You have downloaded a manual for our

MODEL CPO-350-NF SAW

Please read this Manual

before operating this saw!!

NOTE: Saw shown in above picture has power vise and power down-feed options.

Scotchman®

Metal Fabricating Solutions

www.scotchman.com

MODEL

CPO-350-NF-5HP

COLD SAW

S/N B2220NF & AFTER

FEBRUARY 2024

SCOTCHMAN INDS. - 180 E US HWY 14 - PO BOX 850 - PHILIP, SD 57567 Phone: 1-800-843-8844

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1.0 INTRODUCTION

The CPO 350-NF Cold Saw is a high speed saw designed to cut solids, tubes, flats and other profiles in grades of nonferrous material that range from aluminum, brass, copper, synthetics and extrusions.

Cold sawing is a process similar to a milling process. In most cases, this, combined with the self centering vise feature, gives a finished cut that does not require any secondary machining or de-burring.

The high spindle speeds of this saw make it ideal for extrusions with varying cross section thicknesses.

Proper material clamping and a good quality coolant are also important.

Cold sawing has several advantages over band saws and abrasive saws. Besides the mill quality cut, cold saws have the ability to generate faster cutoff times than band saws.

There are no sparks and excessive noises that are associated with abrasive cutoff saws.

The self centering vise allows for easy changeover to special clamping jaws, for profiles and extrusions. Having two spindle speeds enables the user to cut a wide range of materials.

By adding the power vise and power down feed options, the saw can be converted to a semi-automatic machine at a very reasonable price.

2.0 SAFETY PRECAUTIONS

1. **Any individual operating this machine must be qualified, responsible and well instructed.**

➲ **THIS MANUAL IS NOT INTENDED TO TEACH UNTRAINED PERSONNEL HOW TO OPERATE EQUIPMENT.**

2. **NEVER operate this machine with the guard disconnected or removed.**

⌦ **CAUTION: THIS MACHINE IS DESIGNED FOR NONFERROUS MATERIAL ONLY!! NEVER ATTEMPT TO CUT ANY TYPE OF FERROUS MATERIAL. CUTTING FERROUS MATERIALS WILL CAUSE SERIOUS DAMAGE TO THE MACHINE AND POSSIBLE INJURY TO THE OPERATOR.**

3. **Wear eye protection, at all times, when operating or observing this machine in operation.**

4. **Do not wear loose fitting clothing, gloves or jewelry when operating this machine.**

5. **All electrical connections shall be made by a qualified electrician. This machine must be grounded in accordance with the National Electric Code.**

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6. **Disconnect the machine from the power source before performing maintenance or changing blades.**

7. **Practice good housekeeping. Keep the area around the machine clean and dry.**

8. **When sawing, always support long pieces and make sure that the material is properly clamped.**

9. **Keep the guard, as well as all other parts of the saw, in good working condition. Replace worn parts promptly.**

10. **Do not alter or modify this machine in any way without written permission from the manufacturer.**

11. **THIS MACHINE IS TOP HEAVY!! It must be anchored to the floor via the holes in the saw base.**

3.0 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.

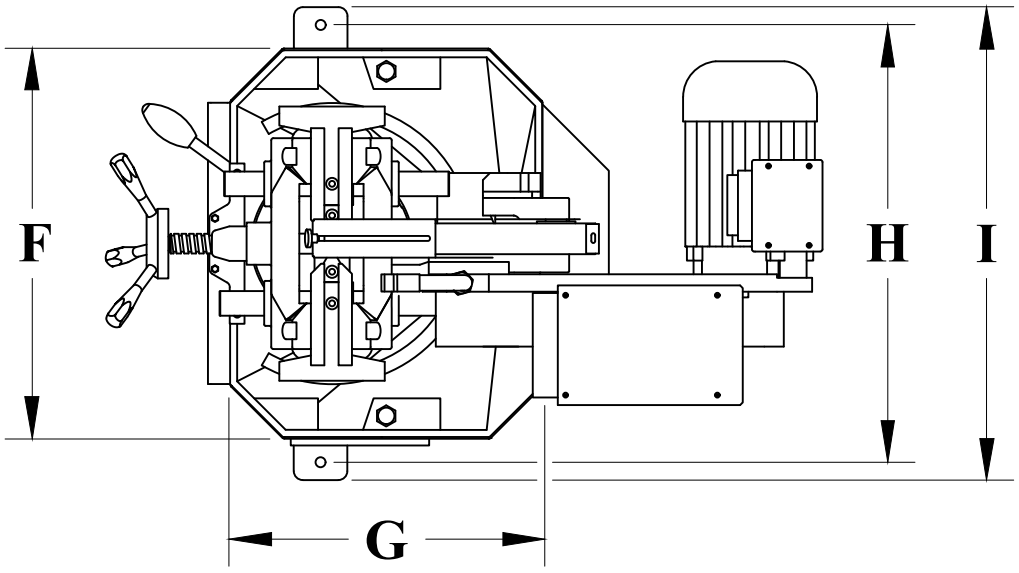
4.0 INSTALLATION AND SET-UP

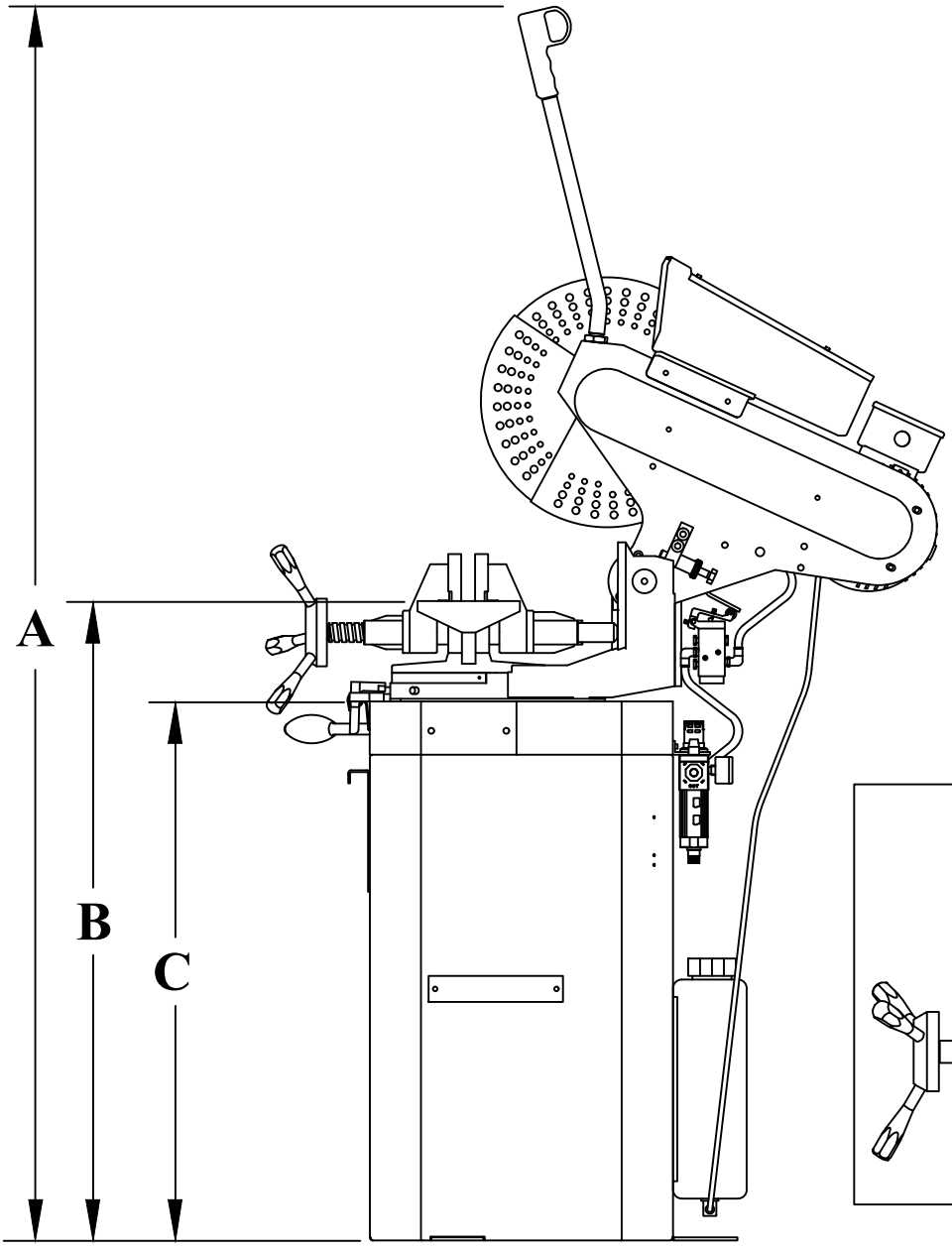
CAUTION: THIS SECTION DISCUSSES INSTALLATION, SET-UP AND START-UP PROCEDURES. PLEASE READ IT THOROUGHLY BEFORE OPERATING THIS MACHINE. IF YOUR MACHINE IS EQUIPPED WITH EITHER THE POWER VISE OR THE POWER DOWN FEED OPTION, READ ALL SECTIONS CONCERNING THESE OPTIONS BEFORE OPERATING THE SAW.

4.1 PHYSICAL DIMENSIONS

SEE FIGURE 1 ON THE FOLLOWING PAGE.

DIMENSIONS	INCHES	CM
A. HEIGHT	67.5	171.4
B. FLOOR TO VISE BED	36.8	93.47
C. FLOOR TO BASE HEIGHT	31	78.74
D. VISE OPENING	5.5	14
E. VISE DEPTH	2.75	7
F. BASE WIDTH	21.65	55
G. BASE LENGTH	17.48	44.45
H. MOUNTING HOLE CENTERS	24.5	62
I. TOTAL WIDTH	26.2	66
J. WEIGHT	625 LB.	284 KG.





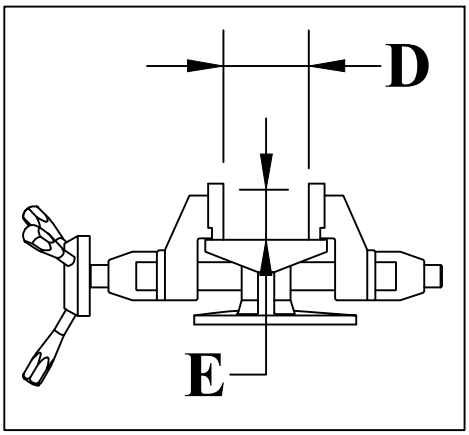


FIGURE 1

4.2 MACHINE MOVING PROCEDURES

SEE FIGURE 2 ON THE FOLLOWING PAGE.

This machine is shipped on a pallet and can be moved to the installation location by means of a fork lift.

CAUTION : THIS MACHINE IS TOP HEAVY AND MUST BE MOVED WITH CARE, ON HARD, FLAT SURFACES ONLY.

All saws are shipped with the head locked in the DOWN position. Before lifting the machine, release the head on manual and power vise saws by cutting the banding strap and allowing it to move to the UP position. On machines equipped with the power down feed option, release the upper stroke control collar and allow the head to move to the UP position. Lift the machine, using the lifting eyelet provided.

Remove the pallet and place the machine in its final location. This machine is top heavy and must be anchored to the floor via the holes provided in the saw base.

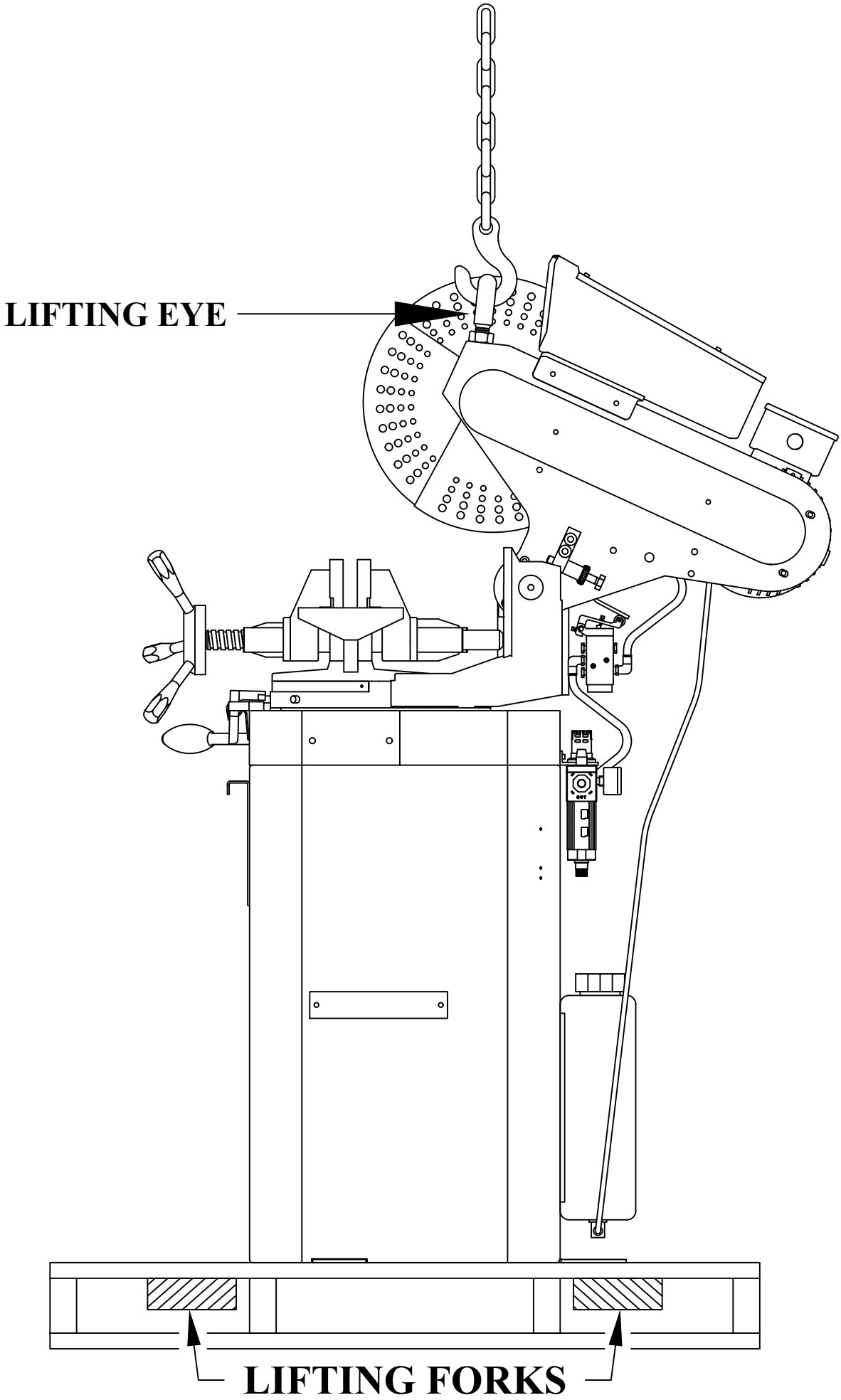


FIGURE 2

4.3 PHYSICAL INSPECTION

Once the machine is located, check it for any possible damage incurred in shipment. Remove the lifting eyelet and install the draw handle.

⌦ **CAUTION: DO NOT USE THE LIFTING EYELET FOR ANY MACHINES OTHER THAN THIS SAW. MAKE SURE THAT THE DRAW HANDLE HAS A JAM NUT ON THE THREADS BEFORE INSTALLING IT ON THE SAW. THE HANDLE IS TOWARD THE OPERATOR WHEN INSTALLED CORRECTLY.**

► **NOTE: THE JAM NUT MUST BE TIGHT TO KEEP THE HANDLE IN PLACE!!**

After the draw handle has been installed on manual and power vice machines, remove the cover from the electrical control box and connect the trigger switch wires. REFER TO FIGURE 3-1.

Remove any other packing material and draw the saw head to its DOWN position to make sure that the guard opens properly. The guard should close completely when the head is up and open freely as the head travels down.

If the guard is not functioning properly, REFER TO SECTION 4.7 FOR THE MANUAL MACHINES OR SECTION 7.8 FOR MACHINES EQUIPPED WITH THE POWER DOWN FEED OPTION.

If your saw is equipped with either the power vise or the power down feed option, REFER TO SECTION 7.0 for additional information.

4.4 ELECTRICAL REQUIREMENTS

SEE FIGURE 3-1 THRU 3-2 ON THE FOLLOWING PAGES.

⌦ **CAUTION: TO PREVENT DAMAGE TO THE MACHINE AND DANGER TO THE OPERATOR, ALL ELECTRICAL CONNECTIONS SHOULD BE MADE BY A QUALIFIED ELECTRICIAN. THIS MACHINE OPERATES WITH LIQUID COOLANT AND MUST BE GROUNDED IN ACCORDANCE WITH NATIONAL ELECTRIC CODES.**

All machines are wired for three phase power. The motors are single voltage, 230 volt or 460 volt, and will operate on one voltage only.

To insure satisfactory performance, the supply voltage should be (+ or -) 10% of the motor voltage rating.

Check the motor data tag for full load current requirements.

THE ELECTRICAL DIAGRAMS FOR THIS MACHINE ARE ON PAGES 12-13, FIGURES 3-1 & 3-2.

For supply lines ten feet (303 cm) or shorter, we recommend 12 gauge wire. For lines longer than ten feet (303 cm), we recommend 10 gauge wire. We do not recommend supply lines over twenty feet (606 cm) in length.

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MOTOR VOLTAGE	FULL LOAD CURRENT	HORSEPOWER
208	16.6	5
230	15	5
460	7.5	5
460	4.9	5

► **NOTE: SEE FIG. 3-2 FOR COMPLETE PD SAW WIRING SCHEMATIC. SECTION 7.10 HAS A SCHEMATIC OF THE PD SYSTEM ON ITS OWN.**

MANUAL OR PK SAWS WITH TRIGGER SWITCH

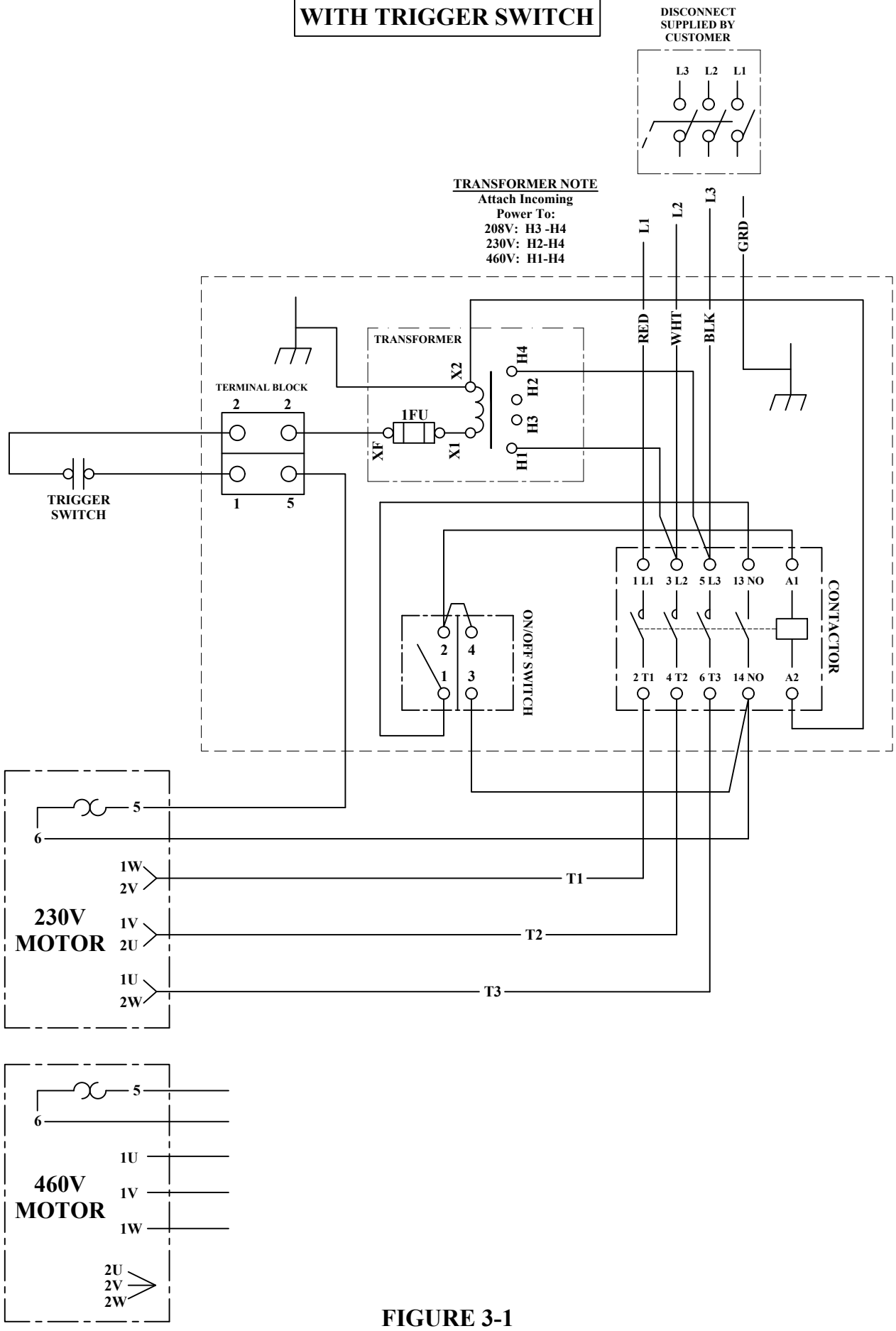

FIGURE 3-1

PD SAWS WITH EMERGENCY STOP (S/N 8001 AND UP)

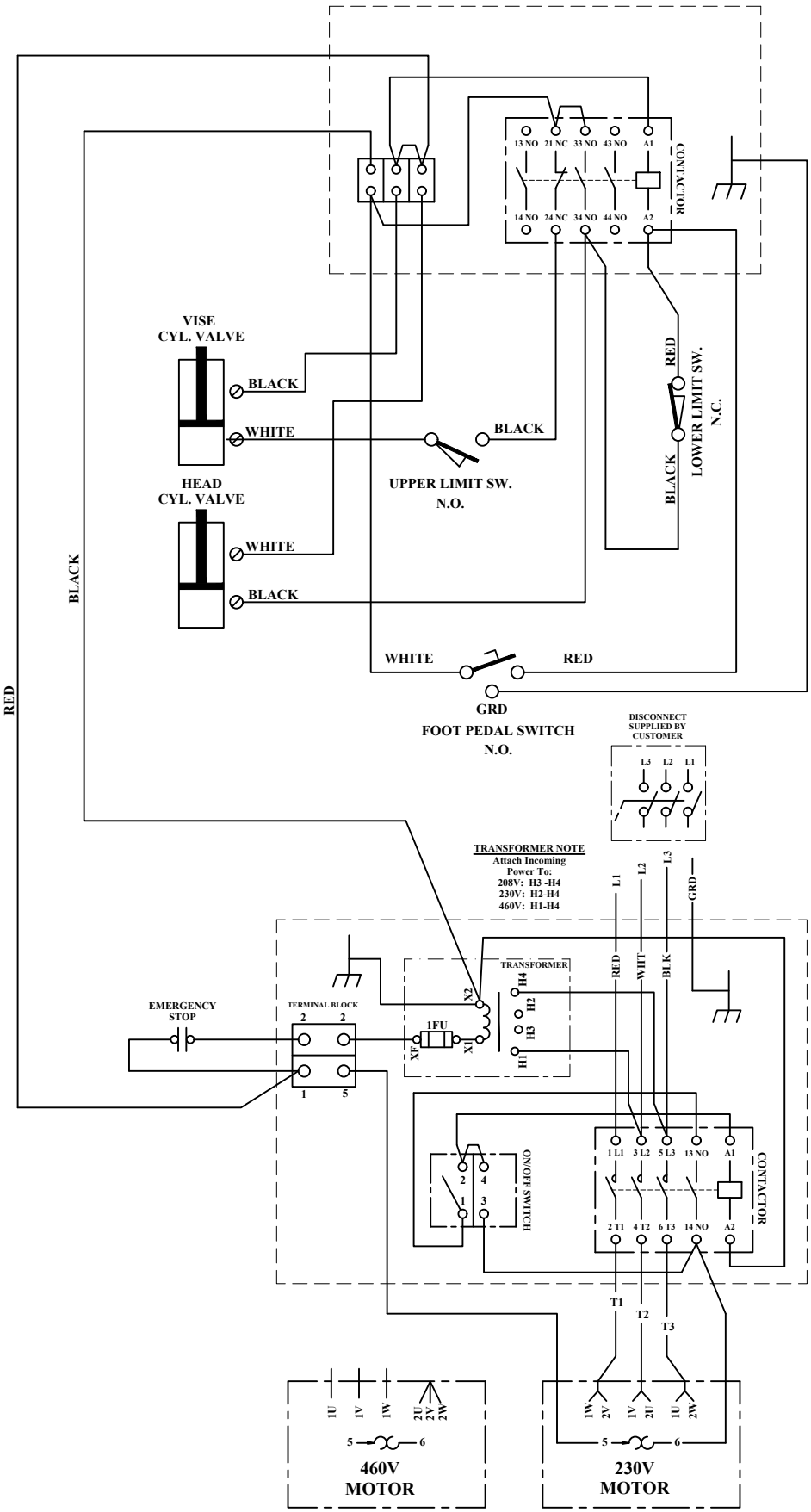

FIGURE 3-2

4.5 MACHINE START-UP

Before starting this machine, take the time to review the operator's manual thoroughly to familiarize yourself with all of the functions of the machine.

We strongly urge you to follow OSHA directive CFR-1910.147 (effective 09-09-90) regarding lock-out, tag-out procedures. Keep in mind that the directive refers to all hazardous energy sources, not just electrical.

On machines equipped with either a power vise or a power down feed, the air supply must also be disconnected and locked or tagged.

Scotchman offers a lock-out switch for this machine as an option, if your plant is not equipped with lock-out capabilities. If you are interested in this option, REFER TO SECTION 7.14 or contact your local dealer or the factory.

Do not install a blade on the saw until after it has been powered and cycled several times. To power the manual and power vise machines, turn the motor switch past the ON POSITION. This will energize the contactor for the motor. When the switch is released, it will return to the ON POSITION.

► **NOTE: EVERY TIME THE SAW IS DISCONNECTED FROM POWER OR IF THE THE EMERGENCY STOP BUTTON IS USED (PD EQUIPPED SAWS ONLY) THE CONTACTOR MUST BE RE-ENERGIZED FOR THE SAW TO OPERATE.**

MANUAL AND PK ONLY SAWS: Use the trigger switch mounted in the draw handle to start and stop the motor. Always turn the motor switch to the OFF POSITION when the saw is not in use.

PD AND PK-PD SAWS: Energizing the contactor for the motor and releasing the switch will start the saw motor. To stop the saw motor you must turn the switch off. The Emergency Stop Button will also stop the saw motor, but it also de-energizes the motor contactor which renders the saw inoperable. We do not recommend using the emergency stop switch to turn the machine off during normal operation. The emergency stop switch must be manually reset by pulling the switch back out. SEE NOTE ABOVE. With contactor energized and the motor switch in the OFF POSITION, the foot switch can be used to cycle the saw head without the motor running. Always turn the motor switch to the OFF POSITION when the saw is not in use.

Once the machine has been powered, check the rotation of the spindle. There is an arrow on the guard showing the proper rotation. If the rotation is not correct, the electrician will have to switch two of the three line wires.

If the saw is equipped with either the power vise or the power down feed options:
GO TO SECTION 7.0 - OPTIONAL EQUIPMENT
There you will find additional information and instructions on the options available for this saw.

4.6 FRL USE AND MAINTENANCE

SEE FIGURE 4 ON THE NEXT PAGE

CAUTION: SHUT OFF AIR SUPPLY BEFORE SERVICING THE FRL

The FRL (Filter Regulator Lubricator) is an important and often overlooked item on a cold saw. It helps to keep moisture from contaminating the pneumatic system and adds a little oil to keep the system lubricated.

REGULATOR

The regulator has the gauge and air pressure is adjusted the knob on top. Pull the knob up to adjust the air pressure and push it down to lock it in place. We recommend 90 psi to 105 psi to operate this saw.

WATER TRAP

Another important function with the regulator is that it has a water trap that is attached to the bottom of the regulator. It should be checked everyday. If the trap is a over half full, it should be removed and emptied. The drawing on the next page has detailed instructions on how to do this. Take care to not damage the o-rings.

OILER

The oiler should add a drop of oil to the pneumatic system every 5 -10 cycles. This can be seen at the top of the oiler. You can see a small tube that the oil drips from. If the oiler needs adjustment, there is a small screw located on the top of the oiler that can be adjusted with a small straight screwdriver.

OILER RESERVOIR

The reservoir for the oiler is attached to the bottom of the oiler. The oil level in the oiler should be checked every day. When the level gets low, the reservoir should be removed and filled about 3/4 full with a quality (ISO 22) air line lubricant designed for automatic oilers (such as our P/N 075759) and installed back on the lubricator. The drawing on the next page has detailed instructions on how to do this. Take care to not damage the o-ring.

