



OPERATOR'S MANUAL



SEMI-AUTOMATIC COLD SAW

Model: CS-275SA

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01/2011



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THANK YOU & WARRANTY

1. Thank you for your purchase of a Baileigh Industrial Cold Saw. We hope that you find it productive and useful to you for a long time to come.

2. **Inspection & Acceptance.** Buyer shall inspect all Goods within a reasonable period of time after delivery, not to exceed ten (10) days. If Buyer rejects any Goods, Buyer must first obtain a Return Authorization Number ("RAN") before returning any goods to Seller. Goods returned without a RAN will be refused. Seller will not be responsible for any freight costs, damages to goods, or any other costs or liabilities pertaining to goods returned without a RAN. Seller shall have the right to substitute a conforming tender. Buyer will be responsible for all freight costs to and from Buyer and repackaging costs, if any, if Buyer refuses to accept shipment. If Goods are returned in unsaleable condition, Buyer shall be responsible for full value of the Goods. Buyer may not return any special order Goods. Any Goods returned hereunder shall be subject to a restocking fee equal to 30% of the invoice price.

3. **Specifications.** Seller may, at its option, make changes in the designs, specifications or components of the Goods to improve the safety of such Goods, or if in Seller's judgment, such changes will be beneficial to their operation or use. Buyer may not make any changes in the specifications for the Goods unless Seller approves of such changes in writing, in which event Seller may impose additional charges to implement such changes.

4. **Limited Warranty.** Seller warrants to the original end-user that the Goods manufactured or provided by Seller under this Agreement shall be free of defects in material or workmanship for a period of twelve (12) months from the date of purchase, provided that the Goods are installed, used, and maintained in accordance with any instruction manual or technical guidelines provided by the Seller or supplied with the Goods, if applicable. The original end-user must give written notice to Seller of any suspected defect in the Goods prior to the expiration of the warranty period. The original end-user must also obtain a RAN from Seller prior to returning any Goods to Seller for warranty service under this paragraph. Seller will not accept any responsibility for Goods returned without a RAN. The original end-user shall be responsible for all costs and expenses associated with returning the Goods to Seller for warranty service. In the event of a defect, Seller, at its sole option, shall repair or replace the defective Goods or refund to the original end-user the purchase price for such defective Goods. The foregoing warranty is Seller's sole obligation, and the original end-user's exclusive remedy, with regard to any defective Goods. This limited warranty does not apply to: (a) die sets, tooling, and saw blades; (b) periodic or routine maintenance and setup, (c) repair or replacement of the Goods due to normal wear and tear, (d) defects or damage to the Goods resulting from misuse, abuse, neglect, or accidents, (e) defects or damage to the Goods resulting from improper or unauthorized alterations, modifications, or changes; and (f) any Goods that has not been installed and/or maintained in accordance with the instruction manual or technical guidelines provided by Seller.



5. EXCLUSION OF OTHER WARRANTIES. THE FOREGOING LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. ANY AND ALL OTHER EXPRESS, STATUTORY OR IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE ARE EXPRESSLY DISCLAIMED. NO WARRANTY IS MADE WHICH EXTENDS BEYOND THAT WHICH IS EXPRESSLY CONTAINED HEREIN.

6. LIMITATION OF LIABILITY. IN NO EVENT SHALL SELLER BE LIABLE TO BUYER OR ANY OTHER PARTY FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES (INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR DOWN TIME) ARISING FROM OR IN MANNER CONNECTED WITH THE GOODS, ANY BREACH BY SELLER OR ITS AGENTS OF THIS AGREEMENT, OR ANY OTHER CAUSE WHATSOEVER, WHETHER BASED ON CONTRACT, TORT OR ANY OTHER THEORY OF LIABILITY. BUYER'S REMEDY WITH RESPECT TO ANY CLAIM ARISING UNDER THIS AGREEMENT IS STRICTLY LIMITED TO NO MORE THAN THE AMOUNT PAID BY THE BUYER FOR THE GOODS.

7. Force Majeure. Seller shall not be responsible for any delay in the delivery of, or failure to deliver, Goods due to causes beyond Seller's reasonable control including, without limitation, acts of God, acts of war or terrorism, enemy actions, hostilities, strikes, labor difficulties, embargoes, non-delivery or late delivery of materials, parts and equipment or transportation delays not caused by the fault of Seller, delays caused by civil authorities, governmental regulations or orders, fire, lightning, natural disasters or any other cause beyond Seller's reasonable control. In the event of any such delay, performance will be postponed by such length of time as may be reasonably necessary to compensate for the delay.

8. Installation. If Buyer purchases any Goods that require installation, Buyer shall, at its expense, make all arrangements and connections necessary to install and operate the Goods. Buyer shall install the Goods in accordance with any Seller instructions and shall indemnify Seller against any and all damages, demands, suits, causes of action, claims and expenses (including actual attorneys' fees and costs) arising directly or indirectly out of Buyer's failure to properly install the Goods.

9. Work By Others; Safety Devices. Unless agreed to in writing by Seller, Seller has no responsibility for labor or work performed by Buyer or others, of any nature, relating to design, manufacture, fabrication, use, installation or provision of Goods. Buyer is solely responsible for furnishing, and requiring its employees and customers to use all safety devices, guards and safe operating procedures required by law and/or as set forth in manuals and instruction sheets furnished by Seller. Buyer is responsible for consulting all operator's manuals, ANSI or comparable safety standards, OSHA regulations and other sources of safety standards and regulations applicable to the use and operation of the Goods.

10. Remedies. Each of the rights and remedies of Seller under this Agreement is cumulative and in addition to any other or further remedies provided under this Agreement or at law or equity.



11. **Attorney's Fees.** In the event legal action is necessary to recover monies due from Buyer or to enforce any provision of this Agreement, Buyer shall be liable to Seller for all costs and expenses associated therewith, including Seller's actual attorneys' fees and costs.

12. **Governing Law/Venue.** This Agreement shall be construed and governed under the laws of the State of Wisconsin, without application of conflict of law principles. Each party agrees that all actions or proceedings arising out of or in connection with this Agreement shall be commenced, tried, and litigated only in the state courts sitting in Manitowoc County, Wisconsin or the U.S. Federal Court for the Eastern District of Wisconsin. Each party waives any right it may have to assert the doctrine of "forum non conveniens" or to object to venue to the extent that any proceeding is brought in accordance with this section. Each party consents to and waives any objection to the exercise of personal jurisdiction over it by courts described in this section. EACH PARTY WAIVES TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW THE RIGHT TO A TRIAL BY JURY.



INTRODUCTION

The quality and reliability of the components assembled on a Baileigh Industrial machine guarantee near perfect functioning, free from problems, even under the most demanding working conditions. However if a situation arises, refer to the manual first. If a solution cannot be found, contact the distributor where you purchased our product. Make sure you have the serial number and production year of the machine. (stamped on the nameplate). For replacement parts refer to the assembly numbers on the parts list drawings.

Our technical staff will do their best to help you get your machine back in working order.

In this manual you will find:

- Safety procedures
- Correct installation guidelines
- Description of the functional parts of the machine
- Capacity charts
- Set-up and start-up instructions
- Machine operation
- Scheduled maintenance
- Parts lists

GENERAL NOTES

- After receiving your equipment remove the protective crating. Do a complete visual inspection, and if damage is noted, **photograph it for insurance claims** and contact your carrier at once, requesting inspection. Also contact Baileigh Industrial and inform them of the unexpected occurrence. Temporarily suspend installation.
- Take necessary precautions while loading / unloading or moving the machine to avoid any injuries. Refer to the related chapter of this Manual for the best way of handling the machine.
- A proper break-in period for the cold saw is recommended. Intervals of 30 minutes to be repeated two or three times, after which the cold saw may be used continuously.



GENERAL NOTES (cont.)

- Always check that the work piece is securely clamped and that long pieces are properly supported.
- **DO NOT** use a saw blade size that is outside the limits of the machines specifications.
- If this manual is lost or destroyed order a new one from Baileigh Industrial.
- If transferring ownership please provide this manual to the next owner.

Your machine is designed and manufactured to work smoothly and efficiently. Following proper maintenance instructions will help ensure this. Try and use original spare parts, whenever possible, and most importantly; **DO NOT** overload the machine or make any unauthorized modifications.

TECHNICAL SUPPORT

Our technical support department can be reached at 920.684.4990, and asking for the support desk for purchased machines. Tech Support handles questions on machine setup, schematics, warranty issues, and individual parts needs.

For specific application needs or future machine purchases contact the Sales Department. at: sales@bii1.com or phone: 920.684.4990



Note: *This symbol refers to useful information throughout the manual.*



PLEASE READ THIS OPERATORS MANUAL CAREFULLY

It contains important safety information, instructions, and necessary operating procedures. The continual observance of these procedures will help increase your production and extend the life of the equipment.



WARNING:

Baileigh Industrial is not responsible for any damage caused by wiring up to an alternative 3-phase power source other than direct 3-phase. If you are using an alternate power source, consult a certified electrician or contact Baileigh Industrial prior to energizing the machine.



SAFETY INSTRUCTIONS

LEARN TO RECOGNIZE SAFETY INFORMATION

This is the safety alert symbol. When you see this symbol on your machine or in this manual, **BE ALERT TO THE POTENTIAL FOR PERSONAL INJURY!**



Follow recommended precautions and safe operating practices.

UNDERSTAND SIGNAL WORDS

A signal word – **DANGER**, **WARNING**, or **CAUTION** is used with the safety alert symbol. **DANGER** identifies a hazard or unsafe practice that will result in severe **Injury or Death.**



Safety signs with signal word **DANGER** or **WARNING** are typically near specific hazards.



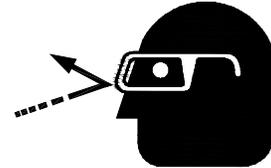
General precautions are listed on **CAUTION** safety signs. **CAUTION** also calls attention to safety messages in this manual.





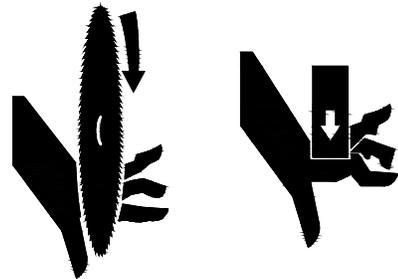
PROTECT EYES

Wear safety glasses or suitable eye protection when working on or around machinery.



BEWARE OF CUT AND PINCH POINTS

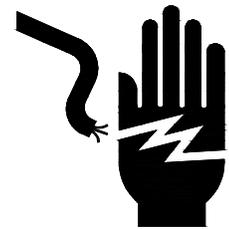
Keep hands and fingers away from the saw blade when the machine is in operation.



HIGH VOLTAGE

USE CAUTION IN HIGH VOLTAGE AREAS.
DO NOT assume the power to be off.

(MAKE SURE PROPER LOCKOUT
PROCEDURES ARE FOLLOWED)



PROTECT AGAINST NOISE

Prolonged exposure to loud noise can cause impairment or loss of hearing. Wear suitable hearing protective devices such as ear muffs or earplugs to protect against objectionable or uncomfortable loud noises.





Additional Safety Precautions

- **Turn off** main power to the machine when changing the saw blade/cutting disc or performing any maintenance work.
- **Never** expose your hands or limbs to the cutting area while the machine is operating.
- Steel toe shoes should be worn when using this machine.
- Make sure it is possible to move freely around the machine and associated equipment. The floor should be kept clean and dry, and the surrounding area well illuminated, so that work can be performed safely.
- **Never** wear loose fitting garments or jewelry, and avoid long loose hair when operating machine.
- When the machine is **not** in use, the saw blade should **not** be moving.
- **Do not** remove any warning signs.
- Check safety equipment, such as safety covers, emergency stop buttons, safety mats, railings, light booms, ramps, and warning signs.
- Make sure electrical cables are well protected from damage. Check insulation periodically for wear.



Blade Guard Safety

The blade guard is a self –adjusting cover that prevents contact with the blade.

- **Never** use the machine without the blade guard.
- **Never** handle blade guard while the blade is turning.



Emergency Stop Button

In the event of incorrect operation or dangerous conditions, the machine can be stopped immediately by pressing the **E-STOP** button. Twist the emergency stop button clockwise (**cw**) to reset.

Note: Resetting the E-stop will not start the machine.

