

CYCLONE 600 UPCUT CUT OFF SAW



WARNING

The operator must thoroughly read and understand this manual before operating the cut off saw or starting any servicing. All safety and warning instructions should be followed. This manual must be available to all operators.

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General Safety Rules for Woodworking Machinery



WARNING

The operator must thoroughly read and understand this manual before operating the cut off saw or starting any servicing. All safety and warning instructions should be followed. This manual must be available to all operators.

1. For your own safety, read the operation manual carefully. Know your machine. Learn its applications and limitations, and any hazards specific to this machine. All personnel should be trained in the operational procedures and received safety instruction before operating this equipment. If you have not received proper training in the use of this machine, **DO NOT OPERATE THIS MACHINE**, damage to the equipment or injury to the operator is possible.
2. This machine should not be operated without all of the guards in place and safety devices in operation. Removal of any guards or disabling any of the safety devices may result in damage to the equipment or injury to the operator. If any of the guards or safety devices are missing, damaged or not working properly, **DO NOT OPERATE THIS MACHINE**, notify your supervisor immediately.
3. If the operator has any safety concerns or questions regarding the operation of this equipment, **DO NOT OPERATE THIS MACHINE**, the machine should be locked out and your supervisor notified immediately.
4. All Lock Out/Tag Out procedures must be followed before servicing or adjusting this equipment. If you have not received proper training in the Lock Out/Tag Out procedures for this machine, **DO NOT OPERATE THIS MACHINE**, damage to the equipment or injury to the operator is possible.
5. In case of any equipment malfunction or jam the machine should be powered off and locked out before clearing any materials from the operational areas of this machine. Once cleared the reset procedures need to be followed when powering up the equipment. At no time should any of the machine control systems including electrical, hydraulic or pneumatic circuits be manually overridden.
6. Check machine for damaged parts. Before continued machine use any damaged guard or part must be carefully checked for proper operation of its intended function. Check all moving parts for proper alignment, check for binding of moving parts, breakage of parts, proper secure mounting, and any other condition that may affect machine operation. Guards or other parts that are damaged must be properly repaired or replaced.
7. Machine must be properly grounded.
8. Maintain and clean machine at recommend intervals. Intervals may need to be adjusted due to work load or material type to keep machine in top condition. Follow instructions for lubrication, setup, and changing accessories.

9. Disconnect machine from power source before, changing accessories, or any servicing activity.
10. Avoid accidental starting. Make sure switch is in the off position before connecting to power.
11. Remove any tools or loose objects from work surface of machine. Make sure any tools used for adjustment or maintenance are removed from machine before machine is restarted. Make a habit of scanning for tools and scraps every time the machine is started.
12. Keep work area clean. Cluttered work areas and workbenches increase the likelihood of an accident.
13. Do not use in dangerous environments. Do not use machine in damp or wet locations, or expose them to rain. Keep work area well illuminated.
14. Keep children away. All visitors should be kept at a safe distance from work area.
15. Make workshop childproof, with padlocks, master switches, or by removing starter keys.
16. Do not force the machine. It will function better and safer at its designed rate.
17. Use the right tools. Do not force the machine or attachments to do a job for which they were not designed. Contact the manufacturer or distributor if there is any question about the machines suitability for a particular job.
18. Use only recommended accessories. Consult the operation manual for recommended accessories.
19. Wear proper apparel. Avoid loose clothing, gloves, neckties, rings bracelets, or jewelry which could be tangled in moving parts. Keep long hair contained to prevent entanglement. Non-slip footwear is recommended.
20. Always wear safety glasses.
21. Secure the work piece.
22. Keep proper footing and balance at all times.
23. Do not use machine while under the influence of drugs, alcohol, or any medication.
24. Always wear a face mask or dust mask if operation creates excessive dust or chips. Always operate machine in a well ventilated area and provide proper dust removal.
25. Never leave machine running unattended. Turn power off. Do not leave machine until it comes to a complete stop.

Safety Rules for Cut-Off Saw



WARNING

The operator must thoroughly read and understand this manual before operating the cut off saw or starting any servicing. All safety and warning instructions should be followed. This manual must be available to all operators.

1. Read and understand the operation manual before operation.
2. Keep hands away from the cutting area.
3. Before making any adjustments disconnect all power sources including electrical and pneumatic.
4. Minimum air pressure is 50 psi, DO NOT operate saw if minimum air pressure is not available. Normal working pressure is 80psi.
5. At the start of each work session turn on saw and trigger the two hand trip with no work piece present, cycle the saw and check for normal operation of top clamp and blade advance cylinders. Turn off saw and as the motor slows and comes to a stop check for correct rotation direction compared to arrow indicator.
6. Do not cut warped wood; work piece should lay flat on table without rocking.
7. Use infeed and outfeed supports when cutting long work pieces.
8. Set top clamp stop pin to limit opening height to only what is required to process the work piece.
9. Never place hands under top clamp; remove cut piece by pulling it out from under open top clamp. Short trim scraps should only be removed by pushing them out with a scrap piece.
10. Always use push roller handles to position and guide work piece against fence. Do not use hands to support work piece.

When Your Saw Arrives...



WARNING

The operator must thoroughly read and understand this manual before operating the cut off saw or starting any servicing. All safety and warning instructions should be followed. This manual must be available to all operators.

The saw ships complete on one pallet, if ordered with stop the stop will be in separate crate.

Unpack the saw ensuring that all parts are present and free from damage. If any parts are missing or damaged contact your local distributor immediately. Do not assembly or attempt to operate saw without all components present and in undamaged condition.

Installation



WARNING

The operator must remove from and lock out all power to saw before servicing or connecting power.

Install saw with enough free space to conveniently allow workpiece to be brought into saw. If infeed and/or outfeed is required allow room for such. The floor should be a flat non-slip surface. The saw will be more stable if bolted to floor. After locating the saw use leveling feet to adjust level of saw table. Place level on saw table and adjust feet to bring table into level position.

Connect Power



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The operator must remove from and lock out all power to saw before servicing or connecting power.

The saw has been factory wired to the requested voltage before shipment. Check that your supply lines match the labeled voltage on the saw before connection. Connect wires inside the electrical enclosure. After wires are connected cycle the start button and stop button quickly to pulse the motor on and then off, look through the fan guard of the motor to check direction of rotation. Rotation must match direction indicated on side of enclosure. If rotation needs to be reversed swap the connection of two of the three power wires and recheck rotation.

Saw Operation



WARNING

The operator must thoroughly read and understand this manual before operating the cut off saw or starting any servicing. All safety and warning instructions should be followed. This manual must be available to all operators.

Before operating saw read all general and safety rules.

If operator is uncomfortable with any operation or condition of saw get help from supervisor.

The Cyclone upcut saw is operated by the triggering of two hand anti tie down triggers located on the work piece clamping handles at either side of the top clamp blade cover. The operator's hands must never be placed under the top clamp. Maintain pressure on triggers until the top clamp opens completeing the saw cycle.

Setting the Top Clamp Height



WARNING

Set the top clamp opening height before sawing material.

Adjust top clamp opening height by swinging the flip stops as shown in the photo below.



