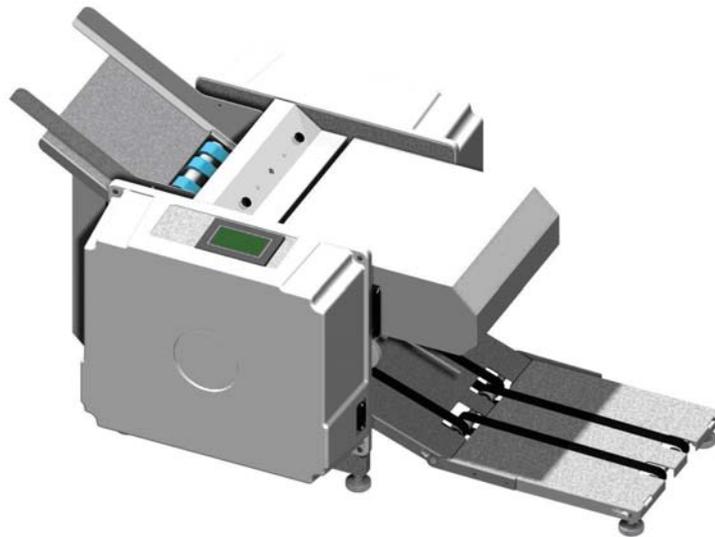




7K Plus Service Manual



Infinity Solutions Manufacturing
192 Gannett Drive South Portland, ME 04106
(207) 899-1714

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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 7K plus.

1. Machine Overview

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

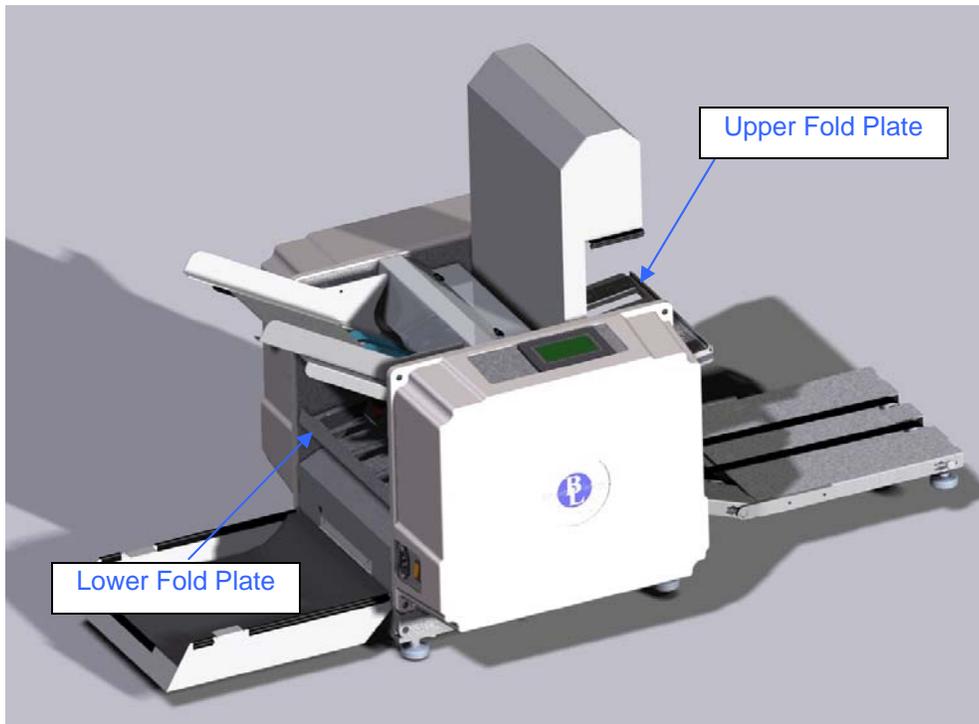
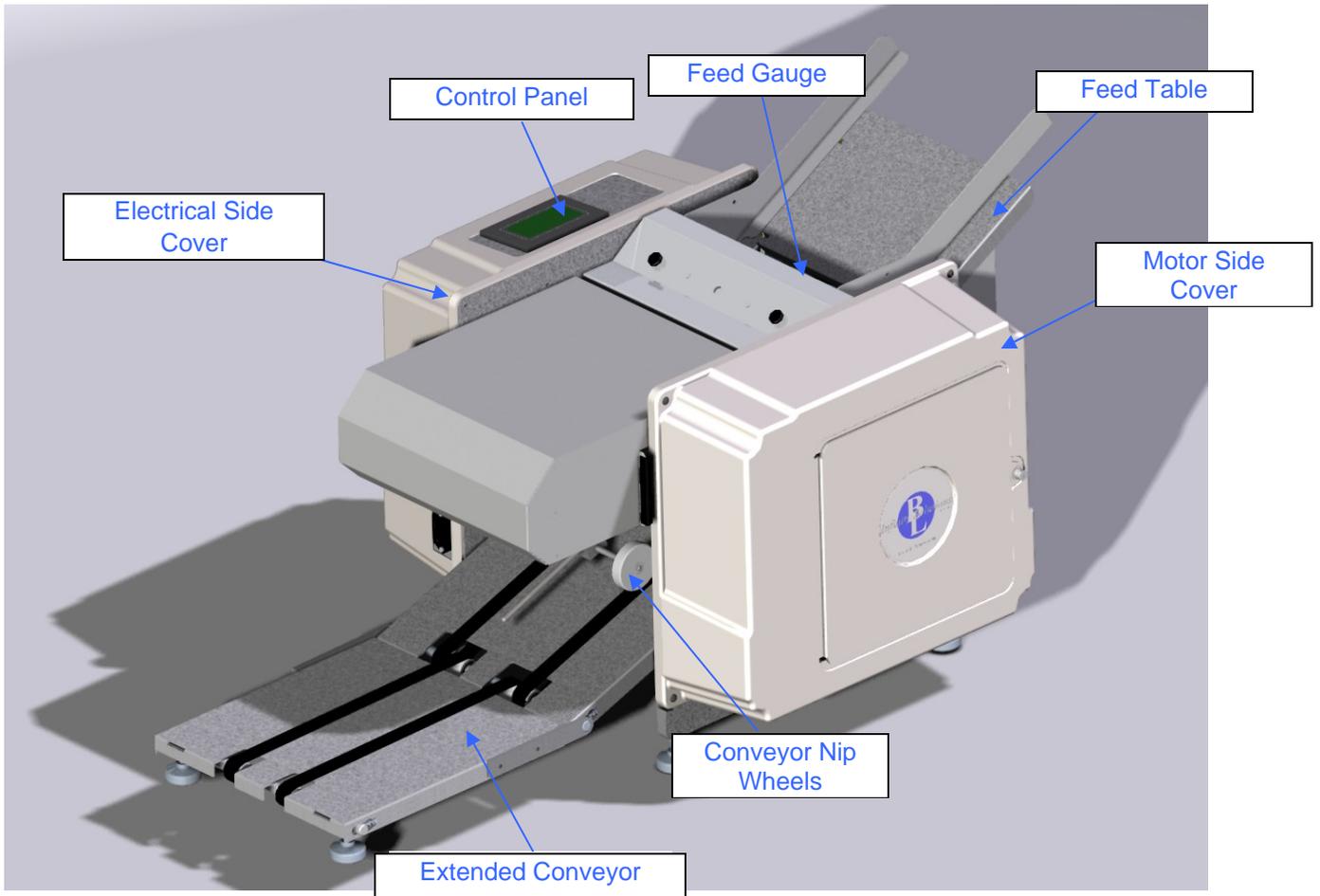


Figure 1: Overview

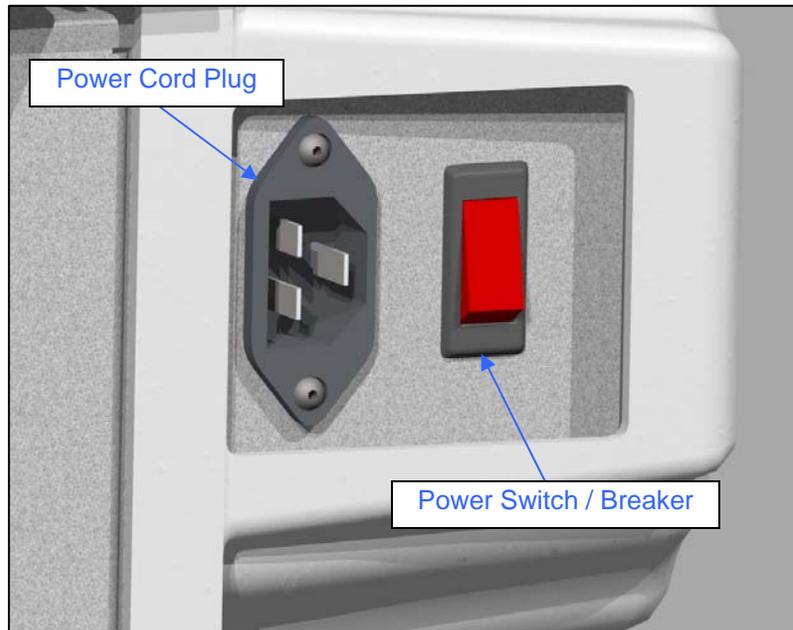


Figure 2: Power Connection and Switch

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.

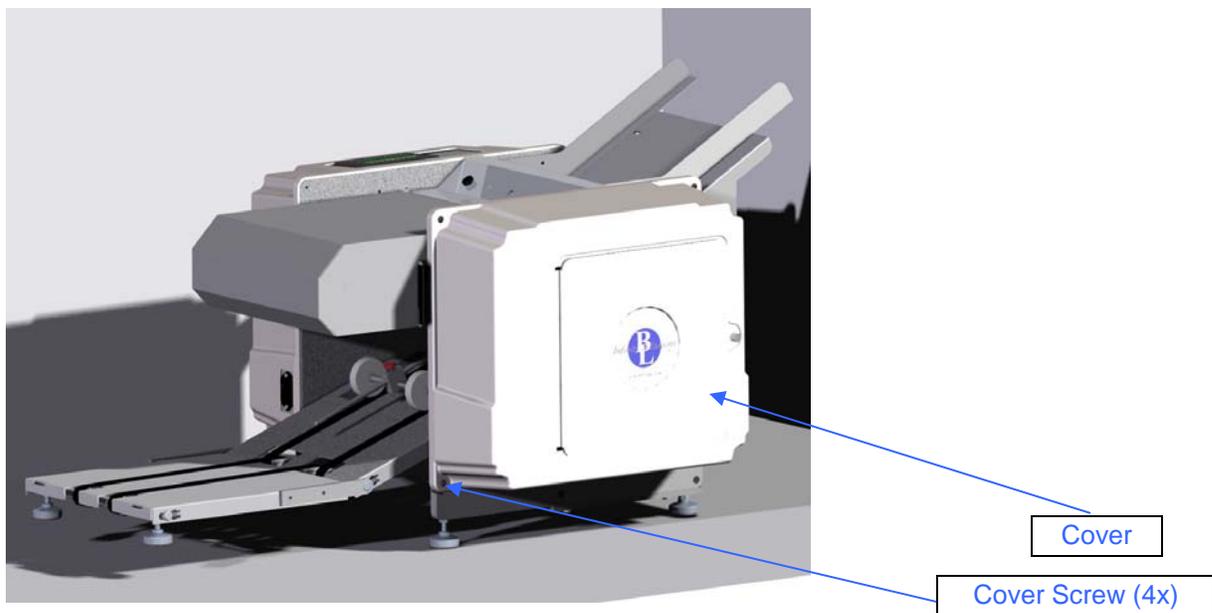


Figure 3: Covers

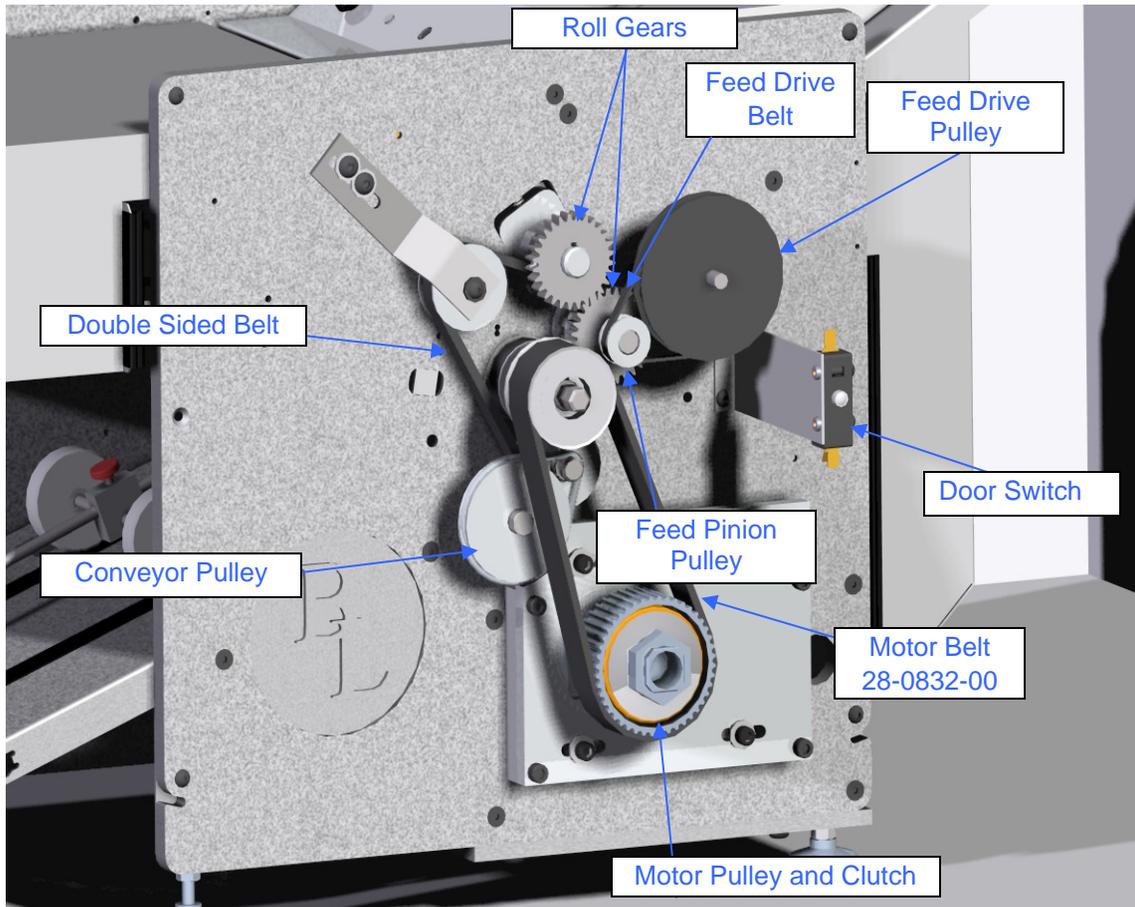


Figure 4: Drive Train

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

2. Drive Train

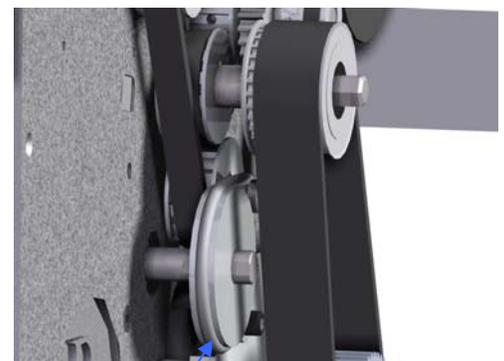
2.1. Conveyor Drive Pulley & O-Ring

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.

b) Installation

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



O-Ring

Figure 5: Conveyor Drive

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**.

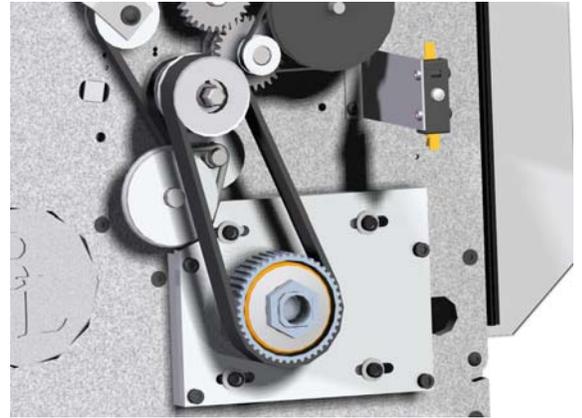


Figure 6: Drive Motor System

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.



Figure 7: 1 and 2/3 forms folded together

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.
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.