CAMOZZI FRL (Filter/Regulator/Lubricator)

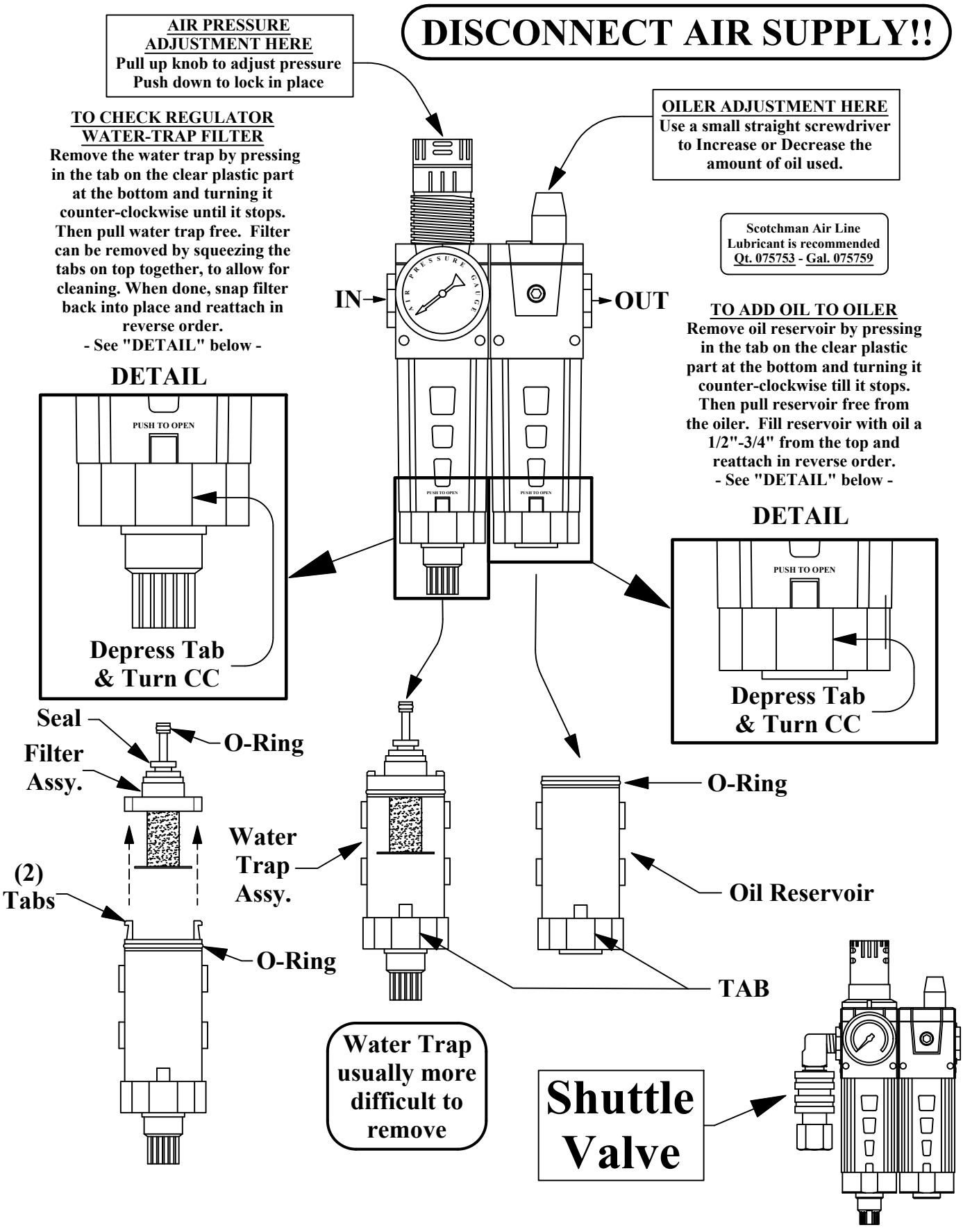

FIGURE 4

4.7 GUARD ADJUSTMENT - MANUAL MACHINES

SEE FIGURE 5 BELOW.

FOR GUARD ADJUSTMENT PROCEDURES ON SAWS EQUIPPED WITH THE POWER DOWN FEED OPTION, REFER TO SECTION 7.8.

The proper adjustment of the blade guard on this machine is crucial to the operation of the machine and the safety of the operator.

If the guard will not maintain proper adjustment, check the guard mounting bolts and rivet joints in the guard and linkage for wear. Replace worn parts promptly.

USE THE FOLLOWING STEPS TO ADJUST THE BLADE GUARD:

1. **Turn the power off and disconnect from the power source.**
2. **With the head in the UP position, loosen the mounting bolts (A) on the linkage mount (B).**
3. **Manually hold the guard open approximately 1/8 of an inch (3mm) at point (C).**
4. **Adjust the linkage mount (B) down until there is tension on the linkage bar. Re-tighten the linkage mount bolts (A).**
5. **Manually cycle the head up and down several times, making sure that the guard operates properly.**

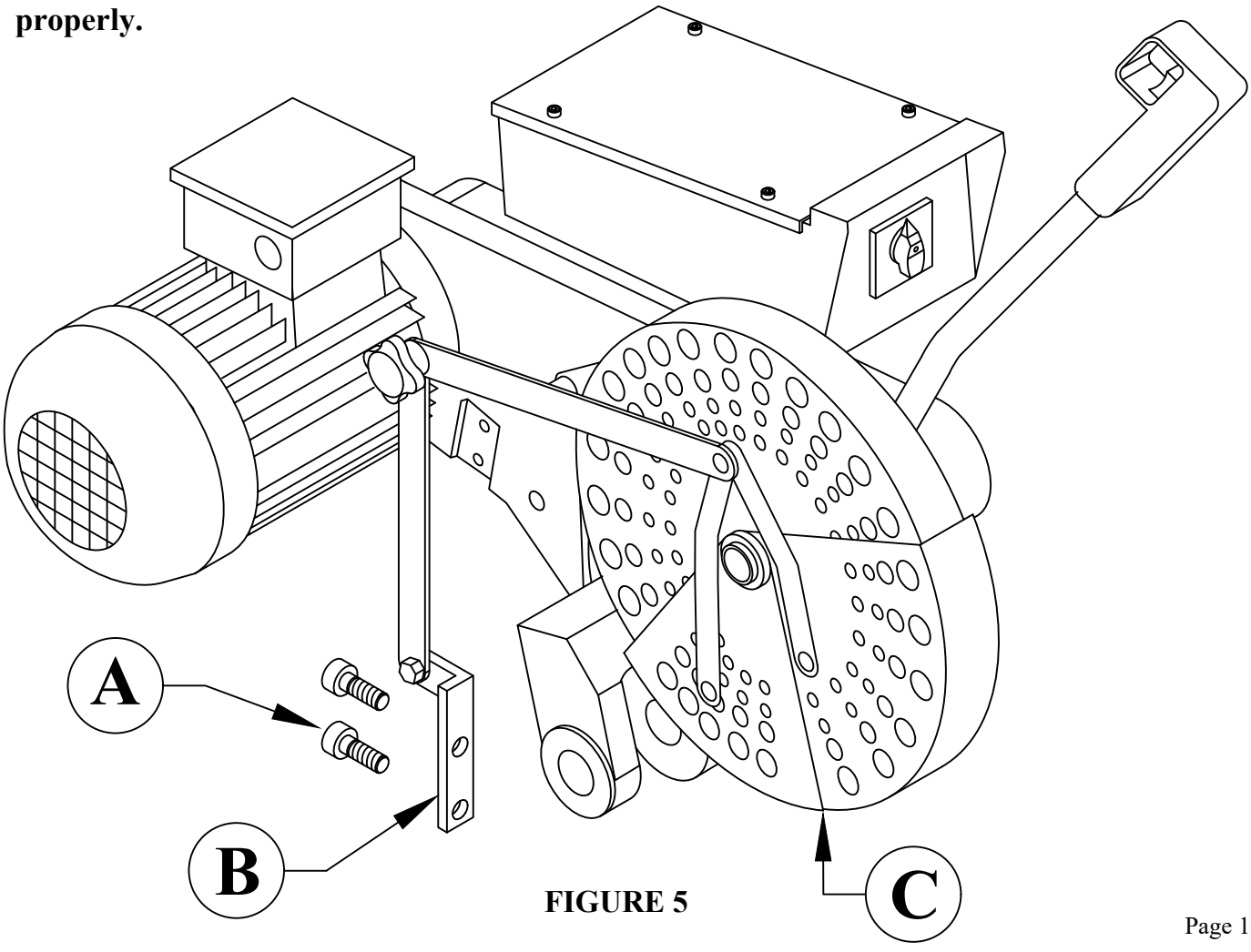

FIGURE 5

4.8 COOLANT SYSTEM

SEE FIGURE 6 BELOW.

This saw has a mist coolant system. The mister is mounted on the saw guard. The amount of coolant that is applied to the blade is controlled with the adjustment knob on the mister. Make sure sufficient air pressure is supplied to the machine and coolant is in the coolant tank. Air pressure to the mister is adjusted with the regulator that is mounted to the side frame just behind the saw guard. On the manual and PK (power vise) only saws, a pneumatic roller valve connected to the guard linkage supplies air to the mister when the head is pulled down and shuts it off when the head returns to the up position. See SECT. 7.2 for more roller valve info. We recommend using only our P/N 075760, SYNCON-2 coolant in this saw. The NF coolant reservoir has a capacity of (5) quarts (4.7 liters). One gallon of coolant is shipped with the saw. For the best results, we recommend that it is used straight and not diluted. For additional information on available coolants and lubes, SEE SECTION 10.8.

MISTER

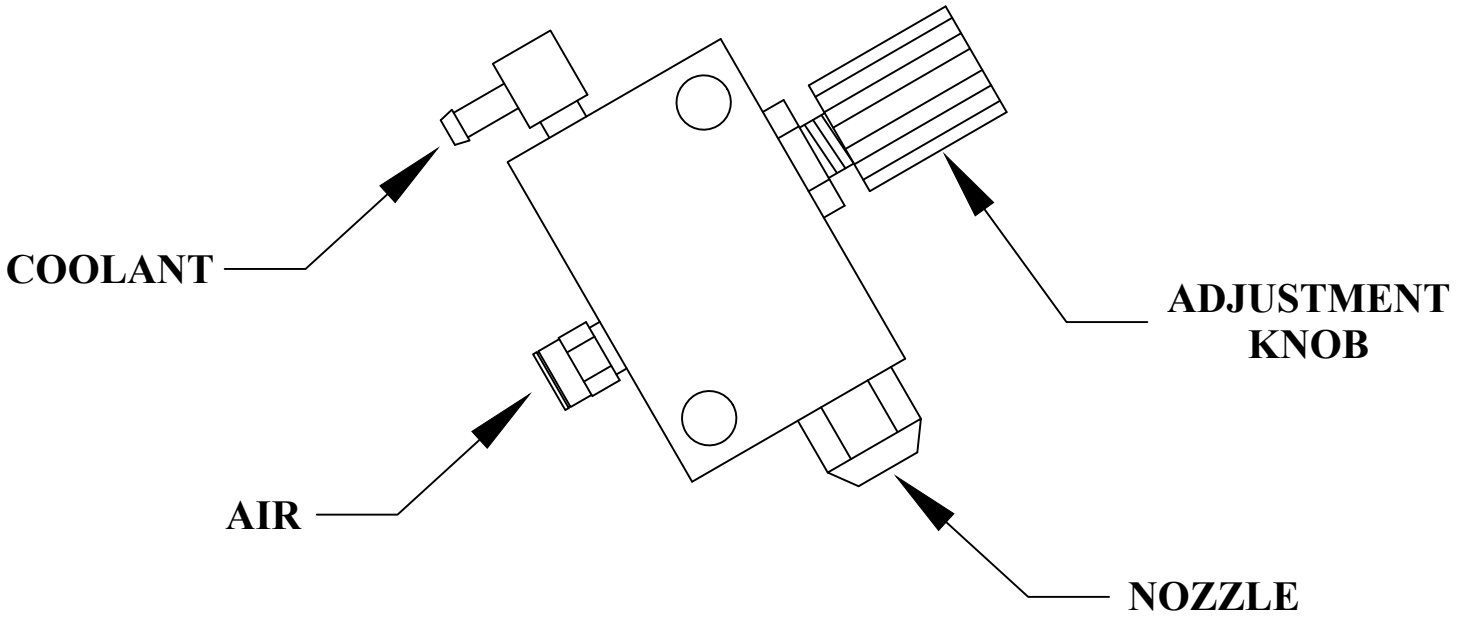

FIGURE 6

5.0 MAINTENANCE AND LUBRICATION

5.1 LUBRICATION

SEE FIGURE 7 BELOW.

Once a week, grease all of the pivot pins (A) and oil all of the rivet connections on the guard linkage (D). Clean the chips out of the vise at least once a day and apply penetrating oil to the vise spindle and guide pins (B) and (C). Clear the chips with a brush or similar device or use a shop-vac. DO NOT use compressed air. If your saw is equipped with a power vise or power down feed option, SEE SECTION 7.0 for additional information. Under normal use, grease the saw blade spindle (below, upper right) once a month. Under heavy use or during prolonged operation, grease it once a week. The saw blade spindle requires a specific type of grease for long life - See SECTION 5.2

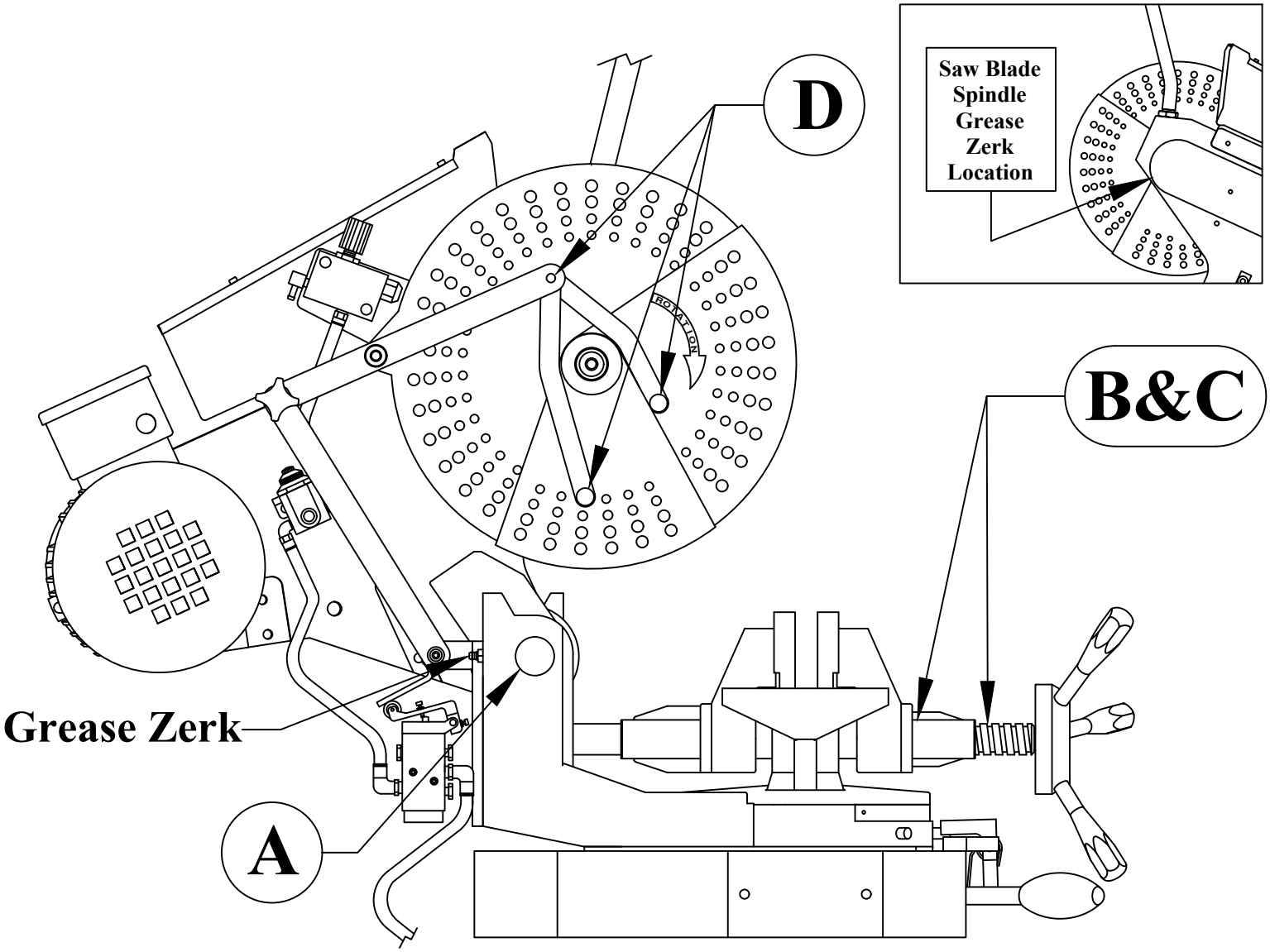

FIGURE 7

5.2 CUTTING OILS AND LUBRICANTS

SECTION 10.8 lists Scotchman's parts numbers for cutting oils and lubricants.

Using high quality lubricants and oils will greatly increase the life of this equipment.

Use only our P/N 075760, (SYNCON-2) coolant in this saws coolant system. For the best results, we recommend that it is used straight and not diluted.

SAW BLADE SPINDLE - With the head in the UP position, you'll see there is an access hole in the front bottom of the belt cover. There is a grease zerk for the saw blade spindle located there. It is very important to:

USE ONLY A HIGH PRESSURE, HIGH TEMPERATURE LITHIUM BASED GREASE ON THE BLADE SPINDLE SUCH AS MOBILEGREASE XHP 222 OR EQUIVALENT. Using the wrong type of grease will shorten the life of the bearings in the saw blade spindle assembly significantly.

On saws equipped with the power down feed, use a SAE 10W (ISO 32) non-foaming hydraulic oil, such as Mobil DTE 10 or equivalent in the hydraulic oil reservoir.

For the lubricator part of the FRL (Filter, Regulator, Lubricator), use a quality (ISO 22) air line lubricant designed for automatic oilers such as our P/N 075753. Make sure it is supplying a drop of oil every 5-10 cycles. See SECTION 4.6 for more information on the FRL.

5.3 SCHEDULED MAINTENANCE

A program of scheduled maintenance should be set up and documented according to your application and the frequency with which you use this machine. The following is a list of some important things that should be included in a scheduled maintenance program.

1. EVERY 250 HOURS OR 3 MONTHS:

Check the condition of the drive belt.
Flush out the coolant lines and the reservoir.

2. EVERY 500 HOURS OR 6 MONTHS:

Check the condition of the pivot pins on the head and on the guard.
Check the complete saw for loose connections in the electrical and air systems.

If your saw is equipped with the power vise or power down feed options, SEE SECTION 7.0 for additional information. Since every application is different, each user must design and implement a scheduled maintenance program that fits his applications.

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6.0 MACHINE OPERATION

6.1 INSTALLING THE BLADE - MANUAL MACHINES

SEE FIGURE 8 BELOW.

FOR INSTALLING BLADES ON MACHINES EQUIPPED WITH THE POWER DOWN FEED OPTION, REFER TO SECTION 7.9.

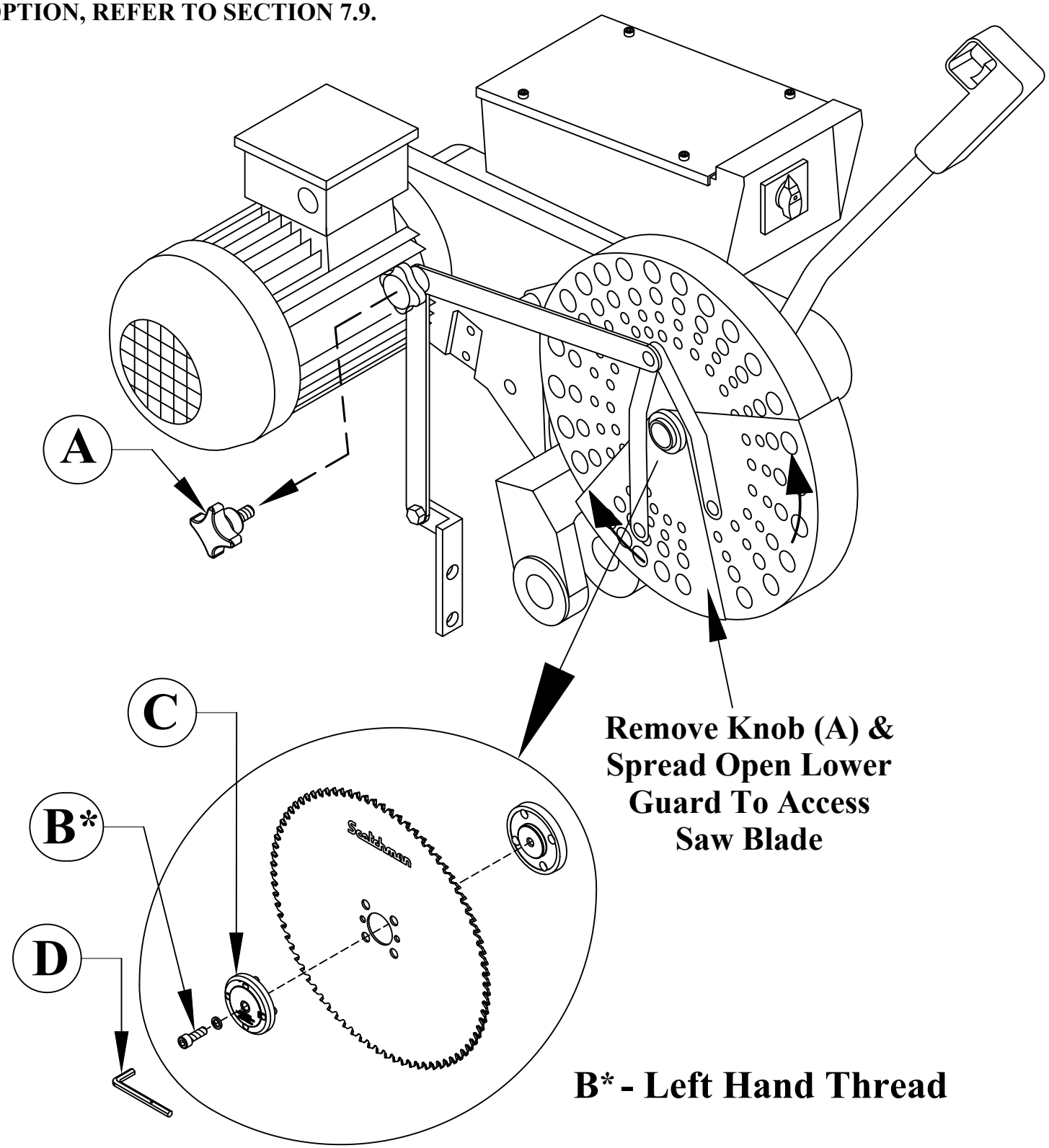


FIGURE 8

⌦ **CAUTION: THIS MACHINE IS DESIGNED TO USE CARBIDE TIPPED BLADES ONLY. USE ONLY BLADES DESIGNED FOR THIS MACHINE. DO NOT MODIFY ANY BLADE TO FIT THIS MACHINE. DO NOT USE BLADES DESIGNED FOR THIS MACHINE ON ANY OTHER EQUIPMENT.**

The CPO-350 NF saw is designed to use a maximum 350mm diameter blade. The arbor is size 40mm with four 12mm pins spaced at 64mm.

BEFORE INSTALLING THE BLADE, make sure that the power to the machine is disconnected and the air supply is turned off (if applicable).

USE THE FOLLOWING STEPS TO INSTALL A BLADE:
(An 8mm hex key wrench (D), shipped with each machine, is required to change blades.)

1. **Remove the knob (A) from the guard linkage and manually open the guard.**

2. **With the hex key wrench (D) remove the left-hand thread blade bolt (B*) through the center hole in the blade guard.**

3. **Remove the blade flange (C).**

► **NOTE: It is very important to keep the blade flange, the spindle and the blade clean and free from nicks and chips when installing a blade. Failure to do these things will result in poor performance and possibly broken or damaged blades.**

4. **Install the blade. Make sure that the pin holes line up to the holes in the spindle.**

5. **Replace the blade flange and start the bolt into the spindle.**

6. **Before locking the blade in position, the backlash must be taken up. To take up the backlash, rotate the bottom of the blade towards you until it seats against the drive pins.**

⌦ **CAUTION: THE BLADES ARE VERY SHARP AND CARE MUST BE TAKEN WHEN REMOVING THE BACKLASH. DO NOT GRIP THE CUTTING EDGE OF THE BLADE BARE HANDED. THE BACKLASH MUST BE TAKEN UP EVERY TIME A BLADE IS CHANGED.**

7. **After taking up the backlash, tighten the blade bolt (B).**

8. **Break in the saw blade. The teeth on new or re-sharpened blades have a sharp edge and should be fed through the first three or four cuts very slowly, before starting normal cutting.**

6.2 SAW CAPACITIES

CPO - 350 - NF

#060332 03/21

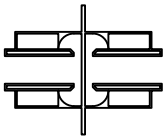
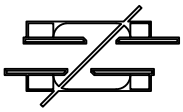
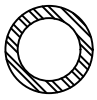
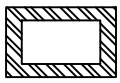
CAPACITIES WITH MAXIMUM DIAMETER BLADES 350 MM		90° 	45° 
	INCHES MM	Ø4-1/2 Ø114	Ø4-1/4 Ø108
	INCHES MM	4-1/4 X 4-1/4 108 X 108	4 X 4 102 X 102
	INCHES MM	4-1/4 X 4-1/4 108 X 108	4 X 4 102 X 102
	INCHES MM	4-1/4 X 4-1/4 108 X 108	4 X 4 102 X 102
	INCHES MM	5-1/2 X 4 140 X 102	4 X 4 102 X 102
	INCHES MM	Ø3 Ø76	Ø2-1/2 Ø64
	INCHES MM	3 X 3 76 X 76	2-1/2 X 2-1/2 64 X 64

FIGURE 9

The above is a chart showing the maximum capacities of this machine with various types of materials at the most common angles of 45° and 90°.

6.3 SELECTING THE PROPER BLADE AND CUTTING SPEED

The CPO-350 NF saw has a single spindle speed of 3000 rpm and is designed to use a maximum 350mm diameter blade. This saw uses a carbide tipped saw blade and we have three blades available for this saw. Two are 300mm blades and one is a 350mm blade. One 300mm blade is thinner (.091) and has 120 teeth and the other 300mm blade is thicker (.134) and has 72 teeth. The 350mm blade is also thicker (.134) and has 84 teeth.

The thinner (.091) 300mm 120 tooth blade is best used for thin wall square or round tube, thin extrusions or small solids. The thicker (.134) 72 tooth blade is best for solid sections of copper, brass, and bronze. The 350mm 84 tooth blade is is used when cutting larger material that a 300mm blade won't reach thru and when the full capacity of the saw is needed.

We recommend using smaller than maximum diameter blades if possible as the smaller blades provide greater rigidity and also reduces the surface feet per minute. And due to the high spindle rpm, the smaller diameter blade also reduce stress and wear on the saw.

Please see SECTION 11.0 for a list of the blades we have available and their part numbers. If you have any further questions, please contact your local dealer or call Scotchman Ind. a 1-800-843-8844.

The chart below shows the surface feet per minute for the 300mm and 350mm diameter blades.

BLADE DIAMETER	SURFACE FEET PER MINUTE (SFM) AT 3000 RPM
300mm	9272 SFM
350mm	10817 SFM

6.4 MATERIAL CLAMPING

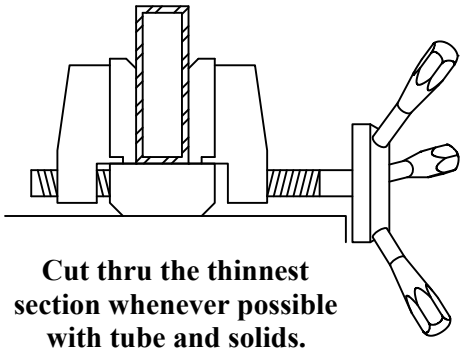
All work pieces must be clamped securely in the vise. Any slippage of the material can result in broken or damaged blades. The material should be clamped so that the contact surface between the material and the blade is as small as possible. For this reason, when cutting flat stock material, we recommend standing it up and cutting it through the thinnest section, whenever possible.

If the flat stock is too wide to clamp standing up, clamp it in the vise diagonally. We also recommend cutting square tubing through the diagonal section and angle iron with the web up. For examples, SEE FIGURE 10 ON THE FOLLOWING PAGE. This is not always possible when cutting materials at a miter. Some thin walled round sections and profiles will require special jaws to hold them. When trimming or cutting very short pieces that do not extend into both sides of the vise, place a piece of material the same size in the unused side of the vise, to insure uniform clamping. When setting up the saw to miter cut, pull the head down before making the first cut, to make sure that the blade clears the vise jaws. The aluminum jaws have slotted mounting holes and can be adjusted for various miters. Always adjust the aluminum jaws so that they clamp the material as close to the blade as possible, whether miter or straight cutting.