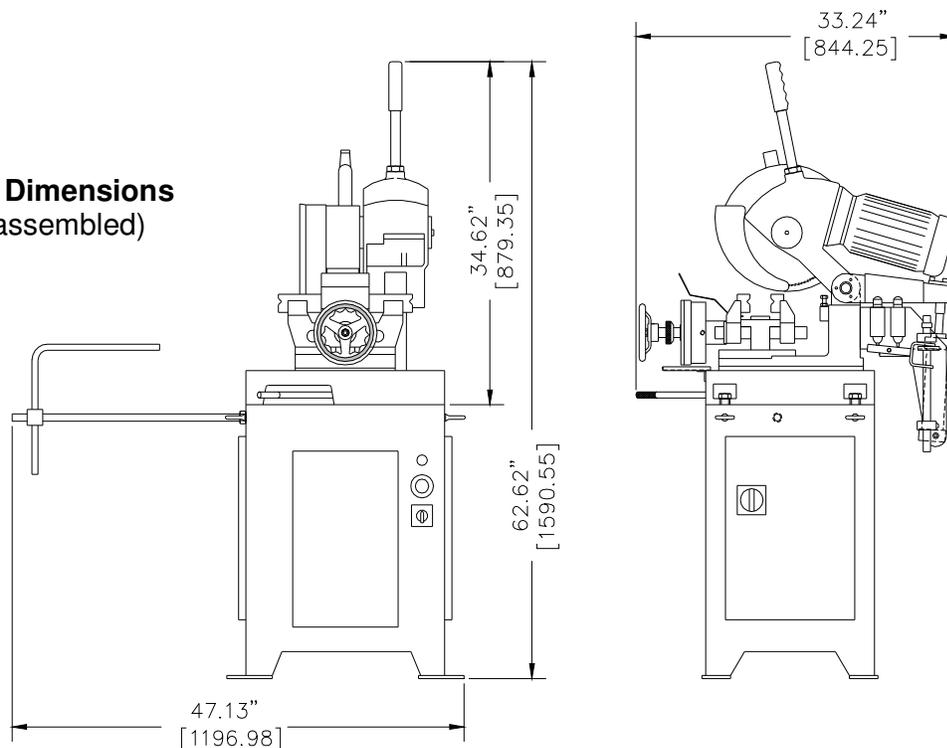




Technical Specifications

Cutting Capacity				
90°	38.1mm (1.5")	69.8mm (2.75")	69.8mm x 69.8mm (2.75" x 2.75")	69.8mm x 73.6mm (2.75" x 2.9")
45°	38.1mm (1.5")	57.15mm (2.25")	55.0mm x 55.0mm (2.165" x 2.165")	55m x 57.15mm (2.165" x 2.25")
Maximum Blade Diameter	11" (275mm)		Slotting Capable	Yes, Left and Right
Arbor Size	32mm		Coolant Pump	1/8 Hp
Blade Speed	60 rpm / 120 rpm		Coolant Tank	3 Gal. Capacity (fill to 80%)
Operation	Semi Automatic		Main Drive Motor	3 Hp
Head Style	Pivot		Air Requirements	80 psi (min) 100 psi (max)
Maximum Vise Opening	4" (100mm)		Electrical Requirements	220V / 3 Ph / 60 Hz
Vise Style	Dual Action Self Centering		Shipping Dimensions	60" x 44" x 48"
Head Miter	90° Slotting, 45° Left / 45° Right		Shipping Weight	788 Lbs

Machine Dimensions (when assembled)



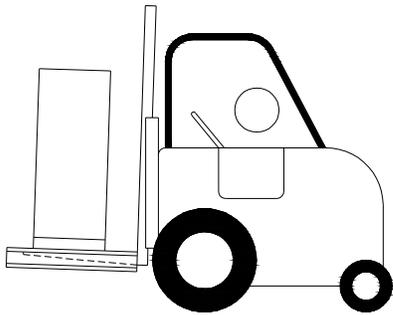
Note: The specifications and dimensions presented here are subject to change without prior notice due to improvements of our products.



TRANSPORTING AND LIFTING THE MACHINE



Caution: Lifting and carrying operations should be carried out by skilled workers, such as truck operator, crane operator, etc. Also, it is necessary to keep in mind that having a large clearance area around the machine is important for efficient and safe working conditions.



When transporting in its own packaging, use a forklift truck or hand trolley.

Follow these guidelines when lifting:

- Always lift and carry the machine with the four rings located on the left and right of the cutting table. (see figure 1)
- Use a steel cable or sling capable of lifting 1500 lbs. (min.)
- Take proper precautions for handling and lifting.
- Check if the load is properly balanced by lifting it an inch or two.
- Lift the machine, avoiding sudden accelerations or quick changes of direction.
- Locate the machine where it is to be installed, and lower slowly until it touches the *floor*.

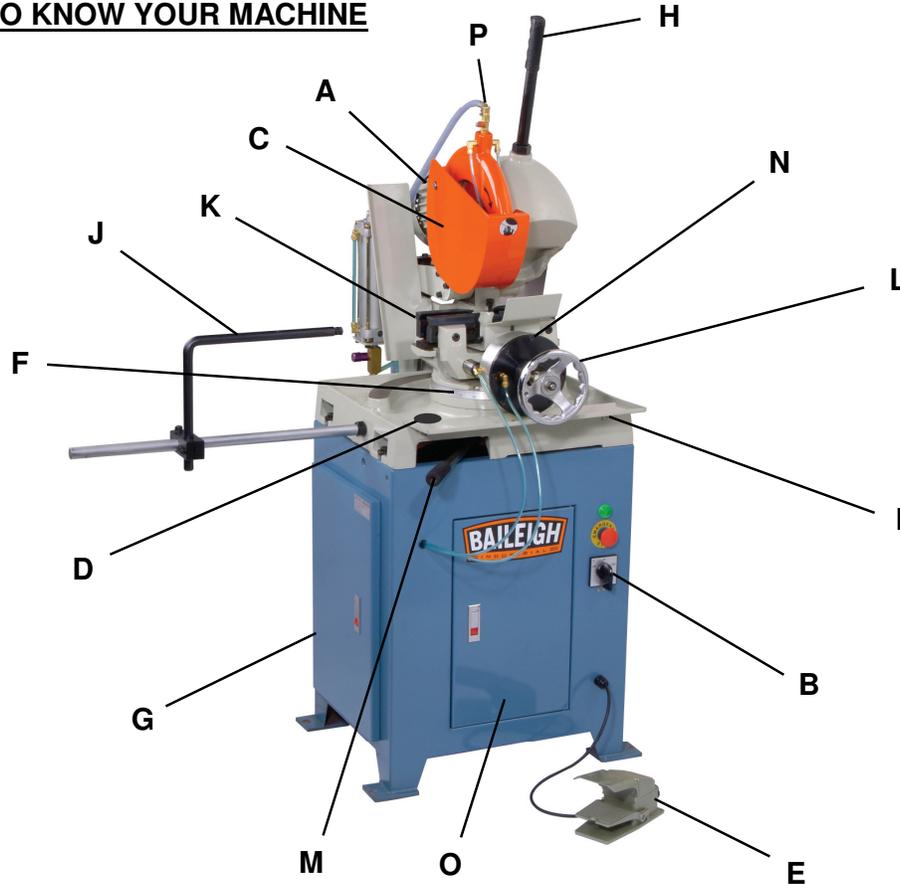
788 lbs.



Figure 1



GETTING TO KNOW YOUR MACHINE

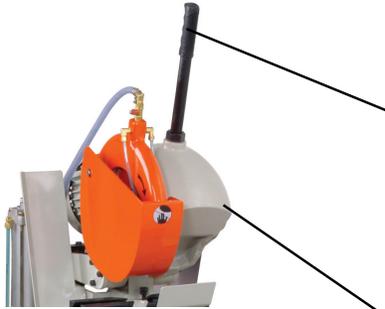


A	Spindle Motor	For driving the spindle
B	2-Speed Switch	Changes saw blade from 60 rpm to 120 rpm
C	3-piece saw guard	Provides safety protection from saw blade
D	Filter tank screen	For filtering metal chips and contaminants
E	Footswitch	Press this switch to start the cutting cycle
F	Angle indicator	For showing angular cutting degrees
G	Air in connector	For connecting customer supplied air
H	Feed handle	Used to move head when adjusting switches
I	Air cylinder guard	For diverting chips and coolant
J	Stop bar	For setting the length of cut
K	Front and rear jaw	For clamping piece part
L	Vise hand-wheel	Turning hand-wheel opens and closes vise
M	Miter lock lever	Tightens and loosens table to set angles
N	Vise air cylinder	Pushes front jaw towards rear jaw to clamp part
O	Storage compartment	Used for holding the coolant system, tools, etc.
P	Coolant valve	Regulates coolant flow to saw blade



GETTING TO KNOW YOUR MACHINE

Disk Head Assembly



The section of the machine composed of the motor, gear transfer system, disc or blade, and feed handle.

Feed Handle

A straight tube with a grip for raising and lowering the disk head. Used when setting the up/down travel limits of the saw blade. **Note:** Flow control valve must be open and air line disconnected.

Transfer Case

The central part of the assembly, housing the gear system and oil tank.

Machine Base



A heavy cast iron structure that supports the miter system, vise system, and head assembly.

Vise



A clamping system that provides the basic support and grip for the work material. A handwheel opens and closes the vise jaws. The front jaw has a quick grip and release feature using a pneumatic cylinder.



GETTING TO KNOW YOUR MACHINE (cont.)

Stand



Support structure for the machine head assembly, machine base, and vise system. The stand also stores the coolant pump system.

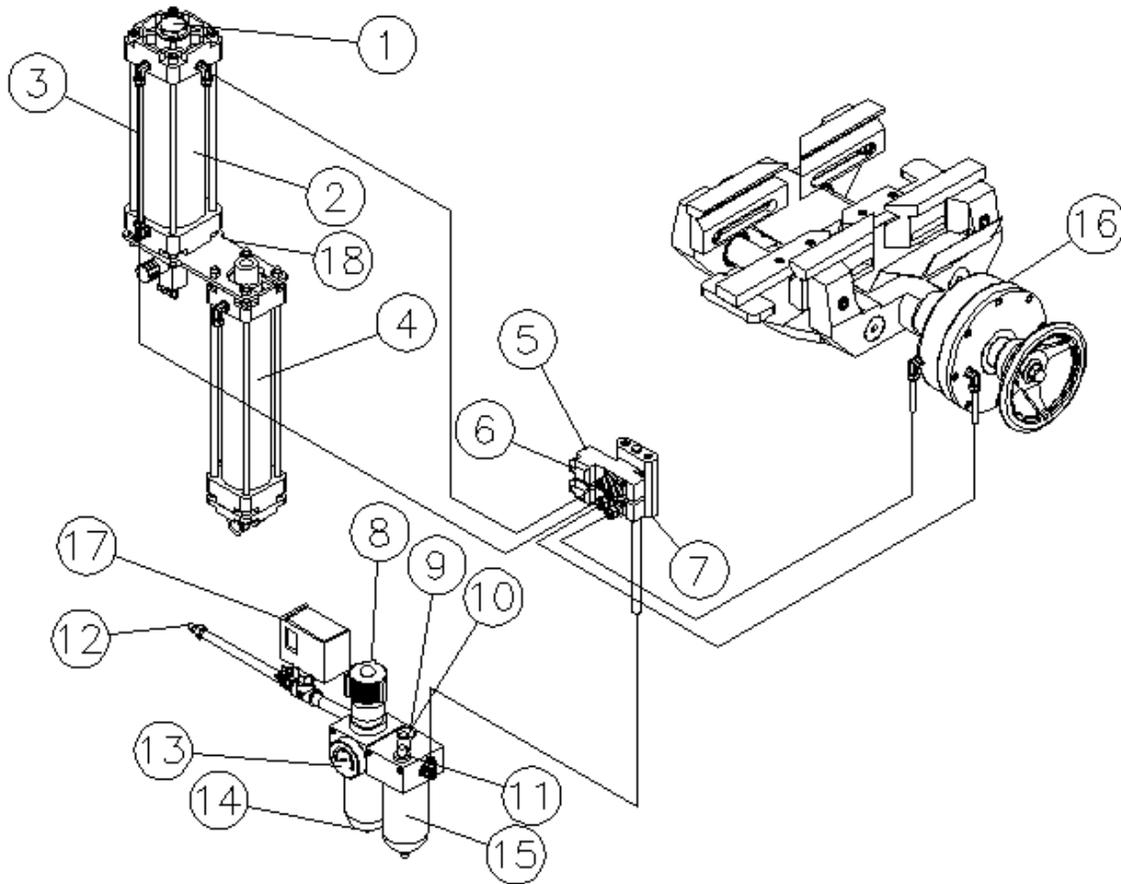
Coolant Pump



The self contained coolant system is located behind the door panel at the front of the machine stand. It consists of a coolant pump, tank, and hoses.



GETTING TO KNOW YOUR MACHINE (cont.)



Pneumatic Circuit			
1	Oil inlet port	10	Oil see-thru window
2	Air hydraulic oil drum	11	Oil air mixing ratio adjustment screw
3	Oil hose	12	Air hose quick connector
4	Hydraulic cylinder	13	Pressure gauge
5	Test button	14	Water release port
6	Coil	15	Lubrication oil cup
7	Buffer	16	Vise air cylinder
8	Pressure regulation knob	17	Pressure switch
9	Lubrication oil inlet port	18	Cylinder connection plate



GETTING STARTED

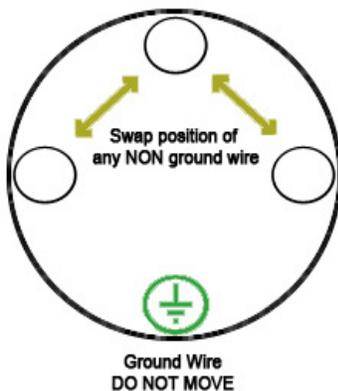
ATTENTION: HAVE ELECTRICAL UTILITIES CONNECTED TO MACHINE BY A CERTIFIED ELECTRICIAN !

Your Baileigh Machine is  approved

Check if the available power supply is the same as required by the Cold Saw Machine (consult nameplate on machine base)

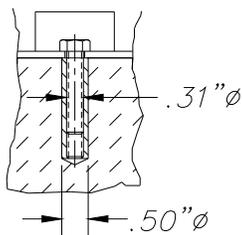
WARNING

Make sure the grounding wire (green) is properly connected to avoid electric shock. **DO NOT** switch the position of the green grounding wire if any electrical plug wires are switched during hookup.



- Connect the power wires to a non-fused breaker in the off position.
- Once hooked up, turn on the power supply and start the cold saw motor.
- Check that the saw blade is running in the direction as indicated by the arrowhead on the blade guard. If not, cut the power to the machine. Swap the position of any two of the three power wires; but **DO NOT** change the position of the green grounding wire!

