Reliant 1500

Manual

Thiele Technologies
A Barry-Wehmiller Company

Streamfeeder®

Part Number: 00900323

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Before You Begin

Message Conventions

DANGER signifies an action or specific equipment area that can result in serious injury or death if proper precautions are not taken.

WARNING signifies an action or specific equipment area that can result in personal injury if proper precautions are not taken.

CAUTION signifies an action or specific equipment area that can result in equipment damage if proper precautions are not taken.

ELECTRICAL DANGER signifies an action or specific equipment area that can result in personal injury or death from an electrical hazard if proper precautions are not taken.

TIP signifies information that is provided to help minimize problems in the installation or operation of the feeder.

NOTE provides useful additional information that the installer or operator should be aware of to perform a certain task.

CHECK signifies an action that should be reviewed by the operator before proceeding.

IMPORTANT alerts the installer or operator to actions that can potentially lead to problems or equipment damage if instructions are not followed properly.

WARNING LABELS affixed to this product signify an action or specific equipment area that can result in serious injury or death if proper precautions are not taken.

Before You Begin

Message Conventions

Avoid injury. Do not reach around guards.

Hazardous voltage. Contact will cause electric shock or burn. Turn off and lock out power before servicing.

Moving parts can crush and cut. Keep guards in place. Lock out power before servicing.

Pinch point. Keep hands and fingers clear.

Moving parts can crush and cut. Keep guards in place. Lock out power before servicing.

SPECIFICATIONS

Maximum Product Size: ..... 9.25 W x 6 L in (235 x 152 mm)
Contact us for longer insert length

Minimum Product Size: ..... 2.125 W x 2.25 L in (54 x 57 mm)

Min/Max Product Thickness: ..... .003-.25 in (.076-6.35 mm)

Belt Speed: ..... 1000 ipm (25,400 mmpm)

Electrical Requirements: 115/230vac, 1A

Weight: ..... 23 lbs. (10.43kg)

1 About the Machine

Introducing the Reliant 1500 Universal Friction Feeder

The Streamfeeder Reliant 1500 Universal Friction Feeder is designed for use with multi-station inserters to efficiently separate, singulate, and feed a wide variety of cut sheets and non-nested material. After material is loaded into the hopper, the rest is automatic. With photo sensor monitoring, feed cycling is always sychronized with the inserter gripper jaw. Figure 1 shows a typical setup on the inserter.

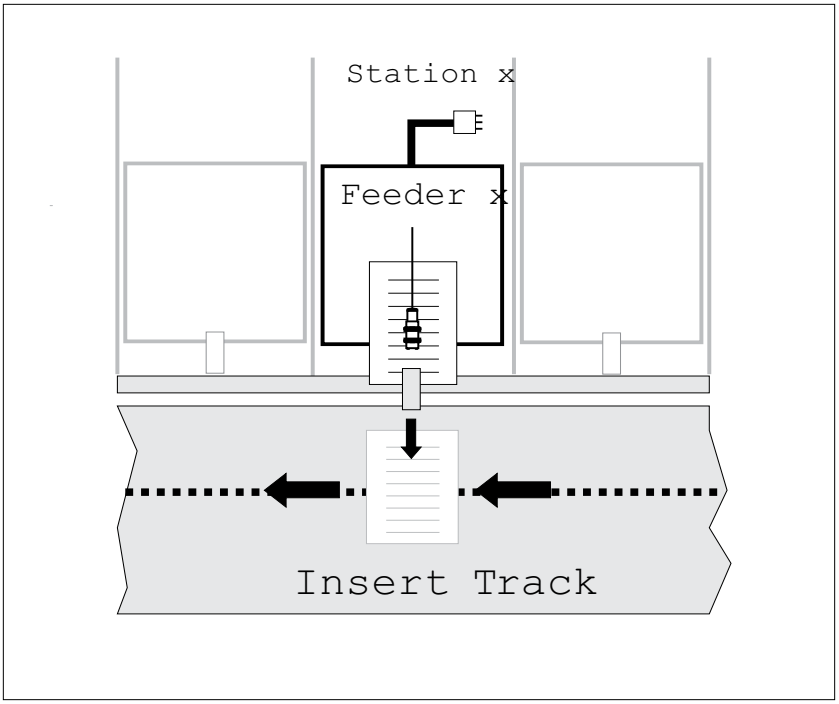
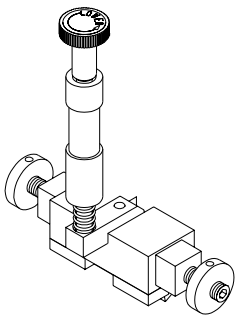


Figure 1. Reliant 1500 Universal Friction Feeders Mounted on an Inserter

One of the design features that makes the Reliant 1500 Universal Friction Feeder unique is a part called the *gate assembly* (Figure 2). This patented device is the main reason the feeder can separate, singulate, and feed individual sheets with accuracy and reliability — even at high speeds. A single-knob adjustment allows you to easily setup the feeder for many different types of material.

Bar Gate II Horizon Adjust Assembly



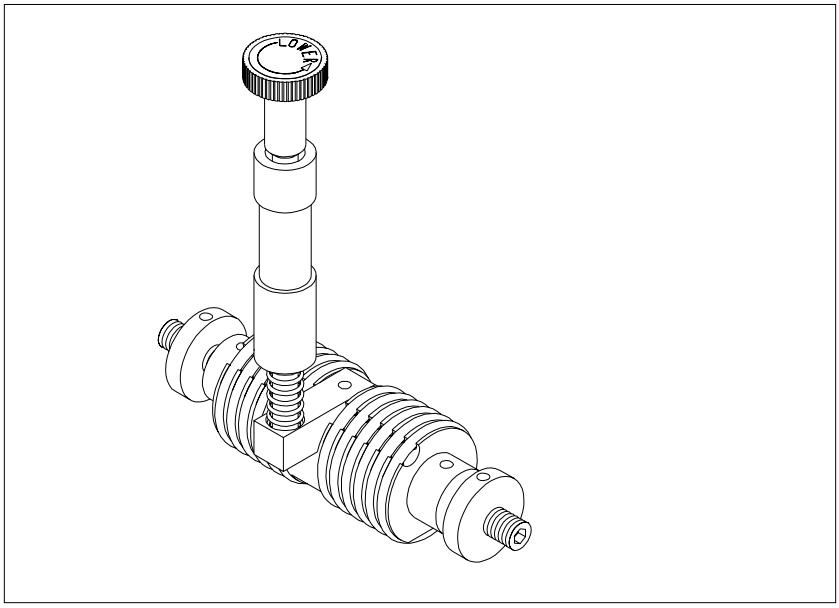


Figure 2. Standard O-Ring Gate, Horizon Adjust

The machine is entirely powered by a single AC synchronous motor that runs off of either a 120- or 240-VAC electrical power source. Once the machine is prepared for operation, the power-up and operation of the feeder is relatively easy.

NOTE

This manual contains installation, preparation, and operation information only.

But to get the most out of your machine, you should first become familiar with all of the features, including controls and sensors, connectors, and cables.

Please read the "Main Features" subsection that follows to learn about all controls, sensors, and connections. Once you have done this, you should be ready to adjust and successfully run the machine with any material within the specification parameters.

Main Features

The Reliant 1500 Universal Friction Feeder is designed for reliability, flexibility, and ease of use. All control, sensing, and feeding assemblies are combined into one compact unit.

The main components and adjustments of the feeder are shown in Figure 3. Brief descriptions of each are found in Table 1 on the following page.

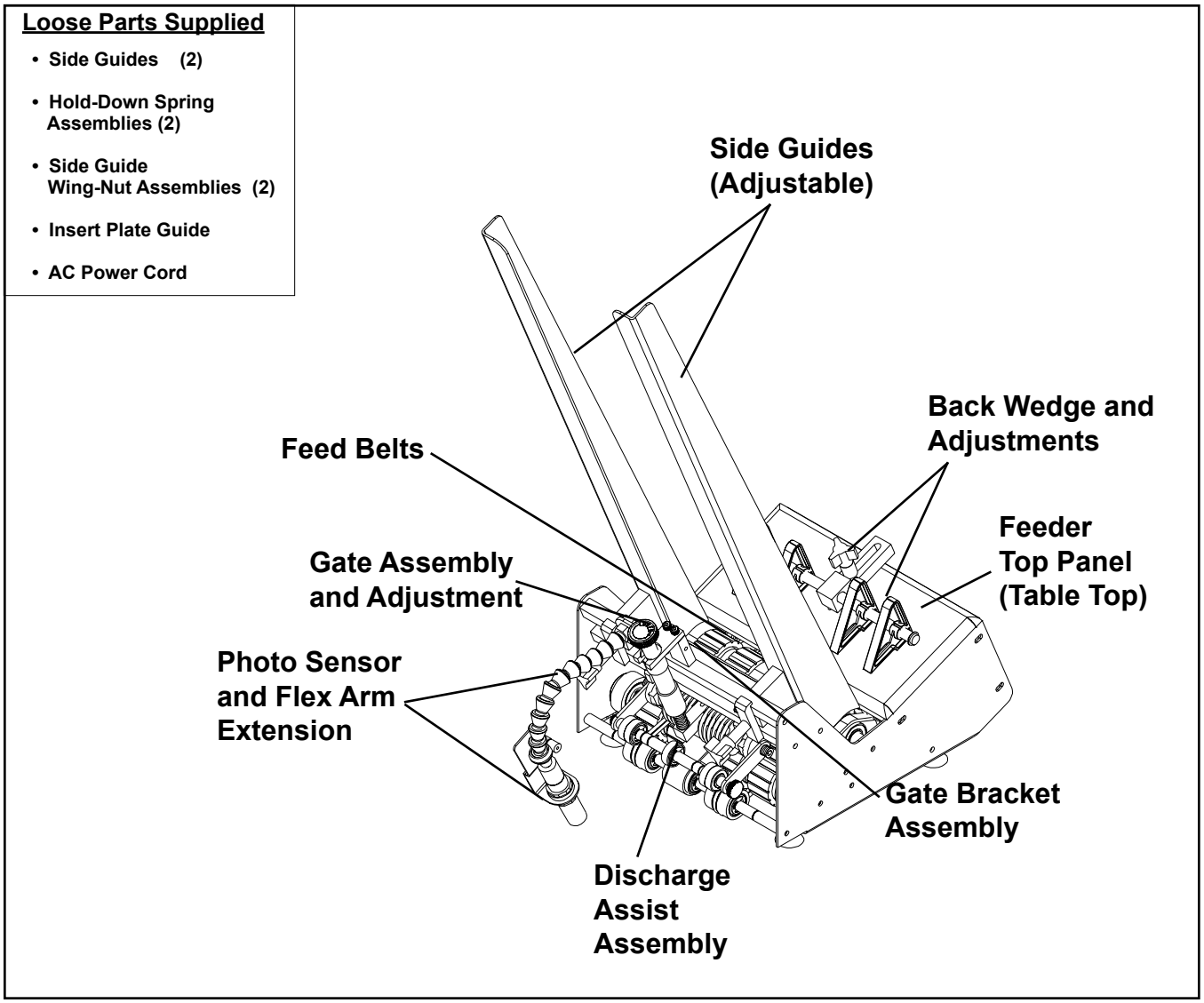


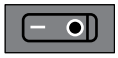
Figure 3. Reliant 1500 Universal Friction Feeder Features

Table 1. Feature Descriptions of Reliant 1500 Universal Friction Feeder

Feature	Description
Gate assembly and adjustment	Mounted on a gate bracket assembly directly above the feed belts, this device provides a curvature to help preshingle stacked material. When properly adjusted, a clearance is created to help singulate and feed material. *(Note: For multiple page material, a 1 to 1.5 maximum thickness is typical.)*
Top panel (table top)	Used to support the back wedge.
Side guides (adjustable)	Holds a stack of material to be fed and helps keep it straight for proper entry through the gate assembly area. Also referred to as “hopper”. *(Note: Loading can be performed from either the front or back of inserter.)*
Back wedge and adjustment	Lifts the material to keep it off the table top, reduces excessive contact with the feed belts, and helps push the material against the curvature of the gate assembly.
Photo Sensor and flex arm extension	Controls the starting and stopping of a feed cycle by sensing the presence or absence of material. To ensure proper alignment of the sensor, a flex arm extension allows you adjust it for proper distance and angle to the material.
Feed belts	Provides the friction and motion necessary to pull individual material from the bottom of the stack and through the gate assembly area.
Discharge assist assembly	A series of small rollers mounted on movable brackets help to gently hold material down on the feed belts as material exits the gate assembly area. These brackets and rollers are part of the gate assembly and are removed when the gate assembly is removed.
On/Off switch (not pictured)	Located on the rear of the feeder, this toggle switch turns AC power On or Off to the feeder.
Hold-down spring assemblies	As a piece of material exits the feeder gate assembly area, these two hold-down spring assemblies help keep it aligned and in proper position for the gripper jaw. Shipped loose and mounted on inserter.
Side guide wing-nut assmblies	Secures side guides to the cross-bar. Loosening each allows you to move each side guide horizontally to accommodate various material sizes.
Insert plate guide	This plate is supplied with your feeder and is to be mounted on the back deck plate. Shipped loose and mounted on inserter (if required).
AC power cord, 8 ft. (2.44 m)	IEC320 removal three-prong. Shipped loose.

Controls and Sensors

Read the following descriptions to become familiar with the controls and sensors. See Figure 4 for locations

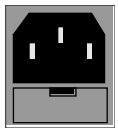


ON/OFF SWITCH. This rocker switch determines whether AC power to the feeder is “On” or “Off”. Push the horizontal line (—) to turn “On” and push the circle (**O**) to turn “Off”. It is located at the rear of the feeder.

PHOTO SENSOR. Sends signals to the relay circuit to both “start” and “stop” the feed cycle. Also called a sheet sensor, it “looks” for the leading edge of the bottom sheet of material to stop the machine. When the gripper jaw removes the bottom sheet of material, the feeder starts and then feeds the next sheet. The machine stops as the sensor “sees” the leading edge. The sensor uses two LED indicators. A green LED functions as the power indicator and is constantly lit during normal operation. The second LED is amber, and indicates the presence of product staged under the sensor. Amber LED on indicates the sensor "sees" product; off when no product is present.

Connectors and Cables

Read the following descriptions to become familiar with the connectors and cables. Refer back to Figure 4 for location.



AC POWER INLET/FUSE. This 3-prong connector receives incoming AC power from the designated power source. One end of AC power cord plugs into power inlet (rear of machine), while the other plugs into a three-prong grounded and fused outlet.

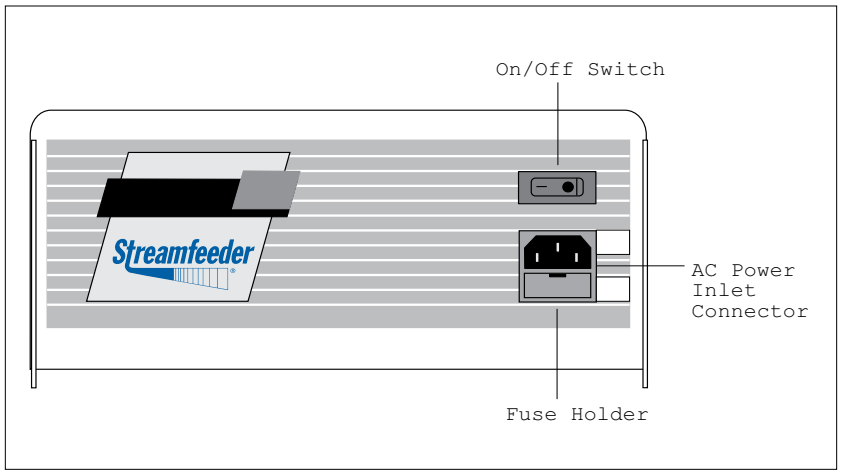


Figure 4. Feeder (Rear)

2 Installing the Machine

When performing initial installation, always make sure you turn Off the main power switch and disconnect all equipment from the electrical power source. Failure to do so can expose you to a potential start-up, and therefore moving parts which can cause serious injury.

Do not attempt feeder installation while the inserter is running. Failure to do so can expose you to moving parts which can cause serious injury.

Avoid turning on the feeder or making initial adjustments until all parts are secured. Failure to do so can cause damage to equipment.

Installation of the Reliant 1500 Universal Friction Feeder onto the back deck plate of an inserter is a relatively simple procedure, with only minor modifications to the selected insert station prior to attaching the feeder. The entire installation can typically be done with a hex-head driver set and a slotted screwdriver.

To install the feeder, perform the following steps:

1: Removing rear guide assembly

2: Removing T-plate

3: Repositioning separator foot

4: Removing suction cup and closing off vacuum hose

5: Repositioning insert guide tabs

Optional step: Install insert plate guide

6: Installing feeder hold-down spring assemblies

7: Aligning feeder with insert station

8: Securing feeder to inserter

9: Initial feeder photo sensor positioning

STEP 1: Removing Rear Guide Assembly

At the selected insert station, remove the fasteners that hold the inserter rear guide assembly to the inserter back deck plate. Lift rear guide assembly off of back deck plate (Figure 5).

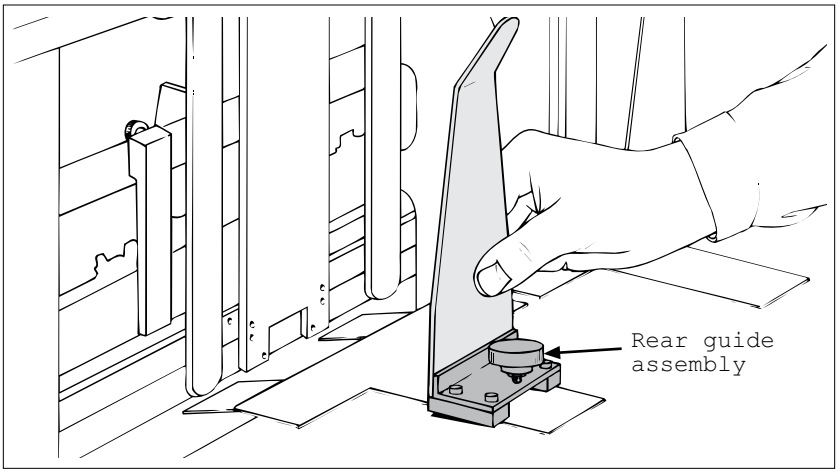


Figure 5. Removing Guide Assembly Rear from Inserter

STEP 2: Removing T-Plate

With the rear guide assembly removed, you can now access the inserter T-plate. Simply lift off of back deck plate (Figure 6).

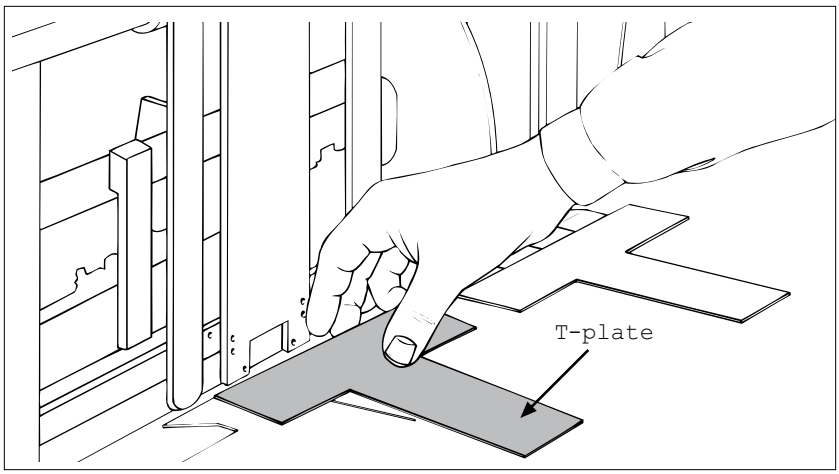


Figure 6. Removing T-Plate from Inserter

STEP 3: Repositioning Separator Foot

- Locate the separator foot at the front side of the inserter station (attached to top rotating shaft).
- With a screwdriver, loosen the inserter separator foot and tilt away slightly from insert station assembly (opposite feeder) so the foot does not interfere with material being fed (Figure 7).
- Retighten to secure.

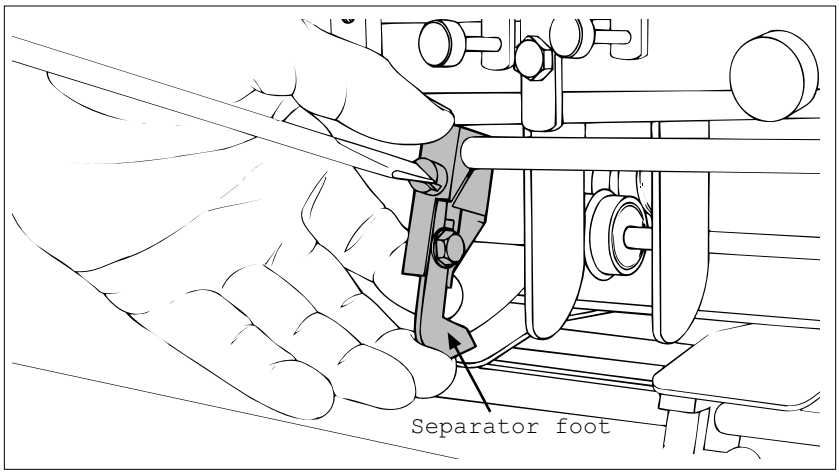


Figure 7. Repositioning Separator Foot at Front of Inserter

STEP 4: Removing Suction Cup and Closing Off Vacuum Hose

- Locate the suction cup and hose from front side of insert station.
- Remove suction cup from vacuum assembly. See Figure 8.
- Lower and tilt the adjustable vacuum assembly forward (by turning the built-in thumbscrew). The vacuum assembly may be moved down and to one side if it interferes with the material being fed.
- Close off the vacuum hose opening; any convenient plugging method will do.

