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MODEL SUP-500-NF COLD SAW

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SCOTCHMAN IND. - 180 E US HWY 14 - PO BOX 850 - PHILIP, SD 57567 Call: 1 -605-859-2542 Email: info@scotchman.com



SUP-500-NF SAW





HYDRAULIC IRONWORKERS CIRCULAR COLD SAWS DIGITAL PROGRAMMABLE FEED SYSTEMS



SU-280-G BAND SAW 66 to 176 TON PRESSPRO HYDRAULIC PRESSES

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TABLE OF CONTENTS

Contents

TABLE OF CONTENTS	3
1.0 INTRODUCTION	6
1.1 Warranty	6
2.0 GENERAL MACHINE INFORMATION	7
2.1 Machine Identification Data	7
2.2 Technical Data	7
2.3 Machine Dimensions	8
2.4 Cutting Capacity	9
2.5 Electrical Data	
2.6 Noise Level	10
3.0 INSTRUCTIONS ON TRANSPORT AND STORAGE	10
4.0 INSTRUCTIONS FOR ANCHORING / SERVICE START-UP	11
4.1 Anchoring Instructions	11
4.2 Power Supply Connection	11
4.3 Pressure Regulator	12
4.4 Installing the Blade	12
4.5 Belt Removal and Installation	13
4.6 Cutting Coolant	13
4.7 Priming/Adjusting the Coolant Mister	14
4.8 Cleaning the Coolant Mister	15
4.9 Hydraulic Oil and Oleo-Pneumatic System	16
5.0 INSTRUCTIONS FOR USE	17
5.1 Proper and Improper Use	
5.2 Function of the Operating Controls	
5.3 Adjusting the Digital Miter Guage (If Equipped)	20
6.0 RECOMMENDATIONS AND MAINTENANCE	21
6.1 Type and Frequency of Inspections	21
6.2 Qualified Personnel for Maintenance and Repair Work	21
6.3 Manufacturer's Recommendations	21
6.4 Voltage Conversions	22

7.0 PARTS DIAGRAMS AND SCHEMATICS
7.1 Machine Exterior24
7.2 Main Power Circuit
7.2A Control Electronics
7.3 Control Panel
7.4 Pneumatic System
7.5 Saw Table, Clamping and Mitering System
7.6 Hood Assembly
7.7 Rocker Assembly
7.7A Rocker Assembly 2
8.0 OPTIONAL EQUIPMENT
8.1 Power Hood
8.2 Digital Stroke Control40
8.2A Digital Stroke Control (Autonics Counter, 2023+ Years)42
8.3 Digital Miter Guage (Part #1554)44
8.4 Blade Laser
8.5 Auto-Feed and Angle Master RazorGage Systems
9.0 CHIP COLLECTOR REMOTE START WIRE LOCATIONS

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.

<u>1.1 Warranty</u>

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

MODEL - SUP-500-NF

SERIAL NUMBER

YEAR OF MANUFACTURE

➢ NOTE: IN ORDER TO REQUEST SPARE PARTS, WHETHER COVERED BY THE WARRANTY OR NOT, ALWAYS INDICATE THE <u>MODEL AND SERIAL NUMBER OF</u> <u>THE MACHINE</u>, 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
Motor Speed	3,450 @ 60 Hz, 2,880 @ 50 Hz
Blade Arbor	50 mm
Maximum Blade Dimensions	500 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	47" x 43" x 59"
Weight	950 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

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)

> <u>ATTENTION</u>: 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

<u>4.1 Anchoring Instructions</u>

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).



<u>4.3 Pressure Regulator</u>

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 500mm 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.

a.

a.



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



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



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.



Blade Down Stroke (EQ2 De-energized)



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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.



<u>DANGER</u>: 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!**



ſ

5.3 Adjusting the Digital Miter Guage (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

<u>6.1 Type and Frequency of Inspections</u>

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
	Oil, AW32	Pneumatic Cylinder	Center of Sight Glass	Annually
SUP Series	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			

*Same part number as our 10W non foaming hydraulic oil. Specify AW32 when ordering.

<u>6.2 Qualified Personnel for Maintenance and Repair Work</u>

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.

<u>6.3 Manufacturer's Recommendations</u>

- 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).

