

SpeedCut

Models SCT78 & SCT98



Tube & Pipe Cleaners ◦ Tube Testers ◦ Tube Plugs ◦ Tube Removal ◦ Tube Installation



Operating and Maintenance Instructions

Table Of Contents

| | |
|---|----|
| Introduction | 4 |
| Safety Instructions..... | 5 |
| Uncrating & Hookup | 7 |
| SpeedCut Layout | 8 |
| SpeedCut Overview | 10 |
| Recommended Spares Kit Components | 12 |
| Installation of Accessories..... | 13 |
| Bundle Setup Instructions..... | 18 |
| Operating Instructions..... | 19 |
| Blade Information | 21 |
| General Information..... | 23 |
| Blade Break-In..... | 24 |
| Notes on Sawing | 25 |
| Troubleshooting..... | 26 |
| Maintenance Instructions | 33 |
| Adjustment & Repair | 36 |
| Technical Drawings | 38 |
| Technical Information | 39 |
| Know Your Responsibility..... | 40 |
| Warranty | 41 |

Introduction

Thank you for purchasing this Elliott product. More than 100 years of experience have been employed in the design and manufacture of our products, representing the highest standard of quality, value and durability. Elliott tools have proven themselves in thousands of hours of trouble free field operation.

If this is your first Elliott purchase, welcome to our company; our products are our ambassadors. If this is a repeat purchase, you can rest assured that the same value you have received in the past will continue with all of your purchases, now and in the future.

The Elliott SpeedCut has been designed for cutting tube bundles and shells in the following types of equipment:

Heat Exchangers

Condensers

Chillers

Feedwater Heaters

If you have any questions regarding this product, manual or operating instructions, please contact Elliott for immediate service.

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Safety Instructions

Read and save all instructions. Before use, be sure everyone that will operate this machine reads and understands this manual, as well as any labels packaged with or attached to the machine.

⚠ WARNING

When using electric tools, certain safety precautions are required to reduce the risk of electrical shock and personal injury.

⚠ WARNING

To reduce the risk of injury, always unplug your machine before performing any maintenance. Never disassemble the machine or try to do any wiring on the electrical system. Contact Elliott for all repairs.

⚠ WARNING

 **BLADE HAZARD:**
Keep hands clear while operating.
Lock out power while servicing.

⚠ WARNING

 **NOISE HAZARD:**
Wear approved ear protection in this area.

⚠ WARNING

 **EYE HAZARD:**
Wear protective glasses.

⚠ WARNING

 **ELECTRIC HAZARD:**
Use the proper lockout and tagout procedures before servicing machine.

⚠ WARNING

 **TRIP HAZARD:**
Be alert.
Watch your step.

Safety Instructions (cont.)

Read all safety and operating instructions contained in this manual prior to use of the machine. Failure to follow all instructions listed below may result in electrical shock, fire and/or serious injury.

- Do not operate this machine while tired, distracted, under the influence of drugs or alcohol or on medication that causes decreased control.
- Do not use machine in wet conditions. Keep work area clean and well lit.
- Do not force a machine or attachment to do a job or operate at a speed it was not designed for.
- Check for misalignment, binding of moving parts, improper mounting, broken parts or any other conditions that may affect operation before use. Inspect all fasteners for tightness to ensure there are no loose nuts or bolts that may inhibit operation. Do not use a damaged machine. Repair or replace any defective parts prior to use of the machine.
- Use proper accessories and use Elliott accessories only. For all repairs, insist on only identical replacement parts.
- Always use properly grounded electrical outlets, and if using an extension cord, make sure that it is of the proper size for the electrical load and it is equipped with a ground wire and ground plug. See “Installation” on page 7 and “Electrical Systems” on page 21 for further information.
- Inspect all hydraulic lines for leaks or tears prior to installation.
- Use only extension cords and plugs approved for outdoor use when working outdoors.
- Use appropriate safety equipment (i.e. safety glasses, ear plugs, dust masks, safety boots, etc) when using this machine.
- Ensure that long hair or loose fitting clothes are secure prior to use of the machine.
- Do Not Overreach. Keep proper footing and balance at all times.
- Never apply the machine to an unsecured work piece.
- Maintain a safe distance from the machine during use.
- Always disconnect the machine from the power source prior to performing any maintenance or repairs.
- Keep guards in place and in good working order.
- When working on hydraulic circuits, the frame must be in the extreme down position or mechanically blocked as the frame is always under pressure.
- Labels and Nameplates carry important information and will assist you in ordering spare and replacement parts. If unreadable or missing, contact an Elliott service facility for a replacement.
- Set up safety fencing around perimeter of machine to prevent unintended access to machine, under moving frame or blade when in operation.

Installation & Hookup

The SpeedCut was designed and manufactured to conform to high standards of performance.

For this machine to provide satisfactory service, it is necessary that it be properly installed, operated and maintained.

This manual has been prepared to assist you in carrying out these functions. We urge you to study the manual and follow these suggestions.

Uncrating

Carefully remove the protective crating so the saw and its parts are not marred or otherwise damaged. Upon receipt of machine, uncrate and check all parts. In case of loss or damage, file Proof of Loss Claim with carrier. Remove rust preventive from vertical posts using mineral spirits. Coat with light oil. The SpeedCut has integrated forklift pockets at the back and can be moved with a forklift.

Utility Hook-Up

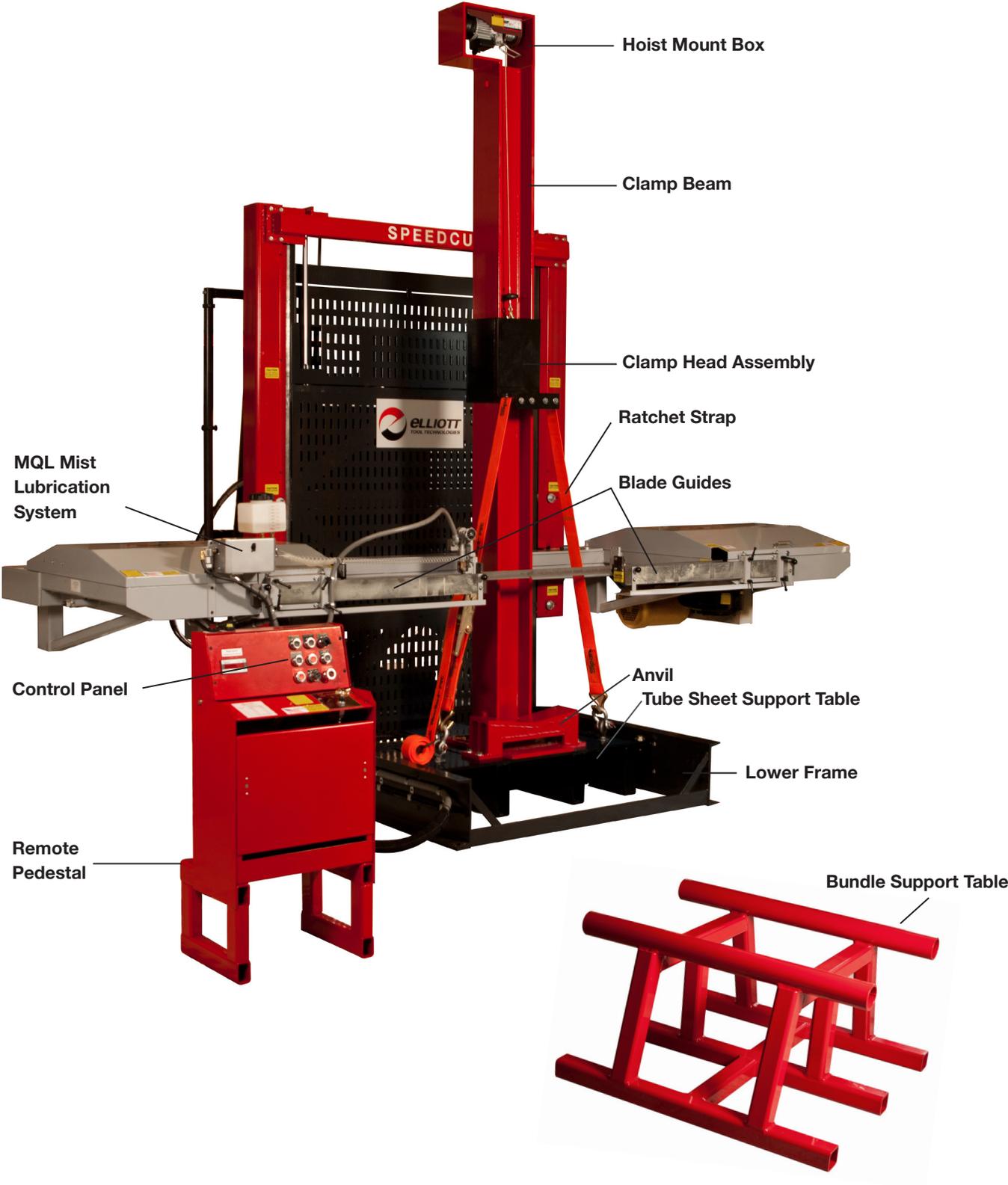
The use of a qualified electrician is always recommended when connecting the saw to the main power supply. Electrical codes differ from area to area and it is the customer's responsibility to ensure their saw complies with applicable codes. Your SpeedCut is prewired at the factory for a specified voltage. Check the motor and electrical panel to ensure that they are wired to correspond to your electrical power supply. Consult the schematics for further detail.