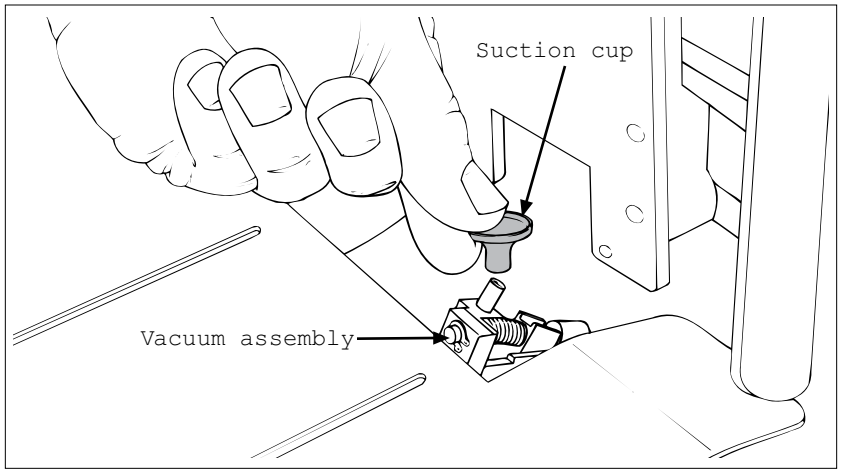


Figure 8. Removing Suction Cup from Vacuum Assembly

STEP 5: Repositioning Insert Guide Tabs

- Cycle the inserter until the gripper arm jaw is approximately 1/2 in. (12.7 mm) from the hopper plate (leading edge of material exiting feeder stops here).
- Locate the two insert guide tabs that protrude from under the back deck plate. Bend these tabs as required (either up or down) until their top surface is slightly above the bottom of the gripper arm jaw. The material to be run will rest on these tabs. The bottom of the gripper arm jaw must pass under the material without making contact with it.
- As it is important that there be adequate clearance between the guide tabs surface and the gripper jaw, use a flat, thin rule (or gauge) to test for clearance. Ideally, with the gripper jaw should be fully open when testing.
- Center the gauge on the guide tabs and slide the gauge back and forth on the tabs, making sure the gripper jaw does not touch the bottom of the gauge. See Figure 9.

NO TE

Inserco inserters only:
Remove the two insert guide tabs that protrude from the back deck plate. Make a bend in each tab approximately 1-3/8 in. (34.9 mm) from the tip by placing the tab approximately 1-3/8 in. (34.9 mm) into the rear guide assembly. Bend the tab slightly and repeat same for second tab. Reinstall insert guide tabs to back deck plate.

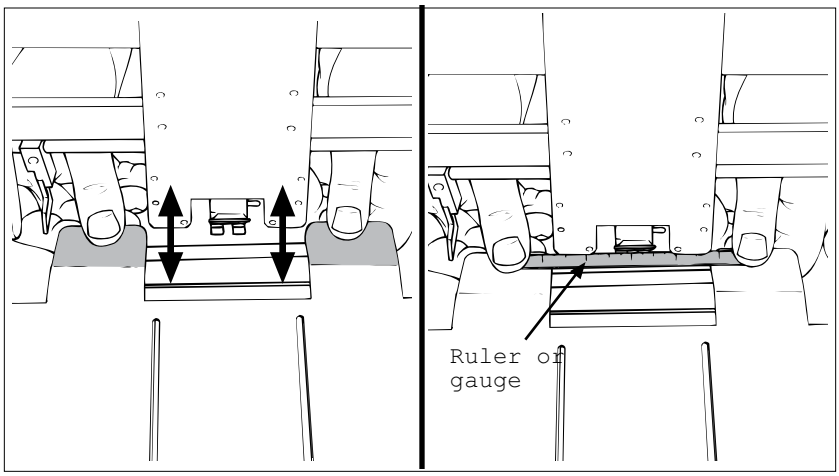


Figure 9. Repositioning Guide Tabs and Testing For Clearance

Optional Step: Installing Insert Plate Guide

When feeding materials less than 5 in. (12.7 cm) wide, you must install the provided insert plate guide with your machine. Install it from the underside of the back deck plate using the two provided hex-head screws; reuse the two slots previously used for mounting the rear guide assembly.

- Start the screws from the top side of the back deck plate, leaving them loose so you can move insert plate guide during placement.
- Position the insert plate guide so the top surface is slightly above the bottom of the gripper arm jaw.
- Tighten to secure.
- As it is important that there be adequate clearance between the guide tabs surface and the gripper jaw, use a flat, thin rule (or gauge) to test for clearance. Ideally, the gripper jaw should be fully open when testing.
- Center the gauge on the guide tabs and slide the gauge back and forth on the tabs, making sure the gripper jaw does not touch the bottom of the gauge. See Figure 10.

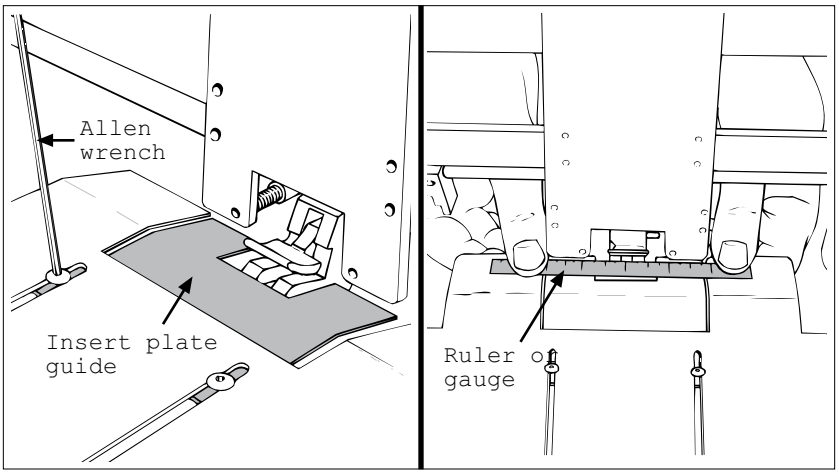


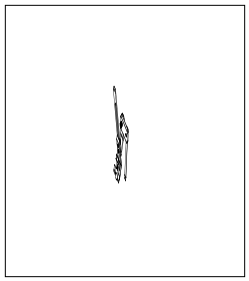
Figure 10. Installing Optional Insert Plate Guide and Checking for Clearance

STEP 6: Installing Feeder Hold-Down Spring Assemblies

- Using the two provided hold-down spring assemblies (with support bars), place each on the insert station rail (feeder side of inserter).
- Position each spring support bar so that they are equally spaced from each edge of the material to be run.
- Tighten the built-in wing nut on each to secure.
- Check for placement and pressure of the hold-down spring assemblies by sliding a piece of material to be run under the springs. There should be a "slight drag" when moving the material back and forth.
- Make adjustments as required and recheck. See Figure 11.

NOTE

Certain inserter models require hold-down spring assemblies to mount from the bottom side of the cross-bar (see figure below). To invert, simply remove screw and invert L-bracket and spring.



Use this configuration for Bell & Howell Mailstars, and 825 models.

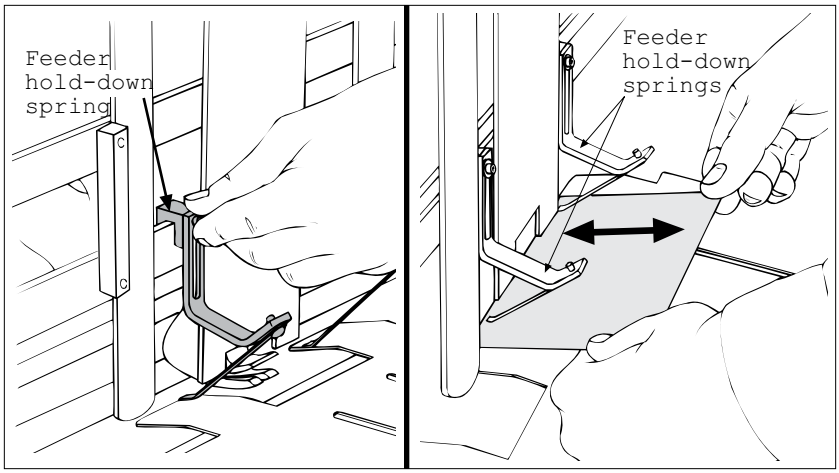


Figure 11. Installing Hold-Down Spring Assemblies and Testing for Drag

TIP

Knowing how far from each edge of the material to place the hold-down spring assemblies is a combination of intuition and testing.

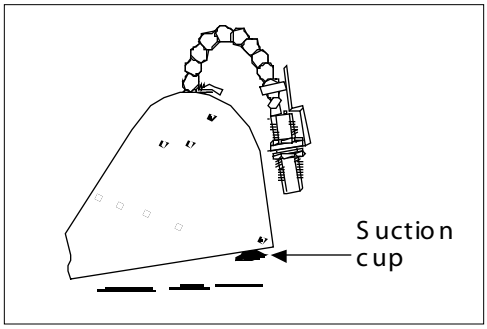
TIP

With material inserted between the springs and the insert guide tabs, test the spring tension by sliding the material back and forth. Tension should not be so great that it distorts the material as it moves.

If adjustment is required, loosen the hex-head screw for each spring and move up or down on support bar. Retighten when optimum tension is achieved.

STEP 7: Aligning and Securing Feeder to Insert Station

- Using your finger, turn the drive belt to advance a piece of your material through the gate assembly area and under the feeder hold down springs.
- Continue advancing the material until the trailing edge of material fits between the feeder exit rollers (.25 in. to .5 in., or 6.4 mm to 12.7 mm of material).
- Carefully slide the feeder into the inserter station and center the leading edge of your material under the inserter hold-down springs. Ensure the front edge of the material is in-line with the front hopper plate. See Figure 12.
- Once you are satisfied with the feeder alignment, press down on the feeder top plate to secure the feeder suction cups to the inserter rear deck plate.



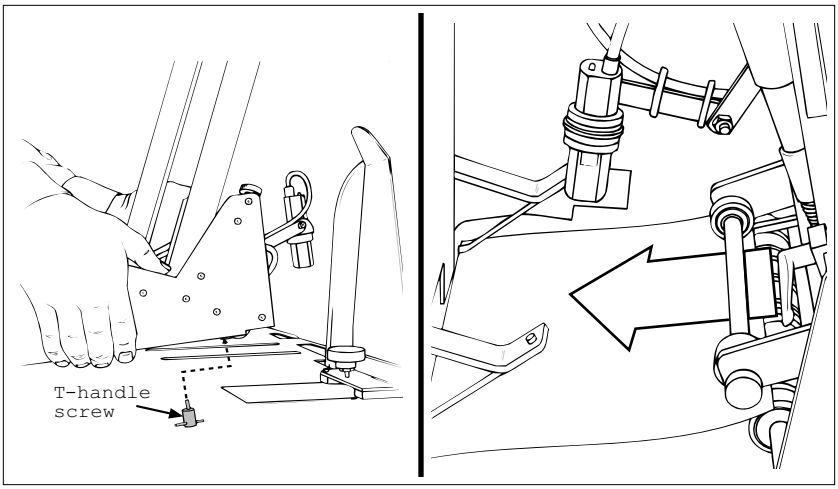


Figure 12. Aligning Feeder with Insert Station

STEP 8: Initial Feeder Photo Sensor Positioning

NOTE

The final photo sensor adjustment will align slightly to the rear of the leading edge. This is because when the photo sensor signals the feeder to stop, the motor will over-travel slightly.

IMPORTANT

A perpendicular alignment to the material is preferred. However, in many instances you may be limited to an angular alignment due to the constraints of the retractable extension and cross-bar design.

- With the machine turned Off, position the photo sensor by sighting along the tubular barrel. It should point exactly at the leading edge of material being held by the hold-down springs (Figure 13).
- Use the retractable extension to maneuver the photo sensor into position for desired height and angle.
- During the final adjustment of the photo sensor, you need to actually load material into hopper, turn the feeder Off, and cycle the inserter. See Section 3, “Preparing for Operation”, for more information.

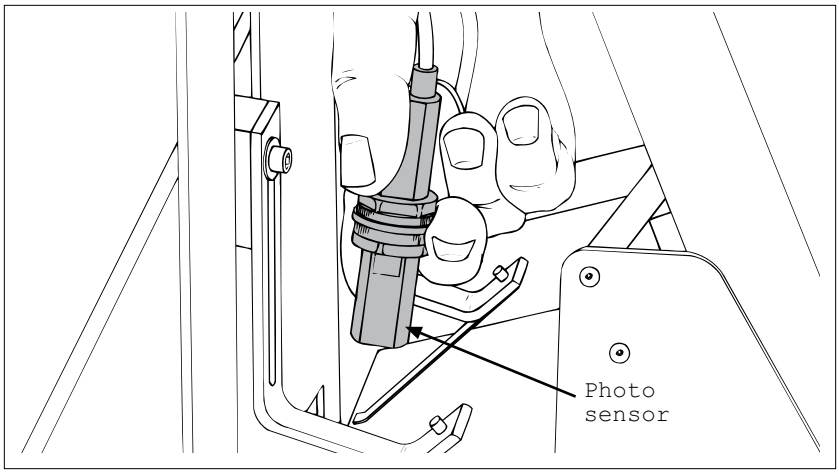


Figure 13. Initial Photo Sensor Adjustment

3 Preparing for Operation

When performing initial feeder adjustments prior to operation, always make sure you turn Off the main power switch and disconnect the inserter from the electrical power source. Failure to do so can expose you to a potential start-up, and therefore moving parts which can cause serious injury. In steps 1–3, do the same for the feeder.

Do not attempt to make any adjustments while the feeder(s) and inserter are running. Failure to do so can expose you to moving parts which can cause serious injury. Do not wear loose clothing when operating the feeder.

Avoid making adjustments with loose or unsecured parts. This can potentially damage parts.

Once the Streamfeeder Reliant 1500 Universal Friction Feeder is installed on your inserter, you are then ready to prepare the machine for operation. To do so, you must perform several adjustments with the material you are going to be feeding. And, you must do a test run with this material to verify that it is set correctly before you begin cycling the inserter. *You will have to perform this procedure for material that you plan to feed.*

The adjustments you must make (in order) are as follows:

1: Gate assembly adjustment

2: Side guides setting

3: Back wedge setting

4: Photo sensor setting

STEP 1: Gate Assembly Adjustment

NO TE

Hopper refers to the space where the material is stacked (made up of the side guides).

NO TE

Keep in mind that the gate assembly works with the wedge to provide the proper lift, curvature of the material, and proper belt/material contact to separate and feed one piece at a time.

IMPOR TANT

Feeding problems will occur with either too much pressure on the material, or too large a gap between the gate assembly and the material.

Review

The gate assembly provides the curvature to help preshingle material and provides the proper gap to help the feed belts pull material through the gate assembly area — one at a time. The downward pressure (or weight) of the stack in the hopper will provide the force to help push the material against the curvature of the gate assembly, and help it contact the feed belts. This preshingling will allow the gate assembly to separate (and singulate) material as it moves toward the gap.

To achieve the optimum separation, you have to use the adjustment knob to either increase (clockwise) or decrease (counter-clockwise) the gap between gate assembly and the feed belts. Depending on the characteristics of the material you are using, you may have to change the gate assembly from the factory-set *high* spring tension to a *low* spring tension. See “Changing from Factory Set High-Tension to Low-Tension” to follow (page 17).

Objective

Adjust the gate assembly for minimum gap, with minimum pressure on the material. Your objective is to adjust the clearance so that a single piece of material passes without resistance. The optimum setting should be a gap adjustment of 1.5 thickness of material.

Review

STEP 1: Gate Assembly Adjustment (continued)

Excessive lowering of the gate assembly can damage material or lead to premature wear of the O-rings or feed belts.

If bottom piece of material does not move freely, then the gate assembly is too tight. This can lead to premature wear of the O-rings or feed belts.

TIP

A wider gap between material and belt provides the highest tolerance for curled and bent edges.

Procedure

To adjust the gate assembly for proper gap,:

1. Slide one envelope under the gate assembly (figure 15) It may be necessary to pull up on the adjustment knob to allow the piece to be inserted (figure 15).
2. Test the piece for clearance. Grasp the envelope with two hands and slide it front-to-back under the gate assembly. A proper adjustment allows a slight amount of drag on the top of the envelope (figure 16).
3. Adjust the knob on the gate assembly until the piece has the desired drag. Turn the knob clockwise to increase clearance or counterclockwise to decrease clearance (figure 17).
4. Repeat the drag tests and adjust as needed to achieve acceptable clearance.

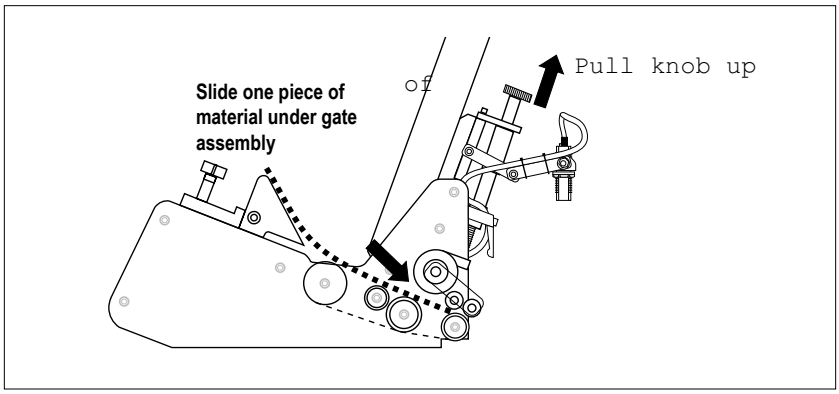


Figure 15. Lifting Gate Assembly Upward to Insert Material

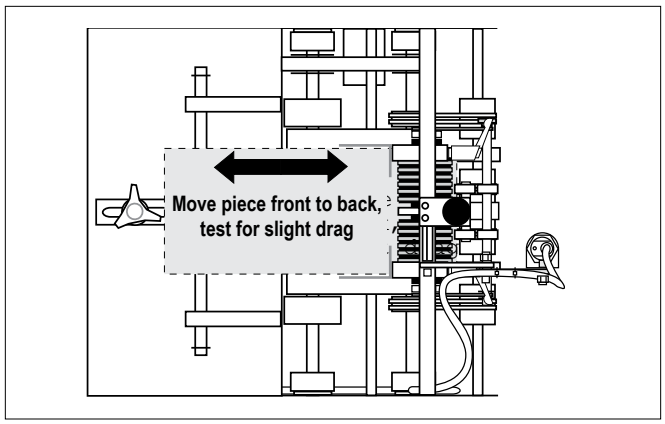


Figure 16. Using Two Pieces of Material to Set Gap

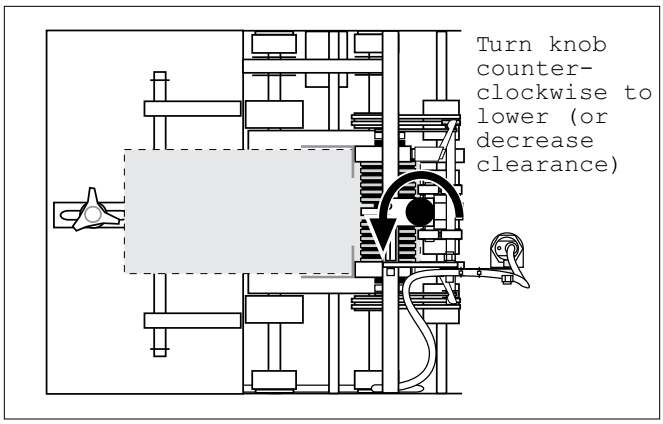


Figure 17. Adjusting Gate Assembly for Correct Gap

STEP 1: Gate Assembly Adjustment (continued)

NO TE

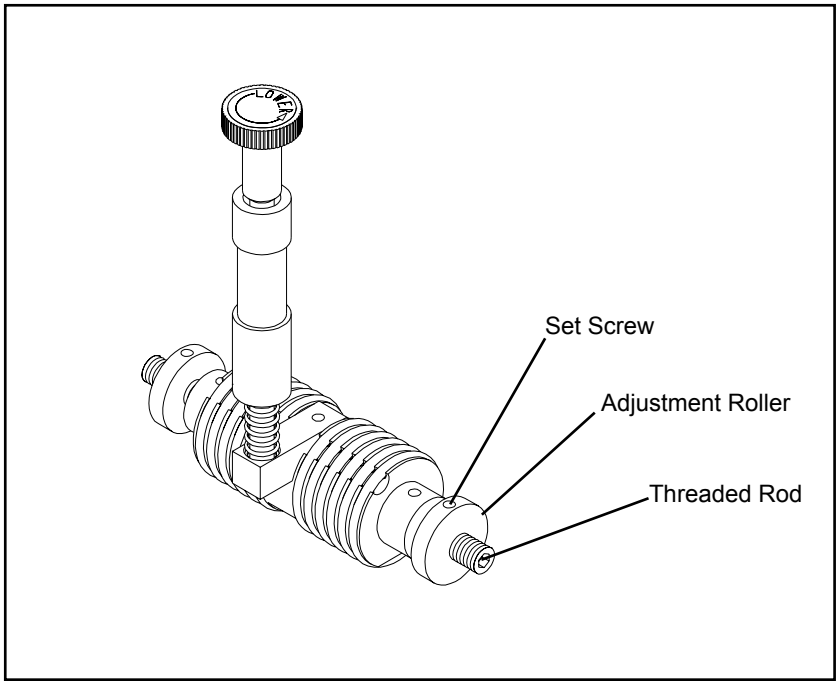
When feeding product with varying thickness throughout, it may be necessary to turn both adjustment rollers 1-2 ***full turns*** *counterclockwise to compensate for the differential thickness. This procedure allows the gate horizon to "float."*

IMPOR TANT

The adjustment knob set screws are pre-set at the factory to lock the knob to the threaded rod. DO NOT OVERTIGHTEN! Over-tightening the set screws may damage the components.

