

user manual

Instrukcja obsługi | Руководство пользователя
Manuel de l'Utilisateur | Betriebsanweisung
Bruksanvisning | Manual del Usuario
Betjeningsvejledning | Gebruikershandleiding
Käyttöohjeet | Manual de utilizare | Bruksanvisning
Manuale d'uso | Příručka uživatele | Navodila
za uporabo

Retain for future use
Zachować do przyszłego użytku
Сохраните для последующего
использования
A conserver pour une utilisation future
Für zukünftige Benutzung aufbewahren
Behold for senere bruk
Säilytä nämä käyttöohjeet tulevaa tarvetta marten
Opbevar manualen til fremtidig brug
Bewaren voor gebruik in de toekomst
Conservare il presente manuale a l'uso futuro
Păstrați acest manual pentru utilizare viitoare
Conservar para futuras consultas
Behall för framtida användning
Uchovejte pro další použití
Hranite za prihodnjo uporabo

Wood-Mizer®

Safety, Setup, Operation & Maintenance Manual

WM2500ME30U

rev. A1.01



Safety is our #1 concern!

Read and understand all safety information and instructions before operating, setting up or maintaining this machine.

Form #2546

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ABOUT THIS MANUAL

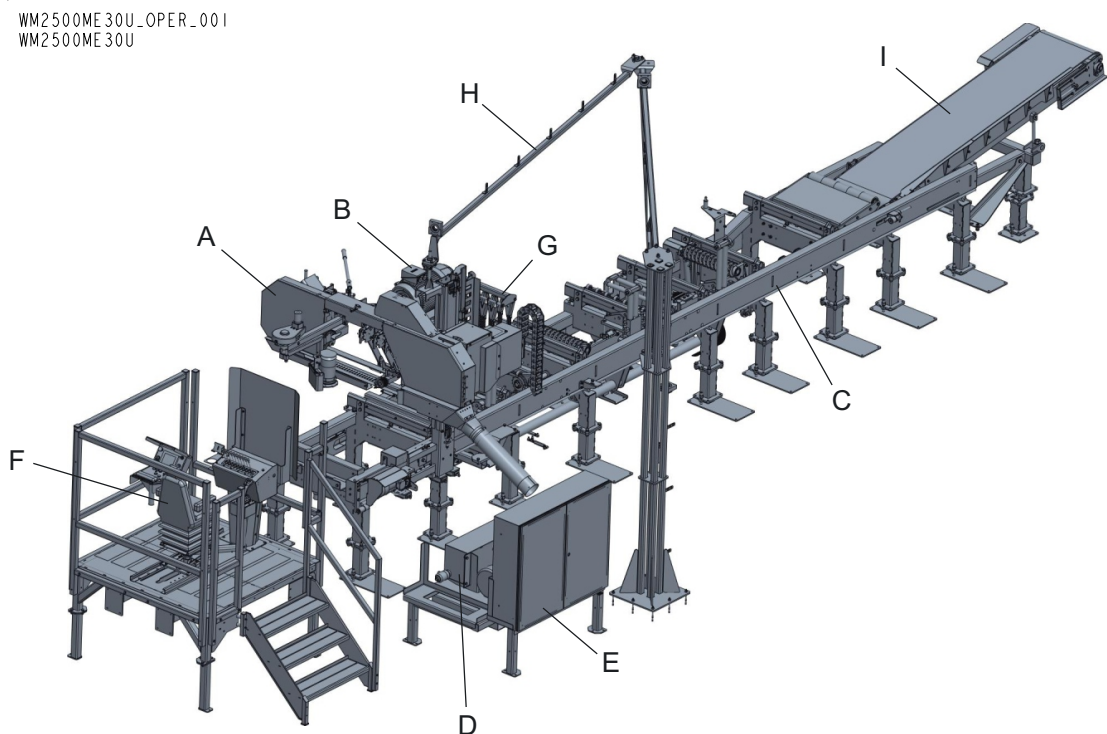
This manual is to replace or to be used with all previous information received on the Wood-Mizer®* sawmill. All future mailings will be an addition to or a revision of individual sections of this manual as we obtain new information.

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

For general information regarding Wood-Mizer and our “Forest to Final Form” products, please refer to the All Products Catalog in your support package.

The major components of the WM2500 sawmill are shown below.

A - Saw Head, B - Blade Drive Motor, C - Bed Frame, D - Hydraulic Power Unit, E - Electrical Service Cabinet, F - Operator Seat, G - Board Return, H - Cable Boom, I - Belt Conveyor



MILL COMPONENTS

*Wood-Mizer® is a registered trademark of Wood-Mizer Products, Inc.
Sawmill U.S. Patent Nos.: 4,559,858, 4,878,411 & 4,930,386
Brevet au Canada Nos.: 1,200,180 & 1,211,684

The WM2500 sawmill is intended for sawing wood only. The sawmill must not be used for other purposes such as cutting ice, metal or any other materials.

Using the machine correctly, you will obtain a material of the highest quality and high degree of accuracy.

The WM2500 sawmill should be operated only by an adult who has read and understood the entire operator's manual.

The machine is built to be durable and easy to operate and maintain.

Getting Service

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're meeting current wood-processing demands. Your comments and suggestions are welcome.

General Contact Information

From Europe call your local distributor or our European Headquarters and Manufacturing Facility in Koło, Nagórna 114 St, Poland at **+48-63-2626000**. From the continental U.S., call our U.S. Headquarter 8180 West 10th St. Indianapolis, IN 46214, 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 machine. He also can schedule you for a service call.

Office Hours:

Country	Monday - Friday	Saturday	Sunday
Poland	7 a.m.- 3 p.m.	Closed	Closed
US	8 a.m.- 5 p.m.	8 a.m.- 12 p.m	Closed

Please have your vehicle identification number and your customer number ready when you call.

Wood-Mizer will accept these methods of payment:

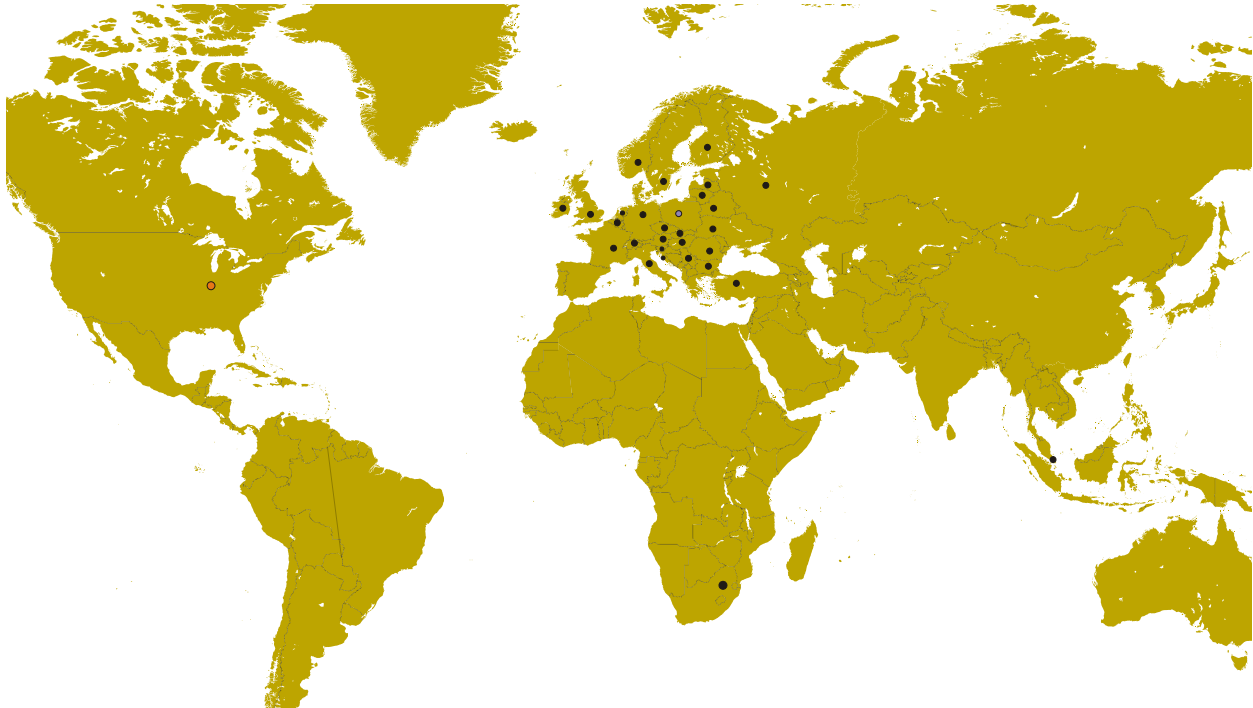
- Visa, Mastercard, or Discover
- COD
- Prepayment
- Net 15 (with approved credit)

Be aware that shipping and handling charges may apply. Handling charges are based on size and quantity of order.

Technical data are subject to change without prior notice.

Actual product may differ from product images. Some illustrations show machines with optional equipment.

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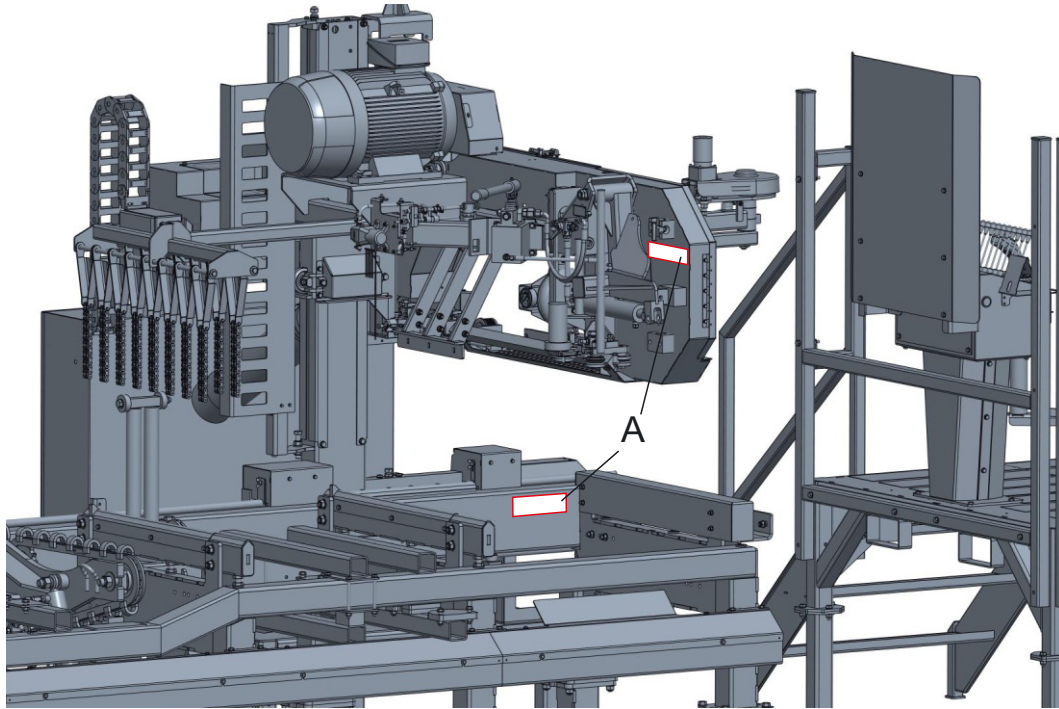
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Branches & Authorized Sales Centers

For a complete list of dealers, visit www.woodmizer.com

Sawmill and Customer Identification

Each Wood-Mizer sawmill has identification number including a Revision level. See the figure below for identification number locations (A).



SERIAL NO. LOCATIONS

Each sawmill is also identified with a model number which includes the base model and the engine/motor configuration. See the figure for a description of the model number.

WM2500
Basic Sawmill I.D.

E30
Engine/Motor
Configuration

MODEL NUMBER DESCRIPTION

When you pick up your mill, you will receive a customer number. Both the VIN and your customer number expedite our service to you. Please write these numbers below so you have quick, easy access to them.

Customer No.	Model No.	V.I.N.	Revision

SECTION 1 SAFETY INSTRUCTIONS

1.1 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 to persons or equipment.



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.

Before operating the sawmill, read the operator's manual and all additional manuals provided with the machine. Observe all safety instructions included in these manuals!

Always be sure that all safety decals are clean and readable. Replace immediately all damaged safety decals to prevent personal injury or damage to the equipment. Contact Wood-Mizer Customer Service or the Wood-Mizer distributor in your area to order a new decal.

IMPORTANT! It is always the owner's responsibility to comply with all applicable federal, state and local laws, rules and regulations regarding the ownership, operation and transport of your WM2500 sawmill. All Wood-Mizer owners are encouraged to become thoroughly familiar with these applicable laws and comply with them fully while using the sawmill.

Always properly dispose of all sawing by-products, including sawdust and other debris, coolant, oil, fuel, oil filters and fuel filters.

Safety instructions are listed in this section by the following operations:

- Blade Handling,
- Sawmill Setup,
- Sawmill Operation,
- Sawmill Maintenance.

1.2 Blade Handling



DANGER! Always disengage the blade and shut off the sawmill motor before changing the blade. Failure to do so will result in serious injury.



WARNING! Always wear gloves and eye protection when handling bandsaw blades. Keep all other persons away from area when coiling, uncoiling, carrying or changing a blade. Changing blades is safest when done by one person! Failure to do so may result in serious injury.



WARNING! Do not spin the blade wheels by hand. Spinning the blade wheels by hand may result in serious injury.

1.3 Sawmill Setup

WARNING! Before operating a stationary sawmill, securely fasten its feet to the floor. Failure to do so may result in serious injury or death.



CAUTION! Ambient temperature changes can cause increased pressure in the blade tensioner and leak of oil from the pressure gauge. Release the blade tension to avoid damage to the tensioner after you have finished sawing for the day.

1.4 Sawmill Operation



IMPORTANT! The sawmill is intended for sawing wood only. [See Section Maximum Log Dimensions](#) for log size capacities of the machine.

IMPORTANT! The operator of the sawmill should get adequate training in operation and adjustment of the machine.



DANGER! Make sure all guards and covers are in place and secured before operating the sawmill. Failure to do so may result in serious injury.

Be sure the blade housing covers are closed (i.e. the safety switches located on them are engaged).

DANGER! Always keep hands away from moving bandsaw blade. Failure to do so will result in serious injury.

DANGER! Keep all persons out of the path of moving equipment and logs when operating the sawmill and/or loading and turning logs. Failure to do so may result in serious injury.

DANGER! Maintain a clean and clear path for all necessary movement around the sawmill and lumber stacking areas. Failure to do so may result in serious injury.

DANGER! Always be sure the blade is disengaged and all persons are out of the path of the blade before starting the motor. Failure to do so may result in serious injury.

DANGER! Keep all persons out of the path of boards being removed. Failure to do so may result in serious injury.

WARNING! Always wear eye, ear, respiration and foot protection as well as safety clothing when operating or servicing the machine. Failure to do so may result in serious injury.

WARNING! Be sure the power feed switch is in the neutral position before switching on the control panel. This prevents accidental carriage movement which may cause serious injury or death.



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

WARNING! Always make sure the log is clamped securely (against the side supports) before sawing. Failure to do so may result in serious injury or death.

WARNING! The loader arm (If installed) should be left halfway up while a log is on the sawmill bed. Failure to do so may result in serious injury or death.

WARNING! Never use the board return conveyor as a platform to stand on. This table is designed and intended to assist in the removal of boards only. Standing on the table may result in serious injury.

WARNING! Never use flammable fuels or liquids with lube accessory. If these types of liquids are necessary to clean the blade, remove it and clean with a rag. Failure to do so may result in serious injury or death.



CAUTION! Before loading a log onto the sawmill bed, make sure that turner arm, clamp and toe boards are below the bed level. Failure to do so may result in machine damage or misalignment.

CAUTION! Before loading a log, be sure the cutting head is moved far enough forward so the log does not hit it. Failure to do so may result in machine damage.

CAUTION! Be careful when manually lowering the log loader (if installed). Do not drop the loader onto the ground or perform any action which might break the velocity fuse valves on the loader cylinders. These valves control oil flow and are necessary to prevent the loading arms from collapsing during use.

CAUTION! Do not try to force the saw head beyond its upper and lower travel limits. Damage to the up/down system may result.

CAUTION! Always make sure the joystick moves to the neutral or “off” position when released to ensure that the saw head stops moving. Failure to do so may result in machine damage.

CAUTION! Be sure to stop the blade before returning the saw head. This will not only prevent the blade from being pulled off and ruined by a wood sliver, but also will increase the life of the blade.

CAUTION! If loading ramps are used to load a log onto the sawmill bed, remove them from the brackets on the bed frame before sawing. Failure to do so can result in damage to the saw head and/or blade guide arm.



CAUTION! Never clean the blade or blade wheels with a brush or a scraper during sawmill operation.

CAUTION! Before installation of the blade, inspect it for damage and cracks. Use only properly sharpened blades. Always handle the blade with extreme caution. Use suitable carrier equipment for transporting the blades.

CAUTION! Always wear gloves when handling the blade. Never grab the blade with your bare hands!

CAUTION! If the blade breaks during sawmill operation, push the EMERGENCY STOP button to stop the blade motor and wait 10 seconds before you open the blade housing covers.

CAUTION! The operator workstation should be equipped with a 4 kg (9 lb) or bigger dry powder extinguisher.

1.5 Sawmill Maintenance



WARNING! Always secure the saw head with a chain or brace before adjusting the up/down chain. The saw head may fall, causing severe injury or death.

WARNING! Always secure the saw head with a chain or brace before removing the up/down motor belt. The cutting head may fall, causing severe injury or death.

CAUTION! Reinstall the track wiper so that it lightly touches the track rail. If the wiper presses too firmly against the rail, it can cause the power feed to bind.

CAUTION! Do not use chain lube. It causes sawdust buildup in the chain.

CAUTION! Do not overtension the up/down chain. Overtensioning may lead to early failure of the gear reducer.

CAUTION! Do not overtension the power feed chain. Damage to the power feed motor may result.



CAUTION! Do not overtighten the contact set screws on the hydraulic valve assembly. Overtightening may cause the threads in the screw hole to strip.

CAUTION! It is important that the lower stop bolts are properly adjusted to secure the saw head on the track rail. Failure to properly adjust the stop bolts can cause saw head damage, especially during mill transportation.

CAUTION! The hydraulic pressure should not exceed 16 MPa.

CAUTION! Failure to remove sawdust buildup from track rail cover can result in damage to these parts when the saw head is lowered to its lowest position.

1.6 Safety Instructions

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

Observe Safety Instructions



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

Also read all additional manuals that you received with the machine (such as: motor manual, optional equipment manuals) and observe safety instructions included in these manuals.

IMPORTANT! Only adult persons who have read and understood the entire operator's manual should operate the sawmill. The sawmill is not intended for use by or around children.

IMPORTANT! It is always 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 sawmill. All Wood-Mizer owners are encouraged to become thoroughly familiar with these applicable laws and comply with them fully while using the sawmill.



1 Safety Instructions

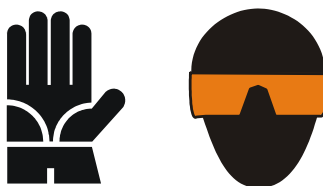
Wear Safety Clothing

Wear Safety Clothing



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

WARNING! Always wear gloves and eye protection when handling bandsaw blades. Changing blades is safest when done by one person! Keep all other persons away from area when coiling, carrying or changing a blade. Failure to do so may result in serious injury.



WARNING! Always wear eye, ear, respiration and foot protection as well as safety clothing when operating or servicing the sawmill.



Keep Sawmill and Area Around Sawmill Clean




DANGER! Maintain a clean and clear path for all necessary movement around the sawmill and lumber stacking areas. Failure to do so may 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 Sawmill Before Operation


 **DANGER!** Make sure all guards and covers are in place and secured before operating the sawmill. Failure to do so may result in serious injury.



Keep Persons Away

 **DANGER!** Keep all persons out of the path of moving equipment and lumber when operating the sawmill. Failure to do so may result in serious injury.

DANGER! Always be sure all persons are out of the path of the blade before starting the motor. Failure to do so may result in serious injury.

 **WARNING!** Allow the blade to come to a complete stop before opening the blade housing covers. Failure to do so may result in serious injury.

1 Safety Instructions

Keep Hands Away

Keep Hands Away



DANGER! Always shut off the blade motor before changing the blade. Failure to do so may result in serious injury.

DANGER! Motor components can become very hot during operation. Avoid contact with any part of a hot motor. Contact with hot motor components can cause serious burns. Therefore, never touch or perform service functions on a hot motor. Allow the motor to cool sufficiently before beginning any service function.

DANGER! Always keep your hands away from moving bandsaw blade. 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! Use extreme caution when spinning the blade wheels by hand. Make sure your hands are clear of the blade and wheel spokes before spinning. Failure to do so may result in serious injury.

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 sawmill operation.



WARNING! Consider all electrical circuits energized and dangerous.

WARNING! Disconnect and lock out power supply before servicing the sawmill! Failure to do so may result in serious injury.

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.

WARNING! Remove the blade before performing any service to the motor or sawmill. Failure to do so may result in serious injury.



DANGER! Never clean the blade or blade wheels with a brush or scraper during sawmill operation.



CAUTION! Before installation of the blade, inspect it for damage and cracks. Use only properly sharpened blades. Always handle the blade with extreme caution. Use suitable carrier equipment for transporting the blades.

CAUTION! Always wear gloves when handling the blade. Never grab the blade with your bare hands!


CAUTION! If the blade breaks, press the emergency stop button to stop the blade. Wait 30 seconds before you open the blade housing.

CAUTION! The operator workstation should be equipped with a 4 kg or bigger dry powder extinguisher.

1 Safety Instructions

Keep Safety Labels in Good Condition

Keep Safety Labels in Good Condition

 **IMPORTANT!** Always be sure that all safety decals placed on the machine 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.

IMPORTANT! When replacing any component having a safety decal affixed, be sure to place an identical safety decal on the new component.

See Table 1-1. See the table below for descriptions of the pictographic warning and informational decals placed on the WM2500 sawmills.

TABLE 1-1

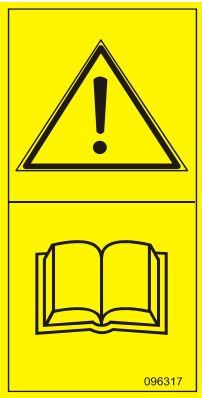



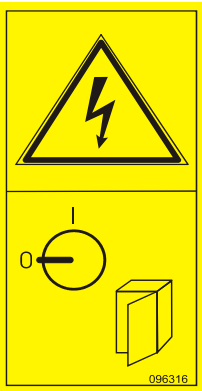
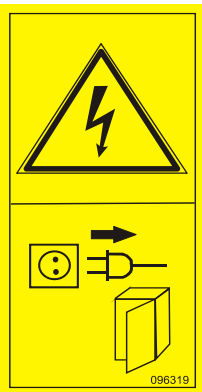
Decal View	Decal No.	Description
	096317	CAUTION! Read thoroughly the operator's manual before operating the sawmill. Observe all safety instructions and rules when operating the machine.
	099220	CAUTION! Close all guards and covers before starting the machine.

TABLE 1-1

 <p style="text-align: right; font-size: small;">099221</p>	<p>099221</p>	<p>CAUTION! Keep all persons away from the machine during sawmill operation.</p>
 <p style="text-align: right; font-size: small;">098176</p>	<p>098176</p>	<p>CAUTION! Keep away from the debarker blade!</p>
 <p style="text-align: right; font-size: small;">096316</p>	<p>096316</p>	<p>CAUTION! Do not open or close the electric box when the switch is not in the "0" position.</p>
 <p style="text-align: right; font-size: small;">096319</p>	<p>096319</p>	<p>CAUTION! Disconnect power supply before opening the box.</p>

1 Safety Instructions

Keep Safety Labels in Good Condition

TABLE 1-1


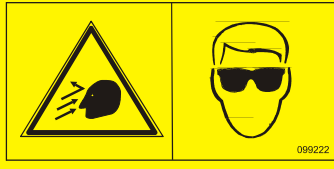
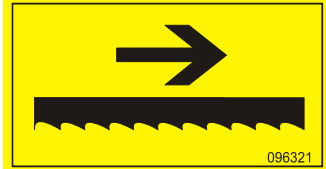
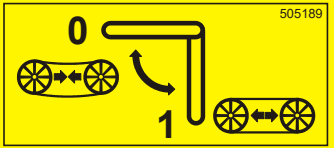
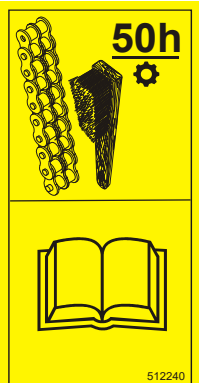
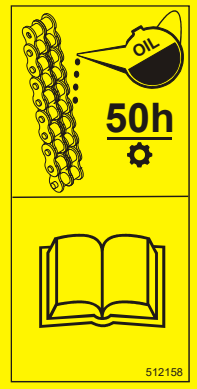




 <p>086099</p>	<p>086099</p>	<p>CAUTION! Hot parts - keep a safe distance!</p>
 <p>099222</p>	<p>099222</p>	<p>CAUTION! Sawdust falling out - protect your eyes!</p>
 <p>096321</p>	<p>096321</p>	<p>Blade movement direction</p>
 <p>505189</p>	<p>505189</p>	<p>Position of the tensioner ball valve lever</p>
 <p>512240</p>	<p>512240</p>	<p>Clean the chain every 50 hours of sawmill operation or once a week.</p>

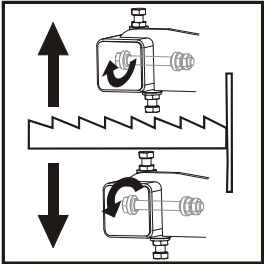
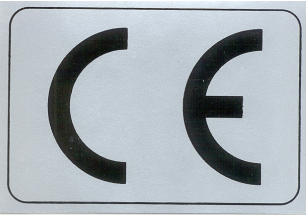

TABLE 1-1

	<p>512158</p>	<p>Lubricate the chain every 50 hours of sawmill operation or once a week.</p>
	<p>S12004G</p>	<p>CAUTION! Always wear safety goggles when operating the sawmill!</p>
	<p>S12005G</p>	<p>CAUTION! Always wear protective ear muffs when operating the sawmill!</p>
	<p>501465</p>	<p>CAUTION! Always wear safety boots when operating the sawmill!</p>
	<p>501467</p>	<p>Lubrication point</p>

1 Safety Instructions

Belt Sizes

TABLE 1-1

 <p>P11789-70</p>	P11789-70	Tracking the blade on the blade wheels
	P85070	CE certification marking
	S20097E	2930 r.p.m. - motor revolutions direction

1.7 Belt Sizes

See Table 1-2. See the table below for sizes of the belts used on the WM2500 sawmills.

Description	Belt Size	PART #
Motor Drive Belt (E30)	3B/HB 2462La	089464
Conveyor Table	XPA 1030	535083

TABLE 1-2

1.8 Blade Sizes

The motor size of your sawmill and the type of wood you saw should determine which blade you choose for optimum performance.

See the **Blade Handbook** for blade hook angle, tooth height and tooth set specifications.

The WM2500 sawmill can be equipped with a 32 mm (1.26"), 50mm (2") wide blade. The blade length for the WM2500 sawmill is 5000 mm (196.8 ").

1.9 Maximum Log Dimensions

See Table 1-3. See the table below for the maximum dimensions of logs that can be cut on the WM2500 sawmills.

	WM2500
Distance between Blade Guide Rollers	34" (86 cm)
Maximum Cant Width	30" (78 cm)
Maximum Log Diameter	41" (105 cm)
Maximum Log Length	20' (6,1 m)
Maximum Log Weight	4400 lbs. (1996 kg)

TABLE 1-3

1 Safety Instructions

Motors Specifications

1.10 Motors Specifications

See Table 1-4. See the table below for the available options of motors used on the WM2500 sawmills and power supply specifications.

Motor Type ¹	Manufacturer	Power	Current at 460 V, 60Hz	Revolutions per Minute	Weight	WM Part No.
Main Motor 1LE1023-1EA23-4AA4	SIEMENS	24.5kW (33 HP)	34 A	2980 r.p.m.	129 kg	591432-UL

TABLE 1-4

¹ The electric motors supplied on Wood-Mizer sawmills carry a rating assigned by the motor manufacturer for the continuous duty operation of the motor, potentially, 24 hours per day, day after day. This rating is useful in sizing motors for use in applications like blowers for cooling and ventilation that are never cycled off except for system maintenance.

	3-Phase Volts	Fused Disconnect	Recommended Wire Size
Hydraulic System	460 VAC	20-25A	+4 mm ² Maximum length: 15 m

TABLE 1-4



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

See Table 1-5. The specifications of WM2500 motors are given in the table below.

Motor	Manufacturer	Voltage	Power	WM Part No.
Power Feed Motor	BESEL	3x460V	1380 r.p.m. - 1.1 kW	100936-UL
Up/Down Motor	SCHNEIDER	3x460V	4000 r.p.m. - 1.6 kW	597660
Blade Guide Arm Motor	CURRENT APPLICATIONS	24V	60 r.p.m. - 50 W	035659
Hydraulic Pump Motor	SIEMENS	3x460V	3550 r.p.m. - 7.5 kW	533938
Debarker	BESEL	3x460V	1380 r.p.m. - 0.75 kW	096777
Belt Conveyour Motor	BESEL	3x460V	2800 r.p.m. - 2.2 kW	535078-UL

TABLE 1-5

1.11 Noise Level

See **Table 1-6**. The noise exposure level is given in the table below¹².

Sawmill	Noise Level L _{EX8}
WM2500 E30	84,1 dB (A)

TABLE 1-6

1.12 Overall Dimensions

See **Table 1-7**. The overall dimensions of the WM2500 sawmill are listed below.

Sawmill Model	Length ¹	Width	Width ²	Height ³
WM2500	33 ft (10.2 m)	87" (2.2 m)	94" (2.4 m)	156" (3.2 m)

TABLE 1-7

¹ From the hitch to the chain bracket.

² Maximum saw head width with the blade guide arm all the way out and sawdust exhaust system in the operating position.

³ From ground to the mast. When the saw head is moved all the way to the top of the mast, the sawmill height is 3 metres (9'-10").

1. The noise level measurement was taken in accordance with PN-EN ISO 3746 Standard The noise exposure level given above concerns an 8-hour work day. Value for associated uncertainty K=4dB.

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. The factors affecting a current level of noise exposure during work are inter alia room characteristics and characteristics of other noise sources, e.g. number of machines and machining operations nearby. 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.

1 Safety Instructions

Overall Dimensions

See Figure 1-1. The figure below shows the WM2500 sawmill dimensions.

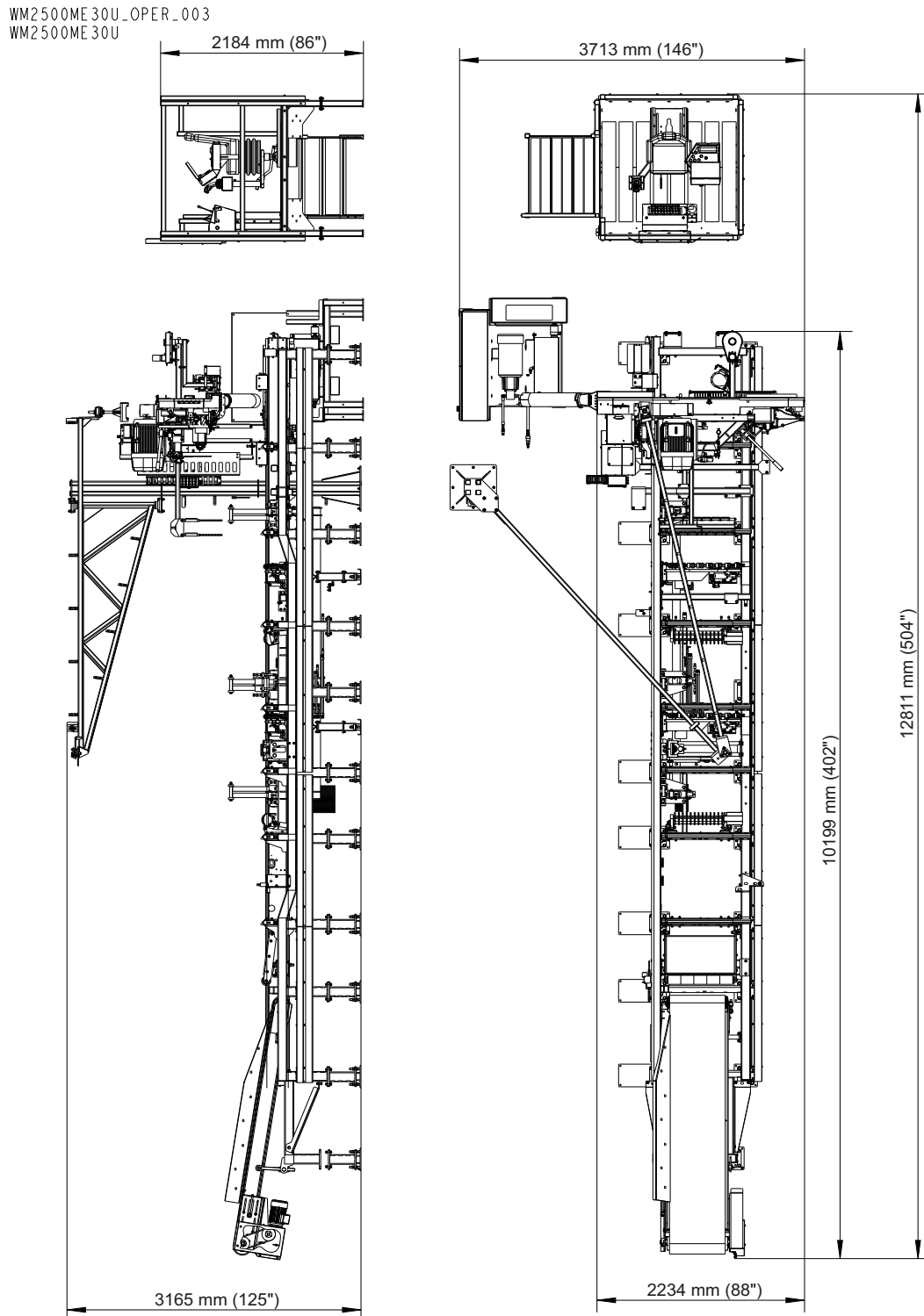


FIG. 1-1

1.13 Chains

See Table 1-8. The load capacity of the chains is given below.

	Load Capacity According to ISO Nr 08A-1
Power Feed Chain	22700N

TABLE 1-8

1.14 Lube System Specifications

1.15 The blade lubricating oil specifications are listed below.

Oil Type	Manufacturer	Freezing Temperature	Ignition Temperature	Autoignition Temperature
ACP-1E ¹	Orlen	-20°C (-4°F)	Above 140°C (284°F)	250°C (482°F)

TABLE 1-8

¹ Waste oil must be disposed of in compliance with applicable national and local regulations.

1.16 Sawdust Exhaust System Specifications

See Table 1-9. The specifications of sawdust exhaust system that should be used with the sawmill are listed below¹.

Maximum Capacity	1200 m ³ /h
Collector Inlet Diameters (in front of fan)	100 mm (4")
Electric Motor Horsepower	1,5 kW
Number of Sacks for Waste	1 pcs
Total Capacity of Sacks	0.25 m ³
Weight	110 kg (242 lb)
Pressure drop	1,5 kPa (0.22 psi) ¹
Conveying Speed When 10 m Long Hose Is Used	20 m/s

TABLE 1-9

¹ The pressure drop between the inlet of the capture device and the connection to the CADES should not exceed 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.

1. External chip and dust extraction equipment with fixed installations are dealt with in EN12779:2016-04.



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



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



IMPORTANT! The total value of hand-arm vibration the operator may be exposed to does not exceed 2.5 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 m/s^2 .

SECTION 2 SETUP & OPERATION

2.1 Sawmill Setup



IMPORTANT! Before starting to use the sawmill you have to meet the following conditions:

- Set up the machine on firm and level ground. Level the sawmill. Secure the sawmill to the ground to prevent it from moving during operation. A concrete foundation (rated to support 31T/m² at each sawmill foot position) and anchored bolts are recommended.
- The sawmill must not be operated indoors without a sawdust exhaust system connected and started.
- AC sawmills must not be used outdoors when it is raining or snowing. In such a case, they must be used and stored under roof or indoors.
- The sawmill must not be operated under roof without a sawdust exhaust system connected and started.
- The sawmill can be operated in the temperature range of -15°C (5°F) to 40°C (104°F) only.
- The intensity of light at the operator's work must be at least 300lx¹.

1. The light cannot cause the stroboscopic effect.

See Figure 2-1. The sawmill's operator position is shown with green color below.

