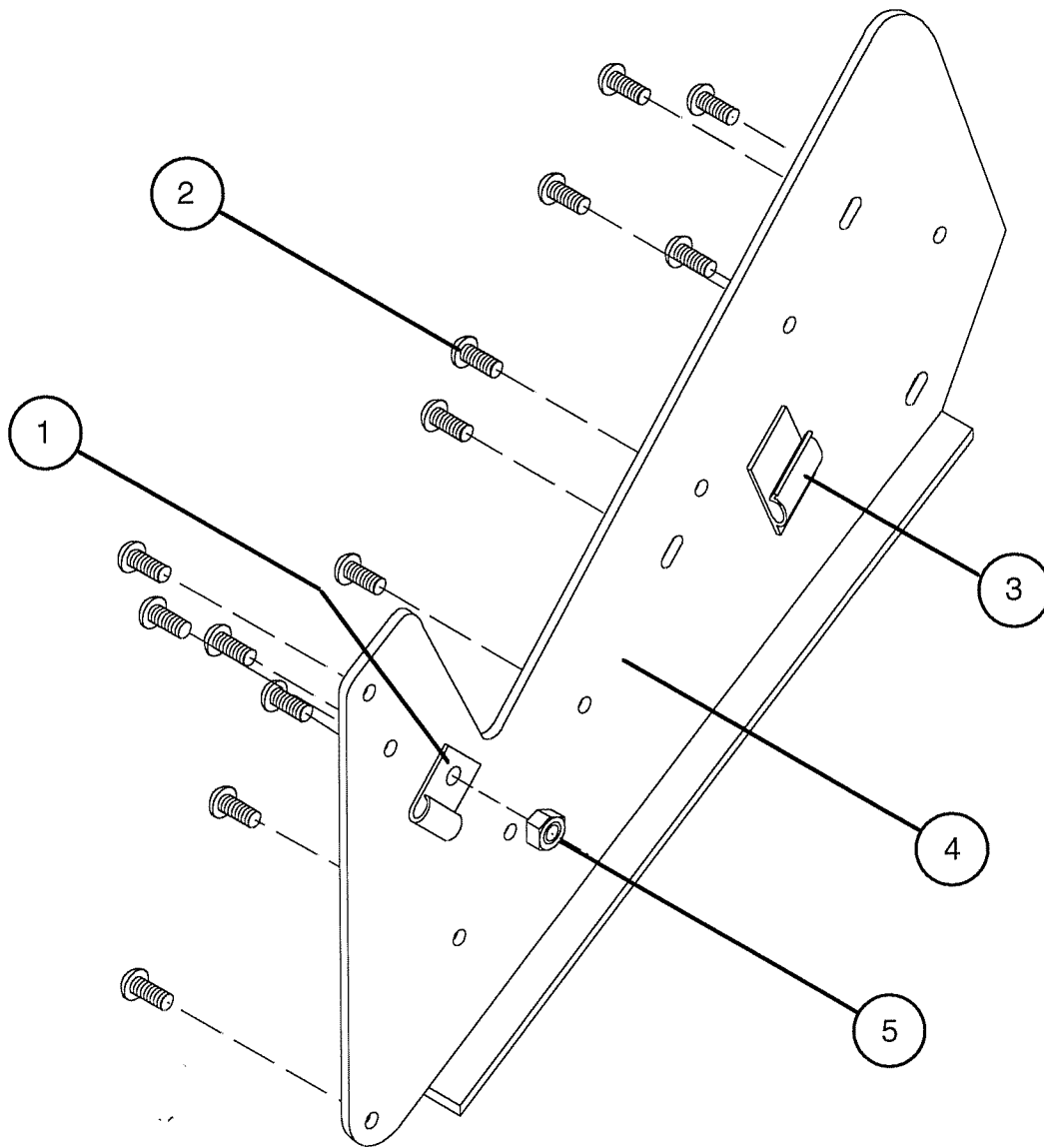


## Model I Mechanical Components

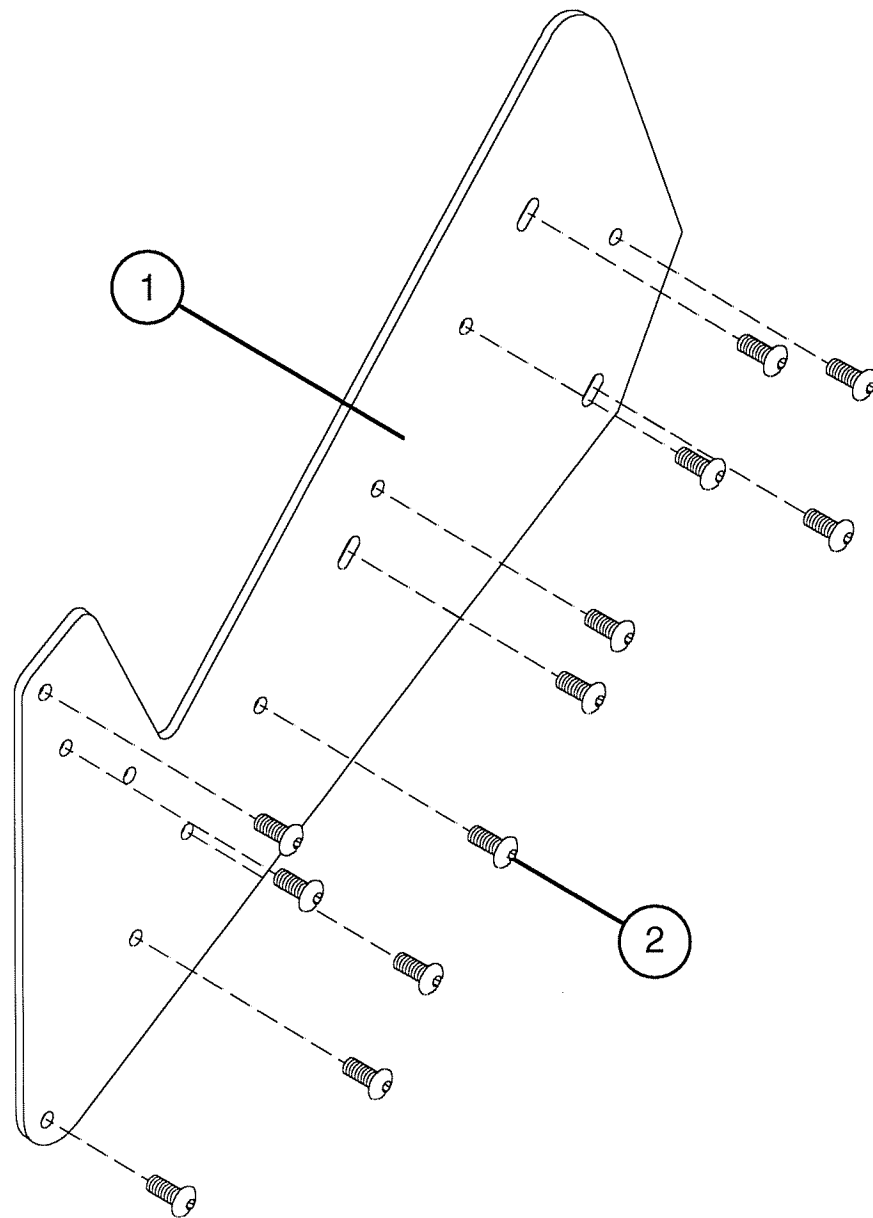
Item #	Page #	Assembly #	Description
1	2-10	235-11-018	Wedge Guide Assembly
2	2-6	235-11-005	Cover Assembly (110 Volt)
	2-6	235-22-005	Cover Assembly (220 Volt)
3	2-5	235-11-004	Table Top Assembly (110 Volt)
	2-5	235-22-004	Table Top Assembly (220 Volt)
4	2-3	235-00-003	Left-Hand Side Plate
5	2-16	235-11-042	Feed Driven Shaft Assembly
6	2-14	235-11-040	Belt Support Bearing Assembly
7	2-13	235-11-036	O-Ring Discharge Assembly
8	2-8	235-11-007	Sensor Extension
9	2-4	235-11-001	Gate Holder Plate Assembly
10	2-12	235-11-034	Discharge Assist Assembly
11	2-11	235-11-020	Gate Cylinder Assembly
12	2-15	235-11-041	Feed Drive Shaft Assembly
13	2-2	235-00-002	Right-Hand Side Plate
14	2-9	235-11-008	Standard Material Hold Down Assembly
15	2-17	235-11-099	Drive Motor Assembly (110 Volt)
	2-17	235-22-099	Drive Motor Assembly (220 Volt)
16	2-7	235-11-006	*Tall Insert Guide Assembly

\*Not Shown on this Drawing  
Refer to page 2-7



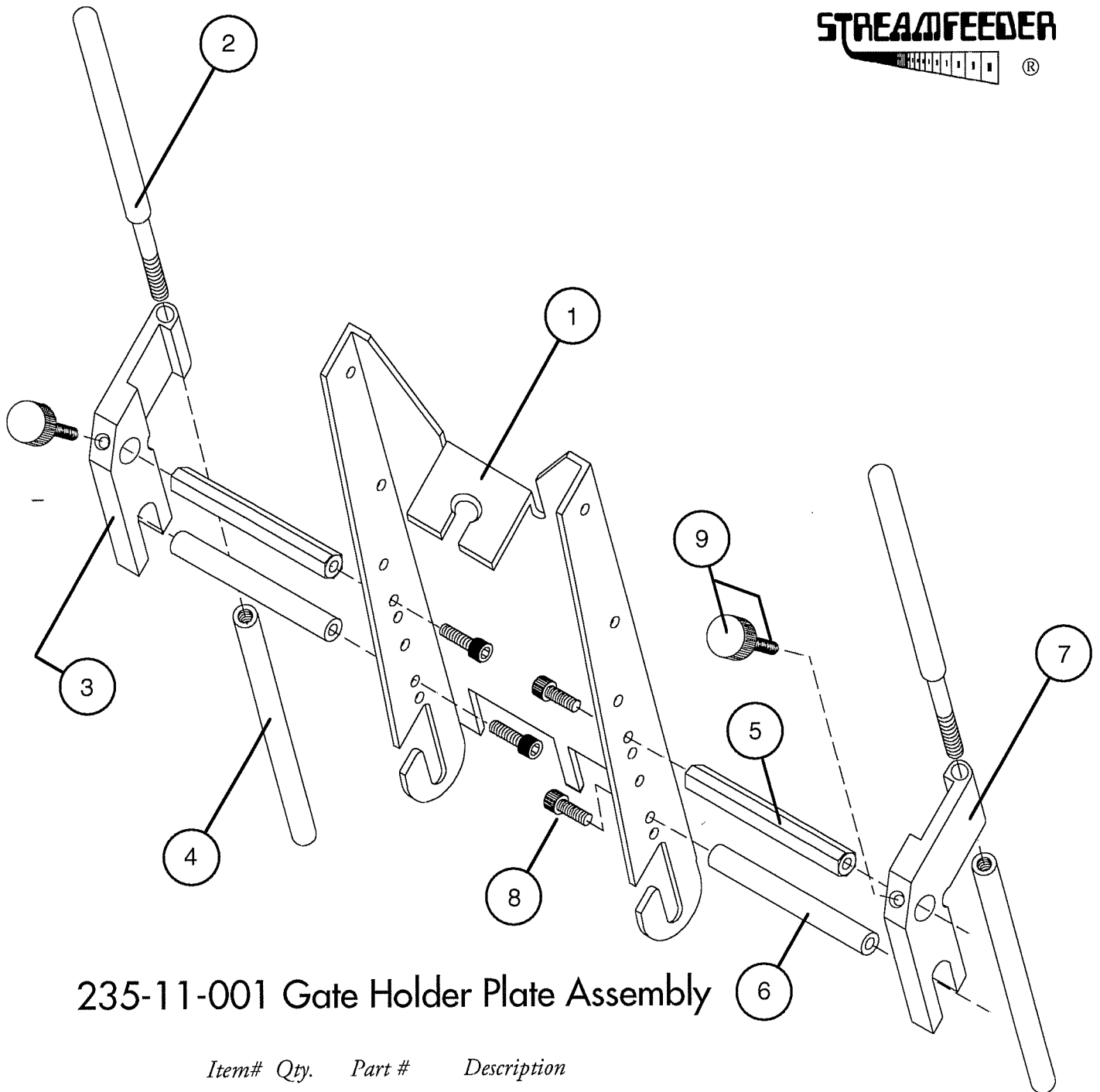
## 235-00-002 Right-Hand Side Plate

<i>Item#</i>	<i>Qty.</i>	<i>Part #</i>	<i>Description</i>
1	1	235-00-078	Wire Clamp
2	13	2305	BHSCS 10-32 x 3/8"
3	1	235-00-079	Wire Holder
4	1	235-00-002	Right-Hand Side Plate
5	1	2106	Hex Nut, 10-32



