Infinity Solutions™

5K

Service Manual

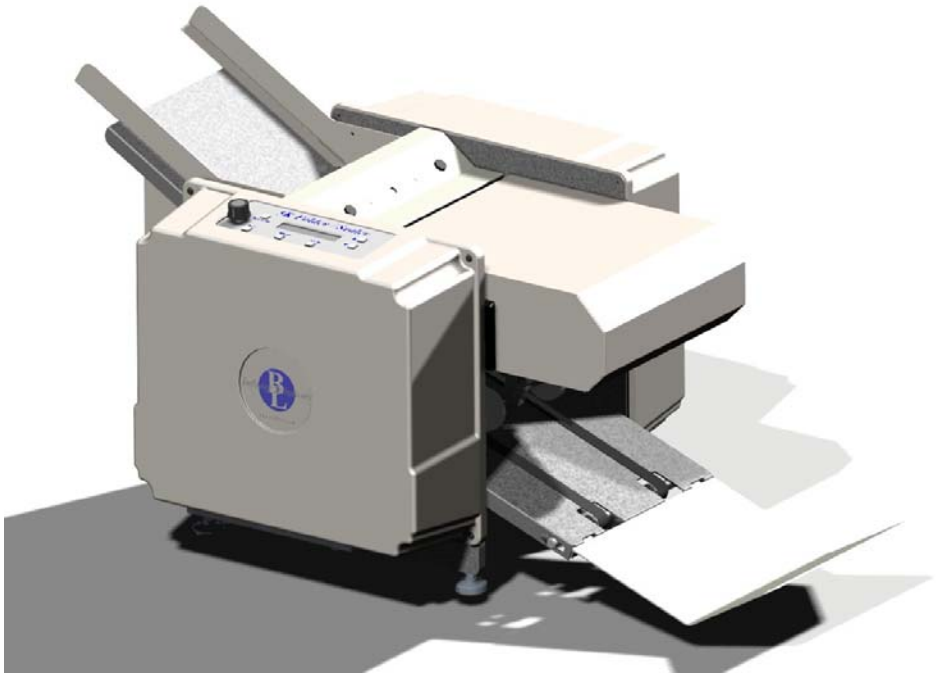


Table of Contents

Service Manual Notes

Tools Needed

- Set of standard Inch Allen Wrenches
- 7/16” Deep Socket & Driver
- 1 ¼ “ Socket
- Torque Wrench, with 12 ft*lbs capabilities
- Philips head Screw Driver

Parts:

For parts please contact Infinity Solutions Manufacturing.

Phone: (207) 899-1714
Fax: (207) 228-1890
www.infinitysolutionsmfg.com

Part numbers are included for components shown in exploded views through out the manual and in the appendix.

Technical Help

The majority of service operations are covered in this manual. However if you are unable to resolve a problem please contact technical support at Infinity Solutions Manufacturing.

Phone: (207) 899-1714

Additional Notes

This manual is for use with the Infinity Solutions 5K .

1. Machine Overview

- Read the ***operators manual*** to become familiar with the machine operation.

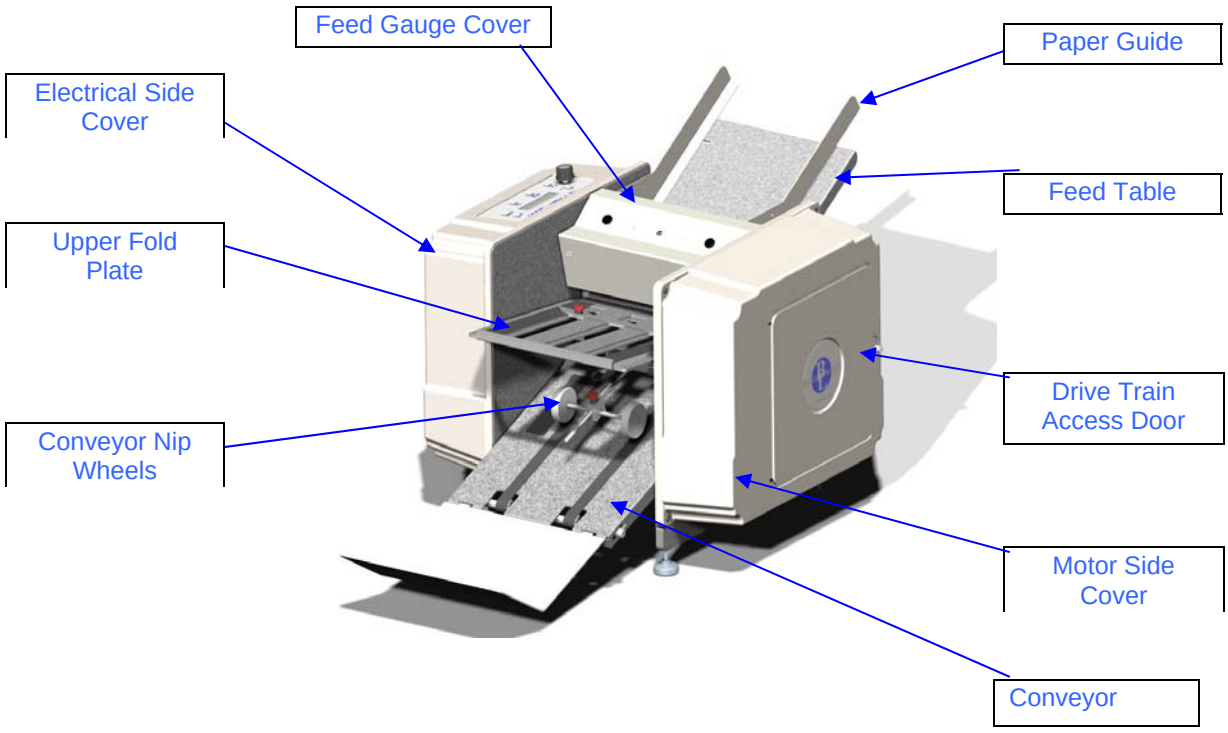


Figure 1: A

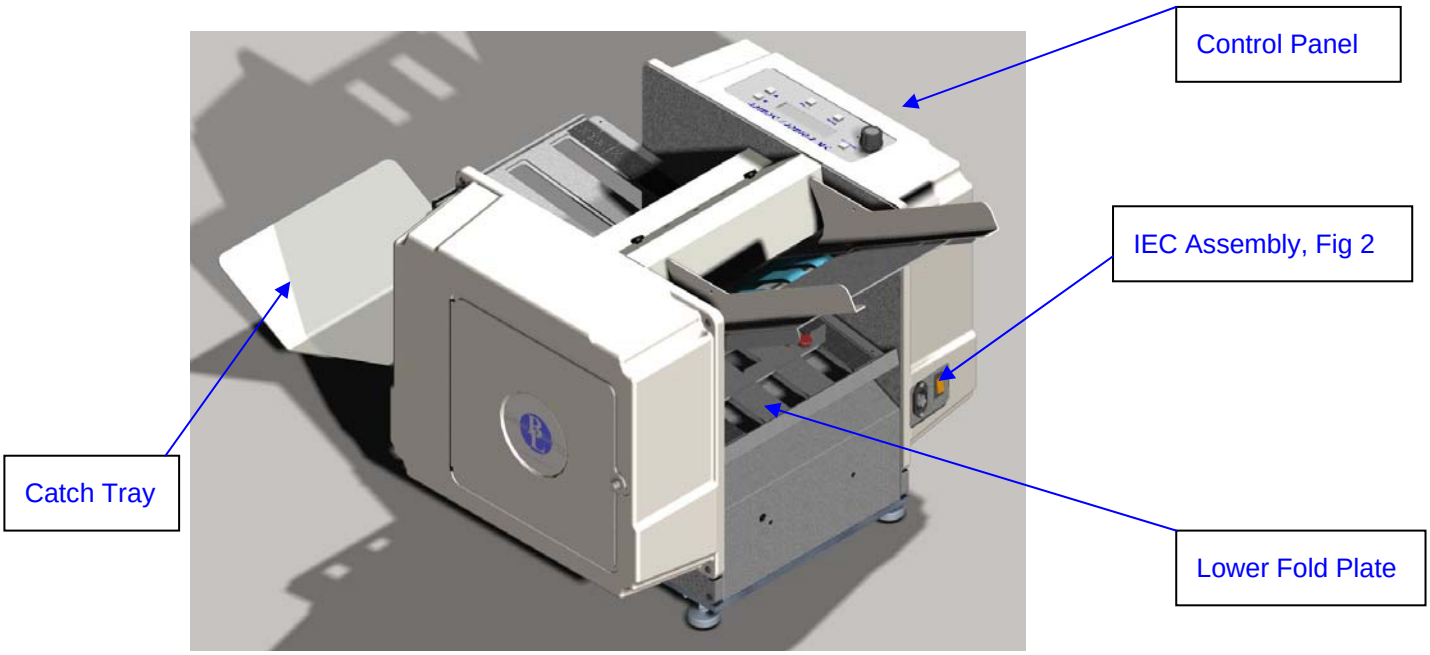


Figure 1: B

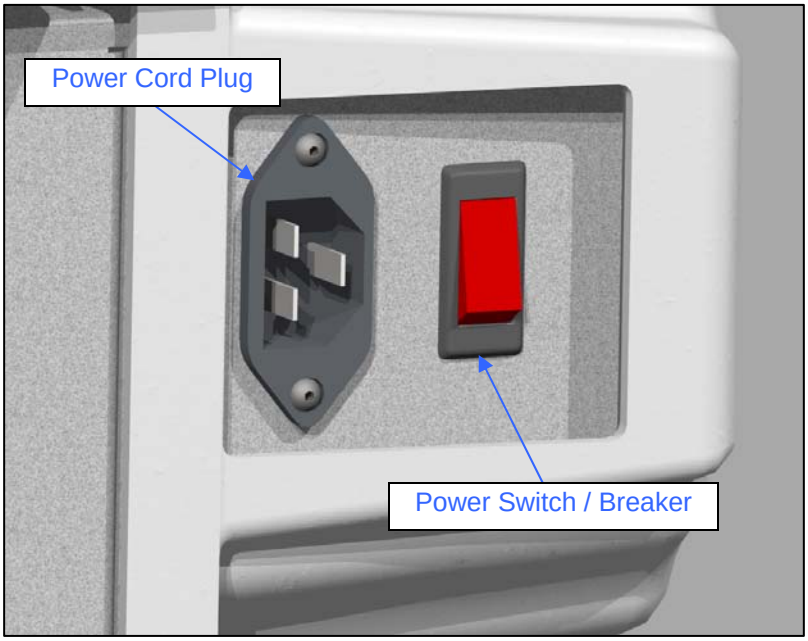


Figure 2: Power Connection and Switch

1.1. Covers

a) Removal

1. Remove the cover screws (4x).
2. Slide the cover off the machine.

b) Installation

1. Installation is the reverse of removal.

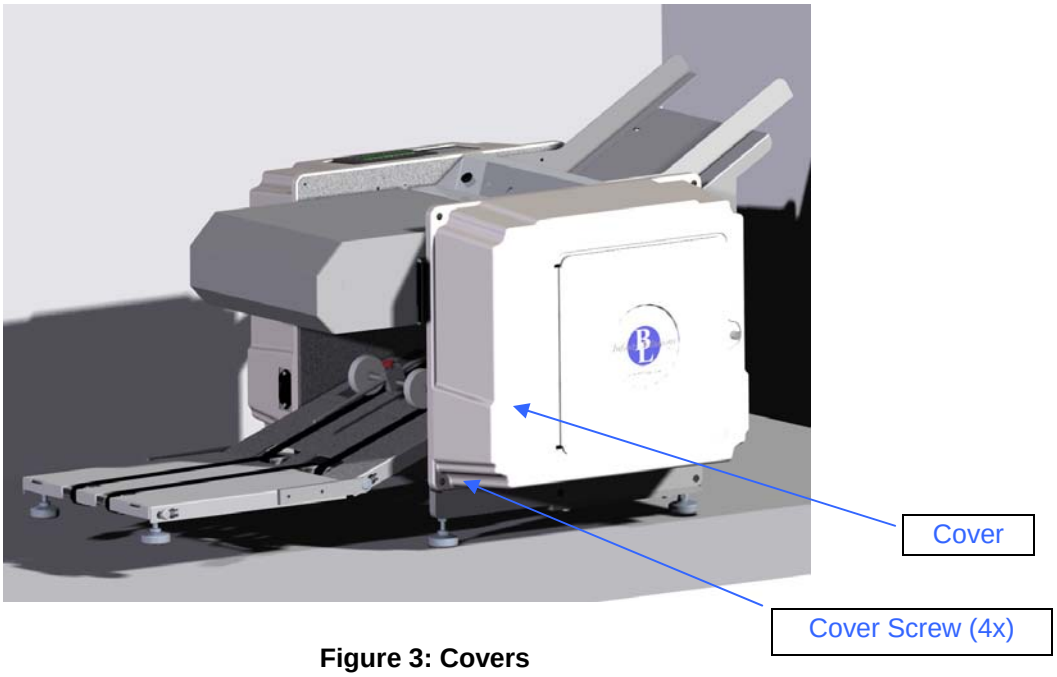


Figure 3: Covers

2. Drive Train

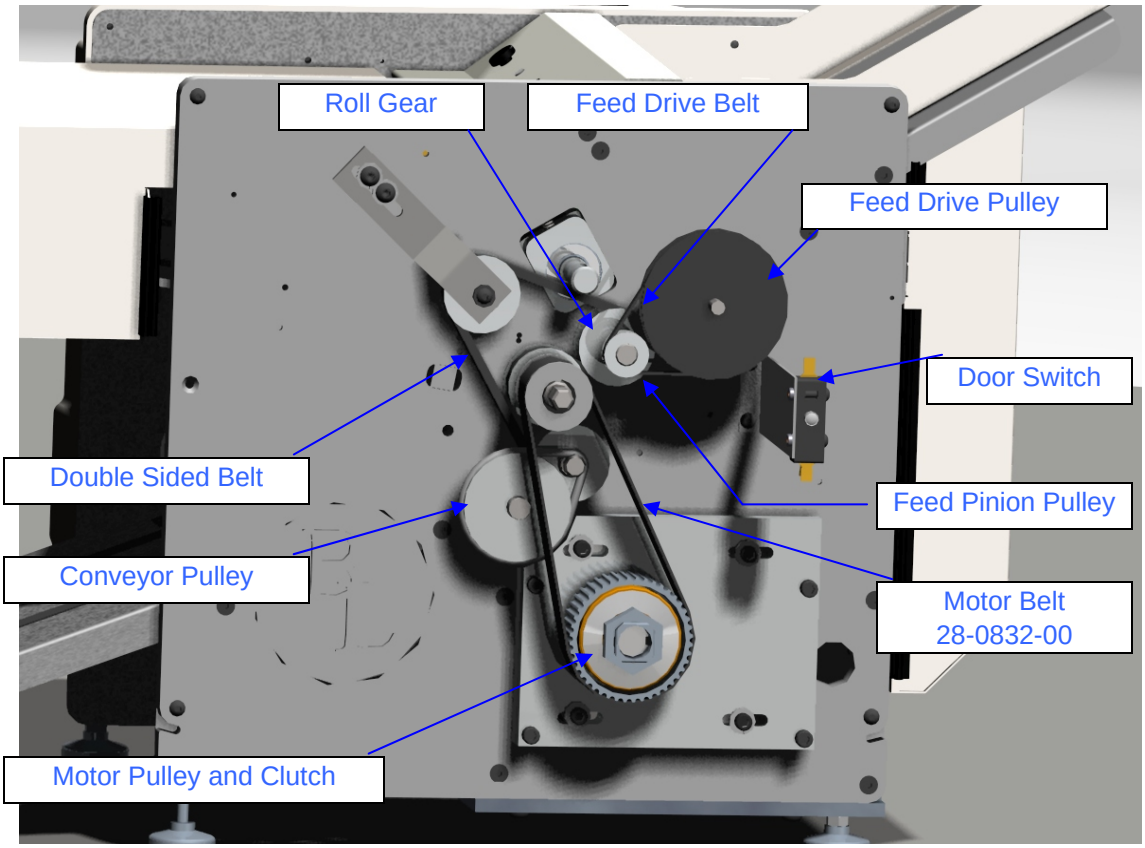


Figure 4; Drive Train

Note: If motor belt is marked 5M450 15, then see addendum

2.1. Conveyor Drive Pulley & O-Ring

a) Removal

- Disconnect the ***power cord*** from the machine.

1. Remove the ***drive train side cover***.
2. Roll the ***o-ring*** off of the ***conveyor pulley***.
3. Remove the ***conveyor pulley***.
   a) Loosen the set screw.
   b) Pull the pulley off of the shaft.

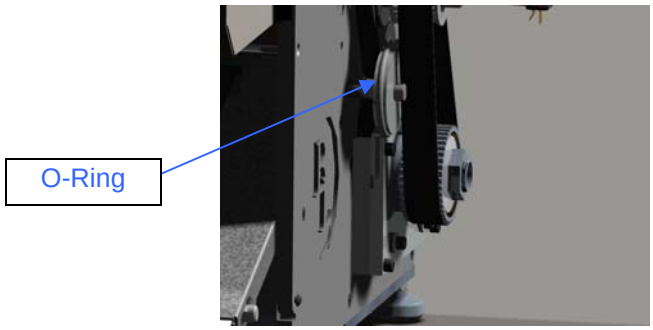


Figure 5: Conveyor Drive

b) Installation

1. Place the ***conveyor pulley*** onto the ***shaft*** with the hub on the inside.
2. Align the O-Ring grove in the ***pulley*** with the O-Ring grove on the roll shaft.

Note: The conveyor pulley is mounted on a floating shaft and the pulley will self align itself, however is best if they are closely aligned to begin with. Tighten the set screw

3. Roll the ***o-ring*** onto the ***conveyor pulley***.
4. Ensure the ***o-ring*** or ***pulley*** can not contact any other drive train components.

Note: For ***conveyor pulley*** and ***O-ring*** part #'s see the Appendix. If existing pulley does not have shown hub, then the clear o-ring must be used. Otherwise, the black one is needed.

2.2. Drive Motor: Belt, Pulleys, and Clutch

a) Removal

- Disconnect the ***power cord*** from the machine

1. Loosen all four ***motor screws*** and slide the ***drive motor*** forward to loosen the belt tension.
2. Slide ***motor belt*** off of the motor pulley.
3. Remove the ***motor clutch and pulley***.
   a) Loosen set screw.
   b) Pull the ***motor clutch and pulley*** off of the motor shaft.

Note: If the ***motor pulley*** needs to be removed from the ***clutch,*** remove the set screws, the large center nut on the ***clutch*** and disassemble. To break the nut loose reinstall the ***belt***, place a socket driver on the end of the hex shaft and loosen the center nut on the ***clutch***. Alternately, if the ***clutch*** is already removed, the inside can be placed in a vise and the center nut can be loosened.

4. Remove the ***roll drive pulley***.
   a) Loosen both the set screws.
   b) Slide the ***pulley*** off of the ***shaft***.

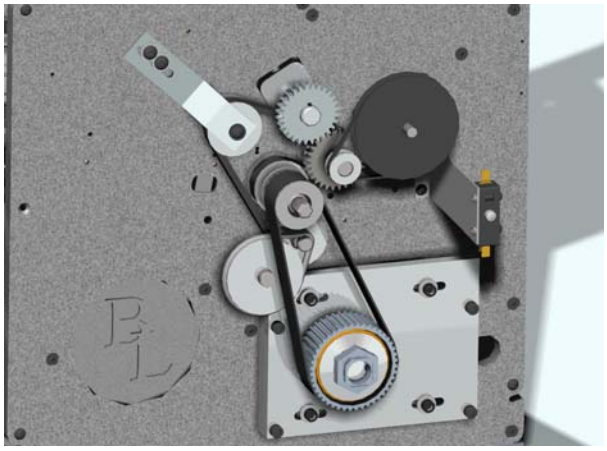


Figure 6: Drive Motor System

b) Installation

1. Install the ***roll drive pulley*** onto the roll shaft with hex end. Ensure the drive key is properly placed in the keyway. Butt the pulley up with the coinciding pulley on the shaft and tighten both set screws.
2. Install the ***motor clutch and pulley*** onto the motor shaft. Ensure the ***drive key*** is properly placed in the keyway. Note that an undersized 3/16 key is used.
3. Slide the belt onto the pulleys. Align the ***motor clutch and pulley*** on the motor shaft so that the ***belt*** rides on the middle of the pulley. Tighten the set screw.
4. Adjust the belt tension (See Section 2.2.c)
5. Check for clearance of the belt between nearby pulleys and ensure there will be no interference. If any interference is found realign pulleys.

c) Adjustments

Belt Tension

1. With the ***motor mounting screws*** loose, slide the ***drive motor*** back until the belt is taut. Tighten the ***motor mounting screws***.