To adjust the gate for effective material skew control, follow these steps:

1. Repeat drag test detailed on page 16.
2. Test the piece for uneven side-to-side drag. Grasp with two hands and slide it front-to-back under the gate assembly. A proper adjustment allows for equal drag on the left and right sides of the piece of material.
3. To compensate for greater drag on one side of the material, turn the *opposite* adjustment roller *counterclockwise* 1/8 turn. Next, turn the other adjustment roller *clockwise* 1/8 turn.
4. Repeat drag tests and adjust as needed until equal drag is achieved. You may need to repeat this procedure after observing the feeder cycling (refer to Section 4, "How to Operate").



Horizon Adjustment Mechanism

Changing From Factory Set High-Tension to Low-Tension

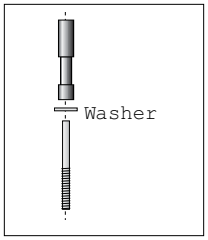
Excessive lowering of the gate assembly can damage material lead and/or lead to premature wear of the O-rings or feed belts.

IMPOR TANT

When changing from a low-tension to high-tension setting, you may have to adjust the stack height downward to prevent feeding problems.

NO TE

Certain types of single-sheet material may require even more tension than the cylinder reversible can provide. To increase tension even further, place a high-tension washer between the cylinder and spring.



The Reliant 1500 is shipped to you with a high-tension spring in the gate assembly. This works well for most materials, allows for tall stack height, and helps provide the best performance in preventing doubles. However, certain types of material may demand that you change the gate assembly from a *high-tension* setting to a *low-tension* setting (for example, irregular shaped material).

If you are feeding a material of irregular thickness, you should change to low-tension. This provides the following benefits:

1) allows the gate assembly to adjust to the irregular thicknesses.
2) prevents marking on the material by the gate assembly.
3) prevents peeling back the top sheet of a multi-page item.

Procedure

To change the spring from a *high* to a *low* spring tension, follow these steps:

1. Move the feeder back from the gate plate to allow working clearance. To do so, loosen the two T-handle screws from underside of feeder. *You can save much realignment time if you mark the current position on the back deck plate before moving.*
2. Remove the gate assembly from gate bracket assembly. To do so, pull cylinder down with one hand, lift up on knob with other, and tip at slight angle to remove.
3. Remove the adjustment knob by turning counter-clockwise (Figure 18A). Then lift the cylinder off of top of spring (Figure 18B).
4. Turn the cylinder around so that the cylinder collar faces up (Figure 18C). Then place the cylinder on top of the spring.
5. Replace the adjustment knob (make about 8 revolutions of the knob before reinstalling gate assembly on gate plate).
6. Return feeder to original position marked on back deck plate and tighten T-handle screws.

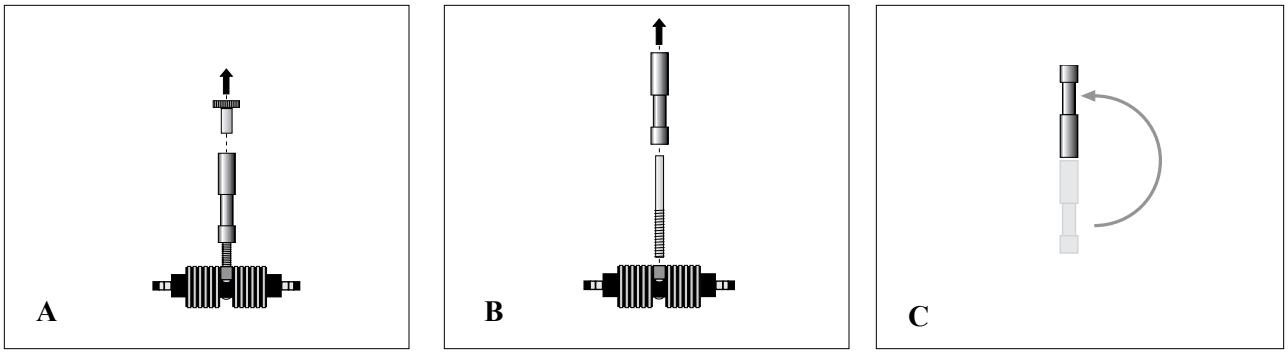


Figure 18. Adjusting Gate Assembly for Low-Tension

STEP 2: Side Guides Setting

Review

The side guides hold the stack of material being fed, and they guide the material through the feeder in a straight line of movement without horizontal drift. You can adjust the side guides to accommodate different sizes of material.

Objective

Adjust the side guides so that the material stack maintains uniformity from top to bottom, with no drifting or binding. Adjustments are made *horizontally only*.

For adjustment, make sure the space between the side guides can accommodate the size of the material being fed. Consider the following as you adjust the guides horizontally:

- An initial starting point should always be that each guide is of equal distance from the center point of the machine.
- Each edge of the material should rest equally on feed belts at either side of gate assembly. *However, there can be certain instances where guides do not need to be centered due to material characteristics.*
- Adjust both side guides to be as close as possible to either sides of the material, without causing binding, curling of edges, or resistance to movement.

Procedure

To adjust each side guide for proper horizontal spacing, follow these steps (Figure 19):

1. With a small stack of material in the hopper and centered in front of the gate, start by loosening each side guide wing adjuster (counter-clockwise). This will allow you to move each side guide as needed.
2. Grasp the lower part of each guide and slide to the recommended distance from the material: 1/16 in. (1.6 mm) from each edge, 1/8 in. (3.1 mm) overall. Tighten each wing adjuster after you establish proper position for each guide.
3. Check final clearance by moving the stack of material up and down between the side guides.

TIP

A good "rule-of-thumb" measurement to use is about 1/16 in. (1.6 mm) between material edge and side guide (1/8 in. or 3.1 mm overall).

TIP

To help ensure the stack has even edges from top to bottom, "jog" each handful of material on a flat surface before placing in hopper.

TIP

Try to establish a "sweet spot" in stack height whereby you can stack the maximum amount of material without compromising performance. A stack too high may cause double feeds; a stack too low may cause slipping.

STEP 2: Side Guides Setting (continued)

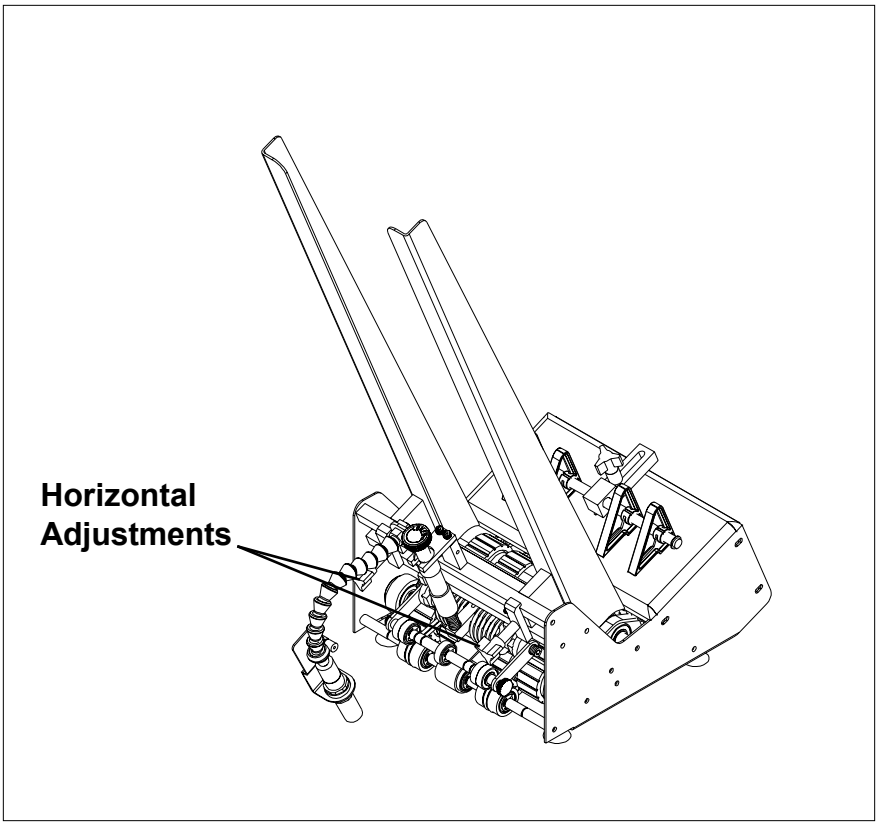


Figure 19. Adjusting Side Guides for Clearance

STEP 3: Back Wedge Setting

NOTE

Keep in mind that the back wedge works with the gate assembly to provide the proper lift, curvature of the material, and proper belt/material contact to separate and feed one sheet at a time.

TIP

There are a number of feeding problems which can be solved by simply adjusting the back wedge to different positions. Some of these problems include double feeds, skewing, twisting, poor singulation, ink or varnish buildup on the belts, and jamming at the gate assembly area.

Review

The back wedge provides proper lift to the material to help keep it off the table top and feed belts, and it creates the force necessary to push material against the gate assembly. By adjusting it back and forth from the gate assembly or pivoting side to side, you can create the lift and force necessary to preshingle material against the curvature of the gate assembly. Also, it keeps other sheets off the feed belts until proper separation of the bottom sheet at the gate assembly has occurred.

Here are some general guidelines that should help you determine how the back wedge should be positioned for your particular material:

- *Moving the individual triangle wedges to the outside* of the back wedge shaft (Figure 20A) will create a bow in the center. The bow will stiffen the material to promote better singulation of thinner material.
- *Pivoting the back wedge from its perpendicular to the gate assembly* (Figure 20B) will increase or decrease the amount of drag or contact (or traction) on the feed belts for a given side. This can also be used to control twisting or skewing of material as it leaves the gate assembly area.

STEP 3:
Back Wedge Setting (continued)

- *If the back wedge is positioned too far backward* from the gate assembly (Figure 20C), then the belts are driving the material before the bottom sheet has separated and left the gate assembly area. This pushes the gate assembly up, creating more pressure on the material, O-rings, and feed belts. The result can be premature buildup of ink or varnish on the belt surfaces. It can also cause more than one piece of material at a time to be forced under the gate assembly, thus creating a double feed.

  By moving the back wedge forward, only the bottom material can make contact with the belt surface. Slippage is reduced, minimizing buildup on the belt surface. Double feeding is also reduced.

- *If the back wedge is positioned too far forward* to the gate assembly (Figure 20D), then a pinch point can be created between the top corner of the individual wedges and the material. Moving the back wedge even closer towards the gate assembly can allow material to overhang the corner of the wedge, creating too much lift of the material off the feed belts.

NOTE

For more information about optional wedges and their use with various materials, see page 41.

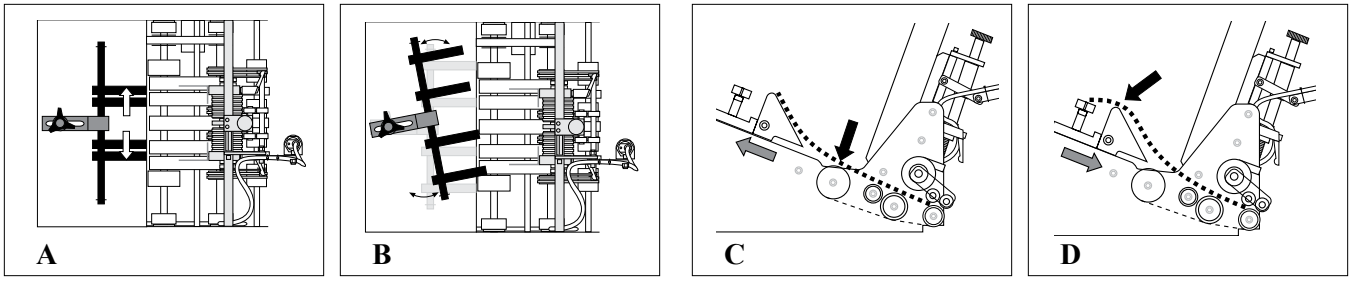


Figure 20. Tips for Proper Back Wedge Adjustment

STEP 3: Back Wedge Setting (continued)

Objective

Adjust the back wedge for proper support of the material off the table top, without creating any pinch or stress points.

Procedure

To adjust the back wedge for initial proper positioning, follow these steps:

1. Grasp a handful of material, approximately 2 to 2-1/2 in. (5 to 6 cm) thick, and preshingle the edges with your thumb (Figure 21).
2. Place the preshingled material in the hopper so that the edges rest against the curvature of the gate assembly (Figure 22).
3. Turn the back wedge knob counter-clockwise to loosen the wedge (Figure 22).

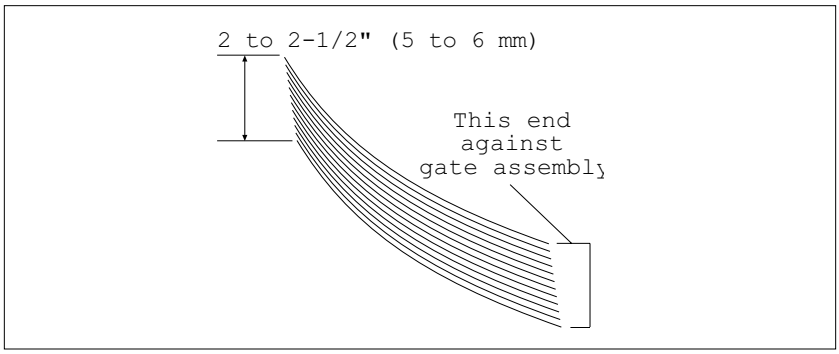


Figure 21. Preshingling a Small Stack of Material By Hand

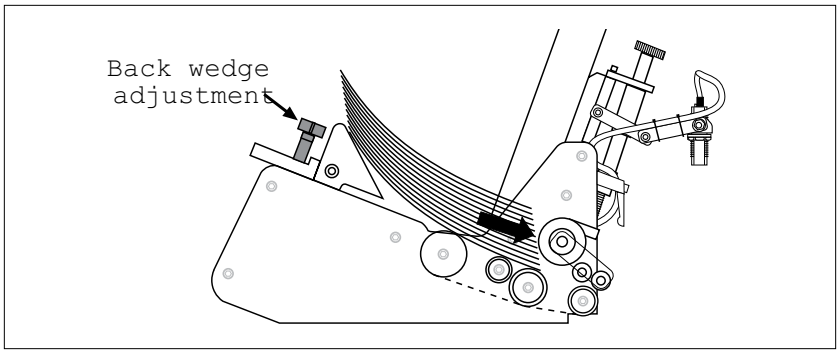


Figure 22. Positioning Material Prior to Loosening Back Wedge

NOTE

Moving the back wedge too far forward to the gate assembly can create a pinch point between the tip of the triangle wedges and the material. If moving the back wedge in is not effective, then an optional wedge may be required. See Appendix A for more information.

4. Move the back wedge forwards and backwards until the bottom sheet is not touching the table top (Figure 23). A good starting point is to measure about 5/8 in. (16 mm) from the bottom sheet to front edge of table top. Then as you test, you can "fine tune" from this point. *Refer back to the previous page for other helpful guidelines.*

STEP 3:
Back Wedge Setting (continued)

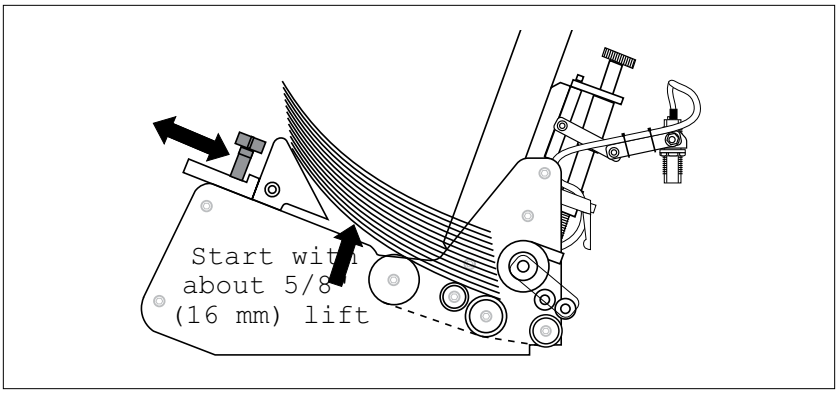


Figure 23. Adjusting Back Wedge for Proper Lift

5. Make sure the edge of the back wedge assembly is parallel with the edge of the material stack (Figure 24). Adjust as required and then tighten knob.
6. Check that individual triangle wedges are evenly spaced to provide enough support to lift the material off the table top and feed belts, without any bowing or twisting (Figure 25). *Refer back to page 20 for guidelines on adjusting individual wedges for thinner material.*

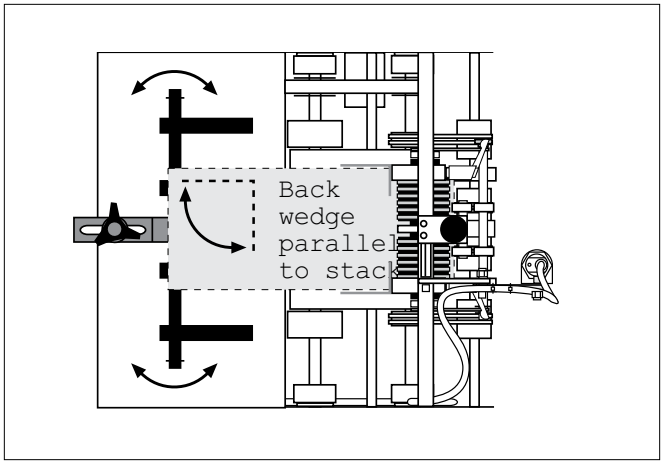


Figure 24. Adjusting Back Wedge for Parallel

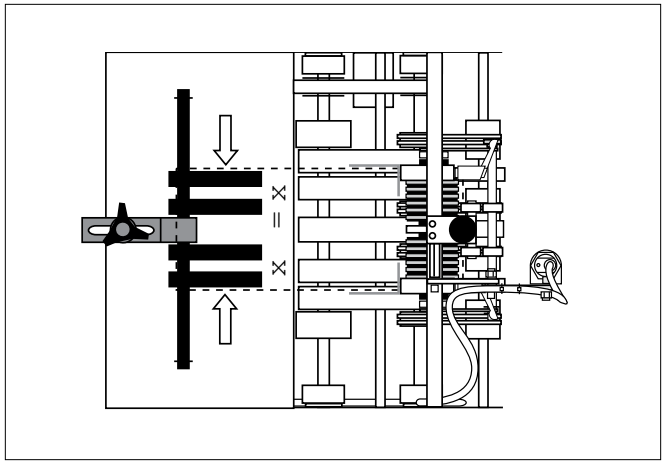


Figure 25. Evenly Adjusting Individual Wedges

STEP 4: Final Photo Sensor Adjustment

NO TE

Standard photo sensor shipped from the factory is a diffuse reflective detector. No adjustment for gain is required or necessary.

Review

The photo sensor is mounted on the flex arm extension to detect the leading edge of a piece of material to be staged. When the gripper jaw pulls the material from the feeder, the photo sensor no longer "sees" the material and sends a signal to start the feeder. The feeder then moves another piece of material into place, and then stops.

Objective

For the photo sensor to be effective, it must be adjusted so that each time the feeder starts, the leading edge of the material being fed stops in line with the front hopper plate. The feeder should stop so that the trailing edge of the material has minimal overlap with the next trailing edge exiting the gate assembly area.

Procedure

Only adjust the photo sensor when the feeder power is Off. Do not attempt to adjust the photo sensor while the feeder power is On or while the feeder is running. Doing so will expose you to pinch points which can cause injury to hands or fingers.

Potential damage to feeder parts is avoided if adjustments are made when the feeder power is Off.

To adjust the photo sensor for proper positioning, follow these steps:

1. Prepare your adjustment by loading the hopper with approximately 2 to 2-1/2 in. (5 to 6 cm) of material. Make sure you preshingle the stack so that material rests against the curvature of the gate assembly.
2. Use your finger or thumb on the drive belt or one of the feed rollers to manually move the bottom sheet of material through the gate assembly area and under hold-down springs. Continue until material leading edge is in-line with front hopper plate, then stop (Figure 26).
3. Turn the feeder power On by pushing the horizontal line (—) at the **Power** On/Off rocker switch.

IMPOR TANT

Observe the overlap between the trailing edge of the bottom sheet and leading edge of the next sheet. It should be approximately 1/4 in. (6.4 mm) to 1/2 in. (12.7 mm). If not refer back to Step 7, "Align Feeder with Insert Station", for more information.

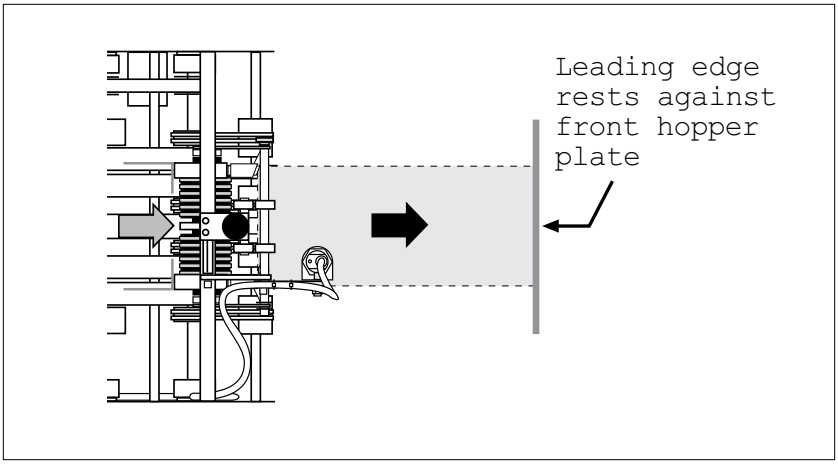


Figure 26. Moving the First Sheet Into Position

STEP 4: Final Photo Sensor Adjustment (continued)

IMPOR TANT

Sensing range from the lens to the paper should not exceed 2 in. (5.08 cm).