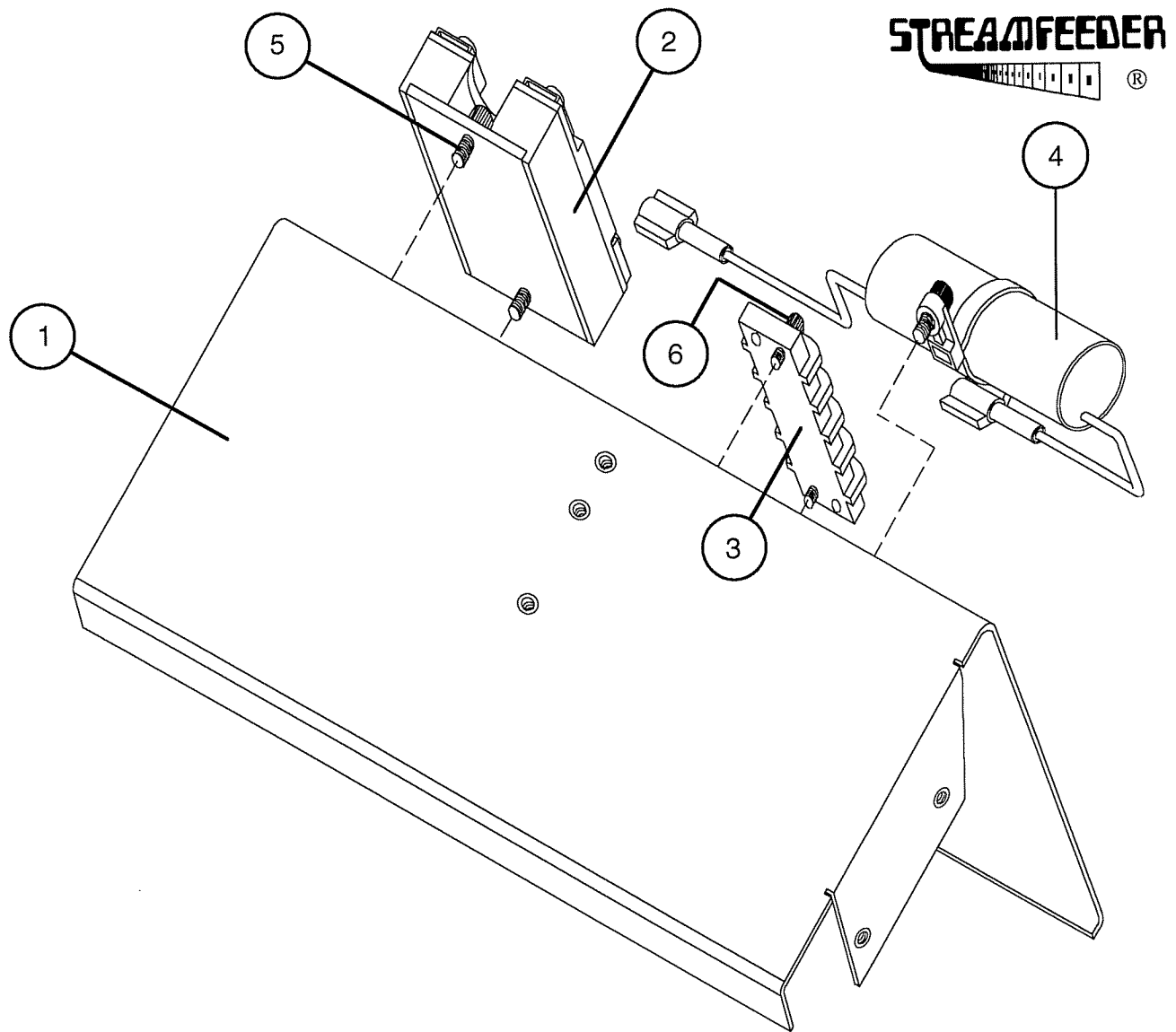
## 235-00-003 Left-Hand Side Plate

<i>Item#</i>	<i>Qty.</i>	<i>Part #</i>	<i>Description</i>
1	1	235-00-003	Left-Hand Side Plate
2	12	2305	BHSCS 10-32 x 3/8"



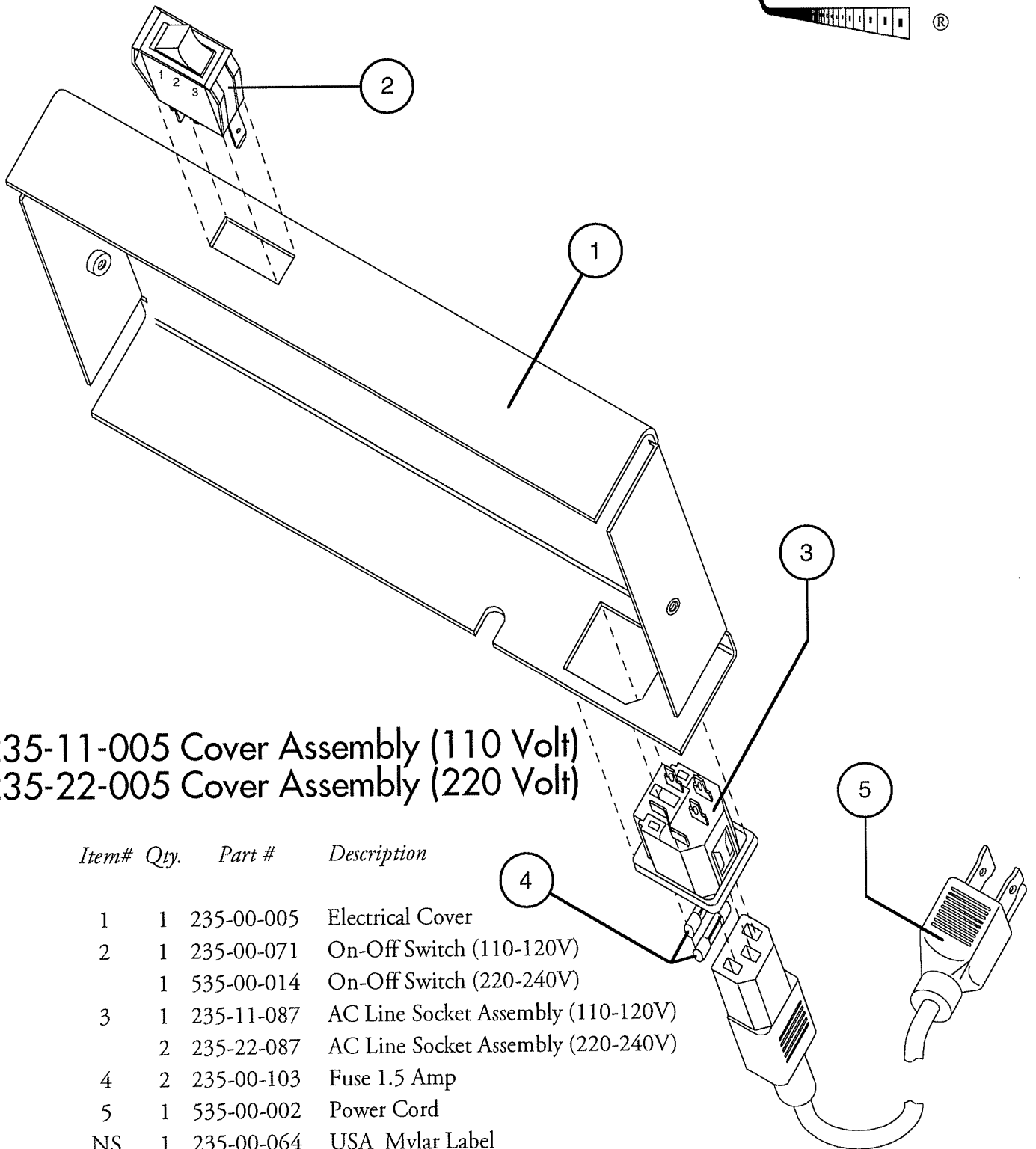
## 235-11-001 Gate Holder Plate Assembly

Item#	Qty.	Part #	Description
1	1	235-00-001	Gate Holder Plate
2	2	235-00-045	Short Side Guide Shaft
3	1	235-00-047	Right-Hand Side Guide Bracket
4	2	235-00-044	Lower Side Guide Shaft
5	2	235-00-043	Gate Support Shaft
6	2	235-00-049	Lower Gate Support Shaft
7	1	235-00-048	Left-Hand Side Guide Bracket
8	4	2310	SHSCS 10-32 x 3/8"
9	2	235-00-091	Small Thumb Screw Knob
		2315	SHCS 10-32 x 1/2"



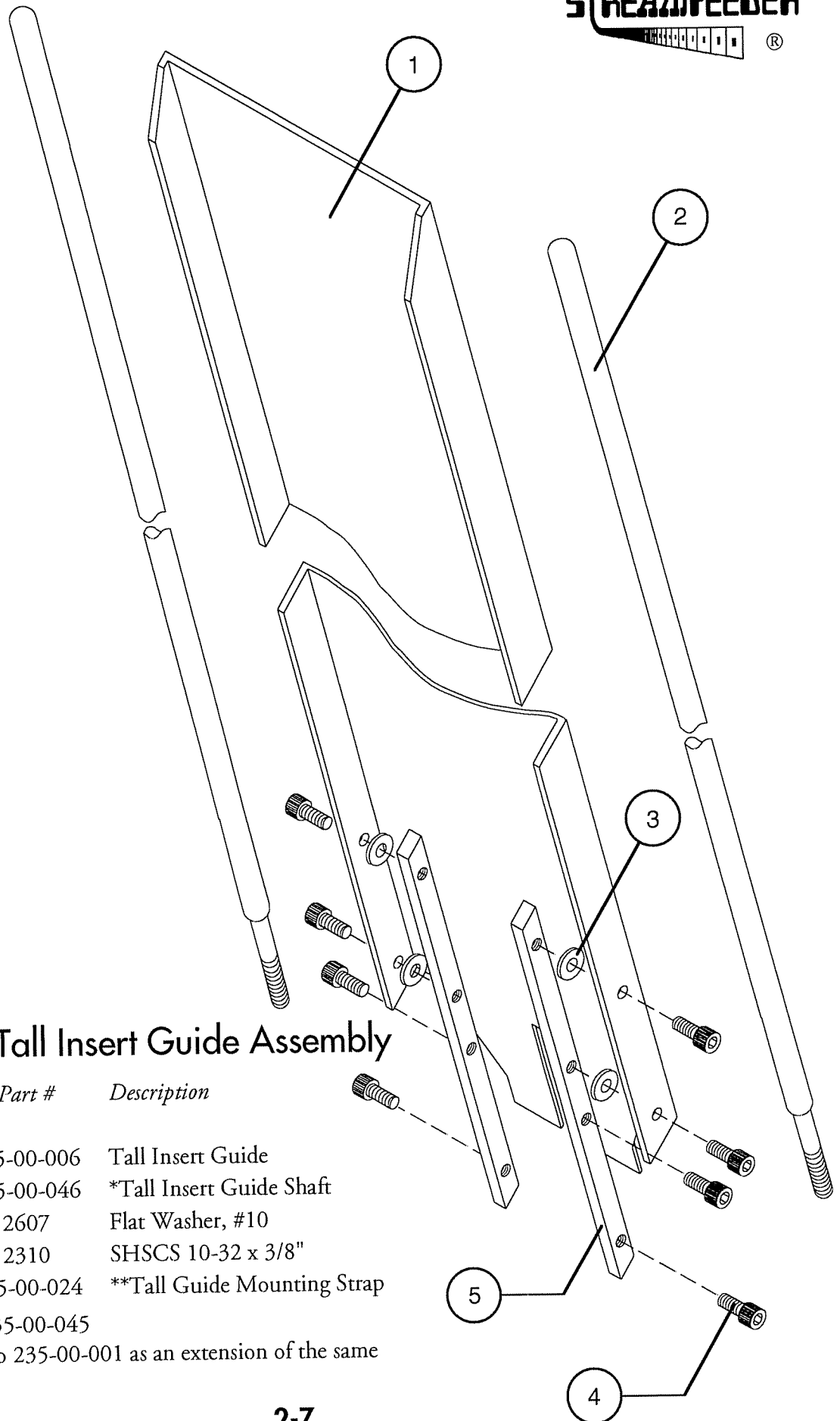
235-11-004 Table Top Assembly (110 Volt)  
235-22-004 Table Top Assembly (220 Volt)

Item#	Qty.	Part #	Description
1	1	235-00-004	Table Top
2	1	235-00-072	Solid State Relay
3	1	235-00-070	Terminal Strip
4	1	235-11-074	Capacitor (110-120V)
	1	235-22-074	Capacitor (220-240V)
5	3	2310	SHCS 10-32 x 3/8"
6	2	2213	SHCS 8-32 x 3/8"
NS	2	235-00-068	Terminal Jumper
NS	1	235-00-081	Grommet 9/16"
NS	1	2301	Ground Screw
NS	Items Not Shown On Drawing		



**235-11-005 Cover Assembly (110 Volt)**  
**235-22-005 Cover Assembly (220 Volt)**

Item#	Qty.	Part #	Description
1	1	235-00-005	Electrical Cover
2	1	235-00-071	On-Off Switch (110-120V)
	1	535-00-014	On-Off Switch (220-240V)
3	1	235-11-087	AC Line Socket Assembly (110-120V)
	2	235-22-087	AC Line Socket Assembly (220-240V)
4	2	235-00-103	Fuse 1.5 Amp
5	1	535-00-002	Power Cord
NS	1	235-00-064	USA Mylar Label
NS	1	235-00-065	1.5 AMP Mylar Label
NS	1	235-00-066	Streamfeeder Nameplate
NS	4	1101	Drive Screw 5/16"
NS	1	235-00-076	Brown Lead Spade & 6" Female
NS	1	535-00-121	Brady 240V Label
NS	Items Not Shown On Drawing		