Motor Clutch Adjustment

The ***motor clutch*** must be adjusted if:

(i) Being replaced
(ii) The motor pulley has been removed from the clutch
(iii) The center nut on the clutch has been loosened or tightened.

Note: If improperly adjusted premature component failure or poor machine performance can occur.

1. Use a torque wrench to tighten the center nut of the clutch to 12 ft/lbs.

Figure 7: 1 and 2/3 forms folded together

2. With the drive train completely assembled and all protective guards in place plug in the machine and power it on.
3. Test the adjustment by running a 1 2/3 folded form (See Figure 7) through the back of the machine while it runs at full speed (See Figure 8).
   a) To feed the form into the back of the machine, remove the rear fold plate. The fold plate switch will have to be depressed to run the machine in the forward direction.
   b) The form should make it through with minimal slipping of the ***motor***. *Note:* by listening to the ***motor*** you will be able to hear if it slips. If the form does not make it through the machine then the ***clutch*** is too loose: tighten the ***clutch*** and repeat.
4. To determine if the ***clutch*** is too tight run two forms folded together through the back of the machine. The paper should not make it through the machine, however the clutch should slip. You will be able to briefly hear this just as the motor shuts down. If the clutch does not slip at all loosen the center nut.
5. Repeat steps 3 and 4 until both above criteria are met.

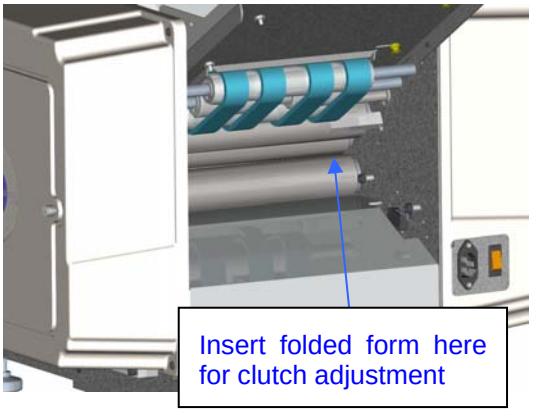


Figure 8: Back of the Machine

Note: If pulley material is aluminum, then see addendum

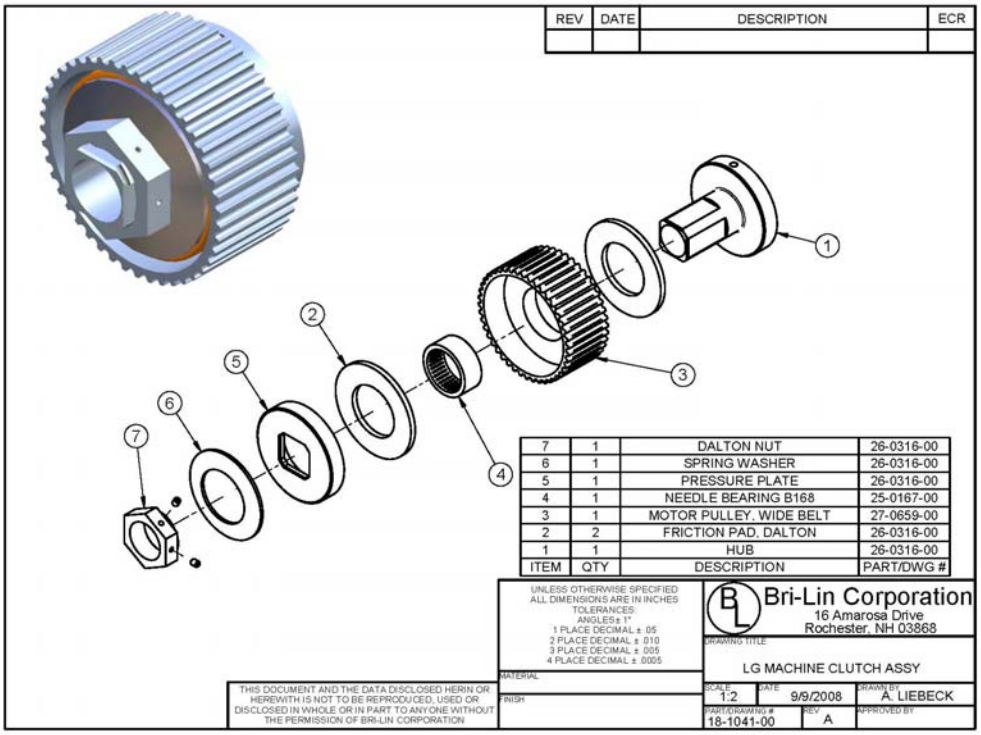


Figure 9: Motor Clutch Exploded View

2.3. Double Sided Timing Belt and Drive Pulleys

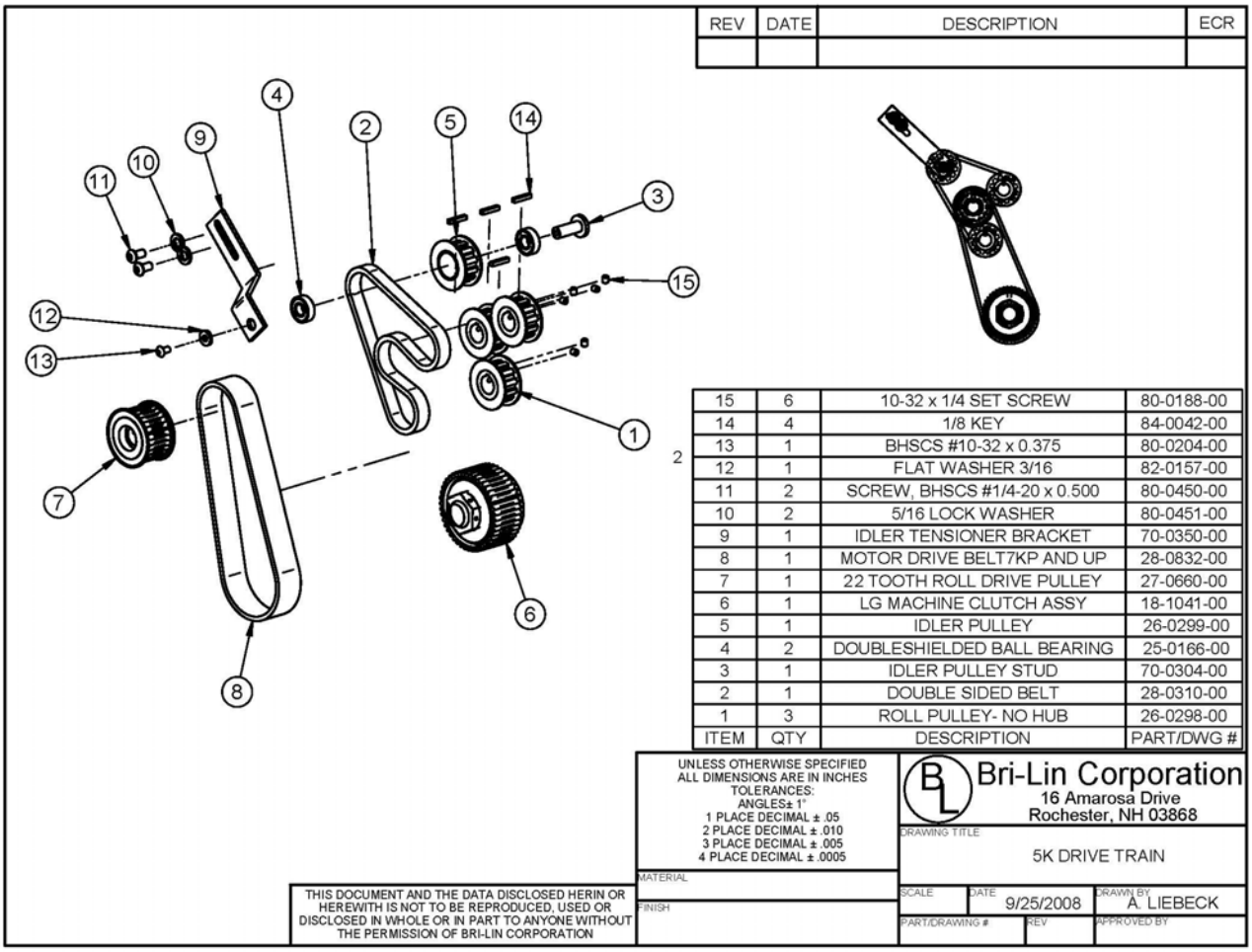


Figure 10: Drive Train Exploded View

a) Removal

- Disconnect the ***power cord*** from the machine.

1. Remove the ***conveyor pulley***, ***motor belt*** and the ***gears***. (See Section 2.2)
2. Remove the ***double sided belt***.
   a) Loosen the ***idler tension bracket*** and slide the bracket and pulley down to release tension on the belt.
   b) Remove the ***idler pulley*** from the bracket.

Note: The ***pulley*** uses a double screw attachment and both sides must be held to unscrew the screws.

3. Remove the ***roll pulleys***.
   a) Loosen the set screws and remove the ***pulleys***.
4. Remove the ***belt.***

b) Installation

1. Installation is the reverse of removal.
2. Adjust belt tension. (See Section 2.2C)

c) Adjustments

1. With the ***idler bracket*** loose, slide the ***idler wheel*** and ***bracket*** up until the ***belt*** is tight. Tension the ***belt*** so that the ***belt*** and ***gears*** move freely with minimal resistance. If the ***belt*** is too loose excess noise and premature belt failure can occur.

3. Feed System

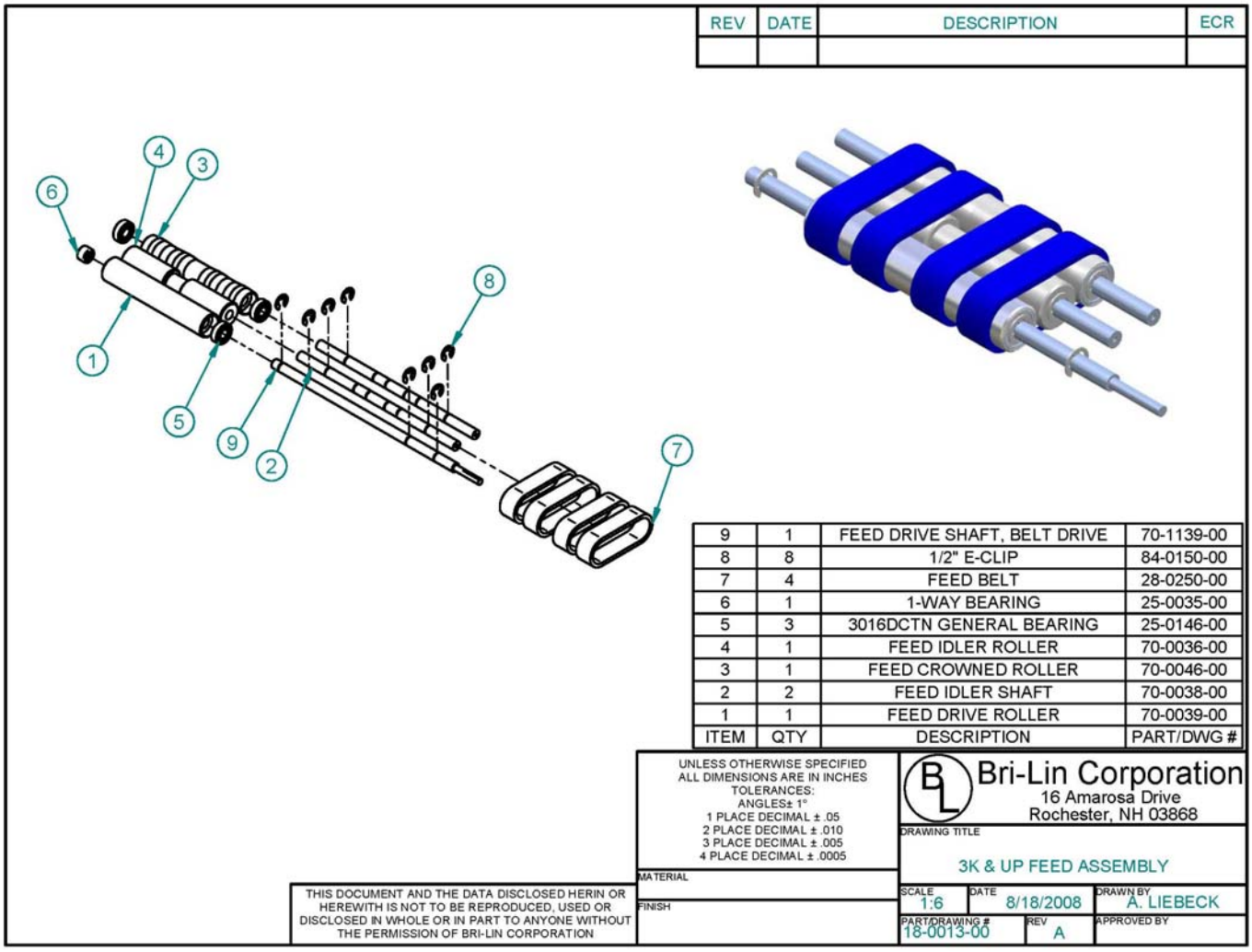


Figure 11: Feed Assembly

3.1. Feed Table (See Figure 1A)

a) Removal

- Disconnect the ***power cord*** from the machine.

1. Remove both the ***side covers***.
2. Remove the ***feed pulleys and belt.***
3. Remove the ***feed table screws***, 2x per side (4x total).
4. Remove the ***feed table***.

b) Installation

1. Installation is the reverse of removal.

3.2. Feed Drive Belts

a) Removal

- Disconnect the ***power cord*** from the machine

1. Remove the ***E-clips*** from the ***drive shaft*** (4x). (See Figure 11)
2. Remove ***shaft support screws*** from the ***side frames***. (See Figure 12)
3. Slide the ***drive shaft*** through the ***drive train side frame***.
4. Pull the ***idler shafts*** out the back side of the chassis.
5. Remove the ***belts***.
   a) Inspect the ***belts*** for any wear or damage. If any is found replace the belts.

b) Installation

1. Place the ***idler rollers*** onto the ***idler shafts*** and place the ***belt*** around the ***rollers***.
   a) Insert the ***drive roller*** inside the ***belts***. (Note: ensure that the 1-way bearing is positioned on the side closest to the electrical side frame)
   b) Insert the ***idler shafts, rollers*** and ***belts*** into the chassis and insert ***shaft screws*** into the side frame.

Note: The ***crowned roller*** goes to the back of the machine. (See Figure 1111)

2. Insert the ***drive shaft*** through ***drive train side frame***, insert the ***shaft*** into the ***drive roller*** as the ***shaft*** is being inserted into the side frame.
3. Replace the ***E-clips*** (4x).
4. Ensure belts are aligned and are oriented with the blue side visible.
5. Reinstall ***feed pulleys and belt.***

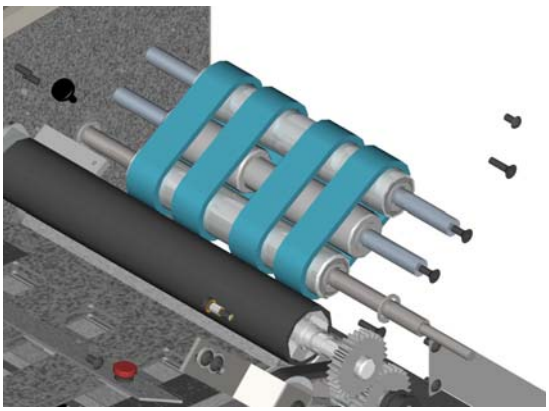


Figure 12: Feed Rollers and Belts

c) Adjustment

Paper Feed Tray Width Adjustment

Place a squared up stack of the paper to be used into the tray and align the paper to the fixed side of the tray. Adjust the sliding side so that there is approximately 1/8 inch between the stack of paper and the guide. If there is no gap the paper may bind and not feed; if too loose paper may feed crooked.

4. Feed Gauge Assembly

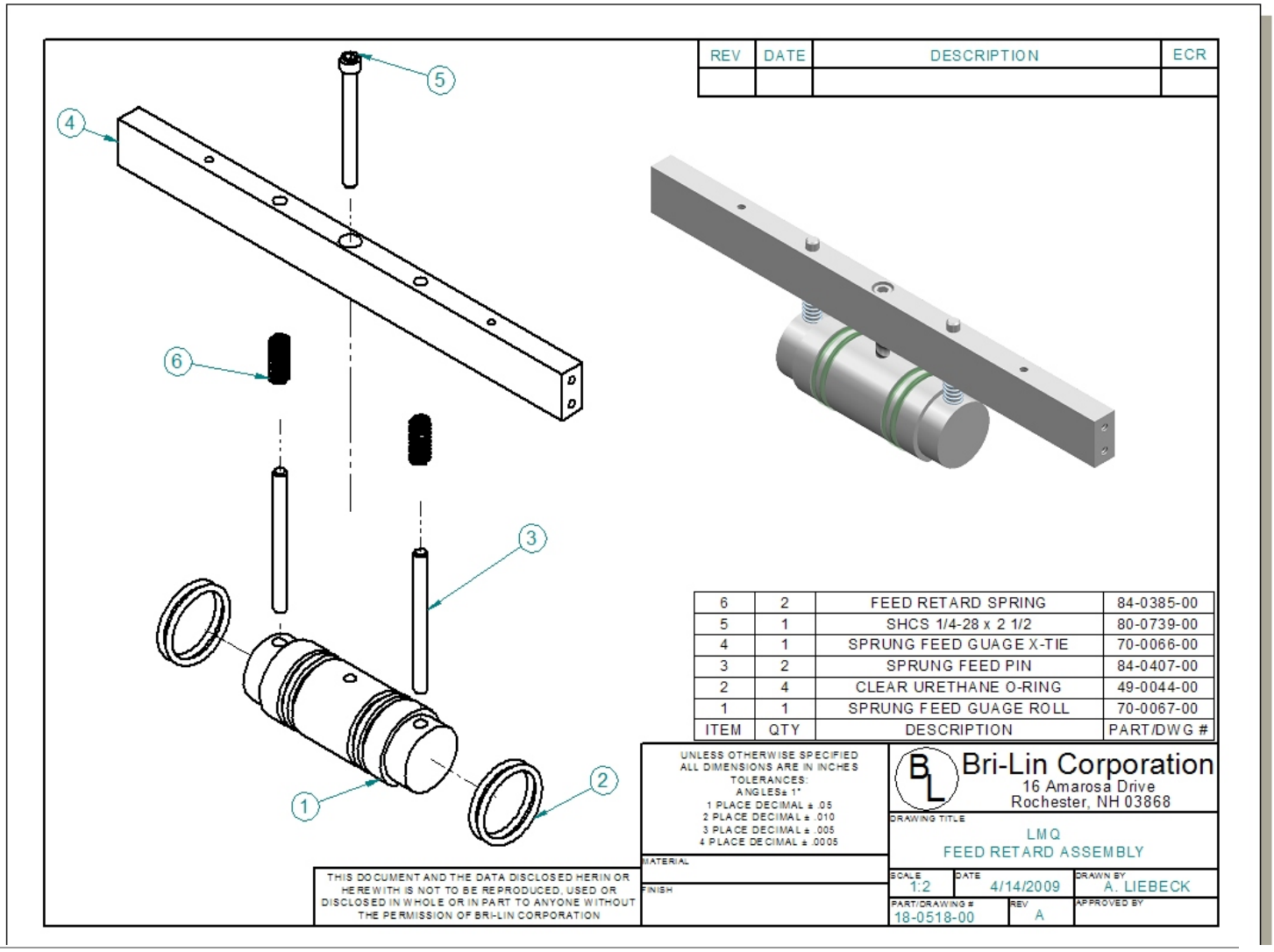


Figure 12: Feed Gauge Assembly

d) Removal

- Disconnect the power cord from the machine.

1. Remove the ***feed gauge cover***.
2. Remove both ***side covers***.
3. Remove the ***x-tie screws*** from both side frames. (See Figure 22)
4. Pull the ***feed gauge assembly*** up and out of the machine.

