

Wood-Mizer® Moulder Planer
Safety, Setup, Operation,
and Maintenance

MP360EB16U

rev. B1.00- B1.02

Safety is our #1 concern!

Form #2404-US



WARNING! Read and understand this manual before using this machine.

California

Proposition 65 Warning



WARNING: Breathing gas/diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Always start and operate the engine in a well-ventilated area.
If in an enclosed area, vent the exhaust to the outside.
Do not modify or tamper with the exhaust system.
Do not idle the engine except as necessary.

For more information go to www.P65warnings.ca.gov.



WARNING: Drilling, sawing, sanding or machining wood products can expose you to wood dust, a substance known to the State of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection.

For more information go to www.P65Warnings.ca.gov/wood.

Active Patents assigned to Wood-Mizer, LLC

Wood-Mizer, LLC has received patents that protect our inventions which are a result of a dedication to research, innovation, development, and design. Learn more at: woodmizer.com/patents

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Wood-Mizer, LLC
8180 West 10th Street
Indianapolis, Indiana 46214

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Wood-Mizer® LLC Limited Product Warranty



Wood-Mizer LLC ("Warrantor"), an Indiana corporation with its principal place of business at 8180 West Tenth Street, Indianapolis, IN 46214-2400 USA, warrants to the purchaser ("Purchaser") that for the time periods specifically stated herein and subject to the terms, conditions and limitations stated herein, the equipment manufactured by the Warrantor will be free from defects in material and workmanship attributable to Warrantor so long as, during the warranty periods stated herein, the equipment is installed, operated and maintained in accordance with the instructions provided by Warrantor.

PRODUCT	MODEL CLASS	LENGTH OF WARRANTY		EFFECTIVE DATE
		USA & CANADA	NON USA & CANADA	
Portable Sawmills, Resaws, Edgers	LT, LX, HR, EG	Two years	One year	Date of purchase
Portable Sawmills with Chassis	LT28, LT35, LT40, LT50, LT70, LX450	Two years, excluding the chassis, which chassis shall have a five year warranty	One year	
Industrial Sawmills, Resaws, Edgers	WM, HR, EG, TVS, SVS	One year	One year	Date of purchase or date of installation / training (if applicable), whichever occurs first, not to exceed 6 months from date of purchase
TITAN Industrial	WB, TV, HR, EG, EA, MR	One year	One year	
Material Handling	TWC, IC, TD, LD, GC, CR, CB, CC	One year	One year	
Blade Maintenance Equipment	BMS, BMT, BMST	One year	One year	Date of purchase
Options and Accessories	Various	One year*	One year*	
Moulders, Extractors	MP, MD	Two years	One year	
Kilns	KS, KD	One year	One year	
Slab Flatteners	MB	Two years	One year	
Pallet Equipment	PD, PC	One year	One year	
Log Splitters	FS	One year	One year	
Replacement Parts	Various	90 days	90 days	

* Warranty on Options will match the warranty on the primary equipment when purchased on same invoice.

Exclusions from 90 Day, Limited One Year and Two Year Warranty

Warrantor shall have no responsibility under this warranty for any wear components, including, but not limited to: belts, blade guides, blades, electric motor brushes, drum switches, filters, fuses, hoses, bearings (excluding cylindrical drive bearings), bushings, cable carriers, and spark plugs. All wear components are furnished "as is", without any warranty from Warrantor. This limited warranty does not cover any defects caused by misuse, negligence, alterations, damage due to overload, abnormal conditions, excessive operation, accident, or lack of performance of normal maintenance services.

Several components which are used in the manufacture of the equipment but not manufactured by Warrantor such as cant hooks, power plants, laser sights, batteries, tires, and trailer axles have warranties provided by the original equipment manufacturer (written copies available upon request). Warrantor does not separately warrant such items. Components or equipment manufactured by third parties are not covered by this warranty. Warrantor, however, will provide reasonable assistance to the Purchaser to make claims against any warranties applicable to such component parts as provided by such original equipment manufacturers. Components or equipment manufactured by third parties are not covered by this Warranty.

Five Year Limited Chassis Warranty

The limited five year chassis warranty described above, DOES NOT extend to (a) any damage stemming from accident, improper towing, overload, abuse, misuse, abnormal conditions, negligence, excessive operation, or lack of maintenance, (b) rust caused by exposure to corrosive atmospheric conditions, or (c) the sawmill head, carriage, axle, brakes, or any hydraulic or electrical components attached to the chassis.

Warrantor's Obligations as To Defects

In the event that the equipment fails to perform due to defective materials or workmanship attributable to Warrantor under normal use and service within the established warranty period, Purchaser's sole and exclusive remedy and Warrantor's sole liability shall be to replace or repair, in Warrantor's sole and subjective discretion, any defective part at Warrantor's principal place of business without cost to the Purchaser if such defect exists. The determination of whether a product is defective shall be made by Warrantor in Warrantor's sole and subjective discretion. The Purchaser must notify Warrantor prior to shipping any defective part. Warrantor, at its sole discretion, may cover expenses incurred in shipping the defective part to Warrantor for evaluation; provided, however, that Warrantor will not be responsible for labor, travel time, mileage, removal, installation or incidental or consequential damages. However, any part in excess of 140 pounds must be returned by the Purchaser, to the Warrantor's nearest authorized facility at the Purchaser's expense, if return is requested by Warrantor. Warrantor shall have a reasonable time within which to replace or repair the defective part. If Warrantor determines that the product is not defective under the terms of this warranty in Warrantor's sole and subjective discretion, then Purchaser shall be responsible for any expenses incurred by Warrantor in returning the equipment to the Purchaser.

Limitations and Disclaimers of Other Warranties

EXCEPT FOR THE EXPRESS WARRANTY PROVISIONS STATED ABOVE, WARRANTOR DISCLAIMS ALL WARRANTIES, EXPRESS AND/OR IMPLIED, INCLUDING WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY, AND FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT AND TITLE. No representation or other affirmation of fact by representatives of Warrantor, whether verbal or in writing, including photographs, brochures, samples, models, or other sales aids, shall constitute a warranty or other basis for any legal action against Warrantor. There are no other representations, promises, agreements, covenants, warranties, guarantees, stipulations or conditions, express or implied, by Warrantor except as expressly set forth herein. THE ORIGINAL PURCHASER AND ANY INTENDED USER OR BENEFICIARY OF THIS EQUIPMENT, SHALL NOT BE ENTITLED TO RECOVER ANY INDIRECT, SPECIAL, PUNITIVE, EXEMPLARY, CONSEQUENTIAL, SPECIAL, OR INCIDENTAL DAMAGES OR LOSSES, INCLUDING BUT NOT LIMITED TO, DAMAGES OF LOST PRODUCTION, LOST REVENUE, LOST PRODUCT, LOST PROFITS, LOST BUSINESS, LOSS OF USE, LOSS OF GOODWILL, OR BUSINESS INTERRUPTION, FROM WARRANTOR FOR ANY REASON WHATSOEVER INCLUDING WITHOUT LIMITATION WARRANTY OR DEFECT IN THE PRODUCT REGARDLESS OF THE SOLE, JOINT AND/OR CONCURRENT NEGLIGENCE, BREACH OF CONTRACT, BREACH OF WARRANTY, STRICT LIABILITY IN TORT OR STATUTORY CLAIMS OR OTHER LEGAL FAULT OR RESPONSIBILITY OF EITHER WARRANTOR OR PURCHASER OR ITS EMPLOYEES OR AGENTS. Warrantor does not warrant that its equipment meets or complies with the requirements of any particular safety code or governmental requirements.

Defective items replaced under the terms of this warranty become the property of Warrantor.

Design Changes

Warrantor reserves the right to change the design of its products from time to time without notice and without obligation to make corresponding changes in or to its products previously manufactured.

Rights of Purchasers

The validity and effect of this limited warranty as well as its interpretation, operation and effect, shall be determined exclusively by the principles of law and equity of the State of Indiana, USA. This limited warranty gives Purchaser specific legal rights. Purchaser may also have other rights, which may vary from state to state. Some states may not allow limitations as to the duration of implied warranties or to the exclusion or limitation of incidental or consequential damages, so some of the limitations and exclusions detailed set forth above may not apply. In the event that any one or more of the provisions of this warranty shall be or become invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions of this warranty shall not be affected thereby.

Interpretations

This Warranty constitutes the entire warranty agreement between Warrantor and Purchaser and supersedes any prior understandings or agreements pertaining to the same subject matter. This warranty cannot be amended except in writing which refers to this warranty which is signed by both Warrantor and Purchaser.

SECTION 1 INTRODUCTION

1.1 About This Manual

This manual replaces any previous information received on your Wood-Mizer® equipment.

The information and instructions in this manual do not amend or extend the limited warranties for the equipment given at the time of purchase..

1.2 Getting Service

For contact information, sales, service, parts, and additional manuals, sign into your account on [.https://woodmizer.com](https://woodmizer.com), or call inside the USA: 1-800-553-0182 or from outside the USA: 317-271-1542

1.3 Specifications

Equipment specification are included in the Online Manuals, which are found at [...https://apps.woodmizer.com/Manuals/Manuals.aspx?parent=0](https://apps.woodmizer.com/Manuals/Manuals.aspx?parent=0).

1.4 Options and Accessories

Your Wood-Mizer product may have options that can be added to the machine or accessories available to purchase. Different power configurations are also available.

Option: Your specific product can have accessories installed at the factory, or installed in the field. For example, a sawmill might have a debarker or power-feed option.

Accessory: Your specific product may have accessories added to the machine that are not available to be installed at the factory. They may only be installed in the field. For example, a sawmill might have a bed extension or a Shingle/Lap Sider accessory.

Power Options: Your specific product power option is detailed based on the specific product number purchased.

This product has the following options available:


Document	Name	Type
2358	Chip Extractor	Accessory
See website	Planing and moulding knives	Accessory


TABLE 1-1


SECTION 1 GENERAL 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 serious injury or death.

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

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

NOTICE indicates vital information.

