

# Operators and Service Manual

Avery Dennison®  
Sonic Knife  
1000w With Telsonics



**WARNING**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- 1) this device may not cause harmful interference, and
- 2) this device must accept any interference that may cause undesired operations.

This Class A digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations. Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada



## Declaration Of Incorporation

according to EN ISO/IEC 17050-1:2004

### Manufacturer's Name and Address

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### Product Information

Product Name: Sonic Knife  
Model Number: Sonic Knife  
Trademarks: Avery Dennison®  
the above model designation(s) comply with this declaration

We declare that the Sonic Knife is manufactured and supplied as partly completed machinery in accordance with Machinery Directive 2006/42/EC.

This partly completed machinery shall not be put into service in the European Community until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of Directive 2006/42/EC and all other applicable EC directives to meet requirements for use of the CE mark.

Sonic knives are intended solely for use with the Avery Dennison Snap 500 printer or the Avery Dennison Snap 700 printer. The Sonic Knife contains moving blades and rotating parts; therefore, requiring strict conformance to safety measures during installation and operation to reduce risk from these hazards. Installation of the sonic knife should only be performed by properly trained personnel.

Type of Test	Standard Used
2014/30/EU 2006/42/EC	EU EMC Directive Machinery Directive
EN 60204-1	Safety of machinery – Electrical equipment of machines Part 1: General requirements
EN 61000-6-2	Generic Standard – Immunity for industrial environments (EMC) Part 6-2: Generic standards – Immunity for industrial environments
EN 61000-6-4	Generic Standard – Emission standard for industrial environments (EMC) Part 6-4: Generic standards – Emission standard for industrial environments

17 August 2016

Date

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TCSNKNIFEDI Rev. AB 8/16

<http://www.monarch.averydennison.com/support/regulatory.asp>



**EU Declaration of Conformity****TELSONIC**  
ULTRASONICS

Translation of the original

The manufacturer: **TELSONIC AG**  
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hereby declares that the following product:

Product designation: **Generator SG3510CT**  
 Art.-No. **911360200**

**Meets all fundamental requirements of the following Directives.**

2014/30/EU EU EMC Directive  
 2014/35/EU LVD Low Voltage Directive

**Applied harmonised standards:**


**EN 60204-1** Safety of machinery - Electrical equipment of machines  
 Part 1: General requirements

**EN 61000-6-2** Generic Standard - Immunity for industrial environments (EMC)  
 Part 6-2: Generic standards - Immunity for industrial environments

**EN 61000-6-4** Generic standard - Emission standard for industrial environments (EMC)  
 Part 6-4: Generic standards - Emission standard for industrial environments

Bronschhofen, 04.05.2016

Solenthaler, Peter, Head of Engineering and Development  
 Surname, first name, function of the signatory

  
 Signature

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# 1.0 Introduction

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AVERY DENNISON has designed the sonic knife to work in-line with the SNAP™ family of printers. It is not intended for stand-alone operation.

The sonic knife uses ultrasonic vibrations to produce a cut in a woven polyester label. These vibrations create micro-pockets of heat which melt the polyester fibers on a microscopic level, cut through the fibers, and join the fibers to adjacent fibers. The result is a smooth cut that is:

- fray resistant, and
- soft to the touch

Cutting the woven polyester with a standard knife requires that the ends of the label be sewn in or “loop sewn”. Otherwise, the label will fray as there is nothing physical to keep the weave together.

Other cutting technologies such as a hot knife will cut and melt the fiber ends together, but the resulting bead of the cut is sharp and uncomfortable for skin contact.

Only a sonic cut woven polyester label has satisfactory fray resistance and soft edge suitable for skin contact.

This manual guides the printer operator as an easy-to-use, quick-reference guide. It contains procedures for receiving, handling, set-up, installation, operation, and maintenance of the sonic knife.

The SNAP 500 printer with the sonic knife is show here. Note that the power supply is not shown.



Throughout this manual, a system of NOTES, CAUTIONS, and WARNINGS identify key information to ensure your personal safety and to proper printer operation. Please review these carefully.



**NOTE:** Call attention to information that is especially significant to understanding and operating the equipment. Provided suggestions and help.



**CAUTION:** Inform you of actions or situations in which the printer might be damaged.



**WARNING:** Describe situations in which lack of attention or insufficient equipment knowledge could cause either personal injury or damage to the printer.



## 2.0 Safety Information

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- Follow all of the safety requirements and procedures established for your facility.
- Turn off the power to the printer before cleaning, servicing, or replacing any components.
- You do not have to turn off the power when loading or changing supplies.
- Follow all warnings and instructions marked on the product.
- There are hazardous moving parts in the printer. Service should be performed only by trained service personnel.
- All covers and guards must be in place when operating the printer and should be removed only by trained service personnel.
- Do not push objects of any kind through openings in the equipment. Dangerous energy might be present and cause fire, electric shock, or damage to the equipment.
- Do not block or cover the openings of the equipment.
- Do not place the equipment near a radiator or heat register. This could cause the product to overheat.
- Turn off the printer and disconnect the power cord before servicing the printer.
- Operators should read and understand the Operators manual before operating the printer.
- If the printer operates improperly or fails to respond to commands, turn the printer off using the power switch. If the problem continues to occur, obtain service for the printer.
- The AC mains supply for the printer should be properly grounded and provide overcurrent protection as required to meet all local electrical and building codes.
- The AC mains supply for the printer should be properly grounded and should meet all local electrical and building codes and provide overcurrent protection as required.
- The AC mains supply for the printer should be properly grounded and should meet all local electrical and building codes and provide overcurrent protection as required.
- Do not remove, deface, or defeat any safety guards or warning labels.
- Do not operate the printer with any parts missing or broken.
- The printer has been designed to be as safe as possible. However, there are moving parts during the normal operation of the printer. Obey all warning labels and safety instructions during operation.
- Do not access the knife or Sonic Horn area when the printer is running.



- This machine has some pinch points and warm surfaces. All of these areas have been well guarded and it is recommended that the safety features of this machine are never altered or defeated.
- Since ultrasonic is high frequency sound, some noise will be produced as it makes its cut. It is recommended that people in the immediate area wear ear protection. (See appendix “A” for a list of manufacturers of hearing protection.)
- High voltage is present in the power supply. Never attempt to operate the unit with the cover off.
- To prevent the possibility of electrical shock, make sure the power supply is properly grounded.
- Keep hands from under horn. High pressure and vibrations can cause injury to hands and fingers.
- Do not allow the ultrasonically activated horn to touch a metal base or metal fixtures.
- Do not press the “TEST” switch when the stack assembly is removed from the equipment.
- For information about supply compatibility or environmental information, contact your local Avery Dennison Customer Service.

## 3.0 Installation

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### 3.1 Preparing for the installation

#### 3.1.1 AC Power Line

---



**NOTE:** AVERY DENNISON requires that the minimum electrical service be 10 Amps @ 115VAC or 6 Amps @ 230VAC. This will allow the printer, Sonic Knife, and any additional support or service equipment to be plugged into the same service. It is highly recommended that the printer and its accessories be on a dedicated circuit.

The electrical service should meet standard electrical code practices, including proper grounding and neutrals.

#### 3.1.2 Location Considerations

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The Sonic Knife weighs about 25 pounds (12 kg), and the power supply weighs 12 pounds (6 kg). The Sonic Knife with printer weighs 80 pounds (43 kg). This equipment combination requires a table of sufficient quality and strength to handle this load.

Locate the sonic knife in an area so that the cutting noise emitted from the knife operation will not affect others. While AVERY DENNISON strives to keep the sonic knife noise to the lowest level, it is not recommended for an office environment.

The power source of the sonic knife should be a dedicated line. Signs appear when power is not sufficient. In this case, the ultrasonic action will stop cutting but the rest of the sonic knife will appear fully functional.



**CAUTION:** Each customer must take responsibility to ensure the workstation created for the system meets the recommended requirements to ensure optimal operation.

### 3.1.3 User Safety

---

1. Follow all of the safety requirements and procedures established for your facility.
2. Turn off the power to the printer and sonic knife before cleaning, servicing, or replacing any components.
3. You do not have to turn off the power when loading or changing supplies



**CAUTION: The Sonic Knife has some pinch points which have safeguards design in. AVERY DENNISON strongly recommends that you do not modify or bypass these safeguards.**



**CAUTION: Danger of explosion if battery is incorrectly replaced. Return product to Avery Dennison for proper replacement and disposal.**



**WARNING: There are hazardous moving parts at the print head station. Keep hair, loose garments, jewelry and fingers away**

## 3.2 Receiving

The sonic knife shipping carton is large and specially made to protect the knife. It may be awkward or difficult to move by hand to its installation location.



**CAUTION: Do not remove the printer from the carton or unpack in the shipping/receiving department. Move the carton to the installation location.**

Move the sonic knife with a forklift, fork cart, or handcart to its intended location. It is easier and safer to use one of these handling devices. Leaving the knife in the carton while it is being moved within your facility will help protect it until placed in its new location.

### 3.2.1 Unpacking

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- 1: Remove binding straps from the carton and discard.
- 2: Lift and remove the carton top, top foam, and all parts. The remaining base packing foam is shown in Figure 1.
- 3: Set aside the information packet.
- 4: Lift up sonic knife and power supply up, out of the foam pocket.
- 5: Remove Poly Bags
- 6: Set the sonic knife on its back cover (the same position as it sits in the carton).
- 7: Remove the tool bag, machine manual and power cord.



FIGURE 1 - Poly bag removed from around components

### **3.2.2 Repacking**

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Follow procedure in reverse order. It is required to band the package with straps due to the tray carton design

### **3.2.3 Disassembly and Disposal**

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1. No special steps are needed to decommission the printer.
2. Disconnect the Sonic Knife from the printer and remove it from the printer.
3. Dispose of the Sonic Knife in accordance with local laws and ordinances.

### **3.2.4 Storing Sonic Knife When Not In Use**

---

- If the sonic knife is removed from the printer care should be taken that it's stored in a safe location and manner to prevent it from falling or tipping over causing personal injury or damage to the unit.
- The sonic knife has a support bracket that can be extended on the base of the printer to keep the unit upright.
- If the sonic knife is stored in a busy work area or a bench that is not stable it should be laid on its back for greater stability.

## **3.3 Installing the Sonic Knife to the Printer**

1. Locate the two mount posts on the printer used to hold the stacker.
2. Place the sonic knife in front of and to the right of the printer. Position the knife so that the support bracket on the sonic knife aligns with the bottom stacker support post as shown in Figure 2. The sonic knife is not free-standing to keep positive control over the knife until it is securely installed on the printer.
3. Slide the sonic knife onto the bottom post and move the sonic knife back until it is aligned with the printer.
4. Adjust the sonic knife forward/backward so the stock coming from the printer is centered on the horn face.
5. Install the printer stacker on the stacker posts on the sonic knife. Those posts mimic the printer stacker posts and installation of the stacker is the same.
6. Plug the stacker into the stacker receptacle on the printer. If the stacker power cord does not reach, check the position of the sonic knife.

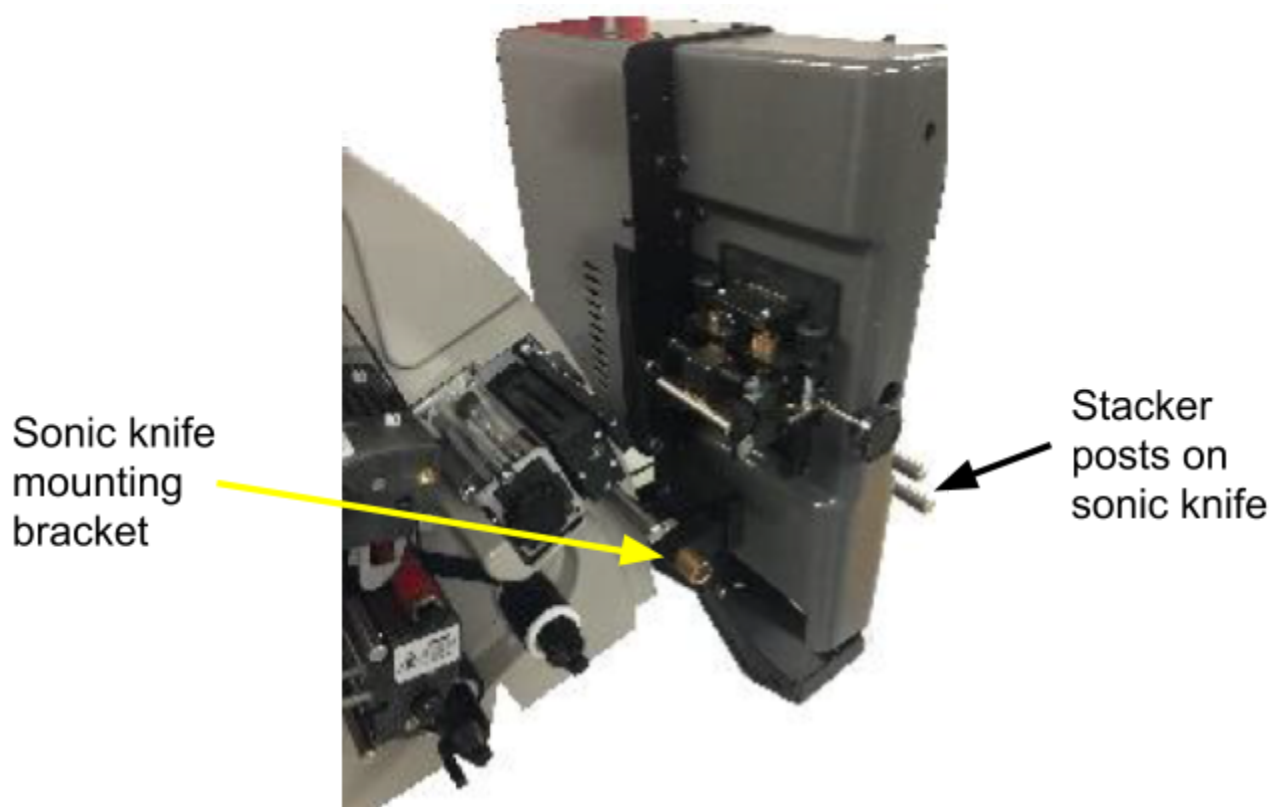


Figure 2

### 3.4 Cables from Sonic Knife to the Printer

1. The sonic knife requires an internal cable in the printer. This internal cable receives the data cord from the sonic knife and connects it to the proper board locations inside the printer. If this internal cable is not installed, call service.
2. Connect the sonic knife cable to the receptacle on the printer as shown in Figure 3.

