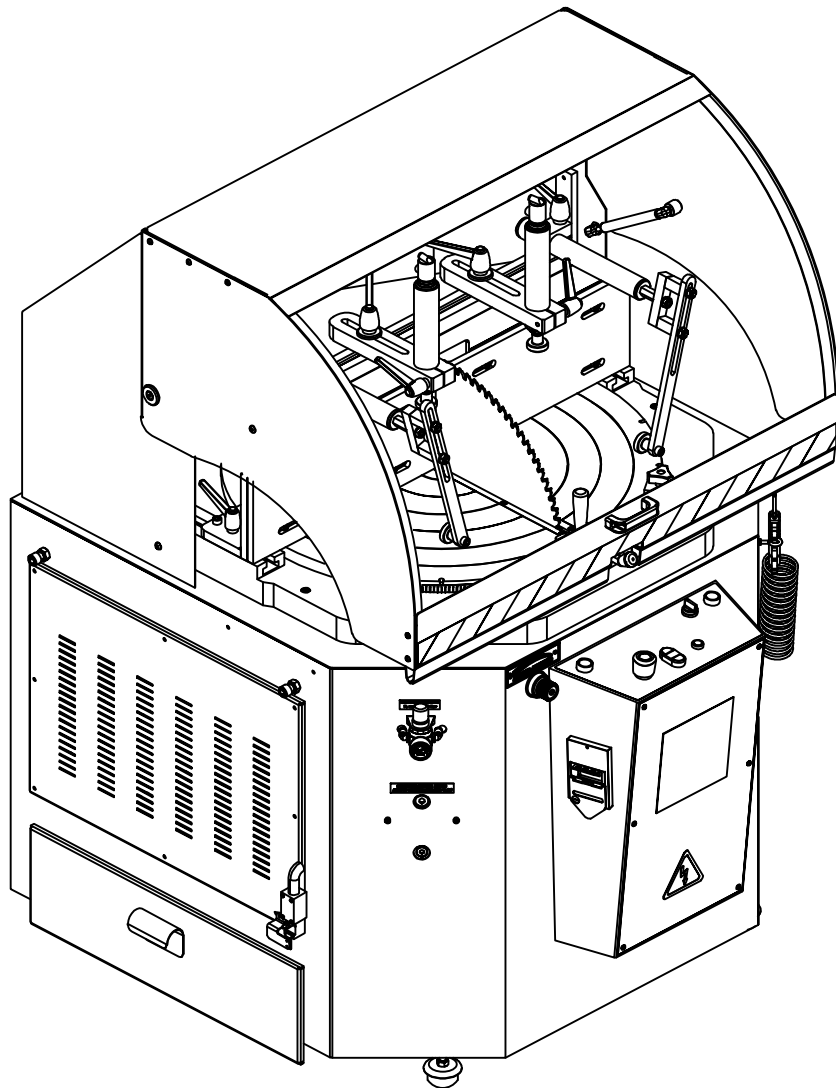


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MODEL SUP-600-NF
PRECISION MITER UP-CUT
NON-FERROUS SAW**





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MODEL SUP-600-NF COLD SAW

PRINTED JANUARY 2025

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SUP-600-NF SAW





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1.0 INTRODUCTION

This instruction manual represents an integral part of the machine. It must be consulted before, during, and after the machine is put into service, as well as whenever it is considered necessary. Operators will only have the knowledge they need to safely and effectively operate this machine by reading this manual. Safety information that is necessary to prevent property damage and injury is covered in the following pages.

- **ATTENTION:** Carefully read this manual before installing the machine. The manual must be kept throughout the machine's lifetime in a place that is easy to find in the event that it is needed. In the event that a used machine is sold, the machine shall be sold together with this manual. In the event that the machine is scrapped, the identification plate and any other document supplied with the same shall be destroyed.

1.1 Warranty

Scotchman Industries, Inc. will, within three years of the date of purchase, replace F.O.B. the factory or refund the purchase price for any goods which are defective in materials or workmanship, provided the buyer, at the seller's option, returns the defective goods freight and delivery prepaid to the seller, which shall be the buyer's sole and exclusive remedy for defective goods.

This warranty does not apply to machines and/or components which have been altered, changed, or modified in any way or subjected to abuse and abnormal use, inadequate maintenance and lubrication or subjected to use beyond the seller's recommended capacities and specifications. In no event shall the seller be liable for labor cost expended on such goods or consequential damages.

The seller shall not be liable to the purchaser or any other person for the loss or damage directly or indirectly arising from the use of the goods or from any other cause.

No officer, employee or agent of the seller is authorized to make any oral representations or warranty of fitness or to waive any of the foregoing terms of sale and none shall be binding on the seller.

Any electrical changes made to the standard machine due to the local electrical code variation must be paid by purchaser.

As we constantly strive to improve our products, we reserve the right to make changes without notification.

This warranty is effective December 1, 2009.

2.0 GENERAL MACHINE INFORMATION

2.1 Machine Identification Data

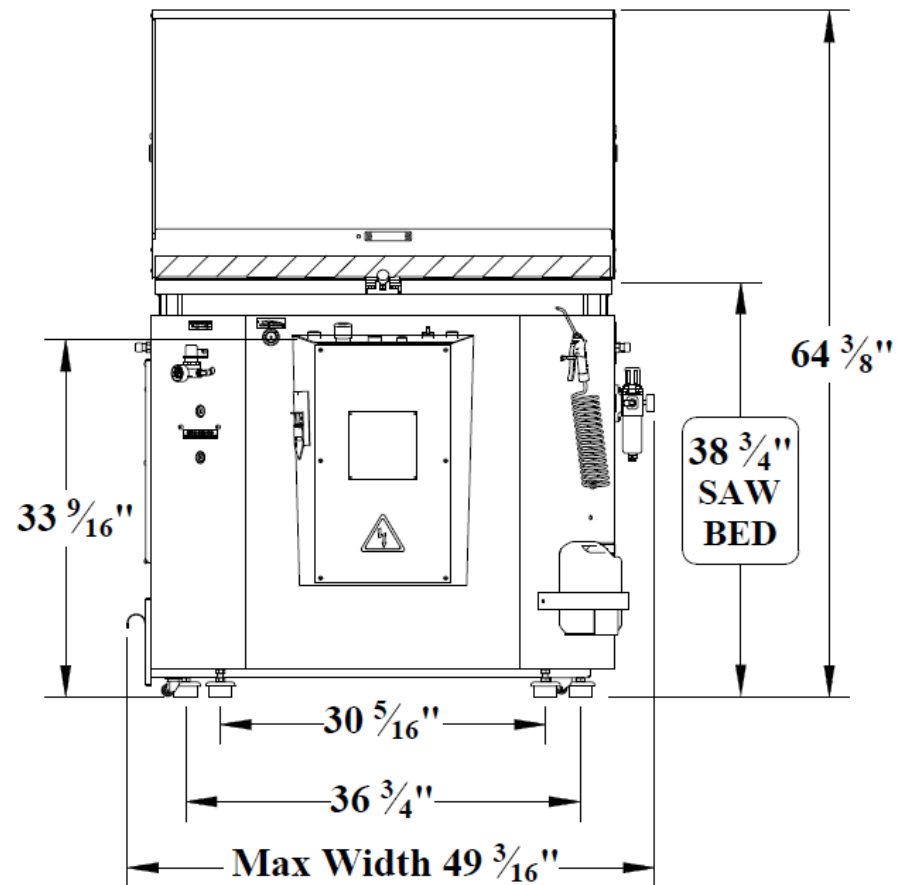
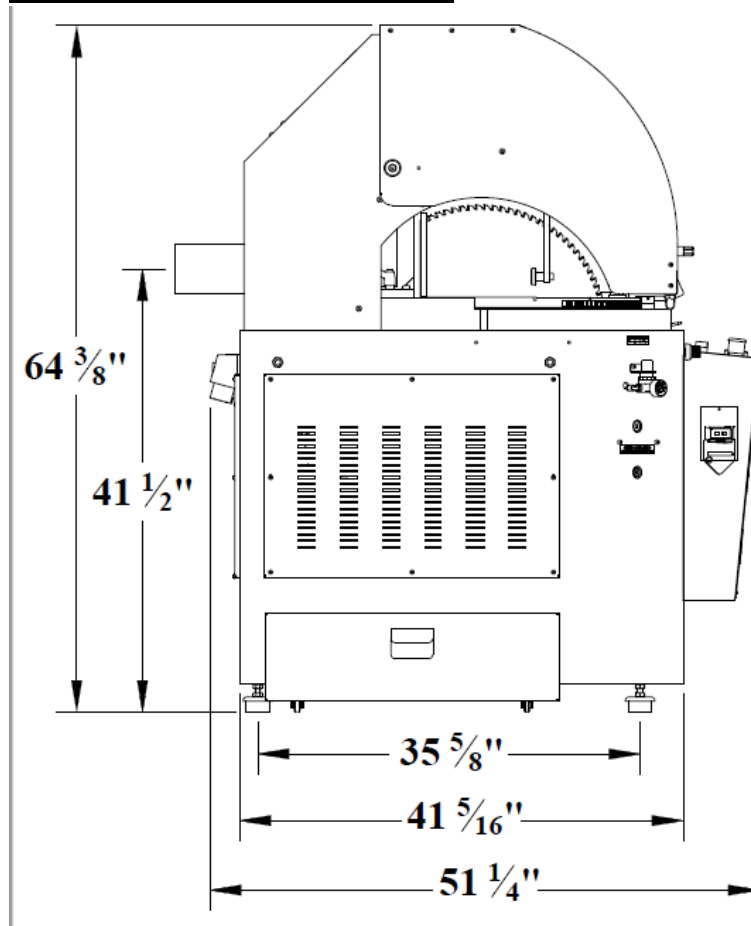
<u>MODEL - SUP-600-NF</u>
<u>SERIAL NUMBER</u> _____
<u>YEAR OF MANUFACTURE</u> _____

- NOTE: IN ORDER TO REQUEST SPARE PARTS, WHETHER COVERED BY THE WARRANTY OR NOT, ALWAYS INDICATE THE MODEL AND SERIAL NUMBER OF THE MACHINE, AS WELL AS THE NAME OF THE PART AND THE PART NUMBER THAT APPEARS IN THE FOLLOWING PARTS DIAGRAMS WITHIN THIS MANUAL.

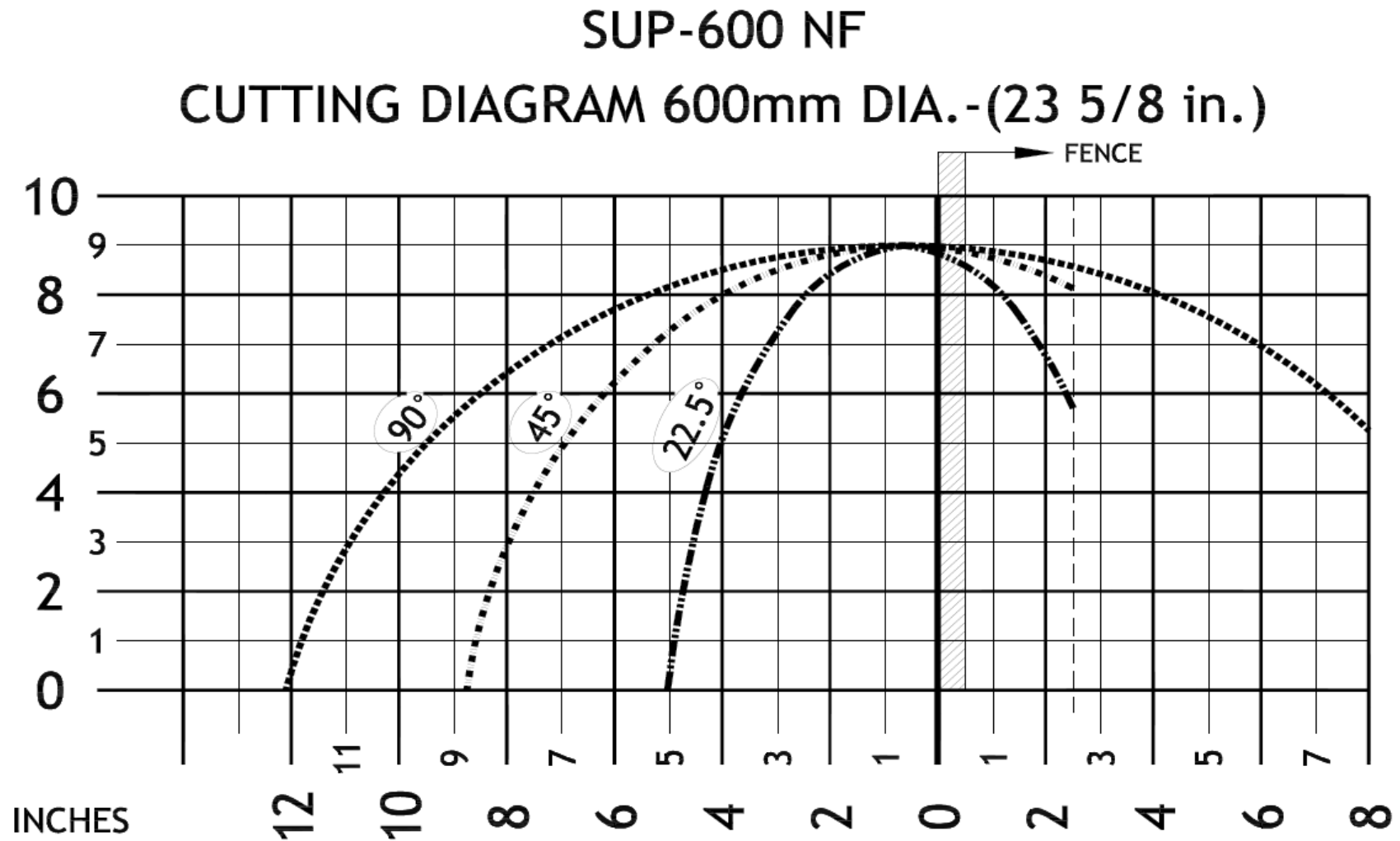
2.2 Technical Data

ITEM	SPECIFICATION
Three Phase Motor	230/460V 6.6 HP @ 60 Hz, 5.5 HP @ 50 Hz *Some models have 10HP Option
Motor Speed	3,450 @ 60 Hz, 2,880 @ 50 Hz
Blade Arbor	50 mm
Maximum Blade Dimensions	600 x 4.5 x 50 mm
Mitering Range	22° - 168°
Fixed Miter Detents	45°, 90°, 135°
Working Pressure	90 – 105 psi, 6.5 – 7.2 bar
Air Demand	5 CFM
Pneumatic Material Vise Cylinders	2 Vertical and 2 Horizontal
Blade Lubrication System	Pneumatic Mist
Dimensions	52” x 48.8” x 65.4”
Weight	1,100 lbs

2.3 Machine Dimensions



2.4 Cutting Capacity



2.5 Electrical Data

POWER SUPPLY	MOTOR POWER	TOTAL CONSUMPTION
230 V Three Phase	5 kW / 6.6 HP	16 amps at 60 Hz
460 V Three Phase	5 kW / 6.6 HP	10 amps at 60 Hz
230 V Three Phase	10 HP	32 amps at 60 Hz
460 V Three Phase	10 HP	16 amps at 60 Hz

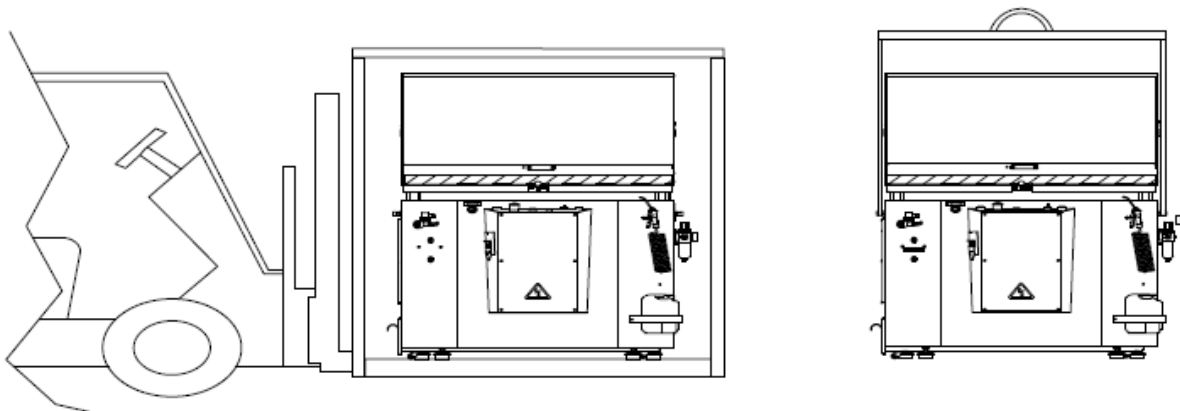
2.6 Noise Level

At a distance of 2 ft	RUNNING OFF-LOAD	80 dB (A)
	CUTTING A 2.75" x 2" PROFILE	120 dB (A)

- **ATTENTION:** When working with the machine, use individual hearing protection equipment.

3.0 INSTRUCTIONS ON TRANSPORT AND STORAGE

1. The saw can be transported short distances via forklift. Take great care not to damage the machine when sliding forks beneath it. There are 4 lifting lugs (2 per side) for attaching a fixture for lifting via bridge crane.
 2. Store the saw in a vertical position. Do not stack any items on top of it.
 3. If the saw is to be stored for a long time period, inspect it monthly. During each inspection, cycle the vise cylinders, cycle the saw blade, and move the miter lock to lock to prevent seizure of any moving components.
 4. Store this machine in a covered area. It must not be exposed to outdoor weather conditions.
 5. Place the machine on a properly sized, structurally sound pallet and wrap in plastic to prevent moisture and dust intrusion.
- **CAUTION:** Do not improperly dispose of the packaging. Send this material to be recycled or disposed of in accordance with local regulations.



4.0 INSTRUCTIONS FOR ANCHORING / SERVICE START-UP

4.1 Anchoring Instructions

When receiving a new machine, ensure the machine has not been damaged during transport by making a visual inspection BEFORE signing the delivery paperwork. If damage is seen, refuse the shipment and notify Scotchman. DO NOT ACCEPT DAMAGED EQUIPMENT. This makes filing damage claims with the shipping company impossible and will make the customer responsible for the damage repair costs.

The machine must be installed on a firm surface that is as level as possible to reduce vibration during saw operation. A machine that is not levelled on a firm surface will not meet the specified cutting accuracy.

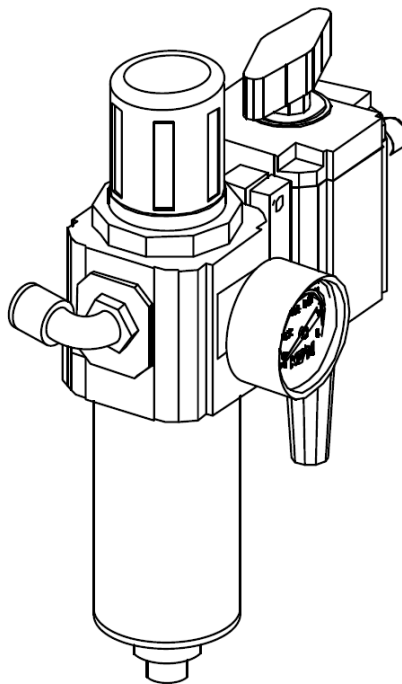
4.2 Power Supply Connection

Verify that the power supply voltage corresponds to the voltage indicated on the specifications plate of the machine. Connect the cable to the power supply using a plug that is appropriate for the amp draw of both the machine and power loss through the customer supplied power cable as determined by the customer's certified electrician. Ensure all connections made to power comply with local and national electric codes.

Once the machine is connected, verify that the saw blade rotation is away from the operator when the operator is standing in front of the machine. If the saw blade rotation is wrong, swap two phases of incoming power to the motor. Then check for proper rotation again.

The saw must be connected to a steady supply of compressed air. The incoming supply is connected to the filter regulator. It is located on the right side of the machine.

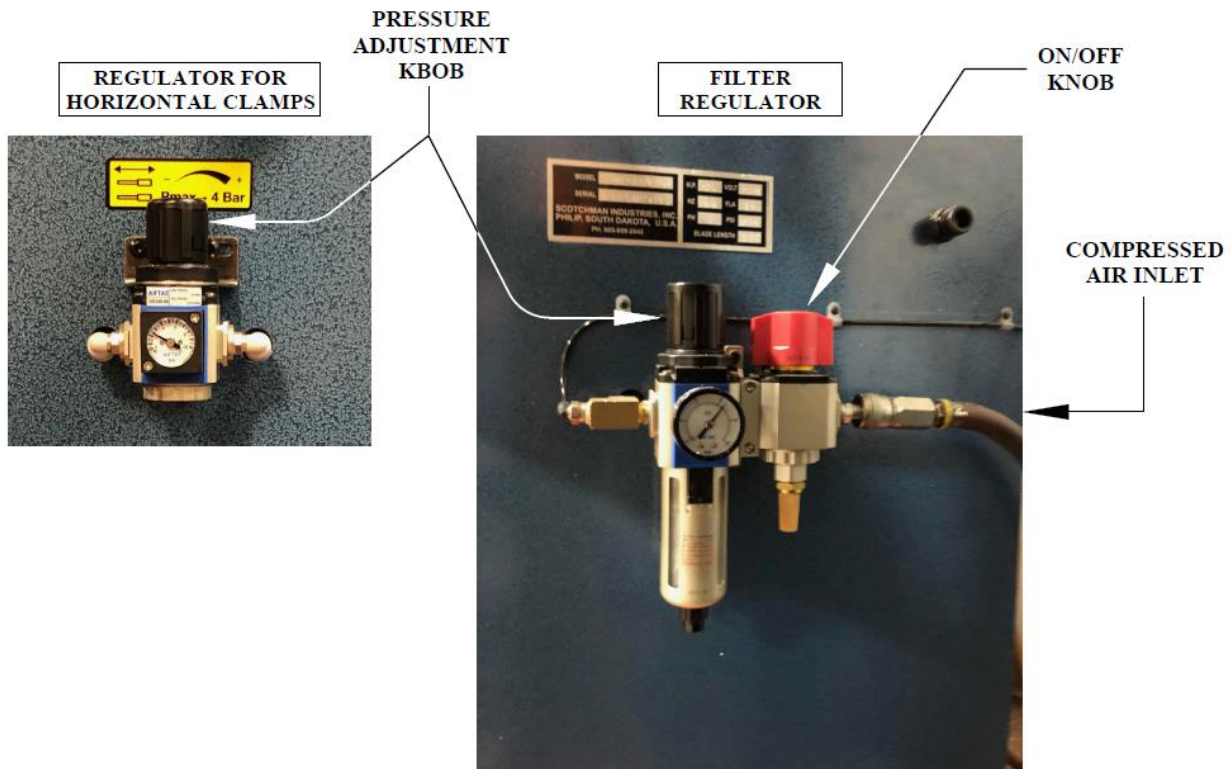
- ATTENTION: The pneumatic working pressure must be between 6.5 to 7.2 bar (90 – 105 psi).



4.3 Pressure Regulator

The air inlet location is shown below. The air regulator must be set at 6.5 to 7.2 bar (90 to 105 psi). The red knob on top is used to turn the air supply on or off. Do not add oil to the regulator. The pneumatic components of this machine are internally lubricated with grease.

There is another smaller regulator on the front left of the saw that regulates the air pressure to the horizontal clamp cylinders. It should be set for 2 – 3 bar (30 – 45 psi). Maxium is 4 bar (60 psi).