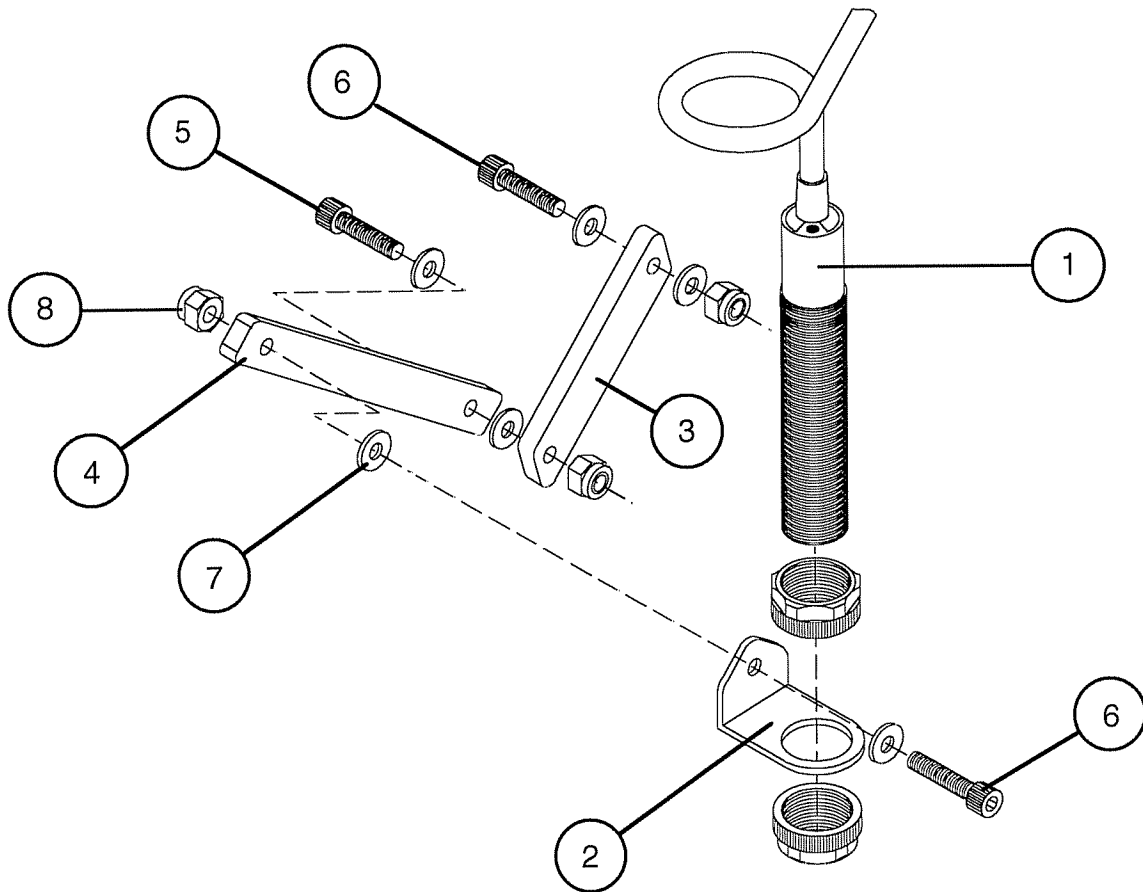


## 235-11-006 Tall Insert Guide Assembly

Item#	Qty.	Part #	Description
1	1	235-00-006	Tall Insert Guide
2	2	235-00-046	*Tall Insert Guide Shaft
3	4	2607	Flat Washer, #10
4	8	2310	SHSCS 10-32 x 3/8"
5	2	235-00-024	**Tall Guide Mounting Strap

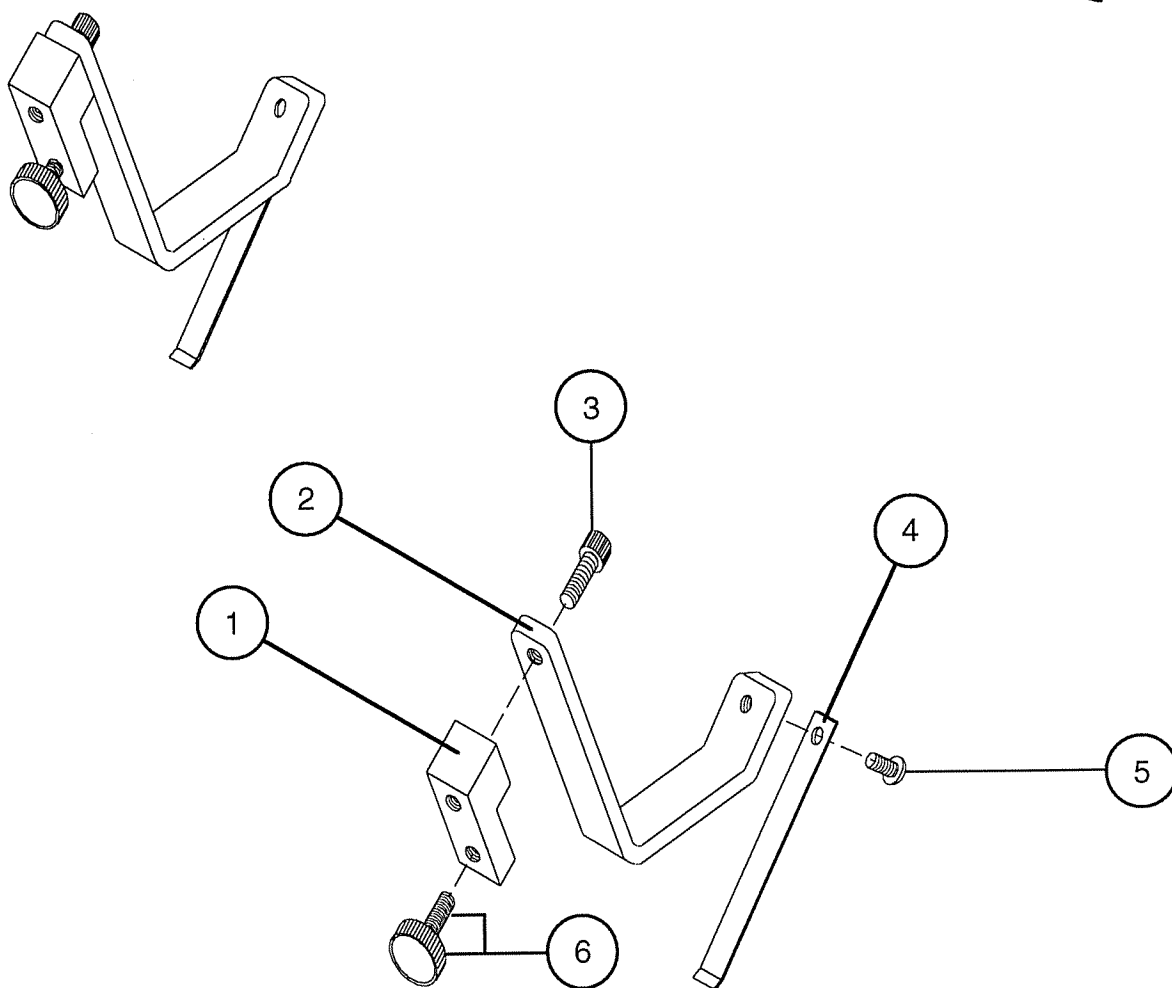
\* Replaces 235-00-045

\*\* Attaches to 235-00-001 as an extension of the same



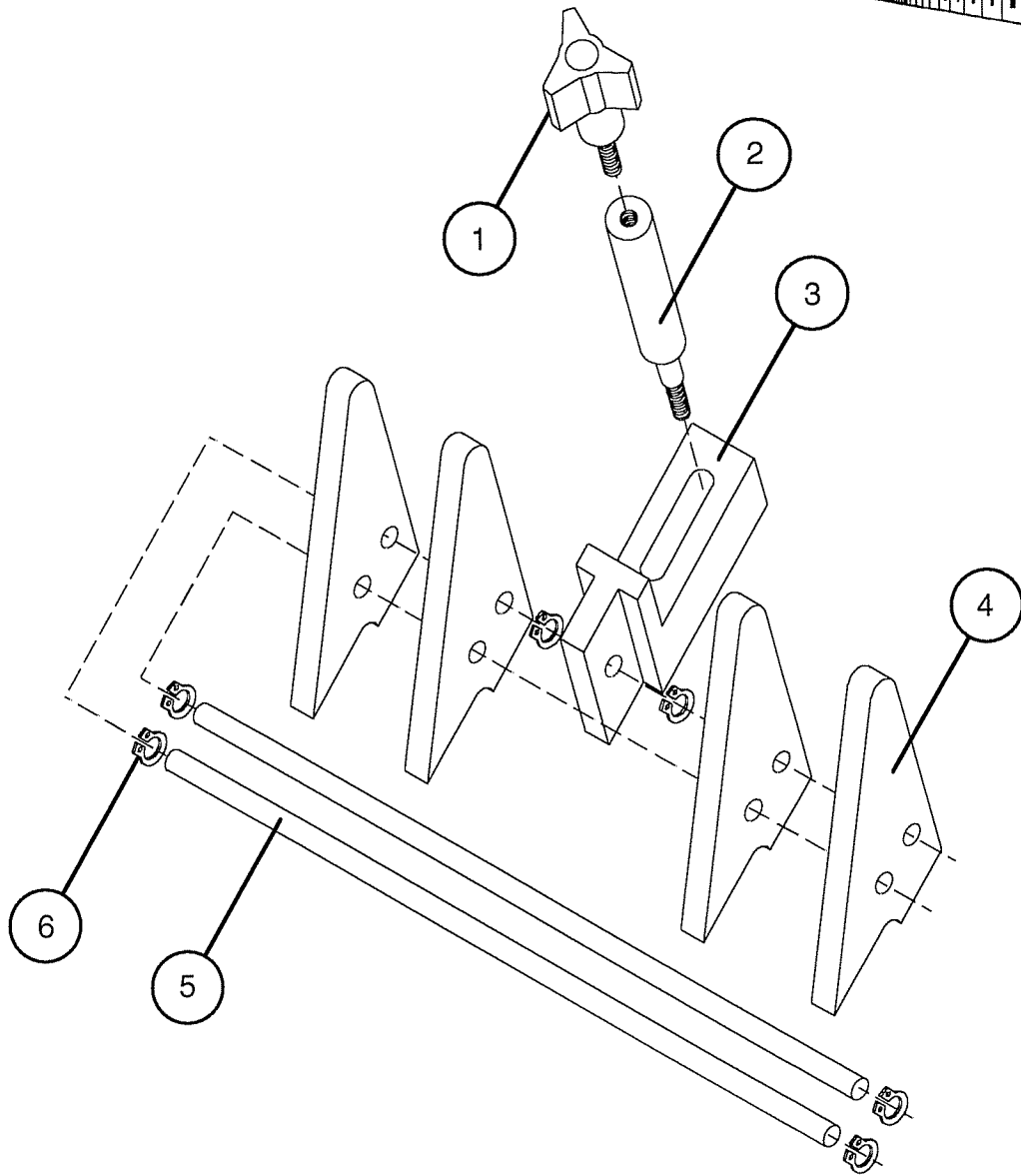
## 235-11-007 Sensor Extension

Item#	Qty.	Part #	Description
1	1	235-11-073	Proximity Sensor w/ Nuts
2	1	235-00-007	Sensor Bracket
3	1	235-00-015	Sensor Extension Bracket "A"
4	1	235-00-016	Sensor Extension Bracket "B"
5	1	2325	SHCS 10-32 x 3/4"
6	2	2320	SHCS 10-32 x 5/8"
7	6	2607	Flat Washer #10
8	3	2110	Nylock Nut 10-32
NS	1	235-00-080	Cable Tie
NS	Items Not Shown On Drawing		



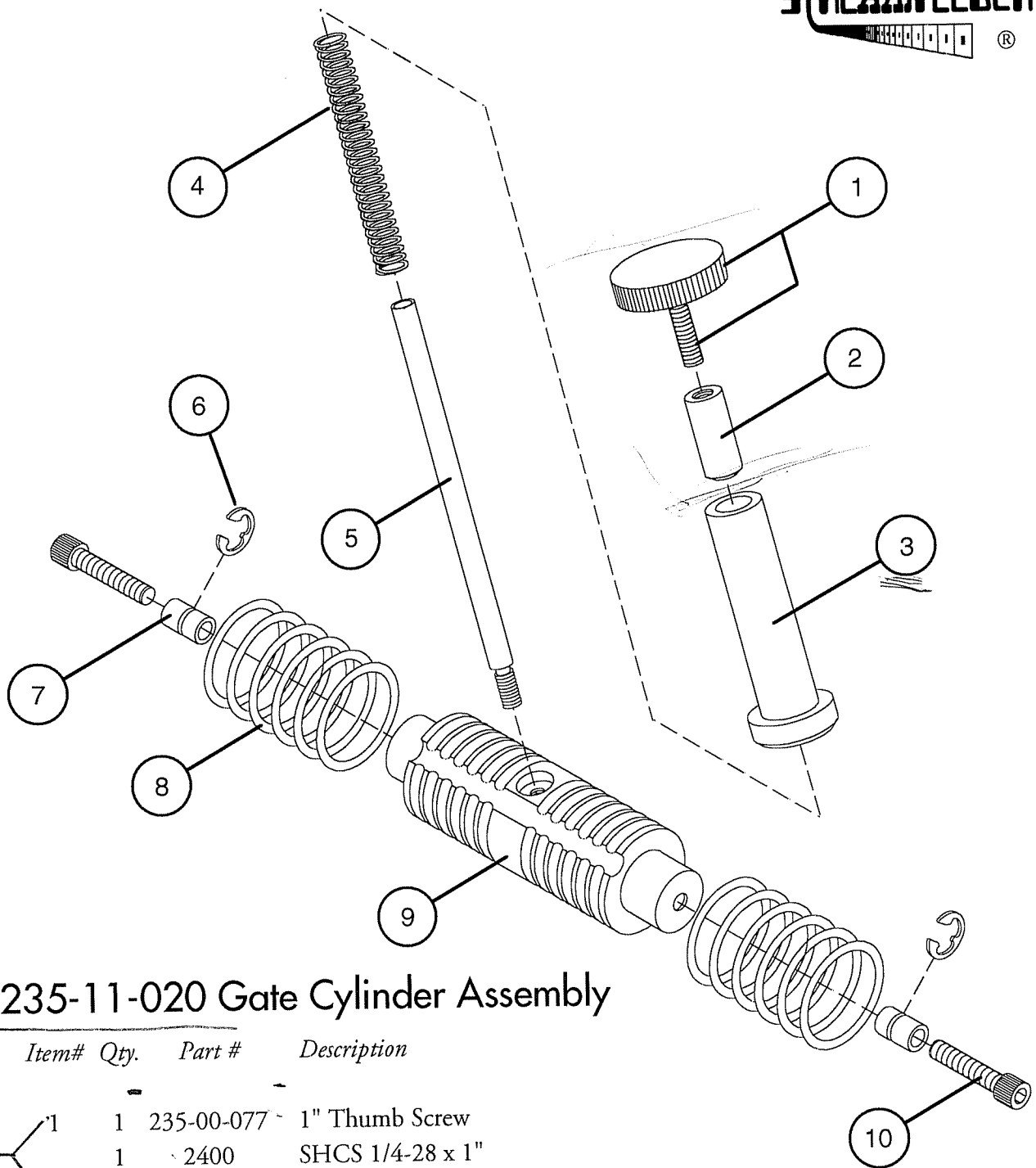
## 235-11-008 Standard Material Hold Down Assembly (Two Full Assemblies Required per Machine)