Anchoring the Machine

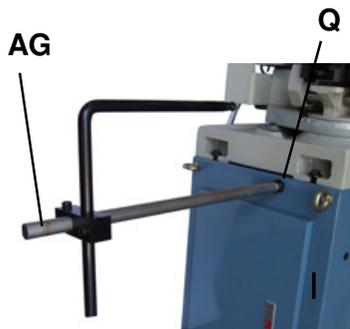


- Position the machine on a firm and level concrete floor.
- Maintain a minimum distance of 32.00" from the wall to rear of the machine.
- Anchor the machine to the floor, as shown in the diagram, using bolts and expansion plugs or sunken tie rods that connect through holes in the base of the stand.



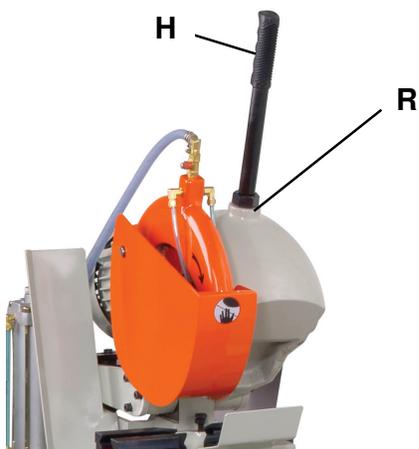
GETTING STARTED (cont.)

Assembly and Setup



Attach the bar stop to the stand.

- Insert the threaded end of the long rod (**AG**) into the side of the stand. (Can be mounted on left side or right side.)
- Turn clockwise (**cw**) until snug, making sure graduated scale can be easily read.
- Using a wrench, turn hex jam nut (**Q**) clockwise (**cw**) until tight.



Attach the feed handle to the head assembly.

- Remove the oil fill transport plug from the gear transfer case oil fill hole (**R**) .
- Insert the threaded end of the feed handle (**H**) into the oil fill hole (**R**).
- Turn the handle clockwise (**cw**) until tight.
- Tighten jam nut.



Assembly and Setup (cont.)



BEFORE PERFORMING THE FOLLOWING OPERATIONS, THE ELECTRIC POWER SUPPLY AND THE POWER CABLE MUST BE COMPLETELY DISCONNECTED.



S



T

Mounting the saw blade (**Wear gloves when handling blade**)

- Remove the saw blade from the coolant tank storage compartment.
- Rotate the pivot guard (**S**) counterclockwise (**ccw**) until it rests on the splash plate.
- Remove the lock bolt by turning clockwise (**cw**), and blade washer (**T**) from the spindle.
- Align blade washer (**T**) to saw blade and mount to spindle.
(Note: Be sure teeth point in the direction as indicated by the arrow on the guard.)
- Tighten lock bolt counterclockwise (**ccw**). (It has a left handed thread).
- Rotate pivot guard (**S**) clockwise (**cw**) until it bottoms on the stop bolt.
- Check for proper blade rotation.



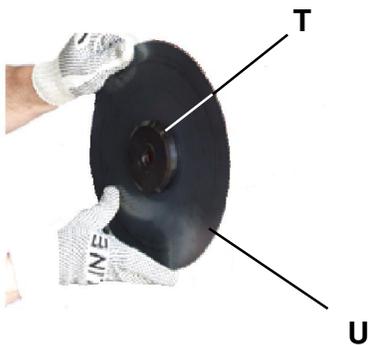
ADJUSTING THE MACHINE



BEFORE PERFORMING THE FOLLOWING OPERATIONS, THE ELECTRIC POWER SUPPLY AND THE POWER CABLE MUST BE COMPLETELY DISCONNECTED.



S



Replacing the saw blade: (**Wear gloves when handling blade**)

- Rotate the pivot guard (**S**) counterclockwise (**ccw**) until it rests on the splash plate.
- Place a block of wood into the vise.
- Disconnect the air supply and lower the machine head to rest the saw blade on the block of wood.
- Using a hex wrench, remove the lock bolt in a clockwise (**cw**) direction. (It has a left-handed thread).
- Remove the blade (**U**) and blade washer (**T**) from the spindle.
- Remove the blade washer from the saw blade.
- Place washer (**T**) onto the replacement blade and follow above procedure in reverse.
- Reconnect air supply.
- Check for proper blade rotation.



THE OPERATION CYCLE



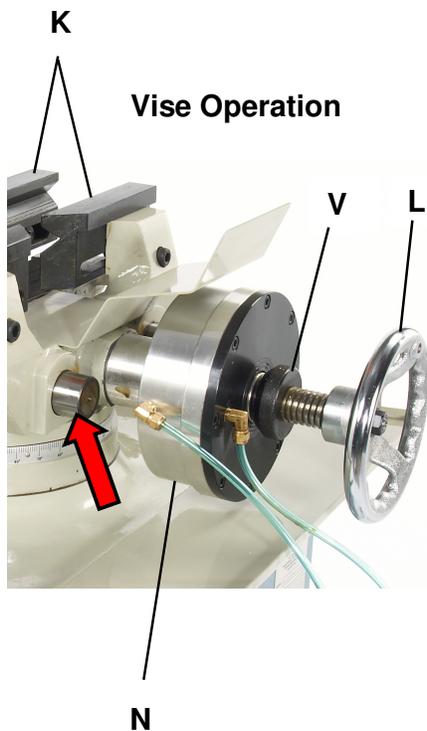
F

M

- Use the miter lock lever (**M**) to release the disk head assembly.
- Rotate the disk head assembly to the correct miter angle.
- Check the miter angle on the angle indicator (**F**) (below the vise).
- Use the miter lock lever (**M**) to lock in the angle.



WARNING Check that the cutting blade clears all parts of the vise assembly before cutting. The blade can strike parts of the assembly (especially during miter cuts) if not properly adjusted.



(With power off and air connected)

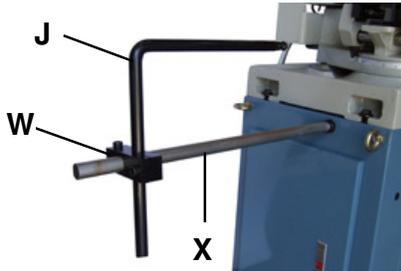
- Use the hand wheel (**L**) to open (**ccw**) and close (**cw**) the vise jaws (**K**) for pieces that vary in width.
- Using the handwheel, load and secure the workpiece.
- After securing the part in the vise, turn the locknut (**V**) (**ccw**) until it is firmly tightened against the air cylinder (**N**).
- Turn main power ON and the vise will open. (This function is on a timer to allow the operator time to grasp the part for removal or to advance the part.)



WARNING Make sure the vise base never opens beyond the travel limits of the slide rails or the assembly may de-rail. (see arrow)



Setting Cut Length



Setting the cut length eliminates measuring duplicate pieces.

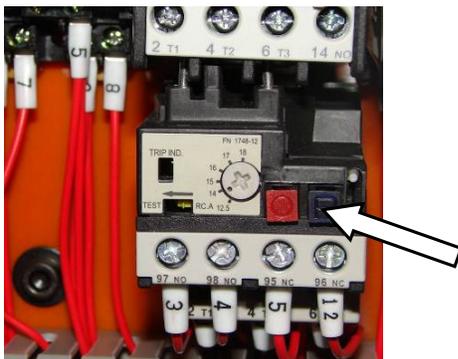
(With main power off)

- Measure and mark the length of material to be cut off.
- With the vise open, load the piece part.
- Line up the cut.
- Manually clamp the piece part.
- Loosen the socket hex bolt at the base of the bar riser (**W**).
- Slide the bar riser (**W**) along the long rod (**X**) so that the tip of stop bar (**J**) touches the end of the piece part.
- Tighten the socket hex bolt at the base of the bar riser .

Using the stop bar

- Cut off the first length from the clamped piece part.
- When the vise opens, slide the piece part forward until it reaches the tip of the stop bar (**J**).
- Proceed with the cutting cycle.

Pinched Saw Blade



If the saw blade gets stuck in the workpiece during a cut cycle the overload switch will trip, shutting off the saw motor and coolant pump motor.

- Turn **OFF** main power disconnect switch located on electrical box door.
- Disconnect air supply and manually raise the cutting head from the workpiece.
- Push the reset button, located in the electrical enclosure (see photo).
- Reconnect air supply.
- Turn on main disconnect switch.
- Reload workpiece and press footswitch to start cut cycle.



Connect utilities to cold saw: Air – 80 psi. (min.) 100 psi. (max.)

Electrical – 220v, 3ph, 60hz

- Set the length of cut (see setting cut length on page 23)

(Ref photos on page 25 for the following)

- With power off, place the workpiece in the vise, and turn the vise hand wheel (**L**) clockwise (**cw**) until the piece is held. Then turn the vise lock nut (**V**) counterclockwise (**ccw**) against the piston for fixing the setting of the vise.
- Turn the main power switch (**Y**) to the **ON** position, and check the green power indicator light (**Z**) to make sure it's on. When the power is on, the vise will open. Remove the workpiece from the vise and turn **OFF** the main power switch.



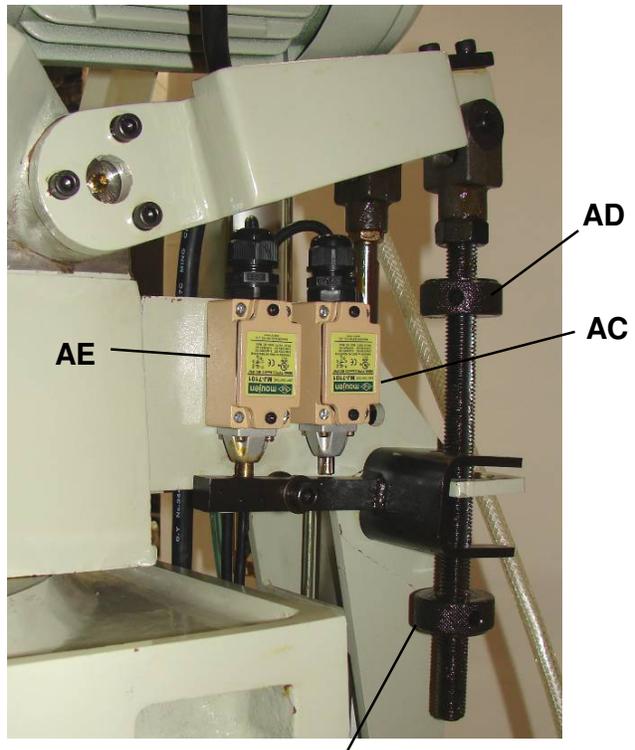
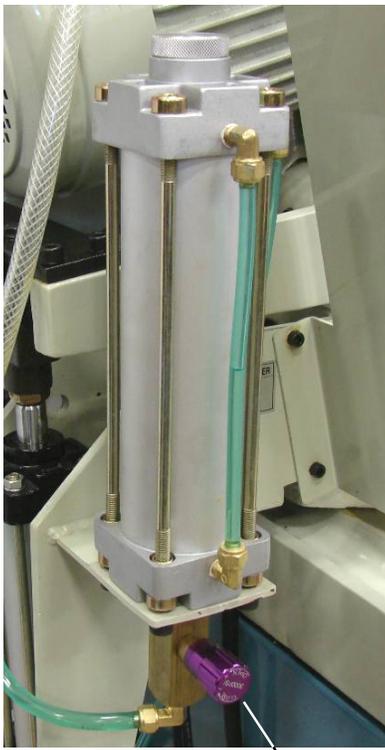
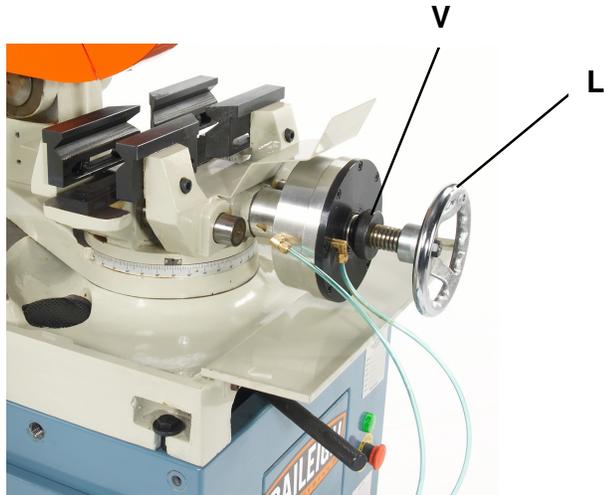
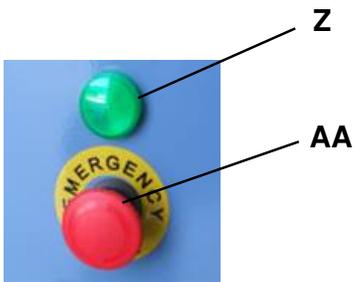
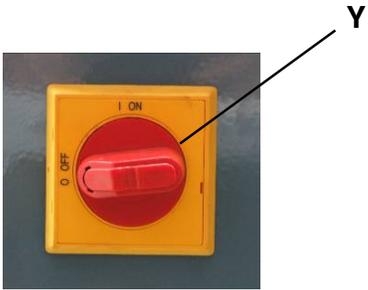
Note: Open flow control valve and disconnect air before lowering saw head manually.