Note: If the ***x-Tie*** is too tight in the chassis to remove it may be necessary to loosen the ***feed table***, ***feed idler shafts***, ***conveyor***, ***sensor x-tie***, and ***front & rear motor guard screws*** on the ***motor side frame***. (See Figure 22, Page 22)

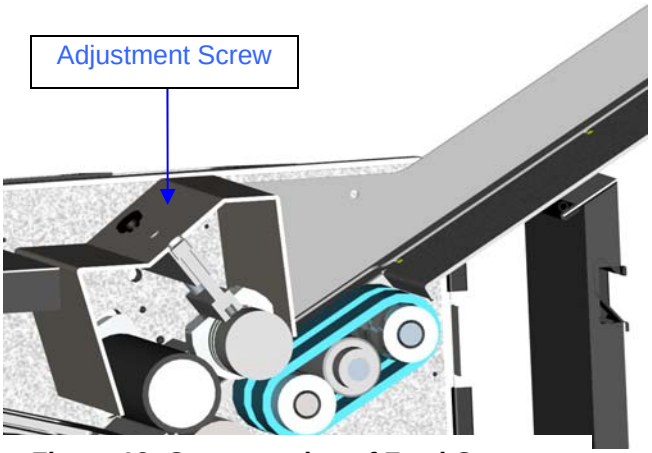


Figure 13: Cross-section of Feed Gauge

e) Installation

1. Assembly is the reverse of the removal.

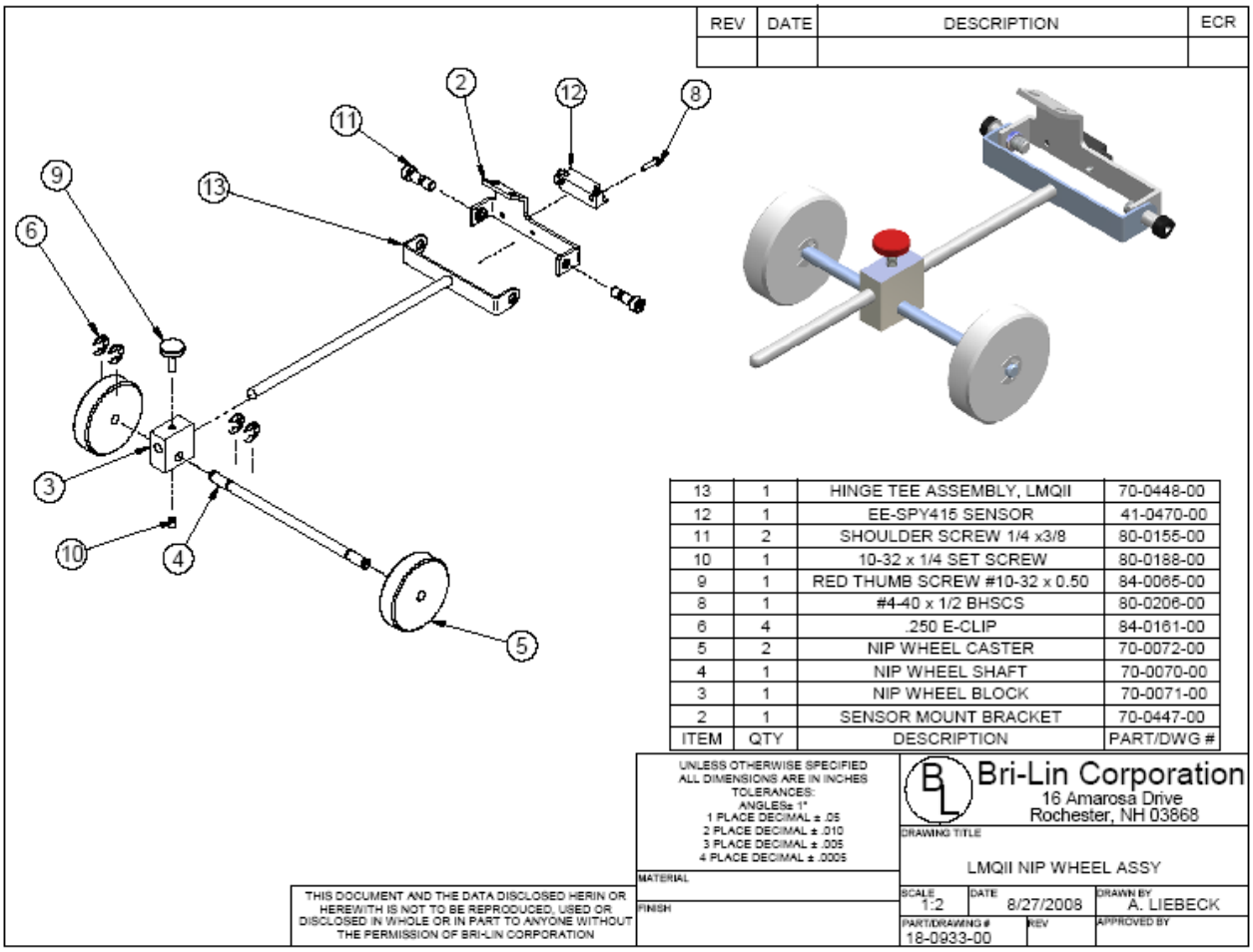
2. Adjust the ***feed gauge***.

f) Adjustment

- Disconnect the ***power cord*** from the machine.

1. Remove ***feed gauge cover***
2. Place 1 form on the feed table and hand feed the form into the machine by moving the feed belt with your hand.
3. Pull the paper out of the machine. You should feel resistance, but not too much. Turn the ***adjustment screw*** clockwise for less resistance and counter-clockwise for more resistance.

5. Nip Wheel



NOTE: Static Brush Part #55-0388-00 not shown

Figure 15: Nip Wheel

g) Removal

- Disconnect the ***power cord*** from the machine.

1. Remove upper fold plate.
2. Remove 3 Felt Holder thumb screws and remove felt holder assembly
3. While holding NIP WHEEL Assembly, remove 2 screws holding Sensor Mount Bracket and swing assembly down onto exit conveyor.
4. Unplug sensor cable from sensor and remove NIP Wheel Assembly

h) Installation

Installation is the reverse of the removal.

i) Adjustment

Note: The nip wheel should be adjusted every time a new fold or form is used that yields a different final size.

1. Set the form with desired fold onto the conveyer so that it is touching the edge of the roll.
2. Adjust the ***nip wheel*** so that it is ½" from the other side of the folded form. (See Figure 16)

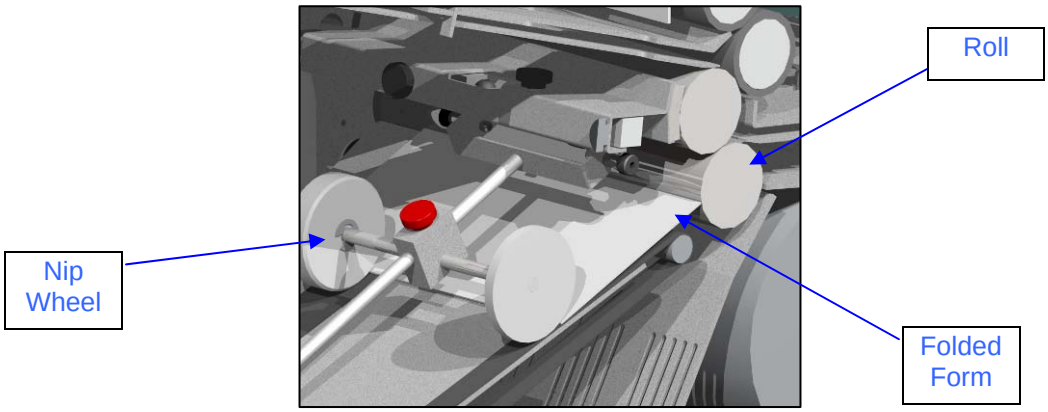
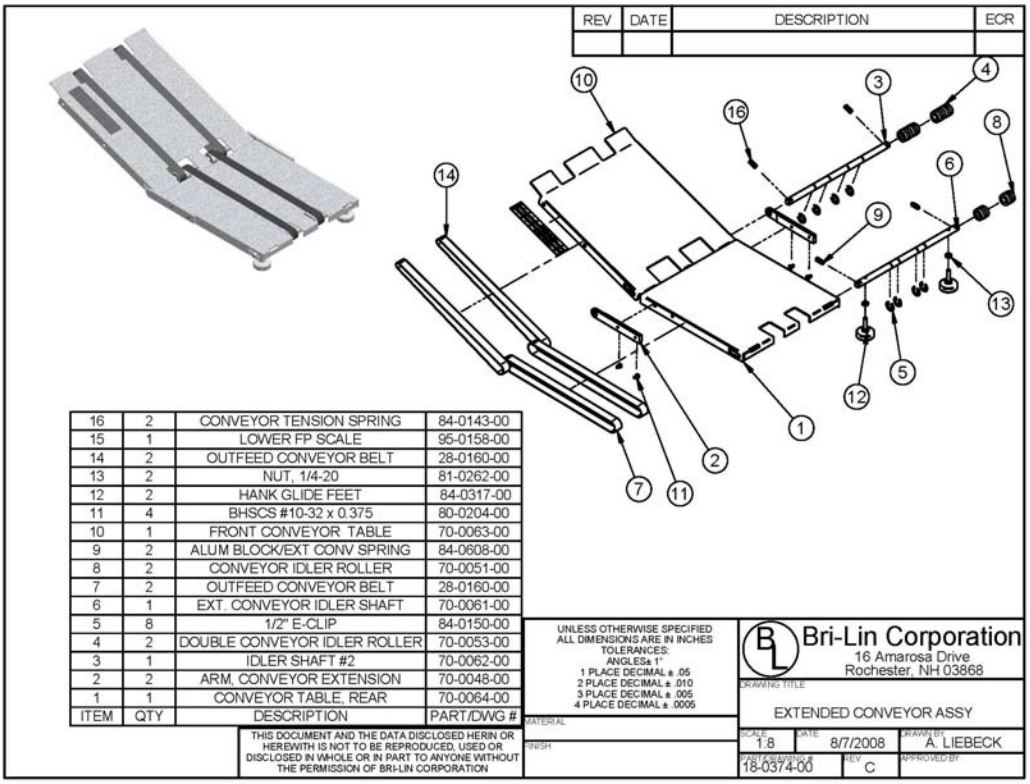


Figure 16: Nip Wheel Adjustment

NIP WHEELS MAY NOT BE WHITE

6. Conveyor



REV	DATE	DESCRIPTION	ECR

ITEM	QTY	DESCRIPTION	PART/DWG #
16	2	CONVEYOR TENSION SPRING	84-0143-00
15	1	LOWER FP SCALE	95-0158-00
14	2	OUTFEED CONVEYOR BELT	28-0160-00
13	2	NUT, 1/4-20	81-0262-00
12	2	HANK GLIDE FEET	84-0317-00
11	4	BHSCS #10-32 x 0.375	80-0204-00
10	1	FRONT CONVEYOR TABLE	70-0063-00
9	2	ALUM BLOCK/EXT CONV SPRING	84-0608-00
8	2	CONVEYOR IDLER ROLLER	70-0051-00
7	2	OUTFEED CONVEYOR BELT	28-0160-00
6	1	EXT. CONVEYOR IDLER SHAFT	70-0061-00
5	8	1/2" E-CLIP	84-0150-00
4	2	DOUBLE CONVEYOR IDLER ROLLER	70-0053-00
3	1	IDLER SHAFT #2	70-0062-00
2	2	ARM, CONVEYOR EXTENSION	70-0048-00
1	1	CONVEYOR TABLE, REAR	70-0064-00

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES TOLERANCES: ANGLES± 1° 1 PLACE DECIMAL ± .05 2 PLACE DECIMAL ± .010 3 PLACE DECIMAL ± .005 4 PLACE DECIMAL ± .0005

MATERIAL

FINISH

Bri-Lin Corporation
16 Amarosa Drive
Rochester, NH 03868

DRAWING TITLE: EXTENDED CONVEYOR ASSY

SCALE: 1:8 | DATE: 8/7/2008 | DRAWN BY: A. LIEBECK

PART/ASSY NO.: 18-0374-00 | REV: C | APPROVED BY:

Figure 17: Extended Conveyor

6.1 Extended Conveyor Belts

Note: Only the 7K Plus is equipped with the extended conveyor, the 5K is equipped with the standard conveyor which does not contain the additional conveyor table and belts. (This may be purchased as an option)

j) Removal

- Disconnect the ***power cord*** from the machine.

1. Remove the ***E-clips*** on both the ***idler shafts*** (8x).
2. Remove the ***springs*** from both ***idler shafts.***

Note: Different size springs are used for the intermediate idler shaft and for the final idler shaft.

3. Remove the ***feet*** from the ***final idler shaft***.
4. Slide and orient the ***final idler shaft*** in table slot to allow for removal and slide the shaft out of the table.
5. Remove the ***extended conveyor arm*** from one side of the ***extended conveyor***.
6. Slide and orient ***intermediate idler shaft*** in the table slot to allow for remove and then slide it out of the table.
7. Remove the ***conveyor belts***.

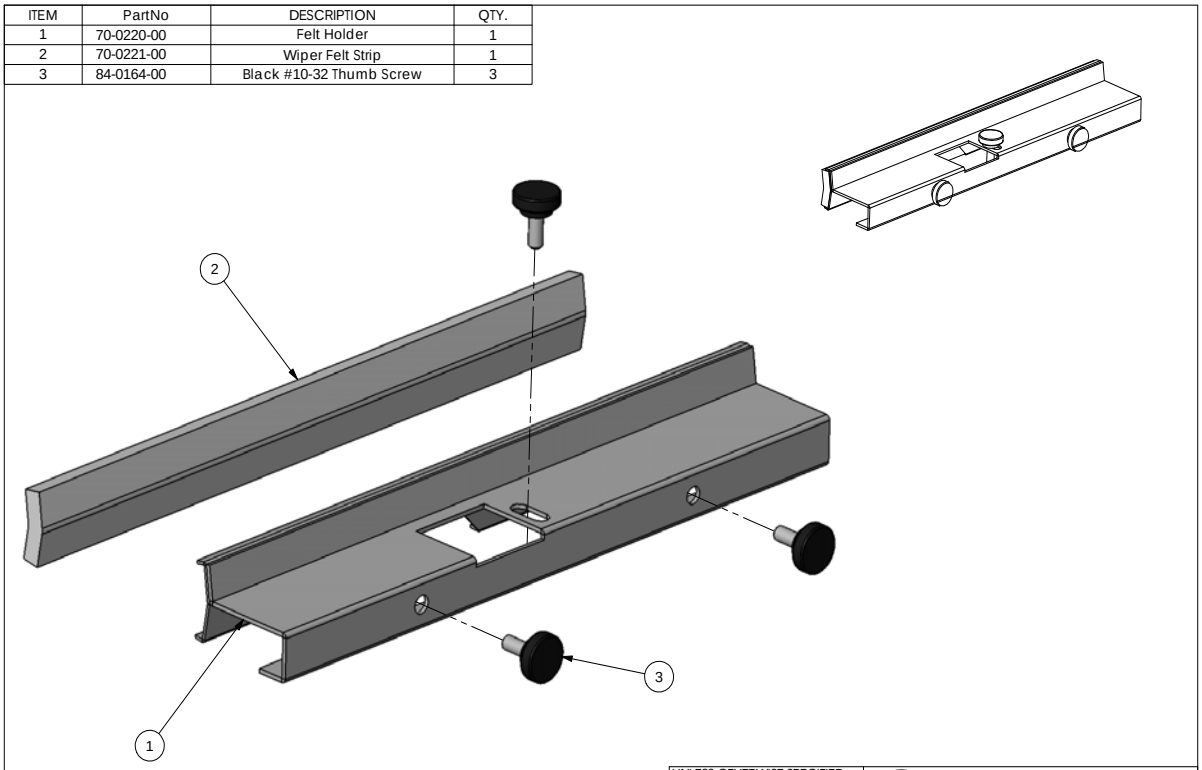
Figure 18: Conveyor

k) Installation

1. Place the ***conveyor belts*** around the rolls on both conveyor tables.
2. Place the ***extended table*** near the ***conveyor table*** and insert the ***intermediate shaft*** into the ***table***, making sure that the ***belts*** for the ***extended conveyor*** are on the ***pulleys***.
3. Reattach ***extended conveyor arm***.
4. Orient the shaft such that the bore for the spring is aligned with the notch for the spring, insert ***springs***.
5. Insert ***E-Clips*** onto the intermediate ***idler shaft*** (4x).
6. Place and hold the ***final idler rollers*** inside the ***extended conveyor belt***.
7. Slide the ***final idler shaft*** in place.
8. Insert ***E-Clips*** (4x).
9. Orient the shaft such that the bore for the ***spring*** is aligned with the notch for the ***spring***, insert ***springs***.
10. Reattach the ***feet*** so that the ***conveyor table*** sits evenly.

7. Wiper

ITEM	PartNo	DESCRIPTION	QTY.
1	70-0220-00	Felt Holder	1
2	70-0221-00	Wiper Felt Strip	1
3	84-0164-00	Black #10-32 Thumb Screw	3



UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE IN INCHES

TOLERANCES:
ANGLES ± 1°
1 PLACE DECIMALS ± .05
2 PLACE DECIMALS ± .010
3 PLACE DECIMALS ± .005
4 PLACE DECIMALS ± .0005

MATERIAL

FINISH

Bri-Lin Corporation
16 Amarosa Drive
Rochester, NH 03868

DRAWING TITLE: WIPER ASSEMBLY

PART #	REVISION	DRAWN BY
18-0219-00	A	AAS
DRAWING #	SCALE	DRAWING DATE
MD-0219-00	1:1.5	1/11/2005

Figure 19: Wiper Assembly

(1) Removal

1. Remove all three ***thumb screws***.
2. Slide the ***wiper assembly*** off the ***x-tie*** and remove from the machine.
3. Inspect the ***felt wiper***, if it is dirty flip over or replace.

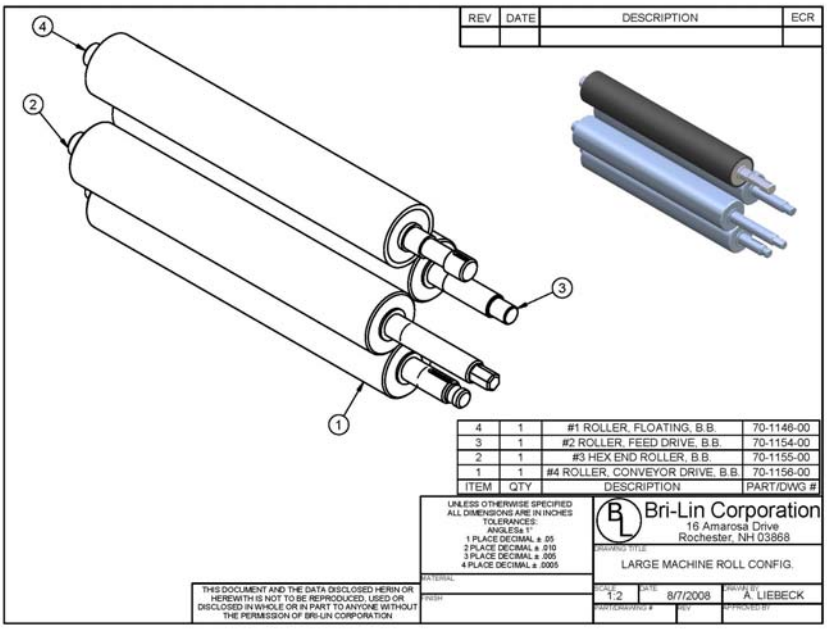
(2) Installation

1. Slide the ***wiper assembly*** in place.
2. Insert the two ***thumb screws*** facing out the front of the machine.
3. Adjust the pressure on the ***roll*** so the ***felt*** is slightly touching. Check that the ***holder*** is parallel with the ***roll***.

Note: If the felt is pressing too hard on the ***roll*** it can increase the load on the ***motor*** and reduce the performance of the machine. If the ***felt*** is not contacting the ***roll*** it will not properly clean and can mark up the forms with ink.

