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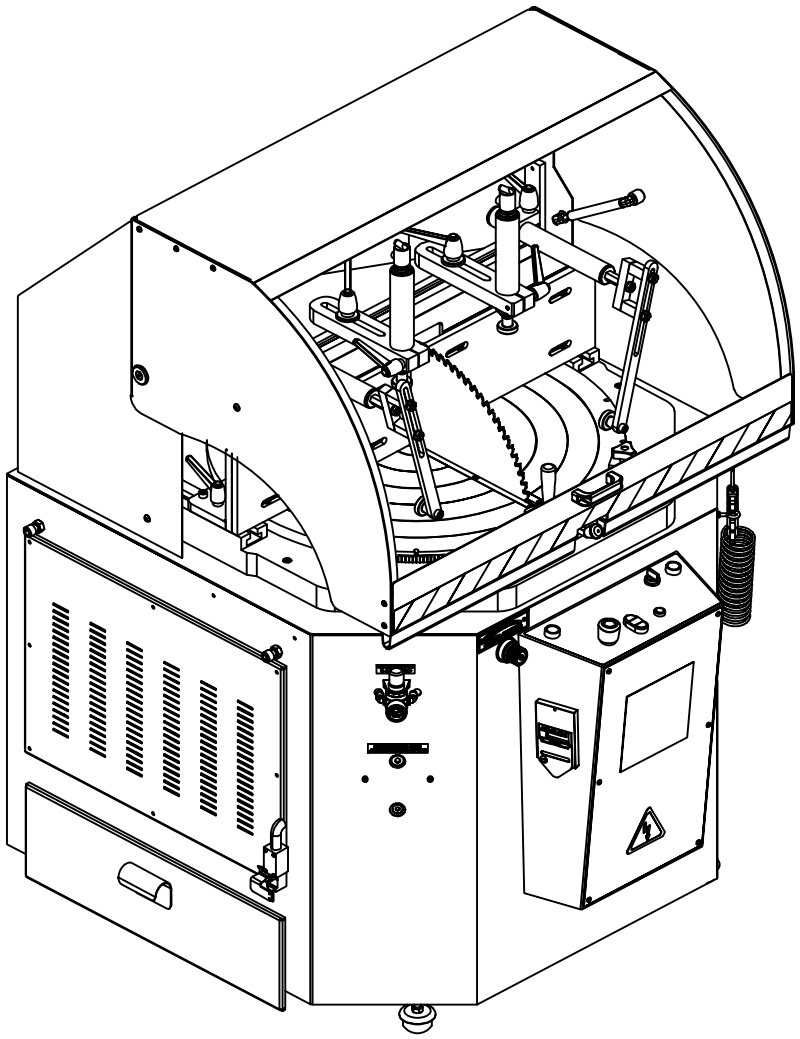
MODEL SUP-600-NF

ANGLEMASTER

PRECISION MITER UP-CUT

NON-FERROUS SAW



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Metal Fabricating Solutions

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MODEL

SUP-600-NF

COLD SAW

ANGLEMASTER

PRINTED MAY 2021

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SUP-600 NF SAW

FIGURE 1

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TABLE OF CONTENTS

1.0 INTRODUCTION

The 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, thereby respecting its content in each and every one of its parts.
This is the only way in which the fundamental objectives that have been established on the basis of this manual will be achieved; such as, accident prevention and making optimal use of the machine features. Within the framework of this manual, all aspects regarding safety and accident prevention on the job while using the machine have been considered in every detail, herein highlighting the information that is of greatest interest to the user.

- **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 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 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

MODEL - SUP-600-NF

SERIAL NUMBER _____

YEAR OF MANUFACTURE _____

⌦ **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 APPEAR IN THE LAST CHAPTER OF THE PARTS EXPLODED VIEWS.**

2.2 Technical Data

CHARACTERISTIC	DIMENSION
Three phase motor	5.3HP, 230/460V
Motor speed	3000 RPM
Bore Ø of blade	50mm
Maximum Ø of saw blade	600 x 50 x 4.5mm
Miter Stops / Presets	135° RIGHT 45° LEFT
Miter Max	90° RIGHT 60° LEFT
Working pressure	95-105 PSI / 6.5-7.2 Bar
Pneumatic hold-down clamps	2 vertical + 2 horizontal
Lubrication system	Pneumatic, Mist
Dimensions	52" x 48.8" x 65.4"
Weight	1,100 lbs

FIGURE 2

2.3 Dimensions of the Machine

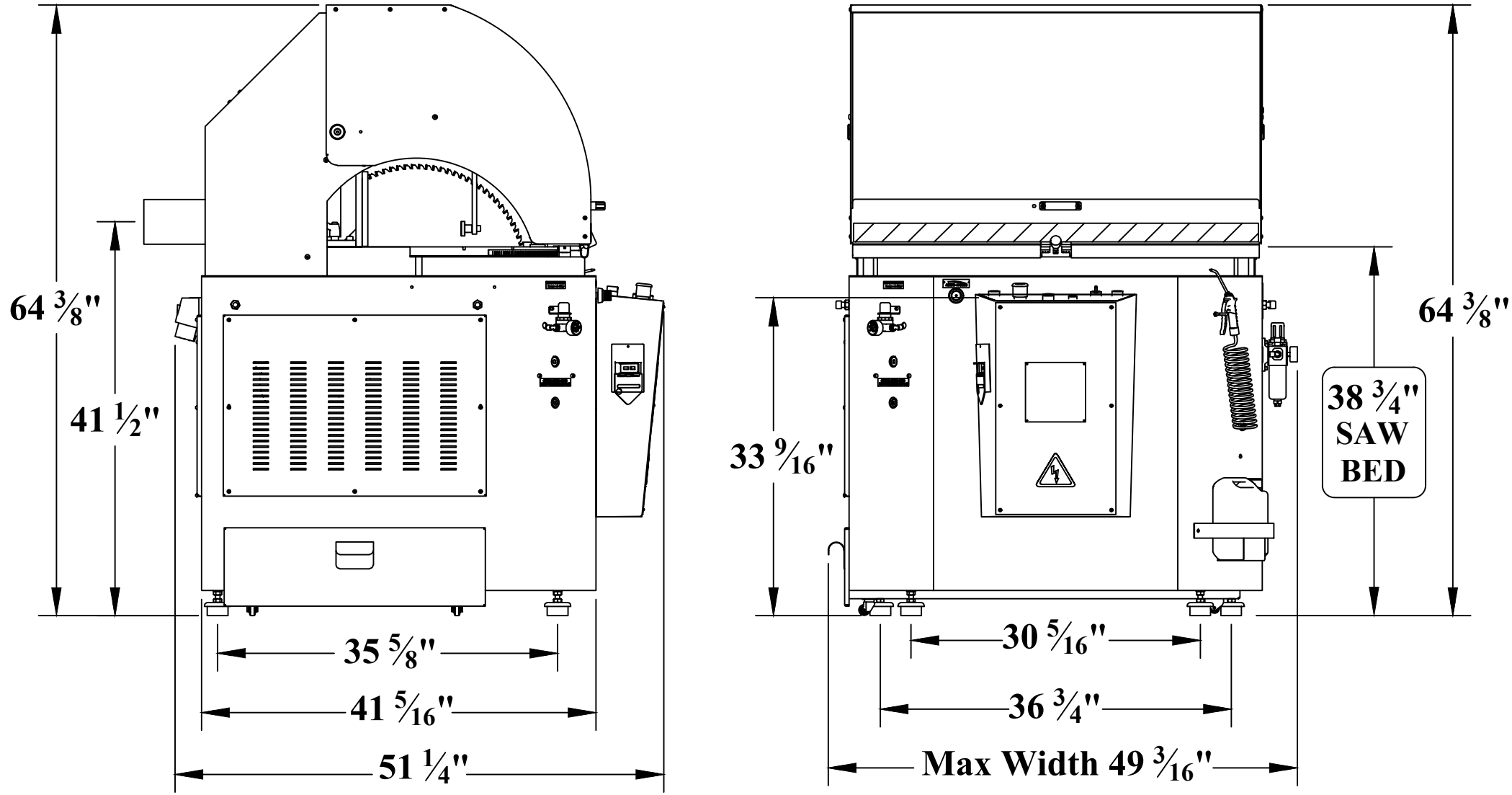


FIGURE 3

2.4 Cutting Capacity

SUP-600 NF SAW
CUTTING DIAGRAM 600mm DIA. (23-5/8)

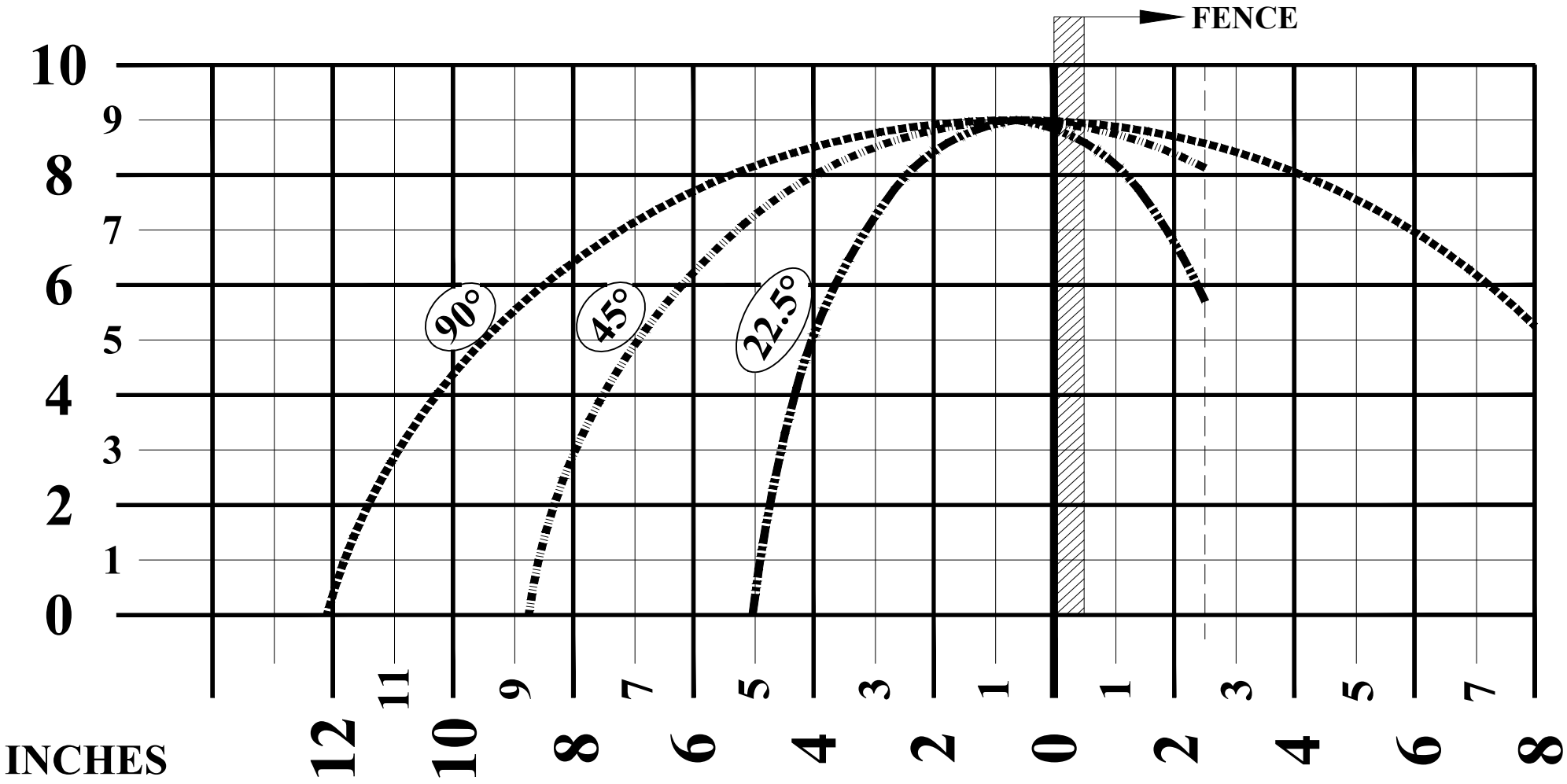


FIGURE 3

2.5 Electrical Data

Power Supply	Motor Power	Total Consumption
230 V Three phase	4 kW/5.3 HP	14 Amps at 60Hz
460 V Three phase	4 kW/5.3 HP	8.1 Amps at 60Hz

2.6 Noise Level

At a distance of 2'	**RUNNING OFF-LOAD**	**80 dB (A)**
	MACHINING A 2.75" X 2" PROFILE	**120 dB (A)**

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

3.0 INSTRUCTIONS REGARDING TRANSPORT & STORAGE

Store in the vertical position. Do not stack.

If the machine remains stored for a long period of time, periodically lubricate it.

Do not expose to the elements.

The packaging is made of properly designed and sized wood and is also wrapped in plastic.

➲ **CAUTION: Do not improperly dispose of the packaging. Send this material to be recycled or disposed of in accordance with all legislation in force.**

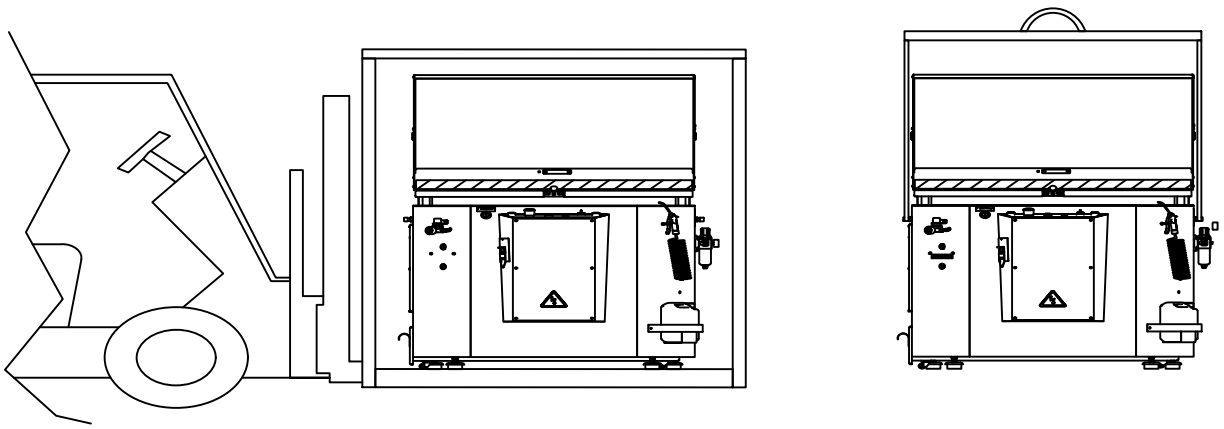


FIGURE 5

4. INSTRUCTIONS FOR ANCHORING / SERVICE START-UP

4.1 Anchoring Instructions

Ensure that the machine has not suffered any damage during transport by making an initial visual inspection. If damage is observed, advise the carrier immediately.

The machine must be installed on a firm surface that is as level as possible, in order to reduce vibrations during operation and so that it operates within the parameters established by the manufacturer.

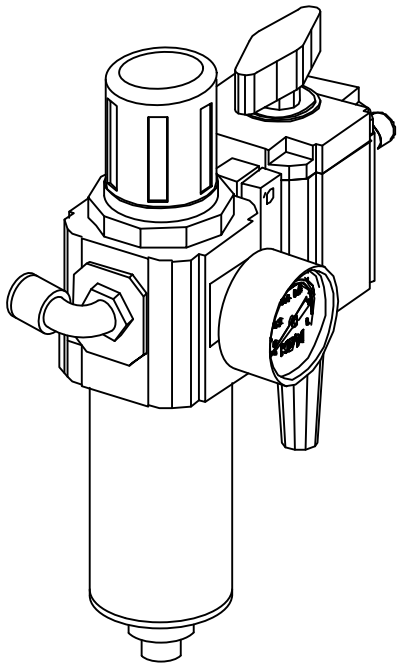
4.2 Power Supply Connection

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 characteristics of same, and complies 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 not correct, swap two phases of the incoming power to the motor. Then, check the rotation again.

The saw must be connected to a steady supply of compressed air. The incoming air supply is connected to the Filter / Regulator. It is located on the right and toward the back of the machine. See Figure 6 on the next page.

- **ATTENTION: The pneumatic working pressure must be between 6.5 to 7.2 Bar (95 to 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 (95 to 105 PSI). The red knob on top is used to turn the air supply on or off.

➲ **ATTENTION: The incoming air pressure must be between 6.5 to 7.2 Bar (95 to 105 PSI). If pressure is too low it can affect the accuracy and consistency of parts.**

There is another smaller regulator on the front left of the saw that regulates the air pressure to the horizontal clamps. It should be set at 2-3 bar (30-45 psi). Maximum is 4 bar (60 psi).

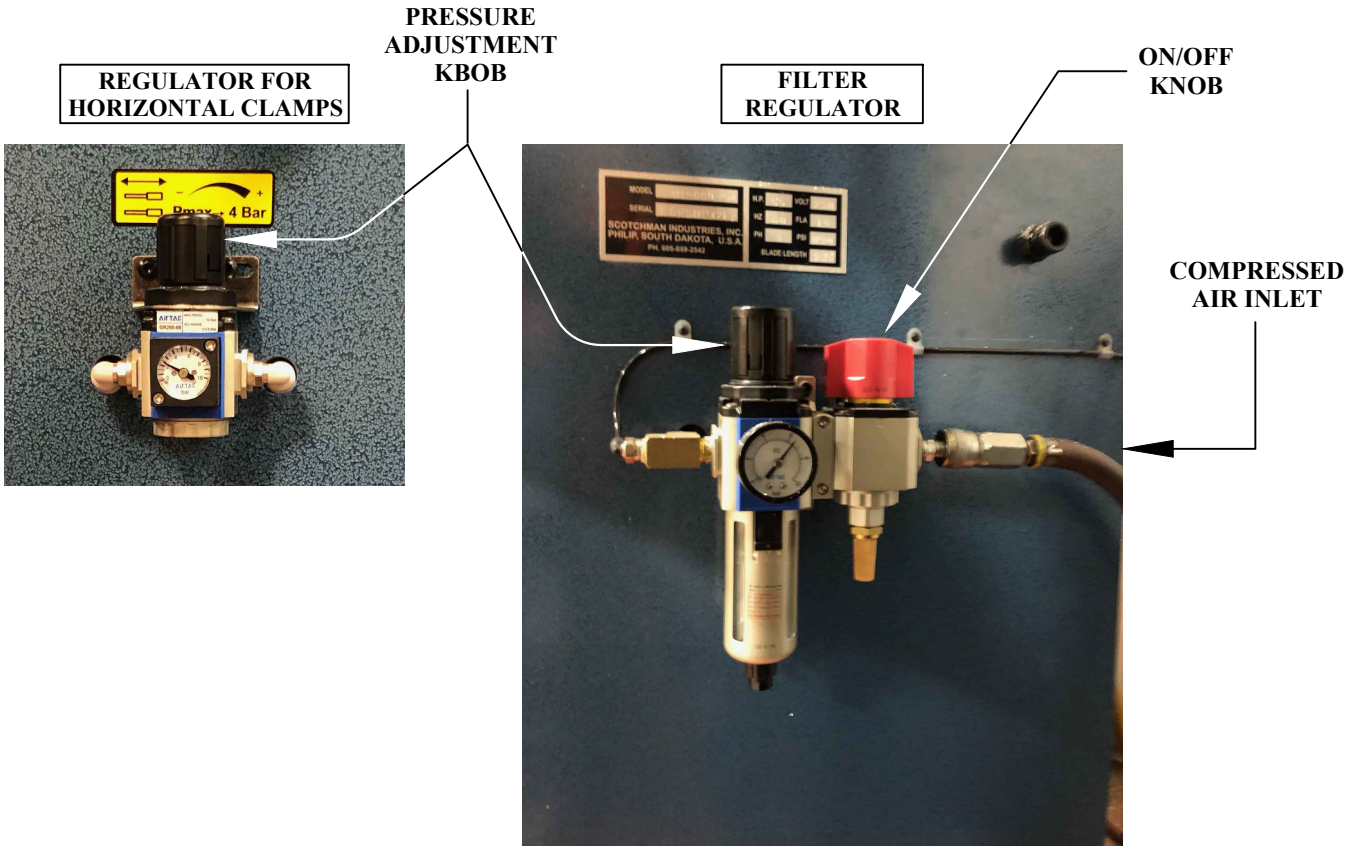


FIGURE 6

4.4 Installing The Blade

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

1. Set the saw to ninety degrees and disconnect the power. Open the cabinet door and remove the existing blade.

⌦ **NOTE: The blade nut is right hand threaded.**

2. Insert the rod provided with the machine into the blade flange (1) and loosen the blade nut (2) with the wrench provided. The teeth on carbide blades are very sharp and we recommend using gloves while changing blades. Remove the blade.