Mounting

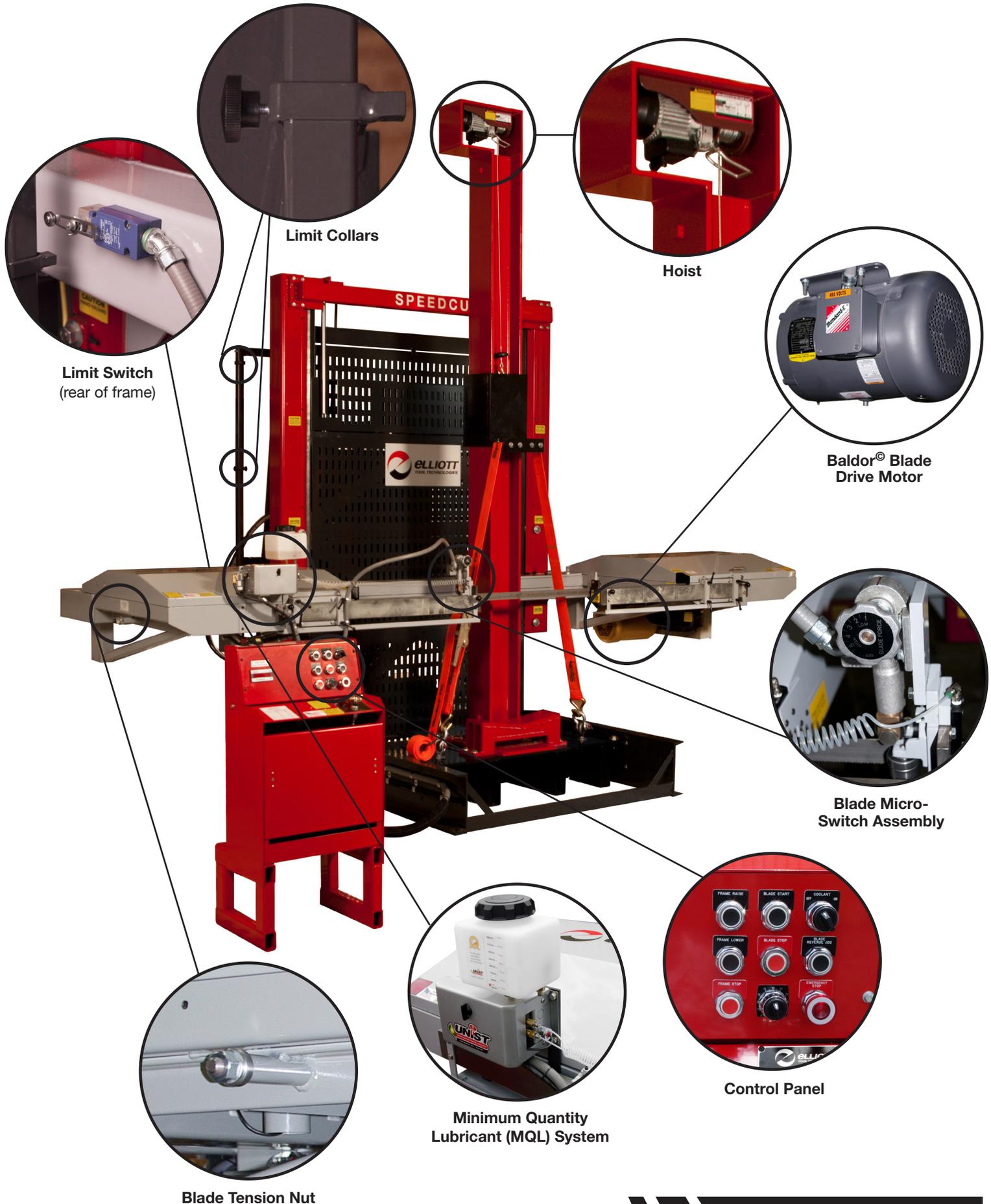
The SpeedCut comes with six (6) mounting holes in base. Six (6) Machine Leveling Bolts are also included with the SpeedCut. If mounting machine to floor, use six (6) 1/2" x 4" anchoring bolts to mount unit to concrete floor and metal shims to ensure machine is level in all directions. It is not required to anchor the machine to the floor.

NOTE: All fasteners and bolts are SAE.

SpeedCut Overview



SpeedCut Overview



Recommended Spares Kit Components

Fuses

SCT100628-006
SCT100628-021
SCT100628-023

Bearings

SCT100406-002
SCT100416-003
SCT100421-002

Drive End Roller Support
SCT102054-000

Roller Axles

SCT101179-000
SCT101372-000
SCT101973-001
SCT102974-002

Blade Brush

SCT100133-004

See technical
drawings for more
detail.

Gear Oil

SCT100318-030

Drive Belt

SCT100140-007

Consult your
electrical schematic
to replace fuses.

Electrical
Panel

SPEEDCUT

LOW
HIGH
BLADE FORCE

Idle End Roller Support
SCTG-183

Installation of Accessories

Bi-Metal Bandsaw Blade

See Replacing Bandsaw Blade on page 20. Also see Breaking In The Blade on page 22.

Minimum Quantity Lubrication (MQL) System

A MQL Mist Lubrication System is a standard feature on the SpeedCut. A very thin film of lubricant is spread on the teeth of the blade just before the blade contacts the tube. As the heat from the cut is absorbed by the lubricant, the liquid is dissipated from the blade and any resulting chips. Environmental hazards and disposal costs are minimized, the cutting speed is increased, and the blade life is prolonged.

NOTE: The MQL Lubrication System will come pre-optimized. Adjusting or changing the rate of lubricant flow prior to initial operation may lead to dry cutting or waste of lubricant. If the lubrication does not appear as mixed mist or spray please see the Adjustment and Repair section on page 32.

To install the MQL Mist Lubrication System:

1. Remove plug from inlet at top of MQL.
2. Remove reservoir from shipping location inside bandwheel cover. Thread reservoir onto MQL inlet.
3. Connect (orange) float level sensor to bottom of reservoir.
4. 90 psi air supply should be provided to machine via 1/4" air hose near back electrical panel.

NOTE: Ensure that MQL Lubrication System is "primed" prior to initial cut.

To do this, turn COOLANT switch to ON and then press BLADE START.

Allow to run until liquid can be seen from the MQL nozzles. For added lubrication visibility, it is recommended to add a few drops of colored food die prior to priming the system.

Bundle Support Table (optional)

Unbolt from shipping location, carefully remove the Bundle Support Table with a forklift or crane and position in front of the SpeedCut to support the tube bundle to be cut. Included with each Bundle Support Table is a Ratchet Strap for securing the bundle to the Bundle Support Table.

NOTE: All fasteners and bolts are SAE.

Installation of Accessories (cont.)

Tube Sheet Support Table (optional)

If the Tube Sheet Support System is shipped separately from the SpeedCut unit, follow steps 1-4.

If the Tube Sheet Support System is shipped with the SpeedCut, the Tube Sheet Support Table arrives already bolted on the saw frame. Finalize assembly according to steps 3-4.

1. Attach the Side Brackets (SCTST802) into the saw frame using the 130GG Hex Bolts, 132H Washers, and 171G Nuts included in the bag labeled “Tube Sheet Support Table Hardware”. The Side Brackets should be installed so that they resemble an upside down “L” shape with the 3/4” slots exposed at the top for install of the table onto the brackets (Figure 1).
2. Use a forklift to place the Tube Sheet Support Table onto the brackets with the four corner mounting holes aligned with the 3/4” slots on the side brackets (Figure 2). Make sure that the 15” X 8.5” projection at the rear of the Tube Sheet Support Table is placed inward toward the rear of the saw frame. Using 130HL Hex Bolts, 132K Washers, and 170H Nuts, secure the corners of the table onto the brackets.
3. Place the Anvil onto the table so that the 11/16” holes are aligned with the inner set of slots on the table. Set the Anvil so that it will support the tube sheet at the desired cut off distance for the bundle cut (Figure 3). Using the 130GN Hex Bolts, 132H Washers included in the box labeled “Anvil Hardware”, secure the Anvil by bolting through the slots in the Tube Sheet Support Table and into the Anvil Nuts. This position can be adjusted at any time before or after a bundle cut.
4. Secure the Eyebolts in the outer set of slots on the Tube Sheet Support Table with the 171K Nuts, and 549-27 Washers included in the box labeled “Tube Sheet Support Table Hardware”. Attach Shackles to the Eyebolts. The Ratchet Strap can be utilized by attaching it to the Shackles with the J-hooks (Figure 4).

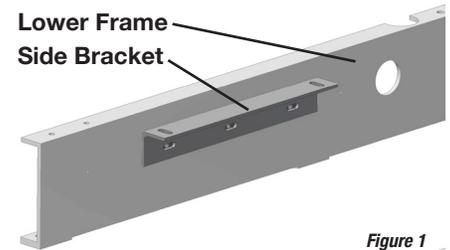


Figure 1

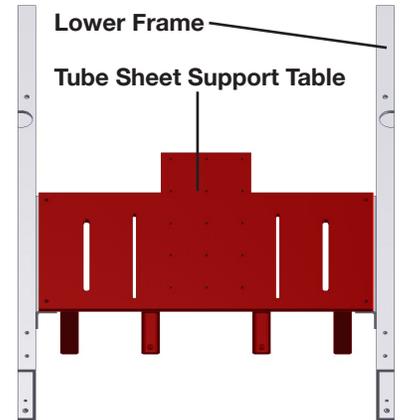


Figure 2

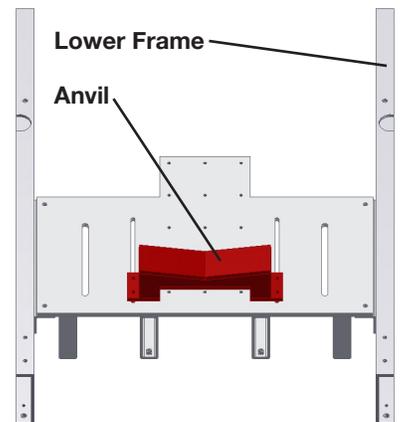


Figure 3



Figure 4

Installation of Accessories (cont.)

