TIPPER TIE™

User Manual

Clipper

Model SZ4135L

Manual Number 80-1302
Revision Number 15
October 25, 2017

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Before operating this machine you must read and understand this manual. Everyone who will operate or maintain this machine must be properly trained. Follow all operating instructions and exercise caution when operating or maintaining this machine. Pay particular attention to Chapter 2, Safety Instructions.

Preventive Maintenance Requirements

IMPORTANT: For proper machine function and continued satisfaction with your finished product, it is **essential** that your machine be properly maintained. This means that a preventive maintenance (PM) schedule should be established and followed. Attention shall be given at least **once a week** to observing wear of all moving parts, especially in the following areas:

- Die support channel and punch assembly
- Die and die pocket area of the die support
- Clip pusher assembly
- Knife assembly

Operating a machine without following an established PM schedule constitutes neglect and may result in endangering the safety of the operator, degradation of machine function, or inferior product. Read and follow the Lubrication and Maintenance sections of this manual for further information.

Note About the Contents of the Manual

The photos and illustrations used throughout this manual are representative of parts installed on similar clippers and may differ slightly from the parts installed on your clipper.

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Publication History

The publication history summarizes major changes to this document. Each update of this manual is a new revision (Rev) in the first column (for example, Rev 02). An update that applies only to the drawings is listed on the Assembly Drawings PDF as a sub-revision (for example, Rev 02.01, Rev 02.02, etc.).

Revision	Description of changes	Issue date
02	Converted manual to MS Word template, edited content and graphics, updated parts and drawings lists.	March 30, 2004
02.01	Edited to current template format and content (including generic content changes in publication history, warranty, safety, and maintenance), revised graphics, updated parts and drawings lists.	October 20, 2004
03	Updated drawing 00-1597 “Clip Pusher Cylinder Assembly RH” and re-scanned several small drawings.	November 15, 2004
03.01	Corrected gate references to throat.	January 31, 2005
04	Added knife cylinder repair kits to parts list. Updated drawings.	March 15, 2005
05	Added Liability Disclaimer page and related content. Updated ECN drawing and performed minor editing.	July 25, 2005
05.01	Updated for main assembly drawing ECN and minor content editing.	September 13, 2005
06	Revised FRL graphics according to new drawing. Updated ECN drawings.	November 30, 2005
07	Revised the Terms and Conditions section. Added new punch installation instructions to Section 5.4.	March 12, 2006
08	Revised drawings to accommodate the change to a clip rail with weight.	August 18, 2007
09	Updated safety, cleaning and maintenance content to current standards. Deleted cleaning appendix. Added drawing 00-2842, Clip Weight Assembly.	February 1, 2009
10	Replaced corporate logo, address/contact box and high air pressure symbol. Edited content to current format and style. Formatted for double-sided printing. Updated ECN drawings.	February 2, 2011
11	Replaced corporate logo. Added Spare Parts Kit drawing 55-0099	April 19, 2012
12	Checked dimensions. Corrected kg values. Added section on loading clips.	January 6, 2013
13	Added section on knife shut-off	January 17, 2013
14	Added data plate info.	December 6, 2016
15	Updated Terms and Conditions.	October 25, 2017

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Chapter 1 - Clipper Description and Specifications

1.1 Description

The TIPPER TIE Clipper, Model SZ4135L is a horizontally mounted, throat-actuated pneumatic bench clipper that is designed to apply a secure seal on a variety of packaging materials. For each clipper cycle, the machine does the following:

- Gather the neck of the bag
- Apply a secure leak proof seal
- Trim excess bag tail from product

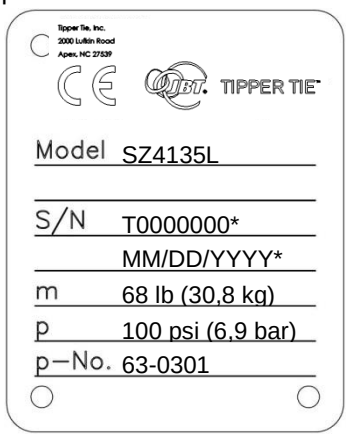
The clipper is designed to operate with TIPPER TIE Z400 series stick clips. Clip size is determined on the basis of product or closure size. A TIPPER TIE representative will assist you in determining the correct clip for your application.

1.2 Applications

The SZ4135L clipper is designed to provide one-step closing for a variety of food products, such as beef, poultry, cheeses, or a wide assortment of non-food products.

1.3 Specifications

The machine's name plate is affixed to the frame. The name plate shows important production data and specifications.