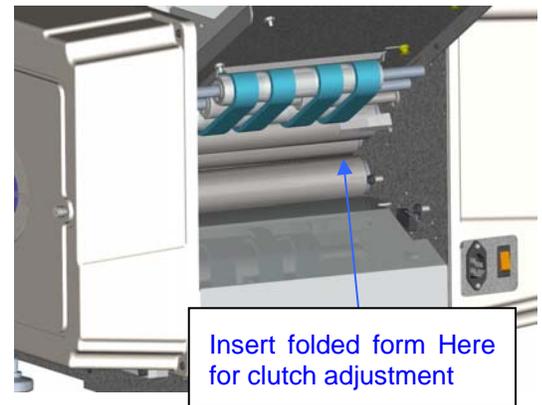
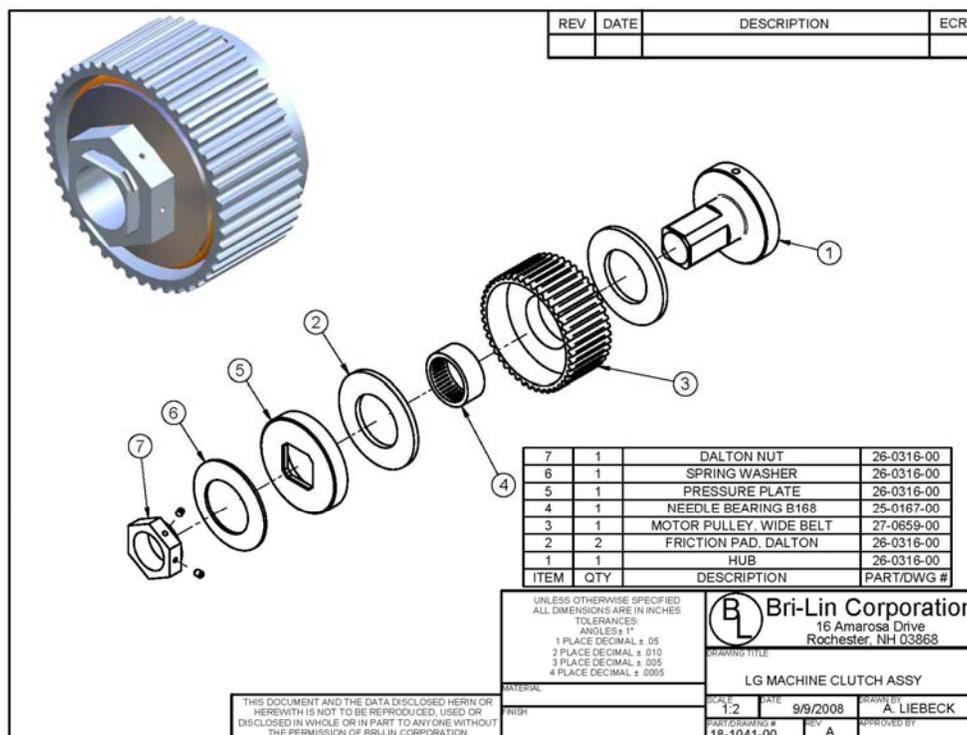


Figure 8: Back of the Machine

Note: If pulley material is aluminum, then see addendum

Figure 9: Motor Clutch Exploded View



2.3. Double Sided Timing Belt and Drive Pulleys

REV	DATE	DESCRIPTION	ECR

15	6	10-32 x 1/4 SET SCREW	80-0188-00
14	4	1/8 KEY	84-0042-00
13	1	BHSCS #10-32 x 0.375	80-0204-00
12	1	FLAT WASHER 3/16	82-0157-00
11	2	SCREW, BHSCS #1/4-20 x 0.500	80-0450-00
10	2	5/16 LOCK WASHER	80-0451-00
9	1	IDLER TENSIONER BRACKET	70-0350-00
8	1	MOTOR DRIVE BELT 7KP AND UP	28-0832-00
7	1	32 TOOTH ROLL DRIVE PULLEY	27-0845-00
6	1	LG MACHINE CLUTCH ASSY	18-1041-00
5	1	IDLER PULLEY	26-0299-00
4	2	DOUBLESHEILED BALL BEARING	25-0166-00
3	1	IDLER PULLEY STUD	70-0304-00
2	1	DOUBLE SIDED BELT	28-0310-00
1	3	ROLL PULLEY- NO HUB	26-0298-00
ITEM	QTY	DESCRIPTION	PART/DWG #

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

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Bri-Lin Corporation
16 Amarosa Drive
Rochester, NH 03868

DRAWING TITLE
7KPlus/15K DRIVE TRAIN

MATERIAL
FINISH

SCALE
DATE 9/25/2008
DRAWN BY A LIEBECK
PART/DRAWING #
REV
APPROVED BY

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)

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

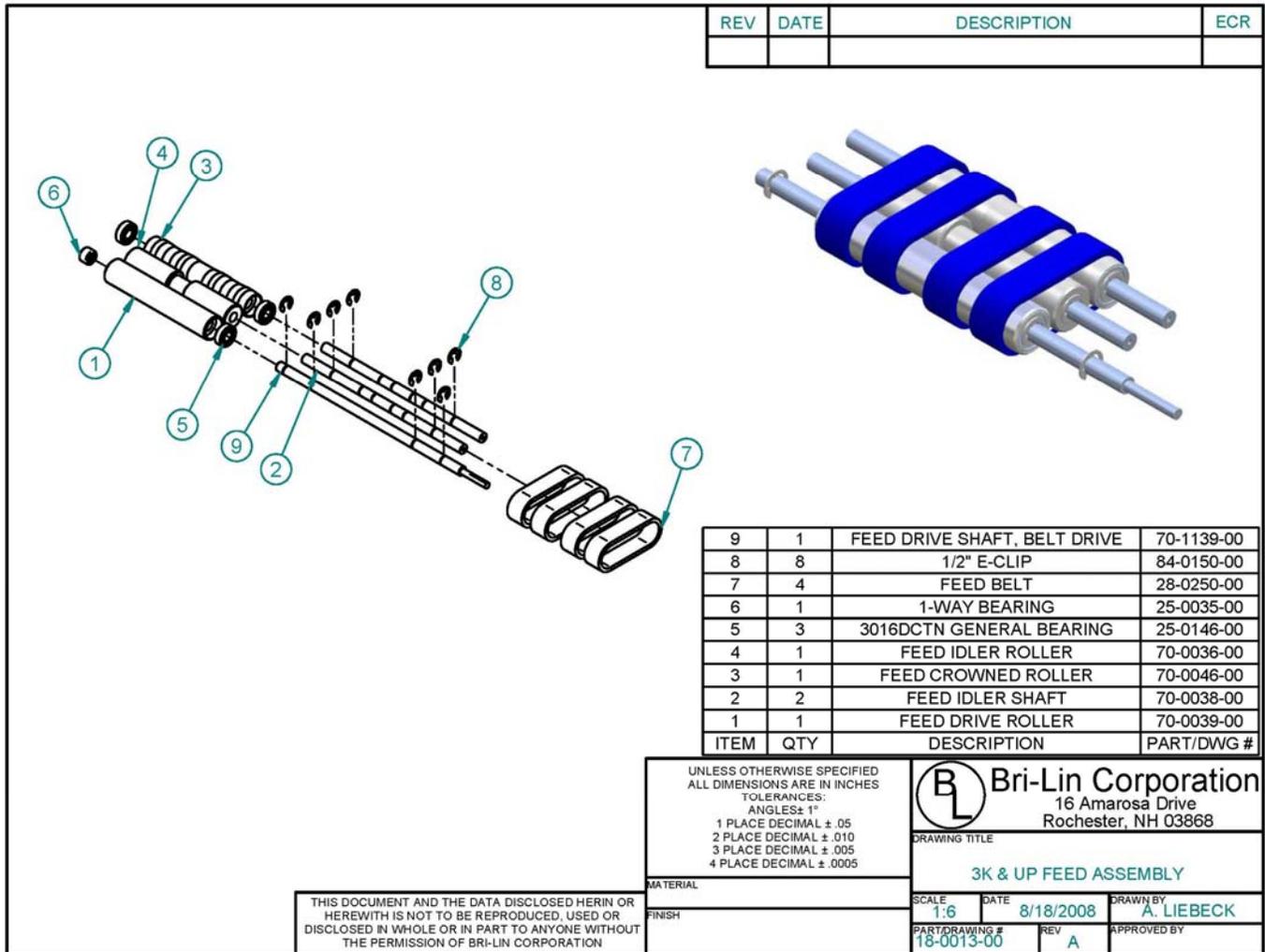


Figure 10: Feed Assembly

3.1. Feed Table

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). (See Figure 19)
 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).
 2. Remove **shaft support screws** from the **side frames**. (See Figure 19)
 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 10)

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**.

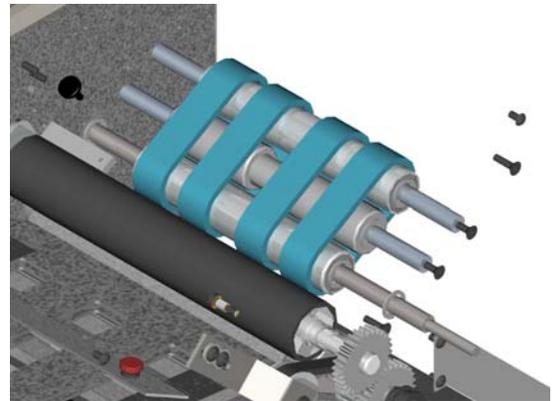


Figure 12: Feed Rollers and Belts

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

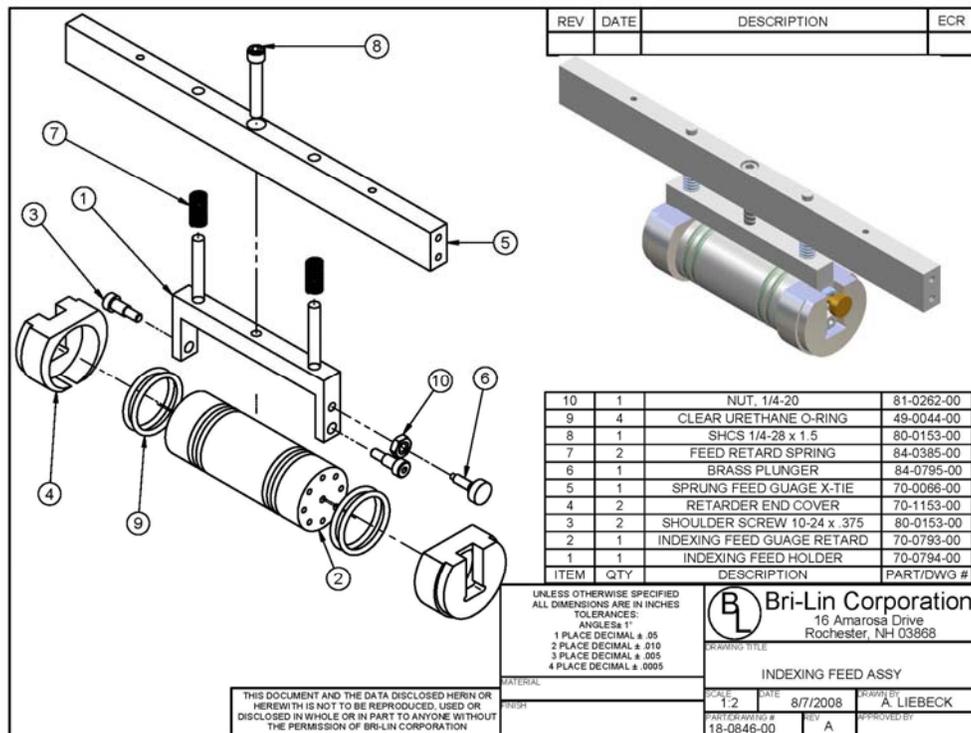


Figure 11: Feed Gauge Assembly

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. (See Figure 19)
 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**. (See Figure 19)

b) Installation

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

c) 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.

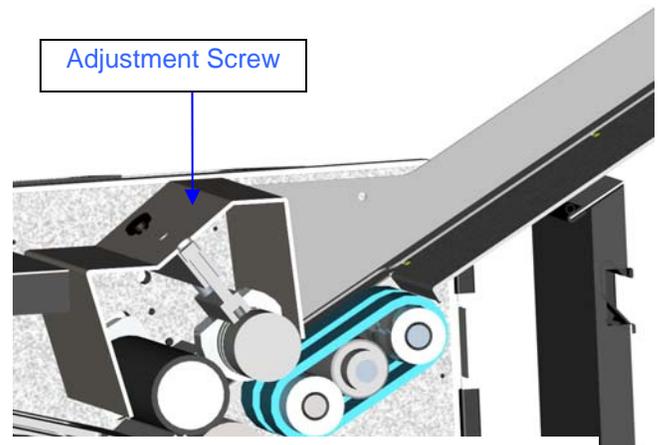
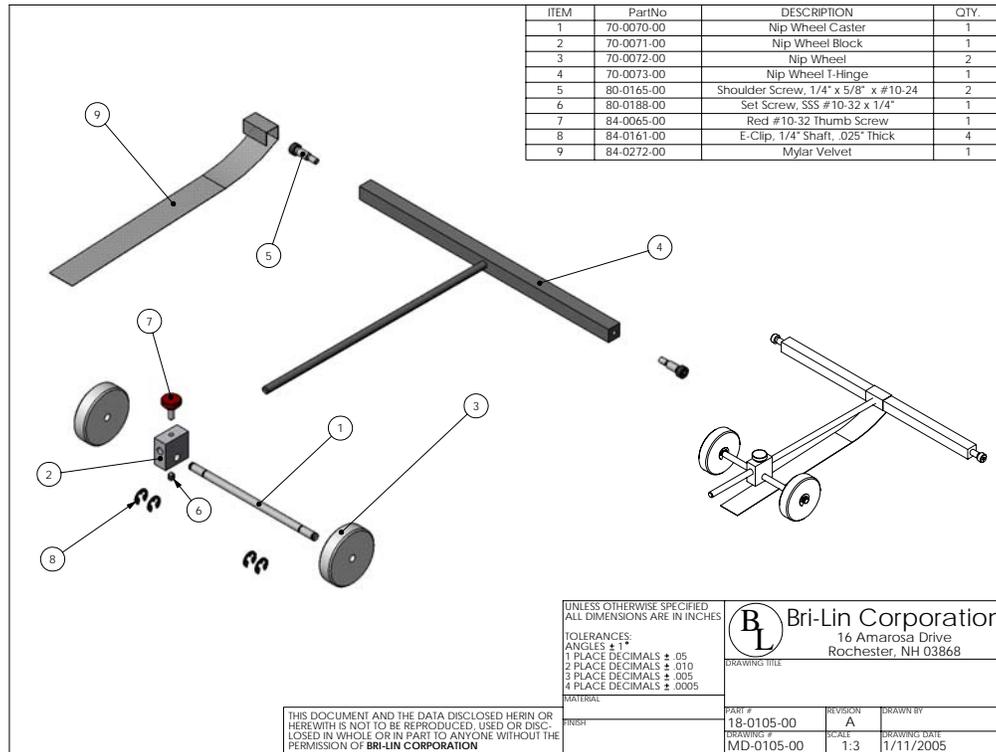


Figure 12: Cross-section of Feed Gauge

5. Nip Wheel



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

Figure 13: 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**. (See Figure 19)
 3. Slide the **nip wheel assembly** out of the front of the machine.

b) Installation

Installation is the reverse of the removal.

c) 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 conveyor 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 14)

NIP WHEELS MAY NOT BE WHITE

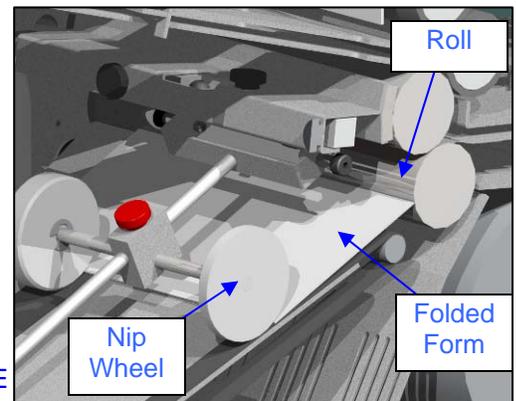


Figure 14: Nip Wheel Adjustment

6. Conveyor

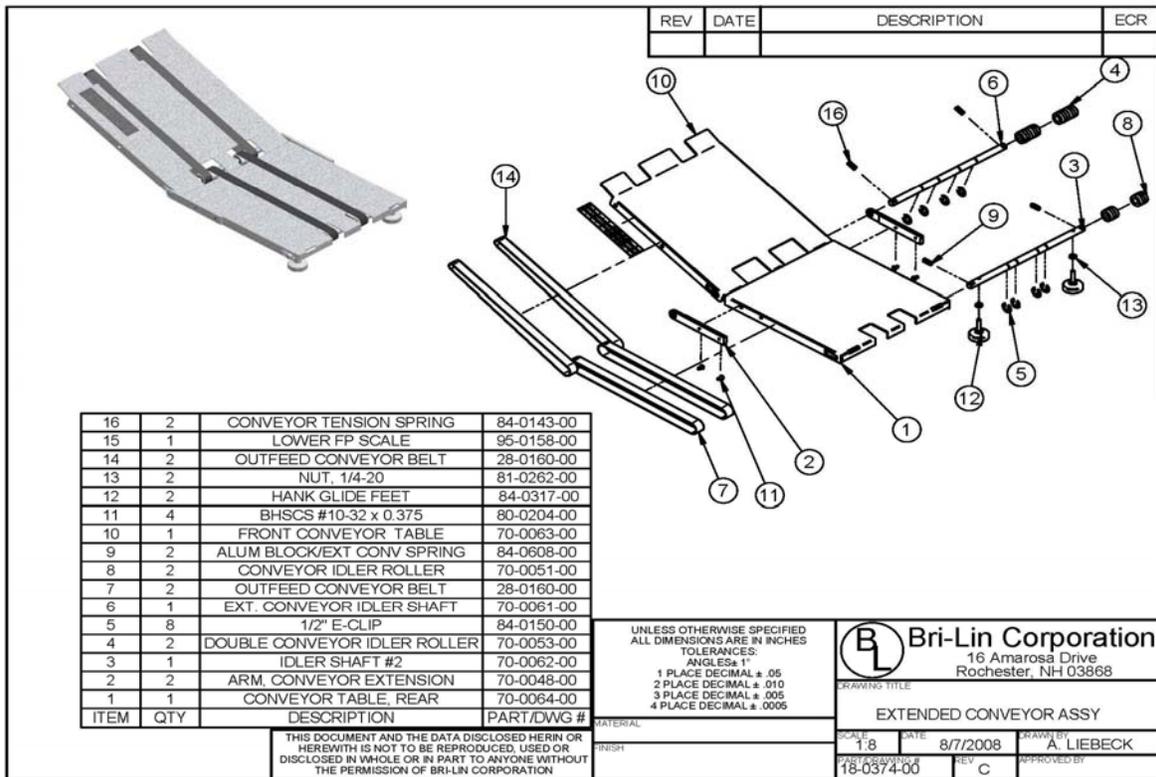


Figure 15: Extended Conveyor

6.1. Extended Conveyor Belts

Note: Only the 7K Plus is equipped with the extended conveyor, the 7K is equipped with the standard conveyor which does not contain the additional conveyor table and belts.

a) 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**.

b) 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



Figure 16: Conveyor

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

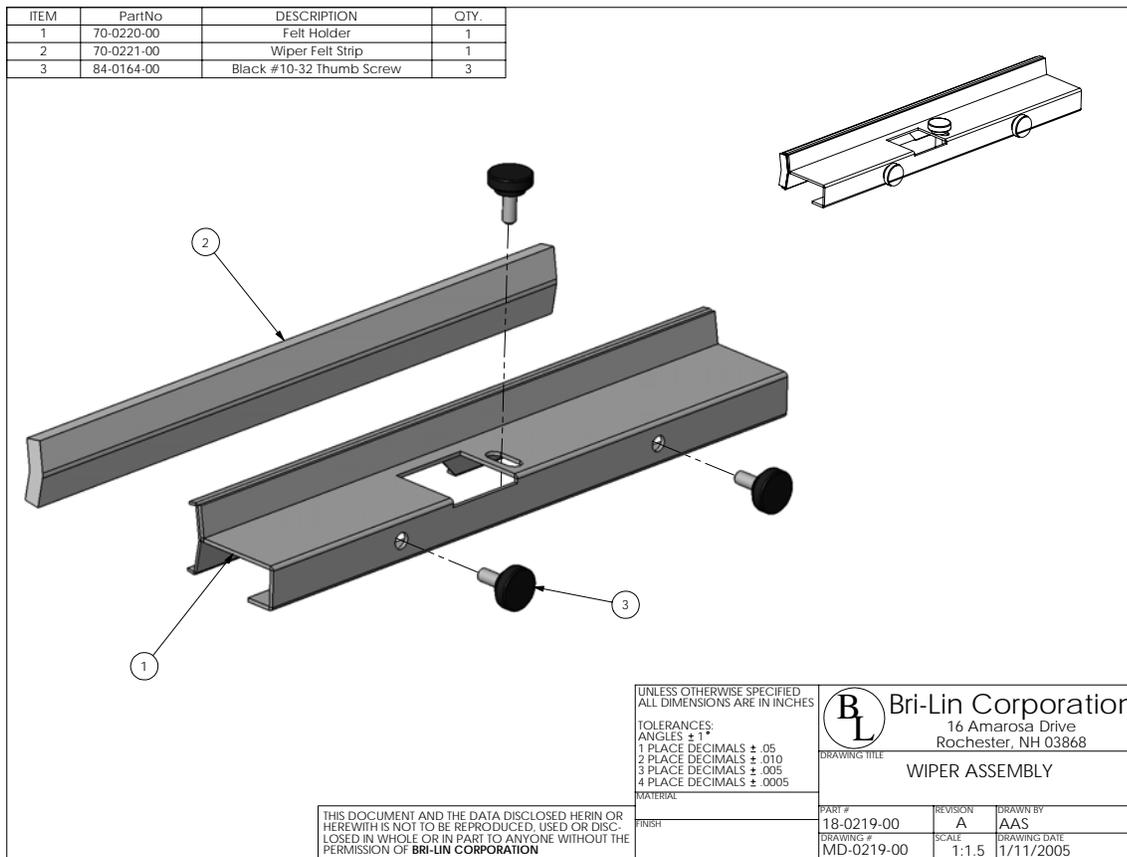


Figure 17: Wiper Assembly

a) 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.