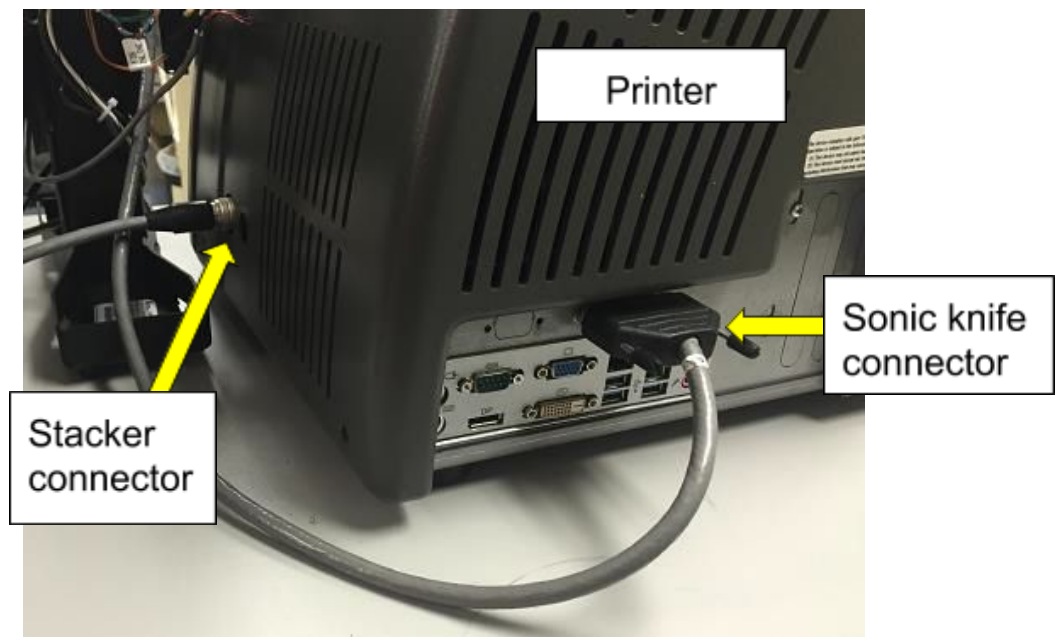


Figure 3

### 3.5 Connecting the Ultrasonic Power Supply

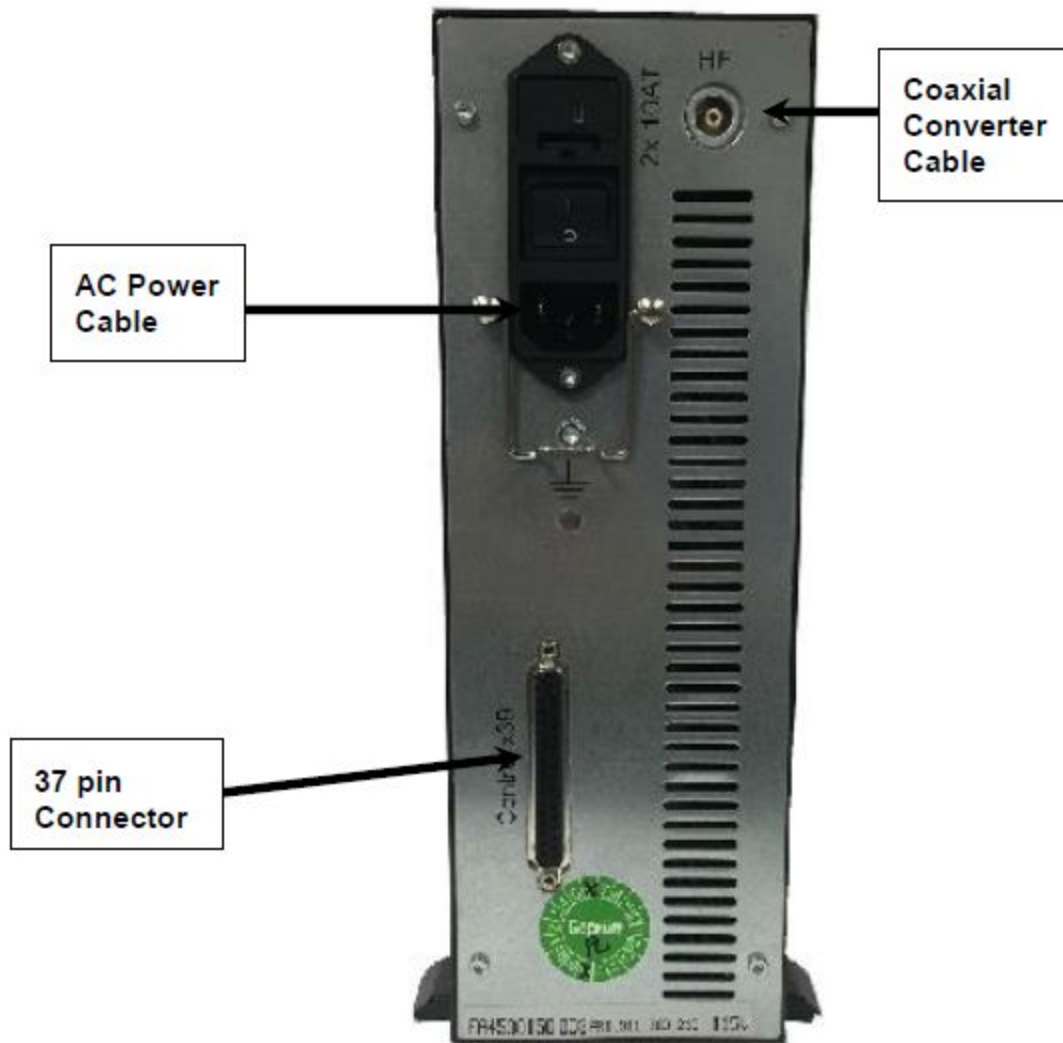
1. Locate the ultrasonic power supply in a convenient location near the sonic Knife.
2. Connect the coaxial converter cable from the ultrasonic stack to the ultrasonic power supply by pressing the connector firmly into the socket.
3. Connect the 37-pin D-shell connector to the 37-pin connector on the rear of the power supply. Tighten the mounting screws to secure the connector.



4. Connect the large D-shell connector to the connector installed in the printer (step 1). Tighten the mounting screws to secure the connector.
5. Connect the power cord to the ultrasonic power supply and the AC power source.



**NOTE:** The 230v power supply has no AC (mains) power switch. Plugging it in energizes it. Ultrasonic energy is generated only while cutting.



**Figure 4**



**WARNING:** Locate the Ultrasonic Power Supply in a location where it will not be bumped or knocked over

## 3.6 Components

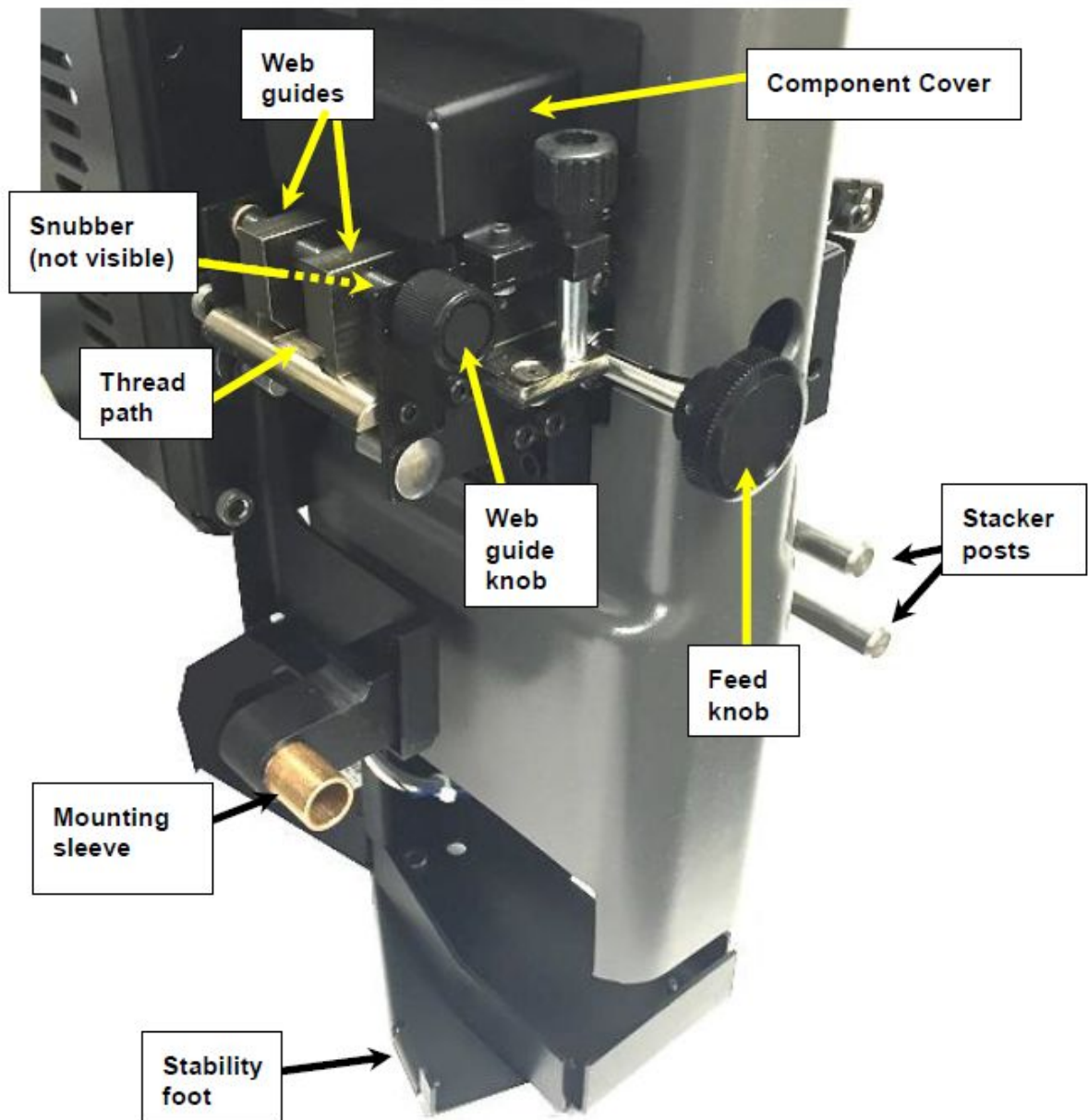


FIGURE 5a

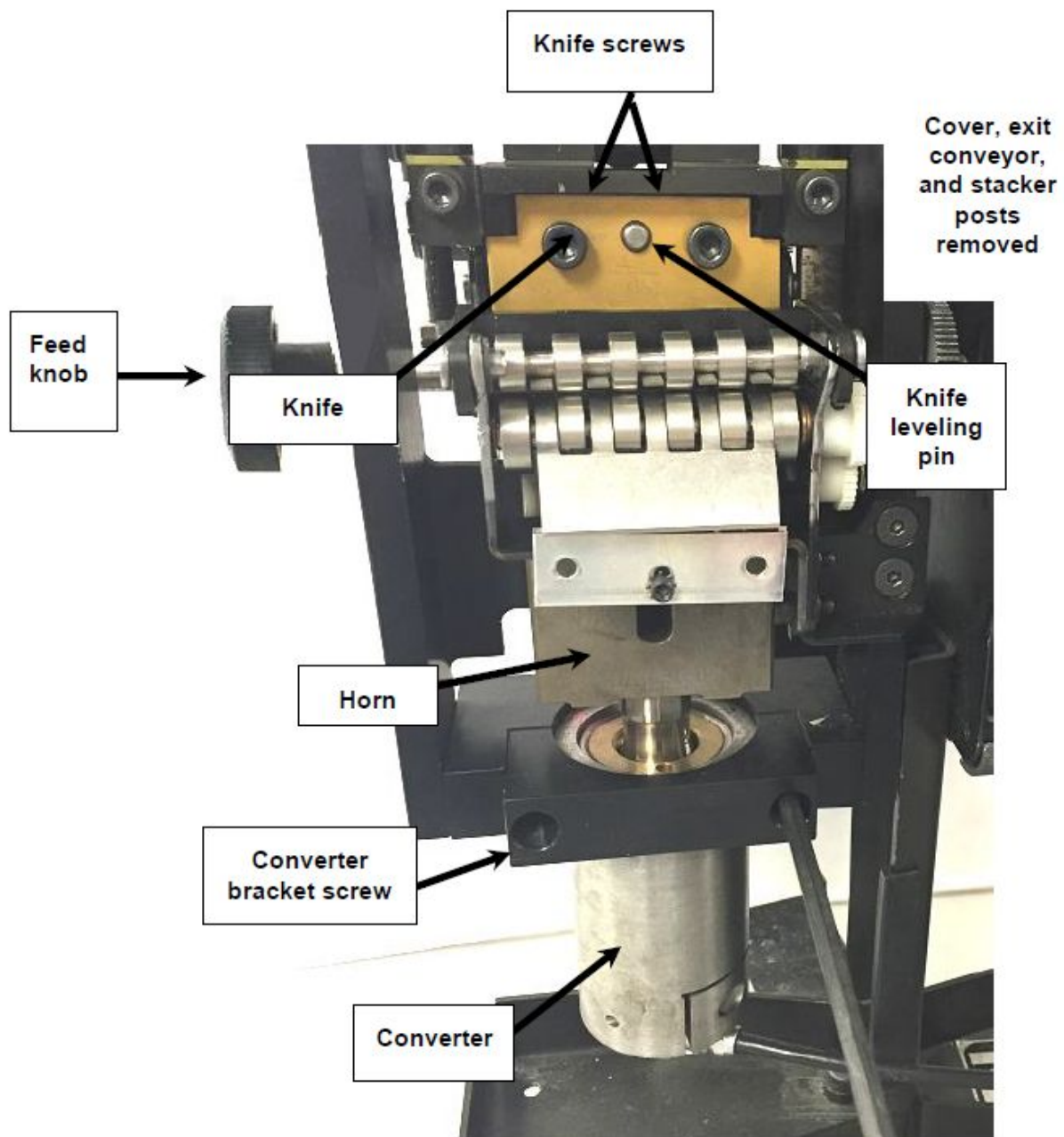


FIGURE 5b

## 4.0 Operation

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### 4.1 Ultrasonic Power Supply Introduction



**CAUTION:** Only a qualified technician should service the power supply.

The ultrasonic attachment is made up of several components.

- Power supply
- Horn assembly
- Connecting cable
- Knife assembly with a changeable tool steel blade.

Operation:

- The power supply generates electrical pulses at 35 KHz to the converter
- The converter turns the electrical pulses into motion.
- The horn turns the motion in a vibrating surface.
- The knife presses the stock against the horn causing the fibers to vibrate, heat, cut, and seal.
- The knife makes contact with the horn and the electrical pulses shut off.

#### 4.1.1 Fuse

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Refer to the nameplate on the ultrasonic power supply for replacement fuse information.