3. Check the blade flange and the blade seat for any chips or nicks before installing the new blade.

4. Install the new blade and the blade flange and blade nut. The saw blade rotates counter clockwise 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 that 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 proper orientation, the teeth will be dulled almost immediately.**

5. Close the access panel and reset the safety switch.

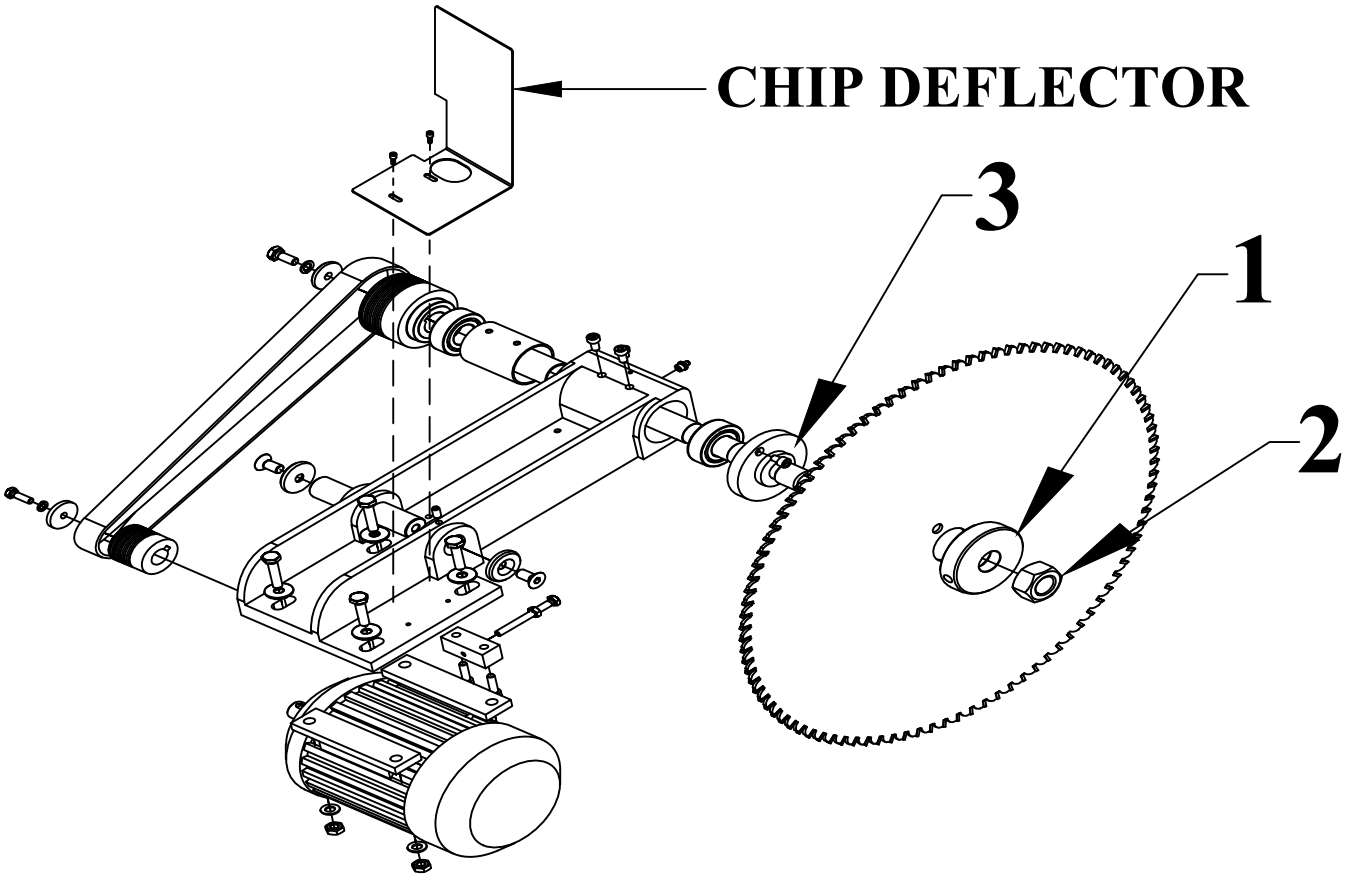
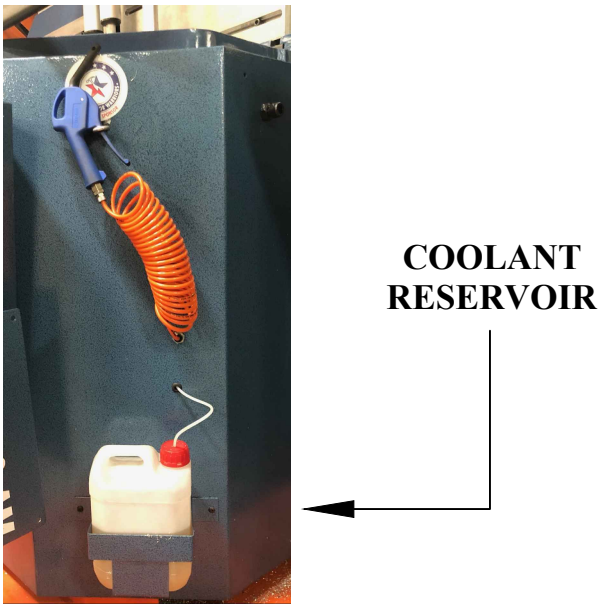


FIGURE 7

4.5 Cutting Coolant

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



4.6 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 that they are in "clamp mode".**
4. **Turn the 2-position switch for the hood to the down position. The clamps must be engaged and the saw hood down for the saw to cycle.**
5. **Turn the feed rate control knob on the machine clockwise until it is turned off. This will prevent the blade from raising.**
6. **Disengage the safety switch on the left-hand blade door by turning the knob clockwise. Once fully disengaged the door will be able to be opened.**
7. **Before proceeding have a second person press and hold both green buttons on the control panel briefly to engage saw. This should cause the solenoid to activate as though the 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 be able to raise out of the base cabinet. If the solenoid does not activate, check to make sure that the clamps are engaged, the hood is down, and the safety switch for the hood is functioning.**
8. **If the saw solenoid activates and the blade remains down, the coolant mister can now be adjusted/primed. The knob is located on the backside of the blade.**

    a. **Adjust - Have the second person now press and hold the green buttons to activate the 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.**

    b. **Prime - Fully open the mister knob. Have the second person now press and hold the green buttons to activate the saw solenoid. As the buttons are held, the machine should begin to purge the air out of the coolant system and then slowly turn to a heavy mist of coolant. Adjust the spray to a satisfactory setting.**

9. **Close the door and reset the safety switch by turning the knob counter-clockwise until tight.**

4.7 Pneumatic Oil

Both the oleo-pneumatic converters and the filter group lubricator must be filled with ISO VG 16 VISCOSITY PNEUMATIC OIL or AW 32, 10 weight hydraulic oil. If none is available, use hydraulic oil 16. This machine holds approximately (1) quart.

5. INSTRUCTIONS FOR USE

5.1 Proper and Improper Use

This is a semiautomatic cut-off machine especially designed for cutting non-ferrous profiles. The use of the machine for cutting other materials is hereby prohibited. Such use may cause damage to the machine and put the health and safety of the worker at risk.

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 Mechanisms

1. Horizontal clamps

2. Vertical clamps

NOTE: The clamping cylinders should not be used with the rod completely extended. The stress produced when the rod of the cylinder is extended completely will reduce the life of the cylinder. It should be at a distance of 1-1/4" to 1-1/2" (30-40 mm) from the material that's being clamped.

3. Lever turn disc

4. Protective shield

5. M-10 x 40 lever

6. Filter + regulator + manometer

7. Clearing gun with hose

8. Advanced regulator 3/8"

9. Raise blade, green button

10. Two position selector

11. Green indicator light

12. Saw blade on-off

13. Emergency stop

14. Pressure regulator for horizontal clamps set at 2-3 Bar

15. Coolant reservoir.

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

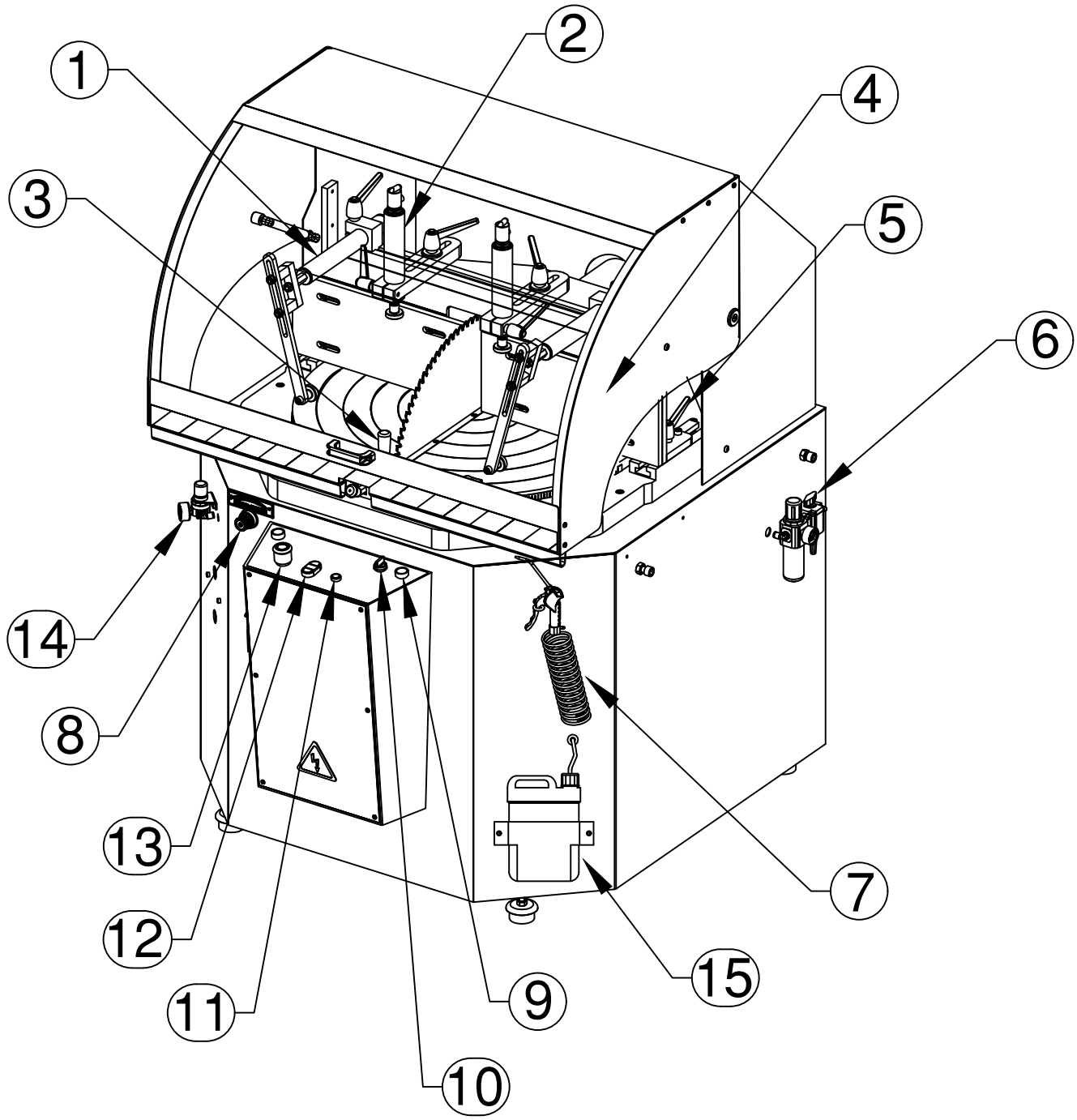


FIGURE 8

5.3 Adjusting the Digital Degrees

To zero the digital readout, press the (F) and (Set) keys. To change the way of reading of incremental to absolute, press (Inc/Abs).

➲ **ATTENTION: Care must be used when cleaning the screen. The surface is plastic and is easily scratched. Also, (2) AA batteries power the display.**

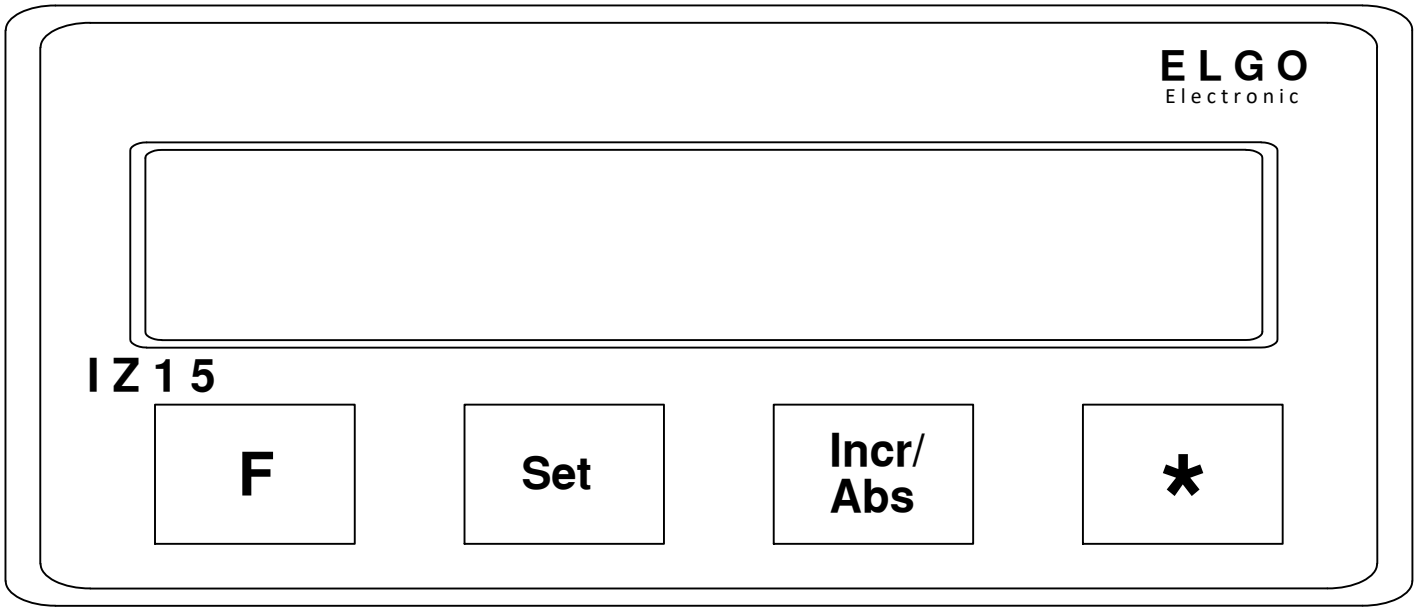


FIGURE 9

5.4 General Rules and Safety Checks

► **Before using the machine, check the efficiency and operation of all safety devices and check that the moving parts of the machine are not blocked, that there are no damaged parts and that all machine components are positioned 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 protective shield in position.**

► **It is mandatory to use appropriate protective equipment.**

► **It is mandatory to use regulation work clothing. (It must be worn fastened.)**

► **Before starting work, the operator must ensure that all tools and wrenches, used for maintenance or adjustment, have been removed.**

► **In the event of a fire, use powder extinguishers and disconnect the machine from the electric system.**

6.0 RECOMMENDATIONS AND MAINTENANCE

6.1 Type and Frequency of Inspections

The operator's knowledge of the machine is one of the best ways of daily control of any possible problem. If any failure is detected, work must be stopped and qualified personnel must be informed immediately.

⌦ **NOTE: Always clean the machine and the work area at the end of the work day.**

MAINTENANCE TABLE

LUBRICATION POINTS	TYPE OF GREASE/OIL	FREQUENCY
Turret travel rail	SAE 30 lubricating oil	WEEKLY
Rocker bearings	Roller bearings grease	ANNUALLY
Pneumatic cylinder	AW 32	ANNUALLY

CHECK POINTS	FREQUENCY
Machine cleaning	DAILY
Condition of the transmission belt	WEEKLY

6.2 Qualified Personnel for Maintenance and Repair Work

All repairs shall be made exclusively by qualified personnel. Always use original replacement parts. If not, the machine may be damaged or the user may be injured.

