is fed jerkily through the machine.	<ol style="list-style-type: none"> <li>1. The machine table is covered with resin or rust.</li> <li>2. One of the feed rollers has been bent.</li> </ol>	<ol style="list-style-type: none"> <li>1. 6. Clean and lubricate the table.</li> <li>2. Replace the bent feed roller.</li> </ol>
The machine runs for a while but then stops.	<ol style="list-style-type: none"> <li>1. One of the motors, in most cases the motor of the upper cutter, gets overheated.</li> </ol>	<ol style="list-style-type: none"> <li>1. See the next point, "<a href="#">The motor gets overheated.</a>"</li> </ol>
The motor gets overheated.	<ol style="list-style-type: none"> <li>1. Wood debris has accumulated in the chassis of the machine or around the cooling fans of the motors.</li> <li>2. Dull knives.</li> <li>3. Too low voltage in the power supply.</li> <li>4. Loose or bad connection in the power supply to the machine or in the electrical system of the machine.</li> <li>5. The upper cutter removes too much wood.</li> <li>6. The feeding speed is too high.</li> </ol>	<ol style="list-style-type: none"> <li>1. Make sure that wood debris has not accumulated in the machine, and that the cooling fans of the motors have free flow. If the motors are kept clean they will be cooled more efficiently.</li> <li>2. Grind or replace the knives.</li> <li>3. The electrical system may only be opened by a qualified electrician: Check that you have the correct voltage on all phases.</li> <li>4. The electrical system may only be opened by a qualified electrician: First of all, check that the connecting cable has the correct current and voltage during operation. Also check that all wires are correctly connected in the electrical system and motors of the machine.</li> <li>5. If the workpiece is too wide, of a hard sort of wood or of varying oversizes: plane it into size before the final machining.</li> <li>6. Decrease the feeding speed.</li> </ol>
Play in the adjusting crank of the movable side cutter.	<ol style="list-style-type: none"> <li>1. The bronze bearing in the bearing housing of the crank is defective. The crank may have been turned when the locking handle of the carriage is tightened.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace the bronze bearing and remember to open the locking handle under the table before adjusting the side cutter.</li> </ol>

# 6

## Troubleshooting

### *Mechanical or electrical problems*

Problem	Possible Cause	Remedy
Vibration or rumble in the side cutter.	<ol style="list-style-type: none"> <li>1. The moulding knives are incorrectly mounted.</li> <li>2. The moulding knives are incorrectly ground.</li> <li>3. Defective bearing.</li> <li>4. The spindle shaft has been bent due to overloading.</li> <li>5. The belt transmission is defective.</li> </ol>	<ol style="list-style-type: none"> <li>1. Demount the cutter head, and clean and mount the knives and the chip breakers correctly. Identical knives should be mounted on opposite sides of the cutter.</li> <li>2. Grind the knives in pairs so that they are identical on the opposite sides of the cutter.</li> <li>3. Replace the bearing.</li> <li>4. Replace the spindle shaft.</li> <li>5. Clean the belt pulleys and replace the Poly V belt.</li> </ol>
Rumbling or vibration in the upper or the lower cutter.	<ol style="list-style-type: none"> <li>1. The moulding knives are incorrectly mounted.</li> <li>2. The moulding knives or the planing knives are incorrectly ground.</li> <li>3. The bearing is defective. This can be due to wood debris accumulated on the back of the bearing housing, which leads to overheating.</li> <li>4. The belt transmission is defective.</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean the cutter and mount the knives and the chip breakers correctly. Identical knives should be mounted on opposite sides of the cutter without any, or with only slightly horizontal deviation.</li> <li>2. Grind the knives in pairs so that they are identical on opposite sides of the cutter.</li> <li>3. Clean the bearing housing and replace the ball bearing.</li> <li>4. Clean the belt pulleys and replace the Poly V belt.</li> </ol>
It is difficult to adjust the height of the machine table.	<ol style="list-style-type: none"> <li>1. The trapezoidal thread bars, on which the table is suspended, are dirty and not lubricated.</li> <li>2. Faulty chain transmission.</li> <li>3. The machine has been subject to impact which has spoiled the setting of the table.</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean and lubricate the trapezoidal thread bars with oil.</li> <li>2. Make sure that the chain runs correctly on the sprockets. Clean and lubricate the chain.</li> <li>3. Adjust the table. (See <a href="#">Leveling the machine</a> of Setup)</li> </ol>

## SECTION 7 PLANER/MOULDER SPECIFICATIONS

### 7.1 Overall dimensions

See figure 7-1. The overall dimensions of the MP280 Planer/moulder are shown below (all dimensions in millimeters).