Installing and Changing Saw Blade

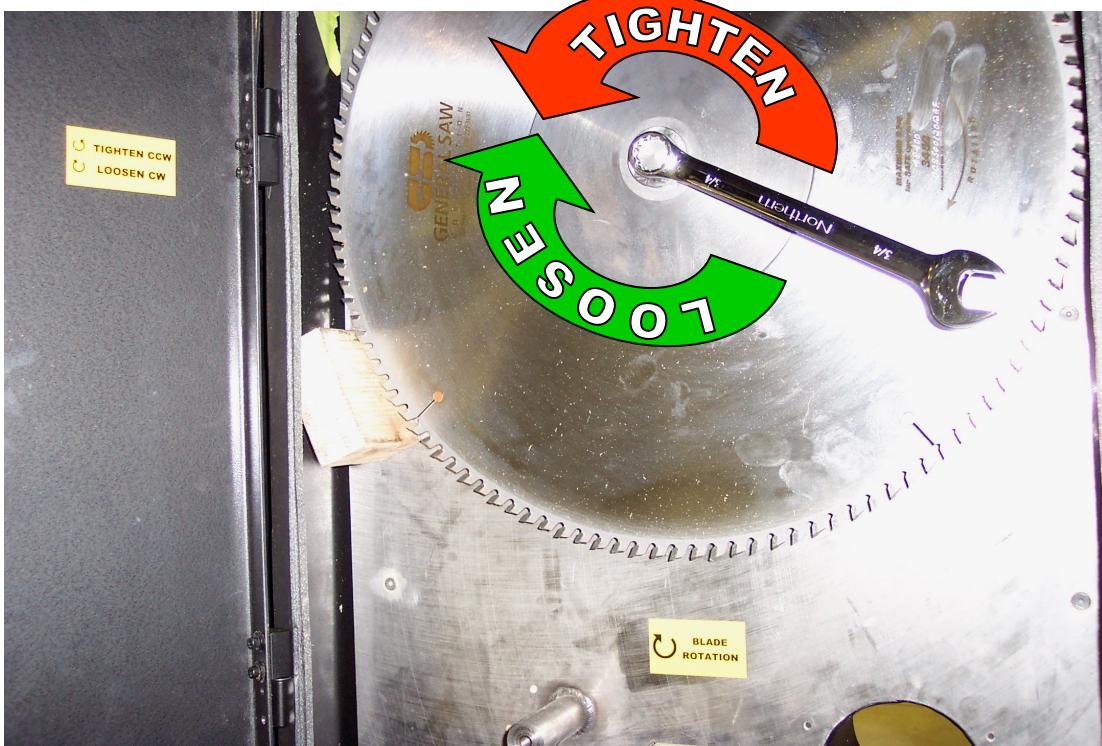


DANGER

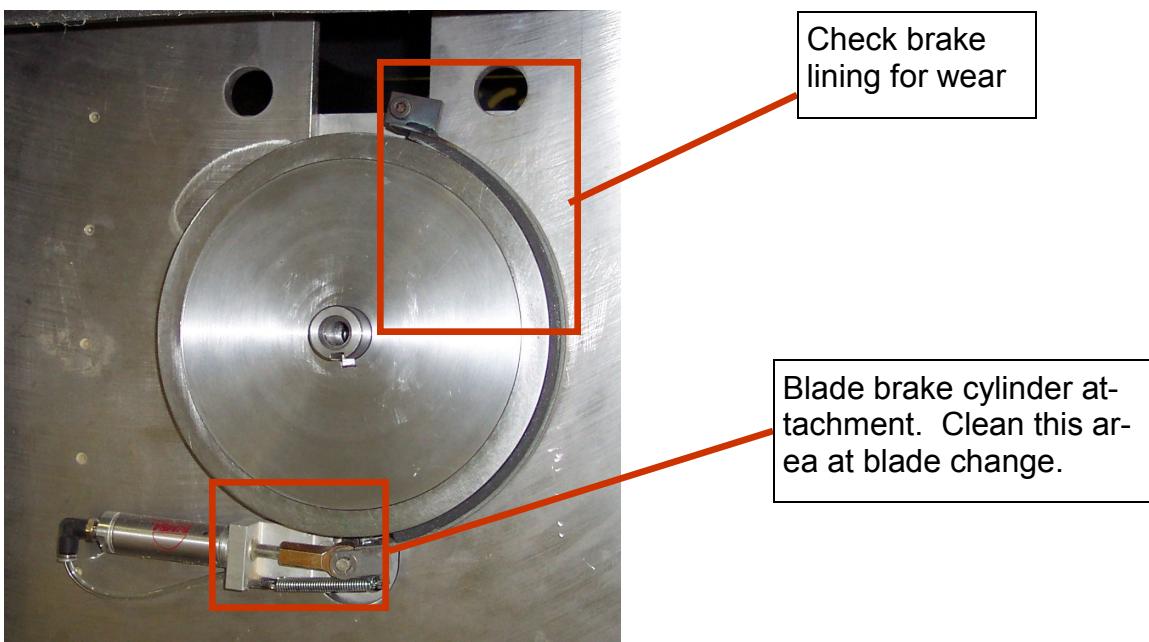
The operator must remove from and lock out all power to saw before servicing.

To access blade area remove the door hold down screw, the screw is purposely long to allow the blade and motor to stop before the door will open. Do not use a powered means to remove hold down screw. Do not shorten screw the length is required to make the door interlocks work properly.





When installing or changing blade observe the proper rotation and be sure blade matches the rotation arrow. Use scrap wood to block blade while tightening or loosening blade retaining screw. Blade retaining screw has left hand threads the direction for tightening and loosening is opposite from normal screws and bolts. To loosen blade screw turn wrench in same direction as rotation of blade, clockwise when looking at the blade. Remove retaining screw and blade arbor plate to free saw blade from motor shaft. Do not remove rear arbor plate, check blade brake for dust buildup, clean if necessary.



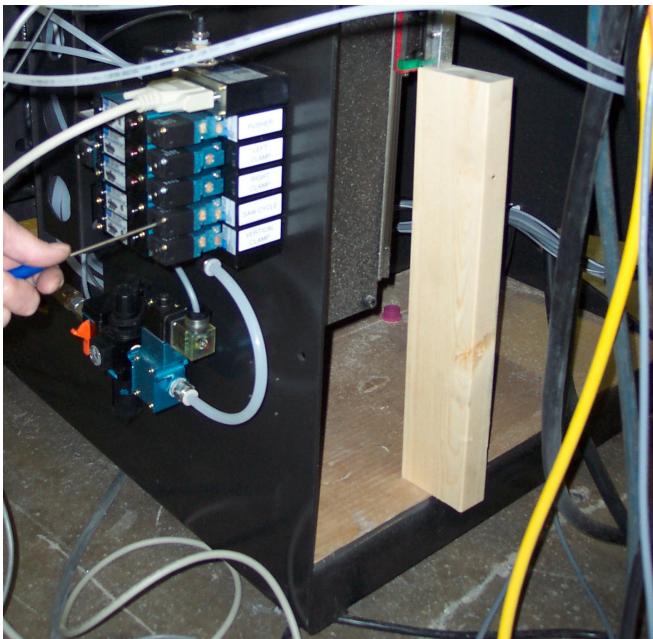
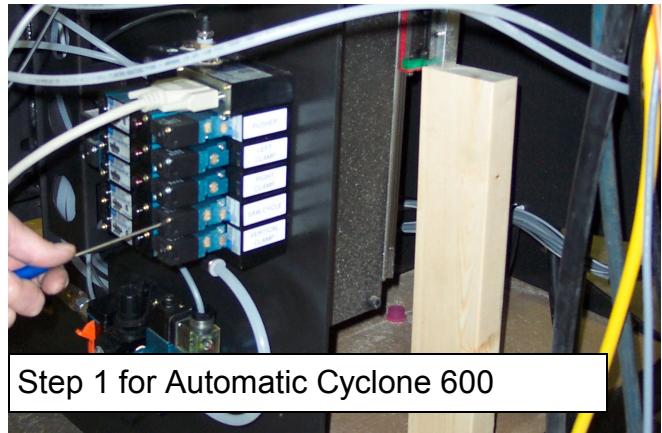
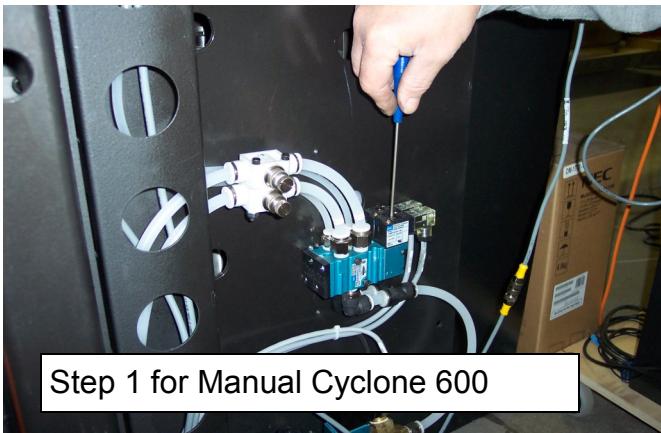
Squaring the Saw Blade



DANGER

The operator must ensure that no person will be in harms way before performing any of the following steps.