6.3 Manufacturer's Recommendations

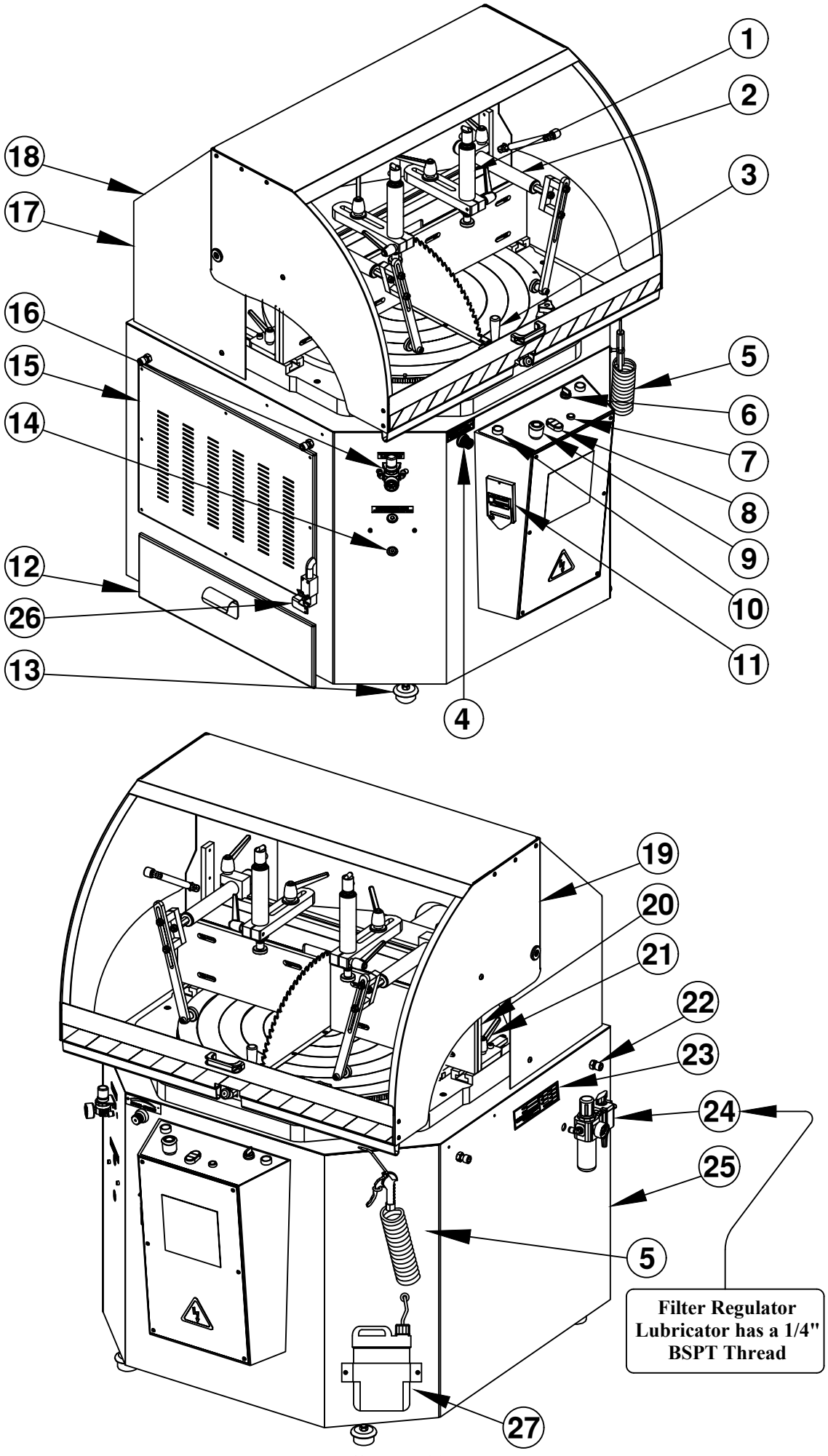
- **In the event that the machine is broken down or the saw blades must be replaced, place a padlock on the protection switch and place the keys under the care of qualified personnel.**
- **Before working on any electrical devices, disconnect the plug from the power supply.**
- **If extension cords are used, ensure that the cable has the appropriate rating for the power of the machine.**
- **Whenever any part has to be replaced, use an original replacement part and use the oil recommended by the manufacturer.**
- **Once a week, all of the chips in the saw should be thoroughly cleaned out. This includes blowing out the chips in the motor fan guard.**
- **Once a month, check the motor belt for any wear.**
- **Once a month, grease the bearing hub.**
- **NOTE: In case of any doubt or problem, do not hesitate to consult the manufacturer.**
- **ATTENTION: The manufacturer hereby guarantees the supply of each of the parts or components for at least two years from the manufacturing date of the machine.**

7.0 DRAWINGS & SCHEMATICS

7.1 General Schematic

ITEM	PART #	DESCRIPTION
1*	*1677	Holddown Clamp 45MM (See NOTE at bottom of page)
2	N00PT14050	Horizontal Clamps Ø40X220
3	2040000482	Angle Lock
4	N000000018	Advance Regulator 3/8"
5	N000000021	Cleaning Gun with Hose
6	011877	Selector Switch
7	E000000030	Green Indicator
8		Saw Blade On-Off
9		Emergency
10	N000000008	Green Vertical Alignment Button
11	000943	230V Motor Protect Switch 10-16A
11A	000940	460V Motor Protect Switch 6-10A
12		Side Drawer Cuttings
13	1156	M16 Feet Levelers
14	2040000092	Oleo Pneu Converter
15		Left Door
16	N000000030	Pressure Regulator
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 + Reg. + Manom. Above has a 1/4" BSPT Thread
25		Sheet Metal Base
26	CE000000R81	Door Interlock Switch
27	077927	NF Coolant Reservoir

ITEM 1* THIS REPLACEMENT CYLINDER WILL RANGE FROM 225MM TO 250MM IN LENGTH. IT IS 100% INTERCHANGEABLE.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27
Filter Regulator Lubricator has a 1/4" BSPT Thread

FIGURE 10

7.2 Power Circuit

ITEM	PART #	DESCRIPTION
1	000943 000940	230V Motor Protect Switch 10-16A 460V Motor Protect Switch 6-10A
2	060071	DILM 12-10 24VAC CONTACT

3*	(Current Motor)	C2050000522	NO Brake	5.5HP 230V/460V3PH Motor
3A	(Old Style Motor)	21690220M3	WITH Brake	4KW Motor 3PH 230V 5.5HP
3B	(Old Style Motor)	21690460M3	WITH Brake	4KW Motor 3PH 460V 5.5HP

➲ **NOTE: 3A & 3B - Motor Pulley is included.**

4	E000000014	Transformer 50VA - 460/230//24V
5	E000000024 071085	Fuse 2A (if N/A use below) 2A replacement for above
6	E000000G44	Emergency (NC)
7	E000000030	Green Indicator 24V

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

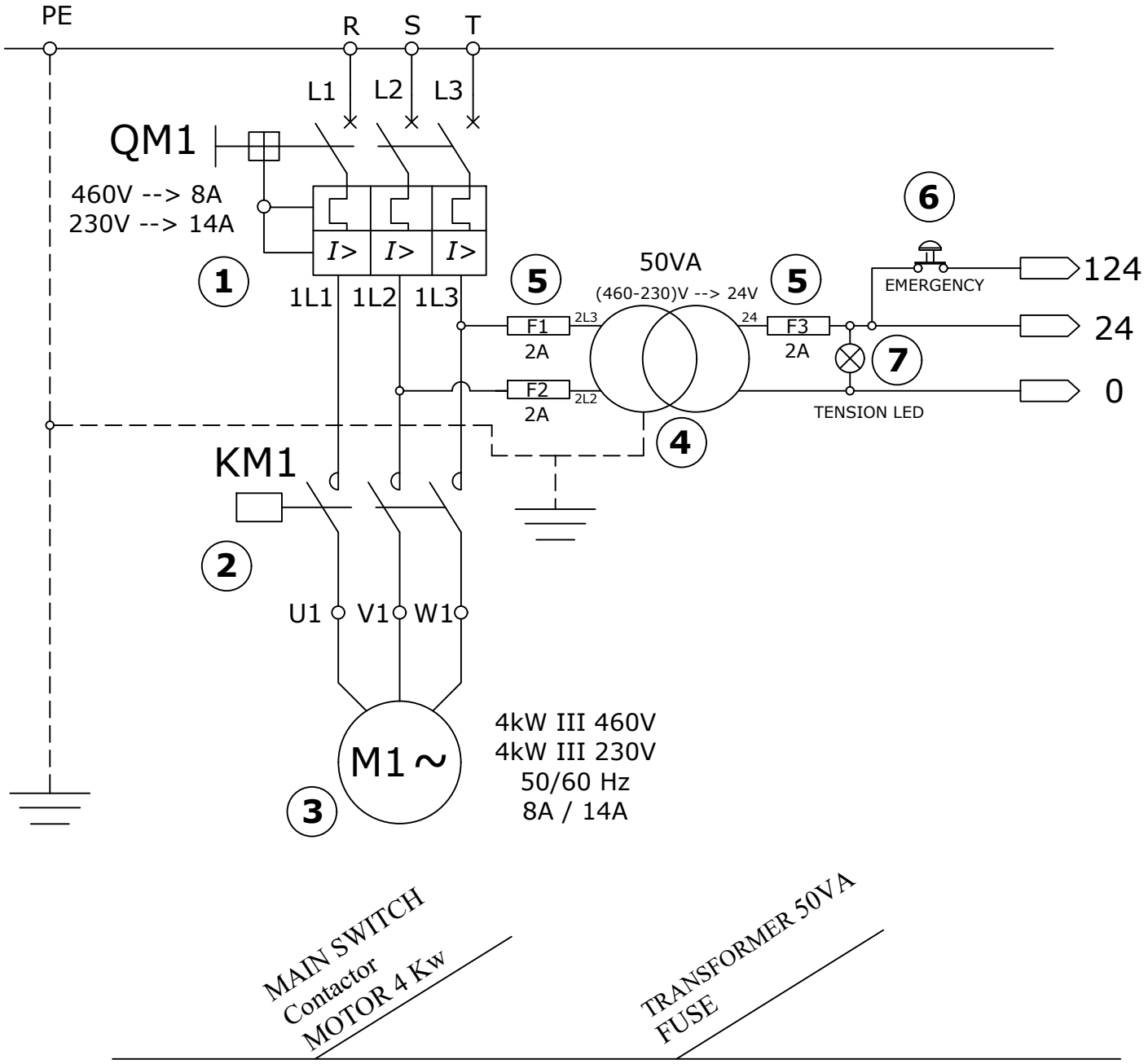

PE
R
S
T
L1
L2
L3
QM1
460V --> 8A
230V --> 14A
I>
I>
I>
1
1L1
1L2
1L3
5
50VA
(460-230)V --> 24V
5
6
EMERGENCY
124
F1
2A
2L3
24
F3
2A
24
7
F2
2A
2L2
0
TENSION LED
4
KM1
2
U1
V1
W1
M1 ~
3
4kW III 460V
4kW III 230V
50/60 Hz
8A / 14A
MAIN SWITCH
Contactor
MOTOR 4 Kw
TRANSFORMER 50VA
FUSE

FIGURE 11

7.2A Switching Power Circuit

ITEM	PART #	DESCRIPTION
8	011877 562023	2-Pos. Sel. (without RazorGage) 2-Pos. Sel. (with RazorGage)
9	E00000BD25	Hood Switch
10	12152	End-of-Travel M-12
11	E000000011	Blade ON/OFF Switch Operator Only (Add 011867 & 011874 for complete switch)
12	N000000008	Green Vertical Align Operator Only
13	1618	KPM Valve With Coil
13A	1620	KPM Coil 24VAC
14	1440	High + Low Pneumatic
15	060071	DILM 12-10 24VAC Contact
16	1724	Magnetic Sensor Power Hood (Must Specify KT-50R or KT50-P)
17	E000000095	Omron Relay SUP500/SUP600
18	078557	ESR5-NZ-21-24VAC-DC

SWITCHING POWER CIRCUIT

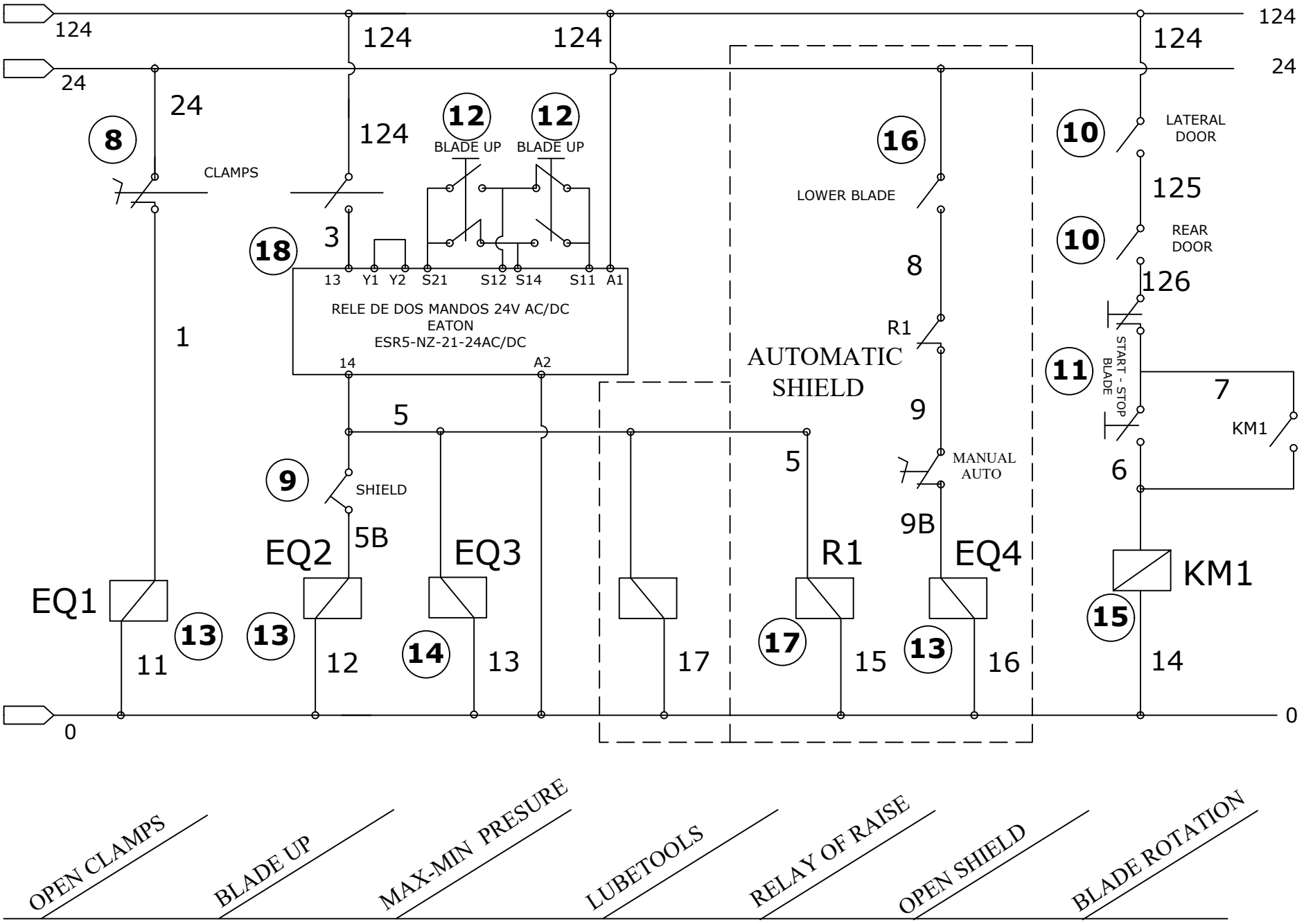


FIGURE 12

7.3 Operating Controls

6 **Emergency button with interlock.**

7 **Green indicator light; power supplied to the machine.**

8 **011877 - Selector Switch, Hold down clamp - WITH OUT RazorGage**

8A **562023 - 2 Pos. Selector Ass'y - WITH RazorGage**

Below is included with 562023:
(1) Switch (Part # 011878)
(1) NC Contact (Part # 011867)
(1) Mounting Adaptor (Part # 011872)
(2) NO contact (Part # 011874)

11 **Saw blade on-off; On, green colored symbol, I. Off, red O.**

12 **Push buttons, for raising the saw blade.**

18 **Auto-manual selector for the pneumatic protective shield operation; optional.**