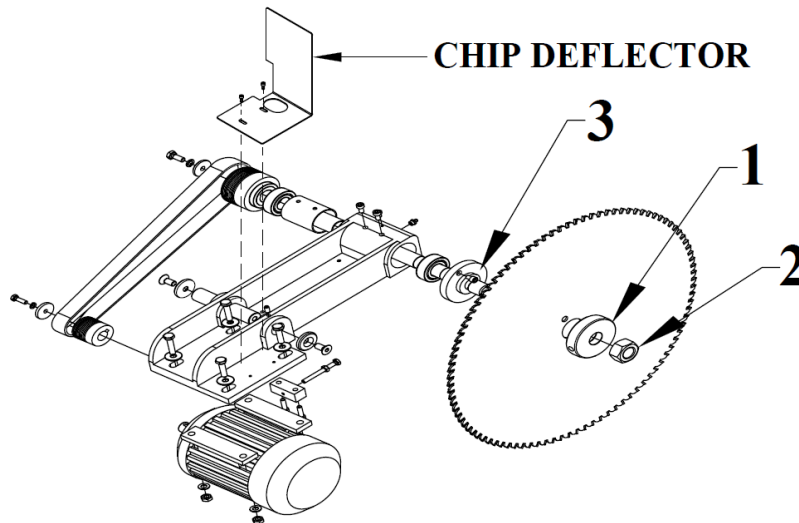


4.4 Installing the Blade

This machine uses a 600mm diameter blade with a 50mm diameter arbor.

1. Set the saw to 90° and disconnect the power. Open the cabinet door and remove the existing blade.
- NOTE: The blade nut has a standard (right hand) thread direction.
2. Insert the rod provided with the machine into the blade flange (1) and loosen the blade nut (2) with the wrench provided. Remove the blade. The teeth on carbide blades are very sharp and we recommend wearing gloves while changing blades.
3. Check the blade flange and the blade for any chips or nicks before installing the new blade.
4. Install the new blade, blade flange, and blade nut. The saw blade rotates counterclockwise when facing the blade from the left side of the machine.

- **CAUTION:** Make sure that the blade is installed with the teeth in the right direction for the rotation and the saw is wired for the correct rotation. If the saw is not wired for the correct rotation, the blade will come loose when the saw is powered. If the blade is not installed in the correct orientation, the teeth will be dulled almost immediately.
5. Close the access panel and reset the safety switch.

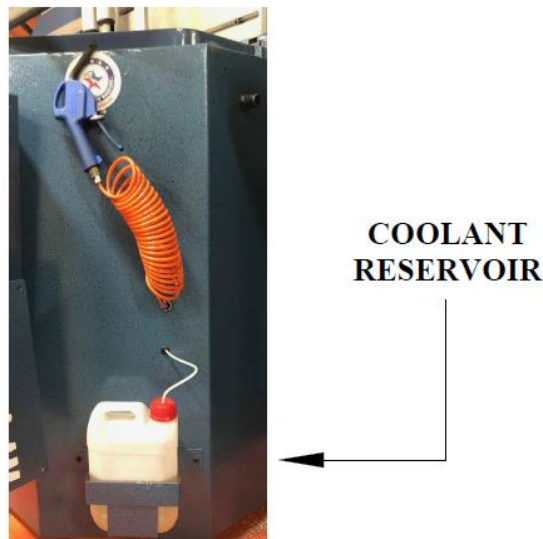


4.5 Belt Removal and Installation

To remove the belt, simply roll it off the pulleys. Do not loosen the motor. Do not pry on the aluminum pulleys or they will get damaged. If the motor has been loosened or removed, it must be realigned. Use a straight edge across the end of the motor pulley and spindle shaft pulley to align the pulleys back again. The straight edge should sit perfectly flat across both pulleys.

4.6 Cutting Coolant

In order to fill the machine with cutting coolant, open the reservoir and fill with our SYNLUBE 2 or equivalent. The coolant reservoir is located on the lower right under the air gun hose.



4.7 Priming/Adjusting the Coolant Mister

The following procedure explains how to adjust the coolant mister or prime the system if it has run out of coolant. This job requires 2 people in order to safely perform. Make sure to adhere to the following instructions. Failure to do so may result in serious injury.

1. Make sure the saw is clear of material, and the blade has been turned off.
2. Fill the coolant reservoir located on the left side of the machine with coolant.
3. Turn the 2-position switch for the clamps so they are in “clamp mode”.
4. Turn the 2-position switch for the hood to the down position if equipped with power hood or simply close the hood by hand if not equipped with power hood.
5. Turn the feed rate control knob clockwise until it is turned off. This will prevent the blade from rising.
6. Disengage the safety switch on the left-hand blade door by turning the knob clockwise a number of turns until it stops. Once fully disengaged, the door can be opened.
7. Before proceeding, have a second person press and hold both green buttons on the control panel at the same time to engage the saw. This should cause the solenoid to activate as though the blade is trying to raise and make a cut. With the blade door open, the BLADE WILL NOT SPIN. With the feed rate off, the blade will also not raise out of the cabinet. If the solenoid does not activate, check to make sure the hood is down and the clamps are engaged.
8. If the saw solenoid activates and the blade remains down, the coolant mister can now be primed and adjusted. The adjustment knob is on the backside of the blade.
 - a. Prime – Fully open the mister adjustment knob. Have the second person press and hold the green buttons to activate the saw solenoid. As the buttons are held, the machine should begin to purge air out of the coolant system and slowly turn into a heavy, consistent mist of coolant. Adjust the spray to a satisfactory setting after priming.
 - b. Adjust – Have the second person press and hold the green buttons to activate the saw solenoid. As the buttons are held, the machine will begin to spray coolant onto the blade. Adjust the spray to a satisfactory setting. A typical setting would be around a 2” rooster tail of oil across the blade after 5 seconds of misting. See photo below.
9. Close the side door and reset the safety switch by turning the knob counter clockwise until snug.



4.8 Cleaning the Coolant Mister

The coolant mister can be removed and disassembled for cleaning. It works on a venturi principle. Some of the blade cylinder supply air is diverted to the mister when the blade is advancing up. The air flow through the venturi creates suction that draws the oil from the bottle on the exterior of the machine. Due to the small size of the venturi any debris in the oil bottle can block the venturi and prevent oil flow. When this happens, the mister needs to be removed and disassembled for cleaning.

1. Open the venturi case:



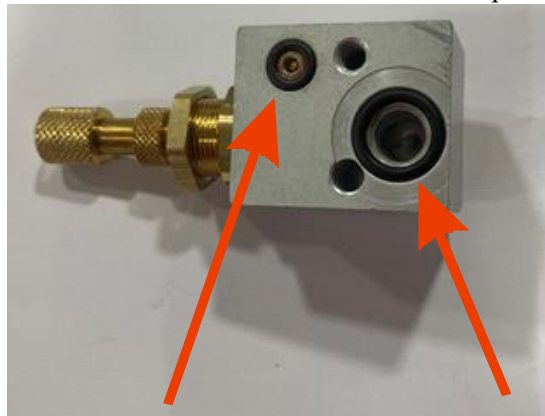
a.

2. Remove the ball, spring, and rubber gasket:



a.

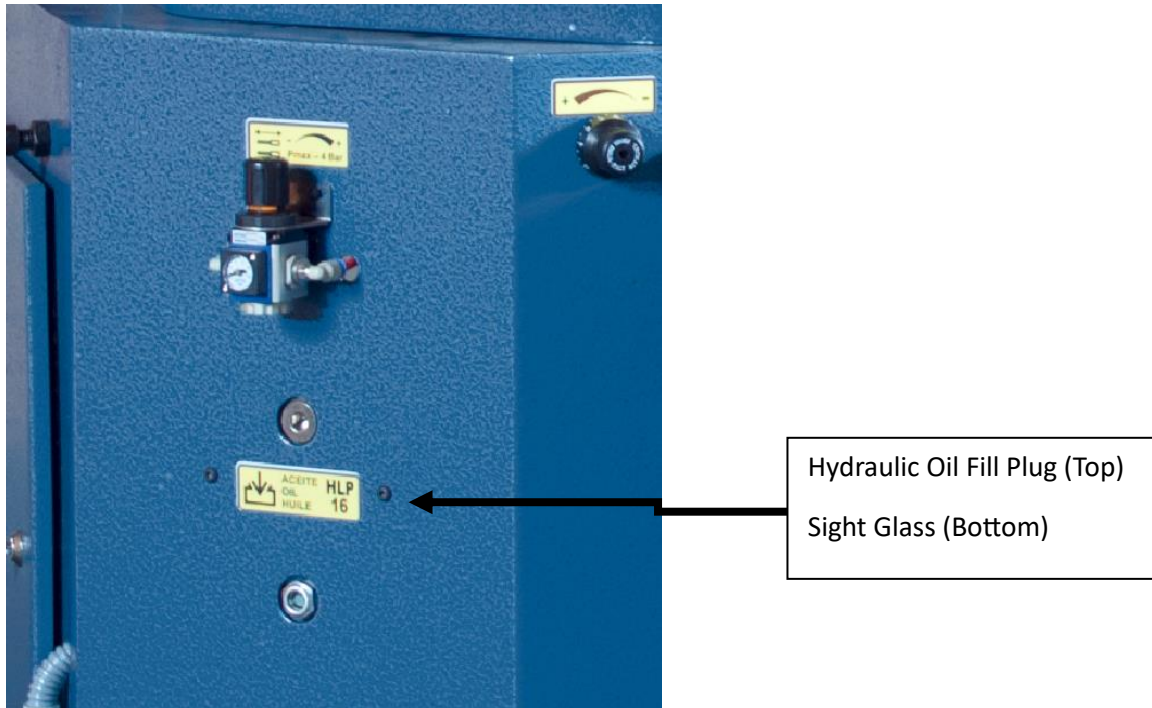
3. Clean the two holes indicated which are the air input and the oil mist output.



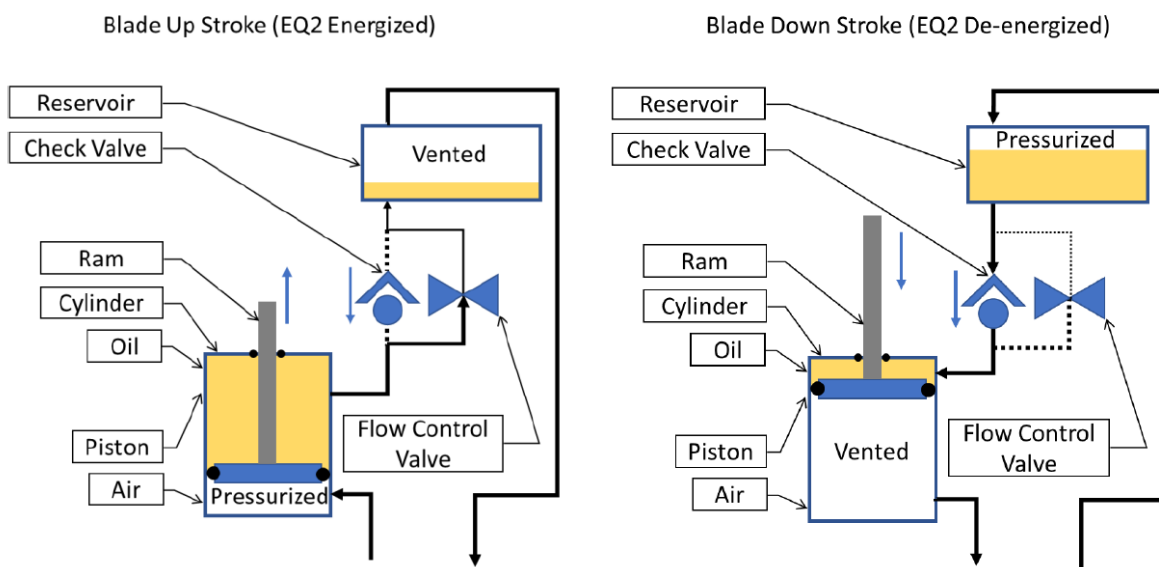
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4.9 Hydraulic Oil and Oleo-Pneumatic System

The oleo-pneumatic converter must be filled with AW32 or 10w nonfoaming hydraulic oil through the threaded plug above the sight glass on the front corner of the machine until the level reaches the center of the sight glass. Be sure to turn off the air supply and dump pressure before removing this plug. It is normally under pressure. This machine holds approximately 1 quart of hydraulic oil.



The operational diagrams below demonstrate how the oleo-pneumatic system operates. Understanding this system is beneficial to operations and essential for troubleshooting. Air is used to power the blade cylinder and the hydraulic oil is used to regulate the advance speed.



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5.0 INSTRUCTIONS FOR USE

5.1 Proper and Improper Use

This is a semi-automatic cold saw especially designed for cutting non-ferrous material. The use of this machine for cutting ferrous materials is strictly forbidden and may lead to machine damage as well as serious injury.



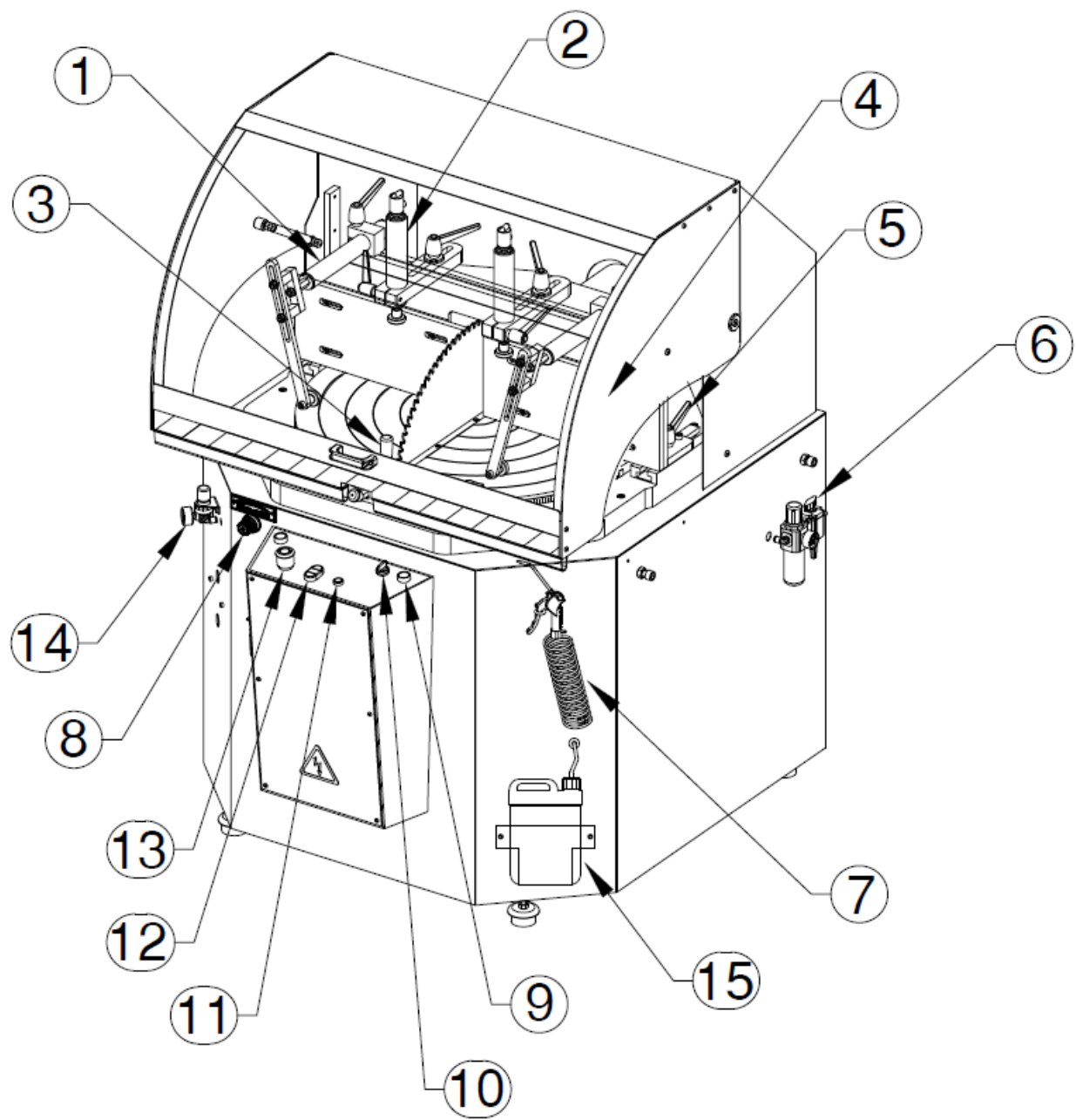
DANGER: We are not responsible for any possible accident caused by the failure to comply with the aforementioned provision.

5.2 Function of the Operating Controls

1. Horizontal clamps
 2. Vertical clamps
- NOTE: The clamping cylinders should be adjusted so that they have minimal travel to clamp the material. The impact stress produced when the cylinder ram is fully extended will reduced the life of the cylinder. It should be at a distance of no more than 1-1/2" (40mm) from the material that is being clamped.
3. Miter table knob
 4. Protective shield
 5. Fence locking lever (one on each side)
 6. Filter Regulator
 7. Cleaning gun with hose
 8. Advance regulator
 9. Raise blade green button (2 total)
 10. Clamp switch, 2 position (on/off)
 11. Green power indicator lamp
 12. Blade motor on/off switch
 13. Emergency stop
 14. Auxiliary regulator for horizontal vise clamp cylinders.
 15. Coolant reservoir



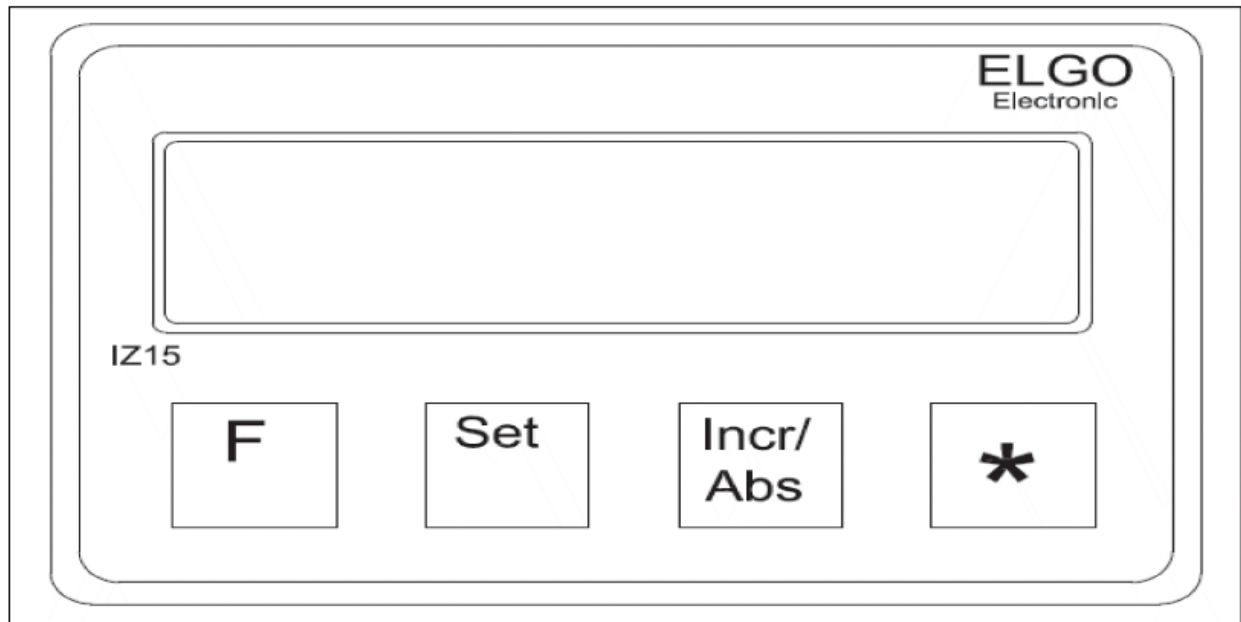
**DANGER: Always work with the protective shield lowered.
DO NOT DISCONNECT ANY SAFETY DEVICES!**



5.3 Adjusting the Digital Miter Gauge (If Equipped)

To zero the digital readout, lock the blade at the 90° position on the miter table. Then press the (F) and (SET) keys. Alternately, the batteries can be momentarily removed and reinstalled. To change the way of reading between incremental and absolute, press (Inc/Abs).

- **ATTENTION:** Care must be taken when cleaning the screen. The surface is plastic and easily scratched. Also, 2x AA batteries are required to power the display. The programming of the readout is unaffected by removal of the batteries. Should the programming parameters become inadvertently altered, contact Scotchman for programming instructions.



5.4 General Rules and Safety Checks

- Before using the machine, check the efficacy and operation of all safety devices, check that the moving parts of the machine are not blocked, ensure there are no damaged parts and all machine components are in place and working correctly.
- NEVER operate the machine with any of the safety devices disabled or removed from the machine.
- It is entirely prohibited to work without the shield down.
- It is mandatory to use appropriate personal protective equipment (reinforced footwear, eyewear, hearing protection, gloves, and head protection).
- Do not wear any loose clothing that can become caught in the machine. Do not keep long hair down or wear loose jewelry which may also become caught in the machine.
- Before starting work, the operator must ensure that all tools used for maintenance or adjustment have been cleared from the machine.
- In the event of a fire, use a class ABC fire extinguisher and disconnect the machine from power as soon as possible. Use of an inappropriate fire extinguisher or water on an oil/electric fire may result in serious injury.

6.0 RECOMMENDATIONS AND MAINTENANCE

6.1 Type and Frequency of Inspections

The operator's thorough knowledge of the machine and proper maintenance schedules is the best way to prevent issues and ensure reliable operation. If any failures are detected, stop using the saw immediately and inform qualified personnel to have the saw repaired.

- NOTE: Always clean the machine and the surrounding work area at the end of each shift or work day.

Saw Lubrication and Inspection Guide				
Saw	Lubricant	Location	Capacity	Frequency
SUP Series	Oil, AW32	Pneumatic Cylinder	Center of Sight Glass	Annually
	Grease	Saw Bearings	1 – 2 Pumps (Top Off) 1/2 Tube (Refill)	Monthly
	Blade Coolant	Coolant Reservoir	As needed	Top Off Daily
Recommended air line pressure is 6.5 to 7.2 bar (90 – 105 psi)				
Clean the machine and surrounding work areas daily or at the end of each shift for 24hr operations.				
Check the condition of the drive belt weekly. Replace when belt cracks or fraying are observed.				

Lubricant Ordering Table			
Lubricant	Size	Sales Part #	Recommended Lubricant
Blade Coolant	1 Gallon	075760	SynLube 2
Hydraulic Oil	1 Quart	060520*	Western M Series AW32
Grease	1 Tube	001139	Mobil XHP 222 Special
*Same part number as our 10W non foaming hydraulic oil. Specify AW32 when ordering.			

6.2 Qualified Personnel for Maintenance and Repair Work

All repairs shall be made exclusively by qualified personnel. Always use original replacement parts. Third party components may cause damage to the machine and injuries.

6.3 Manufacturer's Recommendations

- In the event that the machine is broken down or the saw blade must be replaced, place a padlock on the disconnect switch and place keys under the care of qualified personnel.
- Before working on any electrical devices, disconnect power from the power supply.
- If extension cords are used, ensure that the cable has the appropriate rating for the power of the machine. Aside from the fire risk posed from insufficient cabling, an undersized cable will cause the saw to draw too many amps and either operate improperly or trip breakers.
- Whenever any part has to be replaced, use an original replacement part and use lubricants as recommended by Scotchman in the table above.
- Follow the maintenance schedule as listed above.
- Note: In case of any doubt or problem, do not hesitate to contact Scotchman: (605-859-2542).