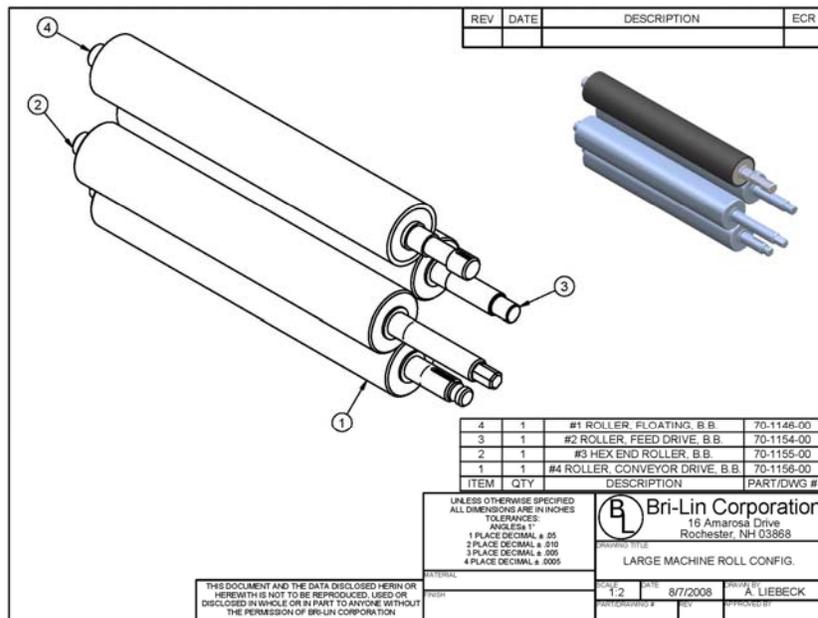
b) Installation

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

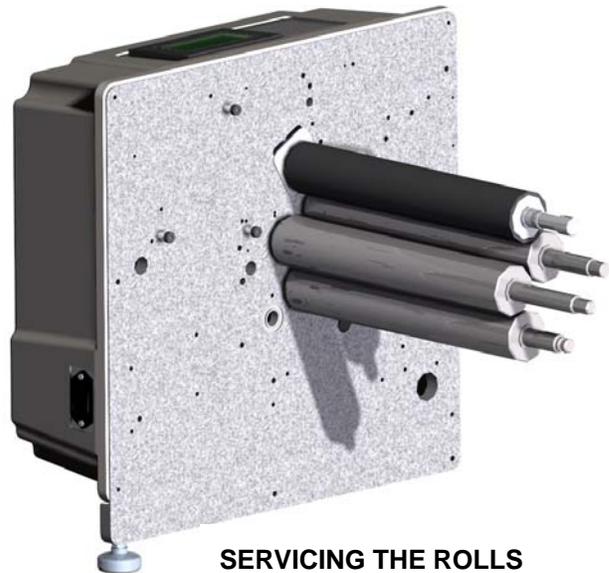


Note: If roll configuration is different than shown, see addendum

Figure 18: Rolls

a) Removal

- Disconnect the **power cord** from the machine.
1. Remove the all drive train components. (See Section: 2)
 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 19)
 4. Remove the **feed table mounting screws** from the drive train side of the chassis. (See Figure 19)
 5. Remove the **feed roller mounting screws** from the drive train side of the chassis. (See Figure 19)
 6. Remove the **conveyor table mounting screws** from the drive train side of the chassis. (See Figure 19)
 7. Remove the **nip wheel x-tie mounting screw** from the drive train side of the chassis. (See Figure 19)
 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.
 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.

b) Installation

1. Installation is the reverse of removal

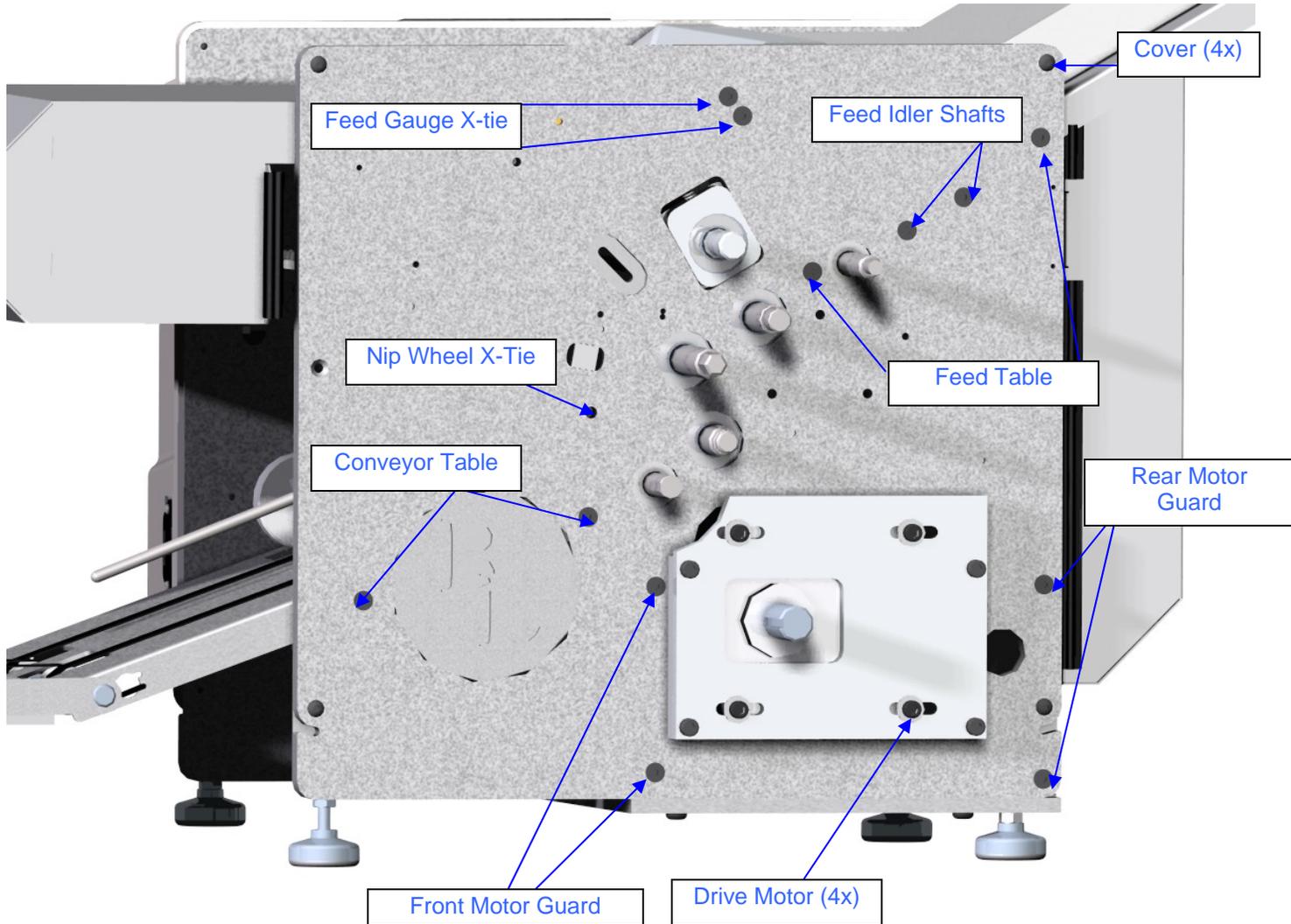


Figure 19: Side Frame Screws
 This view is shown with roller bearings

Note: If Frames are not as shown, see addendum

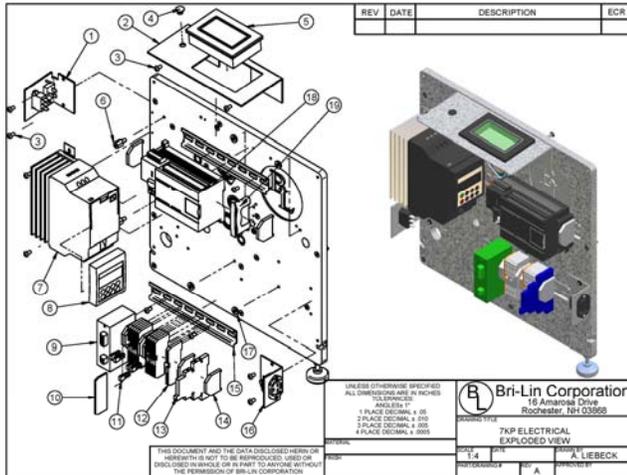
Roller Bearing
 Part # 25-1103-00



Needle Bearing
 Part # 25-0167-00

BEARING IDENTIFICATION

9. Electrical



REV	DATE	DESCRIPTION	ECR

19	1	DOUBLES DETECT SENSOR	41-0133-00
18	1	CPU 224XP AC/DC RELAY	32-0695-00
17	4	FLAT WASHER 3/16"	82-0157-00
16	1	IEC OUTLET ASSY	18-1044-00
15	2	DIN RAIL 3"	85-0122-00
14	9	ENDSTOP	85-0113-00
13	1	FINDER RELAY	32-0787-00
12	10	TERMINAL BLOCK	85-0128-00
11	5	WAGO ADJACENT JUMPER	85-0877-00
10	2	ETHERBLOCK	85-0128-00
9	1	NAIS 24VDC POWER SUPPLY	47-0115-00
8	1	AC 3PH DRIVE OPERATOR PANEL	32-0696-00
7	1	SIEMENS 3PH AC DRIVE	23-0697-00
6	2	1/4" THREADED ST AND OFF	80-0816-00
5	1	GT01 TOUCH SCREEN RS232	50-0790-00
4	1	HOLE PLUG 3/16" DIA	84-1046-00
3	12	BUSHES 10-32 x 3/8"	85-0204-00
2	1	CONTROL PANEL	50-0780-00
1	1	10A IEC BRACKET ASSY	18-1043-00
ITEM	QTY	DESCRIPTION	PART/ENG #

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
DIMENSION
1 PLACE DECIMAL & 05
2 PLACE DECIMAL & 010
3 PLACE DECIMAL & 005
4 PLACE DECIMAL & 0005

Bri-Lin Corporation
18 Amherst Drive
Rochester, NH 03365

7KP ELECTRICAL
EXPLODED VIEW

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DATE: 1/4
BY: A. LIEBECK

Figure 20: Electrical Components (Optional Fuji Drive not shown #29-0697-00)

9.1. Drive Motor

a) Removal

- Disconnect the **power cord** from the machine
- Remove both the **side covers**.
 - Remove the **rear motor guard**.
 - Unscrew the power switch bracket from the electrical side frame.
 - Unscrew and remove the **rear motor guard**.
 - Disconnect the electrical leads from the **motor**. (See Appendix)
 - Remove the **motor clutch with pulley**. (See Section 2.2)
 - Remove the **motor mounting screws** and slide the motor from the chassis.



Motor Part #30-0658-00

b) Installation

- Installation is the reverse of the removal.

9.2. Touch Screen

a) Removal

- Disconnect the **power cord** from the machine.
- Remove the **electrical side cover**.
 - Remove the small holding brackets (4x).
 - Unplug the **electrical connector** from the unit.
 - Remove the **touch screen** and if faulty replace with a new unit.



b) Installation

1. Place holding screws and small brackets into the new unit and tighten screws. Ensure small brackets are properly seated into the plastic housing before tightening.
2. Reconnect the **electrical connector**.

9.3. PLC

a) Removal

- Disconnect the **power cord** from the machine.
 1. Remove the **electrical side cover**.
 2. Disconnect **electrical connectors** from the unit.
 3. Unclip the **PLC** from the **din rail** and remove.
 4. Remove **PLC** and if faulty replace with new unit.



b) Installation

1. Clip the **PLC** onto the **din rail** and reconnect **electrical connectors**. (See Appendix: Electrical Schematic)

9.4. Power Supply

a) Removal

- Disconnect the **power cord** from the machine.
 1. Remove the **electrical side cover**.
 2. Disconnect **electrical connectors** from the **power supply**.
 3. Unclip the **power supply** from the **din rail** and remove.
 4. Remove the **power supply** and if faulty replace with new unit.

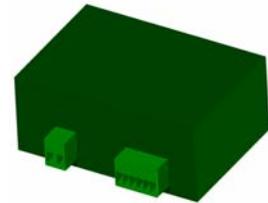


Figure 21: Power

b) Installation

1. Clip the **power supply** onto the **din rail** and reconnect **electrical connectors**. (See Appendix: Electrical Schematic)

9.5. Motor Drive

a) Removal

- Disconnect the **power cord** from the machine.
 1. Remove the **electrical side cover**.
 2. Disconnect **electrical connectors** from the **power supply**.
 3. Unscrew the **motor drive** from the **side frame**.
 4. Remove the **motor drive** and if faulty replace with new unit.



Siemens Driver

b) Installation

1. Screw the **motor drive** to the chassis.
2. Reconnect the electrical connections. (See Appendix: Electrical Schematic)



Fuji Driver

9.6. Doubles Detection

Note: Only the 7K Plus is equipped with doubles detection

9.6.1 Optic Cable

a) Replacement

- Disconnect the **power cord** from the machine.
 1. Remove the **electrical side cover**.
 2. Swing open the clear plastic guard on the **optic amplifier**.
 3. Slide the end of the right side of the **optic amplifier** away from the machine and remove the **optical cables** from the **amplifier**.
 4. Disconnect the **optical cable** from other end and replace if necessary.

b) Installation

1. Reconnection is the reversal of removal.
2. "Teach" Optic amplifier. (See Section 9.6.4)

9.6.2 Optic Amplifier

a) Removal

- Disconnect the **power cord** from the machine.
 1. Remove **electrical side cover**.
 2. Disconnect both **optical cables** from the **amplifier**.
 3. Unclip the **optic amplifier** and remove from the **din rail**.
 4. Remove the **optic amplifier** and replace with new unit if faulty or damaged.

b) Installation

1. Installation is the reverse of removal.
2. Setup new **optic amplifier**. (See Section 9.6.2c)
3. Align the sensor. (See Section 9.6.3)
4. Teach the **optic sensor**. (See Section 9.6.4)

c) Setup

1. With the machine powered on simultaneously press and hold the (+) and (-) buttons until [lodo] is displayed on the screen.
 - a) Ensure the letter [L] is displayed in the lower left hand corner, if it is not press the (+) button once.
2. Proceed to the next step by pressing the (-) button.
 - a) The screen with display [t 0], if the zero is not the number shown use the (+) button to scroll through the numbers till [t 0] is displayed.
3. Proceed to the next step by pressing the (-) button.
 - a) The light reading is displayed as a four digit number, if only a three digit number is displayed followed by the letter [P] press the (+) button once so the four digit reading is displayed.
4. Proceed to the next step by pressing the (-) button.
 - a) Select [SHS] by pressing the (+) button until [SHS) is displayed.
5. Press the (-) button to exit the setup.



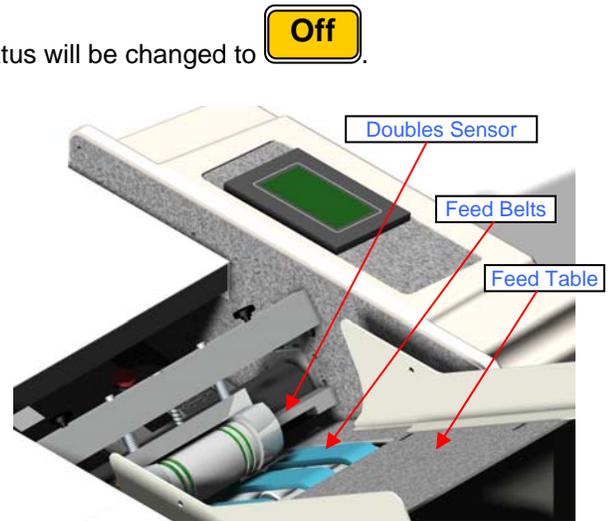
Figure 22: Optic Sensor

9.6.3 Sensor Alignment

1. Visually align the support brackets so that the **cables** are pointing at one another.
2. Fine tune the alignment by slightly rotating the bracket until the highest reading is displayed on the optic amplifier. This number should be approximately between 2000 and 3000.