- Lower the saw head by pulling down on the feed handle to proper depth of cut. Turn the lower stroke setting nut (**AB**) until a "KA" sound is heard as the lower limit switch (**AC**) is energized. Return the saw head to the position right before it would begin contact with the workpiece. Turn the upper stroke setting nut (**AD**) until a "KA" sound is heard as the upper stroke limit switch (**AE**) is energized to finish setting your depth of cut.
- Turn **ON** the main power switch. Turn the saw head flow control valve (**AF**) clockwise (**cw**) until it is closed. Push on the foot switch. After the work piece has been clamped securely by the vise, slowly open counterclockwise (**ccw**) the flow control valve. Repeat this motion until a desired feed speed of the saw head is obtained.
- Turn on the coolant switch lever (**P**) (see photo on page 14) then make a trial cut. (See procedure below)

Cutting operation cycle

- Hold workpiece against the back jaw.
- Step on footswitch to start the cutting cycle.
- Sawblade motor and coolant pump motor will start.
- Vise cylinder moves forward to clamp the workpiece..
- The air over hydraulic cylinder lowers saw blade into workpiece. As soon as the lower limit switch is energized the saw head will retract.
- The saw blade motor and coolant pump motor shut off.
- The front jaw retracts, after a preset time delay, releasing the part for removal or manually advancing to the adjustable stop for next cut.
- When the saw head reaches the up position, it energizes the upper limit switch which resets the cut cycle.

The Baileigh Industrial cold saw is now ready to start work. For quality cutting and machine performance always use the correct type of saw blade.





LUBRICATION AND MAINTENANCE

**MAINTENANCE SHOULD BE PERFORMED ON A REGULAR BASIS
BY QUALIFIED PERSONNEL**



CAUTION: Always follow proper safety precautions when working around machinery.

Daily Maintenance

- Do a general cleaning by removing dust and metal chips from the machine.
- Top off the coolant tank. (80% of full tank capacity)
- Clean both filter screens located on the saw basin as often as necessary.
- Inspect the disk/saw blade for wear.
- Check that the blade guard, shields, and emergency stop are in good working order.
- Inspect air and hydraulic lines for leaks or damage.

Weekly Maintenance

- Check the oil fill window. It is located on the side of the saw head and should be at least half full at all times.
- Thoroughly clean the machine including the coolant tank.
- Clean and grease the vise screw and sliding surfaces.
- Clean the guard housing for the disk/saw blade.
- Sharpen the saw teeth.

Monthly Maintenance

- Check that all screws on the motor, the pump, the vise jaws, and the guard are tight and secure.
- Check that the saw guard is operating properly.
- There is a grease fitting (**AG**) on the side of the saw head joint for lubricating the saw head joint. Using a grease gun inject grease through this fitting. (See photo-page 27)
- Check the gear backlash. After the machine has been in use for a long period, the gears inside the saw head may become worn slightly, resulting in a clearance between the gears. Before checking the gear backlash be sure to turn off and lock out main power source to the saw. Checking the gear backlash can be done by shifting the saw blade up and down. If a chattering occurs then the backlash needs to be adjusted. To do so, loosen the backlash adjustment fix nut and turn the backlash adjustment screw (**AH**) until the chatter is gone. Tighten up the fix nut after adjustment is completed.





LUBRICATION AND MAINTENANCE (cont.)

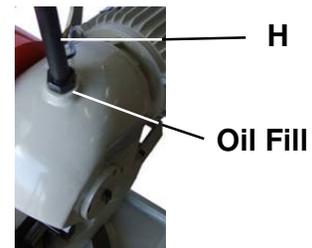
Replacing Oil in the Gearbox

1st Time: After initial operation of 30 hours

2nd Time: After 1 month of operation

3rd Time: Every 3 months of operation

To change oil you need to remove the oil release plug (**AI**) and the feed handle (**H**) located on the top of the gearbox. (Have a drain pan or container handy to collect the used oil). Be sure the gearbox is completely empty before putting the oil release plug back in. Fill the gearbox with fresh oil until it reaches the center of the oil sight window.



Oil Disposal

Used oil products must be disposed of in a proper manner following your local regulations.



LUBRICATION AND MAINTENANCE (cont.)

Accessing and Cleaning the Coolant System

- Open front door to access coolant system.
- Pull out the coolant tank as far as possible without damaging electrical cable or hoses.
- Siphon out old coolant
- Wash out the dirt and debris.
- Re-fill tank with coolant solution.
- Replace tank in reverse order.



Oils for Lubricating Coolant

Any 10:1 (water to coolant) solution will work, however we recommend **Baileigh B-Cool** 20:1 (water to coolant) biodegradable metal cutting fluid. It has excellent cooling and heat transfer characteristics, is non-flammable, and extends blade and machine life. Each gallon of concentrate makes 21 gallons of coolant .

Storing Machine for Extended Period of Time

If the Cold Saw is to be inactive for a long period of time, prepare the machine as follows:

- Detach the plug from the electrical supply panel.
- Empty and clean the coolant tank.
- Clean and grease the machine.
- Drain any water from the FRL unit.
- Cover the machine.

Filling air over oil hydraulic cylinder with oil

- Open the oil outlet cap (**AJ**) on the cylinder and fill the cylinder till the level shows halfway up the sight tube as shown by the arrow in the photo.

Inspect weekly, and refill if needed

AJ





Lubrication Oil Table 1

Above 82 °F

(Select from the products below which apply to your Cold Saw)

Brand	Hydraulic Tank Oil	Gear Oil	Slideway Oil
MOBIL	DTE XL 68, DTE 16M	Mobilgear 634,SHC 460	Mobil Vactra Oil No. 4
SHELL	Shell Tellus Oil 68	Shell Omala Oil 460	Shell Tonna Oil T 220
EXXON	Nuto H 68	Spartan EP 460	Febis K220

Brand	Hyd. Cylinder Oil	Air Lube System	Grease Fittings
MOBIL	Mobil DTE 21	Mobil DTE 21	Mobil UX2 EPO
SHELL	Shell Carnea Oil 10	Shell Carnea Oil 10	Aluania Greaser 1
EXXON	Spinesso 10	Spinesso 10	Ronex MP Beacon 2

Lubrication Oil Table 2

Below 82 °F

(Select from the products below which apply to your Cold Saw)

Brand	Hydraulic Tank Oil	Gear Oil	Slideway Oil
MOBIL	DTE XL 46, SHC 525	Mobilgear 630,SHC 220	Mobil Vactra Oil No. 4
SHELL	Shell Tellus Oil 46	Shell Omala Oil 220	Shell Tonna Oil T 220
EXXON	Nuto H 46	Spartan EP 220	Febis K220

Brand	Hyd. Cylinder Oil	Air Lube System	Grease Fittings
MOBIL	Mobil DTE 21	Mobil DTE 21	Mobil UX2 EPO
SHELL	Shell Carnea Oil 10	Shell Carnea Oil 10	Aluania Greaser 1
EXXON	Spinesso 10	Spinesso 10	Ronex MP Beacon 2



CHOOSING A SAW BLADE

To achieve a quality, economical, and efficient saw cut, the following points must be taken into consideration:

- Type of material being cut (ferrous or non ferrous)
- Material hardness and physical dimensions
- Blade descent rate
- Rotational speed of blade
- Blade tooth profile

Choose a tooth pitch that is suitable for the workpiece. Thin walled profiles, including tubes and pipes require close tothing. At least 3-6 teeth should be in contact with the material while cutting. Large solid or transverse sections require widely spaced tothing to allow for greater volume of chips and better tooth penetration. Soft materials such as plastics, light alloys, mild bronze, Teflon, wood, etc., require widely spaced tothing to avoid clogging.

Use the chart on the following page to help select the saw blade suitable for your application.



BLADE SELECTION CHART

Tube Diameter	Wall Thickness	Blade Diameter- Metric (Normal Inch)						
		225 (9")	250 (10")	275 (10-3/4")	300 (12")	315 (12-1/2")	350 (14")	401.0 (16")
1/2"	.030"-.090"	220BW	240BW	280BW	300BW	300BW	320BW	340BW
1/2"	.090"-.150"	200BW	220BW	240BW	280BW	280BW	300BW	320BW
1"	.030"-.060"	220BW	240BW	280BW	300BW	300BW	320BW	340BW
1"	.060"-.090"	220BW	220BW	240BW	280BW	280BW	300BW	320BW
1"	.090"-.150"	180BW	220BW	220BW	240BW	240BW	280BW	300BW
1-1/2"	.030"-.060"	220BW	240BW	260BW	300BW	300BW	320BW	340BW
1-1/2"	.060"-.090"	200BW	220BW	240BW	280BW	280BW	300BW	320BW
1-1/2"	.090"-.150"	180BW	200BW	220BW	240BW	240BW	280BW	300BW
1-1/2"	.150"-.250"	140C	160C	180C	200C	220C	220C	240BW
2"	.030"-.060"	240BW	260BW	280BW	300BW	300BW	320BW	340BW
2"	.060"-.090"	180BW	200BW	220BW	240BW	240BW	280BW	320BW
2"	.090"-.180"	140C	160C	180C	220C	220C	220C	300BW
2"	.180"-.300"	120C	140C	160C	180C	180C	200C	240BW
2"	.300"-.500"	100C	110C	120C	140C	140C	160C	180C
2-1/2"	.030"-.060"	240BW	260BW	280BW	300BW	300BW	320BW	340BW
2-1/2"	.060"-.090"	200BW	220BW	240BW	260BW	260BW	280BW	300BW
2-1/2"	.090"-.150"	180BW	180C	180C	200C	200C	220C	240BW
2-1/2"	.150"-.250"	120C	140C	160C	180C	180C	200C	220C
2-1/2"	.250"-.400"	100C	110C	120C	140C	140C	160C	180C
2-1/2"	.400"-.500"	90C	100C	110C	120C	120C	140C	160C
3"	.030"-.060"			280BW	300BW	300BW	320BW	340BW
3"	.060"-.090"			240BW	260BW	260BW	280BW	300BW
3"	.090"-.150"			180C	200C	200C	220C	240BW
3"	.150"-.250"			160C	180C	180C	200C	220C
3"	.250"-.400"			120C	140C	140C	160C	180C
3"	.400"-.500"			100C	120C	120C	140C	160C
3-1/2"	.030"-.060"				300BW	300BW	320BW	340BW
3-1/2"	.060"-.090"				260BW	260BW	280BW	300BW
3-1/2"	.090"-.150"				200C	200C	220C	240BW
3-1/2"	.150"-.250"				180C	180C	200C	220C
3-1/2"	.250"-.400"				140C	140C	160C	180C
3-1/2"	.400"-.500"				120C	120C	140C	160C

For Stainless Steel: Recommended Teeth X 1.2 approx.

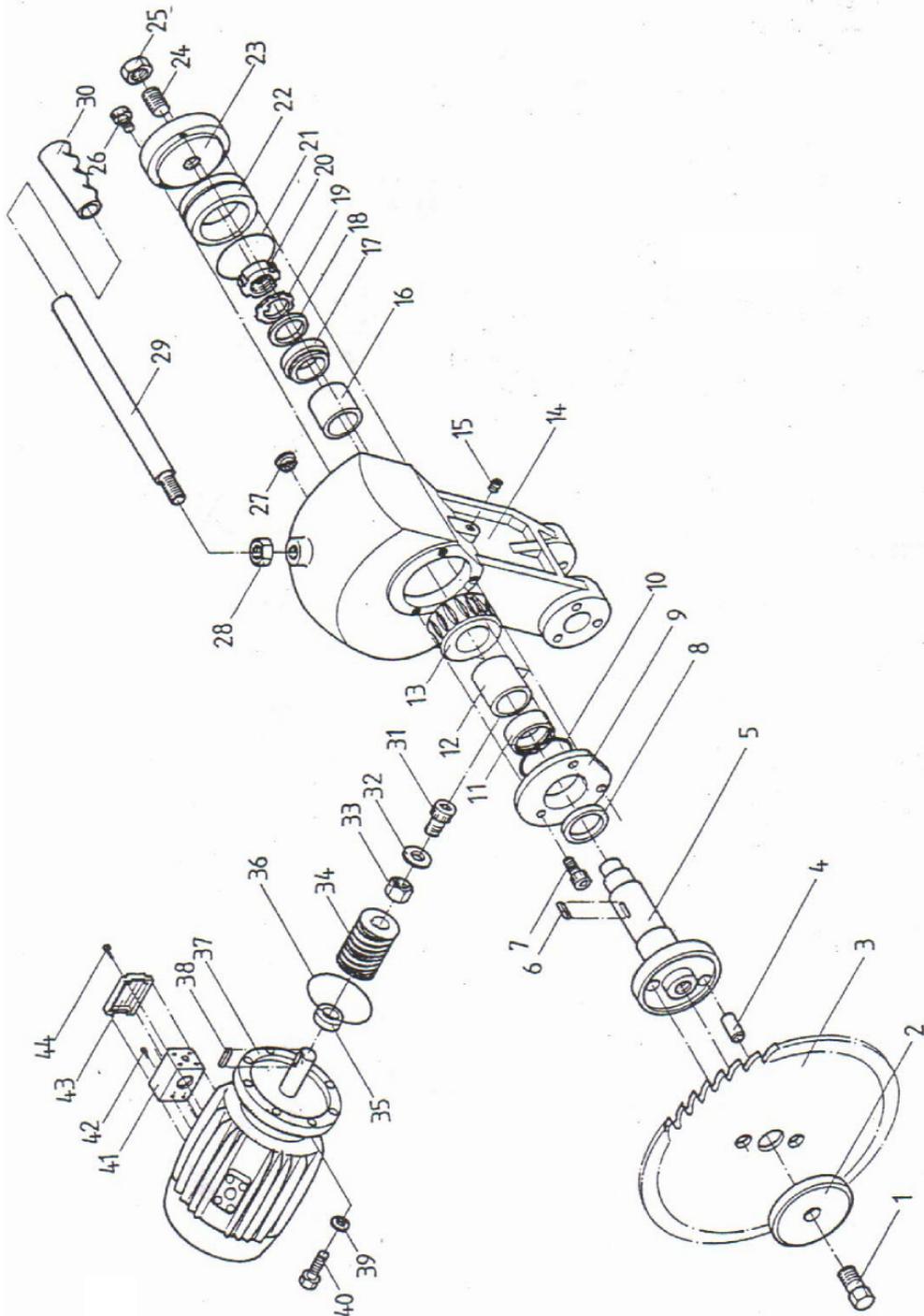
For Non-Ferrous Materials: Recommended Teeth X .75 Approx

SOLID Diameter	Blade Diameter- Metric (Normal Inch)						
	225 (9")	250 (10")	275 (10-3/4")	300 (12")	315 (12-1/2")	350 (14")	401.0 (16")
1/4"-3/4"	180BW	180C	200C	220BW	220BW	280BW	320BW
3/4"-1-1/4"	120C	120C	140C	180C	180C	220BW	240BW
1-1/4"-1-3/4"	100C	100C	120C	140C	140C	180C	200C
1-3/4"-2-1/4"	80C	80C	100C	120C	120C	120C	140C
2-1/4"-2-3/4"	60C	60C	70C	80C	80C	80C	90C
2-3/4"-3-1/2"				60C	60C	60C	80C

Baileigh Industrial offers a wide selection of tooth styles for various cutting applications. Please phone Baileigh Industrial at **(920.684.4990)** or fax to **(920.684.3944)** to have one of our technicians assist you in selecting the proper cold saw blades for your cutting applications.