6.4 Voltage Conversions



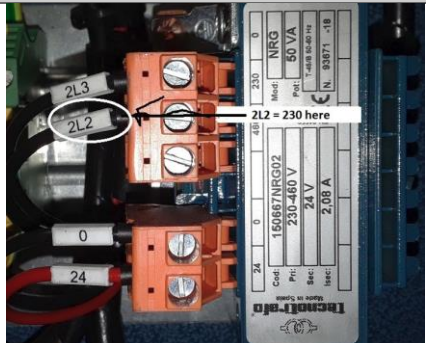
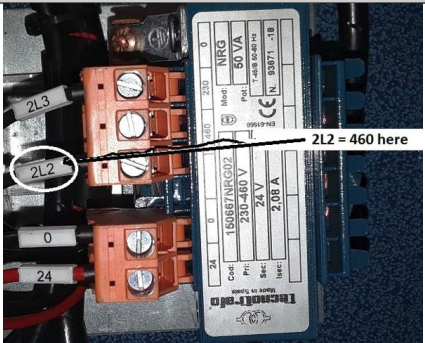
SERIOUS DAMAGE TO THE MACHINE AND INJURY CAN OCCUR IF IMPROPER MODIFICATIONS ARE MADE TO THE ELECTRICAL SYSTEM. ELECTRICAL REPAIRS SHOULD BE DONE BY ELECTRICIANS ONLY.

SUP saws can be converted between 230V and 460V three phase. The following components need modification or replacement to accomplish this task.

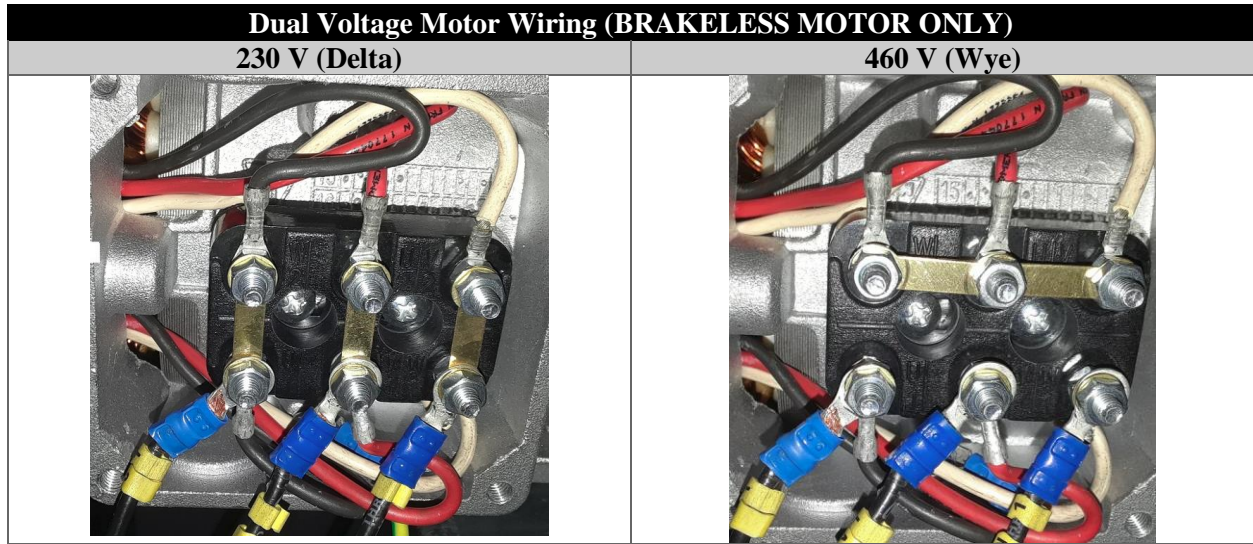
- Motor Overload/Disconnect Switch (Replace)
 - 24 VAC Transformer (Modify)
 - Motor (The brakeless motor is dual voltage. Motors with brakes require replacement.)
 - **If unsure about which motor is on hand, Scotchman can identify your motor off of a photo of the motor data plate.**
1. Replace the overload. This is the same as the disconnect switch for SUP saws. It comes out from the front of the panel. New overloads will come with a plastic knob. Pull the stock knob off before installing on the saw.

SUP Overload/Disconnect Switch Information				
	Motor	Voltage	Overload #	Setting
	5.5 HP	230	000943	16
	5.5 HP	460	000940	10
	10 HP	230	SPECIAL	32
	10 HP	460	000943	16

2. Change over 24 VAC transformer wiring

Transformer Wiring	
230 V	460 V
	

3. Change over dual voltage motor bus bars. If the motor has a solenoid friction brake (in the fan shroud), it is a single voltage motor and must be replaced.

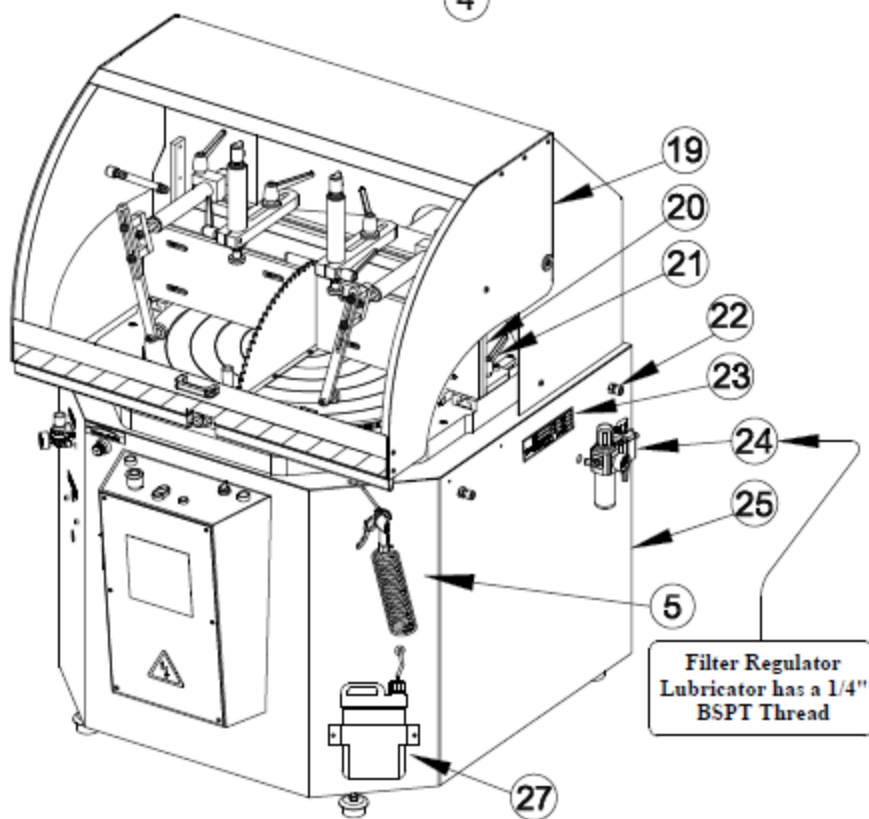
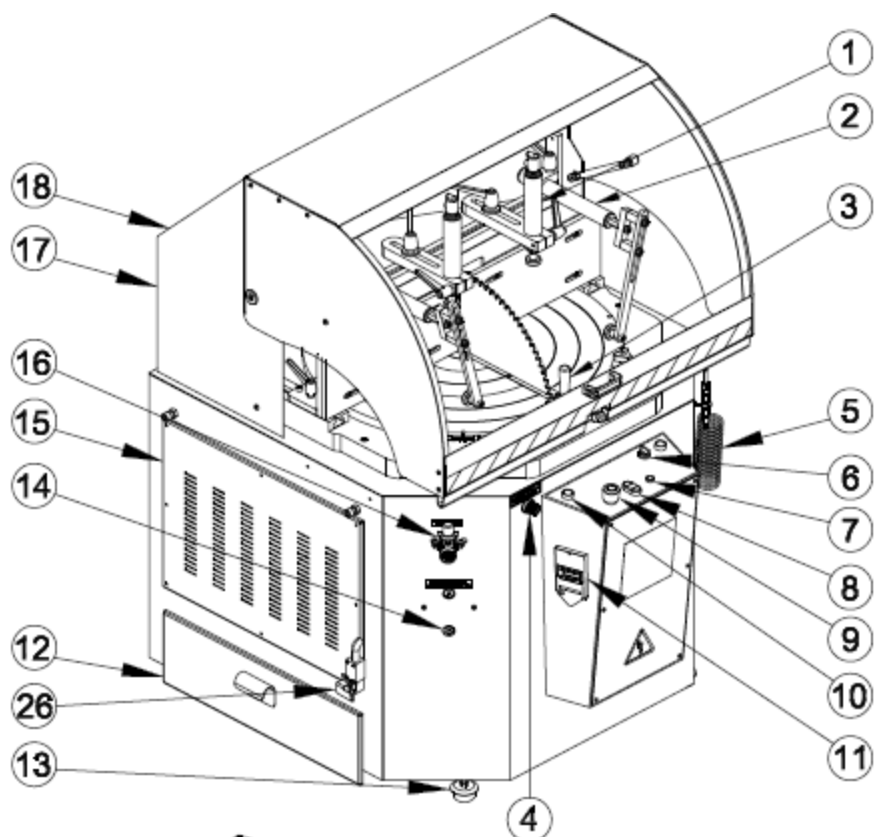


4. Replace voltage stickers (19121, 230V or 19122, 460V) and saw data 19100 plate. The model number, serial number, and desired voltage are required when ordering a new data plate.

7.0 PARTS DIAGRAMS AND SCHEMATICS

7.1 Machine Exterior

ITEM	PART #	DESCRIPTION
1*	1677*	Vertical Clamp Cylinder, 45mm
2	N02PT14050	Horizontal Clamps Ø40X320
3	2040000482	Angle Lock
4	N000000018	Advance Regulator 3/8"
5	N000000021	Cleaning Gun with Hose
6	011805	Selector Switch, Saw Only
6A	562023	Selector Switch, Saw with Auto Feed Pusher
7	E000000030	Green Indicator 24V
8	E000000011-011867-011874	Saw Blade On/Off Switch
9	011837	E-Stop Switch
10	N000000008-011867-011874	Green Button (Blade Up, Modular Style)
11	000943	5.5 HP 230V Motor Protect Switch 10-16A
11A	000940	5.5 HP 460V Motor Protect Switch 6-10A
11B	Special	10 HP 230V Motor Protect Switch 25-32A
11C	000943	10 HP 460V Motor Protect Switch 10-16A
12		Side Drawer Cuttings
13	1156	M16 Feet Levelers
14	2040000092	Oleo Pneumatic Hydraulic Tank
15		Left Door
15A	1053	Left Door Hinge
16	N000000030	Pressure Regulator, 1/4"
17		Protective Shield Support
18		Protective Shield
19	E00000BD25	Hood Switch
20		Turret
21	B0000P1040	M-10 x 40 Lever
22		M-14 x 40 Screw + M-14 Nut (x 2)
23	019100	U.S. DATA PLATE
24	N000000017	Filter Regulator, 1/4" BSPT Ports
25		Sheet Metal Base
26	CE000000R81	Side Door Interlock Switch
27	077927	NF Coolant Reservoir
*Item 1: This replacement cylinder will range from 225mm to 250 mm in length. It is 100% interchangeable.		



7.2 Main Power Circuit

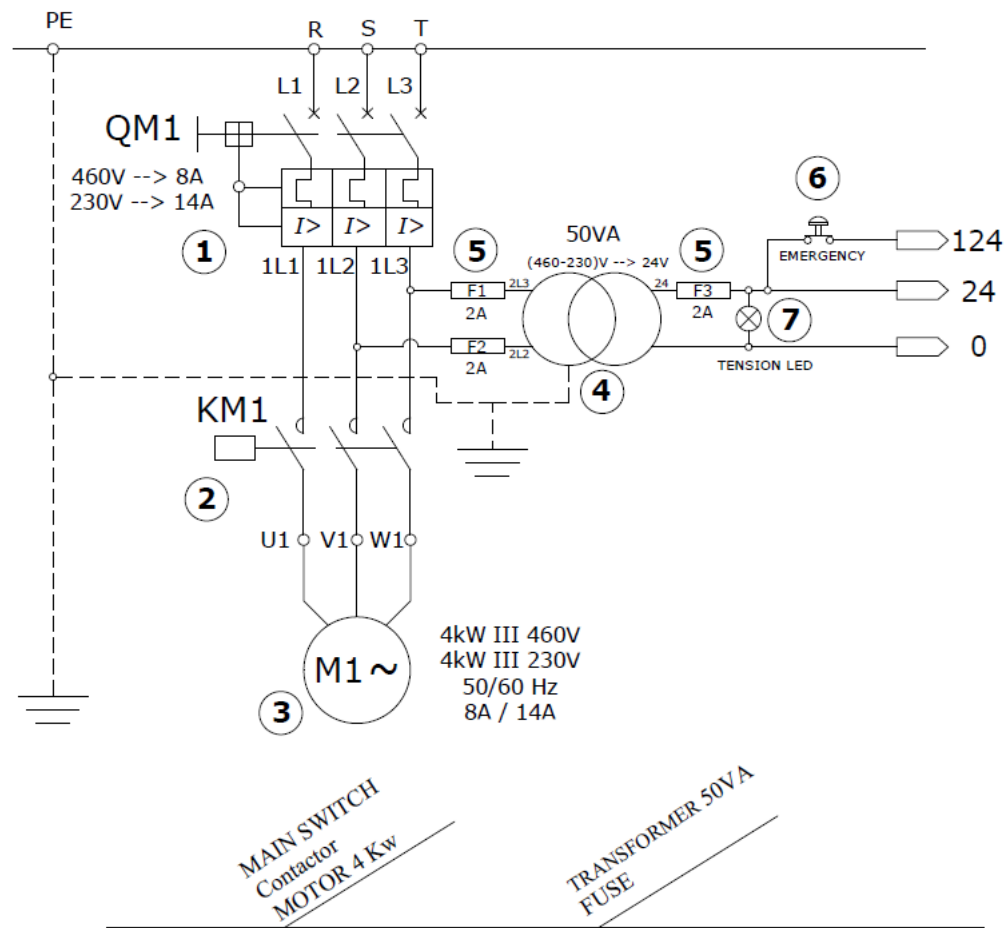
ITEM	PART #	DESCRIPTION
1	000943	5.5 HP 230V Motor Protect Switch 10-16A
1A	000940	5.5 HP 460V Motor Protect Switch 6-10A
1B	Special	10 HP 230V Motor Protect Switch 25-32A
1C	000943	10 HP 460V Motor Protect Switch 10-16A
2	060071	DILM 12-10 24VAC CONTACT
3*	C2050000522	5.5/6.6HP 230V/460V 3PH Motor, NO Brake
3A	18784	10 HP 230V/460V 3PH Motor, NO Brake
3B	21690220M3	5.5/6.6HP 230V 3PH Motor, WITH Brake
3C	21690460M3	5.5/6.6HP 460V 3PH Motor, WITH Brake

➤ **Note: 3B and 3C ONLY – Motor Pulley is Included**

4	E000000014	Transformer 50VA - 460/230//24V
5	071085	Fuse 2A
6	011837	E-Stop Switch
7	E000000030	Green Indicator 24V

ITEM 3 can replace 3B & 3C - However, the Brake Will Be Eliminated.

*The blade motor control circuit shown on this page is for the standard 5.5 hp motor only. The standard motor is engages via a contactor. See the section for the 10 hp motor control circuit which engages with an electronic soft starter if applicable.

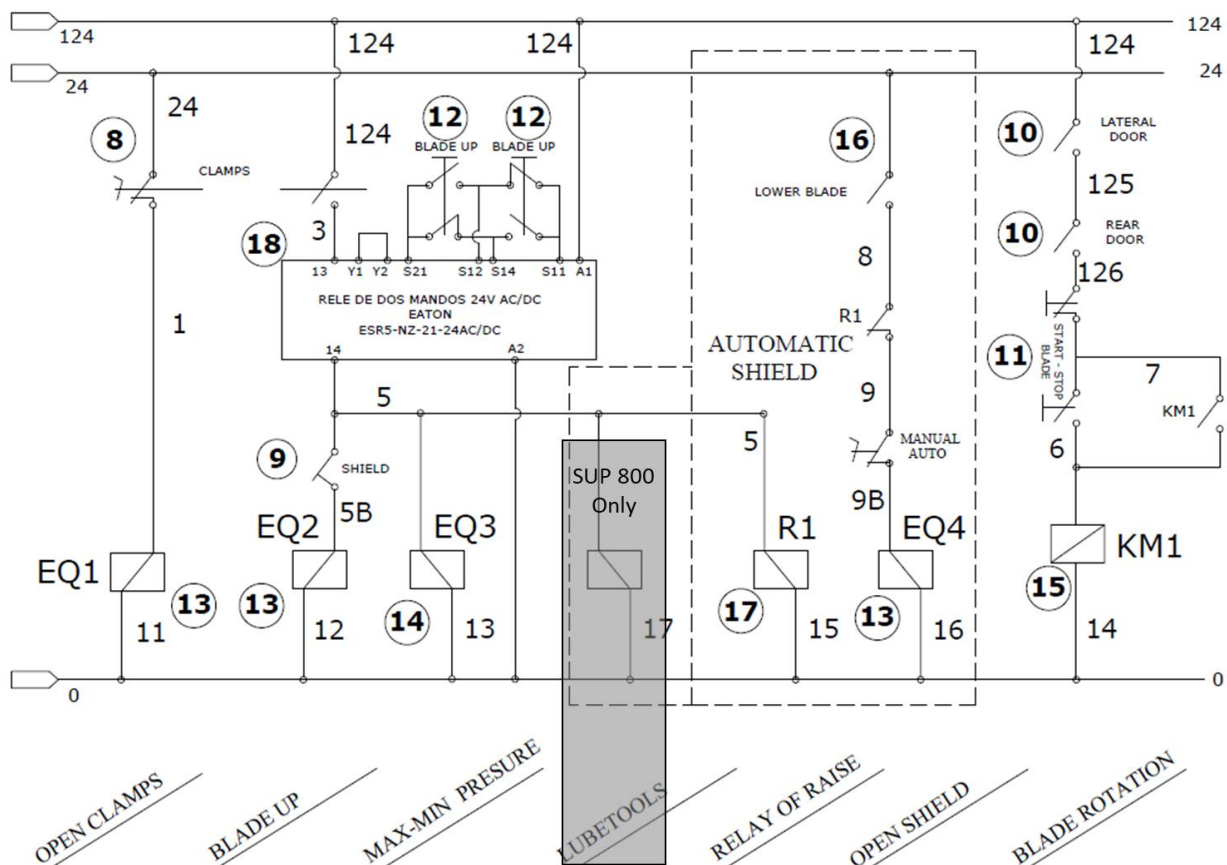


7.2A Control Electronics

ITEM	PART #	DESCRIPTION
8	011805	Selector Switch, Saw Only
8A	562023	Selector Switch, Saw with Auto Feed Pusher
9	E00000BD25	Hood Switch
10	CE000000R81	Side Door Interlock Switch
10A	12152	Back Door Safety Switch
11	E000000011-011867-011874	Saw Blade On/Off Switch
12	N000000008-011867-011874	Green Button (Blade Up, Modular Style)
13	1618	KPM Valve with Coil
13A	1620	24 VAC KPM Coil Only
14	1440	High + Low Shift Valve
15	060071	DILM 12-10 24VAC CONTACT
16	1724	Magnetic Sensor, KT-50R
16A	028459	Magnetic Sensor KT-50R With Wire Harness
17	028483	Slim Omron Relay
18	078557	Yellow Eaton Safety Relay

The blade motor control circuit shown on this page is for the standard 5.5 hp motor only. The standard motor is engaged via a contactor. See the next section for the 10 hp motor control circuit which engages with an electronic soft starter if applicable.

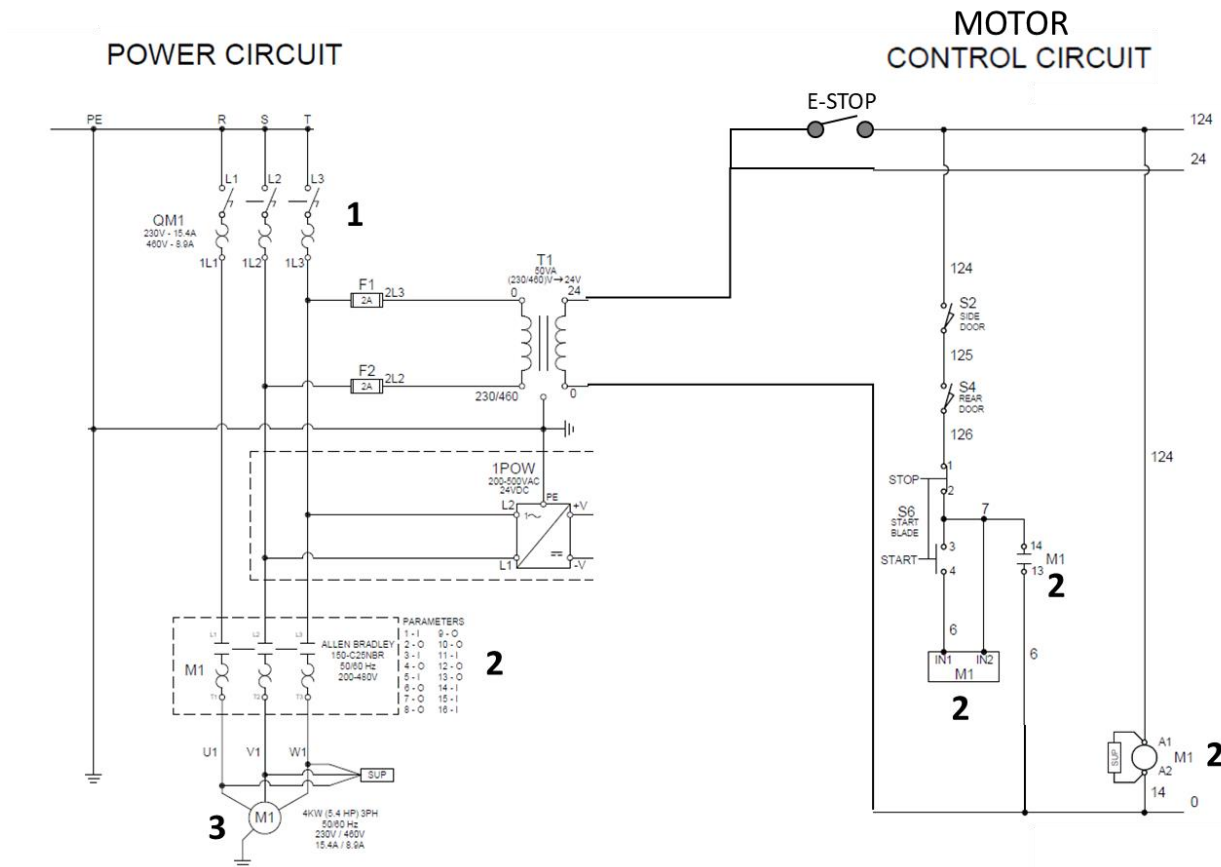
Control Electronics, Saw WITHOUT RAZORGAGE



7.2B 10 Horsepower Special Electrical Components

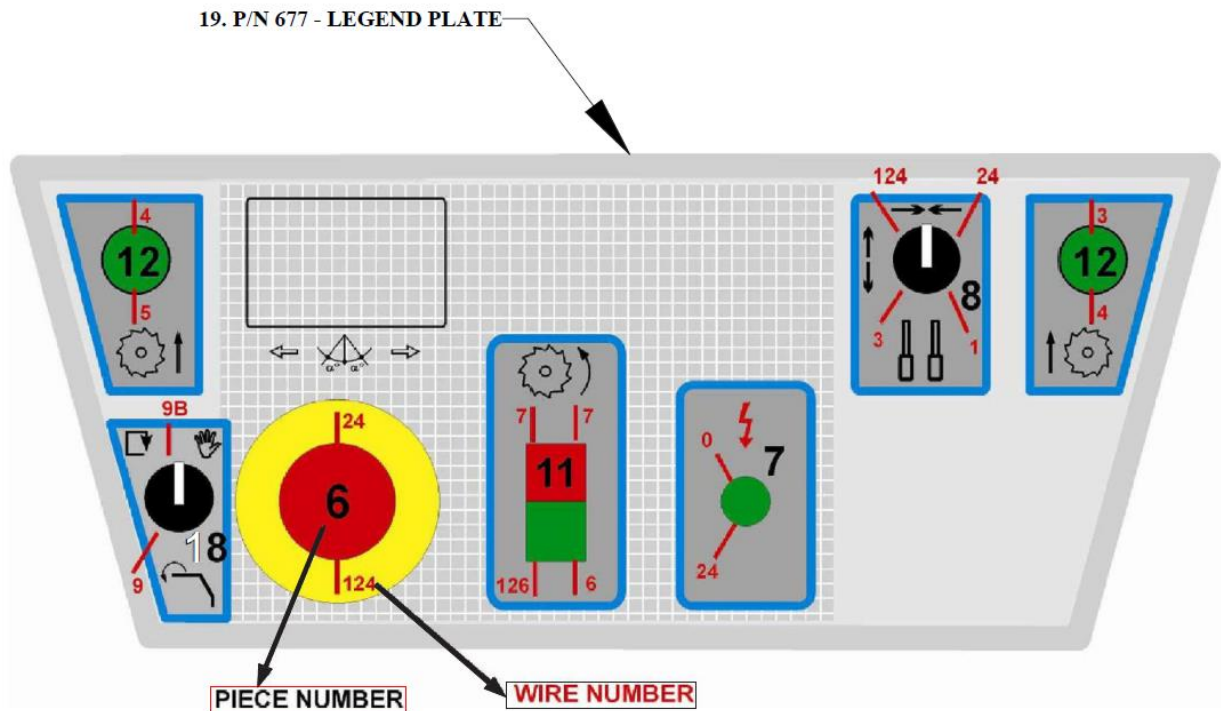
ITEM	PART #	DESCRIPTION
1A	Special Order	460V Motor Protect Switch 25-32A
1B	000943	460V Motor Protect Switch 10-16A
2A	Special Order	30A 230V Soft Starter
2B	E000002384	16A 460V Soft Starter
3	18784	10 HP 230/460V Motor

All of the 10hp equipped saws are individually custom. This is a typical diagram. Machines vary.