NO TE

If the photo sensor is to set too far from the surface of the material, the read indicator on the back of the photo sensor will simply turn On and the feeder will start. This indicates the sensor is out of range and therefore will be not "see" the target.

IMPOR TANT

On the feeder, such objects as shafts, guides, belts, and supports may cause false "reads" if the photo sensor is not adjusted properly for the material (or target). The resulting problem can be intermittent or continuous feeding. See Section 5, "Troubleshooting", for a solution.

IMPOR TANT

Black opaque objects may require a special photo sensor. If the photo sensor fails to stop the feeder when the material is within the target range, then consult a qualified technician.

4. Simulate gripper jaw action by manually grasping the leading edge of the bottom sheet and pulling completely away from the gate assembly area. Once a piece is removed from the gripper jaw, the sensor sends a signal to the feeder to "stage" the next piece. The leading of the "staged" piece should be in-line with the front hopper plate.
5. After running several sheets through, turn the feeder power Off by pushing the circle (**O**) at the **Power** On/Off rocker switch. Adjust the photo sensor as needed to achieve the correct stopping point. *An optimum setting is to aim the barrel slightly to the rear of the leading edge (Figure 27)*. This compensates for the slight over-travel of the motor after it turns Off, thus allowing the leading edge to stop in-line with the front hopper plate.
6. Retest the feeder as needed until optimum results are achieved.

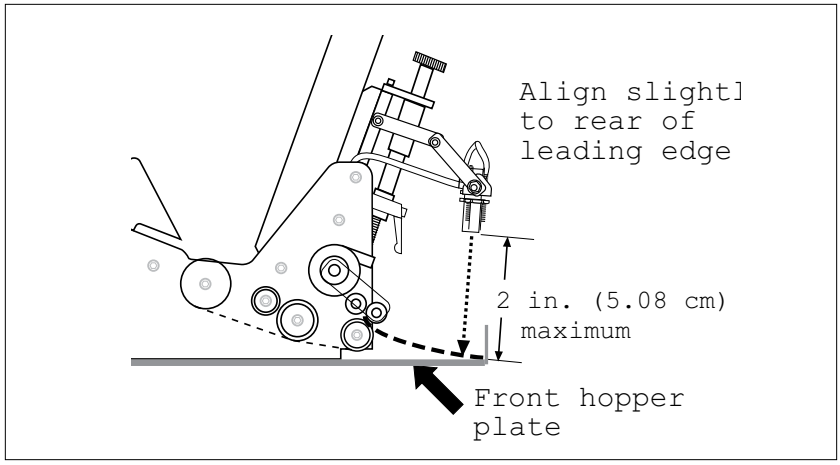


Figure 27. Optimum Alignment of Photo Sensor

STEP 5: Inserter Adjustments and Final Check

Now that you have made all the necessary adjustments for operating the feeder, it is recommended that you next make any adjustments on the inserter so that the inserter and feeder work together effectively. This includes adjusting the gripper jaw and double-detect. *For details, please refer to your inserter owner's manual.*

Prepare your test by loading the hopper with approximately 2 to 2-1/2 in. (5 to 6 cm) of material. Make sure you preshingle the stack so that material rests against the curvature of the gate assembly.

1. Power-up the feeder by pushing the horizontal line (—) at the **Power** On/Off switch.
2. Observe how individual material enters and exits the gate assembly area. Remember, a properly set gap will allow each new sheet to enter at about the center line of the cylinder while the bottom sheet is exiting the gate assembly area (Figure 28). Ideal overlap is 1/4 to 1/2 in. (6.4 to 12.7 mm).
3. If feeding doubles, then move the wedge in towards the gate assembly. Test again.
4. If sheets are overlapping excessively or, if the machine is feeding doubles, then reduce the gap slightly by moving the knob about 1/8 turn counter-clockwise. Test again.
5. As individual sheets of material move through the hold-down springs, check for any skewing or jamming. Also check for damage to the material.
6. If this or other feeding problems still persist (slipping, skewing, jamming), then review all the adjustment procedures in Section 3, "Preparing for Operation".

NOTE

If the gate assembly is too tight, the feeder will have difficulty pulling the material through the gate assembly area. This will cause "missed" feeds.

NOTE

Moving the back wedge too far forward to the gate assembly can create a pinch point between the tip of the triangle wedges and the material. If moving the back wedge in is not effective, then an optional wedge may be required. See Appendix A for more information.

TIP

For certain types of materials, you may have to position the material "off-center" to prevent any skewing affect.

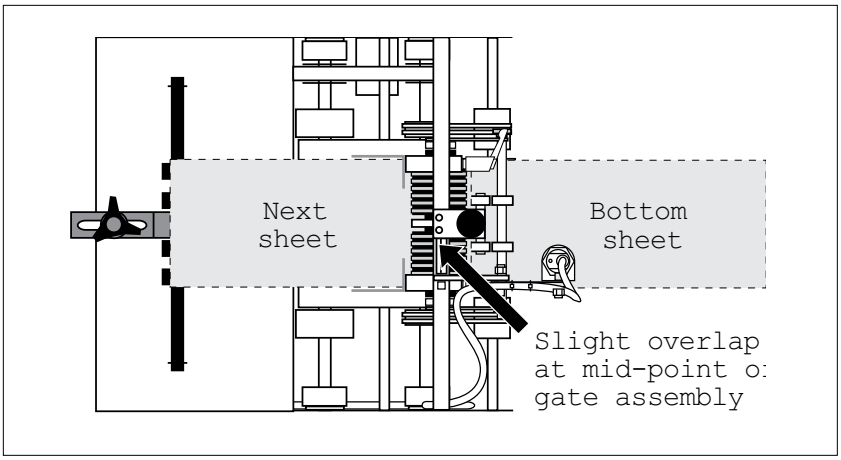


Figure 28. Optimum Overlap and Separation of Material

4 How to Operate

Sequence of Operation

Successful power-up and operation is assured if you apply the following sequence of steps.

STEP 1: Loading Material in the Hopper

NO TE

Preshingling prevents multiple sheets from jamming under the gate assembly at start-up.

- Start by preshingling by hand a small stack of material (Figure 29) so that it conforms to the curvature of the gate assembly. Push in gently to make sure lead edges touch the gate bracket assembly and front edges of the hopper guides (Figure 30).
- At the back wedge, notice how it helps lift the trailing edges of the material off the table top and feed belts. Also notice how the lifting helps to push the preshingled edges against the curvature of the gate assembly (Figure 31).

NO TE

If you wish, loading of material can be accomplished from the front side of the inserter.

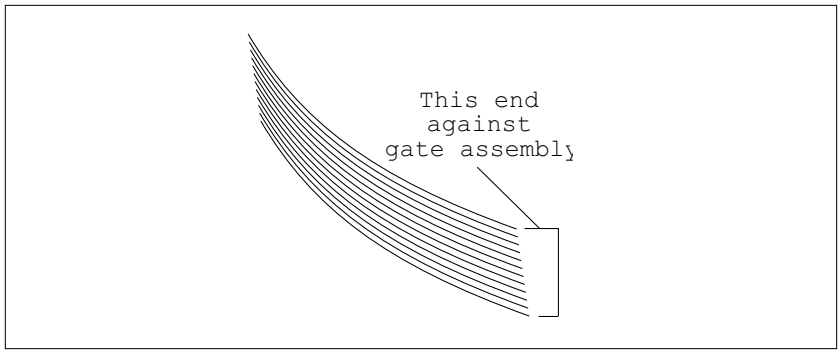


Figure 29. Preshingling of First Stack

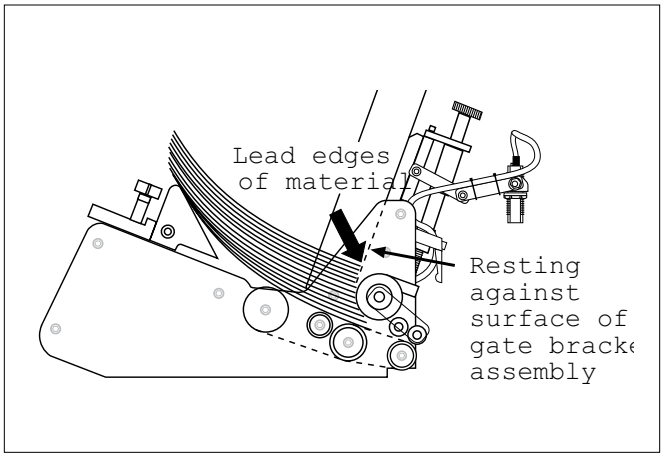


Figure 30. Leading Edges Against Gate Bracket Assembly and Side Guides

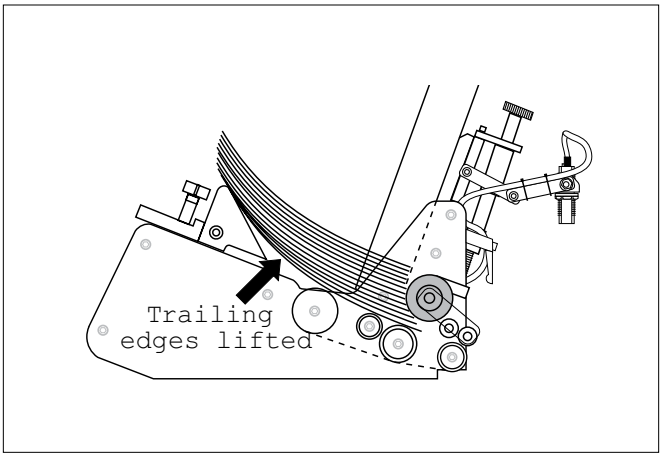


Figure 31. Trailing Edges Lifted by Back Wedge

STEP 2: Determining Stack Height

- Gradually add more material to the hopper after the initial stack is formed around the gate assembly. As stack height will have a preferred minimum and a maximum, you will have to experiment to determine the effective range of height (Figure 32).
- Make sure the material is loaded in the hopper as straight as possible. Before adding to hopper, "jog" each hand-full of material on a flat surface to make sure lead edges are as even as possible. As you add each handful, gently push in each stack so that lead edges rest firmly against front of side guides.

TIP

Stack height affects the downward pressure on the feed belts. Greater downward pressure can increase the chances for double feeds or motor stallouts.

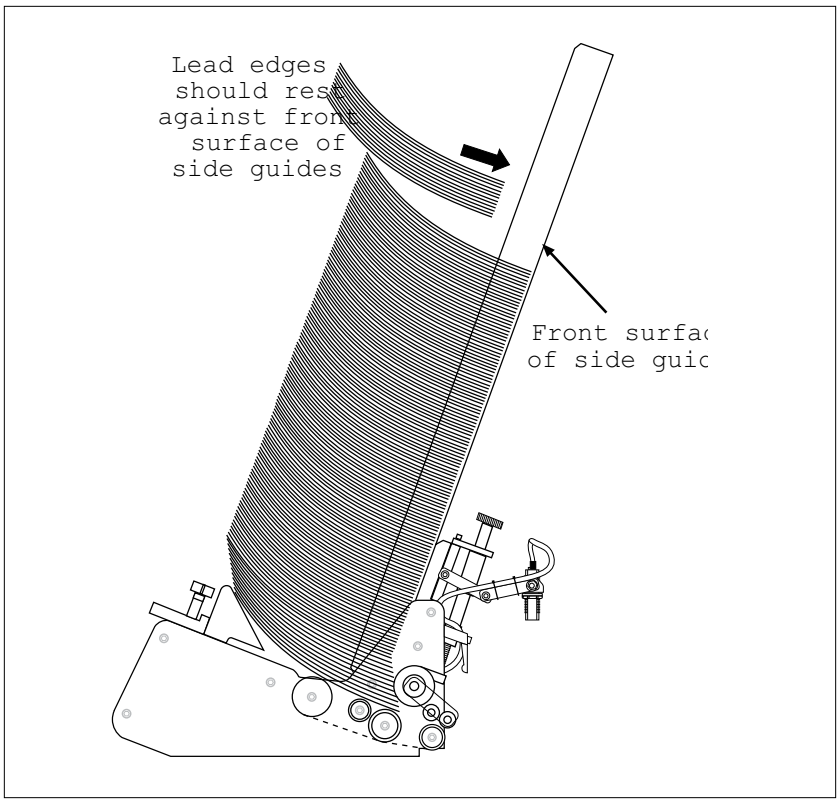
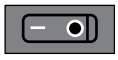


Figure 32. Adding More Material to Hopper

STEP 3: Powering On Feeder



- Turn the feeder power On by pushing the horizontal line (—) at the **Power** On/Off rocker switch.
- With power On, the feeder motor should immediately move the bottom sheet of material from the stack and through the gate assembly area to "stage" the first piece. As the photo sensor "sees" the leading edge, the feeder motor should turn Off.
- Check the leading edge of bottom sheet. It should be in-line with the front hopper plate and ready for cycling.

STEP 4: Cycling the Inserter

- Jog the inserter to see if hold-down spring pressure is equal. Any unequal spring pressure will skew material in the jaw.
- With the feeder already fully loaded and powered On, run the inserter through several cycles (Figure 33).
- Check material alignment to make sure it is consistent with the grip position.

TIP

It might be helpful to know that a properly set gap will allow the leading edge of sheet to enter at about the center line of the cylinder (refer back to Figure 28), as the previous or bottom sheet is exiting the gate assembly area.

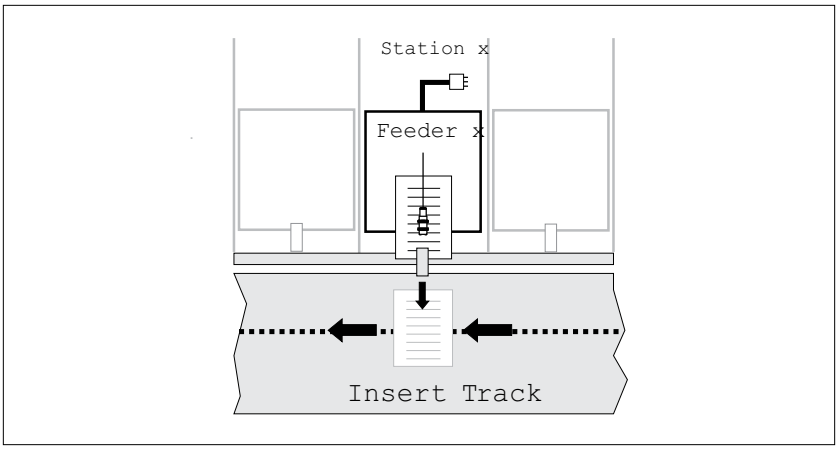


Figure 33. Cycling Inserter

STEP 5: Final Check

CHECK

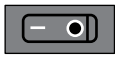
If a jam occurs during operation, follow these steps:

1. *Turn the feeder power Off by pushing the circle (**O**) at the **Power** On/Off rocker switch.*
2. *Remove jammed material from feeder. While doing so, try to determine the cause of the jam (see Section 5, "Troubleshooting").*
3. *Verify whether any adjustments are loose. If so, refer back to Section 3, "Preparing for Operation", for proper adjustment procedures.*
4. *Reposition photo sensor (as required).*

Make sure:

- Leading edge of bottom sheet stops at proper location.
- Proper separation is occurring at gate assembly area.
- Effective preshingling is occurring at curvature of gate assembly.
- Material is not being damaged during cycling.
- Feeder is secured to inserter and will not move during operation.

Shutdown



Should you not be using the feeder for long periods of time, follow these steps to ensure a safe and secure storage:

1. Turn the feeder power Off by pushing the circle (**O**) at the rocker **Power** On/Off rocker switch.
2. Disconnect the feeder power cord from the AC power source.
3. Cover the feeder with a cloth or plastic tarp to prevent dust and debris from accumulating.

5 Troubleshooting

Table 2 is intended to provide you with quick solutions to the more common day-to-day problems you may encounter.

Table 2. Quick-Look Troubleshooting

Problem	Cause	Solution
No AC power to feeder	1. On/Off switch in "Off" (or "**O**" position).	Move switch to "On" (or "**--**" position).
	2. Power cord loose or not plugged into outlet (or AC power source).	Check and secure power cord at AC outlet.
	3. Female end of power cord loose or not plugged into AC power inlet at rear of feeder.	Check and secure cord at AC power inlet at rear of feeder.
Feeding doubles	1. Gate assembly improperly adjusted (possibly more than one sheet thickness).	Review gate assembly adjustment in Section 3 "Preparing for Operation".
	2. Back wedge improperly adjusted.	Review back wedge adjustment in Section 3 "Preparing for Operation".
	3. Worn O-rings (or if applicable, angled wedge).	Rotate O-rings. If applicable, replace angled wedge (see Section 6 "Inspection and Care). If wear is excessive, consult with a qualified technician.
	4. Material interlocking.	Check material and source.
	5. Static buildup.	Check material and source.
Continuous feeding	1. Photo sensor not adjusted properly; may not be close enough to material being fed.	Review photo sensor adjustment in Section 3 "Preparing for Operation".
Feed belts are operating but material not feeding	1. Material stack weight is too low when stack height is down, resulting in a reduction of down pressure.	Review loading the material in Section 4 "How to Operate".
	2. Product binds at side guides.	Adjust side guides further apart to allow freedom of movement.
	3. Slippery feed belts due to buildup of glaze on belt surface.	Clean or replace belts.
	4. Sheet adhesion or interlocking between bottom and next sheet.	Review loading the material in Section 4 "How to Operate", or review back wedge adjustment in Section 3 "Preparing for Operation".
	5. Gate assembly may be down too tight.	Review gate assembly adjustment in Section 3 "Preparing for Operation".

Table 2. Quick-Look Troubleshooting (continued)

Problem	Cause	Solution
Feed belts are operating but material not feeding (cont)	6. Too much weight in hopper.	Remove material from stack. Test again.
	1. Exessive weight in hopper.	Reduce weight. Test again.
Feed belts not tracking on rollers	2. Excessive down pressure on gate assembly.	Rotate clockwise 1/8 turn to increase gap and manually test. Review gate assembly adjustment in Section 3 "Preparing for Operation".
	3. Off-centered product from center point of machine.	Review side guide setting in Section 3 "Preparing for Operation".
	4. Stack is bearing down on edge of belt.	Move stack away from belt, even if this causes stack to be aligned off-center from machine center line.
	5. Belt wear.	Review gate assembly adjustment in Section 3 "Preparing for Operation". See also Section 6 "Inspection and Care". If wear is excessive, consult with a qualified technician.
	6. Rollers out of adjustment.	Consult with a qualified technician.
Jamming occurs during operation	1. Improper adjustment in any of the following areas: • *Gate assembly* • *Back wedge* • *Hold-down assembly*	1. Turn the power switch to "Off". 2. Remove jammed material. Attempt to determine the cause of the jam. 3. Verify each adjustment by reviewing Section 3 "Preparing for Operation".
Material too far from gripper jaw	1. Photo sensor "staging" leading edge of material too short of hopper plate.	Review photo sensor adjustment in Section 3 "Preparing for Operation".
	2. Gripper jaw adjusted too far from edge of hopper plate.	Adjust gripper jaw per inserter owner's manual instructions.
Material too deep in gripper jaw	1. Photo sensor "staging" leading edge of material too far past hopper plate.	Review photo sensor adjustment in Section 3 "Preparing for Operation".
	2. Gripper jaw adjusted too close to edge of hopper plate.	Adjust gripper jaw per inserter owner's manual instructions.
Material skewing	1. Back wedge not adjusted properly.	Review back wedge adjustment in Section 3 "Preparing for Opertion".
	2. Hold down spring too tight or too loose.	Review hold-down spring installation in Section 2 "Installing the Machine".
Motor not "staging" new material	1. Sensor not seeing space between feeds.	Reposition sensor. Review photo sensor adjustment in Section 3: "Preparing for Operation".

6 Inspection and Care

When performing initial installation, always make sure you turn Off the main power switch and disconnect all equipment from the electrical power source. Failure to do so can expose you to a potential start-up, and therefore moving parts which can cause serious injury.

Do not attempt feeder installation while the inserter is running. Failure to do so can expose you to moving parts which can cause serious injury.

Avoid turning on the feeder or making initial adjustments until all parts are secured. Failure to do so can cause damage to equipment.

Please read this Section to learn how to:

- Visually inspect your machine to detect part problems which may require adjustment or replacement.
- Periodically care for your machine to prevent any operational problems.

Visual Inspection

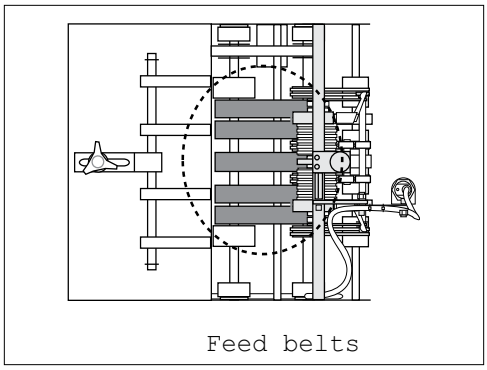


Figure 34. Inspecting Feed Belts

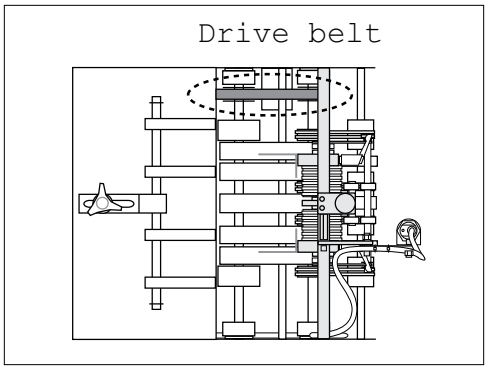


Figure 35. Inspecting Drive Belt

Checking for Feed Belt Wear

Referring to Figure 34, check for visual signs of:

- Walking. Replace as required (see the *Technical Information Guide* for more information).
- Cracking. Replace as required (see the *Technical Information Guide* for more information).
- Thinning. Replace as required (see the *Technical Information Guide* for more information).