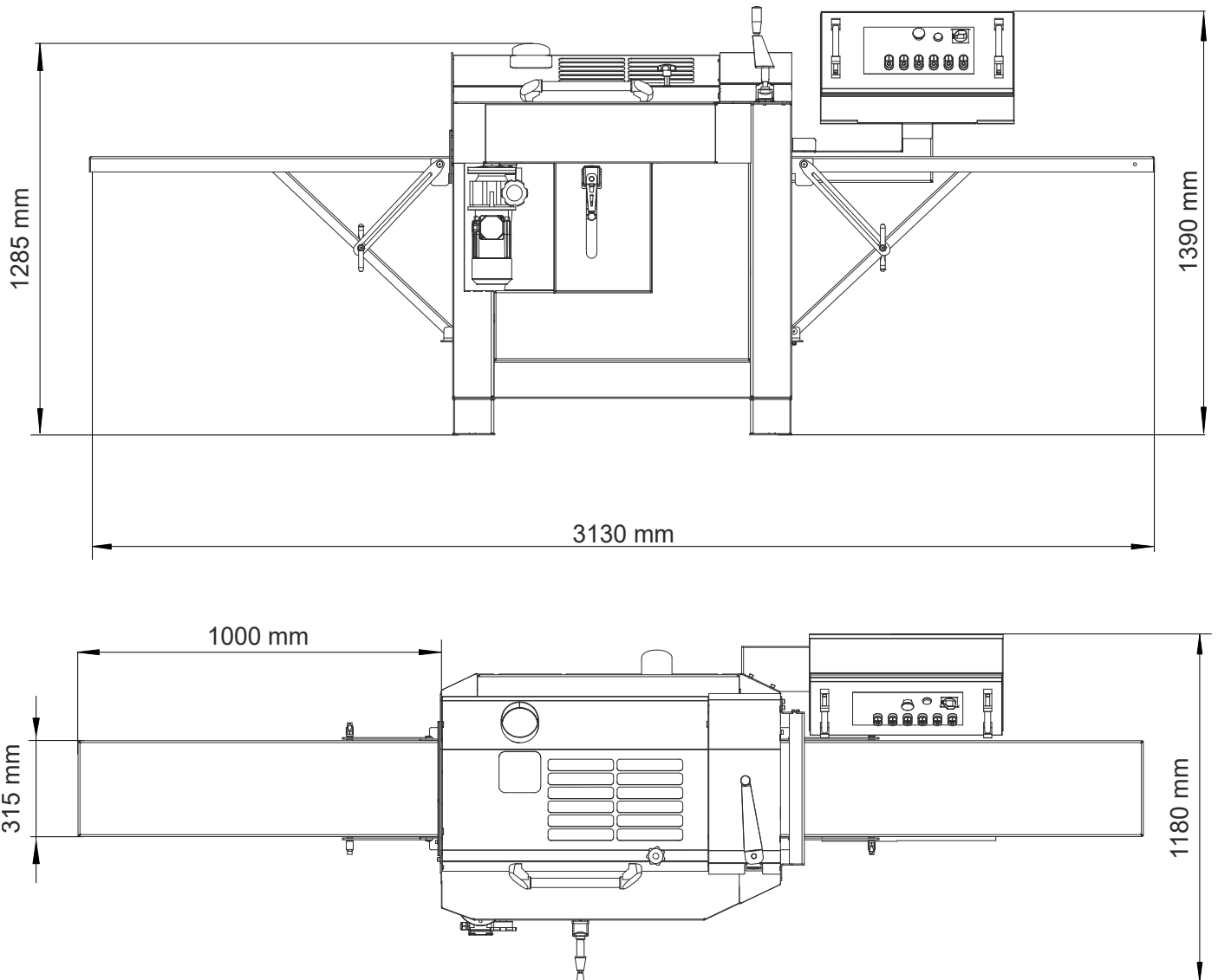


FIG. 7-1 MP280

# 7 PLANER/MOULDER SPECIFICATIONS

## Overall dimensions

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See table 7-1. Weight of the MP280 planer/moulder are given in the table below.

<b>Planer/moulder type</b>	<b>MP280</b>
<b>Weight</b>	600kg

**TABLE 7-1**



# 7 PLANER/MOULDER SPECIFICATIONS

Specifications of the planer/moulder

## 7.2 Specifications of the planer/moulder

See table 7-2. Wood-Mizer MP280 planer/moulder nomenclature is given in the table below.