Clamping System (optional)

1. Attach the Side Brackets (SCTST802) into the saw frame using the 130GG Hex Bolts, 132H Washers, and 171G Nuts included in the bag labeled “Tube Sheet Support Table Hardware”. The Side Brackets should be installed so that they resemble an upside down “L” shape with the 3/4” slots exposed at the top for install of the table onto the brackets (Figure 1).
2. Use a forklift to place the Tube Sheet Support Table onto the brackets with the four corner mounting holes aligned with the 3/4” slots on the side brackets (Figure 2). Make sure that the 15” X 8.5” projection at the rear of the Tube Sheet Support Table is placed inward toward the rear of the saw frame. Using 130HL Hex Bolts, 132K Washers, and 170H Nuts, secure the corners of the table onto the brackets.
3. Use the “Forklift Attachments” as lift points while placing the beam onto the center of the Tube Sheet Support Table. Align the beam so the Hoist Mount Box is offset to the left. Position the beam at a distance from the blade equal to typical tube sheet cut off distances (Figure 5).
4. Bolt the beam into place onto the Tube Sheet Support Table using (9 Each) of the 130GJ Hex Bolts and 132H Washers (Figure 6).
5. Remove the Forklift Attachments and store these items and hardware with the unit if future re-positioning is necessary. **NOTE:** Not removing the Forklift Attachments will prevent proper operation of the Clamp Head.
6. Place the front body of the Clamp Head Assembly onto the Clamp Beam so the front lip is facing downward toward the front of the saw. Now from the rear of the clamp beam, attach the back body of the Clamp Head Assembly using 130EG Hex Bolts and 132G Washers included in “Clamp Head Hardware” bag. *Continued on next page...*

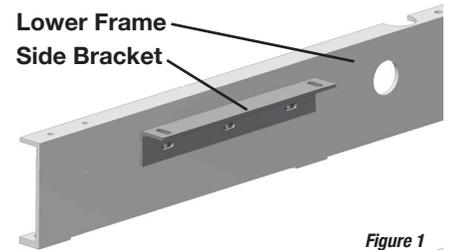


Figure 1

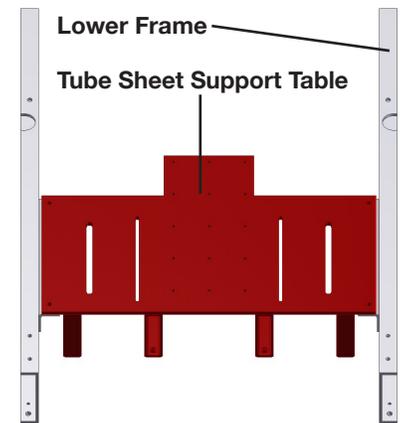


Figure 2

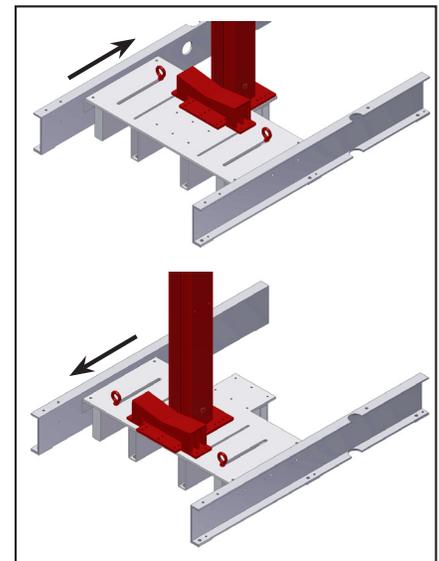


Figure 5

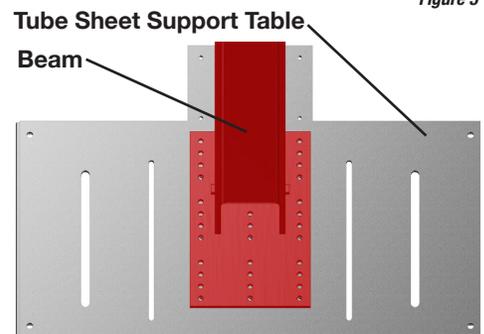


Figure 6

Installation of Accessories (cont.)

Clamping System (optional) (cont.)

- Now it is necessary to run the electrical lines from the hoist down the rear of the clamp beam. To do this, route the hoist pendant cord and the hoist power cord down the rear channel created by the back of the clamp beam and through the Clamp Head Assembly. Utilize the SCTMC116 Cup Magnets to secure the cords in the rear channel (Figure 7).
NOTE: Ensure both the pendant cord and the power cord are secured in the rear channel in a way that allows the clamp head assembly to freely slide up the clamp beam without touching either of the cords.
- Complete the routing of the electrical cords so the power cord can be safely connected to the dedicated receptacle at the rear of the saw (if available) or to a corresponding power supply.
- Place the pendant cord in a location that will not interfere with the downward motion of the saw frame during a cut.
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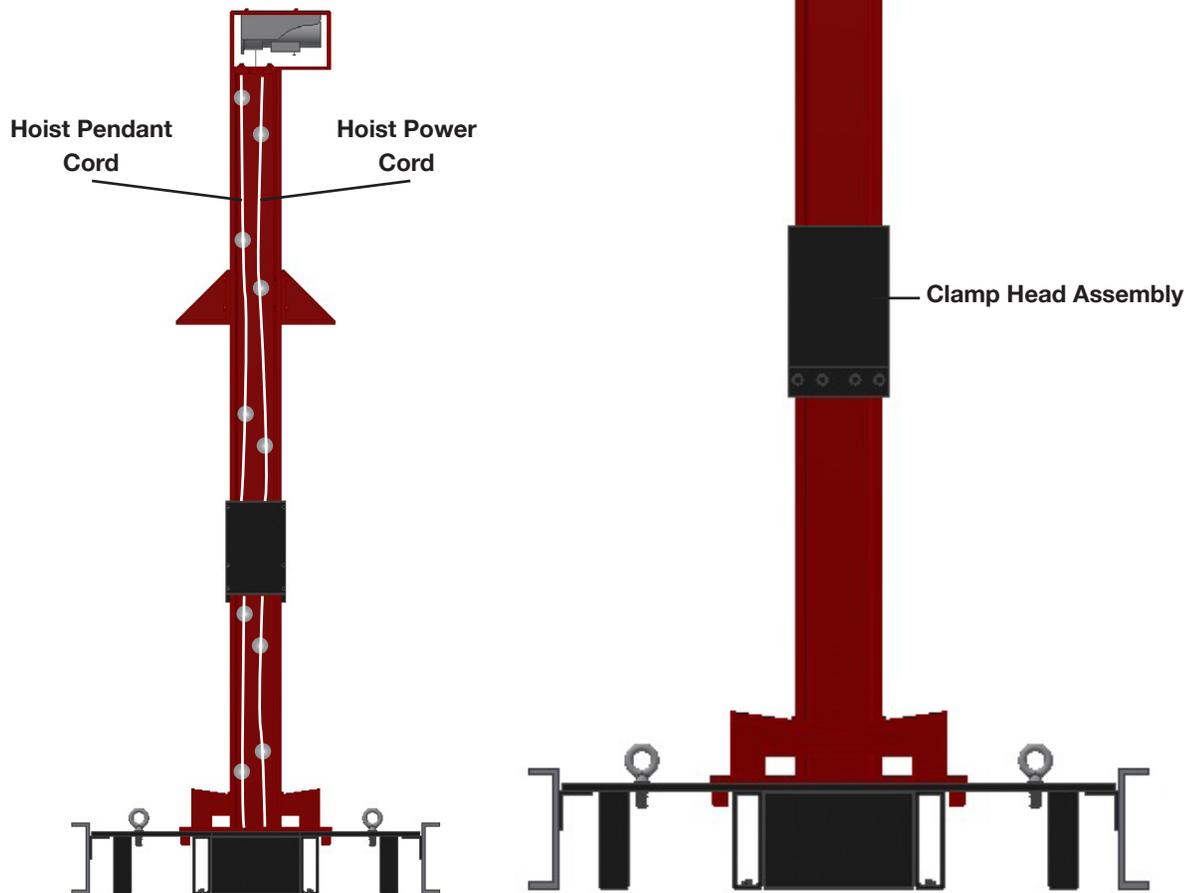


Figure 7

Installation of Accessories (cont.)

Clamping System (optional) (cont.)

10. Finally with power connected to the electric hoist, use the pendant switch to lower the hook until it touches the Eyebolt at the top of the Clamp Head Assembly. Connect this hook through the Eyebolt (Figure 8).
11. Ensure the hoist can safely raise the Clamp Head Assembly without interference from the electrical cords or any other installations.
12. Place the Anvil onto the table so that the 11/16" holes are aligned with the inner set of slots on the table. Set the Anvil so that it will support the tube sheet at the desired cut off distance for the bundle cut (Figure 3). Using the 130GN Hex Bolts, 132H Washers included in the box labeled "Anvil Hardware", secure the Anvil by bolting through the slots in the Tube Sheet Support Table and into the Anvil Nuts. This position can be adjusted at any time before or after a bundle cut.
13. Secure the Eyebolts in the outer set of slots on the Tube Sheet Support Table with the 171K Nuts, and 549-27 Washers included in the box labeled "Tube Sheet Support Table Hardware". Attach Shackles to the Eyebolts. The Ratchet Strap can be utilized by attaching it to the Shackles with the J-hooks (Figure 4).

NOTE: All fasteners and bolts are SAE.

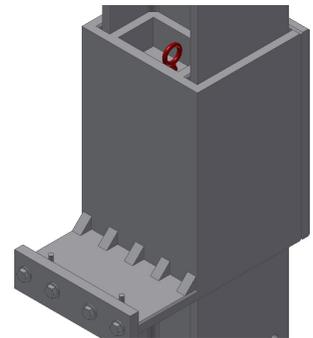


Figure 8

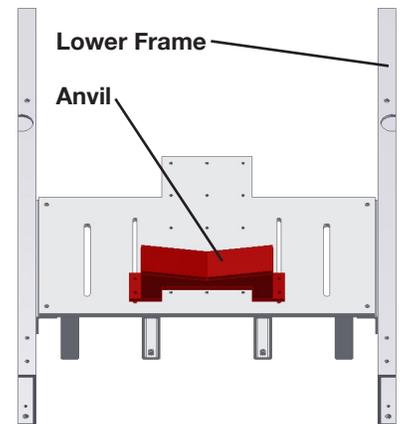


Figure 3



Figure 4

Bundle Setup Instructions

Bundle Support Table

The Bundle Support Table should be positioned in front of the SpeedCut, with the uppermost pair of tubes running perpendicular to the saw blade. It is important to place the tube bundle so the centerline of the bundle is aligned with the centerline of the Bundle Support Table.

Depending on the size of the tube bundle, it may be necessary to utilize two or more Bundle Support Tables in order to properly secure the load. If multiple tables are used, be sure to center the bundle on each table and center all tables in the middle of the exposed saw blade.

Once the bundle has been placed onto the Bundle Support Table(s), use the included Ratchet Strap(s) by running each Strap completely around the bundle and through the open midsection of the table. Tighten the Strap via the ratchet to ensure the bundle remains secure.