Model
Machine Family
Serial Number
Production Date
Machine Weight
Max Allowable Air Pressure
Pneumatic Schematic Number
(* Shows example format)

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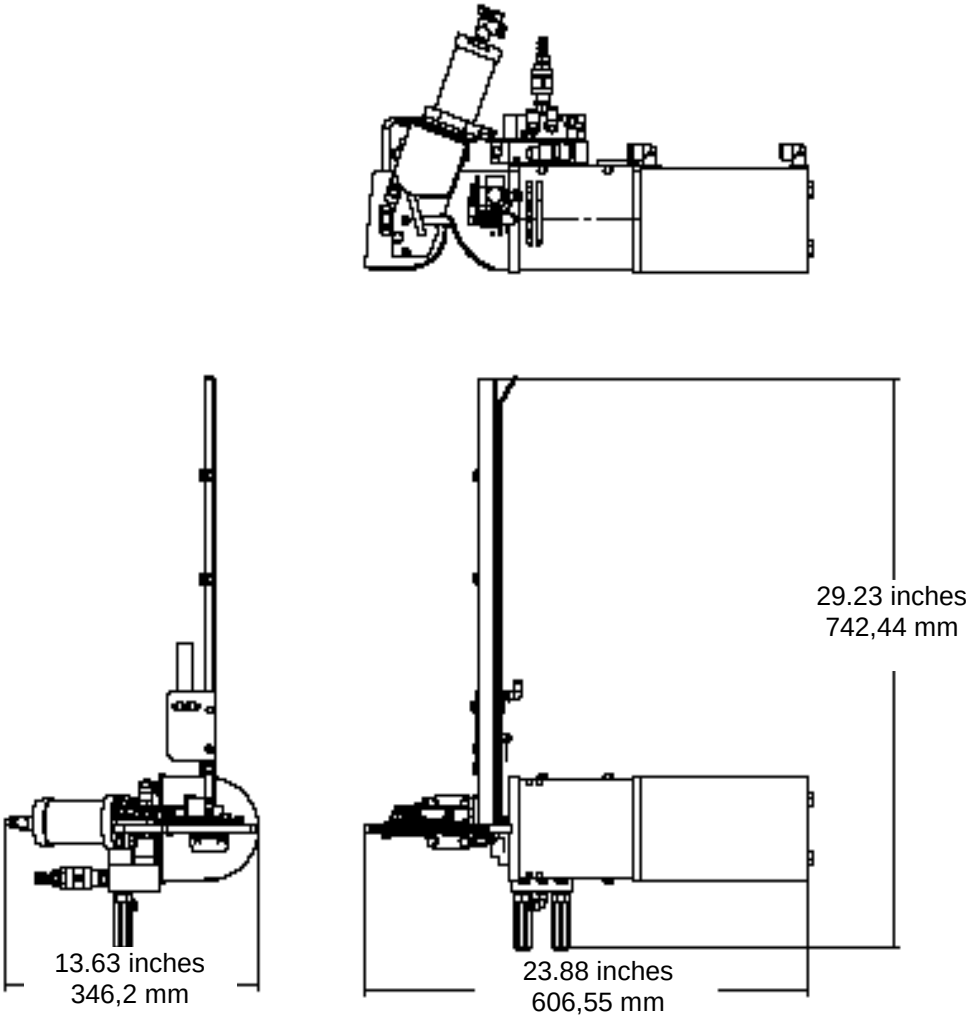
The SZ4135L clipper specifications are as follows:

Air consumption:	.7 cubic feet per cycle at 80 PSI (19.81 liters at 5,5 bar)
Air requirements:	80-100 PSI (5,5-6,9 bar)
Clips:	Z400 series stick clips
Machine weight:	68 pounds (30,8 Kg)
Shipping weight:	75 pounds (34,0 Kg)

1.4 Layout and Dimensions

The clipper's technical layout and dimensions are shown in the following illustration.

SZ4135L Layout and Dimensions



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Chapter 2 - Safety Instructions

2.1 General Precautions

To prevent possible serious injury, it is extremely important that you understand and follow these safety precautions:

- Before installing and first operating the clipper, this manual must be read and understood. Follow all operating and safety instructions and exercise extreme care.
- Understand the meaning of the safety symbols described in this chapter.
- This clipper must be operated only by trained personnel. Training must be repeated at regular intervals.
- Safety devices must be checked each day to ensure proper operation. Safety features should be examined by experts at least once each year.
- Stop the clipper to correct malfunctions. Correct and clear obstructions before restarting the clipper. Immediately report all malfunctions to the person in charge.
- Do not modify, remove, discard, disable or bypass guards or safety circuits.
- Prior to operating the clipper, to ensure both personnel and product safety, carefully inspect the die support channel and punch assembly, the die and die pocket area of the die support, the clip pusher assembly and the knife assembly.
- All guards, protective covers and shields must be in place before operating the clipper. Operating this clipper with guards, covers and shields removed could result in serious injury. Never operate this clipper without its safety devices properly installed and functional.
- Keep hands and fingers clear of the throat, punch, die and knife areas. Never touch these areas while the clipper is in operation or while being moved. Do not allow fingers, hands, jewelry or clothes around moving parts during operation of this clipper.
- Before servicing, maintaining or moving the clipper, disconnect the air supply line. The main air supply line must be disconnected or locked out from the clipper before performing any service operation or maintenance.
- When this clipper is not in operation, disconnect the air supply at the quick-disconnect on the clipper. Failure to disconnect the air supply from this clipper creates serious risk of injury to yourself and others. To prevent unauthorized personnel from operating the clipper, secure the lockout valve in the closed position. Attach a padlock through the holes.
- The maximum operating pressure for this clipper is 100 psi (6,9 bar). Air pressure greater than this could cause an explosive rupture in any of the air lines or pneumatic components. Failure to adhere to this caution could result in personal injury or damage to the clipper.
- Pay particular attention to the loud sound levels produced by this clipper. If applicable, use ear protection.
- Use only original spare parts and accessories.
- If the clipper is sold, the manual must be supplied to the new owner.

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2.2 Safety Symbols

Throughout this manual, you will see a variety of safety symbols, each of which denotes a specific type of warning or caution. The purpose of each safety symbol is described in the following illustrations.

- The yellow triangle signs warn of potential hazardous conditions.
- The blue circular signs define mandatory actions that are required.

Danger: Keep Hands Away From Pinch Area

Danger: Keep Hands Away From Knife Area

Danger: Explosive Air Pressure

Warning

Read manual before operating or servicing

Mechanical Lockout Required

2.3 Disclaimer of Liability

TIPPER TIE shall not be liable to any person for any defects or damages to persons or property resulting directly or indirectly from: (1) any neglect, misuse or abuse of the equipment, including, but not limited to, improper or inadequate maintenance of the equipment or improper modification or alteration thereto, or (2) any use of the equipment which contravenes any of the instructions set forth in this manual.

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2.4 Warnings and Cautions

When using this clipper, observe all instructions, warnings and precautions. Failure to comply could result in serious injury or could damage the clipper.

Warning: This clipper must be securely attached to a solid surface.

Warning: Do not drill into or weld attachments on the frame of the clipper.

Warning: Do not modify, remove, disable, discard, or bypass guards or safety circuits.

Warning: Stop the clipper to correct malfunctions. Correct and clear obstructions or malfunctions before restarting. Do not try to operate the clipper by continuing to reset. Stop the clipper, identify the problem, and correct it.

Warning: Prior to working on the clipper, disconnect and lock out the incoming air at the quick disconnect to purge air pressure from the system.

Warning: The maximum operating pressure for this clipper is 100 PSI (6,9 bar). Air pressure greater than this could cause an explosive rupture in the air lines or pneumatic components. Failure to adhere to this caution could result in personal injury or damage to the clipper.

Warning: Keep fingers, hands, jewelry and clothing clear of the clipper's throat, die, punch and knife areas.

Warning: If a clip or other obstruction jams in the die area, do not attempt to cycle the machine again until the jam is cleared. Turn off and lock-out the air supply before attempting to remove the obstruction. Then, carefully remove the clip or obstruction to avoid damaging the clipper.

Caution: It is especially important to ensure both personnel and product safety that you carefully and frequently inspect the clipper for worn parts. Check the die support channel and punch assembly, the die and die pocket area of the die support, the clip pusher assembly and the knife assembly.

Caution: Do not attempt to install, setup or operate this clipper before you have read and understood this manual and any accompanying suppliers' manuals.

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2.5 Safety Illustration

The following illustration shows the clipper's danger areas as well as the air supply quick-disconnect.

Warning: If a clip or other obstruction jams in the die area, do not attempt to cycle the machine again until the jam is cleared. Turn off and lock-out the air supply before attempting to remove the obstruction. Then, carefully remove the clip or obstruction to avoid damaging the clipper.

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Chapter 3 - Delivery and Setup

3.1 Delivery

Upon delivery of your clipper, inspect the shipping container and equipment for damages due to shipping and handling. If damage is found or suspected, contact the shipping agent immediately. The carrier must have an opportunity to inspect the damage to properly verify claims. Therefore, any loss or damage discovered after delivery should be reported to the shipper's agent as soon as possible or within 15 days after receipt of the goods.

In many instances, the original container is not opened and the contents not examined before reshipment to the final destination. Therefore, under current shipping regulations, nine months are allowed for filing claims for loss or damages. The shipping agent or carrier will help you process your claim.

Remember to report all suspected damages immediately. If additional assistance is required, TIPPER TIE will gladly help in settling your claim. However, the first contact must be with the carrier or his agent.

