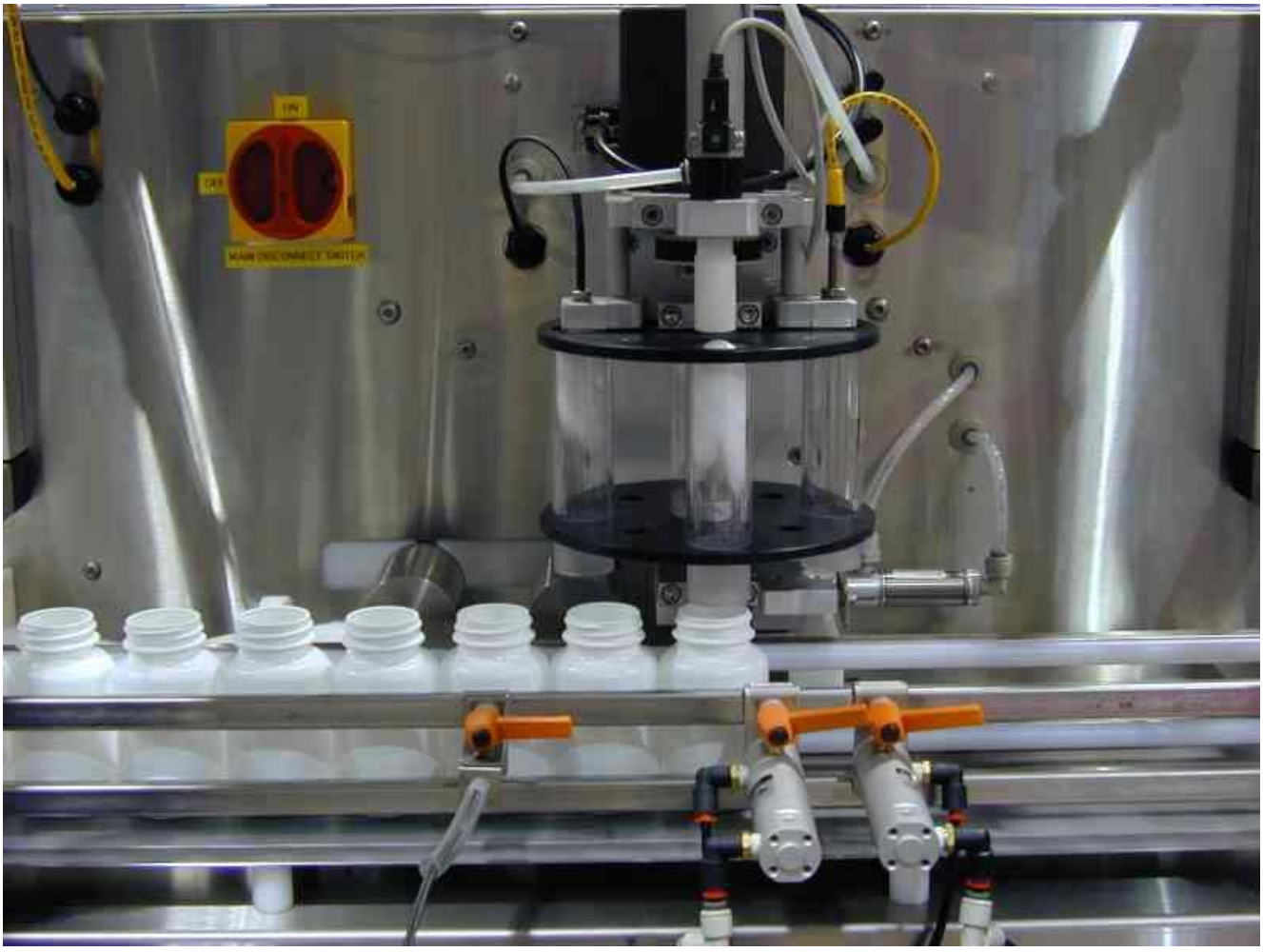
PHARMAFILL™

DEITZ COMPANY, WALL, NJ, USA



# *Model CS2 Cotton Inserter*

## Operation Manual

CONTENTS

# Warning

## This machine contains moving parts and operates automatically. This may present a hazard to personnel.

**Never operate this machine with any covers or guards removed or any guard switches or safety devices removed or bypassed.**

**Only people who have been correctly trained should operate or clean this machine.**

**Only people who are correctly qualified and trained should carry out maintenance, installation or any other service work.**

**Never clean or service the machine without isolating the electrical supply and isolating the air supply.**

**Always test for the presence of voltage before touching or working on electrical components.**

**Note that there might be other requirements that could apply.**

**Refer to the manuals supplied by the component manufacturers for further safety instructions.**

## Section 1: INTRODUCTION

Thank you for purchasing a Pharmafill Model CS2 Cotton Inserter. We at Deitz Company hope you will find that the Model CS2 meets or exceeds your expectations and requirements for an affordable, reliable and innovative addition to your packaging operation.

Pharmafill products are designed and manufactured by Deitz Company Inc., in Wall, NJ, USA. We have manufactured machinery for the bottle filling industry since 1966 and began directly marketing our Pharmafill line in 1993. We are a small (but growing) family-owned business that emphasizes quality, innovation and superior customer service.

If you have any questions or comments, please contact us by phone or visit our website. Chances are someone whose last name is Deitz will handle your inquiry personally.

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The operation manual is designed to make it easier for you to know the machine and to make use of its intended range of operation. It contains important instructions on how to operate the machine safely, adequately and economically. Observing these instructions helps to avoid risks, to reduce cost for repair work and machine downtime, and enhances the machine's operational reliability and lifetime.

The operation instructions are to be supplemented by further instructions due to existing national regulations on accident prevention and environmental protection.

If used in compliance with the instructions contained in this manual and provided that safety devices are regularly maintained and properly working, this machine is not dangerous to the operator.

This manual is to be kept accessible to all operators using this machine and it is assumed that before use the operator will read fully, and understand this manual and will follow instruction stated within.

As this machine may be used in the packaging of hazardous substances the operator should be aware of the precautions required for these substances.

In addition to the operating instructions and the binding regulations on accident prevention valid in the country where the machine is being used and at its operational site, the recognized technical rules on safe and proper working have to be observed as well.

These operating instructions and the information contained therein have been compiled with due care and attention. However, DEITZ COMPANY does not take any responsibility for misprints, translation errors or other errors and any damages resulting there from.

DEITZ COMPANY retains the right to make changes in the described products to improve functionality, reliability and design. The measurements or data shown on schematics, sketches and photos are not binding. They are for description purposes.

The information and drawings found in the operation manual are the intellectual property of DEITZ COMPANY and may not be copied or given to third parties.

## Section 2: SPECIFICATIONS

| | |
|---|---|
| MODEL | CS2 COTTONER |
| TYPE | AD 1066 |
| TURRET TUBE LENGTH | 3, 4 or 5 inches |
| TURRET TUBE DIAMETER | .75 or 1 inch |
| COTTON TYPE | Natural or Synthetic (Rayon, Polyester) Coil |
| COTTON WEIGHT | 6 TO 20 gm |
| COTTON LENGTH OUTPUT | 2 to 9 inches |

| TURRET LENGTH | TURRET INSIDE DIAMETER | COTTON WEIGHT | COTTON LENGTH MAX |
|---|---|---|---|
| 3 inch | .75 inch | 6 to 12 gm | 5 inch |
| 3 | 1.00 | 9 to 20 | 5 |
| 4 | .75 | 6 to 12 | 7 |
| 4 | 1.00 | 9 to 20 | 7 |
| 5 | .75 | 6 to 12 | 9 |
| 5 | 1.00 | 9 to 20 | 9 |

| | |
|---|---|
| MAX. OUTPUT SPEED (3” turret) | 90 per minute |
| MAX. OUTPUT SPEED (4” turret) | 85 per minute |
| MAX. OUTPUT SPEED (5” turret) | 80 per minute |

Maximum output speed will vary with input air pressure, quality of input air and the age and/or condition of the machine components. Final (actual) output will also depend on the characteristics of the particular cotton used and the speed at which cotton and bottles are fed to the machine.

| | |
|---|---|
| HEIGHT ADJUSTMENT RANGE | 9” |
| MINIMUM BOTTLE HEIGHT | 1” (for standard conveyor height of 36”) |

(Continued on next page)

## INPUT REQUIREMENTS

| | |
|---|---|
| VOLTAGE* | 115 VAC |
| CYCLES | 50/60 HZ |
| PHASE | 1 |
| AMPERAGE | 15 AMPS |
| COMPRESSED AIR** | 1.5 $FT^3$/MIN AT 80 $LB/IN^3$ |
| ROOM HUMIDITY | 85% RH NON CONDENSING |

*Other input voltages are available as factory options if specified at the time of order

** Compressed air must clean and dry, free of moisture (water) and oil.

## PHYSICAL DIMENSIONS

| | |
|---|---|
| WEIGHT | 450 LBS |
| FLOOR FOOT PRINT | 31” WIDE X 40-1/2” DEEP |
| HEIGHT | ADJUSTABLE FROM 56” TO 64” *** |
| FILLING HEIGHT | ADJUSTABLE FROM 37-1/4 TO 45-/14” *** |
| STANDARD CONVEYOR HEIGHT | 36” TO TOP SURFACE *** |
| BOTTLE HEIGHT | FROM 1” TO 9” *** |

*** May be adjusted further by adjusting or modifying leveling feet.

## Section 3. INSTALLATION

A. Unpacking
B. Commissioning
C. Compressed Air
D. Electric

### 3A. Unpacking

- Carefully remove equipment from crate and remove all packing materials.
- Inspect all supplied equipment for damage (if any damage is present please notify DEITZ COMPANY immediately).
- Assemble any components such as control panels, etc. using the drawings in this manual as a guide for mechanical, electrical and pneumatic assembly.
- Position the machine on the line and adjust the legs of the machine to level the machine. Note that the machine is designed for a standard conveyor height of 36 inches from the floor to the top of belt.

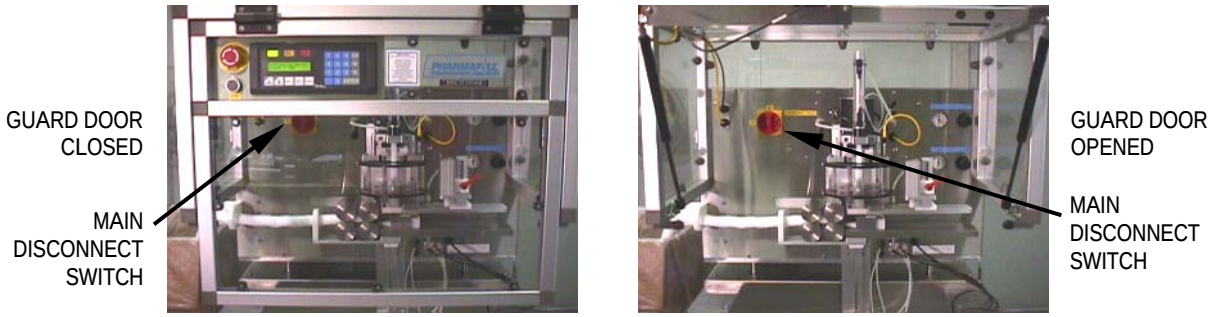
### 3B. Commissioning

- Check that the machine is correctly installed, levelled up and aligned.
- Check that there are no loose bolts, screws and that all electrical connections are tight.
- Ensure that the machine isolator (main disconnect switch) is in the OFF position.
- Do not “megger” the machine (high voltage insulation test) as damage to electronic components may result.
- Apply power to the machine and check polarity and voltage of the incoming supply.
- Check that all emergency stops work correctly.
- Check that all guard switches operate correctly.
- Check that the machine operates correctly.

### 3C. Compressed Air


- Compressor must be adequate to meet the specifications (see Section 2).
- The supply air should be clean and dry, free of condensation and oil.
- Connect up the pneumatic supply.
- Apply compressed air to the machine and turn both pressure regulators to 80 PSI.
- Check for air leaks and rectify any leaks found.

3D. Electric


- Power source must be adequate to meet the specifications (see Section 2).
- Check the polarity and voltage of the incoming supply.
- The machine must be solidly earthed.
- Make sure the Main Disconnect Switch is in the OFF position. If it is not, no action will take place, but this is good practice.
- Connect up the main electrical supply.
- Turn the Main Disconnect Switch to the ON position. No action will take place.
- To confirm that the machine is powered up, the Operator Interface panel should be lighted.
- Machine is now ready for operation.

## Section 4. FEATURES

A. General
B. Operator Interface (Control Panel)
C. Safety Enclosure
D. Turret
E. Rollers
F. Shelf
G. Air Pressure Controls
H. Bottle Indexing and Bottle Sensors
I. Optional Tamper
J. Lift Platform

### 4A. General

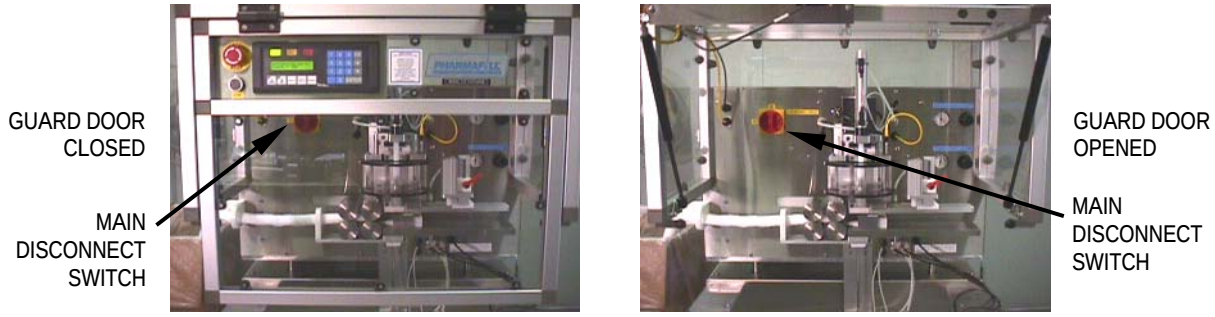
This Model CS2 is an automatic cotton inserter designed to convert continuous cotton coil to individual pieces and place them inside a bottle or other container. The cotton coil is cut by the tearing action of two sets of pinch rollers, so that uniform lengths are produced. The cut piece is the pushed up into a tube, so that it is folded in half to form an inverted-U shape. The tube is then moved under a sensor to confirm the presence of the cotton piece. If confirmed, the tube then is moved into position to align with the bottle filling station. If a bottle is present, the cotton is inserted. Because of the inverted-U shape, the ends of the cut piece are inside the bottle and only the fold is visible at the top. Once a bottle is filled, the machine automatically releases the bottle and repeats the cycle.

In addition to the inserting function, there are several secondary functions which aid in using and setting up the machine. All functions are detailed in Section 5.

### 4B. Operator Interface (Control Panel)

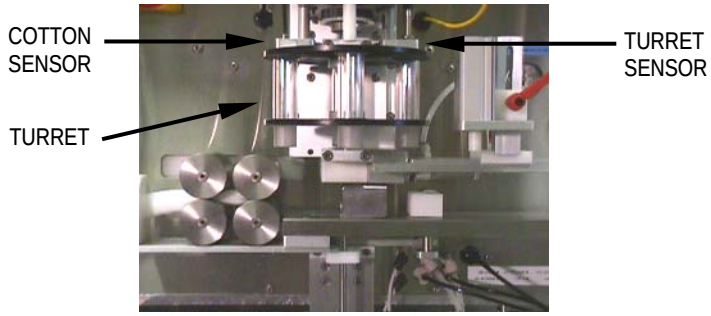

The machine operation is controlled with an Operator Interface Panel, or simply a Control Panel. This is a flat panel device with membrane push buttons, alert indicator lights and a 2-line text display for input and output. See Section 5 for a full explanation. Next to the Control Panel are two pushbutton switches labeled “Emergency Stop” and “Start”.

4C. Safety Enclosure




The operator is protected from coming in contact with the moving parts of the machine by the safety enclosure, which is made of clear polycarbonate with a metal and plastic frame. The front of the enclosure is a hinged door and swings up to provide full access to the components. The Guard Door contains the Control Panel and has an interlock device, which will prevent the machine from operating once the door is opened.

4D. Turret

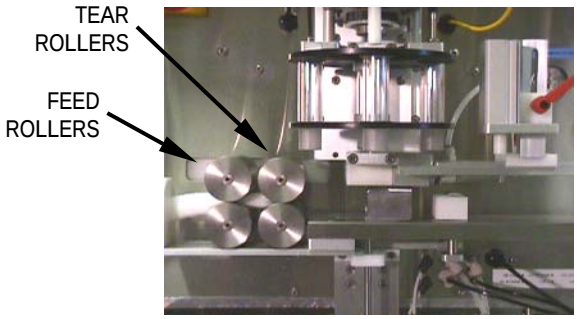



The turret assembly transports and inserts the cut cotton pieces. The turret itself consists of four clear tubes, arranged vertically, 90 degrees apart, between two discs. A stepper motor rotates the turret 90 degrees per cycle. The turret come in different sizes and lengths and is easily changed over.

There are two sensors built into the turret assembly. On the right is the Turret Sensor (proximity), which measures and confirms the movement and position of the turret each cycle. If the turret fails to rotate, the machine will stop and an error message will be displayed (see Sec. 9A). On the left is the Cotton Sensor (fiber optic), which confirms the presence of cotton after each cycle. If cotton is not detected at the end of each cycle when in automatic mode, the machine will stop and an error message will be displayed (see Sec. 9A).

The lower insertion air cylinder (under the shelf) pushes cut cotton up into the rear tube. At the same time, the upper insertion air cylinder (on the turret) pushes cut cotton down out of the front tube and into the bottle. The motion of both air cylinders in confirmed by cylinder sensors (magnetic).