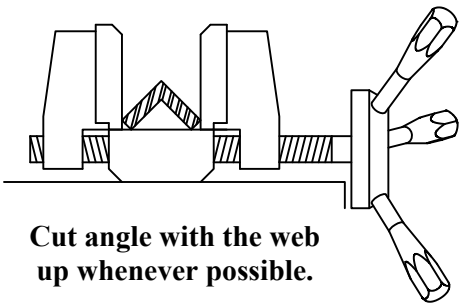
SEE FIGURE 11 ON THE FOLLOWING PAGE. All models of the CPO-350, except those fitted with the power down feed option, have this down stroke or cutting depth adjustment. This adjustment is used to keep the saw blade from cutting into the vise spindle and must be adjusted when changing sizes of materials or blades.

If your saw is equipped with either the power vise or the power down feed options:

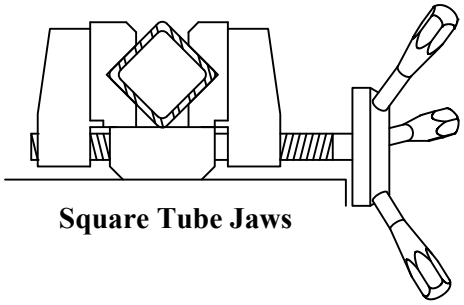
SEE SECTION 7.0 - OPTIONAL EQUIPMENT, for additional information.



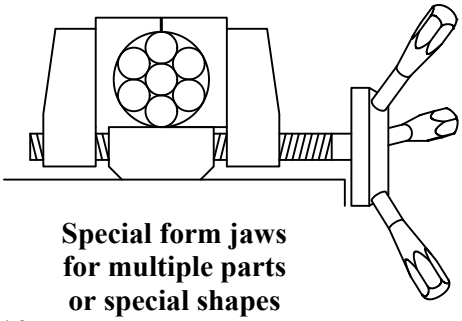
Cut thru the thinnest section whenever possible with tube and solids.



Cut angle with the web up whenever possible.

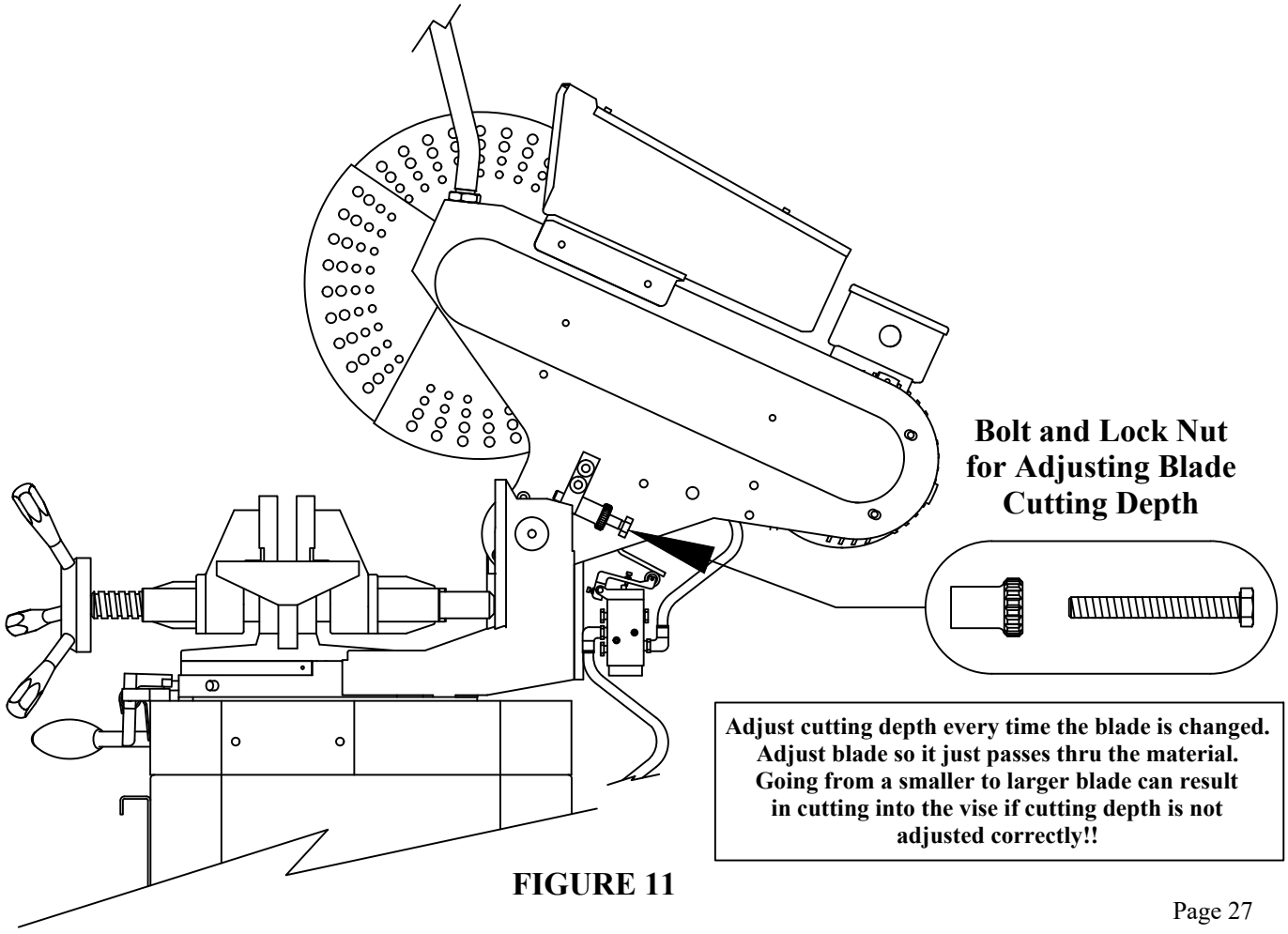


Square Tube Jaws



Special form jaws for multiple parts or special shapes

FIGURE 10



Bolt and Lock Nut for Adjusting Blade Cutting Depth

Adjust cutting depth every time the blade is changed. Adjust blade so it just passes thru the material. Going from a smaller to larger blade can result in cutting into the vise if cutting depth is not adjusted correctly!!

FIGURE 11

6.5 MITER LOCKING DEVICE

SEE FIGURE 12 ON THE FOLLOWING PAGE.

All models manufactured for domestic sales are equipped with a miter locking device which allows quick set-up for mitering at 45 degrees, left and right, and 90 degrees for straight cutting. A miter locking device is available as an option for models manufactured for international sales.

TO USE THE MITER LOCKING DEVICE:

1. **Unlock the tension handle (A).**
2. **Push the miter lock release handle (B).**
3. **Turn the head in the direction that you want to miter.**
4. **Release the miter lock handle and continue turning the head until one of the pins (G) snaps into the slot. The saw is equipped with three pins. One for straight cuts and one for angled cuts left and right.**
5. **Then, re-lock the tension handle. When locking the tension handle, do not over-tighten.**
6. **The miter locking device can be fine adjusted if it does not stop at an exact 45. Loosen the mounting bolts (F) and adjust the complete miter lock, left or right, to the desired position.**

IF YOU WANT TO CUT MITERS OTHER THAN 45 DEGREES:

1. **Unlock the tension handle (A).**
2. **Push the miter lock release handle (B) and turn the head to the desired angle by using the scale on the saw.**

   NOTE: THE SCALE IS READ OFF TO THE SIDE OF THE VISE AT POINT (C), NOT IN THE CENTER.
3. **Re-lock the tension handle (A). After a period of time, the tension handle (A) may need to be adjusted if the head will not remain in the position that it was previously set.**

TO RE-SET THE TENSION HANDLE:

1. **Remove chip drawer to gain access to the tension handle nut in the machine base.**
2. **Move the tension handle (A) to its unlocked position.**
3. **Loosen the jam nuts (D) on the adjustment bolts (E) and tighten the bolts finger tight, plus 1/4 of a turn.**
4. **Work the tension handle several times and re-tighten the adjusting bolts, if necessary.**
5. **Re-tighten the jam nuts (D).**

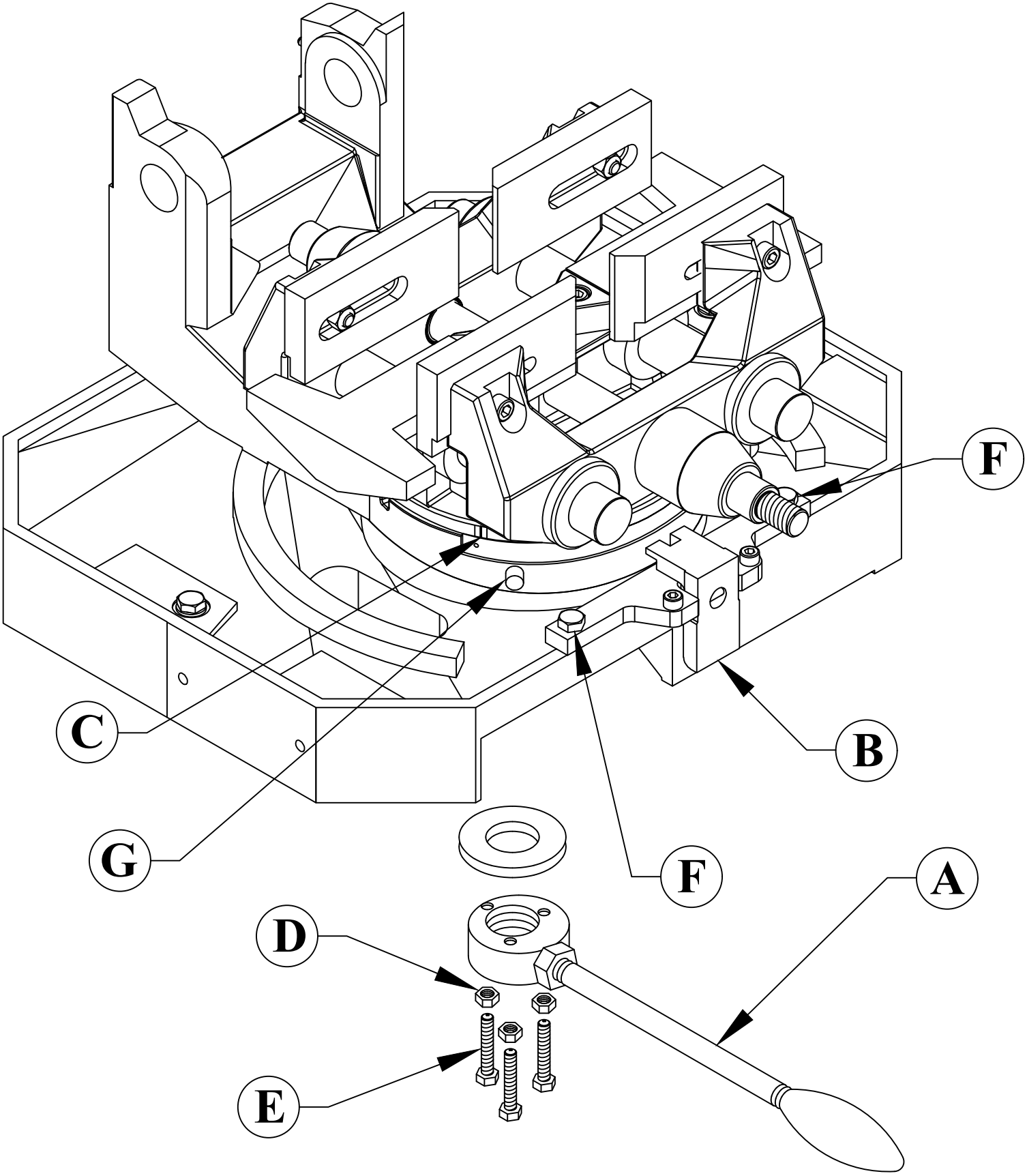


FIGURE 12

7.0 OPTIONAL EQUIPMENT

7.1 POWER VISE

The power vise is an option that is normally ordered with the saw. It is not recommended as a retro-fit in the field. The power vise allows automatic clamping of the material, which improves productivity and reduces operator fatigue. The vise automatically clamps when the saw head is drawn down and releases when the saw head returns.

7.2 POWER VISE SET-UP AND MAINTENANCE

SEE FIGURE 13 ON THE FOLLOWING PAGE.

THE FOLLOWING ARE SET-UP AND MAINTENANCE INSTRUCTIONS FOR THE POWER VISE OPTION - RETROFIT OR FACTORY INSTALLED:

1. **Before connecting the air supply to the saw, make sure that the filter/regulator/lubricating (FRL) device (A) is full of oil.**
2. **Slide the shuttle valve (F) on the filter/lubricator device to the closed position.**
3. **Connect the air supply to the shuttle valve. Make sure that the vise is clear and that the head is in the UP position.**
4. **Slide the shuttle valve to open it. Whenever the shuttle valve is closed, it bleeds the air pressure out of the system automatically.**
5. **Adjust the air pressure regulator (G) to 90 PSI (6.2 BAR) as this is the minimum operating pressure. The maximum operating pressure is 105 PSI (7.2 BAR) .**
6. **Before powering the saw, pull the head down several times, to make sure that the four way valve (H) and the FRL device (A) are adjusted properly and that the air pressure setting remains constant.**
7. **The four way valve should activate the vise at the beginning of the down stroke and release it at the top of the return stroke. The four way valve is adjusted with the set screw (B) in the valve arm, that the roller is attached to.**
8. **The lubricating device (A) should release one drop of oil every 5 to 10 cycles. On top of the lubricating device is a clear plastic dome with a small copper tube inside. The oil should drop out of the copper tube. The lubricating device is adjusted using a small screwdriver (C) on the top of the lubricator.**
9. **To add oil to the lubricating device, disconnect the air supply and remove the plastic bowl. Push in tab and unscrew bowl from the body. Fill the bowl about 3/4 full with a quality (ISO 22) air line lubricant designed for automatic oilers (our P/N 075759) and screw it back on the lubricator.**

TO ADJUST THE VISE TO THE SIZE OF MATERIAL BEING CUT:

Release the locking collar (D) on the vise spindle. The vise spindle is left hand threaded and the locking collar must be turned clockwise to release it.

Open the vise, using the positioning handles (E), and place the material in the vise.

Crank the vise closed to within approximately 1/8 of an inch (3mm) from the material and relock the locking collar (D). Failure to lock the locking collar may allow the vise to vibrate open while cutting, causing damage or breakage of the blade. The power vise has approximately 1/4 of an inch (6mm) of stroke. As with the manual vise, proper clamping is very important and special jaws may be required for some materials.
FOR EXAMPLES OF SPECIAL JAWS, REFER TO FIGURE 10 ON PAGE 27.

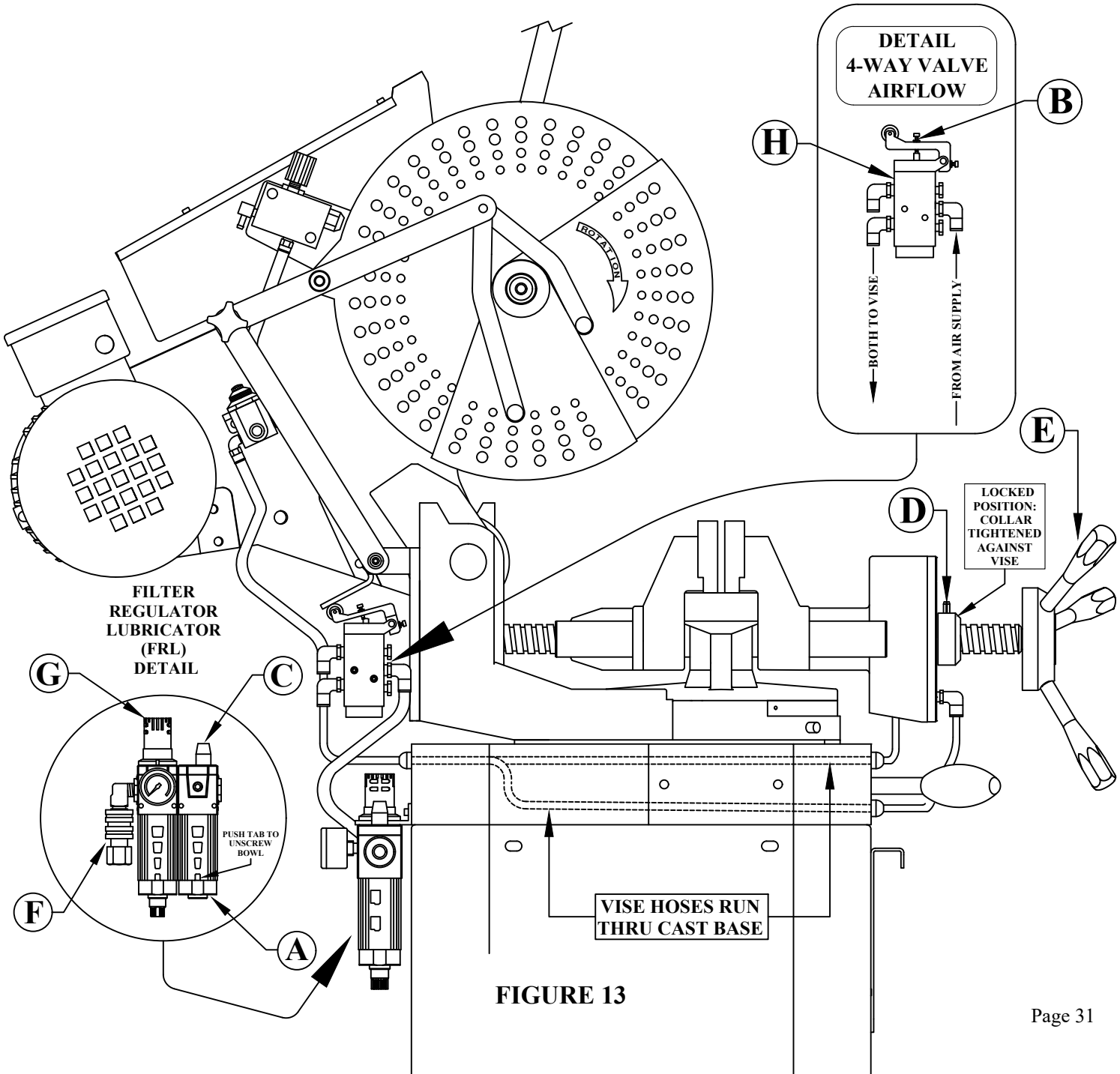


FIGURE 13

7.3 REPLACING THE SPINDLE IN THE POWER VISE

SEE FIGURE 14 BELOW.

⌦ **CAUTION: DISCONNECT THE MACHINE'S POWER AND AIR SUPPLY**

1. **Disconnect the air lines (A). The air connections on the cylinder are snap connectors. To release the air connections, push the collar around the hose into the fitting and pull the hose out. To reconnect the lines, simply push the air line into the fitting as far as it will easily go.**
2. **Remove the support block (B), the bolts (C) and the spacer (I) from the base of the vise.**
3. **Remove the guide pins (D) out through the back of the vise. The head must be moved to a miter position for the removal of one of the pins.**
4. **Carefully lift the complete vise off of the machine and place on a flat work bench.**
5. **Remove plastic cover and remove the lock nut (J) from the spindle boss (K).**
6. **Unscrew the vise boss (K) and the locking collar (M) from the spindle.**
7. **Unscrew the spindle from the front casting (L) and the rear casting (E).**
8. **Install the new spindle and reassemble the vise, reversing the above steps.**

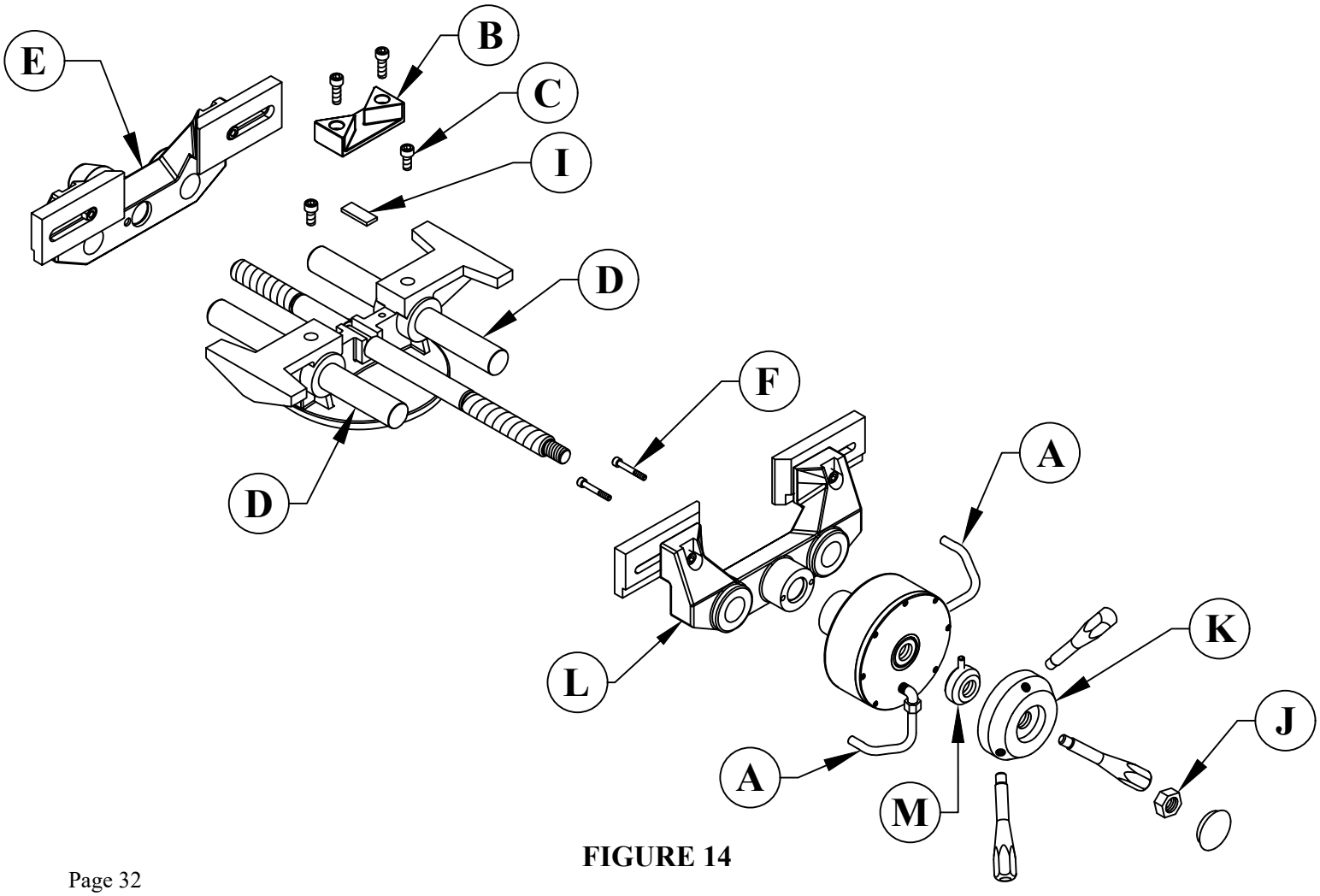


FIGURE 14

7.4 REPLACING THE SEALS IN THE POWER VISE

SEE FIGURE 15 BELOW.

⌦ **CAUTION: DISCONNECT THE MACHINE'S POWER AND AIR SUPPLY**

SEAL KIT IS P/N 076371 - Contains two small and two large o-rings and an oil seal. Locations below.

1. **Open the vise to its full open position.**
2. **Disconnect the air lines from the cylinder (A). (SEE SECTION 7.3 - STEP 1)**
3. **Remove the jam nut (G), the boss (B) and the locking collar (C) from the front of the spindle.**
4. **Remove the two bolts (D) from the front vise casting that holds the air cylinder on.**
5. **Unscrew the air cylinder (A) from the spindle.**
6. **Remove the eight 4mm screws (E) from the cover (H) and remove the cover and the piston (F).**
7. **Remove the old seals and clean all of the parts and inspect them for any scratches or nicks.**
8. **Install the new seals. Lubricate seals, cylinder (A) & piston (F) before reassembly.**

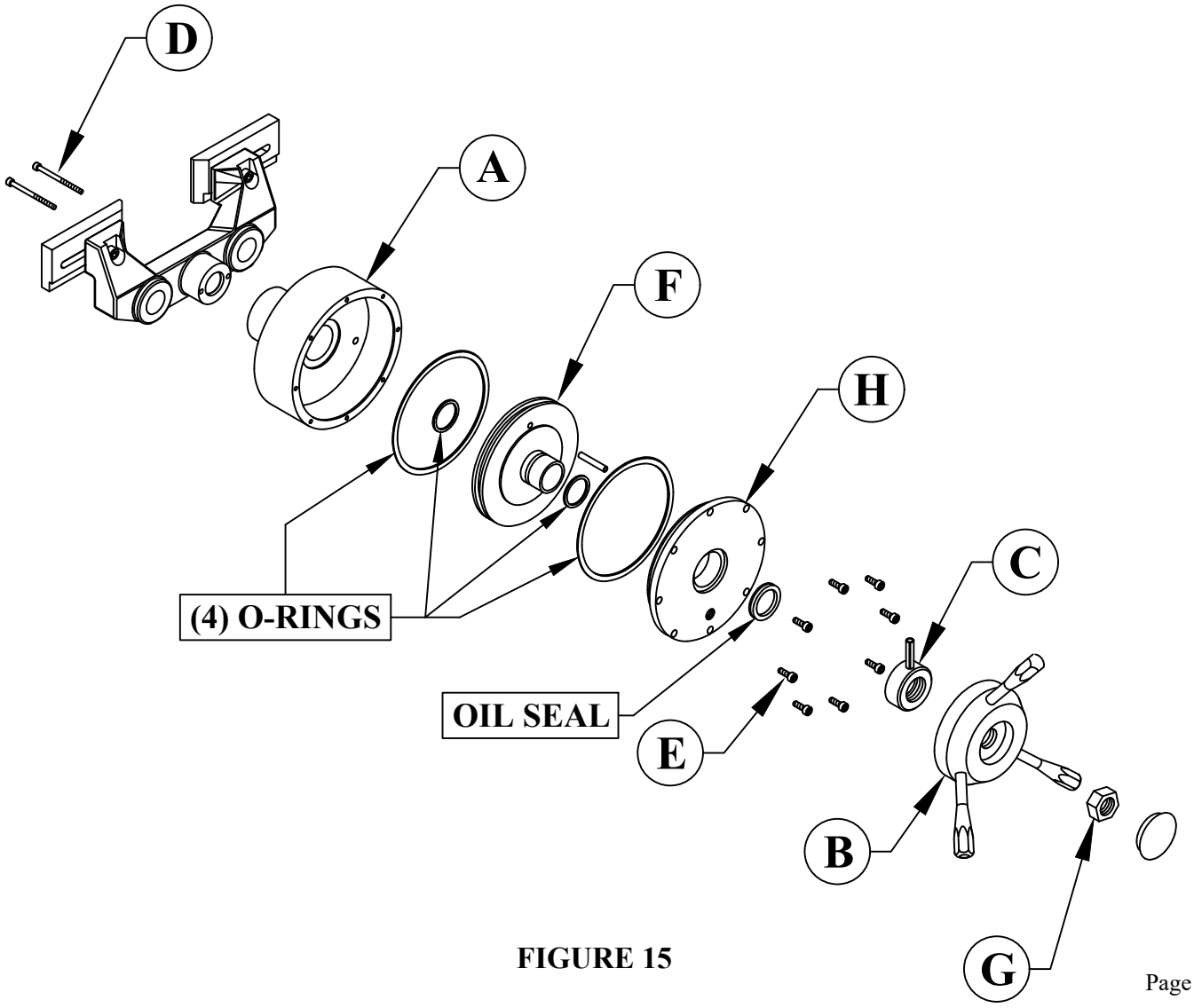


FIGURE 15

7.5 POWER DOWN FEED

The power down feed option, used in conjunction with the power vise option, changes a manual saw into a semi-automatic saw. These options will increase productivity and reduce operator fatigue. The power down feed option will not retrofit to machines with serial number 11940491 and prior in the field. This option can be used on machines with or without the power vise option.

7.6 POWER DOWN FEED SET-UP AND MAINTENANCE

SEE FIGURE 16 ON THE FOLLOWING PAGE.

1. **Before powering the saw - If there is a saw blade on the machine, lift the outer saw blade guard and remove the saw blade, the saw flange, and bolt. Saw blade flange bolt is LH thread. See SECTION 7.9**
2. **Make sure the upper stroke adjustment (A) is at its highest setting and the lower stroke adjustment (B) is at its lowest setting - See SECTION 7.7.**
3. **Turn the stroke control valve (C) clockwise to its fully closed position.**
4. **Slide the shuttle valve (D) to its CLOSED position and connect the air supply.**
5. **Stay clear of the saw and slowly slide the shuttle valve to the OPEN position. Saw head may move if it is not against the upper stop. Adjust the air pressure regulator to the minimum operating pressure of 90 PSI (6.2 BAR). The maximum is 105 PSI (7.2 BAR).**
6. **Make sure the saw is connected to the correct voltage and turn the motor switch past the ON position to energize the motor contactor. The saw motor will start. Turn the switch to the OFF position to stop the saw motor.**
7. **Step on the foot pedal and open the flow control valve (C) slightly. The saw head should start slowly moving down. Allow the saw head to go down to its lowest position and return to the up position.**
8. **Cycle the saw like this several times to purge the air out of the system. It may cycle irregularly for the first few cycles.**
9. **If saw cycles smoothly, open the flow control valve (C) to allow the saw to cycle faster a few times. IF THE SAW HEAD MOVEMENT IS NOT SMOOTH AND CONSISTENT OR IF FLOW CONTROL VALVE IS OVERLY SENSITIVE, THE SAW IS LOW ON HYDRAULIC OIL.**
10. **When the saw head returns to the full up position, turn the stroke control valve (C) clockwise to its fully closed position and turn off the power to the saw.**
    CLOSE THE SHUTTLE VALVE (D) AND DISCONNECT THE AIR SUPPLY.