4. Insert the last ***thumb screw*** into the top of the ***felt holder***.

8. Rolls



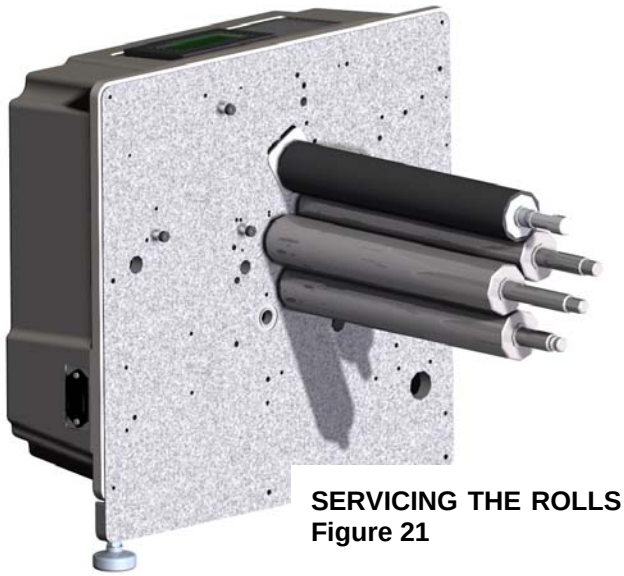
Note: If roll configuration is different than shown, see addendum

Figure 20: Rolls

(1) Removal

- Disconnect the ***power cord*** from the machine.

1. Remove the drive train components. (See Section: 2, page 9)
2. Remove the ***fold trays***, simply lift up trays and slide out of chassis.
3. Remove the ***feed gauge x-tie mounting screws*** from the drive train side of the chassis. (See Figure 22)
4. Remove the ***feed table mounting screws*** from the drive train side of the chassis. (See Figure 22)
5. Remove the ***feed roller mounting screws*** from the drive train side of the chassis. (See Figure 22)
6. Remove the ***conveyor table mounting screws*** from the drive train side of the chassis. (See Figure 22)
7. Remove the ***nip wheel x-tie mounting screw*** from the drive train side of the chassis. (See Figure 22)
8. Remove the ***drive motor guards*** and the ***drive motor*** mounting screws. The drive motor can be left in the machine.
9. Ensure the ***electrical side cover*** is in place and on a sturdy surface tip the machine so that the electrical side is face down. Ensure the drive motor is securely resting and no wires are being pinched or stretched.
10. Remove the ***base plate mounting screws*** and ***rear leg*** from the drive train side frame.



SERVICING THE ROLLS
Figure 21

11. Slide the ***drive train side frame*** off of the rolls and remove.
12. Inspect the ***rolls*** for wear and replace any damaged or worn components.
    a) Clean rolls by wiping down with a household cleaner such as OOPS or the equivalent.

(2) Installation

1. Installation is the reverse of removal

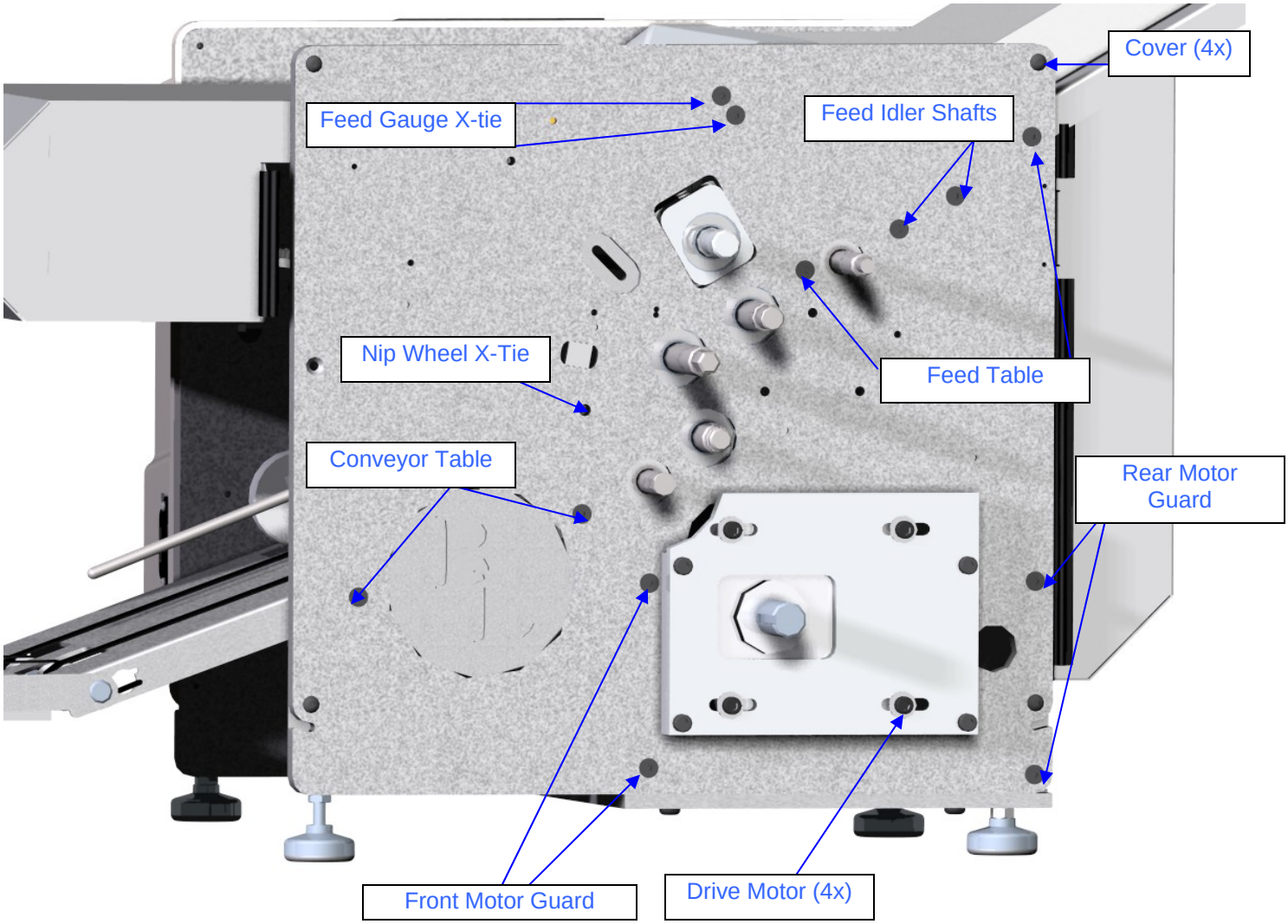


Figure 22: Side Frame Screws
This view is shown with roller bearings

Note: If Frames are not as shown, see addendum

Roller Bearing
Part # 25-1103-00

Needle Bearing
Part # 25-0167-00

BEARING IDENTIFICATION

9. Electrical

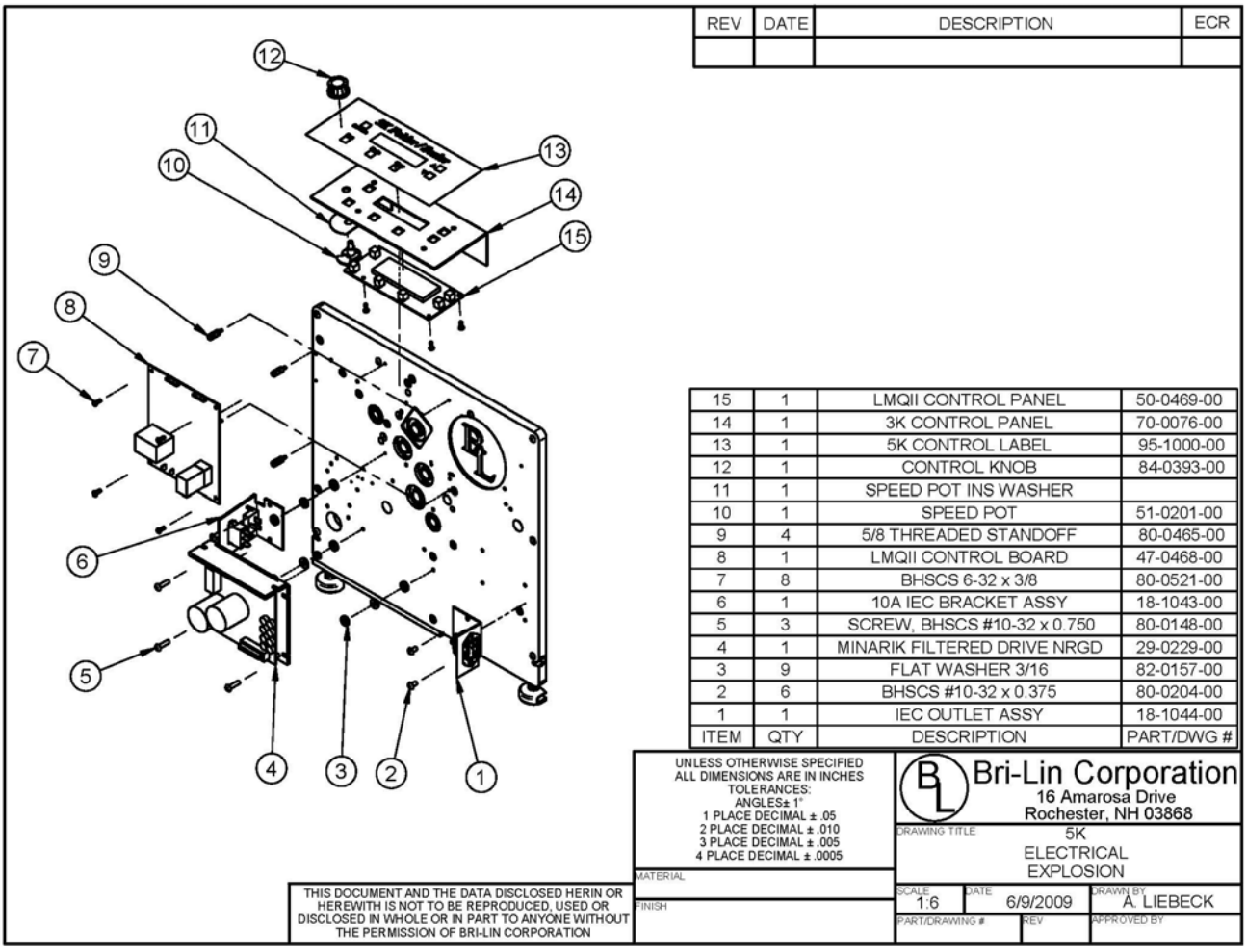


Figure 23: Electrical Components

a)Drive Motor Part #30-0124-00

(1) Removal

- Disconnect the ***power cord*** from the machine

1. Remove both the ***side covers***.
2. Remove the ***rear motor guard***.
   a) Unscrew the power switch bracket from the electrical side frame.
   b) Unscrew and remove the ***rear motor guard***.
3. Disconnect the electrical leads from the ***motor***.
4. Remove the ***motor clutch with pulley***. (See Section 2.2)
5. Remove the ***motor mounting screws*** and slide the motor from the chassis.

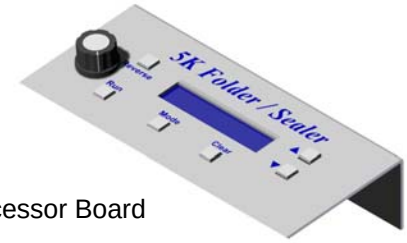
Motor Part #30-0124-00

(2) Installation

3. Installation is the reverse of the removal.

b) Control Panel See Figure 22

(1) Removal



- Disconnect the ***power cord*** from the machine.

1. Remove the ***electrical side cover***.
2. Disconnect wiring of speed pot from drive board.
3. Remove 2 screws that attach Control Panel.
4. Lift the Control Panel straight up, separating it from the Processor Board
5. If faulty replace with a new unit.

(2) Installation

1. Carefully install Control Panel into Processor Board through header interface
2. Reassemble in reverse order of above

c)Processor Board Part #41-0468-00

(1) Removal

- Disconnect the ***power cord*** from the machine.

1. Remove the ***electrical side cover***.
2. Remove Control Panel as described above
3. Disconnect ***electrical connectors*** from the unit.
4. Remove 4 mounting screws and remove unit

(2) Installation

1. Reassemble in reverse order as above (see schematic for wiring)

d) NRDG Drive Part #29-0229-00

(1) Removal

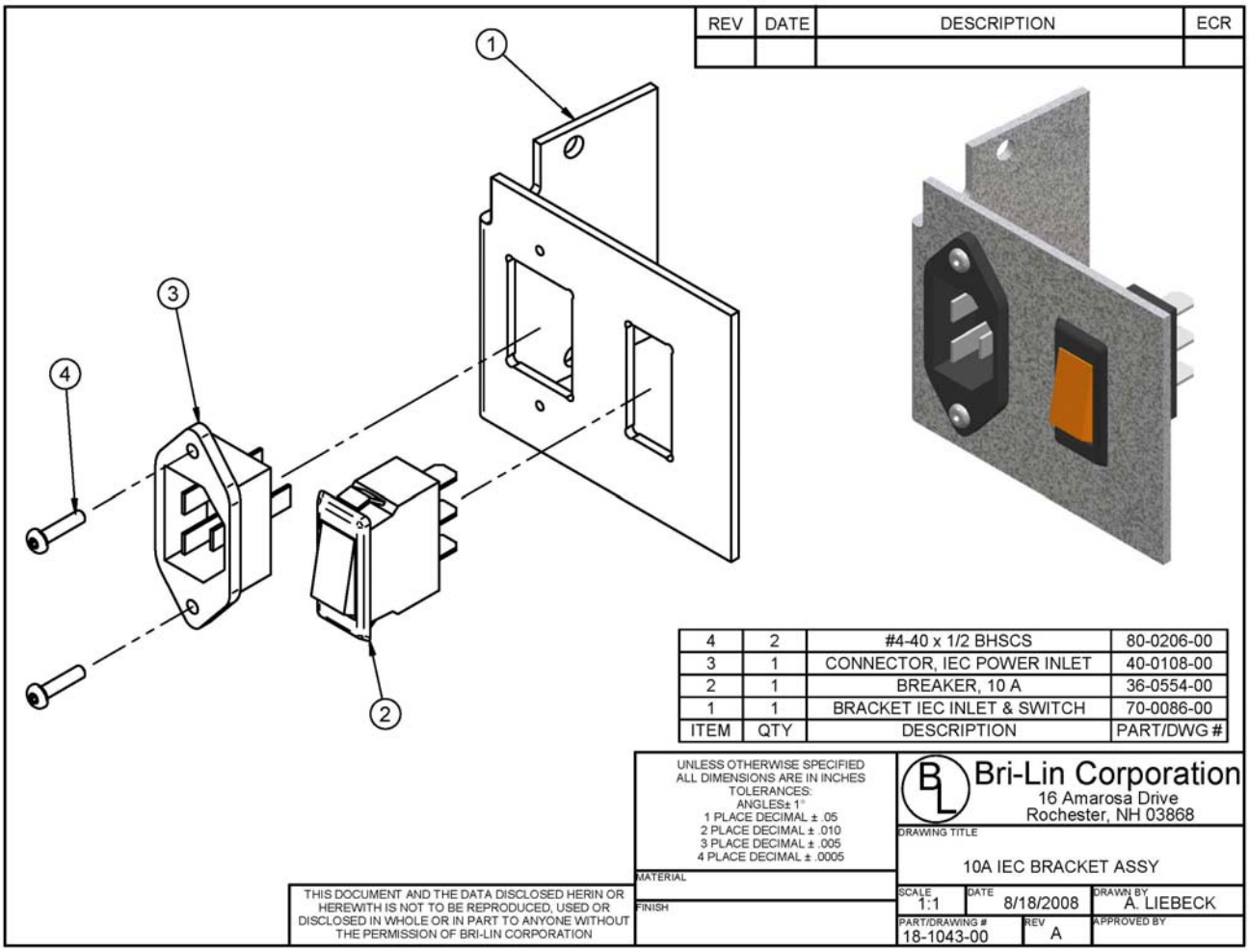
- Disconnect the ***power cord*** from the machine.

1. Remove the ***electrical side cover***.
2. Disconnect ***electrical connectors*** from the ***drive***.
3. Remove mounting screws.
4. Remove the ***power supply*** and if faulty replace with new unit.

(2) Installation

Reassemble in reverse order as above (see schematic for wiring)

e) 10A IEC Bracket Assembly



(1) Removal

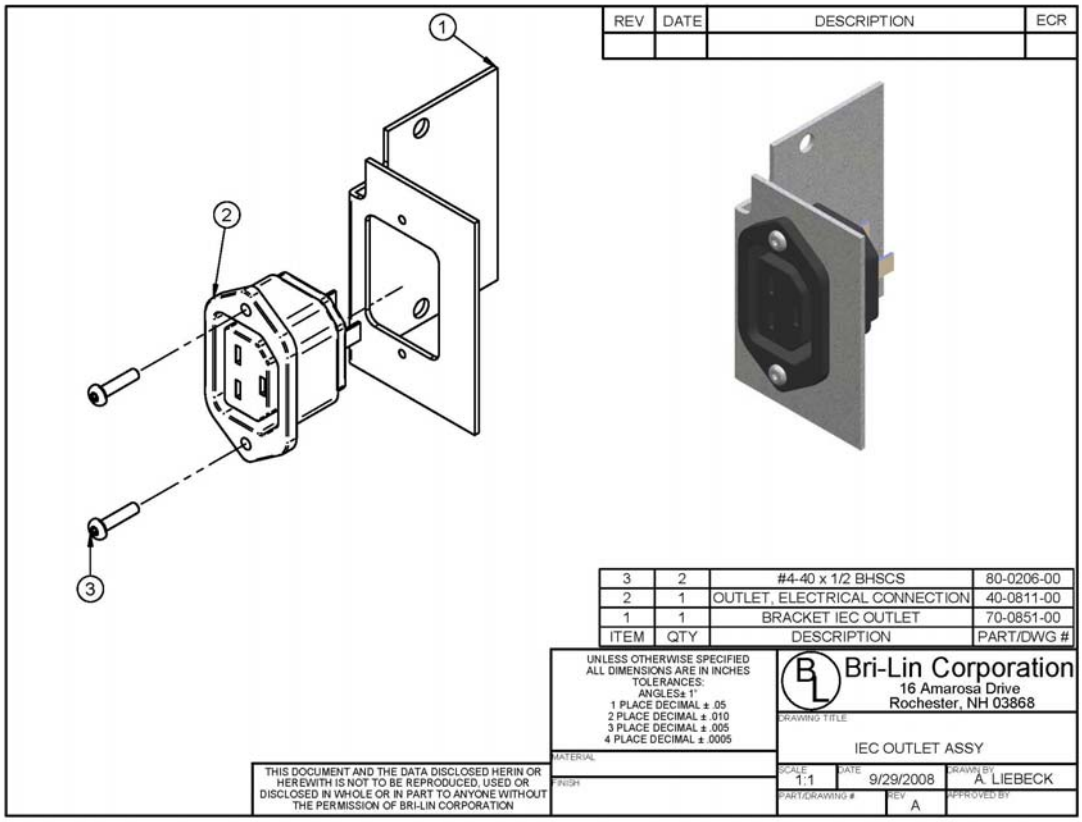
- Disconnect the ***power cord*** from the machine.

1. Remove the ***electrical side cover***.
2. Disconnect electrical connections from assembly
3. Remove mounting screws and remove unit.
4. Replace failed components as required

(2) Installation

Reassemble in reverse order as above (see schematic for wiring)

f) IEC Outlet Assembly



(1) Replacement

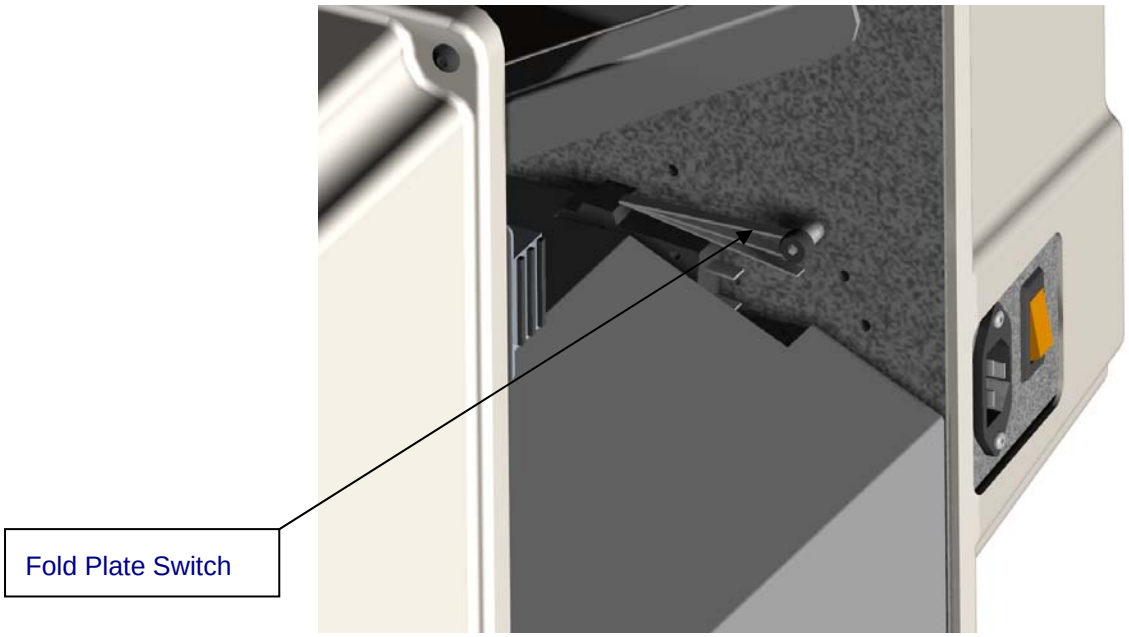
- Disconnect the ***power cord*** from the machine.