<u>6.4 Voltage Conversions</u>



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 overload will come with a plastic knob. Pull the stock knob off before installing on the saw.

SUP Overload/Disconnect Switch Information				
	Saw	Voltage	Overload #	Setting
	SUP 500/600	230	000943	16
	SUP 500/600	460	000940	10

2. Change over 24 VAC transformer wiring



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

<u>7.1 Machine Exterior</u>

ITEM	PART #	DESCRIPTION
1*	1677*	Vertical Clamp Cylinder, 45mm
2	N00PT14050	Horizontal Clamps Ø40X220
3	2040000482	Angle Lock
4	N00000018	Advance Regulator 3/8"
5	N00000021	Cleaning Gun with Hose
6	011805	Selector Switch, Saw Only
6A	562023	Selector Switch, Saw with Auto Feed Pusher
7	E00000030	Green Indicator 24V
8	E000000011-011867-011874	Saw Blade On/Off Switch
9	011837	E-Stop Switch
10	N00000008-011867-011874	Green Button (Blade Up, Modular Style)
11	000943	230V Motor Protect Switch 10-16A
11A	000940	460V Motor Protect Switch 6-10A
12		Side Drawer Cuttings
13	B000121001	M12 Feet Levelers
13A	1156	M16 Feet Levelers
14	204000092	Oleo Pneumatic Hydraulic Tank
15		Left Door
15A	1053	Left Door Hinge
16	N00000030	Pressure Regulator, 1/4"
17		Protective Shield Support
18	2050004542	Hood Window, SUP500
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	N00000017	Filter Regulator, 1/4" BSPT Ports
25		Sheet Metal Base
26	CE00000R81	Side Door Interlock Switch
27	077927	NF Coolant Reservoir
*Item 1: This replace	ement cylinder will range from 22:	5mm to 250 mm in length. It is 100%
interchangeable.	-	-







7.2 Main Power Circuit

ITEM	PART #	DESCRIPTION
1	000943	230V Motor Protect Switch 10-16A
1A	000940	460V Motor Protect Switch 6-10A
2	060071	DILM 12-10 24VAC CONTACT
3*	C2050000522	5.5/6.6HP 230V/460V 3PH Motor, NO Brake
3A	21690220M3	5.5/6.6HP 230V 3PH Motor, WITH Brake
3B	21690460M3	5.5/6.6HP 460V 3PH Motor, WITH Brake
Note: 3A and 3B ONLY – Motor Pulley is Included		
4	E00000014	Transformer 50VA - 460/230//24V
5	071085	Fuse 2A
6	011837	E-Stop Switch
7	E00000030	Green Indicator 24V
ITEM 3 can replace 3A & 3B - However, the Brake Will Be Eliminated.		



<u>7.2A Control Electronics</u>

ITEM	PART #	DESCRIPTION
8	011805	Selector Switch, Saw Only
8A	562023	Selector Switch, Saw with Auto Feed Pusher
9	E00000BD25	Hood Switch
10	CE00000R81	Side Door Interlock Switch
10A	12152	Back Door Safety Switch
11	E00000011-011867-011874	Saw Blade On/Off Switch
12	N00000008-011867-011874	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

Control Electronics, Saw WITHOUT RAZORGAGE



27

7.3 Control Panel

ITEM	PART #	DESCRIPTION
6	011837	E-Stop Switch
7	E00000030	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	N00000008-011867-011874	Green Button (Blade Up, Modular Style)
18	011805	Selector Switch for Optional Power Hood
19	677	Legend Plate



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7.4 Pneumatic System

ITEM	PART #	DESCRIPTION
00		Supply Air Line (by Customer)
01	N00000017	Filter Regulator, 1/4" BSPT Ports
02	1620	24 VAC KPM Coil Only
03	1440	High + Low Shift Valve
04	N00000038	Quick Exhaust Valve
05	N00000030	Pressure Regulator, 1/4"
06	N00PT14050	Horiz Clamps Ø40 x 220
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	N00000038	Quick Exhaust Valve
10	N00000015	Uni Directional (Check) Valve
11*	1677*	Vertical Clamp Cylinder, 45mm
12	N00000021	Cleaning Gun with Hose
13	1618	KPM Valve with Coil
13A	1967	KPM Valve Manifold Block (Not Shown)
14	204000092	Oleo Pneumatic Hydraulic Tank
15	N00000018	Advance Regulator 3/8"
15A	1667	Advance Regulator Knob
16	N00000026	Blade Up Cylinder ISO 50 x 225
17	N00000036	Venturi Sprayer
18	077927	NF Coolant Reservoir
19	1439	SUP-500 Power Hood Retrofit Kit
*Item 11: This replacement cylinder will range from 225mm to 250 mm in length. It is 100%		
interchangeable		