The next step is to check the oil level in the oil reservoir as explained on the next page.

To check the oil level there is a sight glass in the back of the reservoir (E). The head must be in the full UP position. The recommended oil is our P/N 060520 or a SAE 10W (ISO 32) non-foaming hydraulic oil, such as Mobil DTE 10 or equivalent. Use filler plug (F) on top of the reservoir to add oil. SEE CAUTION BELOW.

⌦ **CAUTION: ALWAYS DISCONNECT THE AIR SUPPLY BEFORE REMOVING THE FILLER PLUG FROM THE RESERVOIR. IF THE FILLER PLUG IS REMOVED WHILE THE MACHINE IS CONNECTED TO THE AIR PRESSURE, THE FLUID IN THE TANK WILL BE PURGED THROUGH THE OPENING UNDER PRESSURE.**

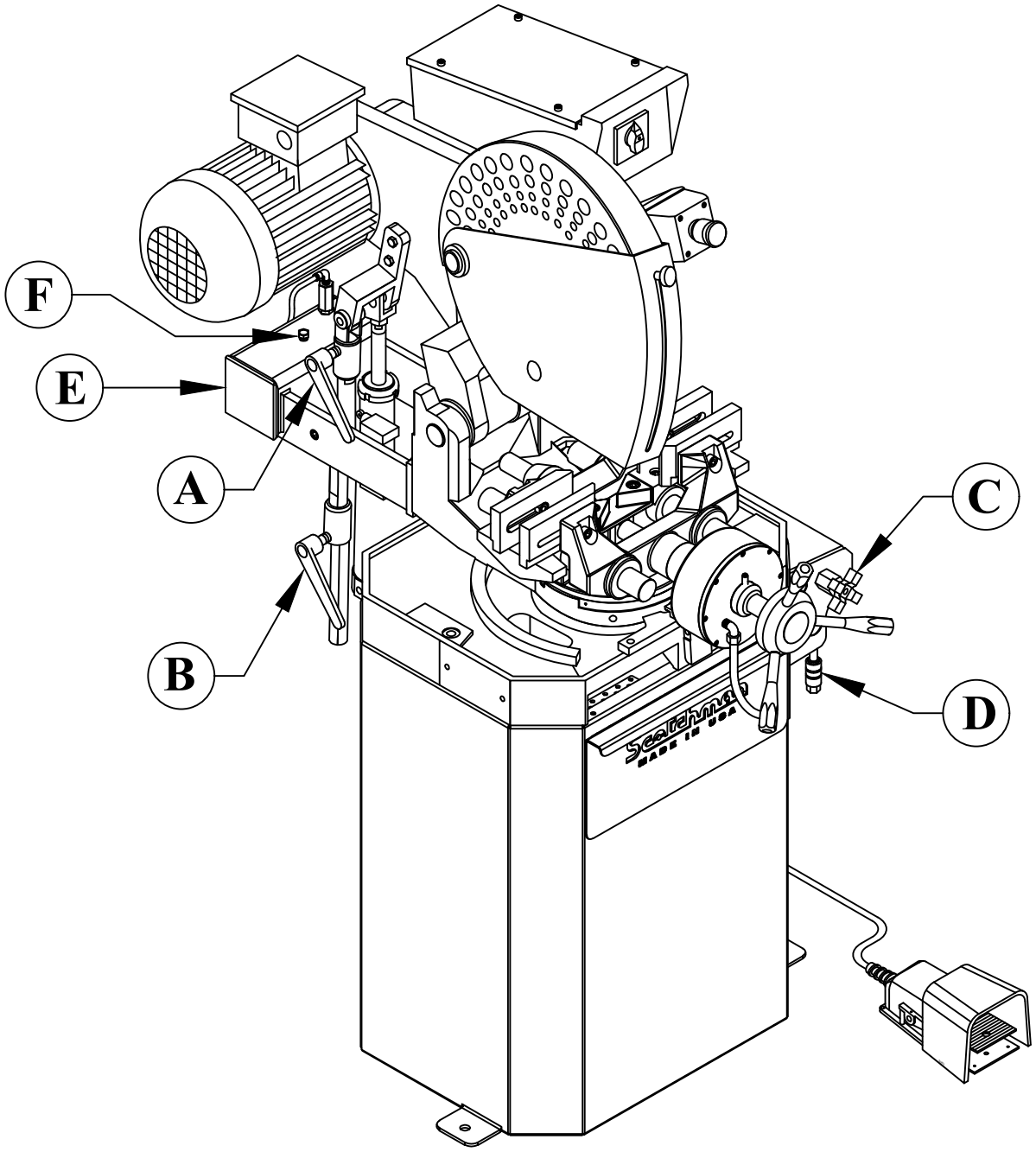


FIGURE 16

7.7 STROKE CONTROL ADJUSTMENT (POWER DOWN FEED)

SEE FIGURE 17 ON THE FOLLOWING PAGE.

Before powering the machine, the up and down strokes of the saw head must be set. The stroke is set by the collars (A & B) on the shaft (C).

TO SET THE STROKE:

1. **The saw blade control switch for the saw blade is located in the electrical box on top of the motor.**
2. **The stroke is set with this switch in the off position - Blade does not turn.**
3. **The flow control valve (D) should be turned all the way clockwise so the saw head won't move.**
4. **Take a piece of material that is to be cut and put it in the vise so it is just off to one side of the blade. It's good to hand-tighten the material in the vise to keep it in place.**
5. **Step on the foot pedal to cycle the saw. The saw head should not move. Open the flow control valve (D) by turning it counterclockwise to allow the head to slowly travel downward. Stop the head with the flow control valve when the blade is just above the material. Loosen the handle (H) on the upper stroke adjustment (A) and move it down to slightly past where it contacts the limit switch (G) and tighten the handle (H).**
6. **Open the flow control valve (D) to allow the head to slowly travel downward again. Stop it with the flow control valve when the blade passes just below the material. Take the foot pedal around to the back of the saw. Step on the foot pedal and HOLD - Then loosen the handle (E) on the lower stroke adjustment (B) and move it up to slightly past where it contacts the limit switch (F) then tighten the handle (E). Keep clear of moving parts and release the foot pedal. The saw head will then return to the up position.**
7. **Make sure the blade is high enough for the material to pass below the blade after it has returned to the up position. Step on the pedal and watch as the blade travels downward to ensure that it passes below the material before returning to the up position. Make a slight adjustment if needed.**

⌦ **CAUTION : ANY TIME THAT THE BLADE OR THE SIZE OF THE MATERIAL BEING CUT IS CHANGED, THE STROKE OF THE MACHINE HAS TO BE CHECKED. FAILURE TO SET THE STROKE OF THE MACHINE WILL RESULT IN DAMAGE TO THE MACHINE OR TO THE BLADES.**

8. **Adjust the flow control valve (D) to the proper cutting feed rate before cutting any material.**

The air lubricator should produce a drop of oil every 5 to 10 cycles. Adjustment is done on top of the lubricator with a small straight screwdriver. There is a clear plastic dome on top of the lubricator with a copper tube inside. The oil should drop from the copper tube. The oil in the lubricator should be checked everyday. For information on the FRL device SEE SECTION 4.6.

As with all other functions of the saw, selection of the proper blade, spindle speed and clamping are very important in providing a quality finished product.

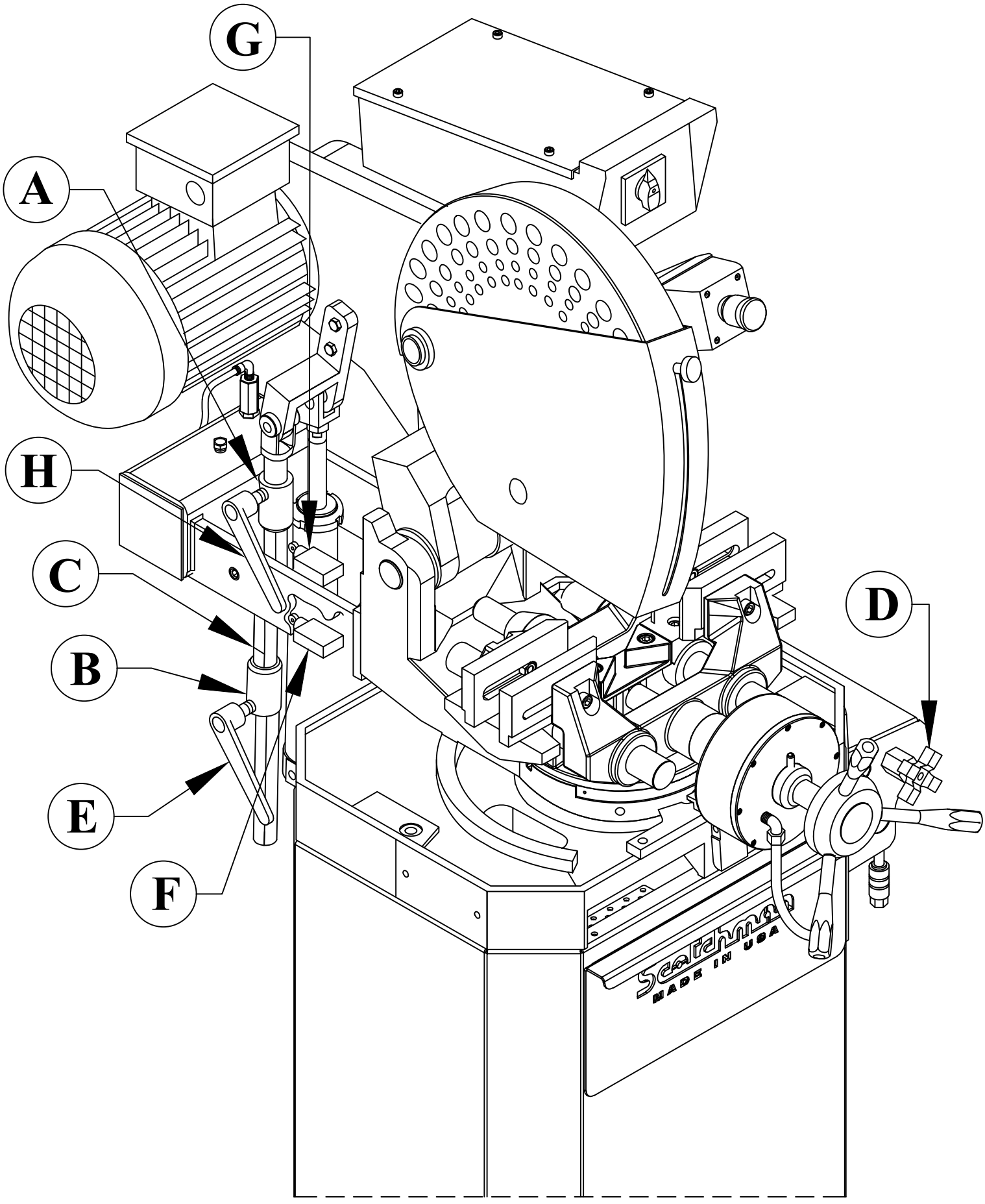


FIGURE 17

7.8 GUARD ADJUSTMENT (POWER DOWN FEED)

SEE FIGURE 18 ON THE FOLLOWING PAGE.

⌦ **CAUTION: THE GUARD MUST BE ADJUSTED EVERY TIME THAT THE STROKE OF THE MACHINE IS ADJUSTED.**

TO ADJUST THE GUARD:

1. **Before adjusting the guard, set the up and down stroke of the machine by following the instructions in SECTION 7.7.**

2. **With the saw head in the UP position, loosen the bolt (A) in the guard stop (B).**

3. **Raise the movable section of the guard (C) so that it just clears the vise jaws by no more than 1/8 of an inch (3mm).**

4. **Adjust the guard stop (B) until it contacts the stop on the fixed section of the guard and tighten the bolt (A).**

5. **Without powering the machine, cycle the head of the saw several times to make sure that the adjustment is correct.**

➲ **NEVER PLACE ANY PART OF YOUR BODY NEAR THE BLADE OR THE GUARD WHILE THE MACHINE IS RUNNING!**

DETAIL VIEW

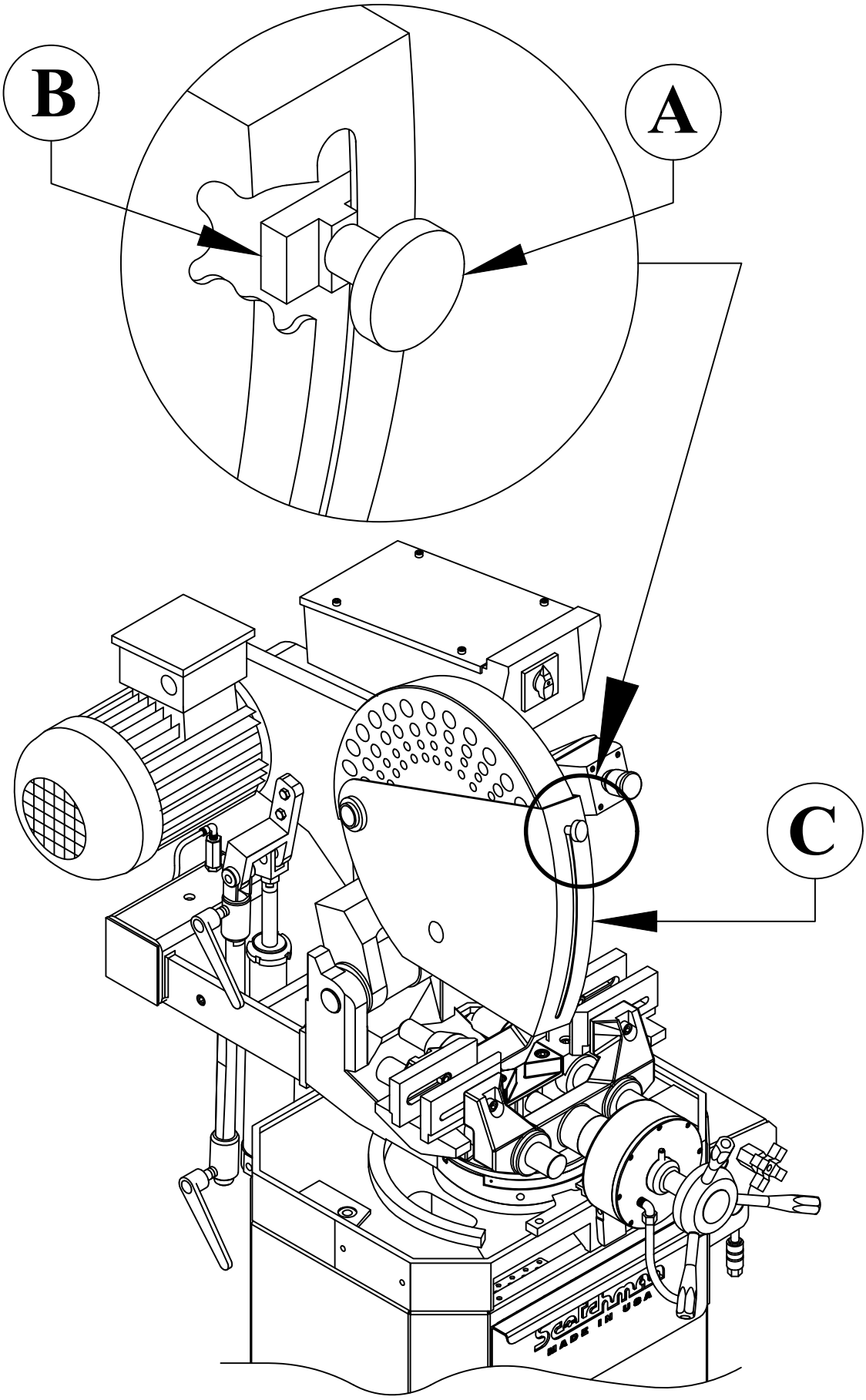


FIGURE 18

7.9 INSTALLING BLADES (POWER DOWN FEED)

SEE FIGURE 19 ON THE FOLLOWING PAGE.

⌦ **CAUTION: USE ONLY CARBIDE TIPPED BLADES DESIGNED FOR THIS MACHINE. DO NOT MODIFY ANY BLADE TO FIT THIS MACHINE. DO NOT USE BLADES DESIGNED FOR THIS MACHINE ON ANY OTHER EQUIPMENT.**

The CPO-350-NF saw is designed to use a maximum 14 inch (350mm) diameter blade. The arbor size is 40mm with four 12mm pins spaced at 64mm, also known as 4/12/64 pin spacing.

BEFORE INSTALLING THE BLADE, make sure that the power to the machine is disconnected and the air supply is turned off.

USE THE FOLLOWING STEPS TO INSTALL A BLADE:

(An 8mm hex key wrench (A), shipped with each machine, is required to change blades.)

1. **Release the upper stroke control (E) and allow the head to travel to its full UP position.**
2. **Raise the movable section of the guard (B) up to the OPEN position.**
3. **Remove the LH THREAD blade bolt (C) through the center hole in the blade guard.**
4. **Remove the blade flange (D).**

► **NOTE: It is very important to keep the blade flange, the spindle and the blade clean and free from nicks and chips when installing a blade. Failure to do these things will result in poor performance and possibly broken or damaged blades.**

5. **Install the blade. Make sure that the pin holes line up to the holes in the spindle.**
6. **Replace the blade flange and start the bolt into the spindle.**
7. **Before tightening the bolt, you must remove the backlash. To take up the backlash, rotate the bottom of the blade toward you until it seats against the drive pins.**

⌦ **CAUTION: THE BLADES ARE VERY SHARP AND CARE MUST BE TAKEN WHEN REMOVING THE BACKLASH. DO NOT GRIP THE CUTTING EDGE OF THE BLADE BARE HANDED. THE BACKLASH MUST BE TAKEN UP EVERY TIME A BLADE IS CHANGED.**

8. **After taking up the backlash, finish tightening the blade bolt (C).**
9. **Return the movable guard to the DOWN position and re-set the upper stroke control.**
10. **Break in the saw blade. The teeth on new or re-sharpened blades have a sharp edge and should be fed through the first three or four cuts, very slowly, before starting normal cutting.**

FAILURE TO DO THESE THINGS WILL RESULT IN BROKEN OR DAMAGED BLADES.

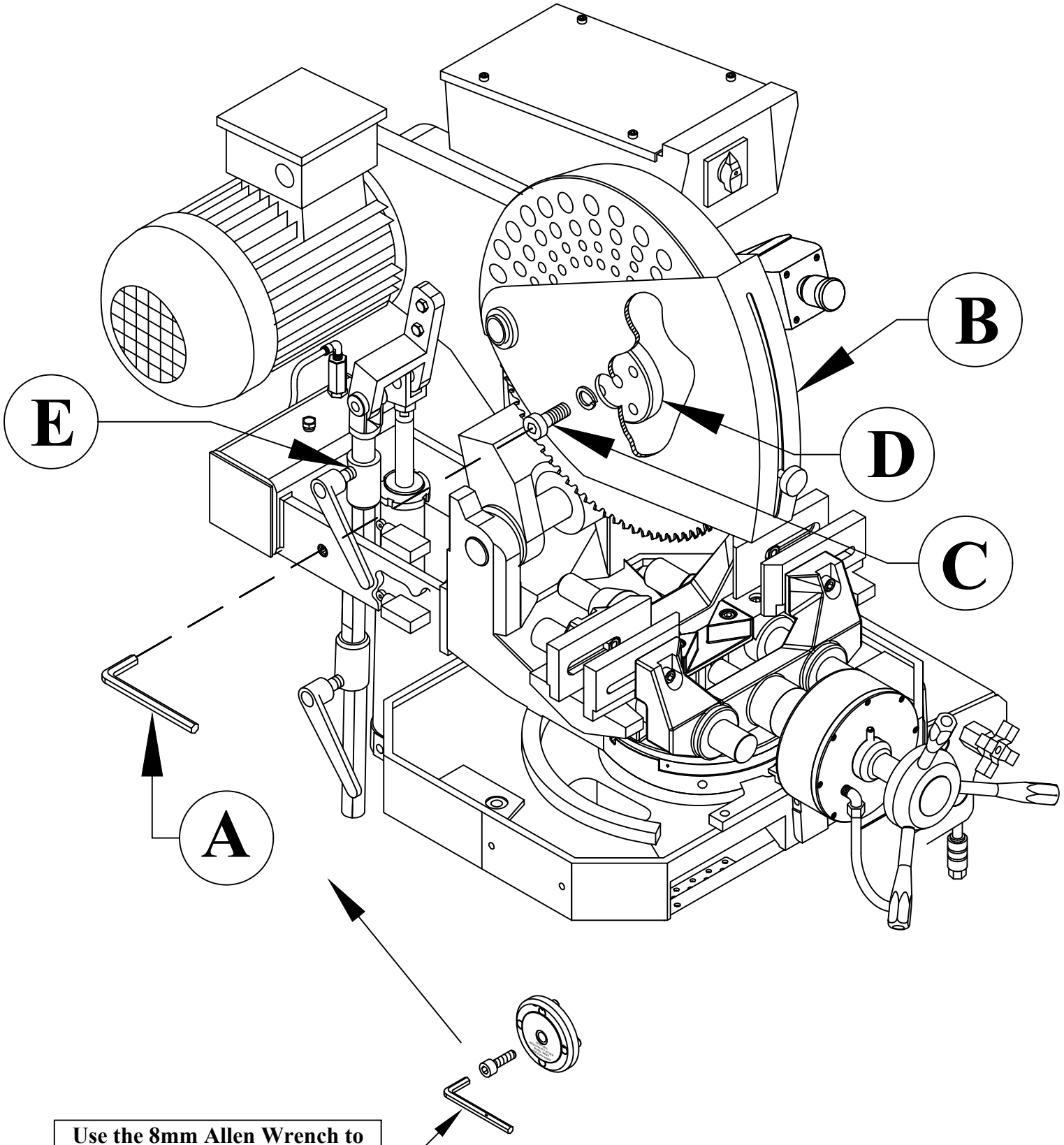

B
E
D
C
A
Use the 8mm Allen Wrench to
Remove the Saw Blade Bolt
and Saw Blade Flange.
NOTE: BOLT IS LH THREAD

FIGURE 19

7.10 POWER DOWN & POWER VISE TROUBLE SHOOTING

⌦ **CAUTION: SHUT OFF AIR SUPPLY BEFORE PERFORMING ANY MAINTENANCE**

SEE FIGURE 20 ON THE FOLLOWING PAGE.

1. **THE HEAD FEEDS DOWN FULL SPEED WITH THE FLOW CONTROL TURNED OFF.**
   Bad check valve: Clean or replace it.

2. **THE HEAD FEEDS FAST WITH NO CONTROL, HEAD BANGING UP.**
   Low oil level - Add hydraulic oil to reservoir.
   SEE SECTION 7.6

3. **THE HEAD STOPS AND DOES NOT FEED THROUGH THE MATERIAL.**
   Insufficient air pressure to machine. Adjust the Pressure Regulator to increases the pressure. SEE SECTION 4.6

4. **THE HEAD FEEDS DOWN BUT DOESN'T RETURN.**
   Check the lower limit switch, then PD solenoid.
   SEE FIGURE 20-1

5. **EXCESSIVE AMOUNT OF OIL IS EXHAUSTING THRU THE PD SOLENOID.**
   Hydraulic Reservoir was overfilled or seals are leaking in the cylinder.

6. **POWER VISE WILL NOT CLAMP OR UNCLAMP OR IS STUCK.**
   - **A. Check air supply to vise. Make sure air gets to the front when clamping and to the side for unclamping. If not, check the limit switches, then the PK solenoid.**
     SEE FIGURE 20-1
   - **B. Make sure when air is on one side of cylinder, air is not leaking past the seals to the other side of the cylinder. If it is, seals need to be replaced.**
   - **C. If cylinder is stuck, the most likely cause is rust from water contaminating the air supply and/or oiler is not putting enough oil in the air supply - See SECTION 4.6 for more FRL info. If this happens, the power vise cylinder must be disassembled, cleaned and the seals replaced.**
     See SECTION 7.3 & 7.4 for power vise disassembly.

► **NOTE: FIGURE 20-1 ON THE RIGHT SIDE OF THE NEXT PAGE IS THE WIRING SCHEMATIC FOR THE CURRENT ELECTRIC POWER DOWN-FEED SYSTEM.**

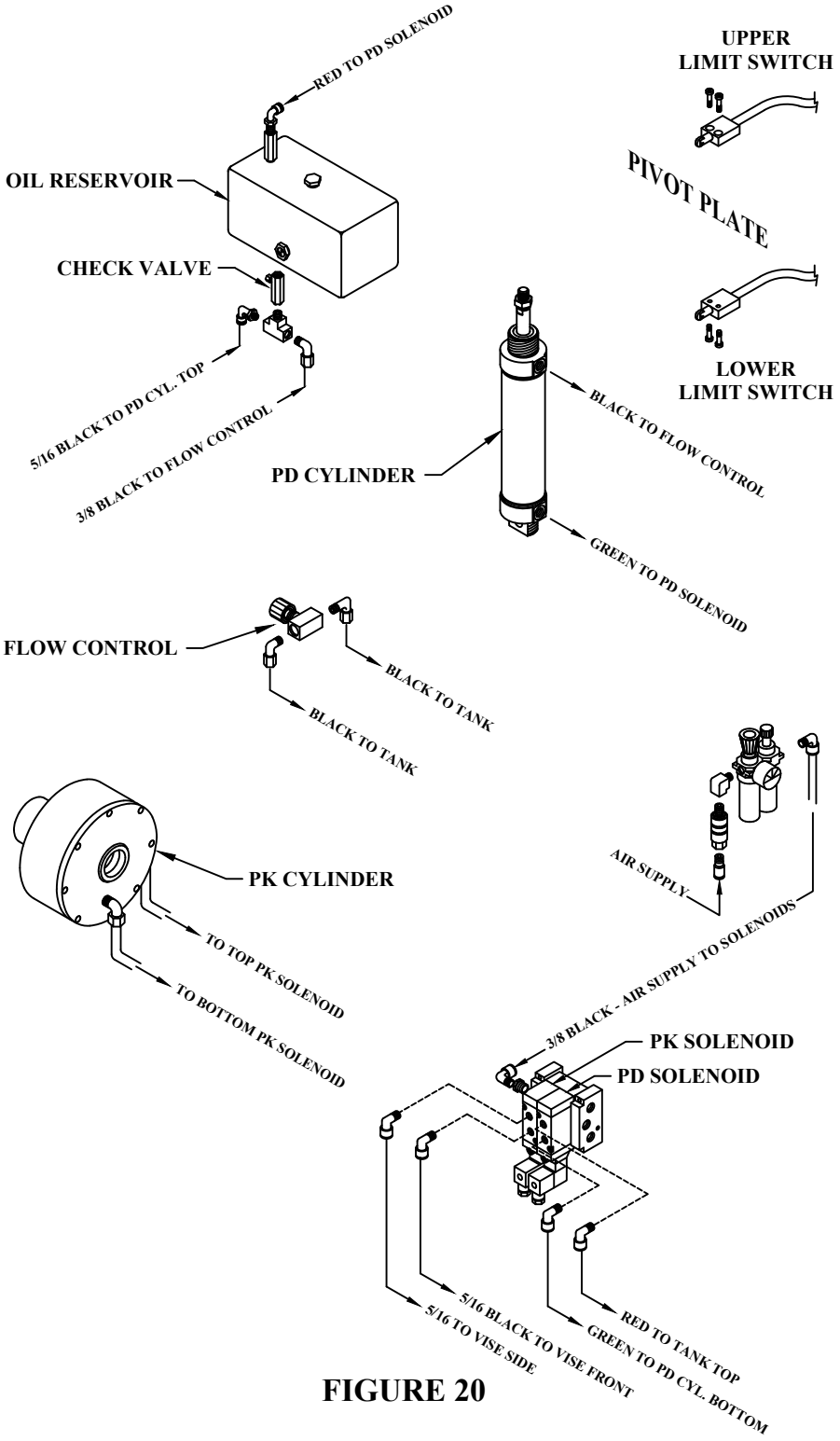


FIGURE 20

POWER DOWN FEED WIRING DIAGRAM

(Ser. #'s 6425& Up)

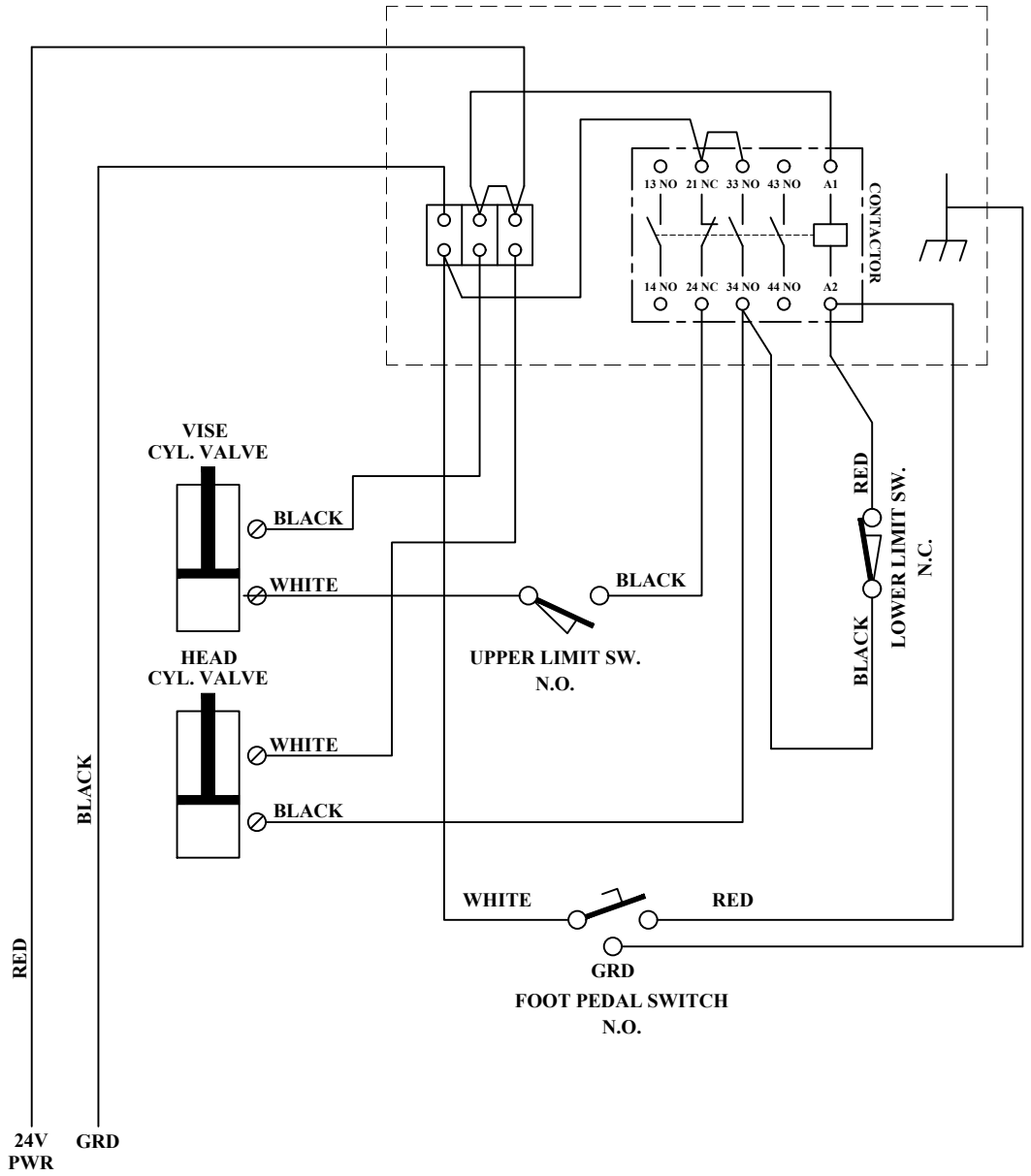


FIGURE 20-1

7.11 MATERIAL SUPPLY TRACKS

A five foot or ten foot roller supply track is an available option for this saw. It can be installed on the input side or output side of the saw to support longer pieces of material. We have measuring systems that can be bolted to the roller supply tracks that will help increase production. If needed, the supply tracks can also be bolted end to end to make them as long as needed.