9.6.4 “Teaching” the Optic Amplifier

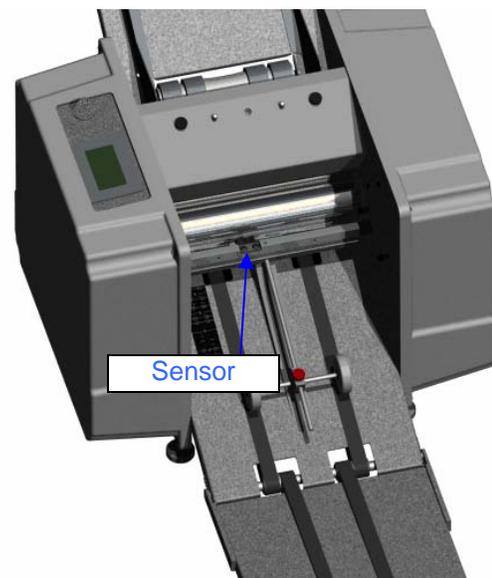
1. Press  on the touch screen.
2. Deactivate the doubles detection.
 - a) Turn off the doubles detection, press  and the status will be changed to .
3. Manually feed your selected form into the machine.
4. Place the form on the feed table and from under the feed table rotate the feed belts to feed the form into the machine until it has passed between the doubles sensor.
5. If your form has a window ensure that it is not oriented such that it is between the sensors. In the below image the location of the doubles sensor can be seen.
6. Touch the  button once.
7. Manually feed a second form under the first sheet.
8. Touch the  button again to finish.
9. Turn the doubles detection .
10. Touch  button and exit the setup menu.



Note: The **Feed Gauge Cover** is only removed for the purpose of illustration of the doubles sensor

Figure 23: Feed Table

11. Test that “Teaching” the machine was successful
 - a) Feed a single piece of paper into the machine, no messages should be displayed. If a “Doubles Detected” message is displayed repeat the “Teaching” process.
 - b) Feed two pieces of paper into the machine so that they cross under the sensor. An error message will be displayed, if the message is not displayed repeat the “Teaching” process.
 - c) The results can also be tested by observing the two indicator lights on the far right of the optic amplifier.
 - (a) The top light indicates no sheets or one sheets.
 - (b) The bottom light indicates that two sheets are detected.
 - d) If the above is not the case repeat the “Teaching” steps.



9.7. Feed Counter

a) Removal

- Disconnect the **power cord** from the machine.
 1. Remove the **upper fold plate**, simply lift the plate up and slide it out of the machine.
 2. Remove the **felt holder**, remove the **thumb screws** and slide out of the machine.
 3. Disconnect the **cable** from the **reflective sensor**.
 4. Remove the **sensor bracket** from the **x-tie**.

5. Remove the **reflective sensor** from the bracket.

Figure 24: Sensor Location

b) Installation

1. Installation is the reverse of removal.
2. Test.

10. Troubleshooting

10.1. Machine 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) **Power Supply** (See Section: 10.7.2)
 - f) **PLC** (See Section: 10.7.3)
 - g) If the above steps have been followed and the machine will still not power on please contact Infinity Solutions Manufacturing.

10.2. 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. (See Section: 10.4)
 - 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**. (See Section: 10.7.5)
 - 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.
 - a) Check proper operation of the. (See Section: 9.6)
 - b) Check proper operation of the **reflective sensor**. (See Section: 9.7)
 - c) Check proper operation of the electrical components in the following order. (See Section: 10.7)
 1. Touch Screen

2. Electrical Connections
3. PLC
4. Power Supply
5. Driver
6. Drive Motor

10.3. 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 than 1/2 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.)
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**. (See Section:10.1)

10.4. Paper Jams

a) 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 **jog** button on the touch screen. (Machine will only jog in either direction for ½ second at a time. This is to prevent the forms from being jogged too far in either direction.)
5. Grip the form and press the – button until the form breaks free of the nip point.
6. Jog the machine forward until the form is cleared of the machine. If it does not, try pressing the - button again. If the paper is not moving or you cannot see it, then you need to manually clear the jam. (See Section 10.4.b)
7. Replace the **fold plates**.

b) 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.

c) 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	<ul style="list-style-type: none"> • Bad Feed Gauge Setting • Too much paper on the feed table 	<ul style="list-style-type: none"> • Wrong fold plate setting 	<ul style="list-style-type: none"> • Feed Table Paper Guide set improperly • Fold Plates set improperly
Solution	<ul style="list-style-type: none"> • ¼ Turn CCW on feed gauge adjust screw 	<ul style="list-style-type: none"> • Check both fold plates. Make sure they are set to the correct mark on the scale. 	<ul style="list-style-type: none"> • Check both fold plates. Make sure that both paper stops are square.

Table 1: Paper Jam Diagnostics

10.5. Improper Functioning of the Machine

10.5.1 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.

10.5.2 Paper Feed Problems

a) Double Feeds

If the machine is occasionally feeding two forms at once, readjust the **feed gauge**. (See Section 4)

b) 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**. (See Section 3)

2. Try resetting the **feed gauge**. (See Section 4)

10.5.3 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. (See Section 7)
 - a) Replace if dirty or flip over.

10.5.4 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 10.6.4)

10.5.5 Excessive Noise

Note: These machines are capable of processing up to 11,000 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 10.4.
 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.

10.5.6 Poor Stacking

1. Adjust the **nip wheel**. (See Section 5)

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.

10.6. Sensors

10.6.1 Doubles Detection

a) Cables

- Visually inspect cables for damage.

Note: Only one of the cables should emit light, the other cable is only for receiving the light.

- To test a cable have the machine powered on and observe the display on the **optic amplifier**. Wiggle the **optical cables** individually and watch for any major variation of the signal strength readout. If the readout varies when either cable is moved, then that **cable** must be replaced.

Swing open the clear plastic guard on the **optic amplifier**.

- Slide the end of the right side of the **optic amplifier** away from the machine and remove the **optical cables** from **amplifier**.
- If neither cable emits light try switching their positions in the optic amplifier. If this works likely one of the cables if bad. Isolate the bad cable and replace.

- If after switch the cables and no light is being emitted from either cable ensure the optic amplifier is powered and on.
- If problems persist reset-up the optic amplifier. (See Section 9.6)

b) Optic Amplifier

1. If a problem is suspected with the **optic amplifier** ensure that it is properly set up. (See Section 9.6)
2. If the screen is scrambled this indicates a faulty unit. (See Section 9.6)

10.6.2 Reflective Counter Sensor

On the drive train side of the sensor a green and amber light should be lit when properly aligned. When the beam is broken by a piece of paper only the green light will be lit.

- If the amber light is not displayed wipe the sensor lens and reflective tape until it is displayed.
- If no lights are displayed check for properly connected wires and faulty wires.

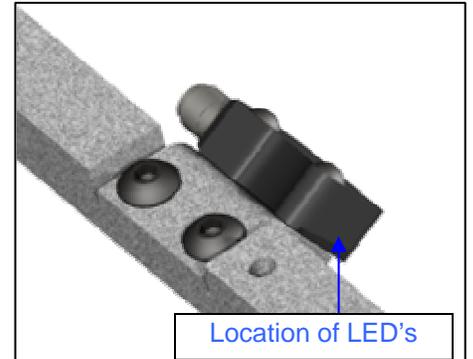


Figure 25: Sensor

10.6.3 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

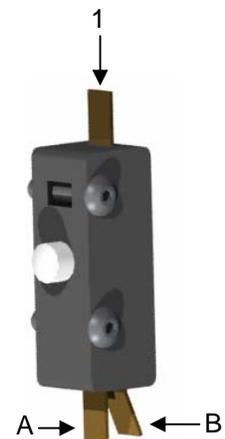


Figure 26: Door Switch

10.6.4 Fold Plate Switch

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

Table 3: Fold Plate Switch Continuity

	1 & A	1 & B
Switch Closed	Open	Continuity
Switch Open	Continuity	Open

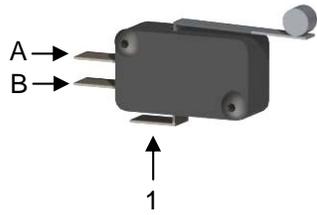


Figure 28: Fold Plate Switch
39-0111-00

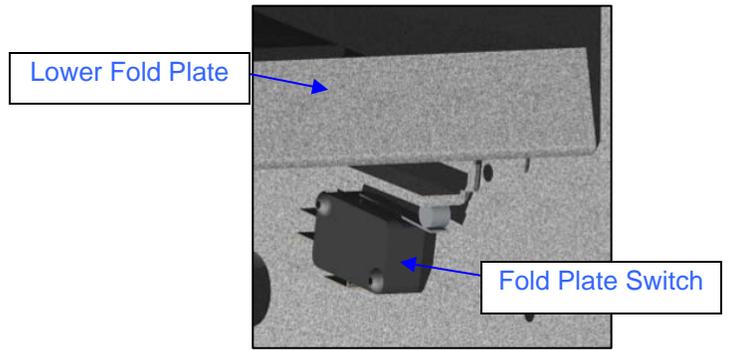


Figure 27: Fold Plate Switch

10.7. Electronic Components

10.7.1 Touch Screen

- If the **touch screen** is scrambled or not reading the complete screen check electrical connections.
- **Touch screen** reads “ERR” (Error) check electrical connections, if the problem persists replace the faulty unit.
- **Touch screen** reads “ERF” (Electrical Interference) check electrical connections if the problem persists contact Infinity Solutions Manufacturing
- If nothing is displayed on the screen, check that the unit is powered and receiving a signal.



Figure 29: Touch Screen

10.7.2 Power Supply

1. With the **power switch / breaker** on and lit, confirm the power LED light on the **power supply** is lit.
 - a. If not lit, ensure power is coming into the unit and the connections are good, if that is confirmed and the power light still is not on, replace.
2. Test output voltages from power supply, the correct voltages are printed on the unit.
 - a. If the voltage is zero or are found to be incorrect replace the unit.

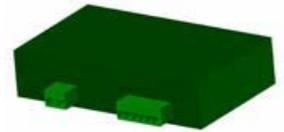


Figure 30: Power Supply

10.7.3 PLC

1. With the **power switch / breaker** on and lit, confirm the “run” LED light on the **power supply** is lit.
 - a) If lights are not on, check wire connections and ensure the unit is receiving power, once both are done and the light remain off replace the unit.
2. Ensure that the “error” light is not lit, if it is lit try switching the “run / program” switch into the “program position and then back into the “run” position to reset the PLC.
 - a) If the “error” light remains on please contact Infinity Solutions Manufacturing.
3. Ensure the “run / program” switch is in the “run” position.



Figure 31: PLC

10.7.4 Driver

- If the machine is power on and no LED lights are lit check for proper wiring and that the unit is getting power.



Seimens Driver

10.7.5 Drive Motor

- If it is suspected of that the **drive motor** is faulty it will either make excessive noise or not run at all.
 - See section 10.5.5 to isolate noise issues. If the motor is the source, replace with a new motor drive. (See Section: 9.1)
- To test the motor drive:
 - Remove the **drive train cover** and remove the **drive belt**.
 - Rotate the **motor drive pulley** by hand, there will be some resistance.
 - If the motor is locked, ensure no wires are shorted, crossed or improperly connected.
 - Replace the motor if it is locked up.
 - If the motor is receiving power ensure the driver is not faulty and all electrical connections are sound and wired correctly, see electrical schematic.



Fuji Driver

Note: If electronics components are not as shown, see addendum.

11. Appendix

REV	DATE	DESCRIPTION	ECR

ITEM	QTY	DESCRIPTION	PART/DWG #
8	4	1623DCTN NICE BEARING	25-1103-00
7	1	HANK GLIDE FEET	84-0317-00
6	1	NUT, 1/4-20	81-0262-00
5	4	SHOULDER SCREW 1/4 x 3/8	80-0155-00
4	1	ALUM BLOCK/EXT CONV SPRING	84-0608-00
3	1	FLOATING ROLL BLOCK	70-0084-00
2	2	3016DCTN GENERAL BEARING	25-0146-00
1	1	MOTOR SIDE FRAME	70-0876-00

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

Bri-Lin Corporation
16 Amarosa Drive
Rochester, NH 03868

DRAWING TITLE
3K & UP MOTOR SIDE FRAME ASSY

MATERIAL: _____
FINISH: _____

SCALE: 1:4 DATE: 1/26/2009 DRAWN BY: A. LIEBECK
PART/DWG # 18-0998-00 REV: C APPROVED BY: _____

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REV	DATE	DESCRIPTION	ECR

ITEM	QTY	DESCRIPTION	PART/DWG #
9	4	1623DCTN NICE BEARING	25-1103-00
8	1	NUT, 1/4-20	81-0262-00
7	1	HANK GLIDE FEET	84-0317-00
6	1	ALUM BLOCK/EXT CONV SPRING	84-0608-00
5	4	SHOULDER SCREW 1/4 x 3/8	80-0155-00
4	1	FLOATING ROLL BLOCK, LG MACH. B.B.	70-1145-00
3	2	3016DCTN GENERAL BEARING	25-0146-00
1	1	ELECTRICAL SIDE FRAME	70-0877-00

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

Bri-Lin Corporation
16 Amarosa Drive
Rochester, NH 03868

DRAWING TITLE
ELECTRICAL SIDE FRAME ASSY

MATERIAL: _____
FINISH: _____

SCALE: 1:4 DATE: 1/26/2009 DRAWN BY: A. LIEBECK
PART/DWG # 18-0998-00 REV: C APPROVED BY: _____

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Side Frame Assembly Drawings