19 **P/N 677 - LEGEND PLATE SUP-500 & SUP-600**

19. P/N 677 - LEGEND PLATE

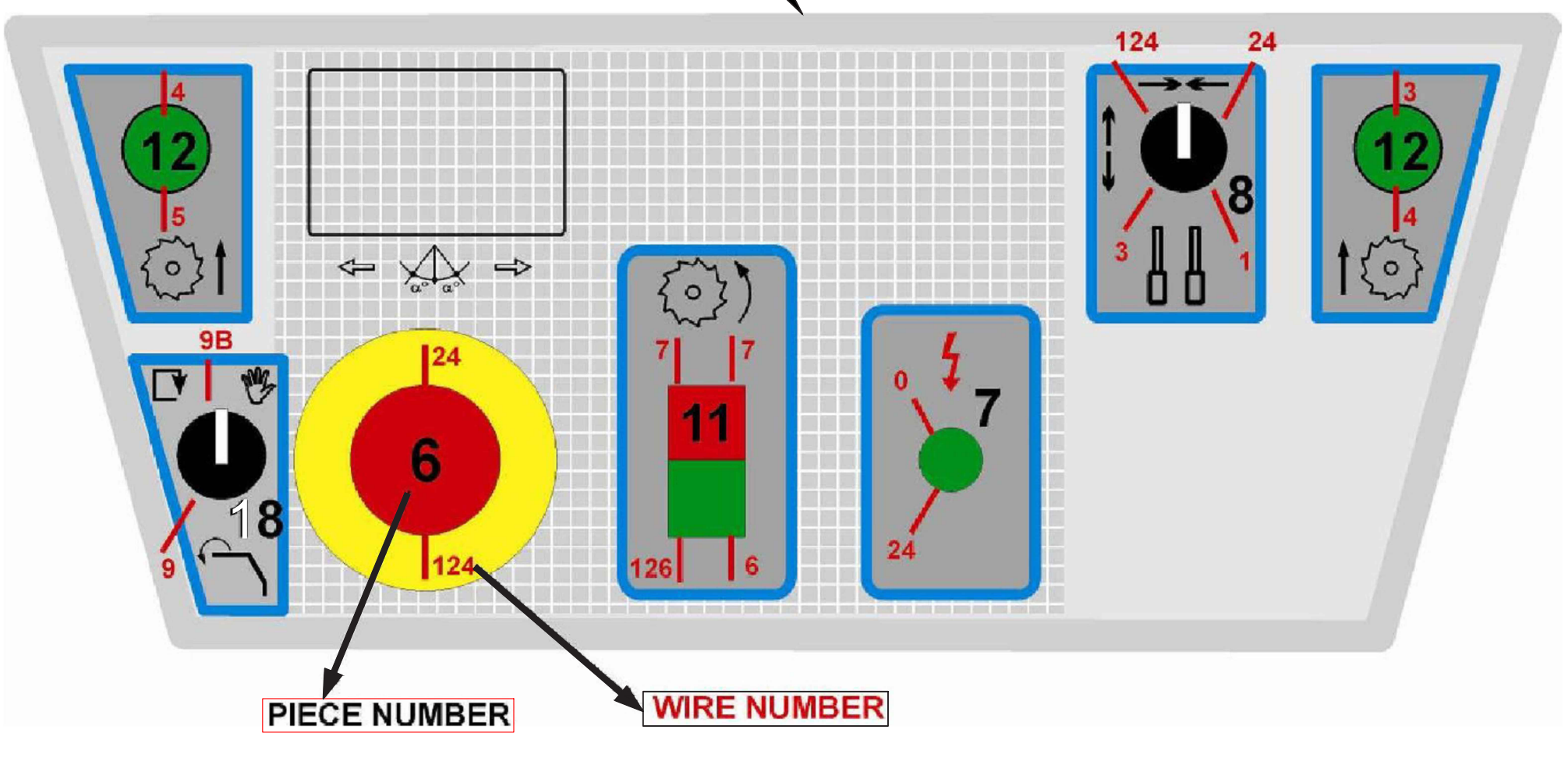
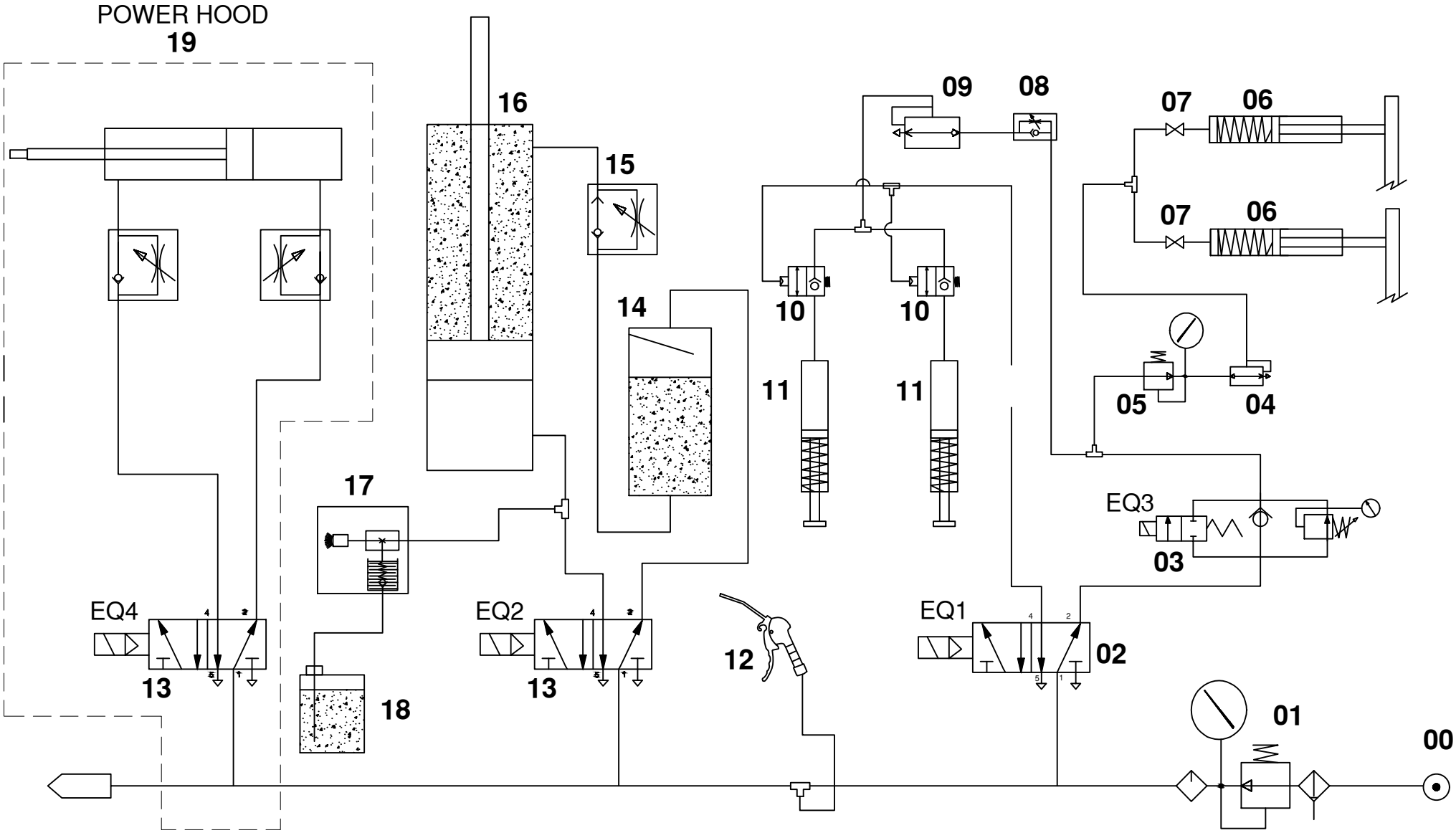


FIGURE 13

7.4 Pneumatic Schematic

ITEM	PART #	DESCRIPTION
00		Line
01	N000000017	F + R + L 1/4"
02	1620	KPM Coil 24VAC
03	1440	High + Low Pneumatic
04	N000000038	Quick Exhaust Valve 1/8”
05	N000000030	Pressure Regulator 1/4"
06	N02PT14050	Horiz Clamps Ø40 x 320
07	2K20000281	Mini Ball Valve 1/8" M-H
08	N0CCRC1806	Flow Regulation 1/8" Ø6 CIL.
09	N000000038	Quick Exhaust Valve 1/8”
10	N000000015	Uni Directional Valve
11	*1677	Holddown Clamp 45MM
12	N000000021	Blow Air Duster
13	1618	KPM Valve With Coil
14	2040000092	Oleo Pneumatic Converter
15	N000000018	Advance Regulator 3/8"
15A	1667	Speed Regulator Knob (for above)
16	N000000025	Cylinder ISO 50 x 200
17	N000000036	Venturi Sprayer
18	077927	NF Coolant Resivoir (USA only)
19	1353	POWERHOOD SUP-600 (see Section 8.1)

*ITEM 11: THIS REPLACEMENT CYLINDER WILL RANGE FROM 225MM TO 250MM IN LENGTH. IT IS 100% INTERCHANGEABLE.


POWER HOOD
19
16
15
14
09
08
07
06
07
06
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10
11
11
05
04
17
EQ3
03
EQ4
EQ2
EQ1
12
02
13
13
18
01
00

FIGURE 14

7.5 Cast Iron Table & Disc Assembly (Exploded View)

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	Nylon Brake Cleat
7		Rocker Support
8	212014	M12 DIN127 Lock Washer
9	221320	M12 X 50MM DIN912 SHCS
10		Autolubricated Tip 30-35-35
11	N000000059	ISO 50 Cyl. Yoke
12	N000000059	ISO 50 Cyl. Yoke
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	ISO 50 x 200 Cylinder
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

ITEM 26* Replacement HHCS bolt - original is a SHCS

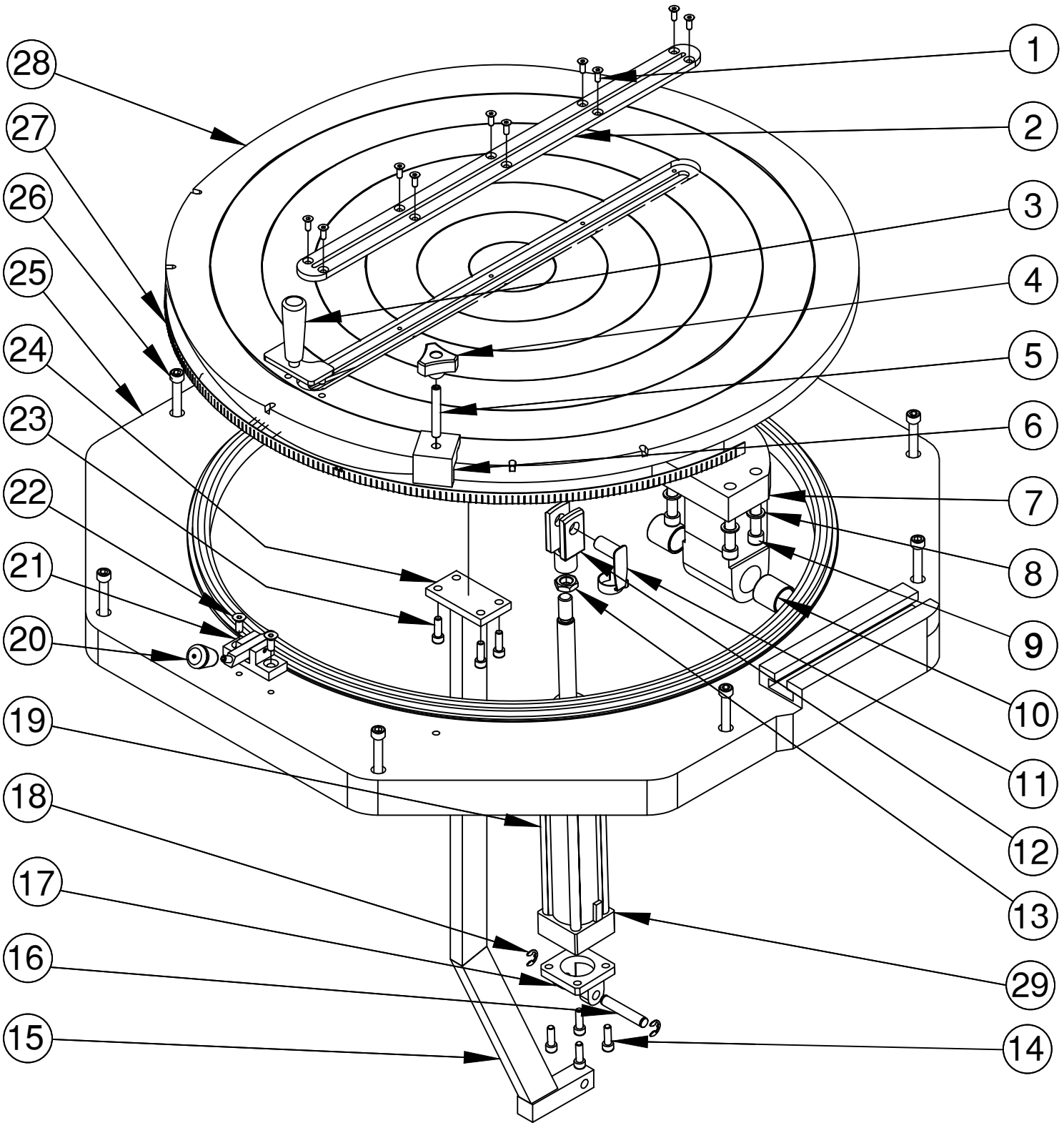
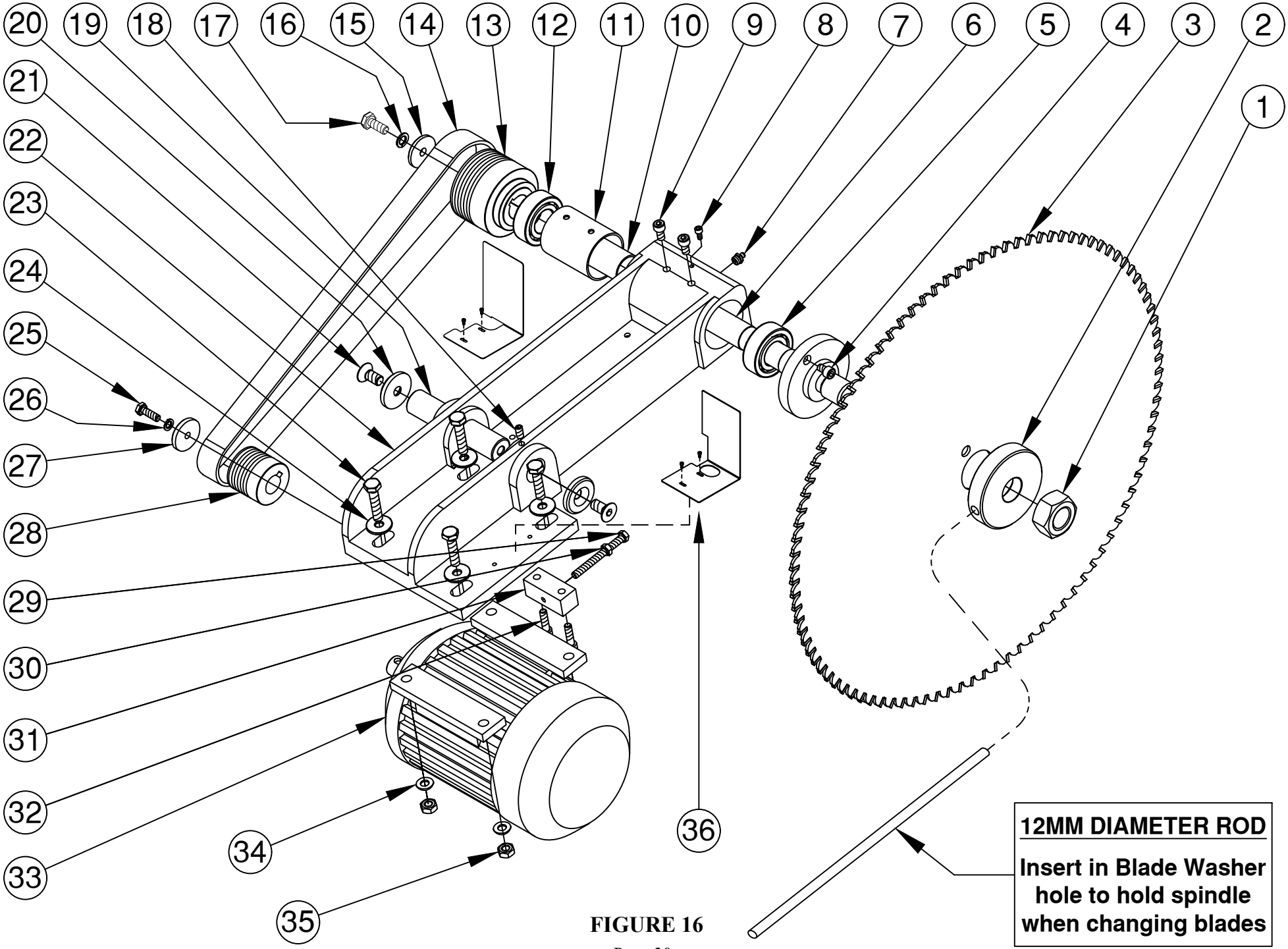


FIGURE 15

7.6 Rocker Assembly (Exploded View)

ITEM	PART #		DESCRIPTION
1	2040000232		Blade Shaft Nut M-30 Nut
2	2050000032		Blade Washer
3	74505		Blade Ø 600 x Ø 50 x 5 - 72 Tooth
	74510		Blade Ø 600 x Ø 50 x 5 - 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		Rocker Shaft Pulley
14	C2160000012		1092 J12 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	2160000032		Cast Iron rocker TL-600
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		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* (Current Motor)	C2050000522	NO Brake	5.5HP 230V/460V3PH Motor
33A (Old Style Motor)	21690220M3	WITH Brake	4KW Motor 3PH 230V 5.5HP
33B (Old Style Motor)	21690460M3	WITH Brake	4KW Motor 3PH 460V 5.5HP
34	214012		M10 DIN125 Regular Washer
35	208012		M10 DIN 934 Hex Nut
36	027600		SUP 600 Chip Deflector

ITEM 23* Replacement bolt is not a full threaded bolt.
ITEM 32* Replacement bolt is HHCS.
ITEM 33* can replace 33A & 33B - However, the Brake will be eliminated.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12MM DIAMETER ROD
Insert in Blade Washer hole to hold spindle when changing blades

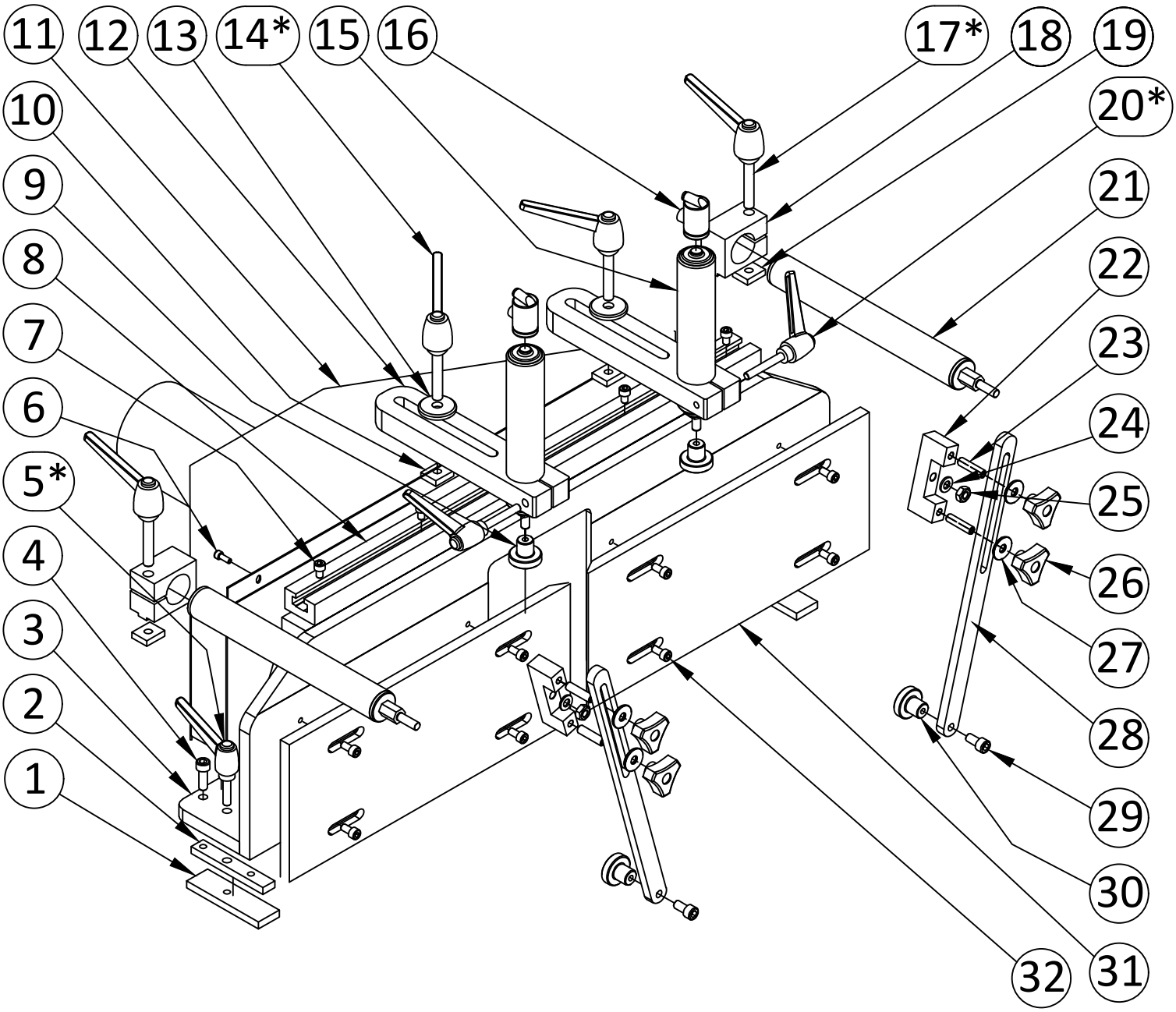
FIGURE 16

7.7 Turret Assembly (Exploded View)

ITEM	PART #	DESCRIPTION
1		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-Direc. Valve
17*	B0000P1270	M12 X 70MM Lever
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		Clamp Arm Adapter
23	TD93310040	D913 M10 x 40
24	214012	M10 DIN125 Regular Washer
25	208012	M10 DIN 934 Hex Nut
26	B0000000H2	M10 KNOB
27	214012	M10 DIN125 Regular Washer
28	1808	Horizontal Clamps Arm SUP-600
29	073626	M10 X 20MM DIN912 SHCS
30	2350000131	Nylon Cleat M-10
31	P2160000102	Aluminum Plates SUP-600
32	073420	M8 X 16 DIN912 SHCS

*** SEE NOTE ON THE NEXT PAGE**

ITEM 15 THIS REPLACEMENT CYLINDER WILL RANGE FROM 225MM TO 250MM IN LENGTH. IT IS 100% INTERCHANGEABLE.**



NOTE:

ITEMS - 5*, 14*, 17*, & 20* are all handles and are all different sizes. Please measure the diameter and length of threads before ordering to make sure you get the right size.