1. Remove the ***electrical side cover***.
2. Disconnect electrical connections from assembly
3. Remove mounting screws and remove unit
4. Replace failed components as required

(2) Installation

Reassemble in reverse order as above (see schematic for wiring)

g) FOLD PLATE SWITCH, DPDT Part #39-0581-00



(1) Replacement

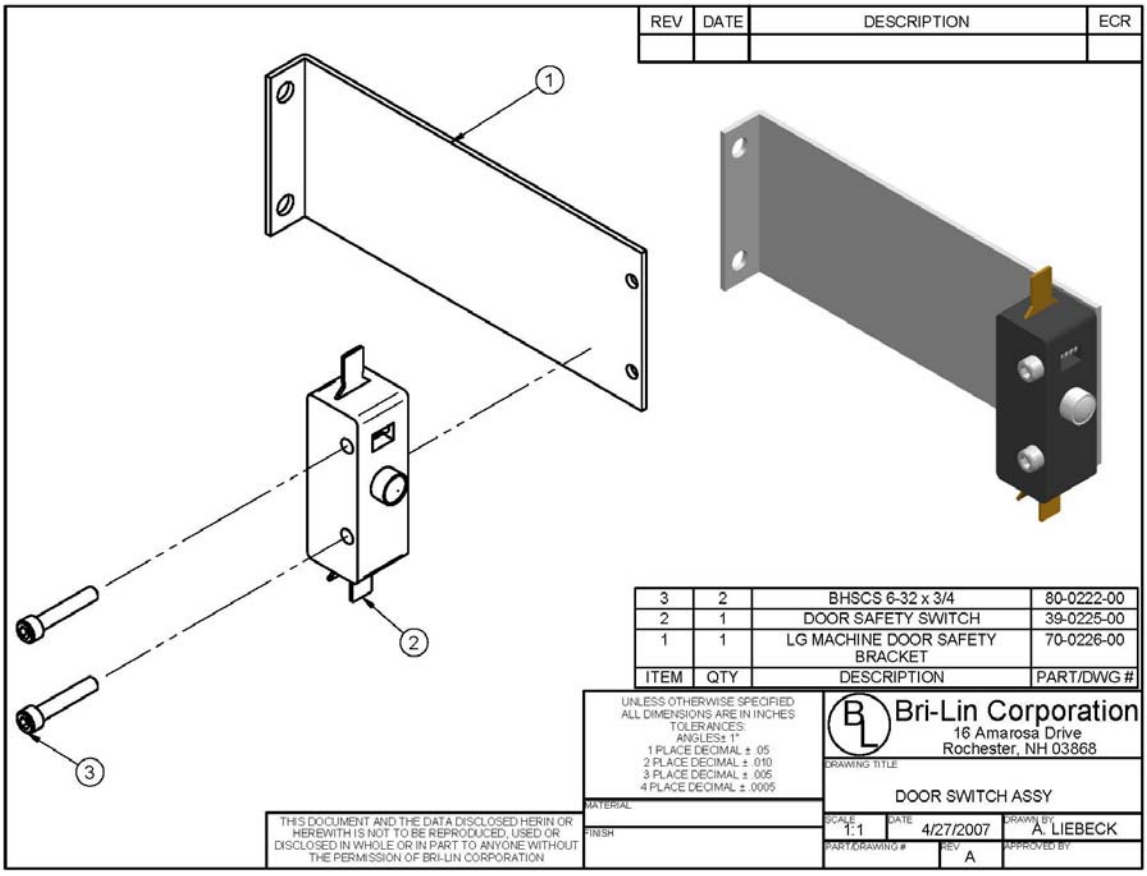
- Disconnect the ***power cord*** from the machine.

1. Remove rear fold plate.
2. Remove side covers to access rear motor cover screws
3. Remove rear motor cover screws and rear motor cover
4. Disconnect electrical connections from fold plate switch
5. Remove mounting screws and remove unit
6. Replace failed components as required

(2) Installation

Reassemble in reverse order as above (see schematic for wiring)

h) Door Switch Assembly



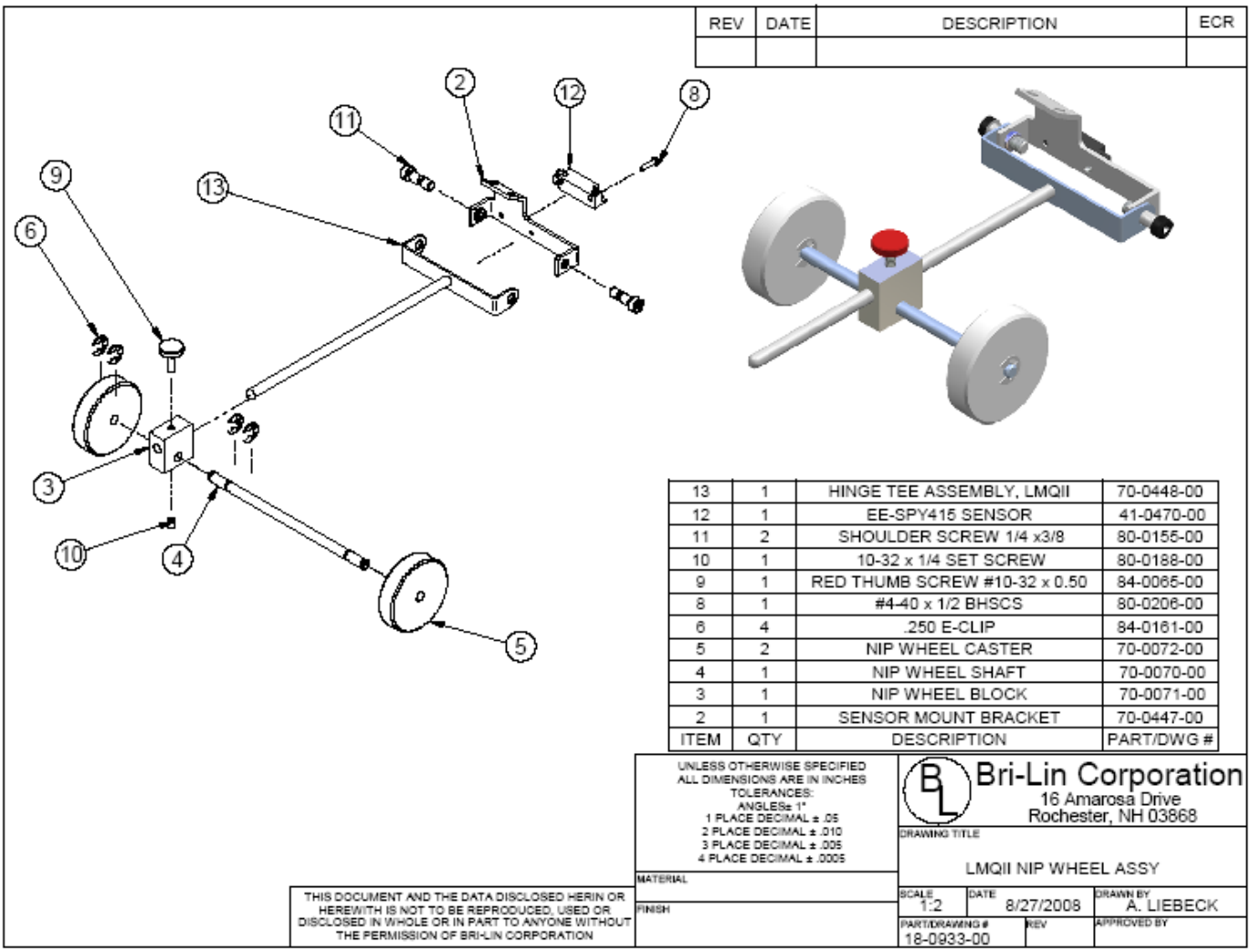
(1) Replacement

- Disconnect the ***power cord*** from the machine.
  1. Remove side door
  2. Disconnect electrical connections from door switch
  3. Remove mounting screws and remove unit
  4. Replace failed component as required

(2) Installation

Reassemble in reverse order as above (see schematic for wiring)

i) NIP Wheel Assembly with Sensor



(1) Replacement

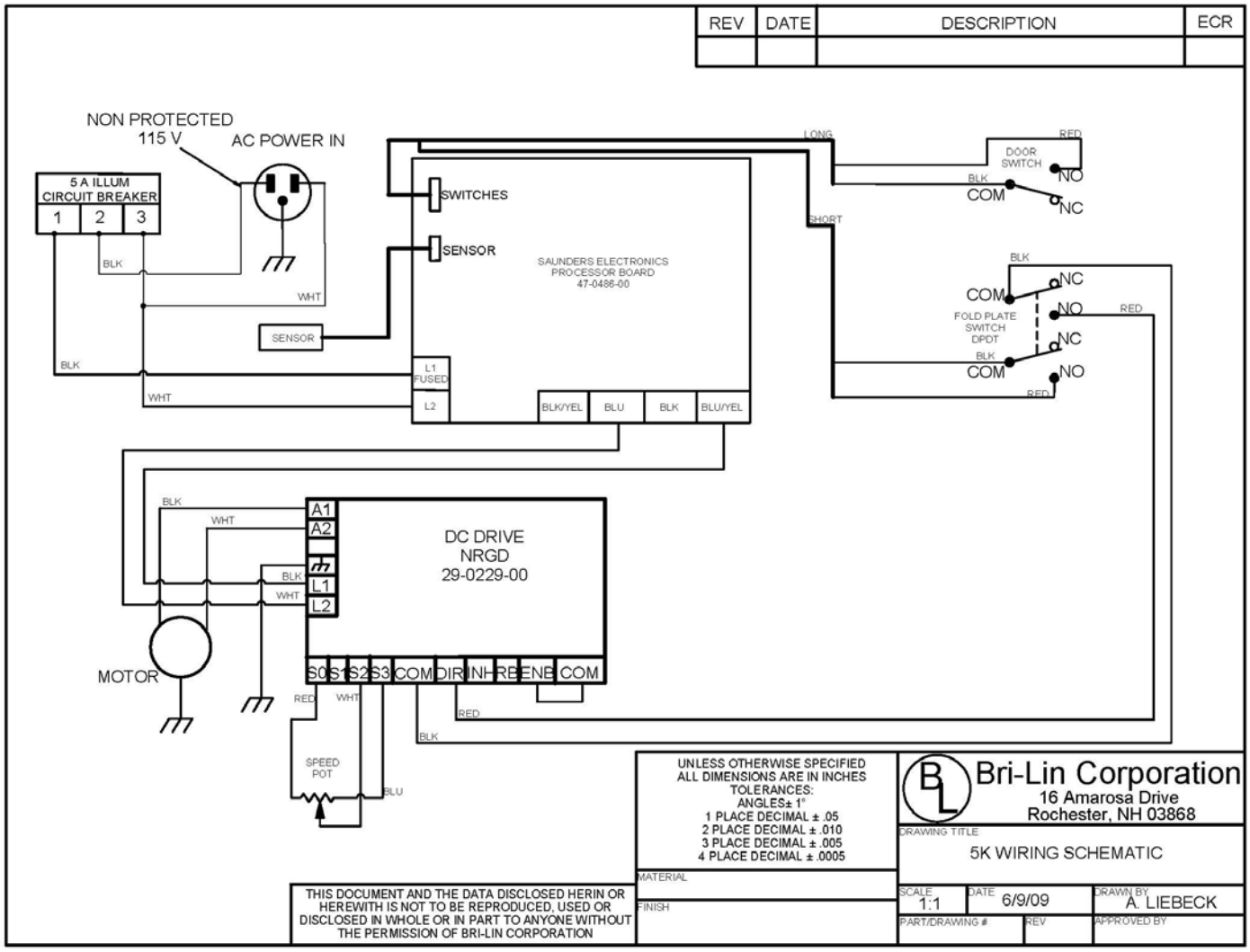
- Disconnect the ***power cord*** from the machine.

1. Remove upper fold plate.
4. Remove 3 Felt Holder thumb screws and remove felt holder assembly
5. While holding NIP WHEEL Assembly, remove 2 screws holding Sensor Mount Bracket and swing assembly down onto exit conveyor.
6. Unplug sensor cable from sensor and remove NIP Wheel Assembly
7. Remove sensor hold down screw and remove sensor from assembly
8. Replace failed components as required

(2) Installation

Reassemble in reverse order as above (see schematic for wiring)

j. Schematic


REV
DATE
DESCRIPTION
ECR
NON PROTECTED
115 V
AC POWER IN
5 A ILLUM
CIRCUIT BREAKER
1
2
3
BLK
WHT
SWITCHES
SENSOR
SAUNDERS ELECTRONICS
PROCESSOR BOARD
47-0486-00
L1
FUSED
L2
BLK/YEL
BLU
BLK
BLU/YEL
LONG
SHORT
RED
DOOR
SWITCH
NO
COM
NC
FOLD PLATE
SWITCH
DPDT
A1
A2
L1
L2
DC DRIVE
NRGD
29-0229-00
MOTOR
S0
S1
S2
S3
COM
DIR
INH
REF
ENB
COM
SPEED
POT
BLU
UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE IN INCHES
TOLERANCES:
ANGLES± 1°
1 PLACE DECIMAL ± .05
2 PLACE DECIMAL ± .010
3 PLACE DECIMAL ± .005
4 PLACE DECIMAL ± .0005
MATERIAL
FINISH
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Bri-Lin Corporation
16 Amarosa Drive
Rochester, NH 03868
DRAWING TITLE
5K WIRING SCHEMATIC
SCALE
1:1
DATE
6/9/09
DRAWN BY
A. LIEBECK
PART/DRAWING #
REV
APPROVED BY

10. Troubleshooting

11.1Machine Will Not Power On

1. Check that the ***power switch / breaker*** is in the “on” position. (when in the “on” position it will be lit up red)
2. Check that the ***power cord*** is properly connected to the machine.
3. Confirm the following components are not faulty in the proceeding order:
   a) ***Wall socket***
   b) ***Power cord:*** test by switching it with a known working power cord. The machine utilized a standard IEC computer power cord.
   c) ***Power switch / breaker:*** If the power switch will not light up, wait a few minutes and try again. If it will still not work, replace the switch. If the ***power switch / breaker*** comes on but only stays on for short periods of time, replace the switch.
   d) ***Electrical connections:***
      (a) Disconnect the ***power cord*** from the machine.
      (b) Remove ***electrical side cover***.
      (c) Refer to the wiring schematic and check all electrical connections.
   e) If the above steps have been followed and the machine will still not power on please contact Infinity Solutions Manufacturing.

11.2 Machine Powers On But Will Not Run

1. Ensure the ***drive train cover*** is in place and the ***safety switch*** is engaged.

- Disconnect the ***power cord*** from the machine

2. Open the access panel on the drive train cover. With a 7/16 socket turn over the hex end shaft and attempt to rotate, if there is heavy resistance or it is locked proceed with the following steps. If it will rotate with minimal resistance go to step 3.
   a) Check for a paper jam.
   b) Inspect for any foreign objects in the ***rolls***.
   c) Remove the ***drive train cover*** and inspect drive train components for faulty components.

i) If all components appear to be in acceptable condition remove the ***drive motor belt*** and attempt to rotate the hex shaft again. If this solves the problem test the ***drive motor***.

ii) If the problem persists with the drive motor belt removed, repeat steps (a), (b), and (c) to ensure they are not the issue. If no solution is found continue removing components until the problem is isolated.

3. Minimal resistance when rotation the shaft.
   a) Ensure the ***drive train cover*** is in place and the ***safety switch*** is engaged.

i) If a bad switch is suspected, test for continuity with a multi-meter and replace if needed

   b) Check proper operation of the electrical components in the following order.
      1. Fold Plate Switch
      2. Control Panel
      3. Electrical Connections
      4. Power Supply Board
      5. Drive Board
      6. Drive Motor

11.3 Machine Stops Running

1. If the machine is still powered on, check to see if the forms on the exit conveyor of the machine are blocking the counter sensor. (If the sensor is blocked for more than1/2 second, the machine will stop to prevent a possible jam in the exit area of the machine.)

2. If the sensor is blocked, increase the starting speed of the machine before pressing RUN. (This may be necessary on machines that are running 14" EZ or Return Envelopes.) Also check that NIP Wheel assembly is properly adjusted.
3. If the machine powered off while running check the ***power switch / breaker***.
   a) If the machine repeatedly shuts off, wait a few minutes and test again. If the problem persists test the ***power switch / breaker***.

11.4 Paper Jams

11.4.1.1 Automatically Clearing a Jam

1. Remove all paper from the ***feed table***.
2. If the ***breaker power switch*** has tripped (light is off) then flip it to the on (lighted) position.
3. Remove both ***fold plates***.
4. Press the **reverse button to remove paper from the back of the machine**.
5. If the paper is not moving or you cannot see it, then you need to manually clear the jam. (See Section 11.4.1.2
6. Replace the ***fold plates***.

11.4.1.2 Manually Clearing a Paper Jam

- Disconnect the ***power cord*** from the machine.

1. Remove all paper from the ***feed table***.
2. Remove both ***fold plates*** from the machine.
3. Remove the access panel in the motor side cover.
4. Place the breaker bar socket over the shaft with the hex end.
5. Rotate the breaker bar in either direction until the jammed form is out of the machine.
6. Replace the ***fold plates***.
7. Replace the paper on the ***feed table***.
8. Replace the side cover access panel.
9. Make sure that the ***power switch*** is in the ***off*** position.
10. Connect the power cord to the machine.

11.4.1.3 Diagnosing the Paper Jam

Table 1 outlines the different problems which cause paper jams and the symptoms which will help you to identify the cause.

Problem	Double Feed	Buckled Form	Bad Fold
Symptom	Unfold the form that caused the jam, you will find that it is actually two forms folded together.	There will be an extra fold in form near the correct fold location.	The form which caused the jam will be folded crooked.
Causes	• Bad Feed Gauge Setting • Too much paper on the feed table	• Wrong fold plate setting	• Feed Table Paper Guide set improperly • Fold Plates set improperly
Solution	• ¼ Turn CCW on feed gauge adjust screw	• Check both fold plates. Make sure they are set to the correct mark on the scale.	• Check both fold plates. Make sure that both paper stops are square.

Table 1: Paper Jam Diagnostics

11.5 Improper Functioning of the Machine

11.5.1 Misaligned Folds

If your forms are running through the machine OK but they're folding a little bit crooked or are not folding right on the perforation, you need to adjust the fold plate settings. The location of perforations on forms generally fluctuates by about 1/16" in either direction. Forms manufacturers do this to avoid the forms sticking together. Because of this fluctuation, it is sometimes necessary to fine tune the placement of the paper stop on the fold plates.

The first step is to identify which fold plate is misaligned. Watch the form as it is fed into the machine, and then compare it to the finished form.

Once you've identified which fold plate needs to be adjusted, remove it from the machine. If the fold is crooked, check to make sure that the paper stop is parallel to the front edge of the fold plate. Check that the indicator points on the paper stop indicate the same reading on the two scales of the fold plate. Also check the feed table to make sure that paper guides are set correctly.

If the fold is just a bit off of the perforation, adjust the paper stop by the amount that the fold is off. If the fold is happening early, then move the paper stop away from the open end of the fold plate. If the fold is happening late, then move the paper stop towards the open end of the fold plate.

11.5.2 Paper Feed Problems

11.5.2.1 Double Feeds

If the machine is occasionally feeding two forms at once, readjust the ***feed gauge.***

11.5.2.2 Won't Feed

If your machine won't feed forms through:

1. Try reducing the size of the paper stack on the ***feed table***.
   a) Adjust the feed table ***paper guides***.
2. Try resetting the ***feed gauge***.