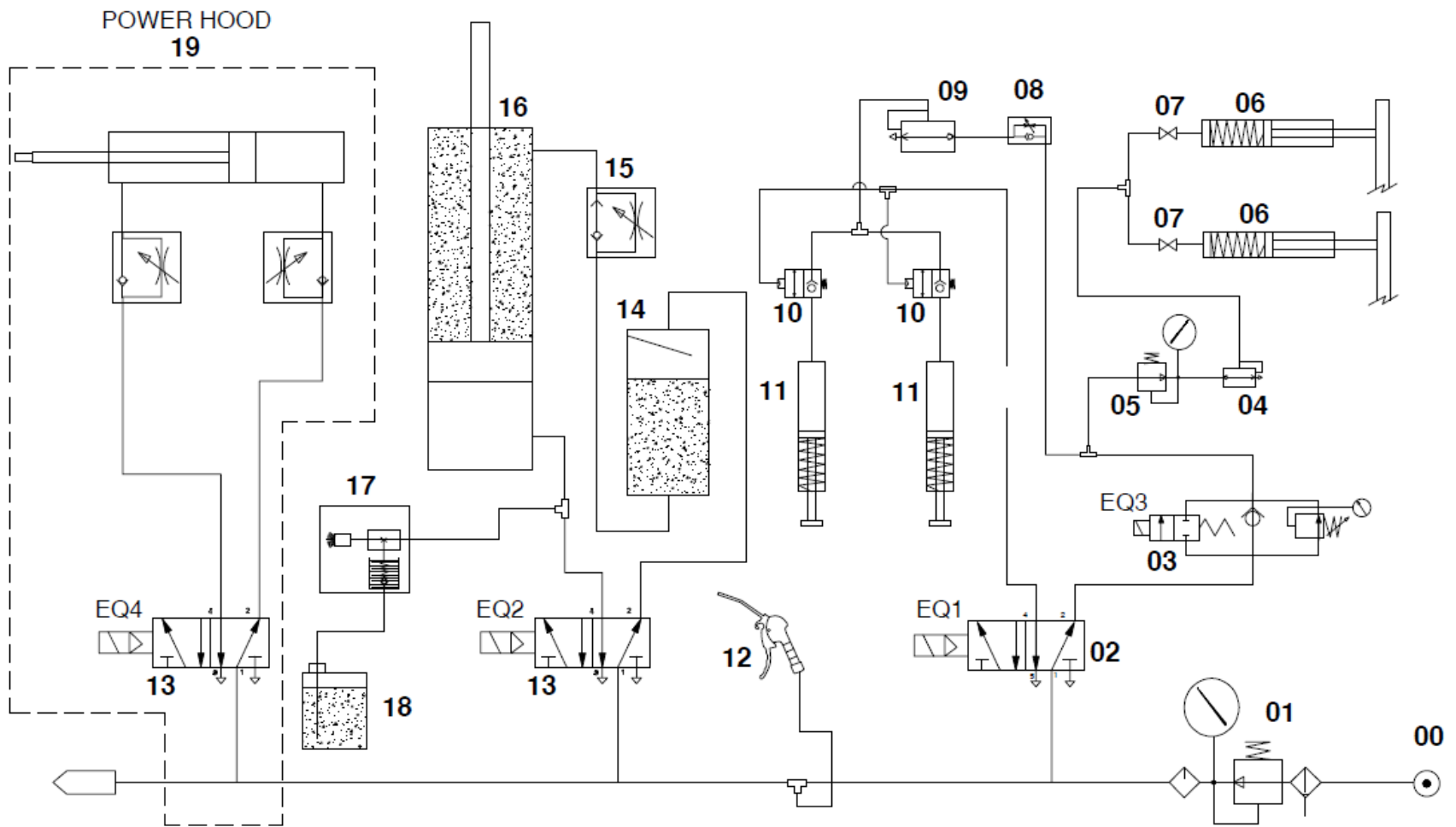
7.3 Control Panel

ITEM	PART #	DESCRIPTION
6	011837	E-Stop Switch
7	E000000030	Green Indicator 24V
8	011805	Selector Switch, Saw Only
8A	562023	Selector Switch, Saw with Auto Feed Pusher
11	E000000011-011867-011874	Saw Blade On/Off Switch
12	N000000008-011867-011874	Green Button (Blade Up, Modular Style)
18	011805	Selector Switch for Optional Power Hood
19	677	Legend Plate



7.4 Pneumatic System

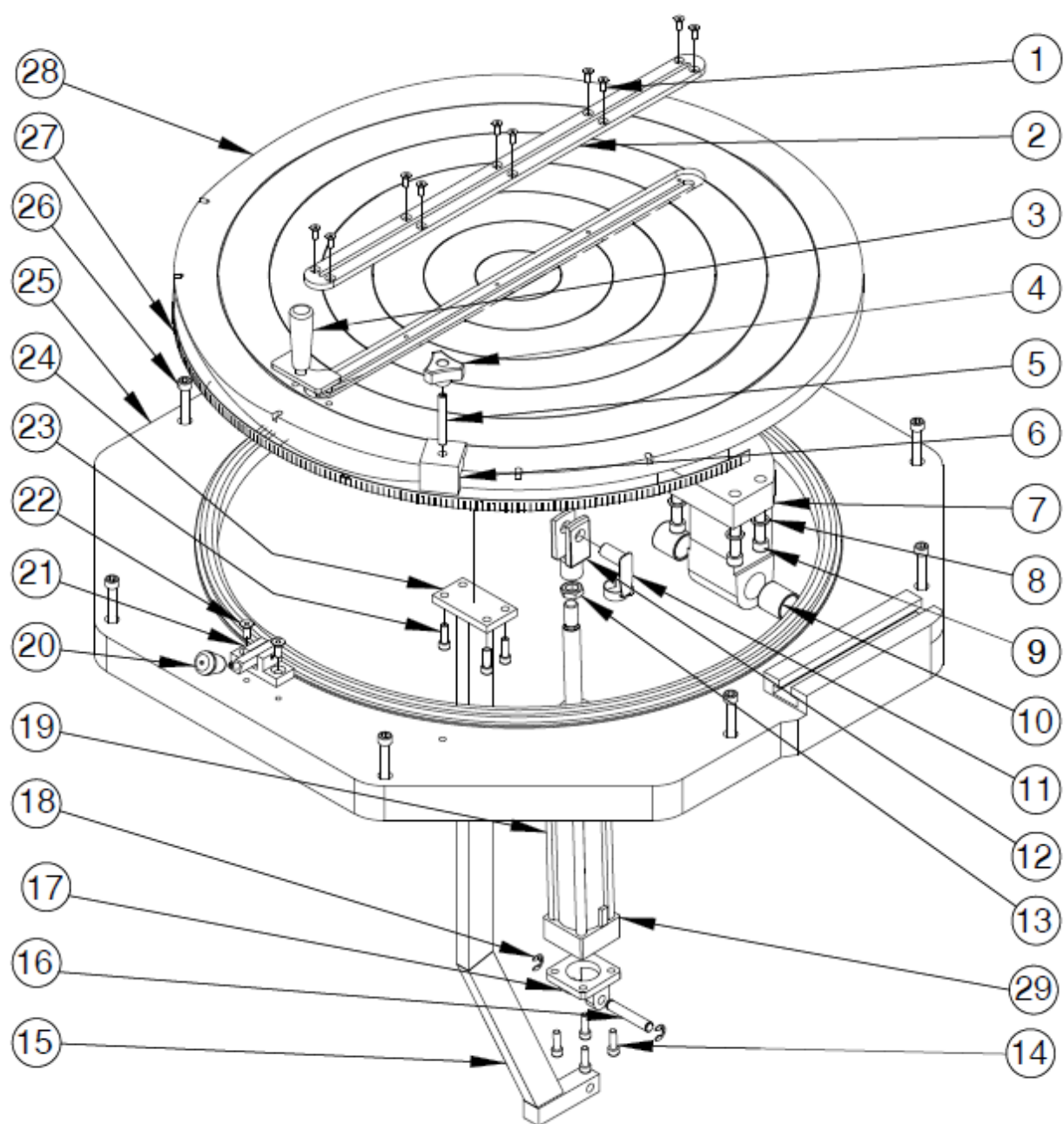
ITEM	PART #	DESCRIPTION
00		Supply Air Line (by Customer)
01	N000000017	Filter Regulator, 1/4" BSPT Ports
02	1620	24 VAC KPM Coil Only
03	1440	High + Low Shift Valve
04	N000000038	Quick Exhaust Valve
05	N000000030	Pressure Regulator, 1/4"
06	N02PT14050	Horiz Clamps Ø40 x 320
07	2K20000281	Mini Ball Valve 1/8" M-H
07A	028506	1/8" x 6mm Push Fitting
08	N0CCRC1806	Flow Regulation 1/8" Ø6 CIL
09	N000000038	Quick Exhaust Valve
10	N000000015	Uni Directional (Check) Valve
11*	1677*	Vertical Clamp Cylinder, 45mm
12	N000000021	Cleaning Gun with Hose
13	1618	KPM Valve with Coil
13A	1967	KPM Valve Manifold Block (Not Shown)
14	2040000092	Oleo Pneumatic Hydraulic Tank
15	N000000018	Advance Regulator 3/8"
15A	1667	Advance Regulator Knob
16	N000000025	Blade Up Cylinder ISO 50 x 200
17	N000000036	Venturi Sprayer
18	077927	NF Coolant Reservoir
19	1353	SUP-600 Power Hood Retrofit Kit
*Item 11: This replacement cylinder will range from 225mm to 250 mm in length. It is 100% interchangeable.		



7.5 Saw Table and Mitering System

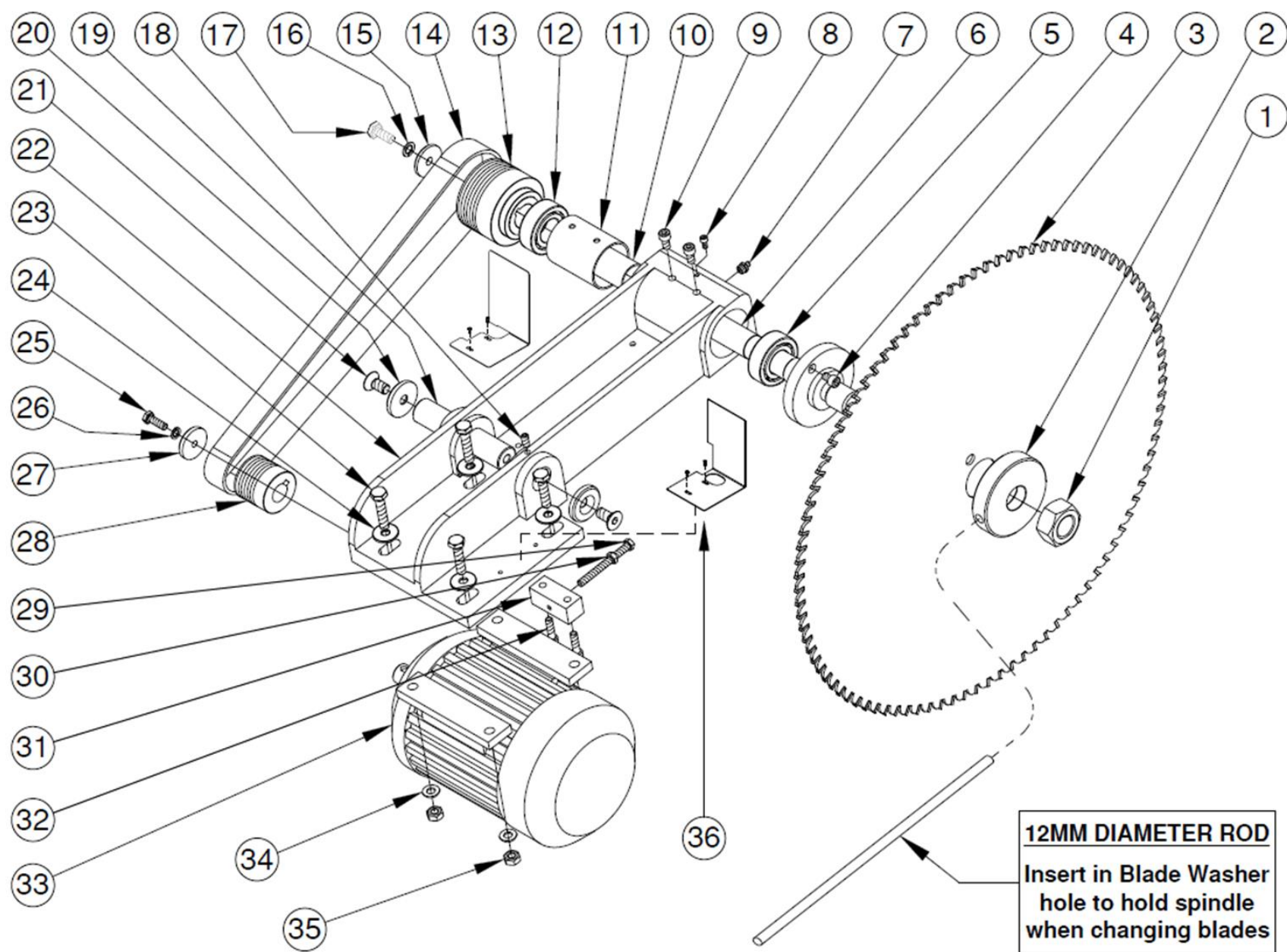
ITEM	PART #	DESCRIPTION
1	230007	M6 X 16 DIN 7991 FSHCS
2	1892	Alum Blade Groove SUP-600
3	2352000171	Degrees Turn Lever
4	B0000000H2	M10 Knob
5	201230	M10 X 70MM DIN931 HHCS
6	2042000181	Friction Miter Lock
7		Rocker Support
8	212014	M12 DIN127 Lock Washer
9	221320	M12 X 50MM DIN912 SHCS
10	2473	Main Rocker Bushing
11	N000000059	ISO 50 Cyl. Yoke
12	N000000059	ISO 50 Cyl. Yoke
12A	1155	Lifting Cylinder T-Bracket
13	208016	M16 DIN 934 Hex Nut
14	221120	M8 X 25 DIN912 12.9 SHCS
15		Post
16	N000000057	50MM Cyl. Female Pin Joint
17	N000000057	50MM Cyl. Female Pin Joint
18	N000000057	50MM Cyl. Female Pin Joint
19	N000000025	Blade Up Cylinder ISO 50 x 200
20	B000000011	M-8 Knob (included with #21)
21	2040000482	Angle Lock
22	230110	M8 X 20 DIN7991 FSHCS
23	221120	M8 X 25 DIN912 12.9 SHCS
24		Lever Support
25	216000F012	Cast Iron Table
26*	201230	M10 X 70MM DIN931 HHCS
27	2160000CG2	Degree Tape SUP-600
28	2160000022	Cast Iron Disc
29	1724	Magnetic Sensor, KT-50R
29A	028459	Magnetic Sensor KT-50R With Wire Harness

*Item 26: Replacement is a HHCS bolt. Original is a SHCS.



7.6 Rocker Assembly

ITEM	PART #	DESCRIPTION
1	2040000232	Blade Shaft Nut M-30 Nut
2	2050000032	Blade Washer
3	074505	Blade Ø 600 x 4.5 x 50 - 72 Tooth
3A	074510	Blade Ø 600 x 4.6 x 50 - 132 Tooth
4	073660	M8 X 12MM DIN912 SHCS
5	2050000162	FAG 4206 BB-TVH Bearing
6	2050000092	Ø 30 Shaft
7	2070000012	Lubricator 1/8" Zerk
8	073458	M6 X 10MM DIN 912 SHCS
9	073420	M8 X 16 DIN912 SHCS
10	2040025582	Ø 36 Separator
11	2040060582	Ø 60 Separator
12	2050000162	FAG 4206 BB-TVH Bearing
13	2050000132	(5.5 HP) Rocker Shaft Pulley
13A	2165000132	(10 HP) Rocker Shaft Pulley
14	C2160000012	(5.5 HP) 1092 J12 Poly-V Belt
14A	216000751	(10 HP) 1130 J20 Poly-V Belt
15	204000A401	Ø40 X Ø10 X 6MM Washer
16	212012	M10 DIN127 Lock Washer
17	203210	M10 X 25MM DIN933 HHCS
18	TD91308016	DIN913 M8 x 16 Screw
19		Connecting Rod Pin
20	216000A452	Ø 45x7 Avell. M-12 Washer
21	TD79911225	DIN7991 M-12 x 25 Screw
22	2151	SUP600 Rocker Assembly
23*	201220	M10 X 50MM DIN931 HHCS
24	204000A401	Ø40 X Ø10 X 6MM Washer
25	201145	M8 X 25 DIN933 HHCS
26	073108	M8 DIN127B Lock Washer
27	204000A402	Ø 40xØ 8x6mm Washer
28	2050000142	(5.5 HP) Motor Pulley
28A	2165000142	(10 HP) Motor Pulley
29	TD93308080	DIN933 M-8 x 80 Screw
30	208010	M8 DIN934 Hex Nut
31		Belt Tension Adjuster
32*	073326	M8 X 30 DIN 933 HHCS
33*	C2050000522	5.5/6.6HP 230V/460V 3PH Motor, NO Brake
33A	18784	10 HP 230V/460V 3PH Motor, NO Brake
33B	21690220M3	5.5/6.6HP 230V 3PH Motor, WITH Brake
33C	21690460M3	5.5/6.6HP 460V 3PH Motor, WITH Brake
Note: 33B and 33C ONLY – Motor Pulley is Included		
34	214012	M10 DIN125 Regular Washer
35	208012	M10 DIN 934 Hex Nut
36	027600	SUP 600 Chip Deflector
<p>*Item 23: Replacement bolt is not a full threaded bolt.</p> <p>*Item 32: Replacement bolt is HHCS.</p> <p>*Item 33: Can replace 33B & 33C - However, the <u>Brake Will Be Eliminated</u>.</p> <p>*Item 37: Does not include motor, belt or blade.</p>		