FIGURE 17

7.8 Sheet Metal Base (Exploded View)

ITEM	PART #	DESCRIPTION
1		Left Door
2	073615	M6 X 20 ISO 7380 BHSCS
3	073211	M14 DIN934 HEX NUT
4	2050000262	Connect Ø 6-Ø 6
5		Back Door
6	073615	M6 X 20 ISO 7380 BHSCS
7	E000000022	Plastic Junction Box
8		Oleoneumatic Conv.
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 - Manometer
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	Speed 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	216000030F	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	N0000TA012	3/8" Sight Glass
42	N0000TA012	3/8" Metal Plug
43	221010	M6 X 16MM DIN912 SHCS
44	N000CC1406	1/4 NPT To 6M Elbow
45		Chip Drawer
46	216000030P	Wheel Ø 30
47	CE000000R81	Door Interlock Switch

ITEM 28* & 38* **Replacement different than original.**

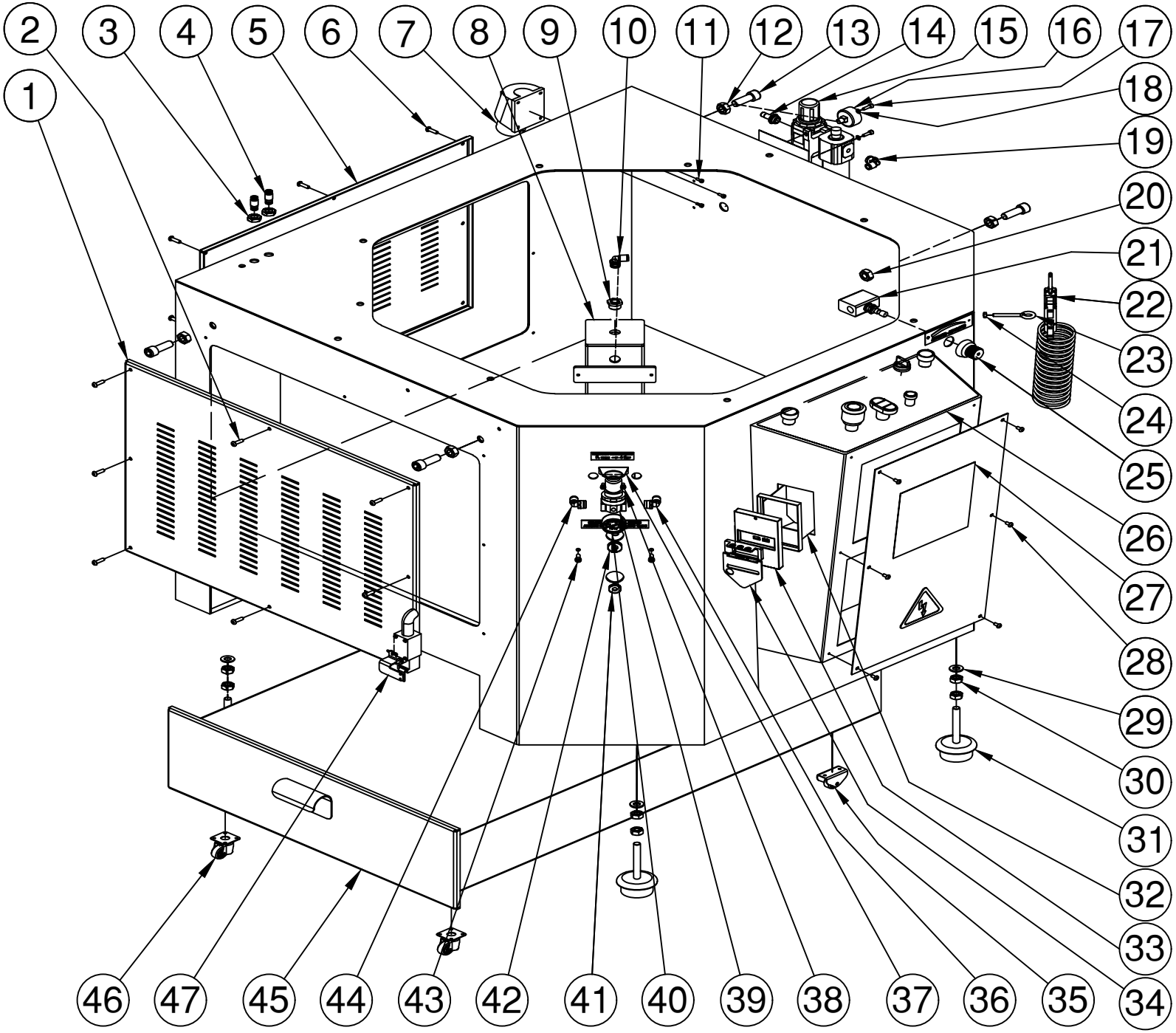

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FIGURE 18

7.9 Protective Shield (Exploded View)

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		Front Protective Shield
7	204000R452	Swivel Joint
8		Top Protective Shield
9	2160000300	M8X20 ØEXT 25 CYL (SUP-600 Only)
10	20400TB452	Ball Stud Ø10 M8
11		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)

14* & 15* These replacement bolts are 2mm longer.

27* This replacement bolt is 4mm longer.

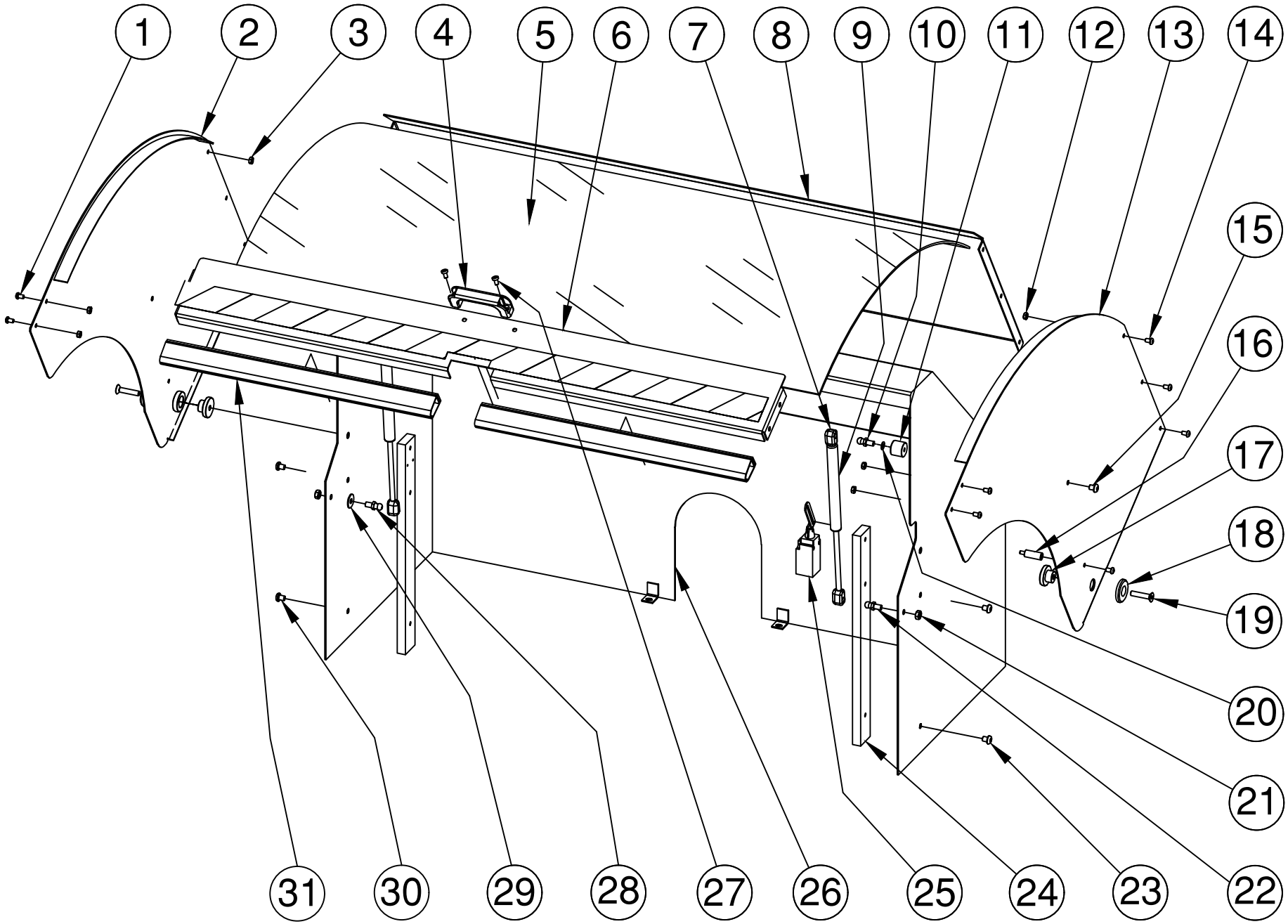
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FIGURE 19

8.0 OPTIONAL EQUIPMENT

8.1 Power Hood (Standard Equipment Now)

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	N000000025 1735	ISO 50 x 200 Cylinder - SUP-600 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	Hood Kit Pneumatic

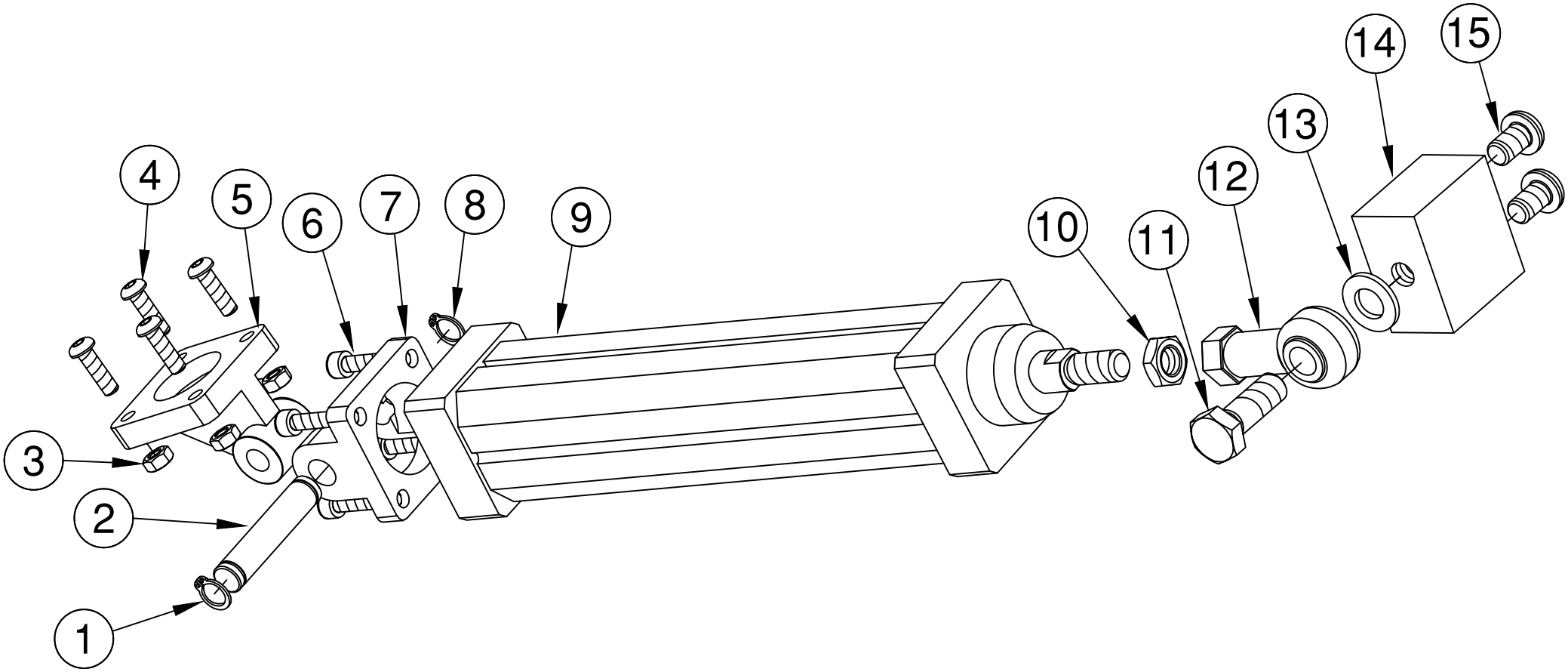


FIGURE 20

8.2 Digital Control of the Cut Height

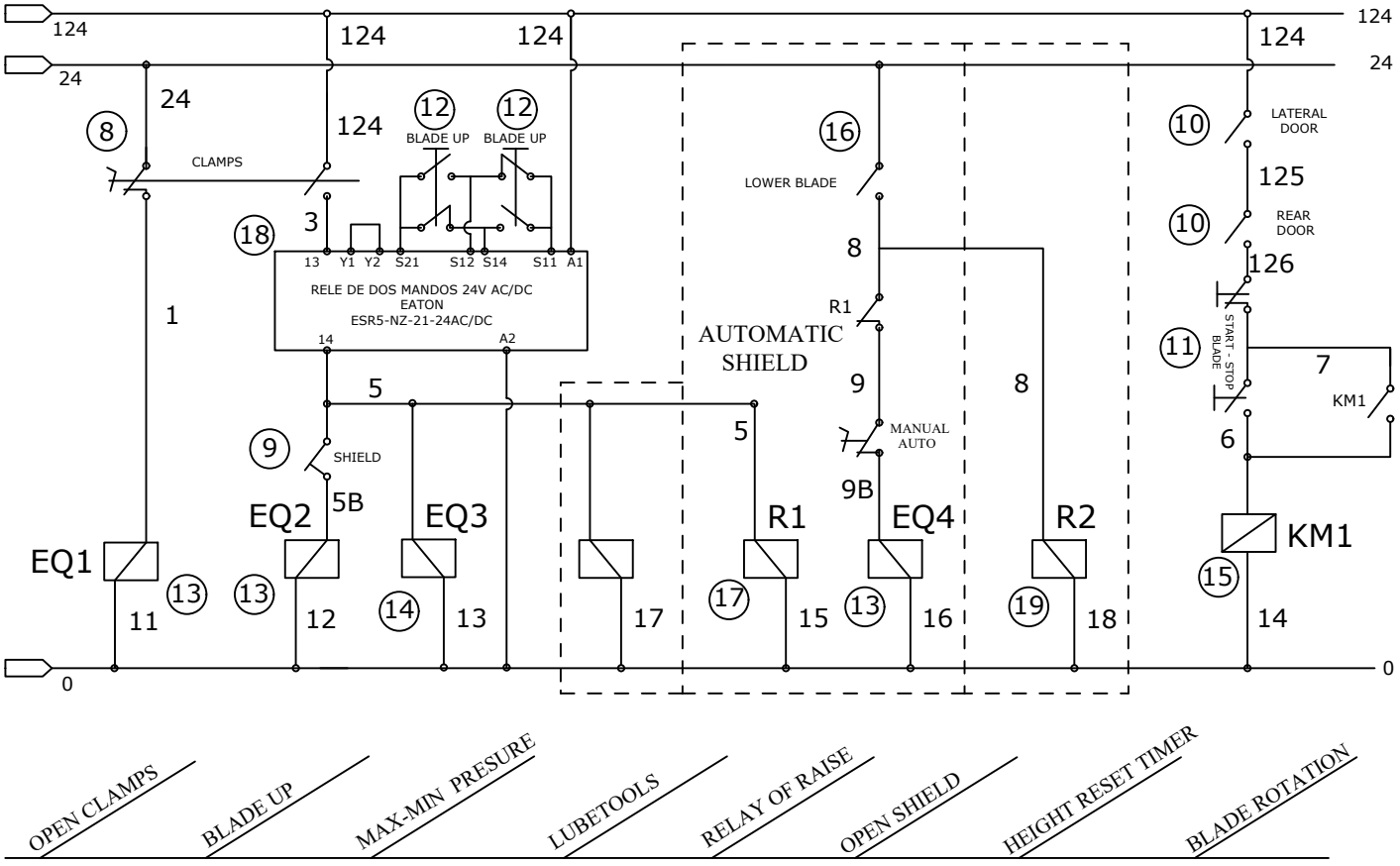
In order to change the cut height, press PRESET to edit the height.

To change the value with the key, Press SET + Up + RESET.

Press PRESET to finish the edition.

ITEM	PART #	DESCRIPTION
19	E000000096	Timer 24V
20	E000B25010	Rectifier 24 AC/DC
21	285	Piece Counter W/ Preselection
22	E00000068	1440 Pulses 24 DC Encoder

SWITCHING POWER CIRCUIT W/ STROKE CONTROL



PULSE COUNTER CONNECTION

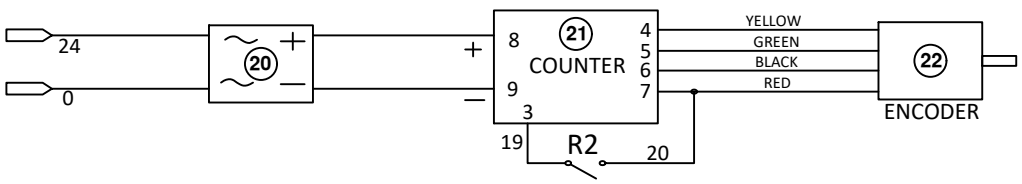


FIGURE 21

8.3 DIGITAL ANGLE DISPLAY (PART # 1554)

SETTING AN ELGO DIGITAL READOUT TO READ 90 DEGREES:

Turn the saw head to 90 degrees.

Press and hold the "F" key until the screen reads "P 01".

Press the "F" key until the screen reads "P 09".

Press the "F" key one more time so the screen will read "00000.00".

Press the "Set" key three times so the tens number is flashing.

Press the "Incr/Abs" key until the screen reads "00090.00".

Press and hold the "F" key for 3 seconds until the screen reads an angle.

Press and hold both the "F" key and the "Set" key until the screen reads 90.00° .