2.2 Safety Instructions

OWNER/OPERATOR'S RESPONSIBILITY

The procedures listed in this manual may not include all ANSI, OSHA, or locally required safety procedures. **It is the owner/operator's responsibility and not Wood-Mizer LLC to ensure all operators are properly trained and informed of all safety protocols.** Owner/Operators are responsible for following all safety procedures when operating and performing maintenance to the equipment.

Observe ALL Safety Instructions

NOTICE Read the entire Operator's Manual before operating this equipment.

Note all safety warnings throughout this manual and those posted on the machine.

Be able to access this manual at all times while operating this equipment.

Read additional manufacturer's manuals and observe their applicable safety instructions.

Only persons who have read and understood the entire operator's manual should operate this equipment.


This equipment is not intended for use by or around children.

It is the owner/operator's responsibility to comply with all applicable federal, state, and local laws, rules, and regulations regarding the ownership, operation, and transporting your equipment.



Operators should become thoroughly familiar with and comply with these applicable laws for operating and transporting equipment.

WEAR SAFETY CLOTHING

 **WARNING!** Secure all loose clothing and jewelry before operating the Planer Moulder.


Always wear eye, ear, and foot protection when operating the Planer Moulder.




Wear hand protection while servicing the Planer Moulder knives.

The workstation should be equipped with a 10 lb (4 kg) or larger dry powder extinguisher.


PLANER MOULDER SETUP

 **DANGER!** Do not operate the Planer Moulder without all covers and guards in place.


 **WARNING!** Set up the planer moulder on solid, level ground.

Do not stand in line with the workpiece when it is being fed into the machine; boards (kick-backs) or other objects may be thrown from the machine.

KEEP HANDS AWAY

 **DANGER!** Remove power before clearing debris or any other maintenance activity.


Never place your hands or tools above or beneath the machine table while the machine is running.

 **WARNING!** Avoid contact with any hot parts (motors).

Allow the system to cool sufficiently before beginning any service function, including debris removal.

Avoid contact with sharp edges of the cutting knives.

KEEP PLANER MOULDER AND AREA AROUND PLANER MOULDER CLEAN

 **WARNING!** Maintain a clean and clear path for all necessary movement around the Planer Moulder and material stacking areas.

Do not allow children in the area of the Planer Moulder.

DISPOSE OF WOOD BY-PRODUCTS PROPERLY

NOTICE Properly dispose of all wood by-products, including sawdust, chips, and other debris, including operation waste such as oil, filters, etc.

KEEP SAFETY LABELS IN GOOD CONDITION

NOTICE Ensure 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 call your Customer Service Representative to order more decals.

NOTICE If replacing a component that has a safety decal affixed to it, ensure the new component also has the safety decal affixed.

2.3 Electrical Lockout Procedures

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, BUT NOT LIMITED TO:

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

MAINTENANCE HAZARDS INCLUDE, BUT NOT LIMITED TO:

- Blade contact
- Pinch points
- Kickbacks
- Missiles (thrown blades/wood chips)
- Electrical

FAILURE TO LOCKOUT MAY RESULT IN, BUT NOT LIMITED TO:

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

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 switches, 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.

EQUIPMENT 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 switch, 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 fly-wheels, 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.



2.4 Safety Labels Description

See table below for safety labels description.

TABLE 2-1

Label View	Description
	096317 CAUTION! Read and understand operator's manual before handling the machine.
	099220 Close guards prior to operating the machine
	096316 Electric box opening is possible with the switch in "0" position only.
	096319 Always disconnect the power cord before opening the electric box.

TABLE 2-1

 A yellow rectangular label with a black border. The top half features a black triangle with a hand being struck by a rotating blade. The bottom half features a black square with a checkmark and the number '3' inside a square. The number '524993' is printed in small text at the bottom right of the label.	524993 Hand injury hazard
 A white square label with a black border containing a large, solid black arrow pointing to the left.	S20097-US Motor rotate direction

SECTION 3 SETUP

3.1 Site preparation

DANGER! Have a certified electrician install the power to your machine.

WARNING! Ensure the power supply cables are not a trip hazard.

CAUTION! Improper voltage will cause damage to the motors and electronic components.

NOTICE The power supply must meet the motor specifications concerning wire size, fused disconnect, and voltage, which are provided in the motor's manual.

The electrical installation must meet local codes.

Locate the MP360 in a dry work area on a firm, level surface.

Ensure proper lighting is available, with attention to extra lighting directly over the planer moulder.

Allow room for the longest piece of material to run through and exit the machine with ease of movement.

Allow space for storing and handling the material that will be running through your planer.

Do not use in temperatures below freezing [32°F (0°C)].

Do not allow the power cables or chip collection hoses to become trip hazards. Plan the routes carefully.

For mounting, you can either bolt the planer moulder to the floor in place with 8 10mm bolts.

The safety distance for persons other than the operator is 10 ft (3 m) from the sides of the machine or 26 ft (8 m) from the infeed side and 20 ft (6 m) from the outfeed side during operation. Use a visual demarcation within the risk area.

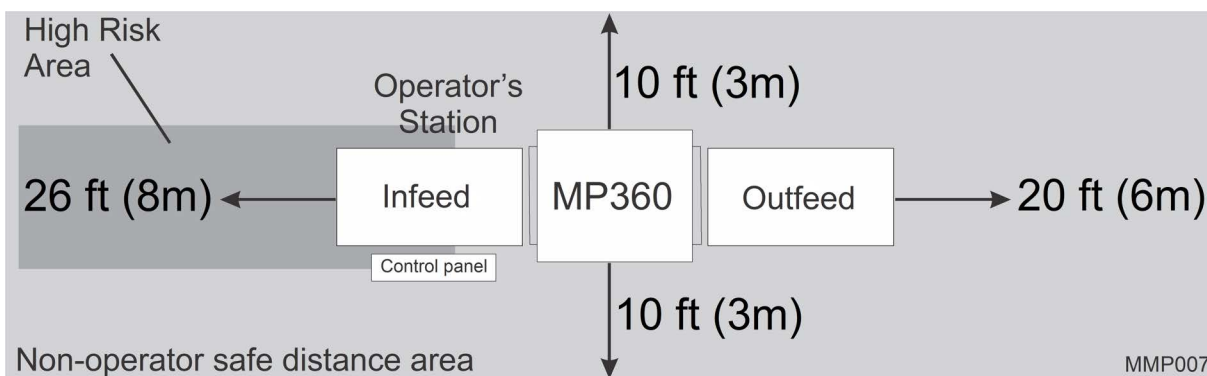


FIG. 3-1

Onsite setup

WARNING! Maintain a clean and clear path for all necessary movement around the planer moulder and material stacking areas.

Keep all hoses, cables, or wire out of the walkway.

Do not allow children in the area of the planer moulder.

Set up the planer moulder on firm, level ground.

Chip collection

The MP360 has 4 chip collection ports--one 5" and three 4" ports--sized to fit flexible hose, one located at each cutter head.

A chip collection system rate approximately 3000 CFM (5000 m³/hr) is recommended for use on standard materials. Wood-Mizer sells the MD500 Chip Extraction unit specially made for this model.

When using a collection system, keep in mind:

- Check your local waste disposal codes before designing your chip collection system.
- Design access to your chip collection bins so that they can be easily emptied.
- Short hose runs and smooth-walled hoses reduce suction loss within the system.
- Locate the chip collector controls near the planer moulder controls.
- Collection systems are loud; use ear protection.
- If you are operating this machine in a climate-controlled building and blowing the chips outside, the vacuum created by the chip collector can quickly empty your building of its heated or cooled air.
- If blowing the chips to an indoor bin, an air filter will be necessary to prevent wood dust from reducing the air quality inside of your building.
- If selling chips for use with livestock, do not use harsh chemicals for cleaning or lubricating machinery.

3.2 Uncrate and Assemble

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 lifting device (forklift/pallet jack/crane) with lifting capacity of minimum 1600bs (~700kg).

3.3 Control Panel

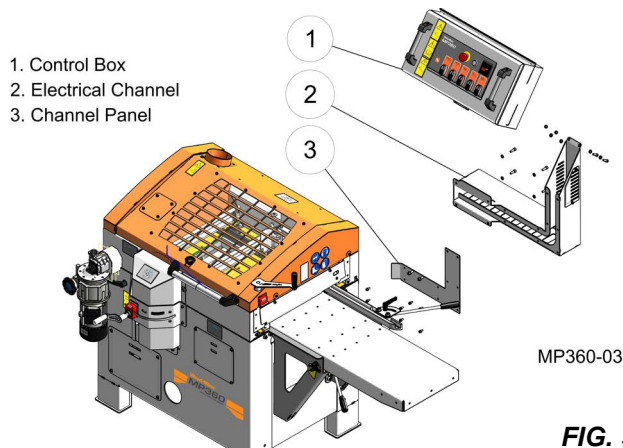


FIG. 3-2

1. Unpack the electrical channel.
2. Remove the front panel from the electrical channel, if necessary.
3. Attach the channel to the rear of the machine base.

NOTE: This step is best done with two people.
4. Attach the control box to the channel **with only the top two fasteners** at first.
5. Place all the control box cables into the channel.
6. Replace the channel panel; be sure to slide it **under** the control box mounting tab.

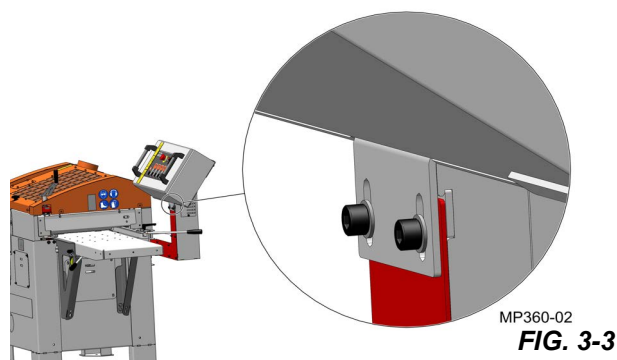


FIG. 3-3

7. Ensure all screws are tightened.

3.4 Outfeed Table

1. Unpack the outfeed table.

NOTE: If the top and bottom sections are attached, unscrew the adjustment handles to separate them.

2. Remove the table mounting screws and washers (shipped in place).
3. Mount the lower section onto the machine base with the removed hardware.
4. Mount the upper section onto the machine base with the removed hardware.
5. Secure the two sections together with the adjustment handles.