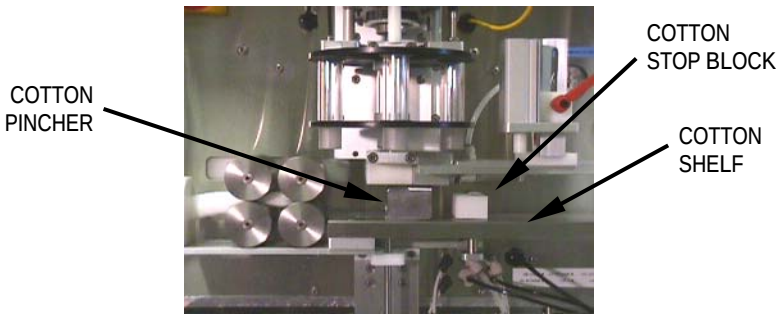
4E. Rollers




Two sets of pinch rollers control the cotton cutting process. The left set, are the feed rollers and the right set are the tear rollers. Separate stepper motors drive each set. The feed rollers feed an exact length of cotton coil into the tear rollers, which tear the cotton to length and places the cut piece on the cotton shelf. The amount of force pressing the rollers together is controlled by air pressure and may be changed. Air pressure is also used to open the rollers for loading or unloading cotton coil. See Section 5E.

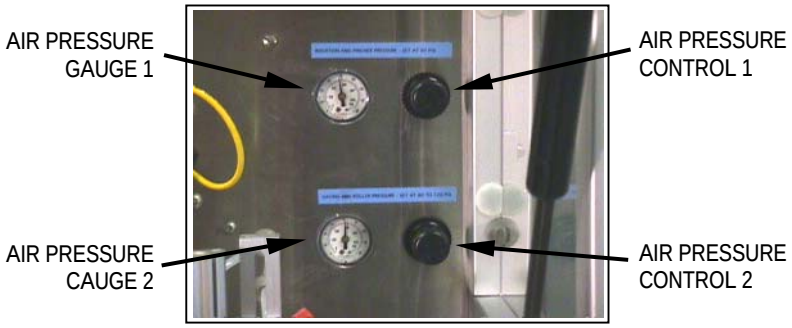
When a new length of cotton is selected, the roller assembly automatically repositions itself to assure that the cut cotton piece is centered under the rear roller. A stepper motor controls this motion.

4F. Shelf



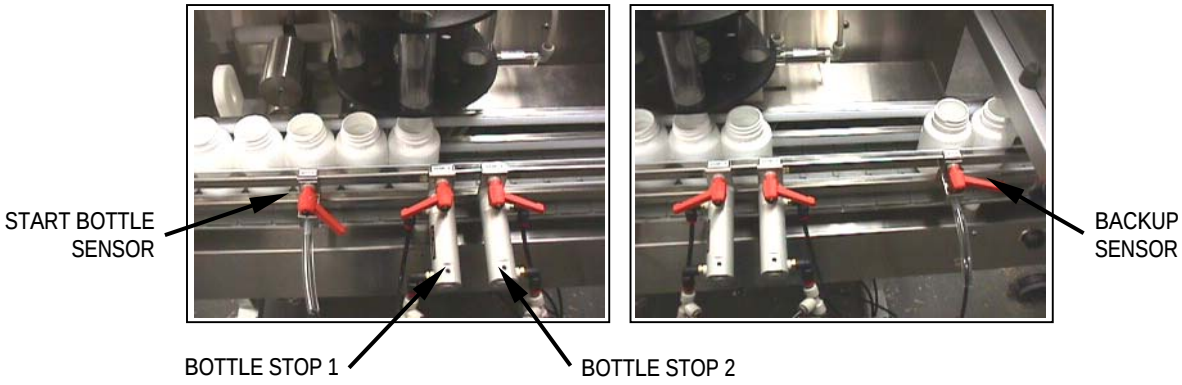

The Cotton Shelf is where the cut cotton piece is placed prior to being inserted into the rear tube. The lower insertion air cylinder is mounted under the shelf. The Cotton Stop Block is part of the shelf. This limits the distance the cut piece can travel to the right, assuring correct centering of the piece under the tube. The Cotton Stop Block adjusts automatically when a new length is selected. Directly above the shelf is the Cotton Pincher assembly. This has an air cylinder and two moving arms that hold the cotton in place as it is inserted into the rear tube.

## 4G. Air Pressure Controls




There are two air regulators with gauges that control pressure to two separate air circuits in the machine. Air Pressure Control 1 controls the insertion air cylinders and the pincher mechanism. Air Pressure Control 2 controls the bottle stops and pinch roller pressure.

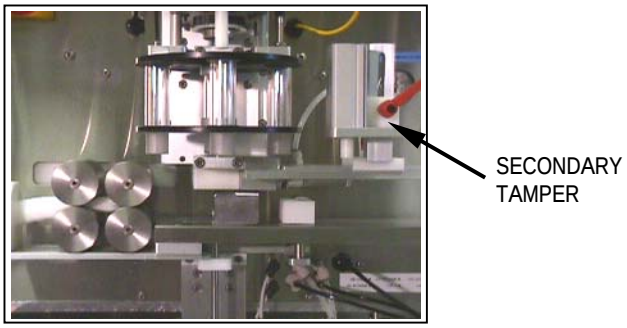
## 4H. Bottle Indexing and Bottle Sensors




The machine controls the bottle flow on the conveyor by using air controlled bottle indexing. This system uses two bottle stop air cylinders, mounted on the conveyor rail, which can be adjusted manually side to side. The air cylinder pushes a finger out to stop the bottle. The first stop is positioned to center the bottle under the filling tube. The second stop is positioned to allow one bottle to move past the filling point.

There are two sensors (fiber-optic) that detect the presence of bottles. The first is the START BOTTLE sensor. In automatic mode, whenever this sensor detects a bottle (and if all other conditions are correct), the machine will perform an insertion cycle. The second one is the BACKUP sensor, which is positioned down line. If a downline process stops, bottles will accumulate on the conveyor. When this sensor detects a bottle, it stops automatic or manual insertion. Once the bottle backup is cleared, insertion will resume without operator intervention.

4I. Optional Tamper




As an option we offer a secondary tamper assembly, for applications where the cotton pops up out of the bottle when after the initial insertion action. The tamper consists of an air cylinder that pushes a plunger into a bottle that already has cotton. The tamper mounts to the turret and taps into the same air control line of the pincher air cylinder. The tamper acts at the same time as the insertion air cylinder. When this option is installed, the tamper is be positioned to be downline from the insertion point a distance equal to an even number of bottles. The bottle stops are positioned at tamper fill point so they will control the indexing for both tamper and insertion operations.

4J. Lift Platform

The machine incorporates an electrically operated lift platform, which is used to adjust the height of the filling tube over the conveyor. The height must be set by visual observation, as there is no feedback or digital readout of relative height. There is also a manual override feature in case of an electrical problem. A manual crank handle is stored inside the machine, accessible through the rear access door.

## Section 5. OPERATION

A. Control Panel
B. Insert Cotton
    Show Values
C. Adjust Settings
    Cotton Length
    Number Of Pieces
    Release Time
    Dwell Time
D. Change Height
E. Open Rollers
F. Clear Tubes
G. Extend Insert Rods
H. One Step Index
I. Index Bottles Only
J. Set Count To Zero
K. Options
L. Technician Only

*(Section begins on next page)*

***Section 5A: CONTROL PANEL***
***This is the operator interface for control functions and message display***


1. Note the locations of the EMERGENCY STOP button, the START button, and the CONTROL PANEL.


2. The right side of the control panel contains:
   - Numeric keypad (not used by operator)
   - UP and DOWN ARROW keys
   - ENTER key


3. The left side of the control panel contains:
   - Three indicator lights: OK (green), WAIT (yellow) and ALERT (red)
   - Two-line x 20 character message display
   - Five keys: F1 AUTO, F2 GO, MENU, CLEAR and SELECT

   *(See section 4-B for more info)*


4. When the message “STOPPED- Press Start” is displayed, twist and release the STOP button and then press the START button. The machine will now initialize and the turret will execute the “find home” routine. The guard door must be down.

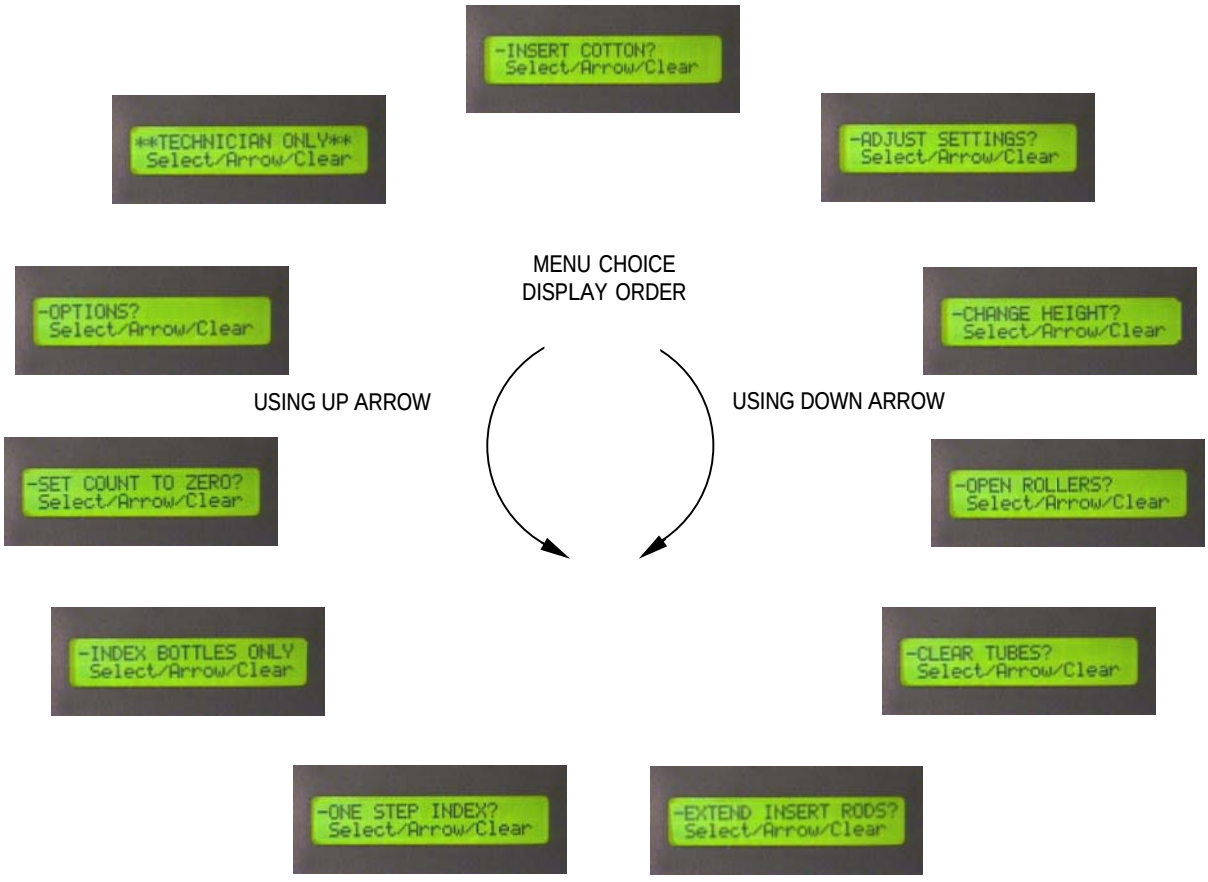

5. When the “find home” routine is complete, you will see the top menu. The machine is now ready to operate.

*Continued on Next Page*


6. From the top menu, press MENU to select the mode of operation. At any time press the CLEAR to return to the top menu.


7. Press UP or DOWN ARROW to scroll through the available menu choices, as shown in the diagram below. You may use SELECT or ENTER to make your choice. The choices are explained in the following sections.

*(End 5-A)*



***Section 5B: INSERT COTTON***
***This function controls the inserting process***


1. Press MENU. If you don't see INSERT COTTON?, press UP or DOWN ARROW to scroll through the menu choices. Normally, this is not necessary.


2. When you see INSERT COTTON?, press SELECT or ENTER. You will then see the INSERT COTTON choices.


3. To start a single insertion cycle, press and release F2 GO. The machine will make one complete cycle, including indexing the bottles. To cycle continuously, press and hold F2 GO.


4. If the BACKUP SENSOR detects an object, the cycle will not start and you will get the message shown at left. Remove the object and try again

(*See Section 4-H for more info.)*


5. To start full automatic operation, press F1 AUTO. If all conditions are correct, cotton will be inserted (cotton present in tube, bottle present, no backup.)

(*See Section 4-H for more info.)*

*Continued on Next Page*

***Section 5B: INSERT COTTON***
***(Continued)***


6. When the second line displays the message "UP/DN = SHOW VALUES", the SHOW VALUES feature is available.

(*See later in this section for more info.)*


7. If there is no bottle at the BOTTLE SENSOR, the machine will pause and display the message "WAITING FOR BOTTLE". As soon as a bottle is detected, insertion will begin.


8. If the BACKUP SENSOR detects a bottle staying in place downline, the machine will pause and display the message "BOTTLE BACKUP". As soon as the backup clears, insertion will BEGIN.


9. If the COTTON SENSOR fails to detect cotton in the left-hand tube, the machine will stop and display the message "NO COTTON IN TUBE". Insertion will not resume. Open the guard and correct the situation, then select INSERT COTTON again from the top menu.


10. To exit automatic operation, press F1 AUTO again or press CANCEL. Note that F1 AUTO can only be reset by hand, or by power off. If you exit by pressing the CLEAR key, F1 AUTO will not reset. If you later select INSERT COTTON mode, the machine will already be in AUTO mode.
*(Continued on Next Page)*

***Section 5B: INSERT COTTON***
***(Continued)***


11.The SHOW VALUES feature is available whenever you are in the INSERTION mode and the message “ENTER = SHOW VALUES” is displayed.


12. Press ENTER to scroll through the available values, as shown in the diagram below. These values are for information only and cannot be changed in this mode.

*(End 5-B)*

SHOW VALUES
DISPLAY ORDER

***Section 5C: ADJUST SETTINGS***
***This function sets the values for length of cotton and other parameters***



1. Press MENU and use the UP and DOWN arrows to scroll through the menu choices.


2. When you see ADJUST SETTINGS?, press SELECT or ENTER.

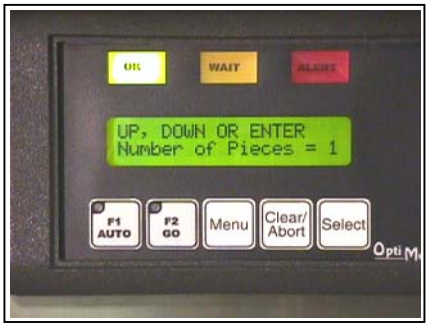
Change values by pressing the UP ARROW to increase or DOWN ARROW to decrease.

Press ENTER to save the value and continue.


3. “Cotton Length” ranges from 2.0 inches to 6.0, 7.5 or 9.0 inches (depending on turret size).

This is the straight length that is fed through the rollers. The length is approximate and varies with the qualities of the cotton.


4. When you press ENTER, the computer will briefly update the drive system with the new length. When this is done you will see the next message.




5. “Number of Pieces” ranges from 1 to 9.

This is the number of pieces of cotton that will be inserted into each bottle.

*(Continued on Next Page)*


6. "Release Time" ranges from 0.10 to 2.00 seconds.

This is the time delay the bottle indexing mechanism allows for a filled bottle to move out of the filling position, before starting a new cycle. The correct value is depends on conveyor speed and bottle diameter.


7. "Dwell Time" ranges from .00 to 2.00 seconds.

This is the time delay after the insertion rods are extended and before they are withdrawn. Sometimes cotton springs up out of the bottle. This is used to give the cotton a "set" after it is inserted in the bottle.


8. After you view or change the Dwell Time and press ENTER, the machine will first reset the position of the pinch rollers and cotton stop block for the current length and then "home" the turret.

9. You may CLEAR at any time to exit this mode. If you press CLEAR any time after "the system update" (step 4) has been completed, the machine will reset the rollers as in step 8. This way, if you only wish to change the length, you can exit without going through the other values.

*(End 5-C)*

***Section 5D: CHANGE HEIGHT***

***This function raises or lowers the machine height over the conveyor***



1. Press MENU and use the UP and DOWN arrows to scroll through the menu choices.



2. When you see "CHANGE HEIGHT?" press SELECT or ENTER. You will now see the CHANGE HEIGHT options.


3. Press the UP arrow to raise the machine. Press the DOWN arrow to lower the machine. The machine is equipped with limit switches that will stop the lift motor at the ends of the adjustment range.


4. Exercise caution and common sense so as to not cause personal injury and also to not damage any equipment. You must visually assure that there is no interference.


5. Press CLEAR to exit this function and return to the top menu.

*(End 5-D)*

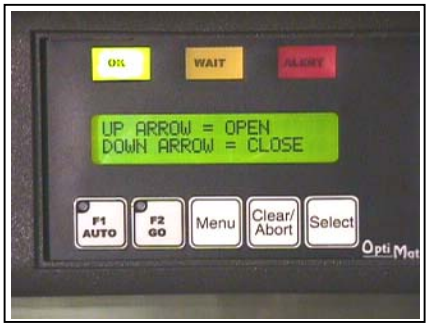
***Section 5E: OPEN ROLLERS***

***This function separates the pinch rollers to allow the cotton coil to be fed in***



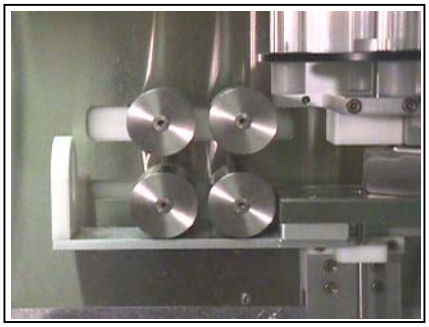
1. Press MENU and use the UP and DOWN arrows to scroll through the menu choices.


2. When you see OPEN ROLLERS?, press SELECT or ENTER.




3. You will now see the OPEN ROLLERS options.


4. Press the UP arrow to open the rollers. The guard door must be closed or no action will take place.



5. Open the guard door. The rollers are now in the open position.

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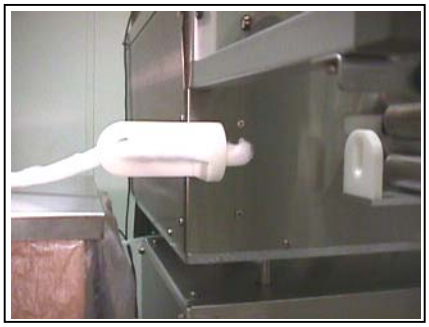
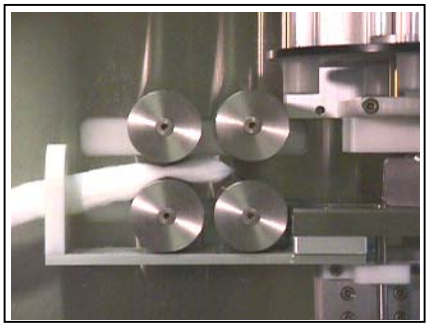
***Section 5E: OPEN ROLLERS***
***(Continued)***

6. Feed the cotton coil through the optional cotton box top (if equipped), then through the 1st cotton guide loop.





7. Feed the cotton through the 2nd and 3rd cotton guide loops and then the first pair of rollers, stopping just before the second set of rollers.