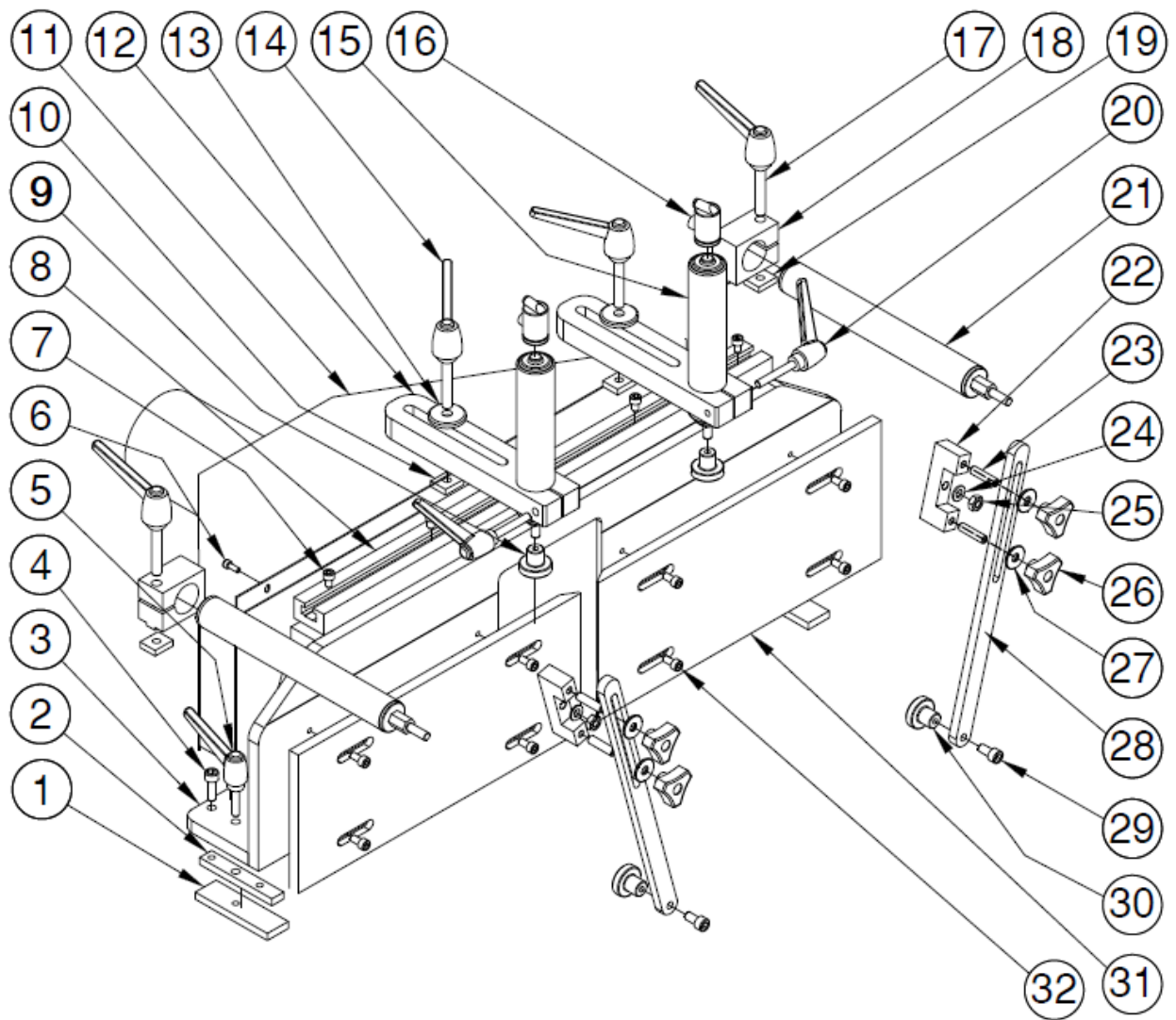


7.7 Back Fence and Clamping Assembly

ITEM	PART #	DESCRIPTION
1	3610	Lock Guide Plate
2		Turret Cotter
3		Iron Turret
4	221212	M10 X 30MM DIN912 SHCS
5*	B0000P1040	M-10 x 40 Lever
6	221010	M6 X 16MM DIN912 SHCS
7	073660	M8 X 12MM DIN912 SHCS
8		Clamps Aluminum Guide
9	2350000131	Nylon Cleat Black M-10
10	2040001512	Flat Nut M-12
11		Turret Protector
12	661	Aluminum Holder 45MM DIA.
13	204000A452	Ø45 X 12MM Washer
14*	025361	M12 X 50MM Adjustment Handle
15*	1677	Holddown Clamp 45MM
16	N000000015	Uni Directional (Check) Valve
17*	B0000P1270	M12 X 70MM Adjustment Handle
18	204000A502	Alum Rod Holder Clamp 40mm
19	2040001512	Flat Nut M-12
20*	B0000P1060	M-10 x 60 Lever
21	N02PT14050	Horizontal Clamps Ø40 x 320
22	2908	Clamp Arm Adapter
23	201215 (was TD93310040)	D913 M10 x 40
24	214012	M10 DIN125 Regular Washer
25	208012	M10 DIN 934 Hex Nut
26	B0000000H2	M10 KNOB
27	213012	M10 DIN125 Regular Washer
28	1808	Horizontal Clamps Arm SUP-600
29	073626	M10 X 20MM DIN912 SHCS
30	2350000131	Nylon Cleat Black M-10
31	P2160000102	Aluminum Back Fence Plates, Set of 2
32	073420	M8 X 16 DIN912 SHCS

***MEASURE LEVER HANDLES BEFORE ORDERING. THERE HAVE BEEN VARIATIONS.**

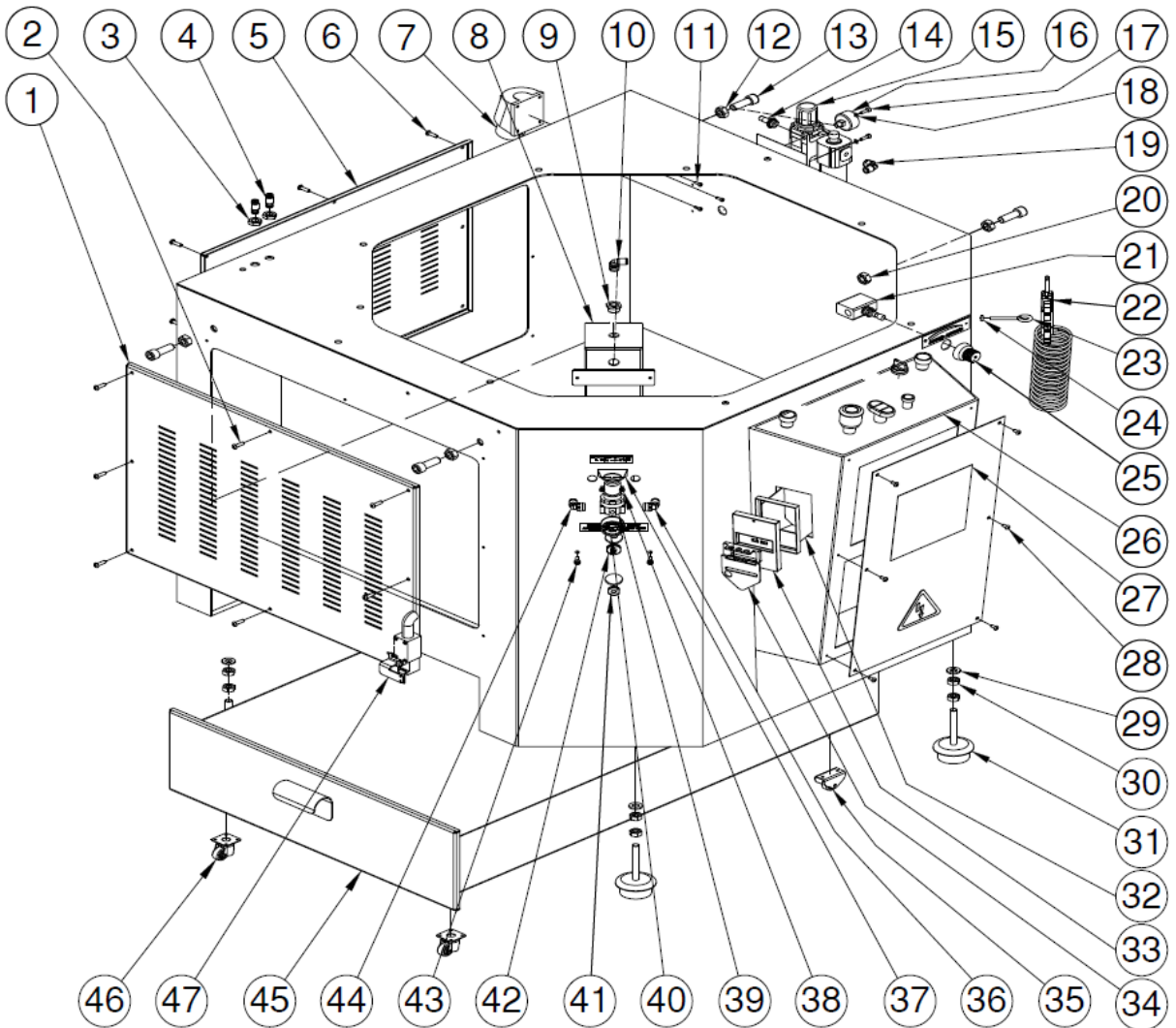
*Item 15: This replacement cylinder will range from 225mm to 250 mm in length. It is 100% interchangeable.



7.8 Base Assembly

ITEM	PART #	DESCRIPTION
1	P21600000P3	Left Side Door
1A	1053	Left Door Hinge
2	073615	M6 X 20 ISO 7380 BHSCS
3	073211	M14 DIN934 HEX NUT
4	2050000262	Connect Ø 6-Ø 6
5	P21600000P2	Back Door
6	073615	M6 X 20 ISO 7380 BHSCS
7	E000000022	Plastic Junction Box
8	2040000092	Oleo Pneumatic Hydraulic Tank
9	N00RHM1412	Reduction 1/2M - 1/4H
10	N000CC1408	Male Stud Elbow 1/4 - Ø 8
11	073444	M4 X 10 DIN912 SHCS
12	073211	M14 DIN934 HEX NUT
13	TD91214040	D912 M-14 x 40 Screw
14	N0000E0914	Adaptor 1/4" Æ8
15	N000000017	Filter Regulator, 1/4" BSPT Ports
16	N000000020	1/8" BSPT Gauge 160 PSI
17	073455	M5 X 20MM DIN912 SHCS
18	073105	M5 DIN127B Lock Washer
19	N000CC1408	Male Stud Elbow 1/4 - Ø 8
20	073211	M14 DIN934 HEX NUT
21	N000000018	Advance Regulator 3/8"
22	N000000021	Cleaning Gun with Hose
23	T0000000H6	Support M-6
24	073206	M6 DIN934 Hex Nut
25	1667	Advance Regulator Knob
26		Control Panel
27		Control Panel Cover
28	077864	M5 X 12 DIN912 SHCS
29	214014	M12 DIN125 Regular Washer
30	208014	M12 DIN934 Hex Nut
31	B000121001	Foot leveler M12
31A	1156	Foot Leveler M16
32	E0000000M6	Box for Switch
33		Box Switch Cover
34		Closing Padlocks
35	1291	Wheel Fixes PP Ø 30
36	N000CC1406	1/4 NPT To 6M Elbow
37	N000000E30	Square Regulator
38	077864	M5 X 12 DIN912 SHCS
39	N000000030	Pressure Regulator 1/4"
40	N000000020	1/8" BSPT Gauge 160 PSI
41	2040000092	3/8" Sight Glass
42	2040000092	3/8" Metal Plug
43	221010	M6 X 16MM DIN912 SHCS
44	N000CC1406	1/4 NPT To 6MM Elbow
45		Chip Drawer
46	1292	Wheel Ø 30
47	CE000000R81	Side Door Interlock Switch

*Item 28 and 38: Replacement is different than original but interchangeable.

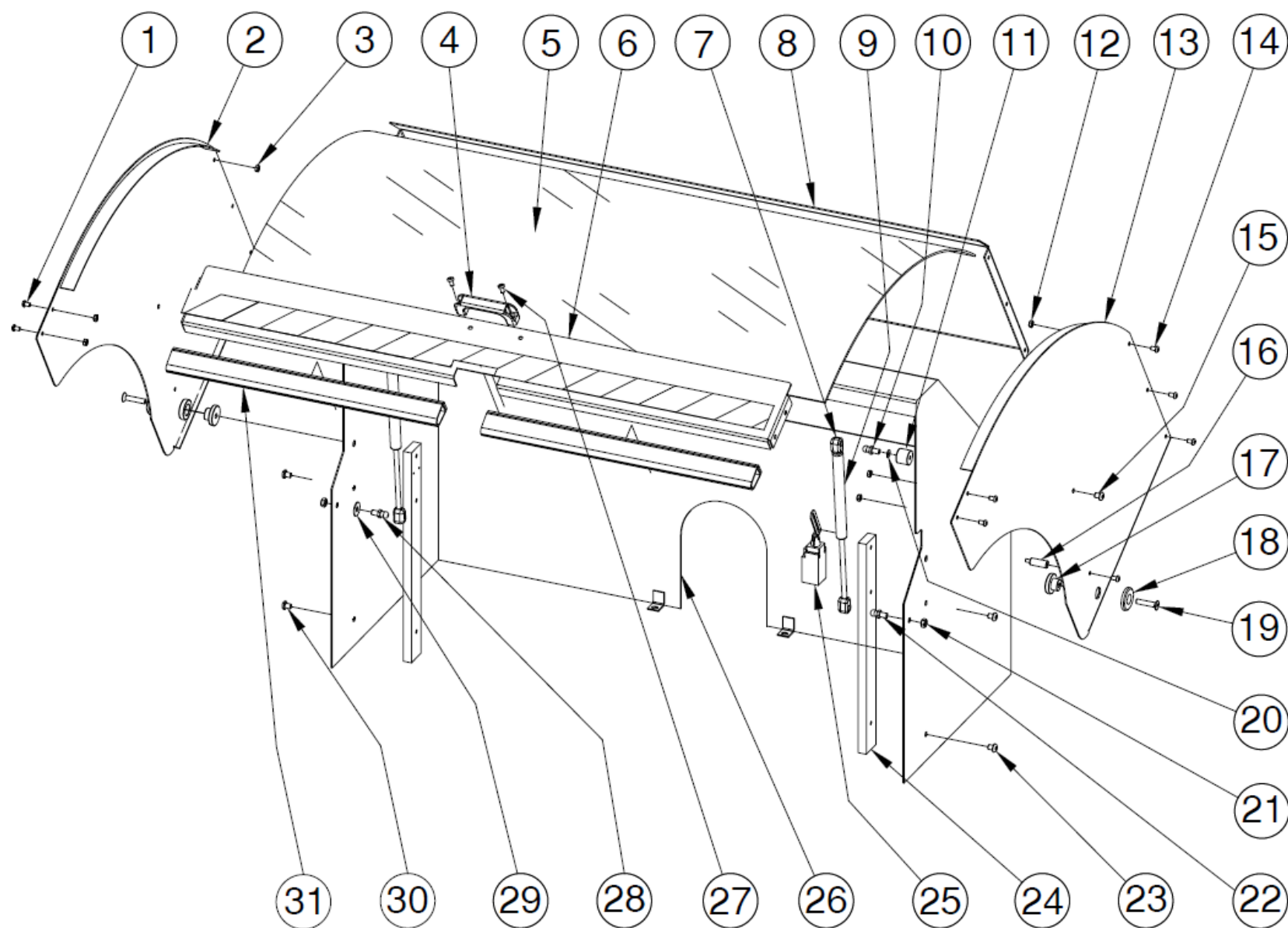


7.9 Hood Assembly

ITEM	PART #	DESCRIPTION
1	220014	M6 X 10MM DIN BN19 BHCS
2		Left Protective Shield
3	073206	M6 DIN934 Hex Nut
4	B000000015	Handle For SUP 600 Hood
5	2160000142	Hood Window SUP600
6	2527	Front Protective Shield
7	204000R452	Swivel Joint
8	P2060004551	Top Protective Shield
9	2160000300	M8X20 ØEXT 25 CYL
10	20400TB452	Ball Stud Ø10 M8
11	235000S471	Spacer M8 x 20 Ø 25mm
12	073206	M6 Hex Nut DIN934
13		Right Protective Shield
14*	073617	ISO-7380 M6 x 12 BHCS
15*	220026	ISO-7380 M8 x 12 BHCS
16		Final Guide of End-of-Travel
17		Connecting Rod Pin P. Shield
18	204000A401	Ø40 X Ø10 X 6MM Washer
19	TD79910840	DIN7991 FSHCS M8 x 40 Screw
20	214011	M8 DIN125 Regular Washer
21	215013	M8 DIN985 GREER NUT
22	20400TB452	Ball Stud Ø10 M8
23	073617	M6 X 12 ISO 7380 BHSCS
24		Shield Post
25	E00000BD25	Hood Switch
26		Protective Shield Support
27*	073619 & 73206	DIN912 M6 x 20 Bolt & DIN934 M6 Nut
28	20400TB452	Ball Screw Ø10 M8
29	214011	M8 DIN125 Regular Washer
30	073617	ISO-7380 M6 x 12 BHCS
31	4884	Hood Rubber SUP Saws (1 meter)

*Item 14 and 15: The replacement bolts are 2mm longer.

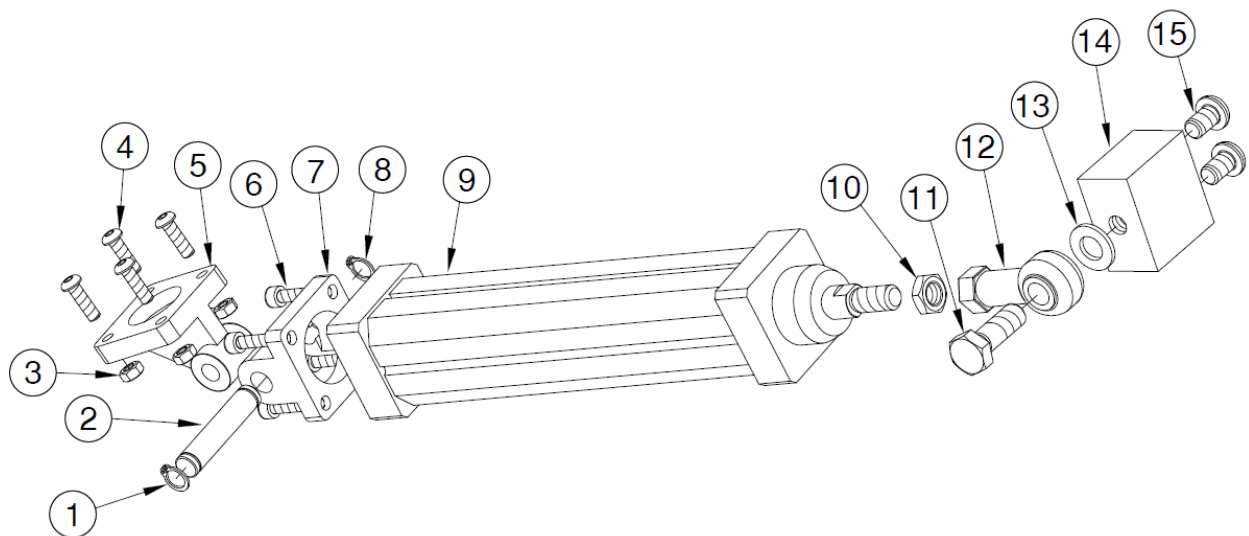
*Item 27: This replacement bolt is 4mm longer.



8.0 OPTIONAL EQUIPMENT

8.1 Power Hood

ITEM	PART #	DESCRIPTION
1		DIN-471 Ø 12
2		ISO-40 Pin
3	073206	M6 Nut DIN934
4	073615	M6 X 20 ISO 7380 BHSCS
5	CN000904059	90° Swivel Flange ISO-40
6	221120	M8 x 25 Screw DIN-912
7	CN000004059	ISO-40 Swivel Flange
8		DIN-471 Ø 12
9	1735	Cylinder For Hood Kit #1353
10	210012	M10 DIN439 Jam Nut
11	203415	M12 X 35MM DIN933 HHCS
12	N000012125	M-12 ISO 40 Joint
13	214014	M12 DIN125 Regular Washer
14		Joint Support
15	T173801016	ISO-7380 M-10 x 16 Screw
16	1353	SUP-600 Power Hood Retrofit Kit



This page is intentionally left blank for viewing purposes.

8.2 Digital Stroke Control (Enda Counter, 2013 to 2023 Year)

In order to change the cut height, press PRESET to view the value in the edit screen.

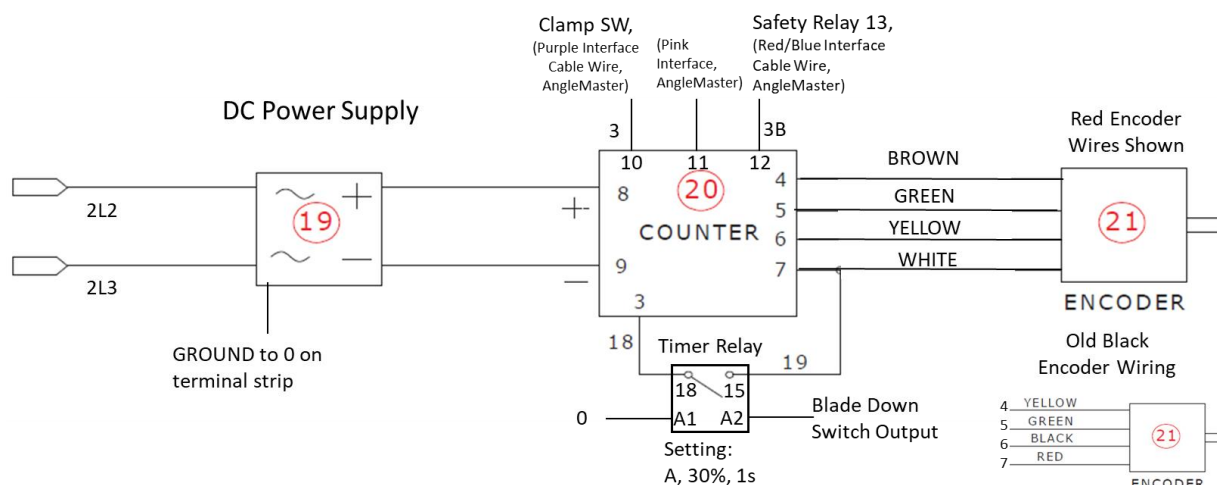
To actually modify the value, press and hold SET. While continuing to hold SET, use PRESET to scroll digits and UP/DOWN to increment digits.

Press PRESET again or wait 10 seconds to lock in the new value and return to the main screen.

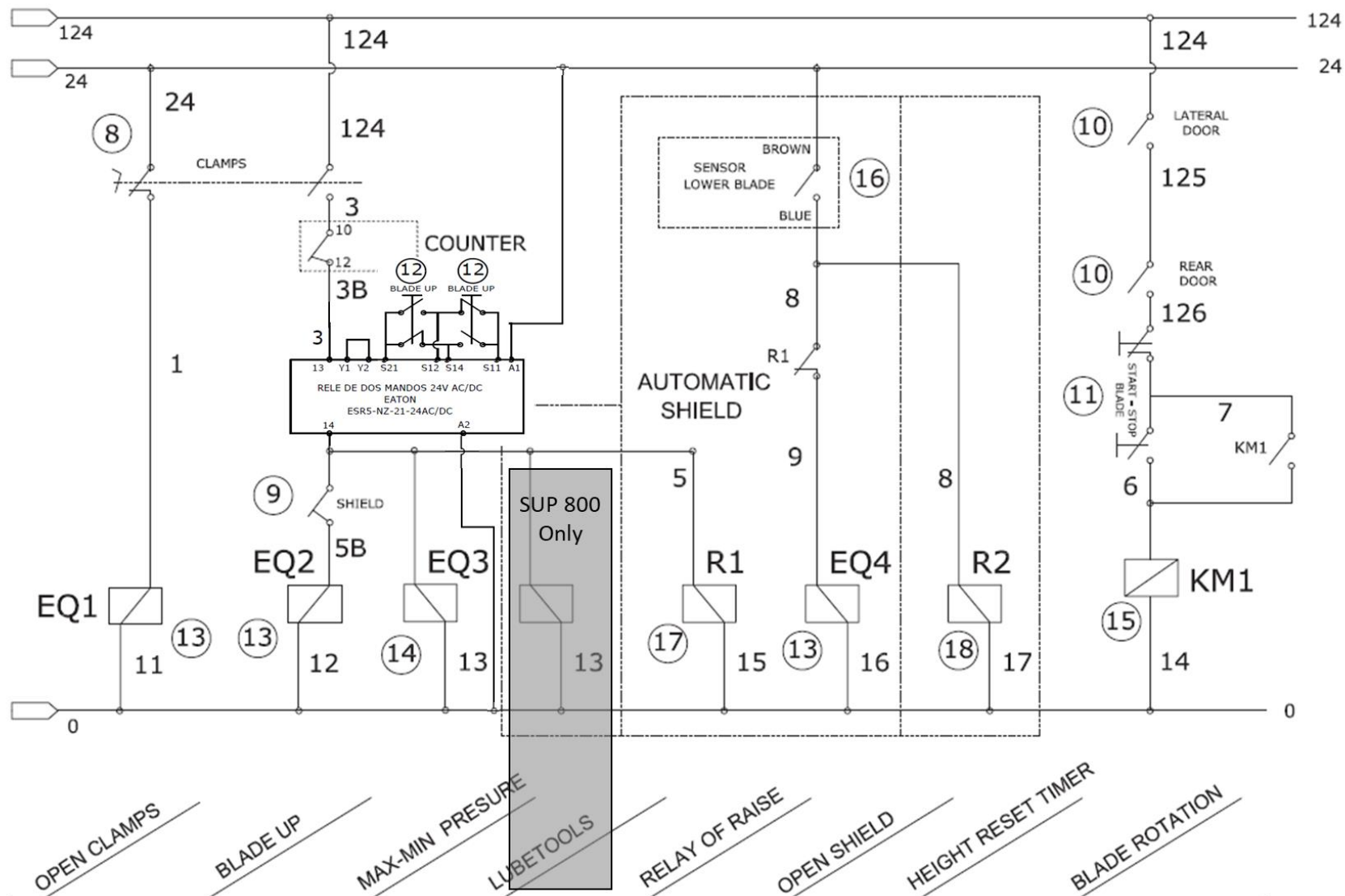


ITEM	PART #	DESCRIPTION
18	E000000096	Timer Relay, R2
19	028588	Regulated 24 VDC Power Supply
19A	075210	DIN Rail (028588 Power Supply Mount)
19B	060053 (OBSOLETE)	Square Rectifier
20	285 (OBSOLETE)	Height Counter, Enda (Obsolete)
21	CE000100068	DC Encoder, RED
21A	E000000068 (OBSOLETE)	DC Encoder, BLACK

Digital Stroke Control Wiring, EC442 Counter



NOTE: OLDER RECTIFIER-EQUIPPED MACHINES TO PROVIDE 24 VDC CONNECT TO THE 24 VAC POWER AND NOT FULL 230/460V POWER LIKE THE CURRENT SILVER DC POWER SUPPLIES.