WM2500ME30U_OPER_005
WM2500ME30U

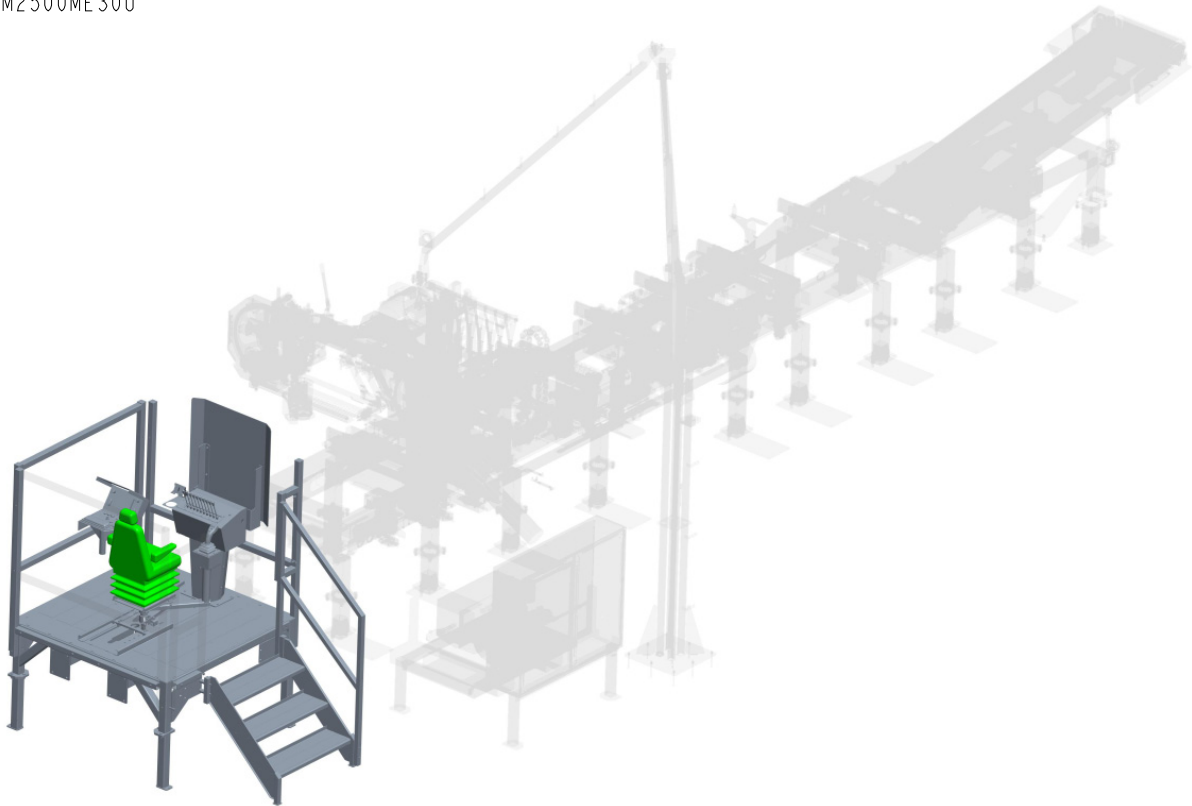


FIG. 2-1



CAUTION! To immediately stop the blade and feed motors, press the E-STOP button. Turn this button clockwise to release the stop.





WARNING! If the blade or drive belt breaks, wait until all moving parts stop completely. Failure to do so may result in serious injury.

See Table 2-1. Have a qualified electrician install the power supply (according to EN 60204 Standard). The power supply must meet the specifications given in the table below.

	3-Phase Volts	Circuit Breaker	Recommended Wire Size
24.5kW (E30)	460 VAC	60 A	16 mm ² Maximum length: 15 m

TABLE 2-1

 **DANGER!** It is recommended that a 30mA Ground Fault Interrupter (GFI) 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. 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 all sawmill motors.


2.2 Sawmill Setup

When the sawmill is already installed and fastened to the ground, you should adjust some of its components. First, level the sawmill bed frame. Use a laser level to ensure easy and accurate measurements.

NOTE: The bed frame setup procedure described in this section must be performed with appropriate equipment after installation of the sawmill on the ground. [See SECTION 6 Sawmill Alignment](#) for further necessary settings of the bed frame.

2.2.1 Bed Frame Leveling

Set the laser level at a location so the beam is positioned 127 mm above the top track rail. Move the saw head so it positioned over the log clamp tube at the middle of the bed frame.

 **CAUTION!** Avoid raising or lowering the saw head against the upper or lower travel limits. Failure to do so may result in damage to the machine.

Measure the distance from the top track rail to the laser beam at four locations along the main bed frame tube. Once you have four measurements, determine a target dimension that splits the difference of the four dimensions taken.

See Table 2-2. Suppose the four dimensions from track rail to the laser beam are as shown below. The 133.4mm [5 1/4"] dimension should be the target dimension as this will require the least adjustment at each location.

Front	Front Middle	Rear Middle	Rear	Target
133.4mm 5 1/4"	127mm 5"	139.7mm 5 1/2"	133.4mm 5 1/4"	133.4mm 5 1/4"

TABLE 2-2

See Figure 2-2. To level the main bed tube, measure the distance from the top track rail to the laser beam at one of the leg locations. Move the saw head if necessary to remove weight from the leg. Use the lower adjustment nut to raise or lower the appropriate leg until the target dimension is obtained ($\pm 1.5\text{mm}$ [$\pm 1/16"$]). Lock the leg in position by tightening the top nut. Repeat at each leg location along the length of the main bed tube.

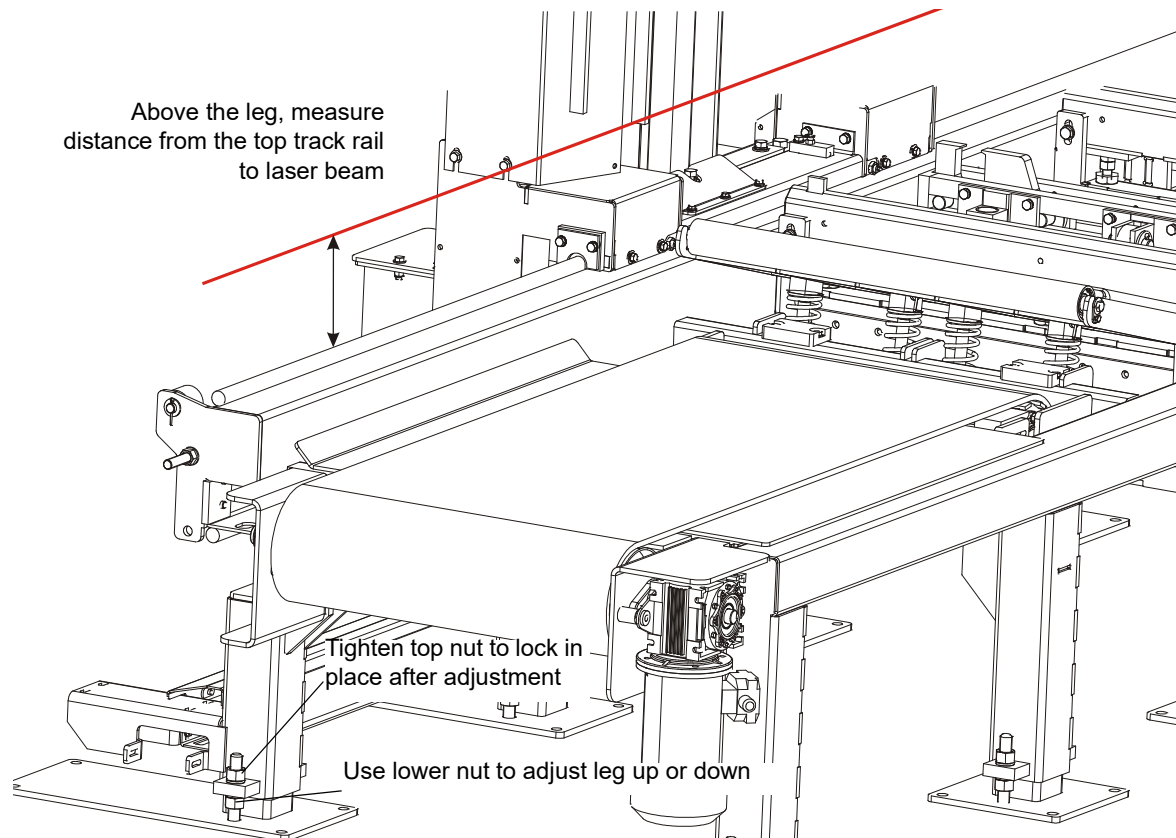


FIG. 2-2

After all of the legs have been adjusted and locked, move the saw head back to the front of the bed (furthest from the operator station). Measure the distance from the top track rail to the laser beam at the log clamp tube location. If the measurement is different than the target dimension determined above ($\pm 0.8\text{mm}$), adjust one of the two middle inside legs. Loosen the upper adjustment nut on the leg and adjust the leg using the lower adjustment nut. Retighten the top nut after adjustment is complete.

See Figure 2-3. Then level the bed frame in the horizontal plane. To do this, first place two pieces of straight tubing between the front two bed rail supports. Next, measure from the front end of each tube to the laser beam. If the measurements are not the same ($\pm 1.5\text{mm}$ [$\pm 1/16''$]), adjust the front outer bed leg. Leave the top adjustment nut loose for now. Make identical measurements at the other end of the adjustment tubes. Use the second outer leg to adjust if necessary. Move the straight tubes to the rear two bed rail supports and adjust the two outer rear legs until the bed is level ($\pm 1.5\text{mm}$ [$\pm 1/16''$]).

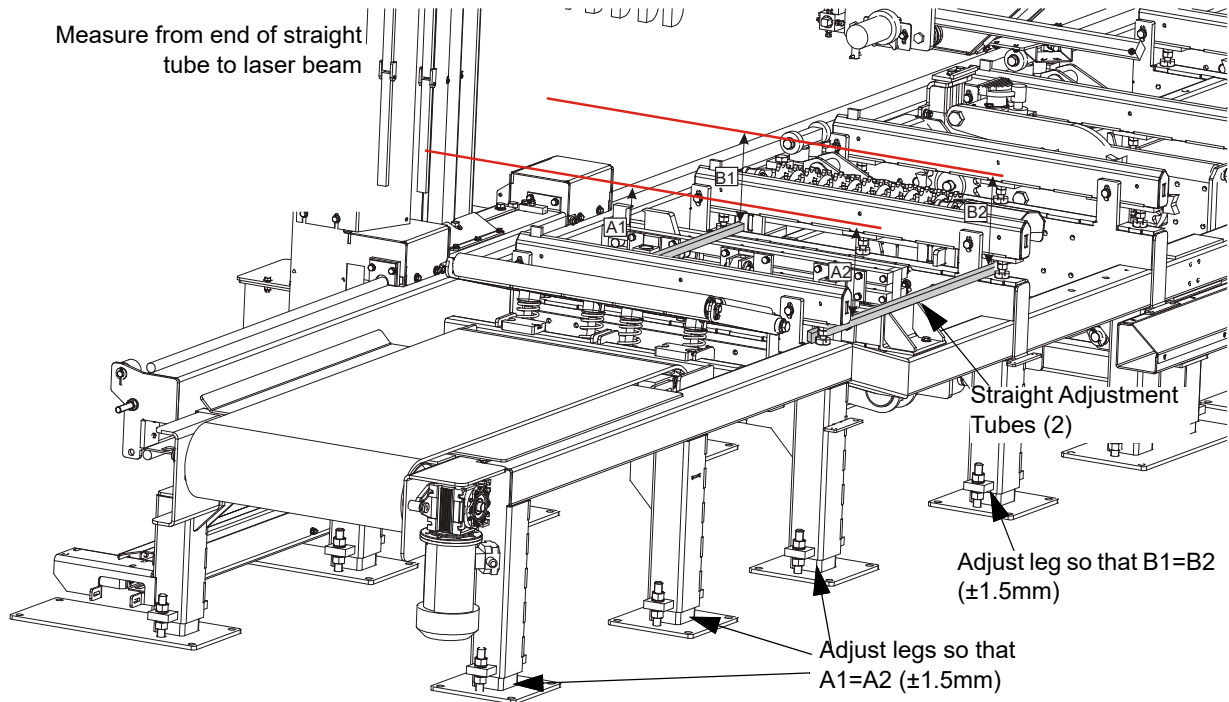


FIG. 2-3

2.3 Track Rail Wiper

Before operating the sawmill do as follows:

1. Clean the upper and lower rails to remove any sawdust and rust preventives.
2. Unbolt and remove the track wiper cover.
3. Soak the felt wiper with Dexron III transmission fluid, 10W30 motor oil or 3-in-1 turbine oil.
4. Reinstall the track wiper cover so it fits against the track rail and secure with two thumb screws.

See Figure 2-4.

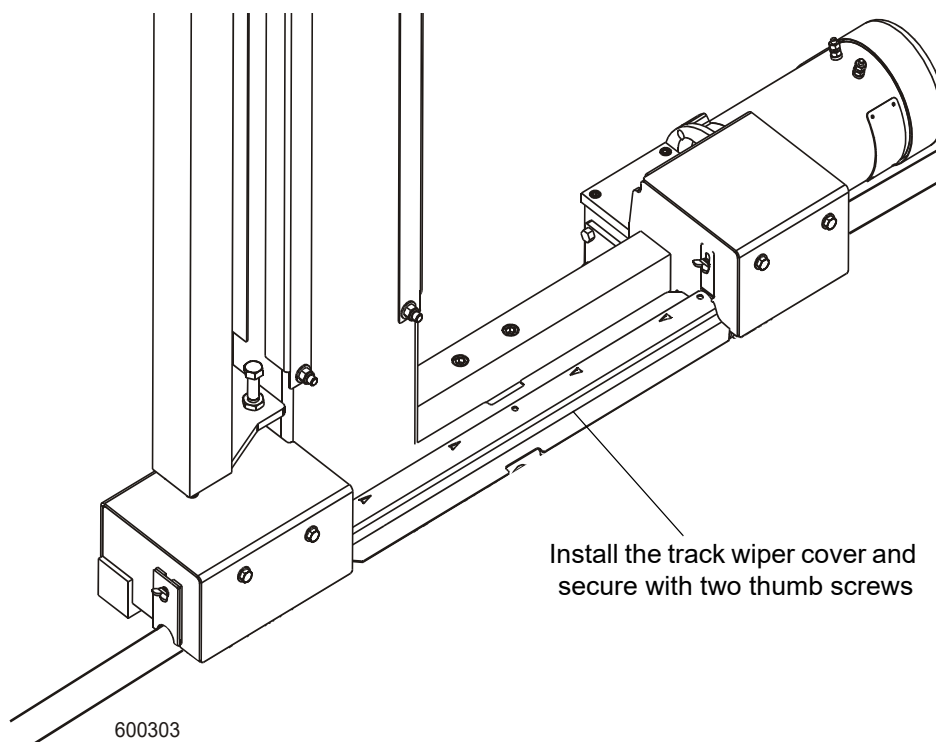


FIG. 2-4



CAUTION! Install the track wiper cover so that it lightly touches the track rail. If the wiper presses too firmly against the rail, it can cause the power feed to bind.

2.4 Replacing the Blade



DANGER! Always disengage the blade and shut off the sawmill motor before changing the blade. Failure to do so may result in serious injury.



WARNING! Always wear gloves and eye protection when handling bandsaw blades. Changing blades is safest when done by one person! Keep all other persons away from work area when coiling, carrying or changing a blade. Failure to do so may result in serious injury.

Adjust the blade guide arm all the way open.

Open the blade housing covers. Release the blade tension ([See Section 2.5](#)) until the wheel is pulled in and the blade is lying loose in the blade housing. To do this, turn the blade tensioner handle. Lift the blade out of the blade housing.

Install a new blade on the blade wheels. When installing the blade, make sure its teeth are pointing the correct direction. The blade teeth should be pointing toward the operator side of the sawmill when you are looking at the blade below the blade guides. Install the blade so it is lying around the wheels.



CAUTION! Be careful when placing the blade between the blade guide inserts. If the blade hits one of the inserts hard enough, it could damage the insert.

Position 1 1/4" wide blades on the wheels so the gullet is 3 mm out from the front edge of the wheel. Position 1 1/2" wide blades on the wheels so the gullet is 4.5mm out from the front edge of the wheel.

Close the blade housing covers.

Next, tension the blade correctly.

2.5 Tensioning the Blade

Before tensioning the blade, check on the air pressure gauge that the air pressure in the air bag is correct. The gauge should read 44 psi, i.e. 3 MPa (yellow colour) with the blade tension completely released. To increase the air pressure, attach an air pump to the air valve. Add air to the air bag until the gauge reads 50 psi. To release air, push in the valve stem.

See Figure 2-5.

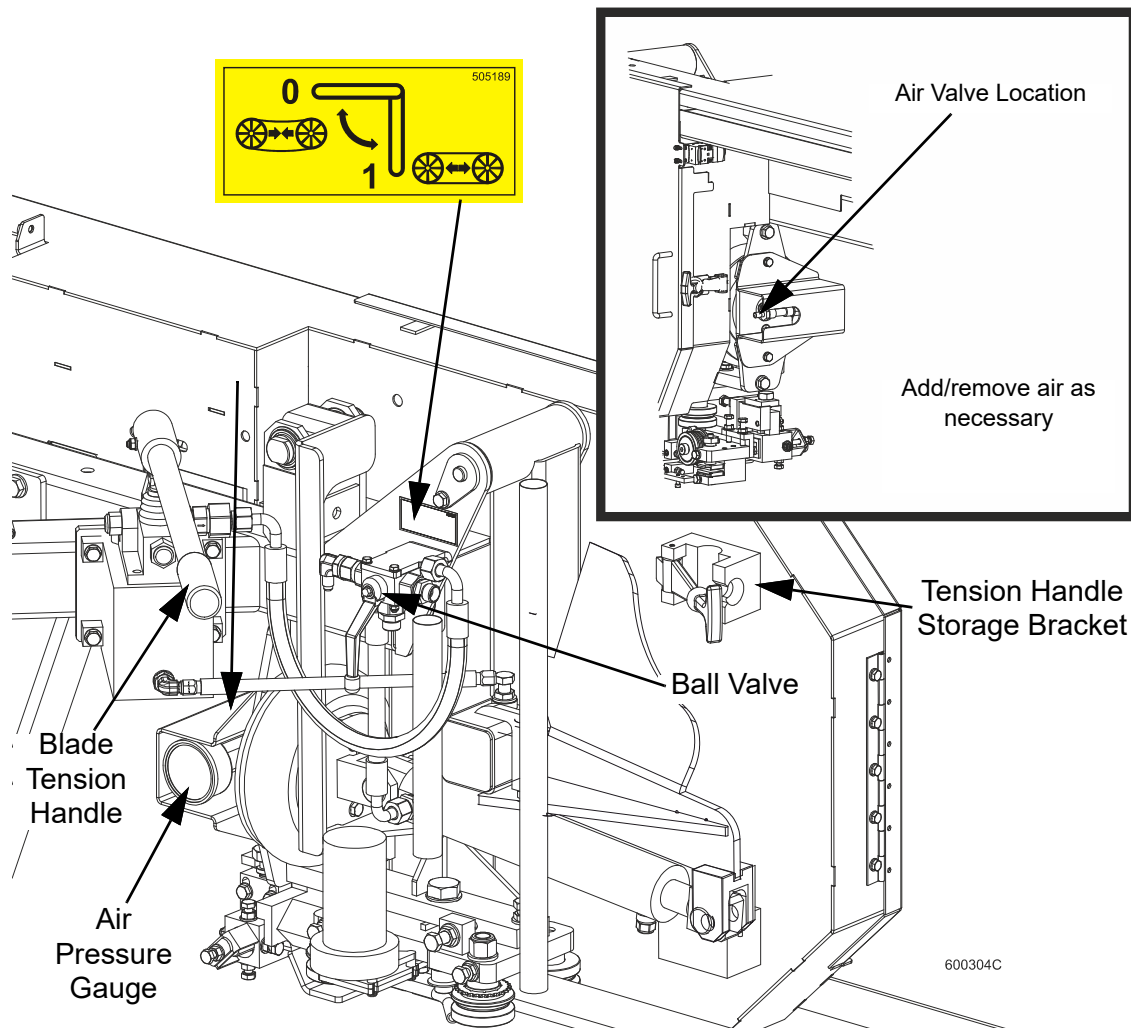


FIG. 2-5

To tension the blade, use the tension handle when the ball valve handle is in the "1" (working) position. To release the tension, move the ball valve handle to the "0" position (loosening). The blade tension handle should be placed in the storage bracket when it is not used.

The air pressure gauge should be checked occasionally when adjusting the cant control or while cutting. Also ambient temperature changes can cause the blade tension to change. Adjust the blade tension as necessary to maintain the recommended tension level.

See Table 2-3. The recommended tension for different types of blades is shown below.

Blade Type	Blade Size		Tension Range	
	Thickness (mm)	Width (mm)	PSI	MPa
2735	1.07	35	60-62	0.41-0.43
3735	1.14	35	65	0.45
276	1.07	38	60-62	0.41-0.43
376	1.14	38	62-65	0.43-0.45
576	1.27	38	65-70	0.45-0.48
476	1.4	38	65-70	0.45-0.48
1750	1.00	50	75-80	0.52-0.55
2750	1.07	50	75-80	0.52-0.55

TABLE 2-3

CAUTION! Release the blade tension after you have finished using the sawmill (e.g. after each shift). Place information on the machine for other operators that it is necessary to tension the blade again before further sawmill operation.

2.6 Tracking the Blade

1. Turn the key switch to #2 position.
2. Manually spin one of the blade wheels until the blade positions itself on the blade wheels.
3. Check if the blade is properly positioned on the blade wheels.

See Figure 2-6. Position 1 1/4" wide blades so the gullet is 3.0 mm(0,12") out from the front edge of the blade wheel $[(\pm 1 \text{ mm})/(\pm 0,04")]$. Position 1 1/2", 2" wide blades so the gullet is 4 mm(0,16") out from the front edge of the blade wheel $[(\pm 1 \text{ mm})/(\pm 0,04")]$.

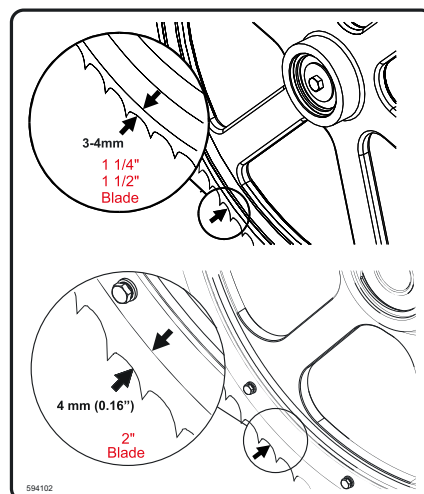


FIG. 2-6

4. Use the cant control bolt to adjust where the blade travels on the blade wheels.

See Figure 2-7.

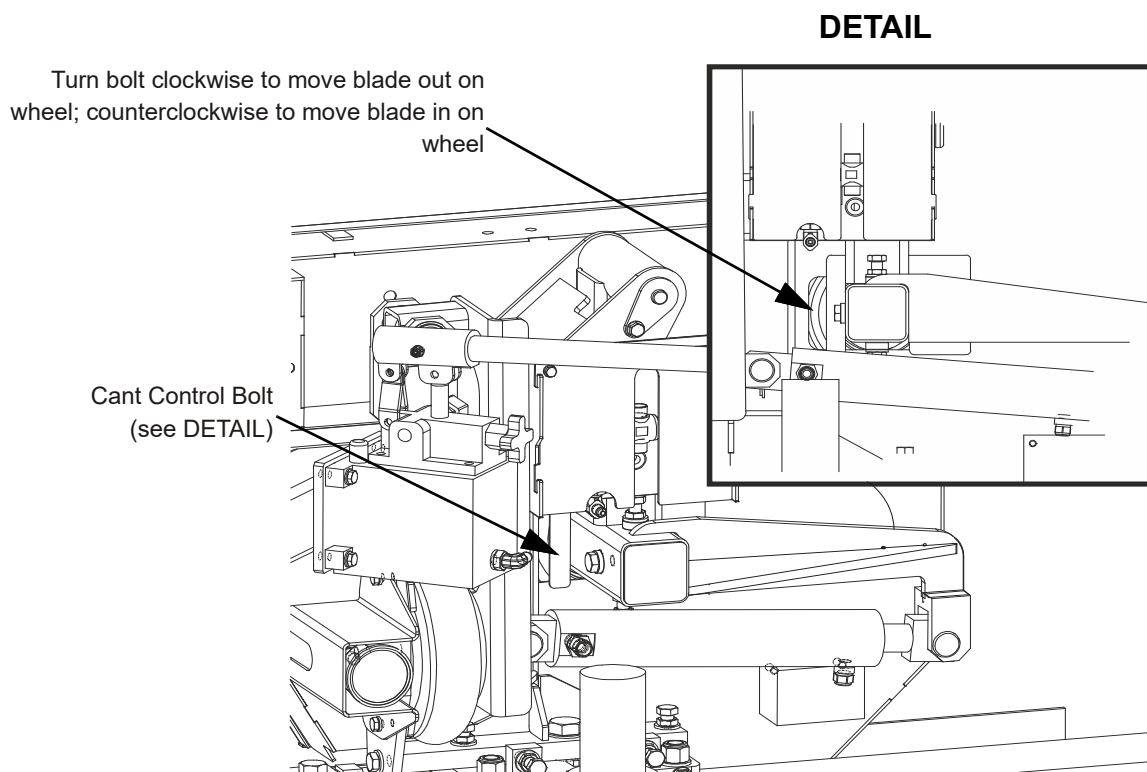


FIG. 2-7

To move the blade out on the blade wheels, turn the cant control bolt clockwise To move the blade in on the wheels, turn the bolt counterclockwise.

NOTE: Slight adjustments of the side bolts on the outer blade wheel are usually all that is necessary to track the blade properly. See Section 7.4 for complete blade wheel alignment instructions.

5. Adjust the blade tension if necessary to compensate for any changes that may have occurred while adjusting the cant control.
6. Spin the blade wheel by hand.
7. Check if the blade is properly positioned on the blade wheels. Repeat steps 5 and 6 as necessary.
8. Turn the key switch to #0 position.
9. Be sure to close the blade housing and pulley covers when the adjustment procedure is complete.



DANGER! MAKE SURE ALL GUARDS AND COVERS ARE IN PLACE AND SECURED before operating or towing the sawmill. Failure to do so may result in serious injury. Be sure the blade housing and pulley covers are closed (i.e. the safety switches located on them are engaged).



IMPORTANT! After aligning the blade on the wheels, always double-check the blade guide spacing and locations ([See Section 6](#)).

2.7 Starting the Motor

[See Section 3.2](#) for motor starting and operating instructions.



DANGER! Make sure all guards and covers are in place and secured before operating or towing the sawmill. Failure to do so may result in serious injury. Be sure the blade housing and pulley covers are in place and secured.

DANGER! Always be sure the blade is disengaged and all persons are out of the path of the blade before starting the motor. Failure to do so may result in serious injury.



WARNING! Always wear eye, ear, respiration and foot protection as well as safety clothing when operating or servicing the machine. Failure to do so may result in serious injury.

WARNING! Be sure the power feed switch is in the neutral position before turning the key switch to the on (#1) or accessory (#3) position. This prevents accidental carriage movement which may cause serious injury or death.

DANGER! Check the sawmill wiring every year. Make sure all electrical installation, service and/or maintenance work is performed by a qualified electrician.

WARNING! Hazardous voltage inside the electric box is dangerous. Turn the main switch to the OFF ("0") position and lock out power supply before opening the box door!

WARNING! The door of the electric box can be opened only when the main switch is in the "0" position. The door is closed when the switch is in the "1" position. Do not open the electric box door when the main switch is in the "1" position. It may result in damage to the electric box.

CAUTION! If at any time you need to immediately stop the blade motor, press the emergency stop button located on the control box.

2.8 Hydraulic Control Operation

The hydraulic control levers become operational when the contacts at the bottom of the saw head touch the power supply strip on the frame tube. The saw head must be close enough to the front end of the sawmill to touch the power supply strip.

See Figure 2-8. The following hydraulic log handling equipment is controlled with the hydraulic control levers:

- A - Loader
- B - Clamp In/Out
- C - Clamp Up/Down
- D - Front Log Turner Up/down
- E - Toeboard Drive
- F - Front Toeboard
- G - Rear Toeboard
- H - Log Turner Drive
- I - Rear Log Turner Up/down
- J - Loader

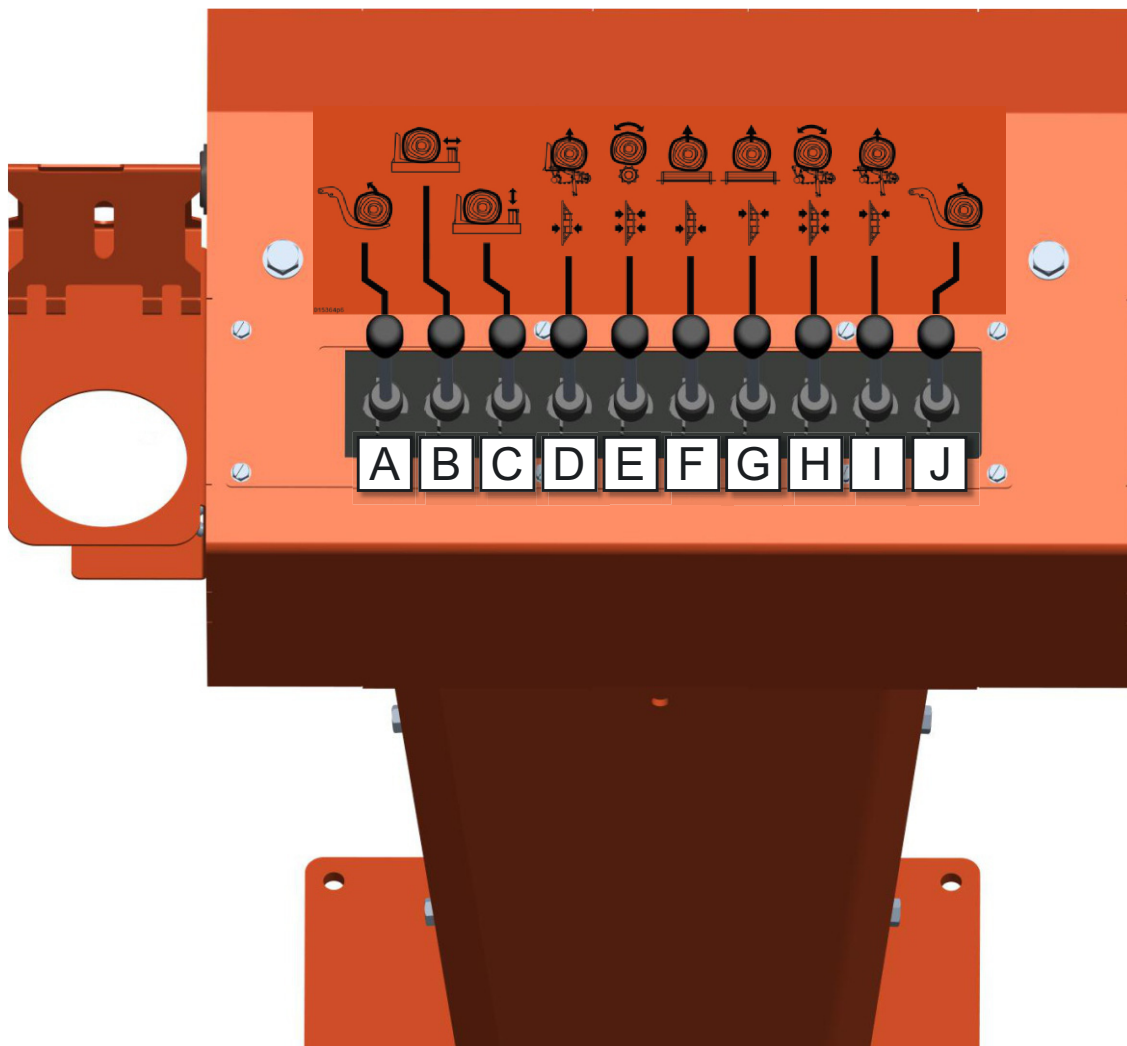


FIG. 2-8

Use the hydraulic control levers to get the sawmill ready to load a log.



DANGER! Keep all persons out of the path of moving equipment and logs when operating the sawmill or loading and turning logs. Failure to do so will result in serious injury.

1. Move the clamp out and down so it will not get in the way of logs being loaded onto the bed.



Using the clamp in/out lever, move the clamp toward the loading side of the sawmill.



Use the clamp up/down lever to lower the clamp below the bed level.



2. Raise the log loader lever to completely lower the log loader feet.

3. The chain securing the log loader arm to the turner arm will be tight. Push the turner lever up to raise the turner arm so that there is slack in the chain.

4. Disconnect the above-mentioned chain from the turner arm.

5. Manually lower the log loader until its feet rest on the ground.



CAUTION! Be careful when manually lowering the log loader. Do not drop the loader onto the ground or perform any action which might break the velocity fuse valves on the hydraulic cylinders. These valves control hydraulic flow and are necessary to prevent the loading arms from collapsing during use.



6. Push the loader lever down to lower the loading arm as far as it will go. Logs must be rolled onto the loading arm one at a time for loading onto the sawmill bed.



7. The front and rear toe boards should be below the bed level. If a tapered log is loaded, the front or rear end of this log may be lifted (with the toe boards) to parallel the heart of the log to the path of the blade.

To raise a toe board, push its control lever up. Once a flat has been made and the log is ready to be turned, push the appropriate toe board lever down to lower the toe board until it falls below the bed level.



It is also possible to move the log forward or reverse with the driven log levelling rollers.

2.9 Loading, Turning and Clamping Logs

To load a log:

1. Move the saw head to the front end of the frame.



CAUTION! Before loading a log, be sure the saw head is moved far enough forward so the log does not hit it. Failure to do so may result in machine damage.

2. Adjust the log clamps all the way down and move them toward the loading side of the sawmill frame. **NOTE:** The clamps can be lifted and removed from the bracket assemblies to avoid damage to the clamp when loading a log.



CAUTION! Be sure the log clamp, turner and toe boards are lowered completely before loading a log onto the bed. Failure to do so may result in machine misalignment or damage.

3. Raise the side supports on the sawmill bed to prevent the log from falling off the side of the bed.

4. Move the log up to the loading arm. Use the cant hooks or other loading equipment to move the log to the foot of the loading arms.

5. Roll the log onto the loader so that it is approximately centered with the sawmill bed. The log turner will operate much easier if the log is centered on the sawmill bed.



6. Raise the loader lever to place the log on the sawmill bed. Simply let the loader rise until the log rolls onto the sawmill bed.



7. Raise the log clamp (push up the clamp up/down lever) to prevent the log from rolling off the bed.

8. Lower the loading arm. Leave the loading arm about halfway up while squaring the log. This will stop the log from rolling off the side of the sawmill.



WARNING! Always leave the loading arm halfway up while a log is on the sawmill bed. Failure to do so may result in serious injury or death.

NOTE: Logs may also be loaded onto the sawmill with a tractor or other equipment specifically designed for that purpose.



9. Raise the clamp up to prevent the log from rolling off the bed.

10. Raise the clamp up/down lever.

To Turn Logs

1. Raise the side supports.



2. Raise the turner lever to engage the log turner arm.



3. Spin the log against the side supports until it is turned the way you want it for the first cut.



4. Engage the clamp by raising the clamp in/out lever. Clamp the log against the side supports.

5. Lower the side supports.



6. Lower the turner lever to lower the turner arm below the log.

To Turn Logs (Optional Procedure)

If you are turning a small cant, you may opt to use the clamp to turn the cant.

1. Lower the clamp up/down lever to lower the clamp below bed level.

2. Raise the clamp in/out lever to move the clamp in, beneath the edge of the cant.

3. Raise the clamp up/down lever to raise the clamp and flip the cant.

To Clamp Logs

1. Raise the clamp up/down lever to raise the clamp.

2. Raise the clamp in/out lever and clamp the log against the side supports.



3. Lower the turner lever until the turner arm falls below the bed.

4. Use the clamp in/out lever, gently release the clamp.

5. Lower the side supports, to make few cuts.

6. Use the clamp in/out lever to clamp the log.

Depending on the log length, front and rear clamp (min. log length - 3.5m), or main clamp together with front or rear one (with logs shorter than 3.5m) can be used. They allow to find optimal position of the log on the bed, and prevent distortions during cutting.



1. Raise the front/rear clamp up/down lever to raise the clamp.



2. Raise the front/rear clamp in/out lever to clamp the log.

3. Lower the front/rear clamp up/down lever to lower the clamp, until the log lays flat on the bed.

To Level a Tapered Log



Use the toe board lever(s) to raise either end of a tapered log, if desired. Log can be moved forward or backward using the power roller.



Raise the appropriate lever to raise the front or rear toe board until the heart of the log measures the same distance from the bed rails at each end of the log.