PARTS IDENTIFICATION DRAWING A





SHEET A

Item	Description	Spec.	Qty
1	Cutter lock bolt	SCM4	1
2	Blade washer	S45C	1
3	Blade		1
4	Pin	S20C	2
5	Spindle	SNCM21	1
6	Key	8x7x32	1
7	Hex screw	M6x20	3
8	Oil seal	42x62x10	2
9	Dustproof cover	FC-20	1
10	“O”- ring	G80	1
11	Bearing	32207J	1
12	Front spacer	SS41	1
13	Worm gear		1
14	Shaft head	FC-25	1
15	Hex plug	PT1/4”	1
16	Rear spacer	S20C	1
17	Bearing	30206J	1
18	Washer	SS41	1
19	Washer	S20Cx30	1
20	Spindle lock nut	S45C	1
21	“O”-ring	G55	1
22	Bearing shield	FC-20	1
23	Bearing cover	FC-20	1
24	Screw bolt	M8x30	1
25	Hex nut	M8x30	1
26	Hex screw	M6x20	3
27	Oil mirror	19Ø	1
28	Hex nut	M24xP1.5	1
29	Knob grip	SS41	1
30	Knob		1
31	Hex screw	M8x30	1
32	Washer		1
33	Hex nut	M20xP1.5	1
34	Worm		1
35	Motor washer	SS41	1
36	“O”-ring	G130	1

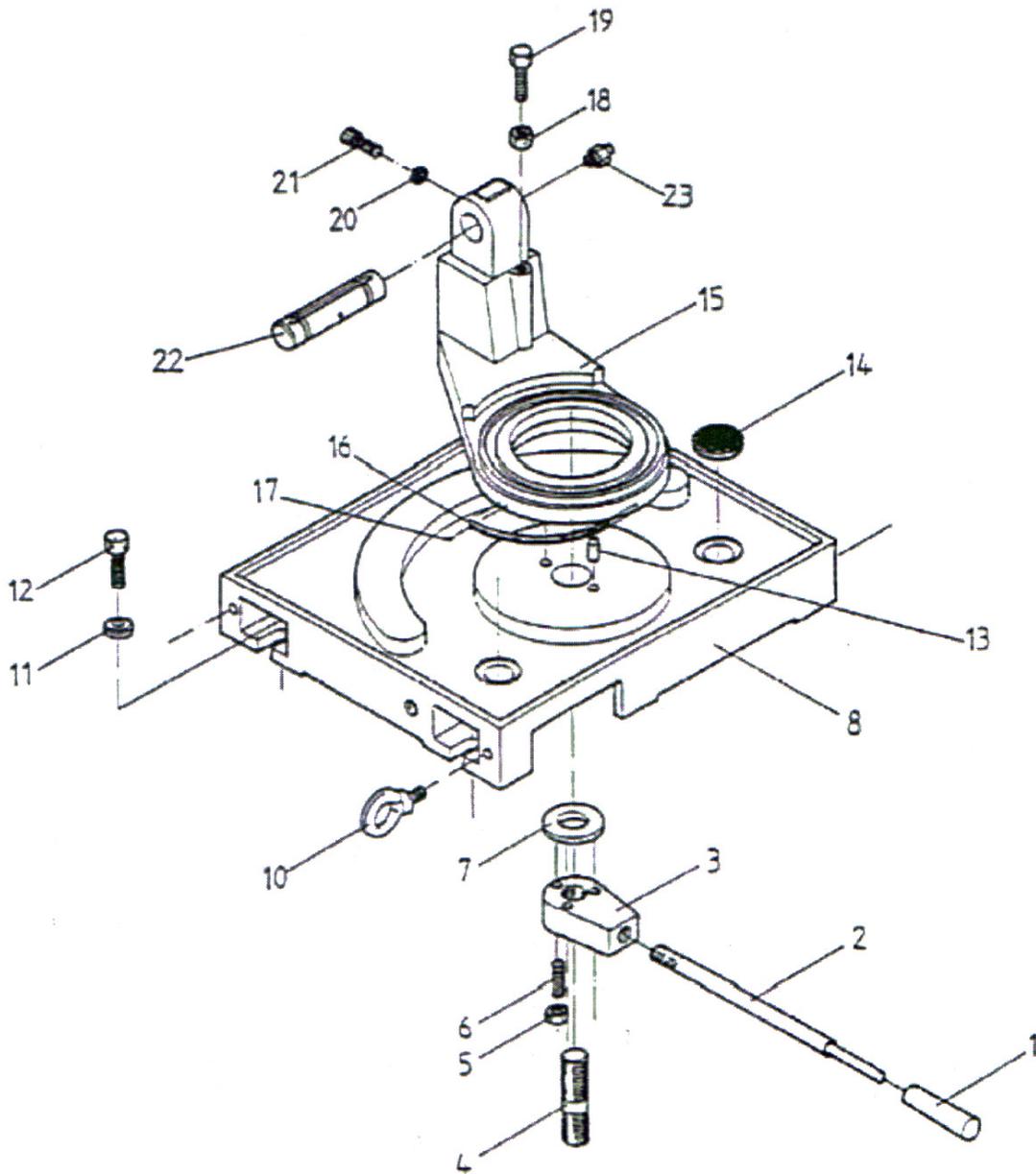


SHEET A (cont.)

Item	Description	Spec.	Qty
37	Motor	2.25 kw	1
38	Motor shaft key		1
39	Washer		4
40	Hex screw		4
41	Electric box	AC	1
42	Hex screw		4
43	Electric box cover	AC	1
44	Hex screw		1
45	Activation button wires		1
46	Blade activation button		1



PARTS IDENTIFICATION DRAWING B



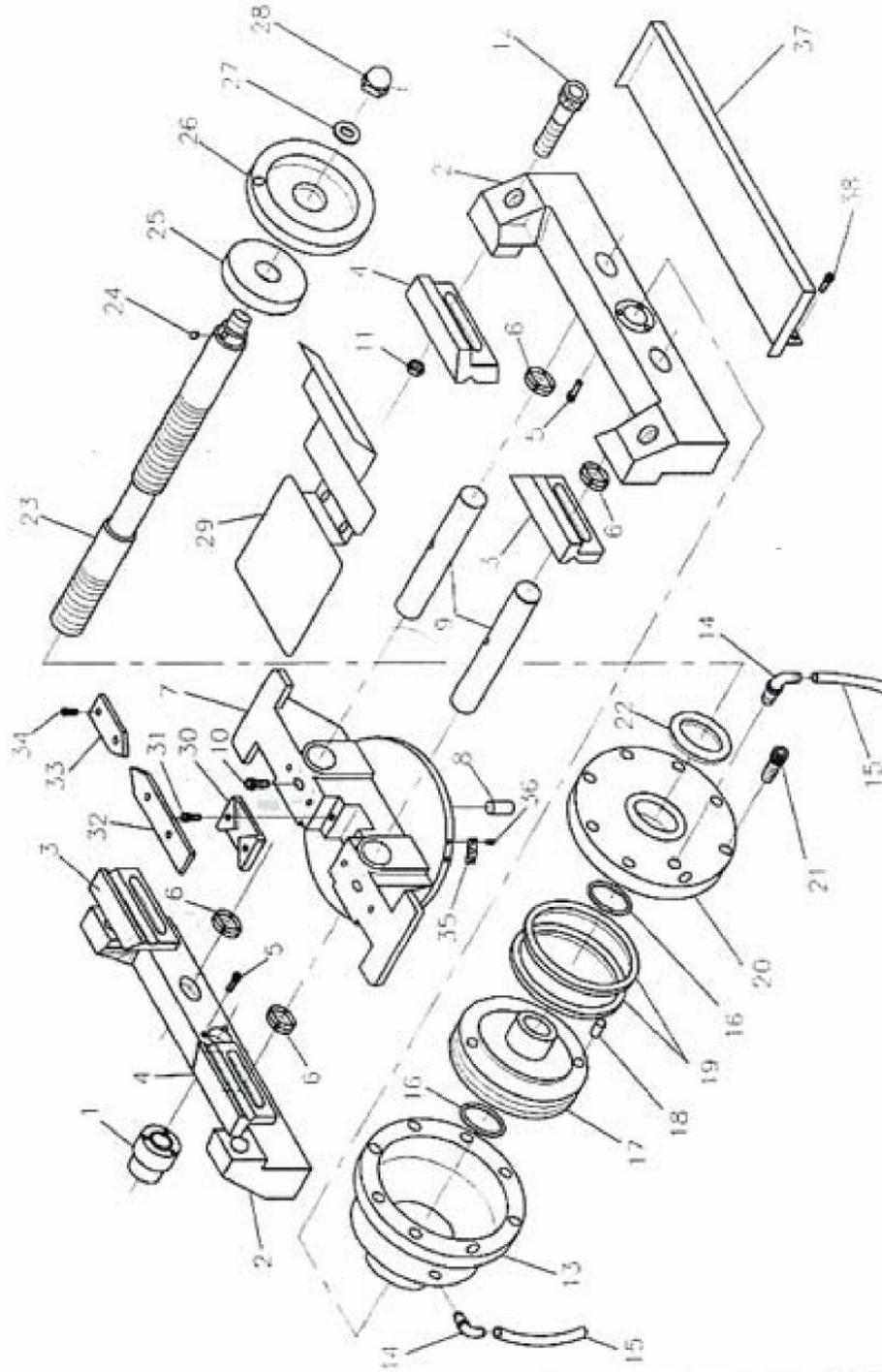


SHEET B

Item	Description	Spec.	Qty
1	Handle		1
2	Lock knob		1
3	Lock screw nut	FC-25	1
4	Lock teeth		1
5	Hex nut		3
6	Screw bolt		3
7	Locating plate	S20C	1
8	Base	FC-25	1
9			
10	Hoisting ring	5/8" UNC	4
11	Washer	32207J	4
12	Front spacer		4
13	Dowel pin		2
14	Oil leakage filter	SPCC	2
15	Rotary block		1
16	Angle panel	.5mm Hrs	1
17	Rivet		3
18	Hex nut		1
19	Hex screw		1
20	Spring washer		1
21	Hex screw		1
22	Link shaft	S45C	1
23	Grease nipple		1



PARTS IDENTIFICATION DRAWING C





SHEET C

Item	Description	Spec.	Qty
1	Screw nut		1
2	Pneumatic Vise	FC-25	2
3	Right clamp jaw	SS-41	2
4	Left clamp jaw	SS-41	2
5	Hex. screw	M6 x 50mm	6
6	Oil seal	30Ø x 40 x 6	4
7	Vise base	FC-25	1
8	Dowel pin	S45C	2
9	Lead screw	S45C	2
10	Hex. screw	M8 x 25mm	2
11	Screw nut	M10	4
12	Hex. screw	M10 x 40mm	4
13	Cylinder	ACIA	1
14	Adapter		2
15	Pu tube		2
16	"O"-ring	G35	2
17	Piston	ACIA	1
18	Piston dowel	S45C	2
19	"O"-ring	P130	2
20	Piston cylinder	SS41	1
21	Hex. screw	M6 x 16mm	8
22	Oil seal	40Ø x 62Ø x 6	1
23	Pneumatic screw	S45C	1
24	Two-head half round key	5 x 5 x 20mm	1
25	Adjusting screw nut	SS41	1
26	Vise hand wheel		
27	Spring washer		
28	Screw nut		
29	Screw splash guard		
30	Pressure packing		
31	Hex. screw		
32	Left washer packing		