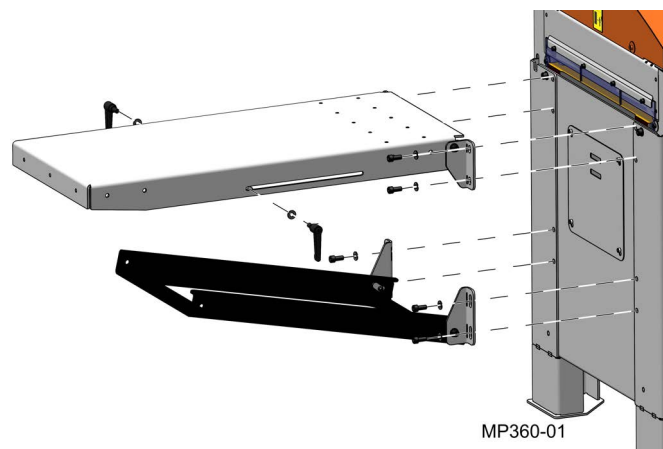


FIG. 3-4

3.5 Electrical

Table 1: MP360 Electrical

230V 3Ph 59A service 70A, D Curve CB

WARNING! Have a certified electrician install the power to your machine.

The electric supply is routed into the electrical breaker box on the back of the MP360. This box has a protective cover, and inside there are four 3-pole 16-amp circuit breakers, one for each motor. Each one of the circuit breakers is shared between one motor and the small feed motor.

1. Route the four wires (three power, one ground) through the access hole located on the side of the box.
2. Attach three voltage leads to L1, L2, and L3.
3. Route the ground wire to the green ground bar found in the electric breaker box.
4. Route the four wires (three power, one ground) through the access hole located on the side of the box.

The planer normally draws between 18 and 32 amps during operation.

NOTE: If using a 3-phase converter for with installation, size it for a 45 HP load.

Phase converter rating should be a **minimum** of 2 times the total HP load of all machines attached.

Checking rotation direction



FIG. 3-5

1. Turn the Main Power to On and check that the Power On Indicator lights.
2. Start **only** the **feed motor** on the planer.

CAUTION! Do not start cutter motors before motor rotation direction is checked!

3. Check the rotation of the rollers.

If the direction is wrong,

- a. turn off the main power,
- b. lock out the system,
- c. and reverse two of the three supply voltage leads.

4. Turn power back on and check rotation direction again.

3.6 Upper and lower cutter heads

WARNING! Before adjusting the knives on this machine always turn off the electrical circuit supplying power to the machine.

Wear gloves when working with knives in the machine.

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

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

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 or moulding knives in the two empty slots

UPPER/LOWER CUTTER DESIGN

Lower Cutter

Diameter: 2 13/16" (72mm)

Width: 16" (410mm)

Rotation Speed: 7200 rpm

4 slots for planer knives

Planing Depth: 0-3/16" (0-5mm)

Moulding Depth: Max. 3/8" (10mm)

Upper cutter

Diameter: 3 7/16" (88mm)

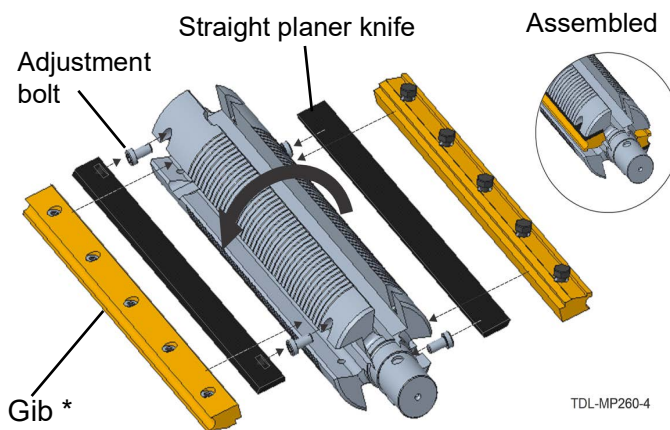
Width: 20" (510mm)

Rotation Speed: 7200 rpm

4 slots for planer knives

Planing Depth: Max 3/16" (5mm)

Moulding Depth: Max. 3/16" (5mm)



TDL-MP260-4

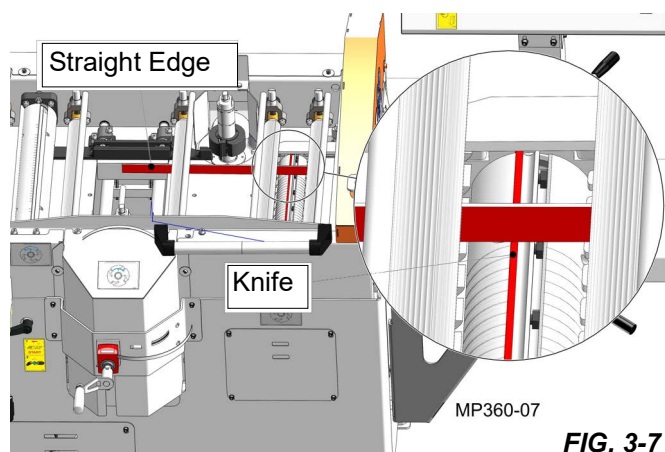
***NOTE:** This item often goes by many names - wedge, chip breaker, block, knife lock bar, clamp, or gib. For this manual, it will be referred to as "gib."

FIG. 3-6

3.7 Leveling lower cutter straight planer knives

WARNING! Lock out the electrical circuit supplying power to the machine prior to adjusting the knives.

NOTICE Ensure the straight edge is flat to the cast iron table without any obstructions.



MP360-07

FIG. 3-7

3 Setup

Initial setup of upper cutter

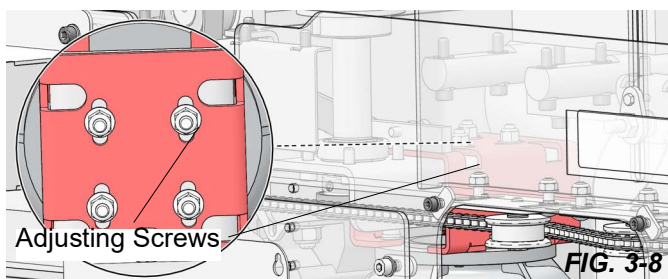
The lower cutter straight planing knives should be adjusted so they lie level with and parallel to the cast iron cutter table.

1. Place the straight edge across the cast iron table.
2. Rotate the cutter head so that the edge of the planer knife is directly under the straight edge.

The straight edge should **move slightly** when the knife edge passes beneath it.

3. Insert the 10 mm wrench in the track between the gib and the cutter to loosen (do not remove) the gib screws.
4. Raise or lower the knife by adjusting the two recessed adjustment screws using a 4 mm hex key (supplied).

The knife sides have a recess that allows access to the adjustment screw heads.



5. 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**.
6. Adjust one side until correct, and then adjust the other side in similar fashion.

NOTICE 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.

7. Securely tighten the gib screws once the knife is adjusted correctly.

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

8. Tighten the height adjusting screws until they touch bottom of the indentations of the knives. (This will be a small adjustment.)

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

9. Repeat this procedure on all straight knives you have installed in the head.
10. Re-check that all knives are level with the cast iron table.

WARNING! Ensure that ALL of the gib screws 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.

Check that all parts and tools used to set the lower knives have been removed from the machine before closing the lid of the machine.

Initial setup of upper cutter

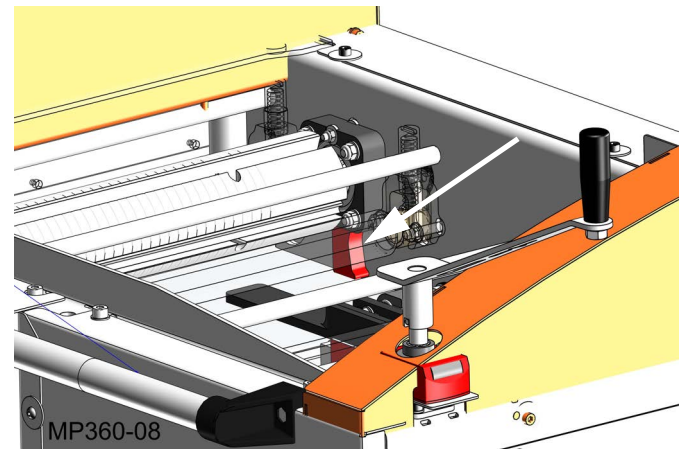
WARNING! Lock out the electrical circuit supplying power to the machine prior to adjusting the knives.

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.

1. Check level by measuring the distances at the front and rear of the upper cutter head.

Proceed only if necessary.

2. Place a **level** spacer on the machine table directly under the cutter head mount. See FIG. 3-9.



3. Turn the table height adjustment crank (front, right corner of machine), so that the cutter mount rests gently on the spacer.
4. Loosen (do not remove) the screws of the cutter head mount on the opposite side.
5. Adjust the cutter head so that it also rests lightly on the spacer.
6. Tighten the screws of the cutter head mount.
7. Calibrate the thickness indicator after adjusting the cutter head. See [Calibrating thickness indicator](#).

3.8 Leveling the upper planer knives

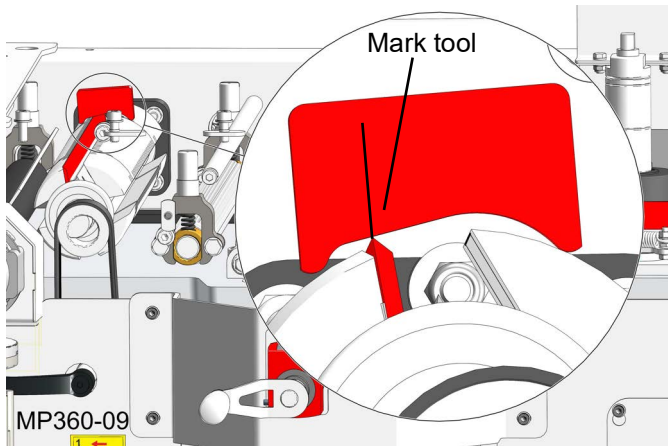


FIG. 3-10

NOTE: 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.