Item#	Qty.	Part #	Description
1	1	235-00-008	Material Guide Bracket
2	1	235-00-009	Material Guide Bar
3	1	2315	SHCS 10-32 x 1/2"
4	1	235-00-010	Material Hold Down Spring
5	1	2210	BHSCS 8-32 x 1/4"
6	1	235-00-091	Small Thumb Screw
		2315	SHCS 10-32 x 1/2"
NS	2	235-00-022	T- Handle Nut
NS	2	1100	Spring Pin 3/16 Dia.
NS	Items Not Shown On Drawing Refer To Drawing 235-11-036		



## 235-11-018 Wedge Guide Assembly

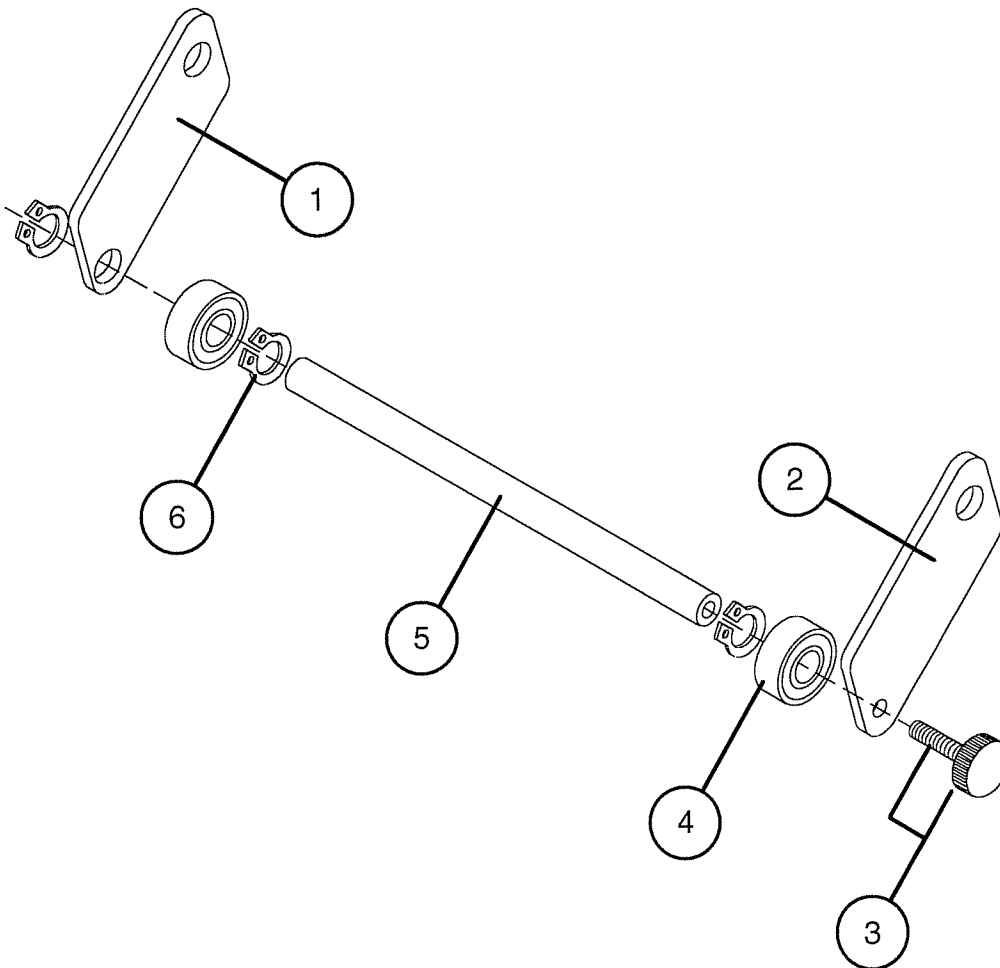
Item#	Qty.	Part #	Description
1	1	235-00-092	Medium Knob
2	1	235-00-023	Knob Extension
3	1	235-00-017	Wedge Hold Down Bracket
4	4	235-00-018	Material Support Wedge
5	2	235-00-033	Wedge Guide Shaft
6	6	1105	Grip Ring 1/4"



## 235-11-020 Gate Cylinder Assembly

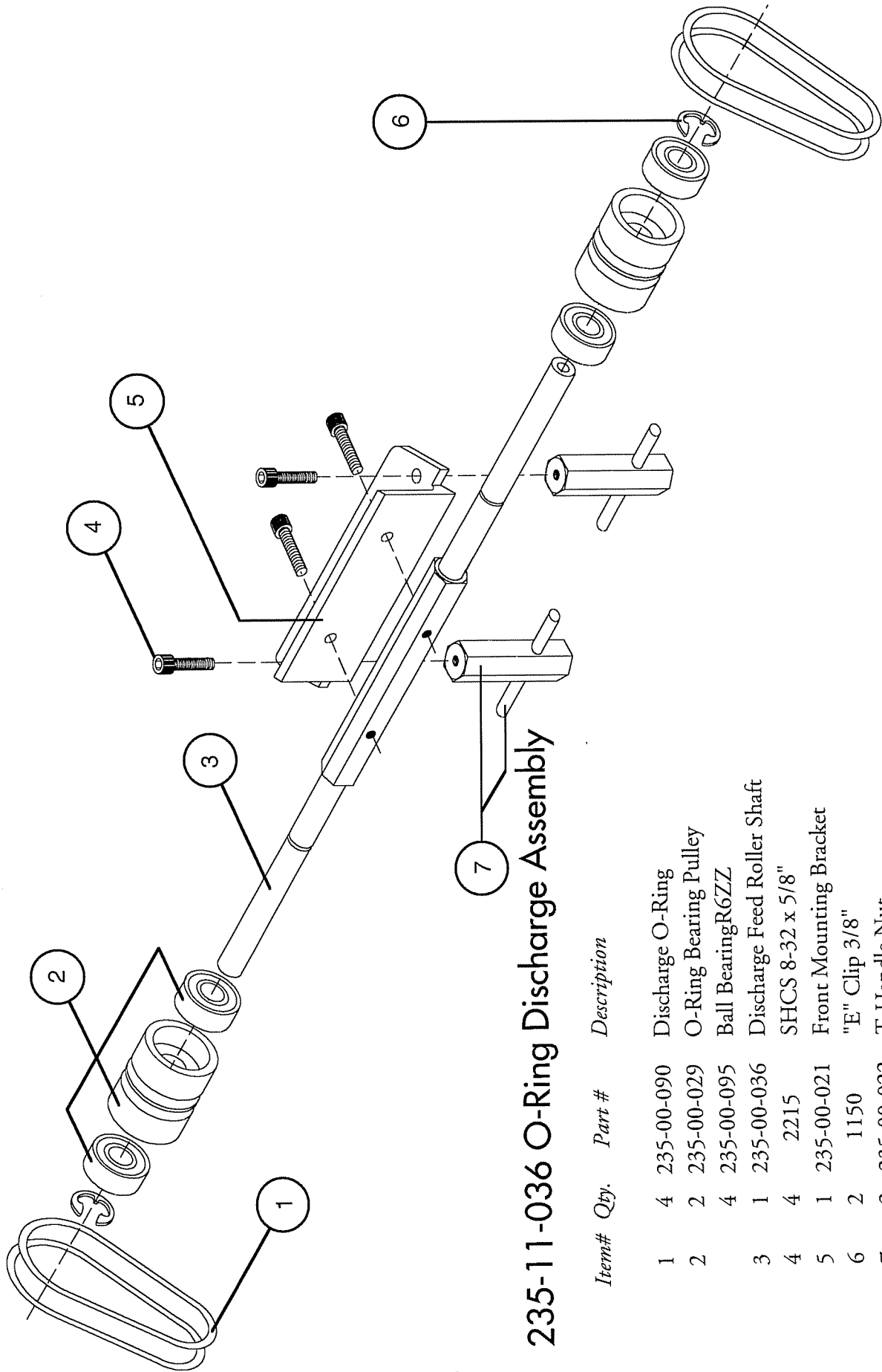
Item#	Qty.	Part #	Description
1	1	235-00-077	1" Thumb Screw
2	1	2400	SHCS 1/4-28 x 1"
2	1	235-00-037	Adjustment Knob Sleeve
3	1	235-00-019	Gate Spring Tension Cylinder
4	1	235-00-083	Gate Compression Spring
5	1	235-00-035	Gate Lift Shaft
6	2	1150	"E" Clip 3/8"
7	2	235-00-082	Spacer, 1/2"
8	12	235-00-089	Gate Cylinder O-Ring
9	1	235-00-020	Gate Cylinder <b>23560800</b>
10	2	2390	SHCS 1/4 x 20 x 1"

23511037



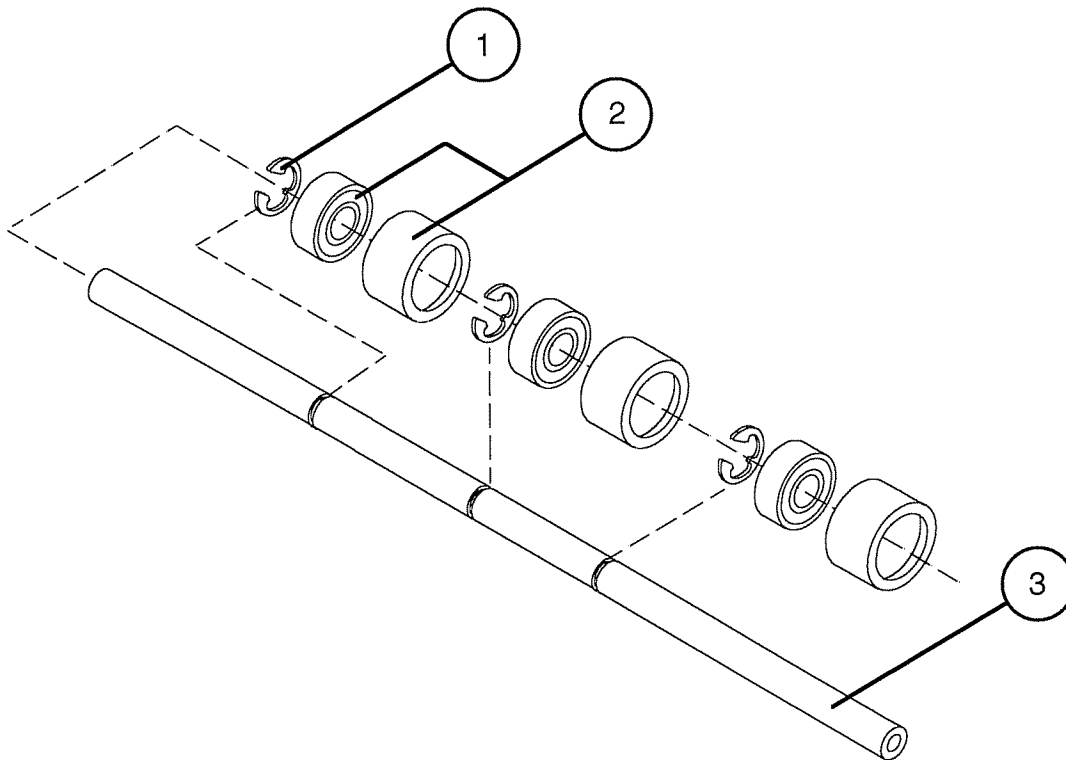
## 235-11-034 Discharge Assist Assembly

Item#	Qty.	Part #	Description
1	1	235-00-014	Left-Hand Discharge Bracket
2	1	235-00-013	Right-Hand Discharge Bracket
3	1	235-00-091	Small Thumb Screw Knob
	1	2315	SHCS 10-32 x 1/2"
4	2	235-00-095	Ball Bearing R6ZZ
5	1	235-00-034	Discharge Bracket Shaft
6	3	1110	Grip Ring 3/8"



## 235-11-036 O-Ring Discharge Assembly

Item#	Qty.	Part #	Description
1	4	235-00-090	Discharge O-Ring
2	2	235-00-029	O-Ring Bearing Pulley
	4	235-00-095	Ball Bearing R6ZZ
3	1	235-00-036	Discharge Feed Roller Shaft
4	4	2215	SHCS 8-32 x 5/8"
5	1	235-00-021	Front Mounting Bracket
6	2	1150	"E" Clip 3/8"
7	2	235-00-022	T-Handle Nut
	2	1100	Spring Pin 3/16" Dia.
NS	2	2105	Acorn Nut, 8-32 (For Shipping Only)