SEE FIGURE 21 ON THE FOLLOWING PAGE.

1. **What is shown is our P/N 029242 - 10' ROLLER CONVEYER W/LEGS that is fully assembled with our optional P/N 076938 - 13" GUIDE ASSEMBLY mounted to it.**

2. **The conveyors can be bolted together to make longer lengths if needed.**

3. **Adjust the conveyor so that the rollers are at the same height as the bed of the vise and make sure the conveyor is level. The conveyor height is adjusted via the slots in the legs.**

4. **For additional stability, we strongly recommend anchoring the conveyor to the floor.**

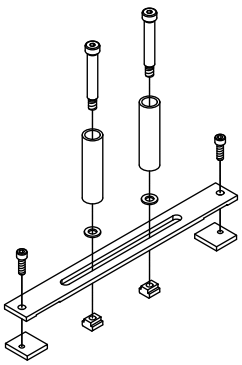
5. **The vertical rollers on the Guide Assembly are adjustable for width and can be adjusted to keep the material toward the front or back of the conveyor.**

6. **Several Guide Assemblies can be mounted to the conveyor if needed.**

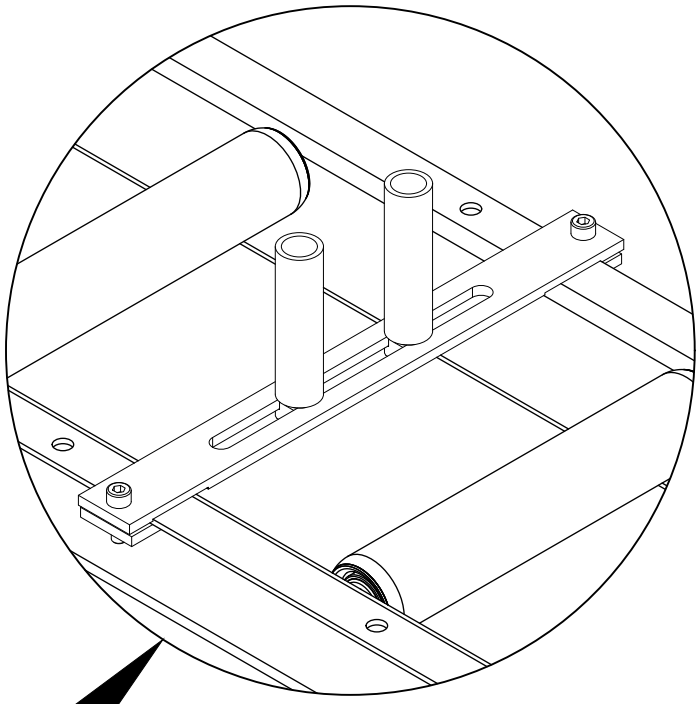
► **NOTE: WE ALSO HAVE COVERED ROLLER CONVEYORS AND SOLID FLAT CONVEYORS AVAILABLE. CONTACT YOUR DEALER OR THE FACTORY FOR MORE INFORMATION OR VISIT WWW.SCOTCHMAN.COM**

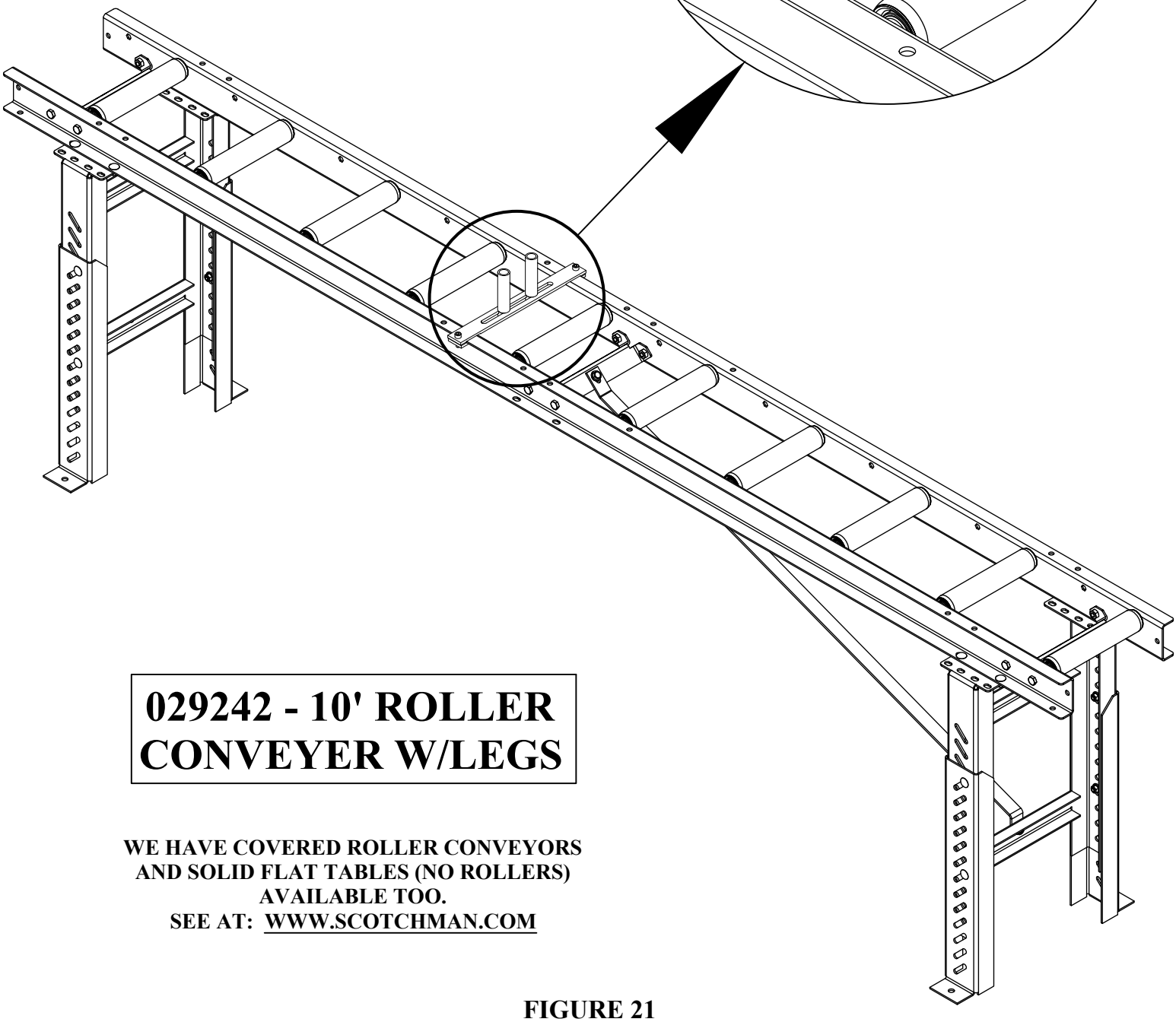
EXPLODED VIEW

DETAIL VIEW



076938
13" GUIDE ASSEMBLY





029242 - 10' ROLLER CONVEYER W/LEGS

WE HAVE COVERED ROLLER CONVEYORS AND SOLID FLAT TABLES (NO ROLLERS) AVAILABLE TOO.
SEE AT: WWW.SCOTCHMAN.COM

FIGURE 21

7.12 SCOTCHMAN MEASURING SYSTEMS

SEE FIGURE 22 ON THE NEXT PAGE FOR THE BELOW.

We have manual and digital measuring systems available that can be used with our supply tracks. They are adaptable to almost any type of machinery and are made in the USA.

QUICK-LOC - The Quick-Loc bolts to the conveyor and comes with a measuring tape. It has an aluminum rail with teeth that are in 1/16" increments. The teeth on the stainless-steel stop align themselves to the teeth on the rail, to give you the exact measurement you set and has a squeeze handle that allows the stop to be easily adjusted to any length. Its also guaranteed not to slip.

MULTI-LOC - Like the above, the Multi-Loc bolts to the conveyor and comes with a measuring tape and has an aluminum rail with teeth that are in 1/16" increments. This system comes with three stops (Standard or Heavy Duty) that can be positioned along the rail. If more than three stops are needed, you can order more. The standard stops allow parts to be cut as close as 1" apart and the heavy-duty stop 1-1/2" apart. The heavy-duty stops are usually used when a very heavy material is being processed. You can quickly cut a bar in to several different lengths without having to adjust the stop for each different length. For example, if you have a 4 ft. bar and need a 6, 8, 16, & 18 inch long piece, the three stops for the Multi-Loc are placed on the rail at those lengths. The Multi-Loc is best for high production applications.

DIGITAL QUICK STOP - The RG Digital Quick Stop is an entry level programmable stop. It is priced right, yet is very durable. Setup is as easy as entering the desired cut length and pressing go. It can be mounted to move left to right OR right to left. It is available in 8' and 12' lengths.

The above measuring systems can be mounted on either side of the saw and there are several options available for them as well. For more information, please call your dealer or the factory. Or visit our website at: www.scotchman.com

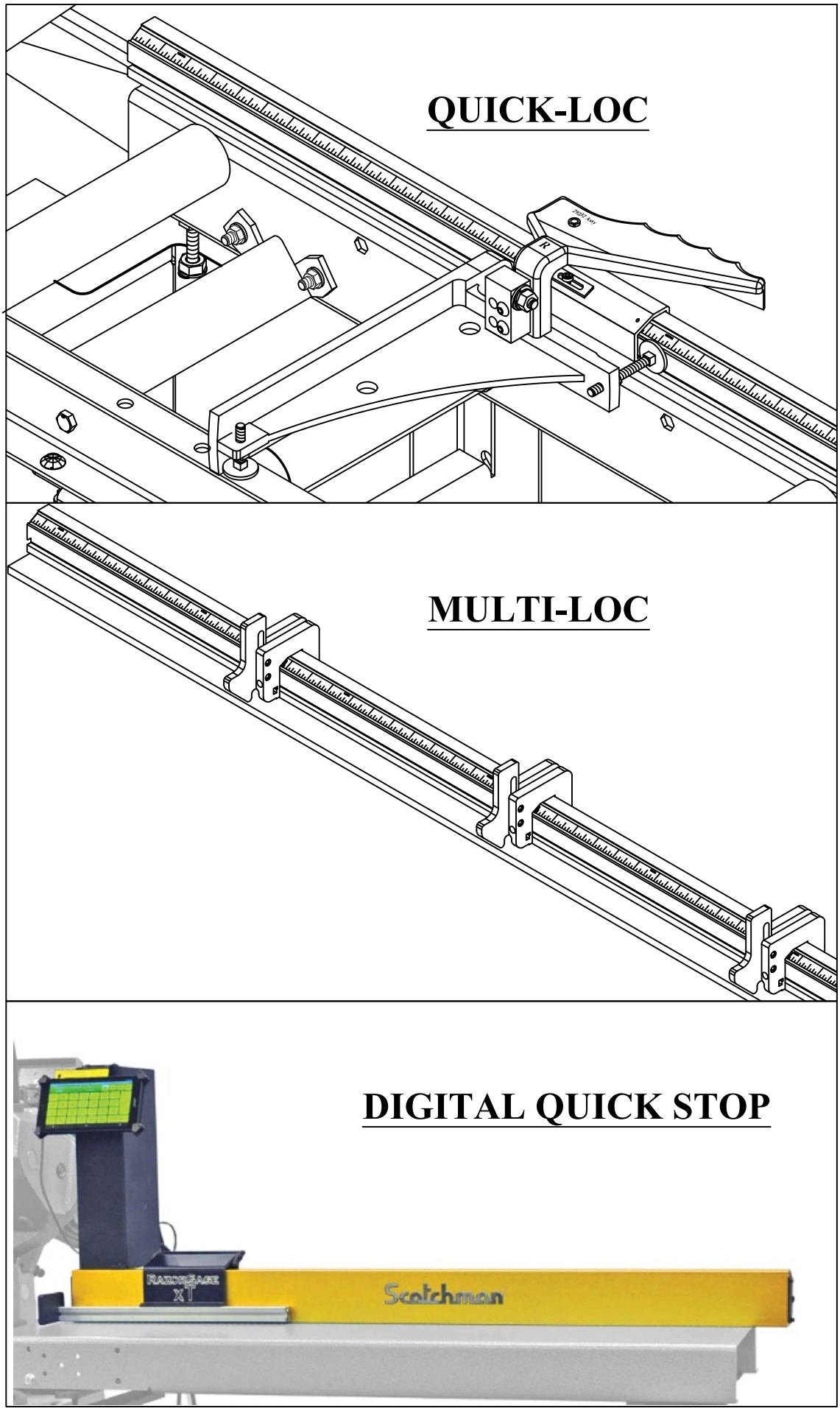


FIGURE 22

7.13 SPECIAL VISE JAWS

Special vise jaws for holding square tubing, rectangular tubing and angle iron are stock items. Jaws for holding thin wall round tubes, profiles and bundles are available on a made-to-order basis.

See SECTION 6.4 MATERIAL CLAMPING for examples.

For prices and delivery on special jaws, contact your local dealer or the factory.

7.14 LOCK-OUT DISCONNECT SWITCH

A lock-out disconnect switch is available for this machine if your plant is not equipped with lock-out capabilities. The switch mounts on the base of the saw and is shipped complete with all of the necessary parts and installation instructions.

It is available as our P/N 078200 - SAW DISCONNECT ASSEMBLY

7.15 PNEUMATIC DIAGRAM FOR PK PD MACHINES

SEE FIGURE 23 ON THE FOLLOWING PAGE.

In the drawing on the next page is a basic illustration of the pneumatic system of a PK PD (power vise and power down-feed) saw. If you have a PD only saw disregard the PK cylinder, PK solenoid and hoses. The diagram is intended to show the components and to show hose routings and locations for these saws.

PK (POWER VISE) ONLY SAWS

If you have a PK only saw, this does not represent the pneumatic system for it. The PK only saws have a simple pneumatic roller valve on the saw blade guard that actuates the power vise.

Please see SECTION 7.2 for a diagram for the PK only saws.

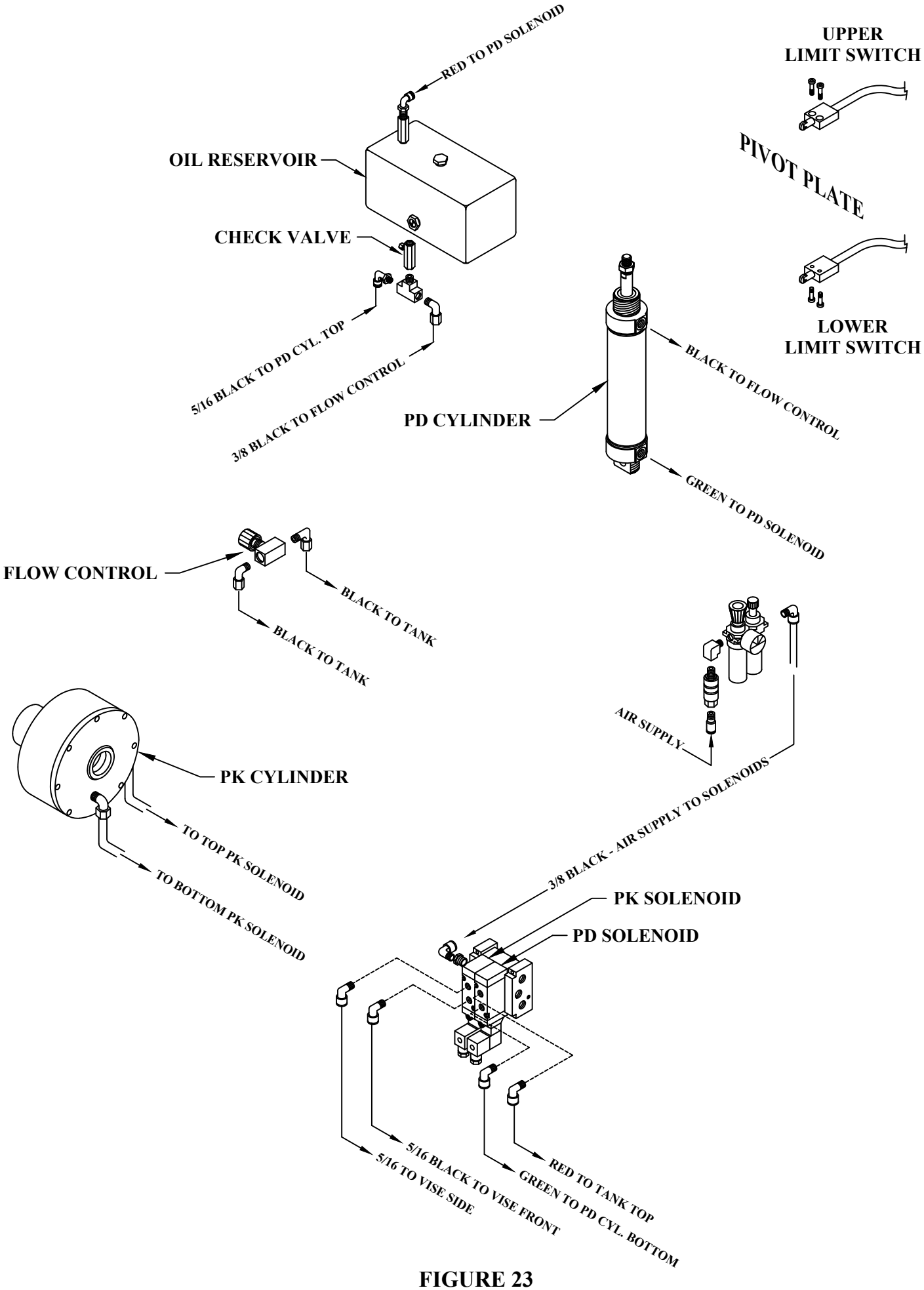

RED TO PD SOLENOID
UPPER
LIMIT SWITCH
OIL RESERVOIR
PIVOT PLATE
CHECK VALVE
5/16 BLACK TO PD CYL. TOP
3/8 BLACK TO FLOW CONTROL
LOWER
LIMIT SWITCH
PD CYLINDER
BLACK TO FLOW CONTROL
GREEN TO PD SOLENOID
FLOW CONTROL
BLACK TO TANK
BLACK TO TANK
AIR SUPPLY
PK CYLINDER
TO TOP PK SOLENOID
TO BOTTOM PK SOLENOID
3/8 BLACK - AIR SUPPLY TO SOLENOIDS
PK SOLENOID
PD SOLENOID
5/16 TO VISE SIDE
5/16 BLACK TO VISE FRONT
GREEN TO PD CYL. BOTTOM
RED TO TANK TOP

FIGURE 23

8.0 TROUBLE SHOOTING GUIDE

8.1 ELECTRICAL TROUBLE SHOOTING

1. THE MOTOR WILL NOT RUN:

A. Some models have a lock-out switch in the base of the saw. If your saw has this option, make sure that it is in the ON position. Also, check the supply voltage to the saw to make sure that it is the same as the motor voltage. These machines require three phase power.

B. On manual and power vise (PK) machines, you must turn the motor switch past the ON POSITION to energize the motor contactor, then left in the ON position for the trigger switch to work. If motor contactor will not energize, contact your local dealer or the factory.

C. On machines equipped with the power down feed option, the motor contactor must be energized as explained above. If the switch is in the ON position the motor should run. When switched to the OFF position, the motor should stop and the contactor stays energized. Depressing the foot switch should activate the power-downfeed with motor on or off. If the motor contactor will not energize, the saw will not function. If motor contactor will not energize, contact your local dealer or the factory.

2. THE SAW MOTOR RUNS BUT DOES NOT HAVE ADEQUATE POWER:

A. Make sure that the supply voltage and phase correspond to the saw motor's voltage and phase.

B. Disconnect the machine from the power source and check for any loose or disconnected wires.

C. The supply lines to the machine must be of adequate size to handle the load and must not be too long. For recommended sizes and lengths, SEE SECTION 4.4.

D. The bearings in the spindle for the saw blade may be damaged. With the power to the machine disconnected, take the belt cover off check the belt for any unusual wear. Take the belt off and turn the blade spindle by hand to see if it spins freely. Listen for any unusual noise, grinding, or excessive free play in the spindle. If the bearings are bad, they are somewhat difficult to replace. So we offer a complete NF bearing assembly - P/N 077929 - that is a simple bolt in replacement.

For instructions on spindle replacement, REFER TO SECTION 8.4 & SECTION 9.1.

8.2 BREAKAGE OR EXCESSIVE DULLING OF BLADES

1. **Select the proper blade and spindle speed for the material being cut. For recommendations, See SECTION 6.3.**

2. **Always break in the blade before you start normal cutting. New blades have a very sharp edge. Draw the blade through the material slowly on the first few cuts.**

3. **Do not apply excessive down pressure on the work piece. With solid material, excessive down pressure will cause the teeth to remove too much material which can cause the material to get stuck in the teeth of the blade. This results in a rough finish on the cut and possibly premature dulling of the blade or the carbide tips getting chipped or broken.**

4. **Use only our P/N 075760, (SYNCON-2) coolant. We recommend that is used straight and not diluted. Make sure the mister is working correctly and applying the proper amount of coolant to the blade to keep it lubricated. If the blade is not getting enough coolant it can cause many problems including pick-up (See below). See SECTION 4.8 for more info on the mister.**

5. **Keep the blade flange, the face of the blade spindle and the blade clean and free from nicks. Any contamination or nicks on the flange, spindle or the blade will cause the blade to run out of alignment. It is VERY IMPORTANT to keep everything clean when changing blades.**

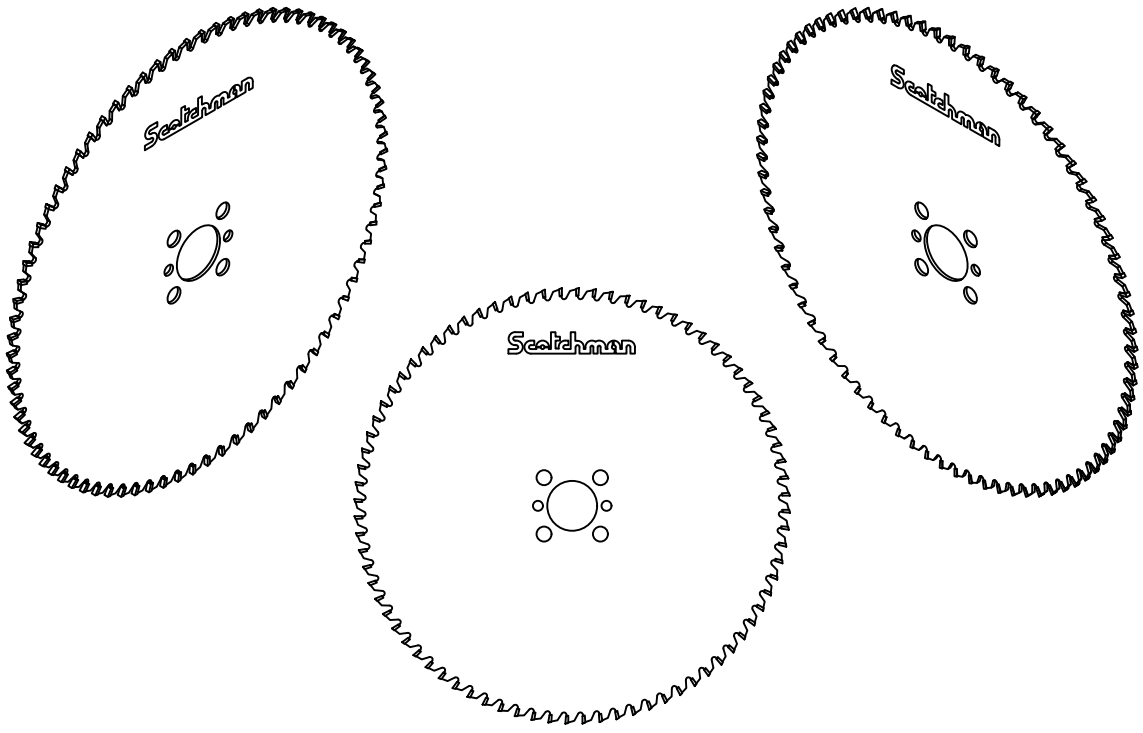
6. **Always remove the backlash when installing a blade. For instructions, see SECTION 6.1. Also, check the condition of the drive pins when replacing the blade. If the drive pins are broken or worn, replace them.**

7. **Any of the above problems may cause a condition known as pick-up. Pick-up is caused when the material being cut adheres itself to the sides of the blade. Too much down pressure, a dirty flange, a lack of coolant, or the wrong kind or a poor quality coolant can help to cause this. When pick-up is present, you will feel a jerking or vibration in the saw head while cutting. This is caused by the blade being pinched as it goes through the material where the pick-up is present. Also, there will be a much rougher finish on the cut. The pick-up makes the blade "thicker" in that spot and every time that "thicker" spot passes thru the material, more material will adhere to it making it worse. Whenever material has adhered to the blade, the blade should be immediately taken off the machine and the pick-up removed from the blade, or the blade should be sent out for resharpening.**

8. **Review the above to determine what the caused the problem and correct it.**

FOR BEST RESULTS, USE ONLY SCOTCHMAN COLD SAW BLADES AND COOLANT

Send your blades back to our factory to be professionally resharpend on modern CNC equipment.