#### 4.1.2 RF Cable to Sonic Converter

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Interface cable from the power supply to the converter.

#### 4.1.3 Custom Trigger

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The interface cable from the sonic knife is used to turn the sonics off and on. The sonic unit is on all the time the stacker is running

#### 4.1.4 Air Cooling

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The sonic horn does not require special cooling. However, to maintain optimum efficiency, keep the horn stack area and the back cover cooling vents free from debris and clutter.

## 4.2 Power Supply Settings



**FIGURE 6**

The factory will pre-program the ultrasonic power supply to the correct settings. Any changes to the factory setting may result in improper operation.



**CAUTION:** For proper operation, use the factory settings at all times. Changing these settings may render the sonic knife inoperable. It may also reduce cut performance, damage the knife, or hurt the reliability.

If necessary, the factory settings may be restored as follows:

AUTO/MAN switch	AUTO
CUTTING CONTROL	0
US-TIME	0

## 4.3 Ultrasonic Horn “Stack”

The "Converter / Horn" assembly is called the "Stack".



**WARNING:** Touching the horn during operation can cause burns.

The sonic knife has been set-up at the factory to run a checkout stock as the minimum checkout requirement.

## 4.4 Threading stock through the sonic knife

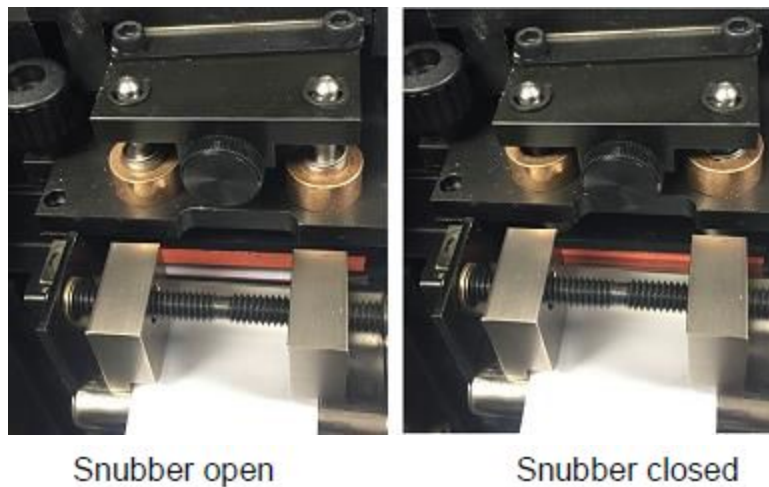


**CAUTION:** Each customer must take responsibility to ensure the workstation created for the printer meets the recommended requirements to ensure optimal operation of the printer.

For information about supply compatibility or environmental information, contact your local Avery Dennison Customer Service.

1. Ensure the snubber brake is in the “up” position as shown in Figure 6. This is the usual position when the knife is stopped. If the snubber brake is not in the “up” position, press start and stop, to cycle the system for one label.

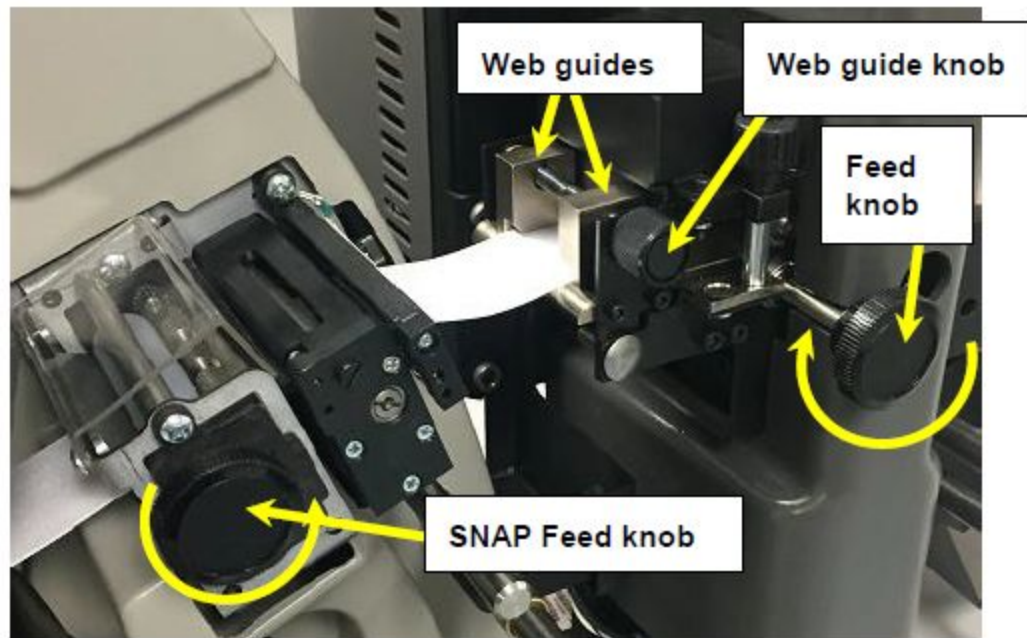


**FIGURE 6**

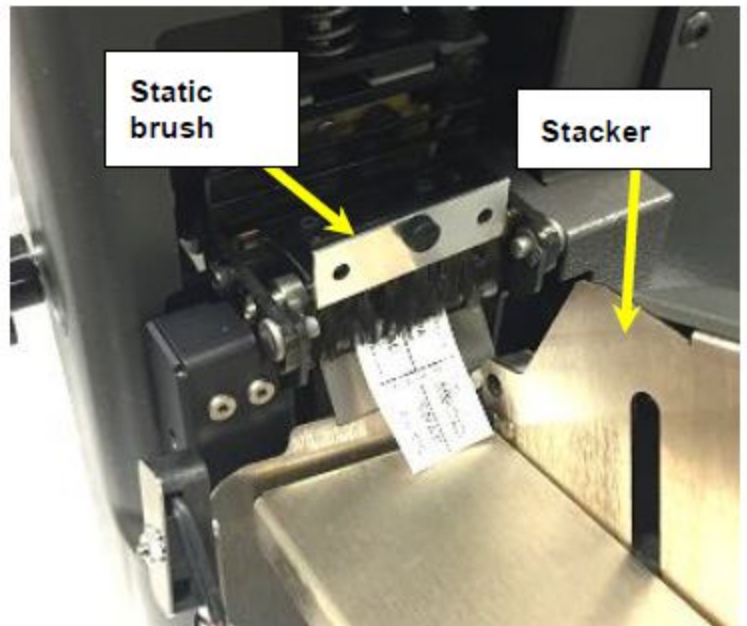
The “Snubber open” allows the material to feed under it through the knife. The “Snubber close” holds the material for cutting and prevents feeding to thread the knife.

2. Feed fabric under the snubber brake until it stops at the upper and lower feed rollers.
3. Using the feed roller knob and the SNAP feed knob, advance the stock through the knife, under the knife blade, and out into the stacker.
4. The upper feed roller is automatically spring loaded, so there is no feed pressure adjustment necessary.
5. Adjust the web guide knob so that the web guides barely touch the stock. If necessary physically position the sonic knife to make a straight path for the stock through the knife into the stacker.

6. Adjust the stacker so it touches the edge of the label. Adjust the static brush as necessary.



**FIGURE 7**





## 5.0 Sonic Knife Cleaning



**WARNING**  
Hazardous moving  
parts. Keep hair,  
loose garments,  
jewelry & fingers away.

**CAUTION:** Each customer must take responsibility to ensure the workstation created for the printer meets the recommended requirements to ensure optimal operation of the printer.

To clean the knife and rollers:

1. Remove the cover.
2. Loosen the one side lock and two top lock screws as shown in Figure 8.
3. Flip back the feed conveyor.
4. Clean metal roller with a nylon brush and alcohol.
5. Rotate the feed knob to cover all roller surfaces. Do not allow alcohol to touch the knife.
6. Allow to dry before reassembly.



**NOTE:** Disassembly and flipping back the feed conveyor can be used to clear jams.

Top lock  
screw

Side lock  
screw

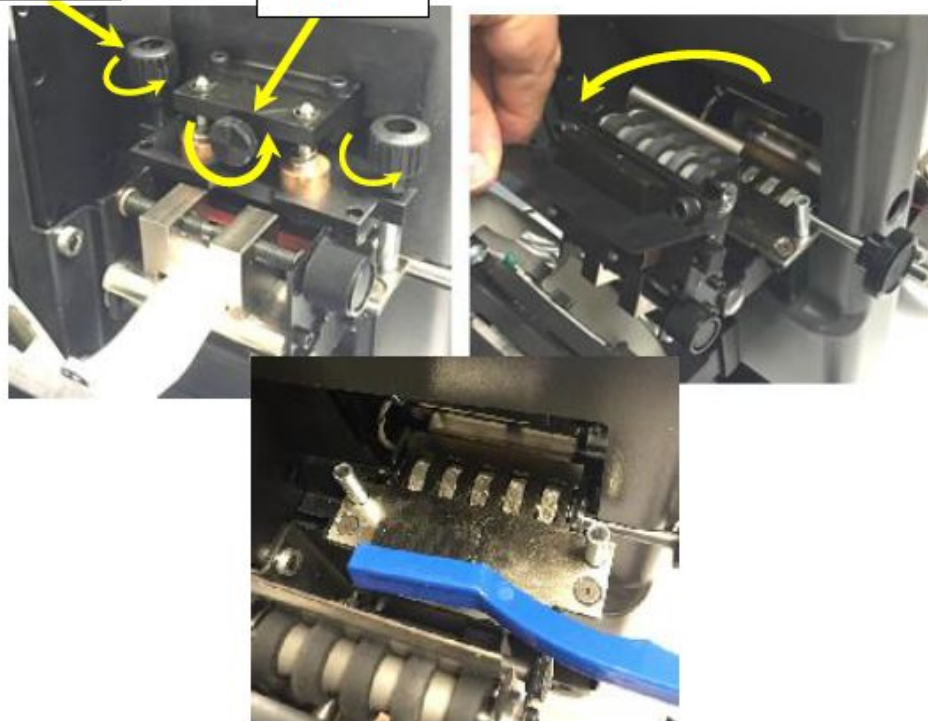


FIGURE 8

## 6.0 Sonic Knife Maintenance

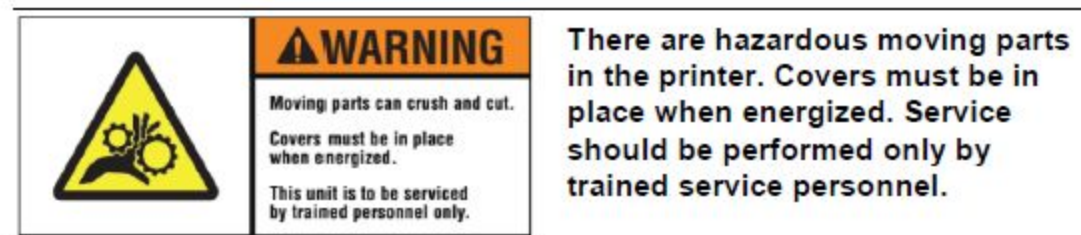
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- At times the sonic knife will require adjustment and maintenance.
- The top knife will need to be replaced and leveled
- The stack will need to be adjusted to cut in a new location,
- General tuning will need to be done to keep the sonic knife in top running condition.

The following sections are in order of procedure to set-up the knife and to keep the sonic knife cutting properly.

### 6.1 Replacing the Knife Blade



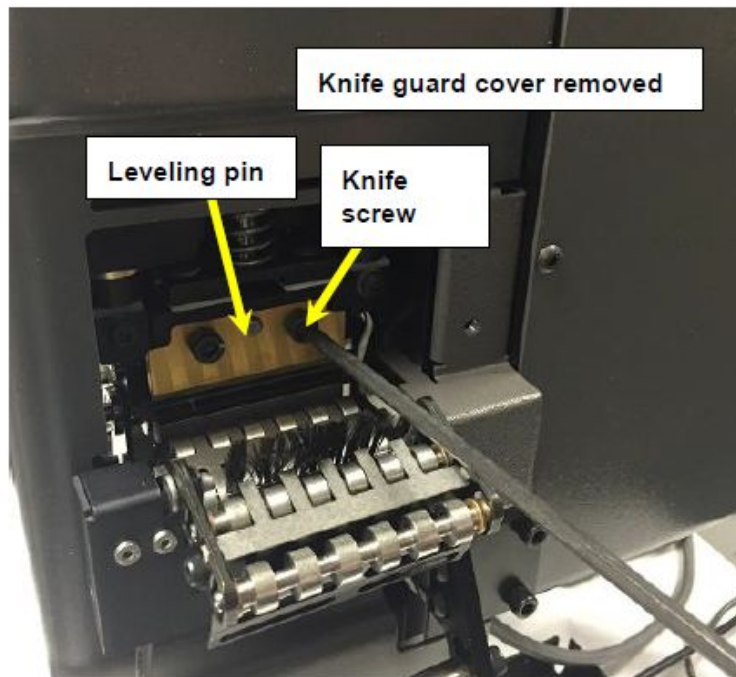


FIGURE 9

When the horn face and knife blade are in brief contact, the ultrasonic vibration over time will cause abrasion and eventually the knife blade to wear. Therefore, the knife blade will need to be replaced periodically.

1. Remove the knife blade guard.
2. The knife is attached to a self-leveling mount with a leveling pin.
3. Loosen and remove the two knife screws.
4. Remove the blade from the leveling pin.
5. Replace the new knife blade.
6. Thread the two knife screws into the knife mount but do not tighten.
7. Follow the knife blade leveling procedure each time the knife blade is replaced.



**NOTE:** When removing the knife blade, the blade may seem tightly mounted to the knife mount pin. Pull blade off of mount (leveling) pin by pulling from the top of the blade.