NOTE: This is especially beneficial to prevent rolling when cutting smaller bundles.

Tube Sheet Support Table

If using the Tube Sheet Support Table in conjunction with the Clamping System, please see the Clamping System Installation Instructions.

If the table is to be used alone, the basic operations are as follows:

1. To set the cut off depth of the Anvil and the Eyebolts, loosen the 130GN Hex Bolts from the Anvil and the 171K Nuts from the Eyebolts, slide the Anvil and Eyebolts into position (Figure 9). The tube sheet should be centralized on the Anvil with the curved face of the sheet having maximum contact with the Anvil. **NOTE:** Ensure tube sheet is not tilted forward or backward while resting on the Anvil.
2. After the tube sheet is centralized and making maximum contact with the Anvil, run the Ratchet Strap from one Shackle over the top of the tube sheet to the other Shackle. Tighten down the Ratchet Strap to secure the tube sheet.

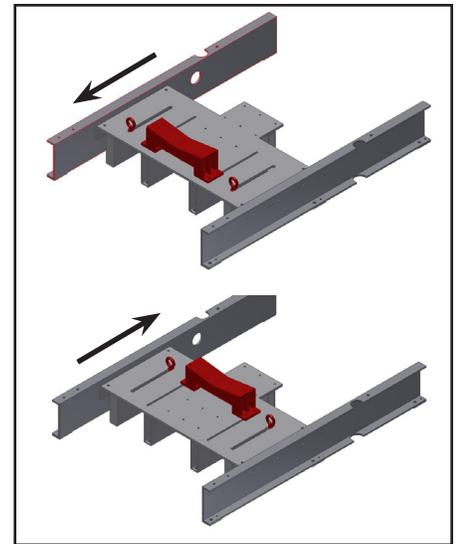


Figure 9

Clamping System

1. Raise the saw frame so the saw blade is safely above the tube sheet.
2. Raise the Clamp Head with the pendant switch so the bottom of the head is even with the raised saw blade. If necessary, move the Anvil at this time so it is straddling the base of the Clamp Beam.
3. Position the tube bundle so the tube sheet is resting on the Anvil (without any tilting) directly below the Clamp Head. The rest of the bundle should be supported by the Bundle Support Table(s).
4. Once the tube sheet is in an ideal position for bundle cutting, press and hold the down button on the pendant switch to lower the Clamp Head and release pendant switch when full weight of Clamp Head is resting on top of tube sheet. The clamp head must be low enough to relax all tension from hoist cable, but not create excess slack.
5. With the Clamp Head in place, attach the Ratchet Strap to one Shackle on the Tube Sheet Support Table, run the Strap over the top face of the Clamp Head and attach to the Shackle on the other side of the Tube Sheet Support Table. Two dowel pins are provided as guides for feeding the Strap over the Clamp Head. Finally, tighten the Ratchet Strap sufficiently over the Clamp Head to provide additional downward pressure firmly securing the tube sheet throughout the cut.

Operating Instructions

1. Fill the MQL Lubrication System container to the 70 oz. line with the provided Advanced Metalworking Lubricant. For additional lubricant, contact Elliott Tool Technologies.
2. For initial operation, check hydraulic oil levels and add oil as needed.
3. Set Frame Limits if necessary. See page 18 for instructions.
4. Ensure all Emergency Stops are released.
5. Raise the frame by pressing and holding the FRAME RAISE button. Release FRAME RAISE button when frame reaches a position so the blade is above the vessel.
6. Follow Bundle Setup Instructions on page 16 to place vessel in cutting position.
NOTE: Ensure tube sheet is placed in a position that will not prohibit blade motion during cut.
7. Adjust the Blade Guides to be about one inch from the widest point of the vessel.
8. Press and hold FRAME LOWER button to lower the frame. Release button when blade is very close, but not touching the vessel. If more rapid traverse in lowering the frame is desired, this can be accomplished by turning the cutting speed control dial to "TRAVERSE" in a counter-clockwise direction.
NOTE: When FRAME LOWER button is activated the yellow FEED ON light on top of the control panel will turn on. When the frame reaches the lower feed stop limit switch, the FRAME LOWER button is deactivated and the light will turn off.
9. With vessel in proper position for cutting and clamped, push BLADE START button to start blade drive motor and wait for blade speed to be reached.
NOTE: Always start at a low speed.
10. Turn COOLANT switch to ON. Check to ensure adequate coolant is being applied onto blade.
11. Push FRAME LOWER button, which energizes blade micro switch and solenoid valve circuit. The machine will then start its controlled cutting action. The frame will automatically stop when it reaches the lower limit switch.
12. When cutting begins, notice the action of the blade micro switch located in casting above the blade on the left blade guide assembly. This micro switch will regulate the cutting force applied to the blade throughout the cut.
NOTE: Should the blade become stuck or jammed, the REVERSE JOG button may be pressed to momentarily reverse the direction of blade to un-stick it. However the REVERSE JOG button should never be pressed for more than a few seconds. The bandwheels are pitched to keep the top of the blade against the flange while rotating in the forward direction. Running the blade in reverse for more than five revolutions will cause the blade to work itself off the bandwheels.
13. Upon completion of the cut, remove the bundle from the working area.

CAUTION

Ensure tube sheet has been properly secured to avoid serious injury or damage.
Do NOT raise Clamping System until prepared to remove the tube sheet.

14. Remove the tube sheet.

Operating Instructions (cont.)

In case of excessive feed during operation, the tension of the spring is quickly overcome. The excessive pressure on the blade raises the stem linkage that operates the blade micro switch which closes the solenoid valve. This stops the downward travel of the saw frame. As the cutting action of the blade removes material to relieve this excessive pressure, the micro switch will function and open the solenoid valve for an instant until pressure again becomes excessive. This can be noticed by the operator due to the jumpy action of the saw frame exerting excessive pressure on the blade as the solenoid valve opens and closes.

Setting Frame Limits

It is important to adjust the frame limit collars prior to operation of the SpeedCut. The frame limit collars and limit switch create a “safe working distance” in which the saw head will continue to travel until it reaches either collar. The benefit of this system is the ability to set an upper limit to protect structures above the SpeedCut from interference with the rising saw head, and also to set a lower limit that will cease the saw head motion upon completion of the cut. This gives the operator piece of mind knowing that the saw head will stop moving once the blade has passed through the lowest section of the bundle.

To set the upper and lower frame limit collars:

1. Determine the maximum safe working height of the saw head. If there are not any restrictive elements, ceiling, etc. above the SpeedCut it is permissible to place the collar toward the top of the rear post.
2. Loosen the thumb screw on the upper frame limit collar and slide up the post to the maximum desirable height. Tighten the thumb screw and the upper frame limit collar is now secured in place.
3. Determine the minimum safe working height of the saw head. Depending on the size of the bundle to be cut, it is typically desirable to place the lower frame limit collar approximately 1” below the lowest tubes of the bundle to be cut. This ensures that the cut is completed and the saw head stops slightly below the cut without bottoming out on the frame.
4. Loosen the thumb screw on the lower frame limit collar and slide down the post to the minimum desirable height. Tighten the thumb screw and the lower frame limit collar is now secured in place.

NOTE: Prior to initial operation it is good practice to test the frame limit switch for functionality. To do so, make sure that the cutting area is clear and that all proper installations have been completed. Secure the lower frame limit collar in place a few inches below the frame limit switch. Begin the cutting motion (without actually cutting any material) by starting the blade and initiating the downward frame feed. When the frame limit switch meets the lower frame limit collar it will close the contacts and you will hear a click. At this time the saw head will stop feeding downward.

NOTE: It is important to use the frame limit switch system to ensure all the solenoids are closed and that there are no open hydraulic circuits. It is not desirable to operate this machine by creating “hard stops”, bottoming out the saw on the lower frame upon the completion of a bundle cut.

Establishing Correct Feed

Decrease frame feed by turning cutting speed control dial until cutting speed and feed are equalized. Insufficient feed is easily recognized as the blade will do very little cutting, if any, due to the lack of cutting pressure.

Blade Instructions

When correct feed is being employed, the blade will cut steadily and the micro switch will function occasionally to open and close the solenoid valve. The yellow FEED ON light on the top of the control box indicates that the saw is feeding. When the solenoid valve closes, the light goes out.

After a correct feed has been established, the position of the cutting speed control dial should be noticed, and this location maintained while cutting similar size and type material. Always keep the cutting speed control within cutting limits, as shown on dial, during actual cutting operations.

Adjusting Spring Pressure

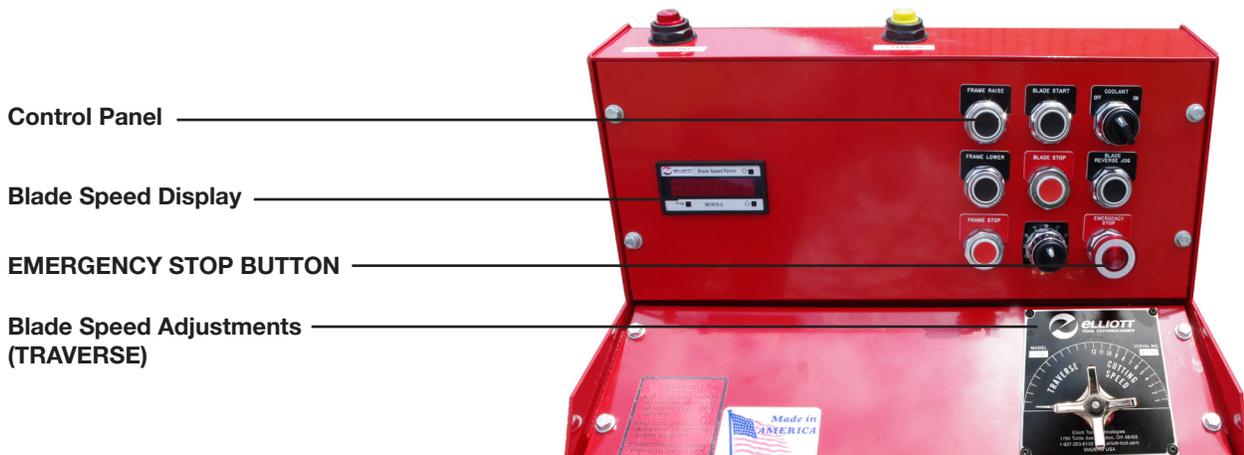
As the spring is compressed on the blade micro-switch assembly, more pressure must be exerted against the blade before the micro-switch functions. The micro-switch spring controls the pressure against the blade and considerable discretion should be used before making any change. However, it may be necessary at times to adjust the spring pressure when radically different materials are to be cut. This adjustment can be made by turning the knob directly mounted to the blade micro switch on the left blade guide.