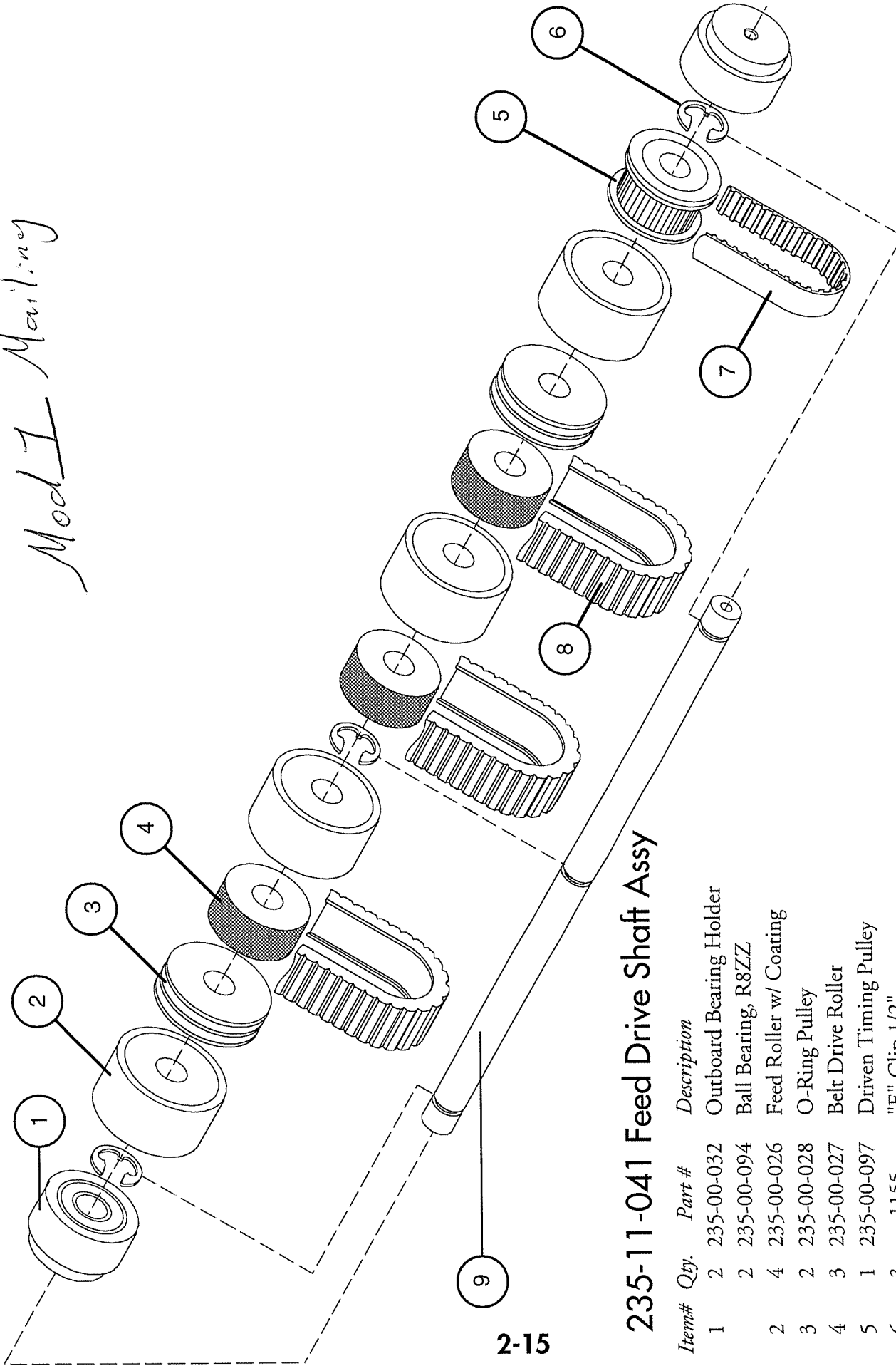


## 235-11-040 Belt Support Bearing Assembly

<i>Item#</i>	<i>Qty.</i>	<i>Part #</i>	<i>Description</i>
1	3	1150	"E" Clip
2	3	235-00-030	Belt Support Bearing Holder
	3	235-00-095	Ball Bearing R6ZZ
3	1	235-00-040	Belt Support Bearing Shaft

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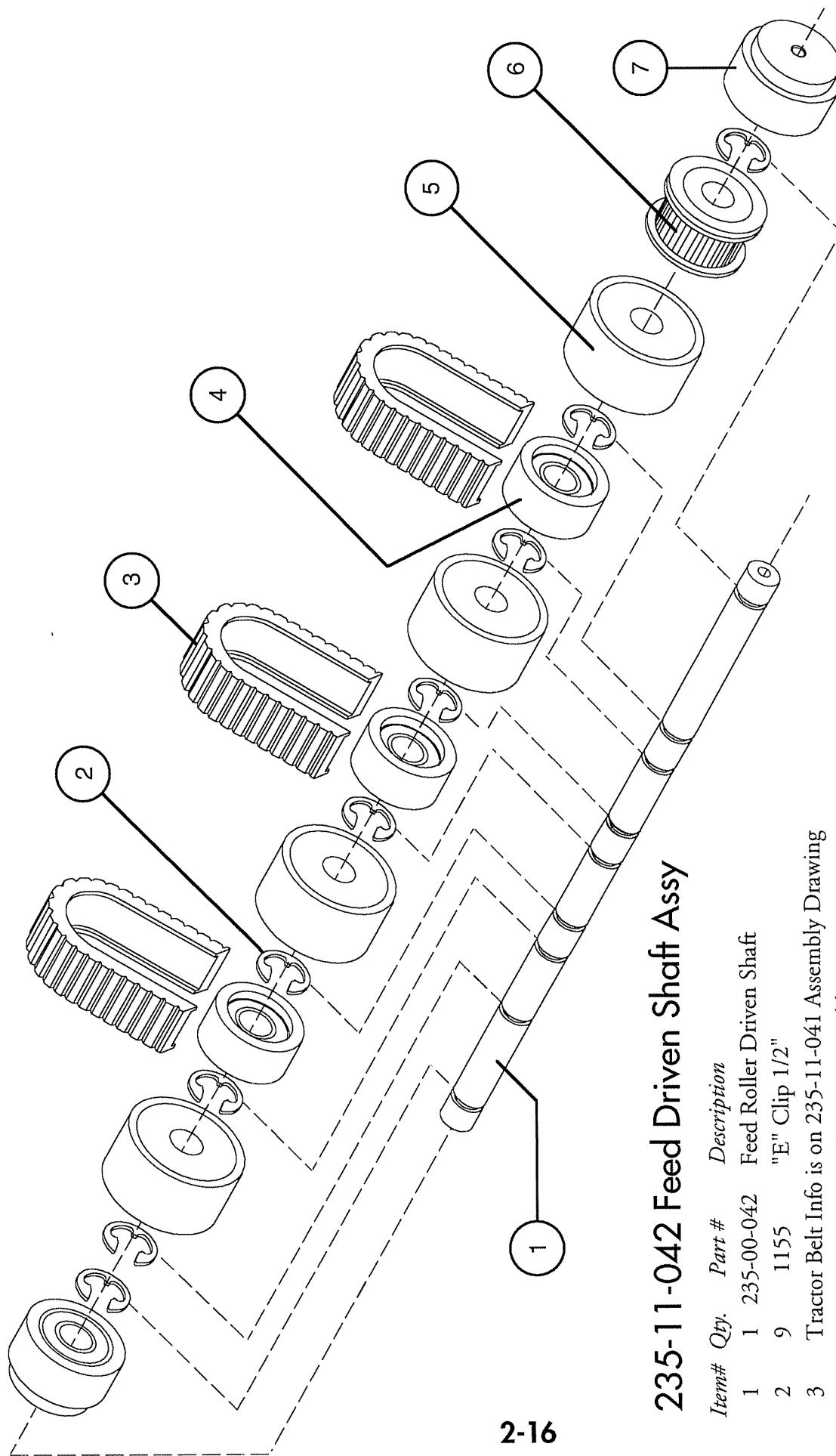
2-15

### 235-11-041 Feed Drive Shaft Assy

Item#	Qty.	Part #	Description
1	2	235-00-032	Outboard Bearing Holder
2	2	235-00-094	Ball Bearing, R8ZZ
2	4	235-00-026	Feed Roller w/ Coating
3	2	235-00-028	O-Ring Pulley
4	3	235-00-027	Belt Drive Roller
5	1	235-00-097	Driven Timing Pulley
6	3	1155	"E" Clip 1/2"
7	1	235-00-096	Drive Belt
8	3	235-00-088	Tractor Belt
9	1	235-00-041	Feed Roller Drive Shaft
NS	11	2217	SHSS 10-32 x 1/4" Brass Tip

NS Items Not Shown On Drawing

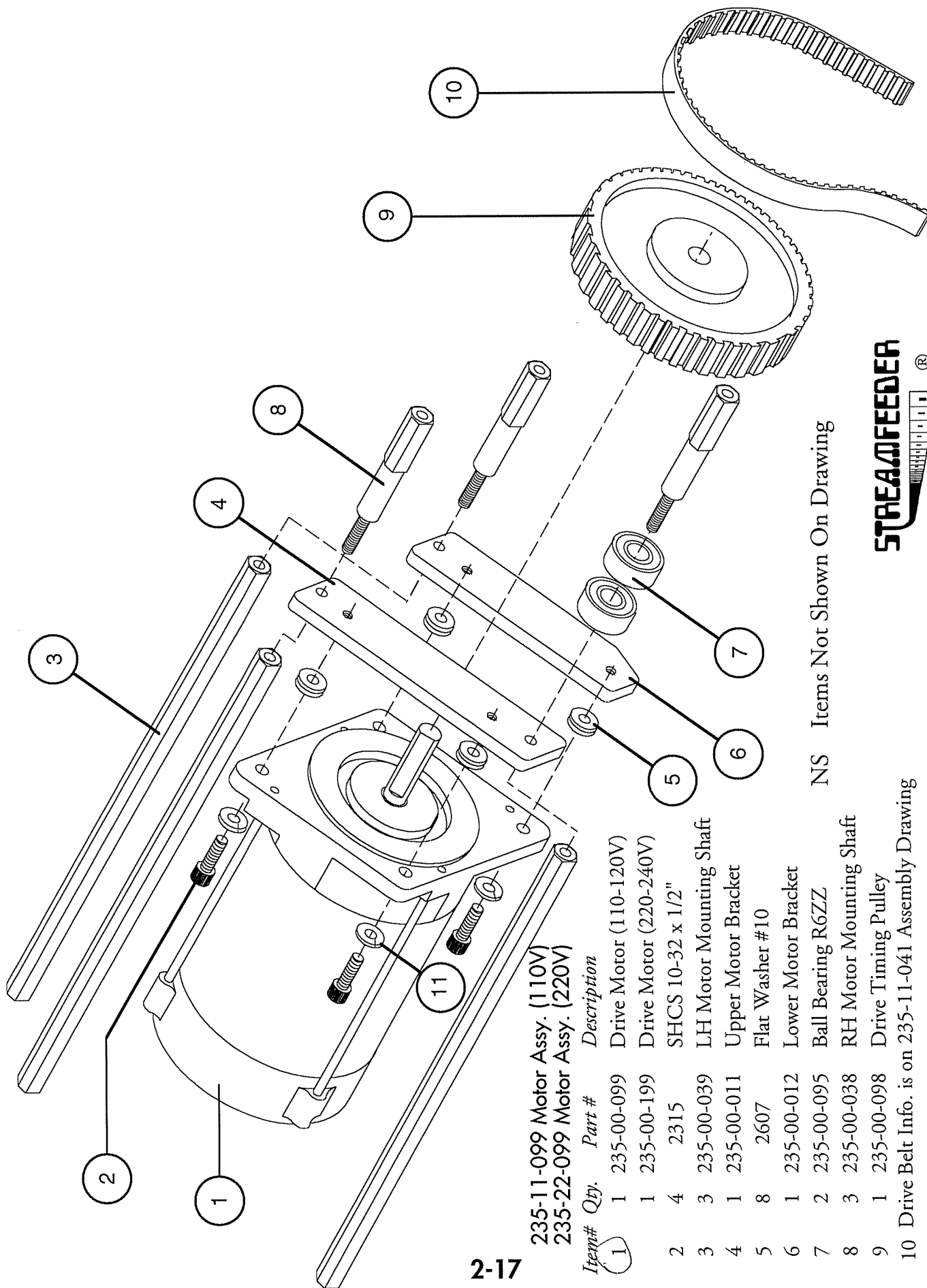




2-16

## 235-11-042 Feed Driven Shaft Assy

Item#	Qty.	Part #	Description
1	1	235-00-042	Feed Roller Driven Shaft
2	9	1155	"E" Clip 1/2"
3	Tractor Belt Info is on 235-11-041 Assembly Drawing		
4	3	235-00-031	Belt Bearing Holder
	3	235-00-094	Ball Bearing, R8ZZ
5	4	235-00-026	Feed Roller w/ Coating
6	1	235-00-097	Driven Timing Pulley
7	2	235-00-032	Outboard Bearing Holder
	2	235-00-094	Ball Bearing, R8ZZ
NS	6	2217	SHSS 10-32 x 1/4" Brass Tip



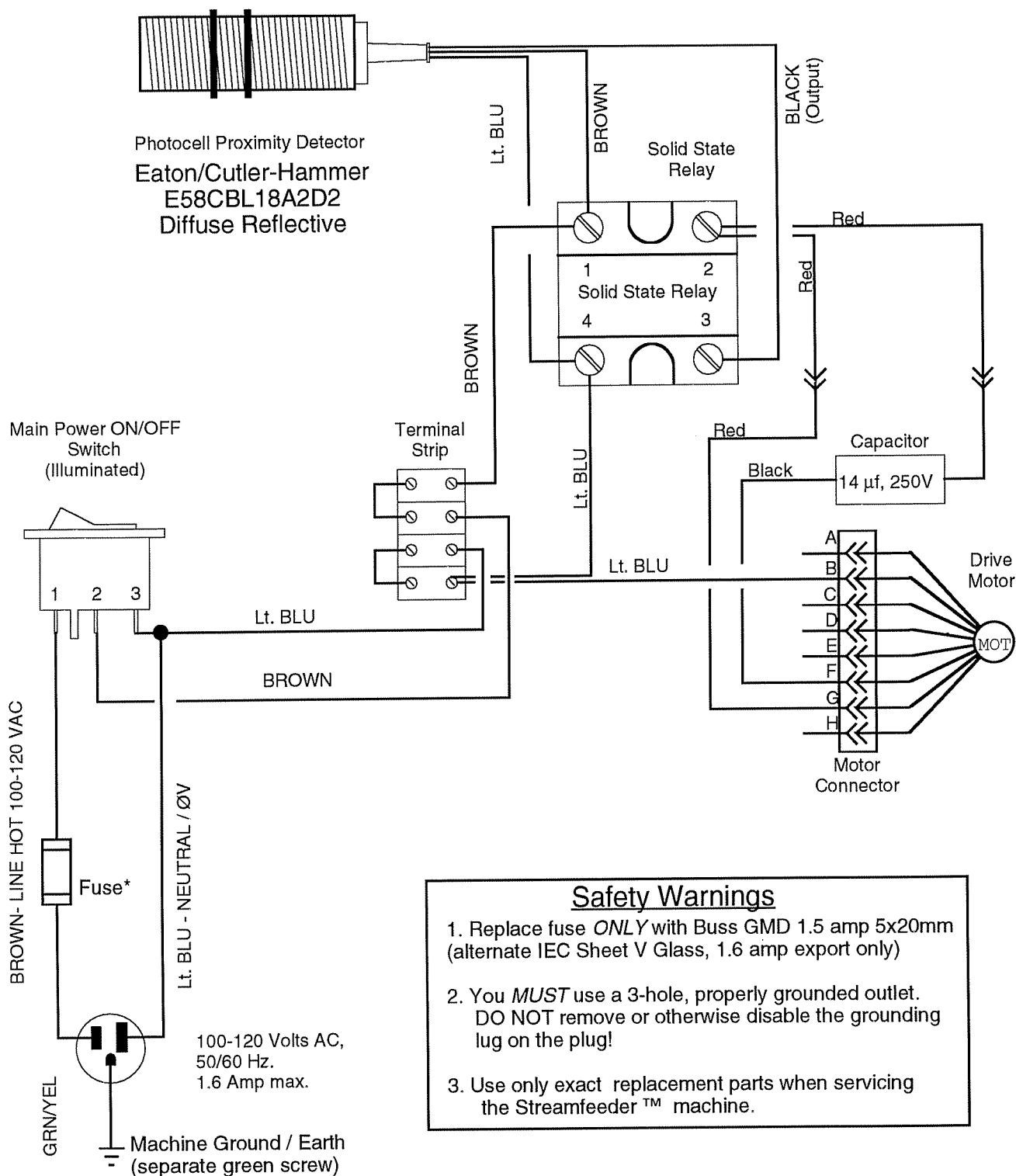
235-11-099 Motor Assy. (110V)  
235-22-099 Motor Assy. (220V)