11.5.3 Dirty forms

1. Clean rolls with OOPS or an equivalent cleaning solvent.
   a) Spray solvent onto a clean rag and wipe down rolls.
2. Inspect felt wiper.
   a) Replace if dirty or flip over.

11.5.4 Motor Runs only in one direction

1. Check the rear fold plate and ensure it is properly installed.
2. Test the fold plate switch. (See Section 11.6.2)

11.5.5 Excessive Noise

Note: These machines are capable of processing up to 7,000 forms per hour. Some noise is to be expected. Be alert for unusual noises or grinding sounds.

- Disconnect the ***power cord*** from the machine.

1. Check for paper jam or foreign object in rolls.
   a) If a paper jam is found see section 11.4.
2. Remove ***drive train side cover***.
   a) Inspect entire drive train for damaged, worn, improperly tensioned or misaligned components. Particularly take note of the condition of the belts.

b) If no visual problems, remove the ***motor drive belt***.

(a) Replace ***drive train cover*** and power machine on and run the ***motor***. If the noise is still present replace the ***motor***.

(b) If the noise if no longer present the problem has been isolated to the drive train system. Check drive train components again, check rolls, conveyor system for damaged components or foreign object.

11.5.6 Poor Stacking

1. Adjust the ***nip wheel***.

Note: The nip wheel should be adjusted every time a new fold or form is used that yields a different final size.

2. Check the ***conveyor belts*** for any damage.
3. With the machine running observe the ***conveyor belts*** and ensure they are operating properly.

11.6 Sensors

1. Reflective Counter Sensor, if counter is not functioning correctly check exit NIP Wheel assembly I set correctly.
2. Check wiring that connections are being made

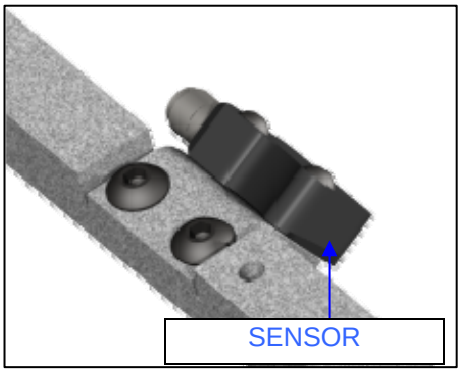


Figure 4: Sensor

11.6.1 Door Switch

Test the continuity, if the continuity does not correspond to the table below replace the switch.

Table 2: Door Switch Continuity

	1 & A	1 & B
Switch Closed	Open	Continuity
Switch Open	Continuity	No

Note: Normal operation requires that wires be connected to Terminals 1 and B

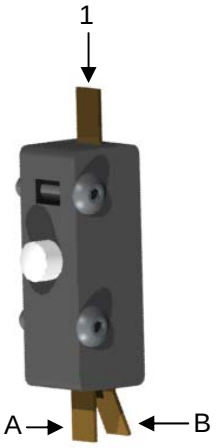


Figure 5: Door Switch

11.6.2 Fold Plate Switch

Test the continuity, if the continuity is not correct, replace the switch. This is a double pole double throw switch with N/C, N/O, and Common identified on the switch.

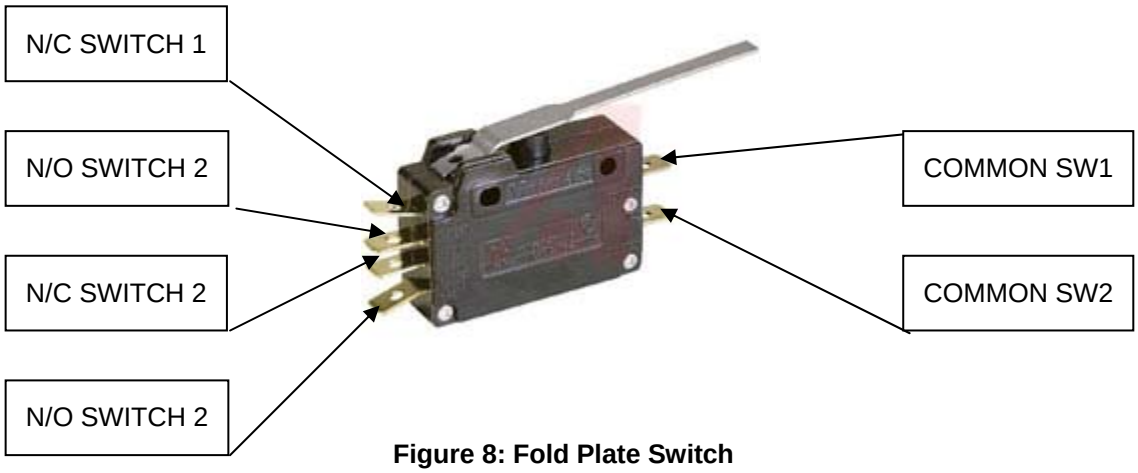
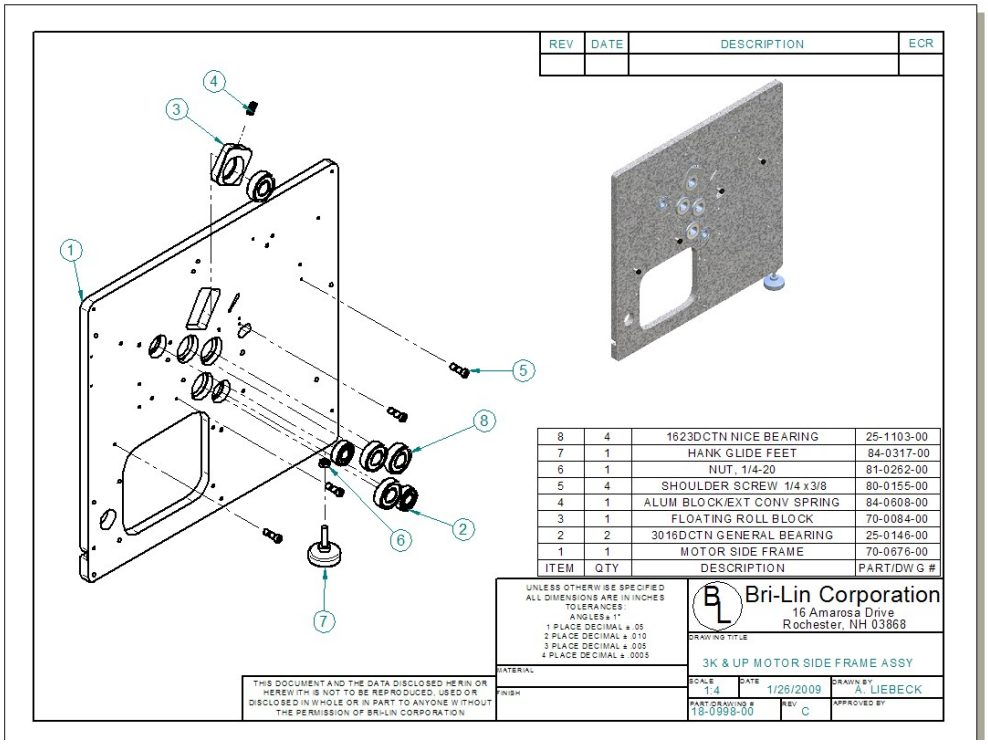
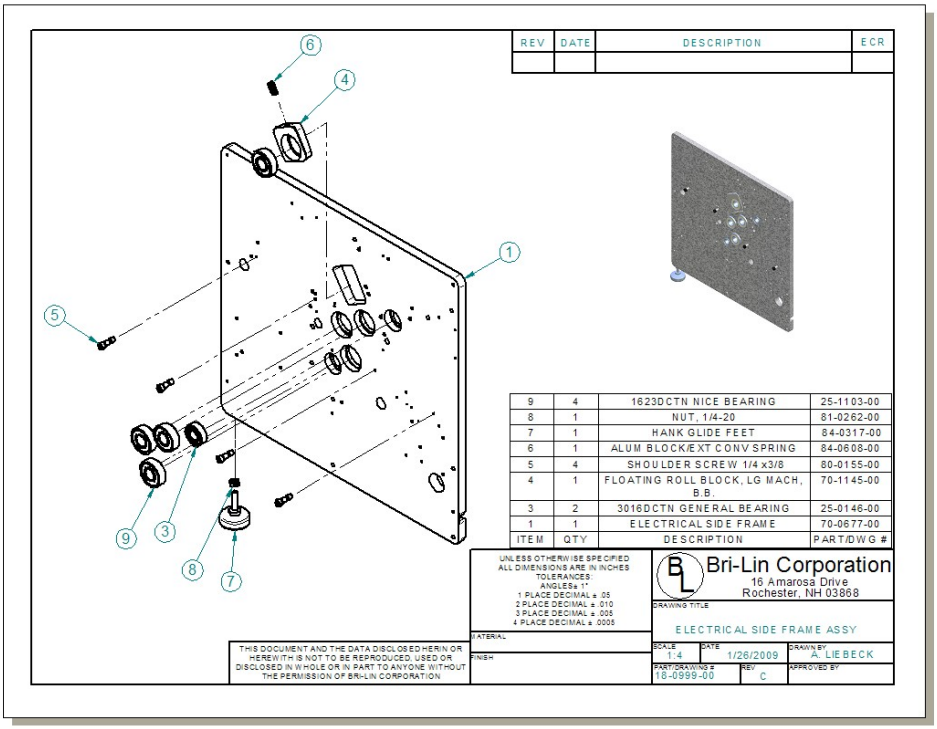


Figure 8: Fold Plate Switch
39-0581-00

11. Appendix

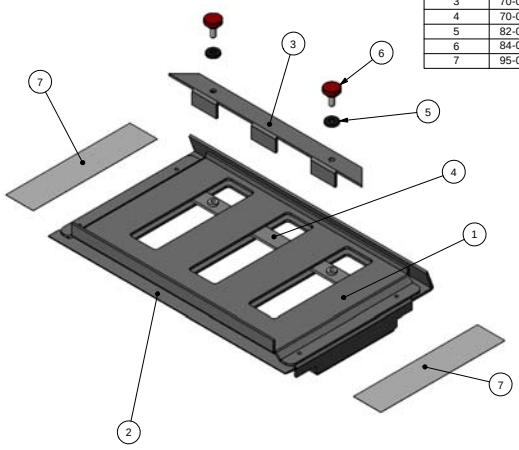




Side Frame Assembly Drawings

SHEET 2 OF 2

ITEM	PartNo	DESCRIPTION	QTY.
1	70-0210-00	Lower Fold Plate	1
2	70-0211-00	Lower Fold Plate Bottom	1
3	70-0212-00	Fold Plate Paper Stop	1
4	70-0213-00	Fold Plate Paper Stop Base	1
5	82-0157-00	Hardened Flat Washer	2
6	84-0065-00	Red #10-32 Thumb Screw	2
7	95-0158-00	Scale	2



UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE IN INCHES

TOLERANCES:
ANGLES ± 1°
1 PLACE DECIMALS ± .05
2 PLACE DECIMALS ± .010
3 PLACE DECIMALS ± .005
4 PLACE DECIMALS ± .0005

MATERIAL

FINISH

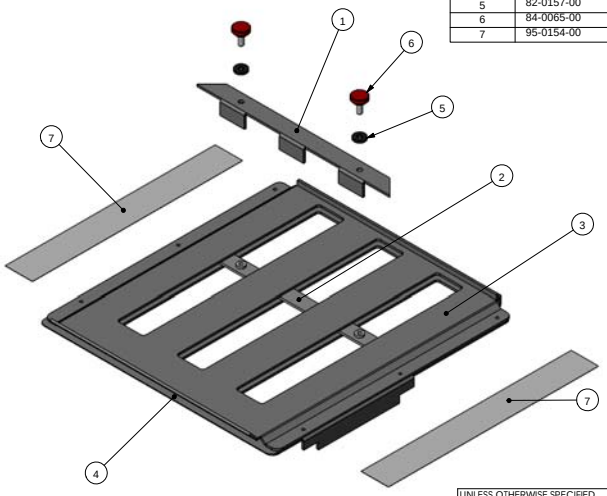
Bri-Lin Corporation
16 Amarosa Drive
Rochester, NH 03868

DRAWING TITLE
LOWER FOLD PLATE
ASSEMBLY, 3K

PART #	REVISION	DRAWN BY
18-0011-00	B	AAS
DRAWING #	SCALE	DRAWING DATE
MD-0011-00	1:3	7/21/2005

SHEET 2 OF 2

ITEM	PartNo	DESCRIPTION	QTY.
1	70-0212-00	Fold Plate Paper Stop	1
2	70-0213-00	Fold Plate Paper Stop Base	1
3	70-0215-00	Lower Fold Plate	1
4	70-0216-00	Lower Fold Plate Bottom	1
5	82-0157-00	Hardened Flat Washer	2
6	84-0065-00	Red #10-32 Thumb Screw	2
7	95-0154-00	Upper Foldplate Scale	2



UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE IN INCHES

TOLERANCES:
ANGLES ± 1°
1 PLACE DECIMALS ± .05
2 PLACE DECIMALS ± .010
3 PLACE DECIMALS ± .005
4 PLACE DECIMALS ± .0005

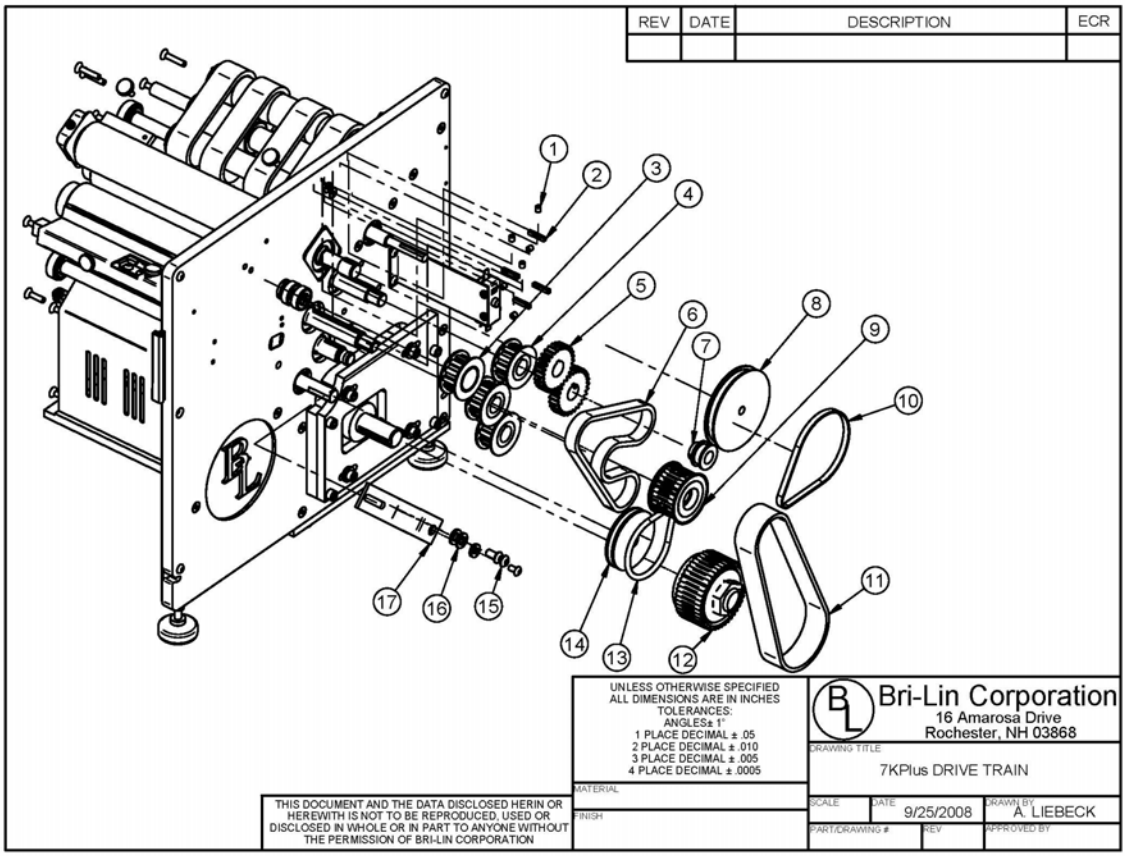
MATERIAL

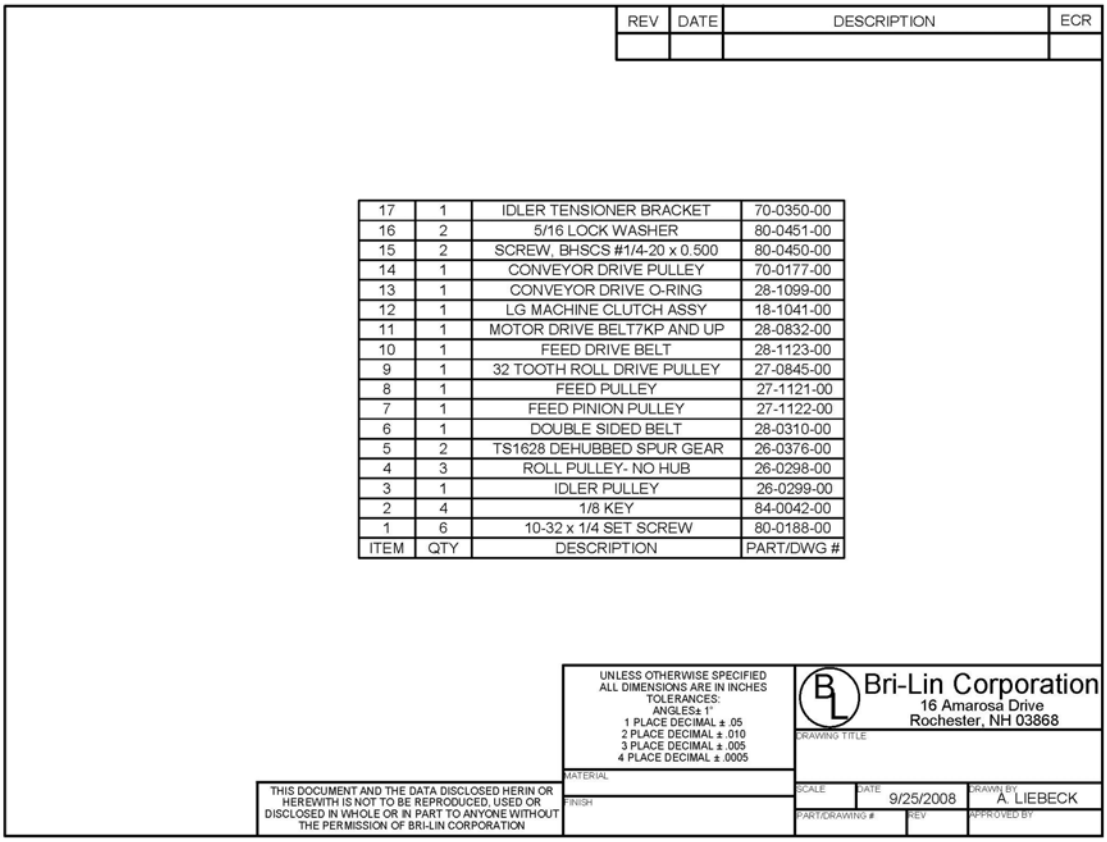
FINISH

Bri-Lin Corporation
16 Amarosa Drive
Rochester, NH 03868

DRAWING TITLE
UPPER FOLD PLATE
ASSEMBLY, 3K

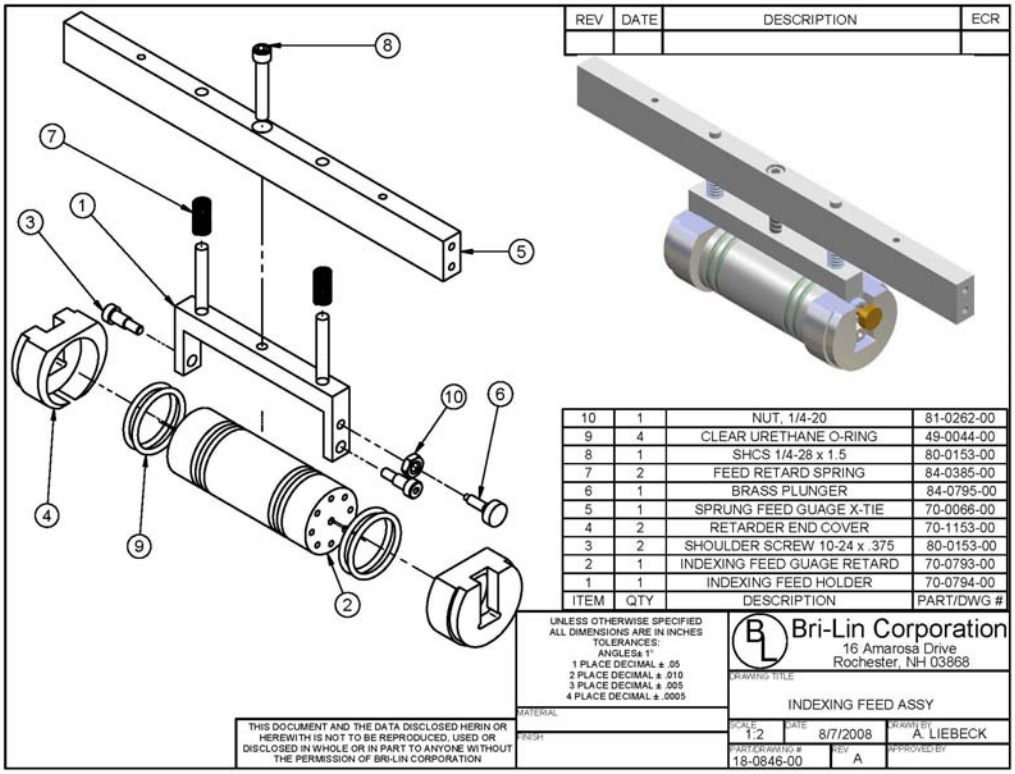
PART #	REVISION	DRAWN BY
18-0010-00	A	AAS
DRAWING #	SCALE	DRAWING DATE
18-0010-00	1:3	7/21/2005