2.10 Cutting the Log

The following steps guide you through normal operation of the Wood-Mizer sawmill.

1. Check if the log is placed where you want it and clamped firmly.
2. Use the blade height indicator on HMI panel to determine where to make your first cut. Set the blade to the desired height. Make sure that the blade will clear all side supports and the clamp. Adjust the outer blade guide to clear the widest section of the log by moving the blade guide toggle switch.
3. Make sure all covers and guards are in place and secured..
4. If you want to use the board return function, push the toggle switch on the control panel down.
5. Feed the blade into the log slowly. Once the blade completely enters the log, increase the feed rate as desired. Always try to cut at the fastest speed you can while keeping an accurate cut. Cutting too slowly will waste blade life and lower production!
6. As you get to the end of the log, slow down the feed rate. When the teeth exit the end of the log, turn the feed rate all the way left and turn the blade switch off. Remove the slab that you have just cut from the log.
7. Use the saw head forward/reverse switch to return the saw head to the front of the mill. Always disengage the blade before returning the saw head for the next cut.
8. Repeat until the first side of the log is cut as desired. Repeat until the first side of the log is cut as desired. Set aside the usable flitches (boards with bark on one or both sides). You can edge them on the sawmill later.
9. Lower the toe boards, if they were used. Use the hydraulic levers to release the clamp and engage the log turner. Turn the log 90 or 180 degrees. Make sure the flat on the log is placed flat against side supports if turned 90 degrees. Make sure it is placed on bed rails if turned 180 degrees. If the log was turned 90 degrees and it is necessary to level it on the bed, use the toe boards.
10. Repeat the steps used to cut the first side of the log until the log is square. Then cut boards from the cant.

Example: Remember that the blade cuts a 1/16 - 1/8" (1.6 - 3.2mm) wide kerf. If you want 1" (25 mm) thick boards, lower the saw head 1 1/16 - 1 1/8" (27 - 29 mm) for each board.

2.11 Edging

The following steps guide you through edging boards on the Wood-Mizer sawmill.

1. Raise the side supports to 1/2 the height of the boards that need to be edged.
2. Stack the flitches on edge against the side supports.
3. Clamp the flitches against the side supports halfway up the flitch height. (Wider flitches should be placed to the clamp side. When they are edged, flip them over to edge the second side without disturbing the other boards or without having to pull them from the middle of the stack.)
4. Adjust the blade height to edge a few of the widest boards.
5. Loosen the clamp and turn the edged boards over to edge the other side.
6. Repeat the steps 2-4.
7. Loosen the clamp and remove the boards that have good clean edges on both sides. Clamp the remaining flitches and repeat the steps 2-5.

SECTION 3 HMI

3.1 Start-Up

When the power supply is turned on, the home screen appears on the HMI panel:



3.1.1 Requirements to Activate the Controller Functions

- The emergency stop button must be released,
- The key switch must be turned to the right (to the "M" position),
- The blade housing covers must be closed,
- The operator's seat must be taken.

3.1.2 Control Power Button

To activate the controller functions, press the Start button located to the left of the operator panel. The light of the button is on when the function has been activated.

The following function loading window will be displayed for a few seconds:



3.2 Control Box

3.2.1 Left Side

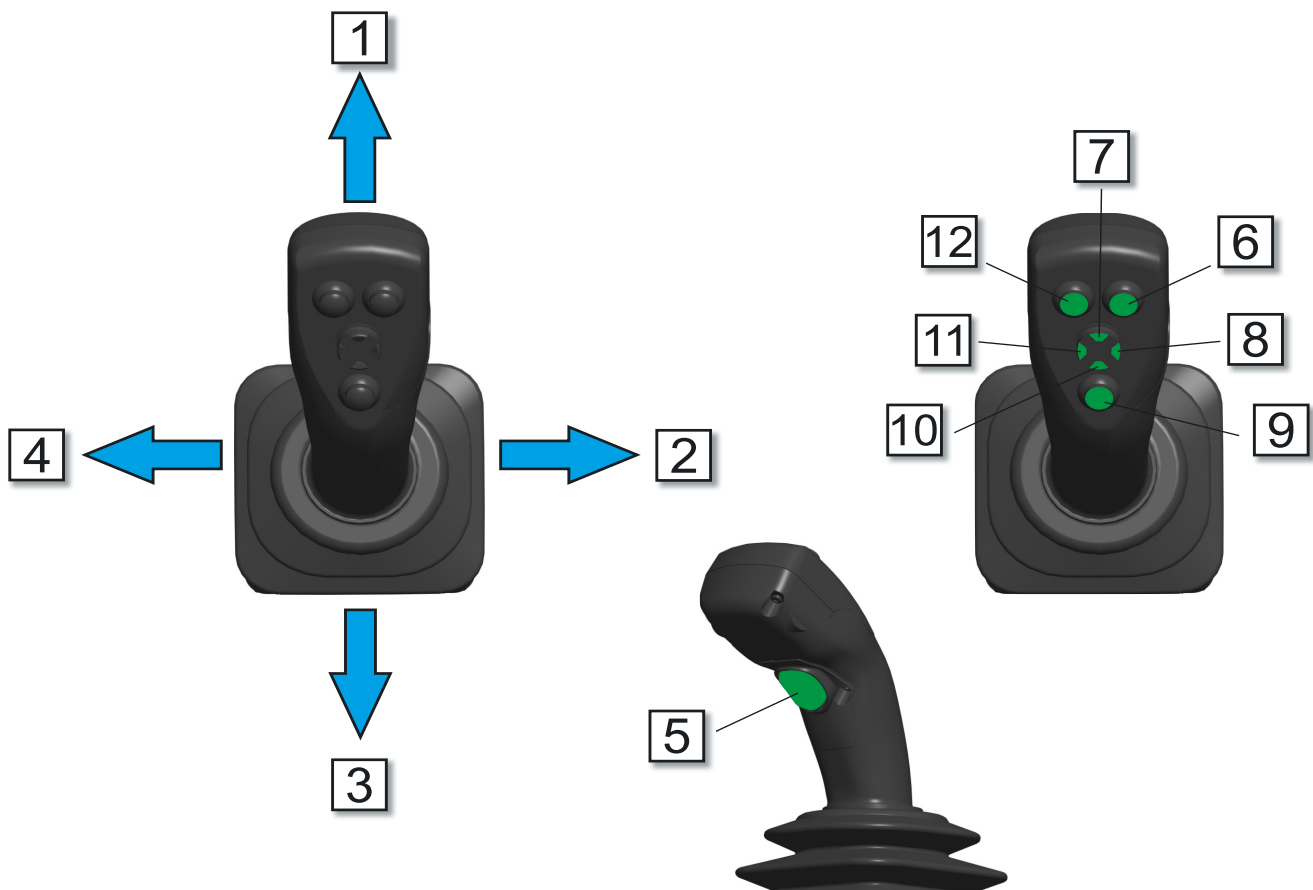
A control panel with an HMI display is located on the left side. It is designed to control the sorting tables, which are optional equipment. If the machine operates without sorting tables, the buttons used to control them are not mounted on the control panel.



1. Emergency E-STOP button,
2. Function activation Start/Stop (CONTROL),
3. Key Switch,
4. Main motor Start/Stop,
5. Button used to change the current cutting program memory,
6. Changing the cutting mode (Manual/Stack/Reference Down/ Reference Up),
7. Starting the cutting program / When this button is pressed, it is possible to choose the return height of the High Bump-Up function.
8. Feed rate potentiometer,
9. Power supply indicator light (sorting tables option),
10. Motor overload light (sorting tables option),
11. Auto/Manual table mode switch (sorting tables option),
12. Direction setting buttons (sorting tables option).

3.2.2 Right Side

There is a joystick for operation on the right side. The joystick buttons have the following functions:

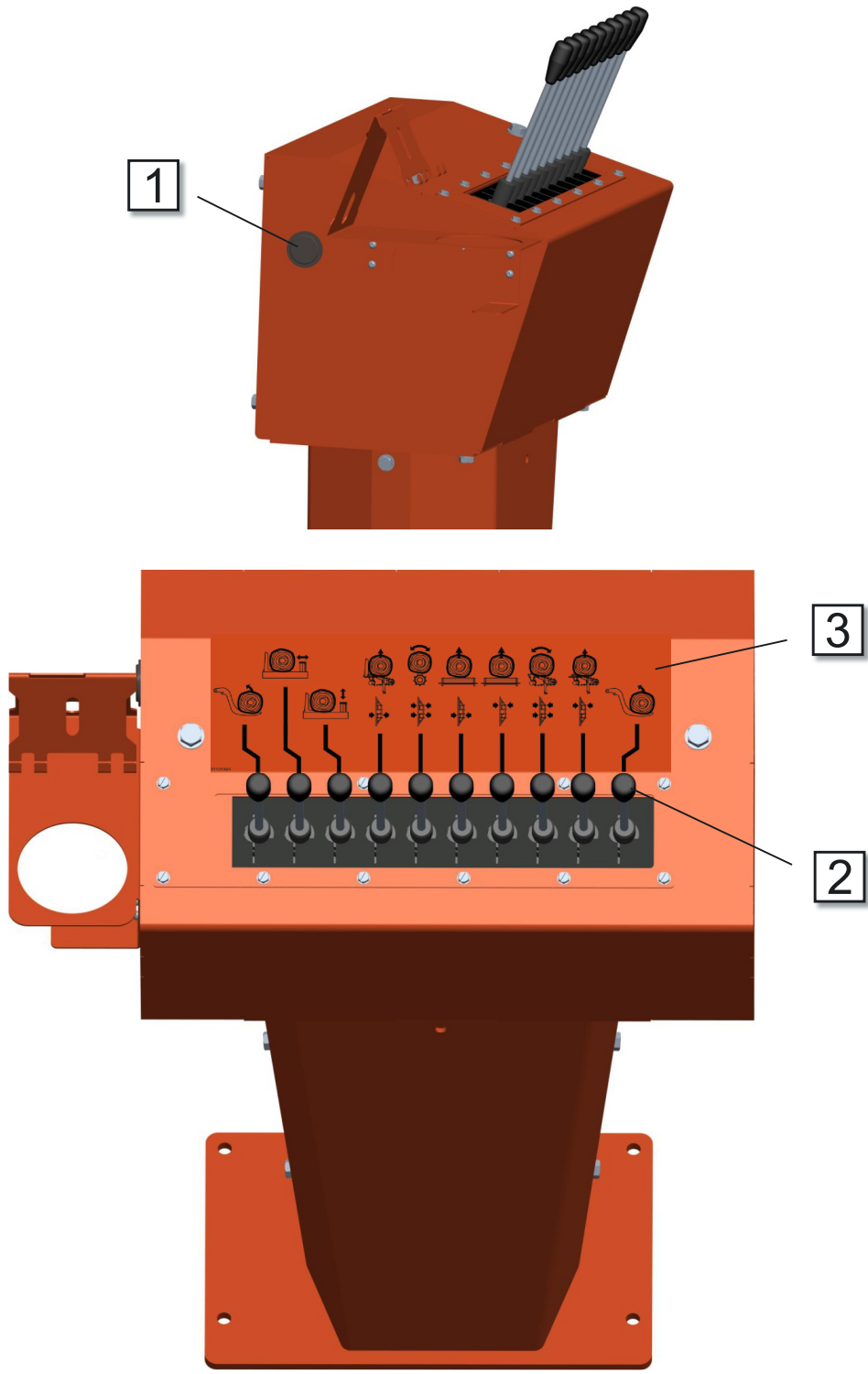


1. Saw head forward,
2. Log infeed deck motor right,
3. Saw head reverse,
4. Log infeed deck motor left,

5. Saw head down,
6. Blade guide in,
7. Turning on the LMS,
8. Debarker arm in,
9. Saw head up,
10. Debarker motor activation,
11. Debarker arm out,
12. Blade guide out.

3.2.3 Middle Part

The following elements are located in this part of the machine: a USB charger socket (1) and joysticks (2) for activating the hydraulic functions shown on the decal (3).

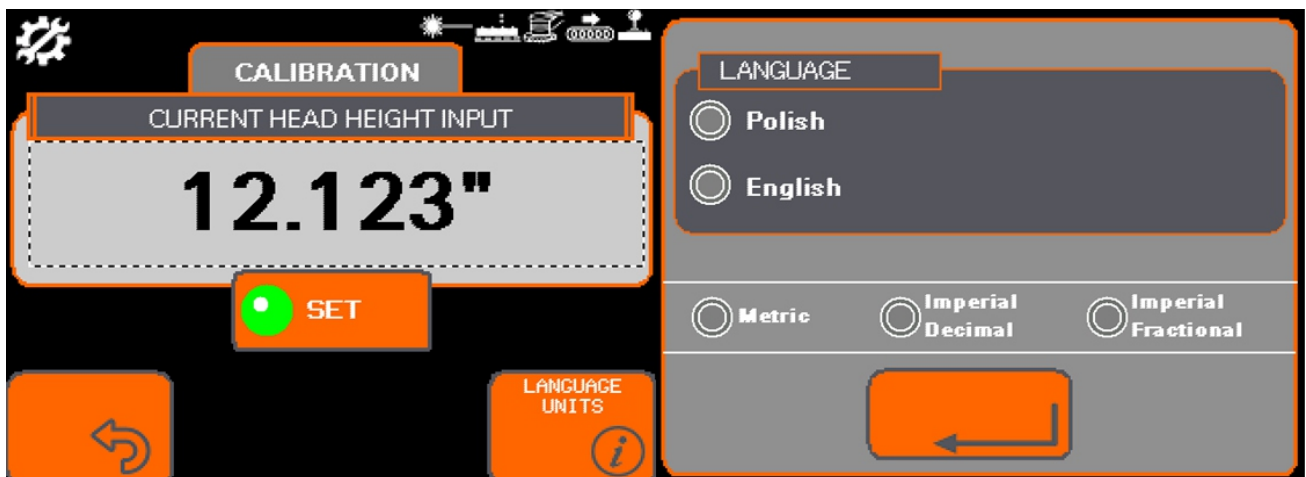


3.3 Settings

3.3.1 Calibration Window

After starting the machine, the following window is displayed which allows to calibrate the height of the saw head by entering the current saw head height (measured distance from a down-set blade tooth to the bed frame). Confirm the entered value. It is not necessary to calibrate the saw head if the displayed height value is the same as the measured distance.

In the Calibration window it is also possible to use the Language/Units button to choose the desired language and the unit of measure.



3.3.2 Settings Page 1



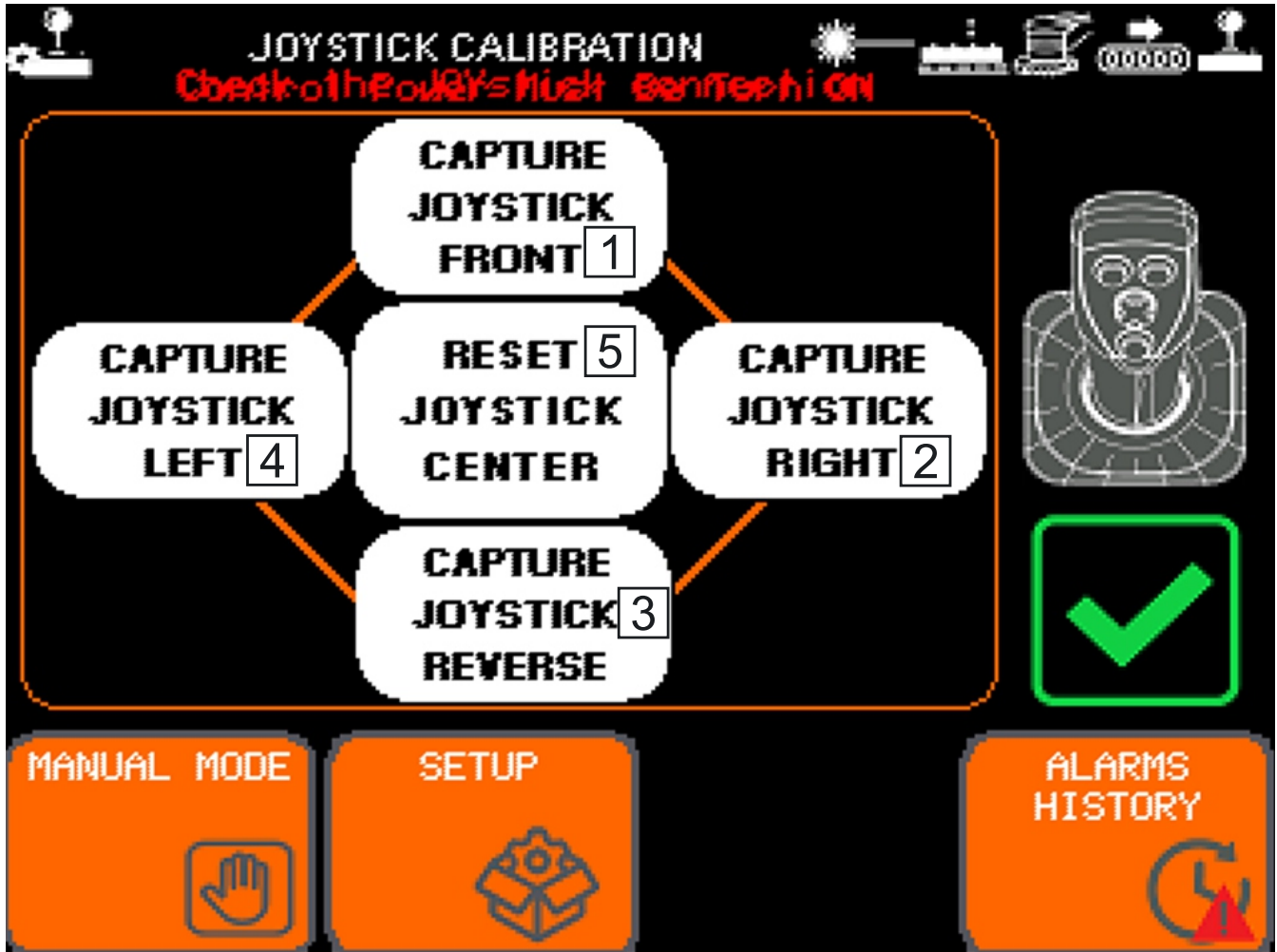
1. Kerf - blade thickness (added to the dimension),
2. Bump - standard saw head bump-up value for board removal,
3. Upper Limit - upper maximum saw head height
4. Lower Limit - lower minimum saw head height
5. Set Max Speed - maximum speed of the up/down drive
6. Set ACC/DEC - value of saw head acceleration and deceleration for up/down movement - it is necessary to save this value.
7. Set Current Height - saw head height calibration value (measured distance from a down-set blade tooth to the bed frame) - it is necessary to save this value.
8. RESTORE FACTORY SETTINGS - it may be used to restore the factory (safe) settings.

3.3.3 Settings Page 2



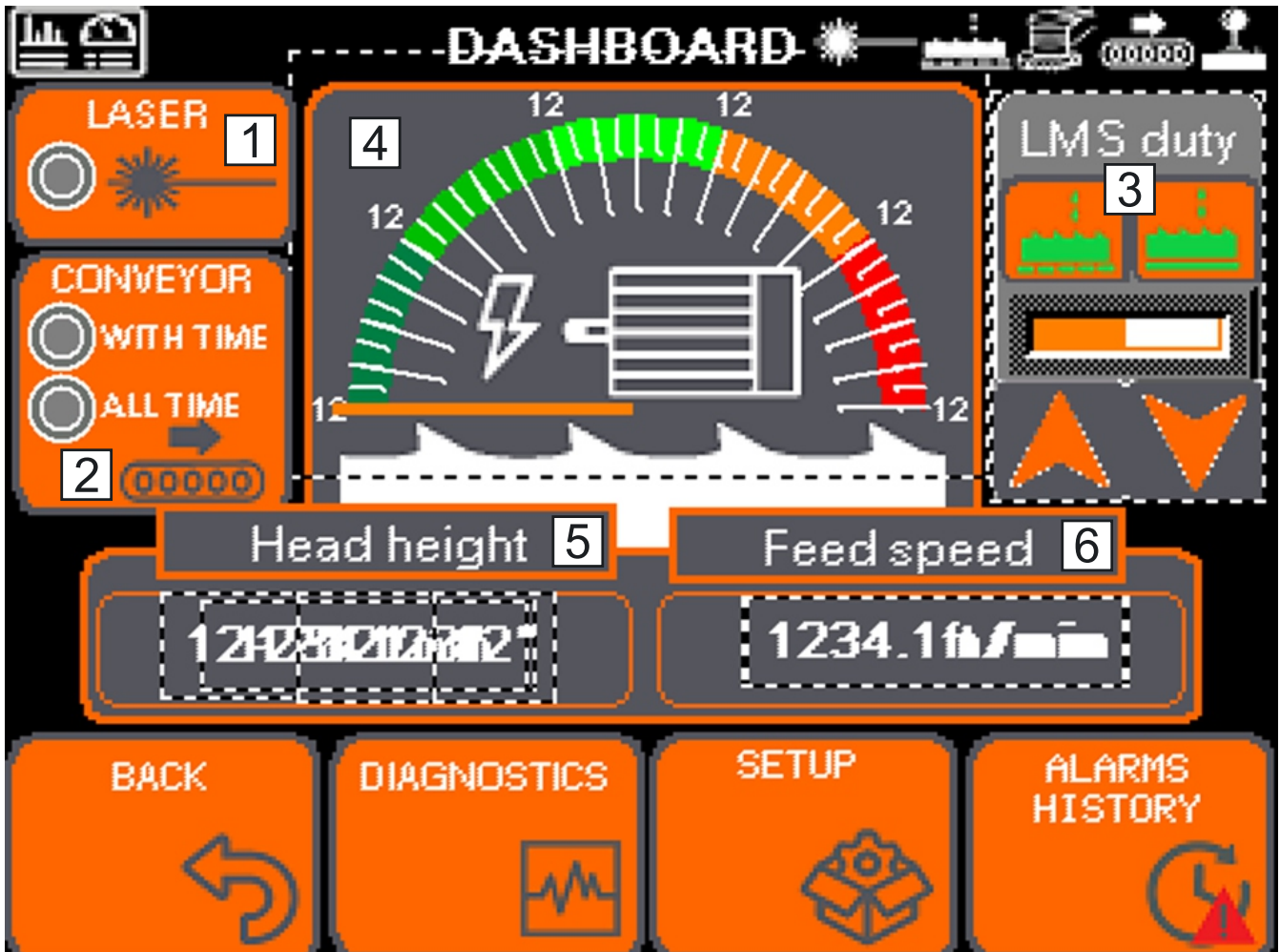
1. Conveyor - operating time of the belt conveyor activated when the material is being transported.
2. Hydraulics - operating time of the hydraulic pump when the function is activated.
3. Feed control type: Potentiometer (3) - saw head speed adjusted with the potentiometer or Joystick (4) - saw head speed adjusted with the joystick.

3.3.4 Joystick Calibration



It is possible to calibrate the joystick if it does not work properly. In order to calibrate the joystick: make sure that the control power is active and perform the following procedure. Push the joystick forward as much as possible and, holding it in this position, press the "Capture Joystick Front" (1) button. Repeat this step pushing the joystick to the right (2), left (4) and backward (3). When calibrating the "0" position of the joystick, do not touch it and press the "Reset Joystick Center" button (5).

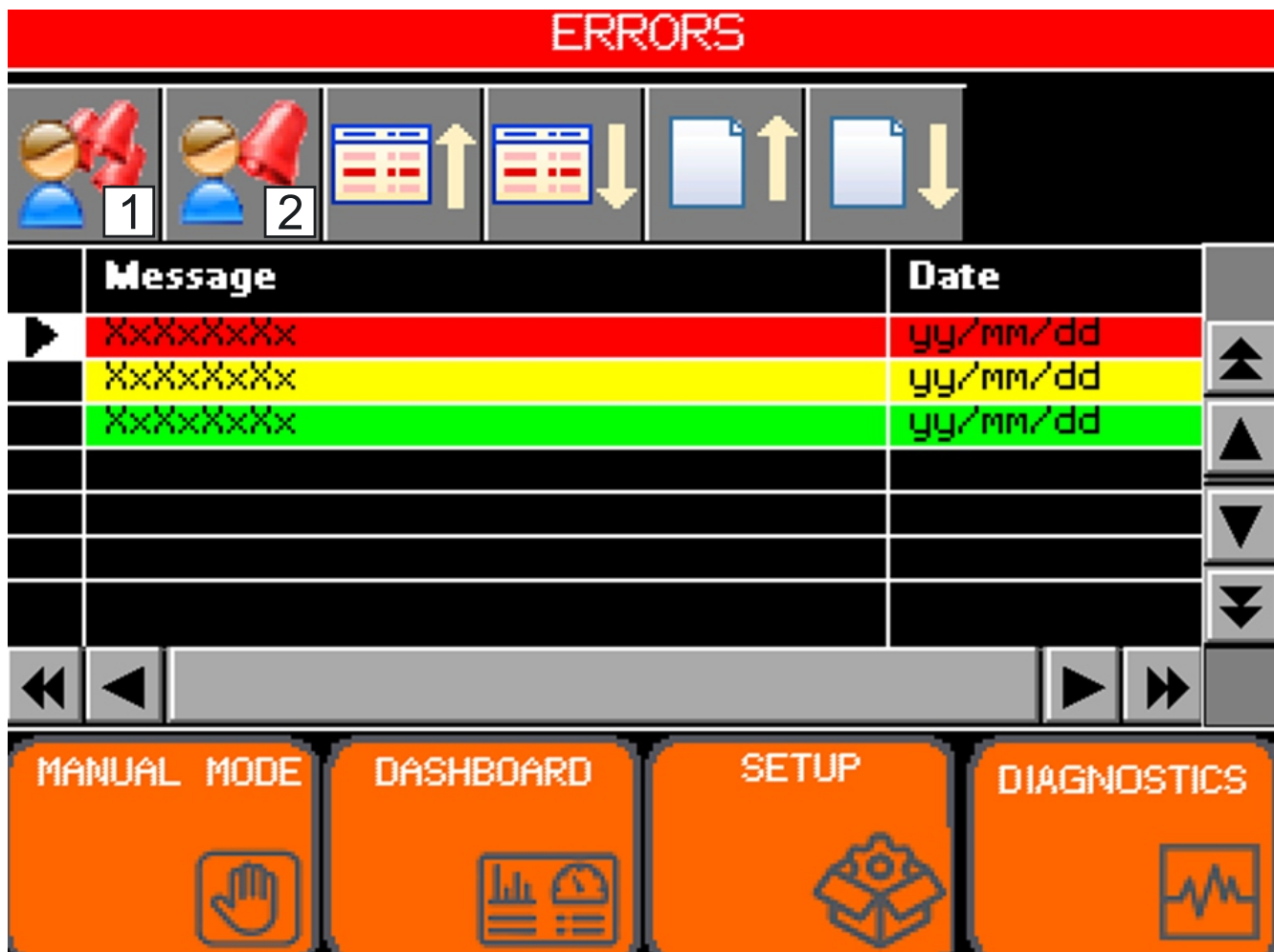
3.3.5 Dashboard



1. Laser - On/Off,
2. Conveyor - three options such as Off/ On for a certain time when the material is being transported/On all the time when the main motor is running.
3. LMS duty - when the LMS is active (it needs to be turned on with the joystick), it is possible to choose its operation mode (either pulse or continuous). In case of the pulse mode of LMS operation, use the up and down arrows to adjust the time of operation.
4. Current main motor power,
5. Head height - current saw head height,
6. Feed speed - current feed rate (forward/backward movement of the saw head).

3.4 Diagnostics

3.4.1 Alarm History

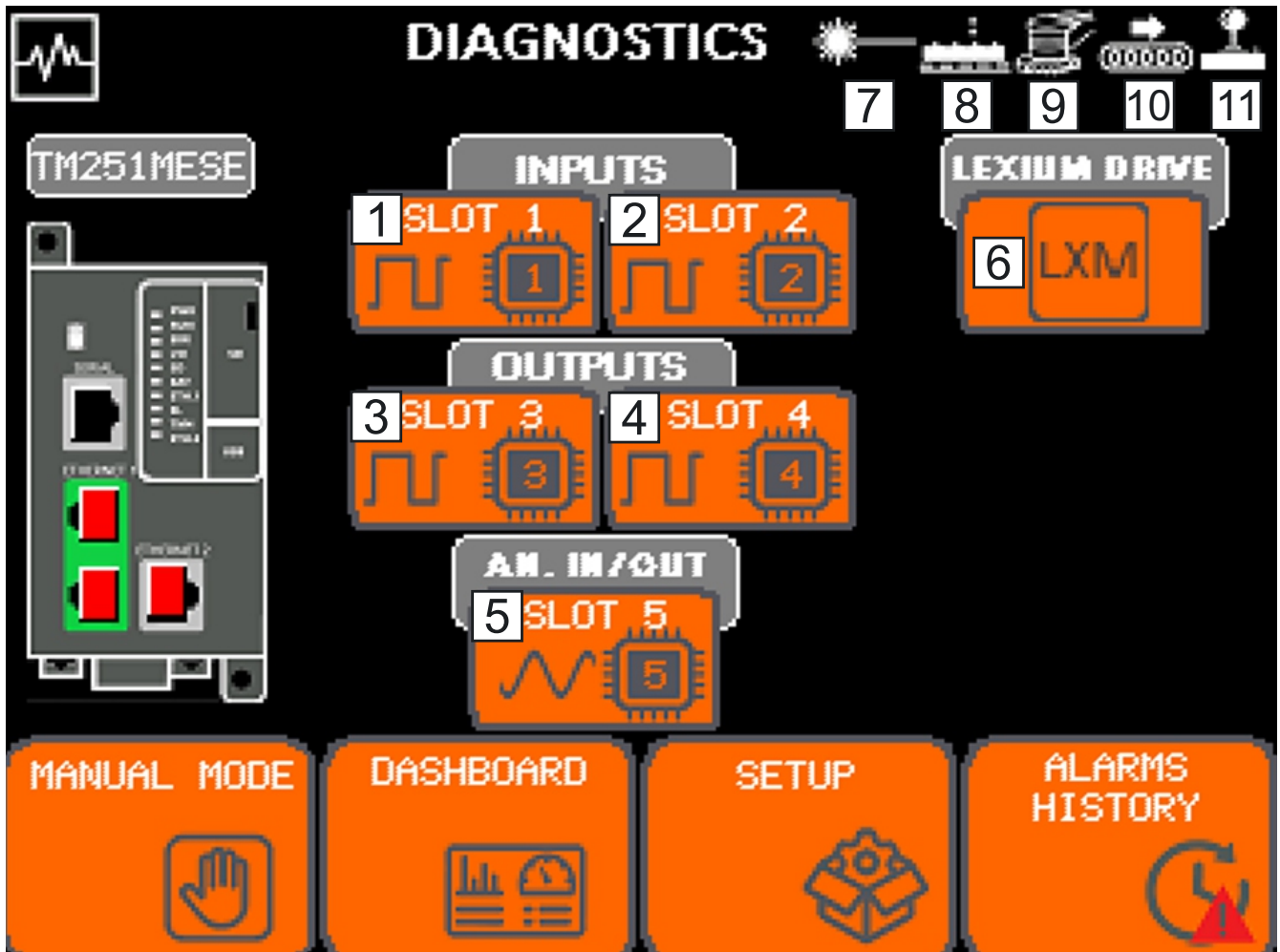


Alarm History is used to display active alarms. All alarms since the last power up are displayed. When the power is turned off, the alarm history is cleaned.

Errors are confirmed by using the buttons located in the upper left corner (1) and (2). After that, an error message marked in red will turn yellow, and it will be possible to continue using the machine despite the problem. If the problem is eliminated, the error message will turn green on its own and it is not necessary to confirm it.

3.4.2 Input/Output Diagnostics

On the main diagnostic window, there is the current status of the Ethernet ports of the controller. The input-output status on individual controller modules (1-5) may also be checked. It is also possible to go to the diagnostics of the LXM Servo Drive (6).



Moreover, at the very top of each screen there are the following pictograms symbolizing the operation of a particular function:

1. Laser,
2. LMS,
3. Debarker,
4. Conveyor,
5. Joystick/Potentiometer.

Signal input modules:

The screenshot displays two PLC slots, Slot 1 and Slot 2, each with a 16-point digital input module. The interface is divided into two columns for each slot, with a central navigation bar at the bottom.

Slot	Input Point	Signal Name
PLC SLOT 1	0	Power supply ON
	1	Not Used
	2	Not Used
	3	Pushbutton Memory
	4	Not Used
	5	Not Used
	6	Not Used
	7	Key Switch On
	8	Hydraulic motor overload
	9	Not Used
	10	Not Used
	11	Conveyor motor overload
	12	Not Used
	13	Hydraulic microswitch
	14	Not Used
	15	Not Used
PLC SLOT 2	0	Joystick Head Left PB
	1	Joystick Head Bottom PB
	2	Joystick Trigger PB
	3	Not Used
	4	Joystick 4-Way Switch Up
	5	Not Used
	6	Joystick 4-Way Switch Left
	7	Not Used
	8	Feed Drive Fault
	9	Not Used
	10	Not Used
	11	Not Used
	12	Not Used
	13	Not Used
	14	Not Used
	15	Not Used

Navigation buttons at the bottom: BACK, MANUAL MODE, DASHBOARD, SETUP (repeated for both slots).

Signal output modules:

The screenshot displays two PLC slots, Slot 3 and Slot 4, each with a 16-point digital output module. The interface is divided into two columns for each slot, with a central navigation bar at the bottom.

Slot	Output Point	Signal Name
PLC SLOT 3	0	LMS control
	1	Hydraulic motor control
	2	Blade guide motor right
	3	Blade guide motor left
	4	Debarker arm in
	5	Debarker arm out
	6	Laser ON
	7	Belt conveyor motor start
	8	Lag infeed deck motor left
	9	Not Used
	10	Not Used
	11	Not Used
	12	Not Used
	13	Not Used
	14	Not Used
	15	Not Used
PLC SLOT 4	0	Head forward
	1	Softstarter reset
	2	Not Used
	3	Not Used
	4	Not Used
	5	Not Used
	6	Not Used
	7	Not Used
	8	Joystick Active Control
	9	Not Used
	10	Not Used
	11	Not Used
	12	Not Used
	13	Not Used
	14	Not Used
	15	Not Used

Navigation buttons at the bottom: BACK, MANUAL MODE, DASHBOARD, SETUP (repeated for both slots).

Analog input/output module:

The screenshot displays PLC Slot 5 with four analog modules and two navigation buttons. Each module shows a channel number, address, and signal name.

Module	Channel	Address	Signal Name
Analog Input 0	0	12346	Joystick Forward/Reverse
	1	12.1V	+/- 10 V
Analog Input 1	0	12346	Main motor current
	1	12.1 mA	4-20mA
	2	123.1A	Motor current
Analog Input 2	0	12346	Feed reference frequency
	1	12.1 mA	4-20mA
Analog Input 3	0	12346	Joystick Base Left/Right
	1	12.1V	+/- 10 V
Analog Output 1	0	12345	Fwd/Rev Head Frequency
	1	12.1 mA	4-20mA
	2	123 Hz	Frequency

Navigation buttons at the bottom: BACK, MANUAL MODE, DASHBOARD, SETUP, MANUAL MODE, DASHBOARD, SETUP, DIAGNOSTICS.