8. Close the guard door. Press the DOWN arrow to close the rollers.

9. The rollers will now close on the cotton coil.


10. Press CLEAR to exit this function and return to the top menu. If the rollers are in the open position when you do this, they will then close.

*(End 5-E)*

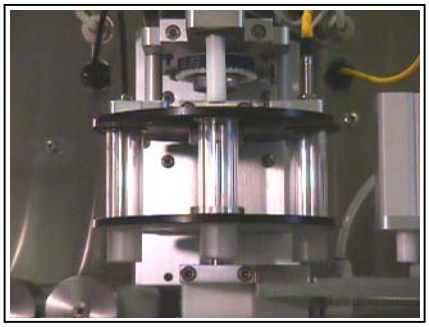
***Section 5F: CLEAR TUBES***
***This function empties the cotton from the tubes***



1. Press MENU and use the UP and DOWN arrows to scroll through the menu choices.


2. When you see CLEAR TUBES?, press SELECT or ENTER.


3. You will now see the CLEAR TUBES options. Press F2 GO to clear the tubes.



4. The machine will now execute four cycles without feeding any cotton. The will result in all tubes being emptied.


5. Press CLEAR to exit this function and return to the top menu.

*(End 5-F)*

***Section 5G: EXTEND RODS***

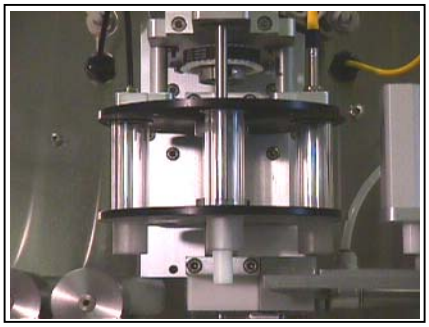
***This function extends the insertion air cylinders rods for setup purposes***



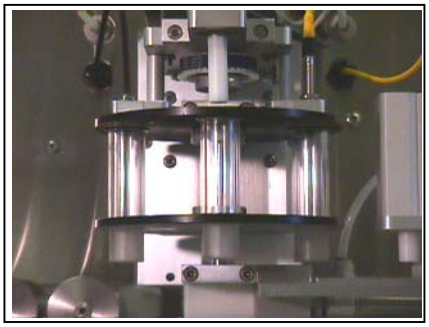
1. Press MENU and use the UP and DOWN arrows to scroll through the menu choices.


2. When you see EXTEND RODS?, press SELECT or ENTER.


3. Press F2 GO to cause to insertion air cylinders to extend fully and hold in that position. The guard door must be closed or no action will take place. You may open the guard while the cylinder is extended. (Note that the pincher air cylinder is also actuated.)



4. With the rod in the fully extended position, you may test a filled bottle to see that the contents are not being crushed by the cotton insertion action. You may also see that the rods are extending properly and that the associated position sensors (mounted on the cylinders) are adjusted and functioning correctly.



5. Close the guard and press F2 GO to retract the insertion air cylinders.

*(Continued on Next Page)*

***Section 5G: EXTEND RODS***
*(Continued)*


6. Press CLEAR to exit this function and return to the top menu. If the rods are extended when you do this, they will then retract.

*(End 5-G)*

***SECTION 5H: ONE STEP INDEX***

***This function jogs the bottle indexing mechanism for setup purposes***



1. Press MENU and use the UP and DOWN arrows to scroll through the menu choices.


2. When you see ONE STEP INDEX?, press SELECT or ENTER.


3. You will now see the ONE STEP INDEX options. Press F2 GO to cause the bottle gating mechanism to switch to the release position and hold there


4. Press F2 GO again to return to the hold position. By doing this several times, you may test the accuracy and smoothness of the bottle indexing action and make mechanical adjustments to the gating accordingly.


5. Press CLEAR to exit this function and return to the top menu.

*(End 5-H)*

***Section 5I: INDEX BOTTLES ONLY***
***This function cycles the bottle gating mechanism without inserting cotton***



1. Press MENU and use the UP and DOWN arrows to scroll through the menu choices.


2. When you see INDEX BOTTLES ONLY?, press SELECT or ENTER.


3. Press F1 GO. The machine will now execute a single bottle index cycle. The gating mechanism will release one bottle and load another into the filling position.


4. Press F1 AUTO. The machine will automatically execute one bottle index cycle each time a bottle is detected by the bottle sensor. This is useful when making a production run which does not use cotton and must bypass the cottoner. Bottles will have a uniform minimum spacing as they leave the machine.


5. Press F1 AUTO again to stop automatic operation.

6. Press CLEAR to exit this function and return to the top menu

*(End 5-I)*

***Section 5J: SET COUNT TO ZERO***
***This function will reset the internal batch counter value to zero***



1. Press MENU and use the UP and DOWN arrows to scroll through the menu choices.


2. When you see SET COUNT TO ZERO?, press SELECT or ENTER.


3. Press F2 GO to reset the count value to zero or press CLEAR to exit this function, leaving the count value unchanged.


Note: The count value is only visible when in the INSERT COTTON mode, using the SHOW VALUES feature, as shown at left.

(*See Section 5-B for more info)*

*(End 5-J)*

***Section 5K: OPTIONS***

***FOR FUTURE EXPANSION ONLY. This model currently does not have any software options***



1. Press MENU and use the UP and DOWN arrows to scroll through the menu choices.


2. When you see OPTIONS?, press SELECT or ENTER.


3. At this time, no options are available. Press CLEAR to return to the top menu.

*(End 5-K)*

***Section 5L: TECHNICIAN ONLY***
***THIS FUNCTION CAN ONLY BE ACCESSED BY A QUALIFIED TECHNICIAN***



1. Press MENU and use the UP and DOWN arrows to scroll through the menu choices.


2. When you see **TECHNICIAN ONLY**, press SELECT or ENTER.


3. At this point you cannot proceed without a passcode. Technicians should refer to the ***Technical Notes*** at the end of this manual.

*(End 5-L)*

## Section 6. SETUP FOR A RUN

QUICK START

- A. Start Up
- B. Setup Conveyor
- C. Adjust Settings
- D. Adjust Machine Height
- E. Load Cotton Coil
- F. Setup Bottles – Without Optional Tamper
- G. Setup Bottles – With Optional Tamper
- H. Test Cotton Inserting

DETAILED EXPLANATION

6A. Start Up

- Lift open the Guard Door.
- Turn the Main Disconnect Switch ON.
- Close the Guard Door.
- Press the STOP Button.
- Twist and release the STOP Button.
- Press the START Button. The turret will “find home”.

6B. Setup Conveyor

- Raise the machine so that it clears the bottles by several inches.
- Adjust the conveyor rails so the bottles move freely, but with minimum side clearance.

6C. Adjust Settings for Length, Etc.

- Follow the procedure under Section 5C Adjust Settings

6D. Adjust Machine Height

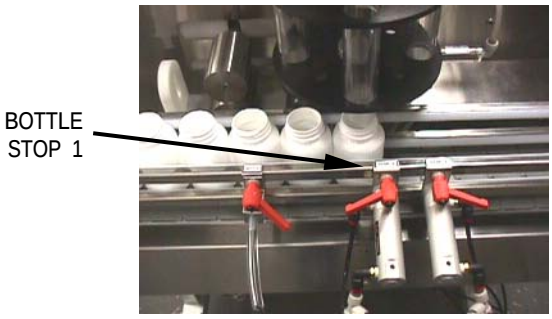
- Place a bottle directly under the front Turret Tube.
- Lower the machine using the Change Height function (Sec. 5D) until the bottom of the front tube is 1/8 to 1/4 inch above the bottle.

6E. Load Cotton Coil

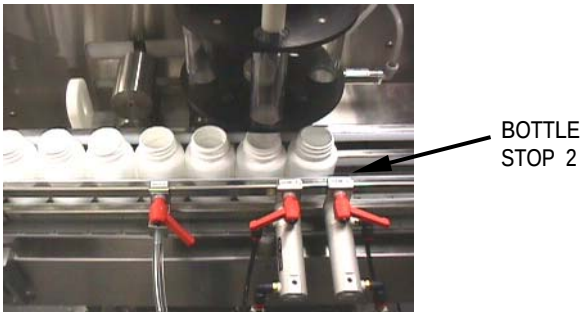
- Place the box of cotton coil on the left side of the machine.
- If equipped with the optional Cotton Box Lid, feed the cotton through the lid and place the lid securely on the box.
- Load the cotton as explained in Section 5E Open Rollers.
- If there is any cotton from the previous run in the turret, use the Clear Tubes function (Sec. 5F) to remove it.
- Use the Manual Insert function (Sec. 5B) to make one piece of cut cotton. This will make a clean starting cut on the end of the coil.
- Open the Guard Door and remove this piece, to be discarded. Close the door.
- Use the Manual Insert function (Sec. 5B) to make several pieces of cut cotton.
- Check that the cut cotton pieces meet expectations for length and proper inverted-U fold.
- With the conveyor turned off (not moving), place a bottle (filled with product, to the specified level) under the front tube.
- Extend the insertion rods using the Extend Rods function (Sec. 5G).
- Open the Guard Door and confirm that the plunger inserts cotton into the bottle without crushing or damaging the product.
- Close the door and withdraw the insertion rods.

6F. Setup Bottles – Without Optional Tamper installed (see technical drawing Sec. 9E)

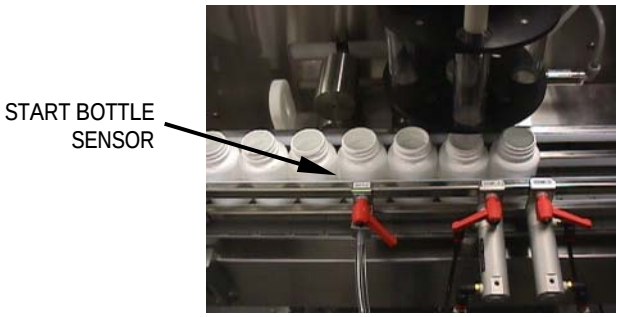
- Turn on conveyor, set to operating speed.




- With several bottles on the conveyor, adjust Stop 1 (normally extended) so the first bottle is centered directly under the front tube
- Use the One Step Index function (Sec. 5H) to extend Stop 2.

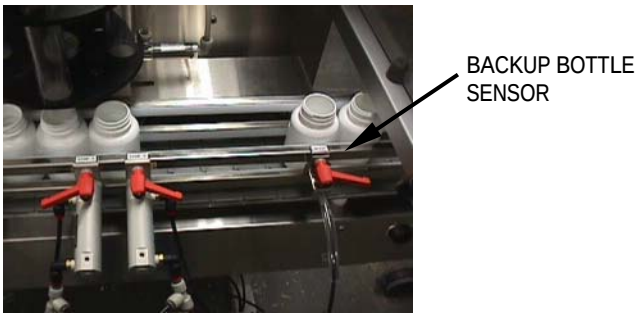



- Set Stop 2 so that the second bottle is centered under the front tube, or just 1/8 to 1/4 inch upstream from centered position.
- Alternately extend the stops several times using the One Step Index function to see if the indexing action is smooth, without any bottles jumping or being crushed.
- Make any necessary further adjustments until the indexing is smooth
- With the conveyor on and moving at the desired speed, use the Auto Index function (Sec. 5I) to index several bottles. Confirm that the Release Time is adequate to allow the bottles to leave the filling station before a new bottle is brought in.




- Position the START BOTTLE sensor so it is centered on and empty bottle. This bottle may be the one directly under the filling tube or any bottle upstream of the filling position. It is recommended that the sensor be positioned at least 3 bottles

upstream. That way the bottle is the filling position is stabilized by the other bottles pressing on it.




- Position the BACKUP SENSOR downstream from the filling position to detect any bottle which may be baking up from a downstream function which has stopped or is slower than the cottoner.

6G. Setup Bottles – With Optional Tamper installed (see technical drawing Sec. 9E)

- Turn on conveyor, set to operating speed.
- Consult the drawing and decide which will be the "filled" bottle
- With several bottles on the conveyor, adjust Stop 1 (normally extended) so the "filled" bottle is centered directly under the front tube while the first bottle is in the area of the tamper
- Use the One Step Index function (Sec. 5H) to extend Stop 2.
- Set Stop 2 so that the bottle after the "filled" bottle is centered under the front tube, or just 1/8 to 1/4 inch upstream from centered position.
- Alternately extend the stops several times using the One Step Index function to see if the indexing action is smooth, without any bottles jumping or being crushed.
- Make any necessary further adjustments until the indexing is smooth
- Move the Tamper Plunger so it is centered over the first bottle.
- Adjust the height of the tamper so it will tamp the cotton without crushing or damaging the product.
- With the conveyor on and moving at the desired speed, use the Auto Index function (Sec. 5I) to index several bottles. Confirm that the Release Time is adequate to allow the bottles to leave the filling station before a new bottle is brought in.

6H. Test Cotton Inserting

- Use the Manual Insert function (Sec. 5B) several times to check the complete operation.

## Section 7. RUNNING PRODUCTION

QUICK START

- A. Start Up
- B. Check Cotton
- C. Check Bottles
- D. Test Operation
- E. Begin Operation
- F. Stopping the Machine Manually
- G. When the Machine Stops Automatically

7A. Start Up

- Lift open the Guard Door.
- Turn the Main Disconnect Switch ON.
- Close the Guard Door.
- Press the STOP Button.
- Twist and release the STOP Button.
- Press the START Button. The turret will “find home”.

7B. Check Cotton

- Check that there is adequate cotton coil in the box
- Check that it is the correct cotton (material and gram weight)
- Check that the cotton is present on the cotton shelf and the rear ands left tubes. The turret will “find home”.

7C. Check Bottles

- Check that there is an adequate supply of bottles.
- Check that they are the correct type of bottle

7D. Test Operation

- Use the Manual Insert function (Sec. 5B) to make several test cycles.

7E. Begin Operation

- Use the Auto Insert function (Sec. 5B) to begin production.

7F. Stopping the Machine Manually

- To stop the machine after the current cycle is complete and stay in INSERT mode, press F1 AUTO to stop automatic operation. To resume, Press F1 AUTO again.
- To stop the machine after the current cycle is complete, you may also press CANCEL to stop automatic operation. To resume, you will have to enter the INSERT mode again (Sec. 5B).
- To stop the machine after the current cycle is complete, you may also raise the GUARD DOOR, which cancels automatic operation. To resume, you will have to close the door and enter the INSERT mode again (Sec. 5B).
- To stop the machine instantly, press the STOP button. The machine will stop in the middle of the cycle. All air cylinders will return to the normal positions. All motors will power down. To resume, release the STOP button and press START. Then you will have to enter the INSERT mode again (Sec. 5B).

7G. When the Machine Stops Automatically

- If you raise the guard door while in automatic mode, the machine will stop. To resume, you will have to close the door and enter the INSERT mode again (Sec. 5B).
- If no cotton is present in the left tube, the message “NO COTTON IN TUBE” will be displayed. You must correct the situation by opening the guard door. See previous paragraph.

- If the bottles begin the backup from the downline direction, the Backup Sensor will cause the machine to pause and display the message “BOTTLE BACKUP”. Once the backup is cleared, automatic operation will resume immediately.
- If there is no bottle in front of the START sensor when in automatic mode, the message “WAITING FOR BOTTLE” will be displayed and the machine is paused. When a bottle is detected, automatic operation will resume immediately. If the START sensor is positioned several bottles upstream from the filling station (as recommended), the machine may have several bottles ready to be filled while it waits for the missing bottle. This is normal.

## Section 8. ROUTINE MAINTENANCE

A. Insertion Air Cylinders
B. Compressed Air Filters
C. Cooling Fan Air Filters
D. Lubrication
E. General Cleaning

### 8A. Insertion Air Cylinders

NOTE: Do not add lubrication to the air cylinders or air supply. Cylinders are pre-lubricated. If the lubrication fails, the cylinder has reached the end of its life and must be re-built.

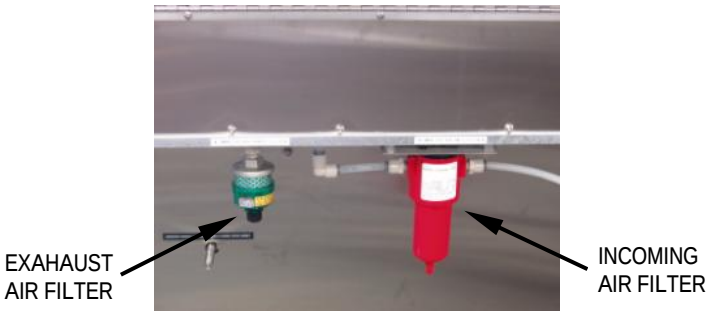
Insertion **a**ir cylinder life expectancy varies widely with each installation, usually due to air supply quality (oil, water). Insertion **a**ir cylinders may be returned to the factory to be rebuilt, at no charge other than shipping costs for the 2-year warranty period (from date of machine purchase) and for a small charge thereafter. Typically, replacing the cylinder and wiper will take up to 20 to 30 minutes each. You may also purchase the seal kit to do-it-yourself, but we are not responsible for the quality of your work. Typically, rebuilding alone will take 20 minutes plus replacement time.

| | |
|---|---|
| CS2/10 Air Cylinder<br>(Also buy one P0157 per cylinder) | P0158-x<br>(where x is the stroke in inches 4,5,6,7 or 8) |
| CS2/10 Cylinder Rebuild Parts Kit<br>- consists of (1) FM3283F, (2) P0156, (2) P0157 | AD1071-1 |
| Cylinder Internal Seal Set (1 per cylinder) | FM3283F |
| Brass Air Fitting 10-32 to ¼" Tube (2 per cylinder) | P0156 |
| Air Cylinder Rod Wiper (1 per cylinder) | P0157 |

*(Also see service parts list in Section 9D)*

## 8B. Compressed Air Filters

There are two replaceable filters in the compressed air system, one for the incoming air filter and one for the exhaust filter. They are found at the lower rear of the machine.