Make sure no person or other obstruction will interfere with the blade as it rises before performing this operation. Use a probe to manually actuate the saw lift valve to raise the saw blade.



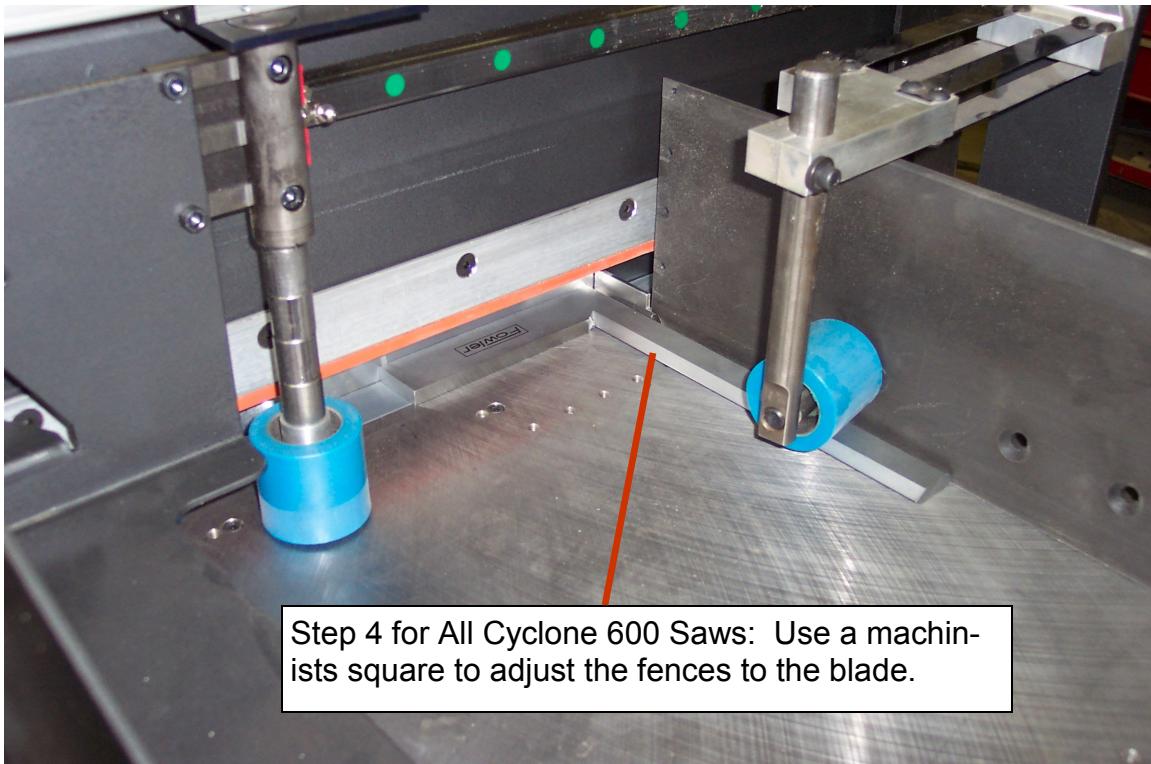
The operator must remove from and lock out all power to saw before continuing.





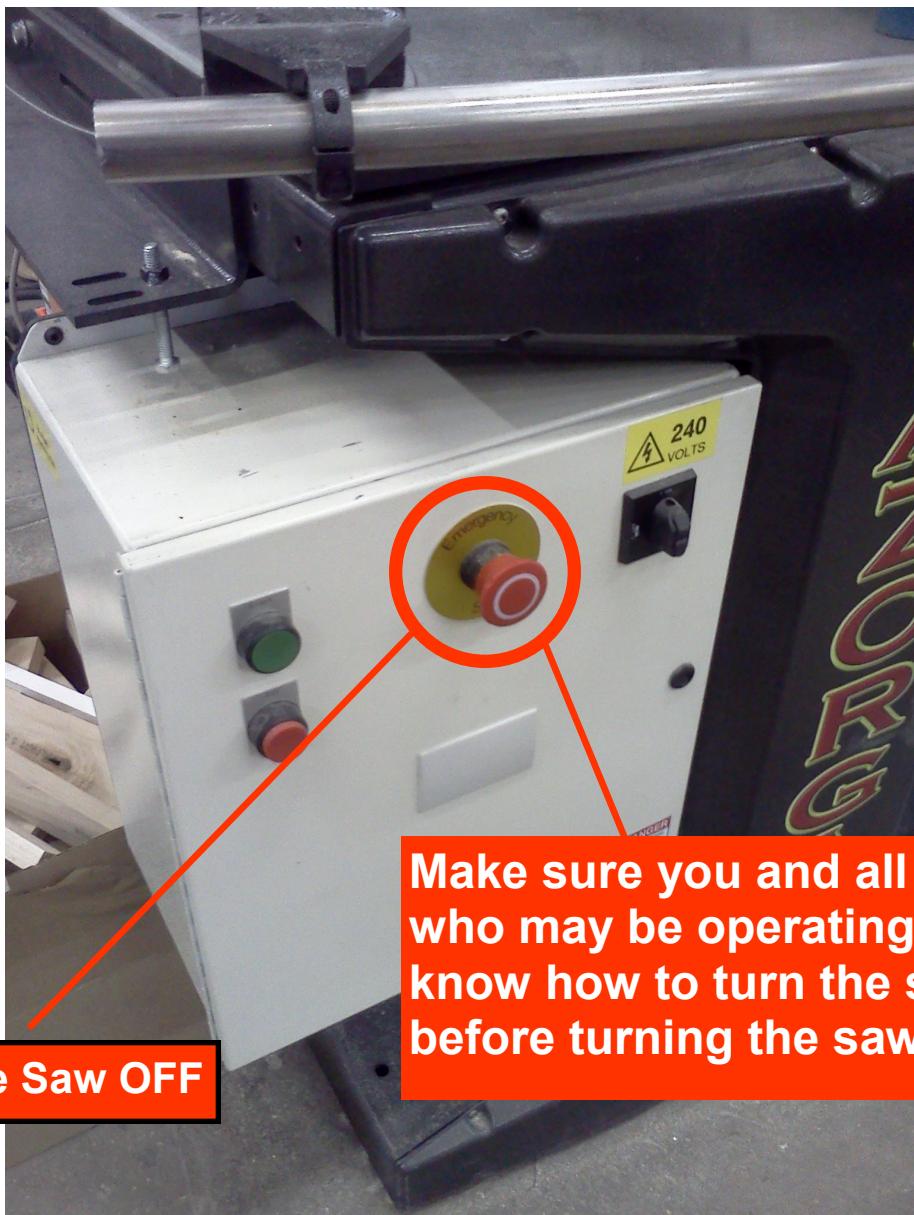
DANGER

The operator must remove from and lock out all power to saw before continuing.