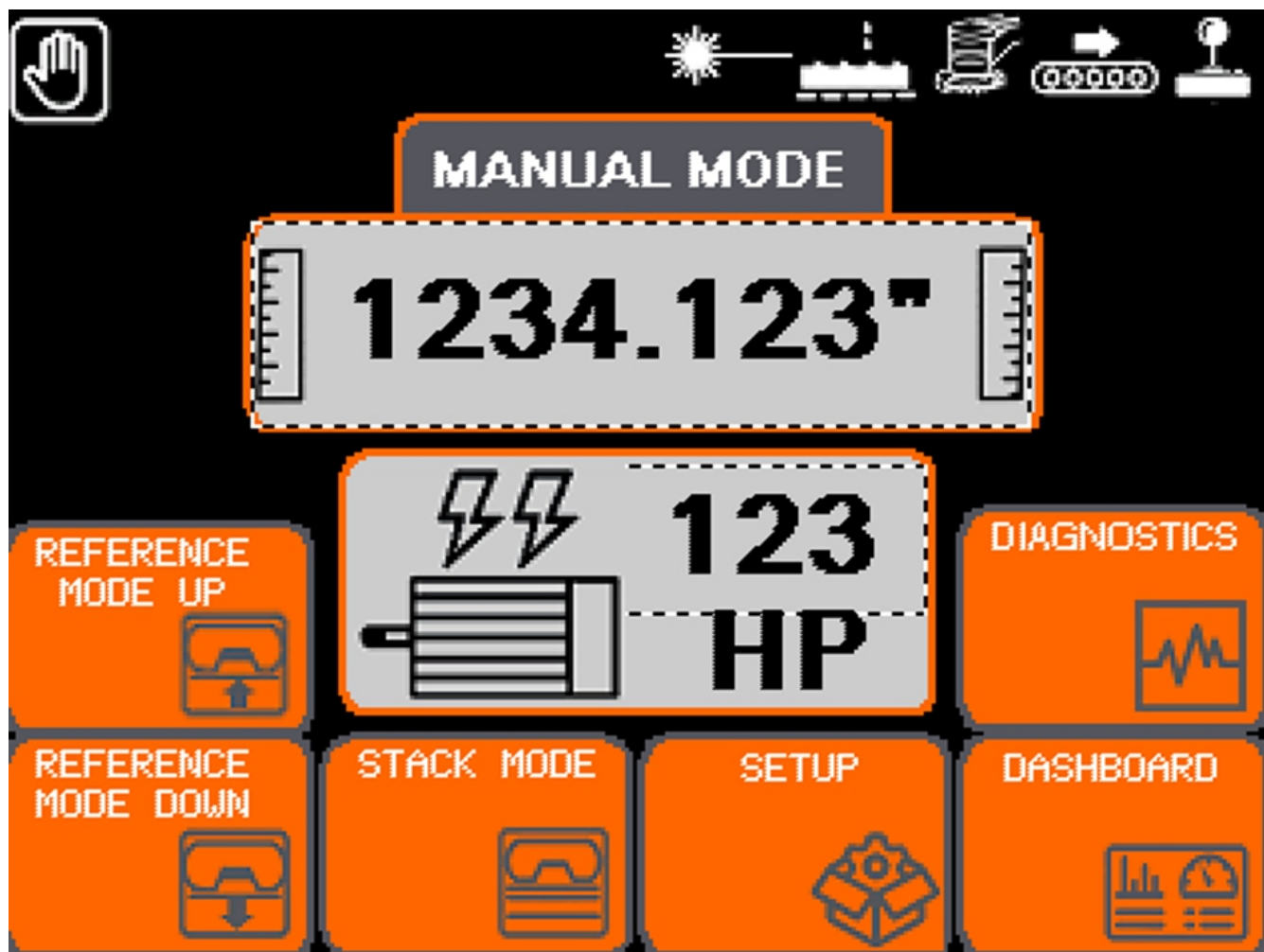
3.4.3 LXM diagnostics



1. Communication OK - Ethernet/IP communication indicator.
2. Communication Search - indicator of a lack of communication/the necessity to search for a device on the Ethernet/IP network.
3. Limit switch pos - status of the top limit switch of the saw head.
4. Limit switch neg - status of the bottom limit switch of the saw head.
5. FB Power Status - status of the control power.
6. FB Fault Reset - reset error status.
7. FB Jog Busy - servo (manual) operation status.
8. Velocity - Current motor speed in rpm.
9. Position - Current saw head position calculated from the center, expressed in inches.
10. Fault - Last error message from the inverter.
11. Fault Reset - Reset Drive - this button is used to clear the current error message.

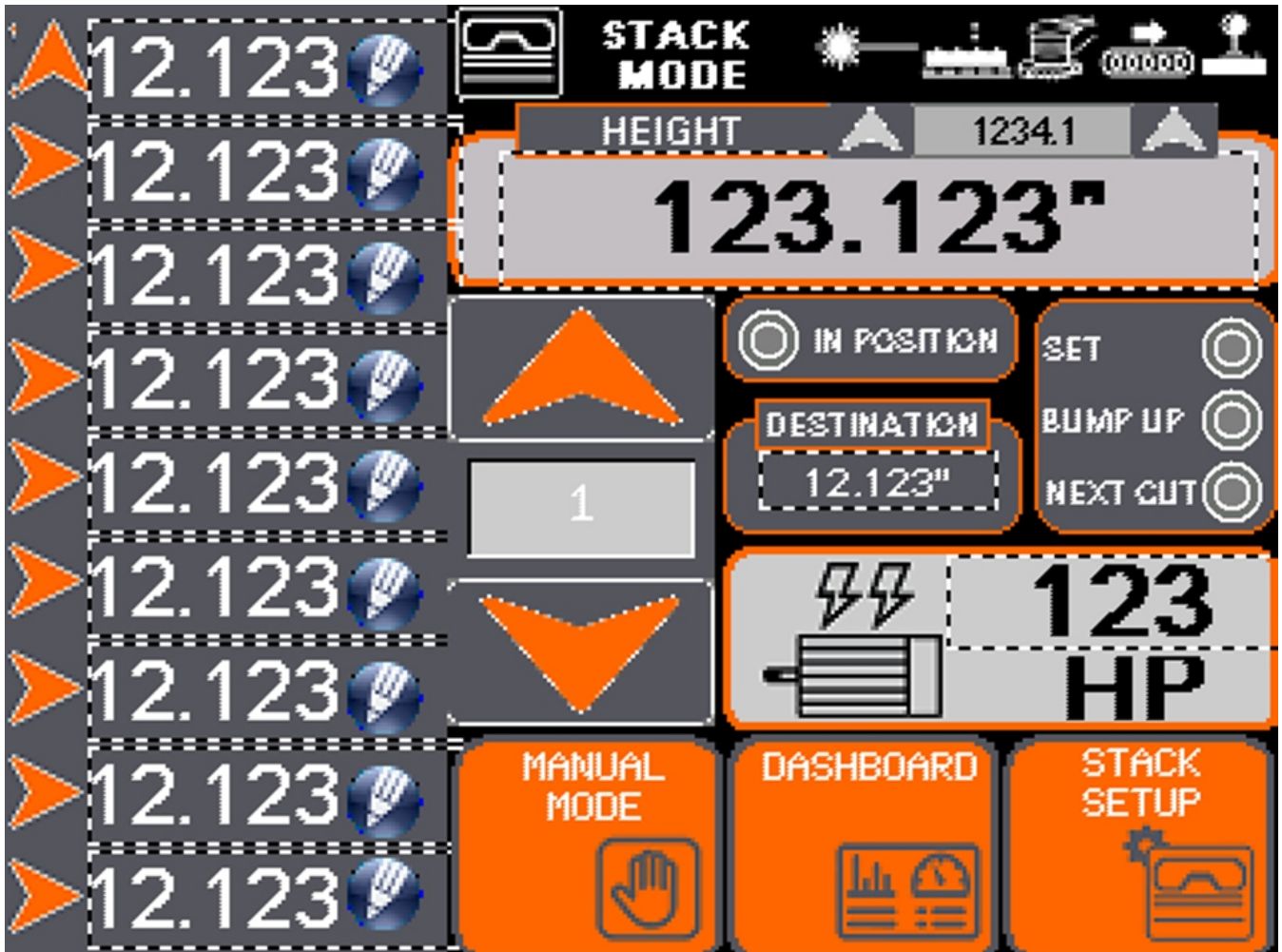
3.5 Cutting Modes

3.5.1 Manual Mode



In manual mode, the operation is performed only with the Joystick. All cutting functions work in this mode; however, it is the operator who fully decides on the specific height. It is not possible to enter particular height values for the saw head to be positioned automatically.

3.5.2 Stack



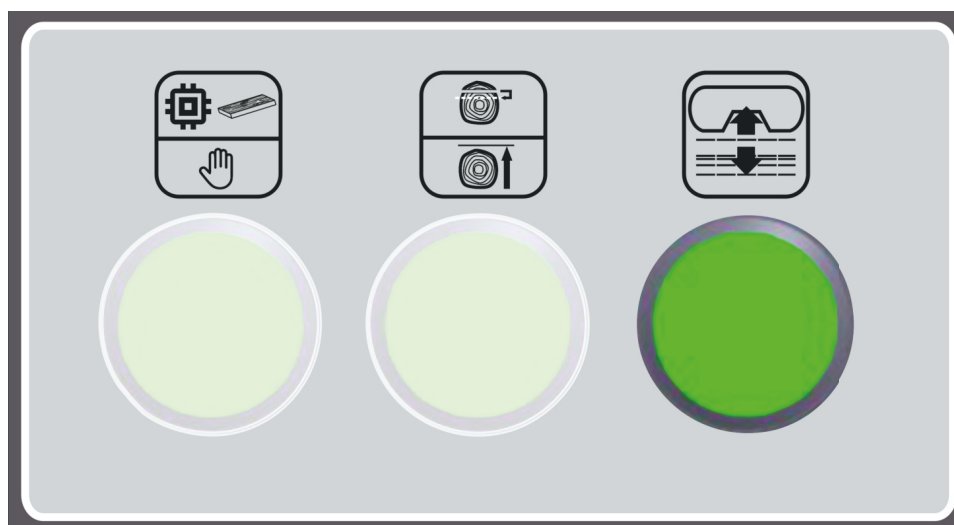
This is a cutting mode in which the cutting dimension is measured from the bed frame. After selecting the board/square thickness, the kerf value is automatically added to the dimension (its value can be changed in the settings and depends on the blade).

The left side of the screen shows the current dimensions of the material being cut. It is possible to temporarily change these values by pressing on a given value and entering the desired dimension. Then the pressed value and all above it will change.

In addition to momentary changes of values, there are 4 memory banks (it is possible to select them with the up/down arrows in the middle of the screen or with the green button on the left). Then the values indicated on the left are changed.

The arrow on the very left side indicates the current cutting position. In addition, there is information about the current height, the designated target and the current power of the motor. This mode is normally not active and up-down operation is performed manually with the joystick.

To activate the cutting mode, press the physical green button on the right side of the control panel:

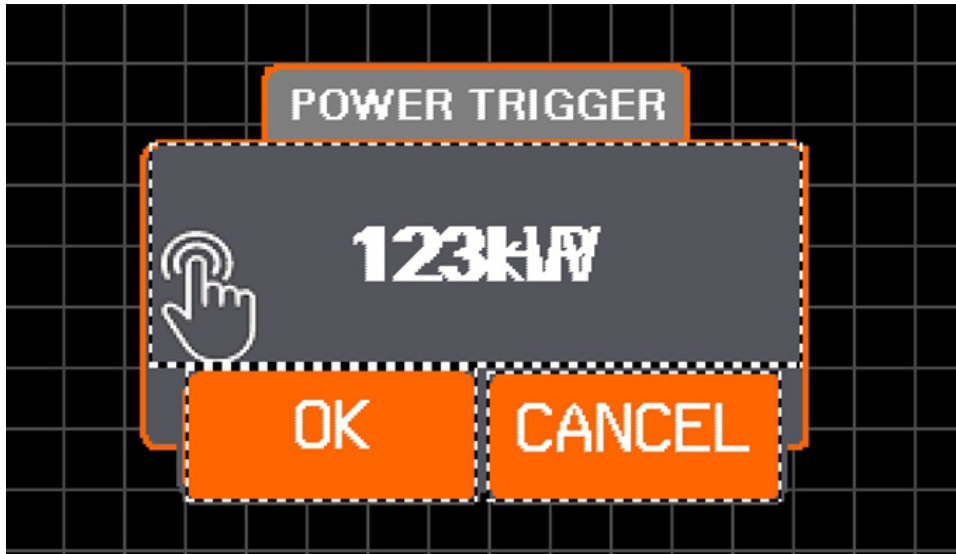


To deactivate this mode, press the same button. Then the values on the left side of the screen will turn grey and it will not be possible to change them.

When this mode is activated, after briefly pressing the down button on the Joystick, the saw head will automatically reach the next recalculated dimension. After briefly pressing the up button on the Joystick, BumpUp function is performed, which is a saw head move upward by a certain value (set in Setup) suitable for pushing the boards back. There is an option to hold the saw head up button in order not to push back a given material, e.g. on the first cut when this is problematic. There is also a third optional type of the BumpUp function that can be performed. By pressing and holding the button used for turning on the cutting program, it is possible to program the height to which the saw head will always arrive when performing a regular BumpUp. This value is then displayed above the current height value.

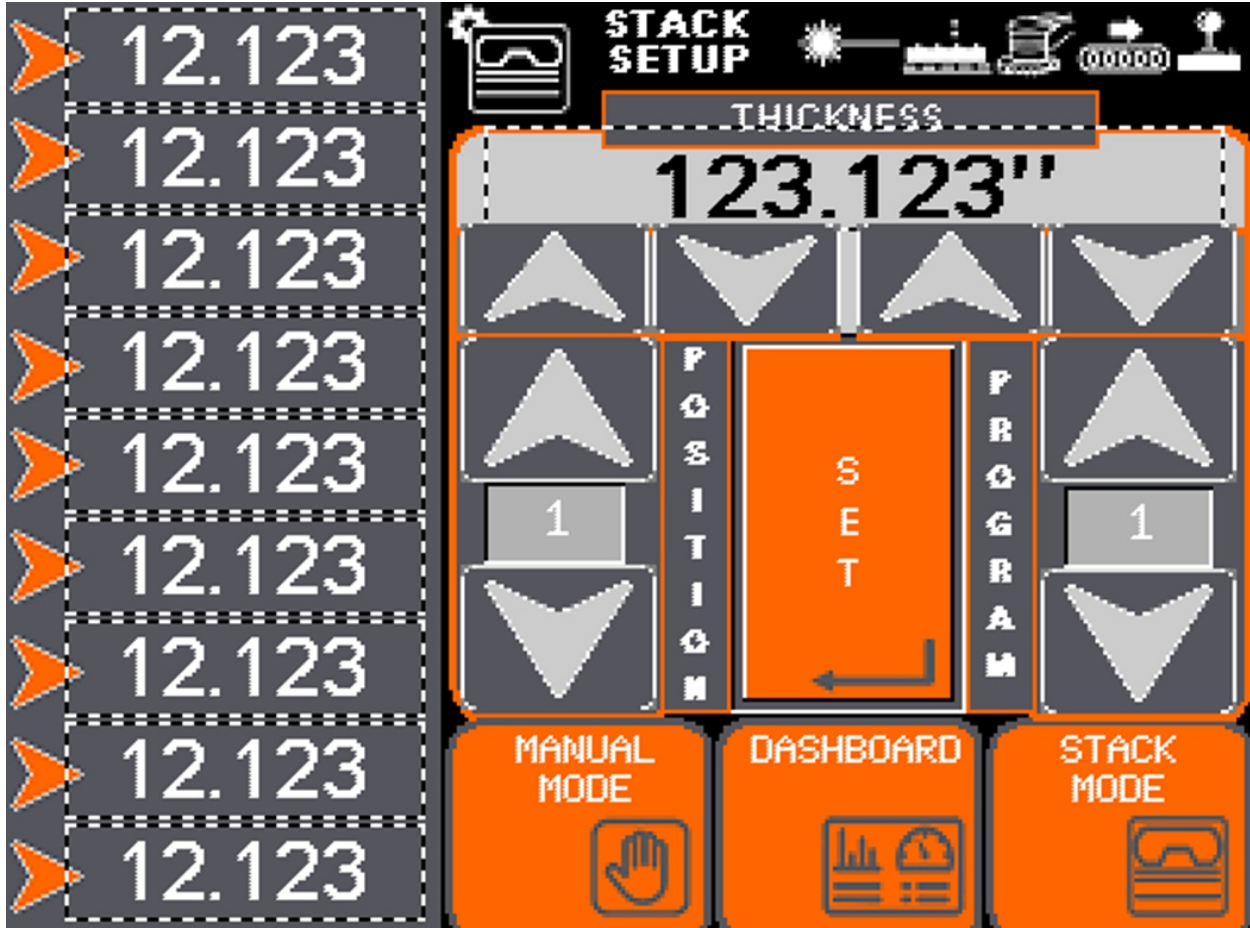


In each mode, after pressing the current motor power value button, the following window will appear:



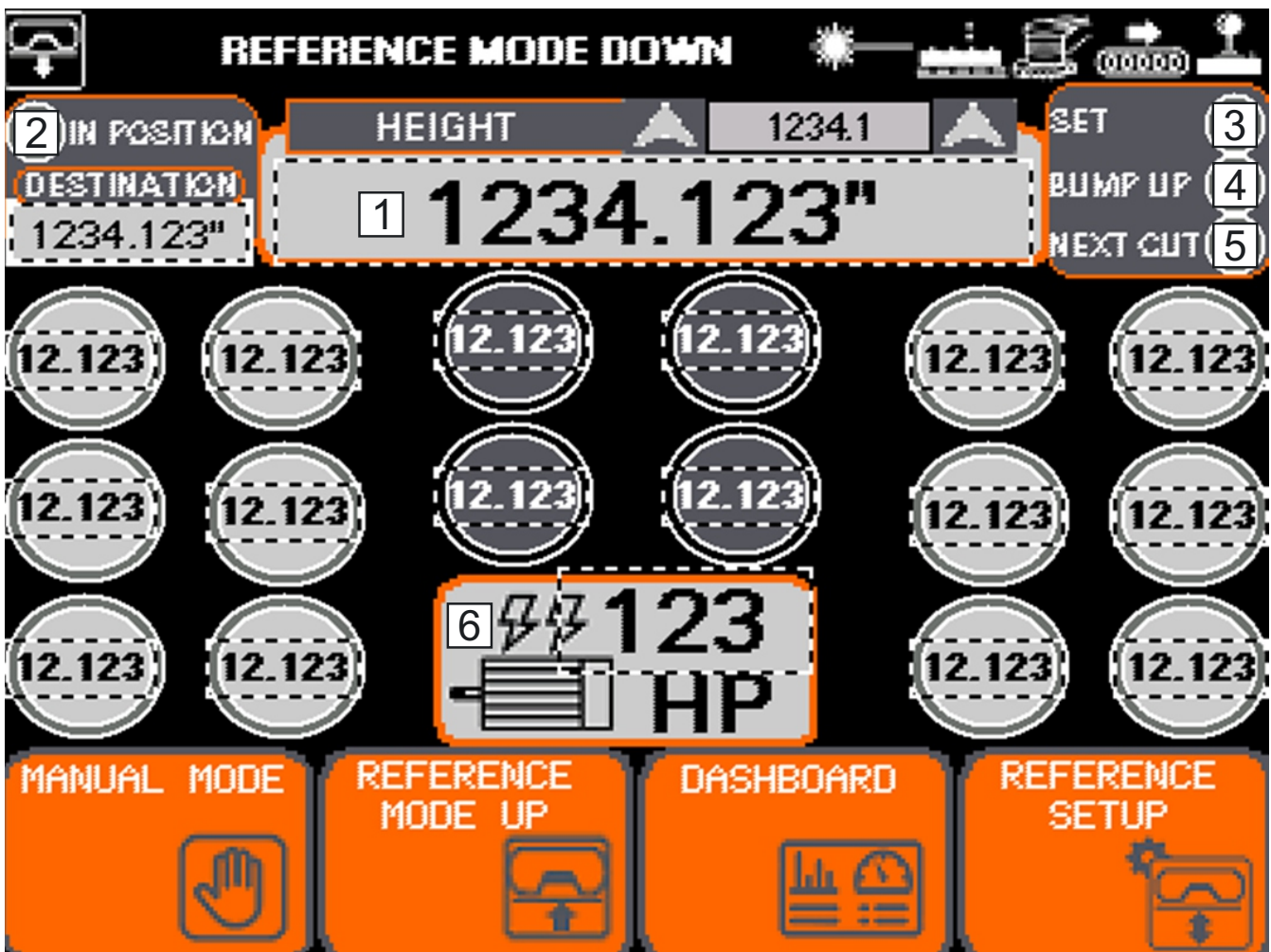
To avoid exceeding the maximum motor power value, it is possible to set the value above which the operator will be notified (when the given current motor power value has been exceeded). Then the background of the displayed value will turn red.

After pressing Stack Setup, the settings window for this mode will be displayed.



It is possible to program 4 programs with cutting dimensions. In order to do that, first select the program to edit with the arrows on the right. Then choose the position to edit with the arrows on the left. In the upper part of the screen, there is the dimension to change with the arrows. After setting the appropriate parameters, press the SET button. The values on the left side will be updated. The rest of the programs can be edited in the same way. After returning to Stack Mode, the given values will be remembered.

3.5.3 Reference Down

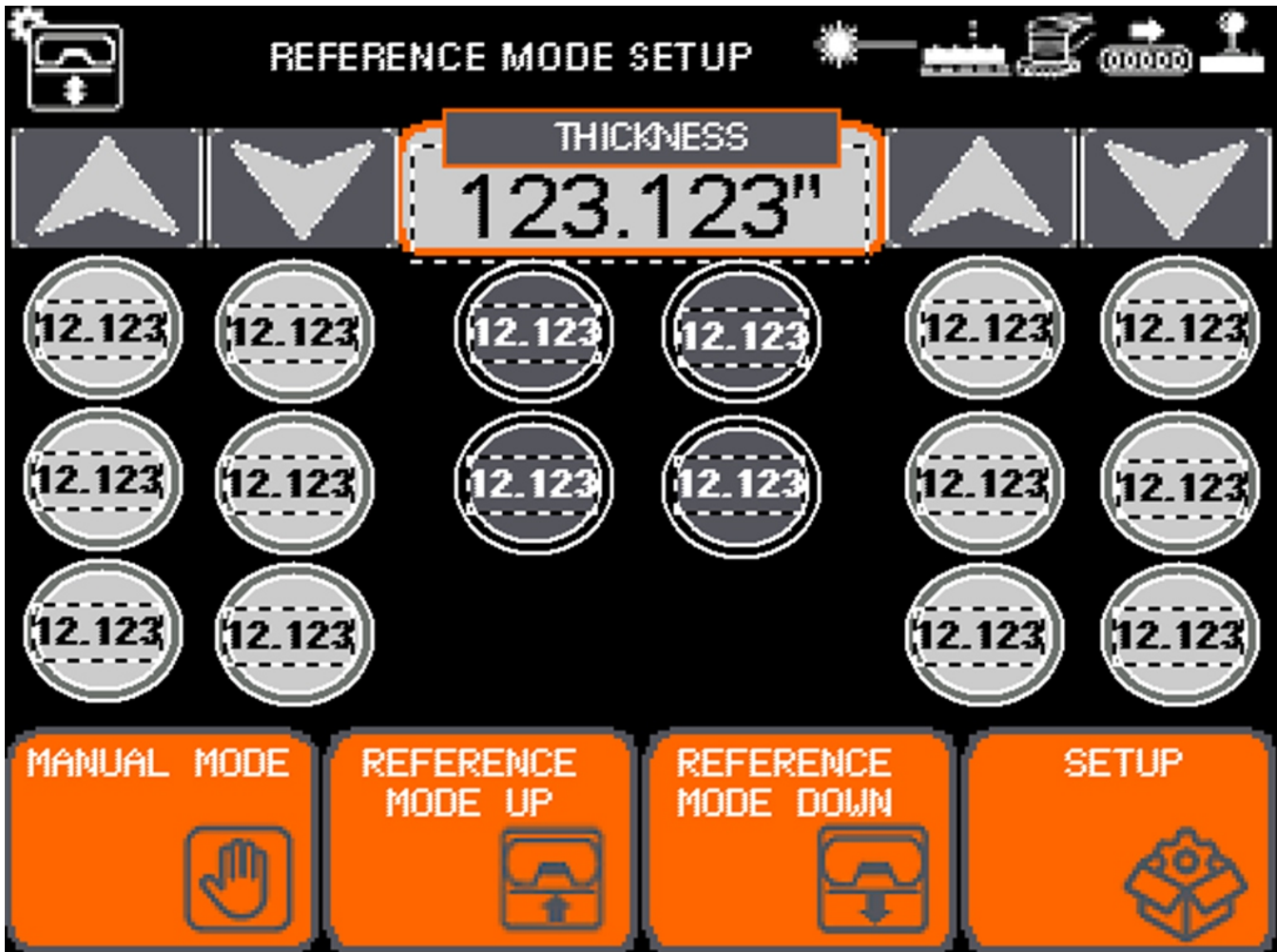


This is a cutting mode in which the cutting height is calculated from the current saw head position. After selecting the board/square thickness, the kerf value is automatically added to the dimension (its value can be changed in the settings and depends on the blade).

In the upper part, there is information about the current height (1) and the set target. There are also control lights informing about the current status in the program such as In Position (2), Set (3), BumpUp (4), and Next Cut (5). The current motor power value of the main motor (6) is in shown in the middle of the screen.

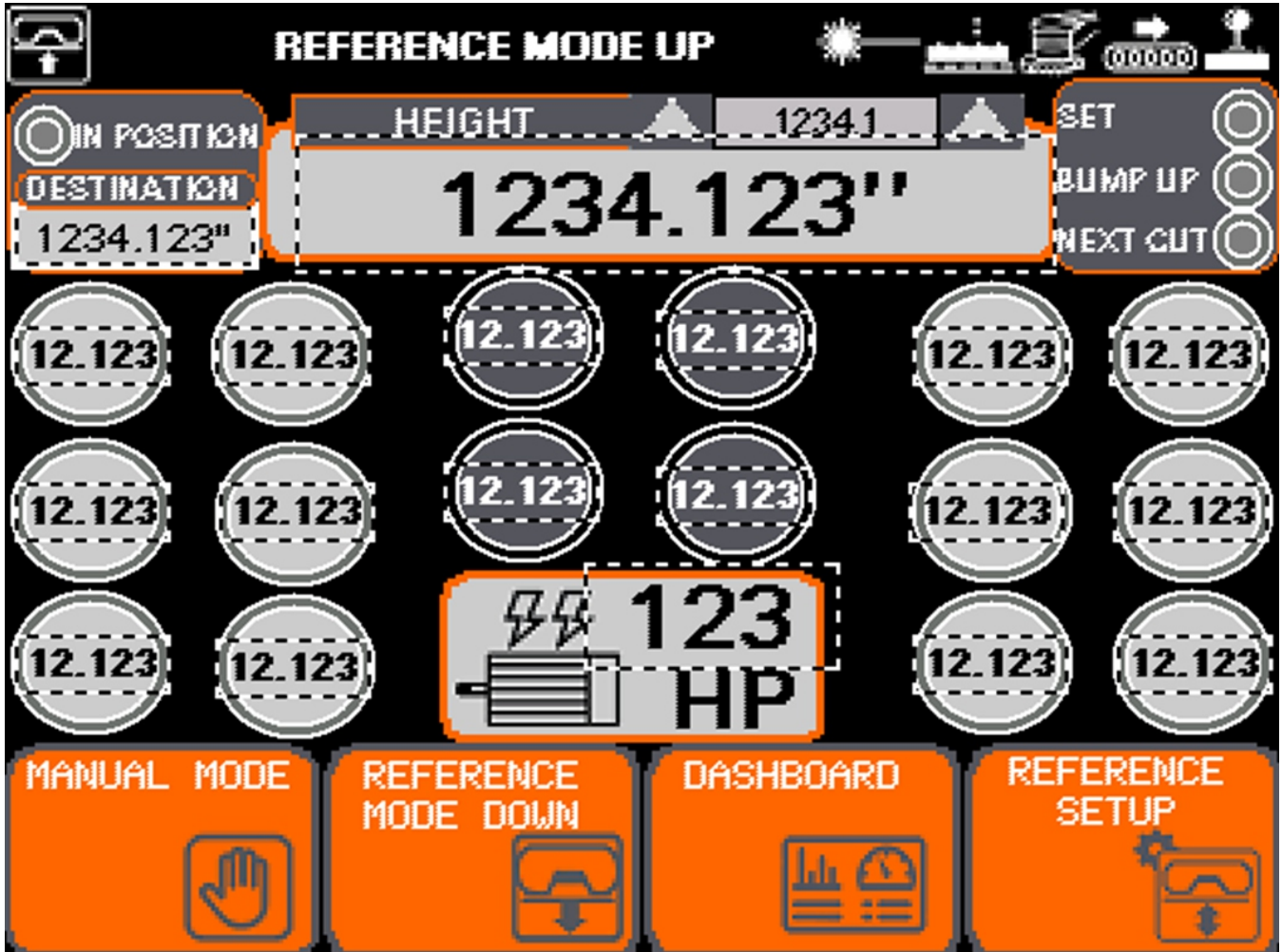
There are also 16 boxes with memory values that can be selected by pressing them on the screen or by changing them with the physical green left button on the control panel. To change the stored values, enter the mode settings. This mode is normally not active and up-down operation is performed manually with the joystick. It may be activated with the physical right button on the control panel as in the Stack mode. The BumpUp function also works here identically as it is described in the previous section.

After pressing the Reference Mode Setup button, the settings window for this mode will be displayed. The memory settings are common for both Reference modes.



Use the arrows to set the desired "Thickness" value and press one of the memory boxes to save it. It is possible to save up to 16 memory values.

3.5.4 Reference Up



This mode is analogous to the Reference Down mode. The cutting height is also calculated from the current saw head position. However, the positioning for cutting is calculated upward, not downward as in the Reference Down mode.

3.6 Error messages

3.6.1 Error messages on the bottom bar

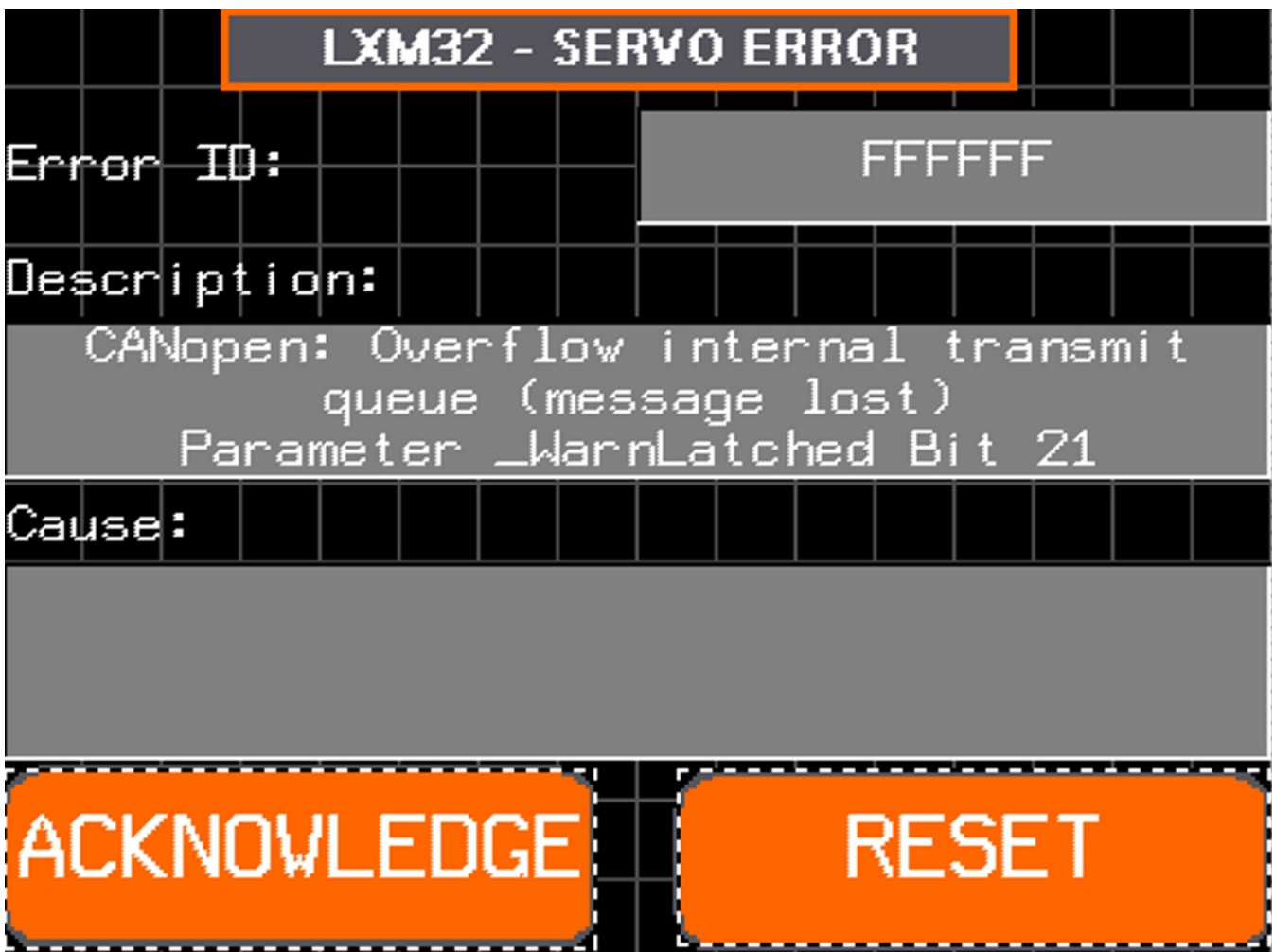
- Key Switch Not On - Ignition switch not on.
- Control Power Off (E-Stop Active) - Emergency stop is not released, the operator's seat is not taken, or blade guards on the saw head are open.
- Down Head Limit Switch Active - Bottom limit switch for the saw head movement is active. The possible reason is incorrect saw head height calibration. If the dimension on the dashboard is the same as the measured distance (from a down-set blade tooth to the bed frame), correct the position of the limit switch.
- Up Head Limit Switch Active - Top limit switch for the saw head movement is active. The possible reason is incorrect saw head height calibration. If the dimension on the dashboard is the same as the measured distance (from a down-set blade tooth to the bed frame), correct the position of the limit switch.

3.6.2 Error codes displayed in alarm history requiring operator confirmation

- Servo Drive Fault - Servo drive error, check the error in the LXM diagnostics window.
- Positioning Fault - Positioning error, check the saw head for blockage, check if the up/down system is not clogged or dirty.
- SoftStarter Fault - Blade soft starter error, check if the blade is properly positioned and tensioned.
- Conveyor Motor Overload Tripped - Error in belt conveyor protection, check if its movement is not blocked and turn the protection to the on position.
- Debarker Motor Overload Tripped - Debarker protection error, check if its movement is not blocked and turn the protection to the on position.
- Feed Drive Fault - Feed inverter error, check if the bed frame is clean and if the feed drive chain is properly tightened.
- Hydraulic Motor Overload Tripped - Hydraulic pump protection error, make sure to check the protection settings and turn the protection to the on position.

- Joystick Failure - Check if the Joystick connection has not been broken.
- Joystick Configuration Error - Configure Joystick positions in the settings.
- Log Deck Infeed Motor Overload Tripped - Loading ramp protection error, check if its movement is not blocked and turn the protection to the on position.

3.6.3 LXM servo error window



If a servo error occurs, a window informing about the specific error number will pop up on the HMI along with the error description and the reason for the occurrence. Further information about error messages may be obtained from the servo instructions.

SECTION 4 MAINTENANCE

This section lists the maintenance procedures that need to be performed on the WM2500 sawmills.



CAUTION! Always disconnect and lock out power supply before performing any maintenance work, cleaning or servicing the sawmill. Failure to do so may result in serious injury.

The Short Interval Maintenance Schedule lists procedures that need to be performed every 4, 8 or 24 hours. The Maintenance Log includes procedures that need to be performed every 50, 100, 200, or 1000 hours. Keep track of machine maintenance by filling in the machine hours and the date you perform each procedure.



This symbol identifies the interval (hours of operation) at which each maintenance procedure should be performed.

This section lists only part of the maintenance procedures that need to be performed on the WM2500 sawmills. Refer to the option and motor manuals for other maintenance procedures.

4.1 Wear Life

See Table 4-1. This chart lists estimated life expectancy of common replacement parts if proper maintenance and operation procedures are followed. Due to the many variables which exist during sawmill operation, actual part life may vary significantly. This information is provided so that you may plan ahead in ordering replacement parts.

Part Description	Estimated Life
Up/Down Motor	2000 hours
Up/Down Drum Switch	1000 hours
Blade Guide Rollers	1000 hours
Power Feed Drum Switch	1200 hours
Power Feed Motor	1500 hours
Blade Wheel Bearings	1000 hours
Up/Down Rollers Bearings	1500 hours
Track Rollers Bearings	1000 hours
Drive V-belts	800 hours
Blade Wheel Belts	400 hours
Up/Down Drive Belt and Power Feed Drive Belt	1000 hours
Blade Guide Rollers Bearings	500 hours
Changing the Hydraulic Oil Filter and Checking and Refilling the Oil Level	600 hours
Up/Down and Power Feed Chains with Sprockets	2 years or 2000 hours
Chain Log Turner – Changing Sprockets and Chain	1500 hours
Self-Lubricating Bushings	1500 hours

TABLE 4-1

4.2 Blade Guides

1. Check the blade guide rollers for performance and wear at every blade change. Make sure the rollers are clean and spinning freely. If not, rebuild them. Replace any rollers which have worn smooth or have become cone shaped.



Inspect the blade guide assemblies for proper alignment every time you change the blade. [See Section 4.2 Blade Guides](#) for blade guide adjustment instructions.



WARNING! Blade guide alignment is essential for optimal cutting performance, blade life and safe operator work. Failure to check and maintain proper blade guide alignment will result in stress cracks forming in the blade. These cracks will lead to premature blade breakage. A blade having multiple stress cracks can break during operation, shatter into several pieces and escape from the protective guard through the sawdust chute. Small blade pieces projected into the area around the sawmill creates a safety hazard for the operator and any bystanders surrounding the mill.