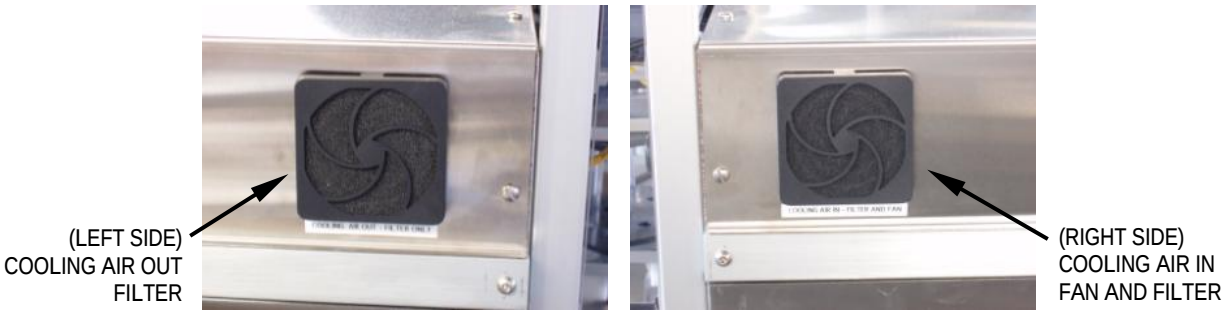

Incoming Compressed Air Filter – Specially designed stainless steel elements to remove condensate and contamination down to 1 micron. It has an automatic float style drain and a filter-service indicator (on top of filter behind glass) that tells you when to replace the filter (Green = good, Red = bad). It has a metal bowl and is rated to 150 PSI. Replace when the indicator changes color to red or once per month, whichever occurs first.

CS2/10 Air In Filter Element P9052-1

Exhaust Filter/Silencer – Reduces noise contamination by 35 dB. It has a drain cock that exhausts 99.9% of all oil mist. Replace the element once every 6 months

CS2/10 Air Exhaust Filter Element P9051-1

## 8C. Cooling Fan Air Filters




The upper cabinet is fan cooled. There are two replaceable foam-type filter elements, one for the inflow and one for the outflow. These are located on the sides of the machine. Replace them when they appear dirty or once per month, whichever occurs first.

CS2/10 Cooling Fan Foam Filter Element FM3049-2

## 8D. Lubrication

There are no lubrication points on the machine. All bearings are permanently lubricated and/or are sealed. Feed screws for the roller carriage travel (one, behind turret assembly inside upper cabinet) and lift platform (two, inside lower cabinet) may occasionally need to be coated with any common grease. The pneumatic system should NOT add lubricant to the incoming air.

## 8E. General Cleaning

You may use any typical surface cleaner on all stainless steel parts and all white or black plastic parts (acetal). Do not use acetone, alcohol or any highly evaporative cleaner on any clear plastic parts (polycarbonate), such as the turret tubes or the safety enclosure. Instead use a mild solution of water and soap, or a mild solution of water and ammonia.

## Section 9. TECHNICAL INFORMATION

A. Cycle of Operation
B. Troubleshooting
C. Options
D. Technical Notes/Drawing Index

9A. Typical machine cycle (insertion process sequence of operations)

TO START CYCLE - Press F2 RUN (manual) or detect a START BOTTLE (automatic).

SEQUENCE OF OPERATIONS:

1. PINCH - Pincher arms close.

2. INSERT – After a very short delay, the lower and upper insertion cylinders extend.

3. DWELL - Upon sensing both insertion cylinders are extended, wait for dwell time delay. then both cylinders withdraw and pincher opens.

4. INDEX BOTTLES– As soon as the upper insertion cylinder begins to withdraw, start bottle indexing cycle:

    a. INDEX - Stop 1 withdraws and Stop 2 extends. All bottles move up.

    b. RELEASE - After release time delay, Stop 2 withdraws and Stop 1 extends. Filled bottle is released.

5. FEED and ROTATE- Upon sensing both cylinders are withdrawn:

    a. Turret rotates 90 degrees.

    b. Rollers produce a new cut piece of cotton.

CYCLE COMPLETE, NEW CYCLE MAY BE STARTED IMMEDIATELY

## 9B. Troubleshooting

1. Bottles fall over or jump suddenly
   - Check the positioning of the Bottle Stops. Use the One Step Index function (Sec. 5H) to test the action.
   - Check that the Release Time is adequate for the conveyor speed and bottle size (Sec. 5C). Use the Index Bottles Only function to test the action (Sec. 5I). Increase the Release Time or increase conveyor speed.

2. Cotton comes out top of bottle
   - Check that the Cotton Length is correct for bottle and contents (Sec. 5C).
   - Check that the plunger tip is the correct size for the application.
   - Check that the cotton is being properly folded into the inverted-U configuration, with equal length on each side of fold (folded in middle). Mechanically adjust the relative position of the Cotton Stop with by moving the Pivot Post left or right.
   - Check that there is adequate space in the bottle, above the contents for cotton to occupy. Cotton is best inserted below a shoulder, not only within the neck of the container.
   - Install the optional Tamper Assembly
   - Check that the Tamper Assembly is positioned properly left to right, that the tamper cylinder height is correct and that the tamper plunger tip is correct for the application.

3. Synthetic cotton issues: Rayon and polyester
   - Pure cotton coil always runs best, though it produces the most dust. It cuts most easily and consistently.
   - Synthetics have longer fibers and stretch and great deal before parting. This makes less dust, Synthetics in larger gram sizes do not make good pieces in the shorter lengths (2 or 3 inches).

4. Turret not centered on insertion cylinders
   - Normally the turret will stop so the plunger is closest to the left side of the hole. This is normal and necessary for high-speed operation.
   - Plunger hits the turret, turret has play when power is on: sprocket collars or setscrew on the turret drive belt sprockets may have come loose. Check and tighten them. Do not worry about timing the belt sprockets. They are self-timing each cycle.
   - Plunger hits turret, turret has no play when power is on: Turret Sensor (proximity0 may have failed on connector may have come loose.

Insertion cylinders extend, then machine stops in extended position
   - Turret sensor may be out of position or is defective. Consult drawing TN 0000.

Insertion cylinders extends, then retracts then machine stops, will not cycle again
   - Turret sensor may be out of position or is defective. Consult drawing TN 0000.

Message: “TURRET ROTATE ERROR”

- If turret can be easily manually rotated with power on, sprocket collars or setscrew on the turret drive belt sprockets may have come loose. Check and tighten them. Do not worry about timing the belt sprockets. They are self-timing each cycle.
- Turret electronic component may be defective or becoming defective. Stop the machine, CLEAR TUBES and try again. If it continues to occur, contact a technician.

Message: “ROLLER TRAVEL ERROR”

- Roller carriage drive electronic components may be defective or becoming defective. Stop the machine and try again. If it continues to occur, contact a technician.

9C. Options

| | |
|---|---|
| CS2 Secondary Tamper Assembly | AD1029-2 |
| Cotton Box Cover Assembly (center draw, no breaks) | AD1035 |

9D. Technical Notes/Drawing Index

(Technical Notes/Drawings Begin After Last Page)

| Number | Title | No. of Pages |
|---|---|---|
| 2006-20 | CS2 Dimensional Drawing | 1 |
| 2006-34 | CS2 Bottle Gating Setup - No Tamper | 1 |
| 2006-35 | CS2 Bottle Gating Setup - With Tamper | 1 |
| AD0998-3_BoM | CS2 Bill of Materials (Top Level) | 1 |
| AD1066-1070-S | CS2-CS10 Speeds | 1 |
| AD1066-CCD | CS2 Contact Compliance Data | 1 |
| AD1066-PM | CS2 Preventative Maintenance | 1 |
| SC1005 | CS2 Wiring Schematic | 14 |
| SC1006 | CS2 Air Line Schematic | 4 |
| TN0075-2 | CS2 Service Parts List | 5 |
| TN0076 | CS2 Using ***Technician Only*** Menu | 5 |
| TN0098 | CS2-10 Drive Unit Service Procedure | 16 |

Addendums or additional technical data

| | | |
|---|---|---|
| _____ | _____ | __ |
| _____ | _____ | __ |
| _____ | _____ | __ |
| _____ | _____ | __ |

| NOTE | REV | DESCRIPTION | DATE |
|---|---|---|---|
| – | – | – | --/--/-- |

REVISION –

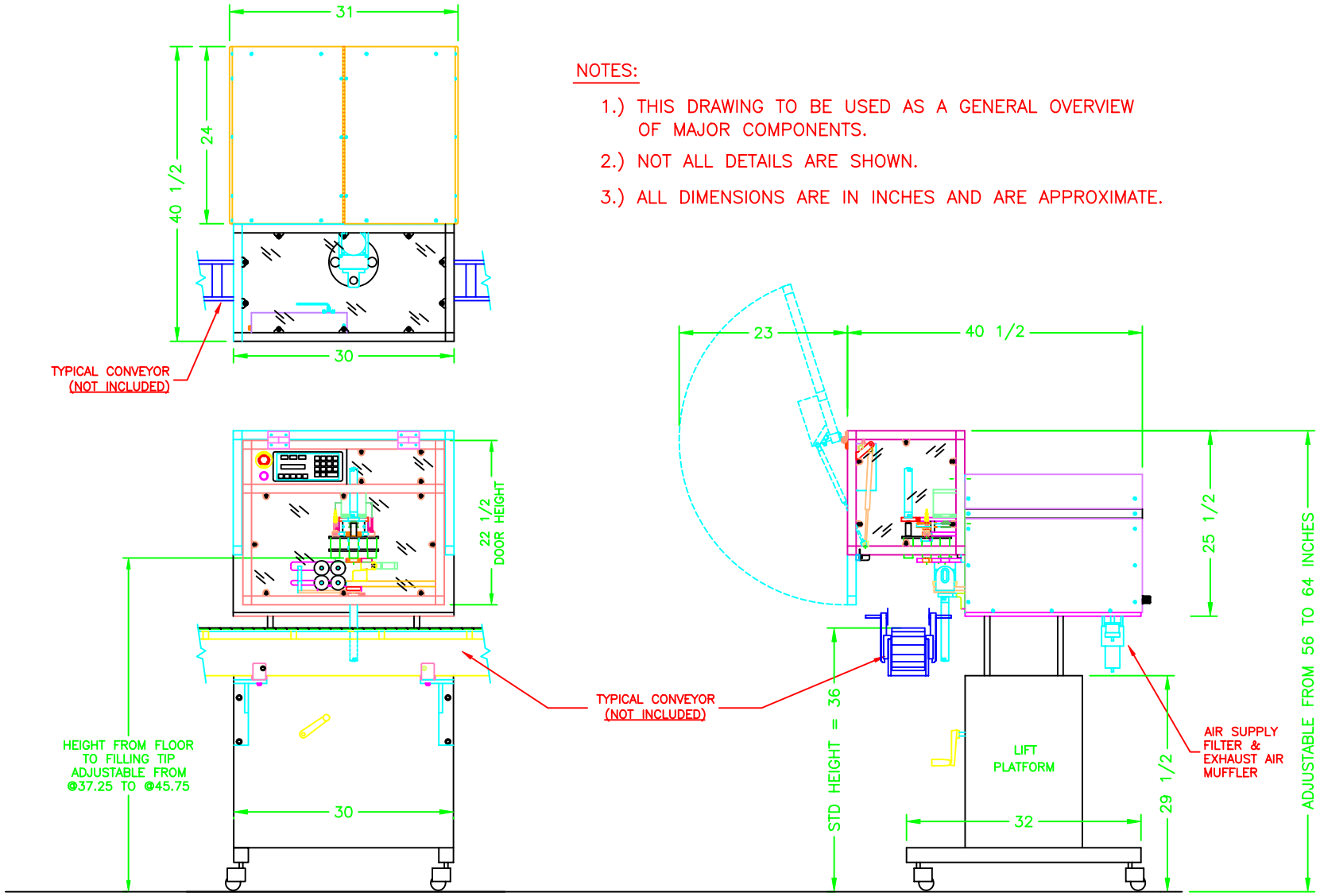
NUMBER: 2006–20

NOTES:

1.) THIS DRAWING TO BE USED AS A GENERAL OVERVIEW OF MAJOR COMPONENTS.

2.) NOT ALL DETAILS ARE SHOWN.

3.) ALL DIMENSIONS ARE IN INCHES AND ARE APPROXIMATE.




NUMBER: 2006–20

REVISION –

DEITZ COMPANY, INC.
ROUTE 34, WALL, N.J.
TECHNICAL DRAWING – PRODUCT INFO

| | | | |
|---|---|---|---|
| PRODUCT | CS2 | BY SJD2 | DATE: 11/11/02 |
| TITLE | CS2 COTTONER DIMENSIONS AND FEATURES | SHEET 1 OF 1 | |
| | | NUMBER 2006–20 | REVISION – |

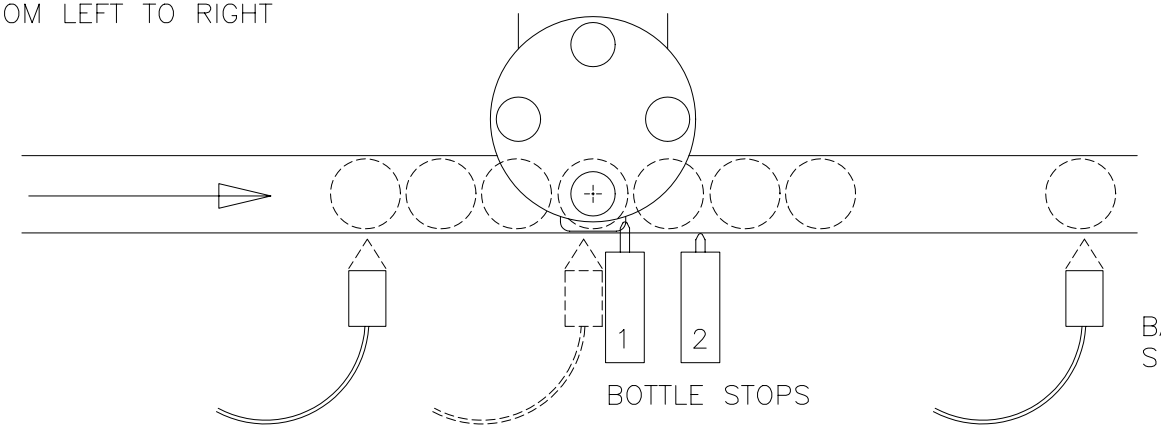
| NOTE | REV | DESCRIPTION | DATE |
|---|---|---|---|
| – | – | – | – |

REVISION A

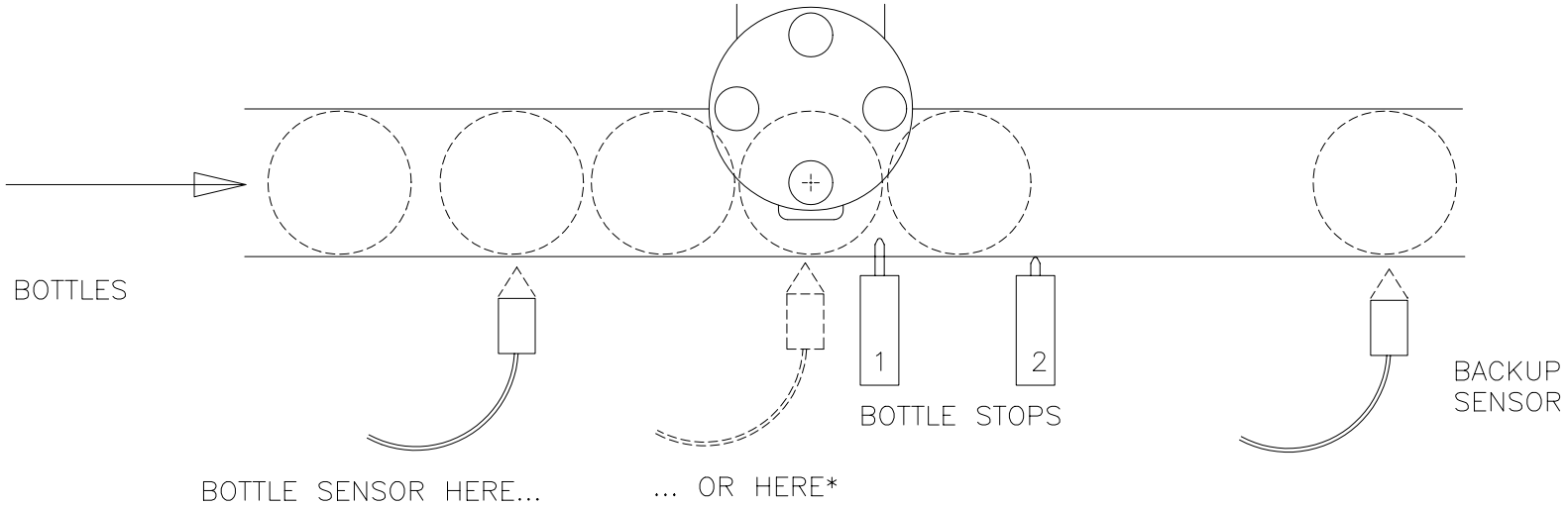
NUMBER: 2006–34

CONVEYOR MOVING FROM LEFT TO RIGHT

SMALL BOTTLES




LARGE BOTTLES




*BOTTLE SENSOR MAY BE FOCUSED ON BOTTLE BEING FILLED OR ANY BOTTLE UPSTREAM OF THAT ONE (MUST BE CENTERED).

FOR ALL BOTTLES SIZES, THE DISTANCE BETWEEN EACH BOTTLE STOP IS ALWAYS EQUAL TO ONE BOTTLE WIDTH.