Turning the Saw On

Make sure all guards are in place and that no person will be at risk in any way when the motor is energized and the saw blade begins to turn before making the decision to turn on the saw. Make sure you and all persons who may be operating the saw know how to turn the saw OFF before turning the saw ON. Pull the Emergency Stop button OUT. Press the green START button. The motor will begin ramping up to operating speed.



Turning the Saw OFF

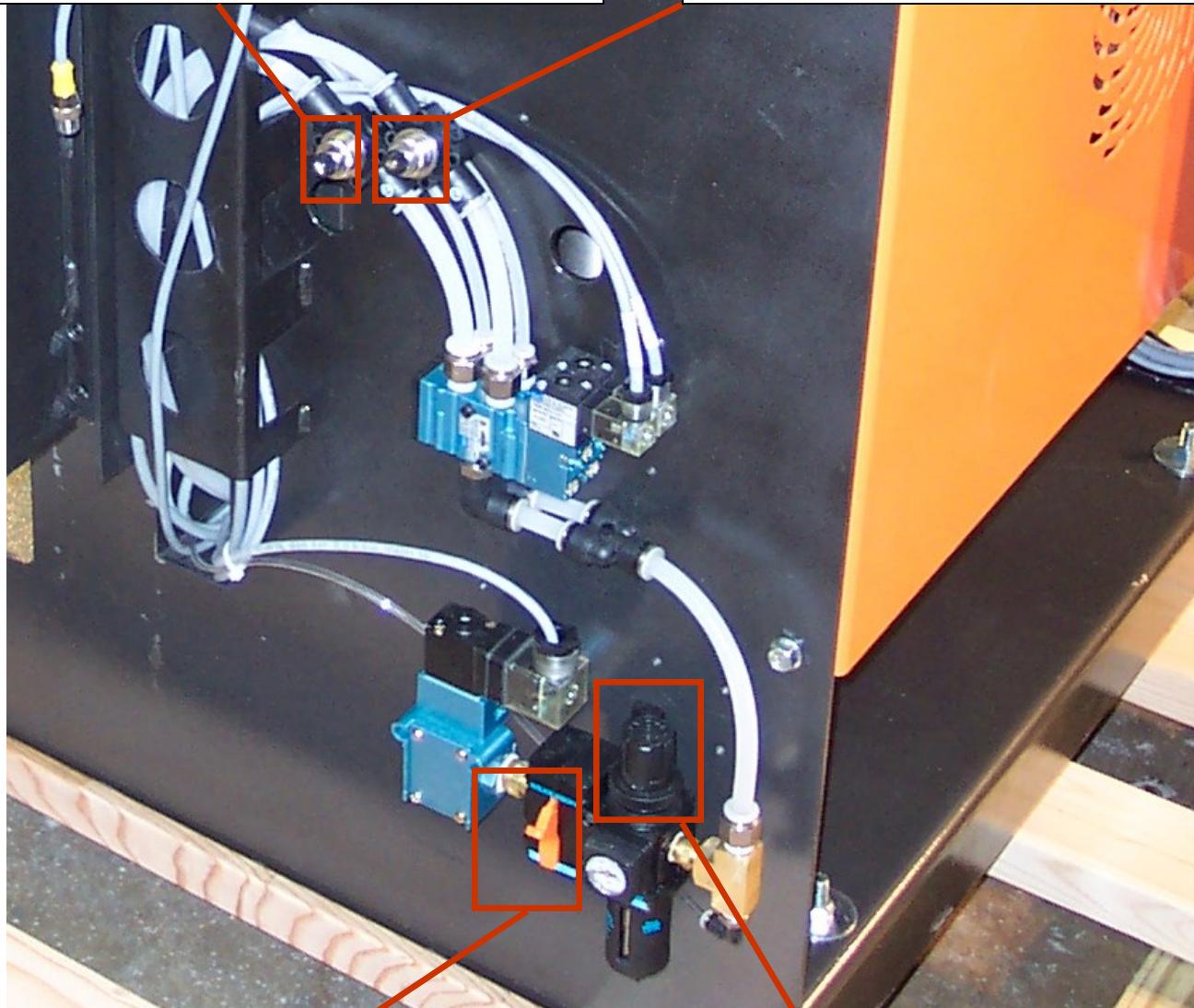
Make sure you and all persons who may be operating the saw know how to turn the saw OFF before turning the saw ON.

Press the RED EMERGENCY STOP BUTTON. If your saw is equipped with a RED STOP BUTTON, it may also be used to stop the saw motor.

Adjusting the Sawing Speed & Main Pressure

This device controls the speed of the blade as it travels down through the material. Loosen the locking thumb nut before adjusting. Turn the knob clockwise to decrease speed, counter clockwise to increase speed. Re-tighten the locking nut.

This device controls the speed of the blade as it travels up through the material. Loosen the locking thumb nut before adjusting. Turn the knob clockwise to decrease speed, counter clockwise to increase speed. Re-tighten the locking nut.



This device is a manual means of dumping all air pressure in the saw and locking it out with your approved lockout device.

This device controls the saw's main incoming air supply pressure. Set it to 80 psi as per the pressure gage below the adjustment knob. Turn the knob clockwise to increase pressure, counter clockwise to decrease pressure.

Using the LCD Display (Manual Saws Only)

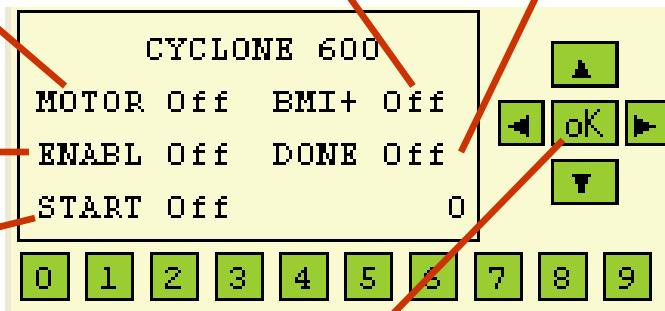
Saw Motor Status says "On" when saw motor is running.

BMI + Status
Off = Auto Mode Disabled
On = Auto Mode Enabled

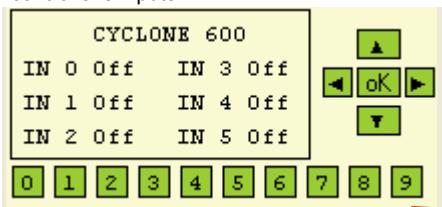
When a saw cycle completes this output changes to "On"

Saw Enable Input Status - This input comes on when contacts on a related machine close to indicate that it is OK for the saw to cycle.

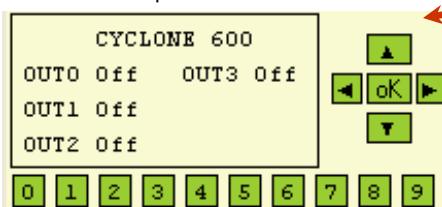
2-Hand Cycle Input Status Turns "On" when both handlebar buttons are pressed simultaneously.



Input Screen shows the current state of the controller's inputs.

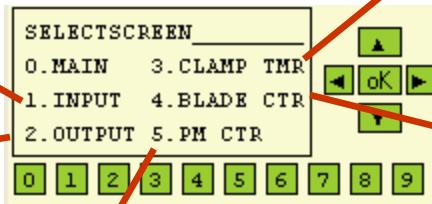


Output Screen shows the current state of the controller's outputs.