Ship them to: **SCOTCHMAN IND.** **ATTN: BLADE DEPT.** **180 E US HWY 14** **PHILIP, SD 57567**	**<u>Make sure to include</u>** **your contact information, company name, and return address inside the box with the blades.**

8.3 COOLANT SYSTEM

1. IF COOLANT WILL NOT FLOW:

A. Check the level of the coolant in the reservoir.

B. Check the suction line between the reservoir and the mister unit. If there are any cracks or poor connections in the line, or if it is plugged, it will not siphon the coolant out of the reservoir.

► NOTE: THERE IS A CHECK VALVE IN THE SUCTION LINE. IT IS LOCATED DOWN LOW, NEAR THE COOLANT RESERVOIR.

C. If suction line is plugged, remove the check valve (see note above) and make sure it is functioning correctly. If it needs to be replaced, it is P/N 045740. With the check valve removed, use compressed air to blow through the suction lines to make sure they are clear.

D. Check the reservoir for contamination or sludge buildup that may be blocking the inlet. If reservoir is contaminated, remove it and thoroughly clean it and fill with fresh coolant.

E. Make sure that the coolant mister on the guard is adjusted correctly. See SECTION 4.8. It has a knob to adjust the amount of coolant being applied to the blade. The nozzle where the coolant comes out can also be adjusted to change the spray pattern, but should be set properly at the factory and need no further adjustment.

F. Make sure the mister has air flowing through it and sufficient air pressure to draw the coolant. The main regulator should be set to at least 90 psi and the mister regulator (mounted just behind the guard) must also be adjusted correctly.

G. The manual and power-vise (PK) only saws have a pneumatic roller valve between the main regulator and the mister regulator. See SECTION 7.2. It must be adjusted to allow the air to flow when the the head is pulled down and stops the air flow when the head is in the full up position. If the main regulator has proper air pressure and no air is getting to the mister, check the pneumatic roller valve.

H. If all of the above check out, the mister itself may be plugged. You may need to remove it and take it apart and clean it. Be very careful not to damage the o-rings when doing so.

8.4 BELT & SPINDLE BEARING REPLACEMENT

SEE FIGURE 24 ON THE FOLLOWING PAGE.

► **NOTE: DISCONNECT POWER BEFORE PROCEEDING**

TO REMOVE THE DRIVE BELT, USE THE FOLLOWING STEPS:

1. **If a blade is installed on the machine, remove it before proceeding.**
2. **Remove acorn nuts (41) retaining the belt guard and remove the belt guard (24).**
3. **Remove the belt (22) by sliding it off the drive pulley (20) while slowly turning it.**
4. **Check the condition of the drive belt. If showing excessive wear or is stretched and loose, the belt should be replaced. If signs of heating or fraying along the sides of the belt are apparent, check the alignment of the pulleys and adjust the drive pulley (20) if necessary.**
5. **Reinstall the belt in the reverse order of above. Install the belt first on the driven pulley and then work it over the drive pulley, slowly turning the drive assembly as necessary.**
6. **The belt drive is manufactured to the length of the belt and no tensioning should be necessary. However, the motor mount holes in the frame (40) are slotted.**
7. **Reinstall the belt guard and retaining nuts.**

TO REMOVE THE SPINDLE, USE THE FOLLOWING STEPS:

Replacing the spindle or spindle bearings on this machine is not an easy task. You may want to consider replacing the complete assembly: P/N 077929 - NF BEARING ASS'Y. (See lower right corner of FIGURE 24)

1. **With the blade drive belt removed (see above), remove the lock nut (28) on the end of the shaft and remove the driven belt pulley (32) and key (34).**
2. **Remove the three bolts (39) retaining the blade guard and spindle assembly. Remove the blade guard.**
3. **The spindle assembly is now free from the head frame. The housing (33) fits snugly in the frame (40) and a hammer may need to be used to (carefully!) remove it.**
4. **Once it's out, gently tap two steel wedges, opposite to each other, between the housing (33) and the seal flange (30) to separate them. (See left side of FIGURE 24)**

5. **Place the assembly in a press with the saw blade mounting flange down, so the outside of the largest diameter of the bearing housing (NOT the seal flange) sits on the wedges. Carefully press the spindle (29) and bearing (27) out of the housing (33).**
6. **Remove the snap-ring (31) and place two steel wedges between the bearing (27) and seal flange (30). Carefully press the bearing (27) off the spindle shaft (29).**
7. **Press the needle bearing (35) out of the bearing housing (33).**
8. **Reassemble assembly in the reverse order of the above.**
9. **Be sure to grease the assembly with a high pressure, high temperature lithium based grease (such as Mobilegrease XHP 222 or equivalent) before operating the machine. When empty, the bearing assembly hold approximately 60 pumps of grease.**

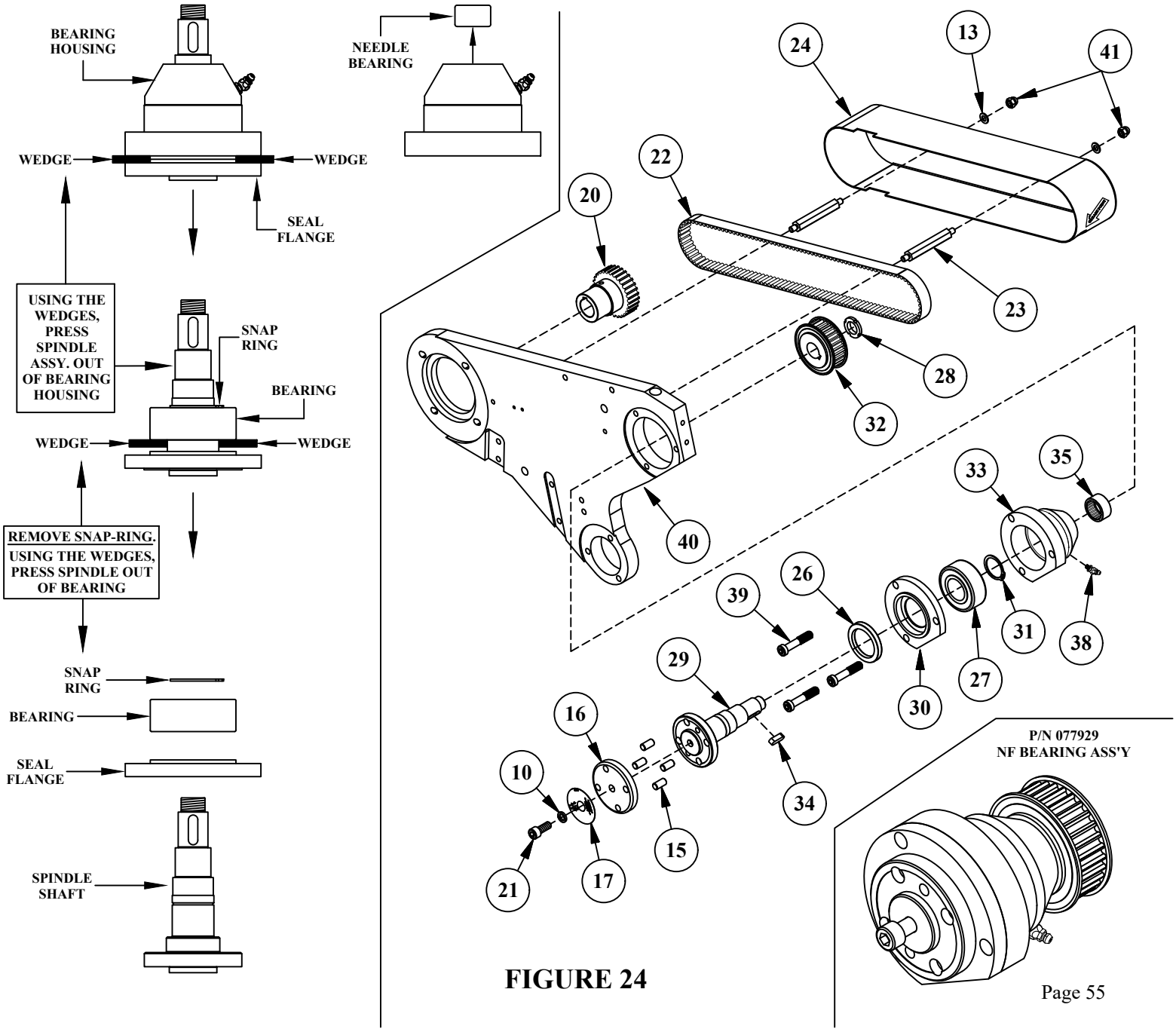


FIGURE 24

9.0 PARTS LISTS

9.1 DRIVE ASSEMBLY

ITEM	PART #	DESCRIPTION
A	677912	Belt Guard
B	077915	Belt
C	077189	Lock Nut
D	077898	Head Sprocket
E	677913	NF Side Frame
F	077900	Bearing Housing
G	077909	Needle Bearing
H	077897	Snap Ring (33mm)
I	075076	Bearing
J	075075	Oil Seal
K	077896	Seal Flange
L	077894	Spindle Shaft
M	077626	Saw Flange
N	077908	M10 Bolt (Left Hand)
O	073110	M10 Lock Washer
P	077902	Key 8 x 25
Q	677901	M10 x 55 SHCS (Low Head)
R	077332	Pivot Shaft (Long)
S	221120	M8 X 25 SHCS Grade 12.9
T	N/A	Included with Item X
U	077912	Pivot Shaft Housing
V	077110	350 Stroke Adjustment Nut
W	201235	M10 x 80 HHCS
X	077906	Motor Sprocket NF

ITEM	PART #	DESCRIPTION
Y	677904	Guard Mount Studs
Z	077160	M8 Plastic Washer
AA	677936	M8 Dome Nut - NF
BB	077922	Return Spring Bracket (Upper)
CC	077365	Return Spring
DD	677923	Return Spring Bracket (Lower)
EE	221212	M10 x 30 SHCS
FF	203210	M10 x 25 HHCS
GG	243102	Grease Nipple
HH	077895	Head Stop NF
I I	221215	M10 x 35 SHCS
J J	073210	M20 Jam Nut
KK	077000	Draw Handle (Includes JJ & LL)
LL	077002	Handle-Plastic with Switch
LL1	077001	Micro Switch (for above)
MM	077303	Pivot Shaft (Short)
NN	077914	NF Head Return Bumper
OO	073458	M6 x 10 SHCS
PP	218040	M8 x 35 SS
QQ	218045	M8 x 45 SS
RR	073920	M10 x 20 Dowel Pin
	077929	NF Bearing Assembly (Includes F, G, H, I, J, K & L)

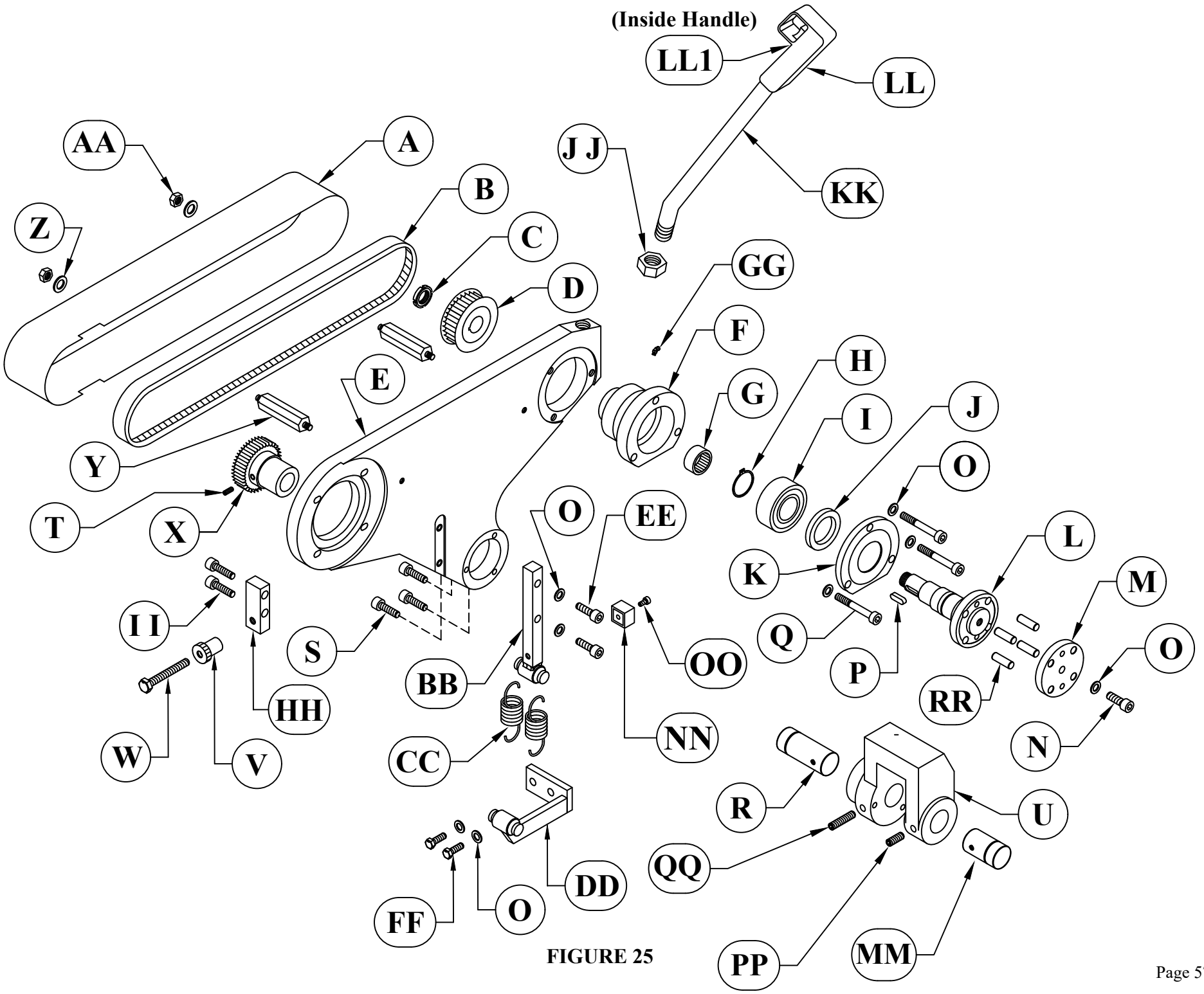

(Inside Handle)
LL1
LL
AA
A
J J
KK
Z
B
C
D
GG
F
E
H
G
I
J
O
Y
T
X
O
EE
L
K
M
I I
S
BB
OO
Q
P
RR
O
HH
W
V
CC
NN
N
R
U
QQ
DD
FF
O
PP
MM

FIGURE 25

9.2 VISE ASSEMBLY

ITEM	PART #	DESCRIPTION
A	221220	M10 x 40 SHCS
B	077319	350 Saw Jaw - Rear (Includes F)
C	077919	Aluminum Vise Jaw (Right) NF (RF & LR)
D	208012	M10 Hex Nut
E	077309	350 Guide Shaft
F	077310	Seal
G	077307	350 Vise Base - Sales
H	077100	M10 x 30 Dowel Pin
I	077133	Screw End
J	077136	Pressure Plate
K	677879	Tension Nut Assembly (Inc. L, M, K)
L	208010	M8 Hex Nut
M	073329	M8 x 45 HHCS
N	210016	M16 Jam Nut
O	060240	Tension Handle (Includes N, O, & P)
P	077138	Knob
R	077400	Vise Handle
S	077121	M20 x 1.5 Jam Nut
T	060270	1-3/4 Hole Plug
U	060267	Boss 275/350 Assy. (Inc. T)
V	077318	350 Saw Jaw - Front - Dimpled (Includes F)
W	077920	Aluminum Vise Jaw (Left) NF (LF & RR)
X	077305	350 Screw Spindle
Y	073460	M10 x 16 SHCS
AA	077314	350 Filling Block
BB	077311	350 Support Block
CC	221212	M10 x 30 SHCS
EE	660225	350 NF Vise Assembly

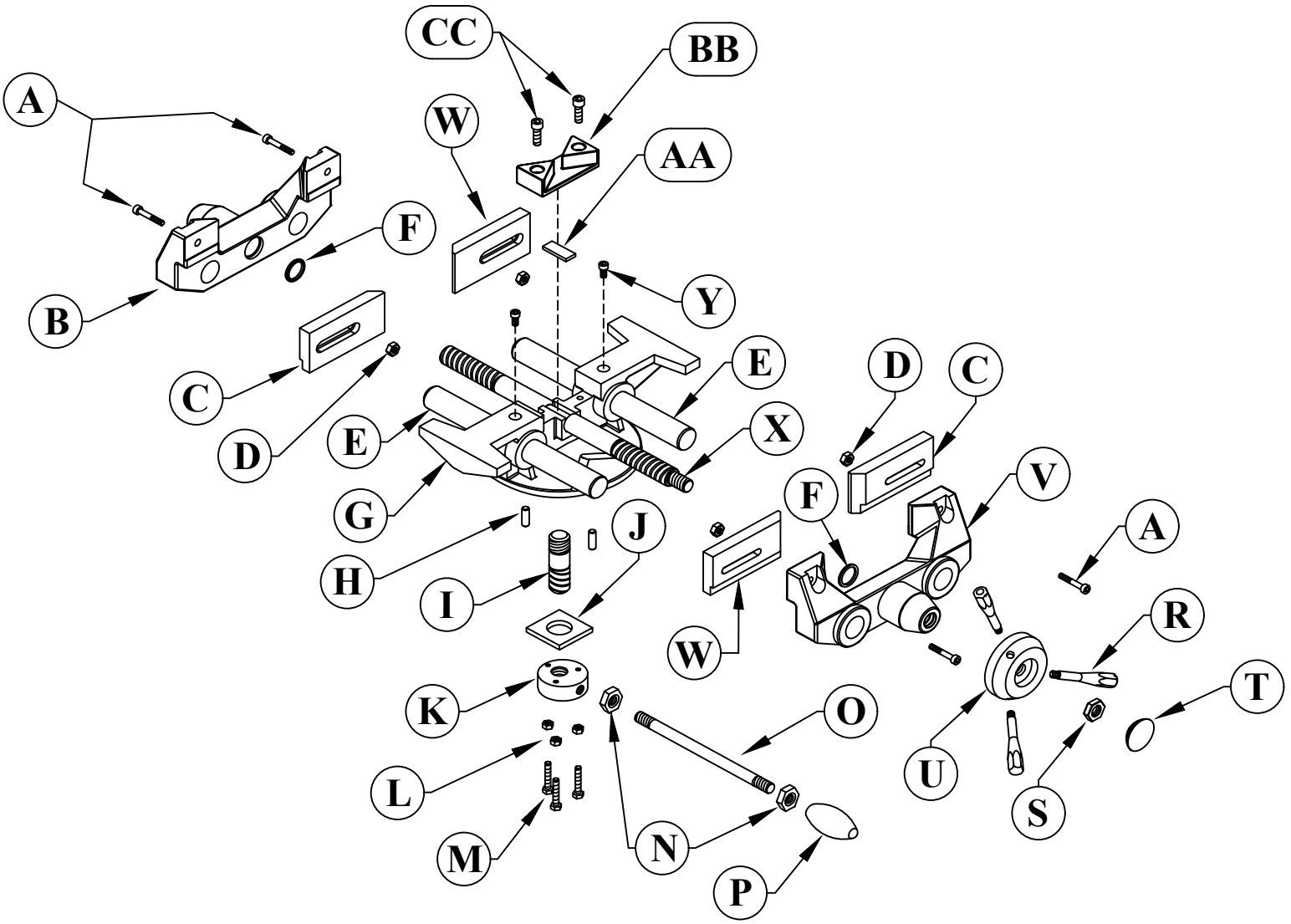


FIGURE 26

9.3 GUARD ASSEMBLY - MANUAL & POWER VISE MACHINES

ITEM	PART #	DESCRIPTION
A	N/A	Guard Shell
B	077165	Spacer Ring (Thin)
C	N/A	Hinge Cap (Front)
D	077164	Spacer Ring (Thick)
E	N/A	Hinge Cap (Rear)
F	077166	Nylon Spacer
G	077167	M30 Ext Ret Ring
H	077160	M8 Nylon Washer
I	777607	Short Arm W/ Pin Installed
J	077162	Pin
K	077161	8mm Dome Cap
L	077361	350 Pivot Bracket Assy.
LA	060490	350PK Pivot Bracket Assy.
M	221210	M10 X 25mm SHCS
N	077366	M8 X 10 X 10 Shoulder Bolt
O	077362	Bushing/Bearing Brnz
P	077359	Star Knob
Q	077360	Box/Spacer Threaded
R	077356	350 Guard Lever
RA	060480	350PK Lever Assembly

ITEM	PART #	DESCRIPTION
S	077358	M10 Lock Ring
T	218010	M5 X 10mm Set Screw
U	077609	350 Guard Lever Assy.
V	N/A	Coupling Arm
W	073641	M10 X 65 SHCS
X	212012	M10 Lock Washer
Y	076839	NF Mister Unit
YA	076835	NF Mister Unit Ass'y (Y, Z & AA)
Z	676842	Male Elbow X 90° Barb
AA	676844	NF-1168X5 1/8 NPT Straight
BB	073090	M4 Spacer NF Guard
CC	073415	M4 X 25 DIN912 SHCS
DD	660350	Blade Rotation Decal
EE	060345	Danger Decal
FF	214012	M10 Regular Washer
GG	077916	350 NF Blade Guard Only (A Thru J, V, DD, & EE)
HH	077975	350 NF Blade Guard-Sales (GG, H, K, & N Thru S, U, Y, Z, & AA Thru DD)

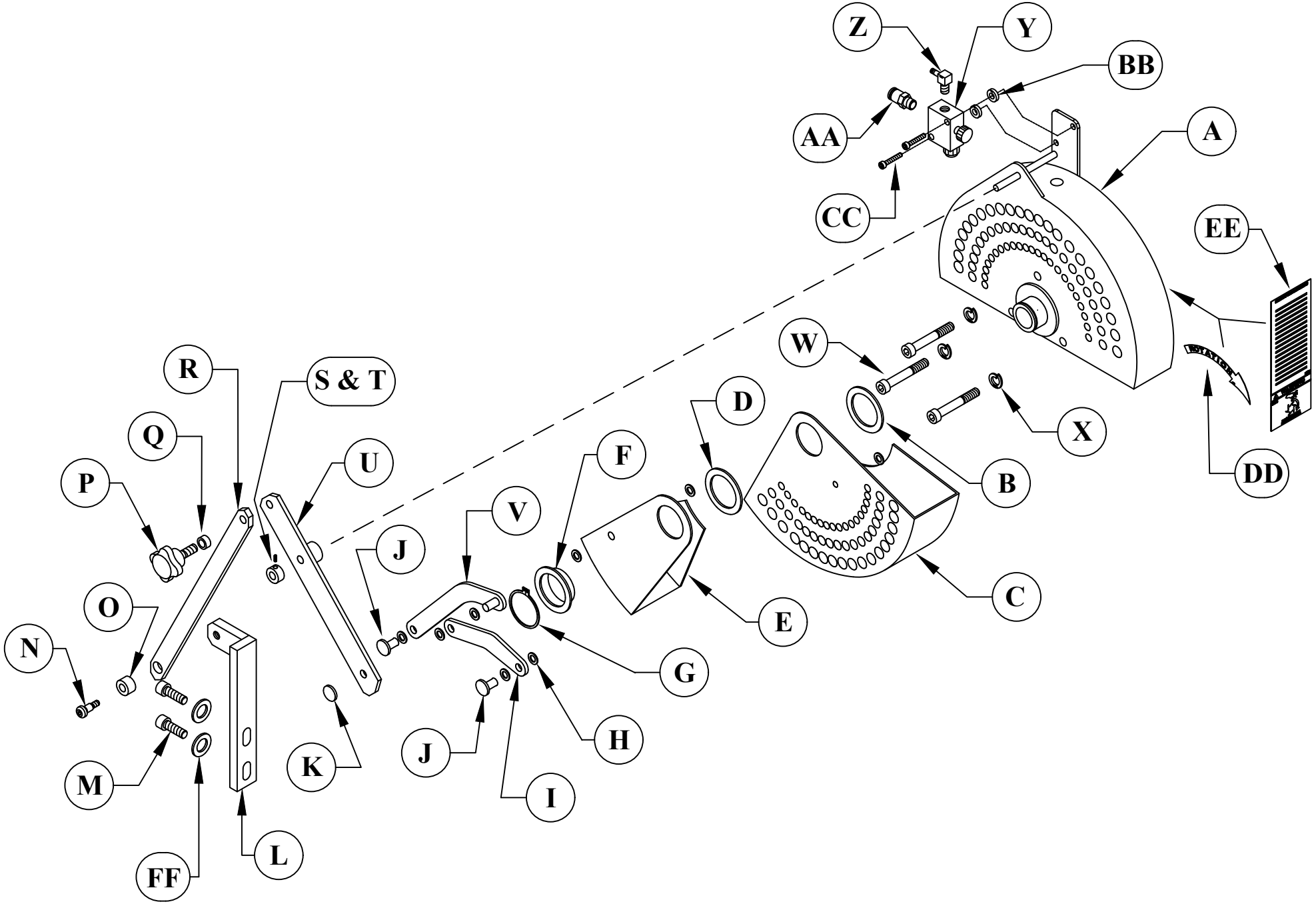
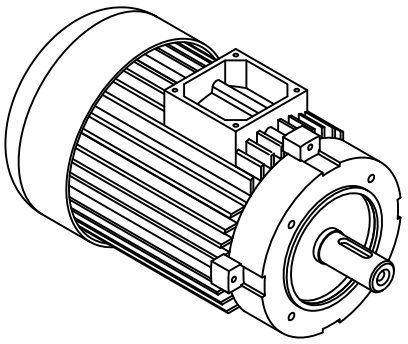


FIGURE 27

9.4 MOTOR ASSEMBLY

ITEM	QTY	PART #	DESCRIPTION
1	1	076902	Fan Cover-Painted
2	4	073407	M5 X 6 Slot Head
3	1	076900	Fan Blade (24mm Dia Hole)
4	1	077370	Key 6-4-30
5	1	077855	Switchbox Gasket
6	4	073326	M8 X 30 HHCS
7	1	076987 076989	350NF 230V 5HP Motor Painted 350NF 460V 5HP Motor Painted

Contact factory for information regarding replacement of internal components.