1. Loosen (do not remove) the knife gib screws.
2. Set one side of the knife to the desired height.
3. Place the knife alignment tool next on the knife to mark the tool where the knife edge touches.
4. Move the tool to the opposite side of the knife.
5. Adjust the knife up or down with the hex key until it just barely touches the marked point of the alignment tool.
6. Securely tighten the gib screws once the knife is adjusted correctly.

NOTE: Tighten the gib screws a small amount at a time, alternating between screws. Continue alternating between screws until they are very tight.

7. When the gib screws are tight, tighten the height adjusting screws until they touch bottom of the indentations of the knives. (This will be a small adjustment.)



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

8. 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. Loosen the gib screws.
2. Loosen 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 [_](#) and [Leveling the upper planer knives](#).

Adjusting cutting depth of the lower cutter

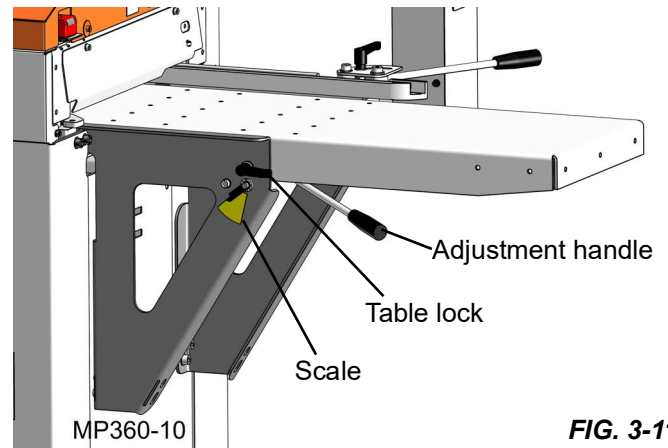
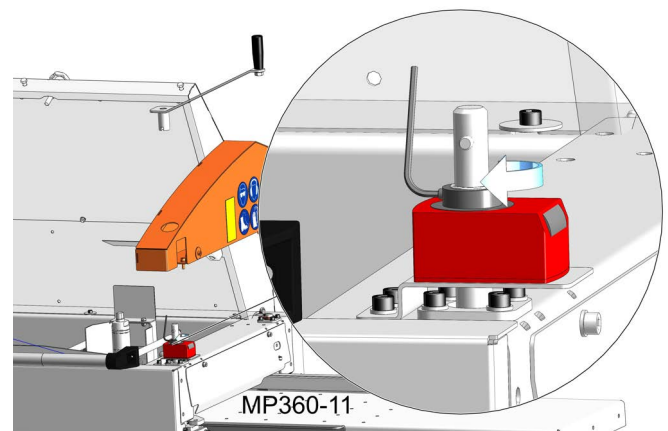


FIG. 3-11

1. Unlock the table lock.
2. Use the adjustment handle to set the desired height by reading the height from the scale.
3. Reset the table lock.

3.9 Calibrating thickness indicator



1. Plane a piece of stock.
2. Carefully measure the thickness of the planed stock.
3. Remove the height adjustment handle.
4. Remove the right guard assembly.
5. Loosen the set screw on the ring of the indicator.
6. Turn the ring until the reading matches the actual planed stock thickness.
7. Tighten the set screw.
8. Replace the right guard assembly.

3 Setup

Upper and lower moulding knives

9. Replace the height adjustment handle.

3.10 Upper and lower moulding knives

Moulding knives can be mounted both in the lower and the upper cutter.

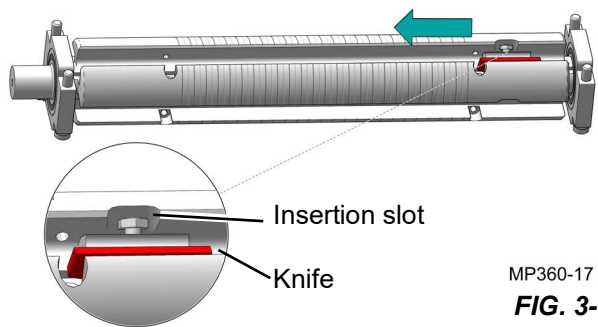
NOTICE The moulding knives must always be mounted in pairs and in the same lateral position in the opposite slots of the cutter head. A small degree of lateral deviation between the moulding knives can be accepted, as long as the cutter head stays balanced.

The lower and the upper cutters have four knife slots each. The machine comes with two mounted planing knives in each horizontal cutter. You can mount moulding knives in the two empty slots.

WARNING! Ensure the cutter head is balanced.

WARNING! Above the machine table on the in-feed side, there is a **limiting plate** which limits the maximum takeoff of the upper cutter when it is turned up-side-down. **This plate must be used when moulding knives are mounted in the upper cutter.** If an over-thick workpiece is fed through the machine, the feed rollers may come in contact with the moulding knives if this limit plate is not used.

NOTICE If back relief knives are mounted in the lower cutter, position them laterally so they pass through the tracks in the machine table.



MP360-17
FIG. 3-12.

1. Assemble the moulder knife gib and the moulder knife.
2. Insert the gib and the knife in the insertion slot in the cutter head.
3. Push the knife and the gib along the slot to the final location.
4. Secure them in the cutter by tightening the gib screw.

NOTICE The gib screw must **not** be situated over the insertion slot.

5. Measure the lateral position of the knife to position an identical knife in the exact position on the opposite side of the cutter head.

3.11 Side cutter setup

WARNING! Lock out the electrical circuit supplying power to the machine prior to adjusting the knives.

Wear gloves when working with knives in the machine.

NOTICE Check for free rotation of cutter heads before closing the lid.

SIDE CUTTER DESIGN

The side cutters have the following specifications:

- Spindle Axle: Diameter 30 mm
- Cutting Height: Maximum 6" (160 mm)
- Rotation Speed: 7000 rpm
- Maximum Planning Depth: 3/16" (5mm)
- Maximum Profile Depth: 3/4" (20mm)

Specifications of the side cutter heads :

- 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)

REMOVING RIGHT OR LEFT SIDE CUTTER

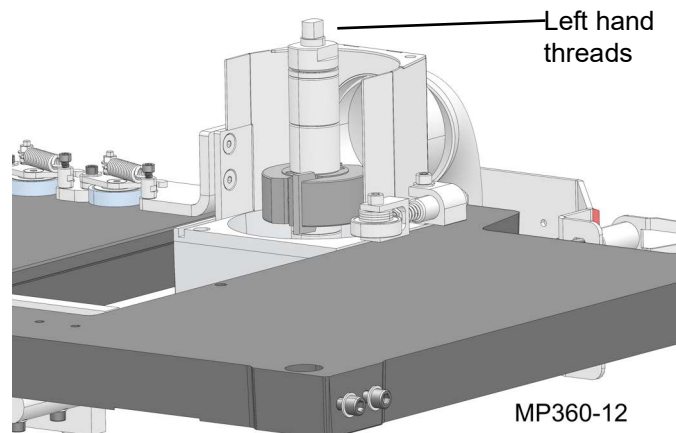


FIG. 3-13.

1. Use a 30 mm and 12 mm open-end wrench in combination to loosen the nut on the top of the shaft.
2. Slide the spacers and cutter head up off of the shaft.

REPLACING KNIVES

1. Loosen the gib 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.

NOTICE Ensure the knives are mounted in the proper orientations for the rotation of the head.

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. See FIG. 3-14 .

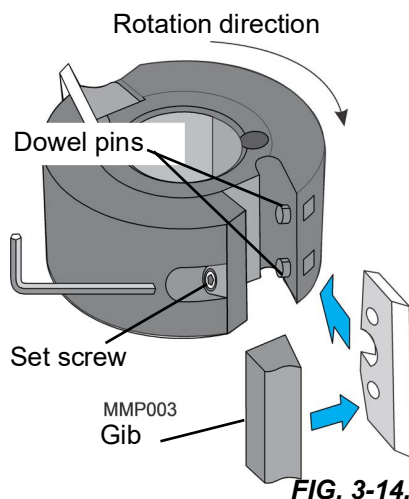


FIG. 3-14.

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.

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/LOWERING THE SIDE 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.

NOTICE 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.

LOCK THE CUTTER HEAD IN POSITION

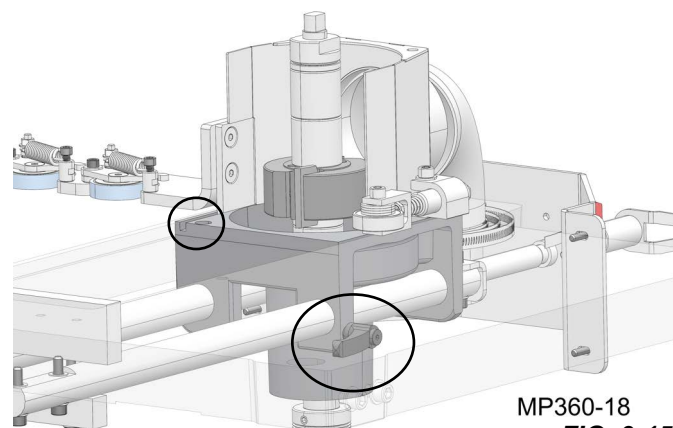
Place the large spacer rings above the cutter head. Only the treaded portion of the shaft should be visible.



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.

Replace the top nut on the shaft; refer back to Fig. 3-13.

Setting the movable side cutter head

MP360-18
FIG. 3-15

The movable side cutter head has a locking bolt **under the table**, on the output side **and** a locking screw accessed on the top of the table.