Blade Speed Control

Blade Speed is indicated on the speed display on the panel. Speed is indicated in feet per minute. Control knob is graduated in percentage from zero to 100 percent. Blade speed is adjusted with the control knob on the front control pedestal of the machine.

Emergency Stops

During the cutting cycle, when frame is in downward travel, all operations can be stopped immediately by pressing BLADE STOP buttons or EMERGENCY STOP button. When in upward travel, this can be accomplished by pressing the FRAME STOP button.



Blade Instructions (cont.)

Replacing Bandsaw Blade

Ensure the proper protective gear is being worn (gloves, safety glasses, etc.) when changing the blade.

1. Open the bandwheel covers and open the rear blade cover.
2. Disconnect the lubrication line from the quick connect and leave it out of the way from the top side of the saw.
3. Cut old blade and remove from SpeedCut.
4. Carefully unwind the new blade with the assistance of a second person.
5. Insert new blade by lowering over the Clamping System (optional) and setting in place. Ensure the new blade is properly aligned inside the blade guides with the blade teeth pointing down and toward the driving bandwheel.
6. Push the blade snugly up against the flange of each bandwheel using spring clamps to temporarily hold blade in place.
7. Slowly tighten the blade tension nut using the torque wrench provided. Continue to monitor the blade position so that the blade remains snug against the flange of each bandwheel.
8. Continue to tighten the nut and watch the dial on the torque wrench. The blade is properly tensioned when the torque on the nut reaches 484 kg/cm (35 lb/ft).
NOTE: Do NOT over tension. Use of a “click type” torque wrench is not recommended.
9. Remove the spring clamps, close the bandwheel covers and the rear blade cover.

Blade Guides

The blade guides are arranged to hold the blade in alignment both vertically and horizontally. Before making adjustments, always try a new blade to be sure that the old blade was not causing the difficulty.

Blade Brushes

Brushes should be cleaned frequently in kerosene and reversed to take advantage of both rows of bristles. For best results, replace worn, filled or sticky brushes with new ones. In bolting brushes to angles, be sure wire bristles are bent in the same direction as the blade travels.

Blade Break/Stall Proximity Switch

This saw is equipped with a Blade Break/Stall Proximity Switch. Should the blade break or stall in the work, the blade motor will stop if the saw ceases operation. This allows the operator to leave the machine unattended with greater confidence. The operation of this feature is fully automatic and requires no attention. The sensor is located under the Idle Bandwheel and monitors the spokes as they pass over the sensor.

Saw Frame Rests/Stops

At the bottom of the stroke the saw frame rests on two removable stops. Should the saw frame need to be lowered below the base position, these stops can be temporarily removed.

Belt

Proper adjustment of the ‘V’ belt is important to prevent overheating of the motor. Be sure the belt guard is closed after changing blade speeds.



Blade Guides



Blade Break/Stall Proximity Switch

General Information

CAUTION

Do NOT grease upright posts!

The cutting frame, of the SpeedCut is raised and lowered by the hydraulic unit in the base. Working in conjunction with this assembly are the electrical units composed of the control cabinet, front mounted controls, limit switches, blade micro switch, pump motor, and blade drive motor.

Hydraulic System

- Pump – Positive displacement, rotary type. Forces oil into lifting cylinders.
- Use Mobil DTE 25 Hydraulic Oil or equivalent for hydraulic pump.
- Pump Details
 - SpeedCut 78/98 Hydraulic Pump (for Saw Head Motion) - Capacity of 10 gallons of Mobil DTE 25 Hydraulic Oil or equivalent, 1 Horsepower.
- Cylinder & Piston – steel cylinder and piston with neoprene cup.
- Solenoid Valve – Regulates flow of oil through line as blade pressure increases and decreases, actuated by blade micro-switch.
- Needle Valve – Governs discharge of oil from cylinder as frame lowers.

Electrical Systems

- Control Cabinet – Contains transformer to provide 110 volts to all controls, magnetic starters with adjustable overloads, relay and terminal blocks.
- Limit Switches – Upper limit switch stops upward travel of frame at predetermined height set by trip collar. Lower limit switch stops blade motor at end of cut.
- Blade Micro-Switch – An automatic device is actuated by pressure on the blade and controls the solenoid valve to maintain constant downward blade force. It also activates an indicator light on top of the front mounted controls.
- Pump Motor – Drives hydraulic pump.
- Blade Drive Motor – “V” belt drive to gear case.
- Front Mounted Controls – Push buttons for blade motor, feed, emergency stop.

Blade Break-In

The factors affecting cutting performance are: the blade, tooth pitch, the work/size of material being cut, blade speed and feed. Contact Elliott for assistance with selecting the proper blade for sawing jobs. All blades should be straight, have sharp teeth, and be “broken in” to obtain good cutting performance and blade life.

NOTE: Failing to follow the break-in procedure will greatly reduce blade life and increase the possibility of tooth stripping.

Reduce Feed Rate

- Use 1/3 to 1/2 the normal feed pressure.
- Because of the reduced pressure, the cut should take about two or three times as long.

Maintain Blade Speed

- Maintain normal blade speed for material.
- Do not slow blade down for break-in.

Break-In Time

- Cut for 8-10 minutes (50 to 100 square inches of material) for adequate break-in time and then gradually increase the feed pressure to a normal rate.

NOTE: CUTTING AT TOO HIGH OF FEEDS AND SPEEDS WITH A NEW BLADE CAN DECREASE THE QUALITY OF CUTTING AND SHORTEN BLADE LIFE. DO NOT START A NEW BLADE IN AN OLD CUT.

Good Cutting Performance

Every cutting situation has special characteristics requiring some experimentation to determine which blade, speed, and feed will achieve the most satisfactory results. Cutting charts indicate a good starting point, but must be modified by direct experience if optimum performance is desired. Here are some helpful pointers for adjusting speed and feed for good cutting performance.

- Watch for excessive “smoke” from coolant indicating heat in the cut, which could damage the blade directly or work-harden the material being cut.
- Watch for excessive vibration or chatter marks on the cut off piece indicating possible damage to saw teeth by “hammering”.
- Check the cut off piece for flatness. A dull blade or excessive feed will cause “cutting in” or “cutting out”.
- Inspect the blade for worn or dubbed cutting edges. Avoid cutting conditions, which allow chips to “weld” to saw teeth.
- When experimenting, gradually increase speed, then feed, by small amounts until adverse effects are noted; then reduce speed to a reasonable level for continuous cutting. Remember that speed and feed must be “balanced” to keep cutting a good chip

Notes on Sawing

Blade Force Limit (Spring Loaded Blade Micro-Switch)

Blade Force Limit is set by the knob on the Guide Arm. This sets a spring force on the blade back-up bearing to interrupt excessive frame feed, and is indicated by the LED light blinking off during a cut. A setting of “3” will normally protect the blade from excessive force when the feed rate is set so the LED light remains on through the cut. This setting may be changed as needed for particular cutting applications. For a few applications at slow feed rates, the blade force switch may be set to control feed rate by interrupting down feed during the cut.

Speed Selection

The SpeedCut provides a range of blade speed, from 80 SFPM to 210 SFPM. Generally, softer materials require faster speeds and slower feed while tougher materials require slower speeds and higher feed pressure. If you are unsure, always start at a slower speed and slowly increase to avoid decreasing blade life and ensure productive cutting.

NOTE: If teeth wear off unusually fast, use slower speeds.

THE UPPER EDGE OF THE BLADE SHOULD NOT SEPARATE MORE THAN 1/8” FROM THE FLANGE OF THE BAND WHEELS.



Bandwheel _____

Flange _____

Blade _____

Brass should always be cut with a blade, which has not previously cut other metal. Cutting work-hardening materials, such as hastelloy etc., can present problems if feeding is too slow, because the surface gets harder and the blade will not cut anymore. A new cut needs to be started and the feed needs increased.

Refer to the SpeedCut speeds and feeds selection tool prior to operating to have better operating settings for each bundle.

Troubleshooting

| Blade | | |
|----------------------------|--|--|
| Problem | Cause | Solution |
| Premature Dulling of Teeth | <ol style="list-style-type: none"> 1. Blade mounted backwards. 2. Blade not broken-in. 3. Blade speed too fast. 4. Feed too light. 5. Material work-hardened. | <ol style="list-style-type: none"> 1. Remove and mount blade in proper direction (see page 20). 2. Replace blade with new and break-in blade before use (see page 22). 3. Decrease blade speed. 4. Increase feed. 5. Decrease blade speed. |
| Blade Teeth Stripping | <ol style="list-style-type: none"> 1. Feed too heavy. 2. Blade speed too slow. 3. Blade mounted backwards. 4. Chip brush not working. 5. Tooth stuck in cut. 6. Insufficient coolant flow. 7. Hard spots in material. | <ol style="list-style-type: none"> 1. Decrease feed. 2. Increase blade speed. 3. Remove and mount blade in proper direction (see page 20). 4. Replace chip brush. 5. Stop. Reverse jog, slightly raise frame, resume cutting. 6. Adjust coolant flow (see page 32). 7. Increase blade speed . |
| Gullets of Teeth Loading | <ol style="list-style-type: none"> 1. Blade pitch too fine. 2. Blade speed too fast. 3. Insufficient coolant flow. | <ol style="list-style-type: none"> 1. Use coarser blade pitch. 2. Decrease blade speed. 3. Turn coolant on and/or adjust flow (see page 32). |
| Chips Welding to Teeth | <ol style="list-style-type: none"> 1. Blade speed too fast. 2. Feed too heavy. 3. Blade pitch too fine. 4. Chip brush no working. | <ol style="list-style-type: none"> 1. Decrease blade speed. 2. Decrease feed. 3. Use coarser blade pitch. 4. Replace chip brush. |
| Premature Blade Breakage | <ol style="list-style-type: none"> 1. Feed extremely heavy. 2. Speed extremely fast. 3. Blade tension too tight. 4. Blade pitch too coarse. 5. Blade Guides damaged or misadjusted. 6. Blade rubbing on wheel flanges. 7. Teeth in contact with work before starting saw. | <ol style="list-style-type: none"> 1. Decrease feed. 2. Decrease blade speed. 3. Decrease blade tension to 35 ft-lbs . 4. Use finer blade pitch. 5. Examine blade guides for misadjustment, wear and/or damage and replace if needed. 6. Ensure that blade is tensioned properly to 35 ft-lbs. 7. Ensure blade is above bundle to be cut before starting cutting operation. |