## 6.2 Leveling the Knife Blade

	<p><b>WARNING</b></p> <p>Moving parts can crush and cut.</p> <p>Covers must be in place when energized.</p> <p>This unit is to be serviced by trained personnel only.</p>	<p>There are hazardous moving parts in the printer. Covers must be in place when energized. Service should be performed only by trained service personnel.</p>
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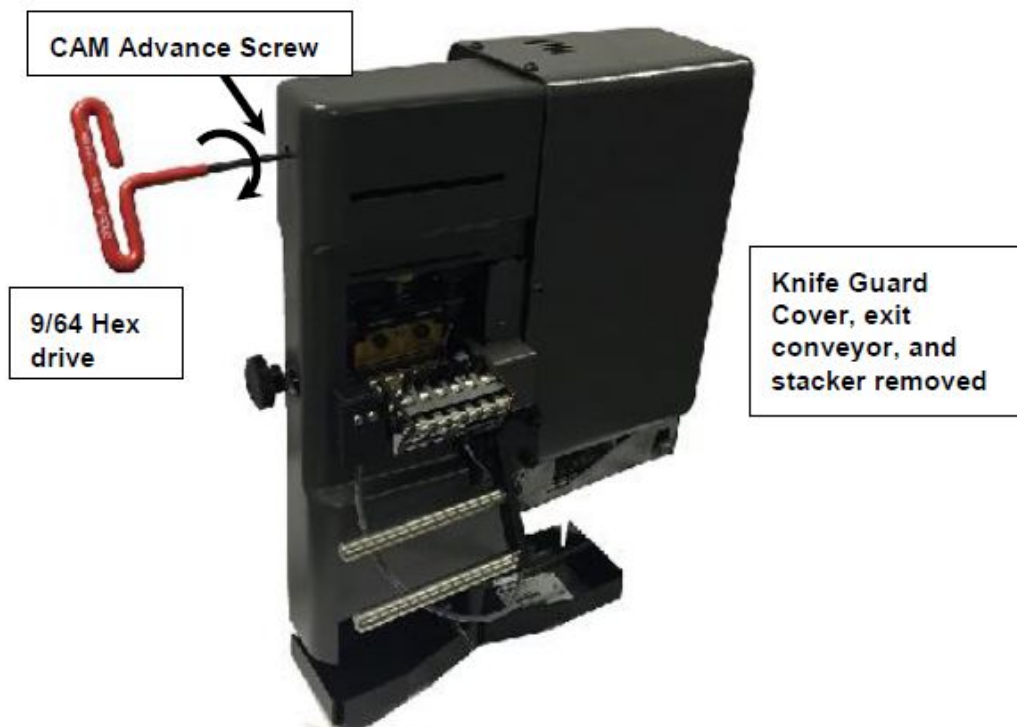
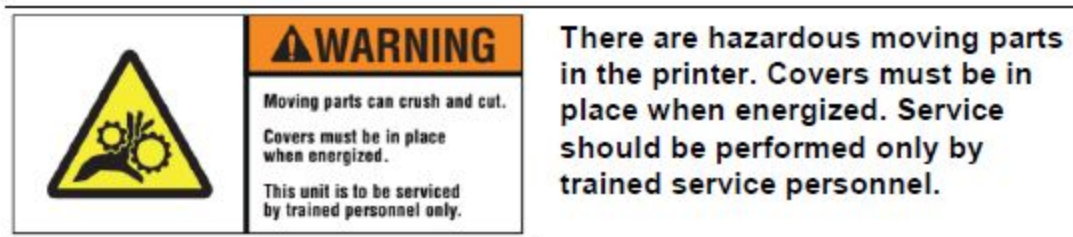


FIGURE 10

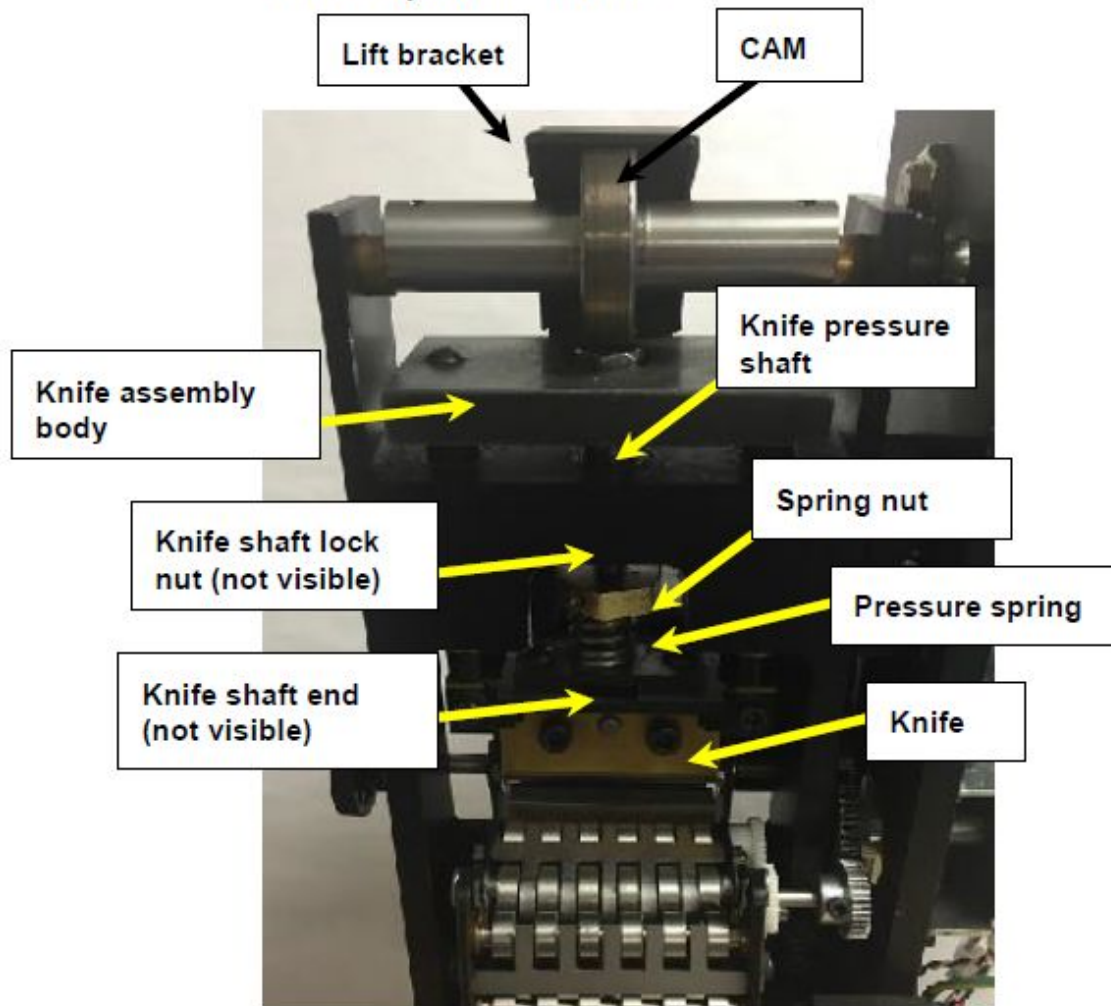
1. Remove the Knife Guard Cover.
2. Loosen the two knife screws.
3. Using a 9/64" wrench, advance the roller cam until the knife blade assembly compresses against the Horn Surface.
4. Make sure the knife spring is fully compressed.
5. Tighten the two knife screws.
6. Using the 9/64" wrench, advance the roller cam back up to its original home position.



## 6.3 Knife Pressure and Dwell Gap Adjust



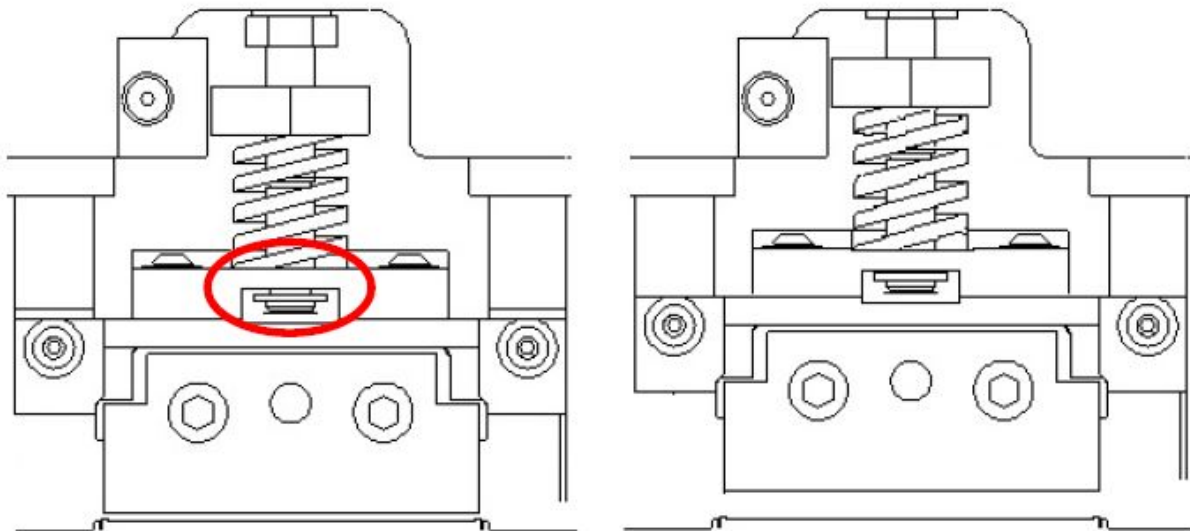
Knife body cover removed.



Operation:

1. The knife assembly body moves the knife up and down.
2. As the CAM moves against the lift bracket the knife assembly body moves up.
3. As the CAM moves against the knife pressure shaft, the knife assembly body moves down.

4. As the knife body assembly faces resistance from material under the knife, it stops. However, the knife shaft continues moving the spring nut down against the pressure spring. The pressure spring presses down on the knife body assembly.
5. With the knife stopped and the spring nut compressing the spring, the knife shaft end continues moving down and separates from the knife body assembly.



**FIGURE 11**

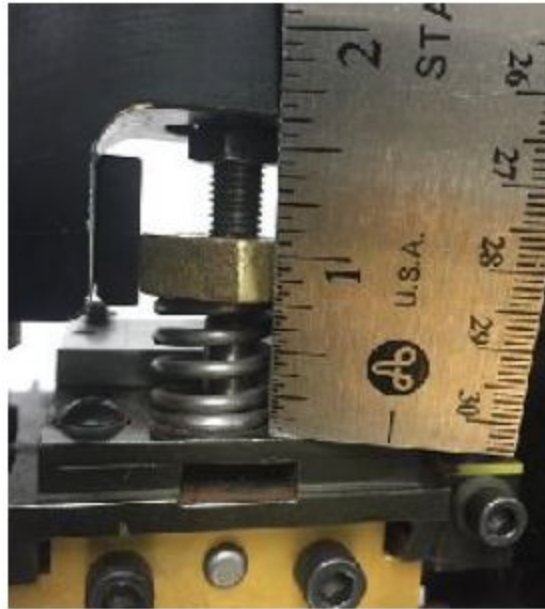
Notice the dwell gap between the knife body assembly and the knife shaft end as shown under the red circle when the knife is fully compressed. See dwell gap missing and the spring elongated when the knife is raised.

Proper spring pressure and dwell are set at the factory. However, adjustment may be necessary from time to time. The factory settings are as follows:

- Sharp Blade spring height - .750" Dwell - .015"
- Dwell is measured while the knife blade assembly is fully compressed against the sonic horn.
- Spring height is measured when the knife blade assembly is in the "up" position.

To adjust the knife blade pressure:

1. Remove the knife guard cover and the top cover.
2. Measure the spring height as shown in Figure 12.



**FIGURE 12**

3. If the knife spring is not  $\frac{3}{4}$ ", use the  $\frac{9}{16}$ " wrench to turn the nut under the Cam as shown in Figure 13. This will rotate the knife shaft while the spring nut will be prevented from turning. Therefore the knife spring will change position on the knife shaft.



**FIGURE 13**

4. Using the 9/16" wrench and a 1/2" wrench, as shown in Figure 14, loosen the locking nut by moving the wrenches in opposite directions. This will allow the top portion of the knife shaft to turn while the threaded portion going through the spring nut will not turn. This action allows the knife shaft to get longer and will allow adjustment of the knife shaft dwell gap.



**FIGURE 14**

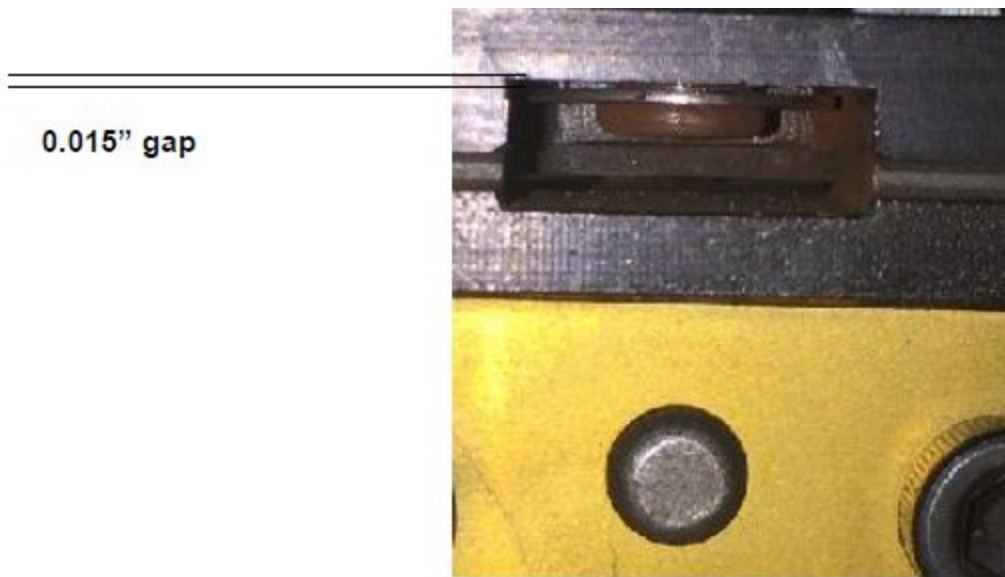
5. Insert the feeler gauge as shown in Figure 15



**FIGURE 15**



6. With the  $\frac{1}{2}$ " nut loosened and the knife closed, use the  $\frac{9}{16}$ " wrench to turn the Adjusting Nut clockwise/counter clockwise to achieve a 0.015" gap as shown in Figure 13.
7. With the feeler gauge removed, you should be able to see the knife shaft end as shown in Figure 16.

**FIGURE 16**

8. Retighten the  $\frac{1}{2}$ " locking nut using the  $\frac{1}{2}$ " wrench and  $\frac{9}{16}$  flat wrench.
9. Re-install the covers.