Checking for Drive Belt Wear

Referring to Figure 35, check for visual signs of:

- Fraying. Replace as required (see the *Technical Information Guide* for more information).
- Missing teeth. Replace as required (see the *Technical Information Guide* for more information).
- Cracking. Replace as required (see the *Technical Information Guide* for more information).
- Paper residue buildup. Clean from belts, especially in grooves. For more information, see “Preventive Care”, page 37.

Visual Inspection (continued)

Ensuring Proper Feed Belt Tracking

Referring to Figure 36, check for visual signs of:

- Stretching (see the *Technical Information Guide* for more information).
- Improper roller adjustment (see the *Technical Information Guide* for more information).

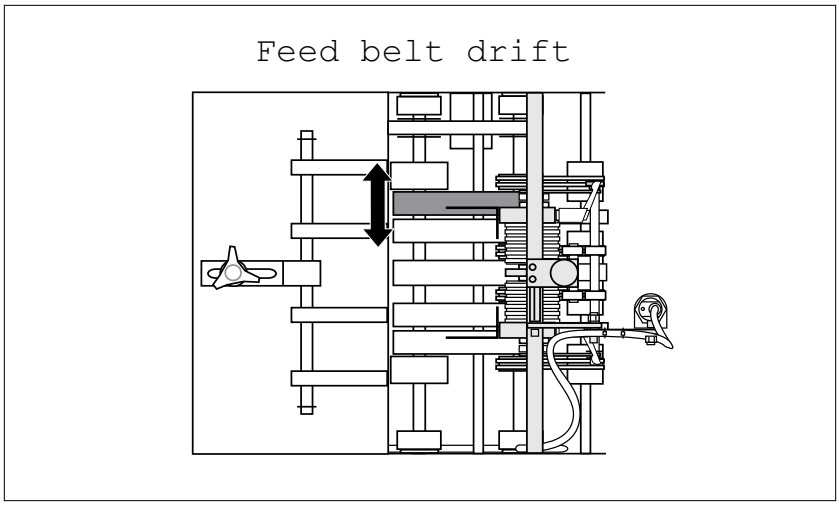


Figure 36. Ensuring Proper Feed Belt Tracking

Ensuring Proper Drive Belt Tracking

Referring to Figure 37, check for visual signs of:

- Misaligned timing pulleys. See the *Technical Information Guide* for more information.

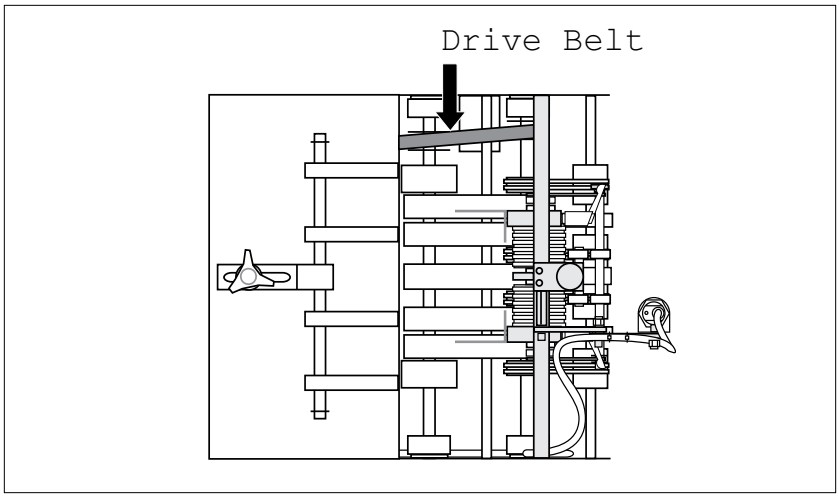


Figure 37. Ensuring Proper Drive Belt Tracking

Visual Inspection (continued)

Checking for Gate Assembly Wear

Check for visual signs of wear:

- Standard O-Ring: Flat areas along the O-rings (Figure 38).
- Bar Gate: Angled wedge begins to flatten excessively (Figure 39).

See “Preventive Care” to follow.

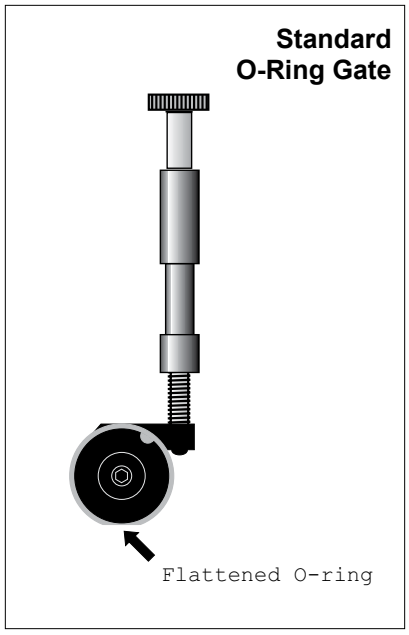


Figure 38. Checking Standard O-Ring Gate for Wear

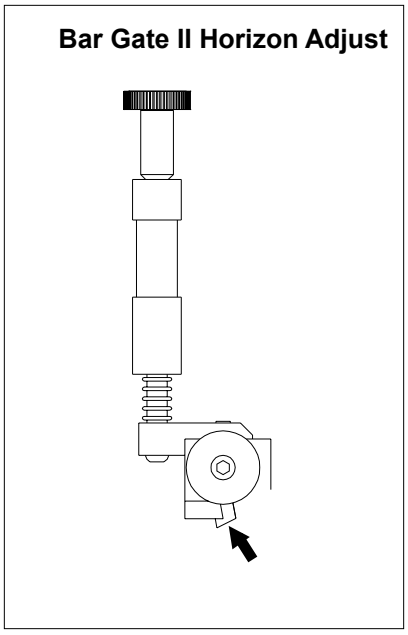


Figure 39. Checking Bar Gate II for Wear

Visual Inspection (continued)

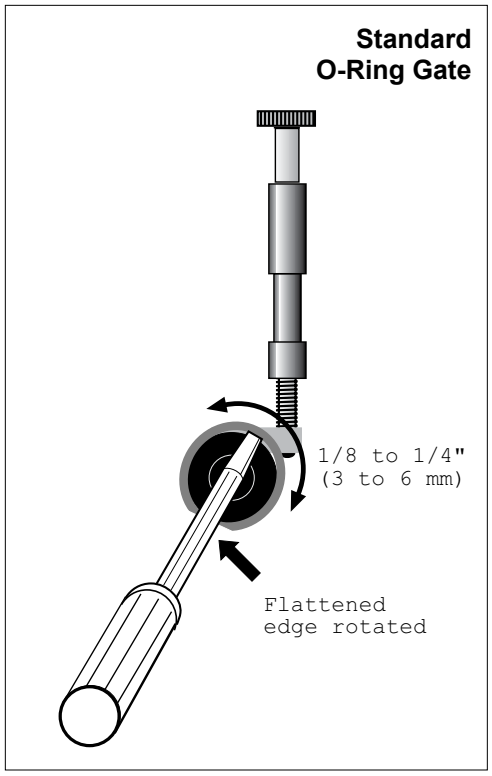


Figure 40. Adjusting Worn O-Rings

Standard O-Ring Gate: Adjusting Worn O-Rings

To adjust worn O-rings on standard O-ring gate:

1. Turn Off feeder and remove power cord from outlet.
2. Move the feeder back from the gate plate to allow working clearance. *You can save much re-alignment time if you mark the current position on the back deck plate before moving.*
3. Remove gate assembly from gate bracket assembly.
4. Insert a screwdriver in slot on top of gate assembly and rotate screwdriver clockwise or counter-clockwise 360° so as to move worn area of O-ring about 1/8 to 1/4 in. (3 to 6 mm). See Figure 40.
5. Remove screwdriver and repeat for each ring as necessary.
6. Reinstall gate assembly and restore power.
7. Return feeder to original position marked on back deck plate. Restore power.

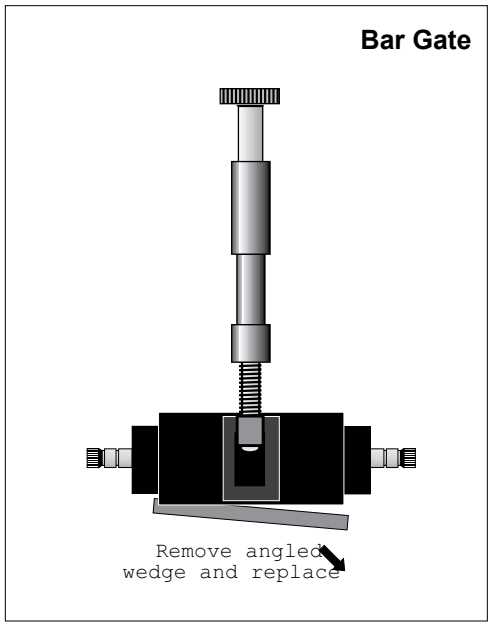


Figure 41. Replacing Worn Angled Wedge

Replacing Worn Angled Wedge

To replace a worn angled wedge:

1. Turn Off feeder and remove power cord from outlet.
2. Move the feeder back from the gate plate to allow working clearance. *You can save much re-alignment time if you mark the current position on the back deck plate before moving.*
3. Remove gate assembly from gate bracket assembly.
4. Use a pliers to grip and remove angled wedge. See Figure 41.
5. Install new wedge by inserting one end and then pushing in until centered. *Do not grip new wedge with pliers as this may cause damage to the edge.*
6. Reinstall gate assembly.
7. Return feeder to original position marked on back deck plate. Restore power.

Preventive Care

Use only isopropyl alcohol (98% concentration). Other solvents can cause belts to wear prematurely, and even cause total breakdown of material.

Cleaning schedule for various materials:
• *Typical: every month*
• *Dusty: after every shift*
• *High ink or varnish: 1 time per shift*

Cleaning Feed Belts

To clean feed belts:

1. Turn Off feeder and remove power cord from outlet.
2. Apply a small amount of isopropyl alcohol to a soft cloth.
3. Use your thumb or finger on the drive belt or one of the feed rollers to manually move feed belts. Start with one belt at a time (there are five total). See Figure 42.
4. Carefully press the moistened area of the cloth to the belt. As you move the belt, use moderate pressure to wipe across the belt, making sure to wipe in direction of grooves also. After several rotations of the belt, repeat for each belt.
5. Taking a dry portion of the cloth, go back to the first feed belt cleaned and use moderate pressure against the belt for several revolutions to ensure the belt is dried. Repeat for each belt.
6. Restore power.

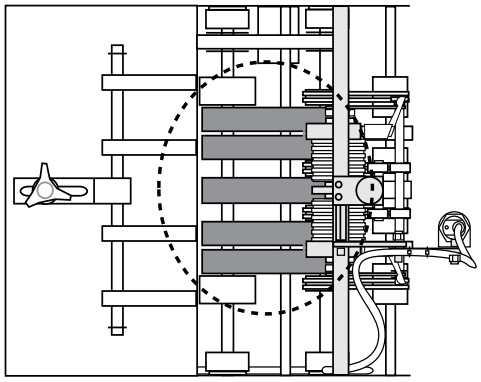


Figure 42. Cleaning Feed Belts

Preventive Care (continued)

Cleaning Gate Assembly

Use only isopropyl alcohol (98% concentration). Do not use any other types of solvents. They can cause premature wear of the belts, or even total breakdown of the material.

To clean gate assemblies:

1. Turn Off feeder and remove power cord from outlet.
2. Move the feeder back from the gate plate to allow working clearance. *You can save much re-alignment time if you mark the current position on the back deck plate before moving.*
3. Remove gate assembly from gate bracket assembly.
4. Apply a small amount of isopropyl alcohol to a soft cloth.
5. Wipe across O-rings (Figure 43) or angled wedge if applicable (Figure 44), first in one direction then the other.
6. Taking a dry portion of the cloth, go back and wipe all surfaces to ensure they are dried.
7. Return feeder to original position marked on back deck plate. Restore power.

Cleaning schedule for various materials:

- *Typical: every month*
- *Dusty: after every shift*
- *High ink or varnish: 1 time per shift*

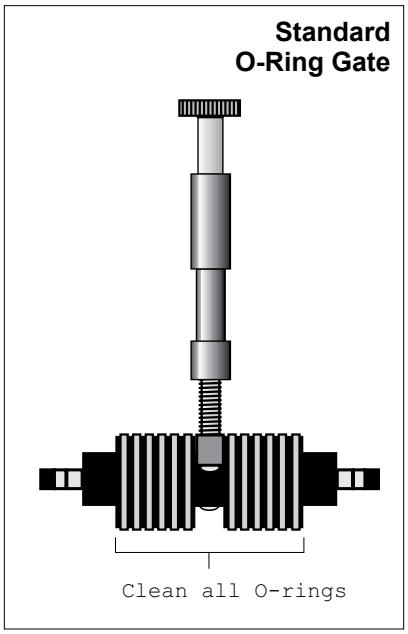


Figure 43. Cleaning Standard O-Ring Gate

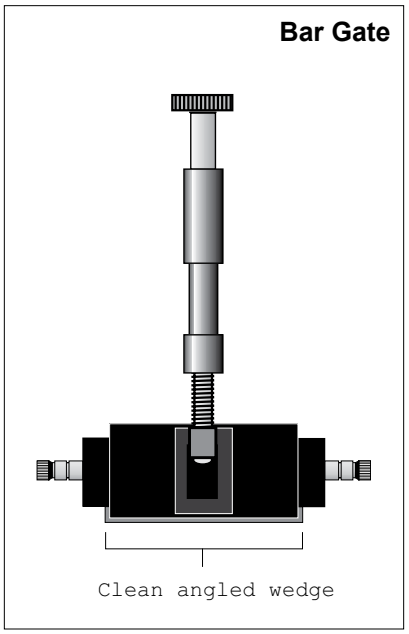


Figure 44. Cleaning Bar Gate

Preventive Care (continued)

Do not use any solvents or cleaning agents when cleaning the photo sensor lens. This can result in surface damage and eventual faulty performance.

Cleaning Photo Sensor

To clean the photo sensor lens:

1. Turn Off feeder and remove power cord from outlet.
2. Using a soft, dry cloth, wipe across the face of the photo sensor lens.
3. Recheck the adjustments to make sure it is still in alignment to the target.
4. Restore power.

7 Additional Wedges

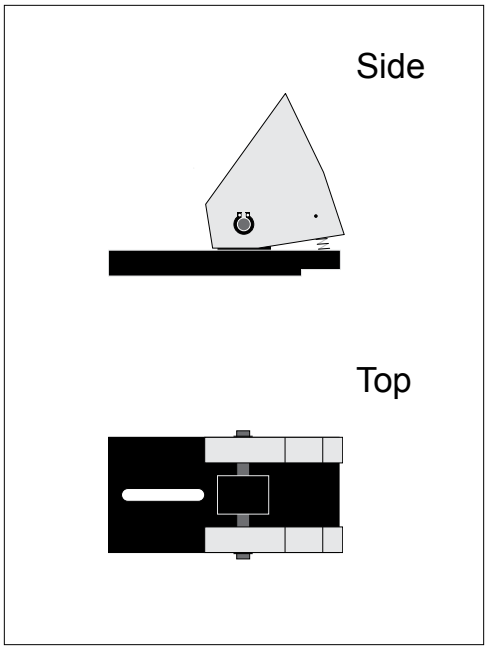
This section provides information about setting up various wedges which are optional with the Reliant 1500 Universal Friction Feeders.

Now that you are familiar with the basic principles of using a wedge, it is simply a matter of combining these principles with the information provided in this section. This will allow you to get optimum performance when setting up the wedge included with your particular feeder.

The following wedges are covered:

- Load compensating
- Articulating roller
- Extended narrow

Load Compensating



When to use: Effective for moderately thick material. Due to characteristics of material, no mid-range support is required.

Setup guidelines: Adjust so that top angle of wedge preshingles the stack against curvature of gate assembly. Edges of material should not extend beyond the tip of wedge. Ideal separation should be where as the stack moves down the wedge, 3 or 4 sheets of material separate out and come to rest on lower angle of wedge. Then, 3 or 4 sheets of material fall to table top, which are then replaced with another 3 or 4 sheets from stack above (Figure A1).

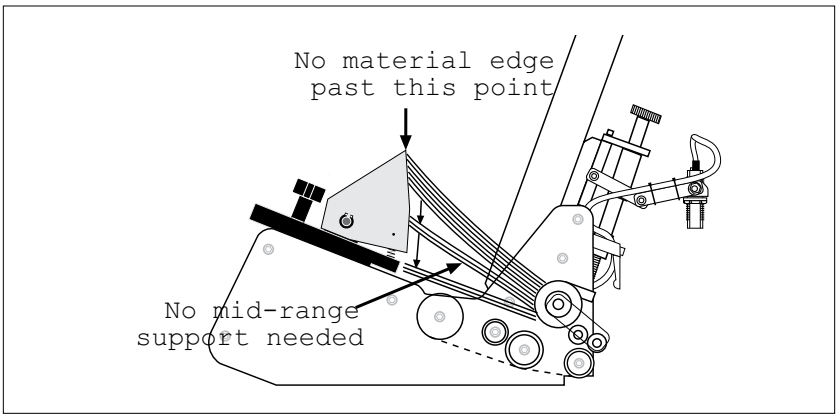
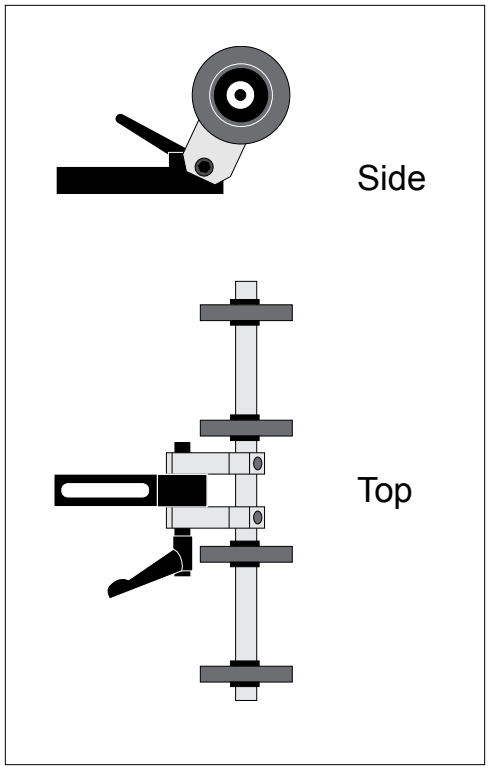


Figure A1. Load Compensating Wedge Setup

Articulating Roller



When to use: Effective for very thick and/or ridged material. Due to characteristics of material, no mid-range support is required.

Setup guidelines: Adjust so that roller edges preshingle the stack against the curvature of gate assembly. Again, make sure edges of material do not extend back more than the mid-point of roller (Figure A4). *NOTE: With some material that tends to bind together (for example, perforated material), it may be beneficial to separate 4 to 5 sheets of material at the bottom to provide some air space.*

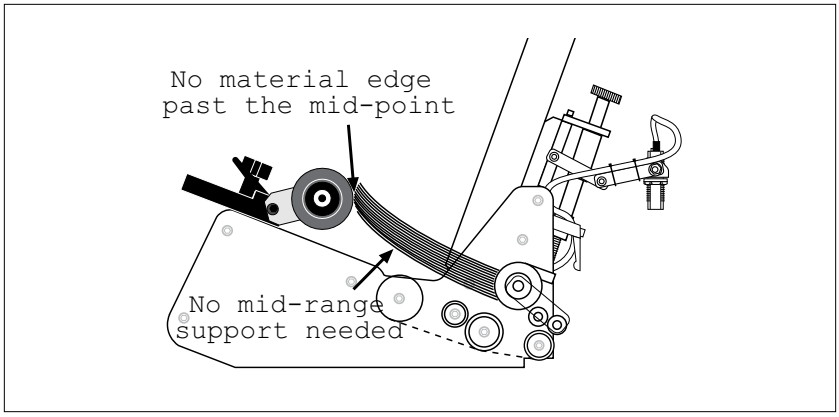
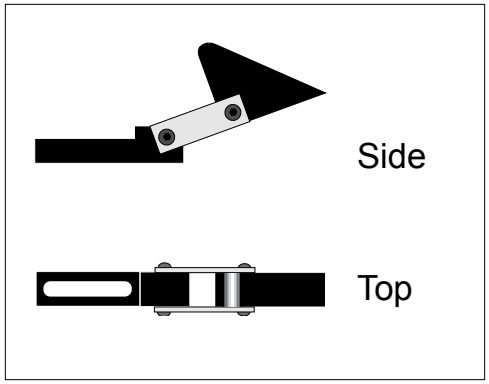


Figure A2. Articulating Roller Wedge Setup

Extended Narrow



Setup guidelines: Effective for moving in close to the gate assembly for supporting very small material. Due to characteristics of material, no mid-range support is required.

Ideal setup: Adjust so that wedge preshingles the bottom of stack against the curvature of gate assembly. Make sure edges of material do not extend back more than the mid-point of wedge (Figure A3).