Include the following materials with all correspondence:

- Original bill of lading or a copy
- Vendor invoice or certified copy when claim is based on weight or when valuation of shipment has been improperly described
- Catalog pages or product information
- Original packing slip or receiving reports or a copy of the electronic bill of lading manifest

3.2 Unpacking Equipment

For ease of shipping, some components may have been shipped disassembled. Check the shipping list and loose parts list to ensure that all items have been received. Do not discard packing materials until the clipper is assembled and operational. Notify TIPPER TIE immediately if any component is missing or if additional assistance is required.

Become familiar with this manual before starting to operate the equipment. Add all required oils and fluids, and make all clipper adjustments as instructed before starting the clipper. Failure to do so may result in equipment damage or personal injury and will void the product warranty.

At time of delivery, record the following information and maintain with permanent records.

_____ **Clipper serial number**

For replacement parts, refer to Chapter 9, Spare Parts Lists and Chapter 10, Assembly Drawings.

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Chapter 4 - Air Connections, Lubrication and Adjustments

4.1 Installation of Main Air Supply

The clipper must have a Filter/Regulator/Lubricator (FRL) assembly (shown below) to ensure that the air supplied to the clipper is filtered, regulated and lubricated. An FRL is shipped with each clipper.

Note the incoming air direction (plant air flow). Assemble the factory air supply to the clipper's air supply lock-out safety valve using the quick-disconnect connector. This quick-disconnect provides a means of removing the incoming air supply and purging the system for servicing and clean-up. The quick-disconnect must be attached with the check valve half (female) to the supply side of the air circuit.

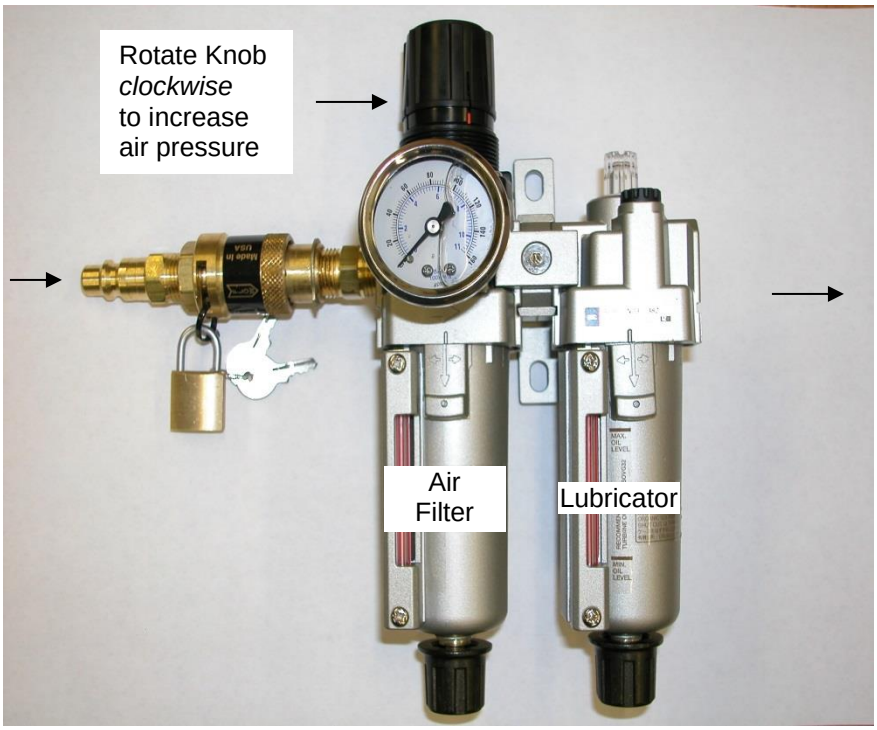
Use the following procedure to assemble the air supply system:

1. Connect the factory air supply to the adjustable air regulator module of the FRL.
2. Connect the standard end of the supplied air hose to the lubricator module of the FRL.
3. Connect the air hose's quick-disconnect connector to the clipper at the air supply lock-out valve.

4.2 Poly Tubing

Before operating, check the clipper air line connections as set at the factory. If air lines (tubing) have become disconnected, reassemble as shown in the pneumatic schematic. Refer to the pneumatic schematic for tubing sizes.

4.3 Filter/Regulator/Lubricator Assembly



Recommended operating pressure: 80-90 PSI (5,5-6,2 bar)

Warning: Do not exceed 100 PSI (6,9 bar)

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4.4 Air Filter

The air filter must be kept clean to maintain maximum filtering efficiency. Periodically open the drain cock under the filter, and drain off any bowl accumulation before it reaches the level of the lower baffle. A visible coating of dirt or condensate on the filter element surface or an excessive pressure drop is an indication that cleaning is necessary.