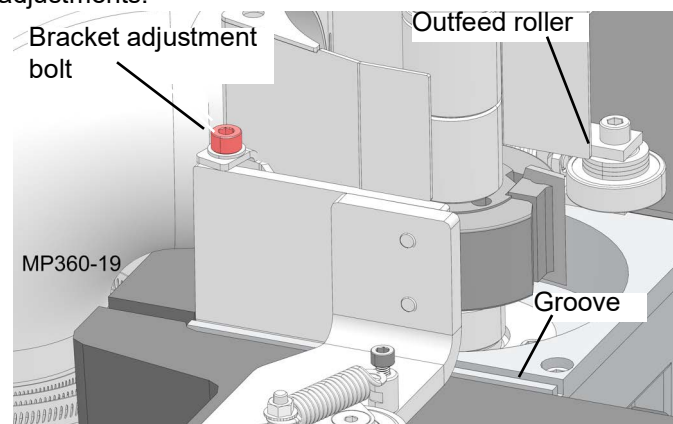
1. Loosen the movable side cutter locking bolt by loosening the handle.
2. Loosen the locking screw with a screwdriver.
3. Use the crank on the front of the unit to move the side cutter in or out to the desired location to cut the left side of the board.

NOTICE This initial setting will only be an approximation while the right side fence is adjusted. Once this right side fence is set, measure the desired cutting width.

SETTING THE SIDE PRESSURE ROLLERS

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

The infeed clamp rollers are mounted on a bracket that moves with the side cutter. The clamp rollers do not need adjustments.

MP360-19
FIG. 3-16.

The infeed clamp roller bracket fits into a groove just in front of the side cutter and can be adjusted in or out as needed to allow for varying width boards. This bracket location determines the widest board the machine will accept.

3 Setup

Feed rollers

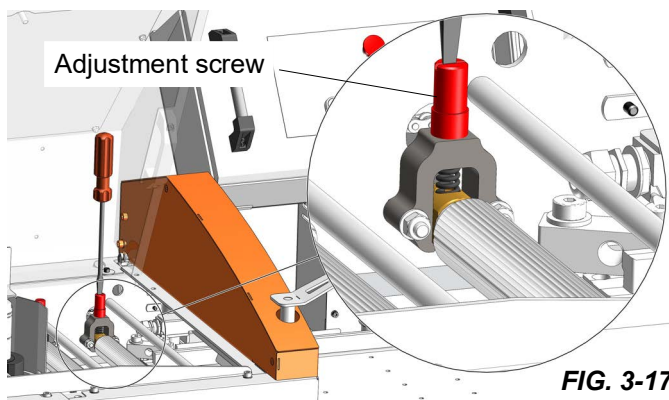
1. Set the clamp roller bracket by loosening the screw (8 mm hex key) that **secures the bracket on the movable cutter carriage**.
2. Adjust the bracket so that the pressure rollers depressed slightly less than 1/4" (5 mm) when the work piece is fed into the machine.
3. Set the outfeed pressure roller approximately 1/32 - 1/8" (1-3 mm) past the cutting diameter at the level of the pressure roller. See FIG. 3-16 .

3.12 Feed rollers

The MP360 has five feed rollers, which feed the work pieces through the machine. The feed rollers are run by a separate motor located on the front of the unit. The motor drives the last roller, which in turn drives the four other rollers via a chain system.

Four rollers are ribbed metal but the last one has a rubber coating to prevent marring work piece as it exits the machine.

Adjusting the feed roller pressure



At both end of each feed rollers is a spring bearing housing with an adjustment screw.

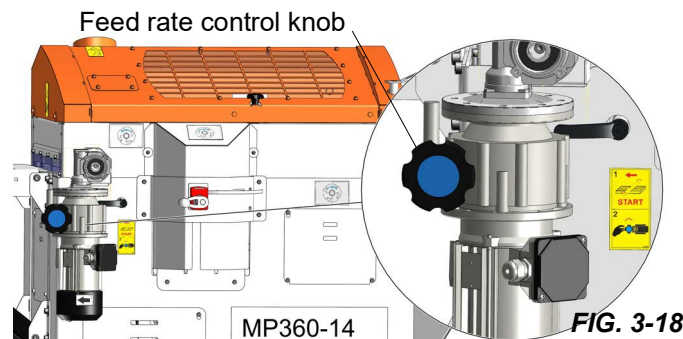
1. Check the downward pressure for evenness by pulling up on the roller with your hands.
2. Use the adjustment screw to adjust the pressure evenly.
3. Ensure all 5 rollers are near the same pressure.
4. Lubricate the bearing housings of the feed rollers with oil after each work session.

NOTICE Wood debris can accumulate under the feed roller spring mounted bearings. Check these areas and, if necessary, remove the wood debris that has accumulated there.

Adjusting the feed rate

The feed rate can be adjusted from 10-49 ft/min (3-15 m/min).

ENSURE MOTOR IS RUNNING BEFORE ADJUSTING



CAUTION! Ensure the motor **is running** before adjusting the feed rate. Equipment damage may occur.

The optimum feed rate depends on the type of wood , the moisture content, and what type of moulding knives are in the machine.

3.13 Leveling the machine table

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

The machine table is leveled from the 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 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 a level block on the machine table directly head (not against the knives or the knife slots).
3. Turn the machine table crank until the block comes very close to the cutter.

If it is impossible to raise the table, 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. Check the table's position lengthwise 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 a threaded bar is difficult to turn, it is due to angular misalignment of the table. Adjust this by slightly turning the dif-

ficult 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 does not move diagonally.
9. Place the chain on the sprockets and tension the chain using the chain tensioner on the out-feed side of the machine.

NOTICE When the bearing housings of the upper cutter have been adjusted, or when the take-off of the planing knives has been altered, the thickness indicator must be recalibrated. (See [Calibrating thickness indicator.](#))

SECTION 4 OPERATION

4.1 Operation

- ! DANGER!** Keep hands away from the knives.
Ensure all knives are secure before starting motor.
Do not operate the planer moulder without all covers and guards in place.

- ! WARNING!** Do not operate the machine standing directly in front of the input or output tables; kickbacks may occur.

Minimum length of the work piece is 24" (600 mm). Do not feed shorter pieces.

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

STARTING THE PLANER

- ! WARNING!** Clear the machine of any loose tools or other items before starting any of the motors.

NOTE: Motors will not start if the planer's observation/protective lid is not securely closed, or if the Emergency Stop is depressed. Ensure the Emergency Stop in the correct position by depressing it and then pulling and/or turning it until you here a click.

Ensure each cutter head moves freely and will not impact any fences before starting.

Main power to the machine is supplied through the switch at the top right corner of the control panel.

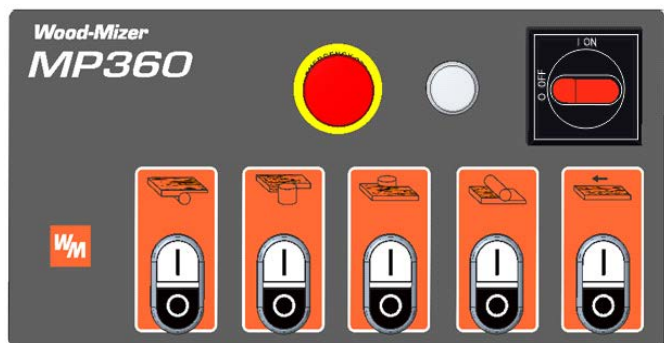
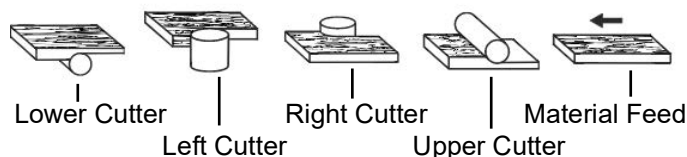


FIG. 4-1.

1. Turn Main Power switch to the ON position.
The Power Indicator lights.
2. Press the upper part of each motor switch independently.



STOPPING UNDER NORMAL OPERATING CONDITIONS

1. Press the lower part of each motor switch independently.

This stops the motors individually. Each motor can be restarted again by pressing the upper part of the switch again.

2. Turn the main power switch to the OFF position.

STOPPING IN AN EMERGENCY

1. Press the Emergency Stop to stop all motors.

Once this switch is pressed, the machine cannot be restarted until this switch 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 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.
- 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 outfeed 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.

- 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 rough 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.
- The chip extractor moves a large amount of air. If you blow the wood debris outside of a heated room, the room will quickly become cold.

4.3 Feeding Stock



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

Ensure you have adequate room for the infeed and outfeed of the material.

Your work area should be clean, well lit, and clear tripping hazards.

The paths to the infeed and outfeed ends of the machine should be clear.

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 right side infeed fence.



CAUTION! Material that is fed into the machine at an angle will not straighten up in the machine and may cause problems with fences.

4.4 Run a first test board



WARNING! Clear all tools used in the setup.

NOTICE 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. This board should stop before it runs completely through the machine. Specifically, the board should stop just in front of the pressure roller located just after the left side cutter.

1. Turn the power on using the start switch located on the control panel. See FIG. 4-1 .
2. Start the cutter heads one at a time.
3. Start the feed motor last.



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

4. Slow the speed of the feed rollers down using the knob on the feed motor.
5. Turn the knob until you see the rollers slow down to their lowest speed.
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 E-Stop 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.

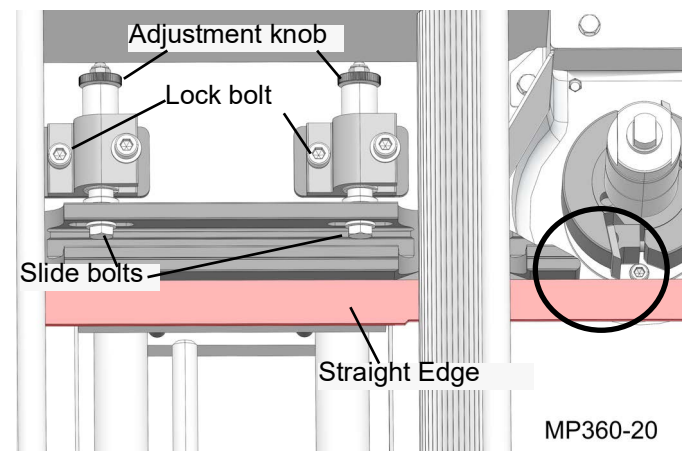
Stationary side cutter fence setup

The infeed fence determines how much material you take off for that pass.

The outfeed fence supports the board after it is cut.

Set the outfeed fence first.

SET THE OUTFEED FENCE



MP360-20
FIG. 4-2.