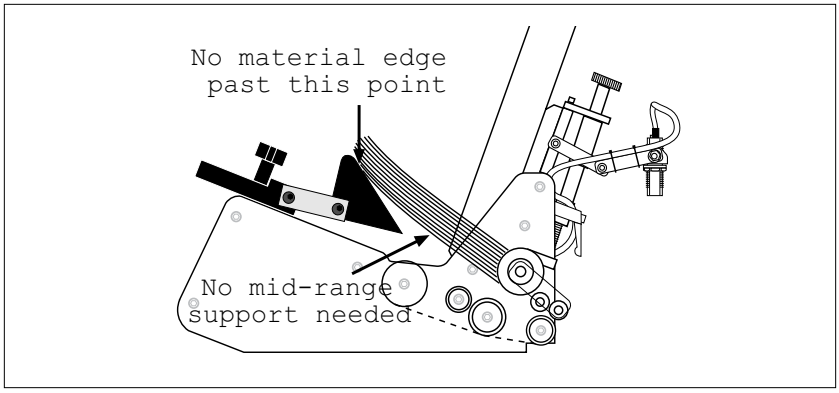
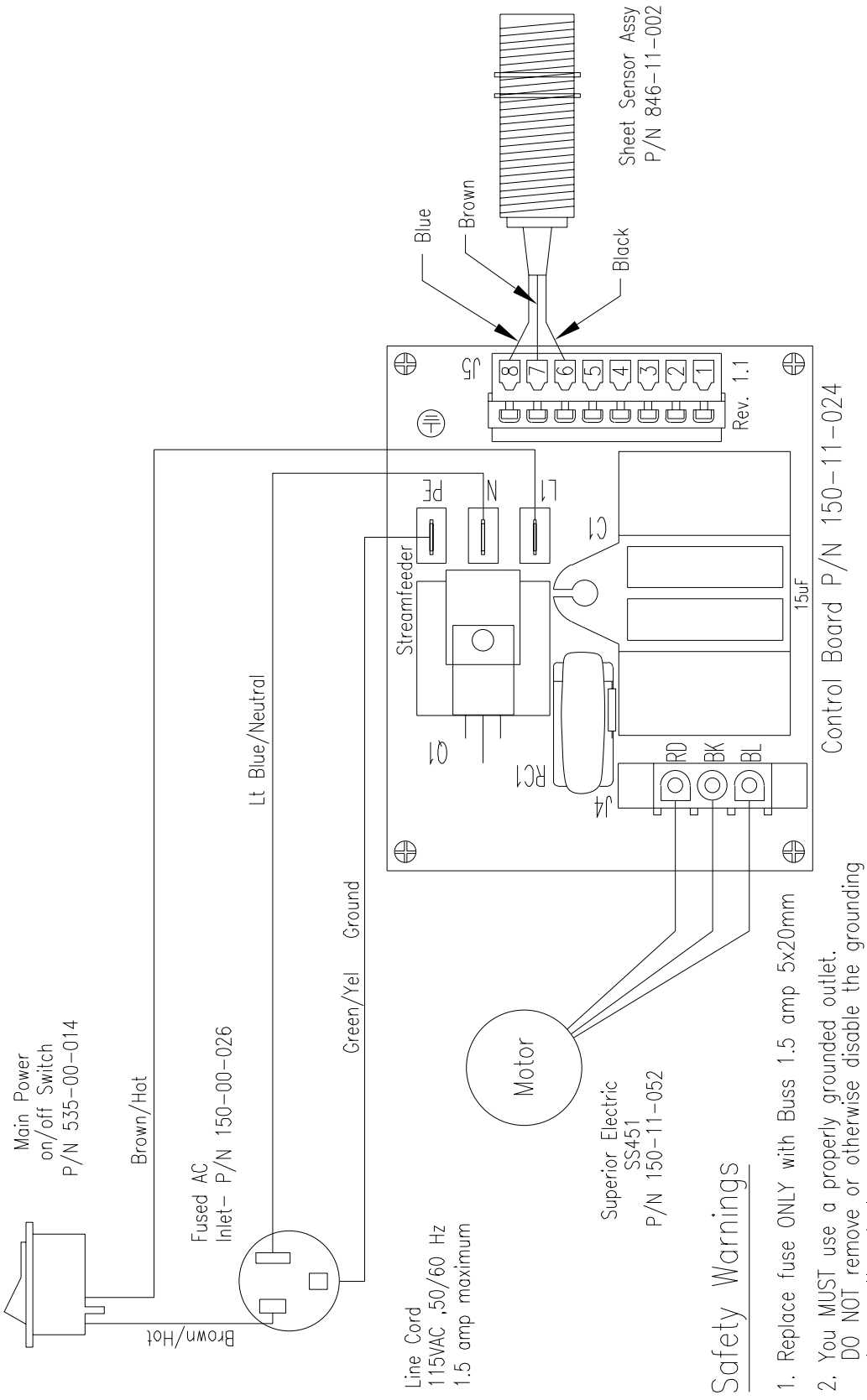
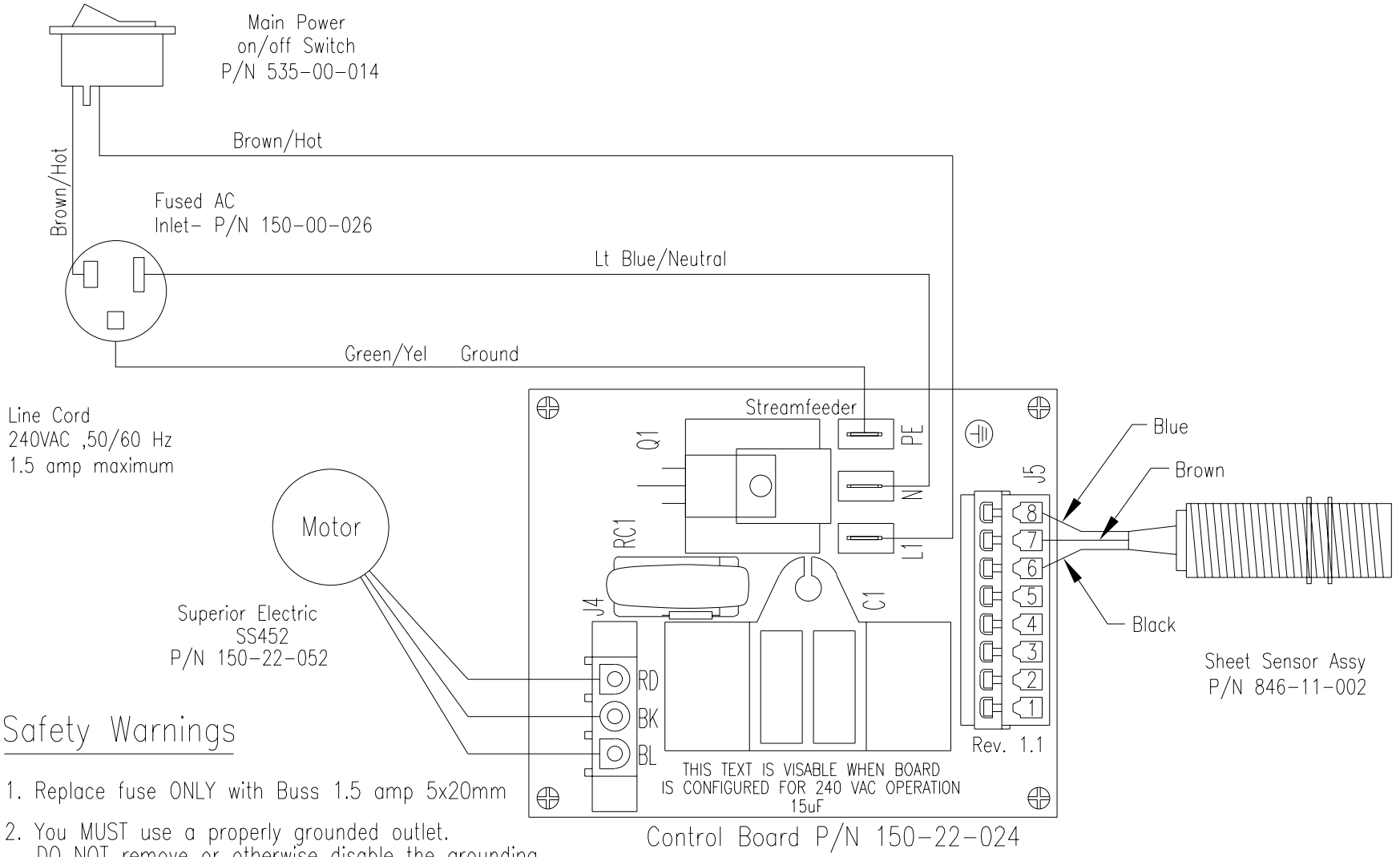


Figure A3. Extended Narrow Wedge Setup

8 Electrical Schematics



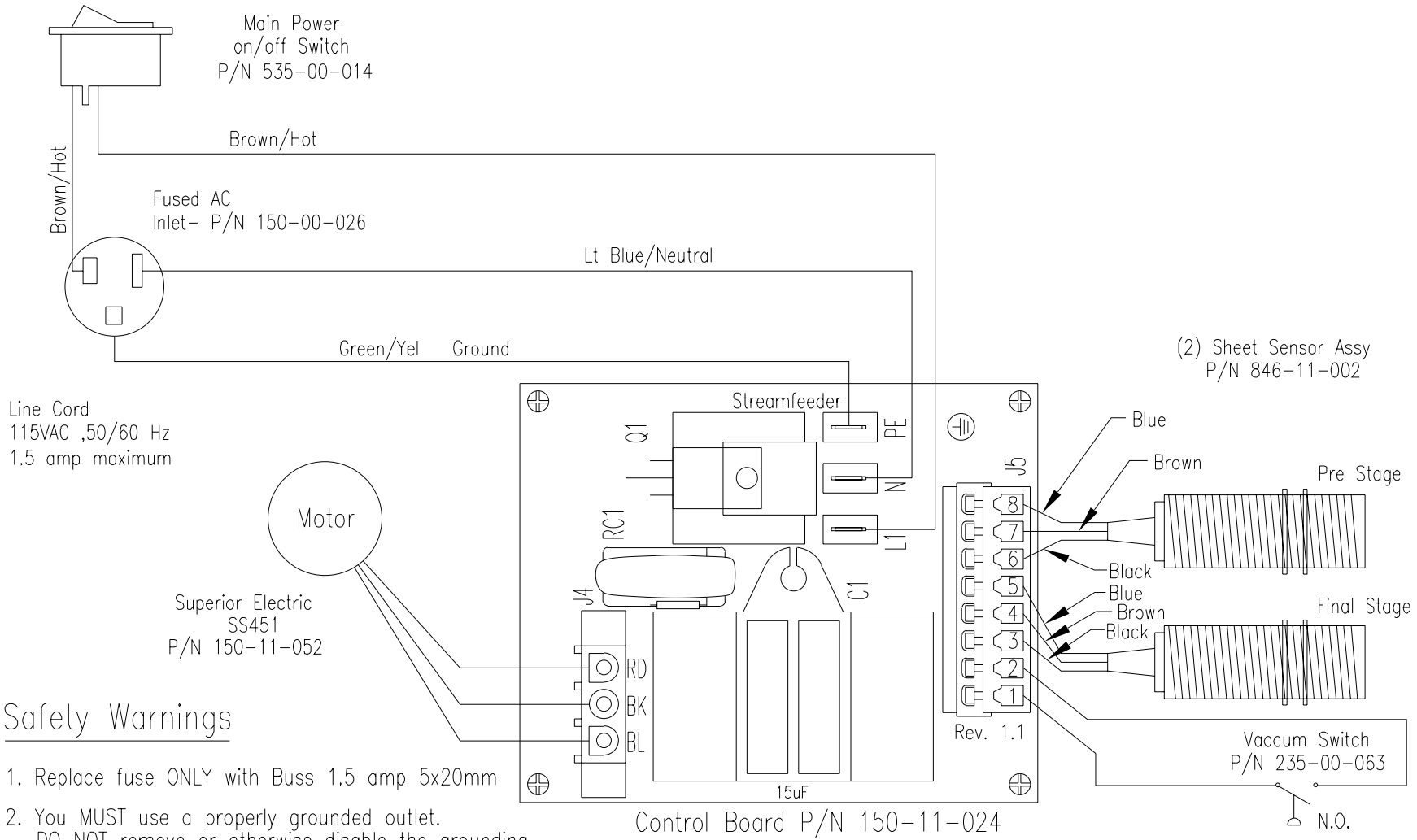
120V Electrical Schematic



Safety Warnings

1. Replace fuse ONLY with Buss 1.5 amp 5x20mm
2. You MUST use a properly grounded outlet. DO NOT remove or otherwise disable the grounding lug on the plug!
3. Use only exact replacement parts when servicing the Reliant 1500.

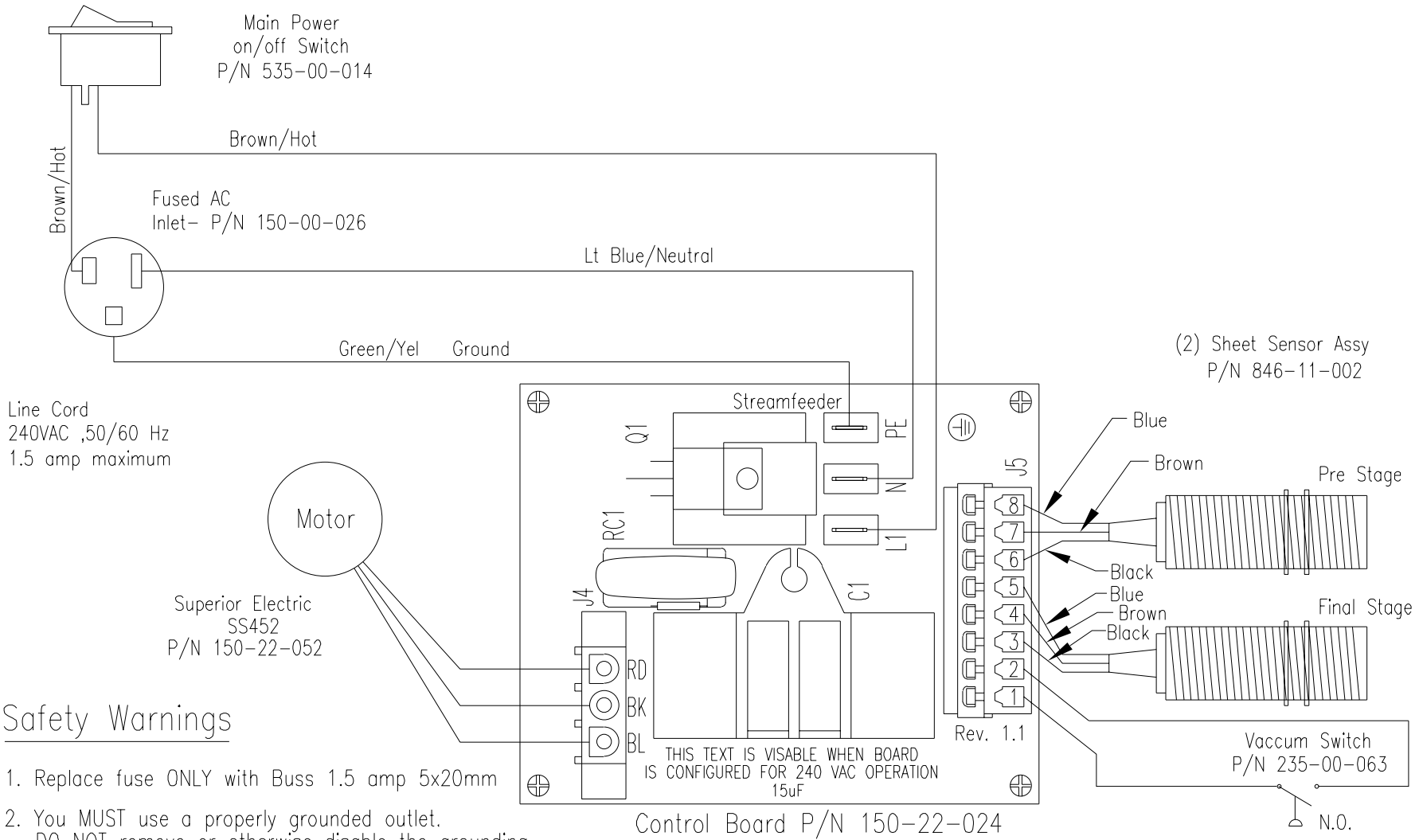
240V Electrical Schematic



Safety Warnings

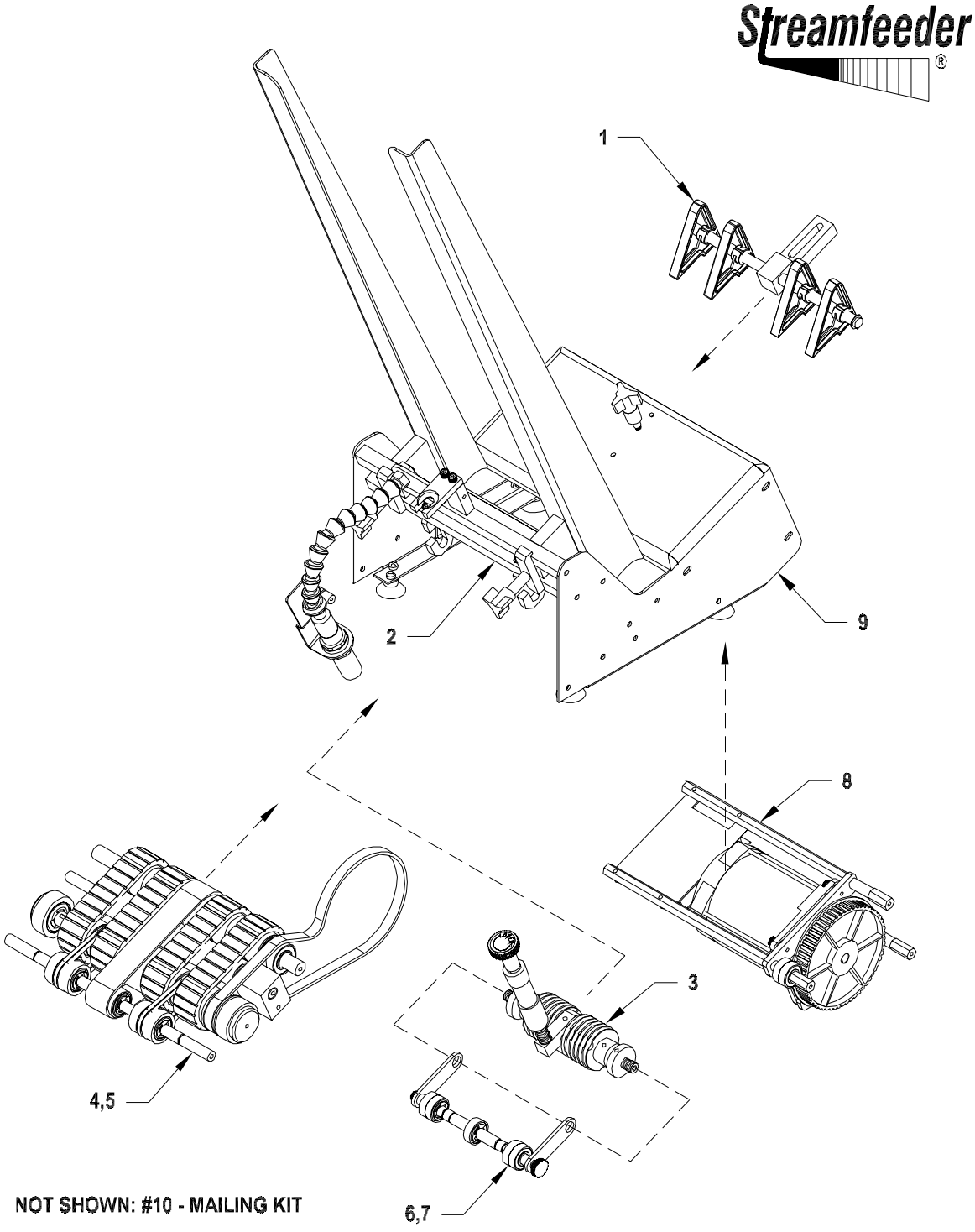
1. Replace fuse ONLY with Buss 1.5 amp 5x20mm
2. You MUST use a properly grounded outlet. DO NOT remove or otherwise disable the grounding lug on the plug!
3. Use only exact replacement parts when servicing the Reliant 1500.