WARNING! DO NOT use blades with stress cracks. Blades with stress cracks can shatter causing bodily injury and/or machine damage.

Preventing sap buildup on the blade is critical when using the high-performance blade guide system. If the wood you are sawing leaves sap buildup, you can add the Wood-Mizer lube additive (Part No. 033439) to plain water in the blade lube system.

4.3 Sawdust Removal

1. Remove sawdust from the blade wheel housing and sawdust chute at every blade change.
2. Remove all sawdust and debris from around the velocity fuse valves every 8 hours of operation.
8 The valves are located at the bottom of the log loader cylinders.

4.4 Mast Track, Wiper & Scrapers

Properly maintaining the mast track is critical in preventing corrosion that can cause pitting and scaling on the rail surfaces. Pitted and scaled surfaces can, in turn, cause rough cuts, saw head vibrations and/or jerky power feed movement.

See Figure 4-1.

1. Clean the track rails to remove any sawdust and sap buildup every eight hours of operation.

8 Use a light-grade sandpaper to sand off any rust or other adhering particles from the rails.



CAUTION! Keep the track rails free of rust. Formation of rust on the track rail in the areas where the track rollers move can cause rapid deterioration of the track rail's surface.

Lubricate the rails by wiping them with Dexron III ATF transmission fluid, 10W30 motor oil, or 3-in-1 turbine oil. Oil lubrication will help protect the rails from corrosive elements such as acid rain and moisture. This lubrication is essential for service life of the track rollers and rails.

2. Remove sawdust from the track roller housings and lubricate the felt track wiper every twenty-five hours of operation.

25

Remove the track roller housing covers and brush any sawdust buildup from the housings.

3. Check the track scrapers as needed. Make sure the scrapers fit firmly against the rail. If a track scraper needs to be adjusted, loosen the thumb screw, push the scraper downward until it fits firmly against the rail, and retighten the thumb screw.

25

Unbolt the track wiper and remove any sawdust buildup every twenty-five hours of operation. Soak the felt wiper with Dexron III transmission fluid, 10W30 motor oil or 3-in-1 turbine oil.



CAUTION! Reinstall the track wiper so that it lightly touches the track rail. If the wiper presses too firmly against the rail, it can cause the

power feed to bind.

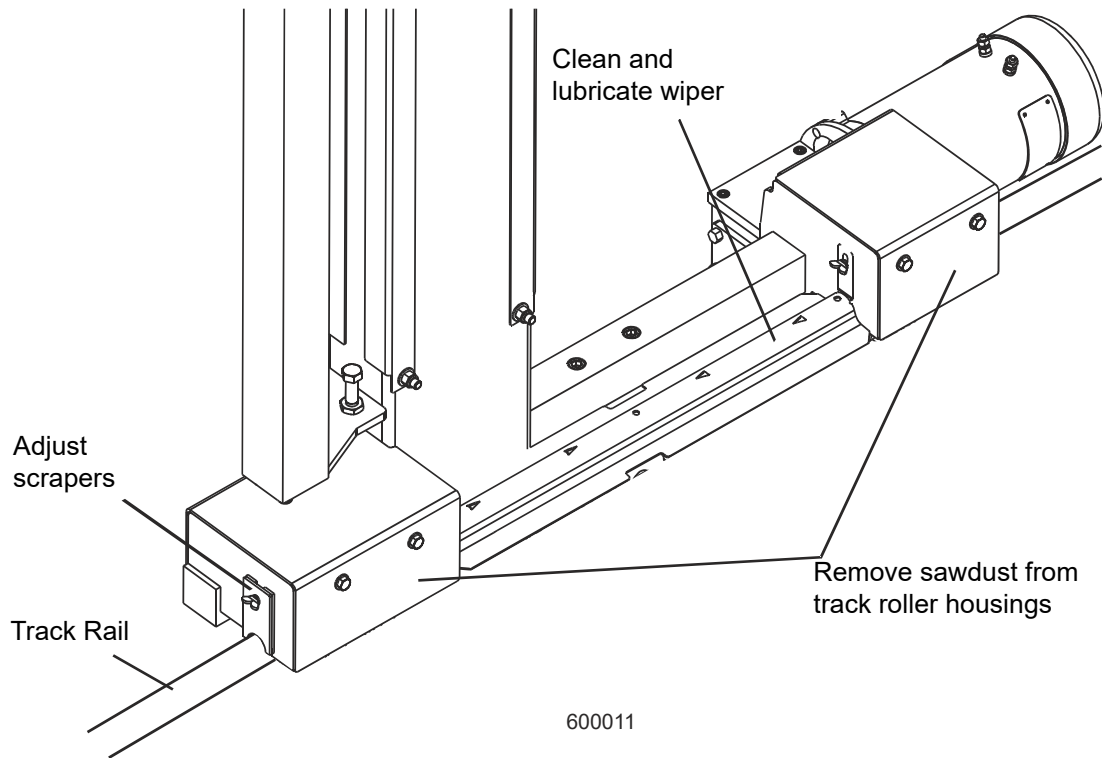


FIG. 4-1

4.5 Vertical Mast Rails

- 50 Clean and lubricate the vertical mast rails every 50 hours of operation. Clean with solvent and remove any rust with a light-grade sand paper. Lubricate the mast rails with motor oil or automatic transmission fluid (ATF).



CAUTION! Never use grease on the mast rails as it will collect sawdust.

4.6 Miscellaneous Maintenance

- 50 1. Oil all chains with Dexron III ATF every fifty hours of operation.



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

- 50 2. Apply a thin film of a NLGI No. 2 grade lithium grease to the blade guide arm every fifty hours of operation to help prevent it from rusting.
- AR 3. Adjust the tension of blade guide arm drive chain as necessary. To adjust the chain tension, loosen the blade guide arm motor mounting plate bolts and slide the motor to take slack out of the chain.
- 50 4. Grease the clamp mechanism, loading arms and side supports with a NLGI No. 2 grade lithium grease every fifty hours of operation.
- 50 5. Lubricate the board return pivots every fifty hours of operation with a NLGI No. 2 grade lithium grease. Apply grease to the grease fitting on the board return pivot tube.
6. Check the sawmill alignment after every setup. See Section 5, Alignment of the Sawmill Operation Manual.
7. Make sure all safety warning decals are readable. Remove sawdust and dirt. Replace any damaged or unreadable decals immediately. Order decals from your Customer Service Representative.

4.7 Motor Drive Belt Adjustment



DANGER! Never adjust the motor drive belt while the motor is running. Failure to do so may result in serious injury.

AR

Periodically check the drive belt for wear. Replace any damaged or worn belts as needed.

See Figure 4-2. Adjust the drive belt tension using the bolt located between the drive side wheel covers. To tighten the drive belt turn this bolt clockwise. To loosen the drive belt, turn the bolt counterclockwise.

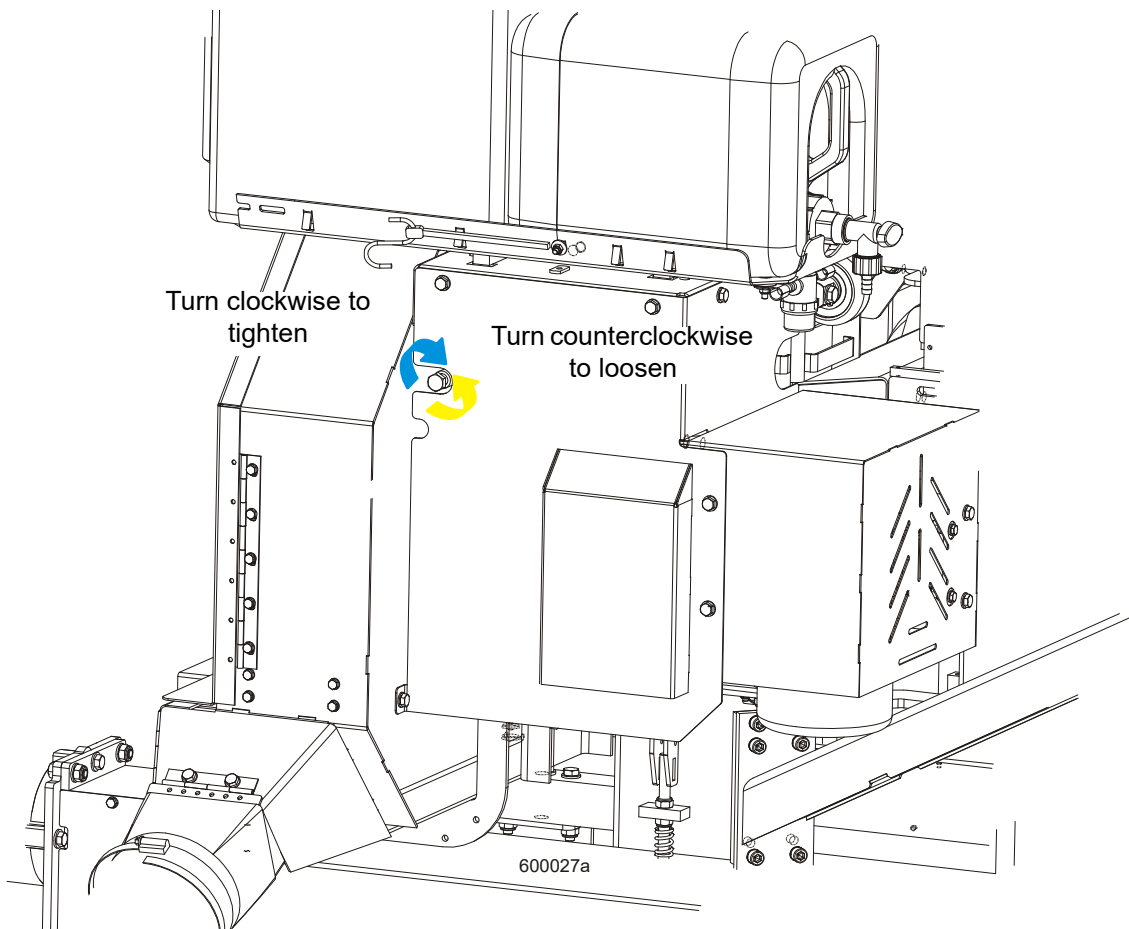


FIG. 4-2

4.8 Up/Down System

750

Adjust the up/down chain tension as needed. Measure the chain tension with the head all the way to the top of the vertical mast. Find the chain adjustment bolt at the bottom of the mast. Use the adjustment nut to adjust the bolt until the center of the chain can be deflected 3/4" (1.9cm) with a 5 lbs (2.3 KG) deflection force.

CAUTION! Do not overtension the chain. Overtensioning the chain may lead to early failure of the up/down gear reducer.

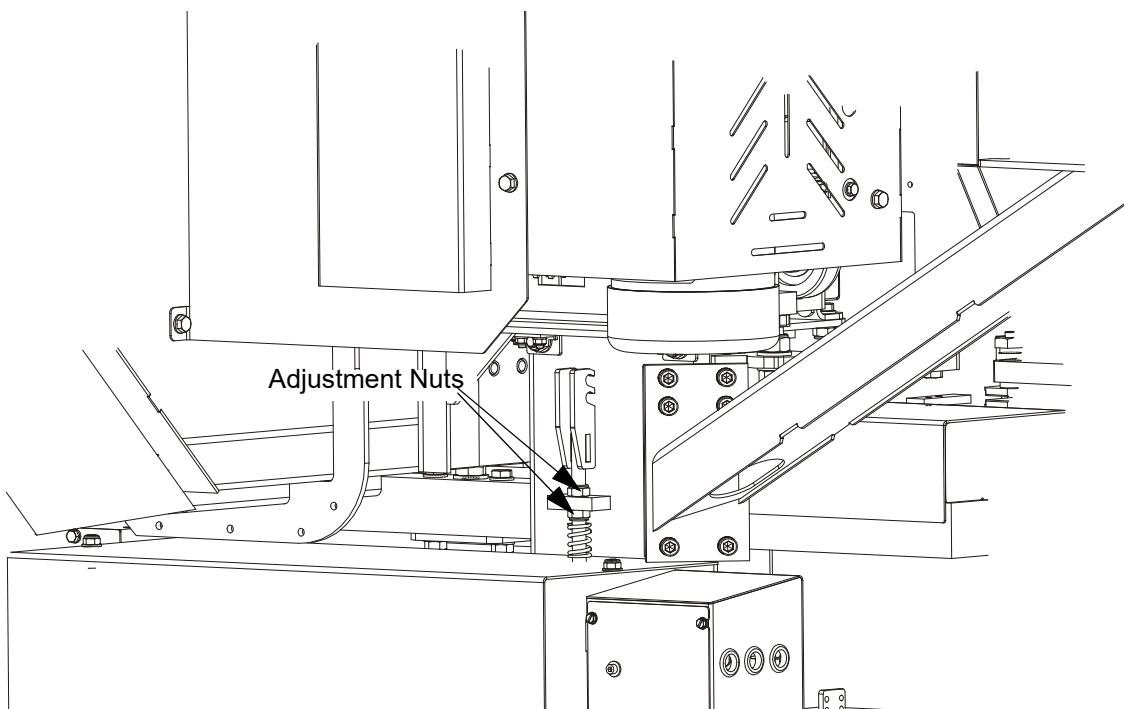


FIG. 4-2

1. Adjust the motor belt tension as needed. To do this, loosen the motor mounting bolts and turn adjustment bolts clockwise or counterclockwise evenly until the belt is properly tensioned. Tighten the motor mounting bolts.

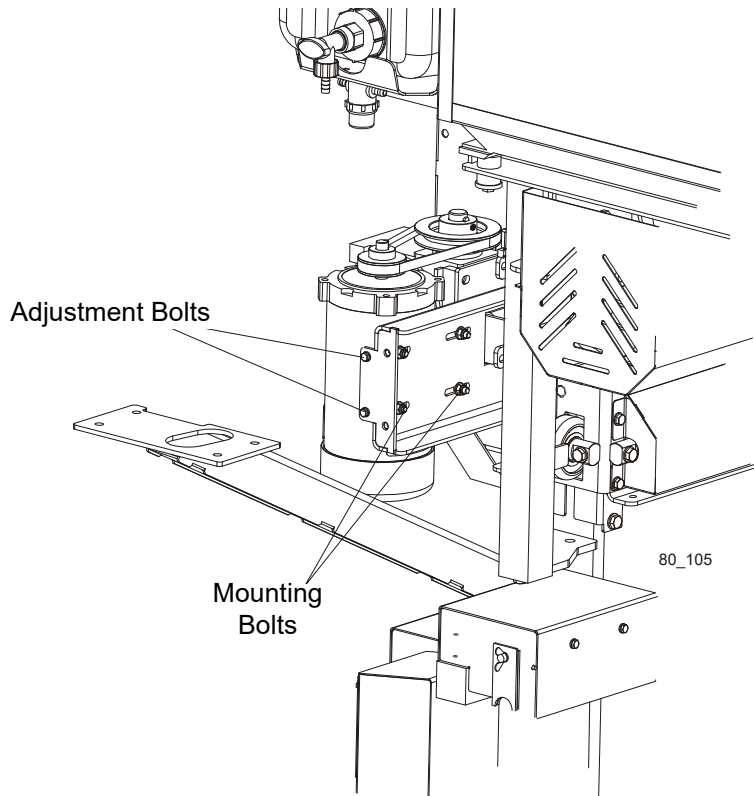


FIG. 4-2




Periodically check the belt for wear. Replace any damaged or worn belts as needed.

2. If oil leaks from the gear reducer, please contact Wood-Mizer Customer Service.

4.9 Power Feed System

See Figure 4-3. Adjust the power feed chain as needed. Measure the power feed chain tension with the saw head all the way toward the front of the mill. Use the two lock nuts at the rear of the mill to tighten or loosen the power feed chain. Adjust the chain until it measures 7 to 8 inches (17.8 to 20.3 cm) from the top of the top rail at its lowest point.

 **CAUTION!** Do not overtighten the power feed chain. Damage to the power feed motor may result.

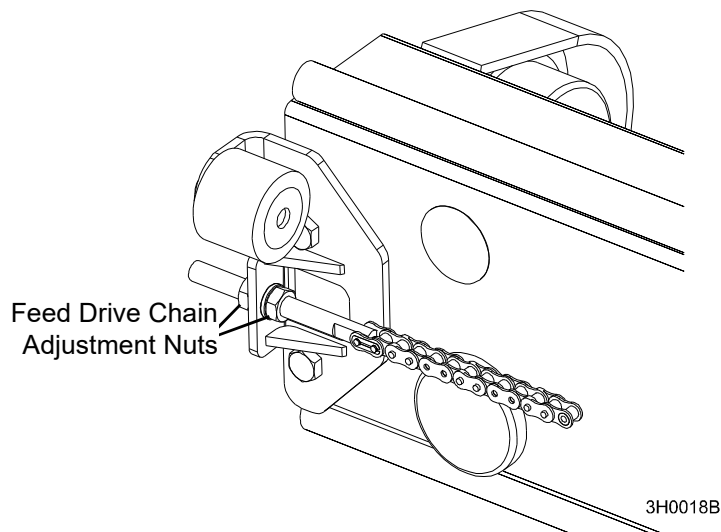


FIG. 4-3

4.10 Hydraulic System

1. Check the hydraulic fluid level every fifty hours of operation. Add fluid as necessary.

50

If the sawmill is used in a place with high humidity, drain and replace two quarts (.95 liters) of hydraulic fluid every six months. This will drain any accumulated water and help prevent pump failure due to water ingestion. It also will prevent excessive fluid wear and allow the fluid to maintain its hot end performance. If humidity is not a problem, drain and replace one gallon (3.8 liters) of fluid every year to prevent fluid wear.

2. If you are operating in temperatures -20° F to 100° F (-29° C to 38° C), use an all-weather hydraulic fluid such as Exxon Univas J26. For alternate fluids and/or other temperature ranges, refer to the chart below. Operating above the recommended temperature range of a fluid could result in excessive pump wear. Operating below the recommended temperature range could result in reduced hydraulic cylinder speed.

See Figure 4-4.

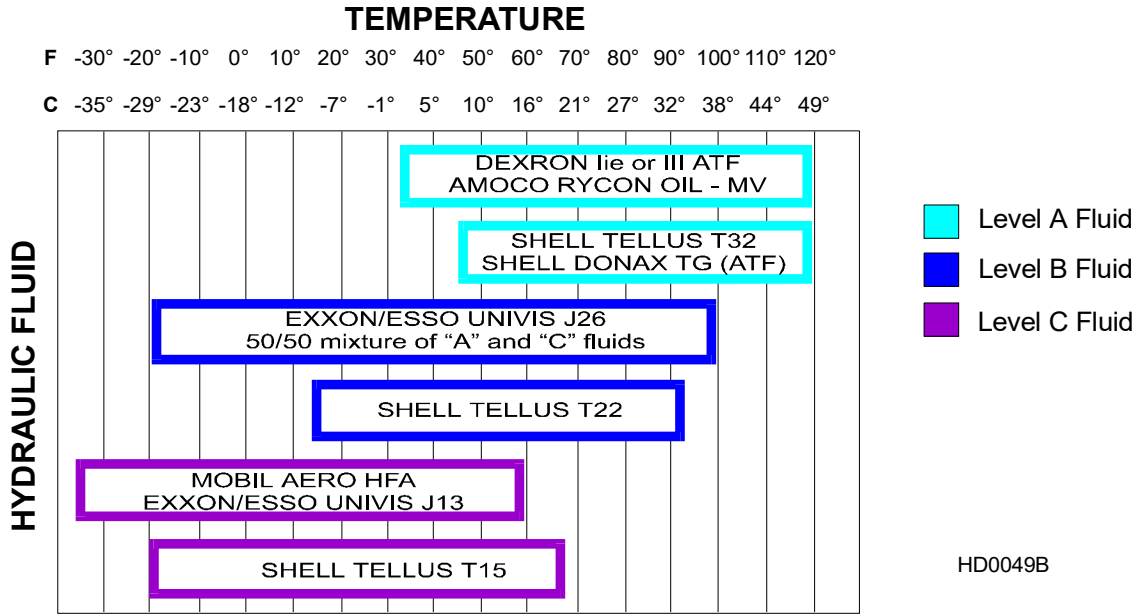


FIG. 4-4

- 3. Replace the oil filter every 500 hours of operation.
- 4. Periodically check all hydraulic hoses and fittings. Replace as necessary.

MAINTENANCE LOG

(Check Engine And Option Manuals For Additional Maintenance Procedures)

DAILY MAINTENANCE PROCEDURES

Lubricate Blade Guide Rollers	See Section 5.2	Daily - Every 4 Hours	DAILY MAINTENANCE PROCEDURES									
Check Blade Screw	See Section 5.2	Daily - Every Blade Change										
Check Blade Guide Roller Performance	See Section 5.2	Daily - Every Blade Change										
Remove Excess Sawdust From Blade Wheel Housings And Sawdust Chute	See Section 5.3	Daily - Every Blade Change										
Clean Sawdust From Hydraulic Loader Fuses, Battery Box Lid & Track Cover	See Section 5.3	Daily - Every 8 Hours										
Clean And Lubricate Track	See Section 5.4	Daily - Every 8 Hours										
Remove Sawdust From Upper Track Roller Housings	See Section 5.4	Bi-Weekly - Every 25 Hours										
Clean And Lubricate Upper Track Wiper	See Section 5.4	Bi-Weekly - Every 25 Hours										
PROCEDURE	REFERENCE	TOTAL HOURS OF OPERATION										
		FILL IN THE DATE AND THE MACHINE HOURS AS YOU PERFORM EACH PROCEDURE. A SHADED BOX INDICATES MAINTENANCE IS NOT NEEDED AT THIS TIME.										
		50 HRS	100 HRS	150 HRS	200 HRS	250 HRS	300 HRS	350 HRS	400 HRS	450 HRS	500 HRS	
Clean & lube mast rails	See Section 5.5											
Lubricate drum switches	See Section 5.5											
Grease pivot points and bearings/Oil chains	See Section 5.6											
Lubricate blade tensioner screwhandle and rods	See Section 5.6 See Section 5.8											
Rotate drive/idle blade wheel belts/Check for wear	See Section 5.9											
Check brake strap tension	See Section 5.8											
Check belt tensions	See Section 5.9 See Section 5.11 See Section 5.12											
Replace cylinder drive bearing fluid	See Section 5.13											
Check feed & up/down chain tensions	See Section 5.11 See Section 5.12											
Check up/down & power feed gear box fluid levels	See Section 5.11 See Section 5.12											
Inspect hydraulic lines & fittings	See Section 5.10											
Check hydraulic fluid level	See Section 5.10											
Replace hydraulic system filter	See Section 5.10											
Inspect hydraulic pump, power feed and up/down motor brushes	See Section 5.10 See Section 5.11 See Section 5.12											
Grease up/down shaft bearing	See Section 5.11											

MAINTENANCE LOG

PROCEDURE	REFERENCE	TOTAL HOURS OF OPERATION									
		FILL IN THE DATE AND THE MACHINE HOURS AS YOU PERFORM EACH PROCEDURE. A SHADED BOX INDICATES MAINTENANCE IS NOT NEEDED AT THIS TIME.									
		550 HRS	600 HRS	650 HRS	700 HRS	750 HRS	800 HRS	850 HRS	900 HRS	950 HRS	1000 HRS
Clean & lube mast rails	See Section 5.5										
Lubricate drum switches	See Section 5.5										
Grease pivot points and bearings/Oil chains	See Section 5.6										
Lubricate blade tensioner screwhandle and rods	See Section 5.6 See Section 5.8										
Rotate drive/idle blade wheel belts/Check for wear	See Section 5.9										
Check brake strap tension	See Section 5.8										
Check belt tensions	See Section 5.9 See Section 5.11 See Section 5.12										
Replace cylinder drive bearing fluid	See Section 5.13										
Check feed & up/down chain tensions	See Section 5.11 See Section 5.12										
Check up/down & power feed gear box fluid levels	See Section 5.11 See Section 5.12										
Inspect hydraulic lines & fittings	See Section 5.10										
Check hydraulic fluid level	See Section 5.10										
Replace hydraulic system filter	See Section 5.10										
Inspect hydraulic pump, power feed and up/down motor brushes	See Section 5.10 See Section 5.11 See Section 5.12										
Grease up/down shaft bearing	See Section 5.11										

MAINTENANCE LOG

PROCEDURE	REFERENCE	TOTAL HOURS OF OPERATION									
		FILL IN THE DATE AND THE MACHINE HOURS AS YOU PERFORM EACH PROCEDURE. A SHADED BOX INDICATES MAINTENANCE IS NOT NEEDED AT THIS TIME.									
		1050 HRS	1100 HRS	1150 HRS	1200 HRS	1250 HRS	1300 HRS	1350 HRS	1400 HRS	1450 HRS	1500 HRS
Clean & lube mast rails	See Section 5.5										
Lubricate drum switches	See Section 5.5										
Grease pivot points and bearings/Oil chains	See Section 5.6										
Lubricate blade tensioner screwhandle and rods	See Section 5.6 See Section 5.8										
Rotate drive/idle blade wheel belts/Check for wear	See Section 5.9										
Check brake strap tension	See Section 5.8										
Check belt tensions	See Section 5.9 See Section 5.11 See Section 5.12										
Replace cylinder drive bearing fluid	See Section 5.13										
Check feed & up/down chain tensions	See Section 5.11 See Section 5.12										
Check up/down & power feed gear box fluid levels	See Section 5.11 See Section 5.12										
Inspect hydraulic lines & fittings	See Section 5.10										
Check hydraulic fluid level	See Section 5.10										
Replace hydraulic system filter	See Section 5.10										
Inspect hydraulic pump, power feed and up/down motor brushes	See Section 5.10 See Section 5.11 See Section 5.12										
Grease up/down shaft bearing	See Section 5.11										

MAINTENANCE LOG

PROCEDURE	REFERENCE	TOTAL HOURS OF OPERATION									
		FILL IN THE DATE AND THE MACHINE HOURS AS YOU PERFORM EACH PROCEDURE. A SHADED BOX INDICATES MAINTENANCE IS NOT NEEDED AT THIS TIME.									
		1550 HRS	1600 HRS	1650 HRS	1700 HRS	1750 HRS	1800 HRS	1850 HRS	1900 HRS	1950 HRS	2000 HRS
Clean & lube mast rails	See Section 5.5										
Lubricate drum switches	See Section 5.5										
Grease pivot points and bearings/Oil chains	See Section 5.6										
Lubricate blade tensioner screwhandle and rods	See Section 5.6 See Section 5.8										
Rotate drive/idle blade wheel belts/Check for wear	See Section 5.9										
Check brake strap tension	See Section 5.8										
Check belt tensions	See Section 5.9 See Section 5.11 See Section 5.12										
Replace cylinder drive bearing fluid	See Section 5.13										
Check feed & up/down chain tensions	See Section 5.11 See Section 5.12										
Check up/down & power feed gear box fluid levels	See Section 5.11 See Section 5.12										
Inspect hydraulic lines & fittings	See Section 5.10										
Check hydraulic fluid level	See Section 5.10										
Replace hydraulic system filter	See Section 5.10										
Inspect hydraulic pump, power feed and up/down motor brushes	See Section 5.10 See Section 5.11 See Section 5.12										
Grease up/down shaft bearing	See Section 5.11										

MAINTENANCE LOG

PROCEDURE	REFERENCE	TOTAL HOURS OF OPERATION									
		FILL IN THE DATE AND THE MACHINE HOURS AS YOU PERFORM EACH PROCEDURE. A SHADED BOX INDICATES MAINTENANCE IS NOT NEEDED AT THIS TIME.									
		2050 HRS	2100 HRS	2150 HRS	2200 HRS	2250 HRS	2300 HRS	2350 HRS	2400 HRS	2450 HRS	2500 HRS
Clean & lube mast rails	See Section 5.5										
Lubricate drum switches	See Section 5.5										
Grease pivot points and bearings/Oil chains	See Section 5.6										
Lubricate blade tensioner screwhandle and rods	See Section 5.6 See Section 5.8										
Rotate drive/idle blade wheel belts/Check for wear	See Section 5.9										
Check brake strap tension	See Section 5.8										
Check belt tensions	See Section 5.9 See Section 5.11 See Section 5.12										
Replace cylinder drive bearing fluid	See Section 5.13										
Check feed & up/down chain tensions	See Section 5.11 See Section 5.12										
Check up/down & power feed gear box fluid levels	See Section 5.11 See Section 5.12										
Inspect hydraulic lines & fittings	See Section 5.10										
Check hydraulic fluid level	See Section 5.10										
Replace hydraulic system filter	See Section 5.10										
Inspect hydraulic pump, power feed and up/down motor brushes	See Section 5.10 See Section 5.11 See Section 5.12										
Grease up/down shaft bearing	See Section 5.11										

MAINTENANCE LOG

PROCEDURE	REFERENCE	TOTAL HOURS OF OPERATION									
		FILL IN THE DATE AND THE MACHINE HOURS AS YOU PERFORM EACH PROCEDURE. A SHADED BOX INDICATES MAINTENANCE IS NOT NEEDED AT THIS TIME.									
		2550 HRS	2600 HRS	2650 HRS	2700 HRS	2750 HRS	2800 HRS	2850 HRS	2900 HRS	2950 HRS	3000 HRS
Clean & lube mast rails	See Section 5.5										
Lubricate drum switches	See Section 5.5										
Grease pivot points and bearings/Oil chains	See Section 5.6										
Lubricate blade tensioner screwhandle and rods	See Section 5.6 See Section 5.8										
Rotate drive/idle blade wheel belts/Check for wear	See Section 5.9										
Check brake strap tension	See Section 5.8										
Check belt tensions	See Section 5.9 See Section 5.11 See Section 5.12										
Replace cylinder drive bearing fluid	See Section 5.13										
Check feed & up/down chain tensions	See Section 5.11 See Section 5.12										
Check up/down & power feed gear box fluid levels	See Section 5.11 See Section 5.12										
Inspect hydraulic lines & fittings	See Section 5.10										
Check hydraulic fluid level	See Section 5.10										
Replace hydraulic system filter	See Section 5.10										
Inspect hydraulic pump, power feed and up/down motor brushes	See Section 5.10 See Section 5.11 See Section 5.12										
Grease up/down shaft bearing	See Section 5.11										

SECTION 5 TROUBLESHOOTING

5.1 Sawing Problems

PROBLEM	CAUSE	SOLUTION
Blades dull quickly	Dirty logs	Clean or debark logs, especially on the entry sides of the cut.
	The blade teeth heated too much during sharpening	Grind just enough metal to restore sharpness to the teeth. Use water/coolant while sharpening your blades.
	Poor sharpening techniques	Make sure the blade teeth are sharpened properly (see Sharpener Manual).
Blades break prematurely	The blade wheel rubber belts are worn to a point that the blade contacts the metal pulley - look for shiny spots on the edges of wheels.	Replace the blade wheel belts (B-57).
	Poor sharpening techniques	See Sharpener Manual
	Blade tension too tight	Tension the blade to the recommended specifications.
Blade does not track right on wheels	The cant adjustment is incorrect.	Readjust.
	Flat/worn blade wheel belts	Replace the B-57 belts.
Blade guides do not spin during cutting	Frozen bearings	Replace the bearings.
	Stiff bearings	Grease the bearings.
Drive belts wear prematurely or jump	Motor and drive pulleys out of alignment	Align the pulleys. See Section 5.5 Motor Pulley Alignment.

PROBLEM	CAUSE	SOLUTION
Boards thick or thin on ends or middle of boards	Stress in the log which causes the log to not lay flat on the bed	After the log has been squared, take equal cuts off the opposing sides. Take a board off the top. Turn the log 180 degrees. Take a board off. Repeat, keeping the heart in the middle of the cant, and making it your last cut.
	Incorrect tooth set	Resharpener and reset the blade.
	Bed rails misaligned	Realign the bed rails.
Height adjustment jumps or stutters when moving up or down.	The sawmill mast needs lubrication.	Lubricate the mast track surface.
	Up/down chain improperly adjusted	Adjust the up/down chain.
	Drive belt too loose	Adjust the drive belt.
Lumber is not square.	The vertical side supports are not square to the bed.	Adjust the side supports.
	The blade is not parallel to the bed rails.	Adjust bed rails parallel to blade.
	Sawdust or bark between the log/cant and bed rails	Remove the particles.
	Tooth set problem	Resharpener and reset the blade.
Sawdust Builds up on track.	Excessive lubrication	Do not lubricate the track.
	Track wiper worn	Adjust the wiper to firmly contact the track.
	The track is sticky.	Clean the track with solvent and apply silicone spray.
Wavy cuts	Too high feed rate	Reduce the feed rate.
	Improperly sharpened blade (This will be the problem 99% of the time!)	Resharpener the blade (See the Sharpener Manual - read the entire manual!)
	Blade guides improperly adjusted	Adjust the blade guides.
	Sap buildup on the blade	Use the Water Lube.
	Tooth set problem	Resharpener and reset the blade.

5.2 Electrical Problems

PROBLEM	CAUSE	SOLUTION
Up/down movement too slow	Up/down rollers stuck	Adjust the rollers.
	Up/down belt too loose	Adjust the belt to be as loose as possible without slipping
	Thermal overload tripped	Reset.
Up/down or power feed motors do not work.	Worn/dirty contacts in the drum switch	Replace the switch or remove the control panel cover and clean the contacts.
	Bad key switch	Replace the key switch.
	Burned-out motor	Replace the motor.
Power feed motor does not work.	Sawdust buildup in the power feed pulleys	Sawdust buildup puts mechanical bind on power feed which causes thermal overload. Remove sawdust from the pulleys and operate normally. Reset overload and operate normally.
Up/down or power feed switches remain engaged when switch is released.	Worn or dirty contacts in the drum switches	Manually move the power feed or up/down switch to the neutral or "off" position. Replace the drum switch or remove the control panel cover and clean and lubricate the contacts. NOTE: Use only contact grease supplied by Wood-Mizer.
	Drum switch spring broken	Manually move the power feed or up/down switch back to the neutral or "off" position. Replace the drum switch spring.
Up/down or power feed motors overheat and loose power.	System overload or bind occurred	Correct the problem. See Section 5.3 Power Feed Problems. Allow the motor to cool before restarting.
	Normal operation factors exceeded (e.g. up/down control jockeyed excessively)	Allow the motor to cool before restarting.

5.3 Power Feed Problems.

PROBLEM	CAUSE	SOLUTION
Power feed is jerky at low speeds or does not move until speed is above halfway mark.	The drum switch is dirty.	Clean the drum switch and lubricate with the contact grease supplied by Wood-Mizer.
	The drum switch contacts are bad.	Check that the contacts are in good condition and positively close the circuit.
	The components are loose or the wires are broken.	Replace or repair the PC board.
Power feed is jerky when shaft of feed rate dial is moved back and forth.	The variable speed switch is bad - perform the variable speed switch test.	Replace the variable speed switch.
Power feed is jerky, but power feed motor runs properly at all speeds.	The problem is mechanical.	Refer to the Mechanical Test.
Power feed is sluggish, trips circuit breaker or current limit.	Sawdust buildup in the power feed cover.	Remove the power feed belt cover and remove sawdust.

5 Troubleshooting

Power Feed Problems.

PROBLEM	CAUSE	SOLUTION
The power feed motor overheats.	The middle track oiler is dragging.	Clean and lubricate the middle track oiler. Allow the motor to cool before restarting.
	The sawmill ground is not level.	Level the sawmill. Allow the motor to cool before restarting.
	Track roller bearing drag is excessive.	Lubricate the bearings. Replace tight bearings. Allow the motor to cool before restarting.
	The lower track rollers are not aligned properly.	Check the stop clearance from the lower track rail. Allow the motor to cool before restarting.
	The power feed chain is dragging.	Make sure the chain is centered on cam follower bearings. Clean and lubricate the chain. Allow the motor to cool before restarting.
	The chain is improperly tensioned.	Adjust the chain tension. Allow the motor to cool before restarting.
	The seat load is excessive.	Check the seat bearings for freedom of movement. Loosen the clamping screw 1/4 turn. Allow the motor to cool before restarting.
	The power feed is binding.	Adjust the belt tension. Check the condition of belt, pulleys, bearings, and sprocket. Check the motor for ground fault. Allow the motor to cool before restarting.
	The saw head load is excessive.	Avoid unnecessary modifications to the saw head that would give it extra weight. Allow the motor to cool before restarting.
	The blade is dull or improperly set.	Use proper blade maintenance procedures (see Sharpener or Toothsetter manual). Allow the motor to cool before restarting.