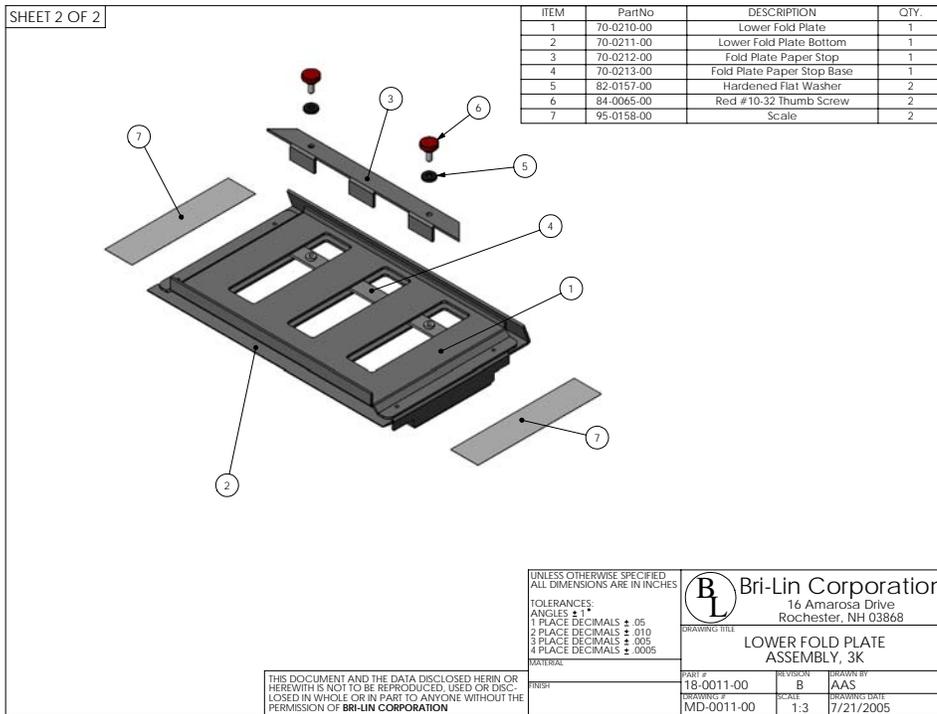


Figure 32: Lower Fold Plate

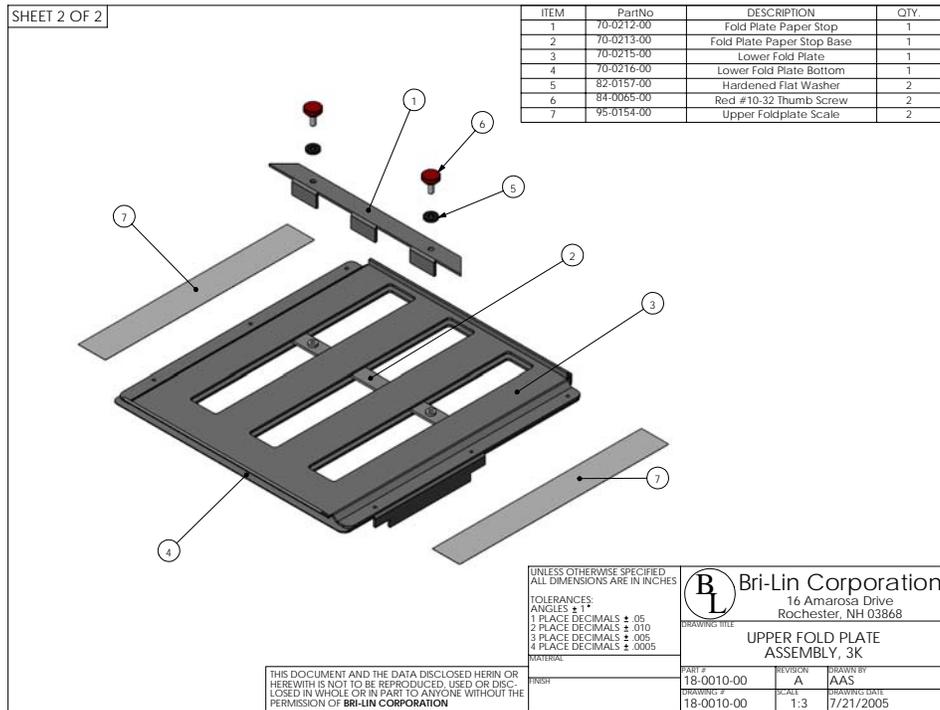
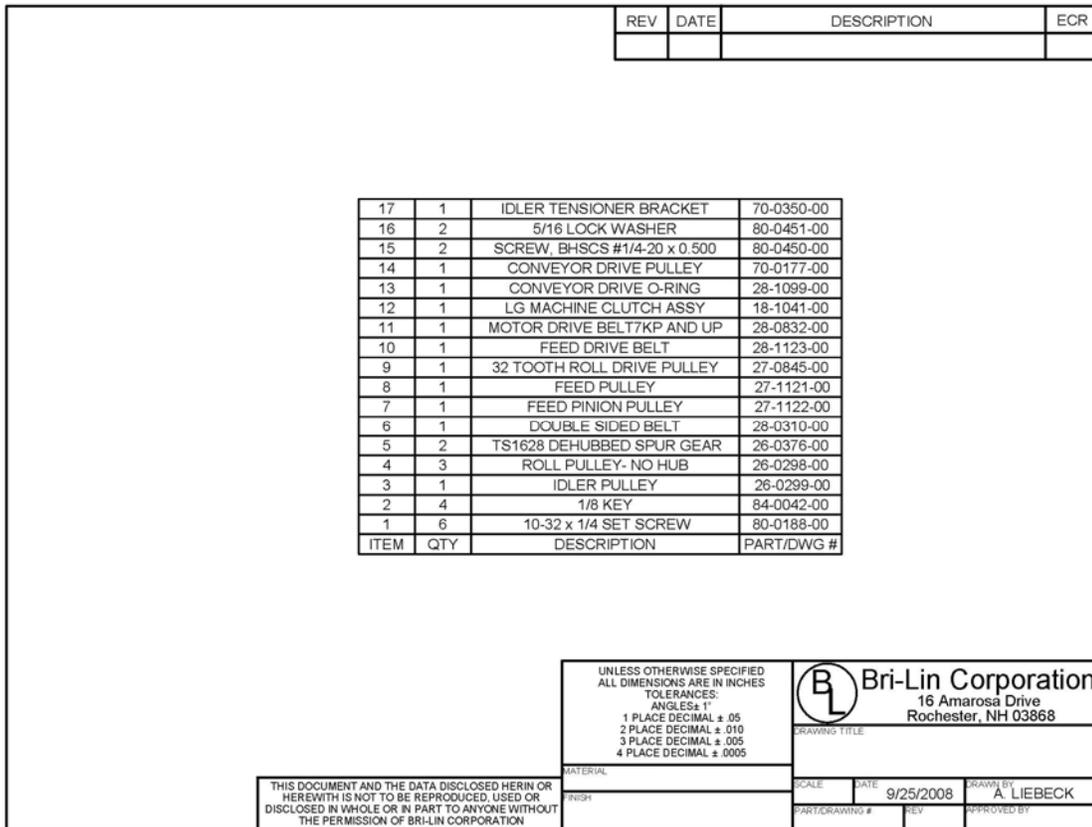
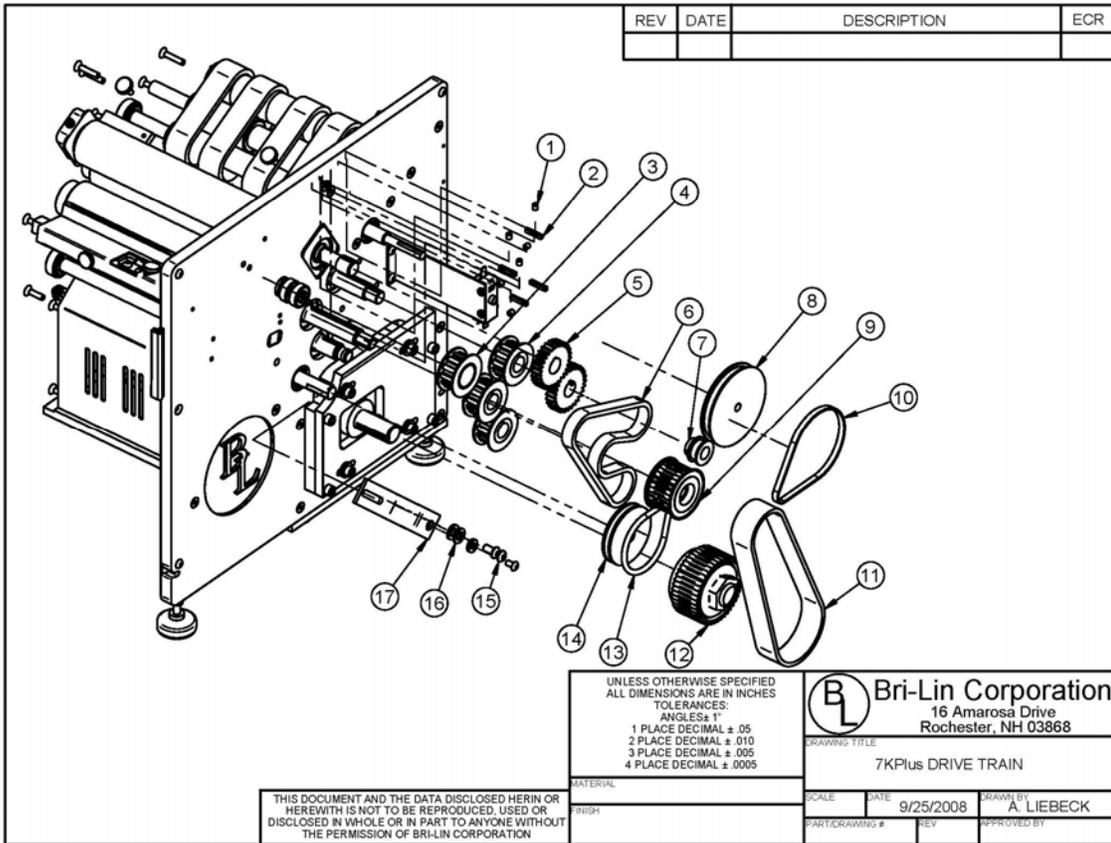
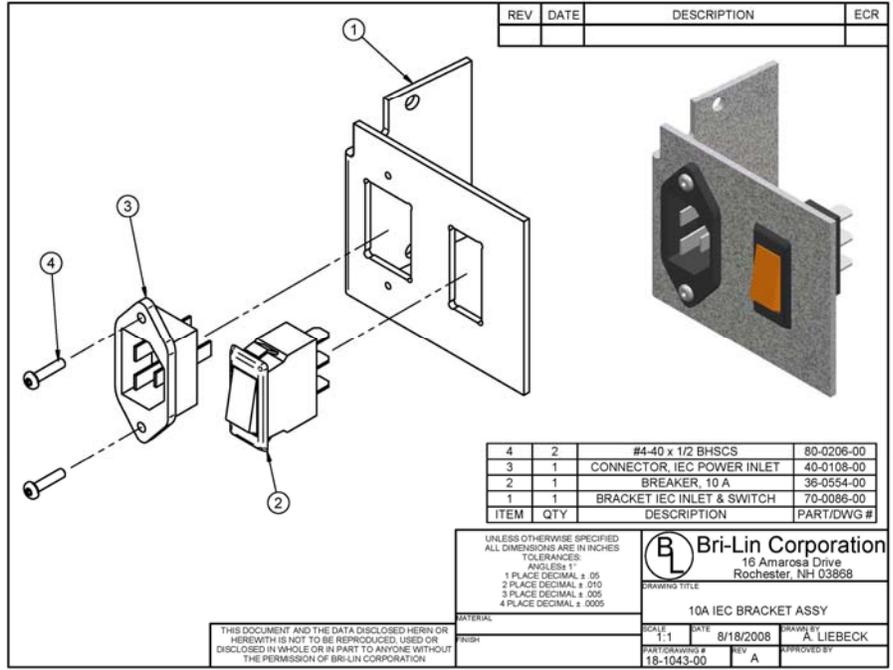


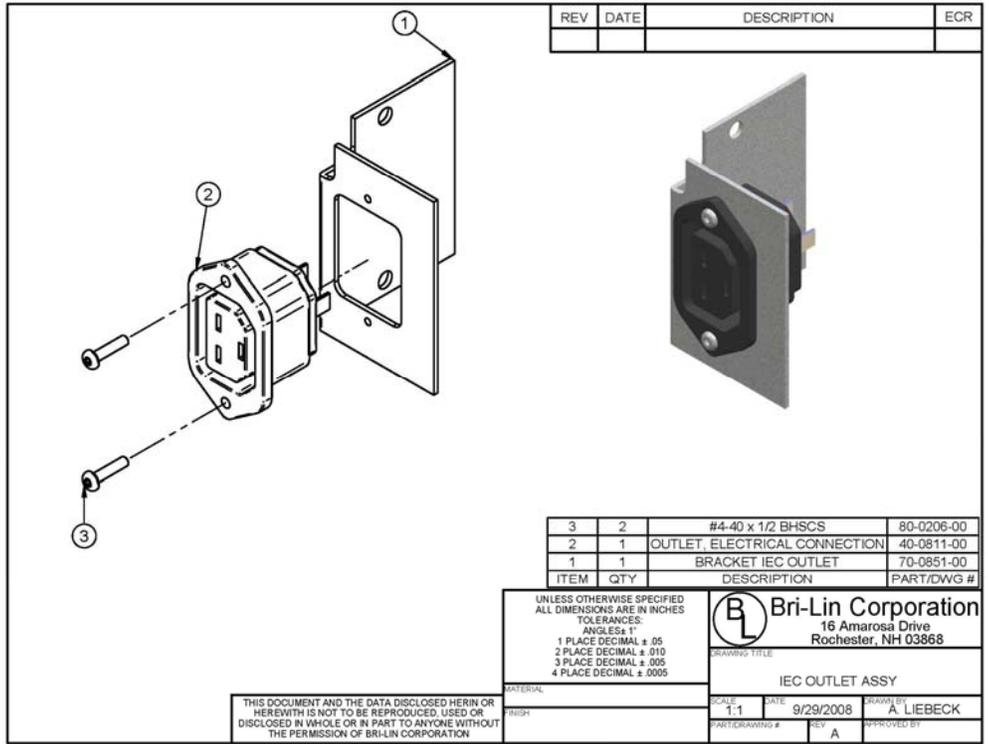
Figure 33: Upper Fold Plate



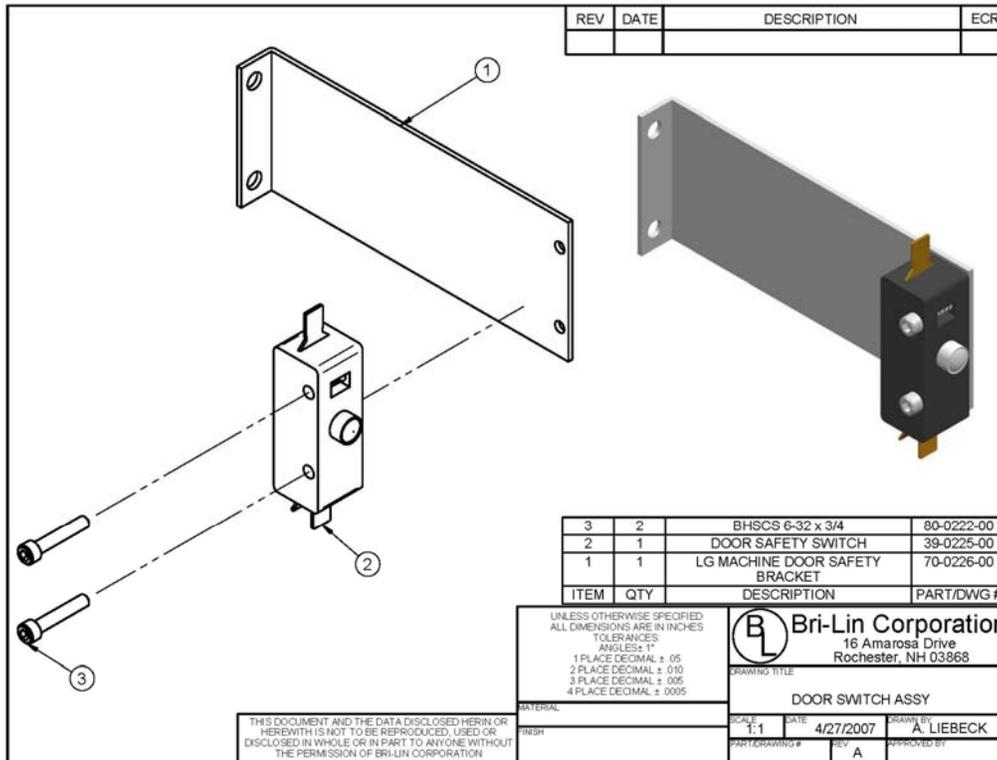
7KPlus Exploded Drive Train



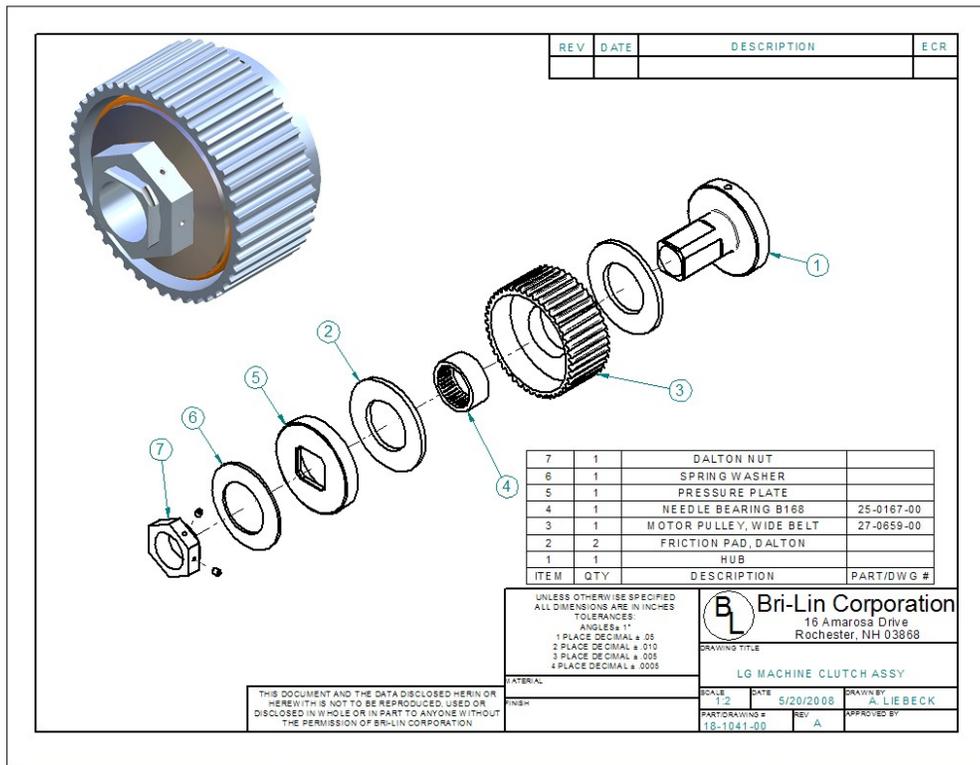
10 Amp IEC Bracket Assy.



IEC Outlet

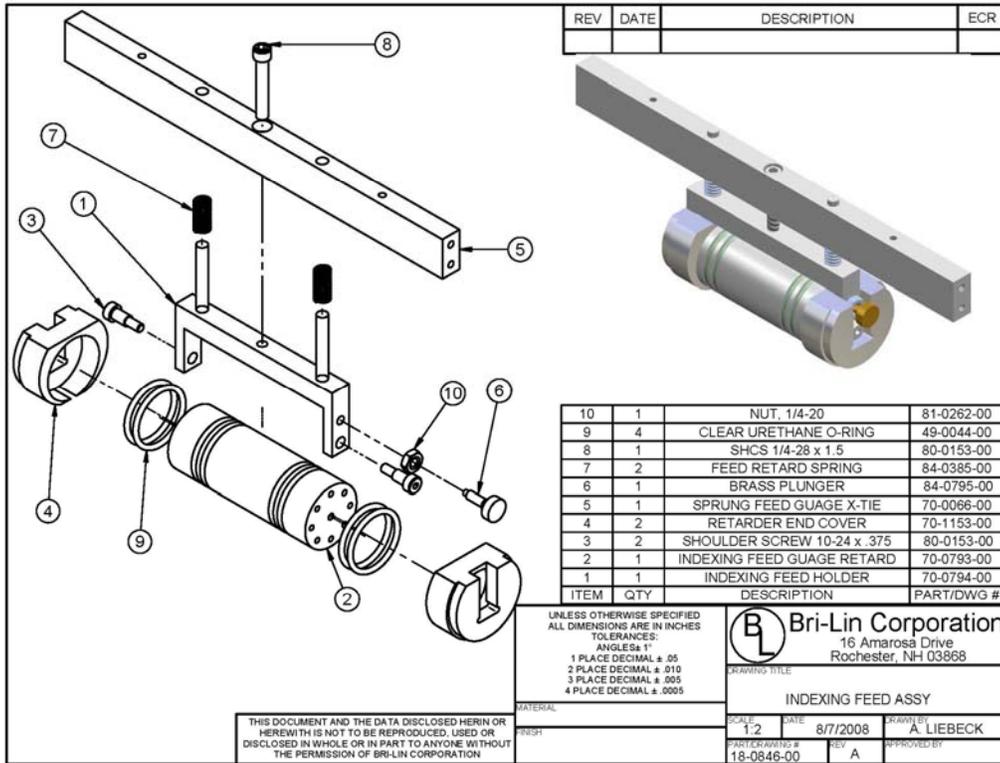


Door Safety Switch



Clutch Assembly

NOTE: Torque Limiter #26-0316-00 includes items 1, 2, 5, 6, and 7 (see page 10)



REV	DATE	DESCRIPTION	ECR

10	1	NUT, 1/4-20	81-0262-00
9	4	CLEAR URETHANE O-RING	49-0044-00
8	1	SHCS 1/4-28 x 1.5	80-0153-00
7	2	FEED RETARD SPRING	84-0385-00
6	1	BRASS PLUNGER	84-0795-00
5	1	SPRUNG FEED GUAGE X-TIE	70-0068-00
4	2	RETARDER END COVER	70-1153-00
3	2	SHOULDER SCREW 10-24 x .375	80-0153-00
2	1	INDEXING FEED GUAGE RETARD	70-0793-00
1	1	INDEXING FEED HOLDER	70-0794-00
ITEM	QTY	DESCRIPTION	PART/DWG #