⌦ **NOTE: This is a battery operated readout. When the battery goes dead, or is removed, the screen will go blank. Or, when the battery is replaced, the readout will default to its original setting. If it was programmed, like above to 90 degrees, you will simply need to set the saw at 90 degrees. Press the "F" key and the "Set" key and it will re-set to 90 degrees.**

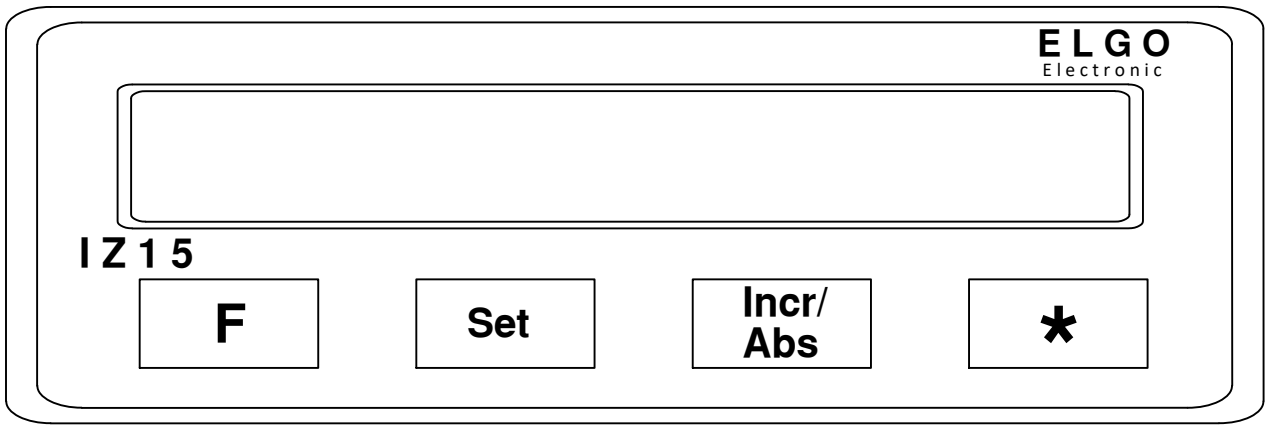


FIGURE 22

9.0 ANGLEMASTER W/CHIP COLLECTOR WIRE LOCATIONS

These are instructions on how to wire the Chip Collector (P/N 829230 - 230V 3PH or P/N 829460 - 460V 3PH) to our SUP-500 or SUP-600 NF Upcut Anglemaster saws.

TO MAKE THE CHIP COLLECTOR START WITH THE ANGLEMASTER, READ THE BELOW AND USE THE WIRE LOCATIONS DRAWING ON THE FOLLOWING PAGE.

1. Attach the Auxiliary Contact (P/N 011981) to the top of the saw contactor.

2. Attach the Brown Wire from the Chip Collector to the #33 NO on the Auxiliary Contact.

3. Attach a Brown Jumper Wire from #34 NO on the Auxiliary Contact to the bottom of the terminal strip where the #124 wire is.

4. Attach the Blue Wire to the top of the Ground Terminal on the right end. The Ground Terminal is yellow and green.

5. It should now be able to run with the Remote Setting on the Chip Collector.

ANGLEMASTER WITH CHIP COLLECTOR WIRE LOCATIONS

SUP-500 & SUP-600 SAWS

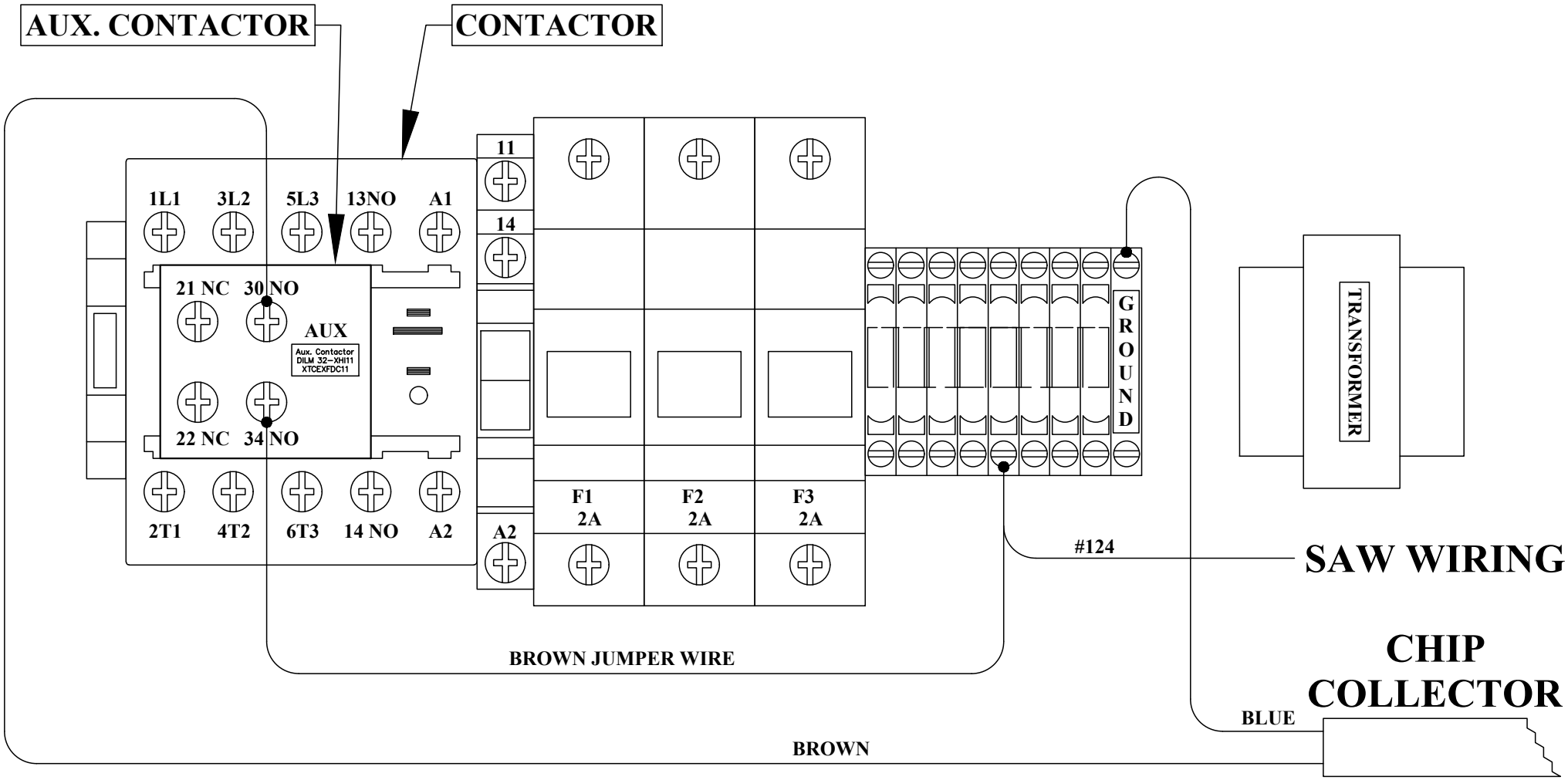


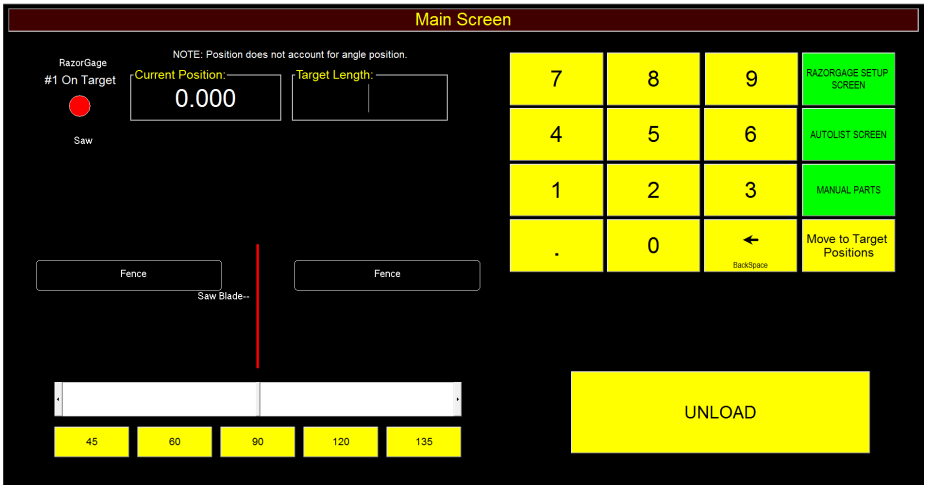
FIGURE 23

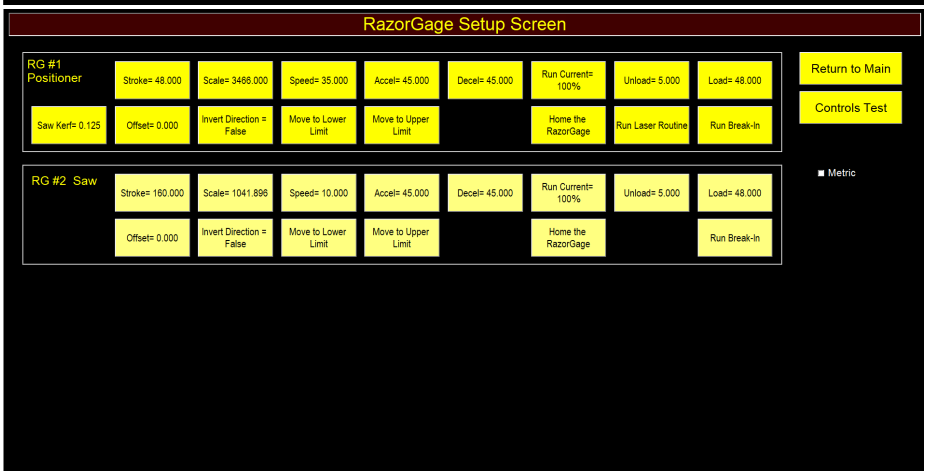
RAZORGAGE
POSITIONERS • SOFTWARE • SYSTEMS

AngleMaster Software Manual

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 anglular 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 paramters 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.





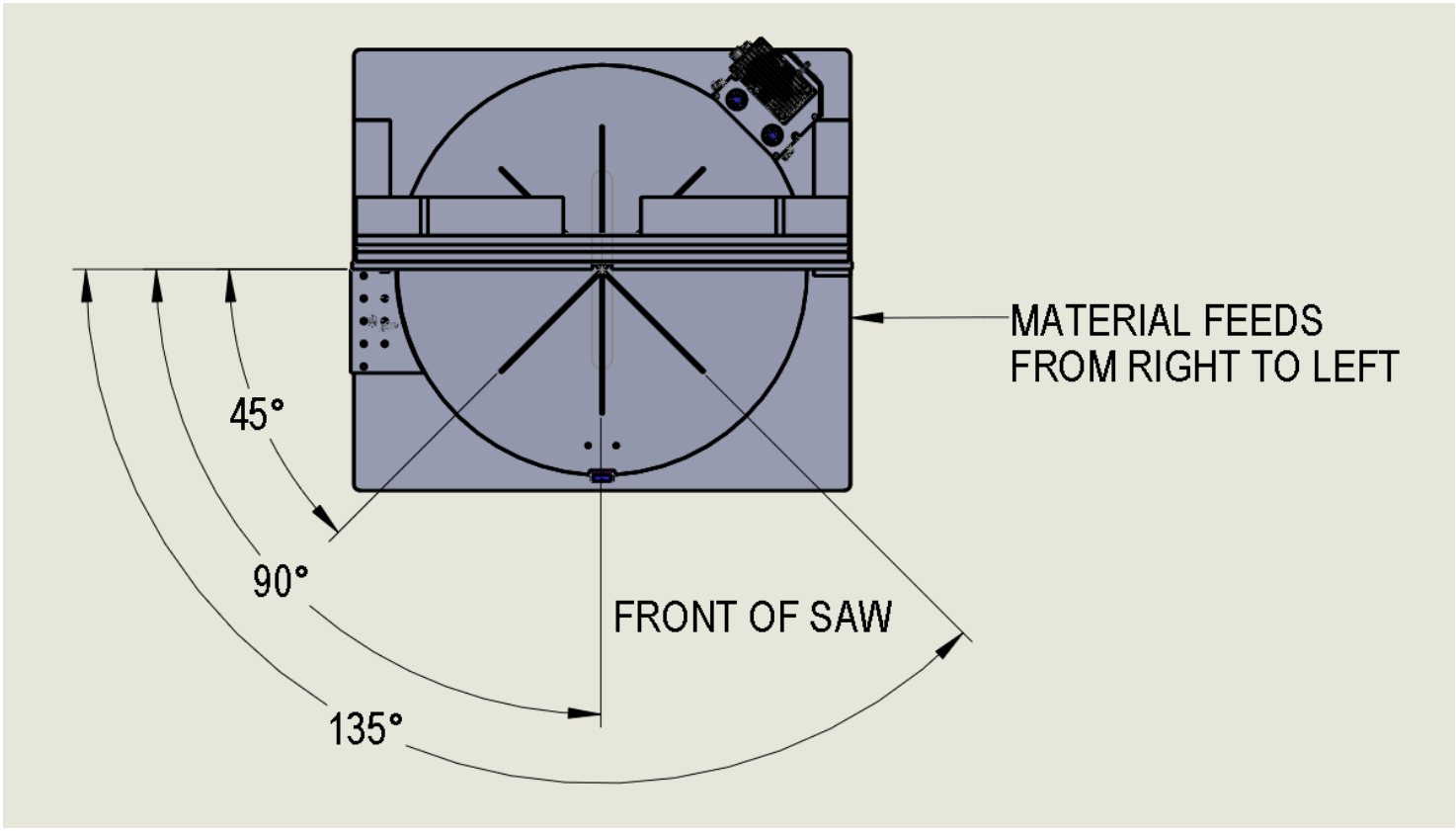
Saw Turret Home Offset describes the angle that is cut when the saw turret is at home. If the Saw Turret Home Offset is not accurate, all angles cut will be off by the amount of the error.

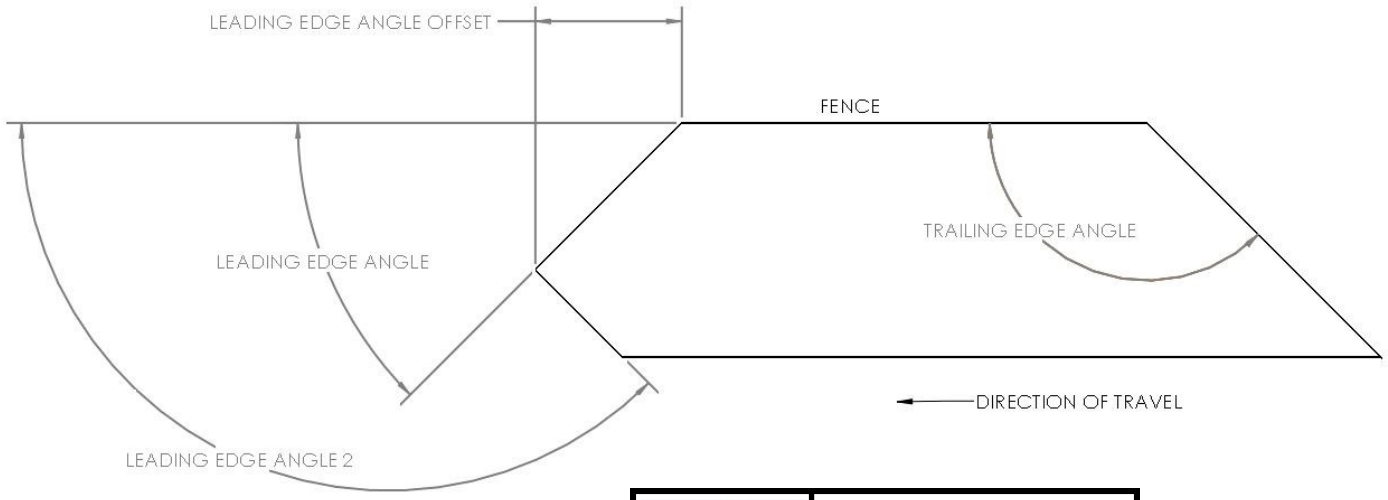
Saw Turret Scale Factor describes the motor counts per degree. The more degrees in the angle, the more times an error in the scale factor is applied. Therefore, if Saw Turret Scale Factor is off, the angle error will increase as the degree of angle increases.

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.

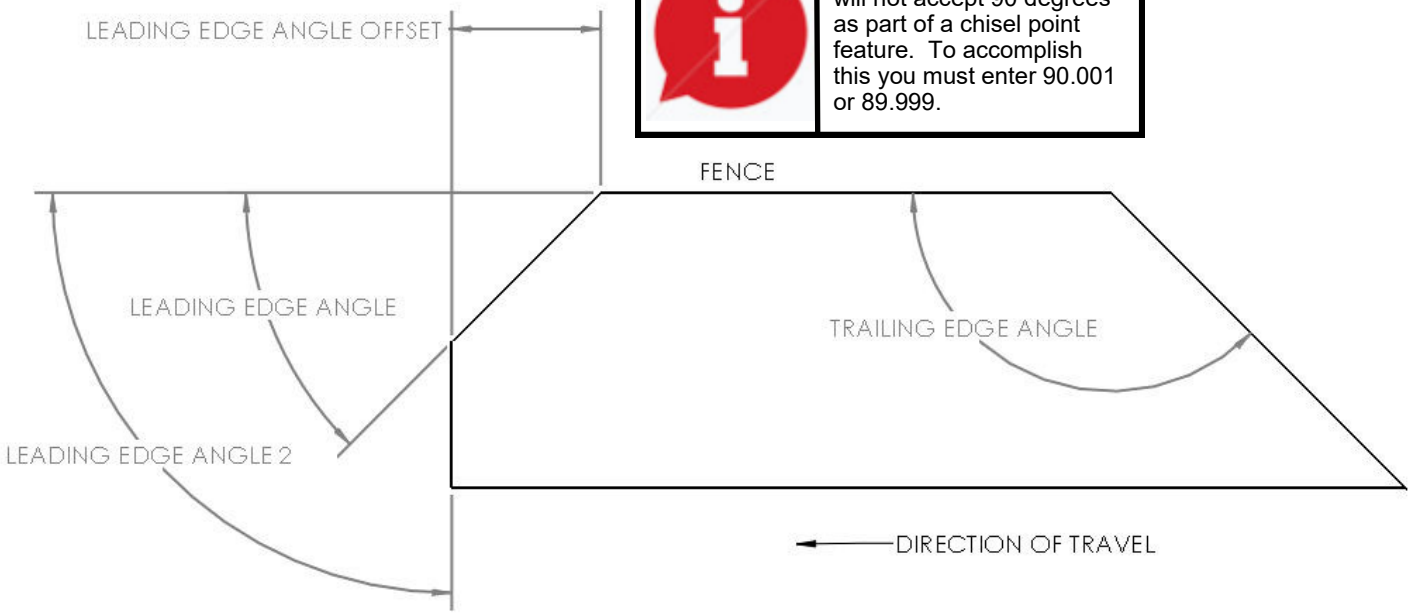
The positioner Home Offset is the distance from the saw blade to the positioner's stop extension face when the positioner is at HOME and the saw is at 90 degrees. If this value is off, then, on a pusher system, the only length affected is the leading edge trim cut.