ITEM	PART #	DESCRIPTION
1	216000F012	Cast Iron Table
2	2040000482	Angle Lock
2B	B00000011	M-8 Knob (included with #2)
3	230110	M8 X 20 DIN7991 FSHCS
4	TD91210060	M10 X 60 DIN7991 FSHCS
5	204000F62	Angle Arrow
6	20400010312	Lock Guide Plate
6B	2040010312	Zero Position
6C	230007	M6 X 16 DIN 7991 FSHCS
7	12157	TURRET COTTER SUP-500
8	TD91206020	M6 x 20 DIN912 Screw
9	205000F022	Cast Iron Disc
9A	8674	Miter Scale
9B	2050000522	Blade Groove
9C	TD79910616	M6 x 16 DIN7991 Screw
10	221212	M10 X 30MM DIN912 SHCS
11	2350000131	Nylon Cleat Black M-10
12	2050000102	Aluminum Back Fence Plates, Set of 2
13	2040000112	Horizontal Clamps Arm
14	TD79840620	M6 x 20 ISO7984 Screw
15	B000000H2	M10 Knob
16	213012	M10 Washer
17	B0000P1040	M-10 x 40 Lever
18	2040001482	Clamps Aluminum Guide
19	N00PT14050	Horizontal Clamp Ø40 x 220
20	TD91208020	M8 x 20 DIN912 Screw
21*	B0000P1070	M10 x 70 Adjustment Handle
21A*	B0000P1270	M12 x 70 Adjustment Handle
22	025361	M12 X 50MM Lever
23	204000A502	Aluminum Rod Hor. Clamp
24*	1677	Holddown Clamp 45MM
25*	025361	M12 X 50MM Adjustment Handle
26	204000A452	Ø45-Æ12 Washer
27	204000062	Ø45 Aluminum Rod
28	2040001512	Flat Nut M-12
29	2042000181	Nylon Brake Cleat
30	TD91310070	M10 x 70 DIN913 Screw
	* McMaster Carr 93245A659	
31	B000000H2	M10 Knob
32	N00000015	Uni Directional (Check) Valve
33	2050000212	Cast Iron Turret
*MEASURE LEVER HANDLES BEFORE ORDERING. THERE HAVE BEEN VARIATIONS.		
*Item 24: This replacement cylinder will range from 225mm to 250 mm in length. It is 100%		
interchangeable.		

7.5 Saw Table, Clamping and Mitering System



7.6 Hood Assembly

ITEM	PART #	DESCRIPTION
1	20400TB452	Ball Screw Ø10 M8
2	204000R452	Swivel Joint
3	2050000452	Hood Gas Shock SUP500
4	235000\$471	M-8 x 20 ØEXT 25mm Separator
5	4884	Hood Rubber SUP Saws (1 meter)
6	B00000017	M-6 Handle
7	220014	M6 X 10MM DIN BN19 BHCS
8	2050004521	Front Closing
9	23500040B1	Shield Post
10	220026	ISO-7380 M8 x 12 BHCS
11	2050004571	Protective Shield Support
12	073206	M6 DIN934 Hex Nut
13	2040060291	Screen Hinges
14	214011	M8 DIN125 Regular Washer
15	230007	M6 X 16 FSHCS
16	073206	M6 Hex Nut DIN934
17	215013	M8 DIN985 GREER NUT
18	20500M6452	Eye M-6
19	2050451312	Left Protective Shield
20	T173800850	M8 X 50 BHCS
21	2050004542	Hood Window SUP500
22	205000455	Above Closing
23	073206	M6 Hex Nut DIN934
24	20504513D2	Right Protective Shield
25	E00000BD25	Hood Switch