Troubleshooting

| Blade | | |
|------------------------------------|--|--|
| Problem | Cause | Solution |
| Blade Wear (Teeth Blue) | <ol style="list-style-type: none"> 1. Blade tooth pitch too fine. 2. Feed too light. 3. Blade speed too fast. 4. Insufficient coolant flow. | <ol style="list-style-type: none"> 1. Use coarser blade pitch. 2. Increase feed. 3. Decrease blade speed. 4. Turn coolant on and/or adjust flow (see page 32). |
| Wear Lines on Blade Loss of Set | <ol style="list-style-type: none"> 1. Blade tension too light. 2. Blade guide(s) are worn. 3. Hard spots in material. | <ol style="list-style-type: none"> 1. Increase blade tension to 35 ft-lbs . 2. Examine blade guides for misadjustment, wear and/or damage and replace if needed. 3. Increase blade speed. |
| Wear on Back of Blades | <ol style="list-style-type: none"> 1. Feed too heavy. 2. Blade tension too light. 3. Guide roll frozen, damaged and/or worn. 4. Blade rubbing on wheel flange. | <ol style="list-style-type: none"> 1. Decrease feed. 2. Increase blade tension to 35 ft-lbs. 3. Examine guide roll for wear and/or damage and replace if needed. 4. Ensure the blade is tensioned properly to 35 ft-lbs. |
| Blade Slips Off Band Wheels | <ol style="list-style-type: none"> 1. Blade tension incorrect. 2. Wheel pitch not set properly. 3. Guides set too tight. | <ol style="list-style-type: none"> 1. Set blade tension to 35 ft-lbs. 2. Adjust wheel pitch (see page 32). 3. Adjust blade guides (see page 33). |
| Twisted Blade (Profile Sawing) | <ol style="list-style-type: none"> 1. Excessive blade tension. 2. Blade binding in cut. 3. Side guides too tight. | <ol style="list-style-type: none"> 1. Decrease blade tension to 35 ft-lbs. 2. If possible, adjust bundle to remove pinching. 3. Adjust blade guides (see page 33). |

Troubleshooting

| Uneven Cuts | | |
|---|--|---|
| Problem | Cause | Solution |
| Crooked Cut Concave in Center of Bundle | <ol style="list-style-type: none"> 1. Blade speed too high. 2. Blade teeth are worn on one side. 3. Blade tooth pitch too fine. 4. Insufficient blade tension. | <ol style="list-style-type: none"> 1. Decrease blade speed. 2. Replace blade. 3. Use coarser blade pitch. 4. Increase blade tension to 35 ft-lbs. |
| Crooked Cut from Left to Right or Top to Bottom Consistent | <ol style="list-style-type: none"> 1. Blade guides out of adjustment. 2. Blade teeth are worn on one side. 3. Blade tooth pitch too fine. 4. Chip brush not working. | <ol style="list-style-type: none"> 1. Examine guide roll for wear and/or damage and replace if needed. 2. Replace blade. 3. Use coarser blade pitch. 4. Replace chip brush. |
| Crooked Cut Portions of Bundle Inconsistent | <ol style="list-style-type: none"> 1. Incorrect speed or feed. 2. Blade teeth are worn on one side. | <ol style="list-style-type: none"> 1. Adjust blade speed and feed. 2. Replace blade. |

| Motor | | |
|-------------------|---|---|
| Problem | Cause | Solution |
| Motor Overheating | <ol style="list-style-type: none"> 1. Incorrect electrical voltages. 2. Overloads are incorrect size. 3. Loose connection between switch, motor and plug. 4. Amp reading does not correspond to motor rating. 5. Incorrect internal wiring. 6. Drive belt is too tight. 7. Power fluctuations. | <ol style="list-style-type: none"> 1. Check for correct voltage at switch and motor. 2. Check for correct size overloads. 3. Check connections between switch, motor and plug. 4. Consult electrical schematic for amp supply to motor. 5. Check internal wiring. 6. Loosen drive belt. 7. Check for power drop during operation due to power drawn by other machines. |

Troubleshooting

| MQL Mist Lubrication System | | |
|--|---|---|
| Problem | Cause | Solution |
| No fluid output | <ol style="list-style-type: none"> 1. Out of fluid. 2. Insufficient inlet air pressure. 3. Meter stroke failure. 4. Pulse generator cycle rate is set too fast or too slow. | <ol style="list-style-type: none"> 1. Check reservoir level. 2. Check inlet air- set to maximum. 3. Check for stroking of meter- use full air line inlet pressure. Check for fluid movement in capillary tubing at each meter stroke. Loosen 5/6" brass hex bleed screw 2 revolutions until only fluid comes out- close screw tightly. Recheck meter output by manually or automatically cycling. 4. Adjust pulse generator cycle rate. |
| Reduced fluid output | <ol style="list-style-type: none"> 1. Insufficient inlet air pressure. 2. Contaminated fluid supply. | <ol style="list-style-type: none"> 1. Check air inlet pressure so that meter operates "crisply". 2. Non-lubricating fluids such as water and solvents could cause premature wear of internal parts. Consult factory for rebuild kit. |
| Pulse generator not functioning | <ol style="list-style-type: none"> 1. Clogged air inlet screen. | <ol style="list-style-type: none"> 1. Remove pulse generator and check air inlet screen for particular matter. If none found, replace pulse generator. |
| Blade Squealing | <ol style="list-style-type: none"> 1. Feed rate too light 2. Blade running against flange on wheel | <ol style="list-style-type: none"> 1. Increase feed rate 2. Ensure blade is tensioned properly to 35 ft-lbs |
| Slow meter operation | <ol style="list-style-type: none"> 1. Insufficient inlet air pressure. | <ol style="list-style-type: none"> 1. Be sure maximum air inlet pressure is available. A slow or incomplete return could be caused by a broken sprint or inadequate lubrication of the U-cup. Rebuild meter. |
| Meter depressed and not returning | <ol style="list-style-type: none"> 1. Debris in fluid reservoir. 2. Broken return spring. | <ol style="list-style-type: none"> 1. A piece of debris in the fluid could cause the liquid pin to jam. Disassemble and reassemble, checking for foreign particles. 2. If a return spring is broken, rebuild meter. |
| Fluid flowing continuously out of the nozzle or reservoir emptying without system running. | <ol style="list-style-type: none"> 1. Bad check valve. | <ol style="list-style-type: none"> 1. The check valve seal is not functioning properly. Check the seat for cleanliness (or turn it over). Check the seal spring. |
| Fluid accumulation in outer tubing | <ol style="list-style-type: none"> 1. Insufficient atomizing air exiting the nozzle. | <ol style="list-style-type: none"> 1. Increase the atomizing air flow. 2. Direct nozzle coupler outlet downward to encourage excess fluid to exit the nozzle. |
| Air bubbling upward into fluid reservoir | <ol style="list-style-type: none"> 1. Bad check valve. | <ol style="list-style-type: none"> 1. Check the valve seat (check seal) for possible leakage (turn over seat). A static sealing o-ring may need replacement. Use a rebuild kit. |

Troubleshooting

| MQL Mist Lubrication System | | |
|------------------------------------|---|--|
| Problem | Cause | Solution |
| MQL System Is Flooding Lubricant | 1. Lubricator is not adjusted properly. | 1. See pages 11 & 34 for proper lubricator adjustment. |

Troubleshooting

| General | | |
|--|--|---|
| Problem | Cause | Solution |
| Saw Will Not Run | <ol style="list-style-type: none"> 1. Emergency Stop enabled. 2. Machine does not have power to hydraulic motor. 3. Machine does not have power to drive motor. 4. Incorrect voltage to saw. 5. Mechanical bind is occurring. 6. Switch is on upper limit collar. 7. Fuse on transformer blown. | <ol style="list-style-type: none"> 1. Disable Emergency Stop. 2. Connect power to hydraulic motor. 3. Connect power to drive motor. 4. Check voltage to saw and correct if necessary. 5. If cause of bind is not apparent, stop operation and contact Elliott. 6. Press Raise Frame button, if frame does not go up, switch is on upper limit collar. 7. Replace fuse with replacement from Spare Parts Kit. |
| Blade Stalls in Bundle | <ol style="list-style-type: none"> 1. Blade tension too loose. 2. Excessive feed (on soft materials). 3. Blade tooth spacing too coarse. 4. Motor worn and/or defective . | <ol style="list-style-type: none"> 1. Increase blade tension to 35 ft / lb. 2. Decrease feed. 3. Use finer pitched blade. 4. Consult warranty information and contact Elliott. |
| Saw Blade Vibrates | <ol style="list-style-type: none"> 1. Tubes loose within bundle. 2. Blade speed incorrect. 3. Blade tension incorrect. 4. Feed incorrect. 5. Incorrect coolant. 6. Back-up bearing worn. 7. Work piece not secured. 8. Worn or misadjusted saw guides. | <ol style="list-style-type: none"> 1. Attempt to secure tubes, increase feed if possible. 2. Review feeds & speeds document for correct setting. 3. Set blade tension to 35 ft / lb. 4. Review feeds & speeds document for correct setting. 5. Use recommended coolant and ensure it is coating the blade. 6. Replace back-up bearing. 7. Secure work piece as recommended (see page 16). 8. Examine guides for wear and/or damage and replace if needed. |
| Blade Squealing | <ol style="list-style-type: none"> 1. Feed rate too light. 2. Blade running against flange on wheel. | <ol style="list-style-type: none"> 1. Increase feed rate. 2. Ensure blade is tensioned properly to 35 ft-lbs. |
| LED Does Not Turn On During Feeding Down | <ol style="list-style-type: none"> 1. Pressure sensor stuck. | <ol style="list-style-type: none"> 1. Use screwdriver to release roller yoke that holds bearing. Increase feed pressure. |