NUMBER: 2006–34

REVISION A

**DEITZ COMPANY, INC.**
**ROUTE 34, WALL, N.J.**

TECHNICAL DRAWING – PRODUCT INFO

PRODUCT CS1/CS2 – WITHOUT TAMPER

TITLE HOW TO SET–UP BOTTLE STOPS AND BOTTLE & BACKUP SENSORS MOVING LEFT TO RIGHT

BY SJD2 DATE: 11/11/02

SHEET 1 OF 1

NUMBER 2006–34

REVISION A

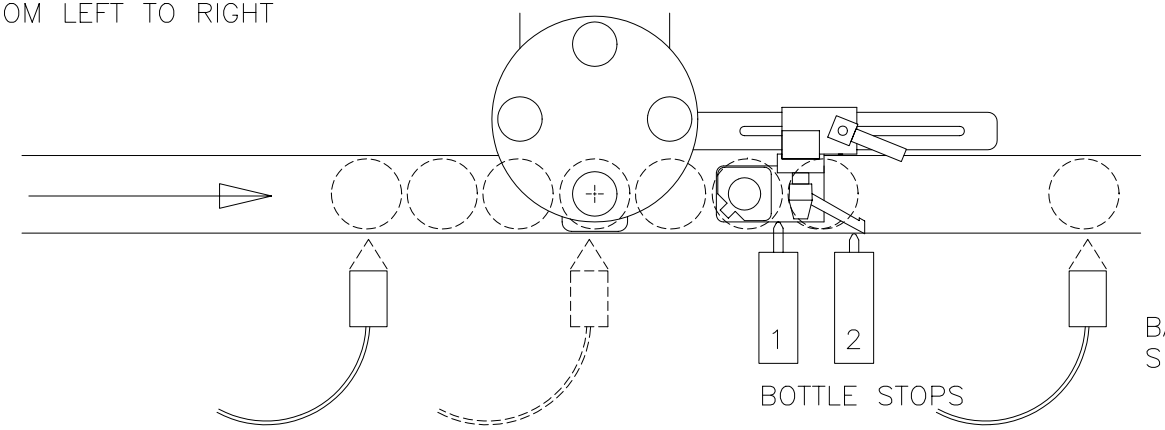
| NOTE | REV | DESCRIPTION | DATE |
|---|---|---|---|
| – | – | – | – |

REVISION –

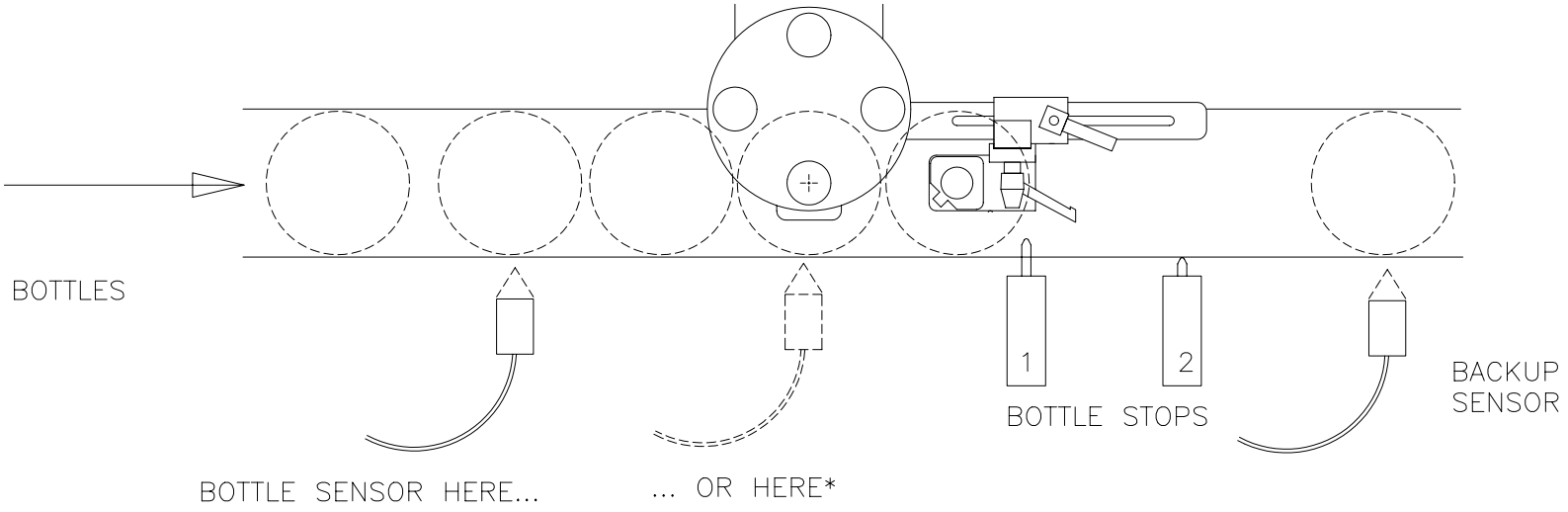
NUMBER: 2006–35

CONVEYOR MOVING FROM LEFT TO RIGHT

SMALL BOTTLES




LARGE BOTTLES




*BOTTLE SENSOR MAY BE FOCUSED ON BOTTLE BEING FILLED OR ANY BOTTLE UPSTREAM OF THAT ONE (MUST BE CENTERED).

FOR ALL BOTTLES SIZES, THE DISTANCE BETWEEN EACH BOTTLE STOP IS ALWAYS EQUAL TO ONE BOTTLE WIDTH.

NUMBER: 2006–35

REVISION –

**DEITZ COMPANY, INC.**
**ROUTE 34, WALL, N.J.**
TECHNICAL DRAWING – PRODUCT INFO

PRODUCT CS1 WITH TAMPER OPTION

TITLE HOW TO SET–UP BOTTLE STOPS AND BOTTLE & BACKUP SENSORS
–

BY SJD2 DATE: 11/11/02

SHEET 1 OF 1

NUMBER 2006–35

REVISION –

SUMMARIZED BOM - SINGLE LEVEL

Monday March 31, 2008 01:22 PM

Parent Item Number: AD0998-3 REVB CS2 Cotton Inserter w/@5"Tubes Type: B

| Component | Description | Qty Required | UM | Type |
|---|---|---|---|---|
| AD1006 | Rail Mount & FibOptc Brkt Assy | 2.00 | EA | B |
| AD1042 | Rail Mount & Bottle Stop Assy (SMC Type) | 2.00 | EA | B |
| AD1044 REVA | CS2 Main Frame | 1.00 | EA | B |
| AD1045-1 | CS2 & CS10 Carriage, LH Feed | 1.00 | EA | B |
| AD1046-1 | CS2 & CS10 Roller Unit, LH Fd | 1.00 | EA | B |
| AD1047-3 | CS2 & CS10 Turret, LH Feed, 5" | 1.00 | EA | B |
| AD1048 | CS2 Guard Enclosure | 1.00 | EA | B |
| AD1049 REVA | CS2 Cotton Shelf (w/Ctr Block) | 1.00 | EA | B |
| AD1052 REVB | CS2 Electrical Panels | 1.00 | EA | B |
| AD1053-1 | CS2 Air Supply & Control | 1.00 | EA | B |
| AD1055-3 | CS2/10 Air Cyl Assy, Lower, 8" | 1.00 | EA | B |
| AD1056 | CS2 Front Enclosure Panel | 1.00 | EA | B |
| AD1057 REVA | CS2 Rear Enclosure Panel (w/Full Access) | 1.00 | EA | B |
| FA1016 | CS2/CS10 Flex Roller Subassy | 1.00 | EA | A |
| FM2974-11 | Cork Strip, CS2/10, Hinge Brkt | 1.00 | EA | A |
| FM2988-2 | Hinge, CS2 & CS10 Top Cover | 1.00 | EA | A |
| FM3049-2 | CS1/2/10 Air Filter Element 1/8 thk x 100 PPI | 2.00 | EA | A |
| FM3176 | CS2/CS10 Front Cotton Guide Support Arm | 1.00 | EA | A |
| FM3177-1 | CS2/CS10 Cotton Gd, Front Roller Mount | 1.00 | EA | A |
| FM3190 | CS2 Pinion Post Arm Mtg Bar | 1.00 | EA | A |
| FM3191 | CS2 Pinion Post Arm | 1.00 | EA | A |
| FM3204-1 | CS2 Top Cover LH | 1.00 | EA | A |
| FM3204-2 | CS2 Top Cover RH | 1.00 | EA | A |
| FM3206-1 | CS2/CS10 Side Cover LH | 1.00 | EA | A |
| FM3206-2 | CS2/CS10 Side Cover RH | 1.00 | EA | A |
| FM3209 | CS2/CS10 Side Bar | 2.00 | EA | A |
| FM3212 | CS2/CS10 Enclosure Top Brace | 1.00 | EA | A |
| FM3213 | CS2/CS10 Roller Tube Subass'y | 3.00 | EA | A |
| FM3276-1 | CS2 Labels - SEE JOHN | 1.00 | EA | A |
| P0135 | AIR FAN-3.12 #1976K37 | 1.00 | EA | R |
| P0183 | Fan Guard/Filter Assy, 3.12" | 2.00 | EA | R |
| P2767 | Shim, 1/4 x 3/8 OD x 1/16 Thk for 1/4 SHCS | 4.00 | EA | R |
| P2820 | Dowel Pin, 3/16 x 1/2 S.S. | 4.00 | EA | R |
| P4721 | PHARMAFILL Aluminum Nameplate | 1.00 | EA | R |
| P5016 | Fiber-Opt Cable,Dual,Straight BANNER PBT46U P/N 25967 | 2.00 | EA | R |
| P5108 | Nylon Plug for 13/16 Hole | 4.00 | EA | R |

DEITZ CO., INC
1750 RT. 34
WALL, NJ 07719
USA

7/28/2005

CS2 & CS10 COTTONER - IDEAL MAXIMUM RATE (INSERTIONS PER MINUTE) BASED ON ACTUAL FACTORY TESTING

(BOTTLE RELEASE TIME FIXED AT .10 SEC, AIR PRESSURE AT 80 PSI)

| | LEN=2 | LEN=3 | LEN=4 | LEN=5 | LEN=6 | LEN=7 | LEN=8 | LEN=9 |
|---|---|---|---|---|---|---|---|---|
| CS2 - 5" TURRET | 85 | 82 | 78 | 76 | 73 | 70 | 68 | 66 |
| CS2 - 4" TURRET | 90 | 87 | 83 | 79 | 77 | 74 | ~ | ~ |
| CS2 - 3" TURRET | 95 | 92 | 88 | 85 | ~ | ~ | ~ | ~ |
| CS10 - 5" TURRETS | 165 | 158 | 151 | 144 | 139 | 134 | 129 | 125 |
| CS10 - 4" TURRETS | 172 | 166 | 159 | 152 | 145 | 140 | ~ | ~ |
| CS10 - 3" TURRETS | 180 | 174 | 167 | 161 | ~ | ~ | ~ | ~ |

SOFTWARE VERSION 07-27-05 E
WIRING REVISION D (07/2005)

CS10 FIGURES ARE ONLY 95% OF (CS2 FIGURES X 2) DUE TO AIR PRESSURE DROP WHEN RUNNING 2 HEADS AT THE SAME TIME. USING LARGER DIAMETER AIR SUPPLY LINES MAY IMPROVE THIS.

THESE FIGURES DO NOT APPLY TO EARLIER VERSIONS. THIS VERSION IS APPROXIMATELY 10% FASTER THAN EARLIER VERSIONS.

ACTUAL REAL-WORLD RATES COULD BE LOWER, DEPENDING UPON HOW FAST THE BOTTLES CAN BE TRANSFERRED.

JOHN DEITZ
President

Deitz Company Inc.
1750 Route 34 PO Box 1108
Wall, NJ USA 07719

Tel 732-681-0200
Fax 732-681-8468
Email sjd2@deitzco.com

# PRODUCT COMPLIANCE DATA
# Model CS2 Cotton Inserter Type AD1066

## FOOD COMPLIANCE STATEMENTS
MATERIALS IN DIRECT CONTACT WITH PRODUCT

Deitz Company Inc hereby certifies that the list below contains all the parts of the above-cited machine that come in direct contact with the product, and that those parts are manufactured using raw materials and surface treatments which conform to the requirements of such parts as established by the Food and Drug Administration of the United States. Certificates of compliance for raw materials and treatments are maintained according to our internal Quality Control System.

## CONTACT PARTS, MATERIALS AND TREATMENTS

| PART NUMBER | DESCRIPTION | MATERIAL | CERTIFICATION |
|---|---|---|---|
| FM3177 | Cotton Guide Loops | Acetal | FDA 21 CFR 177.2480 |
| SD1648 | Roller Tubes | INOX AISI 304 | ASTM Standard |
| FM3322 | Pincher Arms | INOX AISI 304 | ASTM Standard |
| FM3164 | Cotton Shelf | INOX AISI 304 | ASTM Standard |
| FM3323 | Stop Block | Acetal | FDA 21 CFR 177.2480 |
| FM3251 | Insert Cylinder Rod Ext. | INOX AISI 303 | ASTM Standard |
| FM3156 | Tube Extension | Acetal | FDA 21 CFR 177.2480 |
| FM2951 | Turret Tube | Polycarbonate | FDA 21 CFR 177.15803 |
| FM3216 | Upper Cylinder Rod Top | Acetal | FDA 21 CFR 177.2480 |

JOHN DEITZ
President

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Monthly

1. Pincher Assembly
    a. Inspect condition of pincher arms, looking for cracks in the bend area. Replace both arms if any cracks are found.
    b. Check up-and-down free play of pincher arm at pivot screw. If excessive, tighten pivot screws, in small increments and re-inspect. Some free play is necessary for arms to move freely.
    c. Check open-close free play. If excessive, replace slide block.
    d. Check that space between pincher arms when closed = ½ inch. Adjust by turning threaded air cylinder rod into or out of slide block.
    e. Check that locknut on air cylinder rod is tight against slide block
2. Turret Assembly
    a. By hand, move turret assembly back and forth. Look for freeplay at turret pulley and motor pulley. Tighten as necessary.
    b. Inspect condition of belt. Replace if necessary.
    c. Inspect condition of turret tubes for cracking. Replace if necessary.
3. Rollers
    a. Inspect surfaces for scratched or gouges. Replace if necessary.
4. Miscellaneous
    a. Clean or replace cooling fan air filters.
    b. Check all external hardware for tightness.
    c. Check condition of all external electrical and fiber optic cables for wear or damage. Replace if necessary.

Annually

1. Roller Drive Unit (internal)
    a. Remove and inspect drive unit, following procedure TN0098 CS2 Drive Unit Removal (also applies to CS10). Allow two hours, per drive unit, to remove, inspect and replace. Allow additional time if further service is required.
    b. Inspect condition of belts and chains. Replace if necessary.
    c. Inspect condition of bearings and shafts in roller pivot block. Replace if necessary.
    d. Inspect condition of linkage on roller pressure air cylinder. Replace if necessary.
2. Carriage Drive Unit (internal)
    a. Inspect condition of carriage drive screw. Clean and lubricate with a small amount of lithium grease.

REVISIONS

A – FIRST RELEASE

B – MISC WIRING IMPROVEMENTS

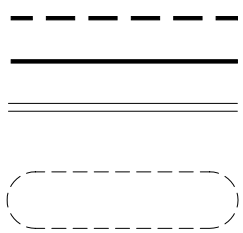
C – OMITTED PLC–A2, PLC–A3, NETC–A2, NETC–A3;
REPLACED WITH INDX–A1, INDEX–A2, INDEX–A3

C1 – CHANGED TERMINAL AND COMPONENT DESIGNATION TO MATCH WIRING INSTRUCTIONS (DROPPED USE OF "–A1 IN FAVOR OF "1").
ADDED AIR PRESSURE SENSOR PG 9.
MINOR CORRECTIONS.

CONTENTS



KEYS




| NOTE | REV | DESCRIPTION | DATE |
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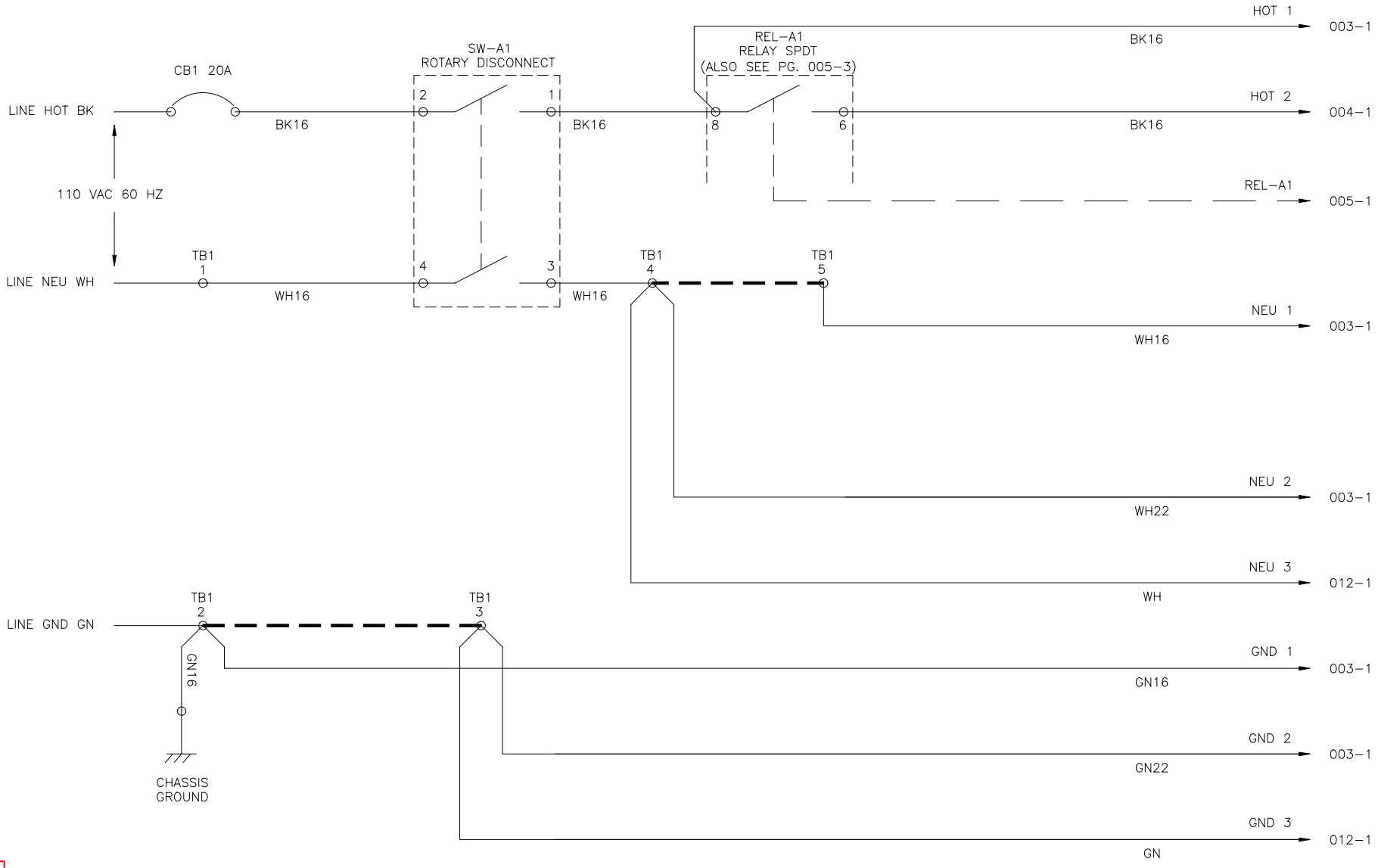
**DEITZ COMPANY, INC.**
**ROUTE 34, WALL, N.J.**
TECHNICAL DRAWING – PRODUCT INFO

| | | | |
|---|---|---|---|
| SECTION | NOTES AND REVISIONS | BY SJD2 | DATE: 11–24–03 |
| TITLE | MODEL CS2 COTTONER WIRING SCHEMATIC SERIAL NO. 008 AND UP | SHEET 001 OF 014 | |
| | | NUMBER SC1005 | REVISION C1 |