7.7 Rocker Assembly

ITEM	PART #	DESCRIPTION
1*	C2050000522	5.5/6.6HP 230V/460V 3PH Motor, NO Brake
1A	21690220M3	5.5/6.6HP 230V 3PH Motor, WITH Brake
1B	21690460M3	5.5/6.6HP 460V 3PH Motor, WITH Brake
Note: 1A and 1B ONLY – Motor Pulley is Included		
2	2050000332	Cast Iron Rocker
3	2050000322	Rocker Support
4	TD91310050	M10 x 50 DIN931 Screw
5	205000062	30 x 139 Connecting Rod Pin
6	2040000202	Belt Tension Adjuster
7	TD93308050	Tension Adjuster Screw
8	TD91208030	DIN912 M-8 x 30 Screw
9	P2050000152	Blade Protector
10	N00000036	Venturi Sprayer
11	2040001172	Cylinder Anchor
12	2040060582	Ø60 Separator
13	2040025582	Ø36 Separator
14	2050000162	4206 Bearing
15	2040000402	Motor Cotter
16	205000092	Ø30 Shaft
17	074490	Blade Ø 500 x 4.1 x 50 - 80 Tooth
17A	074495	Blade Ø 500 x 4.6 x 50 - 96 Tooth
17B	074500	Blade Ø 500 x 4.6 x 50 - 120 Tooth
18	205000032	Blade Washer
19	204000232	Blade Shaft Nut
20	2050000132	Rocker Shaft Pulley
21	T00CH08040	8x7x40 Cotter
22	2050000142	Motor Pulley
23	C205000012	960 J12 Poly V-Belt
24	TD91212050	DIN912 M-12 x 50
25	207000012	1/8" Lubricator
26	TD91208012	DIN912 M-8 X 12 Screw
27	TD91308015	DIN913 M-8 X 15 Stud
28	TD91206010	DIN912 M-6 x 10 Screw
29	201145	DIN933 M-8 X 25 Screw
30	TD91212025	DIN912 M-12 X 25 Screw
31	TD12500012	Ø12 Connect Rod Pin Washer
32	TD12500008	Ø8 Washer
33	2040000532	Venturi Angle Plate
34	027500	SUP 500 Chip Deflector
*Item 1: Can replace	33A & 33B - However, the Brake	e Will Be Eliminated.



<u>7.7A Rocker Assembly 2</u>

ITEM	PART #	DESCRIPTION
1	2050000112	Post
2	N00000026	Blade Up Cylinder ISO 50 x 225
3	N00000057	Lower Cylinder Yoke
4	N00000059	Upper Cylinder Pin Joint
5	2040001172	Cylinder Anchor
6	2040004162	Raise Stop
7	TD91208015	DIN912 M-8 x 15 Screw
8*	B0000P1020	M8 x 20 Adjustment Handle
9	2040004162	Lever Support
10	2050000332	Cast Iron Rocker
11	N00RCC1410	Male Thread Elbow
12	N000CC1410	Simple Male Elbow
13	205000F022	Cast Iron Disk
14	C205000012	960 J12 Poly V-Belt
15	2050000132	Shaft Pulley
*MEASURE LEVER HANDLES BEFORE ORDERING. THERE HAVE BEEN VARIATIONS.		



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	5941	Cylinder For Hood Kit #1439
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	1439	SUP-500 Power Hood Retrofit Kit



8.2 Digital Stroke Control

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	E00000096	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
21	CE000100068	DC Encoder, RED
21A	E00000068 (OBSOLETE)	DC Encoder, BLACK







NOTE: OLDER RECTIFIER-EQUIPPED MACHINES TO PROVIDE 24 VDC CONNCECT 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	E00000096	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	E00000068 (OBSOLETE)	DC Encoder, BLACK







NOTE: OLDER RECTIFIER-EQUIPPED MACHINES TO PROVIDE 24 VDC CONNCECT 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
А		Laser Panel Switch
В	2493	Laser Power Supply (Includes Rectifier)
C1	28496	Factory Installed Laser Kit
C2	4878	Retrofit Laser Kit



<u>8.5 Stop Pusher and Angle Master (non-Auto 90) RazorGage</u> <u>Systems</u>

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

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, Saw WITH RAZORGAGE

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.