Troubleshooting

| General | | |
|---|--|---|
| Problem | Cause | Solution |
| Hydraulic Tank Is Leaking Hydraulic Fluid | <ol style="list-style-type: none"> 1. Reservoir is overfilled or foaming. 2. Air bubbles are in the hydraulic oil. If the saw head seems to bounce, this is an indication of air bubbles in the oil. 3. There is an actual leak in the system. If oil comes from any other location it would indicate an actual leak. | <ol style="list-style-type: none"> 1. Check the vent at the top. If the reservoir is overfilled or foaming the excess oil will come out of the vent. 2. Remove the stops and allow the saw frame to lower all the way down. Check the oil level and add if needed. Raise the saw head all the way up then lower to the bottom. Repeat this 3 times then allow the machine to rest for a few hours with the saw head down. 3. Please contact the manufacturer for assistance. |
| Frame Arm Is Slowly Lowering Even When System Is Turned Off | <ol style="list-style-type: none"> 1. If the saw head drifts down a few inches but eventually stops, this may be caused by air in the hydraulic system. 2. Oil is bypassing at one or both piston seals or the check valve. If the saw continues to drift all the way to the bottom, the oil is bypassing at one or both piston seals or at the check valve. | <ol style="list-style-type: none"> 1. Remove the stops and allow the saw frame to lower all the way down. Check the oil level and add if needed. Raise the saw head all the way up then lower to the bottom. Repeat this 3 times then allow the machine to rest for a few hours with the saw head down. 2. Please contact the factory for assistance. |

Maintenance Instructions

WARNING

To reduce the risk of injury, always unplug your machine before performing any maintenance. Never disassemble the machine or try to do any rewiring on the machine's electrical system. Contact Elliott for all repairs.

WARNING

Follow appropriate lock-out / tag-out procedures prior to performing maintenance on this machine. Lock-out / tag-out handle can be found at rear of unit near electrical panel.

The proper performance and service life of every machine depends on how well it is maintained. The following should become a regular routine of operations.

Weekly

1. Clean & Lubricate Exposed Surfaces
 - a.) Wipe exposed surfaces free of dirty oil, chips and dirt.
 - b.) Apply a thin coat of oil, Symbol 2190TEP, or equivalent to machine's surfaces.
2. Inspect Hydraulic Oil Level

WARNING

Cutting head should be at lowest extremity when inspecting oil level.

- a.) De-energize circuit. Tag 'OUT OF SERVICE'.
- b.) Locate site gauge on the hydraulic tank.
- c.) Inspect oil level. Proper oil level is 1" from top of sight gauge.
- d.) Fill as required with Mobil DTE 25 Hydraulic Oil or equivalent.
- e.) Remove safety tag. Energize circuit.

NOTE: To access the fill port on the standard pump, the case for the hydraulic pump may need to be temporarily removed. Once removed, the fill port can be located in the lower left hand corner (above reservoir) when facing the back of the machine.

Maintenance Instructions (cont.)

3. Inspect Gear Box Oil Level.
 - a.) De-energize circuit. Tag 'OUT OF SERVICE'.
 - b.) Inspect proper level and fill to pipe plug identified with oil level sticker on unit with Uptime SHC634 Synthetic Lubricant or equivalent.
 - c.) Do not overfill unit.
 - d.) Remove safety tag. Energize circuit.

Monthly

4. Apply Grease To Idle Bandwheel Bearing.
 - a.) Apply one stroke of grease (from grease gun) to Idle Bandwheel Bearing.
5. Apply Grease To Gear Box
 - a.) Apply one stroke of high quality lithium base NLGI #2 or NLGI #3 to Gear Box top bearing via the grease fitting.

Quarterly

6. Inspect Flexible Hoses & Fittings.
 - a.) Inspect hoses for cracks, breaks and deterioration.
 - b.) Inspect hoses for chafing or evidence of unusual wear.
 - c.) Inspect fittings for tightness.

Semi-Annually

7. Inspect Drive Belt for Wear. See page 34 for technical drawing.
 - a.) De-energize circuit. Tag 'OUT OF SERVICE'.
 - b.) Remove covers for access to belt.
 - c.) Inspect belt for deterioration.
 - d.) Depress belt half-way between pulleys. Belt should depress $\frac{1}{2}$ " to $\frac{3}{4}$ ". NOTE: A BELT THAT IS TOO TIGHT WILL DAMAGE BEARINGS.
 - e.) Remove safety tag. Energize circuit.

Maintenance Instructions (cont.)

Annually

8. Sound and Tighten Foundation Bolts.
9. Replace Gear Box Oil.
 - a.) Replace Gear Box Oil with Uptime SCH634 Synthetic or equivalent.
 - b.) Fill to pipe plug identified with oil level sticker on unit. Do not overfill unit.

As Required

10. Renew Hydraulic Oil
 - a.) Lower frame to full down position to facilitate draining of hydraulic reservoir
 - b.) De-energize circuit. Tag "OUT OF SERVICE."
 - c.) Remove drain plug and drain oil.
 - d.) Reinstall drain plug.
 - e.) Remove filler cap.
 - f.) Fill reservoir to proper level with MOBIL DTE 25 Hydraulic Oil or equivalent. The tank will hold approximately 10 gallons.
 - g.) Remove safety tag. Energize circuit.
 - h.) Return saw to normal operating condition.

11. Replace Hydraulic Filter
 - a.) Lower frame to remove all pressure from hydraulic lines.
 - b.) De-energize circuit. Tag 'OUT OF SERVICE'.
 - c.) Replace "spin-on" hydraulic filter with part # 911231.
 - d.) Remove safety tag. Energize circuit.
 - e.) Return saw to normal operating condition.

NOTE: To access the hydraulic filter, the case for the hydraulic pump will need to be temporarily removed.

Adjustment & Repair

1. Adjust MQL Fluid/Air Mix

- a.) If lubrication does not appear to be applied to blade as mixed mist and spray, the Fluid Controls and/or Air Controls may need to be adjusted. Both sets of controls are located behind the MQL cover.

NOTE: MQL Lubrication System arrives pre-optimized.

- b.) Proper settings should be as follows:

Fluid Control (2 metering pumps) turned in fully clockwise.

Air Control (2 needle valves) each turned out one (1) half turn from seated position.

2. Adjust Wheel Pitch

- a.) De-energize circuit. Tag 'OUT OF SERVICE'.
- b.) Loosen blade tension. NOTE: MOST WHEEL ADJUSTMENTS CAN BE MADE BY ADJUSTING THE IDLE END WHEEL PLATE FIRST.
- c.) Loosen and tighten opposing wheel pitching screws ½ turn as required to change blade tracking on wheel.
- d.) Re-tension blade.
- e.) Energize and run blade to verify that blade tracks on wheel properly, touching wheel flange but not rubbing.
- f.) Remove safety tag.

3. Adjust Blade Micro-Switch Assembly

- a.) To check operation of the switch, remove control cover. Now turn off the feed valve and press the "Lower" button with the operation selector in setup. The LED light should be on. Depress the switch plunger and the lower light should go off.

- b.) If the LED light did not go on when the FRAME LOWER button was pushed, check to see if stud is holding the switch plunger in.

- c.) If the stud is holding the switch plunger in check for sticking mechanism then adjust the stud to activate the switch with .006 gap.

- d.) If the stud is not holding the switch plunger in and the LED light does not come on when the FRAME LOWER button is pushed, then the switch will need to be replaced. To verify this condition, check the switch with a continuity light.

| Blade Force Settings | |
|-----------------------------|--------------------------------|
| Position Number | lbs of force to close solenoid |
| 1 | 110 |
| 1.5 | 120 |
| 2 | 130 |
| 2.5 | 140 |
| 3 | 150 |
| 3.5 | 160 |
| 4 | 170 |
| 4.5 | 180 |
| 5 | 190 |
| 5.5 | 200 |

Adjustment & Repair (cont.)

4. Blade Guide Adjustment

- a.) The blade should travel from the idle wheel to the drive wheel without distortion.
- b.) The blade guides should be perpendicular to the top of the channel.
Using a square, adjust each guide.
- c.) Place a flat, preferably ground piece of steel on the top of the channel and, using a square, adjust each guide.
- d.) Check the side bearings to be sure they are snug against the side of the blade.
Adjust the eccentric roller axle as needed.