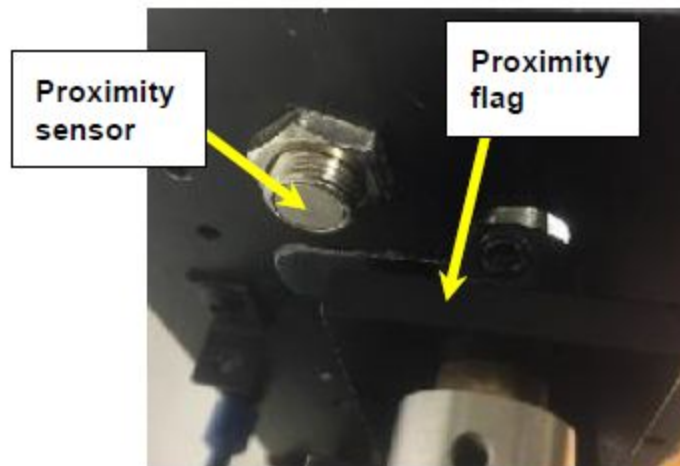
## 6.4 Proximity Switch Adjustment



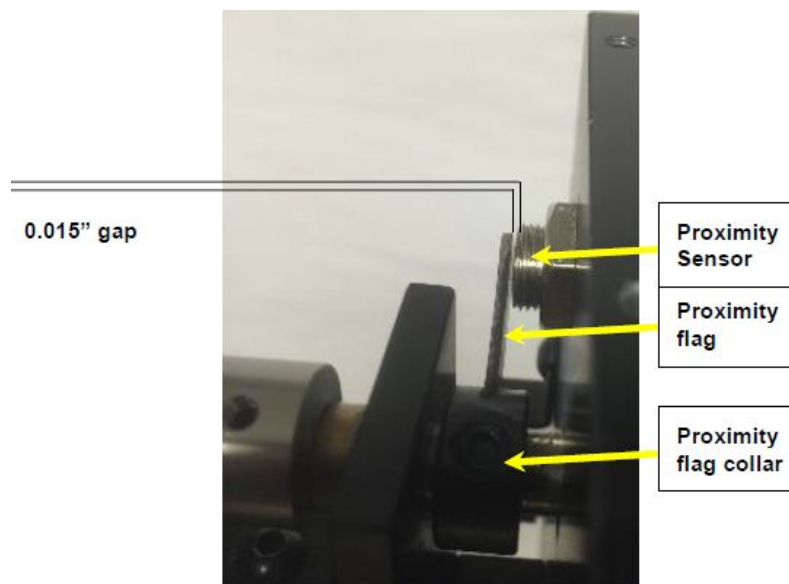
The proximity switch triggers the power supply to begin generating energy during the cut. If the proximity switch is not adjusted properly, the power supply will not be triggered and the unit will not cut properly

Adjust the proximity sensor flag so that it is horizontal when the knife is in the home (all the way up) position.

1. Remove the top cover.
2. Position the knife in the home position which is all the way up.
3. Loosen the collar of the proximity sensor flag with a 1/8" hex key and position so that it is in a horizontal position as shown in Figure 17.

**FIGURE 17**

4. Rotate the cam shaft until the proximity sensor flag is flush with the proximity sensor.
5. Loosen the proximity sensor flag collar and position the flag so there is a 0.015" gap between the flag and the sensor as shown in Figure 18.

**FIGURE 18**

6. Retighten the sensor flag.

7. Re-install the covers.

## 6.5 Horn Replacement / Adjustment

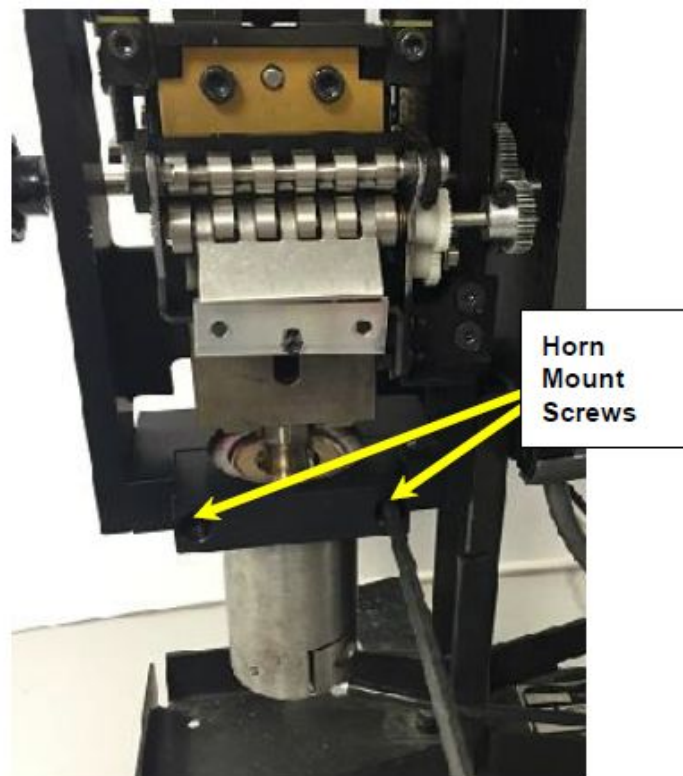


FIGURE 19

To remove the horn for replacement or adjustment:

1. Remove the sonic knife cover.
2. Remove the knife guard and the exit conveyor.
3. Remove the horn mount screws and horn clamp screws as shown in Figure 19.
4. Remove the horn mount and horn clamp.
5. The horn will slide out from its mount.

To replace the horn:

1. When replacing the horn, before tightening the horn clamp screws, make sure the horn is parallel with the knife blade.
2. Replace and tighten the horn mount screws.
3. Replace and tighten the horn clamp screws

4. Follow the procedure for leveling the knife blade.

## 6.6 Lifter Bracket / Adjustment

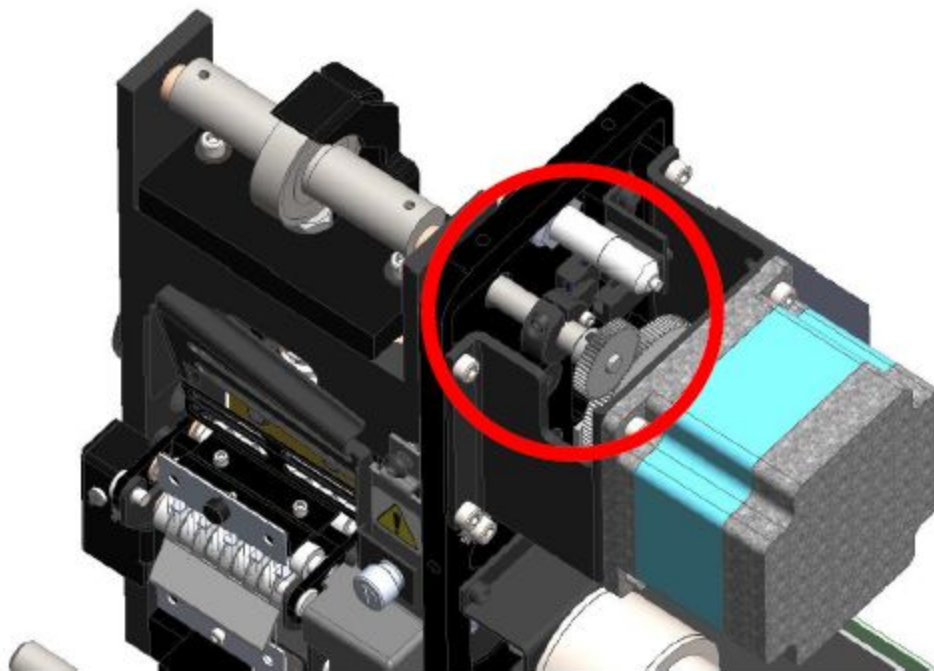


FIGURE 20

To adjust lifter bracket:

1. Remove both front and rear Sonic knife covers.
2. Adjust cam to Top Dead Center (TDC) position as shown in figure 20 by rotating cam until flag is centered in C sensor block.
3. Loosen screws shown in figure 21.
4. Place .020" thick feeler gauge between lift bracket and cam bearing.
5. Adjust gap on lift bracket to sandwich feeler gauge between bracket and bearing and tighten screws from step 3.
6. Replace front and rear cover.

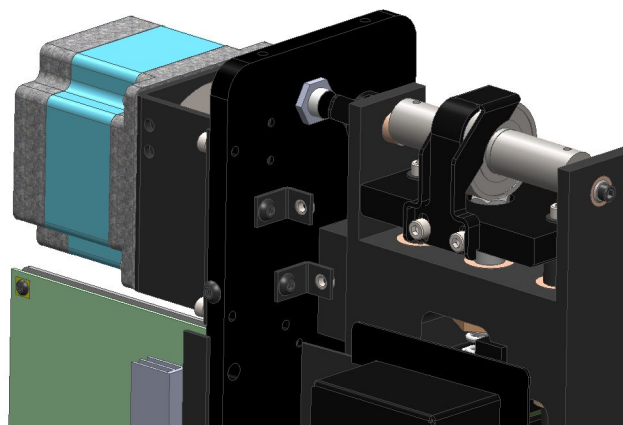


FIGURE 21



## 7.0 Troubleshooting

Problem	Probable Cause	Remedy
Machine fails to power up	Lack of power to machine	Check that both ends of power cord on printer are securely plugged in.
		Confirm that the outlet the printer is plugged into has power. Confirm all sonic knife cables are securely plugged in.
Stock does not advance through sonic knife when printer start button is pressed	Jam in Feed Rollers	Check Feed Rollers for obstruction or jam. If necessary - Re-thread fabric through feed rollers.
		Check to see Feed Rollers are clean. Check the out feed interlock switch is closed.
Cut on one side of fabric only	Out of level Knife Blade	Follow Knife Blade leveling procedure on page 26
	Fabric not centered on horn	Check all label guides and mounting brackets to make sure fabric is centered on horn.
Not cutting fabric	Knife blade not level	Follow knife blade leveling procedure
	Ground Detect "on" too soon	Check to make sure home sensor triggers at top dead center
	Sonic power supply off	Make sure sonic power supply is turned "on".
	Spring pressure too light	Check spring pressure setting procedure
	Spring pressure too heavy	Check spring pressure setting procedure
	Knife dwell setting incorrect	Check knife dwell setting procedure
	Sonic power supply not triggering (the bar indicator on the top front of the power supply should flash for every cut. If it does not, the power supply is not being triggered)	Check the proximity switch adjustment

## 8.0 Sonic Knife Specification

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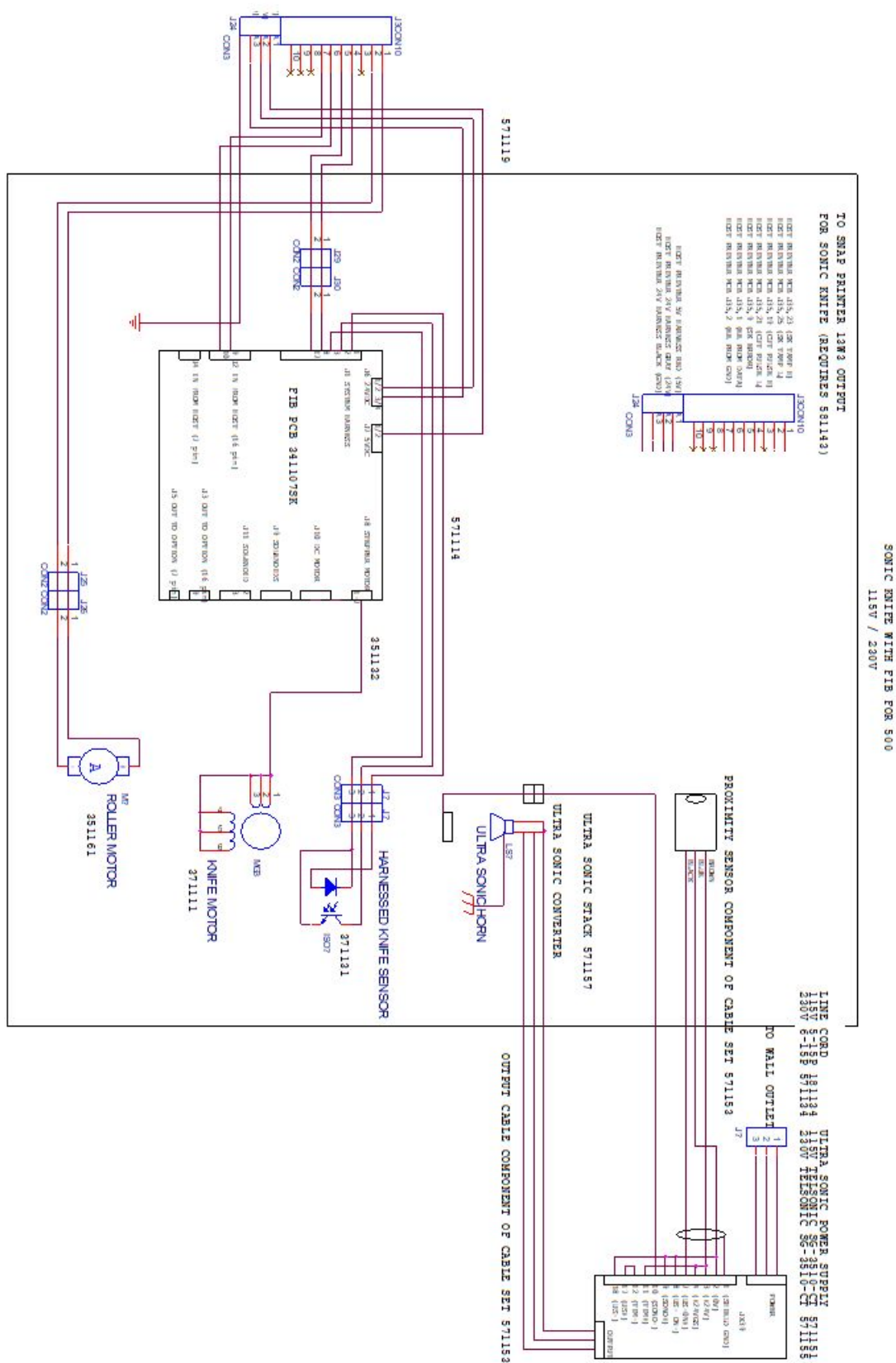
Label Size	Max: - 2.00" (51mm) web x up to 8" (203 mm) feed Min: - 5/8" (16mm) web x 1.2" (30.5mm) feed – See minimum label length vs machine speed in Appendix B.
Justification	Material must be centered over ultrasonic horn.
Sense Mark	The sense mark is not required – does not register to a sense mark – The printer controls the cut position.
Speed	Controlled by speed of printer – See chart in Appendix B.
Stock	Polyester woven edge fabric and AVERY DENNISON So-Soft® Products
Interface	Cabling to printers and to Sonics
Dimensions	16.0" (406mm) high x 5 1/2" (138mm) wide x 14" (356mm) deep
Weight	25 Lbs. (12Kg).
Electrical	90-132 / 180-265 VAC 50-60Hz 10/5Amp - factory set
Temperature	41F (5C) to 104F (40C)
Humidity	5% to 90% non-condensing
Sound Level Pressure (SPL)	78 dB(A)
Options	<ul style="list-style-type: none"> <li>- Flag cutting – (Controlled by printer)</li> <li>- Spare Parts Kit not required</li> <li>- International Hardware Kit</li> </ul>

The sonic knife is a modular design, which can be added to the Avery Dennison SNAP 500 printer only.