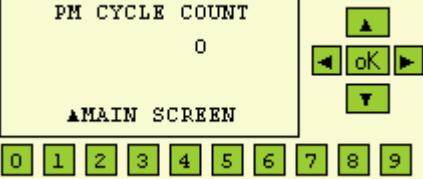


Hold the OK button for 3 seconds to bring up the maintenance screen

Maintenance Screen

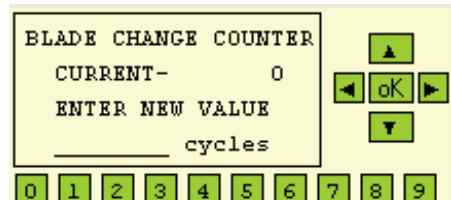


The Vertical Clamp Timer is a timer used in the saw cycle. When the two-hand buttons are pressed simultaneously the controller energizes the air valve that lowers the top clamp. The controller then allows the Vertical Clamp Timer to time out before energizing the valve that brings the saw up. This timer can be set here.



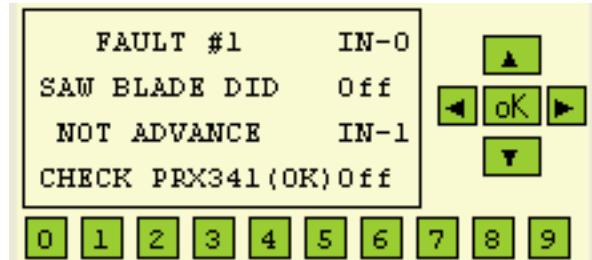
The PM Cycle Count shows how many cycles have elapsed since the last time the bearings were greased.

The Blade Change Counter counts the number of cycles since the last blade change. The operator can set this counter to a value that works for your operating conditions. The actions on the screen are accomplished by pressing the arrow buttons that correspond to the arrow preceding the action label. To change the value press the left arrow as is indicated by the left facing arrow preceding the label "SET". The screen below will appear. Use the number keys to enter a new value and press OK.

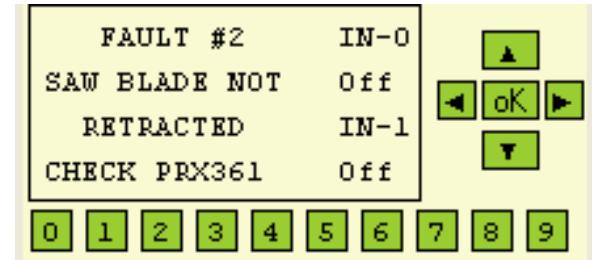


LCD Display Fault Messages

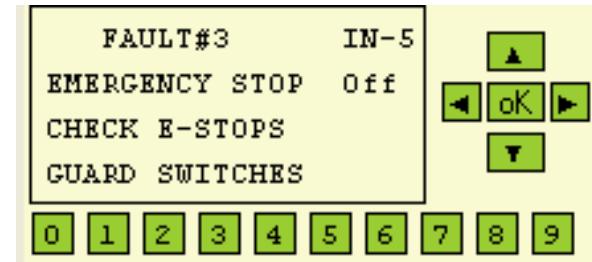
FAULT #1 - This fault indicates that the controller is waiting for the "SAW UP" sensor to be made.



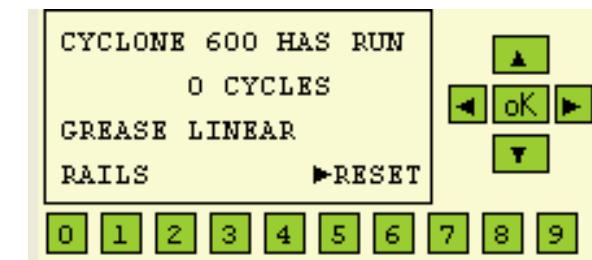
FAULT #2 - This fault indicates that the controller is waiting for the "SAW DOWN" sensor to be made.



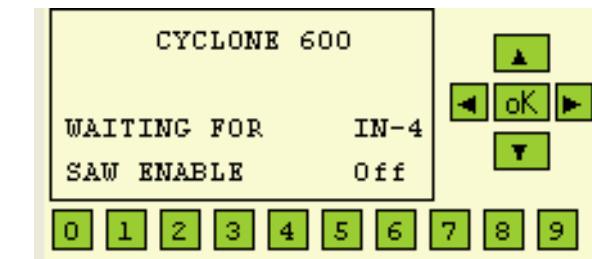
FAULT #3 - This fault indicates that the Emergency Stop Circuit is not closed. This is the case if the E Stop is not pulled out or if the screw that holds the saw blade guard is not driven in to its maximum depth or if there is low air pressure.



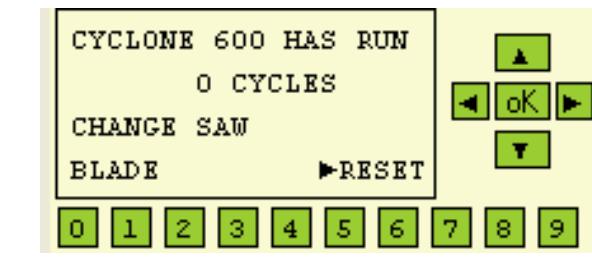
This message indicates that if the PM (Preventative Maintenance) Counter has recorded the number of saw cycles necessary for lubrication of the linear bearings on the saw slide and the top clamp. After greasing all 6 linear bearing blocks press the right arrow button to reset the counter.



This message indicates that the controller is waiting for the SAW ENABLE output from the RazorGage. This may mean that the RazorGage is turned off or that the cable between the RazorGage and the Cyclone saw is not plugged in.

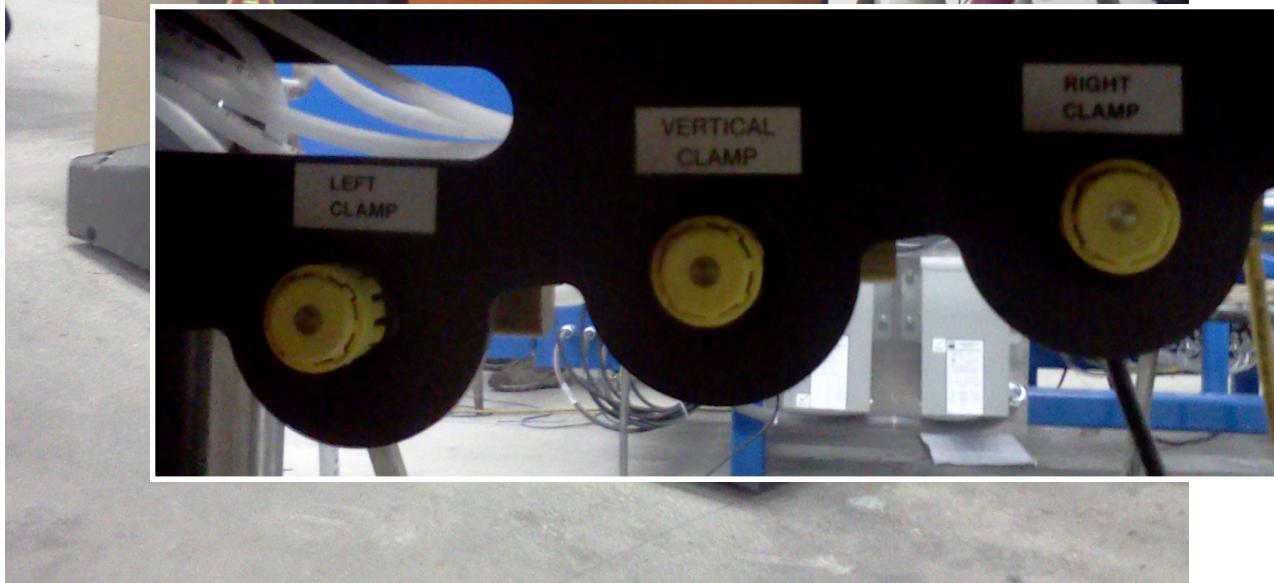


This message shows that the Saw Blade Counter has recorded the number of cycles after which the blade should be changed. After changing the blade press the right arrow button to reset the counter.