The Postioner 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

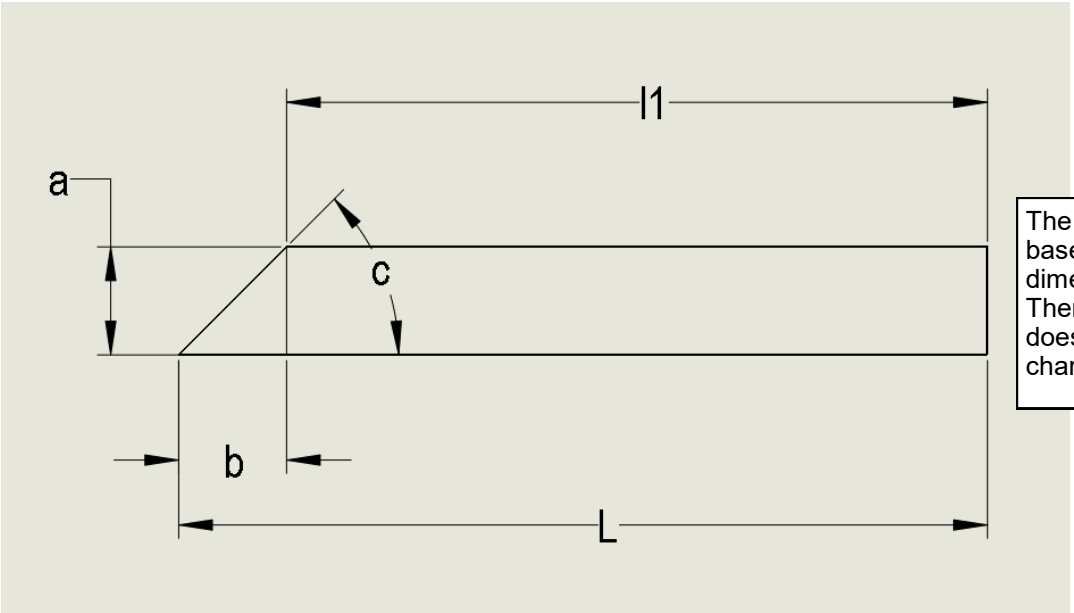




The AngleMaster software will not accept 90 degrees as part of a chisel point feature. To accomplish this you must enter 90.001 or 89.999.



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	a	c	b	l1	L Actual
30	4	45	4	26	30.000
c Nominal	3.995	45	3.995	26	29.995
45	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

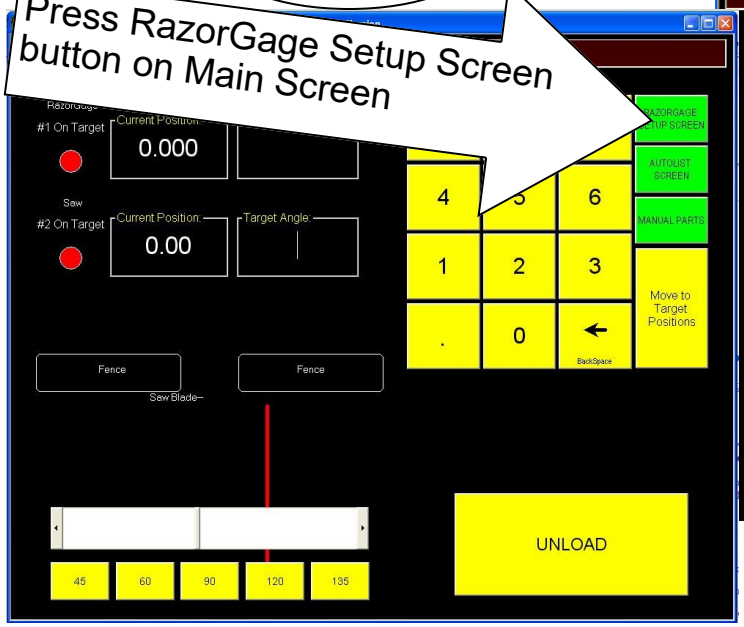
L variation as 'a' (width) changes

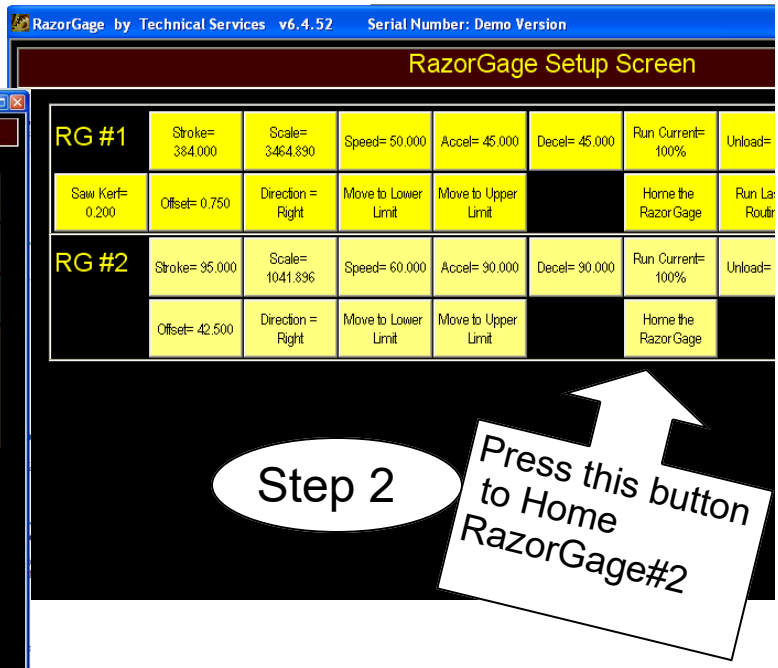
L variation as 'c' (angle) changes

Calibrating the AngleMaster

Step 1

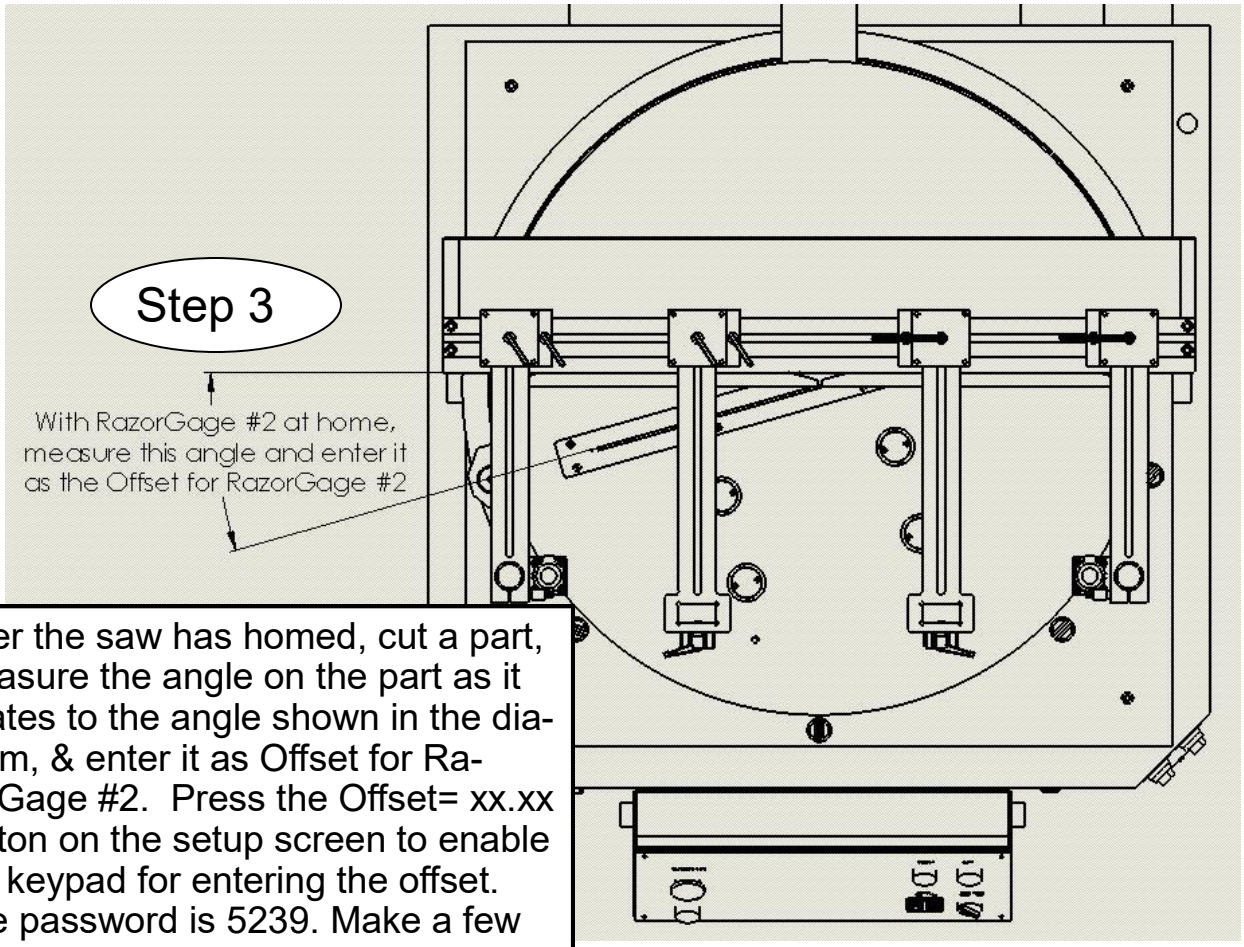
Press RazorGage Setup Screen button on Main Screen





Step 2

Press this button to Home RazorGage#2



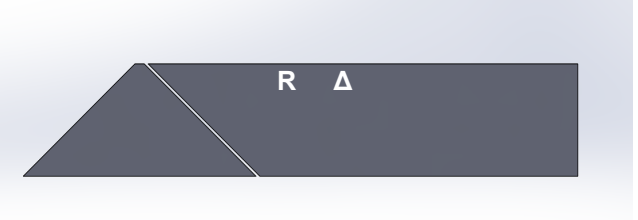
After the saw has homed, cut a part, measure the angle on the part as it relates to the angle shown in the diagram, & enter it as Offset for RazorGage #2. Press the Offset= xx.xx button on the setup screen to enable the keypad for entering the offset. The password is 5239. Make a few cuts at this angle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

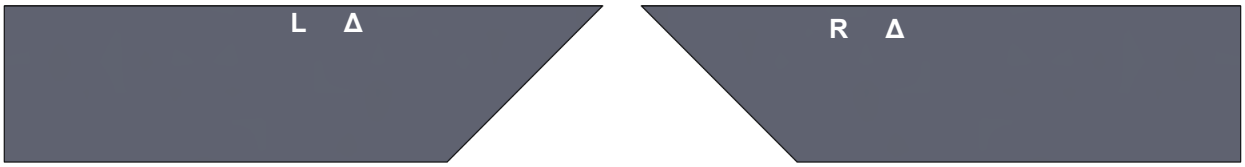
Now go to the main screen and enter an angle of 45 degrees and wait for the saw to finish moving. Find the widest stock you can cut at that 45 degree angle and find a piece that is approximately 36” long. Place the stock on the saw with about 12” of the stock to the left of the point at which the blade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

CUT 1

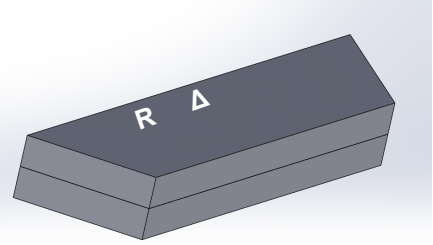
Take the piece on the left and mark it with an “L” on the the top and make a mark to indicate the face that was against the fence and put that piece aside. Now move the saw to 135 degrees, place the remainder of the stock to the right of the blade and make the 135 degree cut as shown at right. Now mark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

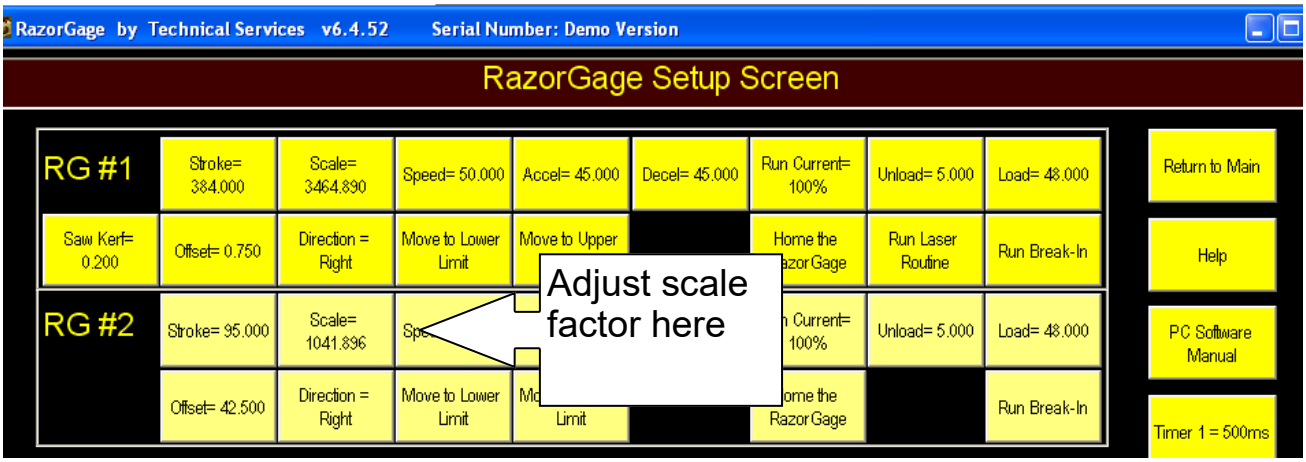
CUT 2



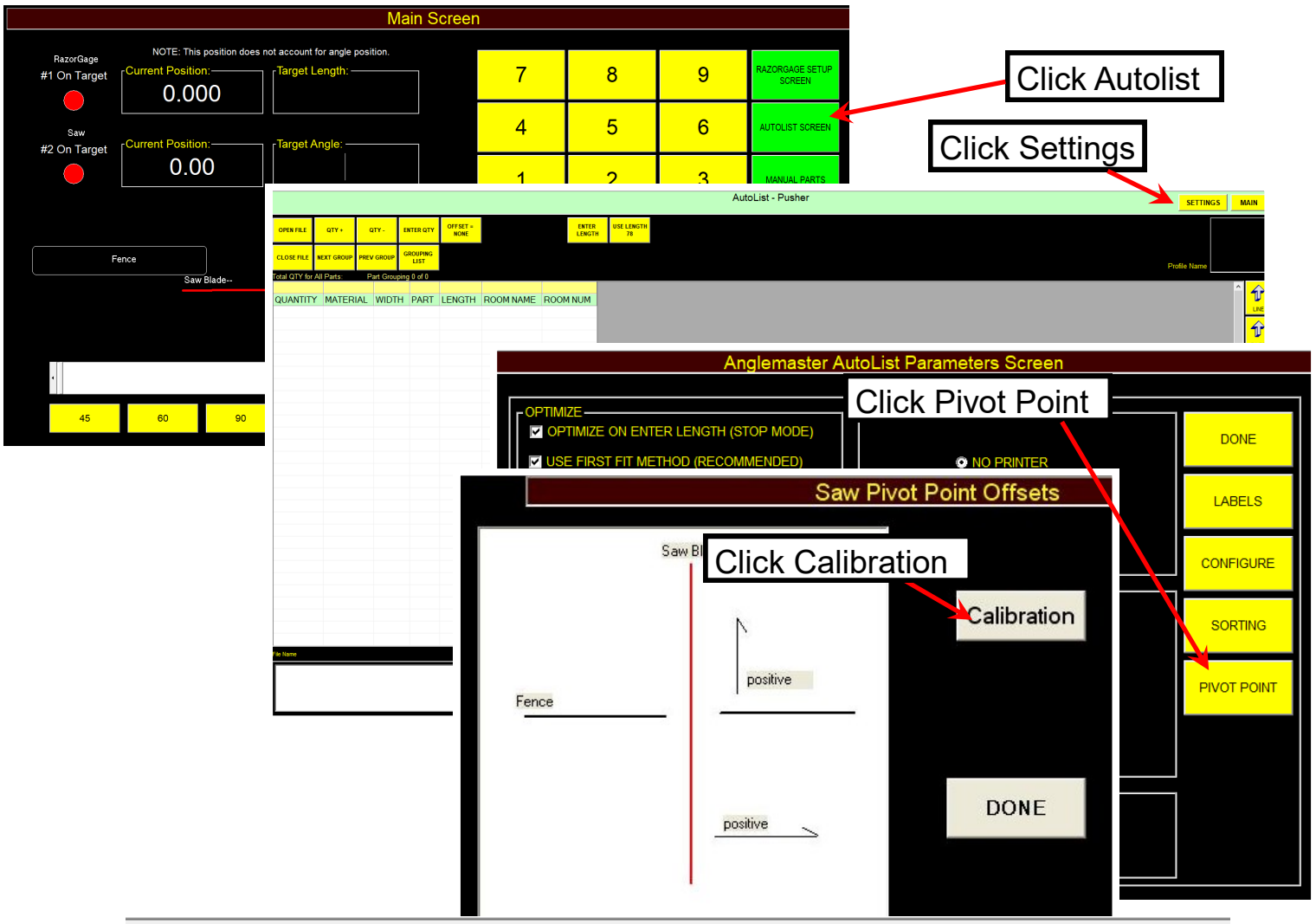


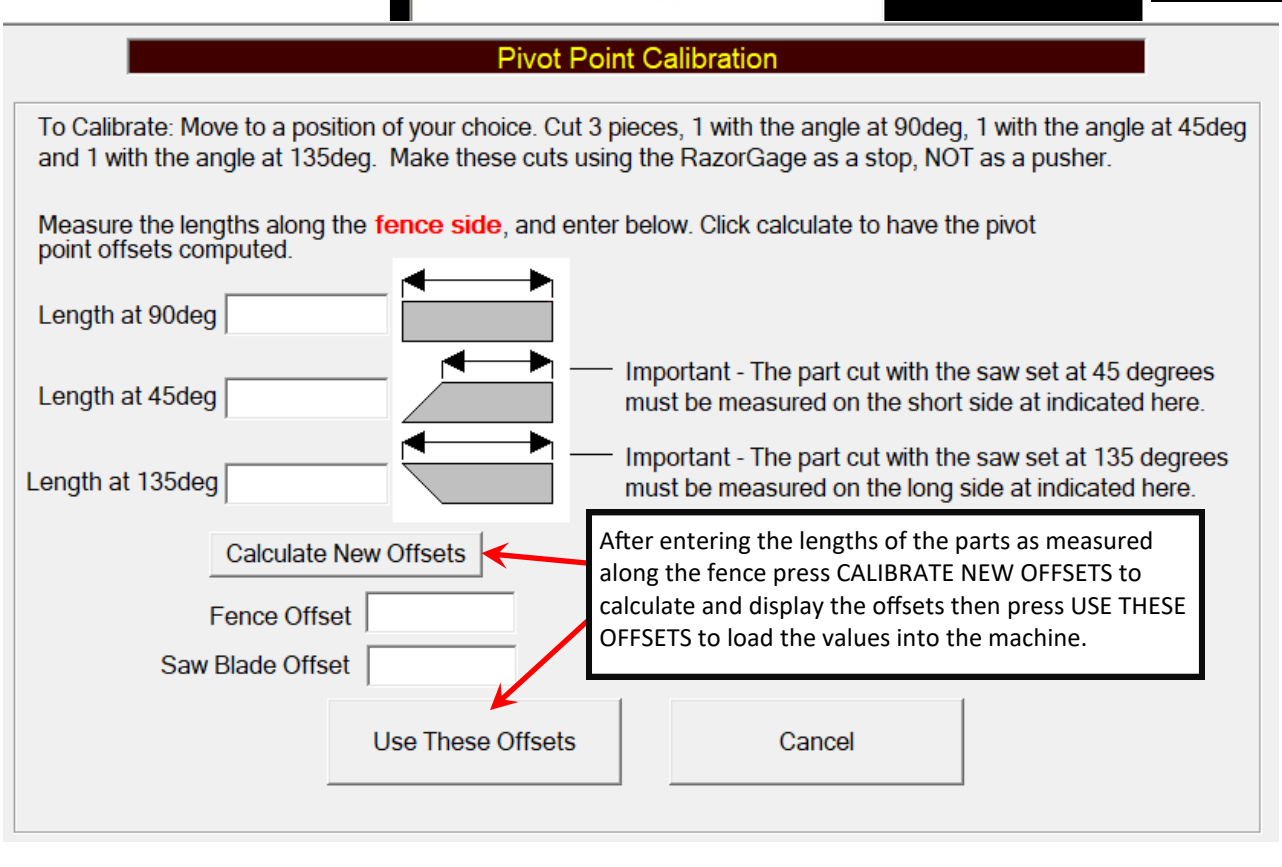
Now flip the parts as shown at right and compare the faces of the two angle cut surfaces. By trial and error, adjust the scale factor and repeat this process until the faces are flush.