	Volts
MP280EA12S-V	1x230V
MP280EB13S-V	3x230V
MP280EH13S-V	3x400V

TABLE 7-2

See table 7-3. See the table below for specifications of the MP280 planer/moulder motors.

MP280EH13S-V					
	-VUpper cutter motor specifications	Lower cutter motor specifications	Side, fixed cutter motor specifications	Side, movable cutter motor specifications	Feed motor specifications
Motor Type	Electric Motor	Electric Motor	Electric Motor	Electric Motor	Electric Motor
Rated Voltage	3x400V	3x400V	3x400V	3x400V	3x400V
Rated motor revolutions	2900 r.p.m.	2900 r.p.m.	2900 r.p.m.	2900 r.p.m.	2800 r.p.m.
Rated cutter revolutions	6000 r.p.m.	6000 r.p.m.	6000 r.p.m.	6000 r.p.m.	---
Rated power	4kW	3kW	3kW	3kW	0,75kW
Wood-Mizer Part #	537387	537386	537385	537385	532808

TABLE 7-3

MP280EB13S-V								
	Upper cutter motor specifications	Lower cutter motor specifications	Side, fixed cutter motor specifications	Side, movable cutter motor specifications	Feed motor specifications	Current (FL)	Current (LL)	SCCR
Motor Type	Electric Motor	Electric Motor	Electric Motor	Electric Motor	Electric Motor	48,7	10,2	5kA
Rated Voltage	3x230V	3x230V	3x230V	3x230V	3x230V			
Rated motor revolutions	2900 r.p.m.	2900 r.p.m.	2900 r.p.m.	2900 r.p.m.	2780 r.p.m.			
Rated cutter revolutions	6000 r.p.m.	6000 r.p.m.	6000 r.p.m.	6000 r.p.m.	---			
Rated power	4kW	3kW	3kW	3kW	0,75kW			
Wood-Mizer Part #	537387	537386	537385	537385	532808			

TABLE 7-3



# PLANER/MOULDER SPECIFICATIONS

Specifications of the planer/moulder

7

MP280EA12U-V								
	Upper cutter motor specifications	Lower cutter motor specifications	Side, fixed cutter motor specifications	Side, movable cutter motor specifications	Feed motor specifications	Current (FL)	Current (LL)	SCCR
<b>Motor Type</b>	Electric Motor	Electric Motor	Electric Motor	Electric Motor	Electric Motor	25	5,4	5kA
<b>Rated Voltage</b>	1x230V	1x230V	1x230V	1x230V	1x230V			
<b>Rated motor revolutions</b>	2900 r.p.m.	2900 r.p.m.	2900 r.p.m.	2900 r.p.m.	1700 r.p.m.			
<b>Rated cutter revolutions</b>	7100 r.p.m.	7100 r.p.m.	7100 r.p.m.	7100 r.p.m.	---			
<b>Rated power</b>	2,7kW	2,7kW	2,7kW	2,7kW	0,55kW			
<b>Wood-Mizer Part #</b>	533651	533651	533651	533651	592832			

TABLE 7-3

See table 7-4. Feed rate

Planer/moulder type	MP280 with constant feed speed	MP280 with adjustable feed speed
<b>Feed Speed</b>	5 m/min	3-15 m/min

TABLE 7-4

See table 7-5. The noise level generated by Wood-Mizer planer/moulder is given in the table below<sup>1 2 3</sup>

	Noise Level
Planer/Moulder MP280 Equipped with electric motor	$L_{WA}(\text{idling}) = 87,3 \text{ dB (A)}$ $L_{WA}(\text{under load}) = 100,7 \text{ dB (A)}$

TABLE 7-5



**IMPORTANT!** The total value of hand-arm vibration the operator may be exposed to does not exceed  $2.5 \text{ m/s}^2$ . The highest root mean square value of weighted acceleration to which the whole operator's body is subjected does not exceed  $0.5 \text{ m/s}^2$ .