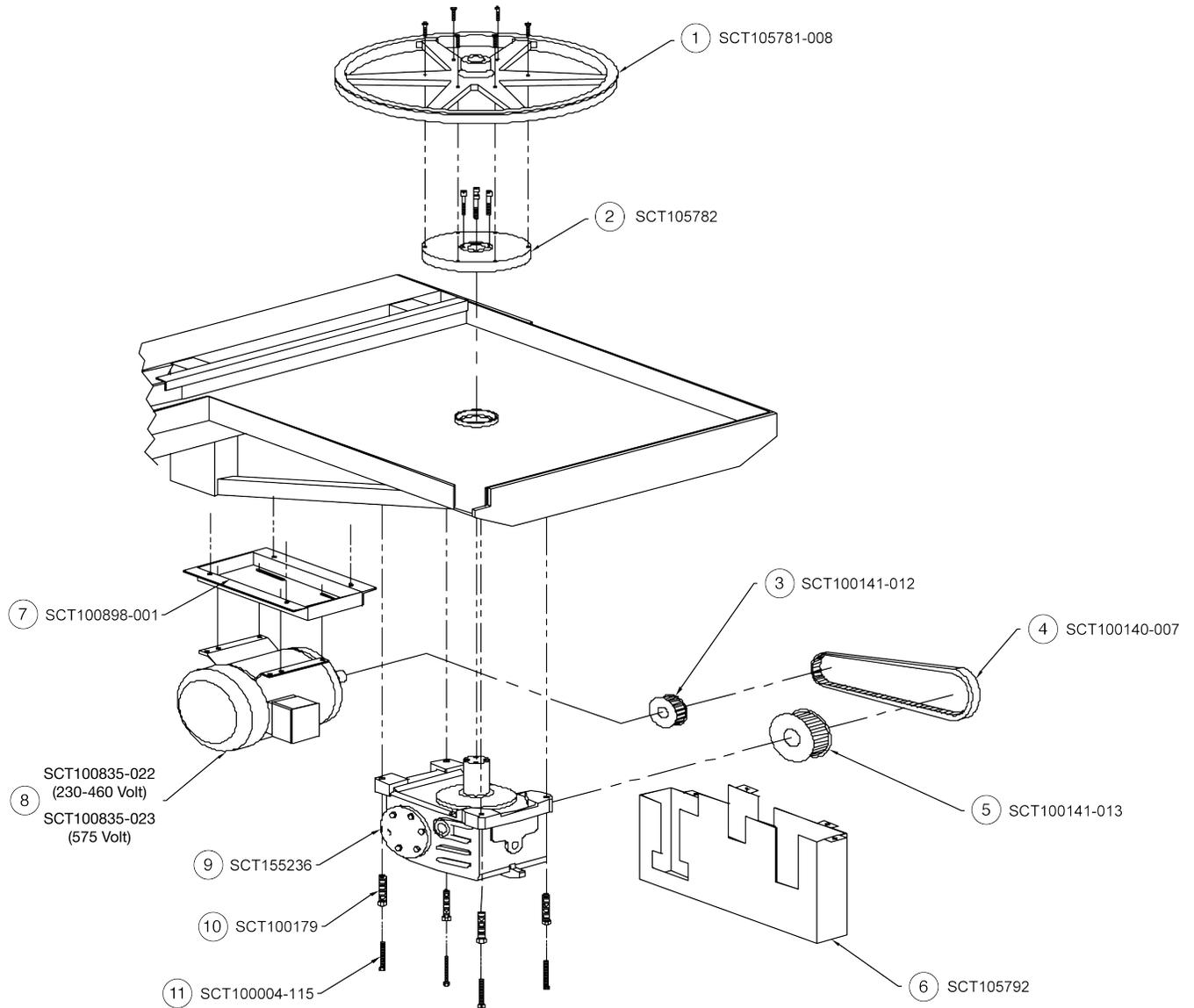
5. Setting Frame Limits

- a.) Determine the maximum safe working height of the saw head. If there are not any restrictive elements, ceiling, etc. above the SpeedCut it is permissible to place the collar toward the top of the rear post.
- b.) Loosen the thumb screw on the upper frame limit collar and slide up the post to the maximum desirable height. Tighten the thumb screw and the upper frame limit collar is now secured in place.
- c.) Determine the minimum safe working height of the saw head. Depending on the size of the bundle to be cut, it is typically desirable to place the lower frame limit collar approximately 1" below the lowest tubes of the bundle to be cut. This ensures that the cut is completed and the saw head stops slightly below the cut without bottoming out on the frame.
- d.) Loosen the thumb screw on the lower frame limit collar and slide down the post to the minimum desirable height. Tighten the thumb screw and the lower frame limit collar is now secured in place.

NOTE: Prior to initial operation it is good practice to test the frame limit switch for functionality. To do so, make sure that the cutting area is clear and that all proper installations have been completed. Secure the lower frame limit collar in place a few inches below the frame limit switch. Begin the cutting motion (without actually cutting any material) by starting the blade and initiating the downward frame feed. When the frame limit switch meets the lower frame limit collar it will close the contacts and you will hear a click. At this time the saw head will stop feeding downward.

NOTE: It is important to use the frame limit switch system to ensure all the solenoids are closed and that there are no open hydraulic circuits. It is not desirable to operate this machine by creating "hard stops", bottoming out the saw on the lower frame upon the completion of a bundle cut.

Technical Drawings



Drive End - Exploded View

| No. | Part Name | Part Number |
|-----|-------------------|---------------|
| 1 | Bandwheel | SCT105781-008 |
| 2 | Bandwheel Adaptor | SCT105782 |
| 3 | Pulley, Motor | SCT100141-012 |
| 4 | Drive Belt | SCT100140-007 |
| 5 | Pulley, Gearbox | SCT100141-013 |
| 6 | Belt Guard | SCT105792 |

| No. | Part Name | Part Number |
|-----|-----------------------------|---------------|
| 7 | Motor Base | SCT100898-001 |
| 8 | Motor (230-460 Volt option) | SCT100835-022 |
| | Motor (575 Volt option) | SCT100835-023 |
| 9 | Gear Box | SCT155236 |
| 10 | Leveling Screws | SCT100179 |
| 11 | Hex Head Cap Screw | SCT100004-115 |

Technical Information

| | SpeedCut 78 | SpeedCut 98 |
|---|--|---|
| Power | | |
| Blade Motor | 7.5 HP (5.6kW) | 10 HP (7.4kW) |
| Hydraulic Motor | 1 HP (.75kW) | |
| Hydraulic Capacity | 10 gal | |
| Power Requirement | 3 Phase - 50/60 Hz (Select from 208V - 600V) | |
| Cutting | | |
| Cutting Capacity (round) | 78.5" (2,000mm) | 98.5" (2,500mm) |
| Cutting Capacity (rectangular) | 78.5" (2,000mm) height | 98.5" (2,500mm) height |
| | 85" (2,160mm) width | 98.5" (2,500mm) width |
| Cutting Depth/Throat | 33.75" (857mm) | |
| Blade Speed (typical speed) | 50 - 275 FPM Infinitely Variable (15 - 84 mpm) | |
| Blade Size | 1.5" x .05" x 375" (38mm x 1mm x 9,525mm) | 1.5" x .05" x 402" (38mm x 1mm x 10,211mm) |
| Typical Bundle Cutting Time | 20 - 60 minutes | |
| Dimensions & Weight | | |
| Working Area | 168" (4,267mm) height | 213" (5,410mm) height |
| | 178" (4,521mm) width | 192" (4,877mm) width |
| | 87" (2,210mm) depth | |
| Minimum Height | 117" (2,972mm) | 134" (3,404mm) |
| Bandwheels | 36" (914mm) cast iron | |
| Weight | 7,500 lbs. (3,402Kg) | 8,500 lbs. (3,856Kg) |
| Shipping Dimensions (Crated) | 130" (3,302mm) height | 143" (3,632mm) height |
| | 186" (4,724mm) width | 199" (5,054mm) width |
| | 100" (2,540mm) depth | |
| Shipping Weight* (Crated) | 9,500 lbs. (4,309Kg) | 10,500 lbs. (4,763Kg) |
| Bundle Support Table (uncrated) | 20" (508mm) height | |
| | 33" (838mm) width | |
| | 36" (914mm) depth | |
| Support Table Weight (uncrated) | 225lbs (102Kg) | |
| *Crate weight is based on an average unit. The final weight may vary. | | |

| Spares & Accessories | | |
|--------------------------|---------------|---------|
| Bi-Metal Bandsaw Blades* | SCT78B1 | SCT98B1 |
| | SCT78B2 | SCT98B2 |
| | SCT78B3 | SCT98B3 |
| MQL Lubricant (1 gal) | SCT100318-028 | |
| Bundle Support Table | SCTBT | |
| Clamp System | SCTMC | |
| Recommended Spares Kit | SCT155291 | |

*For help with blade selection, use the Blade Selection Tool at www.elliott-tool.com/speedcut or contact Elliott for assistance.

Recommended Spares Kit:

Includes spare maintenance parts for quick replacement and no downtime.

- Blade Brushes
- Drive Belt
- Gear Oil
- Bearings
- Fuses
- Roller Axles
- Roller Supports

See page 10 for location on unit.

Know Your Responsibility

The Elliott SpeedCut warranty covers defects in material and workmanship. The following items are considered the responsibility of the SpeedCut owner (some features listed may not apply to your SpeedCut model). Elliott is not responsible for consequential costs due to the improper attention of the below items. Please feel free to contact Elliott for technical support on any of these items.

Machine Installation and Initial Settings

- Air supply to unit.
- Power supply to the saw.
- Counterbalance Spring adjustment to control weight of saw head.
- Position of Blade Guide on the Beam (distance between the guides).
- Saw Blade speed.
- Saw Head Feed Rate Control.
- Selection of the appropriate blade pitch and type for each job.
- Secure clamping of vessel to be cut.
- Proper mixture of coolant and rate of flow (if applicable).

Alignments and Calibrations

- Alignment of the Blade Guides and the sweep of the Saw Head.
- Alignment of the Bandwheels for proper blade tracking.
- Calibration of Variable Bandspeed Indicator.
- Calibration of Blade Tensioning Device.

Normal Wear Items

- Saw Blade is covered for breakage only. It is not covered for wear or tooth stripping.
- Sawing Coolant.
- Blade Guide Bearings and Carbide Guide blocks.
- Blade Brush and Blade Brush Drive Belt.
- Motor Drive Belt.

Warranty

Should any part, of Seller's own manufacture, prove to have been defective in material or workmanship when shipped (as determined by Seller), Seller warrants that it will, at its sole option, repair or replace said part f.o.b., point of manufacture, provided that Buyer notifies, in writing, of such defect within twelve (12) months from date of shipment from the manufacturing plant.

On request of Seller, the part claimed to be defective will be returned, transportation, insurance, taxes and duties prepaid, to the factory where made, for inspection. Any item, which has been purchased by Seller, is warranted only to the extent of the original manufacturer's warranty to Seller. Seller shall not be liable for any damages or delays caused by defective material or workmanship.

No allowance will be made for repairs or alterations made by others without Seller's written consent or approval. If repairs or alterations are attempted without Seller's consent, Seller's warranty is void.

THE WARRANTIES PROVIDED IN THE OBLIGATIONS AND LIABILITIES OF SELLER HEREUNDER, AND THE RIGHTS AND REMEDIES OF BUYER HEREUNDER ARE EXCLUSIVE AND IN SUBSTITUTION FOR, AND BUYER HEREBY WAIVES ALL OTHER WARRANTIES, GUARANTEES, OBLIGATIONS, CLAIMS FOR LIABILITIES, RIGHTS AND REMEDIES, EXPRESS OR IMPLIED, ARISING BY LAW OR OTHERWISE, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTY FOR MERCHANTABILITY AND FITNESS FOR PURPOSE.

Seller's total liability is limited to the lower of the cost of repair or replacement.

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Contact Us

Elliott Tool offers a complete line of precision tube tools to meet your needs. Contact us or your local support.

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Printed in the USA
©03/2023 Elliott Tool Technologies, Ltd.
TM-108
PL-83

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