Item#	Qty.	Part #	Description
1	1	235-00-099	Drive Motor (110-120V)
2	1	235-00-199	Drive Motor (220-240V)
3	4	2315	SHCS 10-32 x 1/2"
4	3	235-00-039	LH Motor Mounting Shaft
5	1	235-00-011	Upper Motor Bracket
6	8	2607	Flat Washer #10
7	1	235-00-012	Lower Motor Bracket
8	2	235-00-095	Ball Bearing R6ZZ
9	3	235-00-038	RH Motor Mounting Shaft
10	1	235-00-098	Drive Timing Pulley
11	4	2608	Lock Washer #10
NS	1	235-11-075	AC Motor Coupler Ass'y

NS Items Not Shown On Drawing



Drive Belt Info. is on 235-11-041 Assembly Drawing



### Safety Warnings

1. Replace fuse *ONLY* with Buss GMD 1.5 amp 5x20mm (alternate IEC Sheet V Glass, 1.6 amp export only)
2. You *MUST* use a 3-hole, properly grounded outlet. DO NOT remove or otherwise disable the grounding lug on the plug!
3. Use only exact replacement parts when servicing the Streamfeeder™ machine.

Date:  
6 OCT 93

Drawn:  
KMN



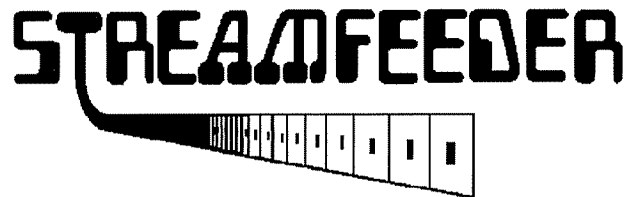
© 1993

Title:  
Streamfeeder™ Model I and II  
Wiring Connection Diagram

Drg. No.  
Engineering Bulletin 004.5



Part Number 235-00-900  
version 1.0  
Price: \$25.00



## **Streamfeeder Universal Friction Feeder**

### ***Mailing Series***

### **Operating Manual**

### **Troubleshooting Manual**

### **Maintenance Manual**



## **Table of Contents**

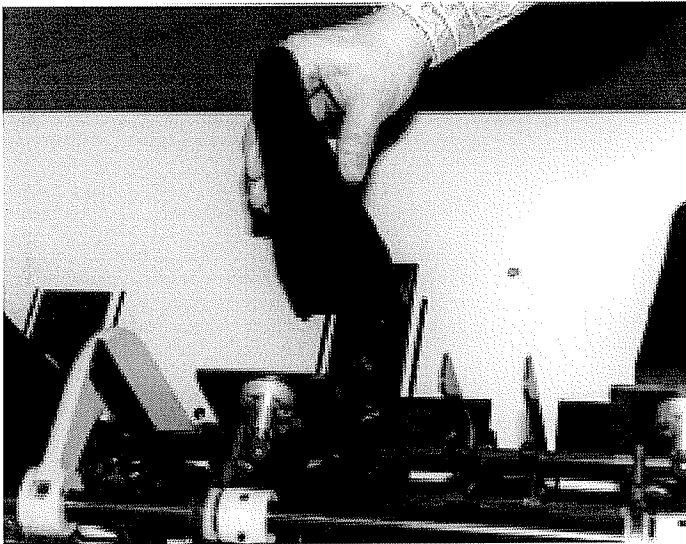
**Section 1 - Operating Manual**

**Section 2 - Parts Manual**

**Section 3 - Electrical Schematic.**

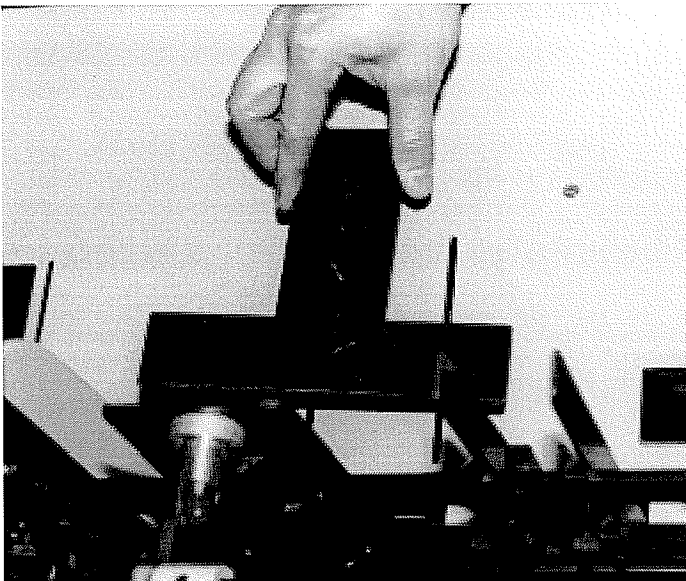
## Operating the Streamfeeder® Universal Friction Feeder

Thank you for investing in the Streamfeeder® Friction Feeder. You will find installation simple to accomplish. These easy step-by-step instructions will “walk you through” the installation and set-up procedures to successfully get your Streamfeeder up and running.

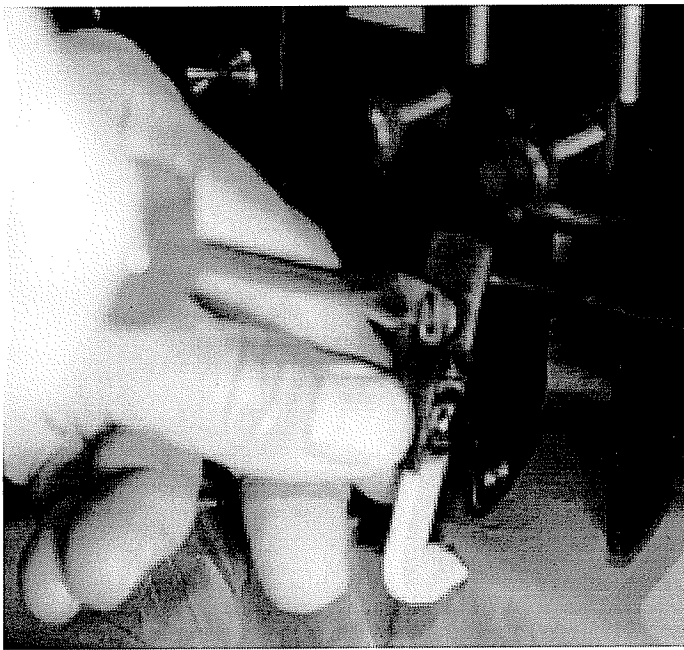


Preparing the inserter for the feeder.

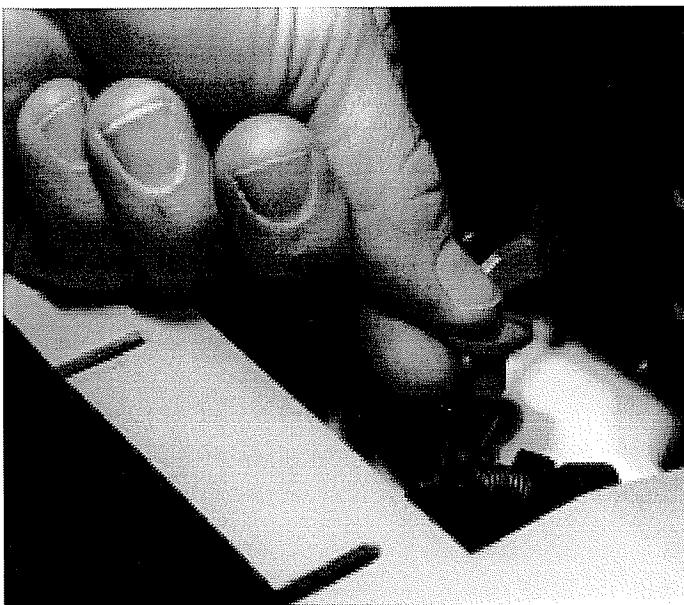
Step 1. Remove the guide assembly rear.



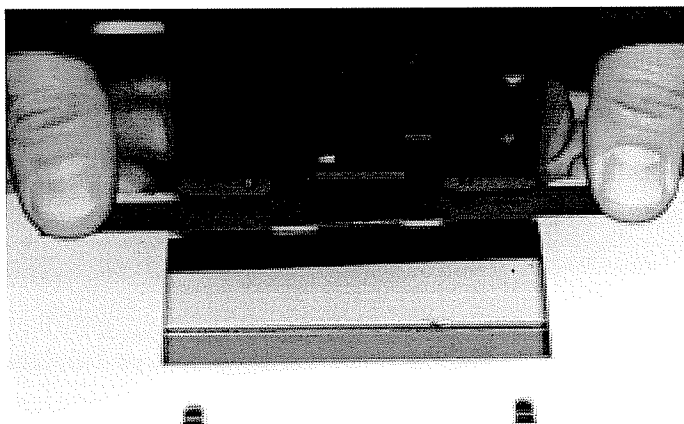
Step 2. Remove the plate insert box feed adjustment (“T” Plate).



Step 3. Loosen the separator foot and tilt it away from the insert station so the foot does not interfere with the material being run.

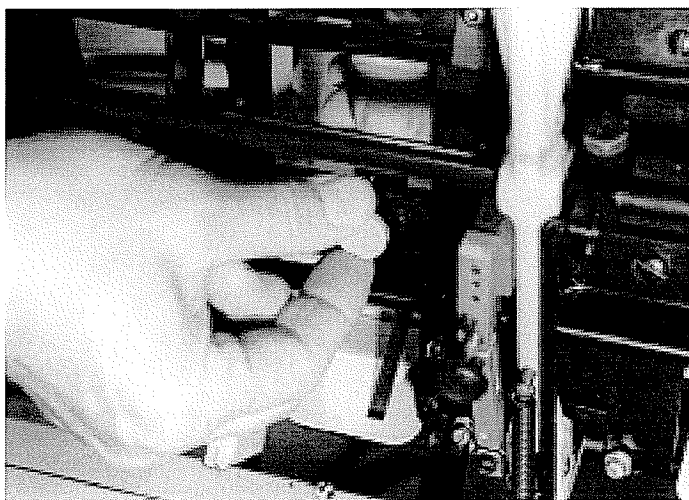


Step 4. Remove the insert suction cup. Lower and tilt the adjustable sucker assembly forward. Plug the sucker hose. The sucker assembly may be moved down and to one side if it interferes with the material being fed.



Step 5. Cycle the inserter until the insert gripper arm jaw is approximately 1/2" from the insert front plate. Locate the two material guide tabs that protrude from the front of the inserter rear table. Pull these guide tabs upward until their top surface is slightly above the bottom of the gripper arm jaw. The material that will be run rests on these guides. The bottom of the gripper arm jaw must pass under the material without making contact with it.

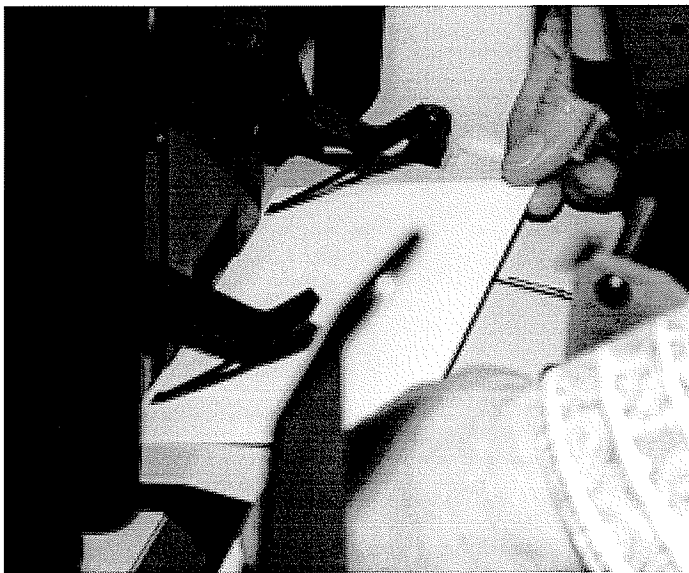
Note: Insecrco machines only: Remove the two material guide tabs that protrude from the front of the rear table. Bend these guides approximately 1 3/8" from the tip and reinstall. Place the guide tab approximately 1 3/8" into the rear table



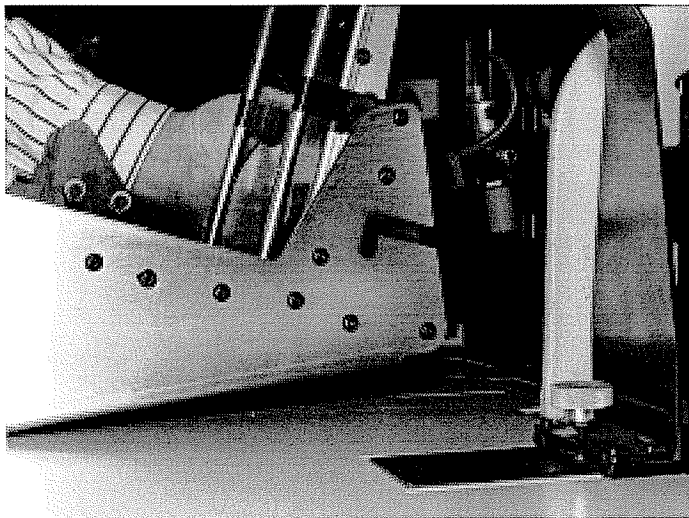
back guide adjusting slot and bend the guide.