8.2A Digital Stroke Control (Autonics Counter, 2023+ Years)

In order to change the cut height, press (<) to view the value in the edit screen. Sequentially press (<) again to cycle through the digits.

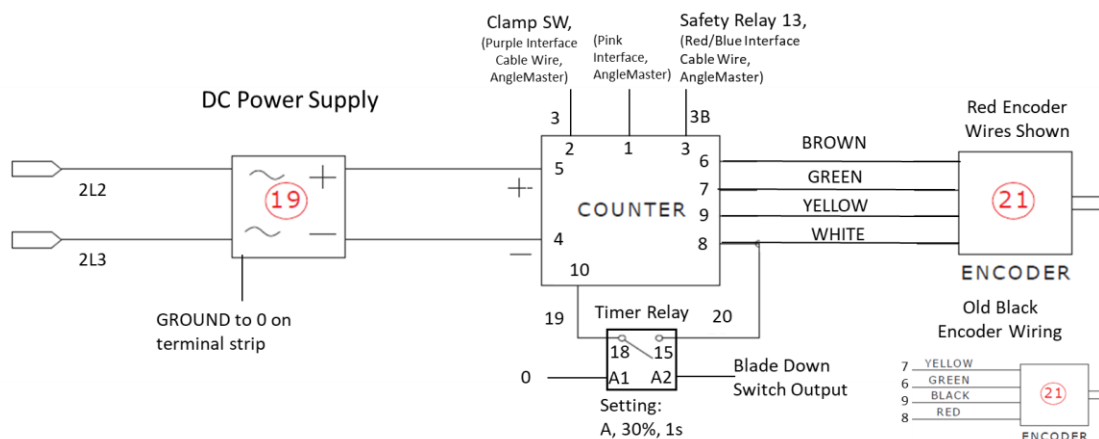
To actually modify each digit, press (^) or (v).

Press (MD) to save the new preset and return to the main screen.

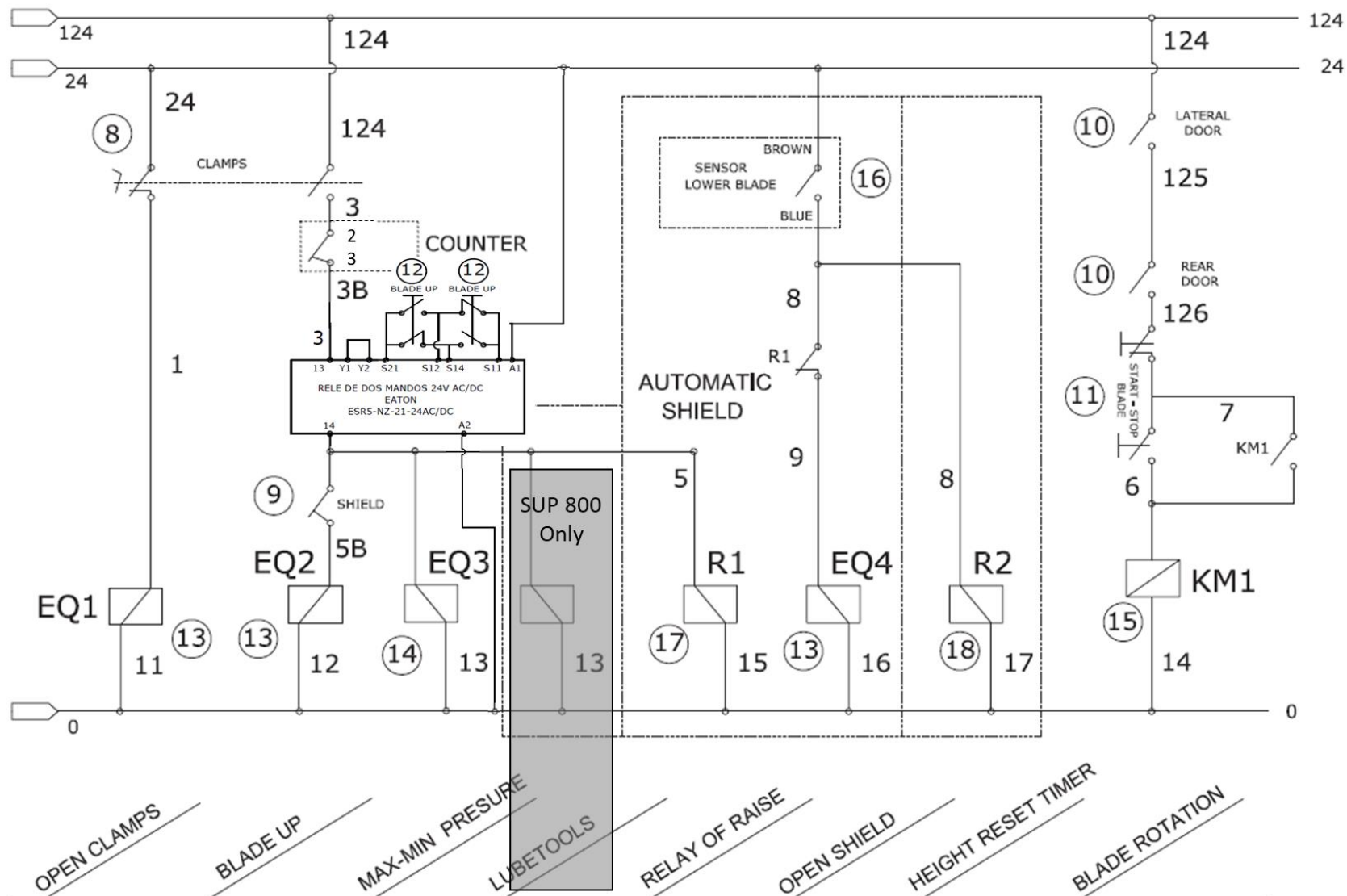


ITEM	PART #	DESCRIPTION
18	E000000096	Timer Relay, R2
19	028588	Regulated 24 VDC Power Supply
19A	075210	DIN Rail (028588 Power Supply Mount)
19B	060053 (OBSOLETE)	Square Rectifier
20	3390	Height Counter, Autonics
21	CE000100068	DC Encoder, RED
21A	E000000068 (OBSOLETE)	DC Encoder, BLACK

Digital Stroke Control Wiring, Autonics Counter



NOTE: OLDER RECTIFIER-EQUIPPED MACHINES TO PROVIDE 24 VDC CONNECT TO THE 24 VAC POWER AND NOT FULL 230/460V POWER LIKE THE CURRENT SILVER DC POWER SUPPLIES.

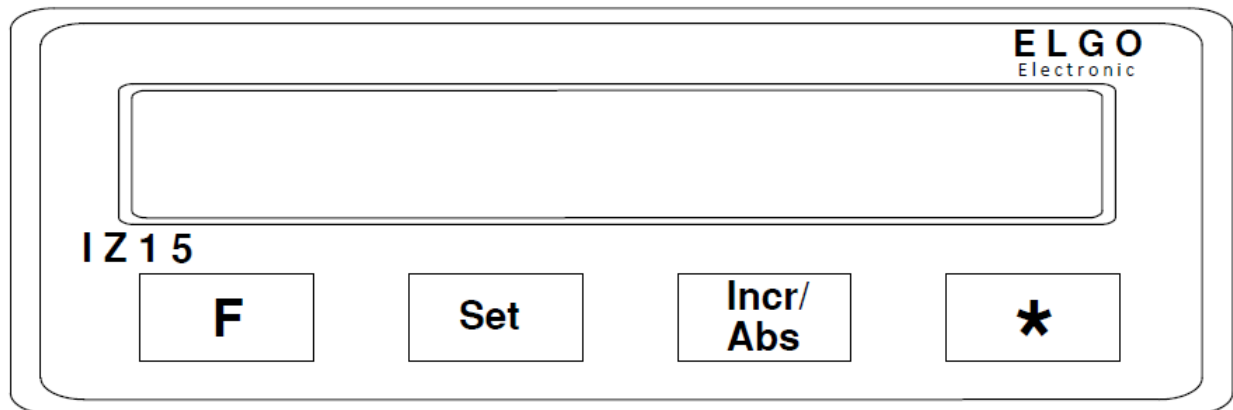


8.3 Digital Miter Guage (Part #1554)

SETTING AN ELGO Z15 DIGITAL READOUT TO READ 90° INSTEAD OF 0° ON THE SQUARE CUT

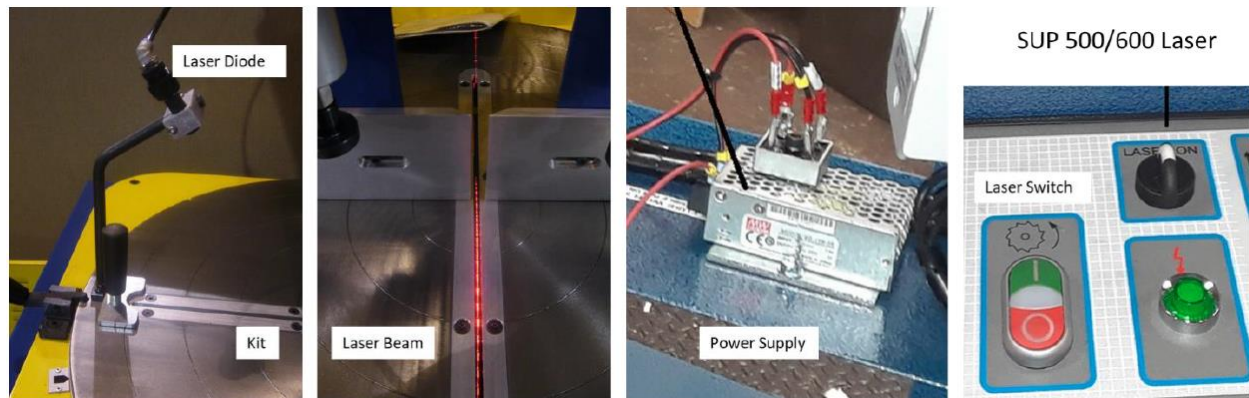
1. Lock the saw blade in the 90° position.
2. Press and hold the “F” key until the screen reads “P 01”.
3. Press the “F” key until the screen reads “P 09”.
4. Press the “F” key on more time so the screen will read “00000.00”.
5. Press the “Set” key three times so the tens number is flashing.
6. Press the “Incr/Abs” key until the screen reads “00090.00”.
7. Press and hold the “F” key for 3 seconds until the screen reads an angle.
8. Press and hold both the “F” and “Set” keys until the screen reads 90.00°.

- **NOTE:** This is a battery operated readout. When the batteries go dead, or are removed, the screen will go blank. When the battery is replaced, the screen will reset itself. Ensure the blade is locked in the 90° position for making a square cut before batteries are reinserted. Should programming parameters become otherwise inadvertently altered, contact Scotchman for programming instructions (605-859-2542).

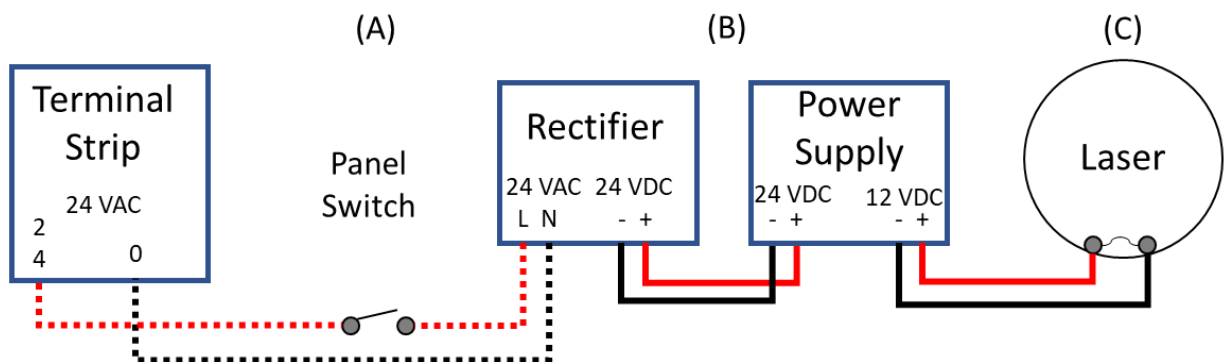


8.4 Blade Laser

The SUP blade laser is a simple bolt on kit with an on/off switch added to the front panel.



ITEM	PART #	DESCRIPTION
A		Laser Panel Switch
B	2493	Laser Power Supply (Includes Rectifier)
C1	28497	Factory Installed Laser Kit
C2	1124	Retrofit Laser Kit



8.5 Stop Pusher and Angle Master (non-Auto 90) RazorGage

Systems

For SUP saws equipped either with the base Angle Master package (non-Auto 90) or saws equipped with a Stop Pusher System, there is one wire harness with 4 wires. A typical RazorGage control wiring diagram is below to assist troubleshooting the SUP saw when so equipped. Note, there have been many slight variations on custom machines.

For any questions regarding the RazorGage system, consult the RazorGage manual or contact RazorGage directly. This includes the RazorGage servo, tower, touch screen, and the miter servo (Angle Master models only).

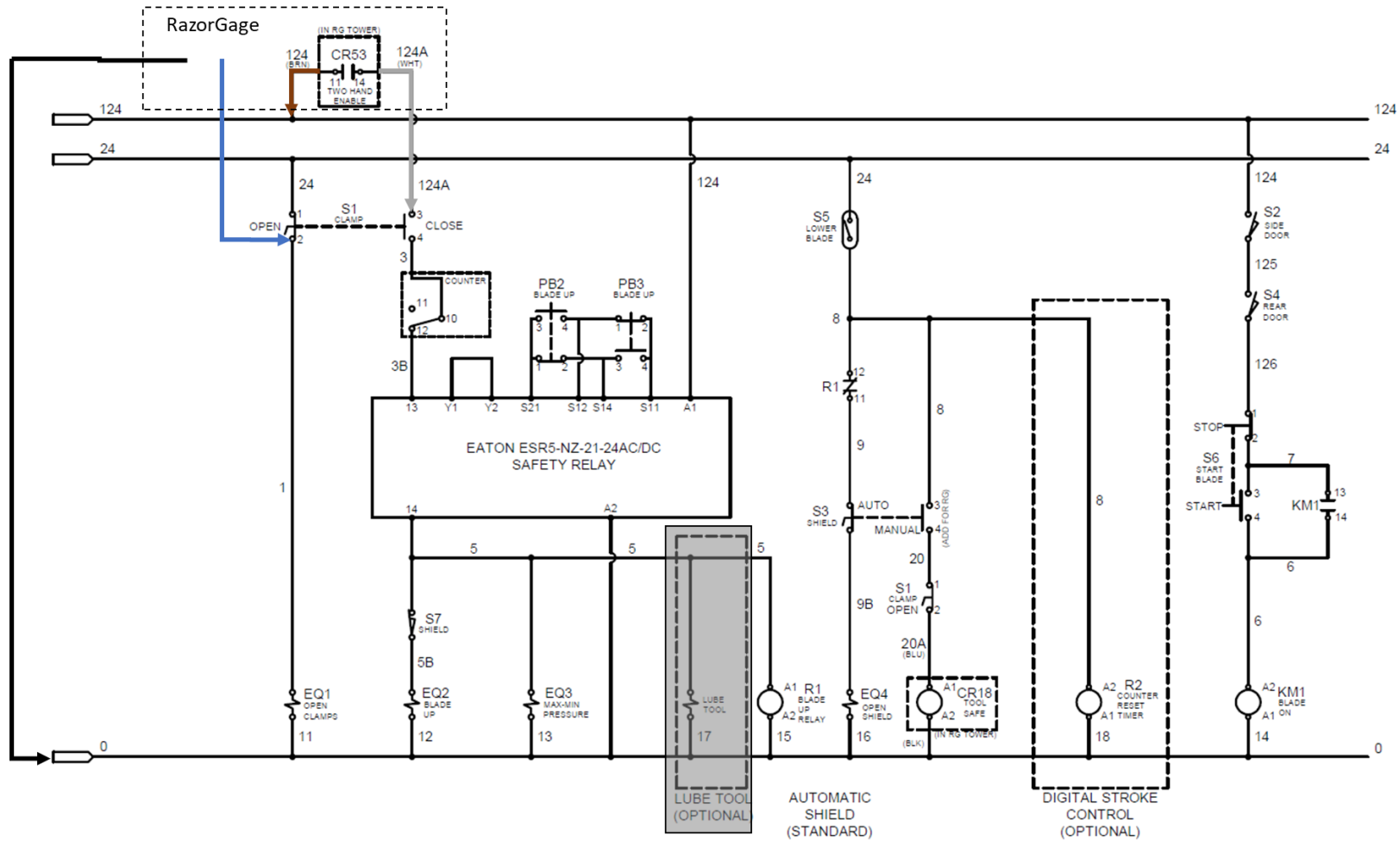
RazorGage Contact:

<https://razorgage.com/request-technical-support/>

Please have the following information available for RazorGage:

- Company Name
- Company Email Address
- RazorGage Serial Number (usually printed on the tower)
- Description of the problem

Control Electronics for Stop Pusher and Angle Master (non- Auto 90)



8.6 Auto-Feed and Angle Master Auto 90 RazorGage Systems

For SUP saws equipped with automatic feed systems (AFS and AngleMaster Auto 90), there are 2 wiring harnesses installed in the saw that interface the saw with the RazorGage system. One is a 12 wire control harness and the other is a 2 wire emergency stop harness. A typical RazorGage control wiring diagram is below to assist troubleshooting the SUP saw when so equipped. Note, there have been many slight variations on custom machines.

For any questions regarding the RazorGage system, consult the RazorGage manual or contact RazorGage directly. This includes the RazorGage servo, tower, touch screen, and the miter servo (Angle Master models only).

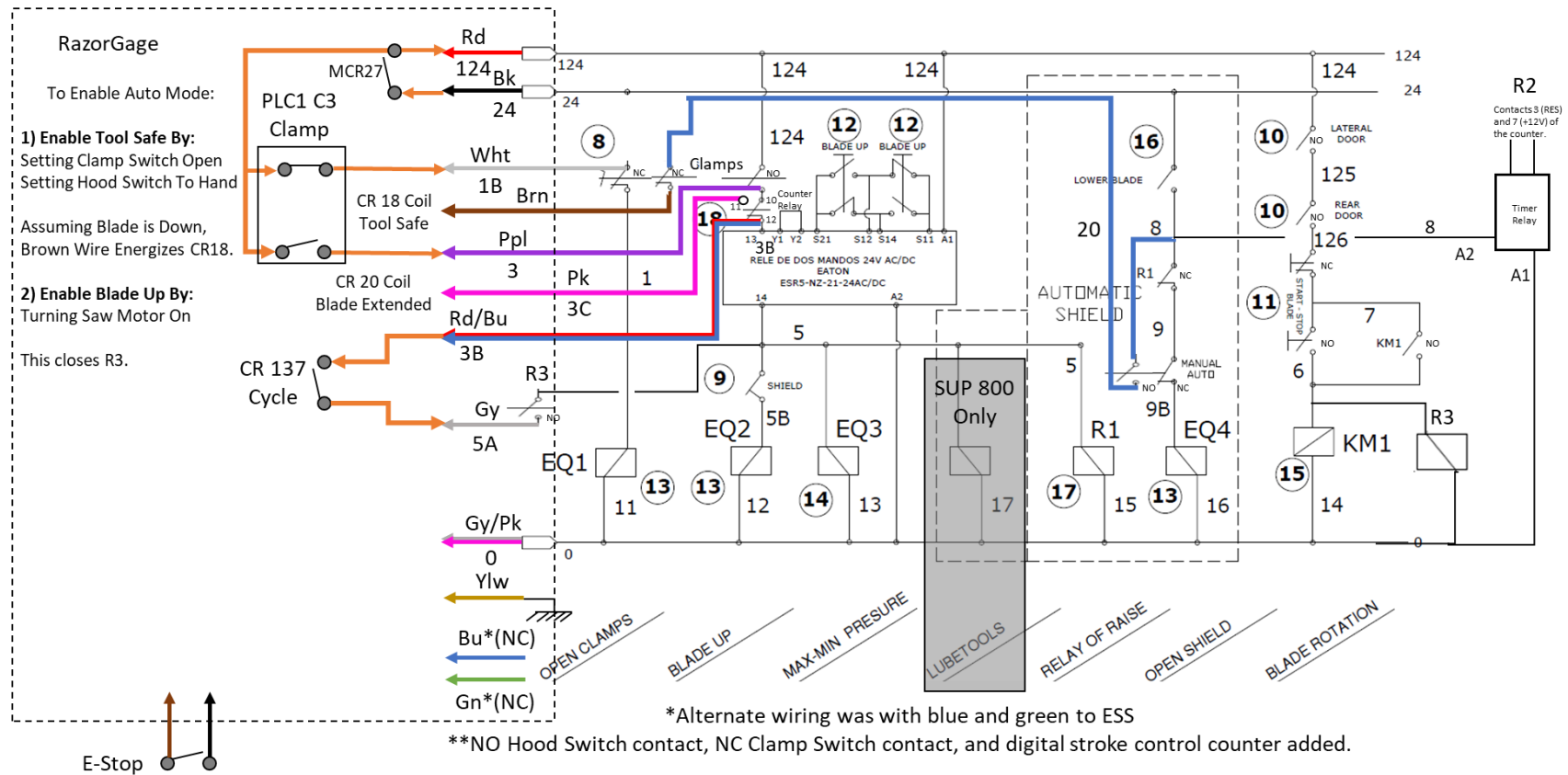
RazorGage Contact:

<https://razorgage.com/request-technical-support/>

Please have the following information available for RazorGage:

- Company Name
- Company Email Address
- RazorGage Serial Number (usually printed on the tower)
- Description of the problem