1. Loosen the locking bolts for the outfeed fence.
2. Set the cutterhead so that the knife is at the maximum cut.
3. Use a straight edge to align the fence with the cutter blade tip. See FIG. 4-2 .
4. Use the adjustment knobs for fine tuning the adjustment.
5. Tighten the locking bolts.
6. Loosen the fence slide bolts.
7. Slide the fence toward the cutter, stopping just outside the cutting diameter.

4 Operation

Sizing stock

8. Tighten the slide bolts.

SET THE INFEED FENCE

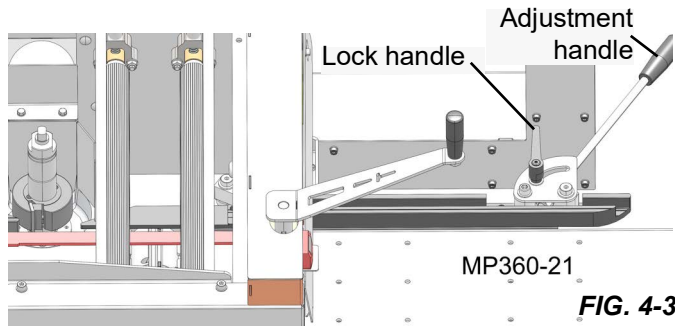


FIG. 4-3

1. Loosen the locking handle.
2. Use the fence handle to move the fence up to the straight edge, setting it parallel to the outfeed fence.
3. Move the fence backwards by the amount of material you want to remove.
4. Tighten the locking handle.
5. Run a test board.
6. Repeat both setups as necessary.

TIP: If the board does not follow the fences, check that

- the back fence is not at the right level in relation to the cutter,
- that the fences are not completely parallel to one another,
- or that the fence does not run straight through the planer/moulder.

If it is difficult to get the fence to lie perfectly straight through the planer/moulder, it is better that the fences are slightly angled to the left, towards cutter 3, as the feed rollers will then press the workpiece against the fence. If the fences lie at a slight angle to the right, away from cutter 3, the feed rollers will pull the object away from the fence, which will lead to incorrect measurements and a badly planed surface.

4.5 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.

4.6 Planing narrow stock

The MP360 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.

4.7 Planing stock thicker than 2"

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.

Cutter heads with a 4" height designed for this model can be ordered through Wood-Mizer.

4.8 Saving a moulding pattern

To reproduce a pattern, take measurements before removing the mounted knives.

1. Use a board that is approximately the same length as the moulder as your last run piece.
2. Stop the feed-in of this board as it is halfway through the cut.
3. Adjust the table and the movable side cutter so that the board may be removed.
4. Write down on the board 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.
5. Measure the machined moulding.
6. Measure and note the spacers and the position of profile blades on the board.

4.9 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.

When moulding tongues and grooves the knives must be at the same height above the planing table.

1. Remove the cutter from the spindle .
2. Decide how the board should look.
3. Assemble the molding knife and tighten the socket head screw that hold the knife properly.
4. Place the cutter on the spindle without any spacers.
5. Measure the distance between top edge of the bottom knife and planer/moulder table.

Take the following measurements:

1. Remove the cutter.
2. Combine spacers to the calculated thickness and thread them onto the spindle.?
3. Place the cutter on the spindle, screw on the lock nut and tighten properly.
4. Check that the cutter can rotate freely.
5. Carry out the points above on the cutter with the tongue knife, so that it is placed at the same height above the table.
6. Test a small board, and check that the tongue and groove are at the right height in relation to one another.

Alternatively, the knife can be set arbitrarily, after which a test bit is run. Measure the test bit and correct the knife height.


NOTICE Spacers must also be placed above the cutter so that it is fixed on the spindle. Add the distance rings that are not used for height setting, so that the thickest ring lies highest and protrudes several millimeters above the lowest threads on the threaded bar. Then screw the nuts on the threaded bar and tighten properly.

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,
 - 1). Lay the two half-boards together on a flat surface.
 - 2). Slide a thickness spacer ring(s) under the lower board until it is level.
 - 3). Use that spacer or combination of spacers to level the cutting head.

SECTION 5 MAINTENANCE

This section lists the maintenance procedures that need to be performed.

 **DANGER!** Disconnect and lock out power supply before performing any maintenance work, cleaning, or servicing the planer/moulder. Failure to do so may result in death or serious injury.

5.1 Sawdust Removal

 **WARNING!** Clean sawdust from all guards, vents, control boxes, or any area where sawdust may gather **after every 8-hour shift**. Failure to do so may result in fire, causing death or serious injury.



5.2 During use

1. Check the control lamps prior to use by pressing down the emergency stop and then the start switch of the feeder.
2. Clear away all wood debris.
3. Ensure that wood debris does not accumulated under the machine.

Debris/dust can interfere with the cooling of the motors and lead to a motor breakdown or fire. The belt under cutter 4 can become slack if wood debris accumulates under its motor.

4. Ensure that all chip outlets are connected to the chip extractor.
5. Ensure that all feed rollers are moving freely.

5.3 After each use

1. Clear the machine from wood debris from the tables, the chip outlets, the hoses, and under the machine.
2. 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.).
3. Clean the cutters and the feed rollers from resin and accumulated wood debris with mineral spirits.

NOTICE Wood debris can accumulate under the feed rollers. This impairs the feeding and increases the risk of kickbacks.

4. Clear away wood debris behind the right side bearing housing of the upper cutter.
5. Clear out any wood debris accumulated in the springs of the feed rollers.

NOTE: Sometimes the spring must be removed from the threaded bar to be cleaned. **Note the setting of the spring before removing it.**

6. Clean and lubricate the pressure rollers so that they can move easily.
7. Check all belt tensions.
8. Ensure that all screws and bolts are tight.
9. Ensure that all cables and connections are in good condition.

5.4 Lubrication points

NOTE: Use a chain/gear oil with ISO Viscosity Grade 68.

1. Lubricate the bearing holders and springs of the feed rollers. (Total of 10 - four steel rollers and one rubber.)
2. Lubricate the threaded bars located at the corners.
3. Lubricate the chain and sprockets for height adjusting the table.
4. Lubricate position bars and the threaded rod on the carriage of the movable cutter.

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 once or twice a month, and lubricate the threaded bar of the crank and the position bars of the carriage.

5. Remove the cover and lubricated the chain transmission of the feed rollers.
6. Lubricate spacers, pressure rollers, and side rollers.

5.5 Cleaning the metal feed rollers

Pitch may build up on the metal feed rollers from planing high resin woods.

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 and/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.

NOTICE If you are selling your shavings for live-stock purposes, this may limit the type of cleaning fluid you can use for this purpose.

5.6 Removing and replacing 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 FIG. 5-1 .

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.

NOTICE The C-clip is made from spring steel and can easily fly off, getting lost during the removal operation. Prepare to prevent this.

5.7 Replacing feed chain gear sprocket set screw

The feed roller sprockets are equipped with set screws that are designed to shear off to protect the feed motor and drive train of the machine.

1. Remove set screws.

If sheared, remove these set screws and re-install new set screws in the feed roller sprocket.

2. Activate the feed mechanism until the set screw is opening downward.

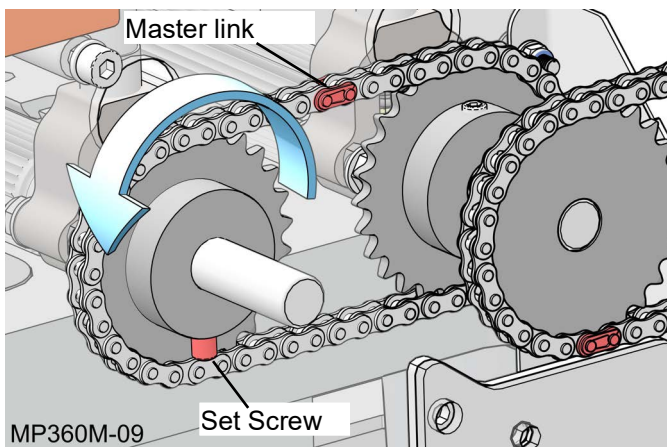


FIG. 5-1.

3. Tap the front of the sprocket/gear, causing the head of the sheared screw to fall free.
4. Ensure the set screw hole is still aligned with the channel 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.

- 1). Use emery cloth to lightly polish and remove the varnish that is on/around the shaft.
- 2). Lightly polish and remove the varnish that is on the inside of the hole in the feed sprocket/gear.
- 3). Place the feed sprocket on the shaft, aligning up the set screw hole on the feed sprocket to the channel on the shaft.

5. Replace with a new set screw.

5.8 Drive Belts Tension Adjustment

Top cutter drive belt tension adjustment

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

1. Raise the table to make access easier.
2. Remove top cutter drive belt cover.
3. Check top cutter drive belt for wear and tension. Replace belt as needed.
4. Tension the drive belt by loosen motor plate mount (highlighted red) bolt.
5. Move motor mounting plate to adjust properly drive belt.

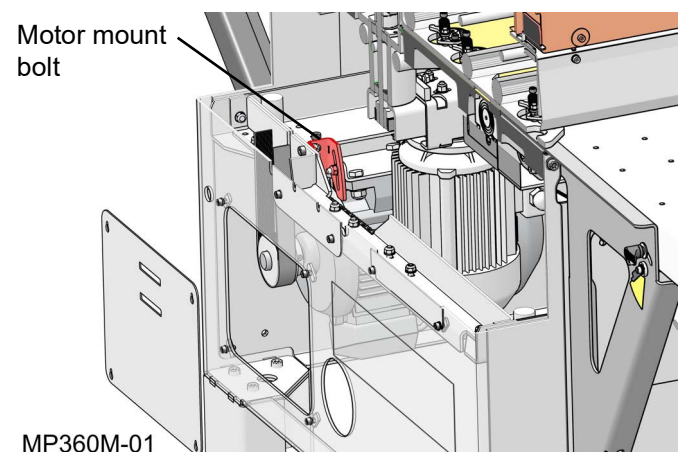


FIG. 5-2

6. Tighten motor plate mounting bolt.
7. Mount top cutter drive belt cover.
8. Use a straight edge to check motor and top cutter pulley alignment.