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**DEITZ COMPANY, INC.**
**ROUTE 34, WALL, N.J.**
TECHNICAL DRAWING – PRODUCT INFO

| | | | |
|---|---|---|---|
| SECTION | POWER ENTRY | BY SJD2 | DATE: 11-24-03 |
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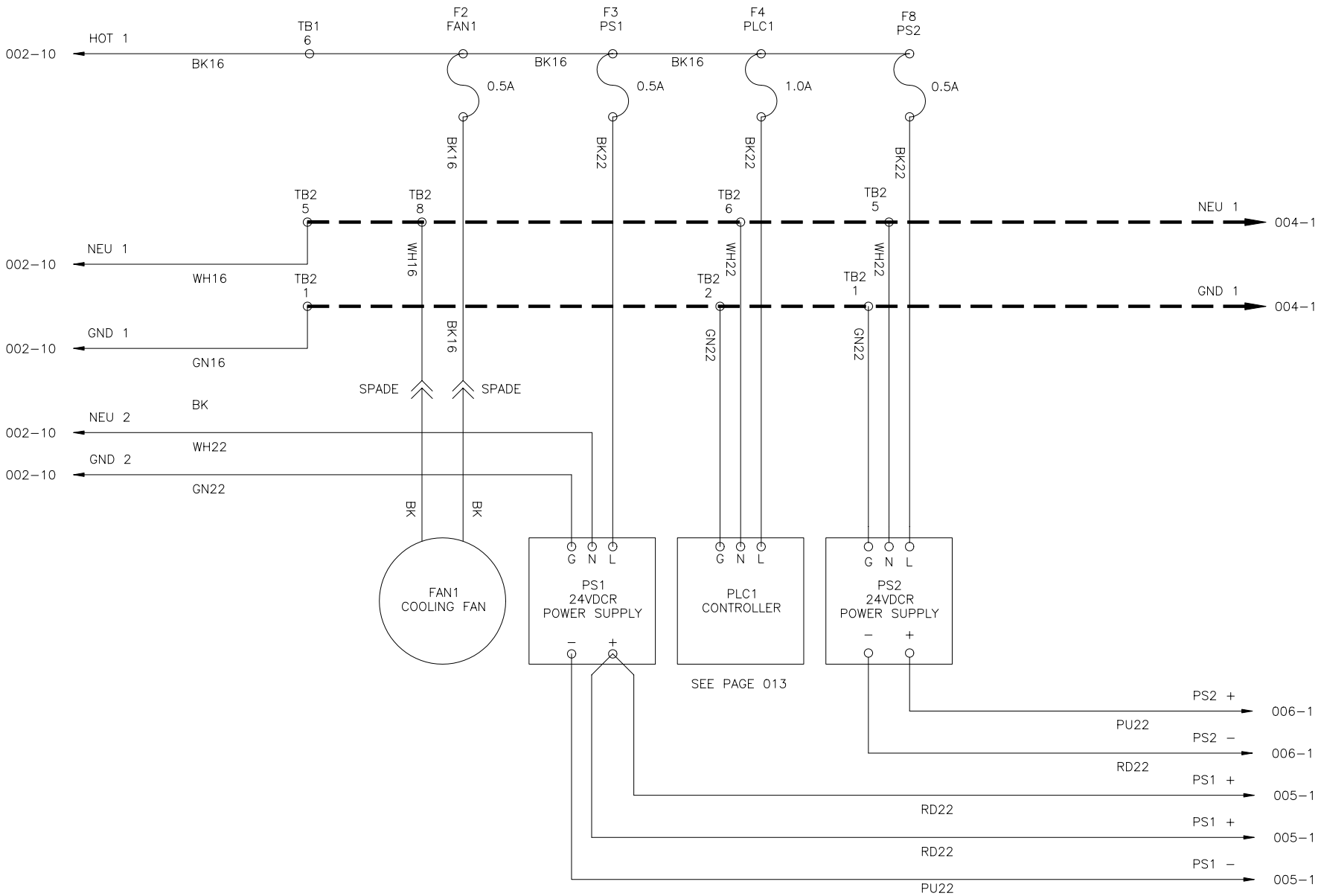
| | | NUMBER SC1005 | REVISION C1 |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2
3
4
5
6
7
8
9
10
HOT 1
002-10
BK16
TB1
6
F2
FAN1
F3
PS1
F4
PLC1
F8
PS2
0.5A
0.5A
1.0A
0.5A
BK16
BK16
BK16
BK16
BK22
BK22
BK22
TB2
5
TB2
8
TB2
6
TB2
5
NEU 1
004-1
NEU 1
002-10
WH16
WH16
WH22
WH22
TB2
1
TB2
2
TB2
1
GND 1
004-1
GND 1
002-10
GN16
GN22
GN22
SPADE
SPADE
BK
NEU 2
002-10
WH22
GND 2
002-10
GN22
BK
BK
FAN1
COOLING FAN
G N L
PS1
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ROUTE 34, WALL, N.J.
TECHNICAL DRAWING – PRODUCT INFO
SECTION
UNSWITCHED AC LOADS
TITLE
MODEL CS2 COTTONER
WIRING SCHEMATIC
SERIAL NO. 008 AND UP
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SJD2
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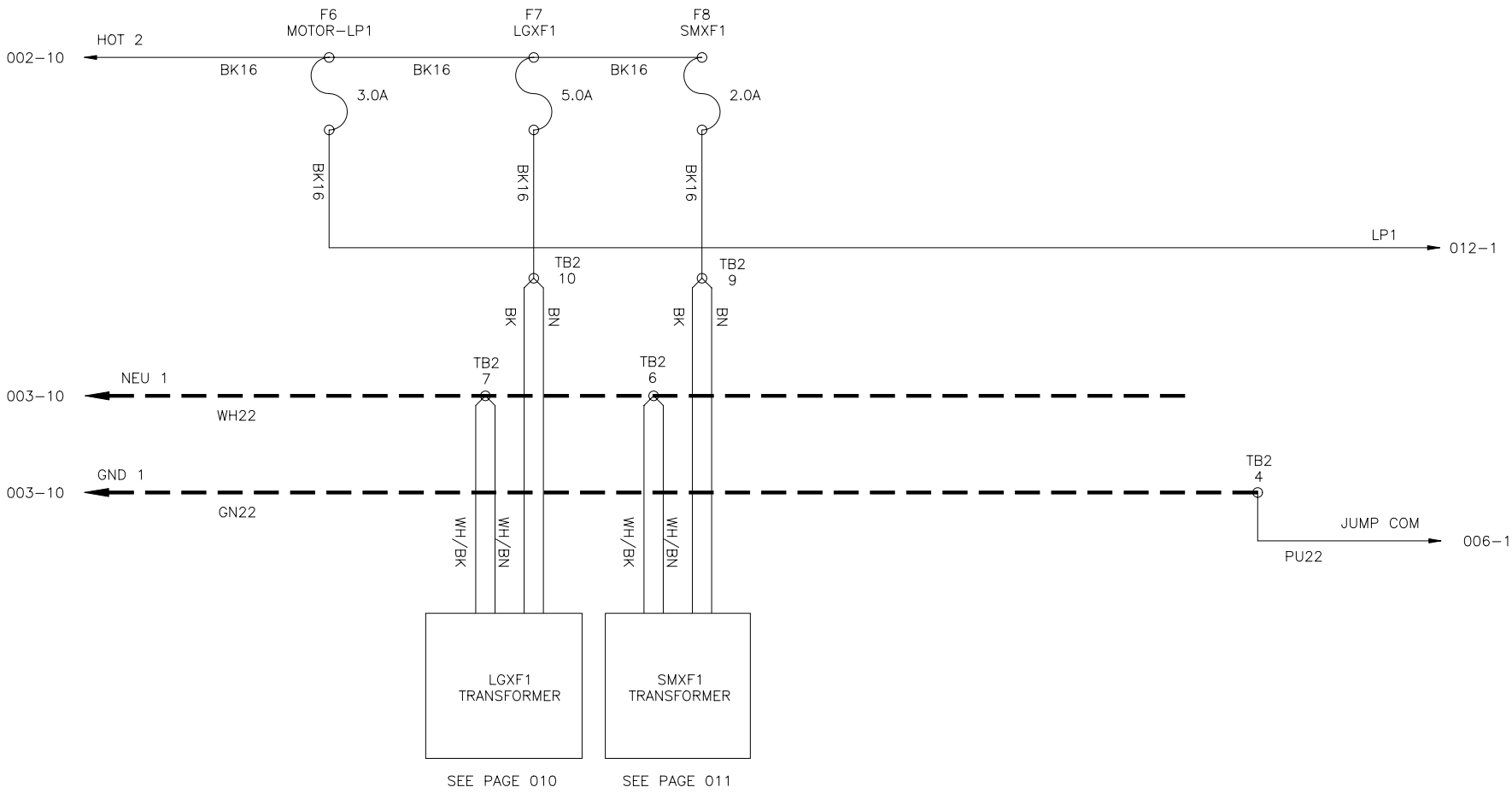


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**DEITZ COMPANY, INC.**
**ROUTE 34, WALL, N.J.**
TECHNICAL DRAWING – PRODUCT INFO

| | | | |
|---|---|---|---|
| SECTION | SWITCHED AC LOADS | BY SJD2 | DATE: 11–24–03 |
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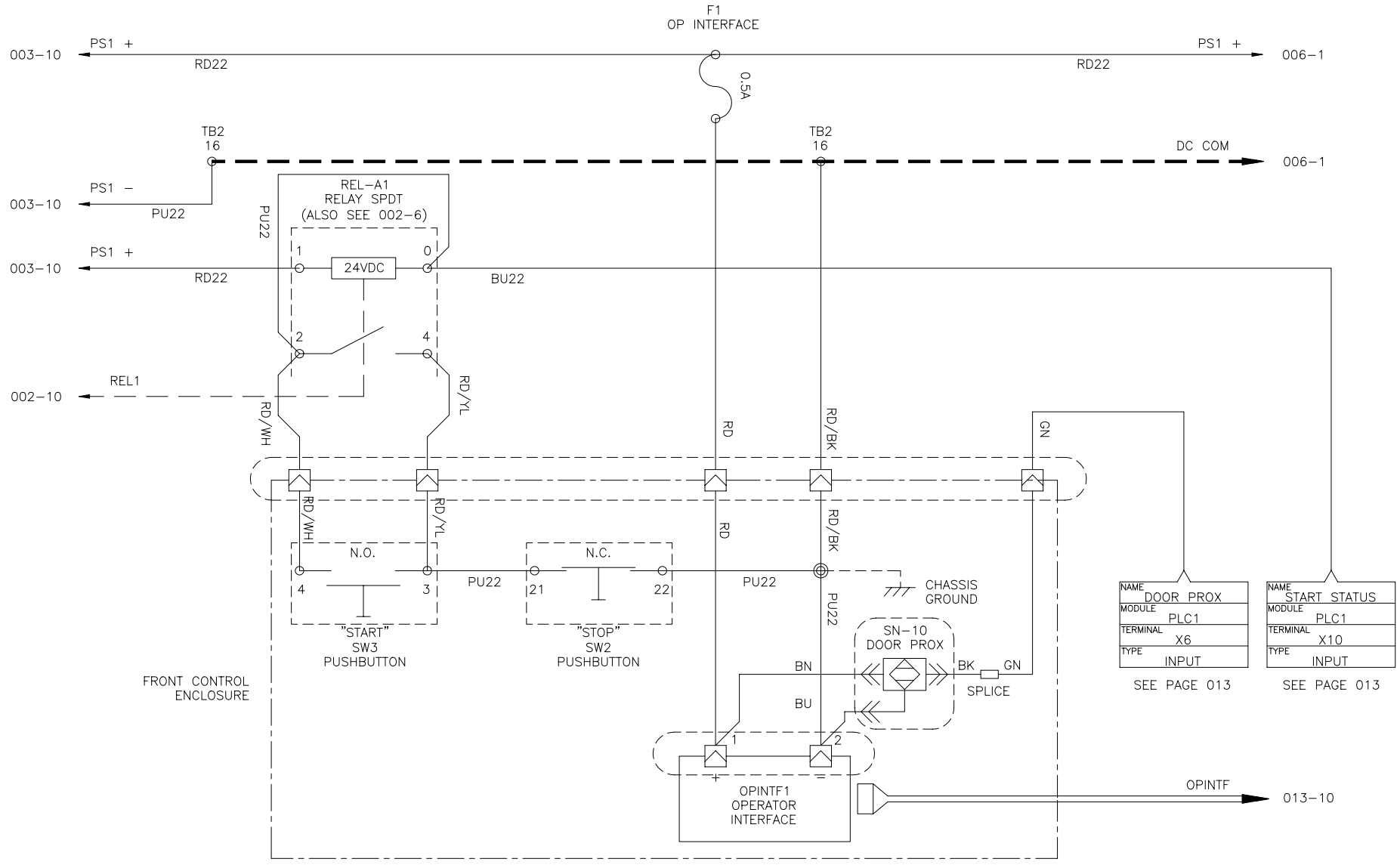


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**DEITZ COMPANY, INC.**
**ROUTE 34, WALL, N.J.**
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| SECTION | START/STOP/OP INTERFACE | BY SJD2 | DATE: 11-24-03 |
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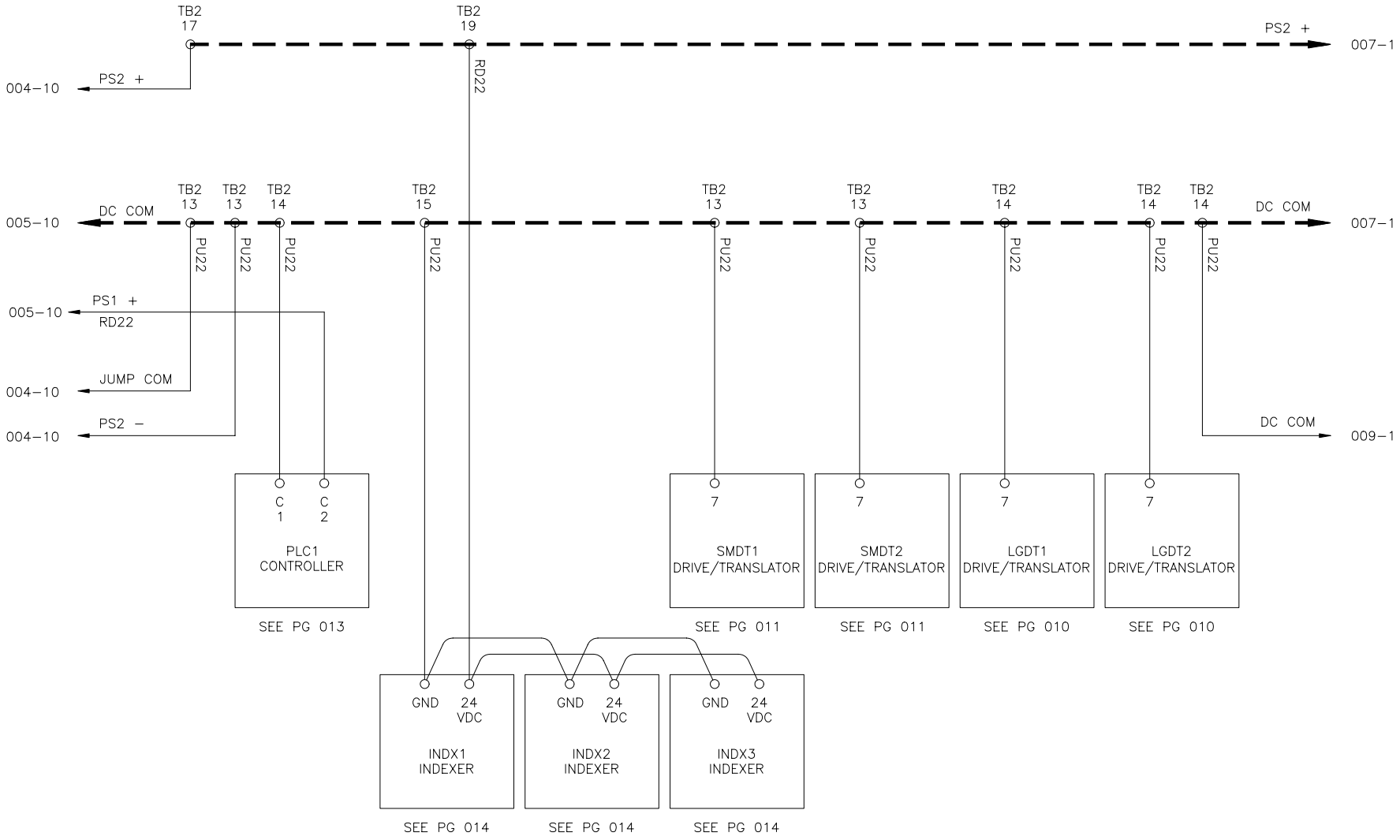


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**DEITZ COMPANY, INC.**
**ROUTE 34, WALL, N.J.**
TECHNICAL DRAWING – PRODUCT INFO