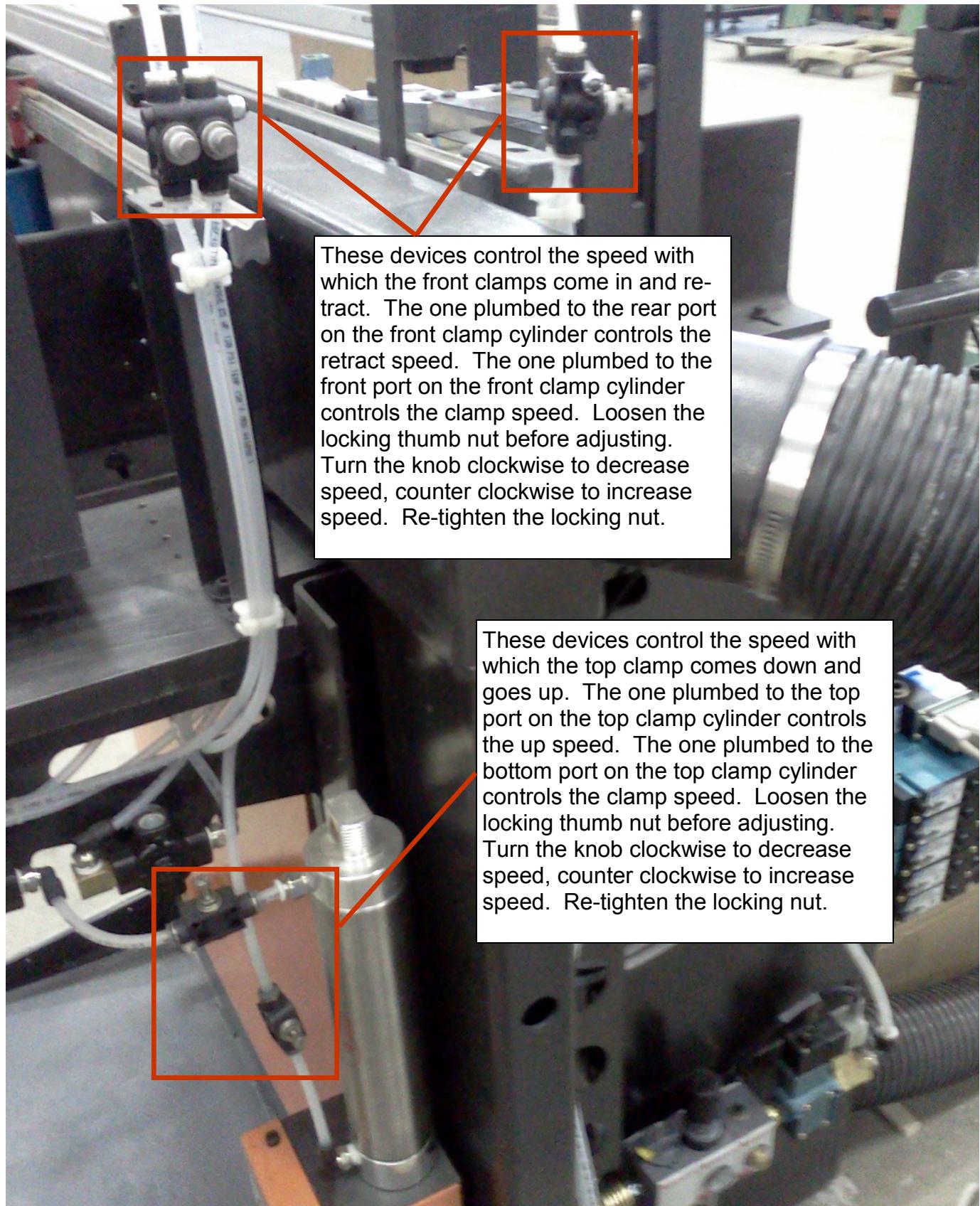


Adjusting the Clamping Pressure

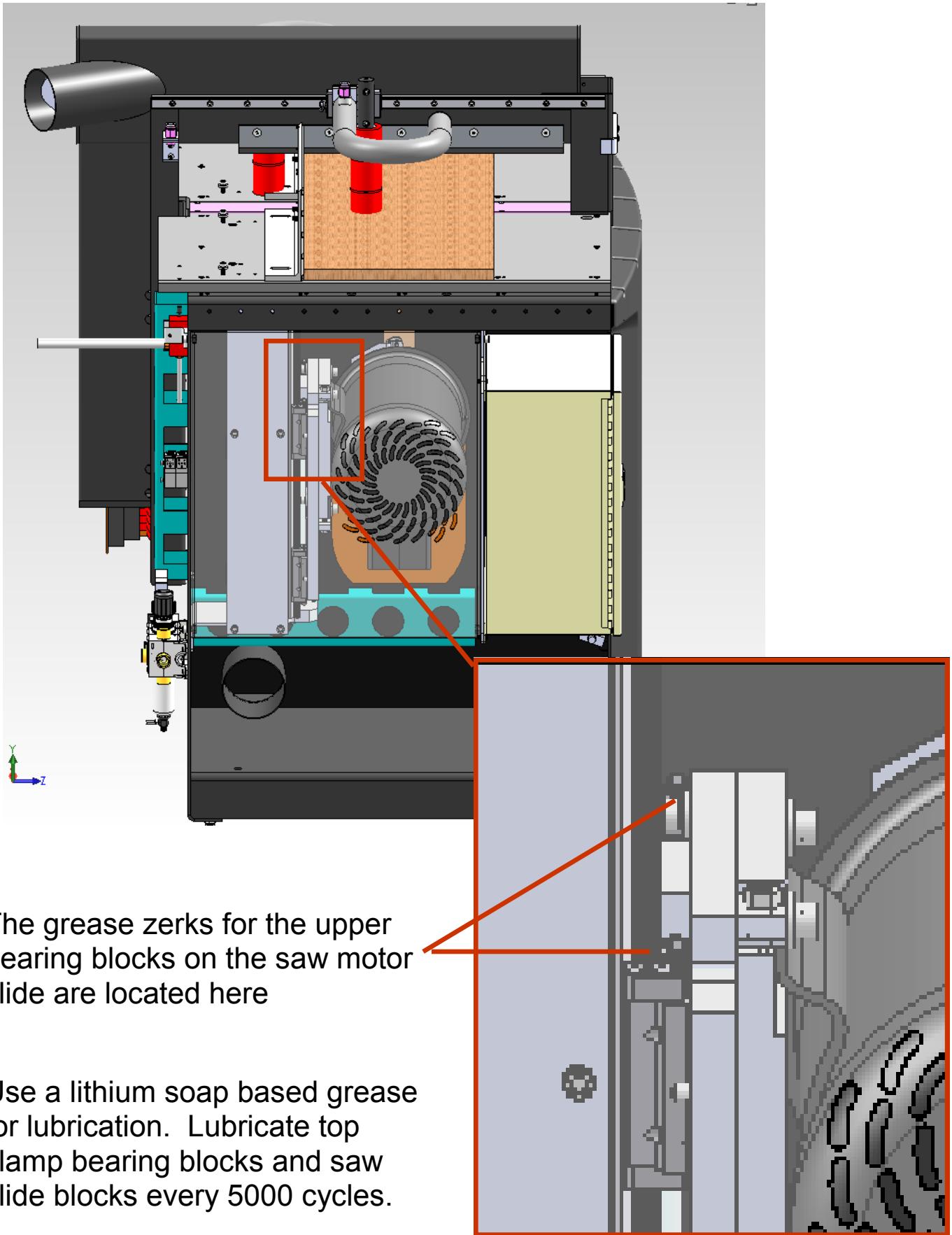
In addition to the main air supply pressure, there are also pressure adjustments for the top clamp and (optionally) the front clamps located beneath the right table to the rear. Turn clockwise to increase pressure, counter clockwise to decrease pressure. For the Vertical clamp start low and gradually increase. Stop when the cut is acceptable. The front clamps can generally be opened up to the max.