To clean the filter, follow these steps:

1. Turn off the air supply, and depressurize the system.
2. Loosen the locking collar and remove the bowl.
3. Clean all parts with denatured alcohol.
4. Blow-out the inside with compressed air.
5. Reassemble the filter.

4.5 Air Regulator Adjustment

Adjust the air pressure at the air regulator module (refer to the diagram on the previous page). Rotate the adjusting knob *clockwise* to increase the regulated pressure.

The recommended operating air pressure is 100 PSI (6,9 bar).

Warning: Never allow the air pressure to exceed 100 PSI (6,9 bar).

4.6 Lubricator Adjustment

The lubricator in the FRL treats the air supply with a controlled, adjustable quantity of oil.

Warning: Do not attempt to add oil to the lubricator while under pressure. Disconnect and lock out the air supply and purge pressure from the system before filling with lubrication fluids. The lubricator cannot be filled while under pressure.

Lubrication
For normal operating conditions, use SAE #10 (SUV > 150-200 SEC @ 100 degrees F) oil. Other lubrications may be used if not heavier than SAE #40 (SUV 800 SEC @ 100 degrees F).

Filling
Shut down, lock out and depressurize the system before refilling the lubricator. Slowly remove the fill plug and fill to 1/4 inch from the top of the bowl using the recommended oil.

Adjustment
Recommended lubrication is one drop of oil for every 20 to 30 cycles of the clipper. The lubricator adjustment knob is located on top of the lubricator module.

To check lubrication, hold a mirror or similar material near the equipment exhaust. A small film of oil will be discharged against the mirror. A heavy film discharge indicates over-lubrication. The oil drop rate should be reduced to a lower setting to decrease the oil drop rate.

If no oil drips through the sight glass with the needle valve open, proceed as follows:

- Make certain there is sufficient oil in the bowl.
- Check to determine whether there is air pressure ahead of the lubricator.
- Check the air flow from the lubricator.

If oil still does not drip through the sight glass, an accumulation of dirt in the lubricator is indicated and the lubricator will need to be cleaned.

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Chapter 5 – Clipper Operating Instructions

5.1 Preparation

Before operating the clipper, check all air connections. If they have become disconnected, reassemble as shown in the pneumatic schematic. Adjust the incoming air to the recommended pressure of 80 - 100 PSI (5,5 - 6,9 bar) and check for any air leakage. If leakage is present, correct before continuing.

Load the clip stick, push clips down the rail and manually reset the clip pusher. Check for proper feeding and for any obstructions at the punch, knife, and die areas.

5.2 Operating the Clipper

Operate the clipper as follows:

- Slide the package to be clipped into the slot of the clipper die support.
- When the package reaches the bottom of the throat, the trigger activates the trigger valve.
- The trigger valve activates the punch cylinder.
- The punch advances into the die forming a clip onto the product.
- An air signal is sent through an adjustable flow control into a volume chamber which creates a delayed signal to extend the knife.
- The cut-off knife fully extends and cuts off the excess package.
- After the knife cuts off the excess package, begin to remove the product.
- The trigger valve resets automatically, retracting the cut-off knife and clip punch.
- Continue to remove the package from the clipper by pulling the material away from the bottom of the die support plate.
- The system resets, and the clipper is ready for another cycle.

Warning: If a clip or other obstruction jams in the die area, do not attempt to cycle the machine again until the jam is cleared. Turn off and lock-out the air supply before attempting to remove the obstruction. Then, carefully remove the clip or obstruction to avoid damaging the clipper.

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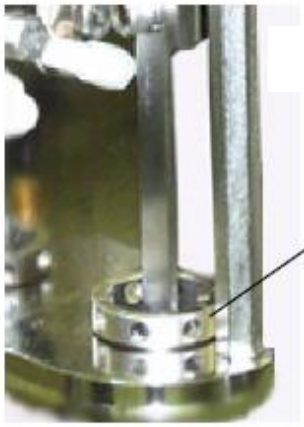
5.3 Mechanical Crimp Control

The clipper's air pressure and crimp control may need to be adjusted to set the machine for the best closure. Differences in envelope size may also require adjustment for optimum closing and operation.

The crimp control ring is located in the inside of the machine, centrally mounted onto the punch cylinder support base. To adjust the crimp, loosen the locking screw at the rear of the clipper. This locking screw sets against the threads of the crimp control ring to prevent it from turning. The crimp control knob is accessible through the slots in the front guard and can be rotated using the holes provided around its diameter with a Hex wrench or small Screw driver. Rotate the crimp control ring *clockwise* to produce a tighter clip crimp. Rotate the ring *counterclockwise* for a looser crimp. After the adjustment is complete, retighten the locking screw before returning clipper to operation.