## **9.0 Electrical Schematic**

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## 9.1 115V /230V Schematic

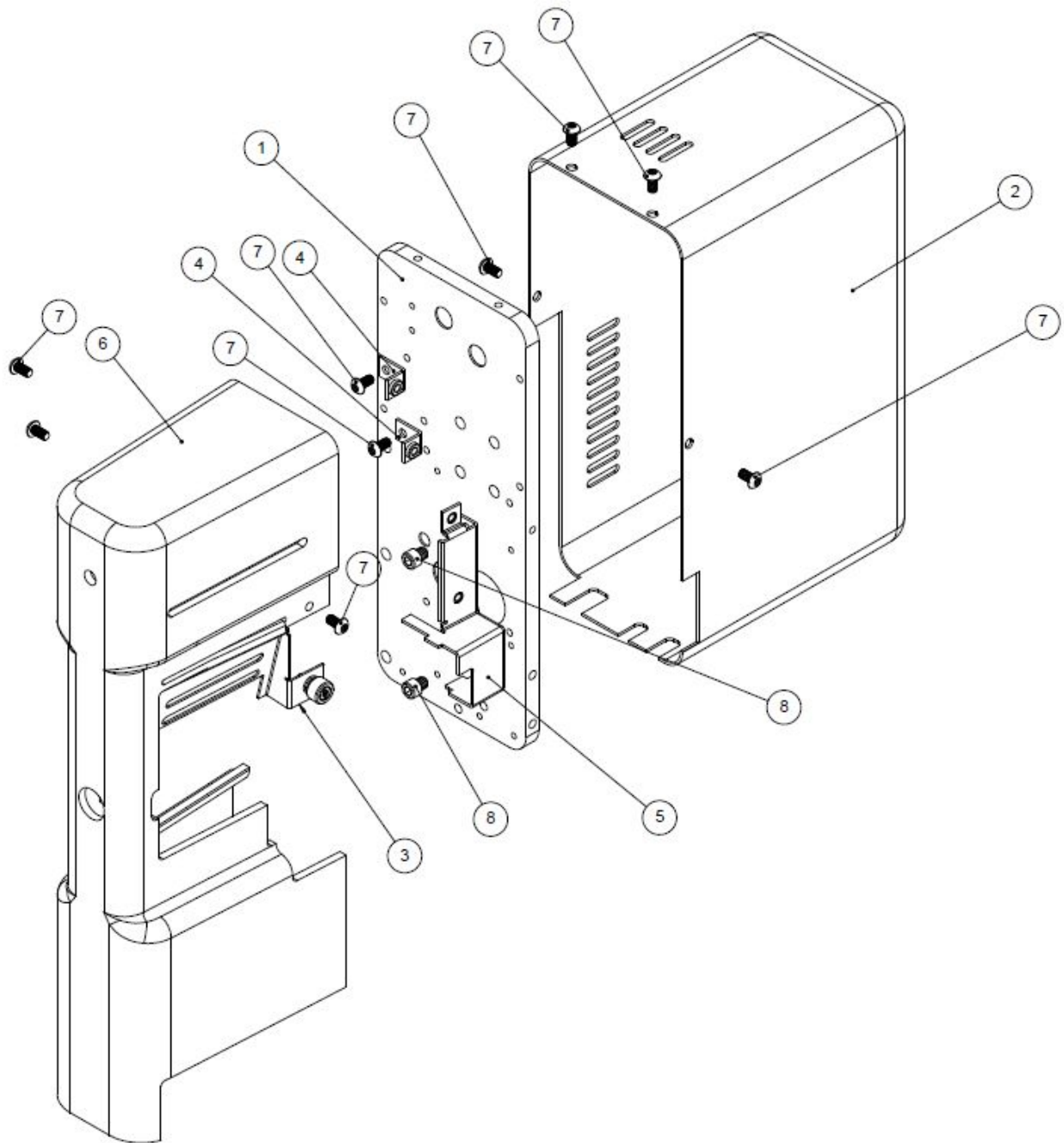






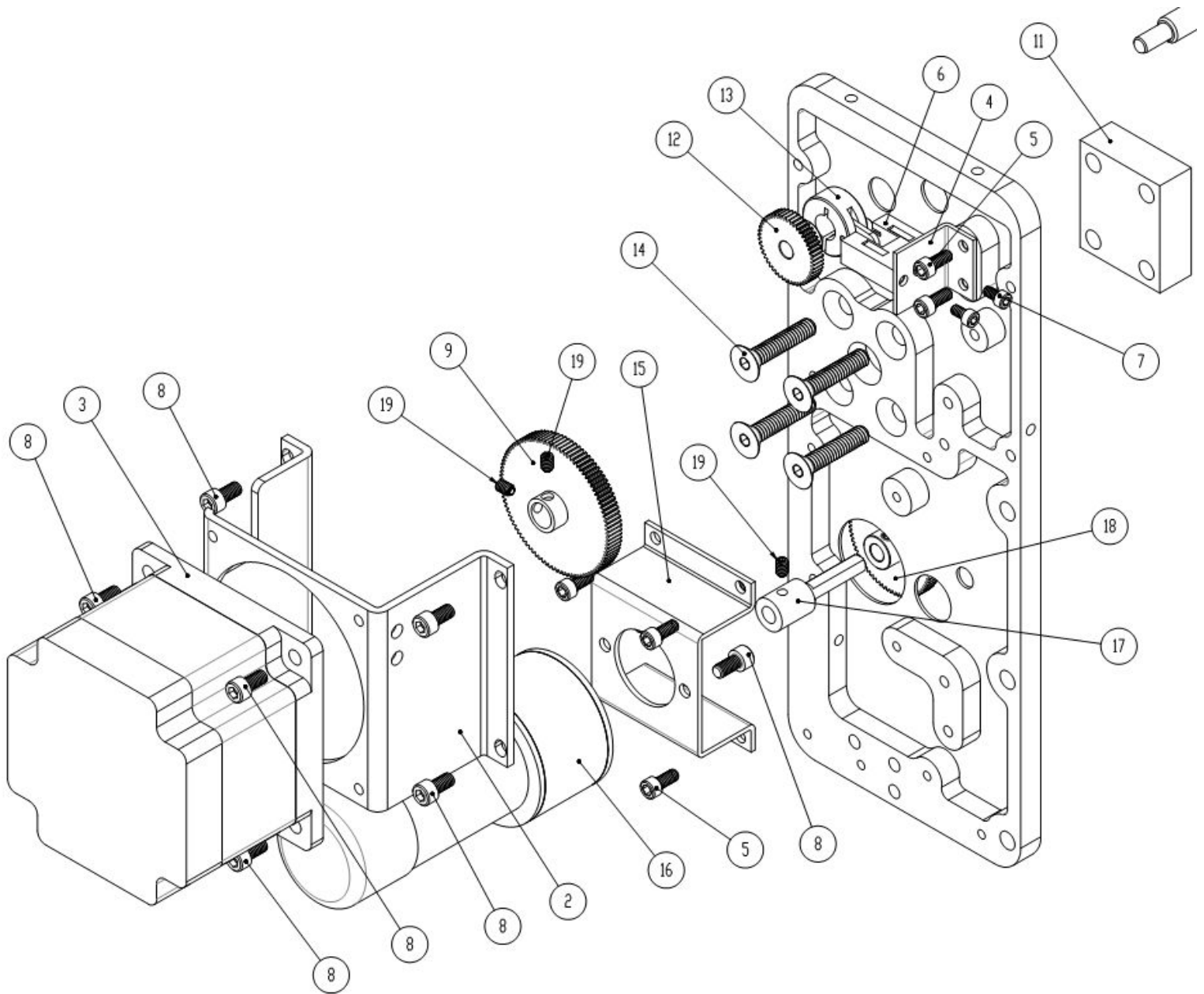
## **10.0 Assembly Drawings Mechanical**

## 10.1 Cover Assembly and Parts List



ITEM	PART NO.	DESCRIPTION	QTY
1	5571008	FRAME, UPRIGHT	1
2	5571204	COVER, BACK	1
3	5571208	COVER, BLADE GUARD	1
4	5571209	BRACKET, FRONT COVER	2
5	5571215	COVER, GEAR	1
6	5571225	COVER, FRONT	1
7	5990090	10:32 X 3/8 BTN. SCREW SOCKET HEAD	9
8	5990118	1/4:20 X 1/4 CAP SC	2

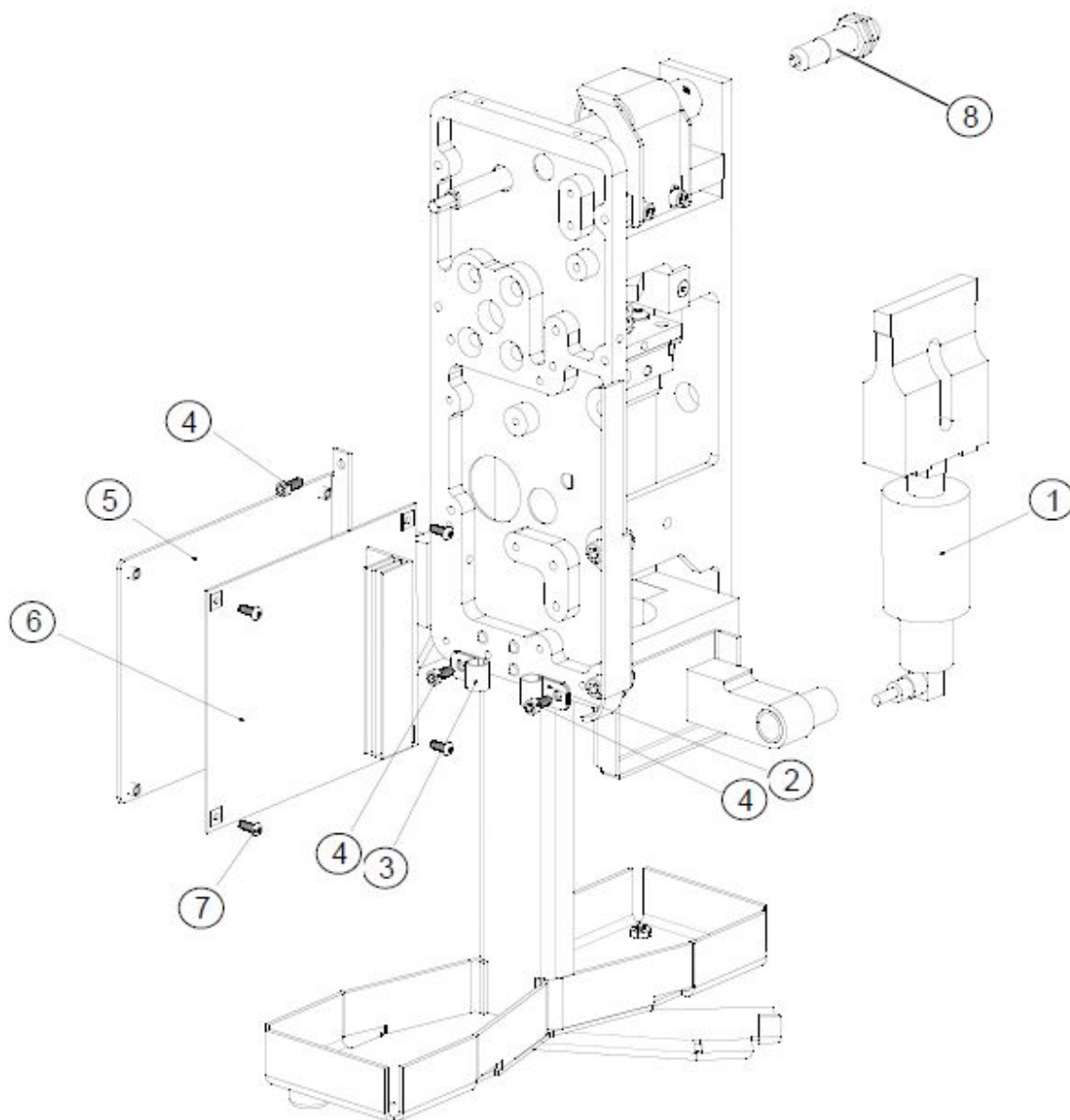
## 10.2 Drive Assembly and Parts List



ITEM	PART NO.	DESCRIPTION	QTY
1	05571008	FRAME, UPRIGHT	1
2	05571005	FRAME, STEP MOTOR	1
3	05371111	FEED MOTOR HARNESSSED	1
4	05571009	FRAME, SENSOR BRACKET	1
5	05990051	8:32 X 3/8 CAP SCREW	6
6	05571122K	KIT, INK OUT SENSOR	1
7	05990015	6-32 X 1/4 CAP SCREW	2
8	05990080	10:32 X 3/8 CAP SCREW	10
9	05572053	DRIVE, 96T GEAR	1
10	05571012	SPACER, FRAME	1
11	05991503	GEAR, 48T	1
12	05577061	COLLAR, FLAG	1
13	05999172	SCREW, 1/4-20 X 1-1/4" FHCS	4
14	05571007	FRAME, FEED MOTOR	1
15	05351161	STACKER MOTOR ASSEMBLY	1
16	05572041	SHAFT, FEED EXT.	1
17	05991485	GEAR, 72T 1/4" BORE	1
18	05990058	8-32 X 1/4 KNURLED CUP POINT	4