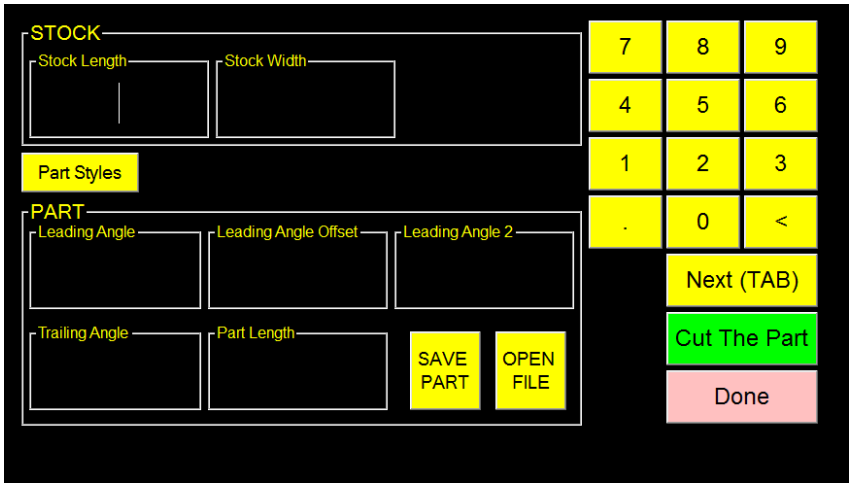




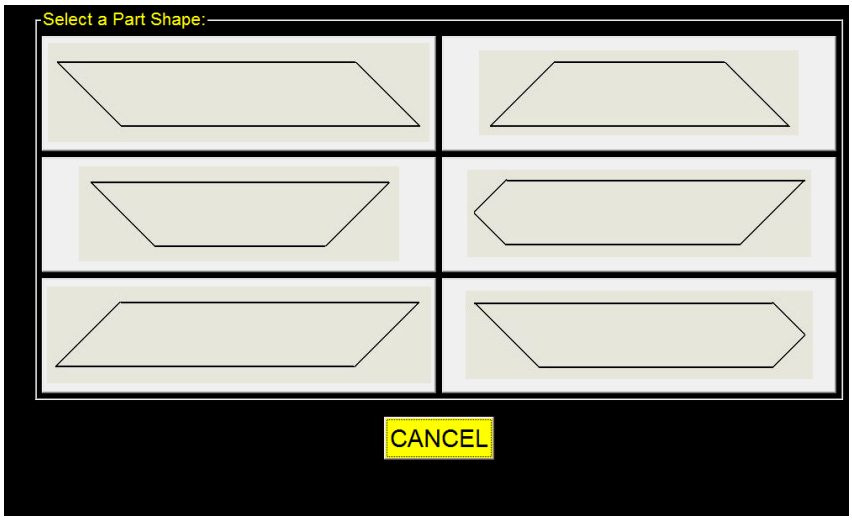
Calibrating Saw Pivot Point



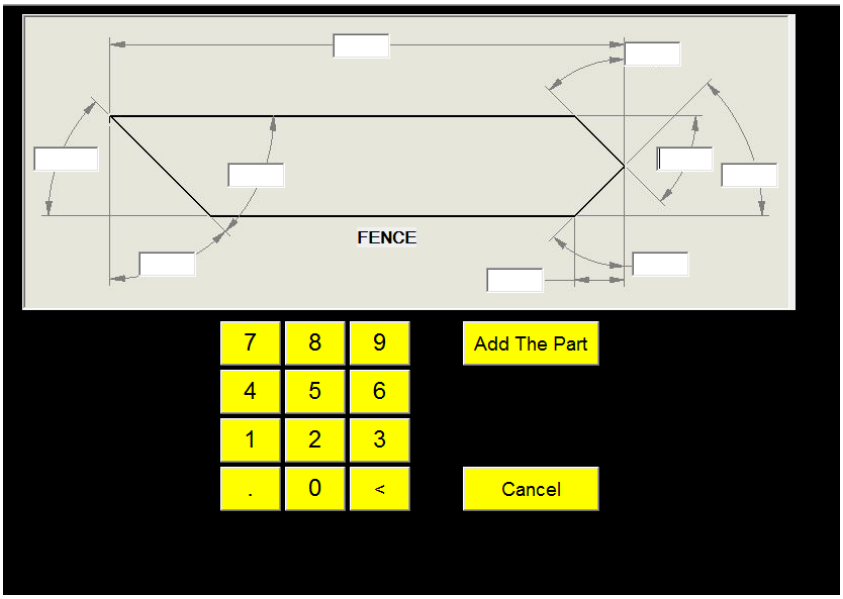




To cut manual parts, click the MANUAL PARTS button on the Main Screen and then enter the STOCK LENGTH, which is the length of the material you're loading into the machine, and the STOCK WIDTH, which is the ACTUAL, NOT NOMINAL, width of the material. If you enter 3" as the stock width but the actual width 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.

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.

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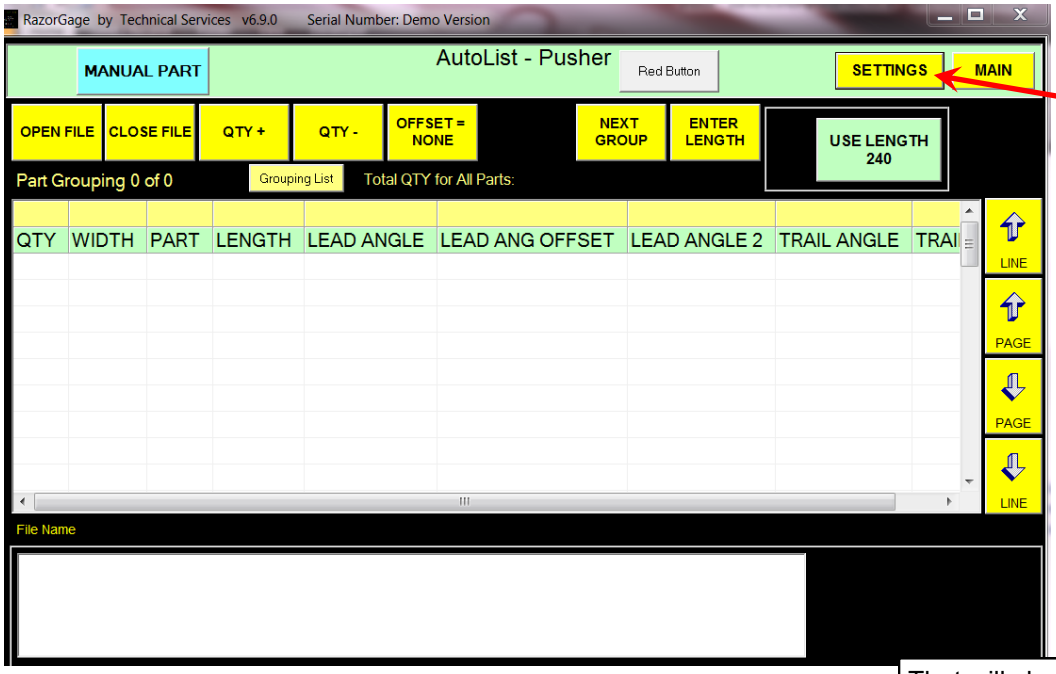
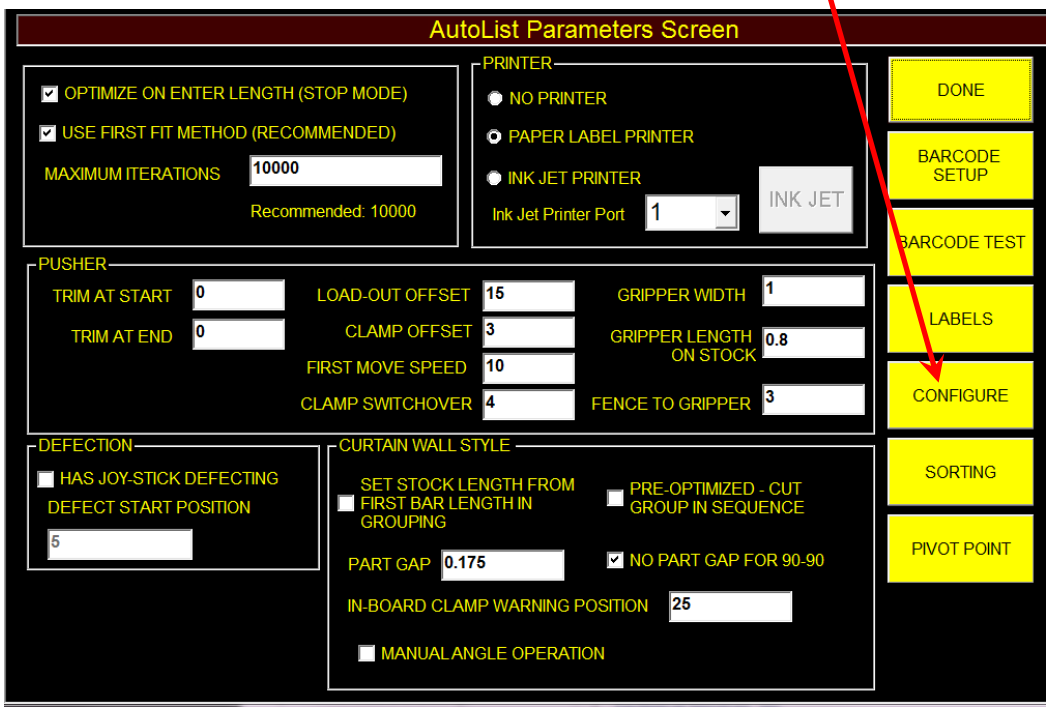
How to Define Leading & Trailing Angle Fields in AngleMaster Software



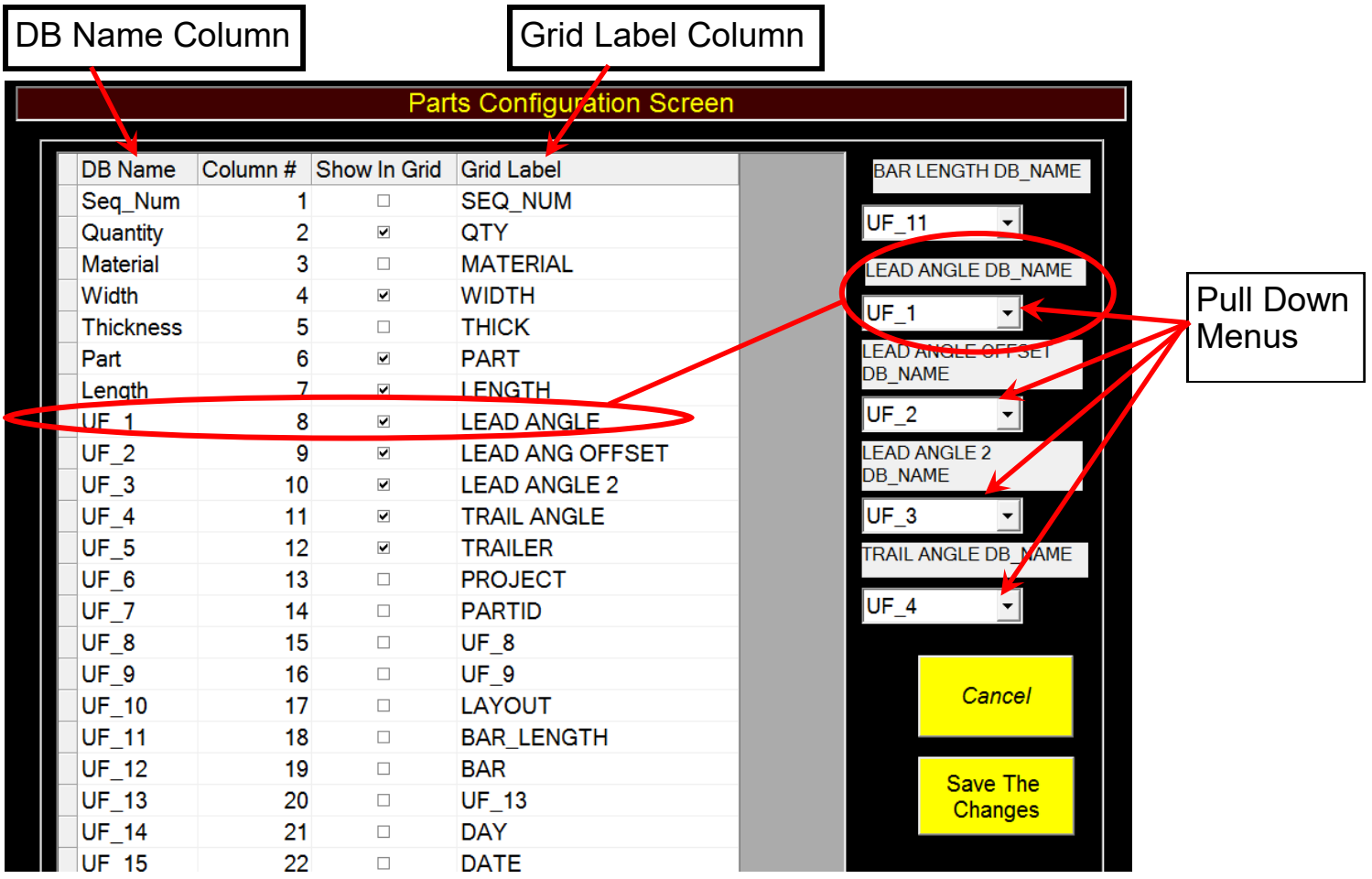
From the Autolist Screen click SETTINGS

That will show the screen below. Click CONFIGURE.



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 CUTLISTS WILL CONTAIN A COLUMN FOR LEAD ANGLE OFFSET AND LEAD ANGLE 2. If you cutlist doesn't contain these columns, just choose NONE from the pull down menu.



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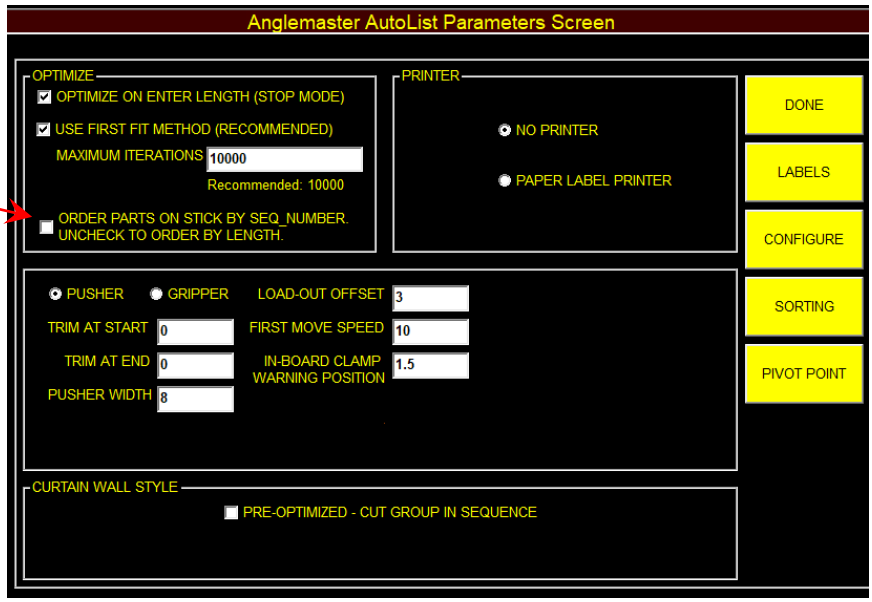
AngleMaster Software Nesting Methods

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 included 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.



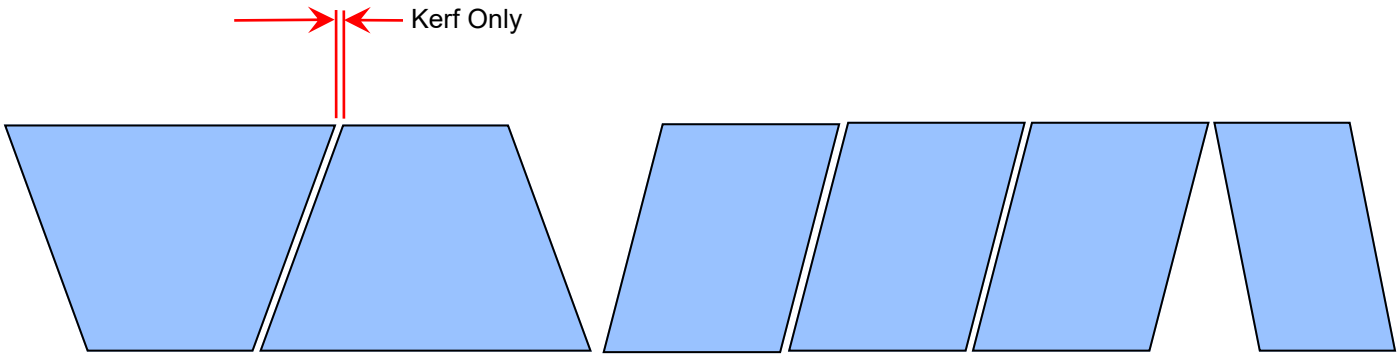
1. When running a standard cut list ("ORDER PARTS ON STICK BY SEQ_NUMBER UNCHECK TO ORDER BY LENGTH " box is NOT checked) the parts are placed in the clear span by order of length (Longest First). All of the parts are 'nested' together meaning that, when possible, the trailing cut of one part is shared 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.