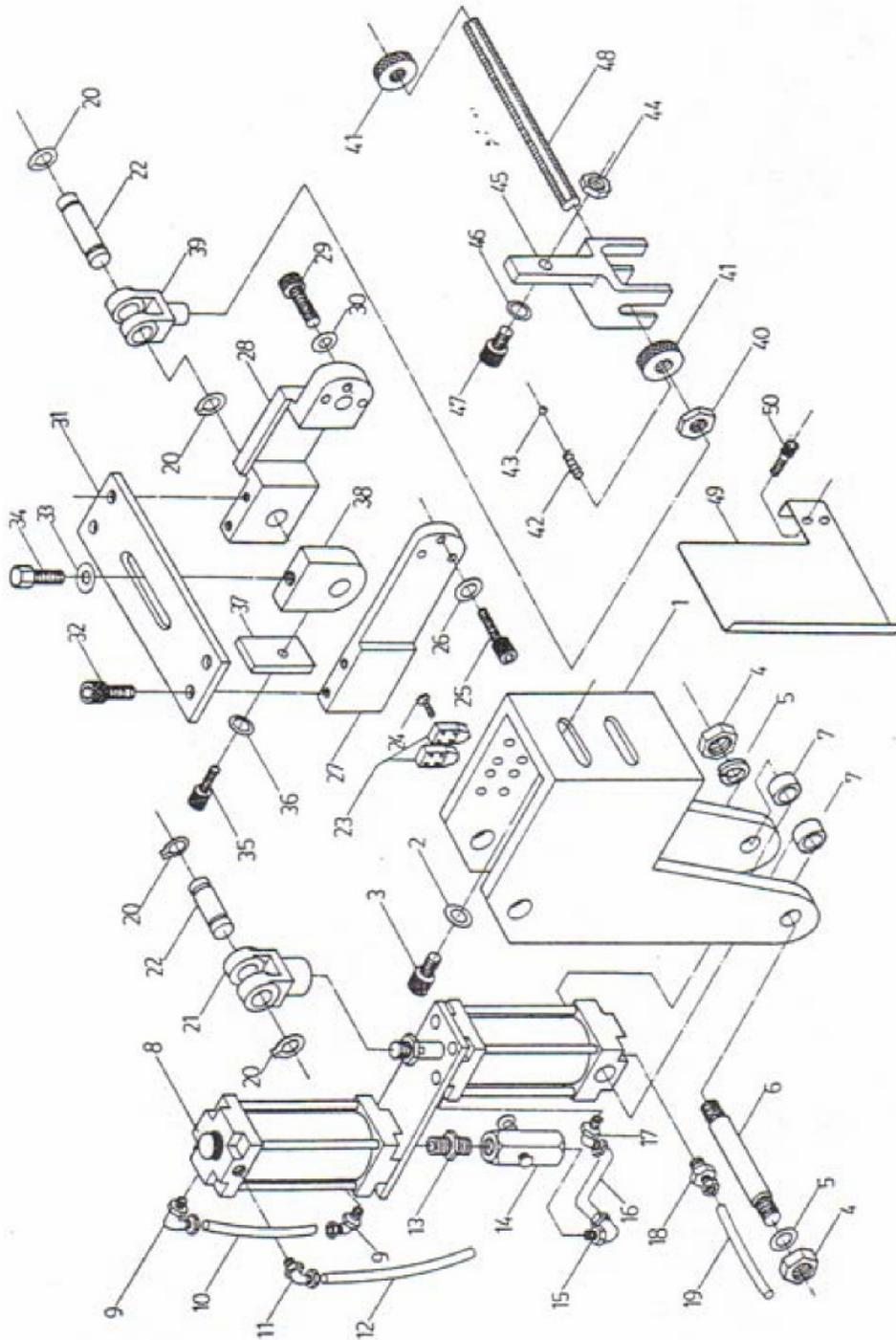


SHEET C (cont.)

Item	Description	Spec.	Qty
33	Right washer packing		
34	Hex. screw		
35	Panel		
36	Rivet		
37	Cylinder splash guard		
38	Hex. screw		



PARTS IDENTIFICATION DRAWING D





SHEET D

Item	Description	Spec.	Qty
1	Bracket	SS41	1
2	Washer	10Ø	2
3	Hex. screw	M10x20	2
4	Hex. nut	M12xP1.75	2
5	Spring washer	12Ø	2
6	Bolt	SS41	1
7	Washer	SS41	7
8	Cylinder combination		1
9	90° elbow		2
10	Plastic tube		1
11	90° elbow		1
12	Plastic tube		1
13	Air connector		1
14	Flow control valve		1
15	90° Elbow		1
16	Plastic tube		1
17	90° elbow		1
18	Air connector		1
19	Plastic tube		1
20	C circlip	10Ø	2
21	Cylinder clevis	FC-20	1
22	Pin		1
23	Limit switch		2
24	Screw bolt	M4	8
25	Screw bolt	M8	3
26	Spring washer	8Ø	3
27	Right cover plate	FC-20	1
28	Left cover plate	FC-25	1
29	Hex. screw	M8x25	3
30	Spring washer	8Ø	3
31	Coupling plate	SS41	1
32	Hex. screw	M8x20	4

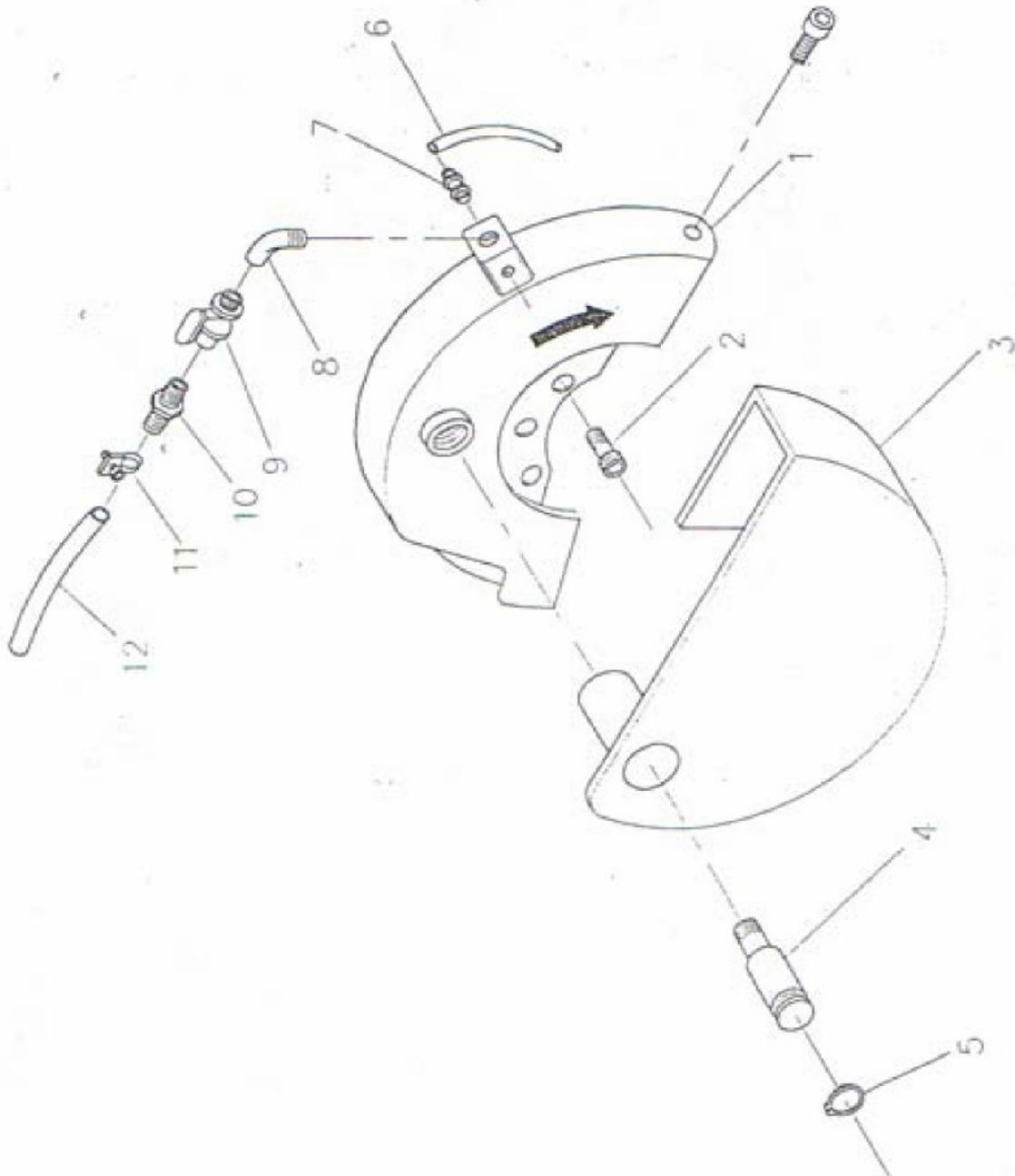


SHEET D (cont.)

Item	Description	Spec.	Qty
33	Spring washer	8Ø	1
34	Hex. screw	M8x25	1
35	Hex. screw	M8x16	1
36	Spring washer	8Ø	1
37	Cylinder holding block	SS41	1
38	Cylinder holder	SS41	1
39	Cylinder clevis	FC-20	1
40	Hex. nut	M20xP2.5	1
41	Adjustment nut	SS41	2
42	Spring		2
43	Steel ball	5/16	2
44	Hex. nut	M8	1
45	Micro switch brake seat		1
46	Spring washer	8Ø	1
47	Hex. screw		1
48	Cutter cover screw	S20C	1
49	Chip guard	SS41	1
50	Hex. socket head screw	M6x16	2



PARTS IDENTIFICATION DRAWING E



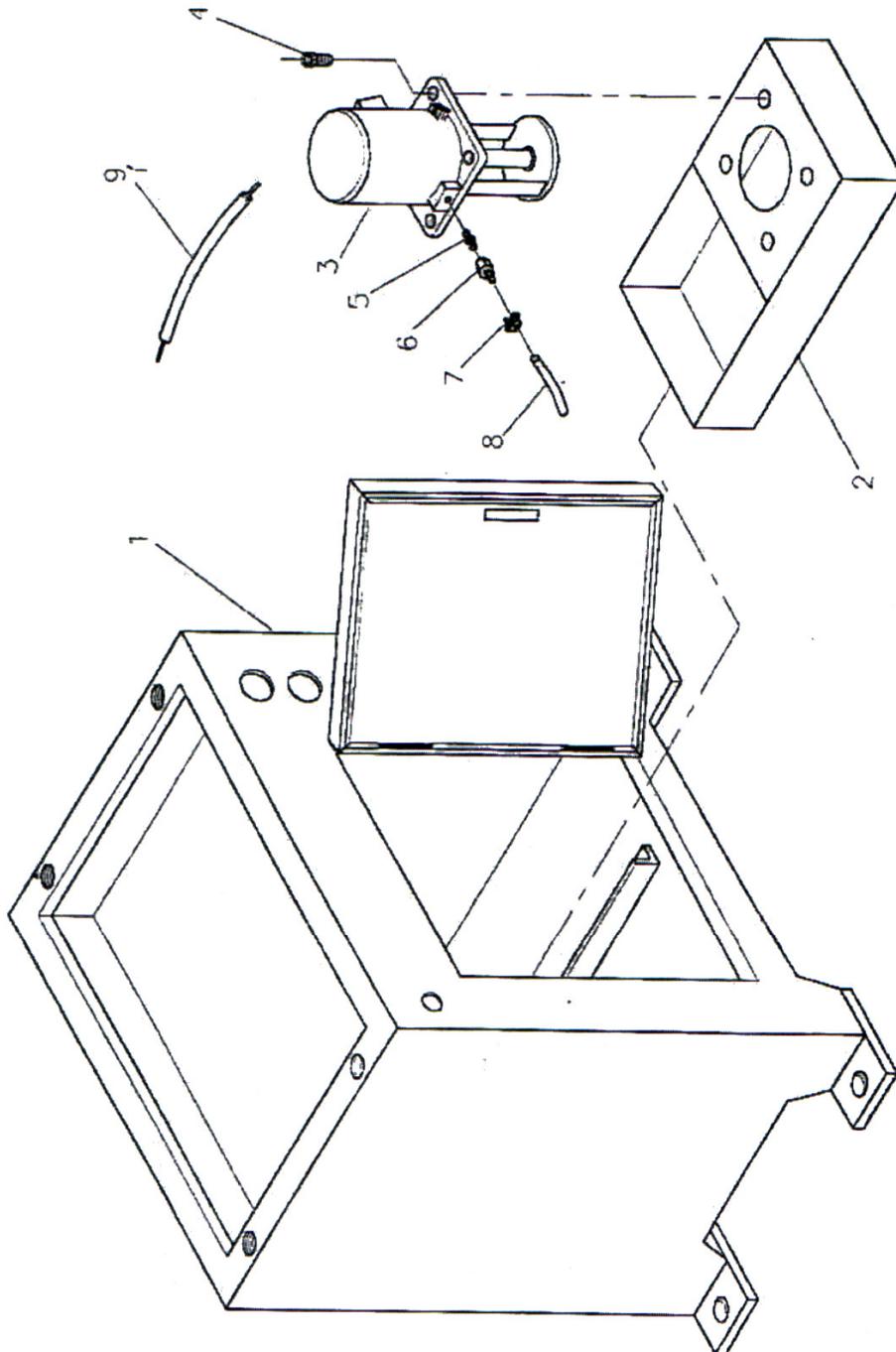


SHEET E

Item	Description	Spec.	Qty
1	Sawblade guard	AC	1
2	Hex. screw		3
3	Blade movable guard cover		1
4	Rock arm shaft	S45C	1
5	C circlip		1
6	Flexible plastic pipe		2
7	Connector (brass)		2
8	Connector (brass)		2
9	Coolant valve (brass)		1
10	Rod		1
11	Clamp		1
12	Hose		1