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|---|---|---|---|
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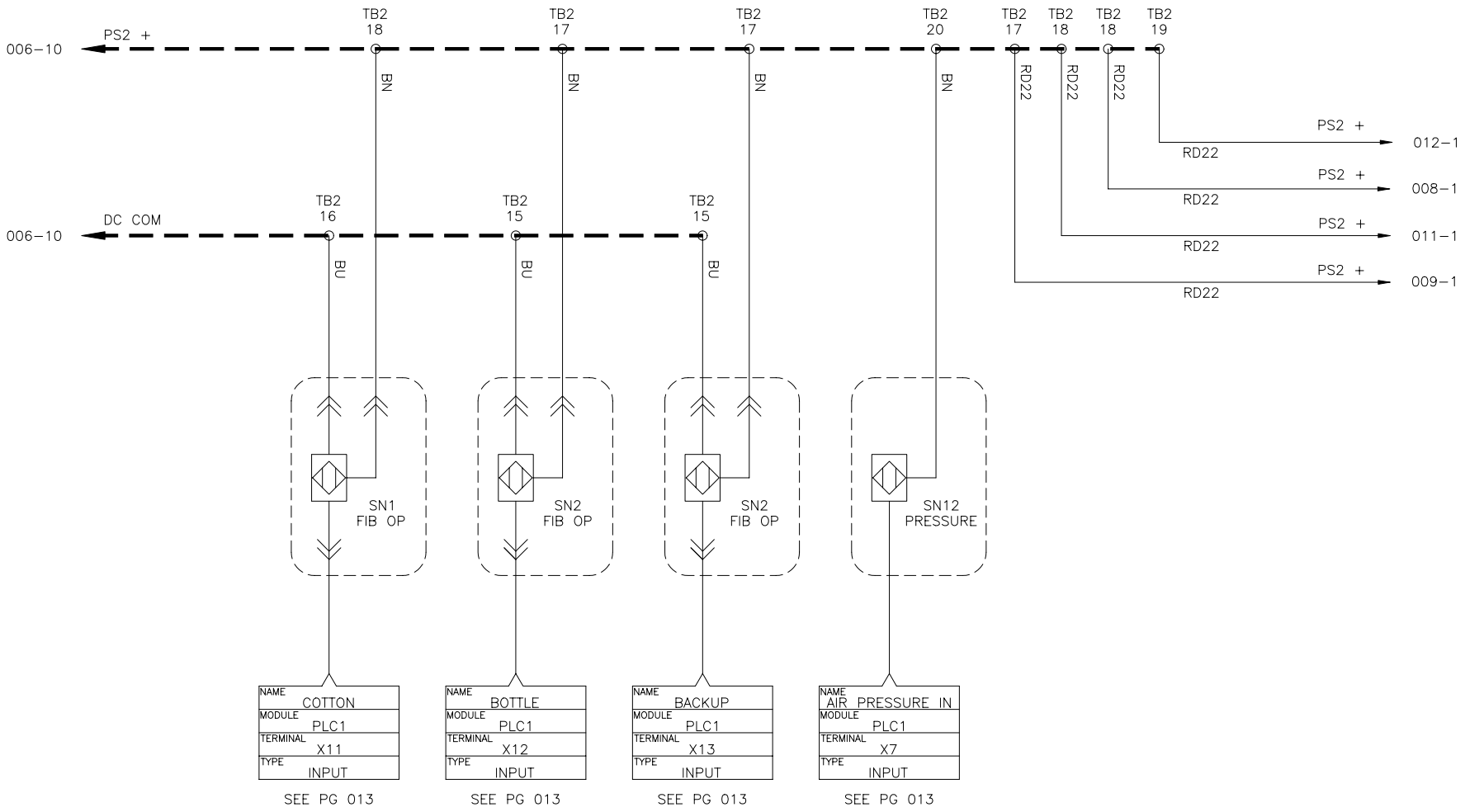


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**DEITZ COMPANY, INC.**
**ROUTE 34, WALL, N.J.**
TECHNICAL DRAWING – PRODUCT INFO

SECTION DC POWER DISTRIBUTION 2
TITLE MODEL CS2 COTTONER
WIRING SCHEMATIC
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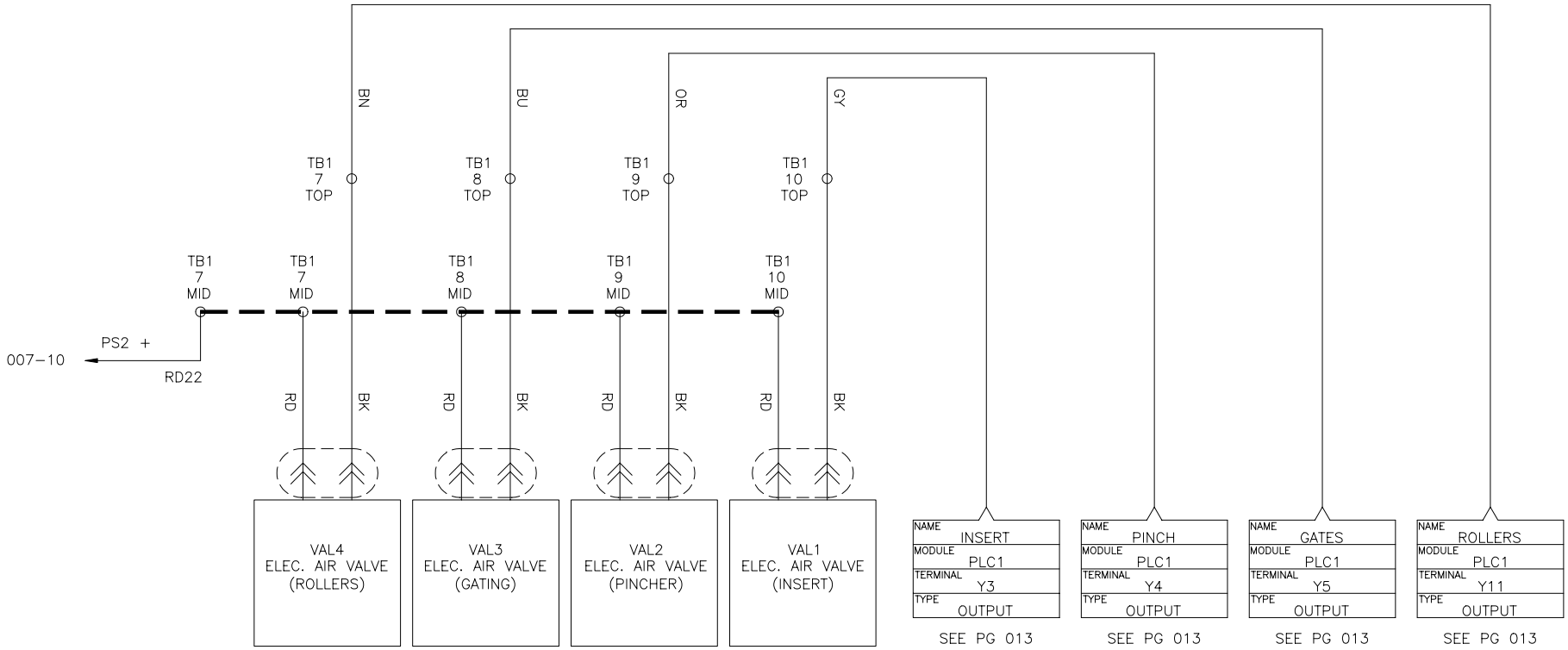


SEE AIR SCHEMATIC DIAGRAM SC1006

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**DEITZ COMPANY, INC.**
**ROUTE 34, WALL, N.J.**
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| SECTION | AIR VALVES | BY SJD2 | DATE: 11-24-03 |
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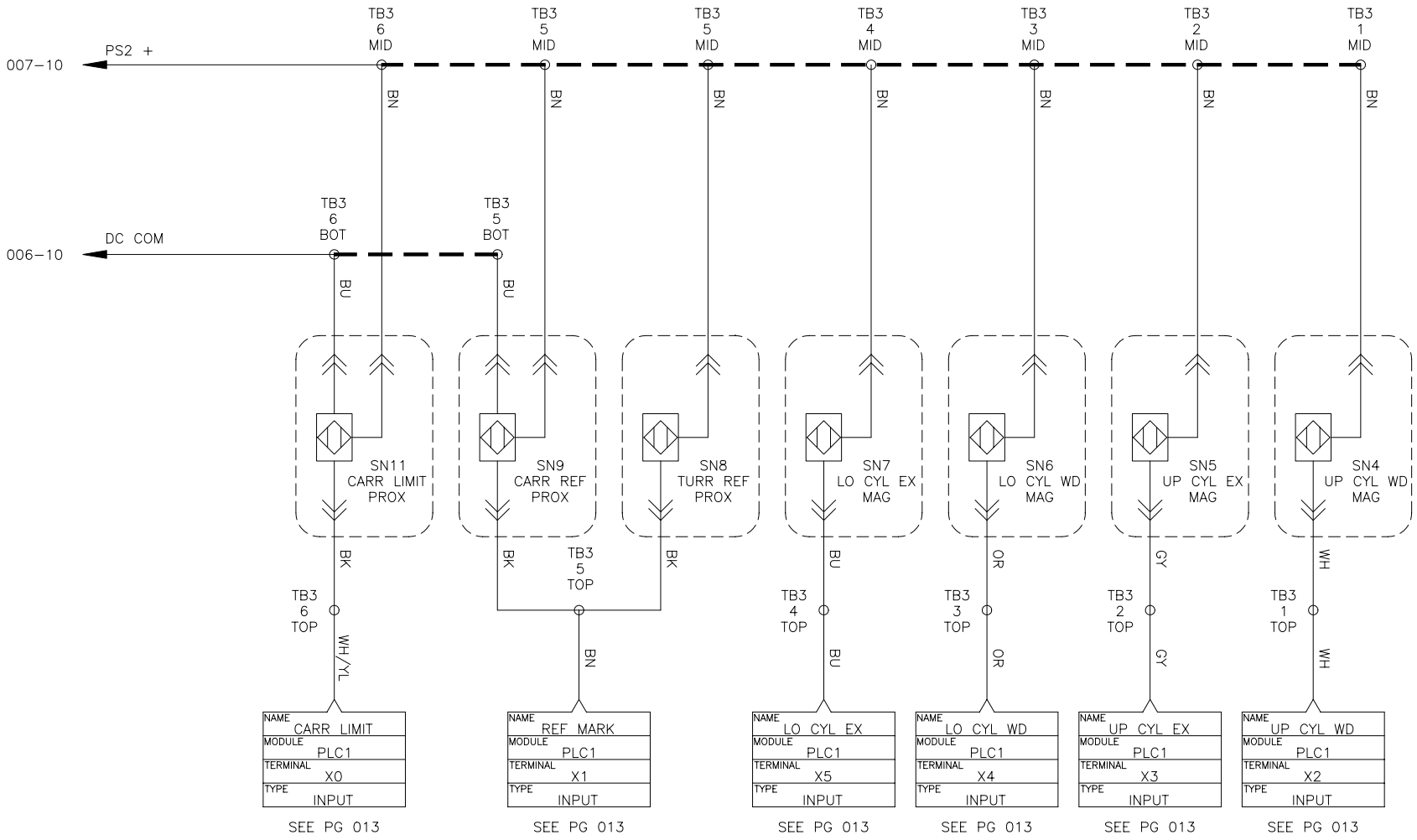


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**DEITZ COMPANY, INC.**
**ROUTE 34, WALL, N.J.**
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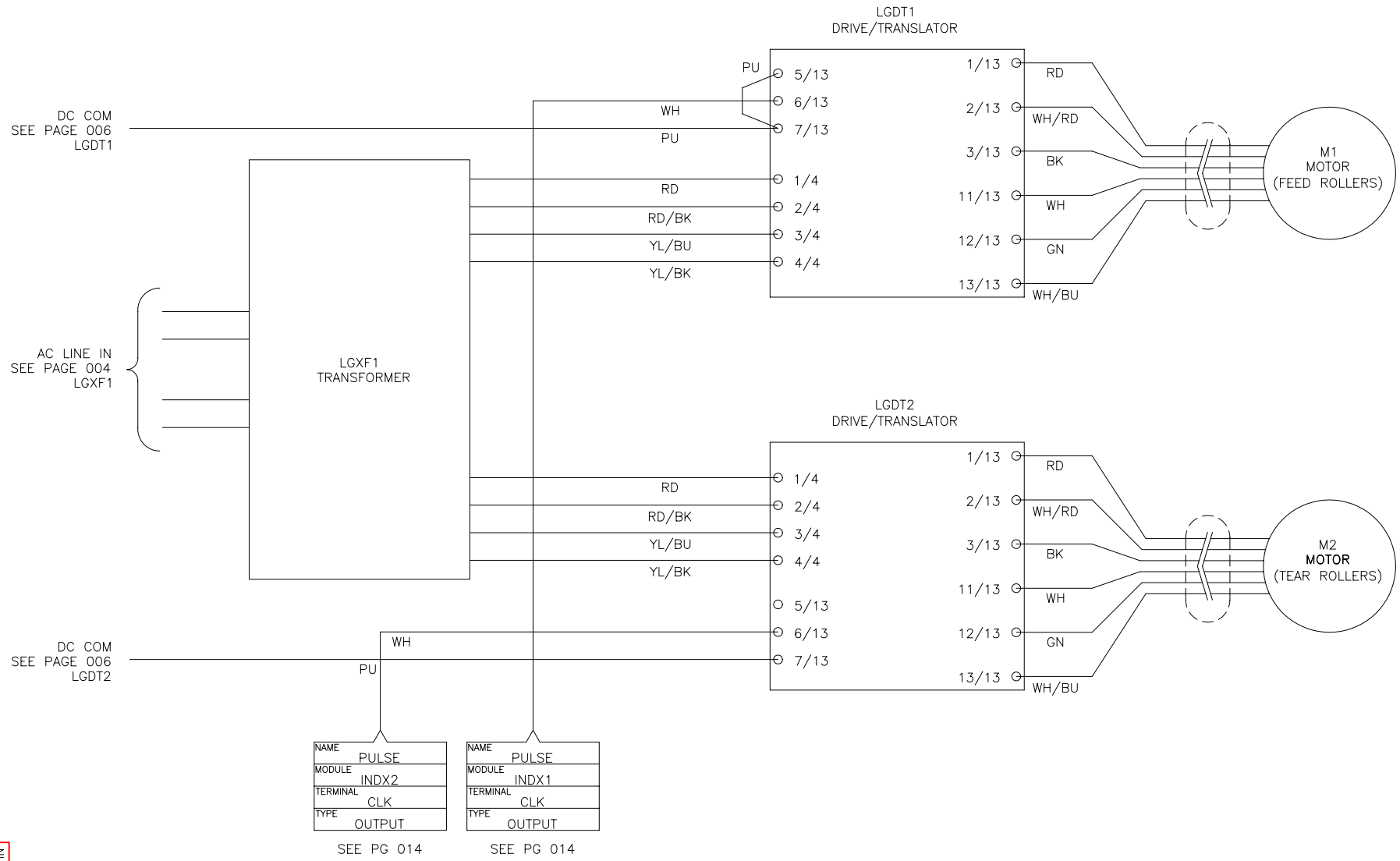
| SECTION | POSITION SENSORS | BY SJD2 | DATE: 11-24-03 |
| TITLE | MODEL CS2 COTTONER WIRING SCHEMATIC SERIAL NO. 008 AND UP | SHEET 009 OF 014 | |
| | | NUMBER SC1005 | REVISION C1 |

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**DEITZ COMPANY, INC.**
**ROUTE 34, WALL, N.J.**
TECHNICAL DRAWING – PRODUCT INFO

SECTION ROLLER DRIVES
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WIRING SCHEMATIC
SERIAL NO. 008 AND UP

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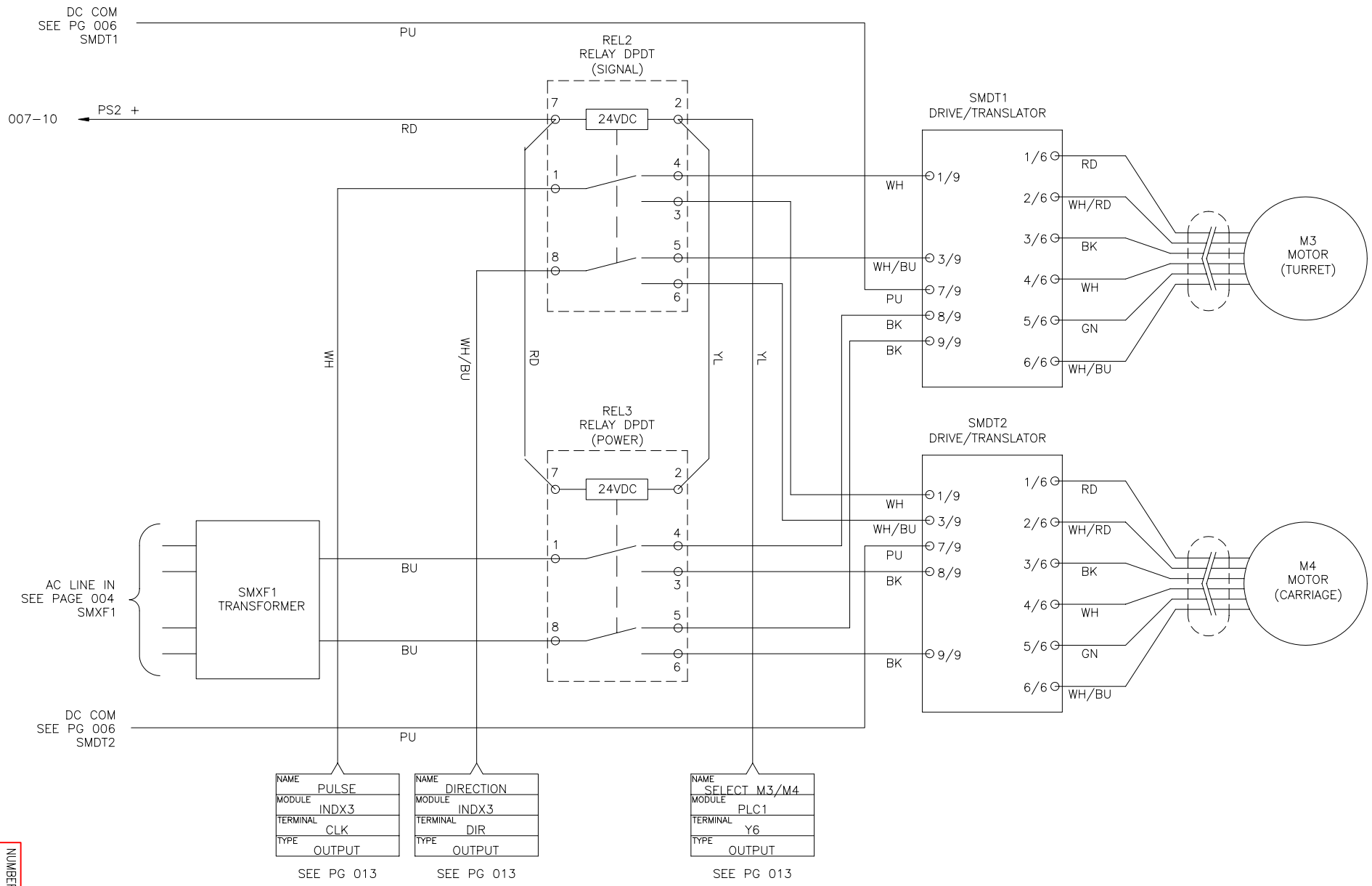