Adjusting the Clamping Speed



Greasing the motor slide bearings on the Cyclone 600

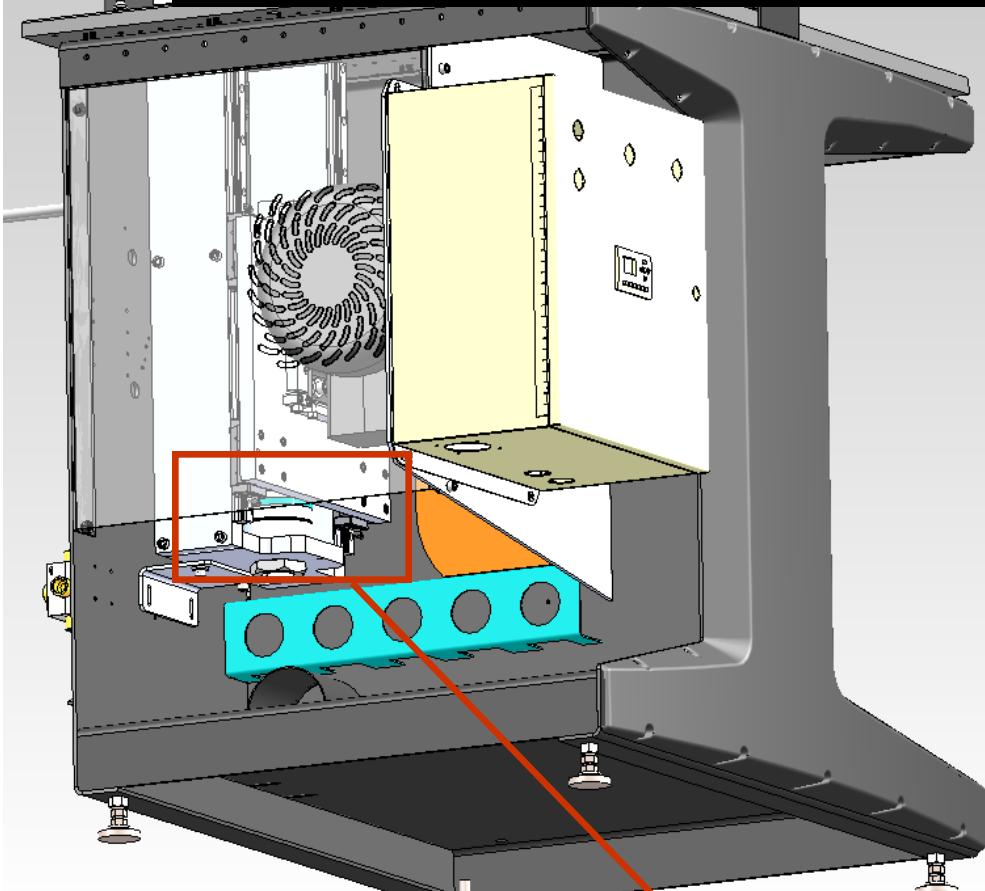


Greasing the motor slide bearings on the Cyclone 600

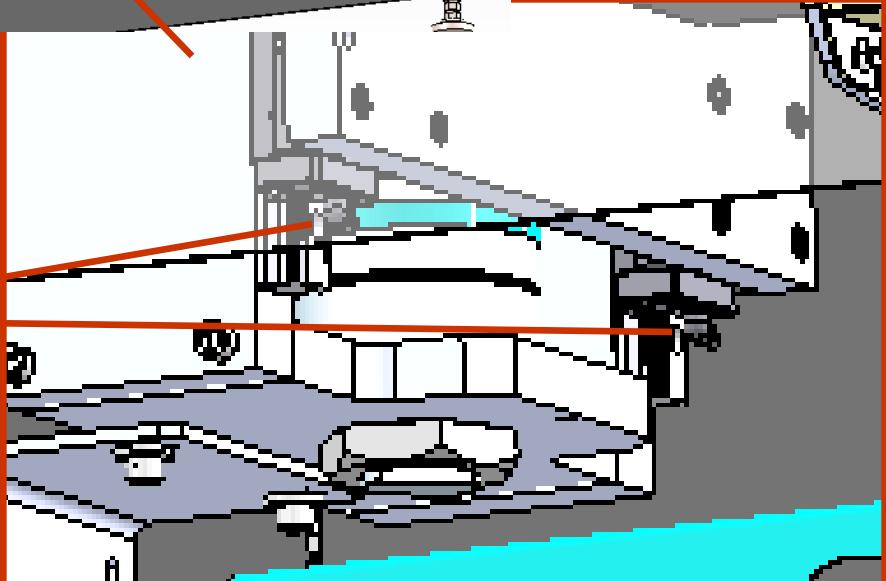


DANGER

The operator must remove from and lock out all power to saw before servicing.



The grease zerk for the lower bearing blocks on the saw motor slide are located here



Use a lithium soap based grease for lubrication. Lubricate top clamp bearing blocks and saw slide blocks every 5000 cycles.

Greasing the top clamp slide bearings on the Cyclone 600



DANGER

The operator must remove from and lock out all power to saw before servicing.

To access the grease zerks for the top clamp slide bearing blocks insert the neck of the grease gun through these holes.