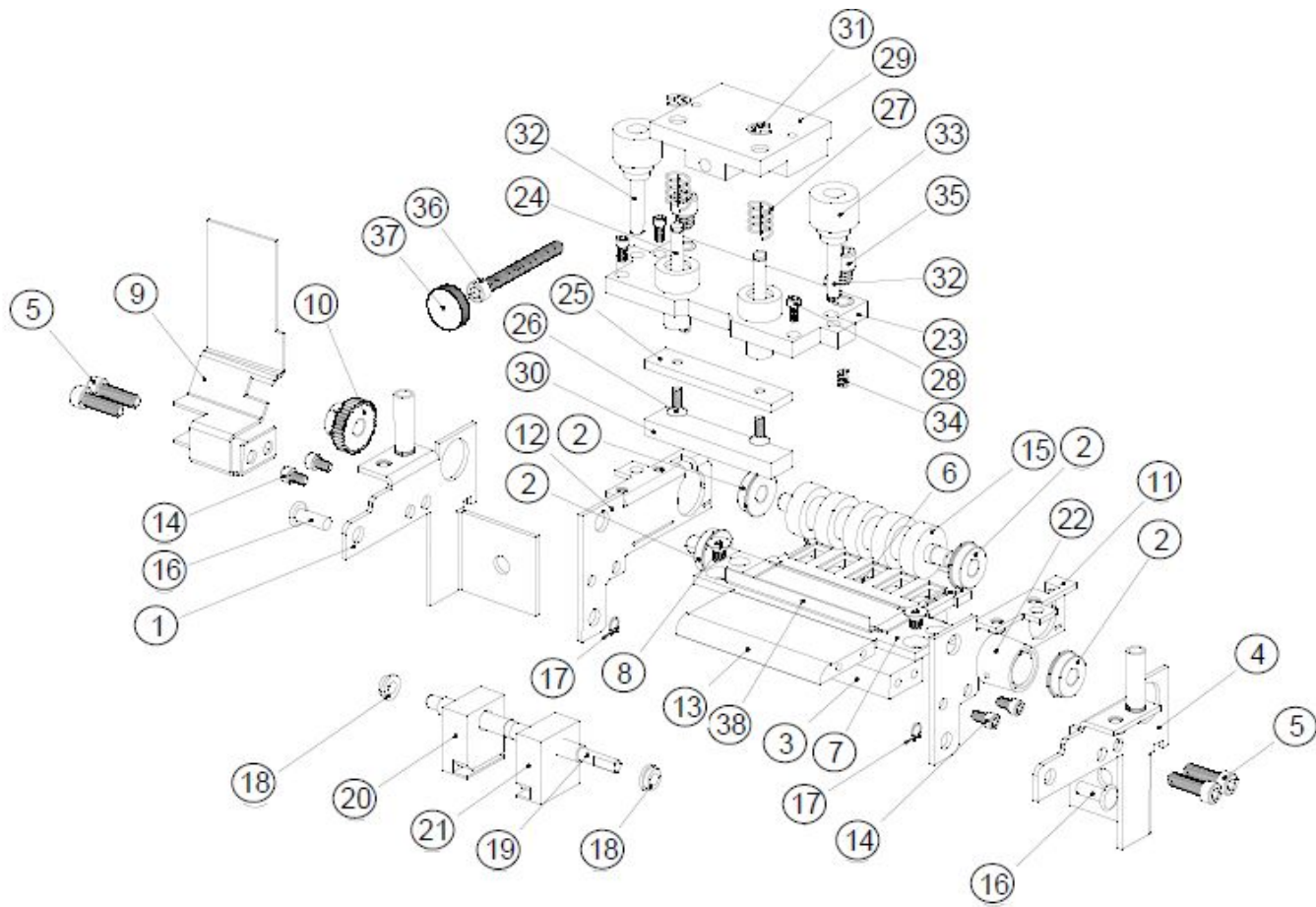


## 10.3 PCB Electrical Assembly and Parts List



ITEM	PART NO.	DESCRIPTION	QTY
1	05575004	SONIC "KIT, 115V 1000W"	1
2	05996154	ELECTRICAL, CLAMP .35 DIA	1
3	05996153	ELECTRICAL, CLAMP .19 DIA	1
4	05990051	8:32 X 3/8 CAP SCREW	4
5	05571006	FRAME, PC BOARD	1
6	05341107SK	PC BOARD, FIB FOR SONIC KNIFE	1
7	05990020	6:32 X 3/8 B.H. SCREW	4
8	05571137	HARNESS, TELSONIC, SG-3510-CT CONTROL	1

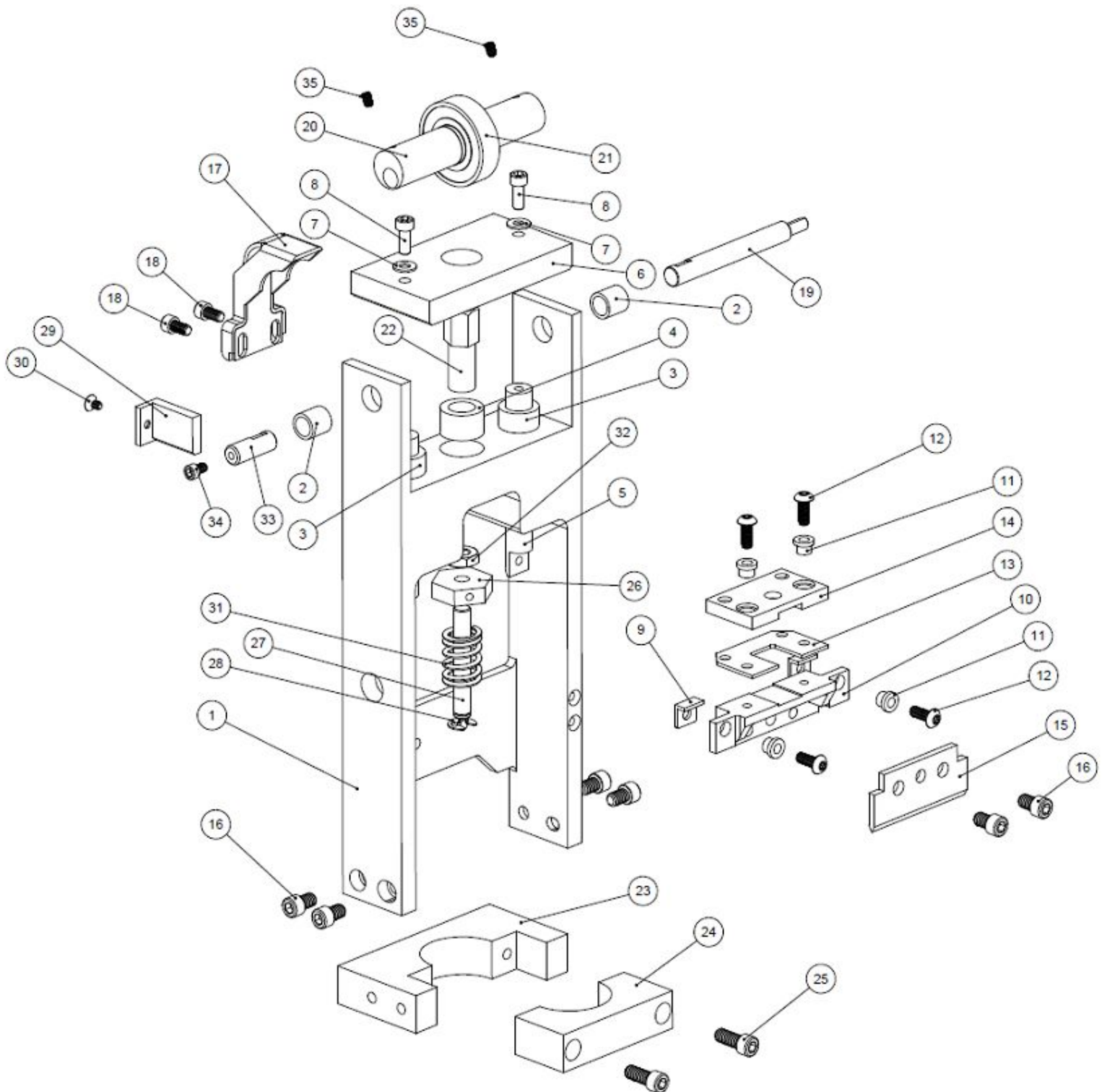
## 10.4 Infeed Conveyor and Parts List



ITEM	PART NO.	DESCRIPTION	QTY
1	05574088	BASE CONVEYOR, RH	1
2	05999014	1/4 X 5/8 FLG BALL BEARING	4
3	05574086	BASE, CONVEYOR BRACKET	1
4	05574087	BASE, CONVEYOR, LH	1
5	05990082	10:32X5/8 CAP SCREW	4
6	05574097	ROLLER, BOTTOM	1
7	05574089	LOWER BRIDGE PLATE	1
8	05990072	8:32X1/4 SOC FL HD SCREW	2
9	05571223	COVER, GEAR	1
10	05991484	GEAR, 36T 1/4" BORE	1
11	05574091	TOP CONVEYOR, LH	1
12	05574092	TOP CONVEYOR, RH	1
13	05574084	WEB GUIDE BASE	1
14	05990015	6-32 X 1/4 CAP SCREW	4
15	05574096	ROLLER, TOP	1
16	05990404	RIVET, 1/4D X 3/4 LGTH	2
1	05574088	BASE CONVEYOR, RH	1
2	05999014	1/4 X 5/8 FLG BALL BEARING	4
17	05990261	SNAP RING, 3/16	2
18	05999100	BUSHING, FL 3/16 X 5/16 X 1/8	2
19	05574082	WEB GUIDE ROD	1
20	05574081	WEB GUIDE, RH	1
21	05574080	WEB GUIDE, LH	1
22	05196028	KNOB, BLACK (GLOSS) .187 SHAFT HOLE	1

		BUSHING SOCKET SET SCREW	
23	05574083	SNUBBER TIE PLATE	1
24	05574095	SHAFT, SNUBBER	2
25	05574090	SNUBBER BRACKET	1
26	05990028	6:32X3/8 SOCKET F.HD. SCREW	2
27	05991493	SPRING, COMPRESSION .360 OD X .29 X .50	2
28	05990006	4:40 X 1/4 CAP SCREW	4
29	05574085	SNUBBER LOCK PLATE	1
30	05574098	SNUBBER PAD	1
31	05990325	SNAP RING, 3/16 "E" RING	2
32	05574099	SHAFT, ADJUSTMENT KNOB	2
33	05991210	KNOB, THUMB	2
34	05991451	SPRING, COMPRESSION, FEED	2

## 10.5 H Frame Assembly and Parts List

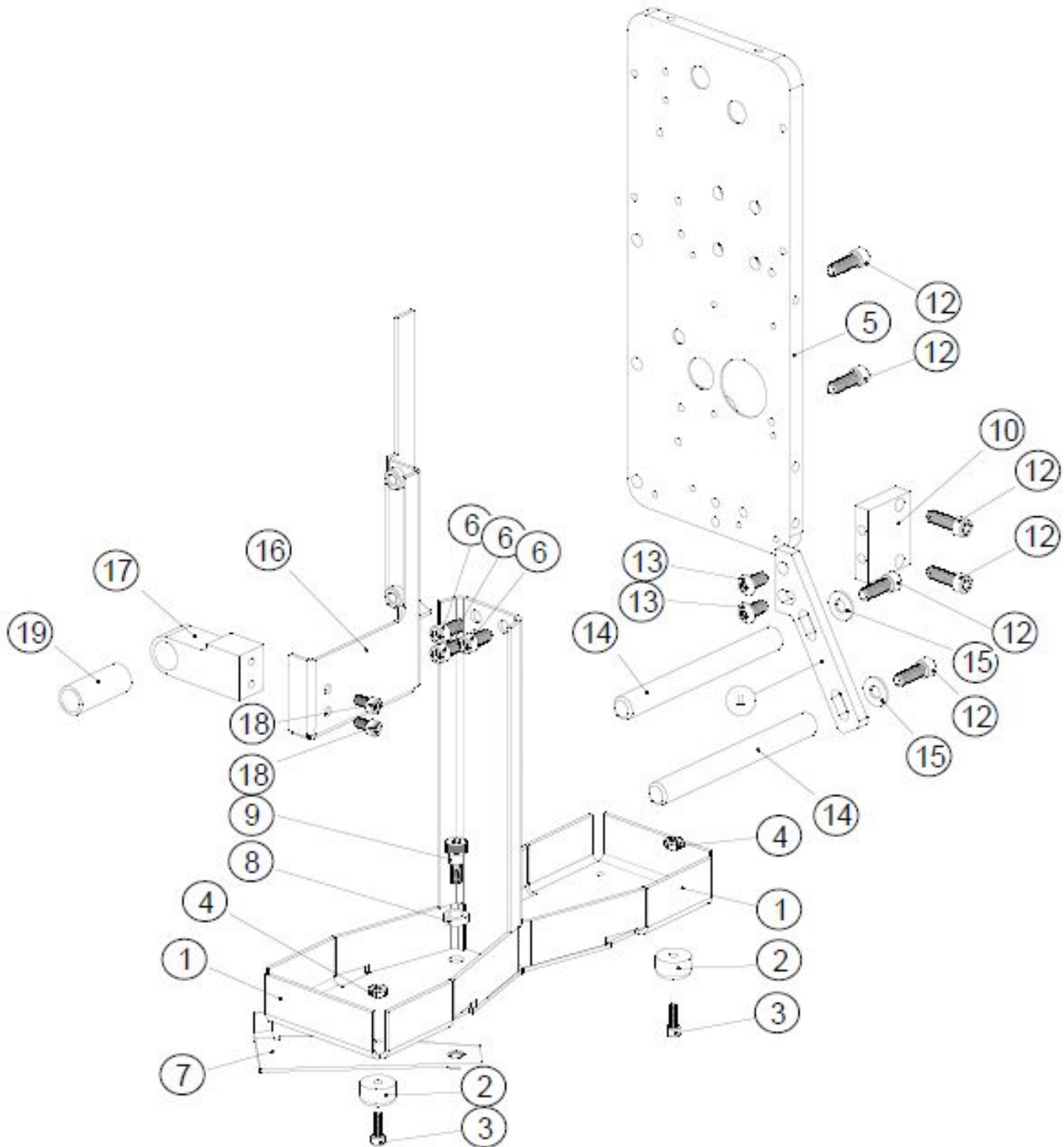




ITEM	PART NO.	DESCRIPTION	QTY
1	05577078	H FRAME	1
2	05999115	BUSHING, 3/8X 5/8 X 5/8	2
3	05999142	BUSHING, 1/2" X 3/4" X 2"	2
4	05999117	BUSHING, 1/2 X 5/8 X 1/2	1
5	05577019	SHAFT, POST	2
6	05572049	TIE PLATE	1
7	05990144	WASHER, #10 FLAT	2
8	05990081	10:32X1/2 CAP SCREW	2
9	05427062	INSULATOR, KNIFE HOLDER	2
10	05577055	BRACKET, KNIFE MOUNT	1
11	05427061	COLLAR, FLAG	4
12	05990091	10:32 X 1/2 BUTTON HEAD SCREW	4
13	05577054	BRACKET, INSULATOR PLATE	1
14	05577053	BRACKET, SNUBBER MOUNT	1
15	05577056	KNIFE BLADE	1
16	05990119	1/4:20X3/8 CAP SCREW	6
17	05577079	BRACKET, CAM	1
18	05990080	10:32 X 3/8 CAP SCREW	2
19	05577034	SHAFT, EXTENSION	1
20	05577035	SHAFT, EXTENSION	1
21	05999008	R12FF BEARING	1
22	05577032	SHAFT, ADJUST	1
23	05577077	BRACKET, HORN MOUNT	1
24	05577077	BRACKET, HORN MOUNT	1
25	05990121	1/4:20X5/8 CAP SCREW	2