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

Bri-Lin Corporation
16 Amarosa Drive
Rochester, NH 03868

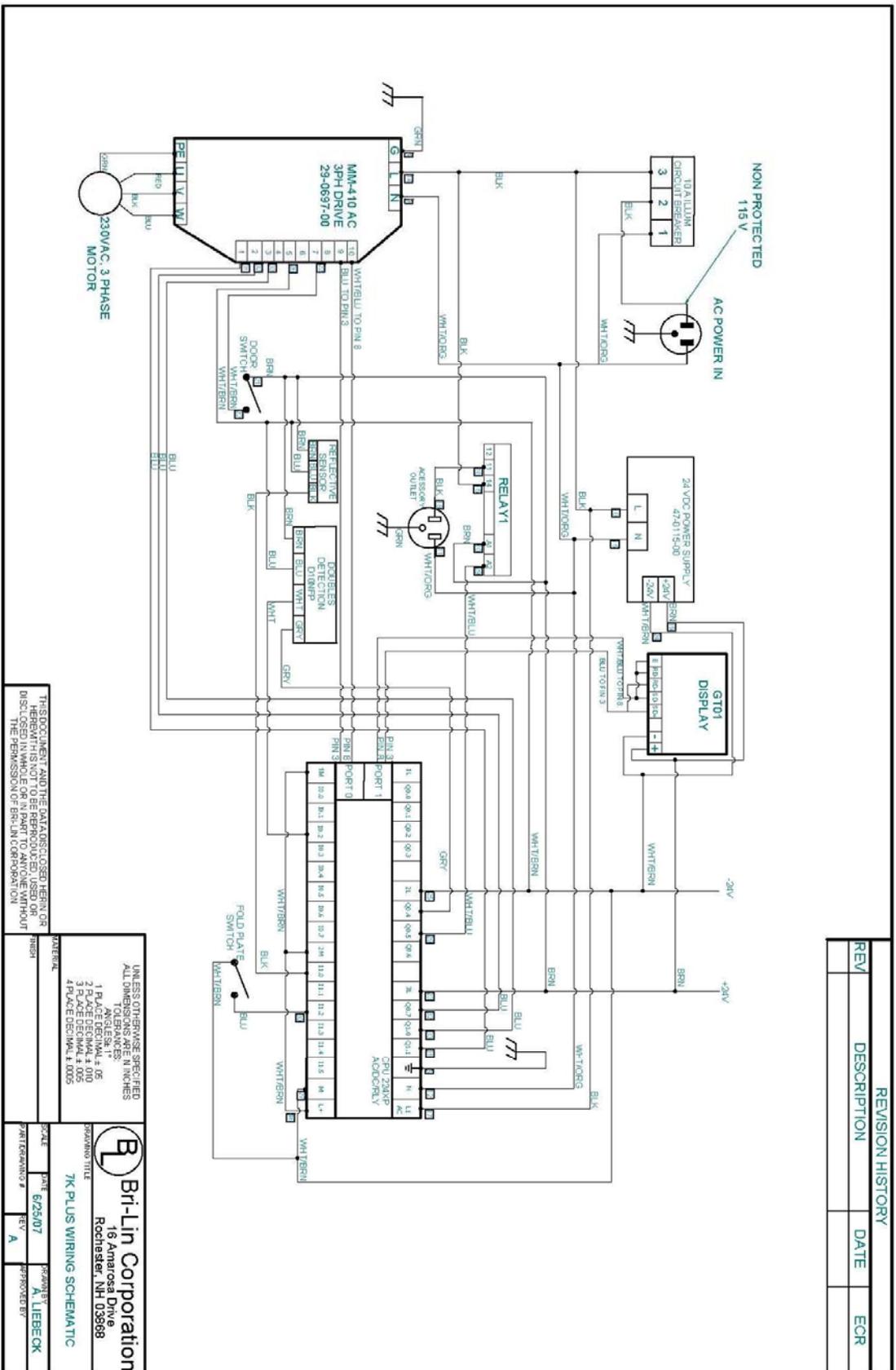
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DRAWING TITLE
INDEXING FEED ASSY

SCALE: 1:2 DATE: 8/7/2008 DRAWN BY: A LIEBECK

PART NUMBER: 18-0846-00 REV: A APPROVED BY:

Retard Assembly



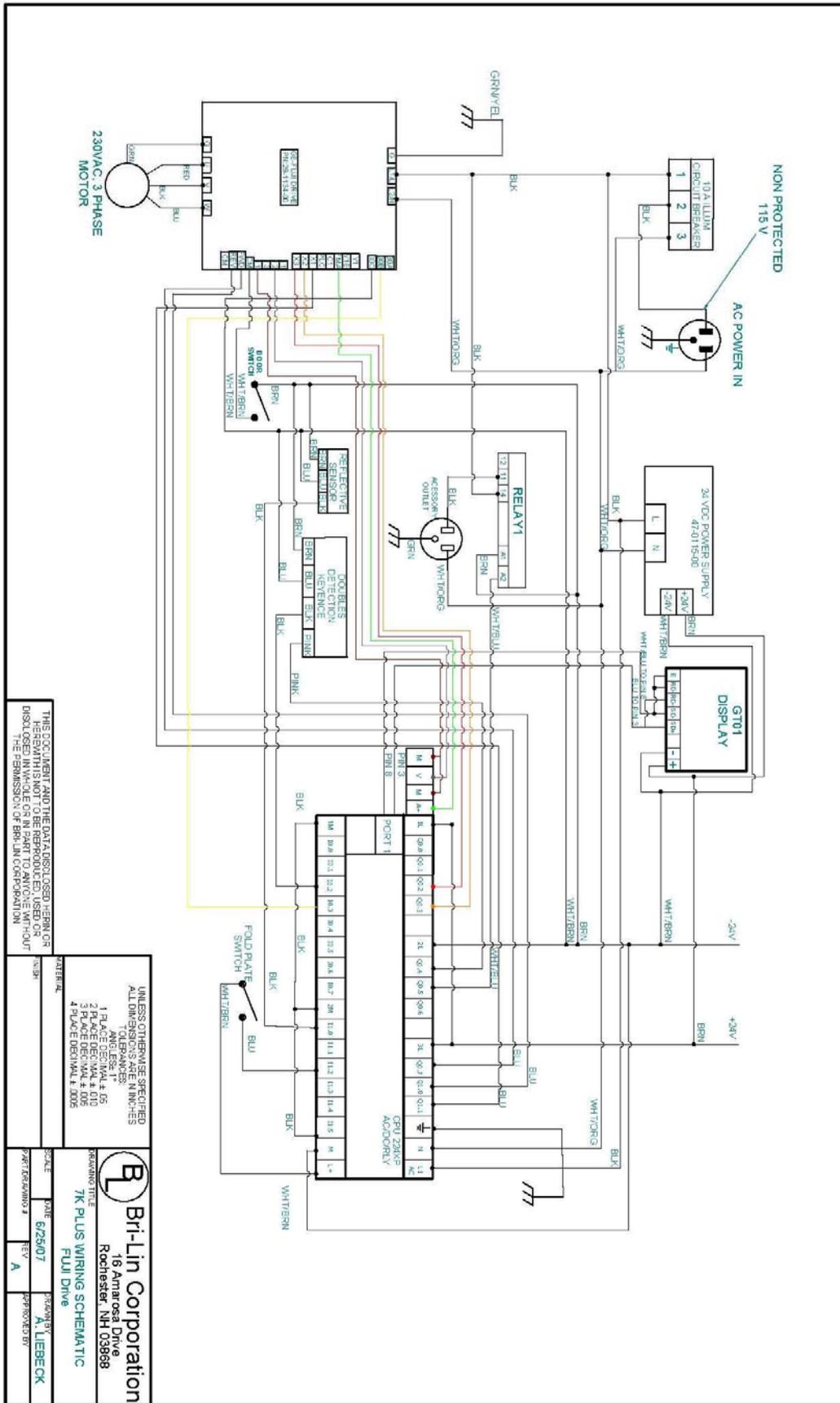
REVISION HISTORY			
REV	DESCRIPTION	DATE	ECR

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UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES ANGLES: 1°	1 PLACE DECIMAL F. 05 2 PLACE DECIMAL F. 005 3 PLACE DECIMAL F. 005 4 PLACE DECIMAL F. 0005
Br-Lin Corporation 16 Amarsosa Drive Rochester, NH 03869	7K PLUS WIRING SCHEMATIC
DATE: 6/25/07	APPROVED BY: A. LIEBECK
SCALE: 1" = 1"	APPROVED BY:
DRAWING #:	REV: A

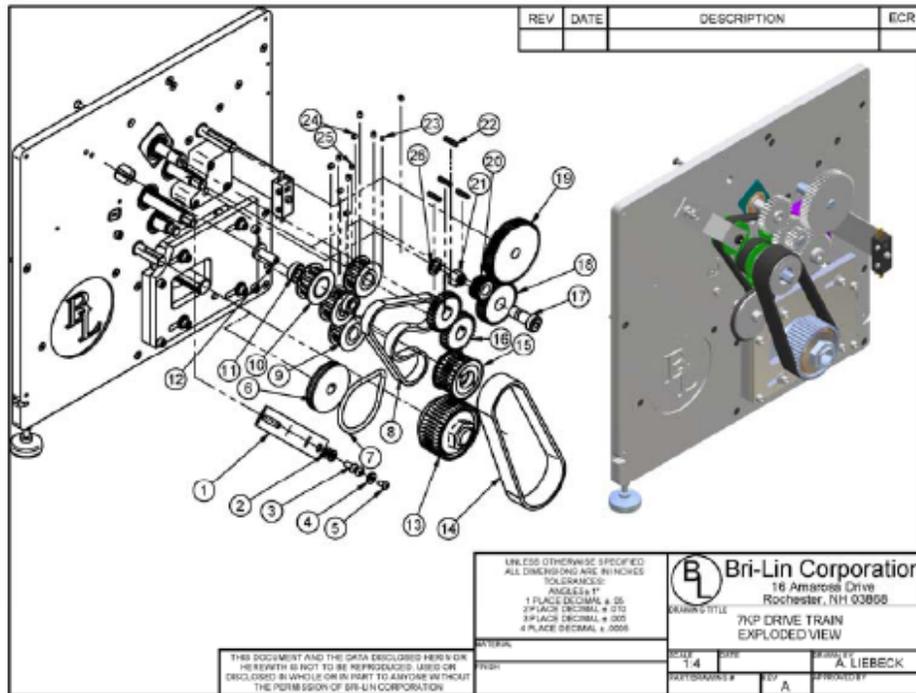
7KPlus Schematic

REVISION HISTORY		
REV	DESCRIPTION	EGR

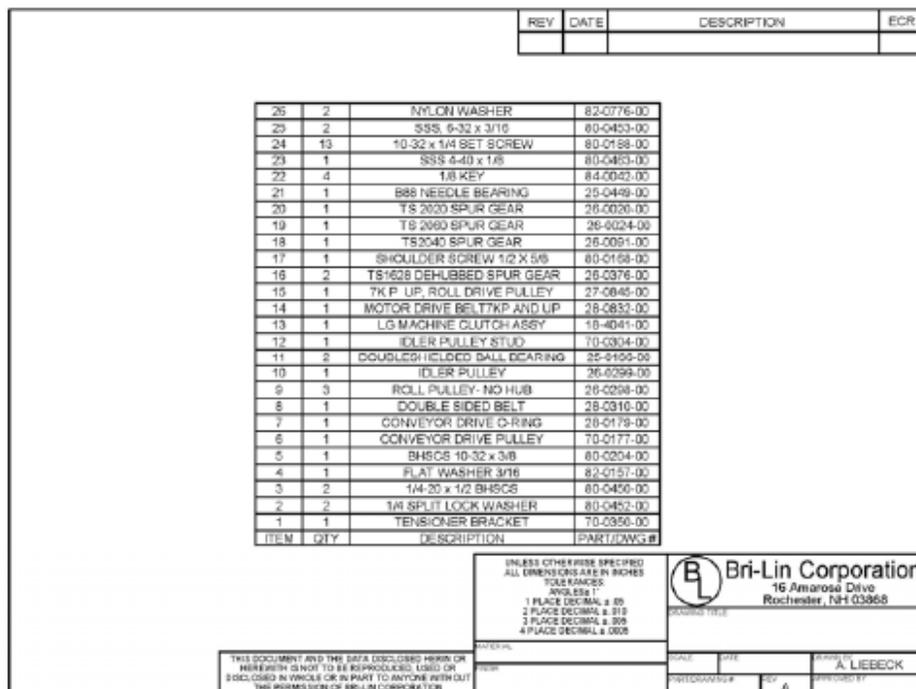


Addendum

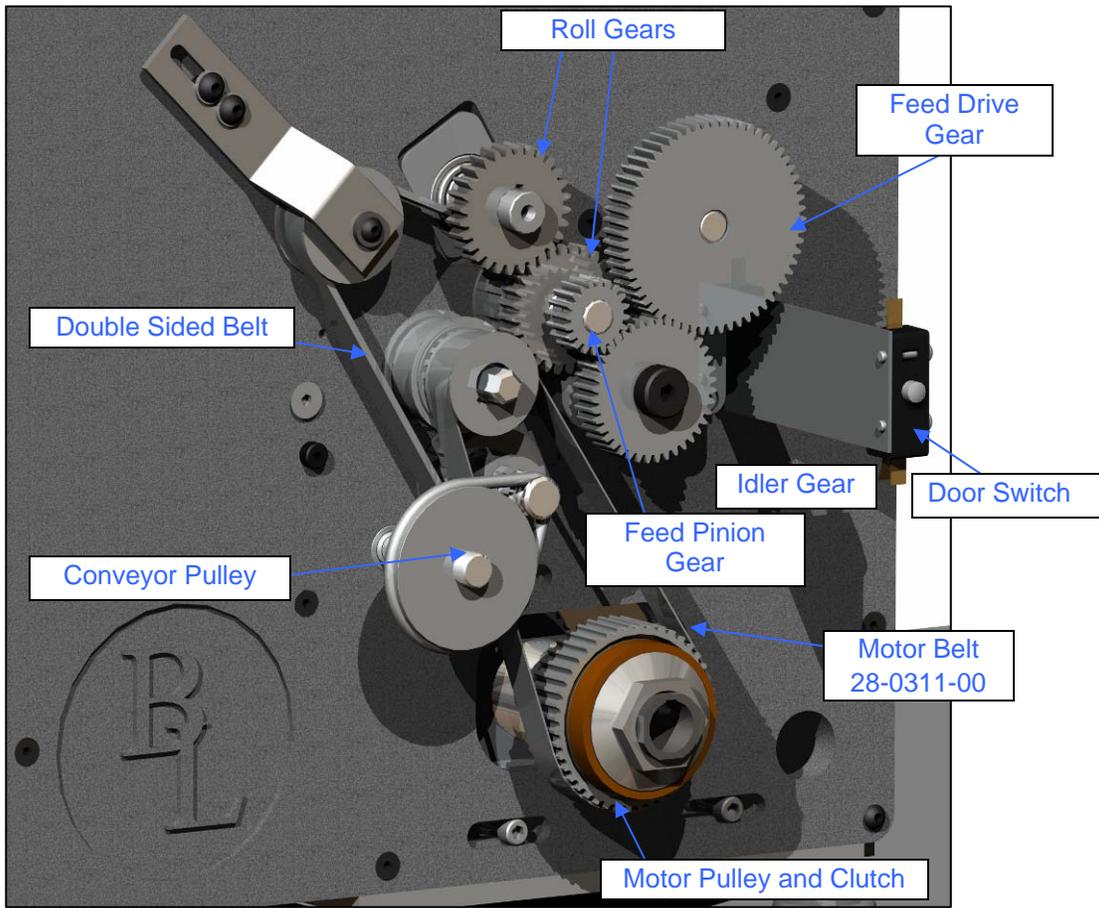
Over the last several years, the 7KPlus has changed several times. Listed in this addendum are most of the changes that have been made. If the machine being serviced does not have the components listed, contact Infinity Solutions Manufacturing.



7KPlus with Gear Driven Feed

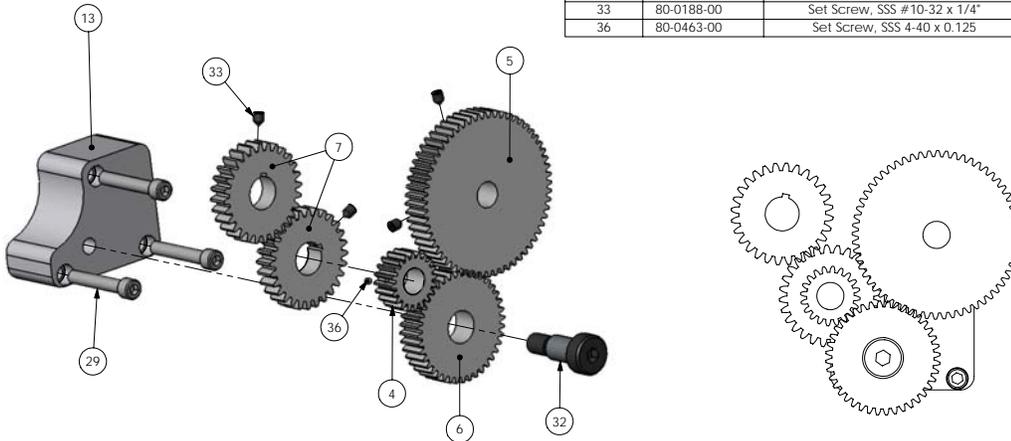


Drive Train w/15mm Belt



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:

B**L** 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

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Feed Gear Cluster

a) Removal

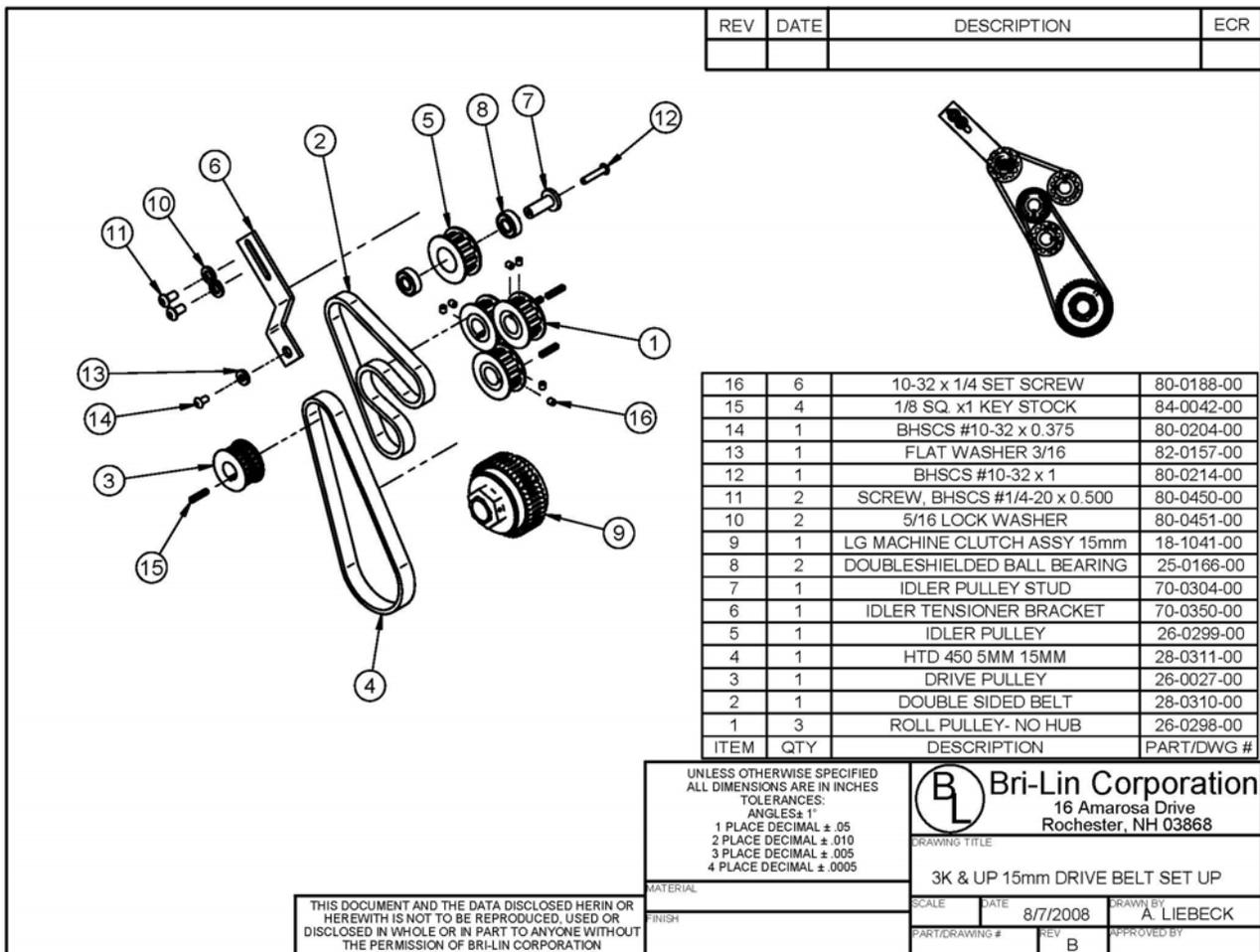
- Disconnect the **power cord** from the machine.
 1. Remove the **large idler gear** by removing the shoulder-bolt on which it is mounted.
 2. To remove the **pinion idler, feed gear and drive gears**.
 - a) Loosen set screw(s).
 - b) Pull the **gear** off of the shaft.
 3. Inspect gears for broken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

b) 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 Figure 4)
 - 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**.