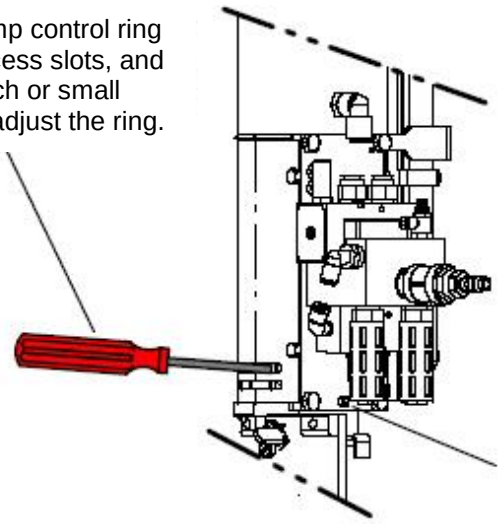


Note: Guard removed only for clarity

Crimp Control Ring

Turn the crimp control ring clockwise to produce a tighter clip crimp

Access the crimp control ring through the access slots, and use a wrench or small screwdriver to adjust the ring.



Loosen the locking screw before adjusting the crimp control ring. Retighten the locking screw when the adjustment is complete.

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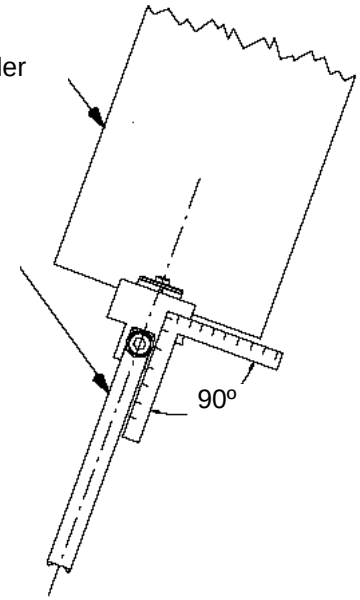
5.4 Punch Assembly

The punch assembly is shown in the illustration below.



When you install a new punch, you need to ensure the punch is mounted straight and square. If the punch is not mounted squarely, excessive wear of the punch and die support will cause premature failure. The following procedure will ensure proper punch installation:

1. Place the punch cylinder in the retracted position.
2. Bolt the punch loosely into position on the support.
3. Ensure the bolts are slightly loose before performing the next step.
4. Push the punch down until it is fully engaged in the die support channel.
5. Tighten the bolts on the punch support.

5.5 Punch and Knife Extend Delay

The delay signal that extends the punch and knife is adjustable through a flow control on the manifold assembly. Turn the flow control knob *clockwise* to lengthen the extend delay. Turn the flow control knob *counterclockwise* to shorten the extend delay.

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5.6 Loading Clips

TIPPER TIE stick clips are easily loaded for dispensing. Clips are held in place within the clip rail and guided towards the punch by means of a clip weight.

Position the clips so that they slide down the rail, and gently guide them down the rail.

Fit the clip weight so that it slides into the groove in the rail. Gently slide it down the rail until it rests on the clips.

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5.7 Knife Shut-Off

If your clipper is equipped with a knife, it probably includes a knife shut-off.
The knife shut-off is a ball valve that regulates air to the knife. It allows operators to shut off knife operation. When shut-off, the knife remains sheathed during the clipping process.

The valve is located on the air line between the knife and the manifold. A simple twist on the valve toggle will close off the air supply. Another twist to open the air supply will reactivate the knife function.

Different models of clippers use different ball valves. Two examples are shown.

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Chapter 6 - Cleaning Procedures

6.1 Cleaning Overview

After the clipper has been used or serviced, it must be cleaned to remove all food or other residue from the food contact zone – the throat, punch, die, and knife areas. Check all other clipper surfaces and surrounding work stations for contamination. All surfaces must be cleaned using current recommended materials and procedures.

Warning: Always disconnect and lockout the air supply before cleaning the clipper.

Warning: The cutoff knife is very sharp. Before servicing the knife, disconnect the incoming air line to the clipper and remove from the machine. Be very careful when working with the knife assembly.

6.2 Cleaning Procedures

1. Turn off the factory air, and use the quick-disconnect to remove air pressure from the clipper.
2. Remove guards and covers to expose all surfaces for cleaning.
3. Clean all surfaces according to current food safety rules.
4. While cleaning, inspect for worn or damaged components that may need to be replaced.
5. After cleaning, rinse the clipper with a low-pressure wash, then blow off the clipper with air.
6. After cleaning, rinsing and air blowing, spray a light coating to all surfaces of the machine using a 10 weight, food grade mineral oil.
7. After cleaning and lubricating, before returning the machine to production, perform these steps:
    - Reassemble the guards and check them for safe operation.
    - After reassembly, run the machine for a minimum of two complete cycles.