**Installing the Streamfeeder on the inserter.**

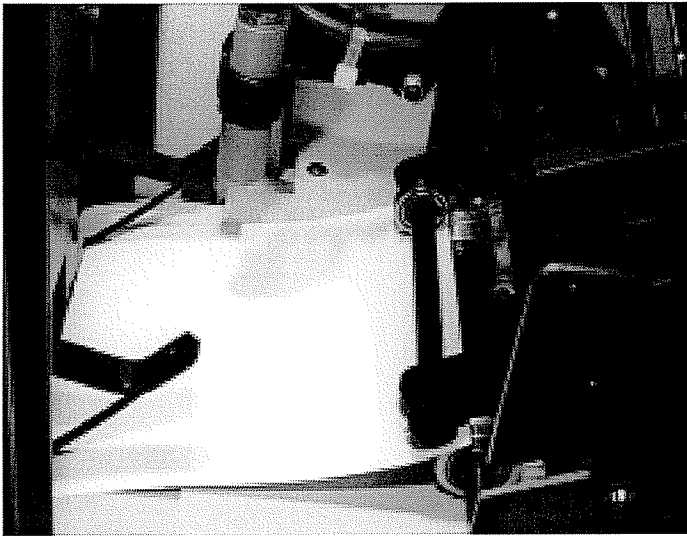
Step 6. Place the Streamfeeder guides on the left and right side of the front insert plate and tighten to the lower support rail.



Check the position of the Streamfeeder spring guides you just installed with a piece of the material you will be running. Adjust the springs to a light tension and locations near the inside edges of the piece. Leave this piece of material in place for further adjustments.



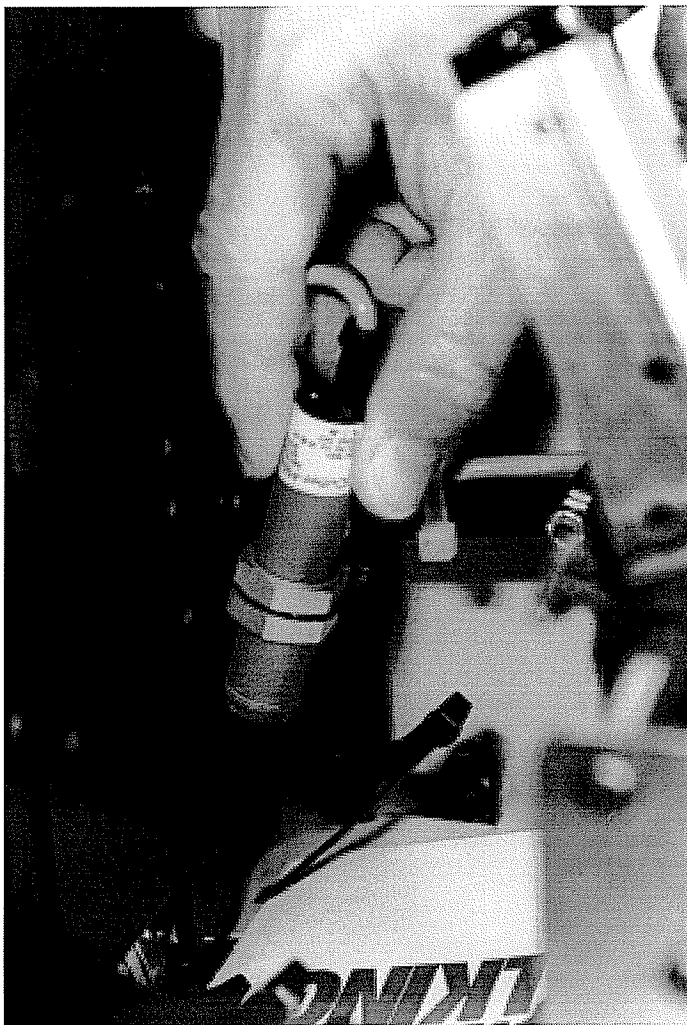
Step 7. Place the feeder on the rear insert table with the two screws that protrude from the bottom of the feeder aligned into the rear guide slots. Secure the feeder with the two "T" Handle nuts provided.



Step 8. Feeder positioning. Place a piece of material to be run under the spring steel guides. Have the front edge of the material aligned with the front of the insert plate. Slide the feeder toward the gripper arm until the trailing edge of the material held by the guides fits between the feeder's exit rollers.



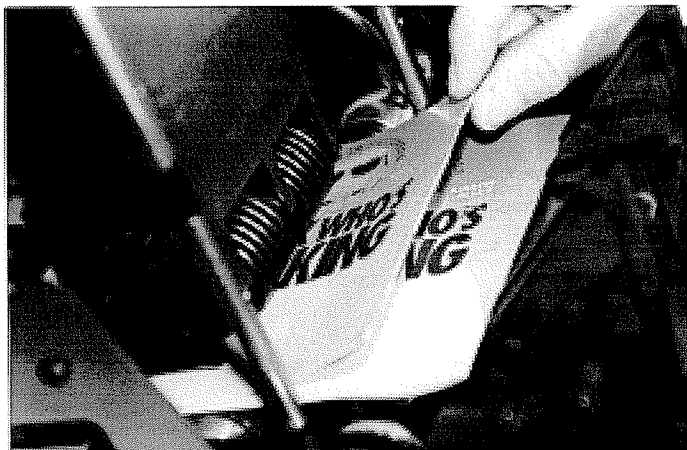
Then tighten the two "T" handle nuts to lock the feeder in place.



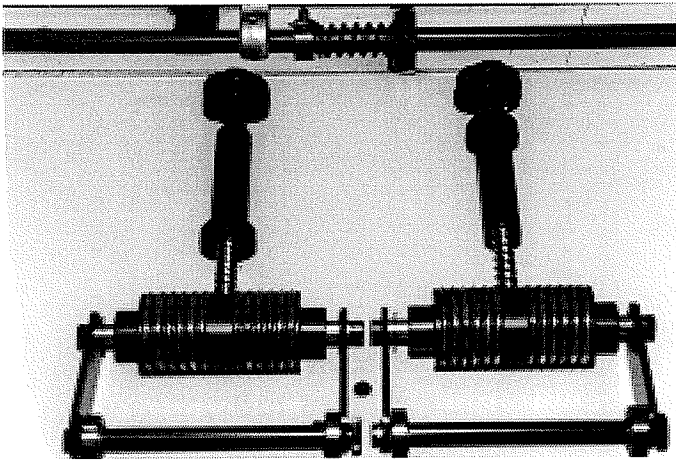
## Adjusting the Streamfeeder.

Step 9. Aligning the photocell. Position the photocell by sighting along the tubular barrel. The photocell should “point” exactly at the leading edge of the piece of material that is held under the spring steel guides. The final photocell adjustment will align slightly to the rear of the leading edge. This is because when the photocell signals the feeder’s motor to stop, the motor will over travel slightly.

Step 10. Gate adjustment. Place two pieces of material to be run under the gate. To do this, pull up on the gate adjustment knob enough to slip the two pieces under the gate “O”-rings. Grasp the top piece of material and slide it back and forward under the gate. The proper adjustment is a slight amount of drag on the top piece. Use the gate cylinder adjust knob to set the amount of drag.



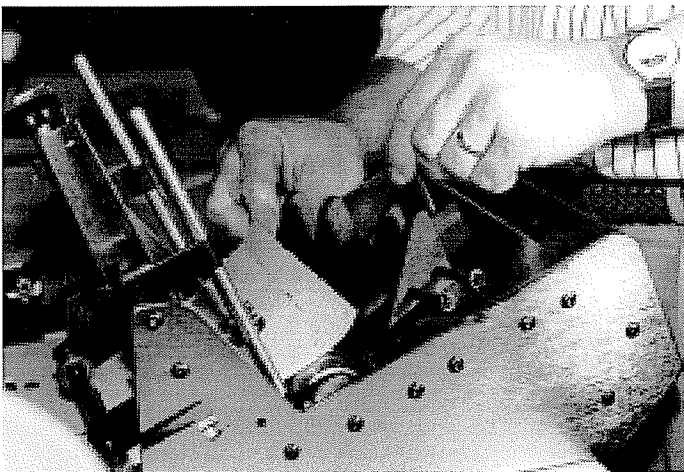
It is desirable to adjust the gate to the maximum opening without feeding doubles. This will allow the maximum tolerance for curled or bent edges, etc. If the feeder feeds doubles after feeding several pieces, you need to close the gate cylinder gap a little. Do this by turning the gate cylinder knob about 1/8 turn counter-clockwise. Retest and repeat the adjustment if necessary. If the gate cylinder is too tight, the material will have difficulty pulling through the gate and you will get missed feeds.



You can also adjust the amount of spring tension holding the gate cylinder in position. The gate can move upwards slightly against the spring while material is being fed. This is useful in feeding irregular materials. The normal setting for the gate cylinder spring tension is with the collar on the barrel in the "down" position. This is shown in the left position in the photograph. This setting will work well for most materials and allows the greatest stack heights. It also gives the best performance in preventing doubles.

*CAUTION: Before running the feeder, be sure that the gate cylinder is adjusted upwards enough that the "O"-rings are not contacting the feed rollers and belts. If the gate cylinder "O"-rings are in contact with the belts and rollers and the feeder is run with no material in it, you will damage the belts, rollers and "O"-rings.*

The cylinder can be turned to the "up", or low tension position for special feeding requirements. This would be especially useful in feeding irregular thickness materials that requires the gate to "float" more during the feeding process. The low tension setting can be used to minimize marking of the product by the gate cylinder or to prevent peeling back the top sheet of a booklet, for example.

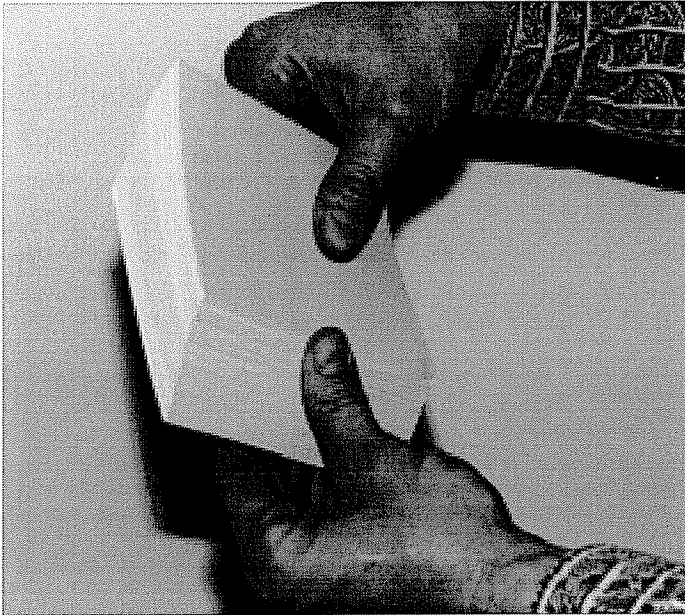


Step 11. Material Support Wedge Adjustment. The trailing edge of the material to be run *must* be supported by the material support wedges.

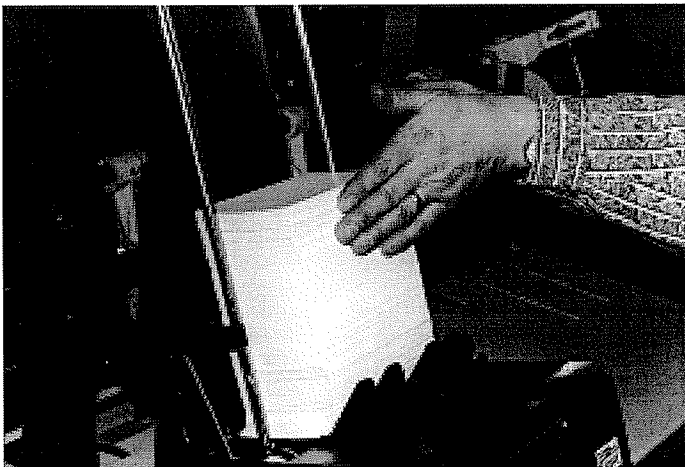
This adjustment is made by loosening the wedge assembly adjusting knob and sliding the wedge assembly under the trailing edge of the material to be run. Each individual wedge may be moved from side to side on its retaining shaft. This allows an adjustable spacing of the wedges to evenly support the material to be run. It should be understood that this feeder feeds in a shingled manner. As the bottom piece exits the gate area, the following piece of material starts to feed. It overlaps the first piece. The amount of

overlap can be adjusted by sliding the wedge assembly toward the gate for less overlap, or away from the gate for more overlap.

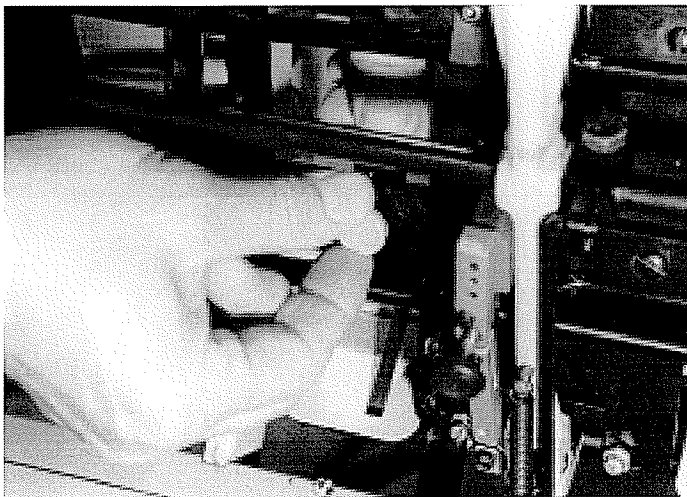
Function of overlap. More overlap allows the feeder to feed a greater amount of paper per revolution. This will serve better in high speed applications. The wedge assembly can be turned to the left or right to help compensate for skewed (twisted) feeding of the material. You can experiment with turning the wedge assembly one way or the other and observing the straightness of the material feeding.