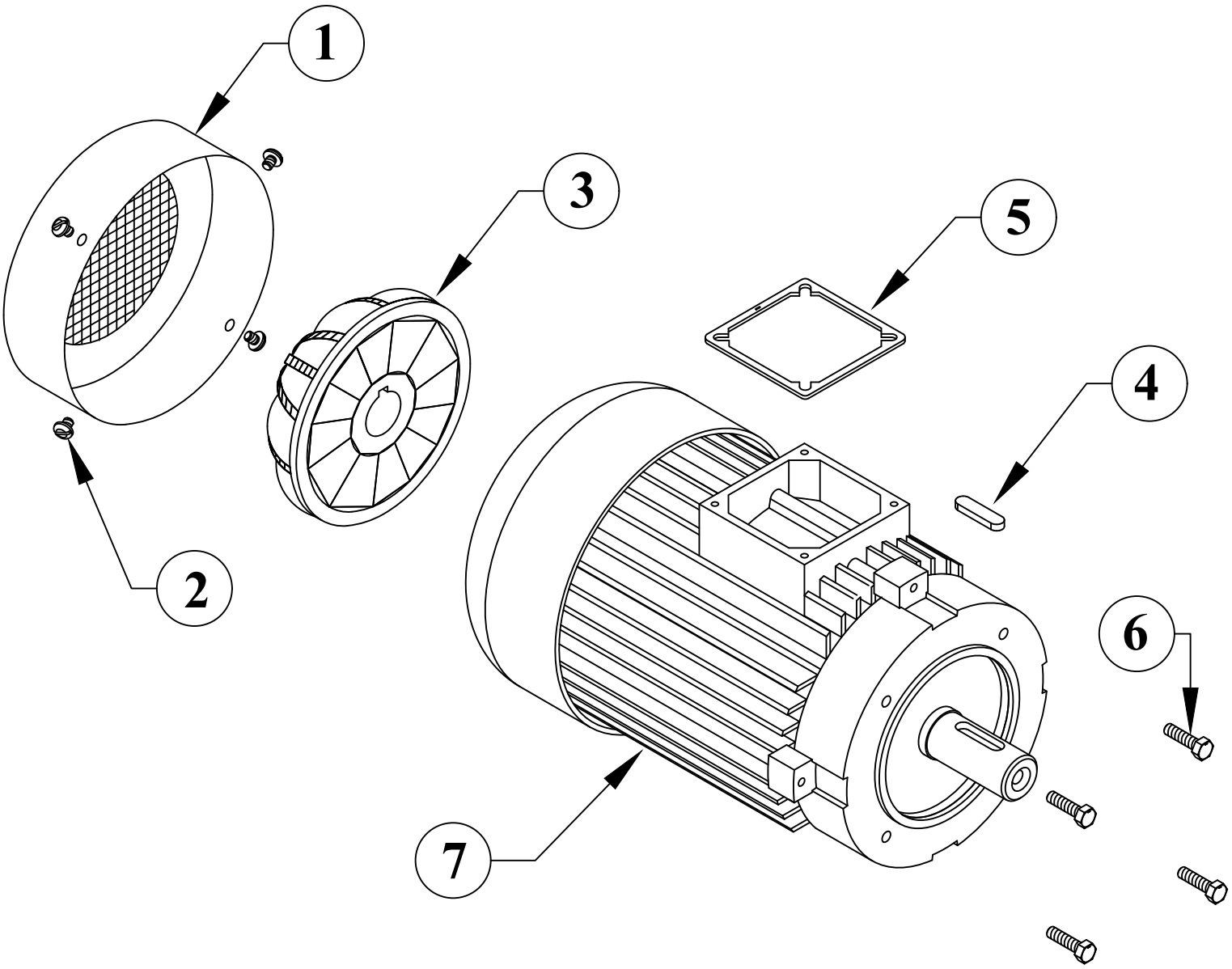
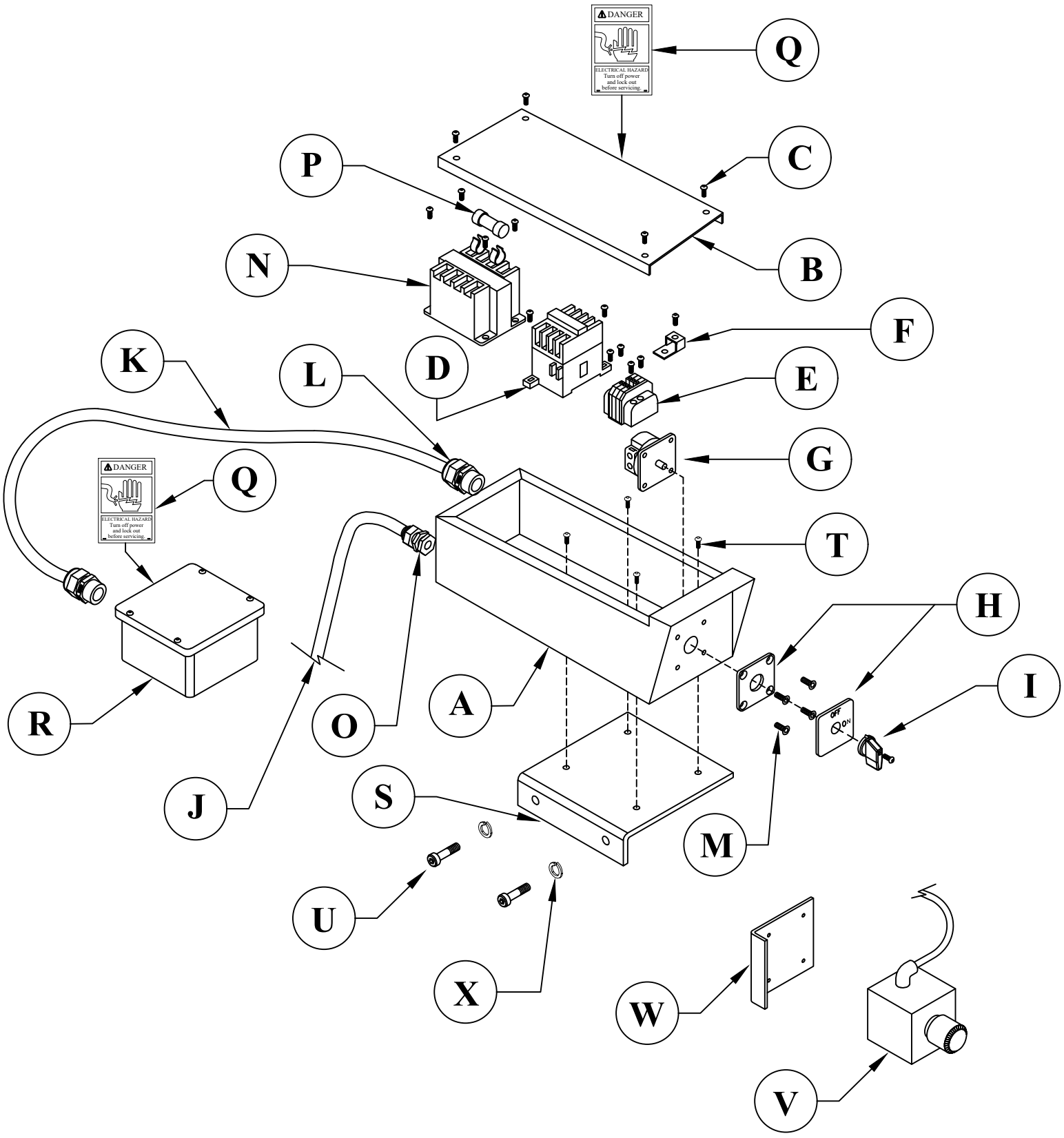


FIGURE 28

9.5 ELECTRICAL UNIT

ITEM	PART #	DESCRIPTION
A	060094	Switch Box & Lid
B	N/A	Included with Item A
C	221002	M-4 x 12 SHCS
D	060071	Contactor 24 Volt
E	078456	M4/6 TERMINAL BLOCK
F	060049	Single Wire Ground Lug - (3) Required
G	060115	Main Switch
H		Included with G
I	011844	Knob
J		Incoming Power
K	060090	Motor Cable
L	077183	M13.5 Liquid Cord Conn
M	077864	M5 X 12 SHCS
N	060050	Transformer 24V 208/230/460
N1	060051	Transformer-575 Volt
O	563441	3/4 Liquid Type Connector
P	077564	Fuse
Q	003122	Danger Voltage Label
R	061000	Junction Box (Complete)
S	060100	NF Switchbox Mount
T	077864	M5 x 12 SHCS
U	221130	M8 x 35 SHCS
V	060110	Emergency Stop
W	060101	Emergency Stop Mount
X	073108	M8 Lock Washer


DANGER
ELECTRICAL HAZARD
Turn off power
and lock out
before servicing.
Q
P
C
N
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O
A
J
S
M
U
X
W
V

FIGURE 29

9.6 COOLANT SYSTEM AND BASE

ITEM	PART #	DESCRIPTION
A	660110	275/350 Base Painted - Sales
B	677933	NF Coolant Reservoir
C	154004	#66 Alum Pop Rivet
D	045740	Liquid Check Valve
E	077926	3/16 x 5/16 Coolant Line
F	060501	5/16" Black Air Tube
G	077930	In Line Regulator
H	676844	1/8" NPT Straight Fitting
I	076839	NF Mister
I-A	076835	NF Mister Unit Assy. (Incs. H, I, & J)
J	676842	Male Elbow x 90° Hose Barb
K	677934	NF-FRL Mounting Bracket

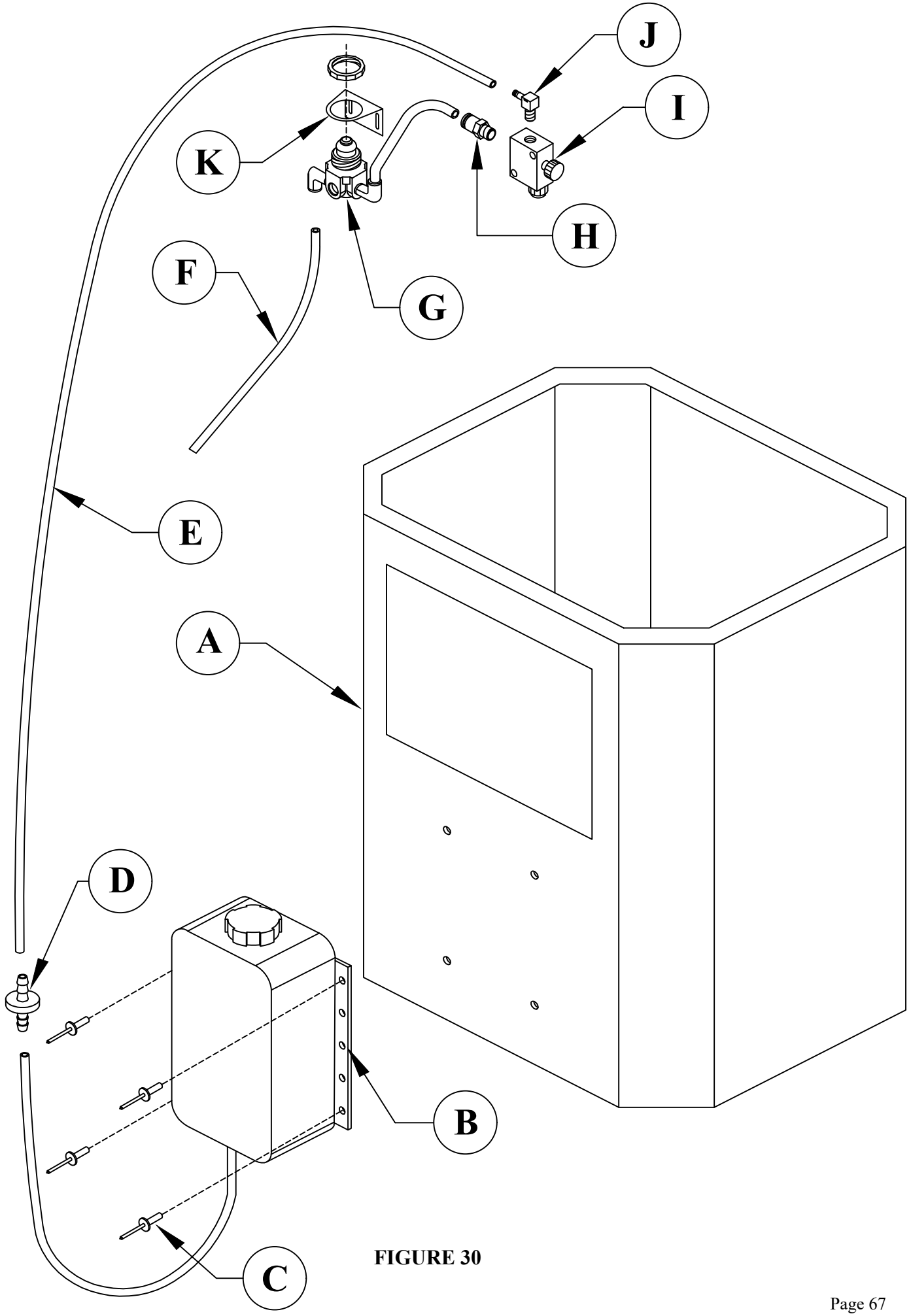

FIGURE 30

9.7 CAST BASE AND PEDESTAL

ITEM	PART #	DESCRIPTION
A	077228	Miter Lock Pin
B	077226	Miter Lock Handle
C	077227	Miter Lock Spring
D	073660	M8 x 12 SHCS
E	077225	Miter Lock Support
F	203210	M10 x 25 HHCS
G	077113	Cast Base Plate (PK Only Models may need to reroute PK hoses)
H	214012	M10 Flat Washer
I	073350	M10 x 100 HHCS
J	077100	Dowel Pin
K	077300	350 Bearing Pedestal Assy. (Inc. Q & P)
L	077332	Pivot Pin (Long)
M	077142	M10 Grease Zerk (2 needed)
N	077303	Pivot Pin (Short)
O	077912	NF Pivot Bracket
P	077101	Pivot Scale
Q	660255	Drive Screw (2)
R	218040	M8 X 35 Set Screw
S	218045	M8 X 45 Set Screw
T	077114	Complete Miter Lock Assembly (Includes Items A thru E)

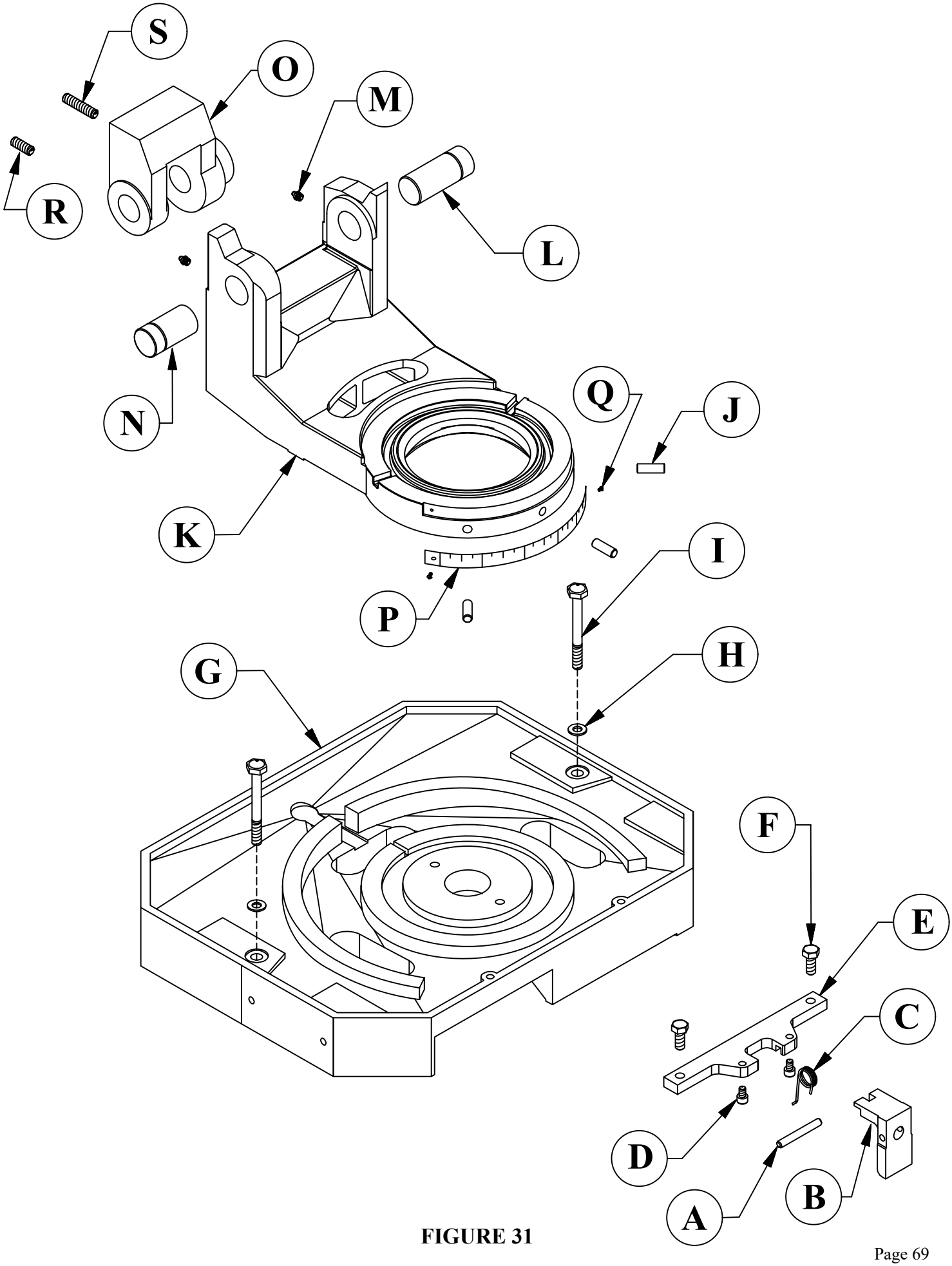

FIGURE 31

10.0 OPTIONAL EQUIPMENT PARTS LISTS

10.1 POWER VISE ASSEMBLY

ITEM	PART #	DESCRIPTION	V	077542	Lubricator Seal Kit -Parker (Obsolete)
A	077462	Cast Grip Cheek Front (inc. HH)	W	077539	Bowl - Parker (Obsolete when stock is gone)
B	077319	Cast Grip Cheek Rear (inc. HH)	W1	077554	Bowl, Lubricator - Parker (Modular FRL)
C	073457	M6 x 80 SHCS	W2	077555	Bowl, Filter - Parker (Modular FRL)
D	077460	350 PK Screw Spindle	X	077538	Air Pressure Gauge
E	060204	PK Cylinder Body	Y	077540	Filter or Reg. Seal Kit - Parker (Obsolete)
F	077417	O-Ring	Z	077719	Slide Valve
G	077416	O-Ring	AA	077553	Complete Modular FRL Device - Parker (Obsolete) Replaced by BB
H	077411	PK Cylinder Piston			
I	077418	M6 x 30 Roll Pin	BB*	077653	Camozzi FRL (Does Not Inc. Q & Z)
J	060450	PK Cylinder Lid	CC	060490	350 PK Pivot Bracket Assy.
K	077419	Oil Seal	DD	073415	M4 x 25 SHCS
L	077408	M8 x 24 Roll Pin	EE	077309	350 Guide Shaft
M	060267	275/350 Boss Assy. (Inc. HH)	FF	077409	PK Lock Nut
N	077400	Vise Handle	GG	060270	1-3/4" Hole Plug
O	077121	M20 x 1.5 Jam Nut	HH	077310	Seal 28 x 35 x 5
P	221002	M4 x 12 SHCS	I I	077741	1/8" Male SW X169PL
Q	077742	1/4" Male Swivel	J J	077311	350 Support Block
R	060501	5/16" Black Tube	KK	077314	350 Filling Block
S	077183	Cord Connector		077412	Complete PK Cylinder Assy.
T	077430	PK Valve Roll Cam		076371	Cylinder Seal Kit (Inc. F, G, & K
U	060501	5/16" Black Tube		060541	350 PK Vise Sales

*** THE CAMOZZI FRL REPLACES THE OBSOLETE PARKER FRL's.**

We do have some parts for the Parkers. But those parts will become obsolete once stock is gone.

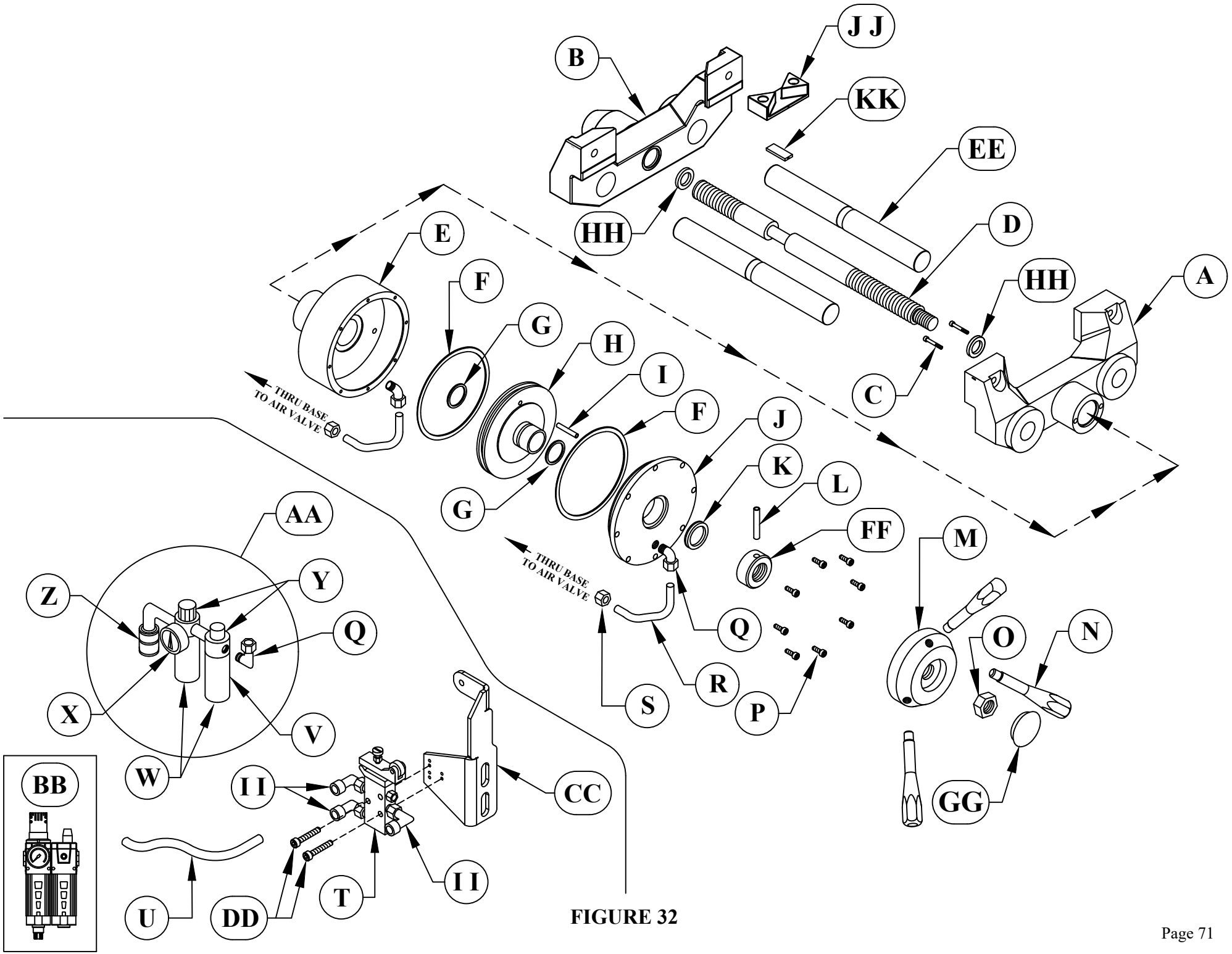
J J
B
KK
EE
HH
D
E
F
HH
A
G
H
I
C
THRU BASE
TO AIR VALVE
F
J
K
L
G
FF
M
THRU BASE
TO AIR VALVE
AA
Y
Z
Q
Q
O
N
X
R
S
P
V
W
I I
CC
BB
GG
I I
U
DD
T

FIGURE 32

10.2 POWER DOWN FEED ASSEMBLY

ITEM	PART #	DESCRIPTION
A	678560	NF/PD Bracket Assy.
B	221210	M10 X 25 SHCS
C	210017	M16 X 1.5 Jam Nut
D	078524	PD Cylinder Pivot
E	078525	350 PD Lower Brkt Assy.
F	140415	1/2" x 1-1/2" Clevis Pin
G	078520	PD Stop Rod Assy.
H	123120	1/8" x 1-1/4" Cotter Pin
I	078518	PD Stroke Adjustment Stop
J	080063	Stroke Adjustment Handle
K	077715	Pivot Bolt
L*	077671	Cylinder (Includes L, N, O, Q, R, S, U, U1, & V)
M	041015	Right Angle Flow Control
N	077662	3/8" Elbow 90° (Top)
O	077578	M16 x 1.5 Cylinder Clevis
P	678550	Reservoir Decal
Q	077505	Bellow Clamp
R	077700	Bellow
S	077512	Nut - Machined
T	078455	Sight Glass
U	077664	3/8 MBSPP TO 1/8 FNPT Adapter
U1	077665	3/8 BSPP Bonded Seal
V	660505	Black Zip Tie

*** For older PD saws prior to 7/91 (without ITEM D - PD Cylinder Pivot) use P/N 077517**

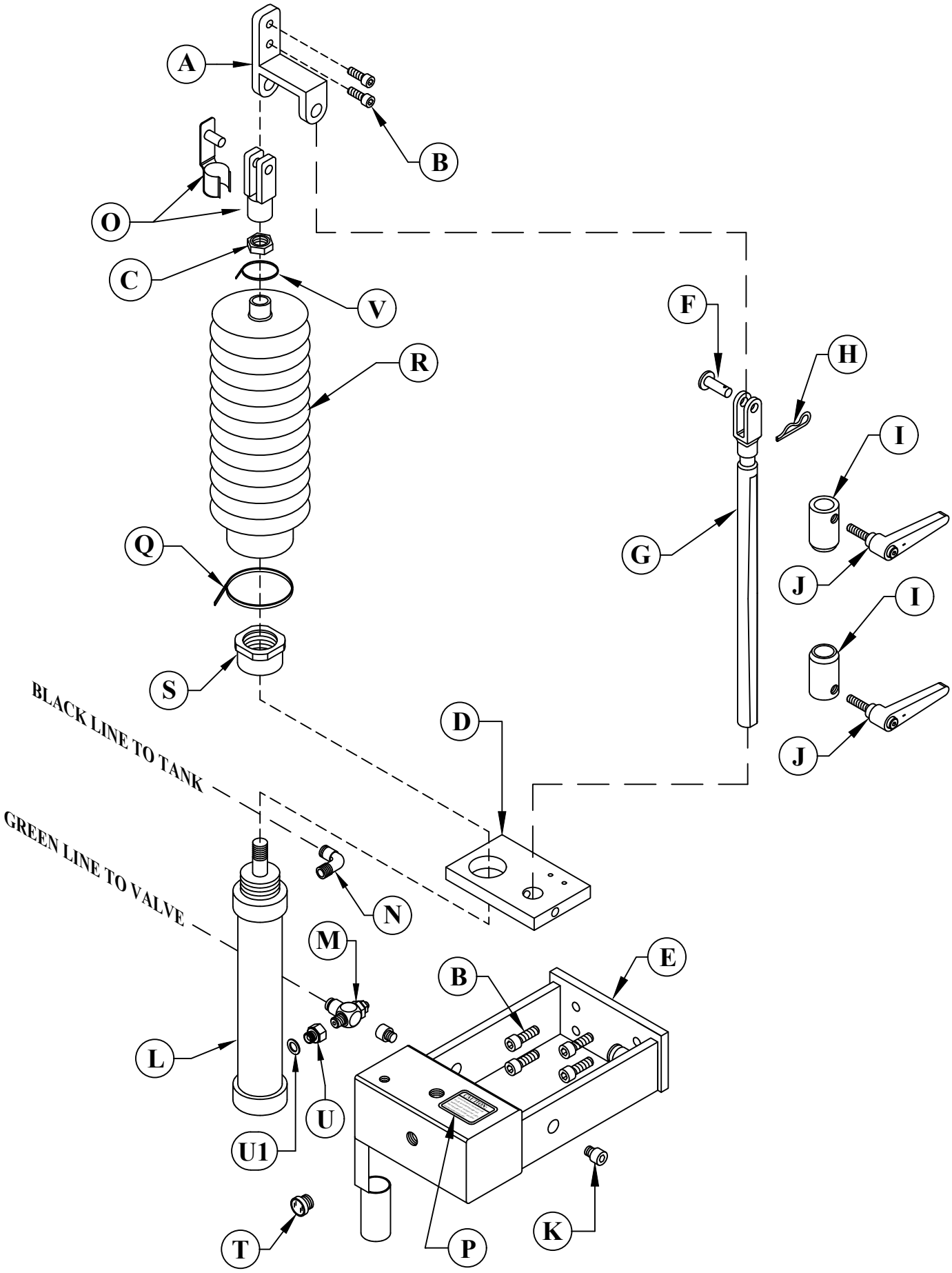
A
B
O
C
V
R
F
H
I
G
J
I
J
Q
S
BLACK LINE TO TANK
D
GREEN LINE TO VALVE
N
M
B
E
L
U
U1
T
P
K

FIGURE 33

10.3 POWER DOWN FEED CONTROLS (S/N B64251003 & UP)

ITEM	PART #	DESCRIPTION
A	077736	PD Valve Mount
B	077183	Cord Connector
C	077738	90° Swivel
D	047535	Flow Control Valve
E	077746	1/4" NPT x 1/4" Street PL
F	078190	Regulator with Gauge
G	077770	1/8" Hex Nipple
H	077538	Gauge
I	077765	Brass Elbow
I 1	047251	Optional Air Regulator PK/PD Vise (Includes F, G, H, I & U)
J	045045	Breather
K	045667	Two Station Valve (DC) with Manifold S/N B34200607 & Prior
KA	045650	Solenoid 24VDC for 045655
KB	045655	Valve
K1	060040	Two Station Valve (AC) with Manifold S/N B34310807 & After
K1A	060039	Solenoid for 060040
K1B	060038	Valve for 060040
L	077777	3/8" NPT Plug
M	060104	Cord Grip
N	N/A	(provided by customer)
O	077719	Slide Valve
P	077737	1/4" NPT x 1/4" 90° Elbow
Q	077653	Modular FRL (Filt./Reg./Lub.) Assy.
Q1	077655	Bowl (Lubricator) for 077653
Q2	077654	Bowl (Filter) for 077653
R	221006	M4 x 50 SHCS
S	077740	3/8" 90° Male Swivel
T	045039	Male Branch Tee
U	077742	1/4" Male Swivel
V	077531	Check Valve
W	078455	Sight Glass
X	078525	350 PD Lower Brkt Assy.
Y	077701	Baffle
Z	073331	M5 X 45 SHCS
AA	046093	Stroke Limit Switch
BB	215010	M5 Greer Nut