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Chapter 7- Maintenance Guide

7.1 General Guidelines

For proper machine function and continued satisfaction with your finished product, it is **essential** that your machine be properly maintained. This means that a preventive maintenance (PM) schedule should be established and followed. Attention shall be given at least **once a week** to observing wear of all moving parts, especially in the following areas:

- Die support channel and punch assembly
- Die and die pocket area of the die support
- Clip pusher assembly
- Knife assembly

Operating a machine without following an established PM schedule constitutes neglect and may result in endangering the safety of the operator, degradation of machine function, or inferior product.

To help you track scheduled periodic maintenance as well as unscheduled service, a maintenance log has been included in Appendix 1. Make copies of the sample (or design your own form) and use the log to record all service and maintenance activities. In addition to fulfilling the PM requirement, the log will help you to identify and isolate adverse maintenance trends.

Prior to performing any service or maintenance, disconnect and lock out the air supply.

For replacement parts, refer to the spare parts list in Chapter 9 and the assembly drawings in Chapter 10.

7.2 Maintenance Precautions

After performing any service or maintenance, before you return the machine to operation, always check for and tighten any loose screws, bolts and nuts, connectors and hoses. Inspect all of the machine's safety components. Closely follow all safety warnings and notes to avoid serious injury and potential damage to the machine.

Caution: It is especially important that you carefully and frequently inspect the clipper for worn parts. Check the die support channel and punch assembly, the die and die pocket area of the die support, the clip pusher assembly and the knife assembly. Always replace worn parts as necessary.

Warning: While operating or servicing the clipper, if a clip or other obstruction jams in the die area, do not attempt to cycle the machine again until the jam is cleared. Turn off and lock-out the air supply before attempting to remove the obstruction. Then, carefully remove the clip or obstruction to avoid damaging the clipper.

Warning: Do not attempt to add oil to the lubricator while the clipper is under pressure. Disconnect the air supply at the quick disconnect, which will purge the air pressure from the system. Lock-out the clipper.

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7.3 Maintenance Checklist

As part of you PM schedule, check the following areas at least daily and after performing any service or maintenance. Do not operate the clipper before checking the following:

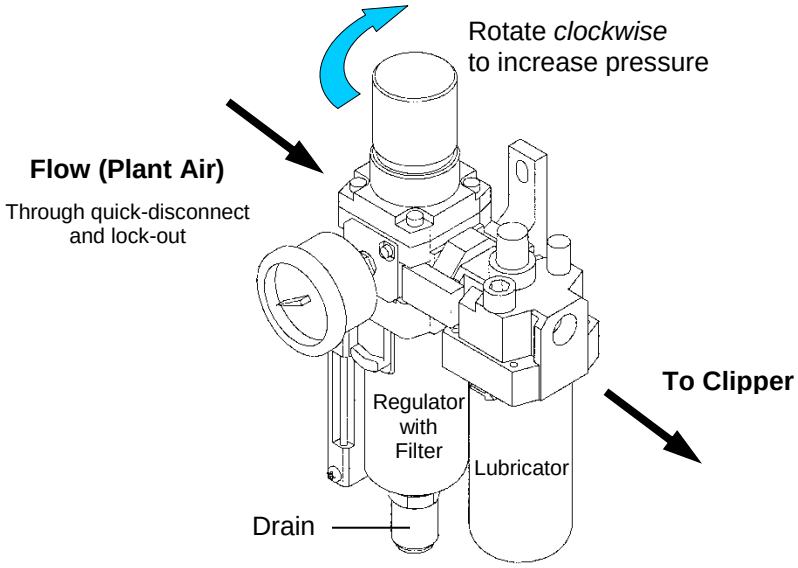
- Check for loose screws.
- Check the oil level in the lubricator.
- Check the air filter.
- Check the knife for signs of chipping. Do not use a chipped or dull blade.
- Check the end of the punch for burrs.
- Check the guards for safe function.

7.4 Air Filter Maintenance

The air filter is equipped with an automatic drain that should be cleaned periodically to maintain maximum filter efficiency. Periodically open the drain cock under the filter and drain off any bowl accumulation before it reaches the level of the lower baffle. A visible coating of dirt on the filter element surface or an excessive pressure drop is an indication that cleaning is necessary.

To clean the filter, turn off the air supply, then lock out and depressurize the system. Loosen the locking collar and remove the bowl. Clean all parts with denatured alcohol and blow out the inside with compressed air.

FRL Illustration



Recommended Pressure Setting
80-90 PSI (5,5-6,2 bar)

Warning: Do not set air pressure above 100 PSI (6,9 bar)

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7.5 Regulator Maintenance

To clean the regulator, follow these steps:

1. Disconnect the air supply at the quick disconnect and lock out the system.
2. Remove the bottom plug, spring, and disk.
3. Clean all parts with denatured alcohol.
4. Wipe off the seat and blowout the regulator body with compressed air.
5. Reassemble the filter / regulator unit.
6. Before tightening the plug, make certain the disk is centered.