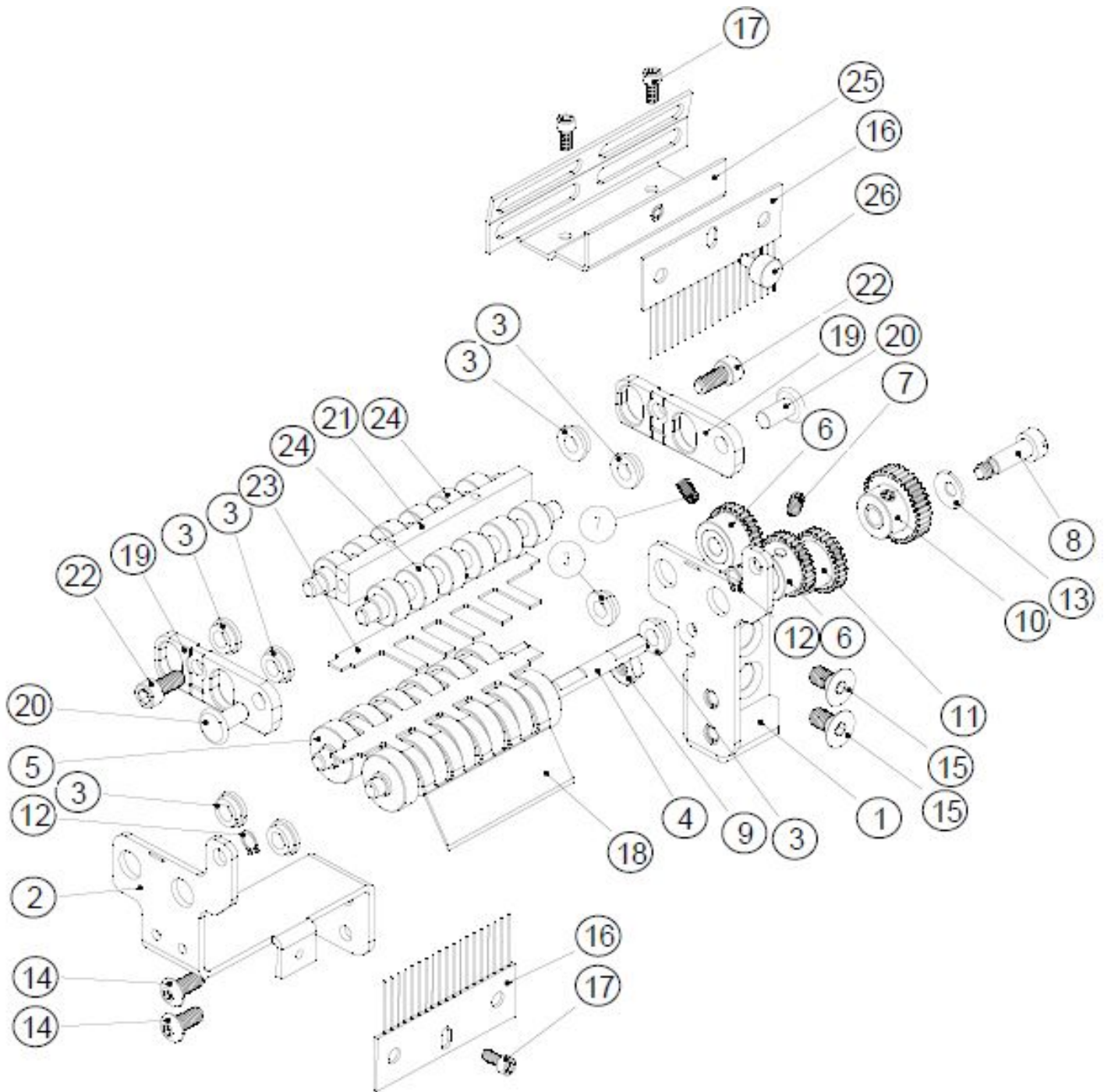
26	05427026	NUT, ADJUSTMENT	1
27	05577020	SHAFT, SPRING MOUNT	1
28	05990326	SNAP RING, 1/4 "E" RING	1
29	05577060	BRACKET, NUT	1
30	05990029	6:32X1/4 SOCKET F.HD. SCREW	1
31	05427035	SPRING, COMPRESSION	1
32	05991428	NUT, JAM 5/16-24	1
33	05577036	SHAFT, SMALL EXTENSION	1
34	05990050	8:32 X 1/4 CAP SCREW	1
35	05990058	8-32 X 1/4 KNURLED CUP POINT	2

## 10.6 Frame Assembly and Parts List



ITEM	PART NO.	DESCRIPTION	QTY
1	05571014	FRAME, FOOT PLATFORM	1
2	05991199	BUMPER, RUBBER 8-32	2
3	05990052	8:32 X 1/2 CAP SCREW	2
4	05990069	NO.8 HEX NUT	2
5	05571008	FRAME, UPRIGHT	1
6	05990120	1/4:20 X 1/2 CAP SCREW	3
7	05571020	FOOT, OUTRIGGER	1
8	05571021	FOOT, SPACER	1
9	05991536	5/16 X 1/4" SHOULDER SCREW	1
10	05578049	BRACKET, MOUNT	1
11	05578048	BRACKET, ARM	1
12	05990122	1/4:20X3/4 CAP SCREW	6
13	05990154	1/4:20X1/2 BH SCREW	2
14	05588023	SHAFT, STACKER MOUNT	2
15	05990167	WASHER, 1/4 SAE	2
16	05571015	FRAME, LOCATOR GUARD	1
17	05571016	FRAME, LOCATOR BLOCK	1
18	05990080	10:32 X 3/8 CAP SCREW	2
19	05999779	BUSHING, 1/2 X 5/8 X 1 1/2	1

## 10.7 Exit Conveyor Assembly and Parts List

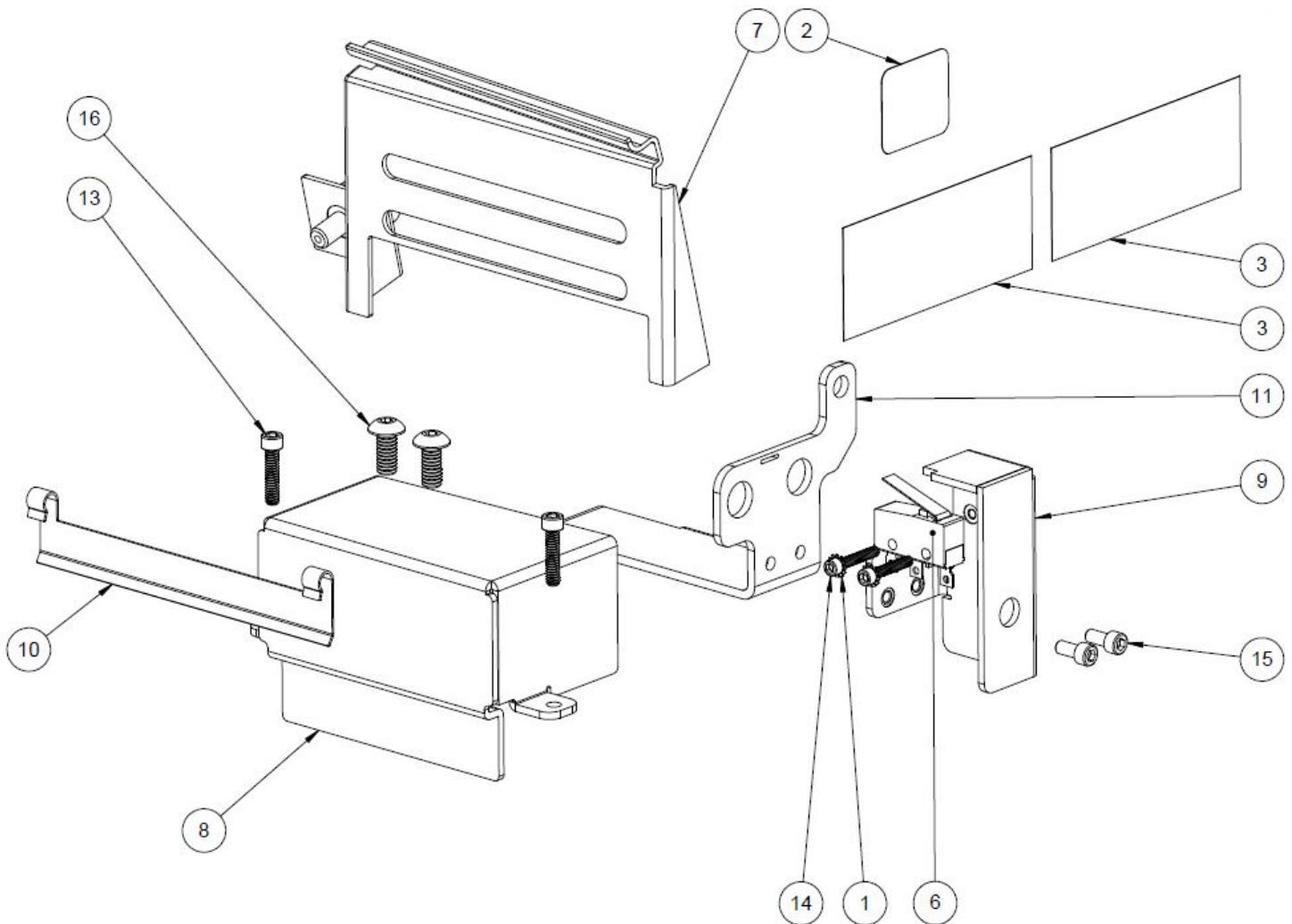


ITEM	PART NO.	DESCRIPTION	QTY
1	05578047	BRACKET, BASE MOUNT	1
2	05578046	BRACKET, BASE	1
3	05999100	BUSHING, FL 3/16 X 5/16 X 1/8	6
4	05578041	SHAFT, DRIVE ROLLER	1
5	05578040	SHAFT, BOTTOM ROLLER	1
6	05572054	DRIVE, 30T GEAR	2
7	05990025	6:32 X 1/4 SET SCREW	2
8	05990446	.188 X .50 X 8:32 SHOULDER SCR	1
9	05990069	NO.8 HEX NUT	1
10	05572045	GEAR, 36T REWORK	1
11	05572044	GEAR, 30T IDLER	1
12	05990261	SNAP RING, 3/16	3
13	05990272	WASHER, #8 BELLEVILLE	1
14	05990065	8-32 X 3/8 BHCS	2
15	05990088	10:32X3/8 F.H. SCREW	2
16	05584034	ELECTRICAL, STATIC BRUSH	2
17	05990006	4:40 X 1/4 CAP SCREW	3
18	05578043	BRACKET, LOWER STRIPPER	1
19	05578044	BRACKET, ROLLER MOUNT	2
20	05990401	RIVT, 3/16X3/8 F.H.	2
21	05578045	BRACKET, MOUNT STANDOFF	1
22	05990051	8:32 X 3/8 CAP SCREW	2
23	05578042	BRACKET, UPPER STRIPPER	1
24	05578039	SHAFT, TOP ROLLER	2
25	05578050	BRACKET, STATIC BRUSH	1
26	05991471	4-40 X 1/4 THUMB SCREW	1



## 10.8 Safety Guards and Parts List

\* 05570080D, 05571114 & 05581143 NOT SHOWN



ITEM	PART NO.	DESCRIPTION	QTY
1	125280	WASHER - #2, STAR, 7A080042	2
2	131902	LABEL, WARNING	1
3	131904	LABEL, WARNING, COVERS IN PLACE	2
4	05570080D	DOCUMENT FIELD KIT, SONIC KNIFE GUARDS (NOT SHOWN)	1
5	05571114	HARNESS, SONIC KNIFE SYSTEM (NOT SHOWN)	1
6	05571140	HARNESS, INTERLOCK UPGRADE	1
7	05571208	COVER, BLADE GUARD	1
8	05571227	COVER, PINCH POINT	1
9	05571228	BRACKET, SWITCH HOUSING	1
10	05574079	GUARD, 500 2/1 CUTTER	1
11	05578046	BRACKET, BASE	1
12	05581143	HARNESS, 13W3 OUTPUT SONIC KNIFE, EL DC REWIND (NOT SHOWN)	1
13	05989973	4-40 X 1/2 SHCS	2
14	05989994	2-56 X 1/2 HEX SOCKET HD CAP SCREW	2
15	05990006	4:40 X 1/4 CAP SCREW	2
16	05990065	8-32 X 3/8 BHCS	2

\* Not Shown in Assembly Drawing  
05574079 is not used on Gen 1 SNAP 500

# 11.0 Revision Record

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REVISION	DESCRIPTION	DATE	ECN NO.	AUTHOR	APPR.
2.2	Removed CE mark from manual as not required. Update FCC ID and moved to page 2 Moved WEEE symbol to page 2	12/04/12	N/A		
2.3	Updated mechanical assembly drawings and part lists (pages 40 -54) Update contact information on page 6 Remove Instructions for 580028	2/23/16	N/A	JRW	DW
3.0	Added safety guard information pages 53 & 54. Revised layout and photos.	4/11/16	N/A	JB, JM	DW
3.1	Updated Electrical Schematic on Page 32 Updated Cover Assembly Parts List Pages 35 & 36 Updated Safety Guard Parts List Pages 49 & 50	4/25/16	N/A	AJD, JJB	DR, DW
4.0	Added risk assessment documentation	6/06/16		DW	DR
4.3	Updated BOM in section 11.6, 11.7, 11.10 & 11.11 Added note that nip stripper is not used on Gen 1 SNAP 500 machines Added document classification (public), legible item indicators on drawings Added Lifter Bracket Adjustment Gap Instructions Section 6.6	11/28/16		JJB	DW
4.4	Update "C" sensor part number 05571122K was an error 05571112K	3/06/19	N/A	DW	DW
4.5	Move Appendices to back of manual Added Appendix B which was left out of 4.x	8/7/19	N/A	JM	JM

# Appendix A

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## Hearing Protector Manufacturers

AMERICAN OPTICAL COMPANY  
Department 4041  
Safety Division, 14 Mechanic Street  
Southbridge, MA 01550

BILSON INTERNATIONAL, INC.  
109 Carpenter Drive  
Sterling, VA 22170

E-A-R  
A Division of the CABOT CORPORATION  
7911 Zionsville Road  
Indianapolis, IN 46268

FLENTS PRODUCTS COMPANY, INC.  
Ely Industrial Part, Building #2  
Norwalk, CT 06854

GLENDALE PROTECTIVE TECHNOLOGY, INC.  
130 Crossways Park Drive  
Woodbury, L.I., NY 11797

SELLSTROM MANUFACTURING COMPANY  
Sellstrom Industrial Park  
220 South Hicks Road, Box 355  
Palatine, IL 60067

# Appendix B

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## Label / Machine Speed

The maximum label length for the Sonic Knife is the same as the printer to which it is attached. The minimum label length depends on the print speed. The following chart indicates the minimum label length for various print speeds.

Print Speed	Minimum Length
3 IPS	1" (25 mm)
4 IPS	1.6" (40 mm)
4.5 IPS	1.7" (42mm)
5 IPS	2" (52mm)
6 IPS	2.3" (58mm)
7 IPS	2.8" (70mm)



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