Control Electronics for Auto Feed System (AFS) and Angle Master Auto 90



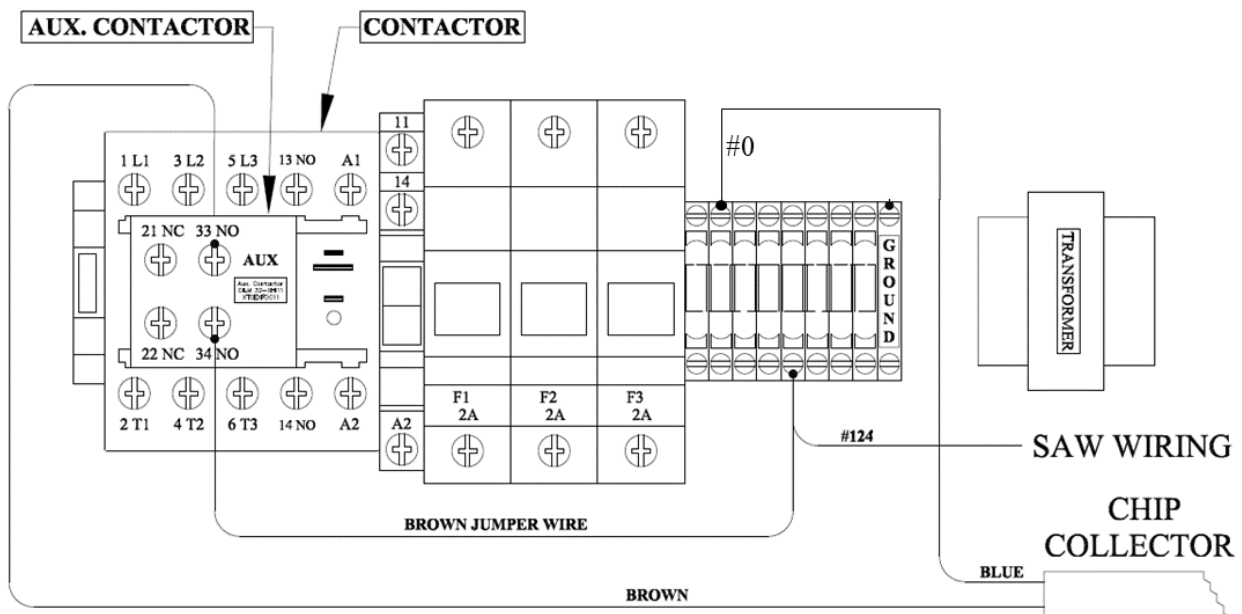
9.0 CHIP COLLECTOR REMOTE START WIRE LOCATIONS

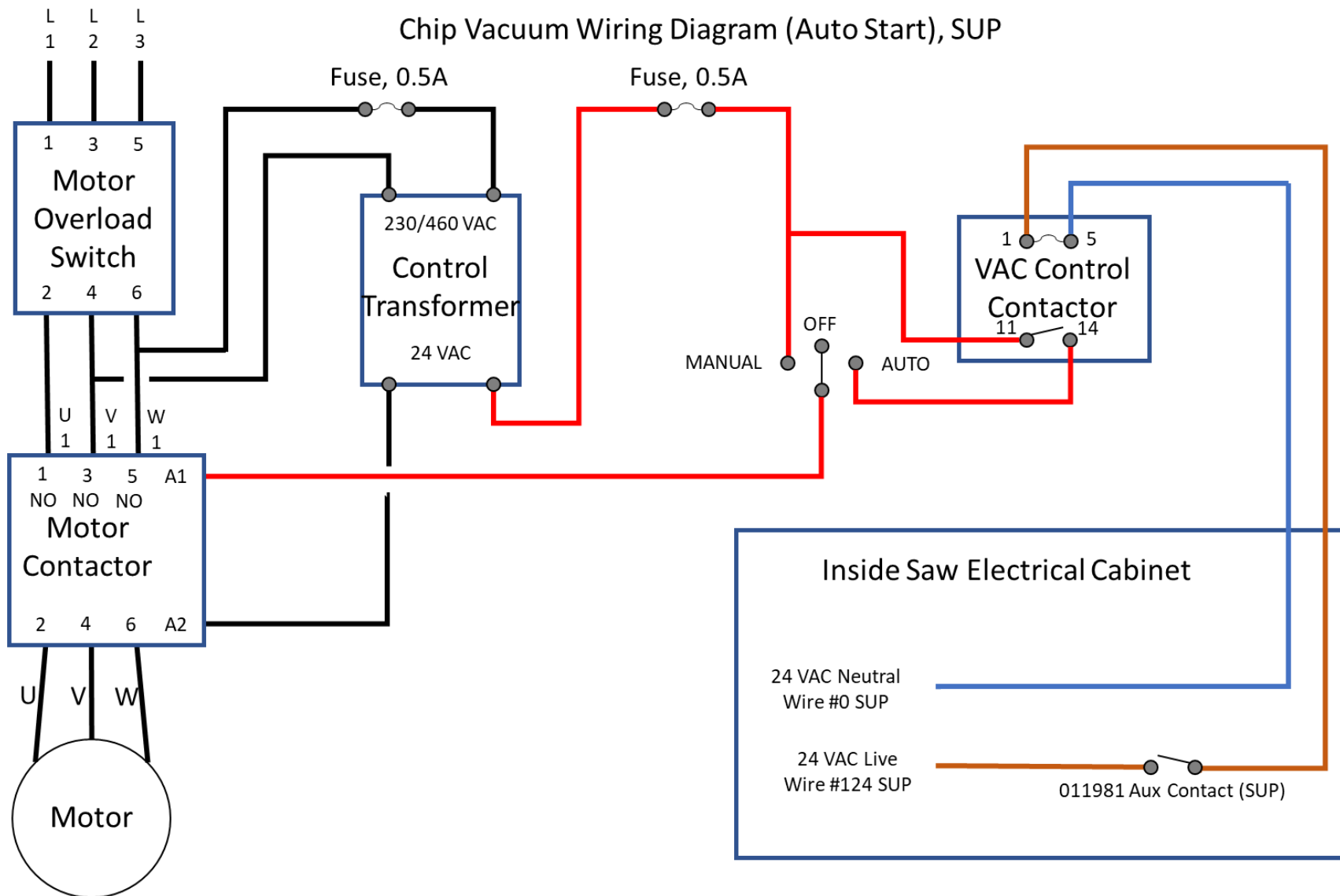


NOTE: THE CHIP COLLECTOR VACUUM MUST HAVE ITS OWN POWER DROP. DO NOT ATTEMPT TO POWER THE VACUUM FROM THE SAW. THE REMOTE START WIRING TO THE SAW IS ONLY A 24VAC CONTROL SIGNAL.

TO MAKE THE CHIP COLLECTOR START WITH THE SUP SAW, READ THE INSTRUCTIONS BELOW AND USE THE WIRE LOCATIONS ON THE FOLLOWING PAGE.

1. Attach the auxiliary contact (P/N 011981) to the top of the saw contactor (insert off-center and slide to the center to lock it in).
2. The chip collector remote start harness has two wires that may be any color such as black, brown, or blue. Polarity does not matter.
3. Attach one wire from the chip collector to #33 NO on the auxiliary contact.
4. Attach the other wire from the chip collector to “0” on the main terminal strip.
5. Attach a jumper wire from the #34 NO on the auxiliary contact to “124” on the terminal strip.
6. The vacuum should now be able to operate with the saw.





The AngleMaster system comprises a RazorGage positioner combined with a third party angle adjustable saw. The RazorGage positioner serves as a pusher feeding the material from right to left. The system is not fully automatic. The linear and angular positions are controlled automatically but the operator must ensure that the material is securely against the positioner stop extension, manually cycle the saw, and ensure that all drops and trim pieces are out of the way before advancing the material.

When the software starts up, the PRESS OK TO HOME screen appears. When you press OK the positioner and the saw turret move to find HOME. Then the MAIN SCREEN appears. The MAIN SCREEN is only useful for moving the positioner and the saw turret to position for test cuts and calibration. It is not useful for cutting angled parts to length. The first step in getting your AngleMaster operational after the tables are leveled and aligned with the saw is calibration. In order to properly cut the parts necessary for calibration, it is necessary to understand the way angles are measured on the machine. On the next page, the AngleMaster coordinate system and terminology is explained. On the pages after that, the calibration process is described. Calibration consists of first setting the Home Offset of the saw turret, then adjusting the scale factor of the saw turret, and finally setting the pivot point of the saw turret. After that one sets the Home Offset of the positioner and the Scale Factor of the Positioner. These parameters are found in the setup screen which is accessed by pressing the SETTINGS button in the upper right corner of the MAIN SCREEN. The parameters for the positioner are shown in the row labeled RG#1 and the parameters for the saw turret are shown in the row labeled RG#2.

Saw Turret Home Offset describes the angle that is cut when the saw turret is at home. If the Saw Turret Home Offset is not accurate, all angles cut will be off by the amount of the error.

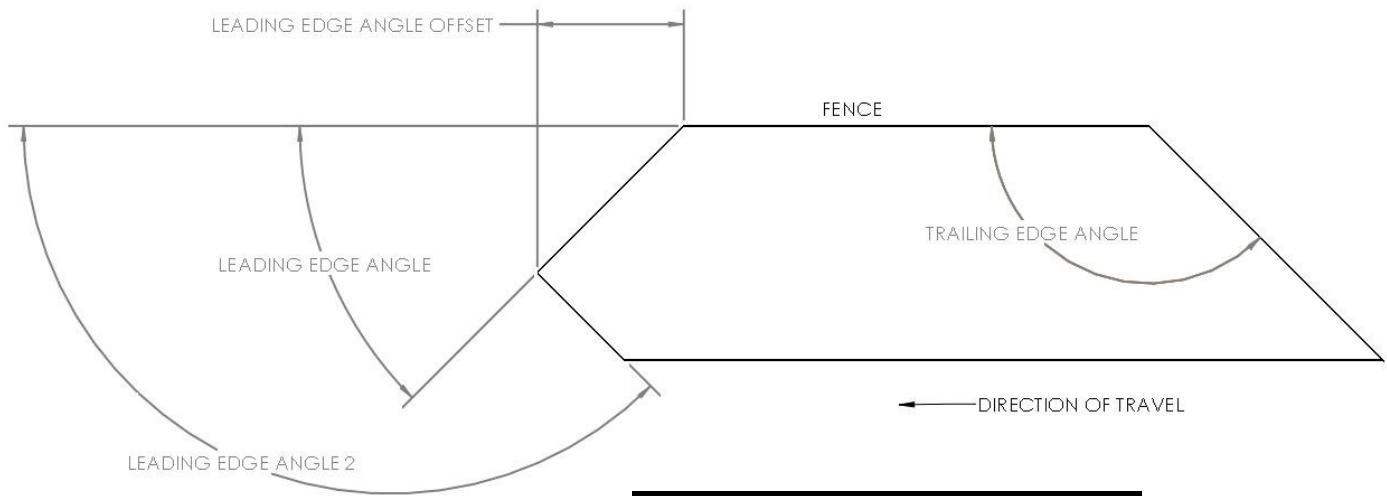
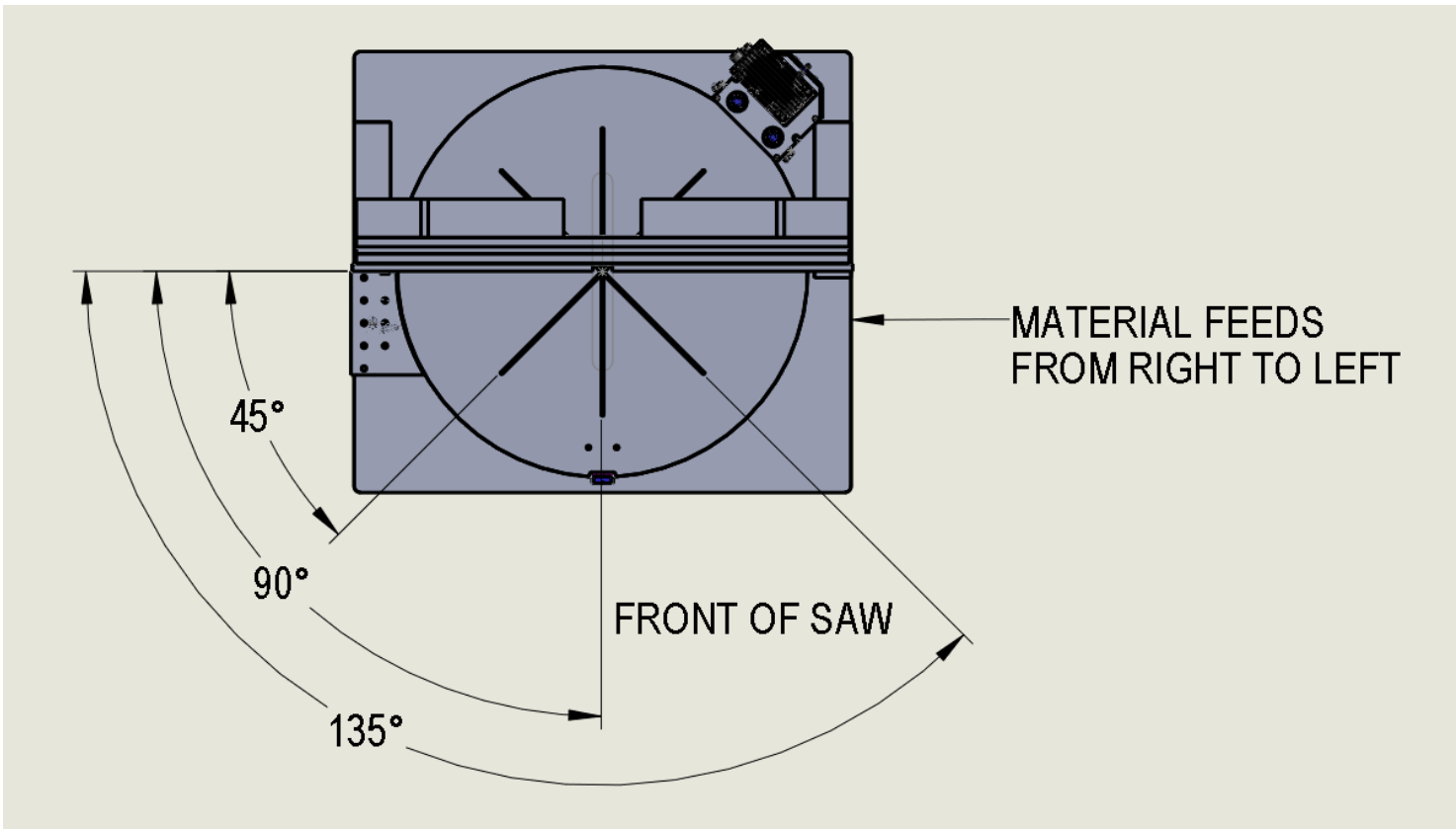
Saw Turret Scale Factor describes the motor counts per degree. The more degrees in the angle, the more times an error in the scale factor is applied. Therefore, if Saw Turret Scale Factor is off, the angle error will increase as the degree of angle increases.

The Pivot Point describes the location of the turret pivot point relative to the center of the blade and the forward facing surface of the fence. If angles are all correct, kerf is correct, and positioner scale factor is correct but parts still come out the wrong length and the error varies with angle, then the pivot point is usually to blame.

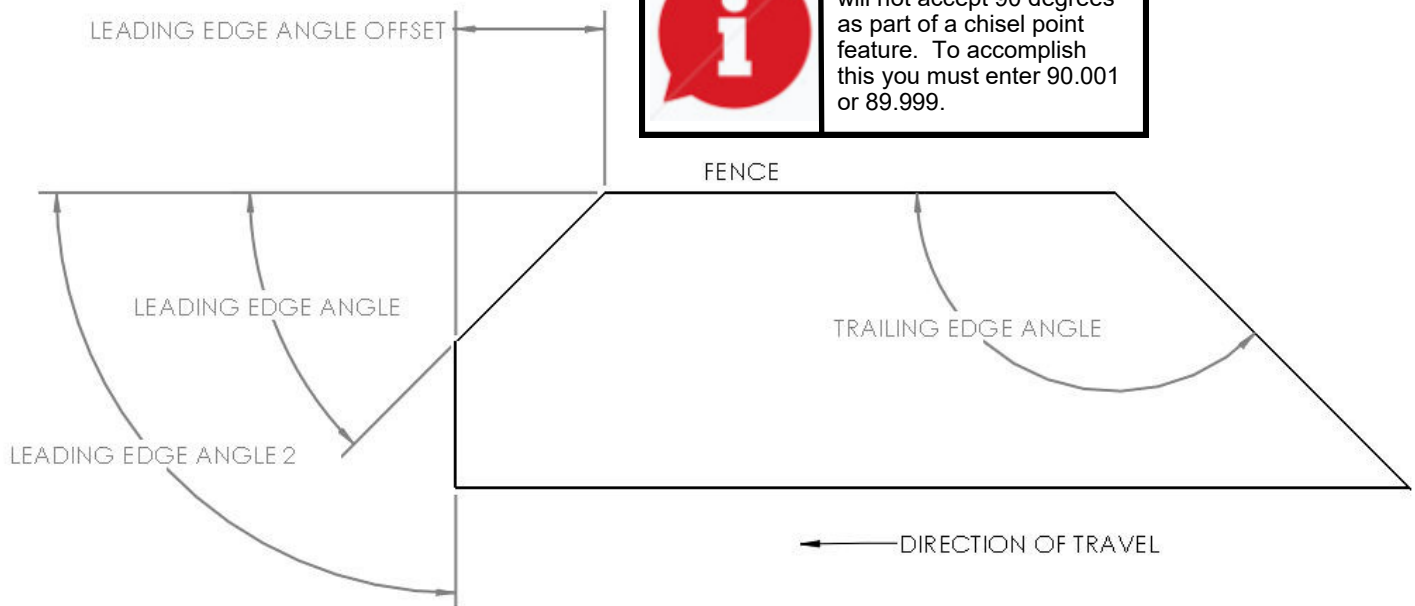
The positioner Home Offset is the distance from the saw blade to the positioner's stop extension face when the positioner is at HOME and the saw is at 90 degrees. If this value is off, then, on a pusher system, the only length affected is the leading edge trim cut.

The Positioner Scale Factor describes the number of motor counts per inch of travel. If short parts are accurate but error increases proportionately as part length increases, then the problem is likely the Positioner Scale Factor

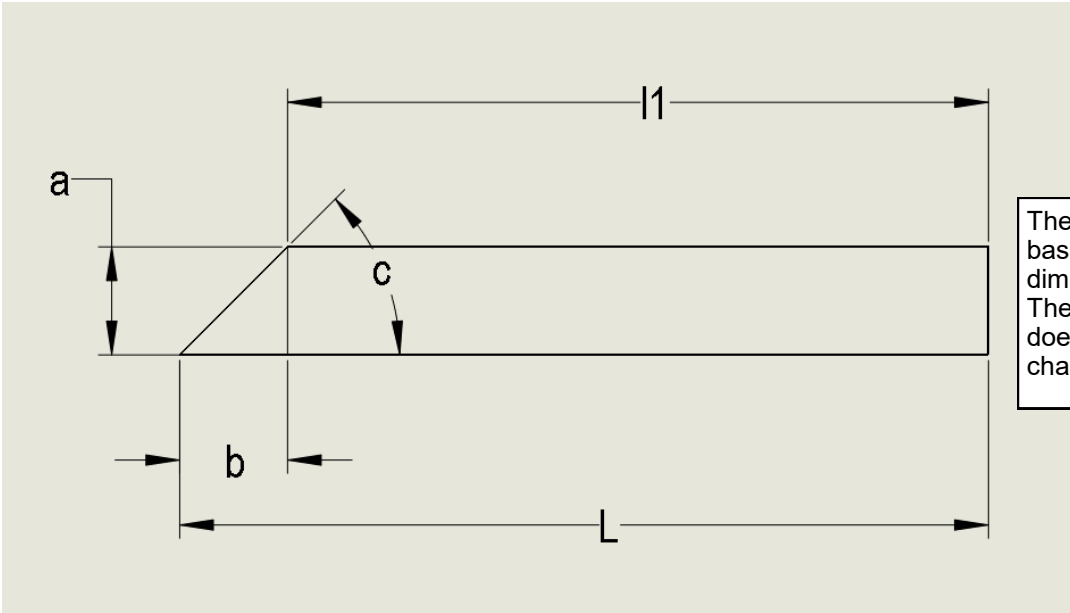




The AngleMaster software will not accept 90 degrees as part of a chisel point feature. To accomplish this you must enter 90.001 or 89.999.