5 Maintenance

Bottom cutter drive belt tension adjustment

Both pulleys should be in line to avoid premature drive belt wear.

9. Loosen set screws (2) on the shaft to move pulleys.

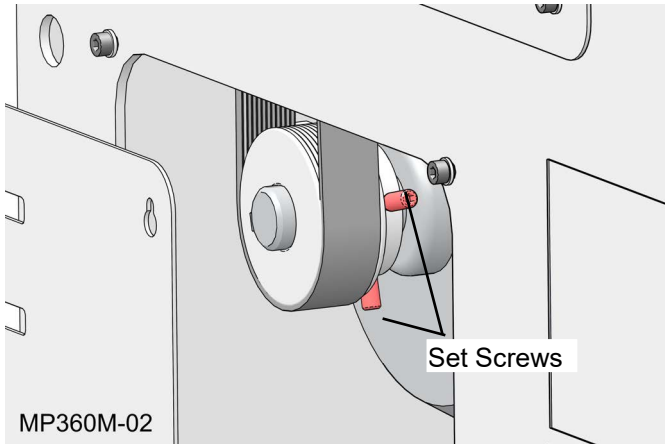


FIG. 5-3

10. Recheck the belt tension.

Bottom cutter drive belt tension adjustment

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

1. Raise the table to make access easier.
2. Remove bottom cutter drive belt cover (located at the rear of the machine).
3. Check bottom cutter drive belt for wear and tension; replace belt as needed.
4. Tension the drive belt by loosen motor plate mount (highlighted red) bolt.
5. Move motor and mounting plate to adjust properly drive belt.

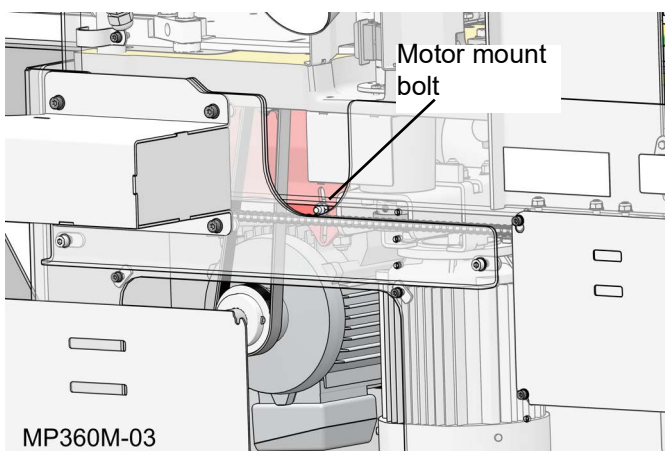


FIG. 5-4

6. Tighten motor plate mounting bolt.
7. Mount bottom cutter drive belt cover.
8. Use a straight edge to check motor and bottom cutter pulley alignment.

Both pulleys should be in line to avoid premature drive belt wear.

9. Loosen set screw (1) on the shaft to move pulley.

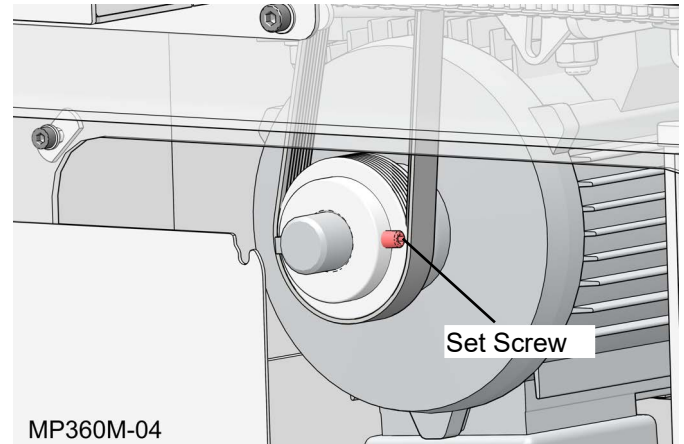


FIG. 5-5

10. Recheck the belt tension.

Side cutter drive belt tension adjustment

Both side cutters are adjusted in the same manner.

1. Dismount access covers as needed.
2. Loosen four motor mounting bolts.

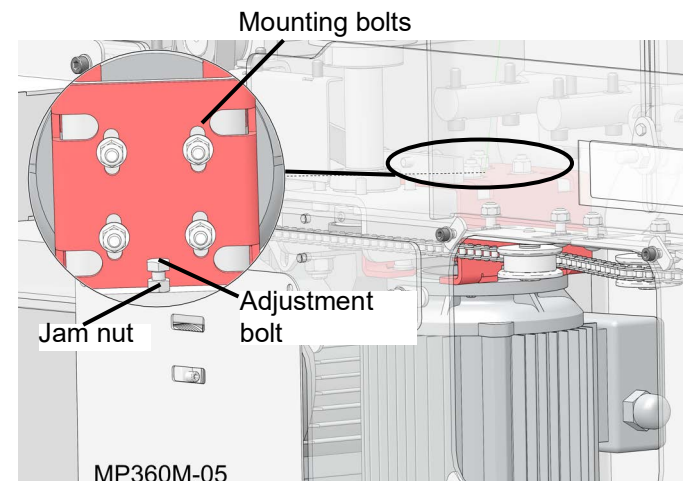


FIG. 5-6

3. Use adjustment bolt to adjust belt tension.
 - 1). Loosen the jam nut
 - 2). Move the adjustment bolt in or out as necessary.
 - 3). Tighten the jam nut.
4. Tighten the motor mounting bolts.

5.9 Table up/down chain adjustment

The chain used to raise and lower the table, must not be slack, but needs to be tensioned enough that teeth mesh correctly.

The chain tension is adjusted with tensioning pulley.

1. Remove the cover.
2. Loosen the lock nuts.
3. Slide the pulley in or out to tension the chain.

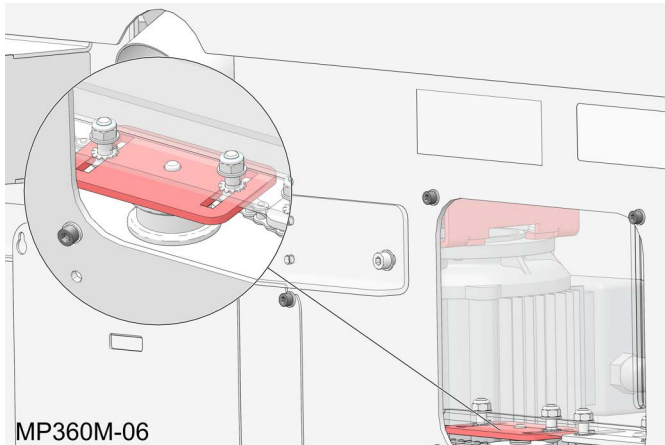


FIG. 5-7

CAUTION! Do not over-tension the chain.
Do not adjust the chain tension as table is moving.

5.10 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 temperatures above zero.
- Loosen the motor belt tension.
- Spray a thin layer of anti-rust coating onto the places not protected against rusting.
- Store the machine in a well ventilated room.
- Cover the planer/moulder.

5.11 Safety Switch Inspection

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

- E-STOP and its circuit inspection,
- Cutter cover safety switch and its circuit inspection.
- Protective plate with limit switch and its circuit inspection.

E-STOP

1. Use motor switches to start all cutters and feed rollers.
2. Press the E-STOP located on the control box.

All motors should stop.

3. Test motor switches; they should not start until the E-STOP is released.

CUTTER COVER SAFETY SWITCH

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

1. Ensure the emergency switch is released.
2. Use motor switches to start all cutters and feed rollers.
3. Open the cutter housing cover.

All motors should stop.

4. Test motor switches; they should not start with the housing cover open.
5. Close the cutter housing cover.
6. Motors do not restart until the motor switches are pressed.

PROTECTIVE PLATE WITH LIMIT SWITCH

1. Ensure the E-STOP switch is not engaged.
2. Use motor switches to start all cutters and feed rollers.
3. Use a board or cant to push the protective plate.

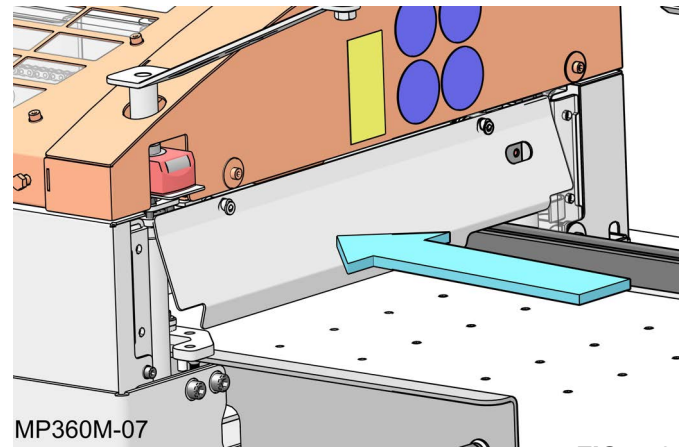


FIG. 5-8

All motors should stopped.

4. Back out the board or cant.

Motors should remain stopped until they are restarted with their motor switches.

5.12 Miscellaneous Maintenance

1. Oil all chains with transmission oil (Dexron III ATF or equivalent) every fifty hours of operation.

CAUTION! Do not use chain lube, which causes sawdust buildup in chain links.

2. Clean resin from the table with solvent, if necessary.
3. Lubricate table.
4. Lubricate these parts every 50 hours:

5 Maintenance

Change the side spindle bearings

- Feed roller bushing,
- Sprockets
- Table height adjustment chain
- Feed roller drive chain
- Two slide rods and trapezoidal thread
- Cast iron table

Every 50 hours check that all screws and bolt connections are tightened and cables and electrical connectors are in good condition.

5.13 Change the side spindle bearings



DANGER! Disconnect and lock out power supply before performing any maintenance work, cleaning, or servicing the planer/moulder. Failure to do so may result in death or serious injury.

1. Remove all spacers and the cutter head from the shaft. [See Section 3.11.](#)
2. Unbolt the clamping plate.
3. Loosen the side cutter motor to relieve belt tension. [See Section 3.11.](#)
4. Loosen the set screw on the shaft pulley to remove the pulley.
5. Remove the shaft with the top bearing from the top of the machine.