Step 12. Loading the material to be run. The first handful of material should be fanned into a wedge and placed in the feeder to allow the bottom pieces of paper to conform to the curvature of the gate cylinder. By helping the first stack of material to form itself around the gate cylinder, you will help get the separation process started correctly. You only need to do this with the first stack going into the machine. From then on, the feeder will continue to form the material around the gate cylinder for proper feeding automatically.



As you add more material to the stack in the feeder hopper, pat the back edge of the material stack so that all of the material is pushed tightly up to the front plate. This helps to prevent miss feeds.



*CAUTION: Electrical extension cords should be at least 16 Gauge wire. They MUST be 3 wire grounding type. You MUST use a 3 hole grounded outlet.*

## **Feeder Start-up.**

Turn the feeder on and adjust the spring tension of the material guides. This is done by sliding the guide bracket up or down on the support bar and then tightening the set screw. The spring tension on the material guides should not be so great as to distort the material as the gripper jaw of the inserter pulls the material through the springs.

Adjust the insert arm gripper jaw and detector to the material being run. The procedure for this is the same as for regular stations that are not equipped with the Streamfeeder. See your inserter owners manual for instructions about these adjustments.



Adjust the photocell to stop the material in line with the insert station front plate. This is done by aiming the photocell forward or backward to change the stopping point. See step 9 for more information about adjusting the photocell.

Run several pieces of material from the feeder before making your final gate adjustments to the Streamfeeder, if necessary. When adjusting the gate cylinder knob, make the movements in small amounts. Usually it is best to move the outside edge of the knob 1/8" or less with each adjustment.

## Troubleshooting and Maintenance of the Streamfeeder

### Problem

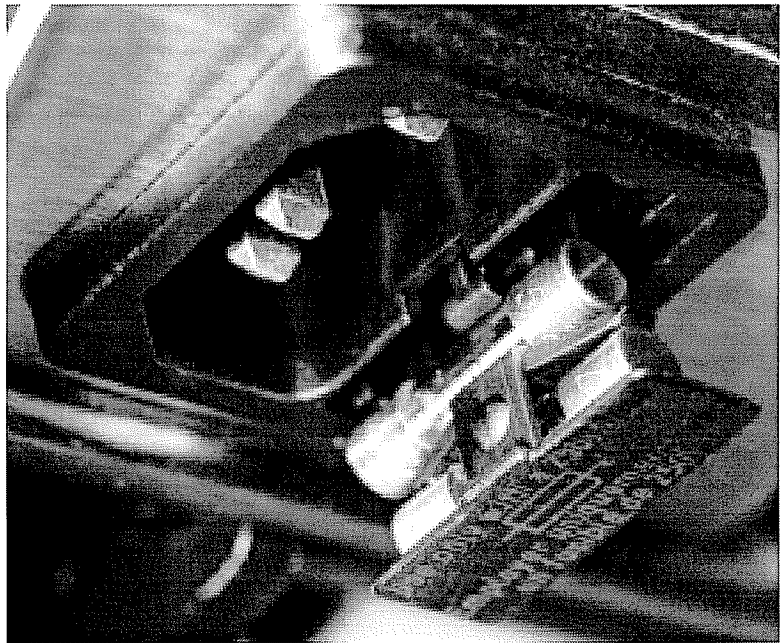
Feeder does not run, switch is turned on.

### Cause and Solution

Is the main power switch light on (120 V models only)? If not, check the electrical supply by plugging in another device into the plug you are using to be sure there is power to the outlet.

The photocell may be detecting a background surface and does not turn the motor on. Realign the photocell to be sure it is not detecting a background.

Check to see if the machine fuse is blown. If so, replace the fuse with the spare one in the fuse holder. Use only the proper size and type of fuse.



If the gate cylinder is set too tight, it will jam the machine and stall the motor. Also check for a paper jam in the machine. A stalled motor can blow the fuse.

Feeder will not stop (continuous feeding).

The photocell is not detecting the material being fed. Realign the photocell as discussed in step #9 of the set up instructions.



The photocell used on the Streamfeeder was chosen for its very broad range of sensing capabilities and ease of set-up. Occasionally, when running very black pieces, the standard photocell will not be able to sense the pieces. In this situation, contact Streamfeeder for technical support. Streamfeeder has optional, specialized photocells available for difficult sensing applications.

The material being fed does not advance far enough for the gripper jaw to pick up.

The photocell is not properly aligned. Realign the photocell to a focal point farther from the feeder. The feeder may not be the proper distance from the gripper jaw. Repeat the adjustment for proper feeder distance from the gripper jaw covered in Step #8 of the set-up instructions.

The material overshoots the guide springs and is too deep in the gripper arm jaw.

The photocell is misaligned and/or the feeder is not installed with the correct distance from the gripper jaw. The spring tension on the guide springs may be too low.

Move the photocell toward the feeder. Position the feeder the proper distance from the guide springs. Set the correct spring tension on the guide springs.

The feeder runs, but material does not feed.  
Erratic feeding, roller slip.

The gate is set too tight. Loosen the gate.  
The wedge assembly is too far toward gate. Move the wedge assembly away from the gate to allow more material contact with the drive belts and rollers.  
The paper may be jammed. Clear the jam.  
Material stack may be too high or heavy. Try removing part of the stack.  
Rollers and belts may be dirty and glazed, causing the rollers and belts to slip on the material. Clean the rollers with rubbing alcohol.

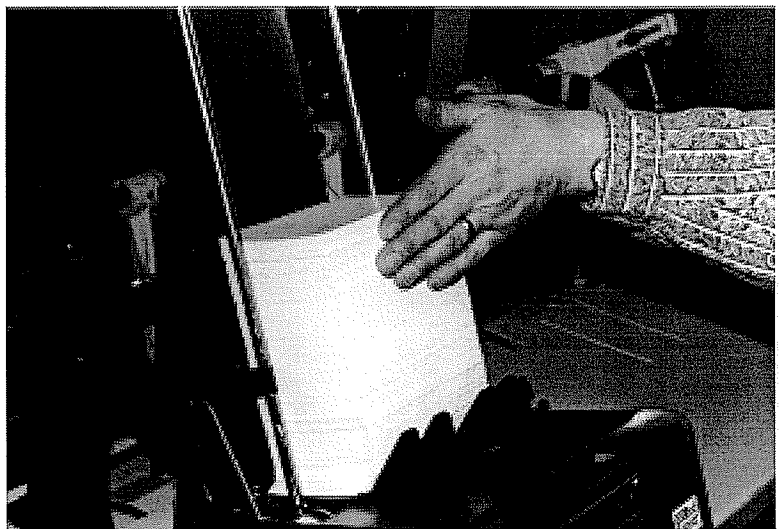
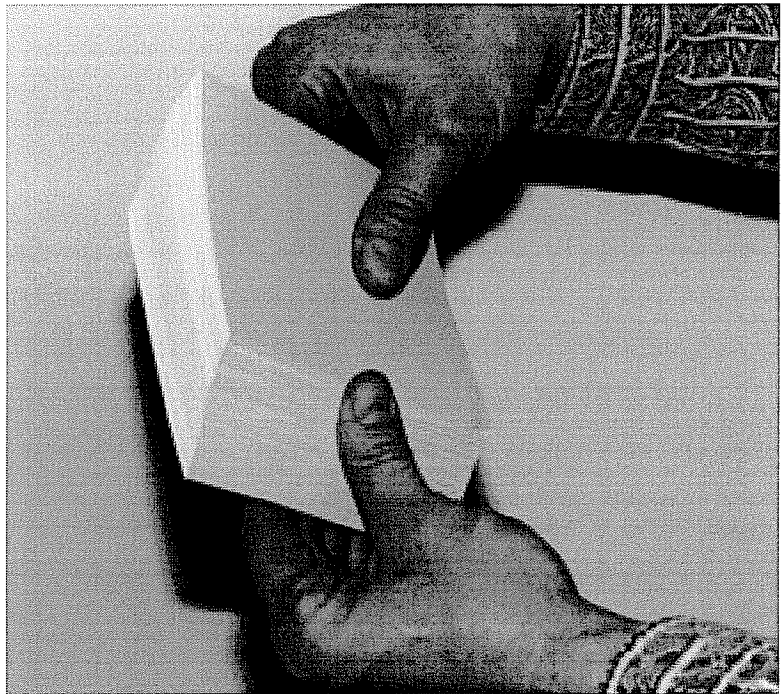
**CAUTION:**  
*Isopropyl rubbing alcohol is FLAMMABLE! Unplug the machine before cleaning the rollers. Do NOT use near an open flame, sparks or any other source of ignition. Do NOT smoke in the vicinity of the alcohol fumes. Air dry the cleaning rag. Dispose of used rags properly. Only purchase consumer packaged rubbing alcohol. Only keep small quantities of alcohol on the job site (16 oz., 500 ml or less). Store alcohol properly.*



*Clean rollers and belts are VERY IMPORTANT to the proper operation and feeding of the Streamfeeder!*  
Clean the rollers using a clean rag or towel and alcohol. **Use ONLY Isopropyl Rubbing Alcohol, 70% by volume.** This is the type of rubbing alcohol that is sold at drug stores. Do NOT use any other type of cleaners, such as Blanket Wash or other solvents. These may coat the rollers with plasticizers or destroy the rubber compound of the rollers.  
DO NOT use any type of abrasive cleaner or cleaning cloth, such as Scotchbrite or sand paper on the rollers. This will destroy the sealed high friction surface and make the rollers useless.

The feeder runs, but material does not feed.  
Erratic feeding, roller slip.  
(continued)

Material not loaded properly in feeder hopper. Make sure the first stack of material is loaded with a fanned lead edge to conform to the gate cylinder. Make sure material is patted forward until it contacts the front guide.

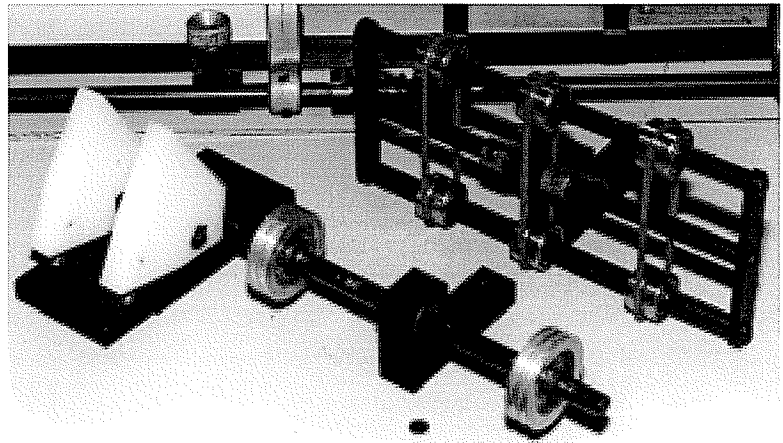


Pieces interlock. Make sure there is no embossing, staples or other physical features of the product that cause the product to interlock one piece to the next. An example of a material with serious interlock would be credit cards with the same data embossed on every card.

The feeder runs, but material does not feed.  
Erratic feeding, roller slip.  
(continued)

On unusual or irregular material, experiment with different directions of material feed. Some materials will feed better in one direction than the others.

If you are feeding some difficult materials, the standard wedge assembly may not provide sufficient support for the material, or it may cause the material to bind together. Streamfeeder has special, optional wedge assemblies for meeting these special requirements. Contact Streamfeeder for technical assistance. Some of the special wedges are shown in the photograph below.

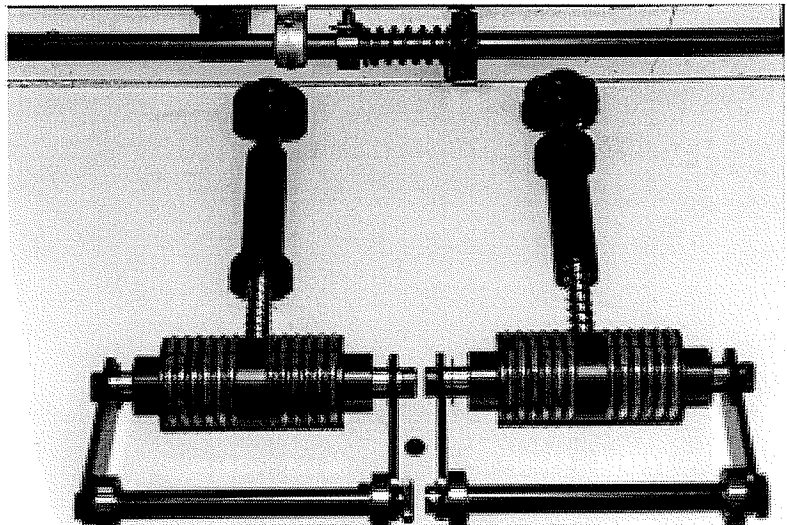


Paper skews when exiting the feeder  
(does not feed straight).

One side of the material being fed is contacting the feed belts before the other side. Turn the wedge assembly to offer more support under the leading edge of the material. The side of the material that is leaving the feeder first needs more support, or less belt contact. Turn the wedge on this side toward the gate cylinder to hold the material up from the belts. Experiment with different amounts of wedge twist to minimize or eliminate the skewing of the material feed.

With the feeder hopper full, the feeder cannot control doubles.

The spring tensioning cylinder may be turned for low stack height. Turn the cylinder over for higher spring tension and higher stack heights. In the high tension, the collar on the cylinder is down, or closest to the cylinder.



The "O"-rings are worn to the same height as the gate cylinder. Turn or replace all "O"-rings if they are worn.

Turning the "O"-rings on the gate retard cylinder may be done by inserting a small, 90° Allen hex wrench in the horizontal groove in the gate cylinder. With the hex wrench in the groove and the "O"-ring in the bend of the wrench, rotate the wrench one complete circle around the "O"-ring groove while pulling the wrench away from the cylinder. This lifts the "O"-ring out of its groove. Turning the wrench one complete turn will rotate the "O"-ring in the groove to a new wear position on the gate cylinder. Rotate all of the "O"-rings the same amount for an even retard surface on the bottom of the cylinder.