Periodically check the air muffler for oil build up and blockage. A muffler caked with oil or accumulated contamination will restrict the porting of the used air into the atmosphere, and slow the clipper. Always check the mufflers when servicing the FRL assembly, and replace them as needed.

7.6 Lubricator Maintenance

The oil level in the lubricator must never be allowed to drop below the end of the dip tube. Before performing any maintenance, remove the incoming air supply at the quick disconnect and lock out the system.

Warning: Do not attempt to add oil to the lubricator while the clipper is under pressure. Disconnect the air supply at the quick disconnect, which will purge the air pressure from the system. Lock-out the clipper.

To refill, remove the slotted filler plug and fill to the oil level mark. Replace and tighten the plug.

Normally the lubricator should require only occasional cleaning, provided clean oil is used, and the air supply is kept clean by the filter system. However, if no oil drips through the sight glass, and the oil supply has been replenished, the lubricator requires cleaning.

Check the following before cleaning the lubricator:

- Make sure there is sufficient oil in the bowl.
- Check to determine whether there is air pressure ahead of the lubricator
- Check the air flow from the lubricator

If each of these areas is functioning properly, clean the lubricator.

After cleaning and servicing the clipper, the air regulator may need to be adjusted to the recommended pressure settings of 100 PSI (6,9 bar). Never allow the air pressure to exceed 100 PSI (6,9 bar).

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Chapter 8 - Troubleshooting Guide

If you are having trouble with your clipper, before you call for assistance, try to resolve the problem through the following troubleshooting steps. Find your problem from the list of symptoms in the left column, then try each of the solutions in the right column until the problem is resolved.

The first things to check in the event of a major clipper outage is the air supply. From that point the following table can be used to isolate and correct the problem.

Symptom	Solution
Clipper has no power	1. Air connection may be loose. Check all air connections.
	2. Regulator may be turned off. Check the regulator unit if used.
	3. Water may be in the system. Drain the water and change the filter, or check air supply.
Clipper is slow	1. Water may be in the system. Drain the water and change the filter, or check air supply.
	2. Muffler may be clogged. Replace the muffler.
	3. Air pressure to the clipper is low. Check the air pressure setting and increase if necessary.
	4. Air lines are pinched. Replace the air lines.
	5. Cylinder is stuck. First check for pinched air line and check the air pressure. If cylinder is still stuck, disconnect air line and check for broken or worn parts. Replace bad parts or air cylinder.
Punch does not retract	1. Knife blade housing may be jammed with product residue. Disassemble and clean.
Knife does not cut	1. Check knife for nicks. Sharpen or replace as needed.
Malformed clips	1. Punch or die may be damaged. Replace as necessary.
	2. Air pressure may be too low or too high. Check air pressure and adjust if necessary.
Clips are loose and seal poorly	1. Air pressure is too low. Check air pressure and adjust if necessary.
	2. Punch and die may be worn. Check for wear on punch and die, and replace if needed.

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Chapter 9 - Spare Parts List

When ordering replacement or spare parts, always include the following information:

- Clipper model number and date of purchase
- Identifying part number that is stamped on the part
- Part number from spare parts list or from assembly drawing

Items listed can be ordered individually or as a kit. Note the recommended quantities.

9.1 Recommended Spare parts

Spare parts may be ordered by individual part numbers, or they may be ordered as a kit: 55-0099.

9.2 Cylinder Repair and Seal Kits

Punch Cylinder
Select a repair kit according to which cylinder is installed

Manufacturer	Part Number
Aurora	55-0108
TRD	55-0155

Knife Cylinder
Select a repair kit according to which cylinder is installed

Manufacturer	Part Number
Aurora	55-0044
Bimba	55-0152

9.3 Loose Parts List

Part Number	Description	Quantity
00-7500	Champion Air Supply 3/8” FRL	1
28-4636	3/8” Air hose Assembly	1
80-1302	SZ4135L Manual	1

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Chapter 10 - Assembly Drawings

SZ4135L	Clipper Model SZ4135L
00-1949	Second Trigger Assembly
00-1990	Punch cylinder Assembly
00-1991	Lower Assembly SZ4135L
00-2123	Horizontal Clipper Mount
00-2842	Clip Weight Assembly
00-2866	Rail Assembly - 4100H w/ Clip Weight
00-7500	Champion Air Supply 3/8”
21-0432	Manifold Assembly
28-4636	3/8” Hose Assembly
55-0099	Spare Parts Kit
63-0301	Pneumatic Schematic

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Appendix 1 - Maintenance Log

Make copies of this maintenance log (or design your own) and use the log to record all preventive maintenance and unscheduled service activities. Use the log to identify and isolate adverse trends.

Date	Technician	Maintenance Performed

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