ITEM	QTY	DESCRIPTION	PART/DWG #
17	1	IDLER TENSIONER BRACKET	70-0350-00
16	2	5/16 LOCK WASHER	80-0451-00
15	2	SCREW, BHSCS #1/4-20 x 0.500	80-0450-00
14	1	CONVEYOR DRIVE PULLEY	70-0177-00
13	1	CONVEYOR DRIVE O-RING	28-1099-00
12	1	LG MACHINE CLUTCH ASSY	18-1041-00
11	1	MOTOR DRIVE BELT7KP AND UP	28-0832-00
10	1	FEED DRIVE BELT	28-1123-00
9	1	32 TOOTH ROLL DRIVE PULLEY	27-0845-00
8	1	FEED PULLEY	27-1121-00
7	1	FEED PINION PULLEY	27-1122-00
6	1	DOUBLE SIDED BELT	28-0310-00
5	2	TS1628 DEHUBBED SPUR GEAR	26-0376-00
4	3	ROLL PULLEY- NO HUB	26-0298-00
3	1	IDLER PULLEY	26-0299-00
2	4	1/8 KEY	84-0042-00
1	6	10-32 x 1/4 SET SCREW	80-0188-00

7KPlus Exploded Drive Train

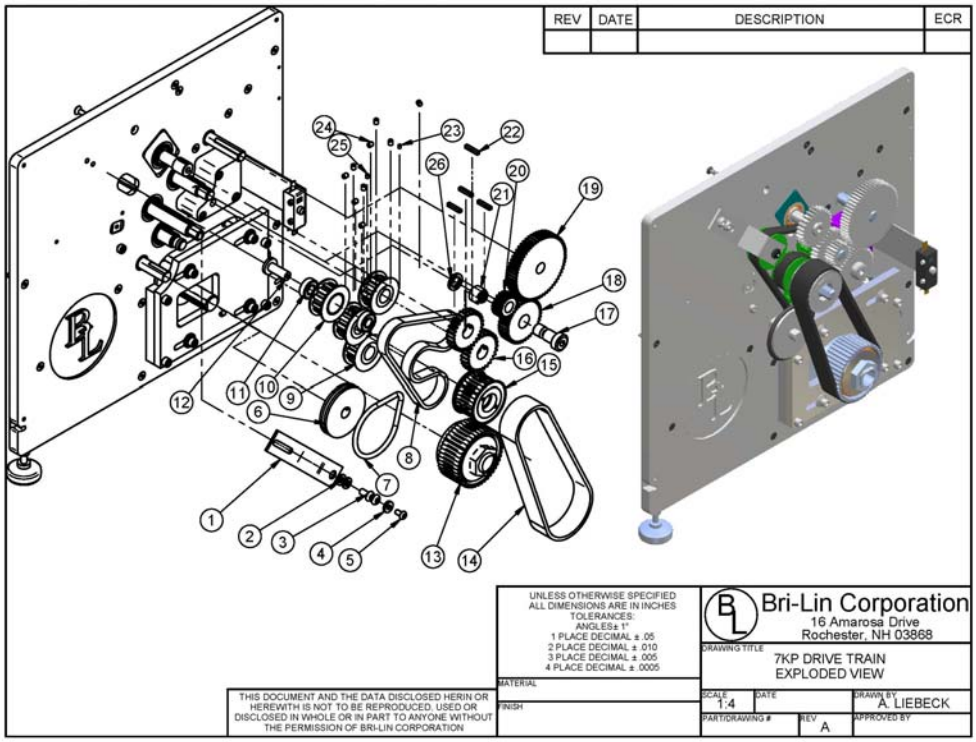


Retard Assembly

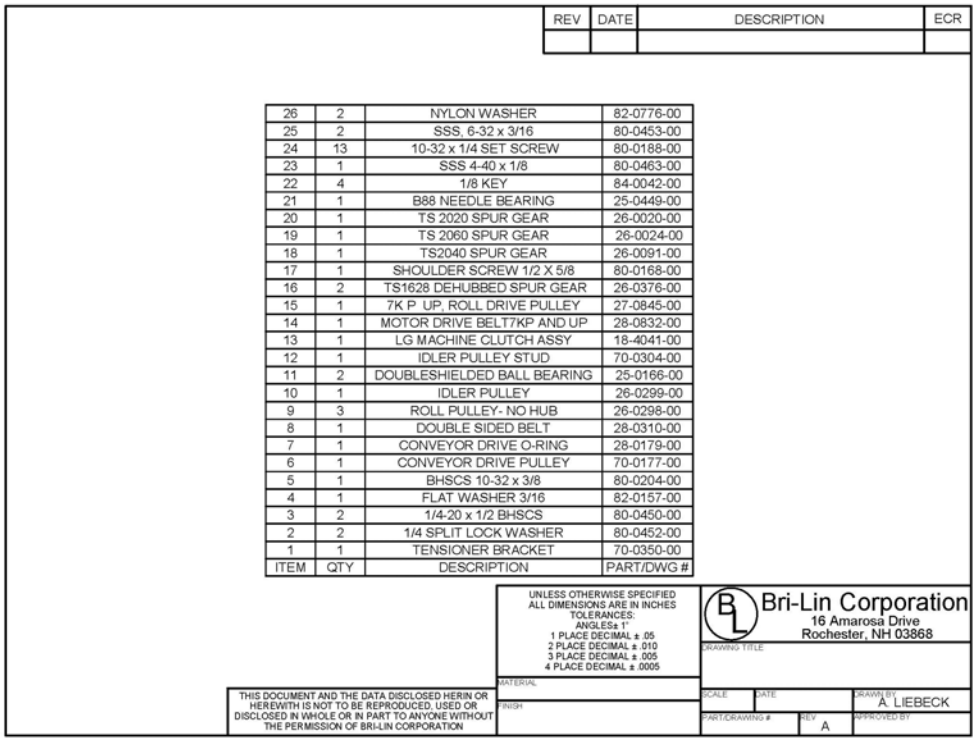
Optional Indexing Feed Retard Assembly

12. Addendums

Over the last several years, the 7KPlus has changed several times. Listed in this addendum are most of the changes that have been made. If the machine being serviced does not have the components listed, contact Infinity Solutions Manufacturing.

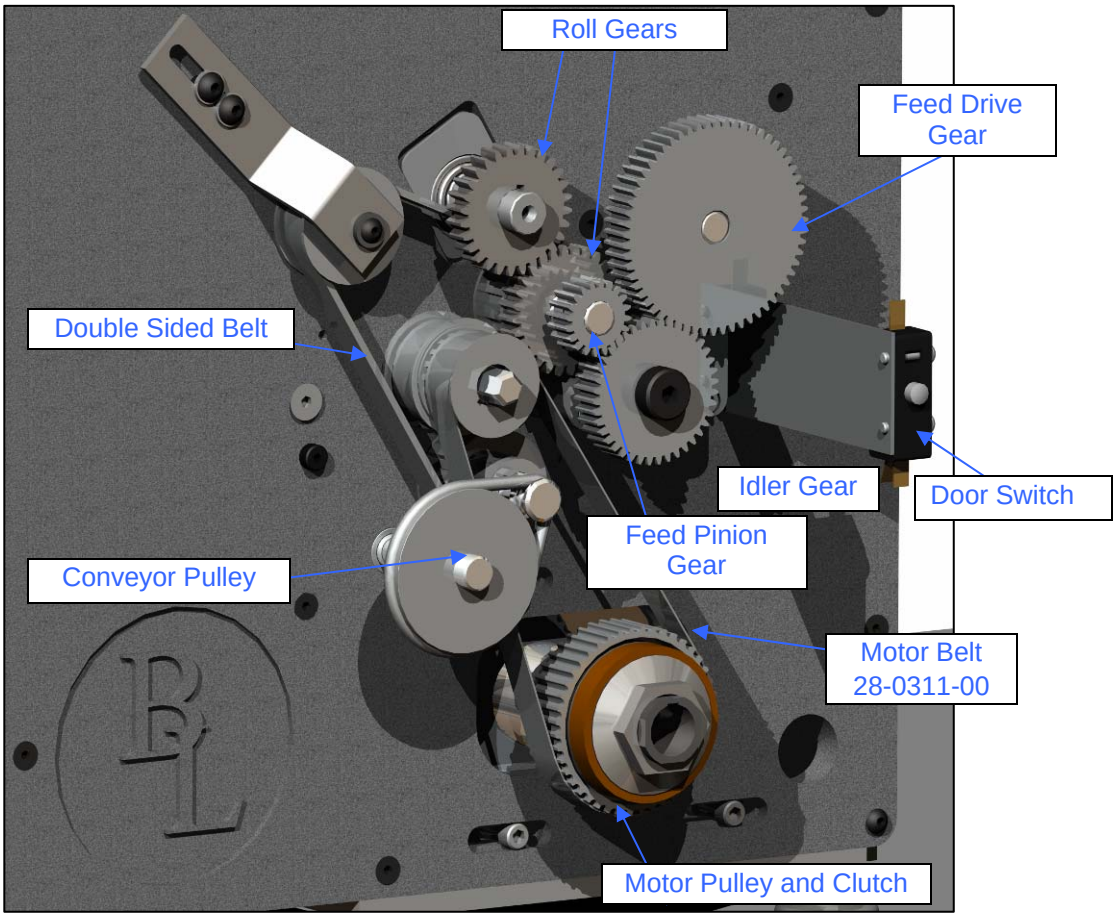


7KPlus with Gear Driven Feed



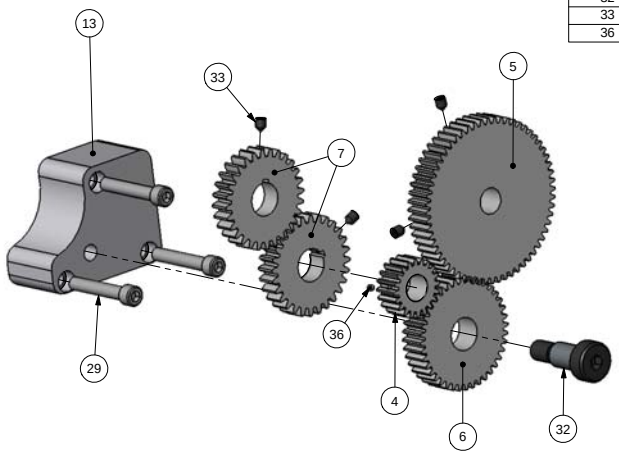
ITEM	QTY	DESCRIPTION	PART/DWG #
26	2	NYLON WASHER	82-0776-00
25	2	SSS, 6-32 x 3/16	80-0453-00
24	13	10-32 x 1/4 SET SCREW	80-0188-00
23	1	SSS 4-40 x 1/8	80-0463-00
22	4	1/8 KEY	84-0042-00
21	1	B88 NEEDLE BEARING	25-0449-00
20	1	TS 2020 SPUR GEAR	26-0020-00
19	1	TS 2060 SPUR GEAR	26-0024-00
18	1	TS2040 SPUR GEAR	26-0091-00
17	1	SHOULDER SCREW 1/2 X 5/8	80-0168-00
16	2	TS1628 DEHUBBED SPUR GEAR	26-0376-00
15	1	7K P UP, ROLL DRIVE PULLEY	27-0845-00
14	1	MOTOR DRIVE BELT7KP AND UP	28-0832-00
13	1	LG MACHINE CLUTCH ASSY	18-4041-00
12	1	IDLER PULLEY STUD	70-0304-00
11	2	DOUBLESHIELDED BALL BEARING	25-0166-00
10	1	IDLER PULLEY	26-0299-00
9	3	ROLL PULLEY- NO HUB	26-0298-00
8	1	DOUBLE SIDED BELT	28-0310-00
7	1	CONVEYOR DRIVE O-RING	28-0179-00
6	1	CONVEYOR DRIVE PULLEY	70-0177-00
5	1	BHSCS 10-32 x 3/8	80-0204-00
4	1	FLAT WASHER 3/16	82-0157-00
3	2	1/4-20 x 1/2 BHSCS	80-0450-00
2	2	1/4 SPLIT LOCK WASHER	80-0452-00
1	1	TENSIONER BRACKET	70-0350-00

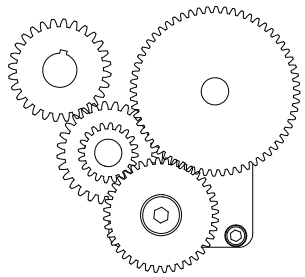
Drive Train w/15mm Belt


Roll Gears
Feed Drive Gear
Double Sided Belt
Idler Gear
Door Switch
Feed Pinion Gear
Conveyor Pulley
Motor Belt 28-0311-00
Motor Pulley and Clutch

SHEET 2 OF 3

ITEM	PartNo	DESCRIPTION	QTY.
4	26-0020-00	Spur Gear, Pinion	1
5	26-0024-00	Spur Gear, Feed	1
6	26-0091-00	Spur Gear, Large Idler	1
7	26-0376-00	Spur Gear, Roll Drive	2
13	70-0078-00	Feed Idler Bracket	1
29	80-0153-00	SHCS 0.250-28 x 1.5	3
32	80-0169-00	SHLDR 1/2 x 3/4 x 3/8-16	1
33	80-0188-00	Set Screw, SSS #10-32 x 1/4"	4
36	80-0463-00	Set Screw, SSS 4-40 x 0.125	1





UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE IN INCHES

TOLERANCES:
ANGLES ± 1°
1 PLACE DECIMALS ± .05
2 PLACE DECIMALS ± .010
3 PLACE DECIMALS ± .005
4 PLACE DECIMALS ± .0005

MATERIAL

FINISH

Bri-Lin Corporation
16 Amarosa Drive
Rochester, NH 03868

DRAWING TITLE: CHASSIS

PART #	REVISION	DRAWN BY
18-0192-00		
DRAWING #	SCALE	DRAWING DATE
MD-0192-00	1:2	7/27/2005

Feed Gear Cluster

1. Removal

- Disconnect the ***power cord*** from the machine.

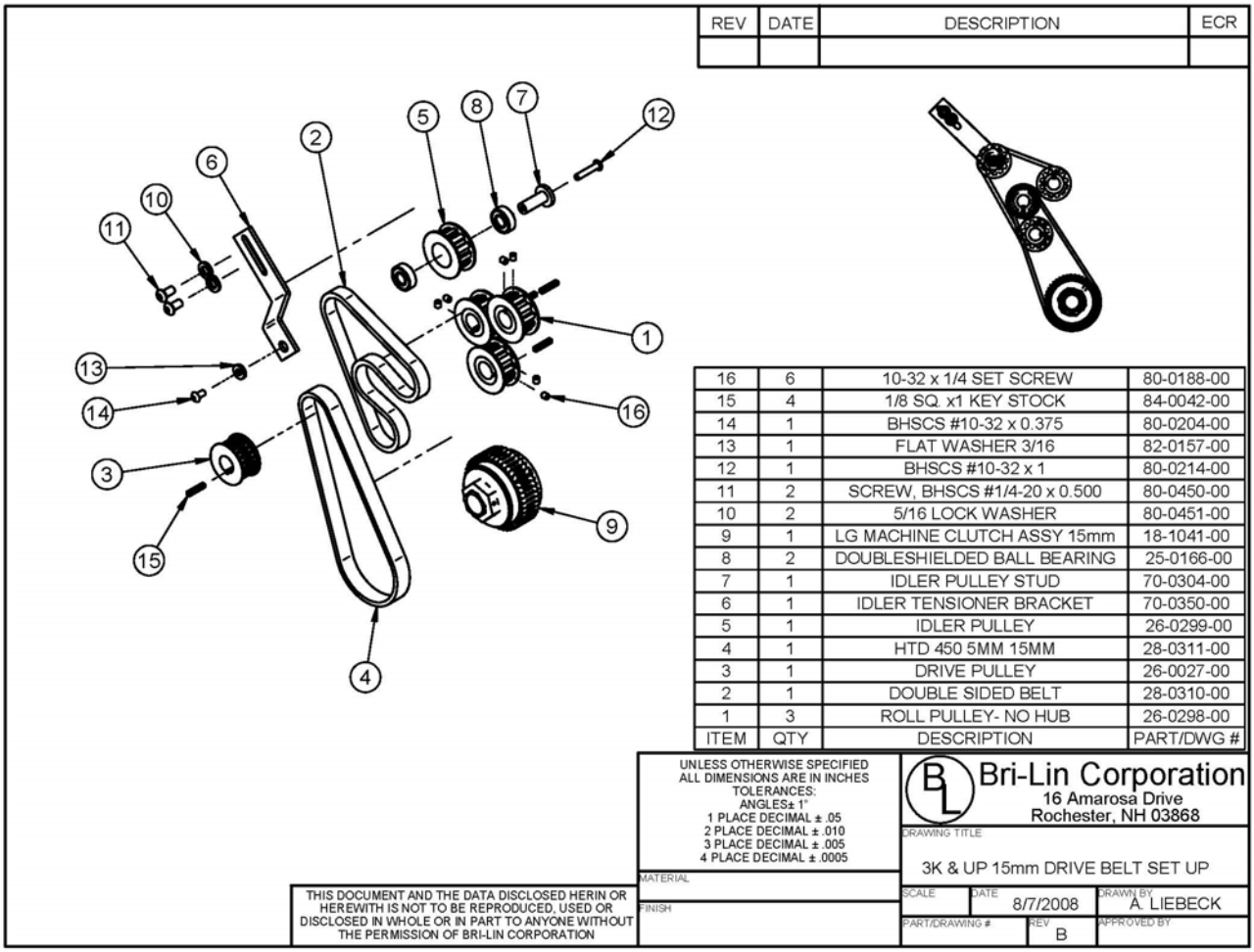
1. Remove the ***large idler gear*** by removing the shoulder-bolt on which it is mounted.
2. To remove the ***pinion idler, feed gear and drive gears***.
   a) Loosen set screw(s).
   b) Pull the ***gear*** off of the shaft.
3. Inspect gears for broken or chipped teeth. Replace the gear if any defects are found.

2. Installation

1. Place the upper and lower ***roll drive gears*** onto the ***roll shafts***.

Note: Only the ***lower roll drive gear*** requires a ***shaft key*** and it should already be present because it is shared with the ***roll drive pulley***. The upper ***roll drive gear*** does not require a keyway. However the set screw should be positioned to tighten into the key slot on the shaft.

2. Visually align the gears and tighten set screws.
3. Install the ***feed gears***.
   a) Place the ***large idler gear*** on the shoulder-bolt and tighten the bolt into the ***idler block***.
   b) Slide the ***feed gear*** on the ***feed drive shaft*** and the ***small idler gear*** on to the ***feed roll shaft***. (See **Error! Reference source not found.**)
   c) Tighten ***set screws***



Double Sided Timing Belt and Drive Pulleys

a) Removal

- Disconnect the ***power cord*** from the machine.

1. Remove the ***conveyor pulley***, ***motor belt*** and the ***gears***. (See Section 2.2)
2. Remove the ***double sided belt***.
   a) Loosen the ***idler tension bracket*** and slide the bracket and pulley down to release tension on the belt.
   b) Remove the ***idler pulley*** from the bracket.