5.4 Hydraulic Problems

PROBLEM	CAUSE	SOLUTION
<p>You can actuate any hydraulic handle, but get no response from the pump.</p>	Saw head not positioned properly to provide drive signal to the hydraulic control.	Move the mast so that it contacts the power supply strip. Check the contacts and strip for tarnish or loose wires. Clean as necessary.
	Poor ground connection	Check the negative contact and lower track rail. Check the contacts and track rails for tarnish or loose wires. Clean as necessary.
	The circuit breaker tripped.	Reset the breaker.
	Defective pump motor	Replace.
	Poor cable connection	Check the cable connections.
<p>You can get response from the pump by actuating all but one or two handles.</p>	Defective motor pump contactor	Replace.
	Valve assembly switch contacts not properly adjusted	<p>Locate the valve switch at the bottom of the valve assembly. Use a 3 mm allen wrench to loosen the set screw on each of the five switch contacts. Press each contact to the valve block and tighten the contact set screws to secure in place. CAUTION! Do not overtighten!</p> <p>NOTE: Do not adjust the valve switch or switch spring; they have been preset at the factory.</p>

5 Troubleshooting

Hydraulic Problems

PROBLEM	CAUSE	SOLUTION
	Low fluid level	Check the fluid level. Add an all-season hydraulic fluid such as Amoco Rycon Oil MV, Mobil Multipurpose ATF (automatic transmission fluid) or Exxon/Esso Univas J26 until the level is 4 - 4 1/2" from the bottom of reservoir with all cylinders retracted.
	The pressure relief valve moved from its proper setting.	Adjust the pressure relief valve.
	Low air temperature causing oil to thicken	Allow the fluid to warm up. Use Exxon/Esso Univas J26 oil allowing operation in temperatures of -29 to 38 C.
Pump motor runs continuously when power contact is made.	The pump motor solenoid is stuck closed.	Tapping the solenoid may solve this problem temporarily. Replace the solenoid.
Fluid leaks from around cylinder piston ram.	Worn seals	Replace the seals in the cylinder. Check the piston ram for abrasive weld that may be causing premature seal failure.
Fluid leak around pump box	Loose seal or fitting	Wipe the pump off completely to locate the cause of the leak. You may have to unbolt the pump to wipe behind it. NOTE: Movement of the sawmill can cause the fluid to slosh up into the foam filter in the reservoir cap, and subsequently spray out, giving the appearance that fluid is leaking from the pump.

PROBLEM	CAUSE	SOLUTION
Hydraulic side supports go down before or at same time as log turner.	Dirt in the sequence valve	Remove the sequence valve and clean thoroughly with kerosene. NOTE: Be sure to reassemble the valve and install it in its original position on the cylinder.
	The retainer in sequence valve is worn	Replace the sequence valve.
Hydraulic turner goes up before or at same time as side supports.	Low air temperature caused the fluid to thicken.	Allow the fluid to warm up. Use Exxon/Esso Univis J26 oil allowing operation in temperatures of -29 to 38 C.
	Spring weakening in the log turner sequence valve	Locate the sequence valve at thr top of turner cylinder. Turn the spring in about 1/4 turn.
	Dirt in the sequence valve	Remove the sequence valve and clean thoroughly with kerosene. NOTE: Be sure to reassemble the valve and install it in its original position on the cylinder.
	The retainer in sequence valve is worn.	Replace the sequence valve.
	Low air temperature causing oil to thicken	Allow the fluid to warm up. Use Exxon/Esso Univis J26 oil allowing operation in temperatures of -29 to 38 C.
	Spring weakening in the log turner sequence valve	Locate the sequence valve at the bottom of turner cylinder. Turn the spring in about 1/4 turn.

5.5 Motor Pulley Alignment

1. Install the drive belt.
2. Use a straight edge to align the motor pulley to the blade drive pulley. Check if the motor pulley is aligned with the blade drive pulley. Loosen the bolts in the motor mount plate and move the motor if necessary.
3. Check that the front-to-back movement of the motor does not exceed 1/4". Tighten the motor mount U-bolts if necessary.
4. Engage the clutch handle and adjust the drive belt tension to 7/16" deflection with a deflection force of 10 lbs.
5. Recheck the pulley alignment with the clutch handle engaged. Adjust if necessary.
6. Adjust the drive belt support to 1/4" ($\pm 1/32$) from the belt while engaged.

5.6 Power Feed Variable Speed Switch Test

With the feed rate dial switch all the way down, move the shaft of the dial back and forth to see if there is a jerky response. Turn the dial and move the shaft back and forth again. Repeat several times. If the jerkiness occurs at the same location on the dial several times, you need to replace the variable speed switch.

5.7 Power Feed Preliminary Test

1. This test will determine if the problem is mechanical or electrical. Remove the drive belt from the power feed drive pulley.
2. Turn the key switch to the ACC position. Put the saw head forward/reverse switch into the forward position and turn the feed rate dial through all speeds. If the power feed motor runs properly at all speeds, the problem is a mechanical one instead of an electrical one.

5.8 Power Feed Mechanical Test

1. Remove the weight from the track rollers. They should turn smoothly and easily with very little play.
2. Make sure the middle track cover is not bent or touching the top rail.
3. Make sure the middle track oiler is free of sawdust buildup.
4. Make sure the power feed chain is not stiff from rust. Also make sure the chain is not too tight.
5. Make sure the power feed chain cam bearing is not touching the main frame tube.
6. Make sure there is no sap or rust on the rails.
7. Make sure the block on the lower track roller assembly is not rubbing the lower rail. Also make sure the track rollers are not too tight.
8. Make sure the power feed belt is properly tightened.

SECTION 6 SAWMILL ALIGNMENT

The Wood-Mizer sawmill is factory aligned. Two alignment procedures are available to realign the sawmill if necessary. The Routine Alignment instructions should be performed as necessary to solve sawing problems not related to blade performance. The Complete Alignment procedure should be performed approximately every 1500 hours of operation (sooner if you regularly transport the sawmill over rough terrain).

6.1 Routine Alignment Procedure

Blade Installation and Positioning

1. Remove the blade and check the blade wheels. Remove any sawdust buildup from the surfaces of the wheels.
2. Install a clean blade and apply the appropriate tension. ([See Section 2.5](#))
3. Adjust the idle-side blade wheel horizontally to properly position the blade on the wheels. ([See Section 6.3](#))
4. Close the blade housing covers and make sure all persons are clear of the saw head.
5. Manually spin one of the blade wheels until the blade positions itself on them.

Saw Head Tilt Adjustment

As the blade enters a wide log or cant, the outside of the saw head will drop down slightly. To compensate for the drop, the saw head is adjusted 1/26" (1 mm) higher at the outside.

1. Move the saw head so the blade is positioned over a bed rail. Adjust the blade guide arm to 1/2" (15 mm) from full open.
2. Raise the saw head so the bottom of the blade measures 14 3/4" (375 mm) from the top surface of the bed rail near the inner blade guide assembly.

See Figure 6-1.

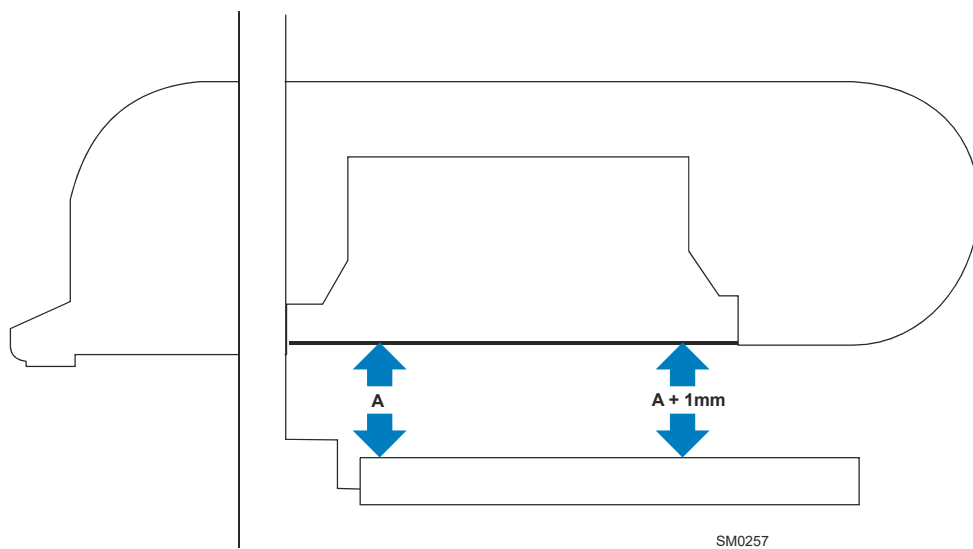
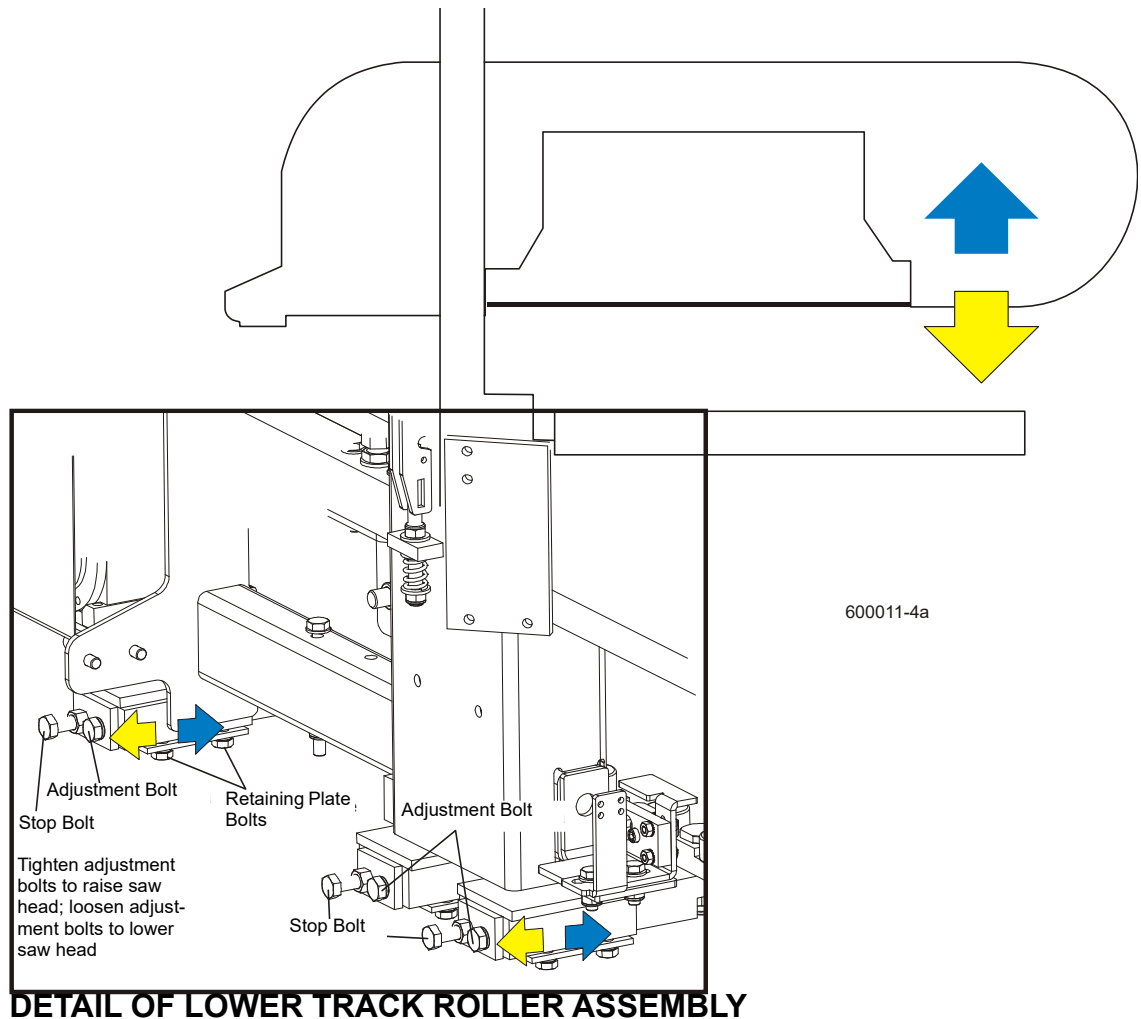


FIG. 6-1

3. Measure from the blade to the bed rail near the outer blade guide assembly. This measurement should be 1/26" (1 mm) higher than the measurement at the inner blade guide (i.e., it should be 14 13/16", 376 mm).

See Figure 6-2. To adjust the saw head tilt, use the bolts located at the bottom of the sawmill mast. Loosen the three sets of four retaining plate bolts. To raise the outside of the saw head, back the stop bolts out and then tighten the adjustment bolts. To lower the outside of the saw head, loosen the adjustment bolts and tighten the stop bolts. Recheck the measurement from the blade to the bed rails and adjust the stop bolts and adjustment bolts until the outside of the saw head is 1/26" (1 mm) higher than the inside. Retighten the retaining plate bolts.

**FIG. 6-2**

Blade Guide Arm Alignment

The blade guide arm moves the outer blade guide in and out. If the arm becomes loose, the blade guide will not guide the blade properly, causing inaccurate cuts. A loose blade guide arm can also cause blade vibration.

1. Adjust the blade guide arm in to 1/2" (15 mm) from fully closed.
2. Manually try to move the arm up and down. If you can move the arm by hand, you will need to tighten the arm rollers.

See Figure 6-3. Loosen the jam nuts and turn the adjustment bolts in to tighten the blade guide arm rollers. Retighten the jam nuts.

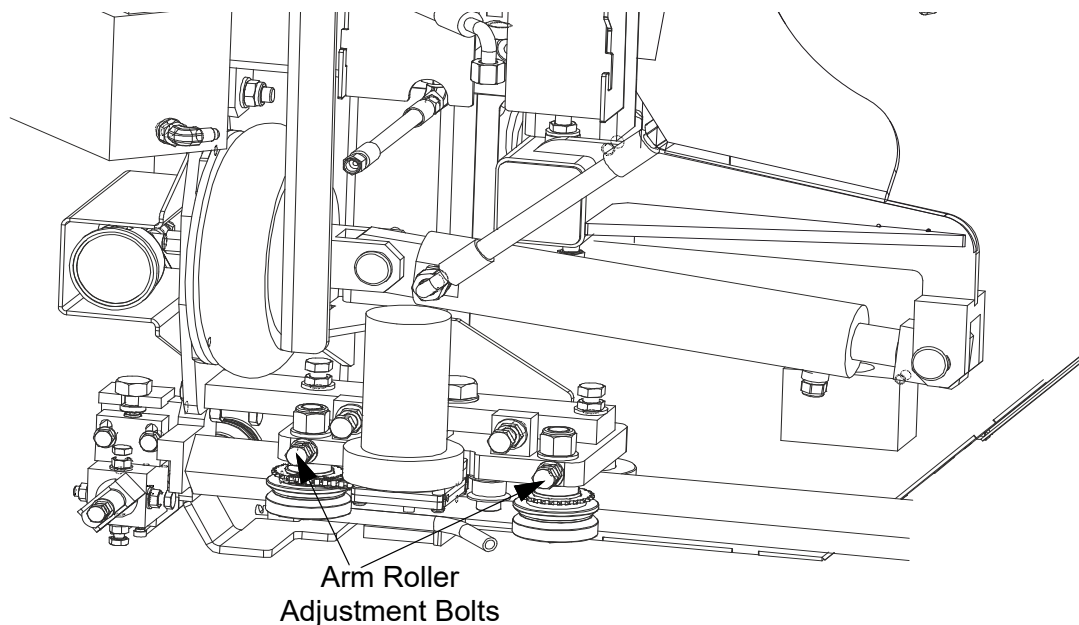


FIG. 6-3

After tightening the blade guide arm rollers, check that the arm is aligned properly.

Blade Guides

3. With the arm adjusted 1/2" (15 mm) from fully closed, measure the distance between the blade guide roller flange and the blade. If your sawmill is equipped with optional blade guide assembly (with two ceramic blocks), measure from the back of the blade to the back roller.

See Figure 6-4.

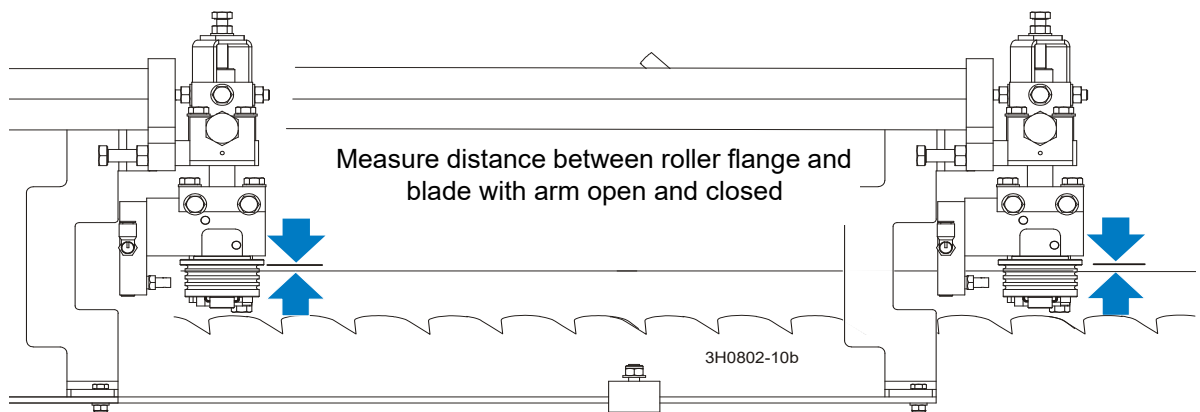


FIG. 6-4

4. Adjust the blade guide arm to 1/2" (15 mm) from fully open and remeasure the distance from the roller flange to the back of the blade. The two measurements should be the same. If not, adjust the blade guide arm tilt in the horizontal plane.

See Figure 6-5. Loosen the horizontal adjustment bolt jam nuts. To tilt the arm in toward the blade, loosen the right bolt and tighten the left bolt. To tilt the arm out away from the blade, loosen the left bolt and tighten the right bolt. Retighten the jam nuts and recheck the blade guide arm horizontal tilt.

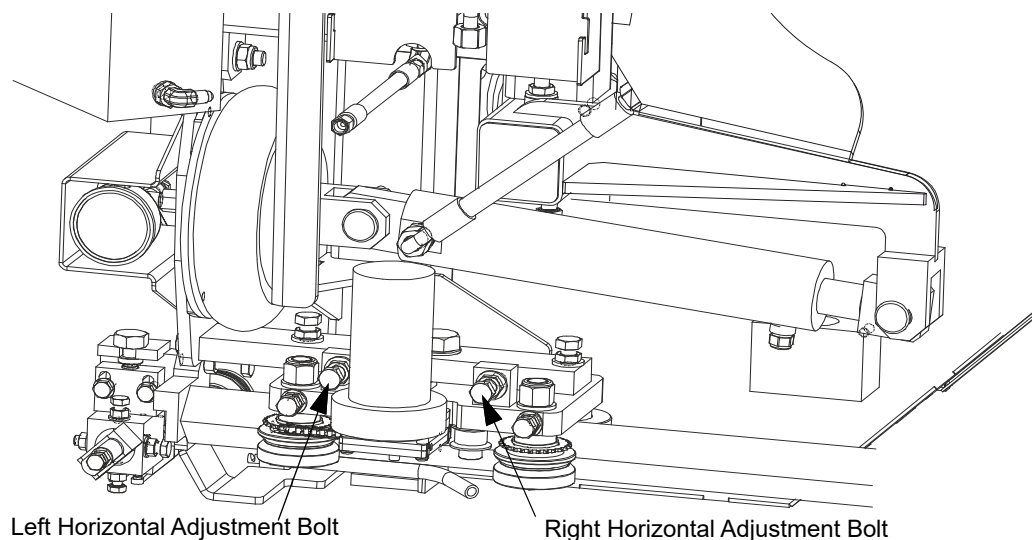


FIG. 6-5

5. Now check the vertical tilt of the blade guide arm. To do this, move the saw head so the blade guide arm is positioned over a bed rail.
6. With the arm 1/2" (15 mm) from fully closed, raise or lower the saw head until the bottom of the blade guide block is 15" (375 mm) from the top of the bed rail.

See Figure 6-6.

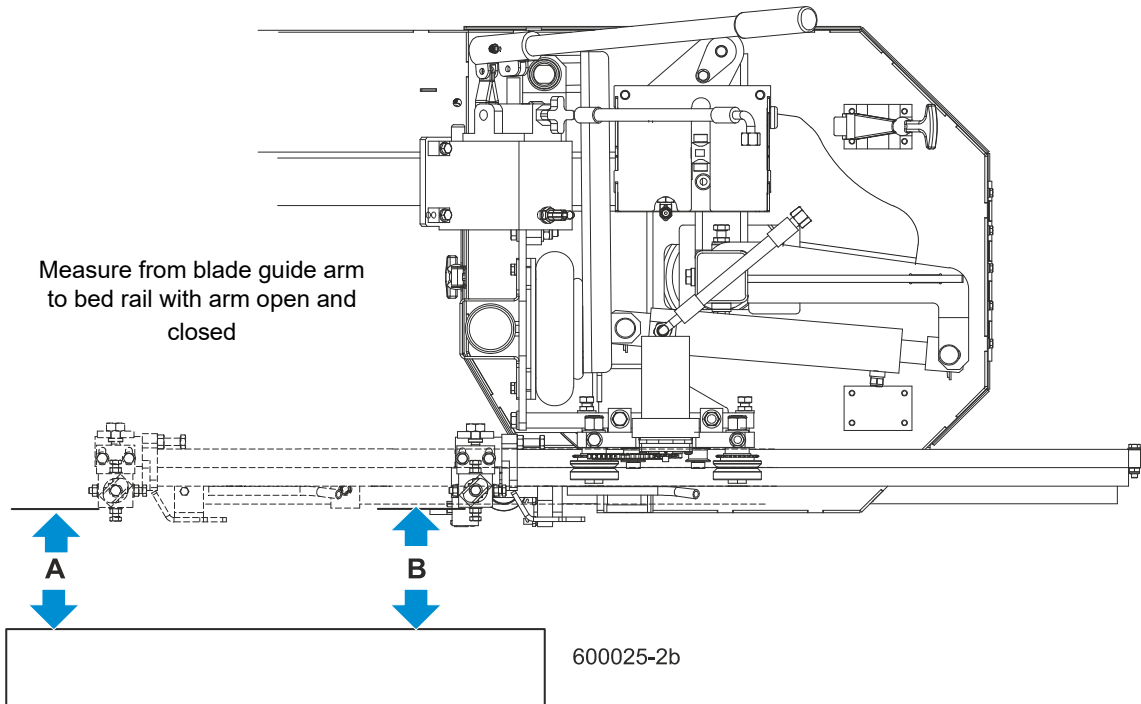
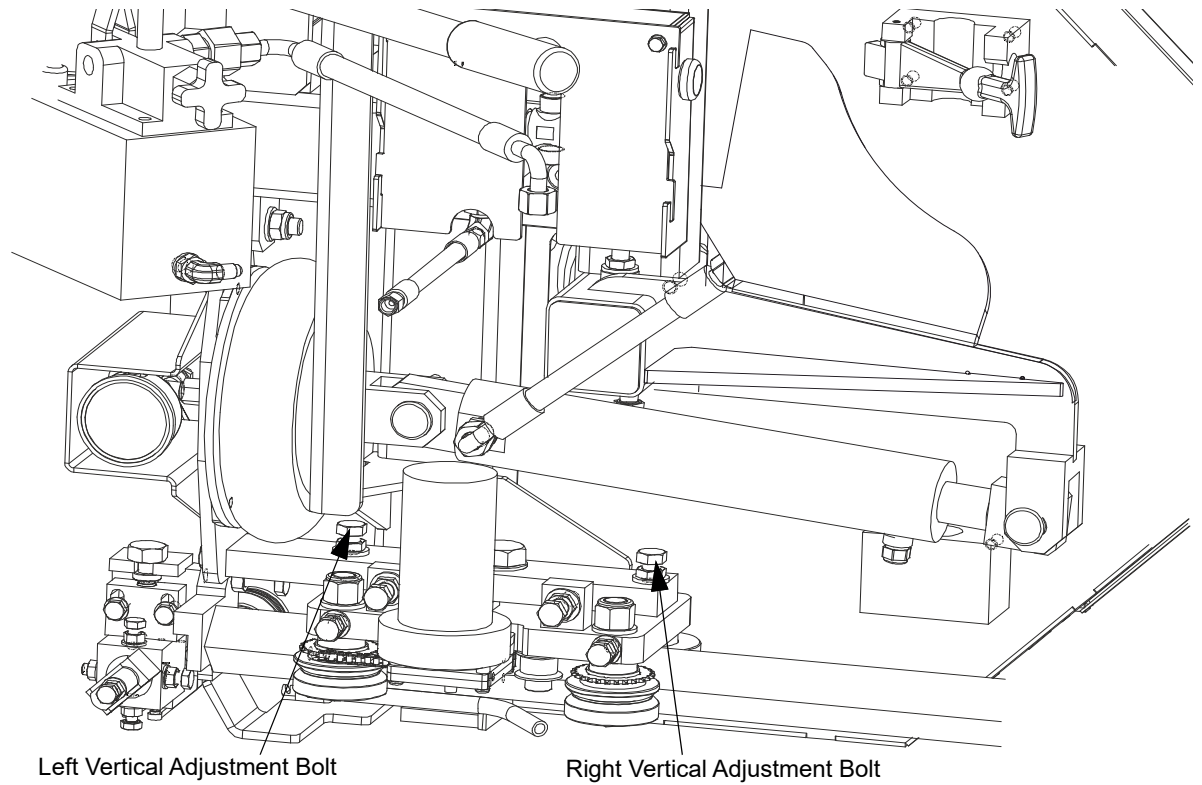


FIG. 6-6

7. Adjust the blade guide arm to 1/2" (15 mm) from fully open. Measure the distance from the blade guide mounting block to the bed rail. This measurement should be 15" (375 mm) or slightly higher because the saw head is tilted up 1/26" (1 mm) on the outside. If the blade guide is closer to the bed rail or more than 1/26" (1mm) higher with the arm open, adjust the blade guide arm vertically.

6**Sawmill Alignment***Routine Alignment Procedure*

See Figure 6-7. Loosen the vertical adjustment bolt jam nuts. To tilt the blade guide arm down, loosen the right bolt and tighten the left bolt. To tilt the blade guide arm up, loosen the left bolt and tighten the right bolt. Retighten the jam nuts and recheck the blade guide arm vertical tilt.

**FIG. 6-7**

Blade Guide Vertical Tilt Adjustment

The blade guides should be adjusted properly in the vertical plane. If the blade guides are tilted vertically, the blade will try to travel in the tilted direction.

A Blade Guide Alignment Tool (BGAT) is provided to help you measure the vertical tilt of the blade.

1. Open the adjustable blade guide arm 1/2" (15 mm) from full open.
2. Clip the alignment tool on the blade. Position the tool close to the outer blade guide assembly. Be sure the tool does not rest on a tooth or burr, and is lying flat against the blade.

See Figure 6-8.

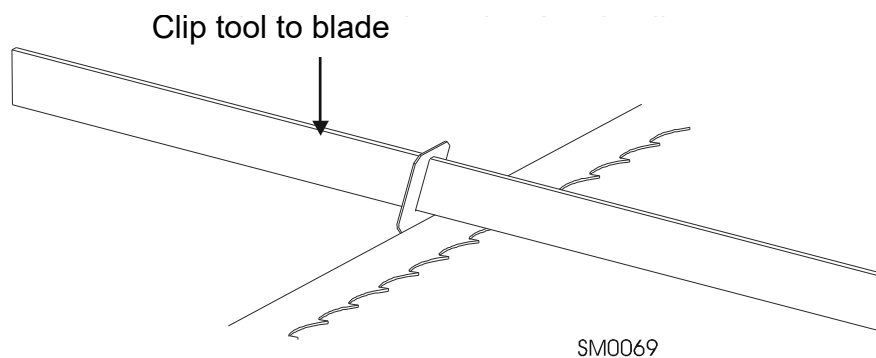


FIG. 6-8

3. Move the saw head so that the front end of the tool is positioned above the bed rail. Measure the distance from the bed rail to the bottom edge of the tool.
4. Move the saw head so that the back end of the tool is positioned above the bed rail. Measure again the distance from the bed rail to the bottom edge of the tool.
5. If the measurements from the tool to the bed rail are not equal within 1/26" (1 mm), adjust the vertical tilt of the outer blade guide.

See Figure 6-9. Loosen the jam nuts on the top and bottom vertical tilt adjustment screws. To tilt the roller up, loosen the bottom screw and tighten top screw. To tilt the roller down, loosen the top screw and tighten the bottom screw. Tighten the jam nuts and recheck the tilt of the blade.

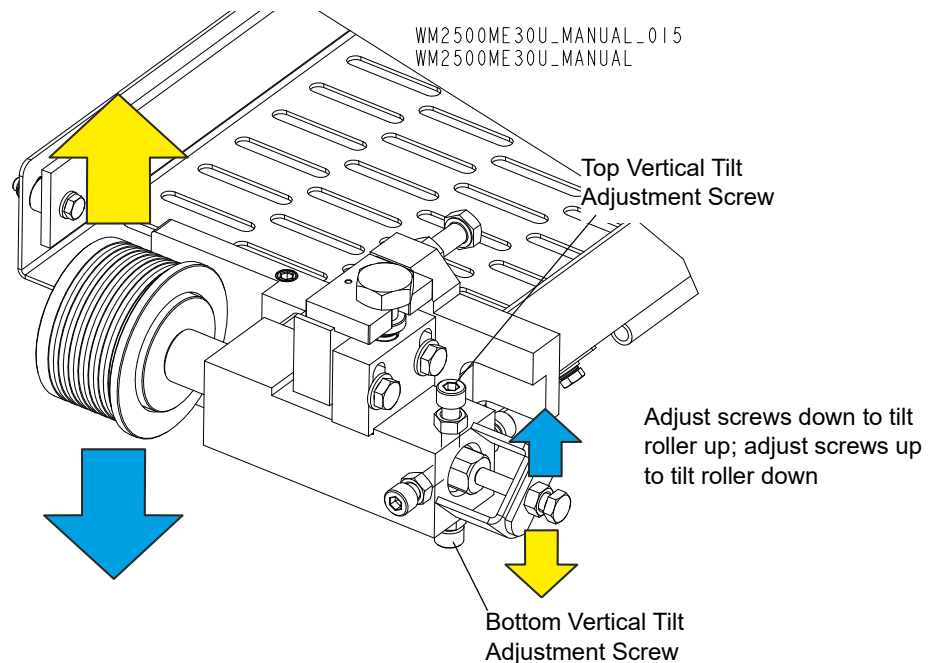


FIG. 6-9

6. Move the blade guide alignment tool close to the inner blade guide assembly and repeat the above steps. Adjust the vertical tilt of the inner blade guide if necessary.

Blade Guide Horizontal Tilt Adjustment

If the blade guides are tilted horizontally in the wrong direction, the back of the blade may contact the roller flange as the roller is spinning down, causing it to push the blade away from the roller.

1. Remove the blade guide alignment tool from the blade and adjust the blade guide arm halfway in.
2. Remove the clip from the blade guide alignment tool. Place the tool against the face of the outer blade guide roller.

See Figure 6-10.

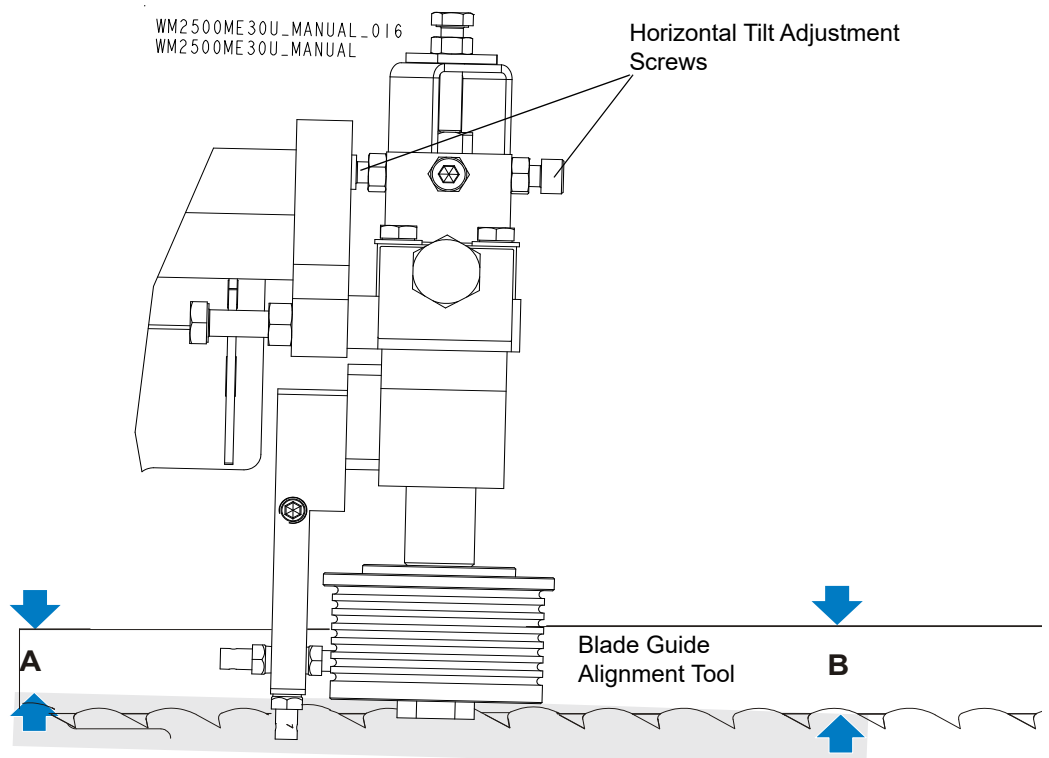


FIG. 6-10

3. Measure between the back edge of the blade and the tool at the end closest to the inner blade guide ("B").
4. Measure between the back edge of the blade and the other end of the tool ("A").

The roller should be tilted slightly to the left ('A' 1/8" [3 mm] less than 'B' ±1/8" [3 mm]).

See Figure 6-11. Loosen the jam nuts on the horizontal tilt adjustment screws. To tilt the roller left, loosen the right screw and tighten left screw. To tilt the roller right, loosen the left screw and tighten the right screw. Tighten the jam nuts and recheck the tilt of the blade.

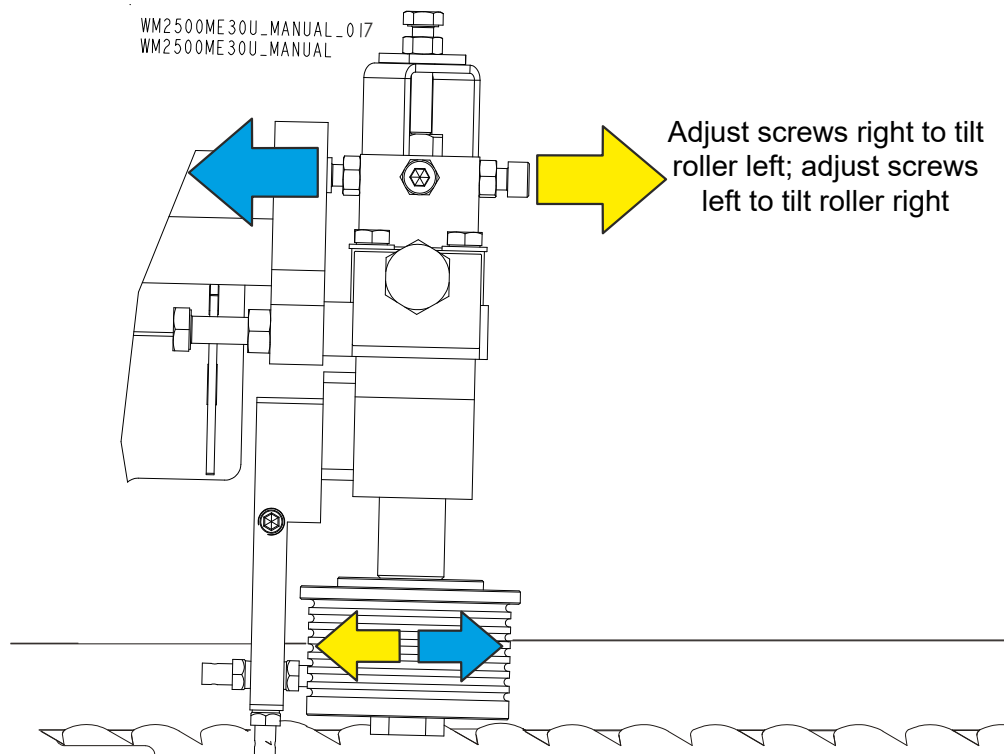


FIG. 6-11

5. Repeat the above steps for the inner blade guide assembly.

NOTE: Once the blade guides have been adjusted, any cutting variances are most likely caused by the blade. [See PBlade Handbook, Form #600.](#)

Guide Roller Flange Spacing

Each blade guide must be adjusted so the roller flange is the correct distance from the back edge of the blade. If the flange is too close to or too far from the blade, the sawmill will not cut accurately.

HINT: When adjusting the blade guide spacing, loosen the top set screw and one side set screw only. This will ensure horizontal and vertical tilt adjustments are maintained when the adjustment screws are retightened.