120V Electrical Schematic with Vacuum Select



240V Electrical Schematic with Vacuum Select

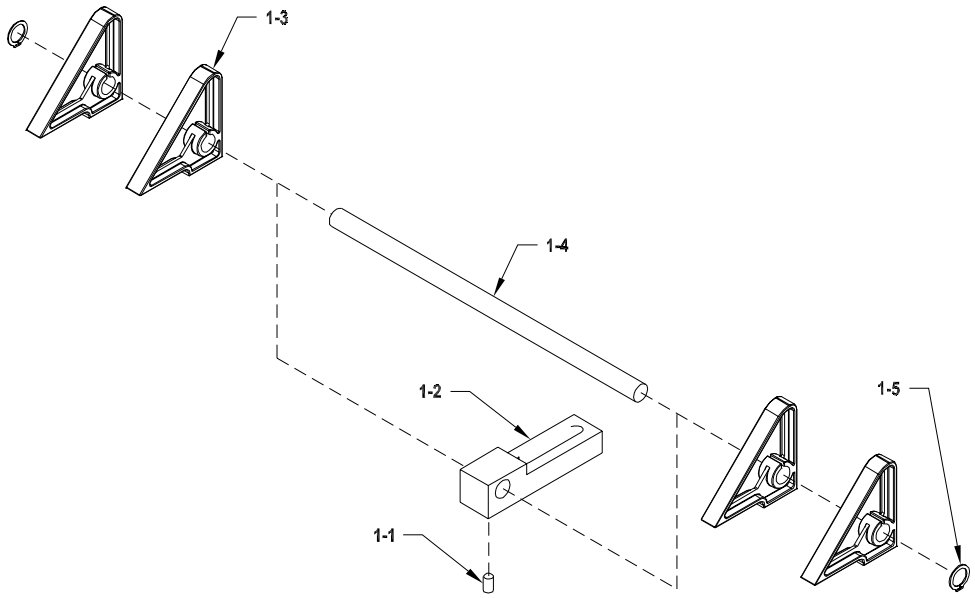
9 Mechanical Components



RELIANT 1500

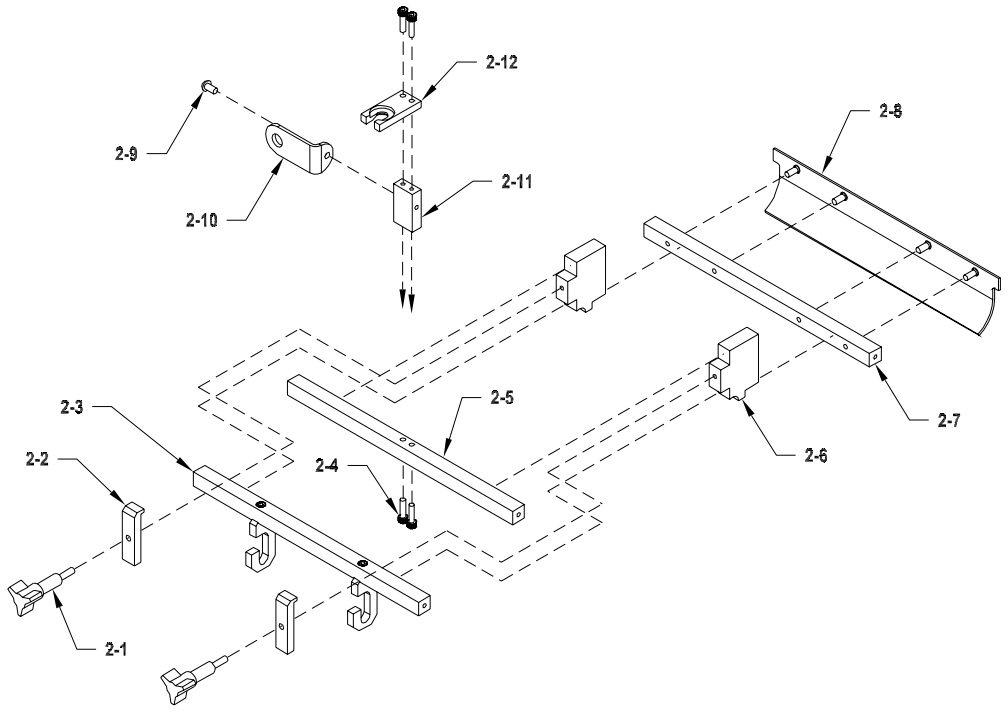
1: 8” TRIANGLE WEDGE ASSEMBLY #23511214

DIAGRAM NUMBER	QTY	DESCRIPTION	PART NUMBER
1-1	1	SHSS 10-32 X 5/16” LG	00002217
1-2	1	Bracket Wedge Hold Down	33560213
1-3	4	Wedge Material Support	33560212
1-4	1	Shaft Wedge Guide	23560214
1-5	2	Ring Grip 3/8 Waldes	00001110



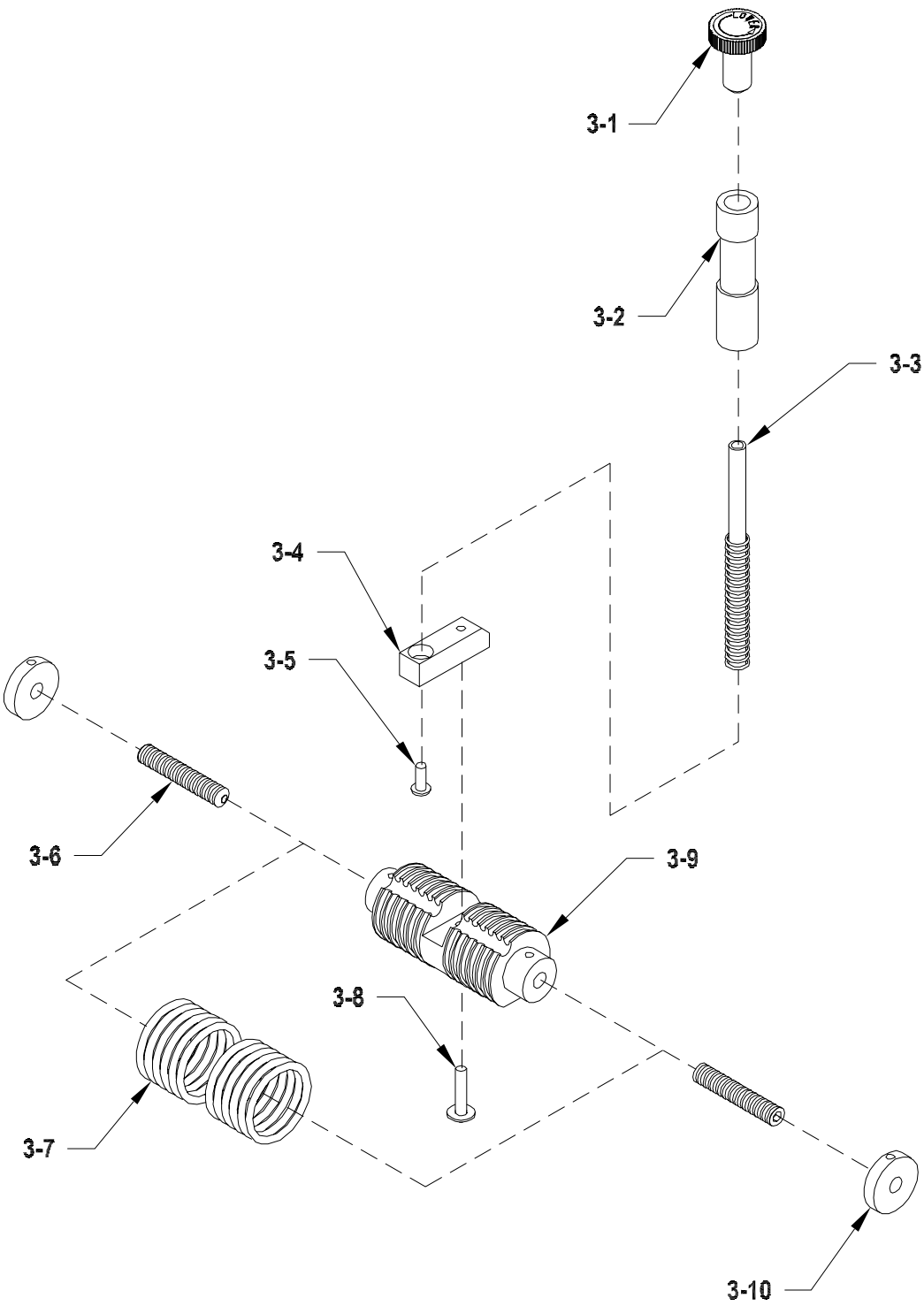
2: GATE PLATE ASSEMBLY #13511001

DIAGRAM NUMBER	QTY	DESCRIPTION	PART NUMBER
2-1	2	Knob Extension Assembly	33511092
2-2	2	Clamp Adjustment Side Guide Front	44846009
2-3	1	Bar Support Gate Bottom	44846006
	2	Gate J Hook	44841011
	2	SHCS 8-32 X 5/8” LG	00002215
2-4	4	SHCS 8-32 X 5/8” LG	00002215
2-5	1	Bar Support Gate Top	44846005
2-6	2	Clamp Adjustment Side Guide Rear	44846010
	4	FHSS 10-32 X 1/2” LG SS	00002830
2-7	1	Bar Pre-Gate	44846007
2-8	1	Pre Gate	44846016
	4	FHSS 10-32 X 1/2” LG SS	00002830
2-9	1	BHCS 10-32 X 3/8” LG	00002305
2-10	1	Bracket Sensor Mounting	44846051
2-11	1	Block Mount Reference	44846015
2-12	1	Adjustment Reference Block	44841019



3: STANDARD O RING GATE W/HORIZON ADJUST ASSEMBLY #13511872

DIAGRAM NUMBER	QTY	DESCRIPTION	PART NUMBER
3-1	1	Adj Knob Assembly for Gate	23511037
3-2	1	Cylinder Gate Spring	23500019
3-3	1	Shaft Gate Lift	23560084
	1	Spring Gate Compression	23500083
3-4	1	Mount Gate Lift Shaft	15000001
3-5	1	BHCS 10-32 X 1/2” LG	00002334
3-6	2	Screw Adjustment	44872005
3-7	12	O Ring Gate Cylinder	23500089
3-8	1	BHCS 10-32 X 1” LG	00002340
	1	Washer Flat #10	00002607
3-9	1	Gate Cylinder (Not Sold Separately)	51101001
	2	SHSS 10-32 X 3/4” LG Cup Pt	00002216
3-10	2	Roller	44872003
	2	SHSS 10-32 X 3/8” LG Nylon Tip	44872007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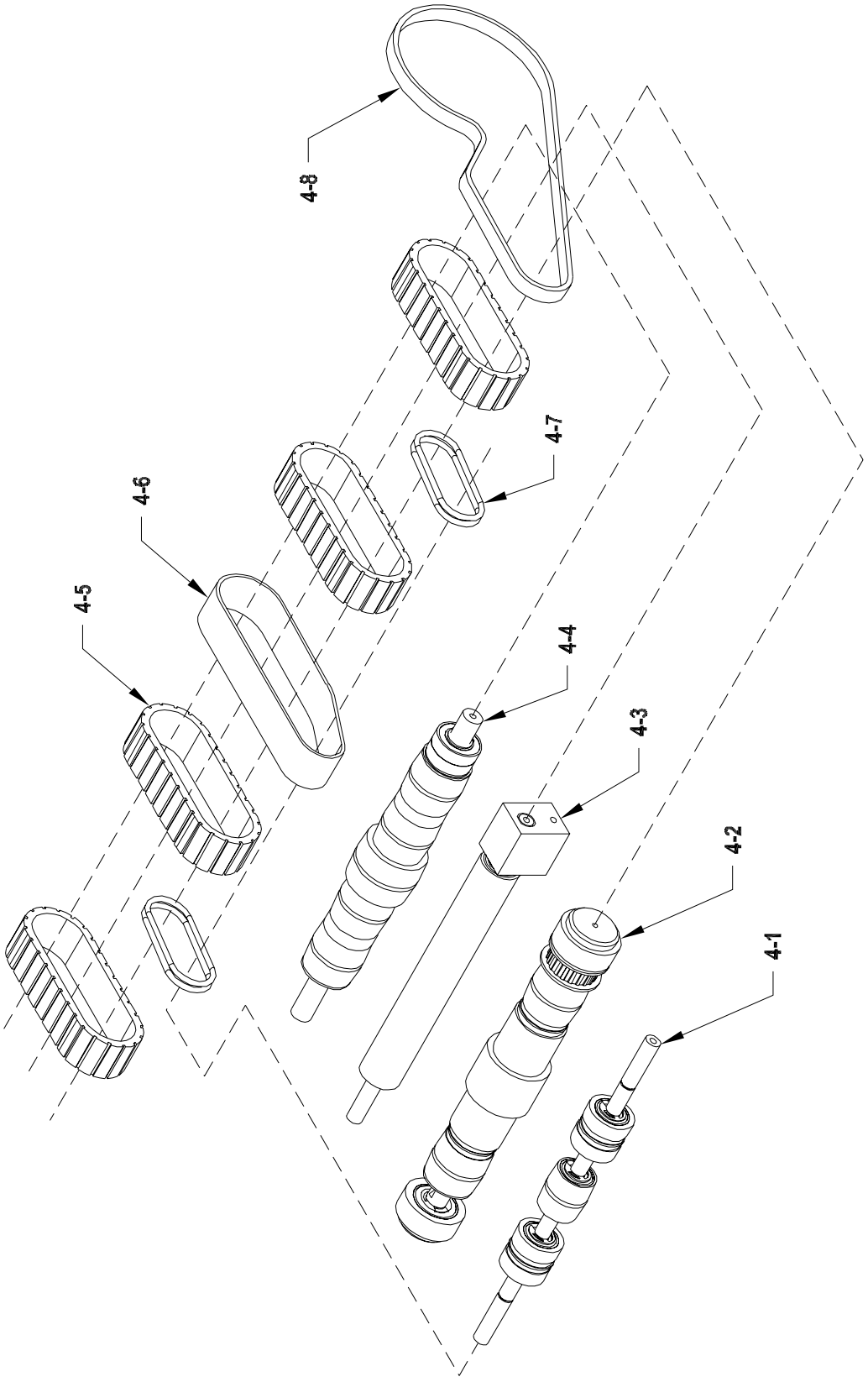
4: CARRIAGE (GUM BELT VERSION) ASSEMBLY #13511065

DIAGRAM NUMBER	QTY	DESCRIPTION	PART NUMBER
4-1	1	Shaft	15000075
	1	Crown Roller	44846021
	2	Bearing Ball R6	23500095
	2	Roller O Ring Driven w/Bearings	23511029
	6	Clip E 3/8 Waldes	00001150
4-2	1	Tube Drive	44846019
	1	Pulley 20T 1/2 Bore w/Flange Driven	23500097
	1	SHSS 10-32 X 1/4” LG Cup Point	00002216
	1	SHSS 10-32 X 5/16” LG Cup Point	00002217
	1	Key Woodruff 1/8 X 3/8	00003351
	2	Clip E 1/2 Waldes	00001155
	2	Bearing Ball R8	23500094
	2	Holder Outboard Bearing Cup	23500032
4-3	1	Shaft	15000075
	1	Belt Support Tube	44846018
	2	Bearing Ball R6	23500095
	2	Clip E 3/8 Waldes	00001150
	1	Guard Pinch	15000017
4-4	1	Idler Shaft	23560047
	1	Tube Driven	44846017
	4	Bearing Ball R8	23500094
	3	Ring Grip	00001115
4-5	4	Belt Feed Tan Gum Grooved Composite 1W	23500162
4-6	1	Discharge Belt Clear 1W	15000065
4-7	4	O Ring	15000068
4-8	1	Drive Belt 220XL037	23500096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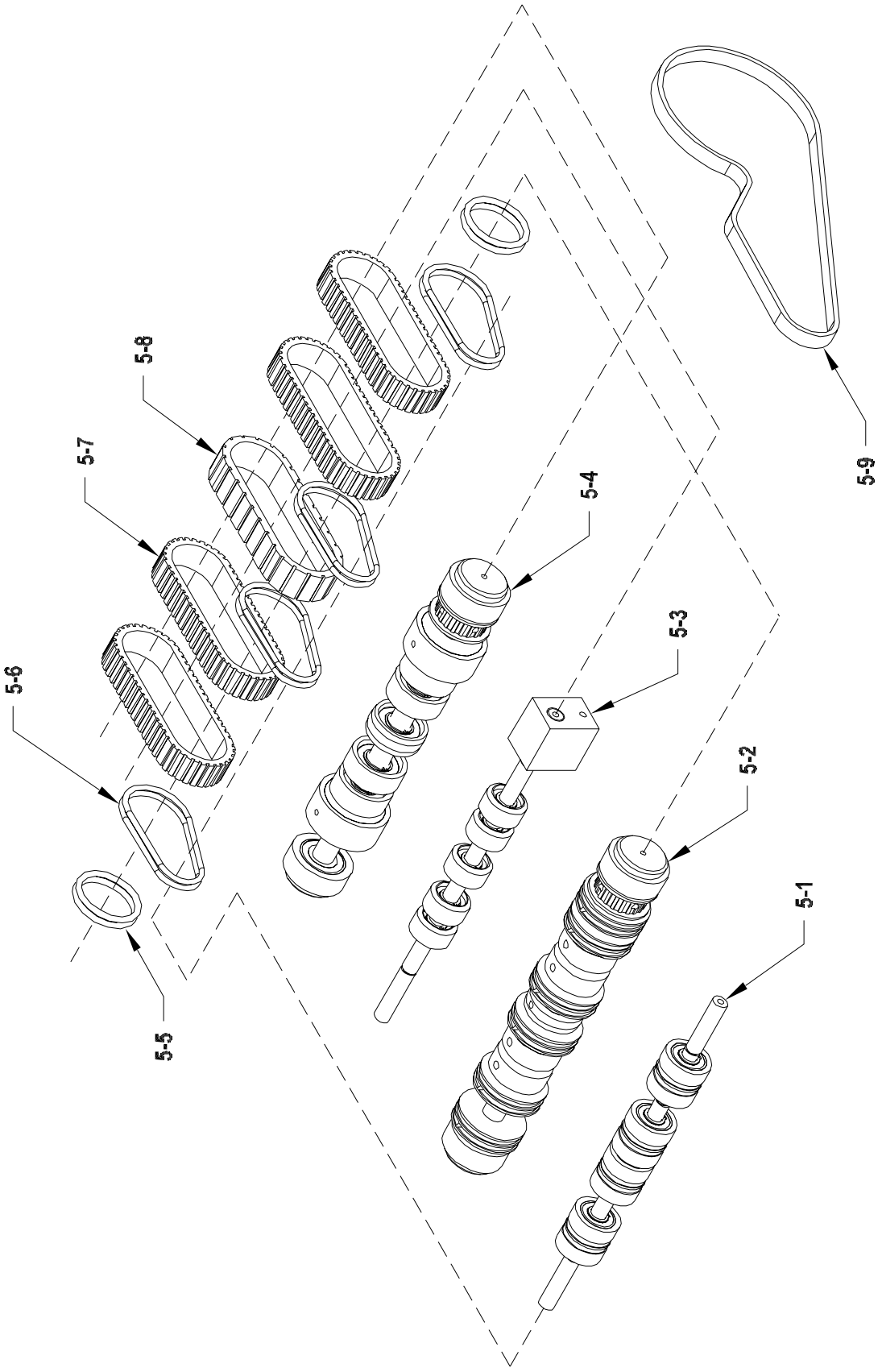
4-1