Effect of Width & Angle on Overall Part Length



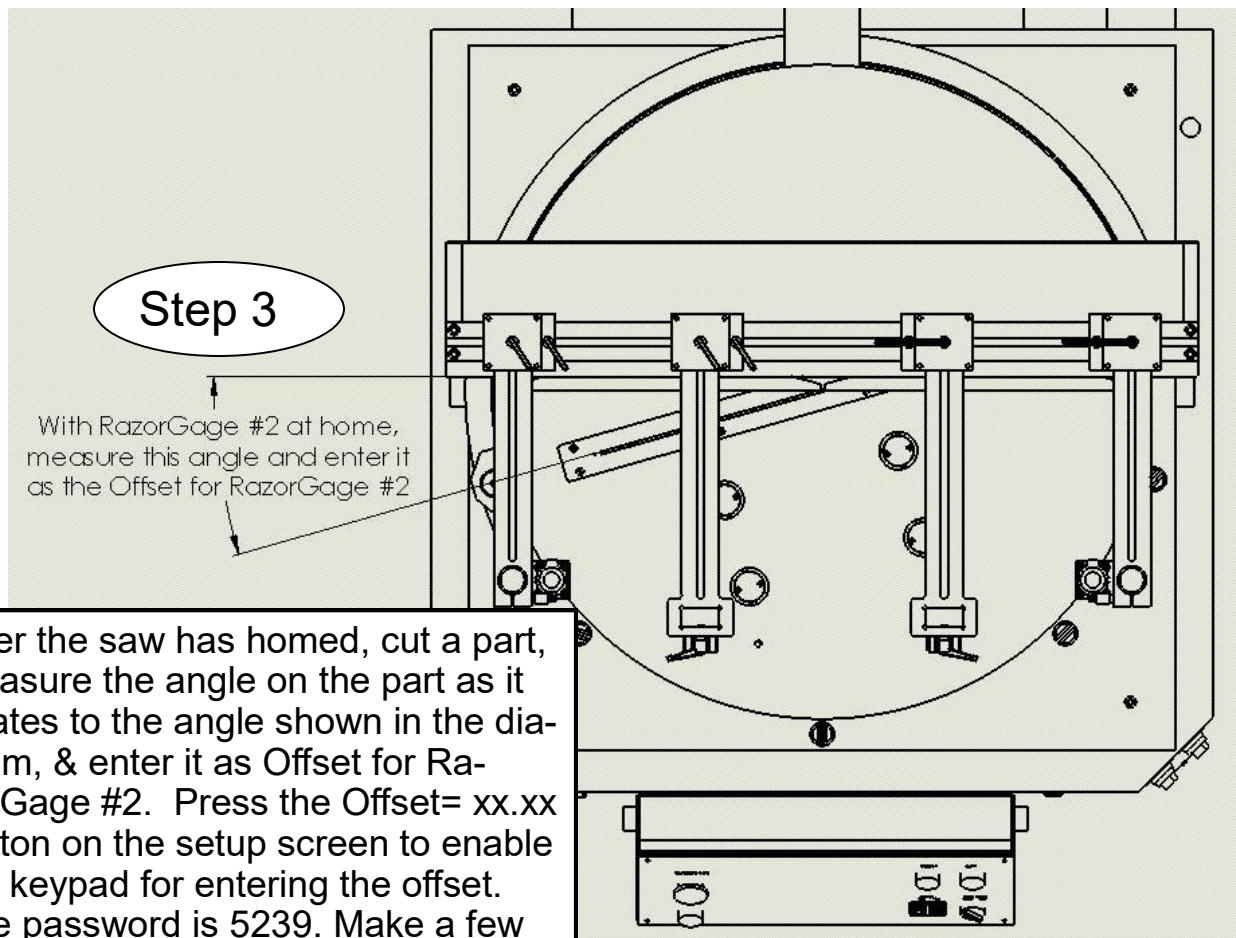
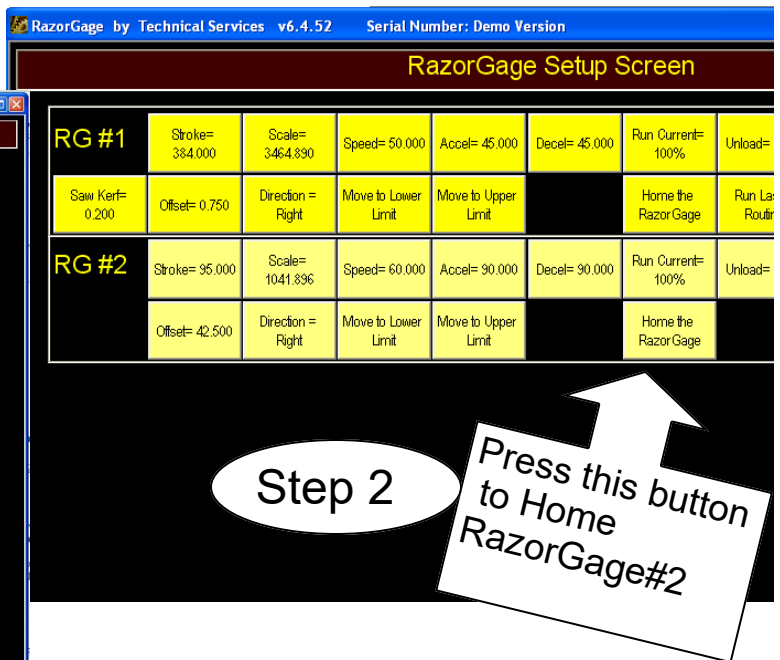
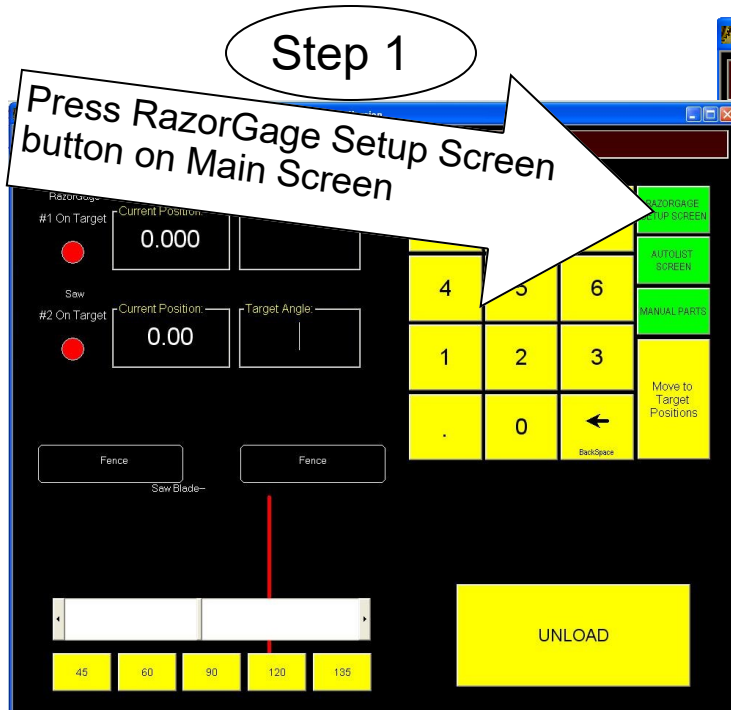
The move $l1$ is calculated based on the nominal dimensions entered. Therefore its value doesn't change in the chart below.

L Nominal 30	a	c	b	l1	L Actual
c Nominal 45	4	45	4	26	30.000
	3.995	45	3.995	26	29.995
	3.996	45	3.996	26	29.996
	3.997	45	3.997	26	29.997
	3.998	45	3.998	26	29.998
	3.999	45	3.999	26	29.999
	4	45	4	26	30.000
	4.001	44	4.143157	26	30.143
	4.002	44.1	4.129744	26	30.130
	4.003	44.2	4.116375	26	30.116
	4.004	44.3	4.103051	26	30.103
	4.005	44.4	4.089771	26	30.090
	4	44.5	4.07043	26	30.070
	4	44.6	4.056244	26	30.056
	4	44.7	4.042109	26	30.042
	4	44.8	4.028023	26	30.028
	4	44.9	4.013987	26	30.014
	4	45	4	26	30.000
	4	45.1	3.986062	26	29.986
	4	45.2	3.972172	26	29.972
	4	45.3	3.95833	26	29.958
	4	45.4	3.944536	26	29.945
	4	45.5	3.930789	26	29.931
	4	45.6	3.917089	26	29.917
	4	45.7	3.903437	26	29.903
	4	45.8	3.88983	26	29.890
	4	45.9	3.87627	26	29.876
	4	46	3.862755	26	29.863

L variation as 'a' (width) changes

L variation as 'c' (angle) changes

Calibrating the AngleMaster



After the saw has homed, cut a part, measure the angle on the part as it relates to the angle shown in the diagram, & enter it as Offset for RazorGage #2. Press the Offset= xx.xx button on the setup screen to enable the keypad for entering the offset. The password is 5239. Make a few cuts at this angle and measure to ensure you have it set accurately.

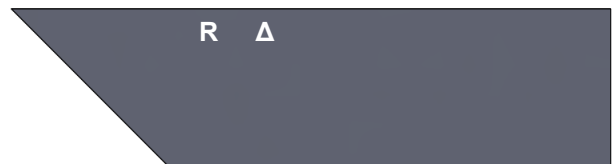
Now go to the main screen and enter an angle of 45 degrees and wait for the saw to finish moving. Find the widest stock you can cut at that 45 degree angle and find a piece that is approximately 36" long. Place the stock on the saw with about 12" of the stock to the left of the point at which the blade intersects the fence and cut it into two pieces as shown at right.

CUT 1

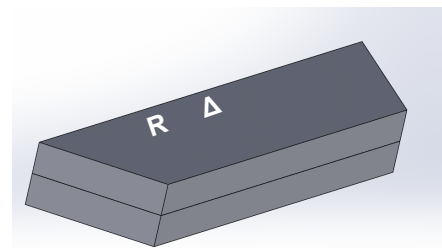


Take the piece on the left and mark it with an "L" on the top and make a mark to indicate the face that was against the fence and put that piece aside. Now move the saw to 135 degrees, place the remainder of the stock to the right of the blade and make the 135 degree cut as shown at right. Now mark the top of this piece with an "R" and indicate the face that was against the fence.

CUT 2



Now flip the parts as shown at right and compare the faces of the two angle cut surfaces. By trial and error, adjust the scale factor and repeat this process until the faces are flush.



RazorGage by Technical Services v6.4.52 Serial Number: Demo Version

RazorGage Setup Screen

RG #1	Stroke= 384.000	Scale= 3464.890	Speed= 50.000	Accel= 45.000	Decel= 45.000	Run Current= 100%	Unload= 5.000	Load= 48.000	Return to Main
	Saw Kerf= 0.200	Offset= 0.750	Direction = Right	Move to Lower Limit	Move to Upper Limit	Home the RazorGage	Run Laser Routine	Run Break-In	Help
RG #2	Stroke= 95.000	Scale= 1041.896	Speed= 50.000	Accel= 45.000	Decel= 45.000	Run Current= 100%	Unload= 5.000	Load= 48.000	PC Software Manual
	Offset= 42.500	Direction = Right	Move to Lower Limit	Move to Upper Limit	Home the RazorGage	Run Laser Routine	Run Break-In	Timer 1 = 500ms	

Adjust scale factor here

Calibrating Saw Pivot Point

Main Screen

NOTE: This position does not account for angle position.

RazorGage #1 On Target: **0.000** Target Length:

Saw #2 On Target: **0.00** Target Angle:

Buttons: 7, 8, 9, 4, 5, 6, 1, 2, 3, RAZORGAGE SETUP SCREEN, AUTOLIST SCREEN, MANUAL PARTS

Click Autolist

Click Settings

Anglemaster AutoList Parameters Screen

Click Pivot Point

OPTIMIZE

- ☒ OPTIMIZE ON ENTER LENGTH (STOP MODE)
- ☒ USE FIRST FIT METHOD (RECOMMENDED)

NO PRINTER

Saw Pivot Point Offsets

Click Calibration

Calibration

DONE

Pivot Point Calibration

To Calibrate: Move to a position of your choice. Cut 3 pieces, 1 with the angle at 90deg, 1 with the angle at 45deg and 1 with the angle at 135deg. Make these cuts using the RazorGage as a stop, NOT as a pusher.

Measure the lengths along the **fence side**, and enter below. Click calculate to have the pivot point offsets computed.

Length at 90deg

Length at 45deg

Length at 135deg

Calculate New Offsets

Fence Offset

Saw Blade Offset

Use These Offsets

Cancel

Important - The part cut with the saw set at 45 degrees must be measured on the short side at indicated here.

Important - The part cut with the saw set at 135 degrees must be measured on the long side at indicated here.

After entering the lengths of the parts as measured along the fence press CALIBRATE NEW OFFSETS to calculate and display the offsets then press USE THESE OFFSETS to load the values into the machine.

STOCK

Stock Length

Stock Width

Part Styles

PART

Leading Angle

Leading Angle Offset

Leading Angle 2

Trailing Angle

Part Length

SAVE PART

OPEN FILE

789

456

123

.0<

Next (TAB)

Cut The Part

Done

To cut manual parts, click the MANUAL PARTS button on the Main Screen and then enter the STOCK LENGTH, which is the length of the material you're loading into the machine, and the STOCK WIDTH, which is the ACTUAL, NOT NOMINAL, width of the material. If you enter 3" as the stock width but the actual width is 2.995, then finished part length on a 45 degree part will be off by .005" even if all other aspects of the machine are perfect.

After entering STOCK WIDTH, click PART STYLES. The SELECT A PART SHAPE screen will appear. Click the part shape that matches your part and enter the angles and length on the drawing. The drawing has multiple dimensioning schemes to describe each feature. This is done because we never know how the draftsman will dimension an angle so we give you multiple ways to enter it. DON'T ENTER A VALUE IN EACH BOX. Just enter one value to describe each angle. Leave the unused boxes blank. The software will warn you if you don't fill in enough information.

Click ADD THE PART when you're done and the MANUAL PARTS SCREEN will come back. It will have all the information filled out. Now click CUT THE PART and follow the onscreen prompts.

Select a Part Shape:

CANCEL

789

456

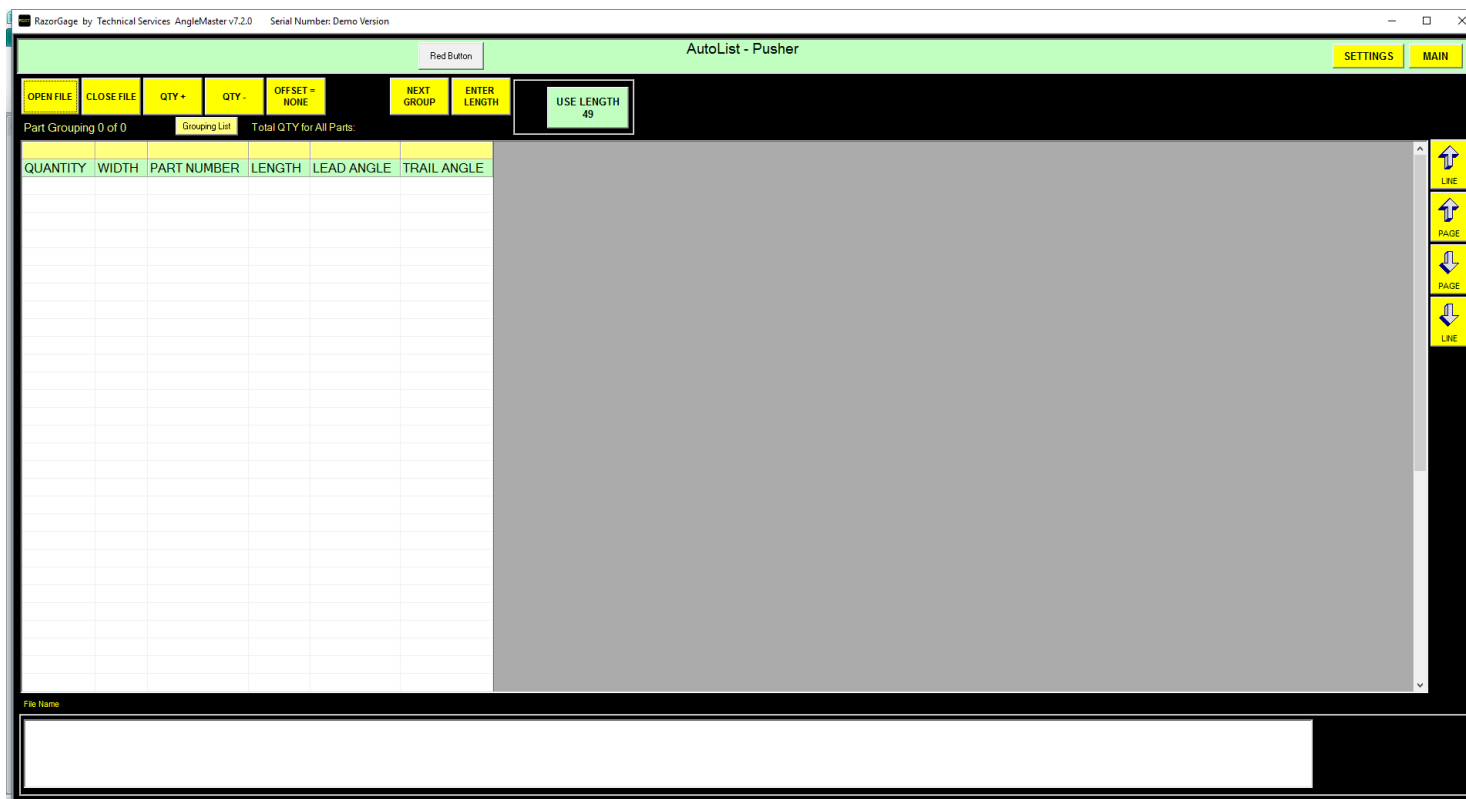
123

.0<

Add The Part

Cancel

The other screen offered in the AngleMaster software is the AutoList Screen. The Autolist allows you to open a cutlist, enter the length of your stock, and then it will find the parts in the cutlist that best utilize the available material and create a cutting solution. You press GO and the RazorGage positioner will advance the material to the trim cut, then to each subsequent location, adjusting the saw as needed to cut the parts to the required leading and trailing edge angles and length. To operate the Autolist screen, click AUTOLIST from the MAIN SCREEN. When the AUTOLIST screen appears, click OPEN FILE and click the file to open. When the file opens it will be sorted into groups according to the sorting criteria established in the Autolist Settings/Sorting screen. Usually groups are sorted by material type but more criteria can be added such as color, job number, room number, or all of the above. To start the operation, just click the GROUPING LIST button and choose the material type (group) you want to run. Then the parts from that group will be displayed. Click the ENTER LENGTH button and enter the stock length and then just follow the prompts to run the parts from that stick. For a complete tutorial on AUTOLIST, watch our COMPLETE AUTOLIST TUTORIAL on our YouTube channel.



From the Autolist Screen
click SETTINGS

That will show the screen below.
Click **CONFIGURE**.

AutoList Parameters Screen

☒ OPTIMIZE ON ENTER LENGTH (STOP MODE)

☒ USE FIRST FIT METHOD (RECOMMENDED)

MAXIMUM ITERATIONS

Recommended: 10000

PRINTER

☐ NO PRINTER

☒ PAPER LABEL PRINTER

☐ INK JET PRINTER

Ink Jet Printer Port INK JET

PUSHER

TRIM AT START LOAD-OUT OFFSET GRIPPER WIDTH

TRIM AT END CLAMP OFFSET GRIPPER LENGTH ON STOCK

FIRST MOVE SPEED CLAMP SWITCHOVER FENCE TO GRIPPER

DEFECTION

☐ HAS JOY-STICK DEFECTING

DEFECT START POSITION

DEFECTION

☐ HAS JOY-STICK DEFECTING

DEFECT START POSITION

CURTAIN WALL STYLE

☐ SET STOCK LENGTH FROM FIRST BAR LENGTH IN GROUPING

☐ PRE-OPTIMIZED - CUT GROUP IN SEQUENCE

PART GAP ☒ NO PART GAP FOR 90-90

IN-BOARD CLAMP WARNING POSITION

☐ MANUAL ANGLE OPERATION

DONE

BARCODE SETUP

BARCODE TEST

LABELS

CONFIGURE

SORTING

PIVOT POINT

In order for the software to position the saw at the proper angle for each part, the software must be told which columns in the cutlist contain the various angle data. We tell the software this by selecting the column from pull down menus on the right of the Parts Configuration Screen.

The pull down menus contain a list of the columns available in the cutlist. This list contains the DB Name of the columns which is different than the name you see in the table that shows up on the Autolist screen. The names you see on the Autolist screen are called the Grid Labels. The Grid Labels are column headings that make sense to the operator. Internally, however, the software refers to the columns by the DB Name. When we tell the software which column contains Leading Edge Angle, for example, we must use the DB Name instead of the Grid Label. In the example below, find the second pull down list from the top on the right side of the screen. That pull down list is labeled LEAD ANGLE DB_NAME. When you click on the arrow on the right side of the box you'll see a list of all the DB_Names in the RazoGage database file (.rdb file). The grid to the left of the pull down menus has a column on the far left labeled DB Name. The column on the right of the grid is labeled Grid Label. Look down the Grid Label column until you see the label LEAD ANGLE. Then go over to the left column to find the corresponding DB Name. Select that name from the pull down to assign the LEAD ANGLE column. Do this same procedure for LEAD ANGLE OFFSET, LEAD ANGLE 2, and TRAIL ANGLE. IMPORTANT: NOT ALL CUT-LISTS WILL CONTAIN A COLUMN FOR LEAD ANGLE OFFSET AND LEAD ANGLE 2. If your cutlist doesn't contain these columns, just choose NONE from the pull down menu.

DB Name Column

Grid Label Column

Parts Configuration Screen

DB Name	Column #	Show In Grid	Grid Label
Seq_Num	1	<input type="checkbox"/>	SEQ_NUM
Quantity	2	<input checked="" type="checkbox"/>	QTY
Material	3	<input type="checkbox"/>	MATERIAL
Width	4	<input checked="" type="checkbox"/>	WIDTH
Thickness	5	<input type="checkbox"/>	THICK
Part	6	<input checked="" type="checkbox"/>	PART
Length	7	<input checked="" type="checkbox"/>	LENGTH
UF_1	8	<input checked="" type="checkbox"/>	LEAD ANGLE
UF_2	9	<input checked="" type="checkbox"/>	LEAD ANG OFFSET
UF_3	10	<input checked="" type="checkbox"/>	LEAD ANGLE 2
UF_4	11	<input checked="" type="checkbox"/>	TRAIL ANGLE
UF_5	12	<input checked="" type="checkbox"/>	TRAILER
UF_6	13	<input type="checkbox"/>	PROJECT
UF_7	14	<input type="checkbox"/>	PARTID
UF_8	15	<input type="checkbox"/>	UF_8
UF_9	16	<input type="checkbox"/>	UF_9
UF_10	17	<input type="checkbox"/>	LAYOUT
UF_11	18	<input type="checkbox"/>	BAR_LENGTH
UF_12	19	<input type="checkbox"/>	BAR
UF_13	20	<input type="checkbox"/>	UF_13
UF_14	21	<input type="checkbox"/>	DAY
UF_15	22	<input type="checkbox"/>	DATE

BAR LENGTH DB_NAME

UF_11

LEAD ANGLE DB_NAME

UF_1

LEAD ANGLE OFFSET DB_NAME

UF_2

LEAD ANGLE 2 DB_NAME

UF_3

TRAIL ANGLE DB_NAME

UF_4

Cancel

Save The Changes

Pull Down Menus

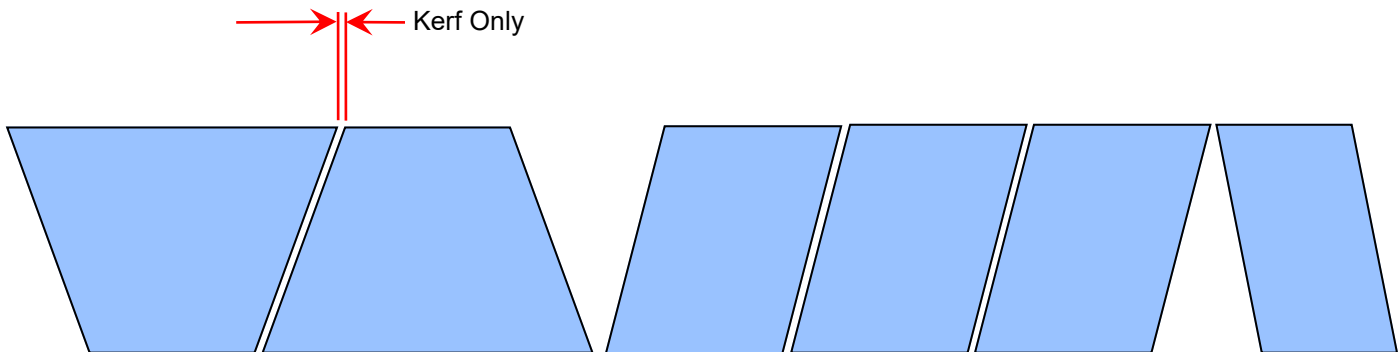
If conditions are right the AngleMaster software will make one cut to achieve the trailing edge angle of one piece with the leading edge angle of the next piece. In order for this to happen the ORDER PARTS ON STICK BY SEQ_NUMBER UNCHECK TO ORDER BY LENGTH box must be checked. To find the screen at right, click the SETTINGS button in the upper right corner of the AUTOLIST screen. As indicated by the label, parts are cut according to sequence number. If you did not include a column for sequence number in your cutlist, the Parts List Processor applies a sequence number for you. The sequence number automatically applied may not provide you with the nesting results you're looking for as, in order for parts to be nested, they must fall in place so that the angles match. The software does not actively try to make conditions right for angle nesting.

1. When running a standard cut list ("ORDER PARTS ON STICK BY SEQ_NUMBER UNCHECK TO ORDER BY LENGTH " box is NOT checked) the parts are placed in the clear span by order of length (Longest First). All of the parts are 'nested' together meaning that, when possible, the trailing cut of one part is shared with the leading edge cut of the next part. **Chisel point parts (two angles on the leading edge) will not be included with other parts in the optimized cutting solution when this box is checked. They will be put in the cutting solution one at a time.**

For example,

- A) If the trailing angle of one part is the same as the leading angle of the next part, then no additional move is made.
- B) If the trailing angle of one part is less than the leading angle of the next part, then a small move is made.

Note: the parts are not re-arranged to be nested.



2. If the "Pre-Optimized - Cut Group In Sequence" box is checked, it is placed into "Curtain Wall" mode.

In this mode, each part is treated like a rectangle so the parts are not "nested" in the way they are above.

The "Part Gap" parameter adds an additional distance (minus the kerf) between the two 'rectangles'.

The "No Part Gap for 90-90" checkbox ignores the "Part Gap" parameter when two 90's are side by side.