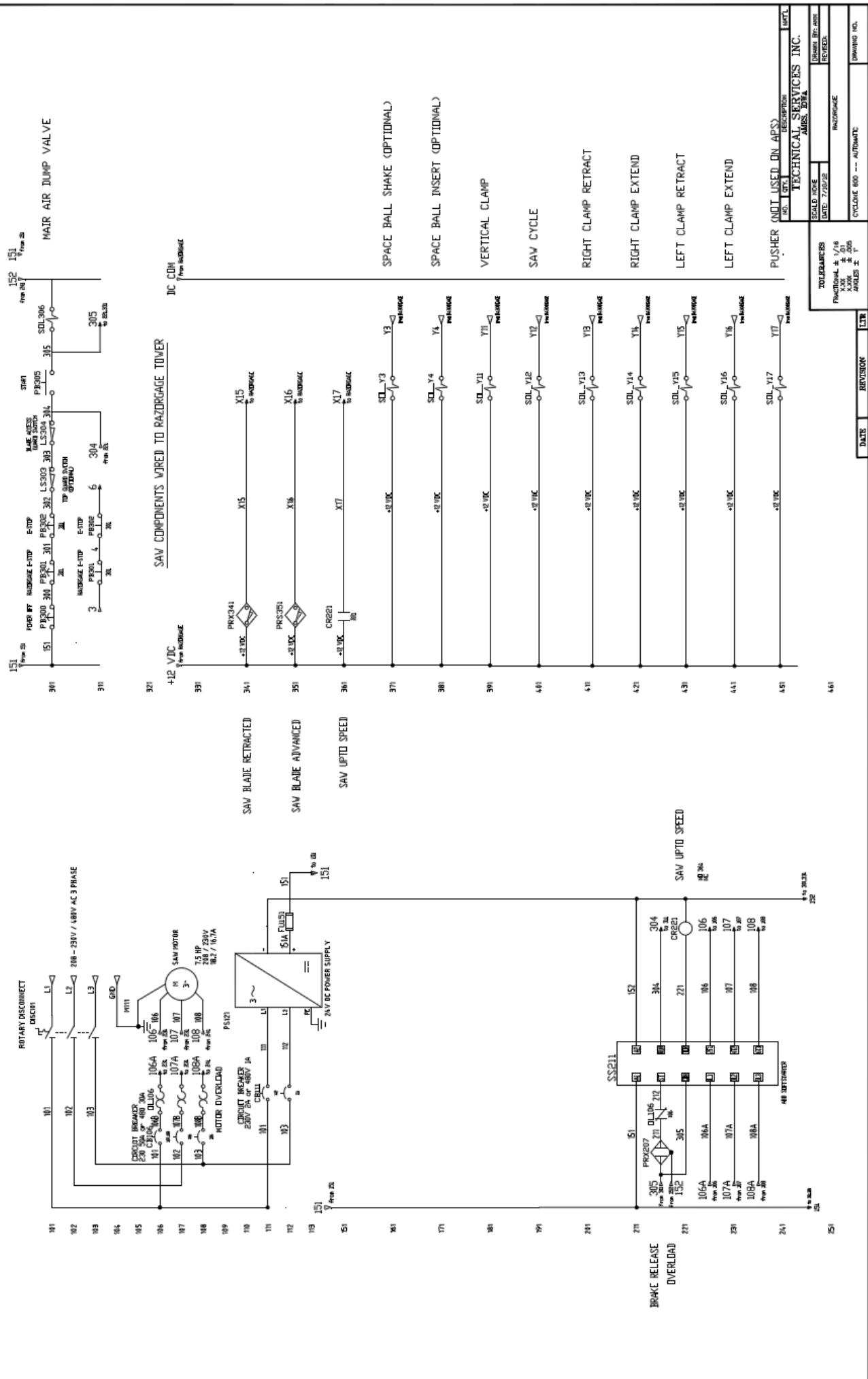
Use a lithium soap based grease for lubrication. Lubricate top clamp bearing blocks and saw slide blocks every 5000 cycles.

Cyclone 600 Sawing Capacity Chart & General Specifications

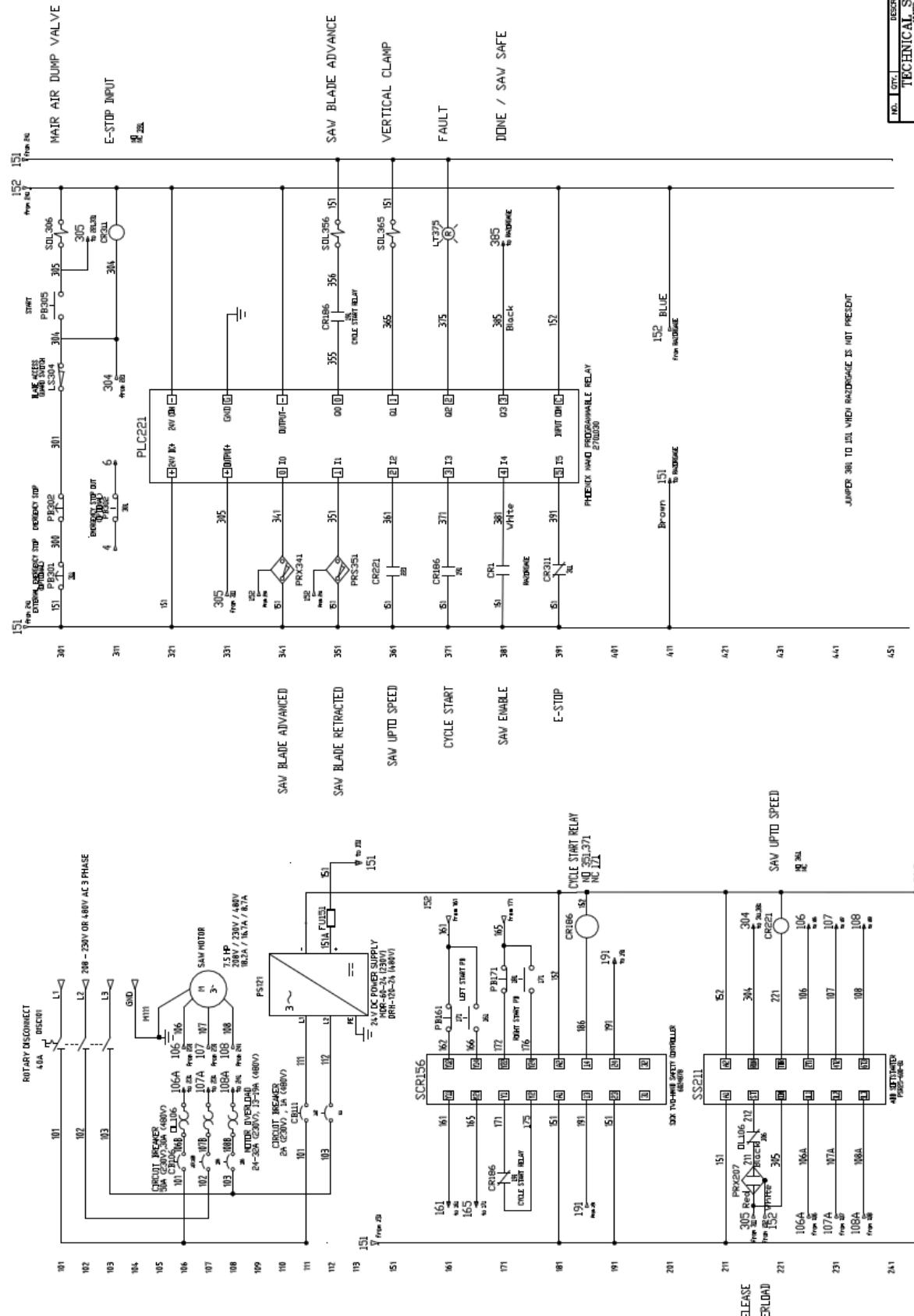
Material Thickness	Cyclone 600 Width Capacity for Common Blade Diameters					
	14" Blade	16" Blade	18" Blade	500mm Blade	22" Blade	24" Blade
0.5	6.97	10.38	13.23	15.42	18.27	20.62
0.75	6.04	9.77	12.76	15.02	17.93	20.32
1	4.89	9.10	12.25	14.59	17.57	20.00
1.25	3.32	8.35	11.70	14.13	17.19	19.67
1.5		7.49	11.10	13.64	16.79	19.32
1.75		6.49	10.44	13.11	16.36	18.95
2		5.25	9.72	12.54	15.90	18.55
2.25		3.56	8.91	11.92	15.42	18.14
2.5			7.98	11.24	14.90	17.70
2.75			6.90	10.50	14.35	17.24
3			5.58	9.68	13.75	16.74
3.25			3.78	8.75	13.11	16.22
3.5				7.68	12.42	15.67
3.75				6.40	11.67	15.08
4				4.75	10.84	14.45
4.25				1.99	9.92	13.77
4.5					8.88	13.03
4.75					7.68	12.24
5					6.20	11.37
5.25					4.20	10.40
5.5						9.30
5.75						8.03
6						6.49

The vertical stroke of the upcut saw blade requires that the workpiece be centered over the center line of the blade to maximize thickness capacity. The fence is adjustable to accommodate the potential material sizes as shown in the chart above. For best cut quality on thin stock the work piece should be toward the rear of the saw. Adjust the position of the fence toward the rear of saw to optimize cut quality. See adjustment section for directions on adjustment of fence and squaring fence to blade after adjustment.

CYCLONE 600 AUTOMATIC SCHEMATIC



CYCLONE 600 MANUAL SCHEMATIC



CYCLONE 600 BMI+ SCHEMATIC