1. Measure the distance between the flange on the inner blade guide roller to the back edge of the blade. This distance should measure 1/8" (3 mm). Adjust the roller back or forward if necessary.

See Figure 6-12. Loosen the top and one side screw shown and the rear adjustment bolt if necessary. Tap the blade guide forward or backward until properly positioned. Retighten the screws and jam nuts.

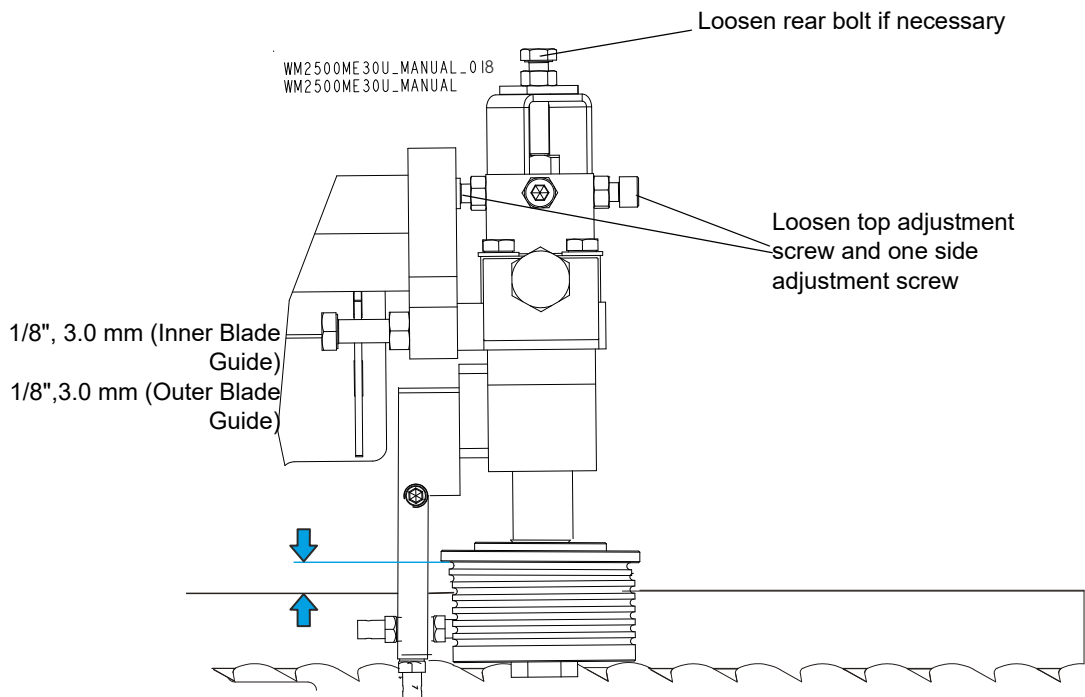


FIG. 6-12

2. Measure the distance between the flange on the outer blade guide roller to the back edge of the blade. This distance should measure 1/8" (3.0 mm). Adjust the roller back or forward if necessary.

6.2 Bed Frame

Levelling the Bed Frame in the Length Direction

NOTE: In some cases, when the ground has a large tilt, leg adjustment may not be sufficient to level the bed frame in the vertical plane. In such a case, level the sawmill as much as possible. This will not affect sawing accuracy.

Move the saw head so it is positioned over the log clamp tube in the middle of the bed frame. Place a level on the main frame tube, near the front end of the sawmill. If the tube is not level at this location, level it by adjusting the front leg.

See Figure 6-13.

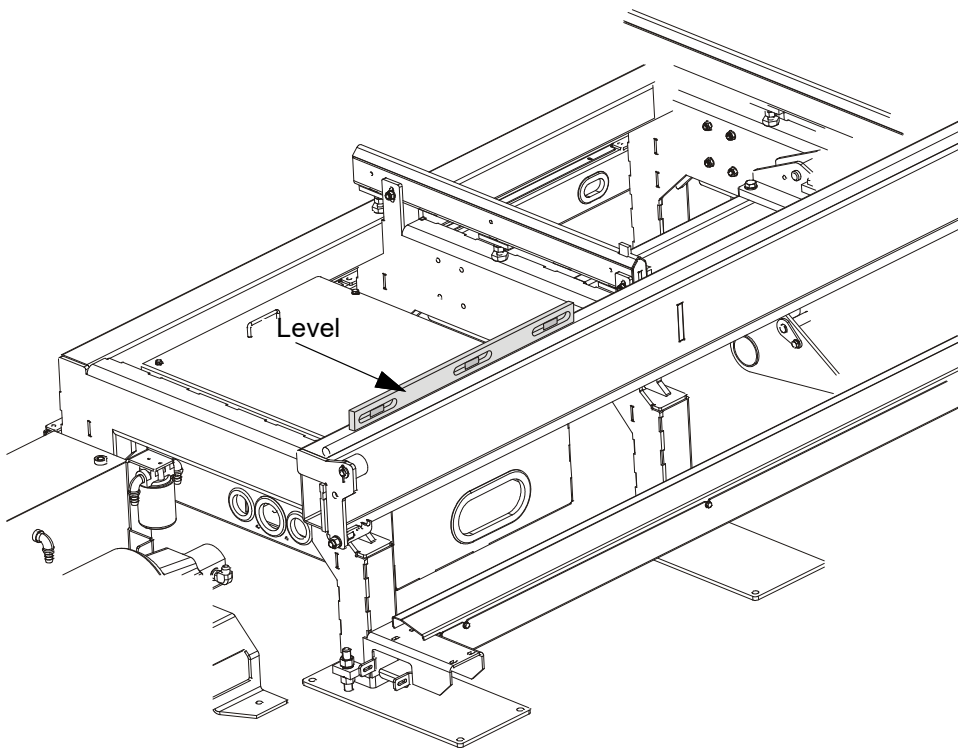


FIG. 6-13

Move the level to the center of the tube and adjust the middle legs if necessary. Then move the level to the rear of the tube and adjust the rear legs if necessary.

Levelling the Bed Frame in the Width Direction

See Figure 6-14. To level the bed in the width direction, place two pieces of straight tubing between the two front bed rail supports. Place a level across both tubes, near the first bed rail ('A'). Adjust the outer front leg to level the bed. Move the level to the other front bed rail ('B') and use the second outer leg to level the bed if necessary. Then move the straight tubes to the two rear bed rail supports and repeat the adjustment steps described above.

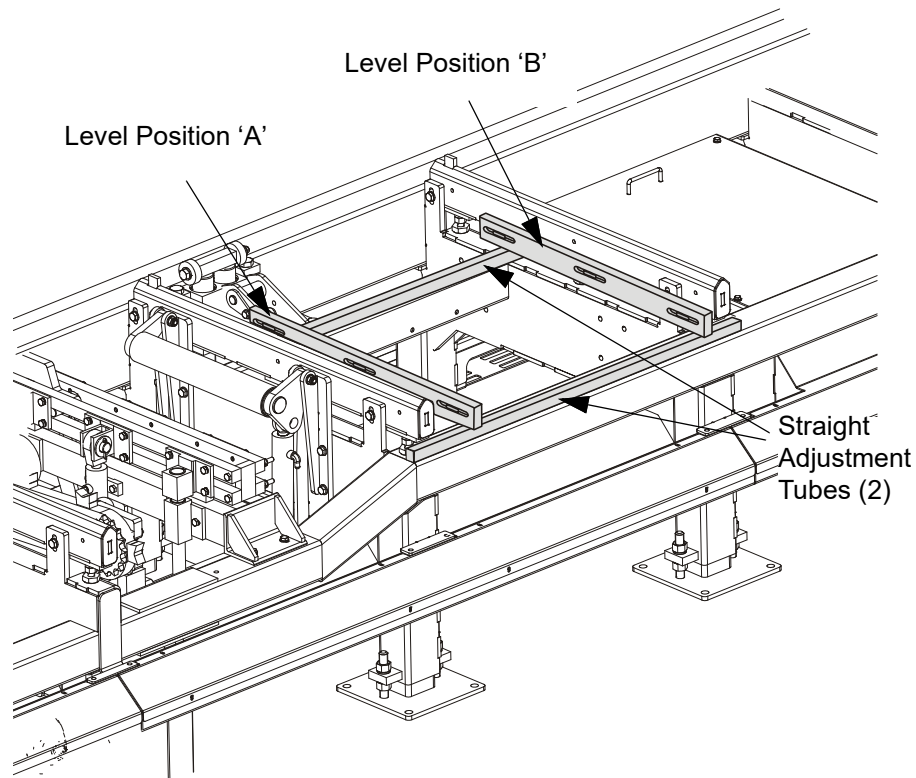
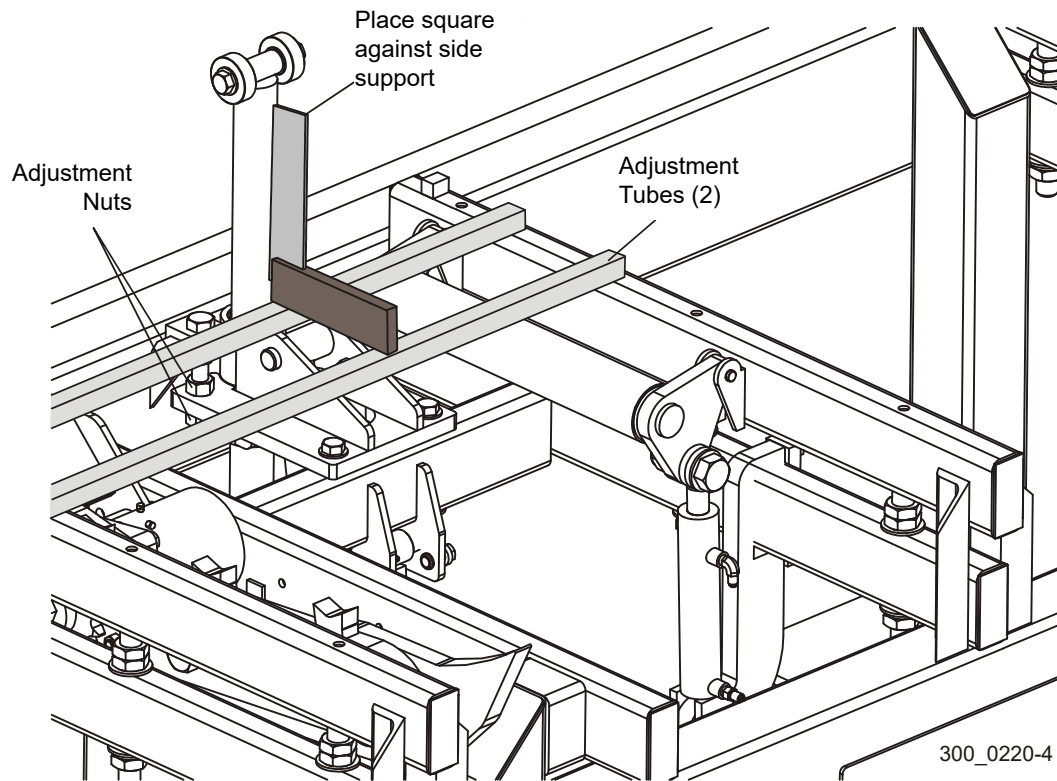


FIG. 6-14

Side Support Adjustment

See Figure 6-15. Place square adjustment tubes (Part No. S12831 - 2 required) across the bed rails in front of one of the side supports. Use the controls to raise the side supports all the way up. Set a square on the tubes and place it against the side support. The side support should be square to the bed or tilted slightly forward $1/32''$ (0.8 mm). Adjust the tilt of the side support if necessary.

**FIG. 6-15**

To tilt the side support forward, loosen the top adjustment nuts and tighten the lower adjustment nuts. To tilt the side support back, loosen the bottom adjustment nuts and tighten the top adjustment nuts.

6.3 Complete Alignment Procedure

Bed Frame Setup

Before performing the following alignment procedures, setup the mill on firm, level ground.

Lower the sawmill feet so the weight of the sawmill is evenly supported.

Blade Installation and Positioning

1. Remove the blade and replace the blade wheel belts. New blade wheel belts are required to perform the complete alignment procedure.
2. Blow sawdust off of the blade guide assemblies. Remove sawdust from the blade housing. Scrape any sawdust buildup from the blade wheel rims.
3. Remove the blade guide assemblies and the blade.

NOTE: To remove the blade guide assemblies and maintain the tilt adjustments made earlier, loosen one side screw only and the top screw.

4. Adjust the blade guide arm in or out until the outer blade guide is approximately 24" (61 cm) from the inner blade guide.
5. Install a new blade and apply the appropriate tension ([See Section 2.5](#)).
6. Close the blade housing covers and make sure all persons are clear of the saw head.
7. Turn the key switch to the position #2.
8. Manually spin one of the blade wheels until the blade positions itself on them.

Blade Wheel Alignment

The blade wheels should be adjusted so they are level in the vertical and horizontal planes. If the blade wheels are tilted up or down, the blade will want to travel in the tilted direction. If the blade wheels are tilted horizontally, the blade will not track properly on them.

1. Use the provided blade guide alignment tool to check the vertical alignment of either blade wheel. Attach the tool to the blade near the inner blade guide. Be sure the tool does not rest on a tooth or burr, and is lying flat against the blade.

See Figure 6-16.

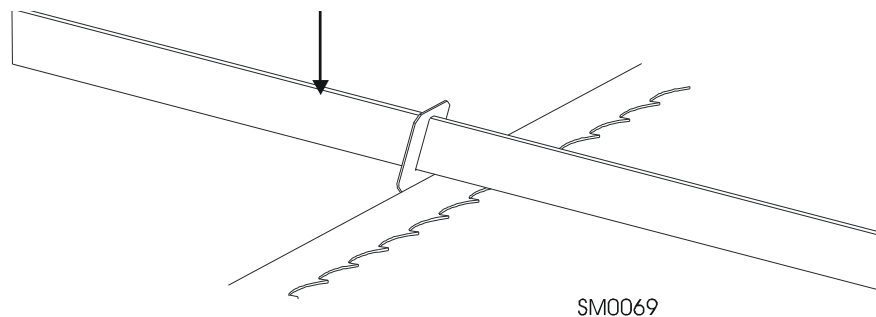


FIG. 6-16

2. Move the saw head so the front end of the tool is positioned over the first bed rail. Measure from the bottom of the tool to the top surface of the bed rail.
3. Move the saw head so the rear of the tool is positioned over the bed rail. Again, measure the distance from the bottom of the tool to the bed rail.
4. If the two measurements differ by more than 1/16" (1.5 mm), adjust the vertical tilt of the drive-side blade wheel.

See Figure 6-17. Use the vertical adjustment screws to adjust the drive-side blade wheel. To tilt the wheel down, loosen the top adjustment screw one quarter turn. Loosen the jam nut on the bottom adjustment screw and tighten the screw. Tighten the top and bottom jam nuts.

To tilt the wheel up, loosen the bottom adjustment screw one quarter turn. Loosen the jam nut on the top adjustment screw and tighten the screw. Tighten the top and bottom jam nuts.

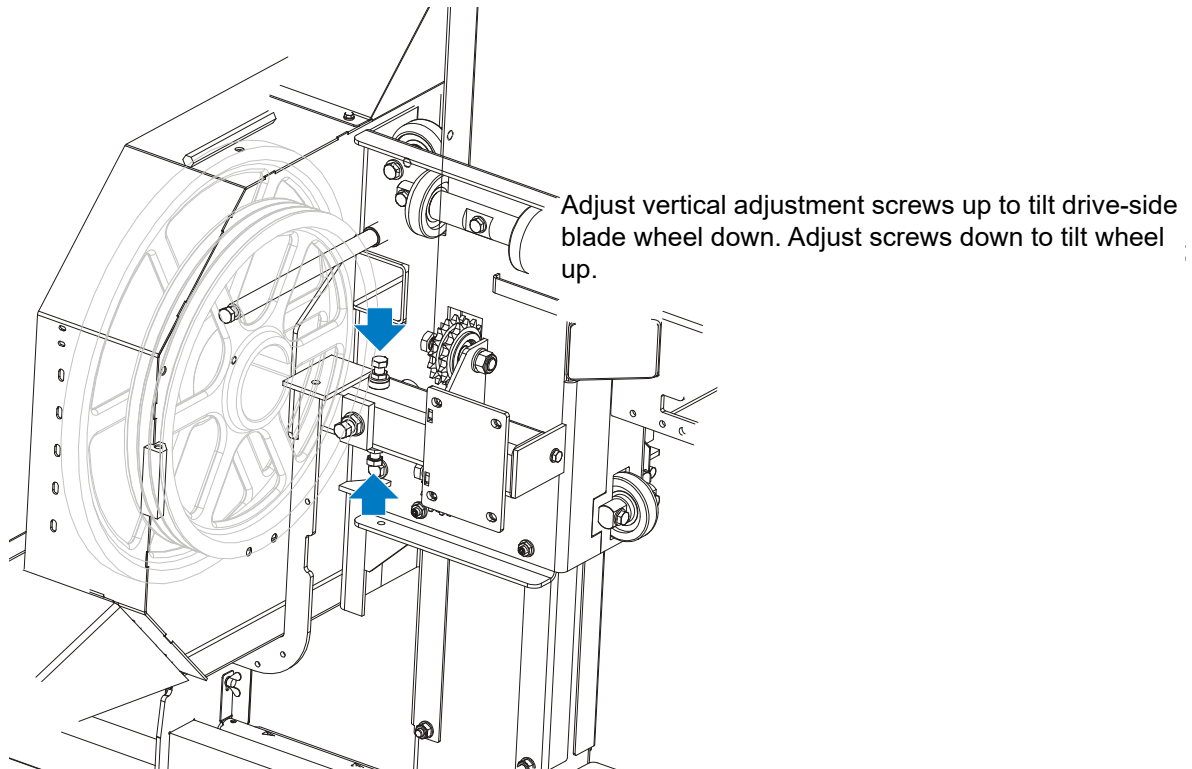


FIG. 6-17

5. Recheck the vertical tilt of the drive-side blade wheel with the blade guide alignment tool. Readjust the blade wheel as necessary until the front and rear of the tool are the same distance from the bed rail (within 1/16" [1.5 mm]).
6. Remove the tool from the blade and reattach it near the outer blade guide assembly.
7. Measure from the tool to the bed rail at both ends of the tool. If the measurements at the front and rear ends of the tool differ by more than 1/16" (1.5 mm), adjust the vertical tilt of the idle-side blade wheel.

See Figure 6-18. Use the vertical adjustment screws to adjust the idle-side blade wheel. To tilt the wheel up, loosen the bottom adjustment screw one quarter turn. Loosen the jam nut on the top adjustment screw and tighten the screw. Tighten the top and bottom jam nuts.

To tilt the wheel down, loosen the top adjustment screw one quarter turn. Loosen the jam nut on the bottom adjustment screw and tighten the screw. Tighten the top and bottom jam nuts.

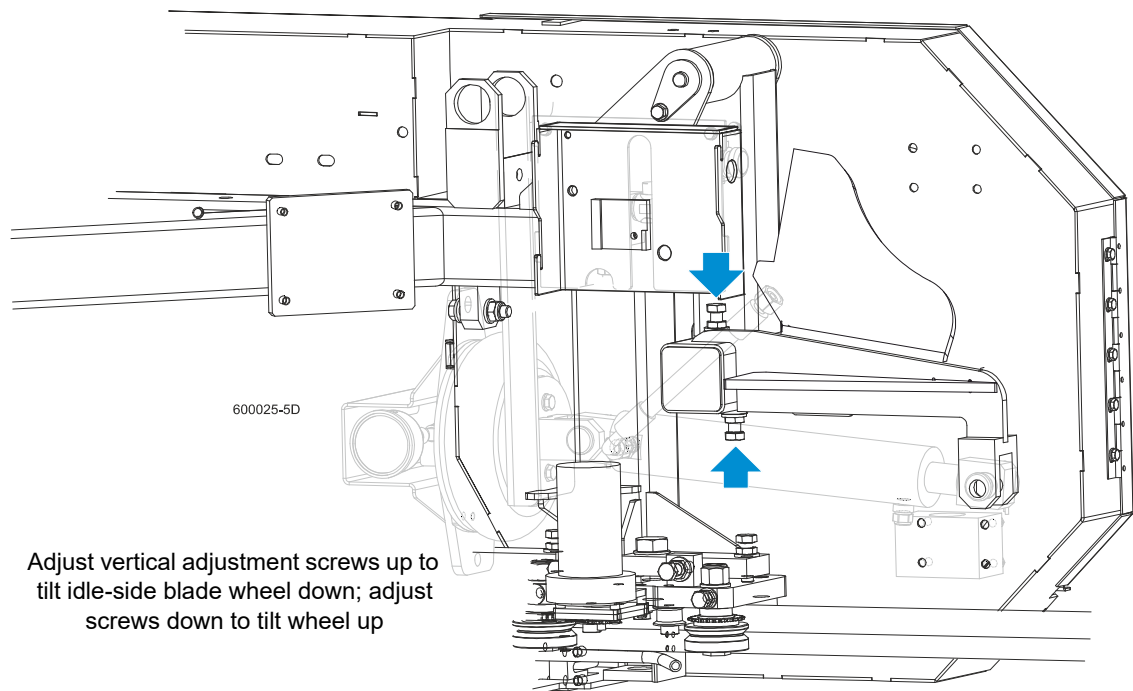


FIG. 6-18

8. Recheck the vertical tilt of the idle-side blade wheel with the blade guide alignment tool. Readjust the blade wheel as necessary until the front and rear of the tool are the same distance from the bed rail (within 1/16" [1.5 mm]).
9. Check the position of the blade on the idle-side blade wheel.

See Figure 6-19. The horizontal tilt of the blade wheel should be adjusted so that the gullet of a 1-1/4" blade is 1/8" (3 mm) out from the front edge of the wheel ($\pm 1/32$ [0.75 mm])(± 1.5 mm). The gullet of a 1-1/2" blade should be 3/16" (4.5 mm) out from the front edge of the wheel ($\pm 1/26$ [1 mm]). Do not let the teeth ride on the wheels.

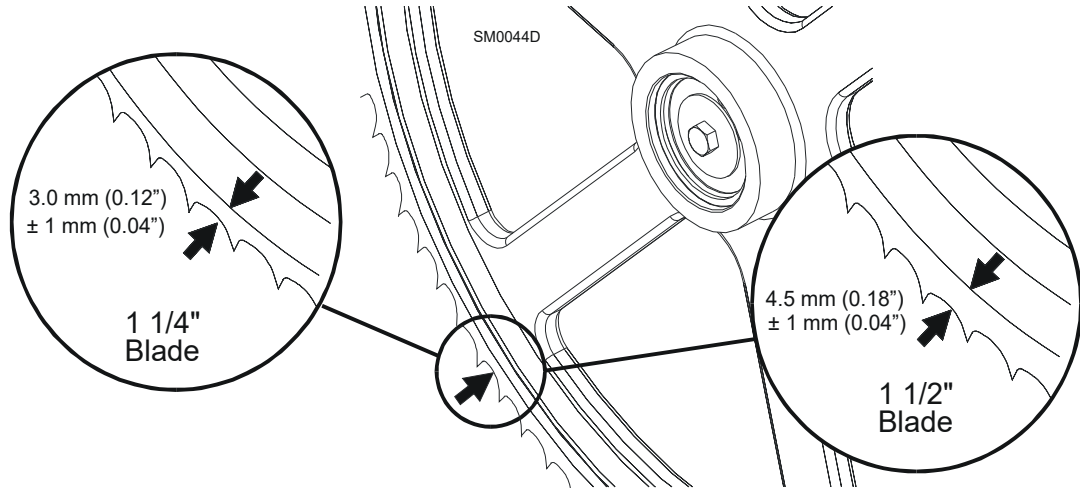


FIG. 6-19

See Figure 6-20. Use the cant control bolt to adjust the idle-side blade wheel. If the blade is too far forward on the wheel, turn the cant control bolt clockwise. If it is too far back on the wheel, turn the cant control counterclockwise.

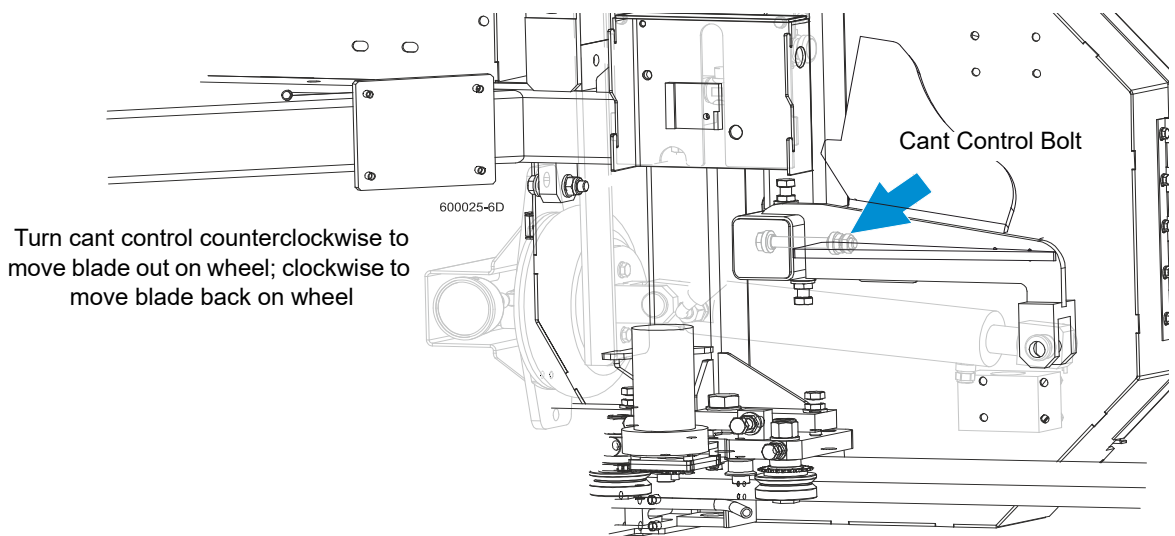
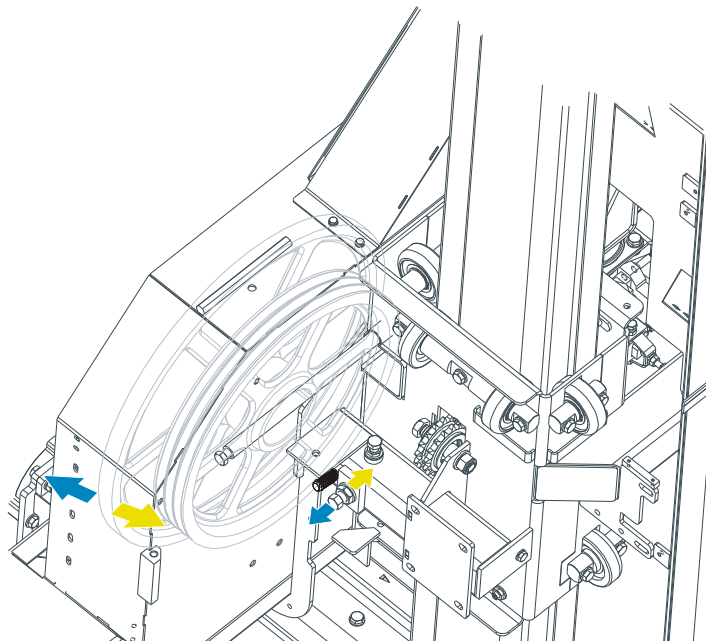


FIG. 6-20

10. Check the position of the blade on the drive-side blade wheel. The blade should be positioned on this wheel as described for the idle-side blade wheel. If not, adjust the drive wheel horizontally.

See Figure 6-21. Use the horizontal adjustment screw to adjust the drive-side blade wheel. To move the blade back on the wheel, loosen the jam nut on the adjustment screw and tighten the screw. Tighten the jam nut.

To move the blade out on the wheel, loosen the jam nut on the adjustment screw and loosen the screw. Tighten the jam nut.



Loosen adjustment screw to
move blade out on wheel;
tighten adjustment screw to
move blade in on wheel

FIG. 6-21

See Figure 6-22. To adjust the saw head tilt, use the bolts located at the bottom of the sawmill mast. Loosen the three sets of four retaining plate bolts. To raise the outside of the saw head, back the stop bolts out, then tighten the adjustment bolts. To lower the outside of the saw head, loosen the adjustment bolts and tighten the stop bolts. Recheck the saw head tilt and readjust the bolts as necessary. Retighten the retaining plate bolts.

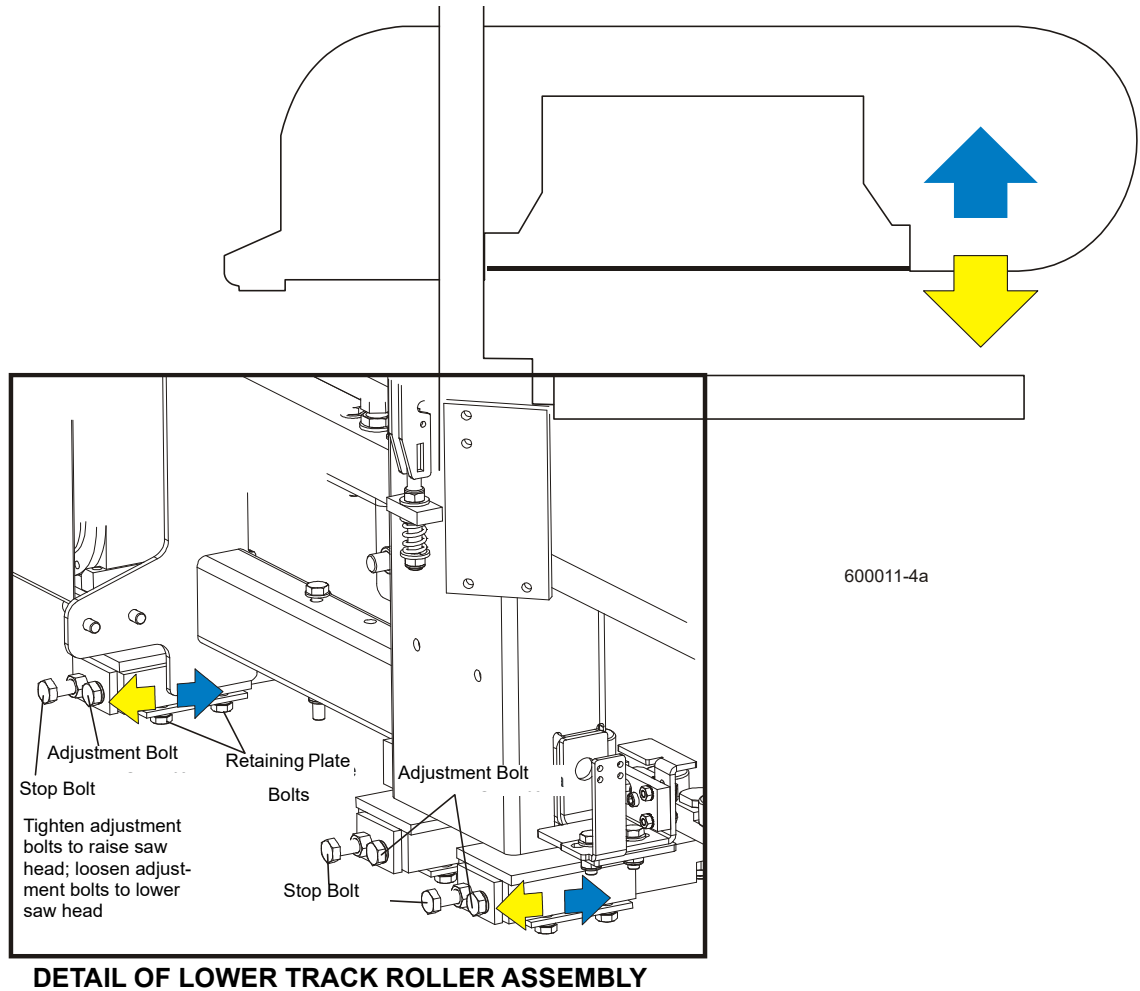


FIG. 6-22

- 11.** Move the clamp so it is 10" (25.4 cm) from the clamp stop. Adjust the clamp down to its lowest position. Move the saw head forward until it is positioned over the clamp. Raise the saw head until the blade measures 15 5/16" (385 mm) from the clamp at its lowest position.
- 12.** Move the saw head so the blade is positioned over the center of the front main bed rail.
- 13.** Measure the distance between the bottom of the blade and the bed rail at either end of the bed rail. The bed rail should measure 15" (375 mm) from the blade to the bed rail (+1/26", 1mm at the outer side).

14. Loosen the bed rail clamping bolts and turn the adjustment bolts to move the bed rail to the blade if necessary. Retighten the clamping bolts and adjustment bolt jam nuts.

See Figure 6-23.

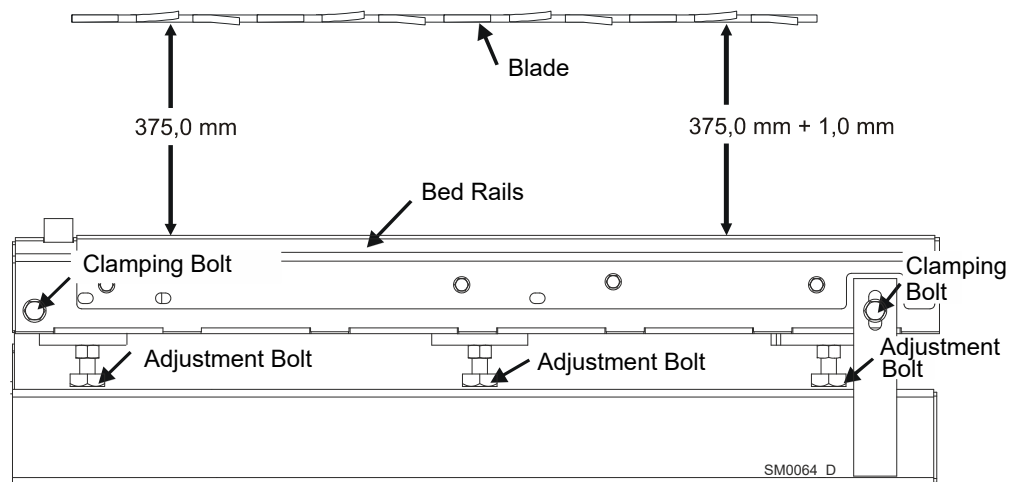


FIG. 6-23

15. Without adjusting the saw head height, check the three remaining main bed rails. Adjust them so that all measure the same distance from the blade at both ends of the bed rail.

Blade Guide Installation

Each Wood-Mizer sawmill has two blade guide assemblies that help the blade maintain a straight cut. The two blade guide assemblies are positioned on the saw head to guide the blade on each side of the material being cut.

One blade guide assembly is mounted in a stationary position on the drive side of the saw head. This assembly is referred to as the "inner" blade guide assembly.

The other blade guide assembly is mounted on the idle side of the saw head. It is referred to as the "outer" assembly and is adjustable for various widths of materials to be processed.

NOTE: Before installing the blade guide assemblies, remove the blade guide adjustment screws and apply lubricating oil such as 10W30 or Dexron III to each screw. This will prevent the screws and threaded holes from corroding and make screw adjustments easier.

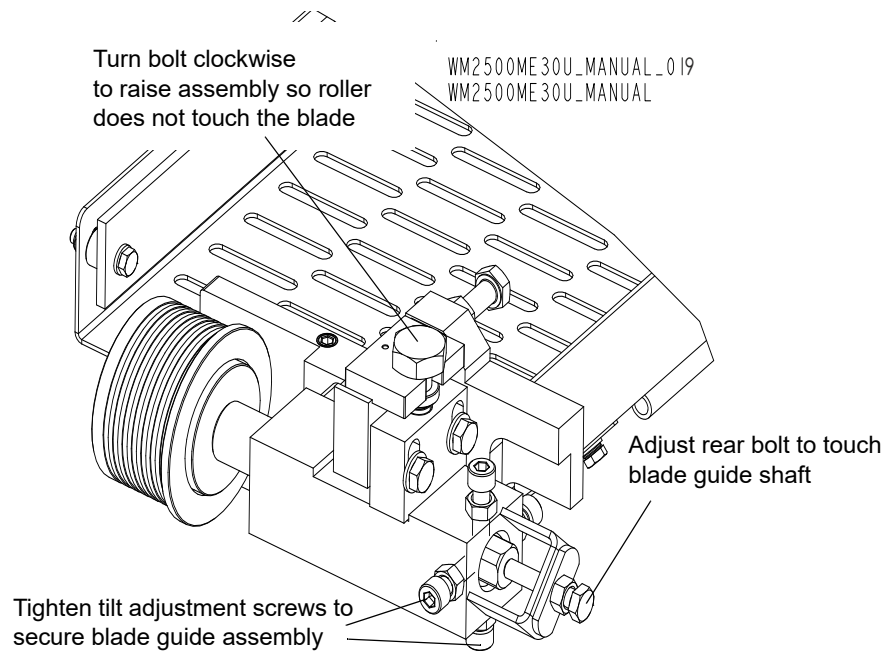
1. Install both blade guide assemblies to the mounting blocks and push all the way back. Install, tension and track a new blade. Adjust the outer blade guide assembly so the roller flange is 1/8" (3 mm) from the blade. Adjust the inner blade guide assembly so the roller flange is 1/8" (3 mm) from the blade.