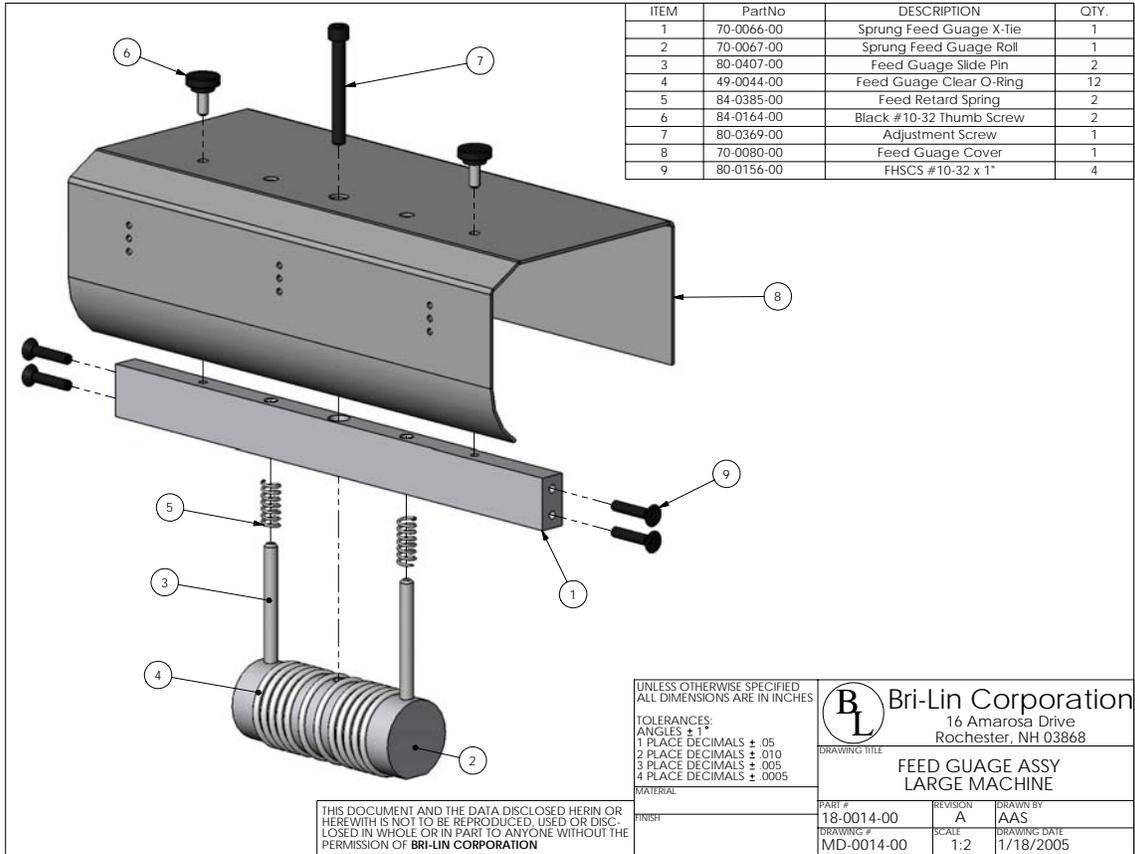
b) Installation

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

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

Feed Gauge



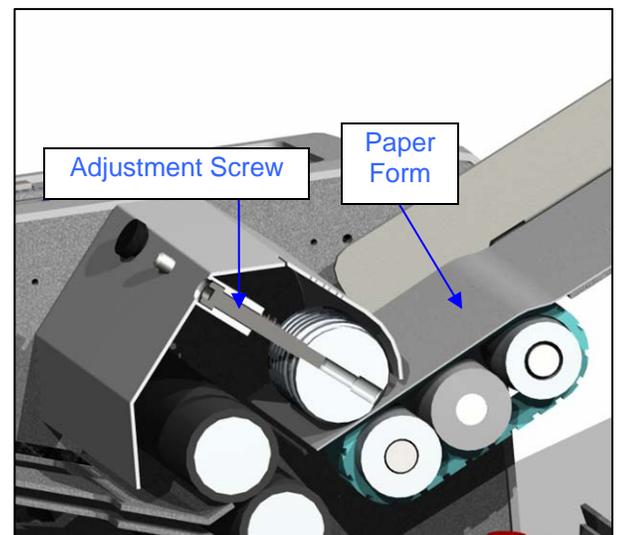
a) Removal

- 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**.

b) Installation

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

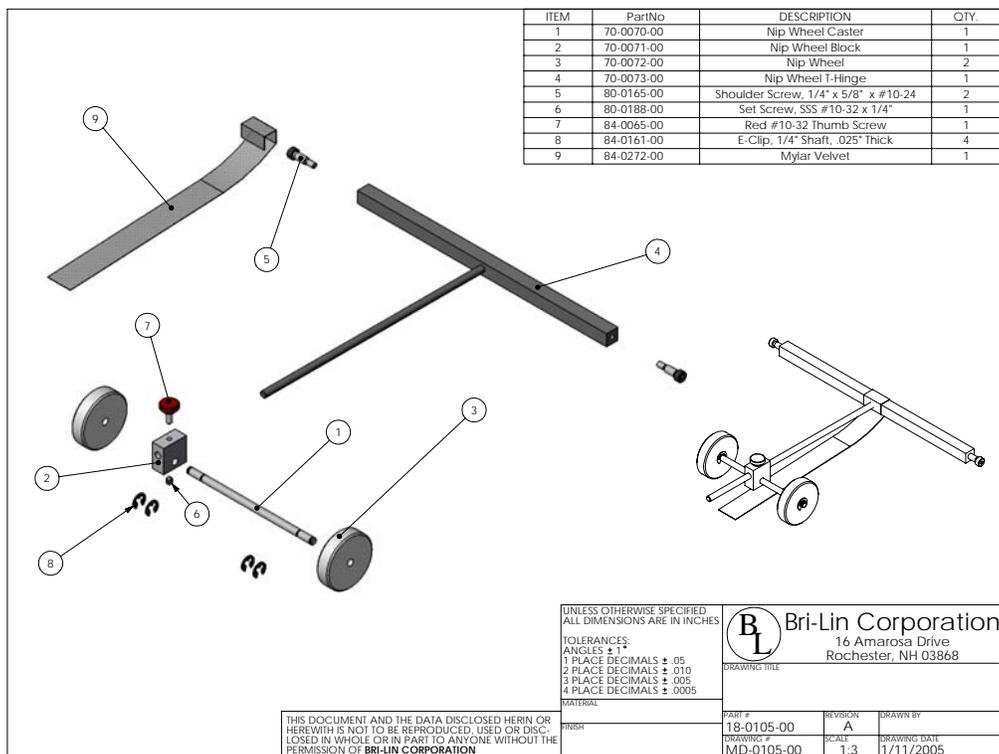


Cross-section of Feed Gauge

c) 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



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.

b) Installation

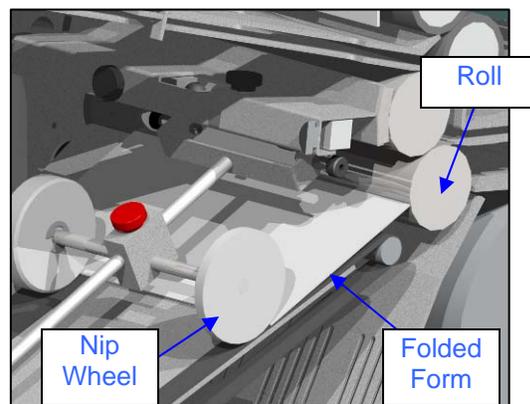
Installation is the reverse of the removal.

c) Adjustment

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

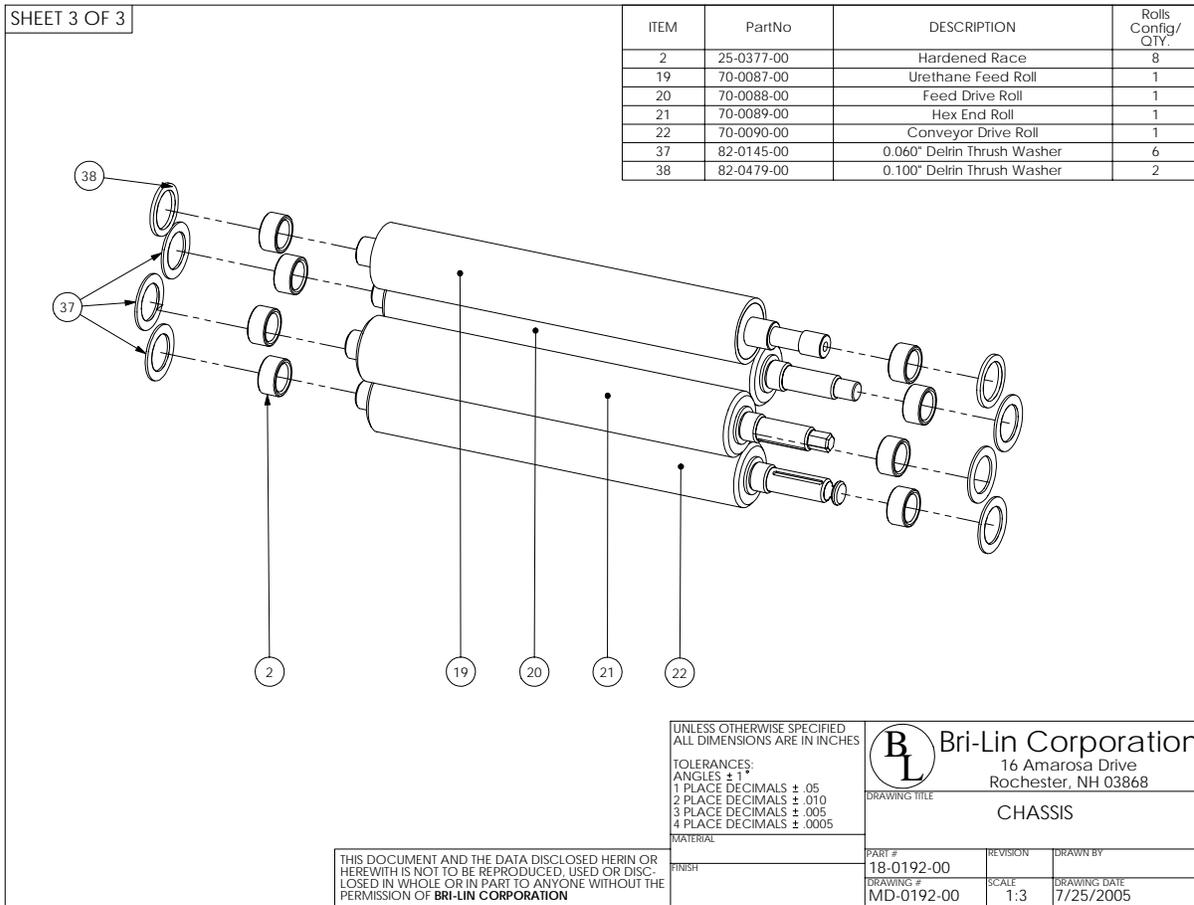
1. Set the form with desired fold onto the conveyor so that it is touching the edge of the roll.
2. Adjust the **nip wheel** so that it is 1/2" from the other side of the folded form.

NIP WHEELS MAY NOT BE WHITE



Nip Wheel Adjustment

Sealer Rollers



Rolls

a) Removal

- Disconnect the **power cord** from the machine.
1. Remove the all drive train components. (See Section: 2)
 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 19)
 4. Remove the **feed table mounting screws** from the drive train side of the chassis. (See Figure 19)
 5. Remove the **feed roller mounting screws** from the drive train side of the chassis. (See Figure 19)
 6. Remove the **conveyor table mounting screws** from the drive train side of the chassis. (See Figure 19)
 7. Remove the **nip wheel x-tie mounting screw** from the drive train side of the chassis. (See Figure 19)
 8. Remove the **counter sensor x-tie mounting screw** from the drive train side of the chassis. (See Figure 19)
 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.

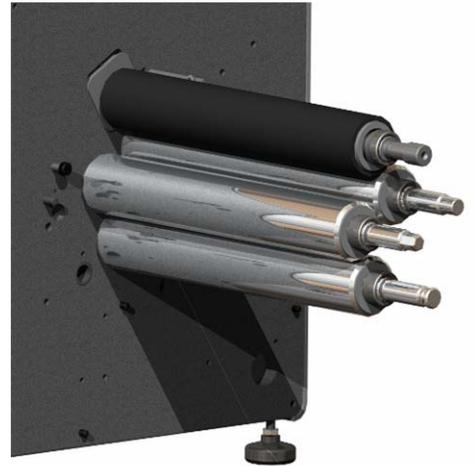


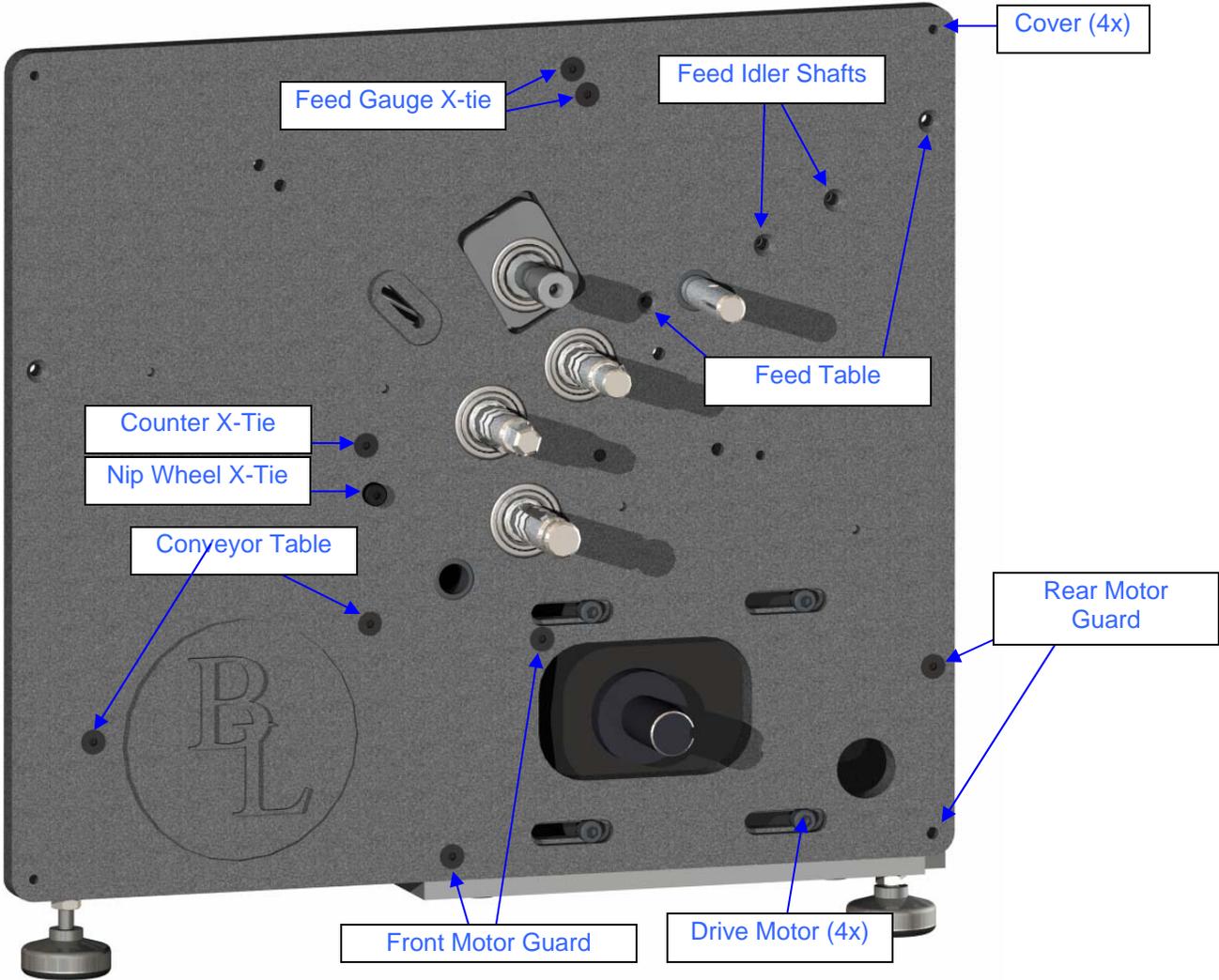
Figure 34: Rolls

- 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.