PARTS IDENTIFICATION DRAWING F



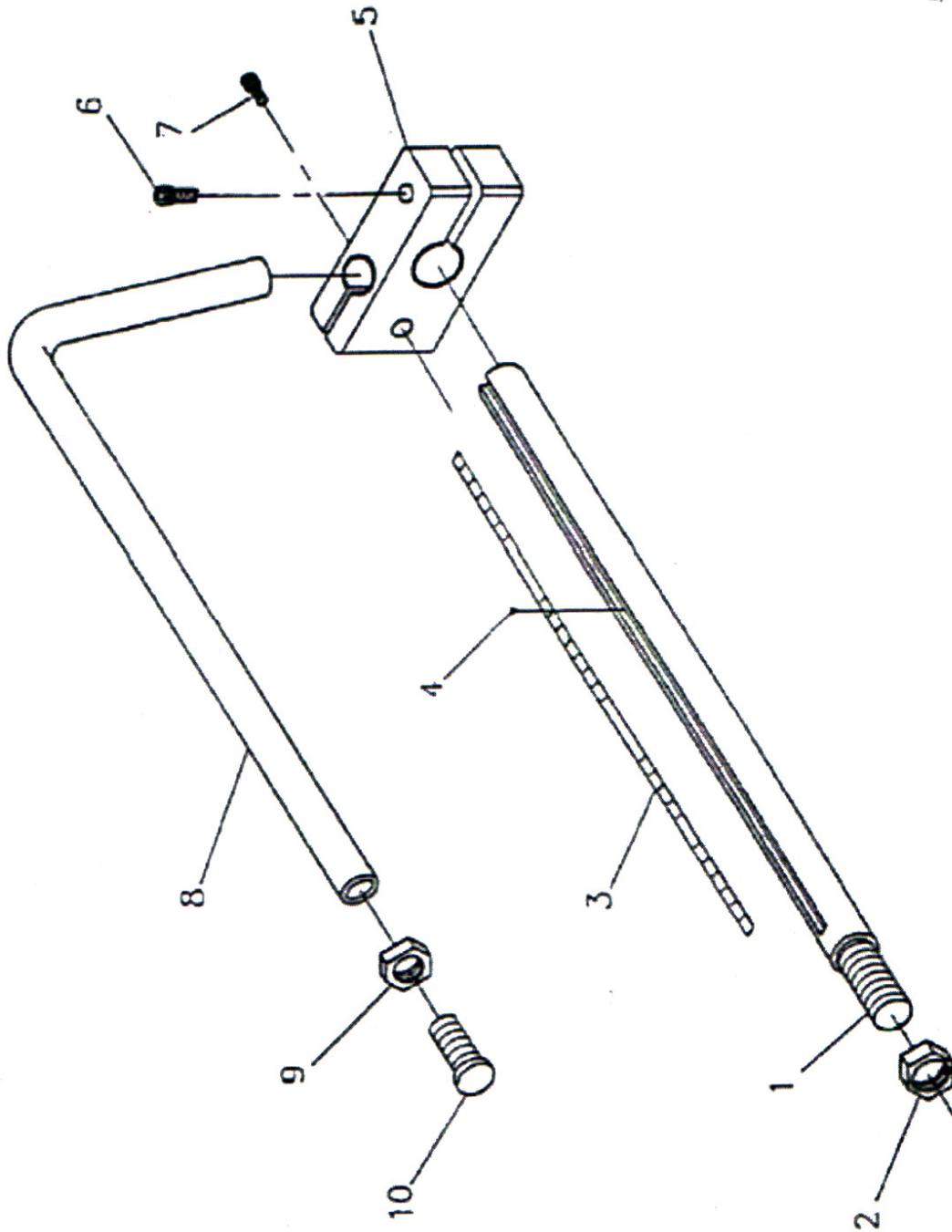


SHEET F

Item	Description	Spec.	Qty
1	Frame		1
2	Coolant tank		1
3	Coolant pump		1
4	Hex. socket hand screw		4
5	Tube connector		1
6	Tube connector		1
7	Hose clamp		3
8	Hose 3/8"		1
9	Power wire		1



PARTS IDENTIFICATION DRAWING G



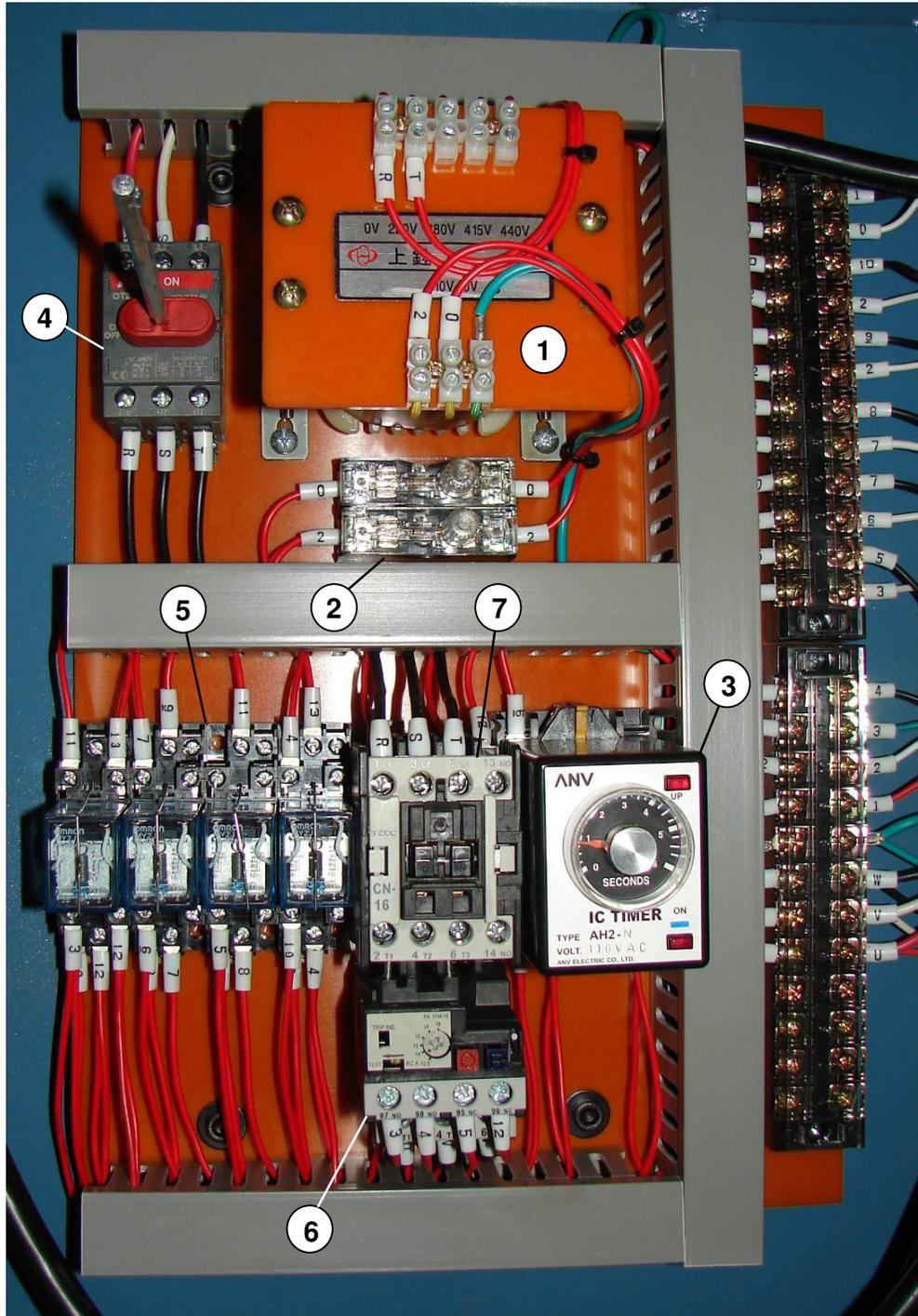


SHEET G

Item	Description	Spec.	Qty
1	Rule gauge shaft	S20C	1
2	Hex. Nut	M20xP2.5	1
3	Rule gauge		1
4	Rivet	M2	4
5	Stopper arm	FC20	1
6	Hex. Screw	M6x25	1
7	Hex. Screw	M10x45	1
8	Stopper	S20C	1
9	Hex. Nut	M10xP1.5	1
10	Hex. Bolt	M10x35	1



ELECTRICAL PARTS LAYOUT

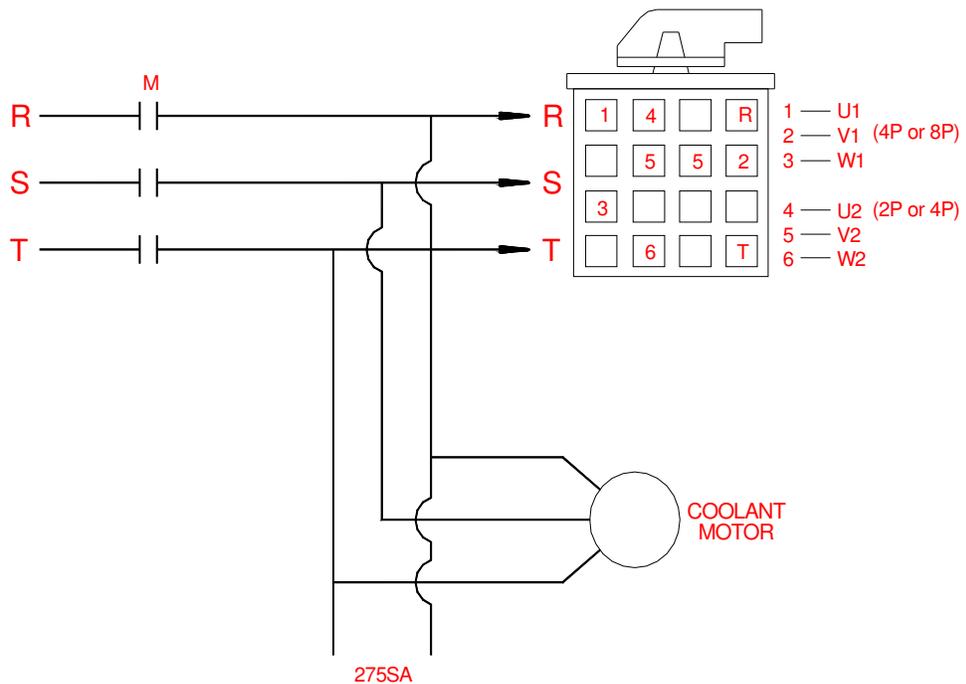




ELECTRICAL PARTS CALLOUT

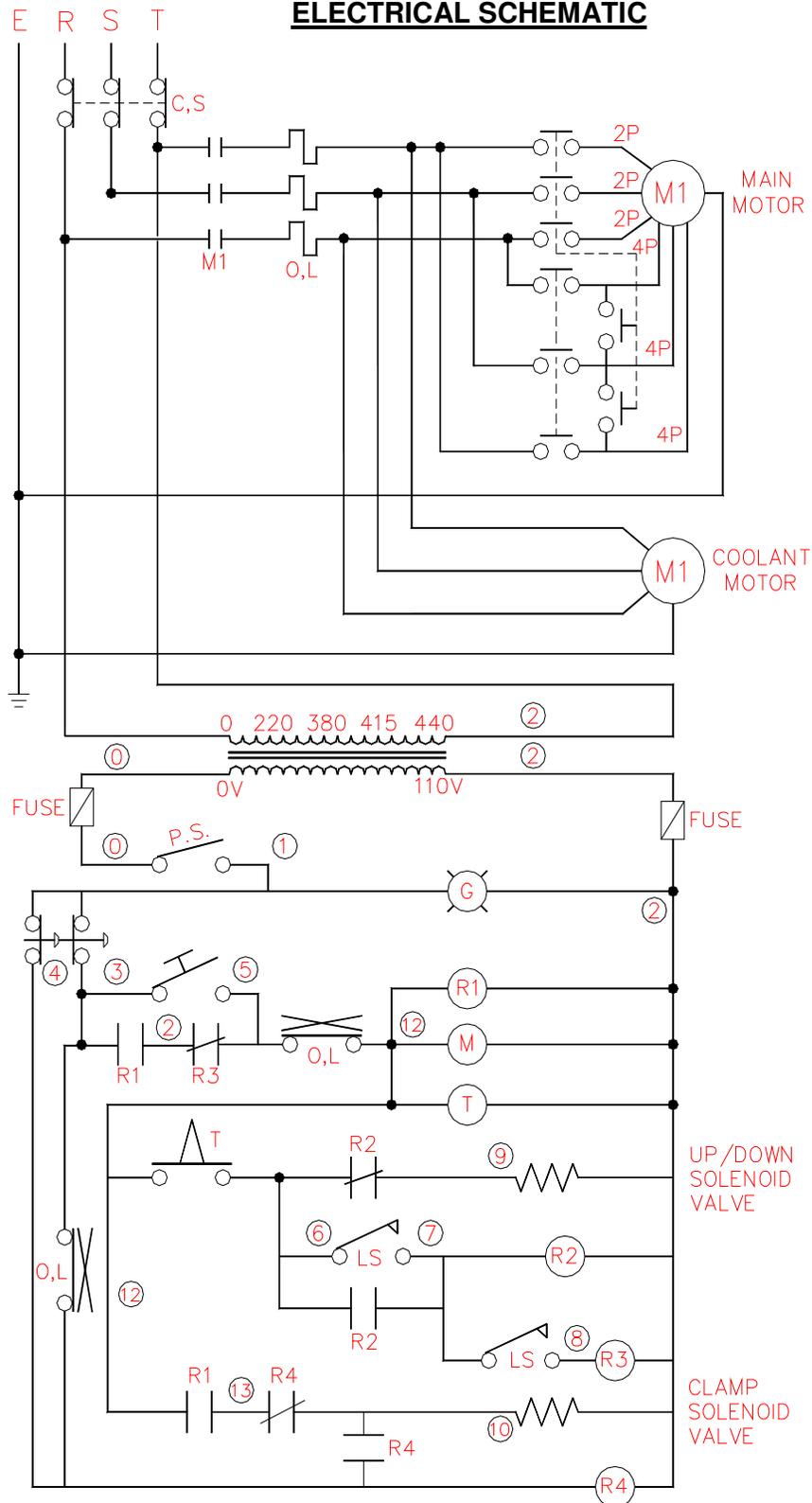
Item	Description	Spec.	Qty
1	Transformer		1
2	Fuse socket and fuse	10A	2
3	Omron timer	STP-N-110V 5S	1
4	Disconnect switch		1
5	Relay		4
6	Overload		1
7	Electromagnetic contactor		1