See Figure 6-24.

Tighten the two previously-loosened tilt adjustment screws to secure the blade guide assembly. Turn the top adjustment bolt clockwise to raise the blade guide assembly so it does not touch the blade.

NOTE: Before adjusting the top bolt, unload pressure on the bolt by turning 1/2 turn in the opposite direction it was last adjusted.

With the roller flange positioned properly from the back of the blade, adjust the rear bolt so it touches the end of the blade guide mounting shaft.

**FIG. 6-24**

Blade Guide Arm Alignment

The blade guide arm moves the outer blade guide in and out. If the arm becomes loose, the blade guide will not deflect the blade properly, causing inaccurate cuts. A loose blade guide arm can also cause blade vibration.

1. Adjust the blade guide arm in to 1/2" (15 mm) from fully closed.
2. Manually try to move the arm up and down. If you can move the arm by hand, you will need to tighten the arm rollers.

See **Figure 6-25**. Loosen the jam nuts and turn the adjustment bolts in to tighten the blade guide arm rollers. Retighten the jam nuts. After tightening the blade guide arm rollers, check that the arm is adjusted properly.

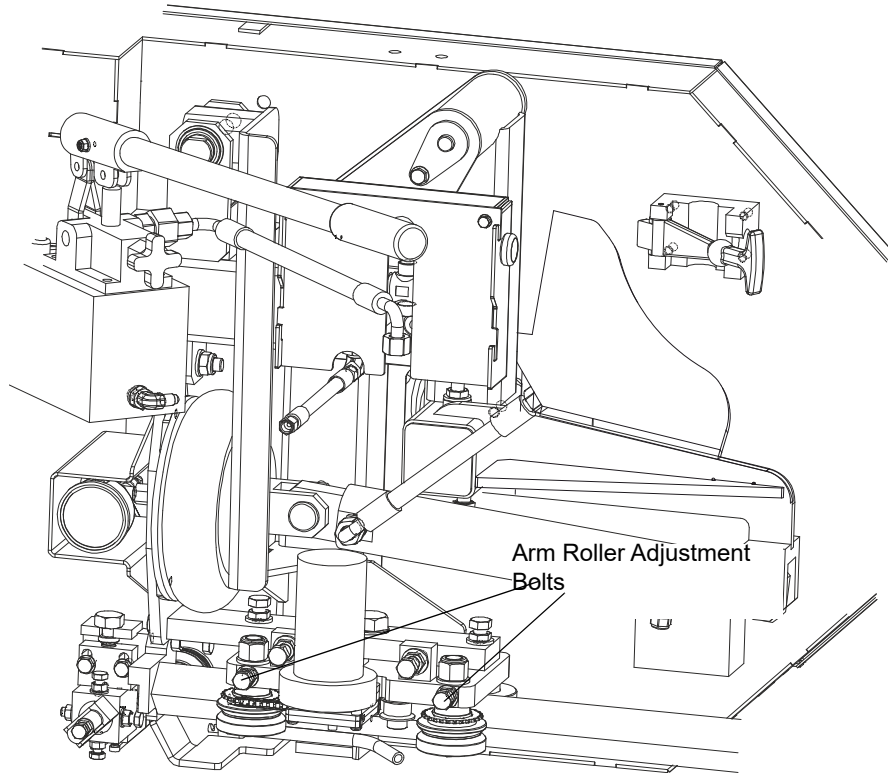


FIG. 6-25

3. With the arm adjusted 1/2" (15 mm) from fully closed, measure the distance between the rear blade guide roller and the back of the blade.

See **Figure 6-26**.

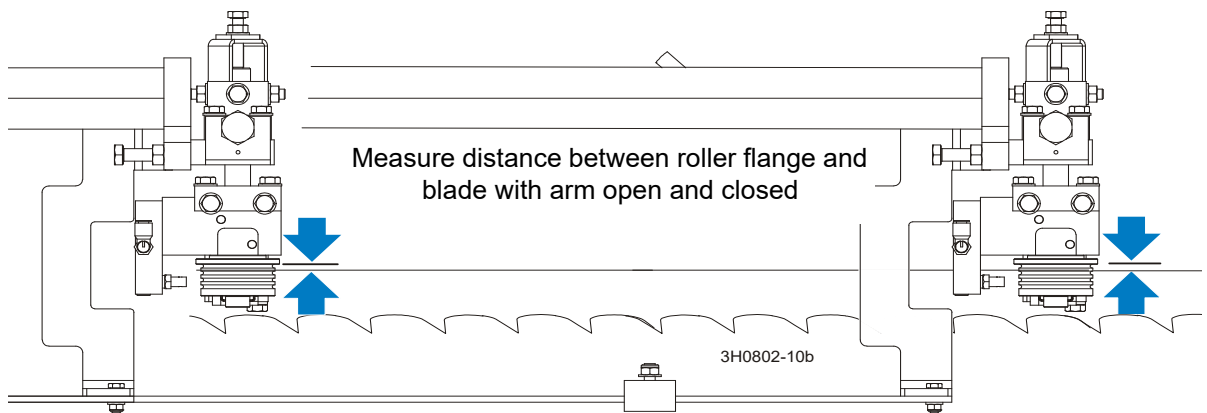


FIG. 6-26

4. Adjust the blade guide arm to 1/2" (15 mm) from fully open and remeasure the distance from the roller to the back of the blade. The two measurements should be the same. If not, adjust the arm tilt

in the horizontal plane.

See Figure 6-27. Loosen the horizontal adjustment bolt jam nuts. To tilt the arm in toward the blade, loosen the right bolt and tighten the left bolt. To tilt the arm out away from the blade, loosen the left bolt and tighten the right bolt. Retighten the jam nuts and recheck the blade guide arm horizontal tilt.

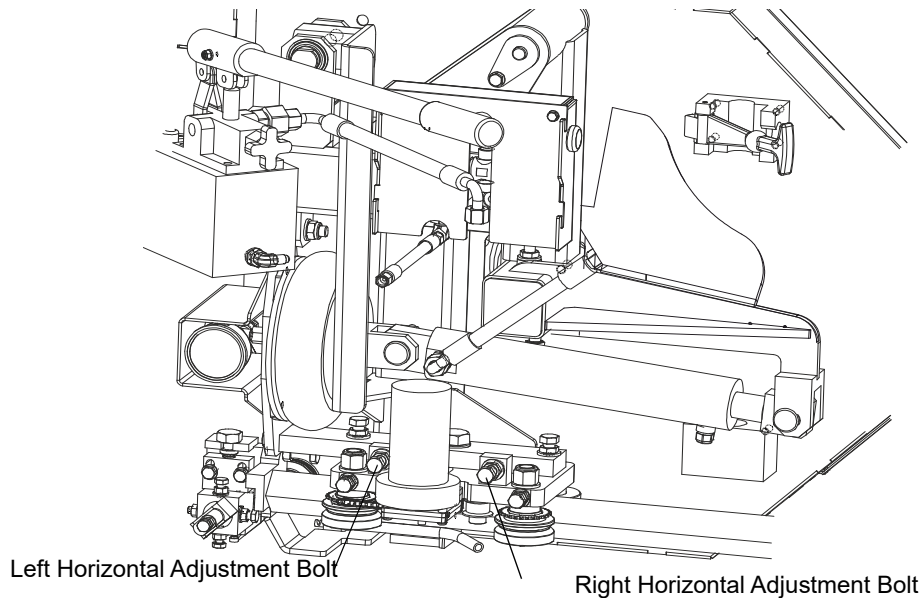


FIG. 6-27

5. Now check the vertical tilt of the blade guide arm. Move the saw head so the blade guide arm is positioned over a bed rail.
6. With the arm adjusted 1/2" (15 mm) from fully closed, raise or lower the saw head until the bottom of the blade guide mount block is 15" (375 mm) from the top of the bed rail.

See Figure 6-28. Adjust the blade guide arm to 1/2" (15 mm) from fully open. Measure the distance from the bottom of the blade guide mounting block to the bed rail. This measurement should be 15" (375 mm). If the measurements are not the same, adjust the blade guide arm vertically.

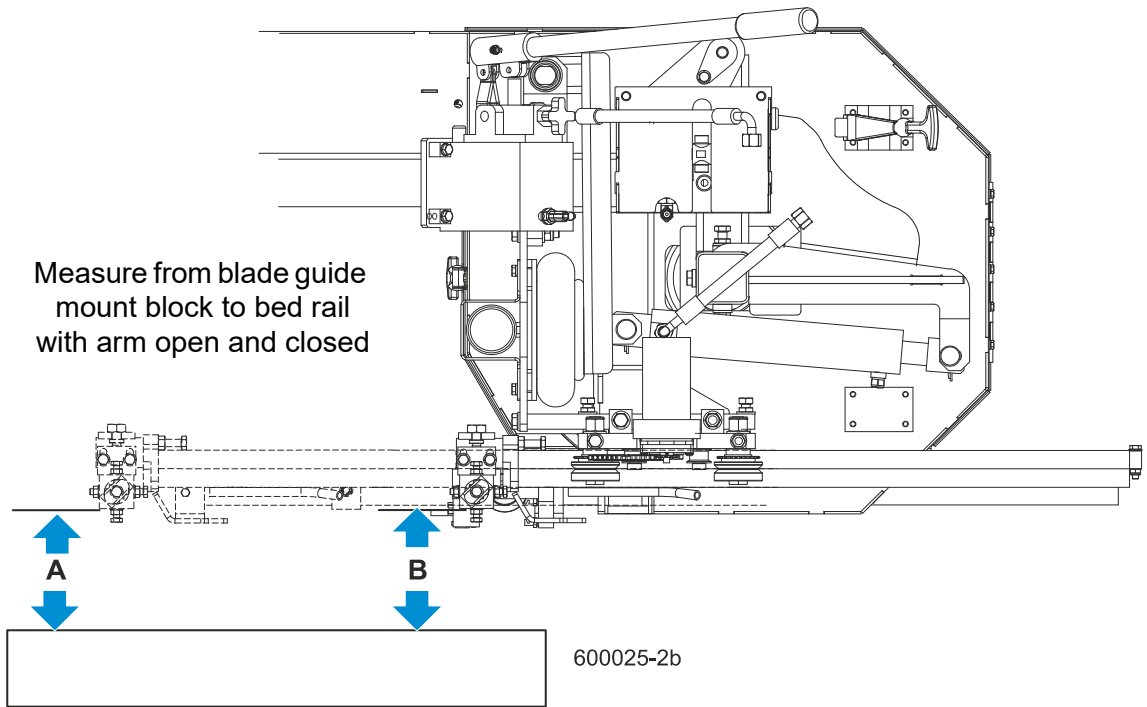


FIG. 6-28

See Figure 6-29. Loosen the vertical adjustment bolt jam nuts. To tilt the blade guide arm down, loosen the rear bolt and tighten the front bolt. To tilt the blade guide arm up, loosen the front bolt and tighten the rear bolt. Retighten the jam nuts and recheck the blade guide arm vertical tilt.

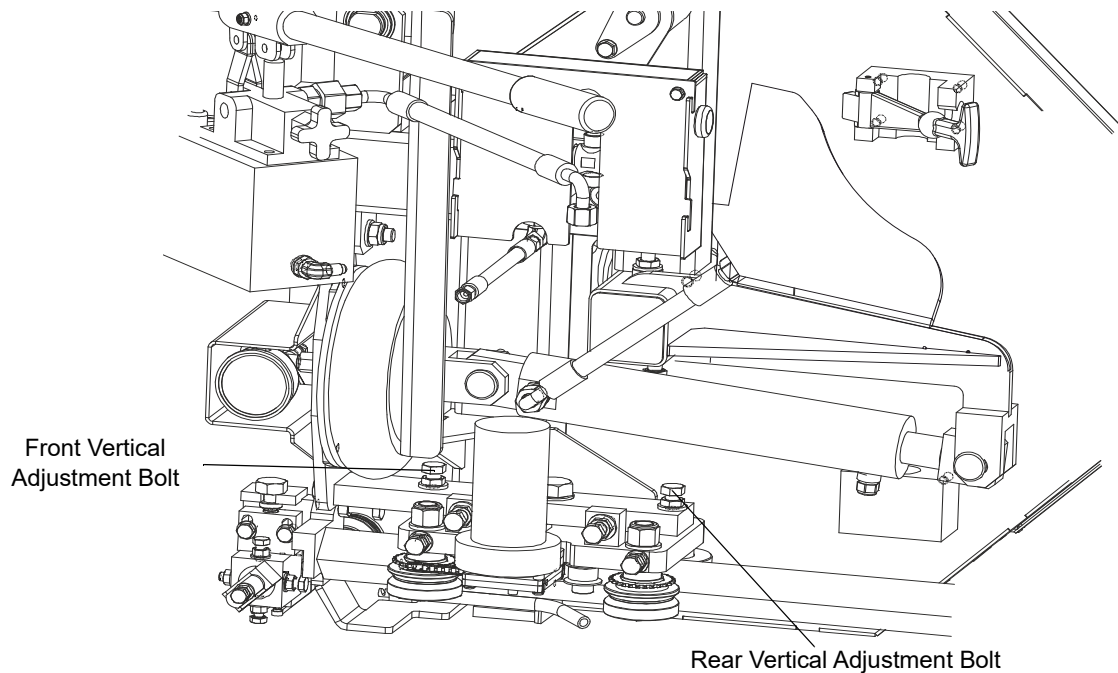


FIG. 6-29

Blade Deflection

Perform the following steps to achieve proper blade deflection with the blade guides.

1. Raise the saw head until the blade is 15" (375 mm) above a bed rail. Measure the actual distance from the top of the rail to the bottom of the blade.

See Figure 6-30. Loosen the clamp bolts. Turn the top adjustment bolt counterclockwise to lower the blade guide assembly so that the blade guide roller deflects the blade down and the bottom of the blade measures 15" (370 mm) from the bed rail

Loosen the bottom jam nut and tighten the top jam nut until the blade guide deflects the blade down until the bottom of the blade measures 14 3/4" (370 mm) from the bed rail. Tighten the clamp bolts.

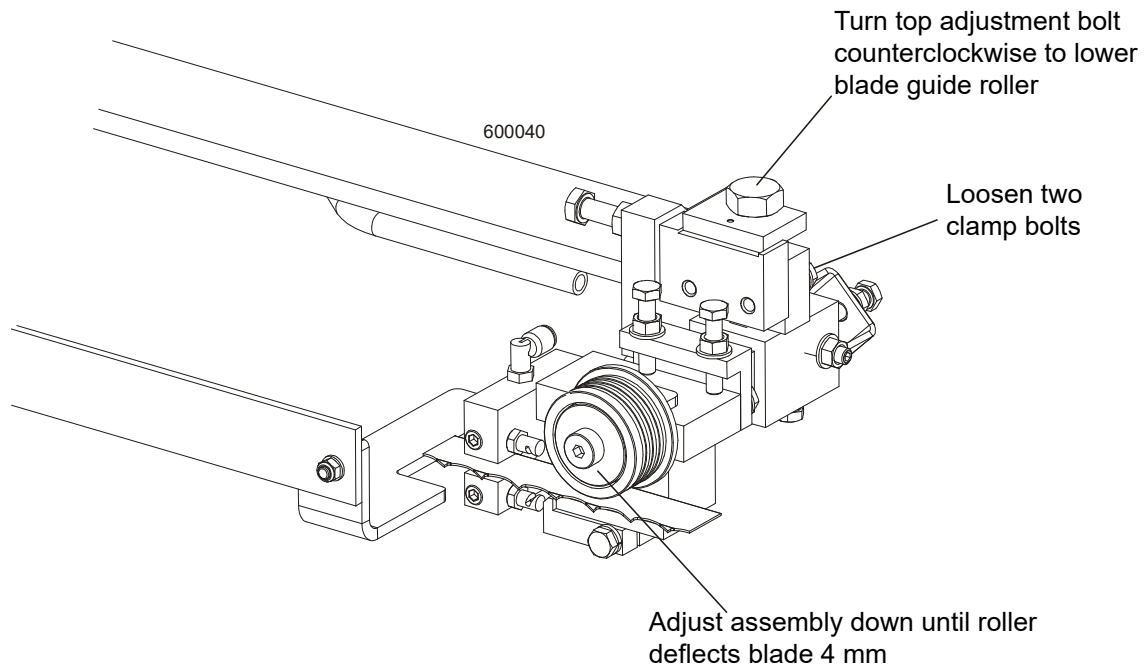


FIG. 6-30

2. Repeat the above steps for the other blade guide.

Blade Guide Vertical Tilt Adjustment

The blade guides should be adjusted properly in the vertical plane. If the blade guides are tilted vertically, the blade will try to travel in the tilted direction.

A Blade Guide Alignment Tool (BGAT) is provided to help you measure the vertical tilt of the blade.

1. Open the blade guide arm 1/2" (15 mm) from full open.
2. Clip the alignment tool on the blade. Position the tool close to the outer blade guide. Be sure the tool does not rest on a tooth or burr, and is lying flat on the blade.

See Figure 6-31.

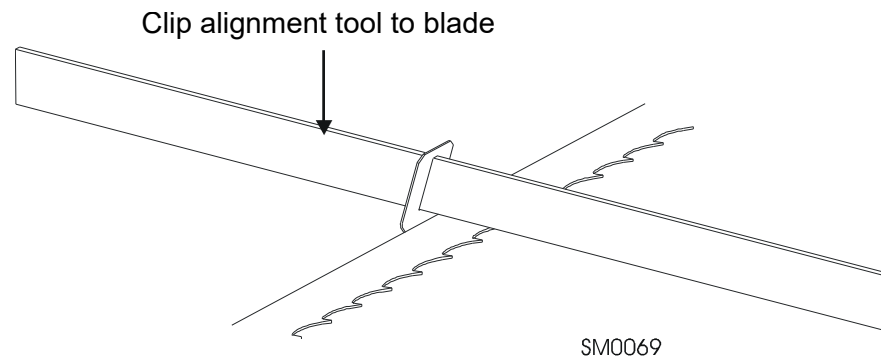


FIG. 6-31

3. Move the saw head so that the front end of the tool is positioned above the bed rail. Measure the distance from the bed rail to the bottom edge of the tool.
4. Move the saw head so that the back end of the tool is positioned above the bed rail. Measure the distance from the bed rail to the bottom edge of the tool.
5. If the two measurements from the tool to the bed rail are not equal, adjust the vertical tilt of the outer blade guide roller.

See Figure 6-32. Loosen the jam nuts on the top and bottom vertical tilt adjustment screws. To tilt the roller up, loosen the bottom screw and tighten top screw. To tilt the roller down, loosen the top screw and tighten the bottom screw. Tighten the jam nuts and recheck the tilt of the blade.

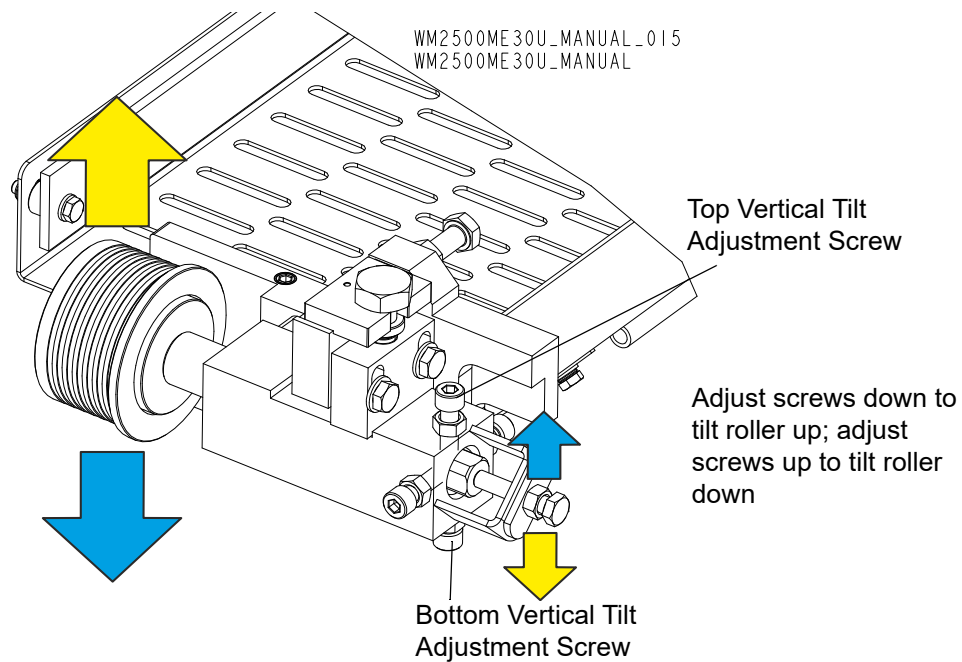


FIG. 6-32

6. Move the blade guide alignment tool close to the inner blade guide roller assembly and repeat the above steps. Adjust the vertical tilt of the inner blade guide if necessary.
7. After adjusting the vertical tilt of the blade guides, recheck the blade deflection and adjust if necessary.

Blade Guide Horizontal Tilt Adjustment

If the blade guides are tilted horizontally in the wrong direction, the back of the blade may contact the roller flange as the roller is spinning down, causing it to push the blade away from the roller.

1. Remove the blade guide alignment tool from the blade and adjust the blade guide arm halfway in.
2. Remove the clip from the blade guide alignment tool. Place the tool against the face of the outer blade guide roller.

See Figure 6-33.

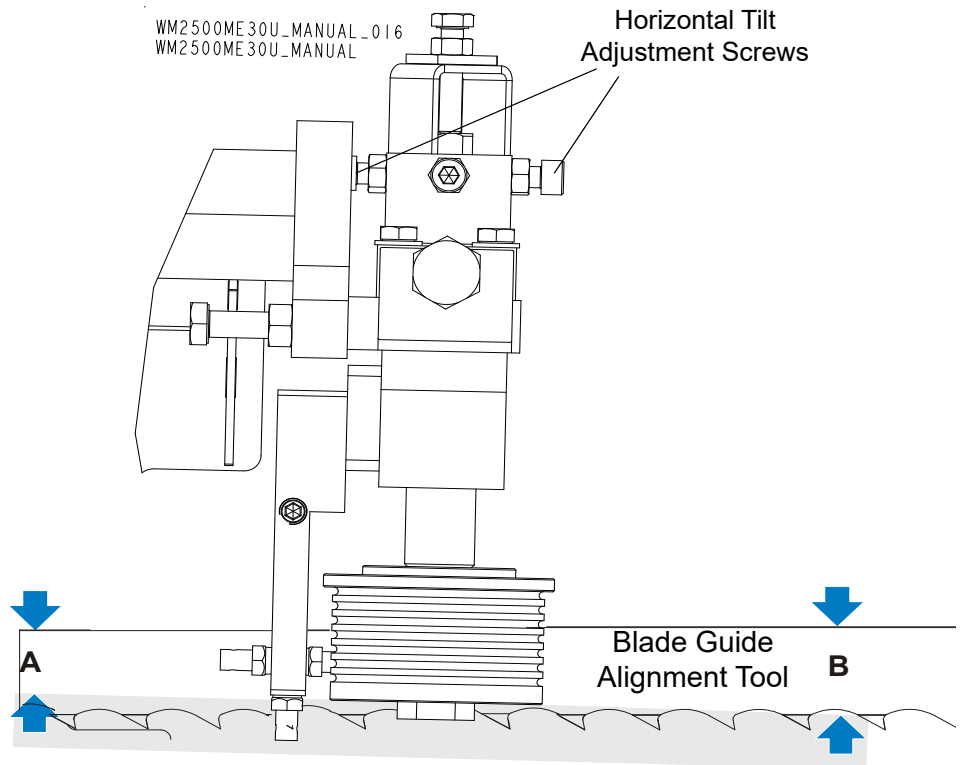
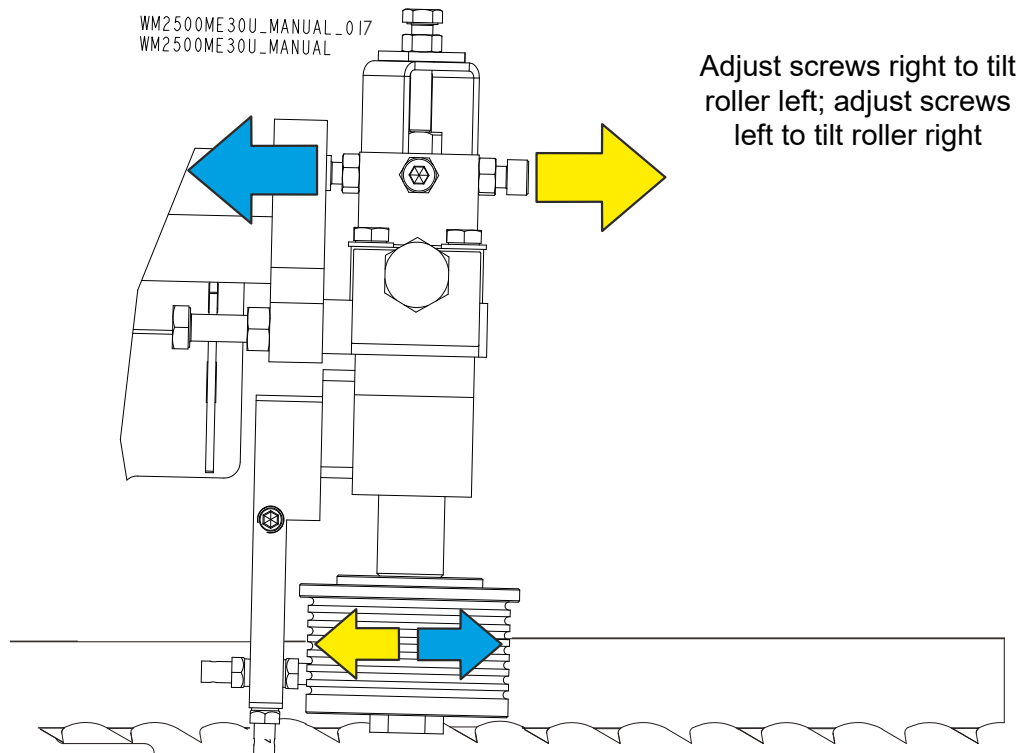


FIG. 6-33

3. Measure between the back edge of the blade and the tool at the end closest to the inner blade guide ("B").
4. Measure between the back edge of the blade and the other end of the tool ("A").

The roller should be tilted slightly to the left ('A' 1/8" [3 mm] less than 'B' ±1/8" [3 mm]).

See Figure 6-34. Loosen the jam nuts on the horizontal tilt adjustment screws. To tilt the roller left, loosen the right screw and tighten left screw. To tilt the roller right, loosen the left screw and tighten the right screw. Tighten the jam nuts and recheck the tilt of the blade.



Adjust screws right to tilt roller left; adjust screws left to tilt roller right

FIG. 6-34

- Repeat the above steps for the inner blade guide assembly.

NOTE: Once the blade guides have been adjusted, any cutting variances are most likely caused by the blade. [See Blade Handbook, Form #600.](#)

Blade Guide Flange Spacing

Either blade guide must be adjusted so the roller flange is the correct distance from the back edge of the blade. If the flange is too close to or too far from the blade, the sawmill will not cut accurately.

HINT: When adjusting the blade guide spacing, loosen the top set screw and one side set screw only. This will ensure horizontal and vertical tilt adjustments are maintained when the adjustment screws are retightened.

- Measure the distance between the flange on the inner blade guide roller to the back edge of the blade. This distance should measure 1/8" (3.0 mm). Adjust the roller back or forward if necessary.

See Figure 6-35. Loosen the top and one side screw shown and the rear adjusting bolt if necessary. Tap the blade guide forward or backward until properly positioned. Retighten the screws and jam nuts.

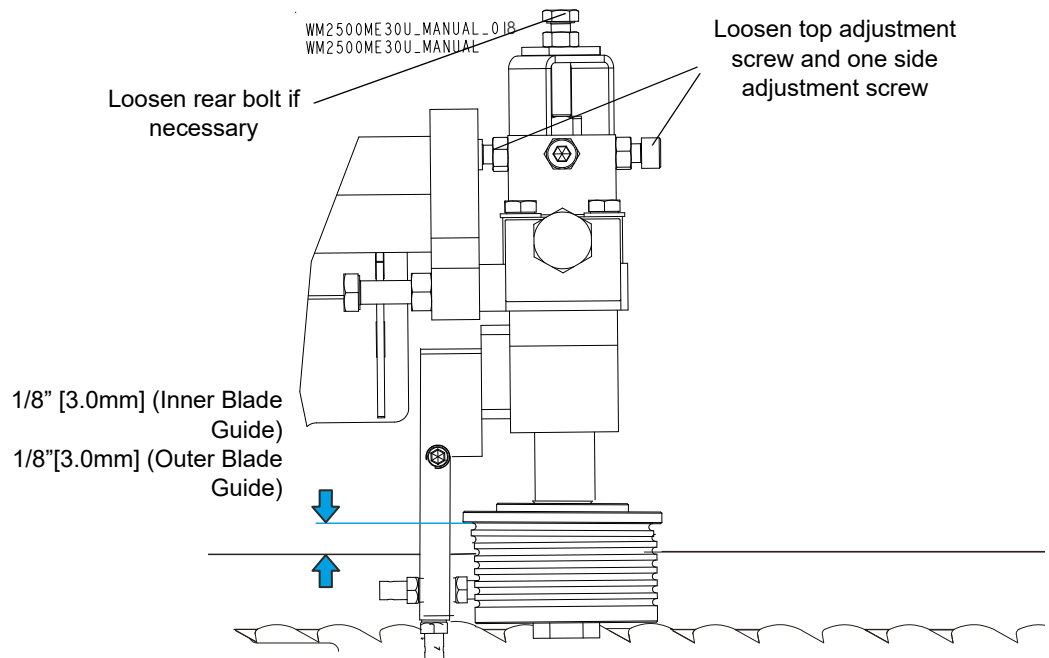


FIG. 6-35

2. Measure the distance between the flange on the outer blade guide roller to the back edge of the blade. This distance should measure 1/8" (3.0 mm). Adjust the roller back or forward if necessary.
3. Check the blade guide disks and drive side deflector plate are properly adjusted ([See Section 6.3](#)).

Saw Head Tilt Adjustment

As the blade enters a wide log or cant, the outside of the saw head will drop down slightly. To compensate for the drop, the saw head is adjusted $1/16"$ (1.5 mm) higher at the outside.

1. Move the saw head so the blade is positioned over a bed rail. Adjust the blade guide arm to $1/2"$ (15 mm) from full open. The saw head should still be adjusted so the blade is $14\ 3/4"$ (375 mm) above the bed rails - measure at the inner blade guide.

See Figure 6-36.

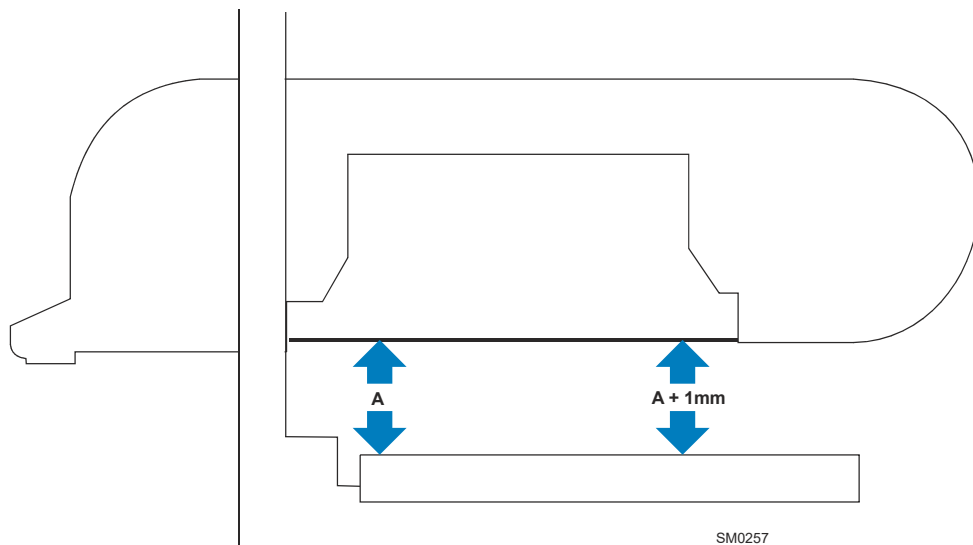


FIG. 6-36

2. Measure from the blade to the bed rail near the outer blade guide assembly. This measurement should be $1/26"$ (1.0 mm) higher than the inner measurement.

See Figure 6-37. To adjust the saw head tilt, use the bolts located at the bottom of the sawmill mast. Loosen the three sets of four retaining plate bolts. To raise the outside of the saw head, back the stop bolts out, then tighten the adjustment bolts. To lower the outside of the saw head, loosen the adjustment bolts and tighten the stop bolts. Retighten the retaining plate bolts. Recheck the measurement from the blade to the bed rails and adjust the stop bolts and adjustment bolts until the outside of the saw head is 1/26" (1 mm) higher than the inside.

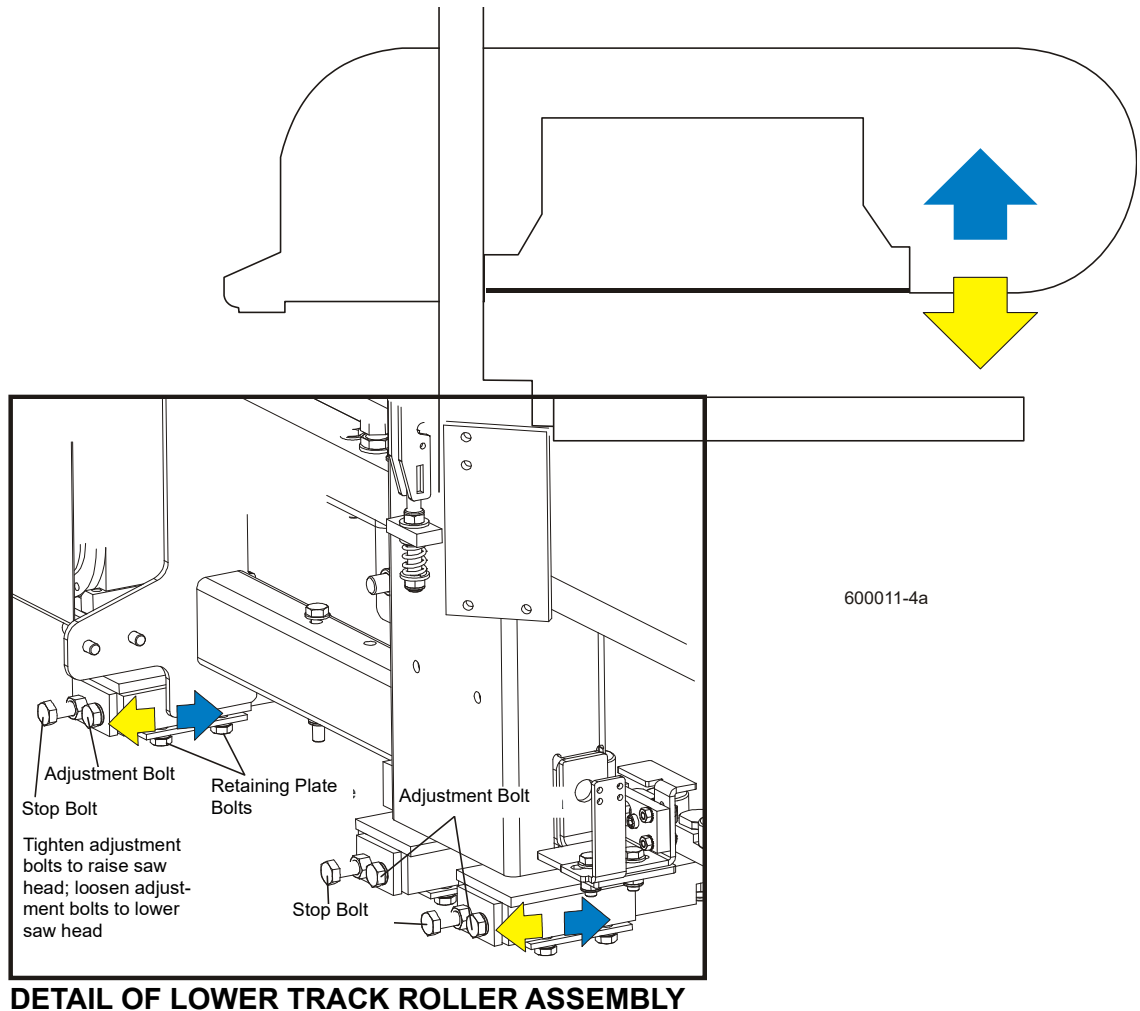


FIG. 6-37