Note: The ***pulley*** uses a double screw attachment and both sides must be held to unscrew the screws.

3. Remove the ***roll pulleys***.
   a) Loosen the set screws and remove the ***pulleys***.
4. Remove the ***belt.***

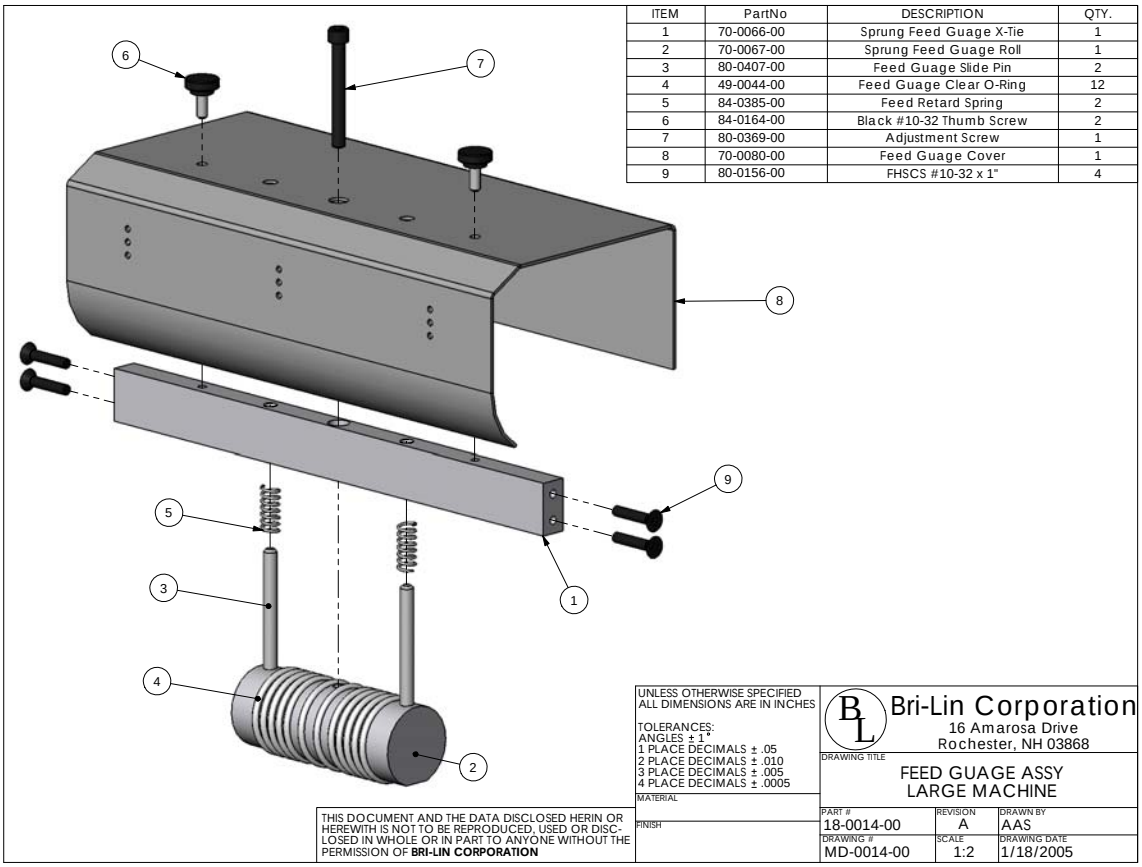
b) Installation

1. Installation is the reverse of removal.
2. Adjust belt tension. (See Section 2)

3. *Adjustments*

1. With the ***idler bracket*** loose, slide the ***idler wheel*** and ***bracket*** up until the ***belt*** is tight. Tension the ***belt*** so that the ***belt*** and ***gears*** move freely with minimal resistance. If the ***belt*** is too loose excess noise and premature belt failure can occur

Feed Gauge



ITEM	PartNo	DESCRIPTION	QTY.
1	70-0066-00	Sprung Feed Guage X-Tie	1
2	70-0067-00	Sprung Feed Guage Roll	1
3	80-0407-00	Feed Guage Slide Pin	2
4	49-0044-00	Feed Guage Clear O-Ring	12
5	84-0385-00	Feed Retard Spring	2
6	84-0164-00	Black #10-32 Thumb Screw	2
7	80-0369-00	Adjustment Screw	1
8	70-0080-00	Feed Guage Cover	1
9	80-0156-00	FHSCS #10-32 x 1"	4

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3 PLACE DECIMALS ± .005
4 PLACE DECIMALS ± .0005

MATERIAL

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Bri-Lin Corporation
16 Amarosa Drive
Rochester, NH 03868

DRAWING TITLE
FEED GUAGE ASSY
LARGE MACHINE

PART #	REVISION	DRAWN BY
18-0014-00	A	AAS
DRAWING #	SCALE	DRAWING DATE
MD-0014-00	1:2	1/18/2005

a) Removal

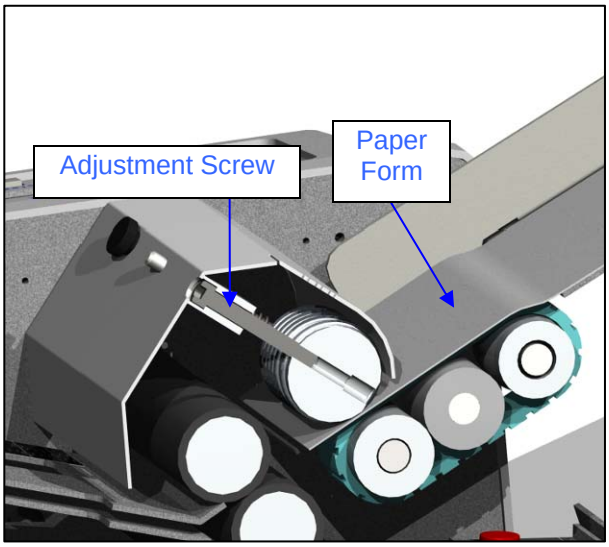
- Disconnect the power cord from the machine.

1. Remove the ***feed gauge cover***.
2. Remove both ***side covers***.
3. Remove the ***x-tie screws*** from both side frames.
4. Pull the ***feed gauge assembly*** up and out of the machine.

Note: If the ***x-Tie*** is too tight in the chassis to remove it maybe necessary to loosen the ***feed table***, ***feed idler shafts***, ***conveyor***, ***sensor x-tie***, and ***front & rear motor guard screws*** on the ***motor side frame***.

4. *Installation*

1. Assembly is the reverse of the removal.
2. Adjust the ***feed gauge***.



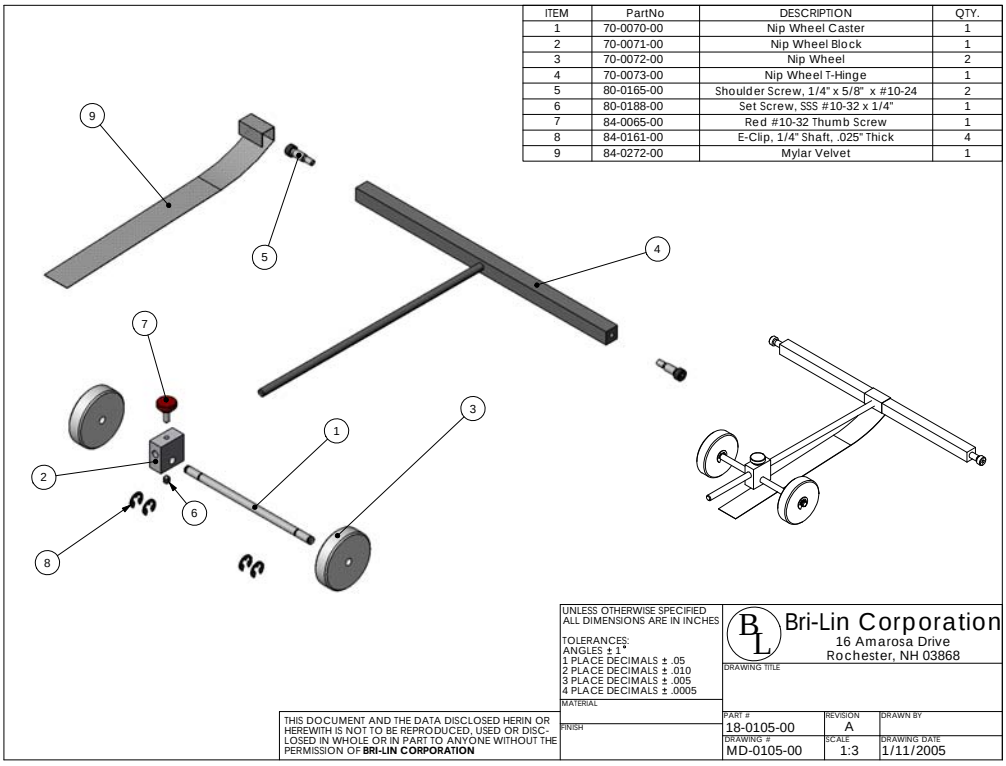
Cross-section of Feed Gauge

5. *Adjustment*

- Disconnect the ***power cord*** from the machine.

1. Remove ***feed gauge cover***
2. Place 1 form on the feed table and hand feed the form into the machine by moving the feed belt with your hand.
3. Pull the paper out of the machine. You should feel resistance, but not too much. Turn the ***adjustment screw*** clockwise for less resistance and counter-clockwise for more resistance.

Nip Wheels



ITEM	PartNo	DESCRIPTION	QTY.
1	70-0070-00	Nip Wheel Caster	1
2	70-0071-00	Nip Wheel Block	1
3	70-0072-00	Nip Wheel	2
4	70-0073-00	Nip Wheel T-Hinge	1
5	80-0165-00	Shoulder Screw, 1/4" x 5/8" x #10-24	2
6	80-0188-00	Set Screw, SSS #10-32 x 1/4"	1
7	84-0065-00	Red #10-32 Thumb Screw	1
8	84-0161-00	E-Clip, 1/4" Shaft, .025" Thick	4
9	84-0272-00	Mylar Velvet	1

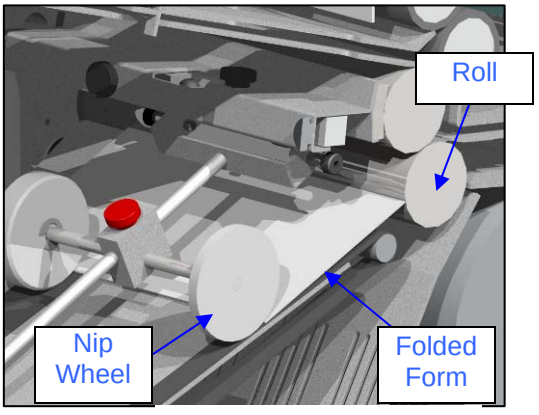
Nip Wheel

a) Removal

- Disconnect the ***power cord*** from the machine.

1. Remove both the ***side covers***.
2. Remove the ***x-tie screws*** from both ***side frames***.
3. Slide the ***nip wheel assembly*** out of the front of the machine.

NIP WHEELS MAY NOT BE WHITE



Nip Wheel Adjustment

6. *Installation*

Installation is the reverse of the removal.

7. *Adjustment*

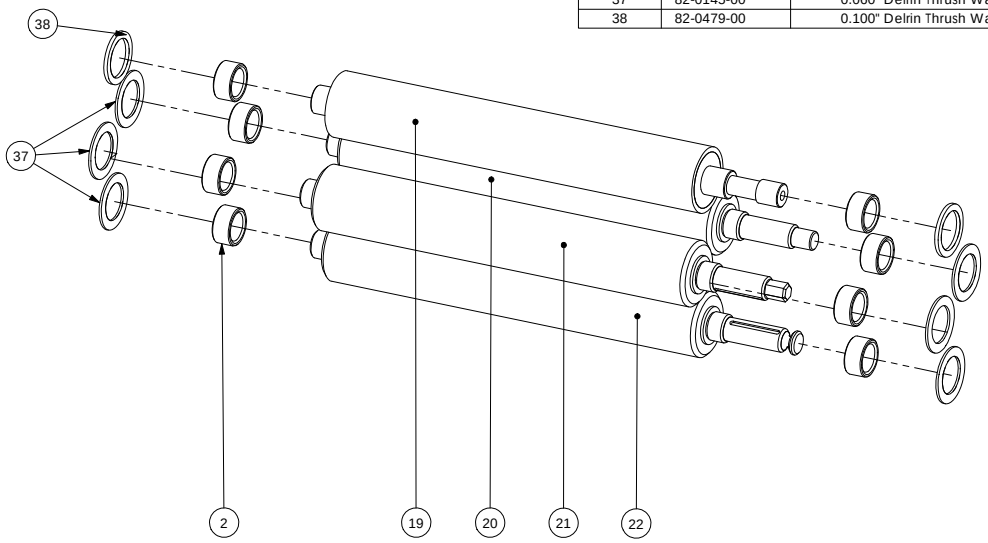
Note: The nip wheel should be adjusted every time a new fold or form is used that yields a different final size.

1. Set the form with desired fold onto the conveyer so that it is touching the edge of the roll.
2. Adjust the ***nip wheel*** so that it is ½" from the other side of the folded form.

Sealer Rollers

SHEET 3 OF 3

ITEM	PartNo	DESCRIPTION	Rolls Config/ QTY.
2	25-0377-00	Hardened Race	8
19	70-0087-00	Urethane Feed Roll	1
20	70-0088-00	Feed Drive Roll	1
21	70-0089-00	Hex End Roll	1
22	70-0090-00	Conveyor Drive Roll	1
37	82-0145-00	0.060" Delrin Thrush Washer	6
38	82-0479-00	0.100" Delrin Thrush Washer	2



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TOLERANCES:
ANGLES ± 1°
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3 PLACE DECIMALS ± .005
4 PLACE DECIMALS ± .0005

MATERIAL

FINISH

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Bri-Lin Corporation
16 Amarosa Drive
Rochester, NH 03868

DRAWING TITLE: CHASSIS

PART #	REVISION	DRAWN BY
18-0192-00		
DRAWING #	SCALE	DRAWING DATE
MD-0192-00	1:3	7/25/2005

Rolls

a) Removal

- Disconnect the ***power cord*** from the machine.

1. Remove the all drive train components. (See Section: 0)
2. Remove the ***fold trays***, simply lift up trays and slide out of chassis.
3. Remove the ***feed gauge x-tie mounting screws*** from the drive train side of the chassis. (See Figure)
4. Remove the ***feed table mounting screws*** from the drive train side of the chassis. (See Figure)
5. Remove the ***feed roller mounting screws*** from the drive train side of the chassis. (See Figure)
6. Remove the ***conveyor table mounting screws*** from the drive train side of the chassis. (See Figure)
7. Remove the ***nip wheel x-tie mounting screw*** from the drive train side of the chassis. (See Figure)
8. Remove the ***counter sensor x-tie mounting screw*** from the drive train side of the chassis. (See Figure)

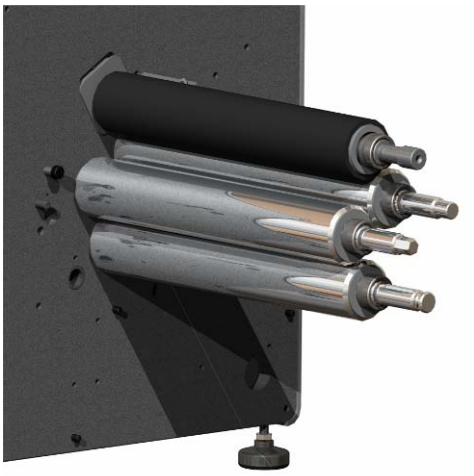


Figure 6: Rolls

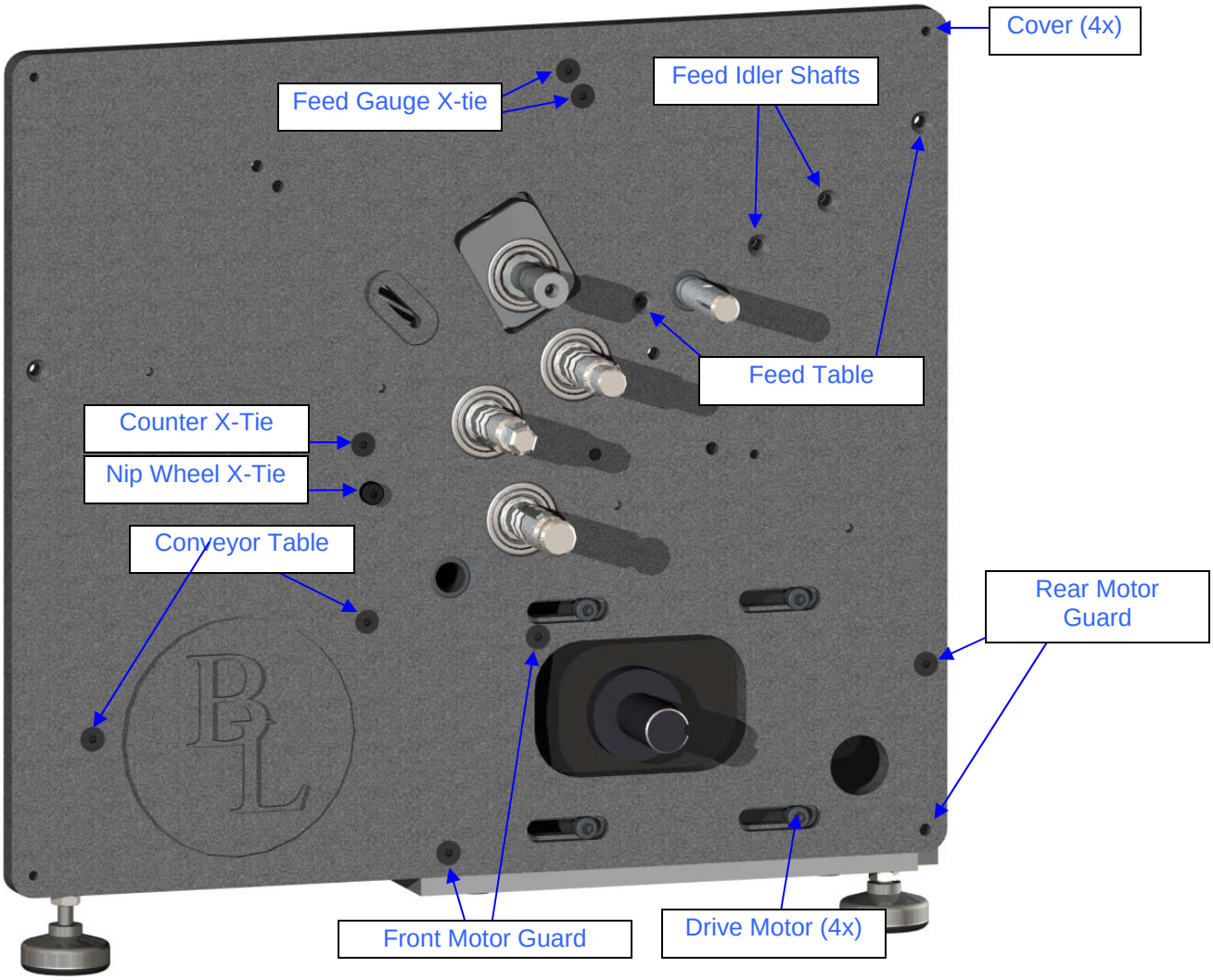
9. Remove the ***drive motor guards*** and the ***drive motor*** mounting screws. The drive motor can be left in the machine.
10. Ensure the ***electrical side cover*** is in place and on a sturdy surface tip the machine so that the electrical side is face down. Ensure the drive motor is securely resting and no wires are being pinched or stretched.
11. Remove the ***base plate mounting screws*** and ***rear leg*** from the drive train side frame.
12. Slide the ***drive train side frame*** off of the rolls and remove.

13. Inspect the ***rolls*** and ***delrin spacers*** for wear and replace any damaged or worn components.
    a) Clean rolls by wiping down with a household cleaner such as OOPS or the equivalent.

8. Installation

1. Installation is the reverse of removal

Note: Make sure the correct spacers are installed on each shaft.



Side Frame Screws
This view is shown with needle bearings with hardened race

ROLLER BEARING
Part # 25-1103-00

NEEDLE BEARING
Part # 25-0167-00

BEARING IDENTIFICATION

Phone (866) 427-4546
Fax (603) 332-8043
www.brilininc.com