5: CARRIAGE (BLUE BELT VERSION) ASSEMBLY #13511088

DIAGRAM NUMBER	QTY	DESCRIPTION	PART NUMBER
5-1	1	Shaft Belt Support Bearing	23500040
	4	Roller O Ring Driven with Bearings	23511029
	8	Ring Grip 3/8 Waldes	00001110
5-2	1	Shaft Drive 1/2 SS	23560211
	1	Pulley Front Belt	435SO249
	6	Pulley O Ring	23500028
	4	Roller Belt Drive	23500027
	1	Pulley 20T 1/2 Bore w/Flange Driven	23500097
	2	Holder Outboard Bearing Cup	23500032
	2	Bearing Ball R8	23500094
	1	SHSS 10-32 X 1/4” LG Cup Point	00002216
	12	SHSS 10-32 X 5/16” LG Cup Point	00002217
	1	Key Woodruff 1/8 X 3/8	00003351
5-3	1	Shaft Belt Support Bearing	23500040
	5	Roller Support Driven with Bearing	23511030
	10	Ring Grip 3/8 Waldes	00001110
	1	Guard Pinch	15000017
5-4	1	Shaft Drive 1/2 SS	23560211
	1	Pulley Rear Belt	435SO248
	4	Roller Driven with Bearing	23511031
	2	Roller Feed 1/2 Bore	23500026
	10	Ring Grip 1/2 Waldes	00001115
	1	Pulley 20T 1/2 Bore w/Flange Driven	23500097
	2	Holder Outboard Bearing Cup	23500032
	3	Bearing Ball R8	23500094
	1	SHSS 10-32 X 1/4” LG Cup Point	00002216
	3	SHSS 10-32 X 5/16” LG Cup Point	00002217
	1	Key Woodruff 1/8 X 3/8	00003351
5-5	4	O Ring	23500089
5-6	8	O Ring	15000068
5-7	4	Feed Belt Blue Urethane Grooved	23500088
5-8	1	Feed Belt Tan Gum Grooved 3/4 W	15000061
5-9	1	Drive Belt 220XL037	23500096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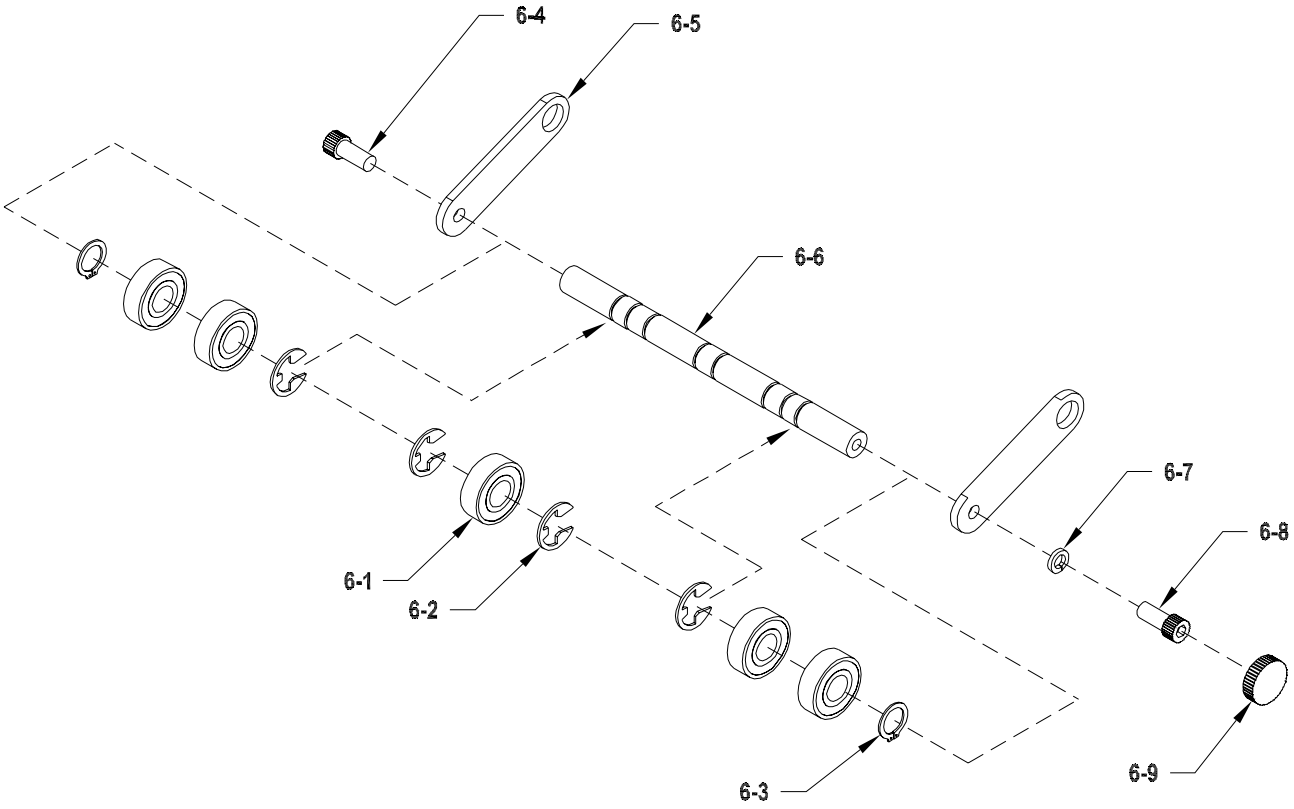
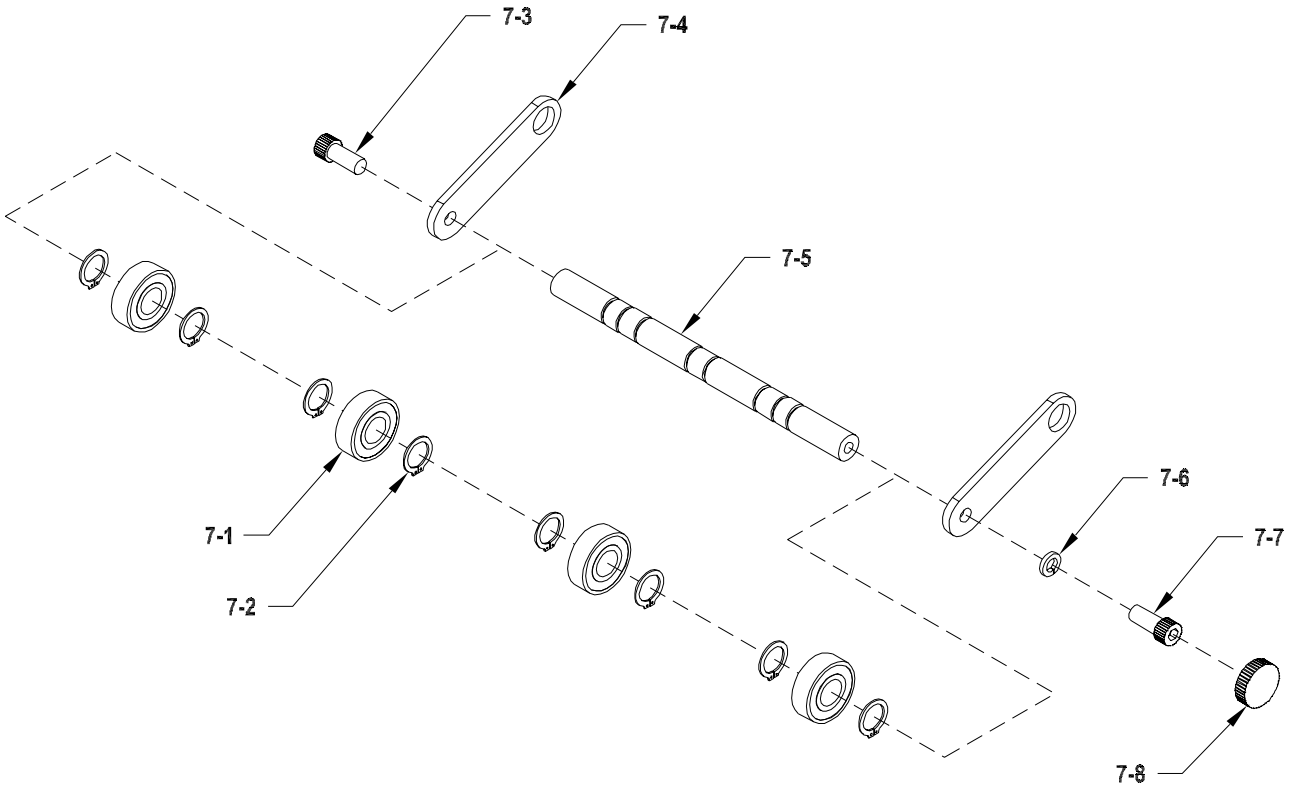
6: DISCHARGE ASSIST (GUM BELT VERSION) ASSEMBLY #13511050

DIAGRAM NUMBER	QTY	DESCRIPTION	PART NUMBER
6-1	5	Bearing Ball R6	23500095
6-2	4	Clip E 3/8 Waldes	00001150
6-3	2	Ring Grip 3/8 Waldes	00001110
6-4	1	SHCS Nylock 10-32	44350017
6-5	2	Bracket Discharge	44841040
6-6	1	Shaft Discharge	51101003
6-7	1	Washer Lock #10	00002608
6-8	1	SHCS 10-32 X 1/2” LG	00002315
6-9	1	Knob Small Black	23500091



7: DISCHARGE ASSIST (BLUE BELT VERSION) ASSEMBLY #13511051

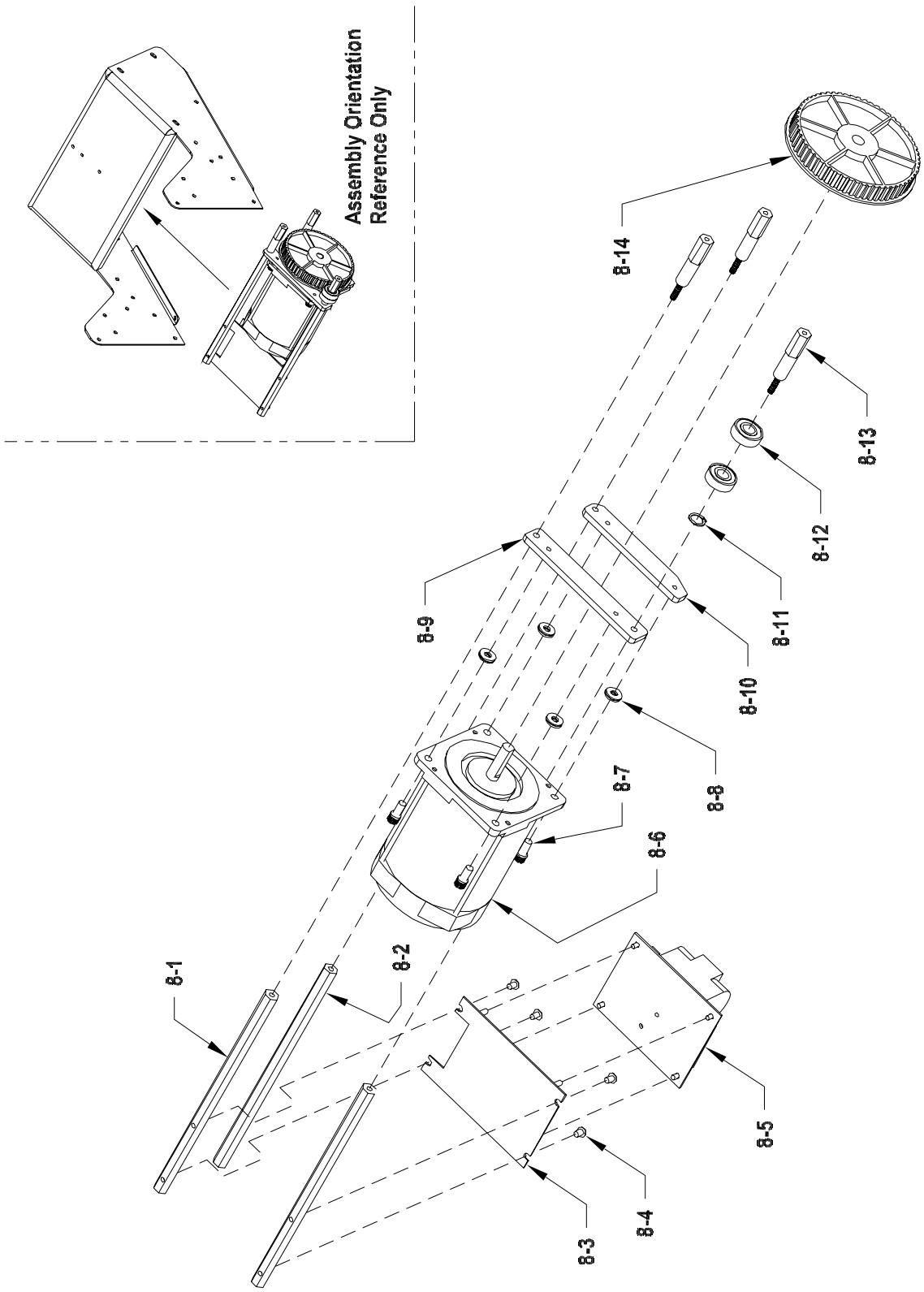
DIAGRAM NUMBER	QTY	DESCRIPTION	PART NUMBER
7-1	4	Bearing Ball R6	23500095
7-2	8	Ring Grip 3/8 Waldes	00001110
7-3	1	SHCS Nylock 10-32	44350017
7-4	2	Bracket Discharge	44841040
7-5	1	Shaft Discharge	51101003
7-6	1	Washer Lock #10	00002608
7-7	1	SHCS 10-32 X 1/2” LG	00002315
7-8	1	Knob Small Black	23500091



8: DRIVE MOTOR ASSEMBLY

120V: #13511099 240V: #13522099

DIAGRAM NUMBER	QTY	DESCRIPTION	PART NUMBER
8-1	2	Shaft Left Hand Motor Mounting	15000040
8-2	1	Shaft Left Hand Motor Mounting	23500039
8-3	1	Plate Electronic Mounting	15000041
8-4	4	BHCS 8-32 X 1/4” LG	00002210
8-5	1	Board Main Control 115V R1500 (115V Only)	15011024
	1	Board Main Control 230V R1500 (230V Only)	15022024
	4	Phillips Pan Head Screw 6-32 X1/4” LG	00002221
8-6	1	Motor w/Connector 115V R1500 (115V Only)	15011052
	1	Motor w/Connector 230V R1500 (230V Only)	15022052
8-7	4	SHCS 10-32 X 1/2” LG	00002315
	4	Washer Lock #10	00002608
8-8	8	Washer Flat #10	00002607
8-9	1	Bracket Upper Motor	23500011
8-10	1	Bracket Lower Motor	23500012
8-11	1	Ring Grip 3/8 Waldes	00001110
8-12	2	Bearing Ball R6	23500095
8-13	3	Shaft Right Hand Motor Mounting	23500038
8-14	1	Pulley 60T 3/8 Bore Drive Motor Mod 1	23500098
	2	SHSS 10-24 X 1/2” LG	00002206


Assembly Orientation
Reference Only
8-1
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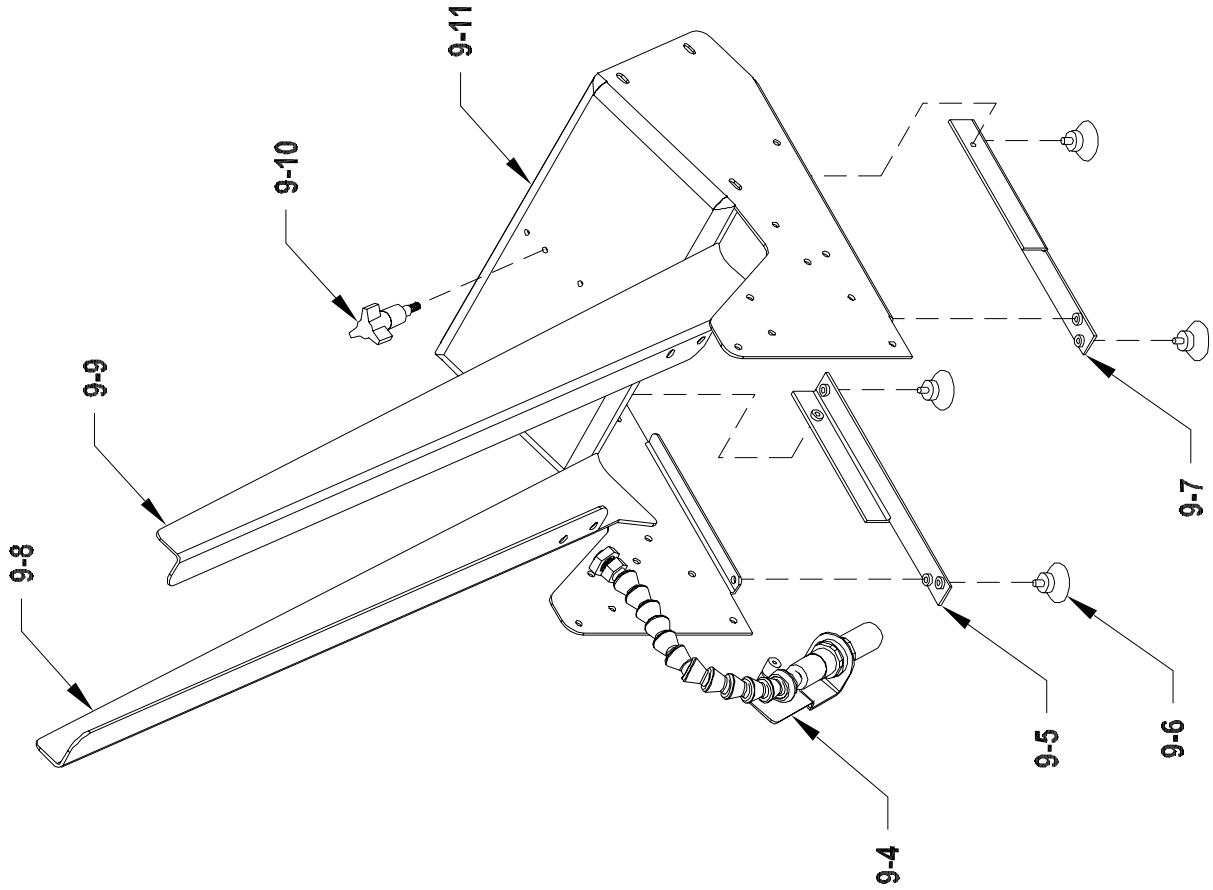
8-11
8-12
8-13
8-14

9: BASE FEATURES

DIAGRAM NUMBER	QTY	DESCRIPTION	PART NUMBER
9-1	1	Graphic Reliant 1500	15000035
9-2	1	Module AC Inlet	15000026
	1	Fuse 1.6A 250V Slo-Blo 5 X 20 mm	23500103
9-3	1	Switch On/Off Non-Illuminated	53500014
9-4	1	Sheet Sensor Assembly	84611002
9-5	1	Bracket Right Mount	15000067
9-6	4	Foot Suction Cup	44846058
9-7	1	Bracket Left Mount	15000066
9-8	1	Side Guide Right 11.524	44846013
9-9	1	Side Guide Left 11.524	44846014
9-10	1	Knob Extension Assembly	23511023
NS	1	Wire Assembly Light Blue	13511055
NS	2	Wire Assembly Brown	13511056
NS	1	Wire Assembly Green/Yellow	13511057
NS	1	Ruler Kit	15000064
NS	1	Clamp Cable	23500078
NS	1	Power Cord (115V Only)	53500002
NS	1	Tyrap	53500030
NS	3	Ferrule 22 AWG White	53500235
NS	1	Power Cord and Allen Wrenches (230V Only)	53522210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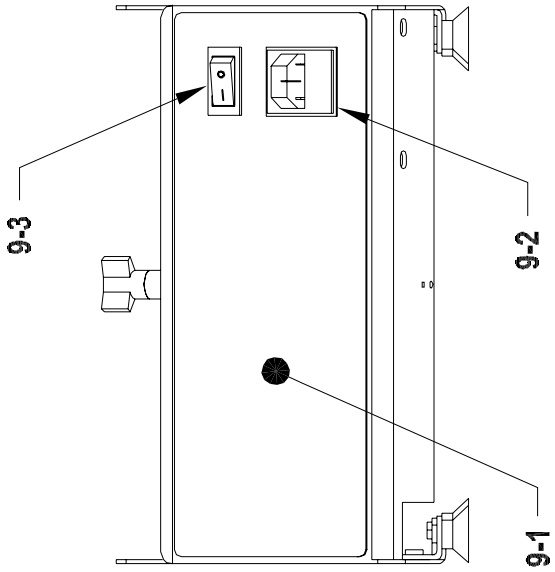
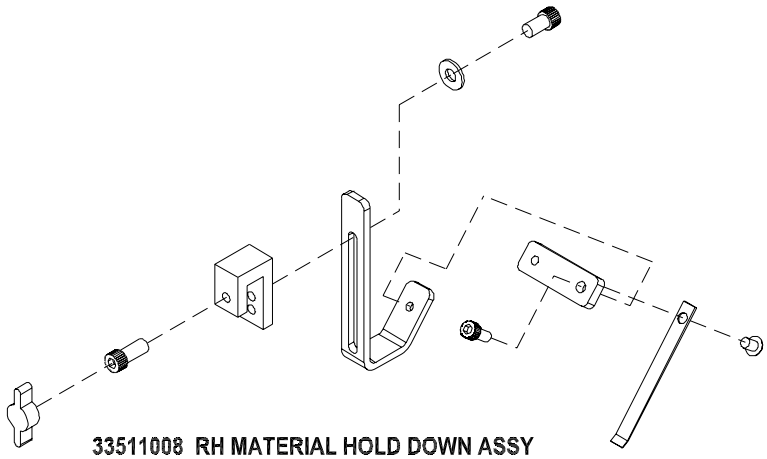
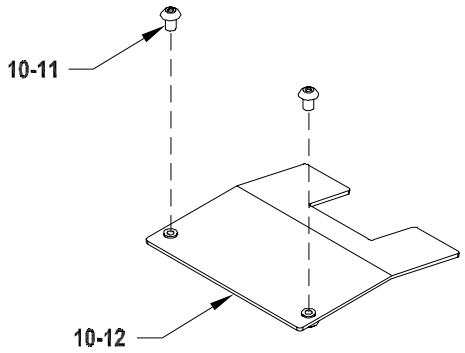

9-3
9-2
9-1

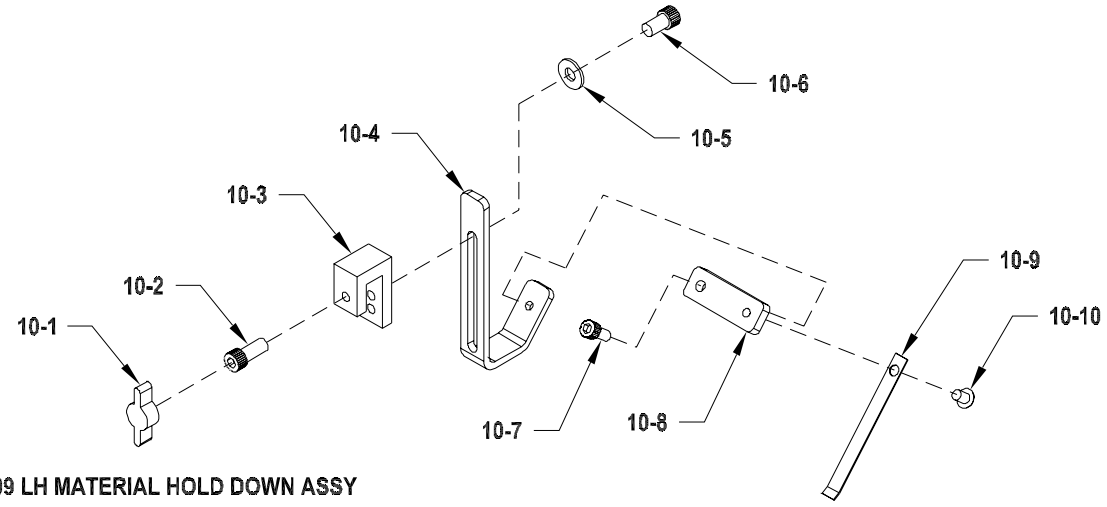
10: MAILING KIT ASSEMBLY #84611004

DIAGRAM NUMBER	QTY	DESCRIPTION	PART NUMBER
33511009: LH MATERIAL HOLD DOWN ASSY			
10-1	1	Knob Wing 10-32	23500076
10-2	1	SHCS 10-32 X 1/2” LG	00002315
10-3	1	Bracket Universal Guide Bar	23500051
10-4	1	Bar Universal Guide	23500050
10-5	1	Washer Flat #10	00002607
10-6	1	SHCS 10-32 X 3/8” LG	00002310
10-7	1	SHCS 8-32 X 3/8” LG	00002213
10-8	1	Extension Material Hold Down	33500023
10-9	1	Spring Material Hold Down	23500102
10-10	1	BHCS 8-32 X 1/4” LG	00002210
33511008: RH MATERIAL HOLD DOWN ASSY			
Contains same part numbers and quantities as above assembly. Note change in orientation of parts.			
OTHER			
10-11	2	BHCS 8-32 x 1/4” LG	00002210
10-12	1	Plate Insert Tab	33500008



33511008 RH MATERIAL HOLD DOWN ASSY





33511009 LH MATERIAL HOLD DOWN ASSY

Thiele Technologies
A Barry-Wehmiller Company

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NPES