ELECTRICAL SCHEMATIC



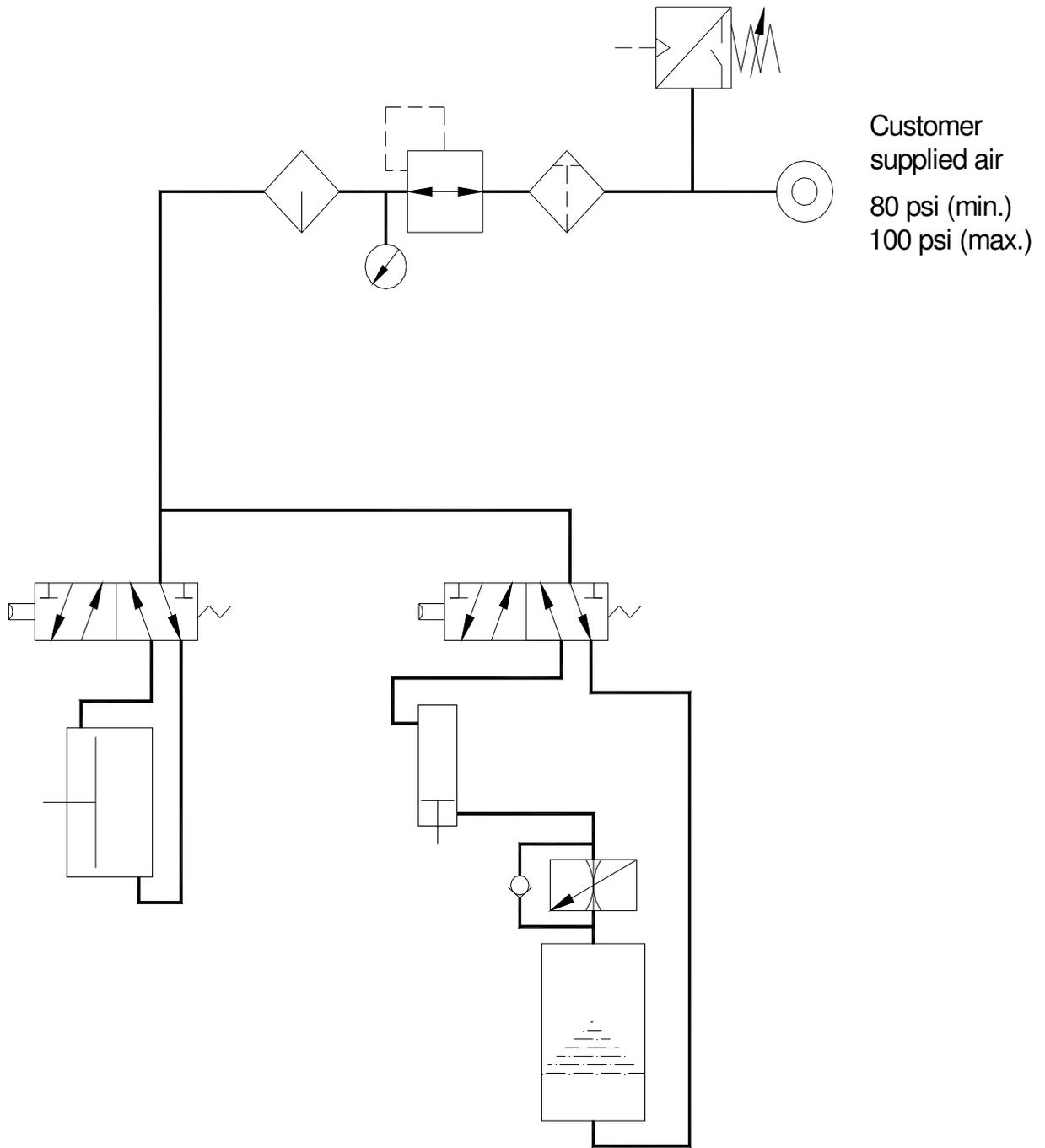


ELECTRICAL SCHEMATIC





PNEUMATIC / HYDRAULIC CIRCUIT DIAGRAM





TROUBLESHOOTING



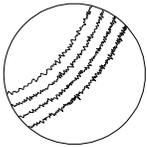
WARNING

Disconnect the machine from power source before troubleshooting.

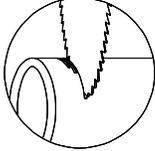
Blade and cut diagnosis

FAULT	PROBABLE CAUSE	REMEDY
<p>TOOTH BREAKAGE</p> 	<p>Too fast advance</p> <p>Wrong cutting speed</p> <p>Wrong tooth pitch</p> <p>Low quality disk</p> <p>Ineffective gripping of the part in the vise.</p> <p>Previously broken tooth left in the cut.</p> <p>Cutting resumed on a groove made previously.</p> <p>Insufficient lubricating coolant or wrong coolant.</p> <p>Sticky accumulation of material on the disk.</p>	<p>Decrease advance, exerting less cutting pressure.</p> <p>Change disk speed and/or diameter.</p> <p>Choose a suitable disk.</p> <p>Use a better quality disk.</p> <p>Check the gripping of the part.</p> <p>Accurately remove all the parts left in.</p> <p>Make the cut elsewhere, turning the part.</p> <p>Check the level of the liquid in the tank. Increase the flow of lubricating coolant, checking that the hole and the liquid outlet pipe are not blocked.</p> <p>Check the blend of lubricating coolant and choose a better quality disk.</p>
<p>PREMATURE DISK WEAR</p> 	<p>Wrong running in of the disk .</p> <p>Wrong cutting speed.</p> <p>Unsuitable tooth profile.</p> <p>Wrong tooth pitch.</p> <p>Low quality disk.</p> <p>Insufficient lubricating refrigerant.</p>	<p>When cutting for the first time run in the tool, making a series of cuts at a low advance speed, spraying the cutting area with lubricating coolant.</p> <p>Change disk speed and / or diameter.</p> <p>Choose a suitable disk.</p> <p>Choose a suitable disk.</p> <p>Use a better quality disk.</p> <p>Check the level of the liquid in the tank. Increase the flow of lubricating coolant, checking that the hole and the liquid outlet pipe are not blocked.</p>

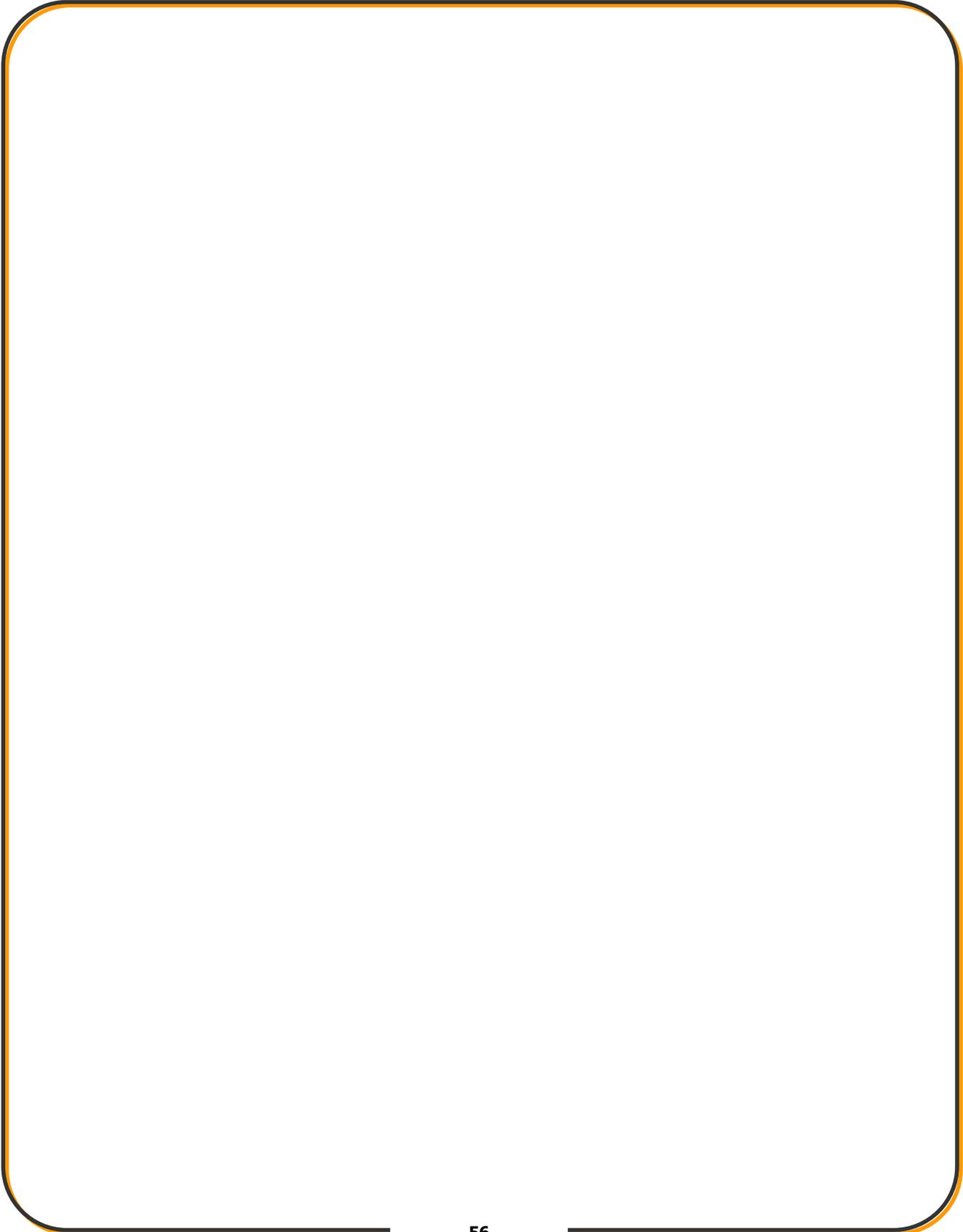


FAULT	PROBABLE CAUSE	REMEDY
<p>CHIPPED DISK</p> 	<p>Hardness, shape or flaws in the material</p> <p>Wrong cutting speed.</p> <p>Wrong tooth pitch.</p> <p>Vibrations</p> <p>Disk incorrectly sharpened.</p> <p>Low quality disk.</p> <p>Incorrect emulsion of the lubricating coolant</p>	<p>Reduce the cutting pressure and/or the advance.</p> <p>Change disk speed and/or diameter.</p> <p>Choose a suitable disk.</p> <p>Check gripping of the part.</p> <p>Replace the disk with one that is more suitable and correctly sharpened.</p> <p>Use a better quality disk.</p> <p>Check the percentage of water and oil in the emulsion.</p>
<p>DISK VIBRATION</p> 	<p>Choose a suitable disk.</p> <p>Choose a suitable disk.</p> <p>Check the gripping of the part.</p> <p>Abide by the instructions.</p> <p>Decrease the disk diameter, adapting it to the dimensions of the part to be cut.,</p>	
<p>RIDGES ON THE CUTTING SURFACE</p> 	<p>Ineffective gripping of the part in the vise.</p> <p>Too fast advance.</p> <p>Disk teeth are worn.</p> <p>Insufficient lubricating coolant.</p> <p>Toothing does not unload shavings well.</p>	<p>Check the gripping of the part.</p> <p>Decrease advance, exerting less cutting pressure.</p> <p>Sharpen the tool.</p> <p>Check the level of the liquid in the tank. Increase the flow of lubricating coolant, checking that the hole and the liquid outlet pipe are not blocked.</p> <p>Choose a blade with a larger tooth pitch that allows better unloading of shavings and that holds more lubricating coolant.</p>



FAULT	PROBABLE CAUSE	REMEDY
CUT OFF THE STRAIGHT 	<p>Too fast advance.</p> <p>Ineffective gripping of the part in the vise.</p> <p>Disk head off the straight.</p> <p>Disk sides differently sharpened.</p> <p>Dirt on the gripping device.</p>	<p>Decrease advance, exerting less cutting pressure.</p> <p>Check the gripping of the part which may be moving sideways.</p> <p>Adjust the head.</p> <p>Choose proper tool quality, type, and construction characteristics.</p> <p>Carefully clean the laying and contact surfaces.</p>
BLADE STICKS IN THE CUT 	<p>Too fast advance.</p> <p>Low cutting speed.</p> <p>Wrong tooth pitch.</p> <p>Sticky accumulation of material on the disk.</p> <p>Insufficient lubricating refrigerant.</p>	<p>Decrease advance, exerting less cutting pressure.</p> <p>Increase speed.</p> <p>Choose a suitable disk.</p> <p>Check the blend of lubricating coolant and choose a better quality disk.</p> <p>Check the level of the liquid in the tank. Increase the flow of lubricating coolant, checking that the hole and the liquid outlet pipe are not blocked.</p>

FAULT	PROBABLE CAUSE	REMEDY
MACHINE SHUTS DOWN	<p>Pressure switch shuts down machine when pressure drops below 50 psi.</p> <p>Electrical source interrupted.</p>	<p>Run machine at 80 – 100 psi.</p> <p>Have checked by qualified electrician.</p>





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PLEASE FILL OUT AND FAX OR RETURN IN SELF ADDRESSED ENVELOPE.

COMPANY NAME: _____

ADDRESS: _____

TELEPHONE: _____

CONTACT NAME: _____

MACHINE SERIAL NUMBER: _____

A COPY OF THE OPERATORS MANUAL AND WARRANTY HAS BEEN RECEIVED BY:

Signature

Date