NOTE: This is a tight fit and may require effort.

6. Remove the retaining rings and washer on the shaft and slide the top bearing down the shaft for replacement.



CAUTION! Provide a means for supporting the motor for this step.

7. Remove the motor mounting bracket holding the motor to the cast table.
8. Remove the lower bearing.

NOTE: This is a tight fit and may require effort.

9. Complete these steps in reverse for installation.
10. Check the belt tension and pulley alignment after reassembled.

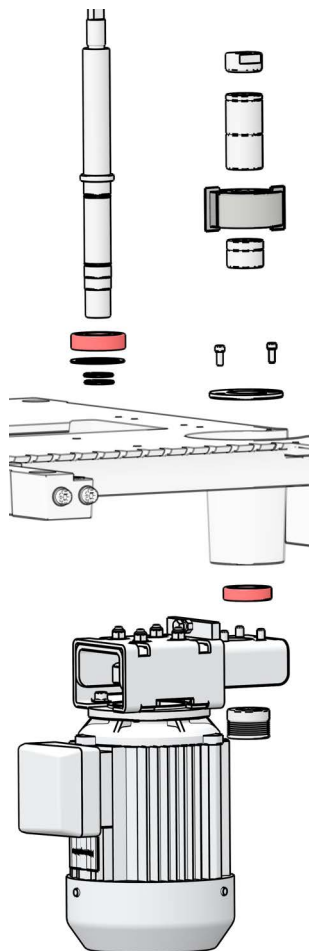


FIG. 5-9

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.

6.1 Operation problems

Problem	Possible Cause	Solution
In-and out-feed marks (snipes)	<ol style="list-style-type: none"> 1. Incorrectly adjusted in- and out-feed tables. 2. The workpieces are not butted when being fed into the machine. 3. The feed pressure of the feed rollers is incorrectly adjusted. 4. The workpiece is bent or warped. 5. There is play in the suspension of the machine table. 	<ol style="list-style-type: none"> 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. 2. Butt the workpieces end to end when feeding them into the machine. This will eliminate the variations of the feed pressure that can occur the moment the feed rollers grab the workpiece. 3. Make sure that the feed pressure is sufficient and that the rollers are balancing horizontally over the workpiece. 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. 5. Press firmly to check if the machine table wobbles in any direction. If it wobbles, see Leveling the machine table.
The entire surface is fuzzy.	<ol style="list-style-type: none"> 1. The workpiece has high moisture content. 2. The knives have lost their edge. 	<ol style="list-style-type: none"> 1. Dry the lumber before machining it. 2. Grind the knives. Sharp knives are important when machining soft or moist wood.
Fuzzy surface around knots, where the direction of the fibers can vary	<ol style="list-style-type: none"> 1. The workpiece has high moisture content. 2. The knives have lost their edge. 3. The workpiece is of a too soft sort of wood. 	<ol style="list-style-type: none"> 1. Dry the lumber before machining it. 2. Grind the knives. Sharp knives are important when machining soft or moist wood. 3. Choose another material, or sand the workpiece after it has been machined.
The thickness of the board does not correspond to the setting of the scale.	<ol style="list-style-type: none"> 1. The takeoff of the knives in the upper cutter are set incorrectly. 2. The height scale is set incorrectly. 	<ol style="list-style-type: none"> 1. Set the takeoff of the planing knives to 1 mm, using the setting block supplied, or a straightedge. 2. Refer to Calibrating thickness indicator.
The edges of the molding knives are visible in the machined moulding profile.	<ol style="list-style-type: none"> 1. The planing knives do not cut away enough wood. 2. The moulding knives are ground incorrectly 	<ol style="list-style-type: none"> 1. Set the takeoff of the planing knives to 1 mm, using the setting block supplied, or a straightedge. 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.
The width of the machined board differs.	<ol style="list-style-type: none"> 1. The workpiece moves away from the side fences. 2. The locking handle of the movable cutter has not been tightened. 3. The spring mechanism of the pressure rollers is stiff. 4. The workpiece is too small for the measurement the machine is set to. 5. The stationary side cutter cuts away too much wood. 	<ol style="list-style-type: none"> 1. The right-side fences are set incorrectly. Adjust them according to the instructions. 2. Pull the handle tight before planing/ moulding. 3. Clean and lubricate the spring mechanisms of the three pressure rollers. 4. Set the machine to the correct width. 5. Decrease the feed rate or the takeoff of the stationary cutter.

6 Troubleshooting

Mechanical or electrical problems

Problem	Possible Cause	Solution
The surface of the workpiece's right side is below par.	1. The locking handle of the movable side cutter has not been tightened.	Pull the handle tight before planing/ moulding.
Splintering of the workpiece from the movable side cutter.	1. Too much takeoff.	1. Plane the workpiece to size before the final machining.

6.2 Mechanical or electrical problems

Problem	Possible Cause	Solution
None of the motors can be started.	<ol style="list-style-type: none"> 1. The cover is not entirely closed. 2. The emergency stop is not released. 3. No power is supplied to the machine. 4. One of the motors is overheated. 5. Fault in the electrical system of the machine. 6. A fuse has blown in the electric box of the machine. 7. Wood debris has accumulated in the cover's safety switch. 8. The protective plate on the infeed opening is depressed. 	<ol style="list-style-type: none"> 1. Firmly tighten the locking knob on the cover. You can hear a soft click when the safety switch is activated. 2. Reset the emergency stop by twisting and pulling it outwards. 3. Check the residual circuit breaker and the fuses in the building. Also check the connecting cable. 4. Wait until the overheating protection of the motor automatically resets (see the point, "The motor gets overheated"). 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. 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. 7. The electrical system may only be opened by a qualified electrician: Open and clean the safety switch from wood debris. 8. Clear the area around the infeed and clean around the limit switch.
The workpiece is fed poorly or not at all through the machine.	<ol style="list-style-type: none"> 1. The shear pin in the out-feed roller is broken. 2. Wood debris and resin have accumulated in the grooves of the feed rollers and on the out-feed roller. 3. The pressure of the feed rollers is too low. 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. 5. Wood debris has accumulated around the upper cutter. 6. The machine table is covered with resin or rust. 7. One (or several) of the sprockets in the chain transmission of the feeder has come loose from the shaft. 	<ol style="list-style-type: none"> 1. Remove the feed motor and replace the broken shear pin. 2. Clean the feed rollers. 3. Increase the feed pressure and make sure the feed rollers are balancing horizontally over the workpiece. See Feed rollers. 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. 5. Remove the wood debris and increase the air flow in the chip extractor of the upper cutter. 6. Clean and lubricate the table. 7. Check the locking screws of the sprockets and tighten them against the flat part of the shaft.
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"> 1. The fuse on the brake card has blown. 2. The brake card is defective. 	<ol style="list-style-type: none"> 1. Replace the glass fuse on the card. 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).

Problem	Possible Cause	Solution
One of the motors will not start.	<ol style="list-style-type: none"> 1. Defective contact. 2. Defective motor. 3. A cable to the contact or to the motor is loose. 	<ol style="list-style-type: none"> 1. The electrical system may only be opened by a qualified electrician: Replace the defective contact. 2. The electrical system may only be opened by a qualified electrician: Replace the defective motor. 3. The electrical system may only be opened by a qualified electrician: Ensure that all cables are correctly connected.
The workpiece is fed jerkily through the machine.	<ol style="list-style-type: none"> 1. The machine table is covered with resin or rust. 2. One of the feed rollers has been bent. 	<ol style="list-style-type: none"> 1. Clean and lubricate the table. 2. Replace the bent feed roller.
The machine runs for a while but then stops.	<ol style="list-style-type: none"> 1. One of the motors, in most cases the motor of the upper cutter, gets overheated. 	<ol style="list-style-type: none"> 1. See the next point, "The motor gets overheated."
The motor gets overheated.	<ol style="list-style-type: none"> 1. Wood debris has accumulated in the chassis of the machine or around the cooling fans of the motors. 2. Dull knives. 3. Too low voltage in the power supply. 4. Loose or bad connection in the power supply to the machine or in the electrical system of the machine. 5. The upper cutter removes too much wood. 6. The feed rate is too high. 	<ol style="list-style-type: none"> 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. 2. Grind or replace the knives. 3. The electrical system may only be opened by a qualified electrician: Check that you have the correct voltage on all phases. 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. 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. 6. Decrease the feed rate.
Play in the adjusting crank of the movable side cutter.	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 1. Replace the bronze bearing and remember to open the locking handle under the table before adjusting the side cutter.
Vibration or rumble in the side cutter.	<ol style="list-style-type: none"> 1. The moulding knives are incorrectly mounted. 2. The moulding knives are incorrectly ground. 3. Defective bearing. 4. The spindle shaft has been bent due to overloading. 5. The drive belt is defective or improperly tensioned. 	<ol style="list-style-type: none"> 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. 2. Ensure the knives in pairs are identical on the opposite sides of the cutter. 3. Replace the bearing. 4. Replace the spindle shaft. 5. Clean the belt pulleys and replace or properly tension the belt.
Rumbling or vibration in the upper or the lower cutter.	<ol style="list-style-type: none"> 1. The moulding knives are incorrectly mounted. 2. The moulding knives or the planing knives are incorrectly ground. 3. The bearing is defective. This can be due to wood debris accumulated on the back of the bearing housing, which leads to overheating. 4. The drive belt is defective or improperly tensioned. 	<ol style="list-style-type: none"> 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. 2. Ensure the knives in pairs are identical on the opposite sides of the cutter. 3. Clean the bearing housing and replace the bearing. 4. Clean the belt pulleys and replace or properly tension the belt.
It is difficult to adjust the height of the machine table.	<ol style="list-style-type: none"> 1. The threaded bars on which the table is suspended, are dirty and not lubricated. 2. Faulty chain transmission. 3. The machine has been subject to impact which misaligned the table. 	<ol style="list-style-type: none"> 1. Clean and lubricate the threaded bars with oil. 2. Make sure that the chain runs correctly on the sprockets. Clean and lubricate the chain. 3. Adjust the table. (See Leveling the machine table of Setup)