b) 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

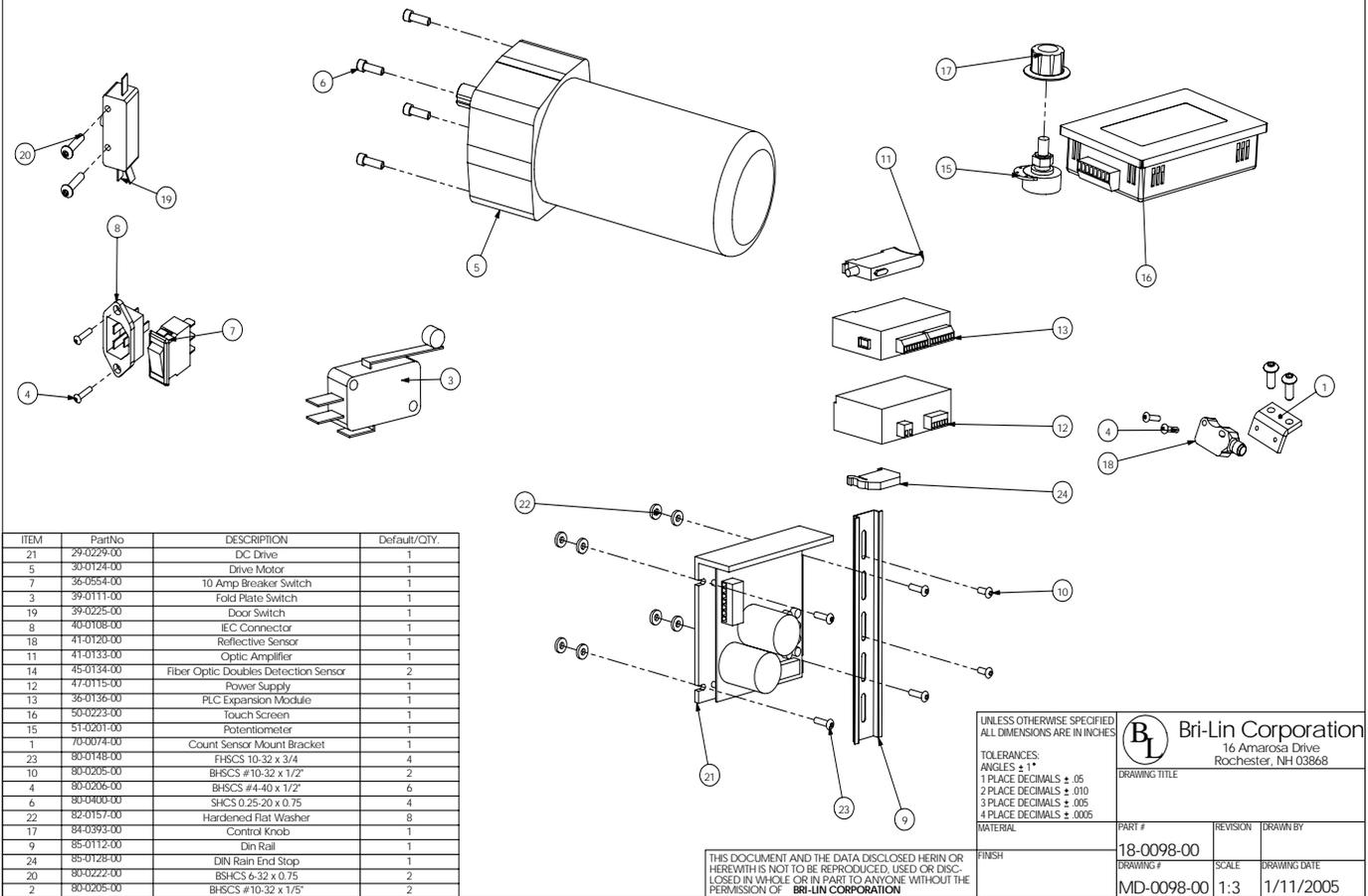
NEEDLE BEARING
Part # 25-0167-00



BEARING IDENTIFICATION

Electrical

NOTE: DRAWINGS NOT TO SCALE



Drive Motor

a) 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 the **rear motor guard**.
 3. 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.
 4. Unscrew the **base plate** and remove from the **frame**.
 5. Disconnect the electrical leads from the **motor**. (See Appendix)
 6. Remove the **motor clutch with pulley**. (See Section 2.2)
 7. Remove the **motor mounting screws** and slide the motor from the chassis.



Drive Motor

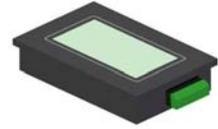
b) Installation

2. Installation is the reverse of the removal.

Touch Screen

a) Removal

- Disconnect the **power cord** from the machine.
 1. Remove the **electrical side cover**.
 2. Remove the small holding brackets (4x).
 3. Unplug the **electrical connector** from the unit.
 4. Remove the **touch screen** and if faulty replace with a new unit.



Touch Screen

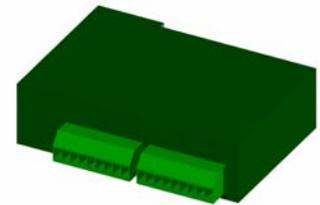
b) Installation

1. Place holding screws and small brackets into the new unit and tighten screws. Ensure small brackets are properly seated into the plastic housing before tightening.
2. Reconnect the **electrical connector**.

PLC

a) Removal

- Disconnect the **power cord** from the machine.
 1. Remove the **electrical side cover**.
 2. Disconnect **electrical connectors** from the unit.
 3. Unclip the **PLC** from the **din rail** and remove.
 4. Remove **PLC** and if faulty replace with new unit.



PLC

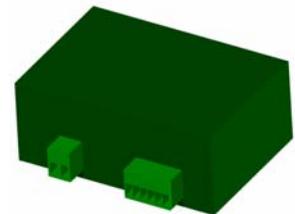
b) Installation

1. Clip the **PLC** onto the **din rail** and reconnect **electrical connectors**. (See: Electrical Schematic)

Power Supply

a) Removal

- Disconnect the **power cord** from the machine.
 1. Remove the **electrical side cover**.
 2. Disconnect **electrical connectors** from the **power supply**.
 3. Unclip the **power supply** from the **din rail** and remove.
 4. Remove the **power supply** and if faulty replace with new unit.



Power Supply

b) Installation

1. Clip the **power supply** onto the **din rail** and reconnect **electrical connectors**. (See Electrical Schematic)

Motor Drive

a) Removal

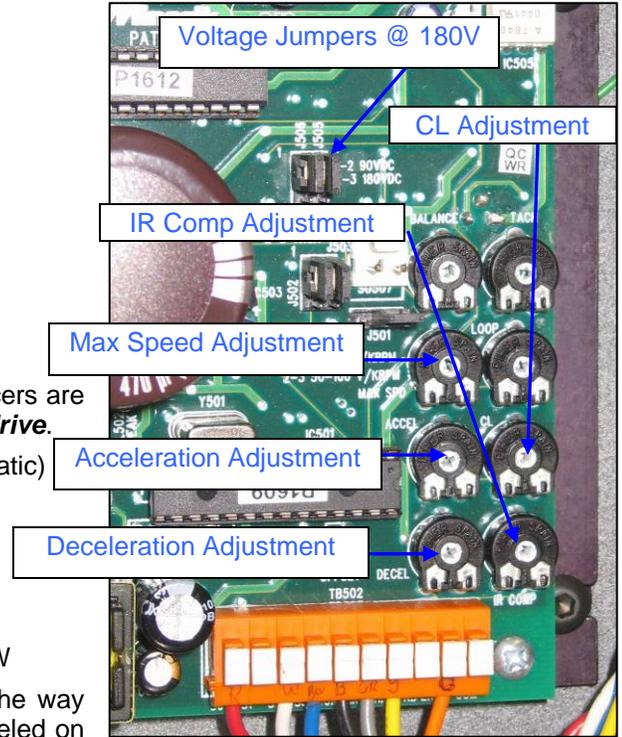
- Disconnect the **power cord** from the machine.
 1. Remove the **electrical side cover**.
 2. Disconnect **electrical connectors** from the **power supply**.
 3. Unscrew the **motor drive** from the **side frame**.
 4. Remove the **motor drive** and if faulty replace with new unit.

b) Installation

1. Screw the **motor drive** to the chassis; make sure the spacers are properly installed between the **side frame** and the **motor drive**.
2. Reconnect the electrical connections. (See: Electrical Schematic)
3. Calibrate the **motor drive**. (See below)

c) Calibration

1. Ensure the voltage jumper is set to 180V for 7KPlus.
2. Adjust the Acceleration and Deceleration trim pots to full CCW
3. Adjust the top speed. Turn the max speed adjustment all the way counter clockwise for the 7K. The max speed adjuster is labeled on the **motor drive**.
4. Set drive for 7KPlus by adjusting IR Comp and CL trim pots to approximately 1 O'clock. Set the Max Speed trim pot to approximately 3 O'clock. Run the machine and slowly adjust the Max Speed trim pot counter clockwise until you hear the motor just start to slow down. The drive is now set.



Motor Drive

Forms Counter

a) Removal

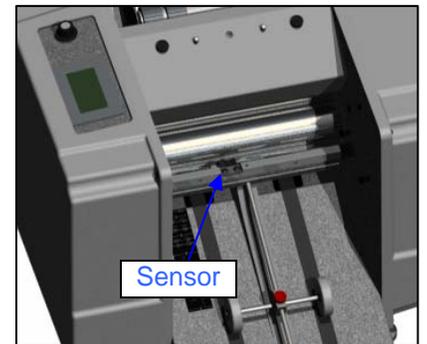
- Disconnect the **power cord** from the machine.
 1. Remove the **upper fold plate**, simply lift the plate up and slide it out of the machine.
 2. Remove the **felt holder**, remove the **thumb screws** and slide out of the machine.
 3. Disconnect the **cable** from the **reflective sensor**.
 4. Remove the **sensor bracket** from the **x-tie**.
 5. Remove the **reflective sensor** from the bracket.

b) Installation

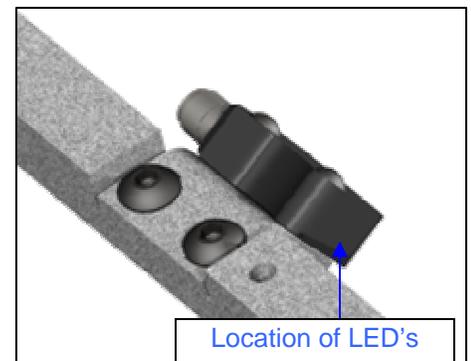
1. Installation is the reverse of removal.
2. Adjust and test.

c) Adjustment

1. Visually align the sensor to point towards the reflective tape.
2. Fine tune the alignment till both the amber and green lights are only showing. The light is located on the drive train side of the sensor. Adjust the alignment by placing a 1/2 inch wrench on the **x-tie** and rotating the bar slightly till the sensor is aligned.
3. Test the alignment by breaking the light beam with a piece of paper and observe the amber light turn off.



Sensor Location



Reflective Sensor

Electronic Components Testing

Touch Screen

- If the **touch screen** is scrambled or not reading the complete screen check
- **Touch screen** reads “ERR” (Error) check electrical connections, if the problem persists replace the faulty unit.
- **Touch screen** reads “ERF” (Electrical Interference) check electrical connections if the problem persists contact Infinity Solutions Manufacturing.
- If nothing is displayed on the screen, check that the unit is powered and receiving a signal.

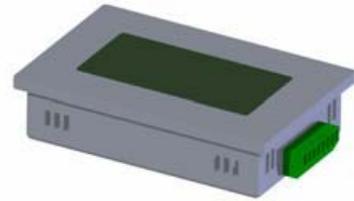


Figure 35: Touch Screen

Power Supply

1. With the **power switch / breaker** on and lit, confirm the power LED light on the **power supply** is lit.
 - a. If not lit, ensure power is coming into the unit and the connections are good, if that is confirmed and the power light still is not on, replace.
2. Test output voltages from power supply, the correct voltages are printed on the unit.
 - a) If the voltage is zero or are found to be incorrect replace the unit.

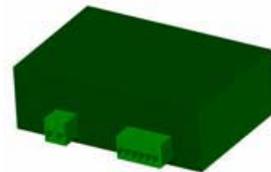


Figure 36: Power

PLC

1. With the **power switch / breaker** on and lit, confirm the “run” LED light on the **power supply** is lit.
 - a. If lights are not on, check wire connections and ensure the unit is receiving power, once both are done and the light remain off replace the unit.
2. Ensure that the “error” light is not lit, if it is lit try switching the “run / program” switch into the “program position and then back into the “run” position to reset the PLC.
 - a. If the “error” light remains on please contact Infinity Solutions Manufacturing.
3. Ensure the “run / program” switch is in the “run” position.

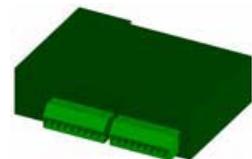


Figure 37: PLC

Driver

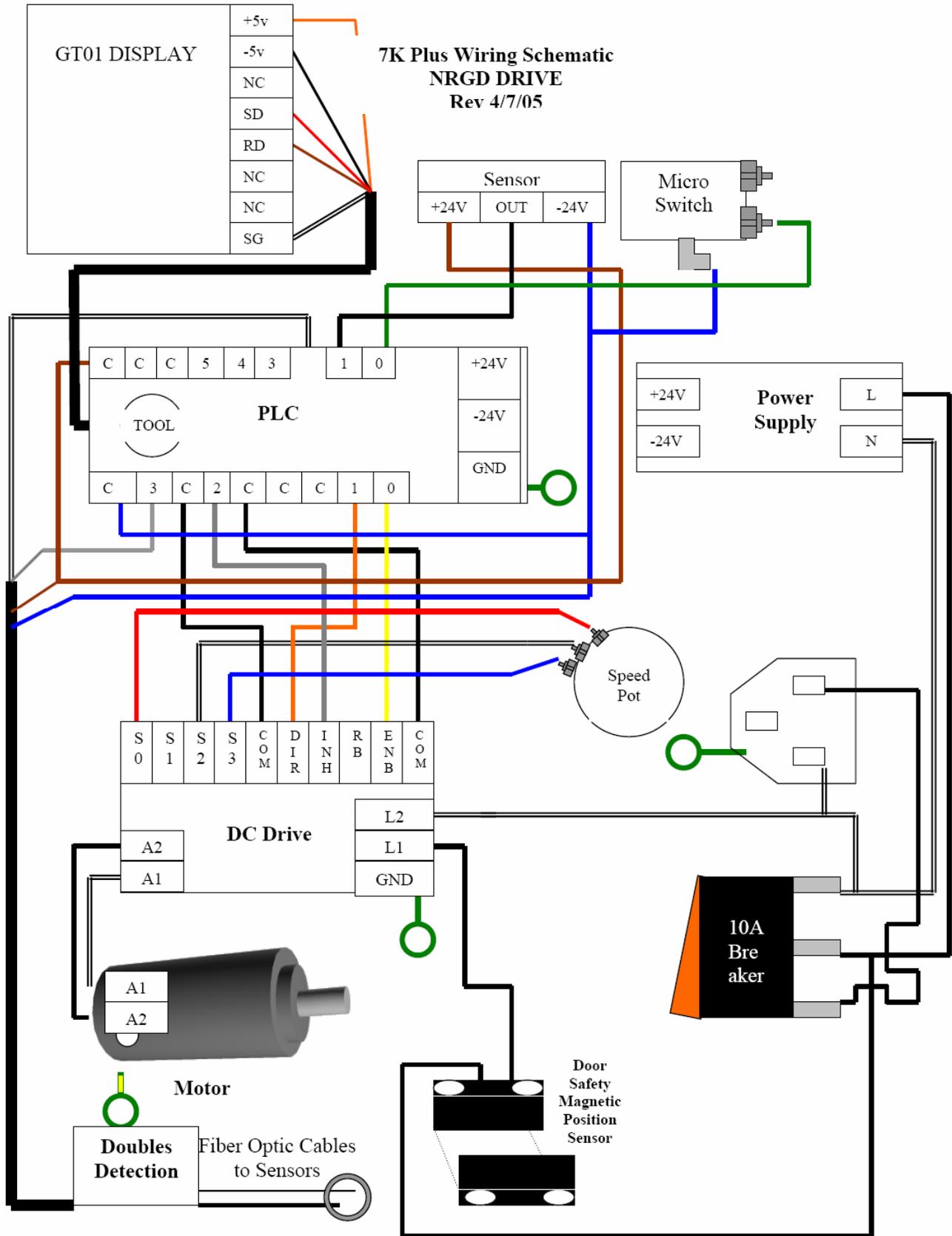
- If all four LEDs next to the capacitor are lit this indicates a faulty unit, replace the driver.
- If the machine is power on and no LED lights are lit check for proper wiring and that the unit is getting power.

Drive Motor

- If it is suspected of that the **drive motor** is faulty it will either make excessive noise or not run at all.
 - See section 10.5.5 to isolate noise issues. If the motor is the source, replace with a new motor drive. (See Section: 9.1)
- To test the motor drive:
 - Remove the **drive train cover** and remove the **drive belt**.
 - Rotate the **motor drive pulley** by hand, there will be some resistance
 - If the motor is locked, ensure no wires are shorted, crossed or improperly connected.
 - Replace the motor if it is locked up.
 - Disconnect all wires from the **drive motor** and connect the lead wires (black and white) attempt to rotate the motor pulley, it should be locked up and not rotate freely. If it rotates freely replace motor.
 - If both the above steps are successful, check for power to the motor.
 - If the motor is receiving power ensure the driver is not faulty and all electrical connections are sound and wired correctly, see electrical schematic.



Figure 38: Driver





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