See table 7-6. See the table below for planing/moulding material specifications

	One-sided planing	Double-sided planing	Four-sided planing
Minimum Cant Height	10mm	10 mm	10 mm
Maximum Cant Height	230 mm	230 mm	100mm
Maximum Cant Width	410 mm	300 mm	250 mm

TABLE 7-6

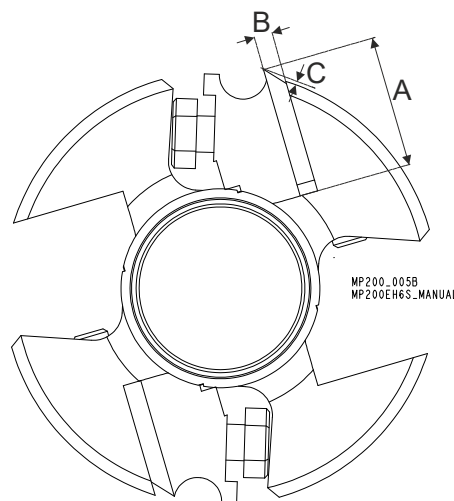
1. The noise level measurement was taken in accordance with PN-EN ISO 3744:2011 Standard . Value for associated uncertainty  $K=2$ .
2. The measured values refer to emission levels, not necessarily to noise levels in the workplace. Although there is a relation between emission levels and exposure levels, it is not possible to determine with certainty if preventives are needed or are not needed. Factors that influence the actual level of exposure of the workforce include the characteristics of the work room and the other sources of noise etc. i.e. the number of machines and other adjacent processes. Also, the permissible exposure level value may vary depending on country. This information enables the machine's user to better identify hazards and a risk.
3. The total value of hand-arm vibration the operator may be exposed to does not exceed  $2.5 \text{ m/s}^2$ . The highest root mean square value of weighted acceleration to which the whole operator's body is subjected does not exceed  $0.5 \text{ m/s}^2$ .

See table 7-7. Other specifications of the planer/moulder are listed below

<b>Cutter Specifications</b>	
Number of knife sockets	4
Upper cutter diameter	88 mm
Upper cutter width	410 mm
Upper cutter max. planing depth	5 mm
Upper cutter max. moulding depth	20 mm
Lower cutter diameter	72 mm
Lower cutter width	300 mm
Lower cutter max. planing depth	4 mm
Lower cutter max. moulding depth	10 mm
Side cutter diameter	93 mm
Maximum Height	100 mm
Side cutter max. planing depth	5 mm
Side cutter max. moulding depth	20mm
Cutter rotations	6000 r.p.m.
<b>Knives Specifications</b>	
Straight knife height "A"	20 mm
Straight knife thickness "B"	3 mm
Straight knife protrusion "C"	1 mm
Pattern knife protrusion "C"	depends on the knife thickness (see table 7-8)

**TABLE 7-7**

See figure 7-2.



**FIG. 7-2**

See table 7-8. A relation between the pattern knife protrusion and the thickness is shown below.

Pattern knife thickness	Pattern knife max. protrusion <sup>1</sup>
3 mm	13 mm
4 mm	21 mm
5mm	29 mm

**TABLE 7-8**

<sup>1</sup> According to EN 847-1:2005 European Standard

### 7.3 Dust/Chip Extractor Specifications

See Table 7-9. Specifications of the dust/chip extractors used on the MP280 are listed below.

<b>Airflow</b>	4000 m <sup>3</sup> /h
<b>Inlet diameter</b>	3x100mm 1x125 mm
<b>Motor power</b>	3 kW
<b>Number of sacks</b>	4 pcs
<b>Sack capacity</b>	--
<b>Recommended conveying air velocity in the duct</b>	25 m/s

**TABLE 7-9**

The pressure drop between the inlet of the capture device and the connection to the CADES should be maximum 1,5 kPa (for the nominal air flow rate). If the pressure drop exceeds 1,5 kPa the machine might not be compatible with conventional CADES.



**IMPORTANT!** The dust extractor hoses must be grounded or made with materials not accumulating electrostatic charge.



**CAUTION!** Always turn on the dust extractor before starting the machine

## EC declaration of conformity according to EC Machinery Directive 2006/42/EC, Annex II, 1.A

**Manufacturer:** Wood-Mizer Industries sp. z o.o.  
Nagórna 114, 62-600 Koło; Poland  
Tel. +48 63 26 26 000

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Following machine in our delivered version complies with the appropriate essential safety and health requirements of the EC Machinery Directive 2006/42/EC based on its design and type, as brought into circulation by us. In case of alteration of the machine, not agreed by us, this declaration is no longer valid.

### We, the undersigned herewith declare, that:

Designation of the machine: **Four-sided planer-moulder Wood-Mizer MP280**

Type: MP280

Models: MP280EH13S-V, MP280EB13S-V

Serial Number: .....

### Is in conformity with the following EC directives:

EC Machinery Directive 2006/42/EC  
EC Electromagnetic Compatibility Directive  
2014/30/EC

### And is in conformity with the following Harmonized Standards:

PN-EN 12100:2012;  
PN-EN ISO 13849-1:2016-02  
PN-EN 60204-1:2018-12

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Koło, 02.01.2023



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Engineering Manager