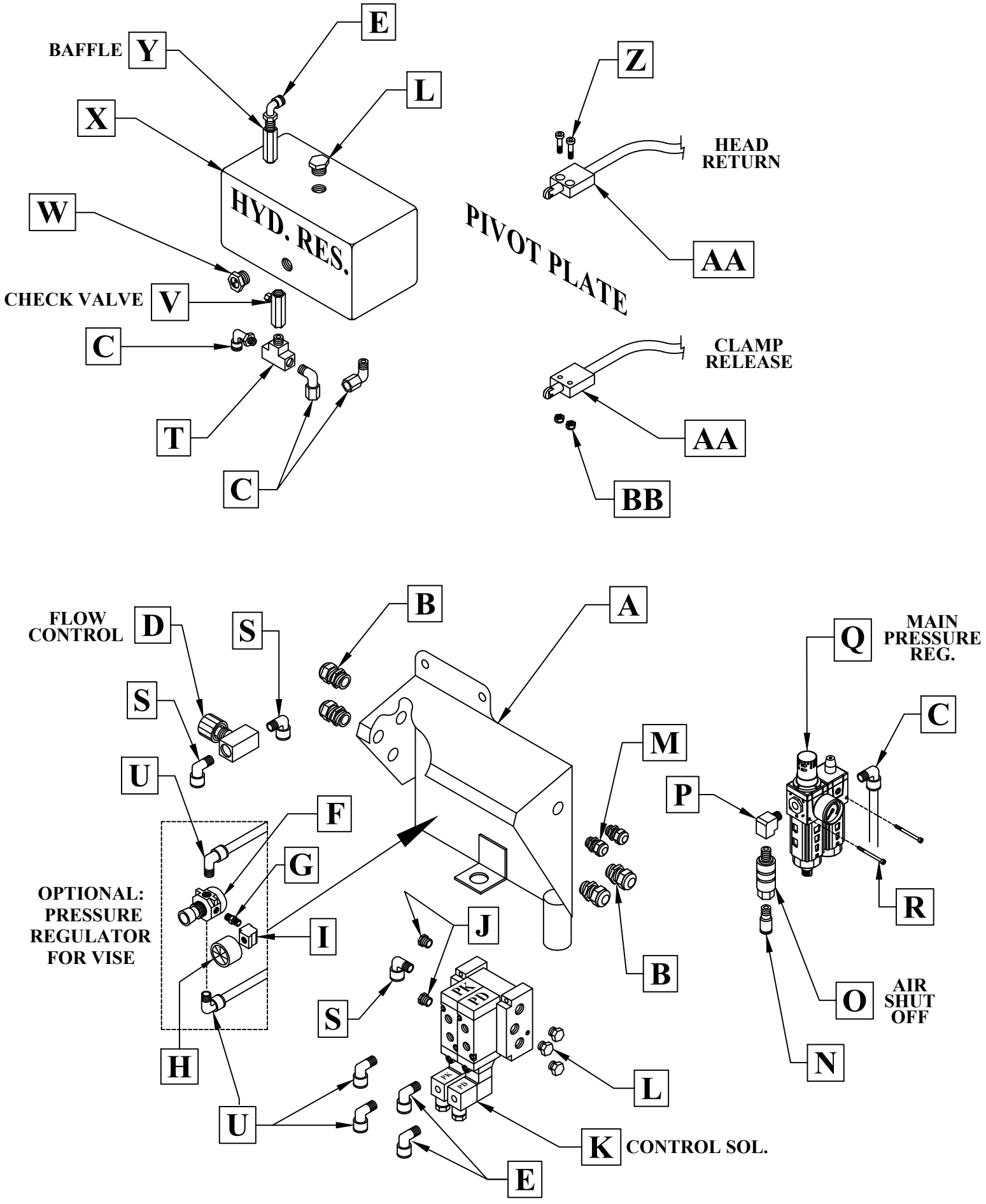
BAFFLE
Y
E
L
X
HYD. RES.
W
CHECK VALVE
V
C
T
C
Z
HEAD RETURN
PIVOT PLATE
AA
CLAMP RELEASE
AA
BB
FLOW CONTROL
D
S
S
U
F
G
I
OPTIONAL: PRESSURE REGULATOR FOR VISE
H
U
B
A
J
S
M
B
PK
PD
L
K
CONTROL SOL.
E
Q
MAIN PRESSURE REG.
C
P
R
O
AIR SHUT OFF
N

FIGURE 34

10.4 POWER DOWN FEED ELECTRICAL CONTROLS

S/N B64251003 & UP (See Note)

ITEM	PART #	DESCRIPTION
A	075250	Enclosure
B	077183	Cord Grip
C	075205	Subplate Drilled
D	075210	Electric PD Mount Strip
E	073440	M4 x 6 SHCS
F	078104	End Bracket
I	078456	M4/6 Terminal Block
J	078457	Jumper Screw
K	060044	24 Volt Relay AC
K1*	048042	24 Volt Relay DC
L	060104	Cord Grip
M	660453	18/3 Cord - 90” Length
N	158202	5/16 Single Stud Bumper
O	115011	5/16 Nylon Lock Nuts
P**	562451 562452	Micro Switch (SSC Foot Pedal) Micro Switch (Linemaster Foot Pedal)
Q	078500	Complete Foot Switch
R*	048081	Glass Fuse
S*	048080	KM/AFR Fuse Term. Block - Obsolete
T*	221002	M4 X 12MM SHCS
U*	060053	Bridge Rectifier NTE5344

***These parts were used on saws from S/N B64251003 to B79960607. See inset on the next page.**

**** BEFORE ORDERING A MICROSWITCH: Inspect foot pedal to determine if it's a LINEMASTER or SSC.**

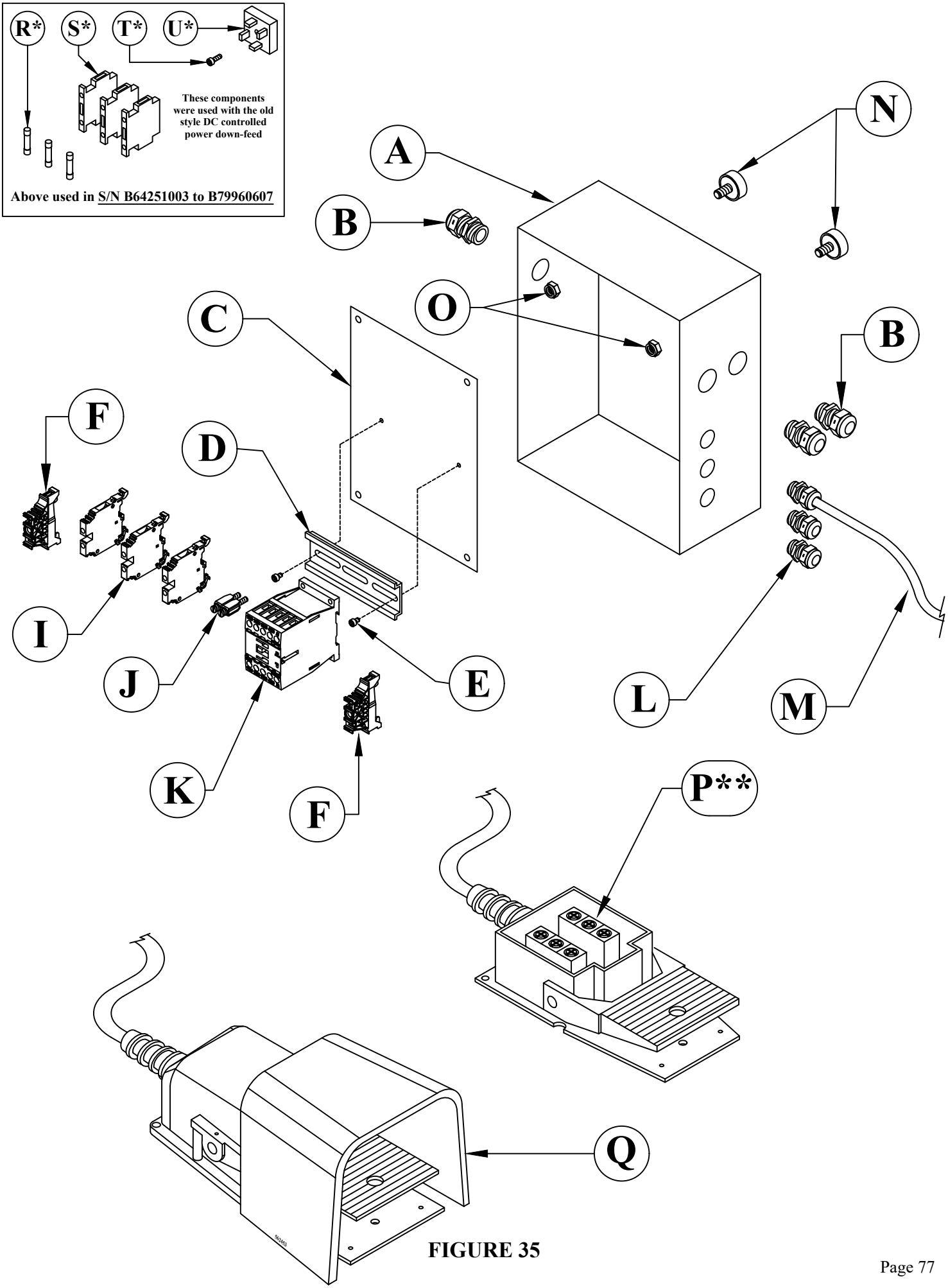
R*
S*
T*
U*
These components were used with the old style DC controlled power down-feed
Above used in S/N B64251003 to B79960607
A
B
C
D
E
F
I
J
K
L
M
N
O
P**
Q

FIGURE 35

10.5 GUARD ASSEMBLY (Power Down Feed)

ITEM	QTY	PART #	DESCRIPTION
1	2	060345	Danger Decal
2	1	060501	5/16" Black Air Tube
3	2	073090	M4 Spacer NF Guard
4	2	073415	M4 X 25 SHCS
5	1	073691	M6 X 12 Knob
6	1	076839	NF Mister Unit
7	1	077926	NF US 3/16 x 5/16 x 1/16 Tube
8	1	070010	350 NF/PD Guard Sales
9	1	077165	Ring Thk 2 50.0846
10	1	077167	M30 Ext. Retaining Ring
11	1	077202	Spacer-Nylon
12	1	078516	PD Guard Stop
13	1	660350	Blade Rotation Decal
14	1	676842	Male Elbow X 90° Barb
15	1	676844	NF-1168X5 1/8 NPT Straight
16	1	070010	NF/PD Complete Guard Sales

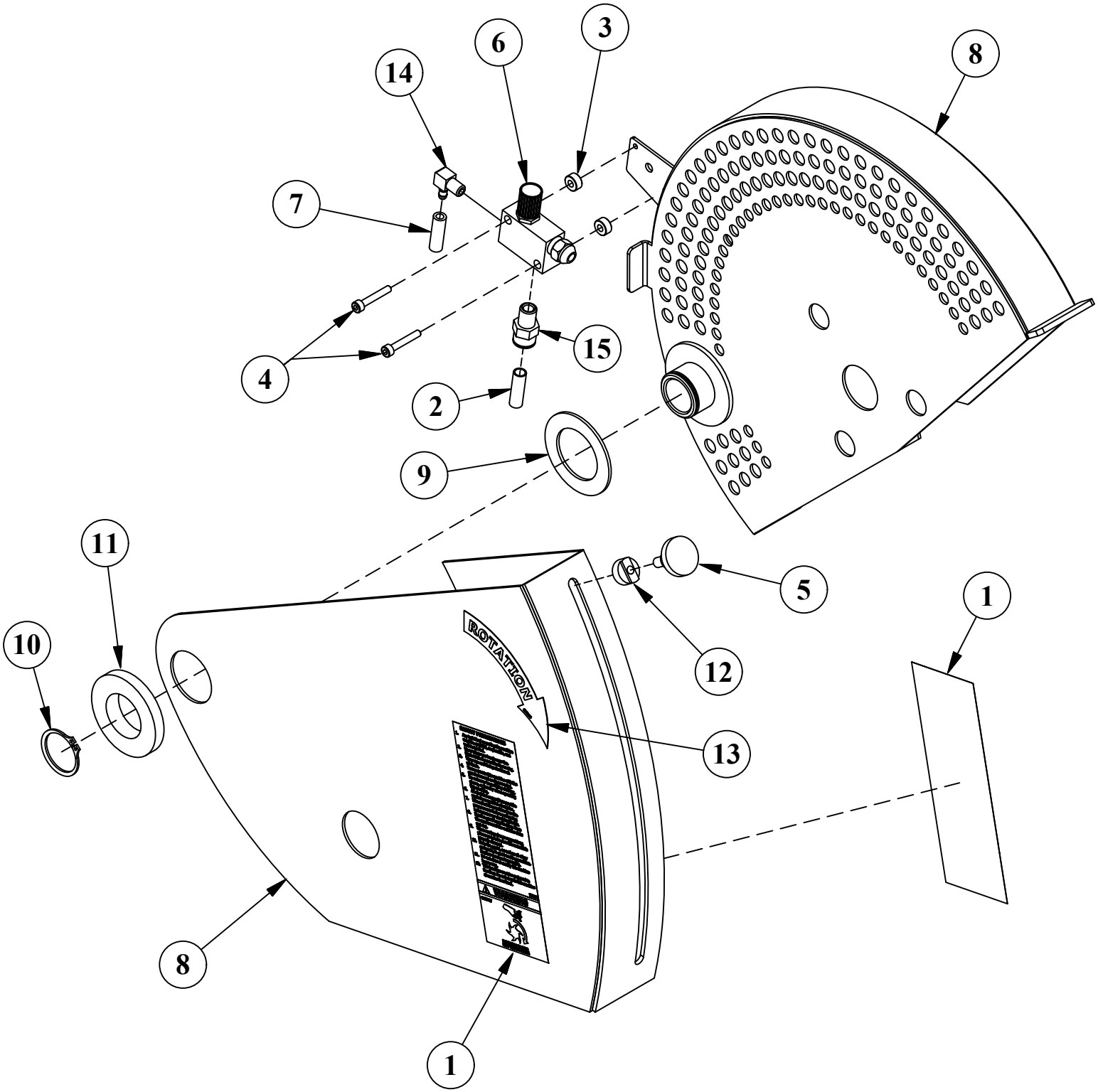

FIGURE 36

10.6 TEN FOOT (304 CM) SUPPLY TRACK

ITEM	QTY	PART #	DESCRIPTION
1	1	029242	10' Roller Conveyer W/Legs (Complete Assy.)
2	2	029243.1	10' Roller Conveyor Side
3	2	029244	Leg Roller Conveyor
4	10	029245	Replacement Rollers For #29243
5	1	029300	Conveyor Brace
6	3	029621	Conveyor Support Bracket
7	12	201205	M10 X 16 HHCS
8	12	208012	M10 Hex Nut
9	2	216015	M10 Flange Nut
10	2	224205	M10 X 16 WLCS

076938 - 13" GUIDE ASSEMBLY (Optional)

ITEM	QTY	PART #	DESCRIPTION
1	2	026619	Small Tee Nut (M10)
2	2	043003	Nylon Roller 3.25
3	2	076941	Base Clip
4	1	076943	Base Material Guide 13" Paint
5	2	214012	M10 Regular Washer
6	2	221120	M8 X 25 DIN9121580 12.9 SHCS
7	2	229225	M10 X 12 X 70 Shoulder Bolt

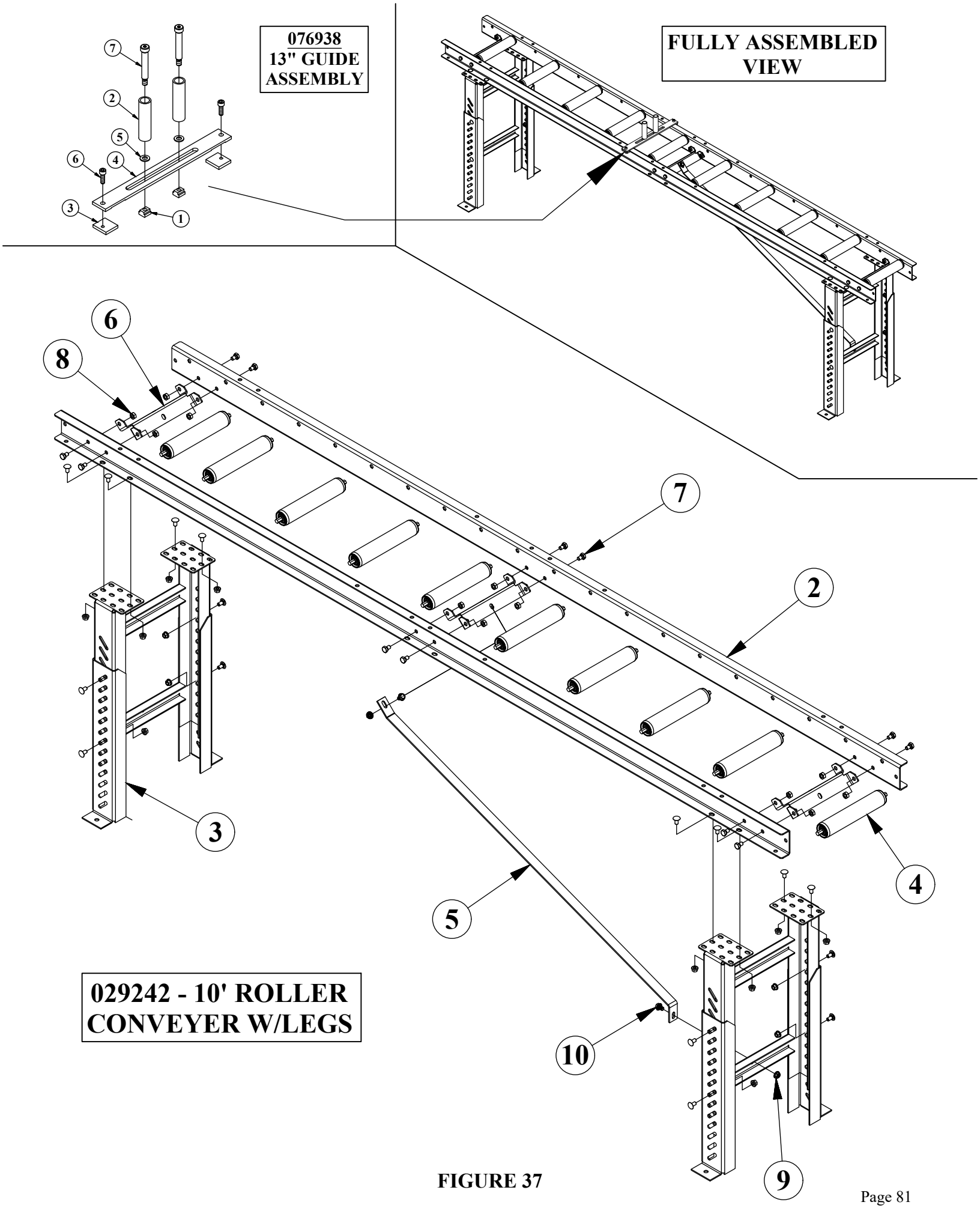
076938
13" GUIDE
ASSEMBLY
FULLY ASSEMBLED
VIEW
029242 - 10' ROLLER
CONVEYER W/LEGS
1
2
3
4
5
6
7
8
9
10

FIGURE 37

10.7 OVERVIEW OF SCOTCHMAN MEASURING SYSTEMS

Scotchman Ind. has several measuring systems available for our saws. They can be attached to our conveyors and increase speed and accuracy. All are AMERICAN MADE and below is the name and brief description of each.

QUICK-LOC:

- **System includes: Rail, Handle, Quick-Loc Arm, Measuring Tape & Mounting Hardware**
- **Patented Loc-Stop System is manufactured from high quality stainless steel and provides a guarantee with teeth**
- **Teeth on the rail are in 1/16" increments**
- **The teeth on the stainless-steel stop align themselves to the teeth on the rail, to give you the exact measurement you set**
- **Guaranteed not to slip - In seconds, your work station is set up and locked in**

MULTI-LOC:

- **System includes: Rail, 3 Stops (Standard or Heavy Duty), Measuring Tape & Mounting Hardware**
- **Patented Loc-Stop System is manufactured from high quality stainless steel and provides a guarantee with teeth**
- **Teeth on the rail are in 1/16" increments**
- **The teeth on the stainless-steel stop align themselves to the teeth on the rail, to give you the exact measurement you set**
- **Guaranteed not to slip - In seconds, your work station is set up and locked in**
- **3 Stops - standard stops (as close as 1" apart) or heavy duty stops (as close as 1-1/2" apart)**

DIGITAL QUICK STOP:

Simply key in the desired cut length and press go; the positioner then moves to that desired length. Place your material up against the fence and make your cut.

- **Digital Length Positioner**
- **Android tablet**
- **Works in inches, fractions, decimal or metric**
- **Fraction keys work as the "go" key**
- **Unlimited preset hot keys and cut list storage**
- **Keypad has large, easy to read numbers**
- **Adjustable reach stop**
- **Supports barcode operations and remote serial commands**

PROGRAMMABLE LENGTH STOP OR MATERIAL PUSHER:

This programmable measuring system eliminates operator error and is easily programmed to measure length or has the ability to push material to a desired length. Simply enter a part length and the stop will advance to that position quickly and accurately. This Stop/Pusher System can move one length at a time or be programmed with a series of lengths & quantities for faster operation.

Please visit SCOTCHMAN.COM to see the above or call us at 1-800-843-8844 for more information.

Below is an example of our Quick-Loc Measuring System on a conveyor that is mounted to a saw. To change the measurement you grab the squeeze handle and move the stop to the desired length indicated on the measuring tape. The Quick-Loc Arm is designed to pivot up out of the way if needed.

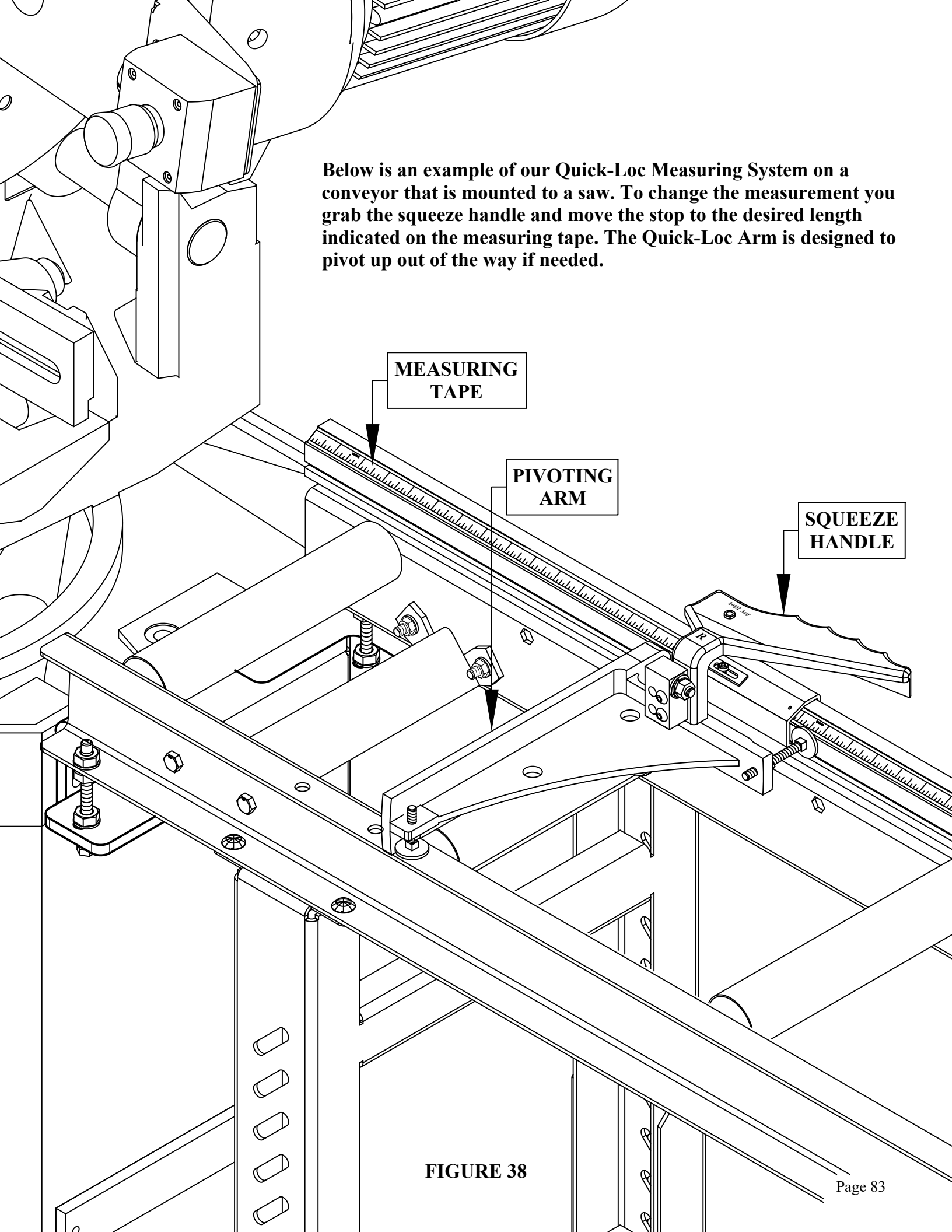

FIGURE 38

10.8 CUTTING COOLANTS AND LUBRICANTS

UNIT	PART	DESCRIPTION
1 Gal.	075760	1 GAL. SYNCON-2 (do not dilute)
55 Gal.	075761	55 GAL. SYNCON-2 (do not dilute)
1 Qt.	075753	Air Line Lubricant
1 Gal.	075759	Air Line Lubricant

10.9 MATERIAL STOP 30 INCH (76 CM)

ITEM	PART #	DESCRIPTION
A	677436	Stop Clamp (Includes D)
B	060315	Small Shaft
C	060310	Large Shaft
D	073460	M10 x 16 SHCS
E	076930	Complete Ass'y (Includes all)
F	080193	M8 Allen Wrench
G	210016	M16 Jam Nut

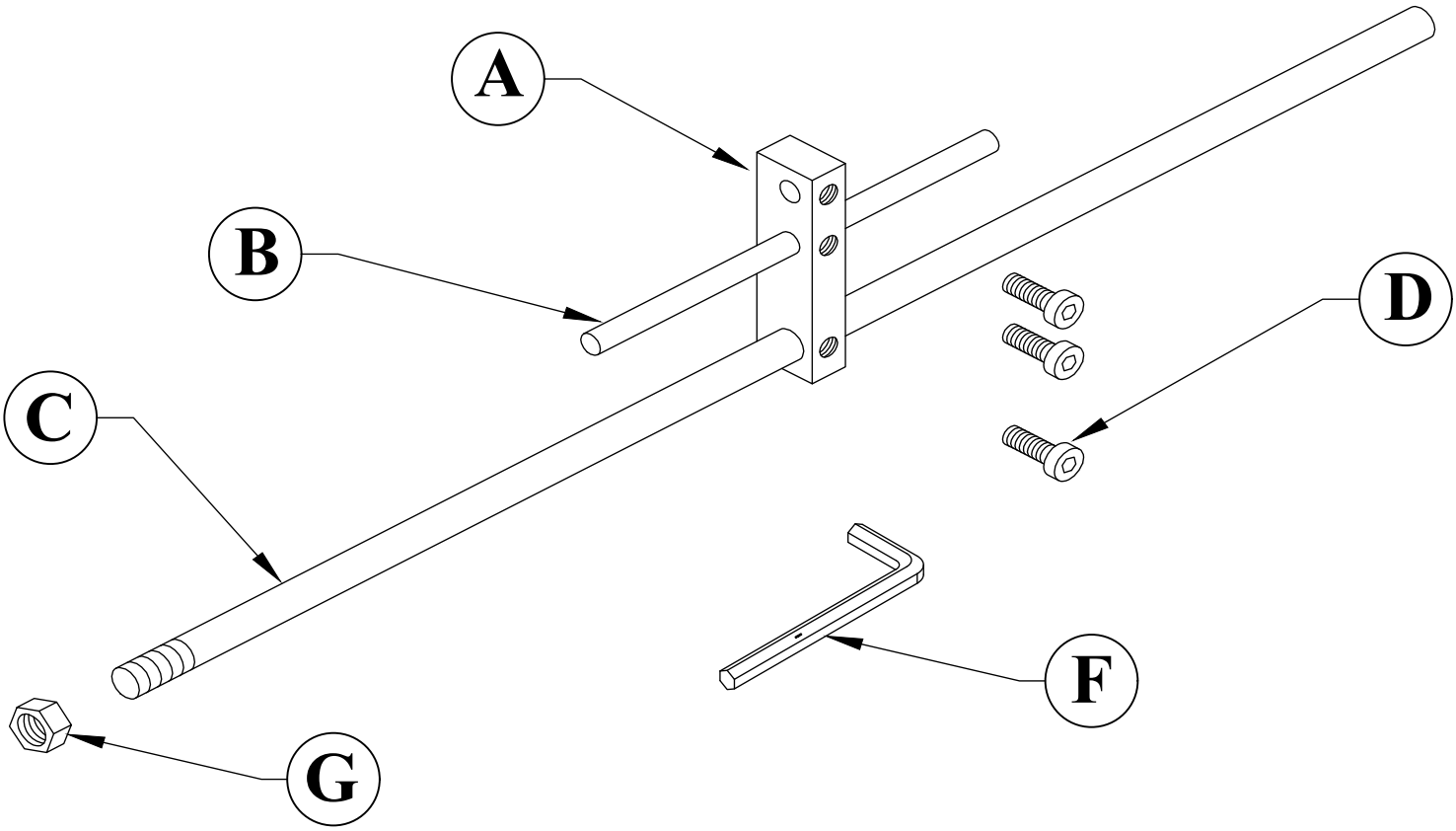

FIGURE 39

11.0 STOCK BLADES

ITEM	PART	THICKNESS	DESCRIPTION
A	074334	.091	300mm 120 Tooth Carbide
B	074327	.134	300mm 72 Tooth Carbide
C	074329	.134	350mm 84 Tooth Carbide

BLADE ARE AVAILABLE IN 300mm (12 inch) & 350mm (14 inch) DIAMETERS. SEE ABOVE