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**DEITZ COMPANY, INC.**
**ROUTE 34, WALL, N.J.**
TECHNICAL DRAWING – PRODUCT INFO

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WIRING SCHEMATIC
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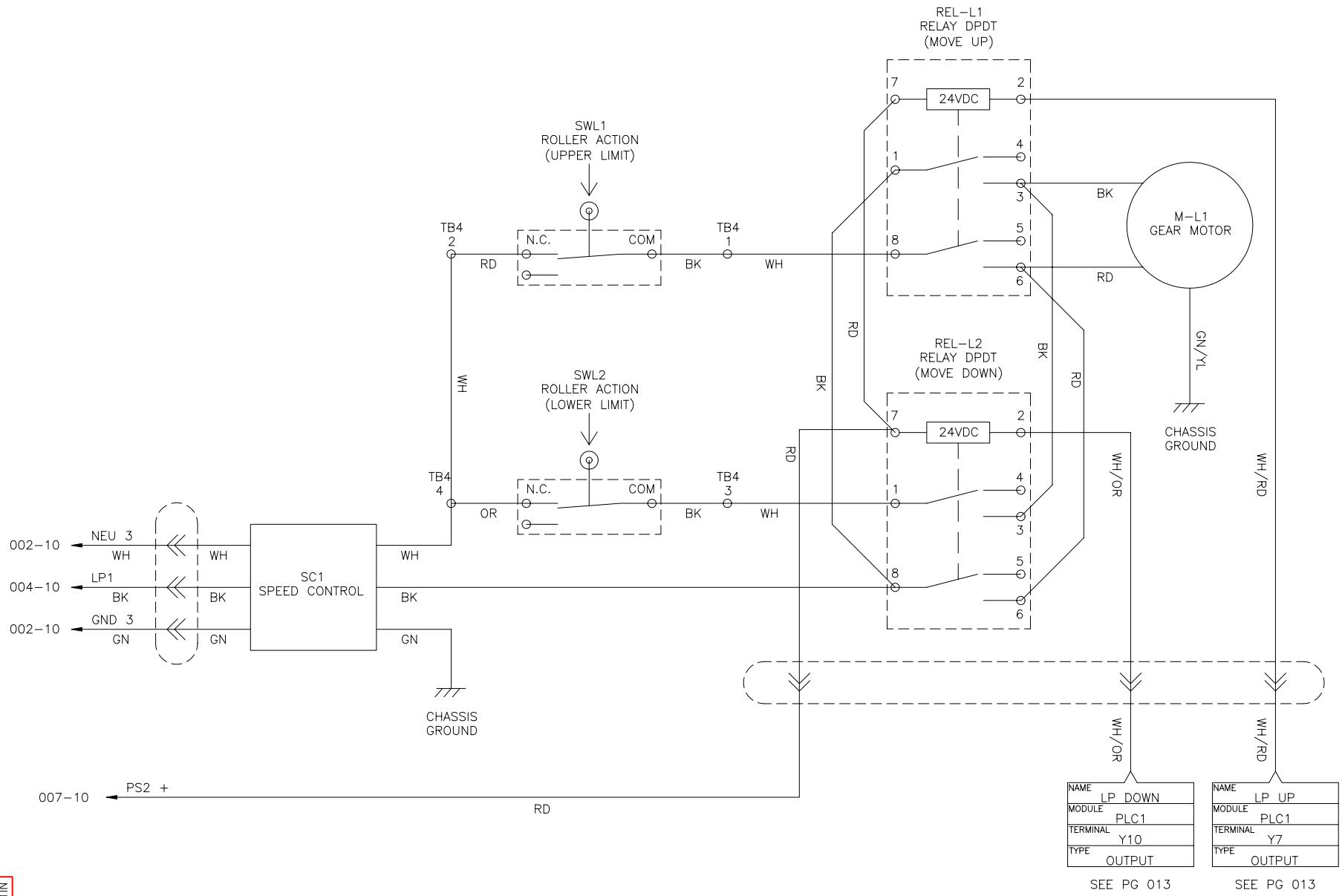


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**DEITZ COMPANY, INC.**
**ROUTE 34, WALL, N.J.**
TECHNICAL DRAWING – PRODUCT INFO

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| SECTION | LIFT PLATFORM | BY SJD2 | DATE: 11–24–03 |
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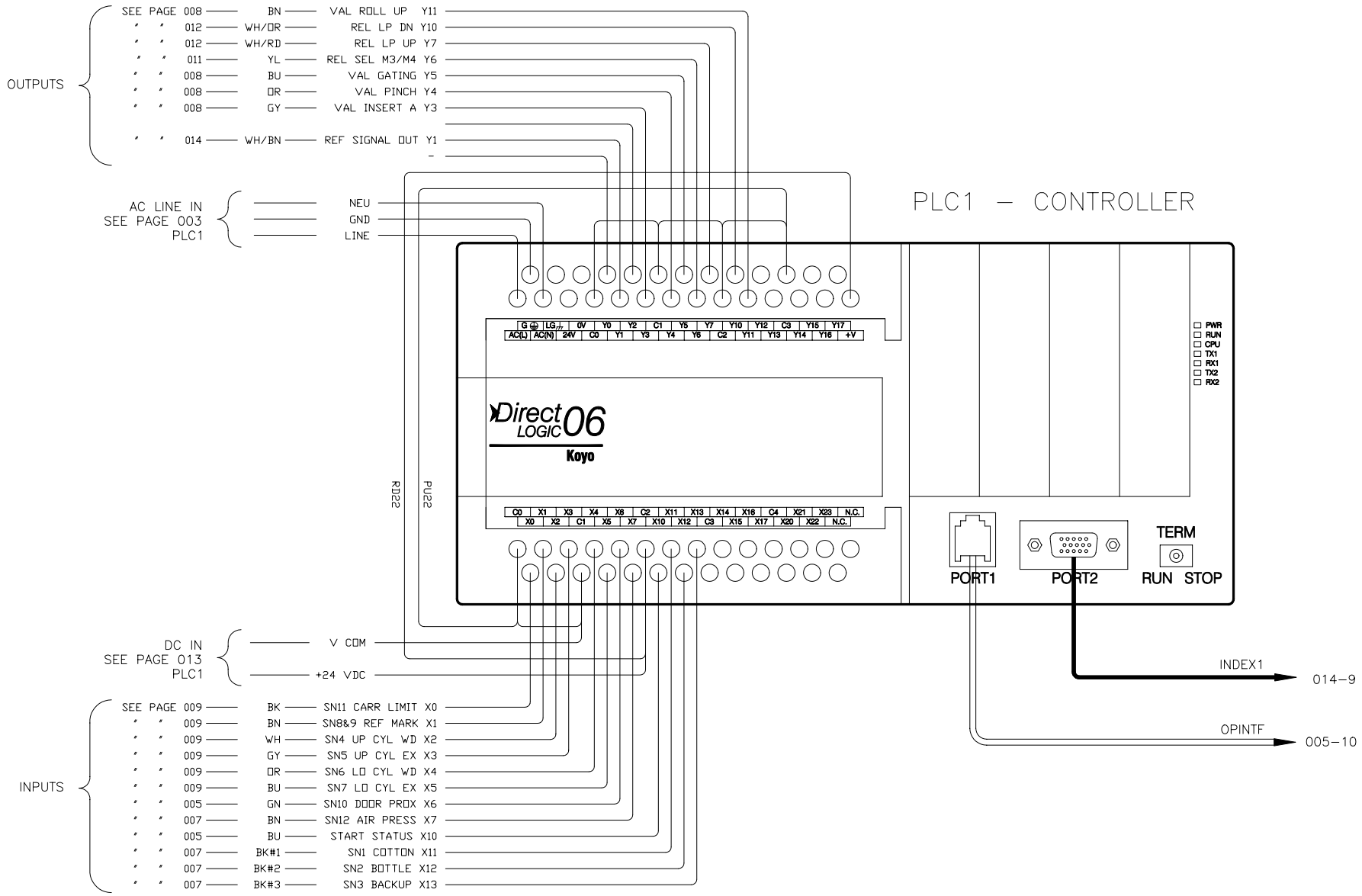


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**DEITZ COMPANY, INC.**
**ROUTE 34, WALL, N.J.**
TECHNICAL DRAWING – PRODUCT INFO

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| SECTION | MASTER PLC | BY SJD2 | DATE: 11-24-03 |
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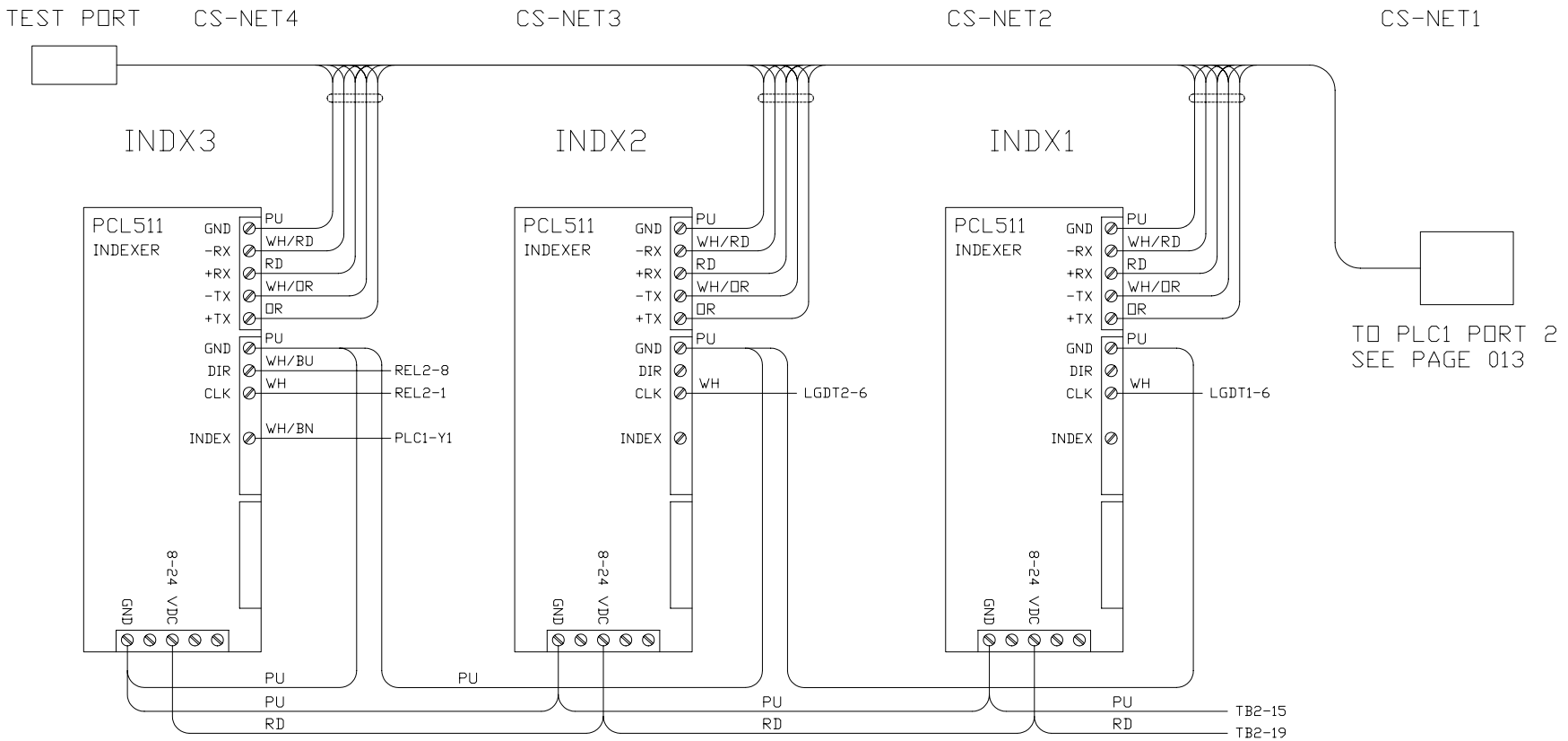


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**DEITZ COMPANY, INC.**
**ROUTE 34, WALL, N.J.**
TECHNICAL DRAWING – PRODUCT INFO

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| SECTION | INDEXERS (SLAVES) | BY SJD2 | DATE: 11-24-03 |
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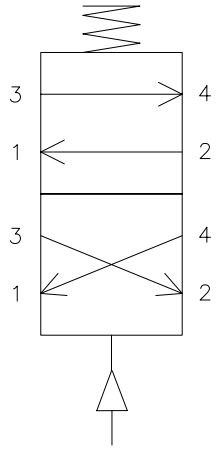
24 VDC

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PAGE 001

**DEITZ COMPANY, INC.**
**ROUTE 34, WALL, N.J.**
TECHNICAL DRAWING – PRODUCT INFO

| | | | |
|---|---|---|---|
| SECTION | NOTE AND REVISIONS | BY SJD2 | DATE: 5-23-03 |
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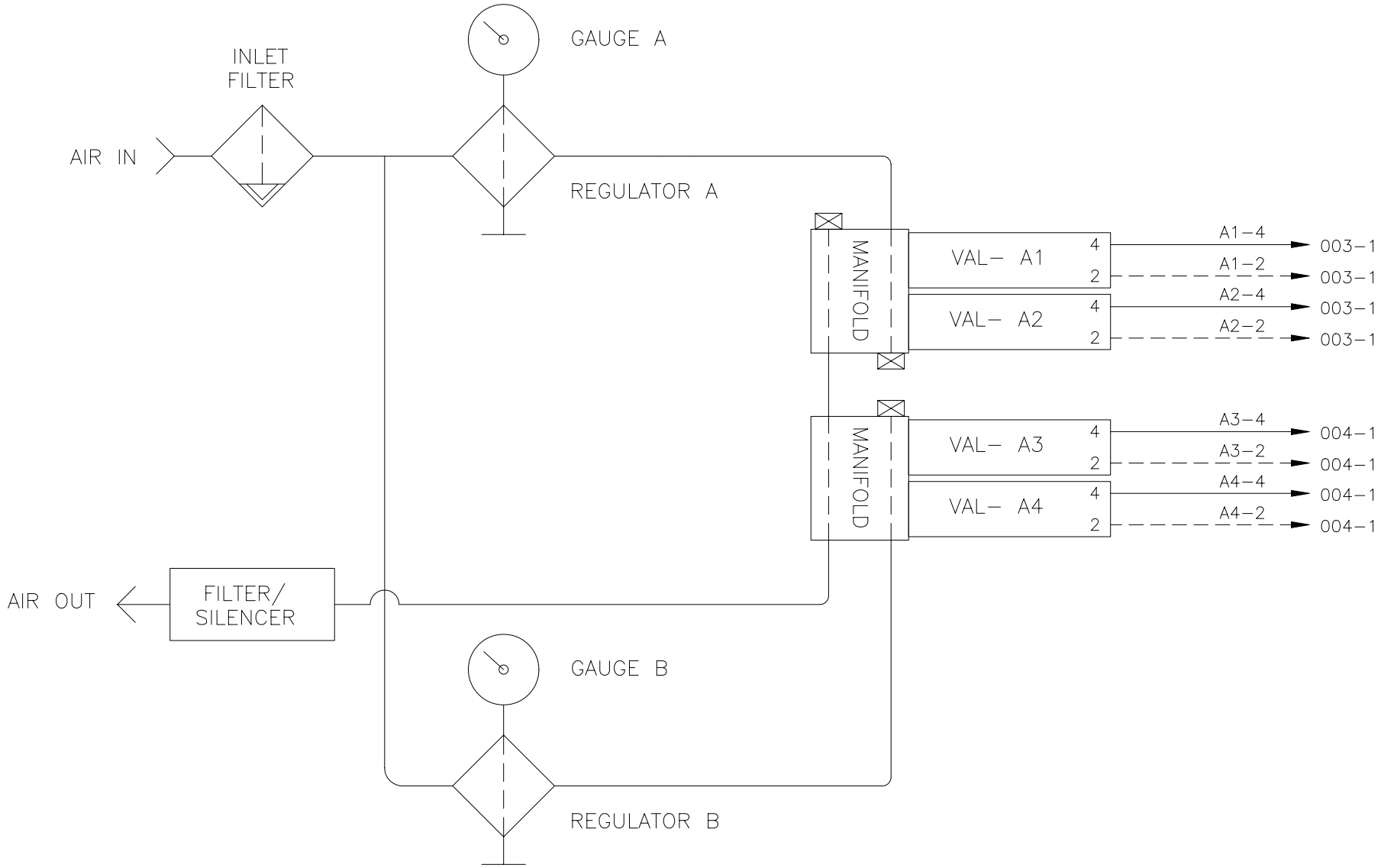
| | | NUMBER SC1006 | REVISION – |

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**DEITZ COMPANY, INC.**
**ROUTE 34, WALL, N.J.**
TECHNICAL DRAWING – PRODUCT INFO

| | | | |
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| SECTION | INLET/CONTROL VALVES | BY SJD2 | DATE: 5–23–03 |
| TITLE | MODEL CS2 COTTONER AIR LINE SCHEMATIC FROM SERIAL NO. 001 | SHEET 002 OF 004 | |
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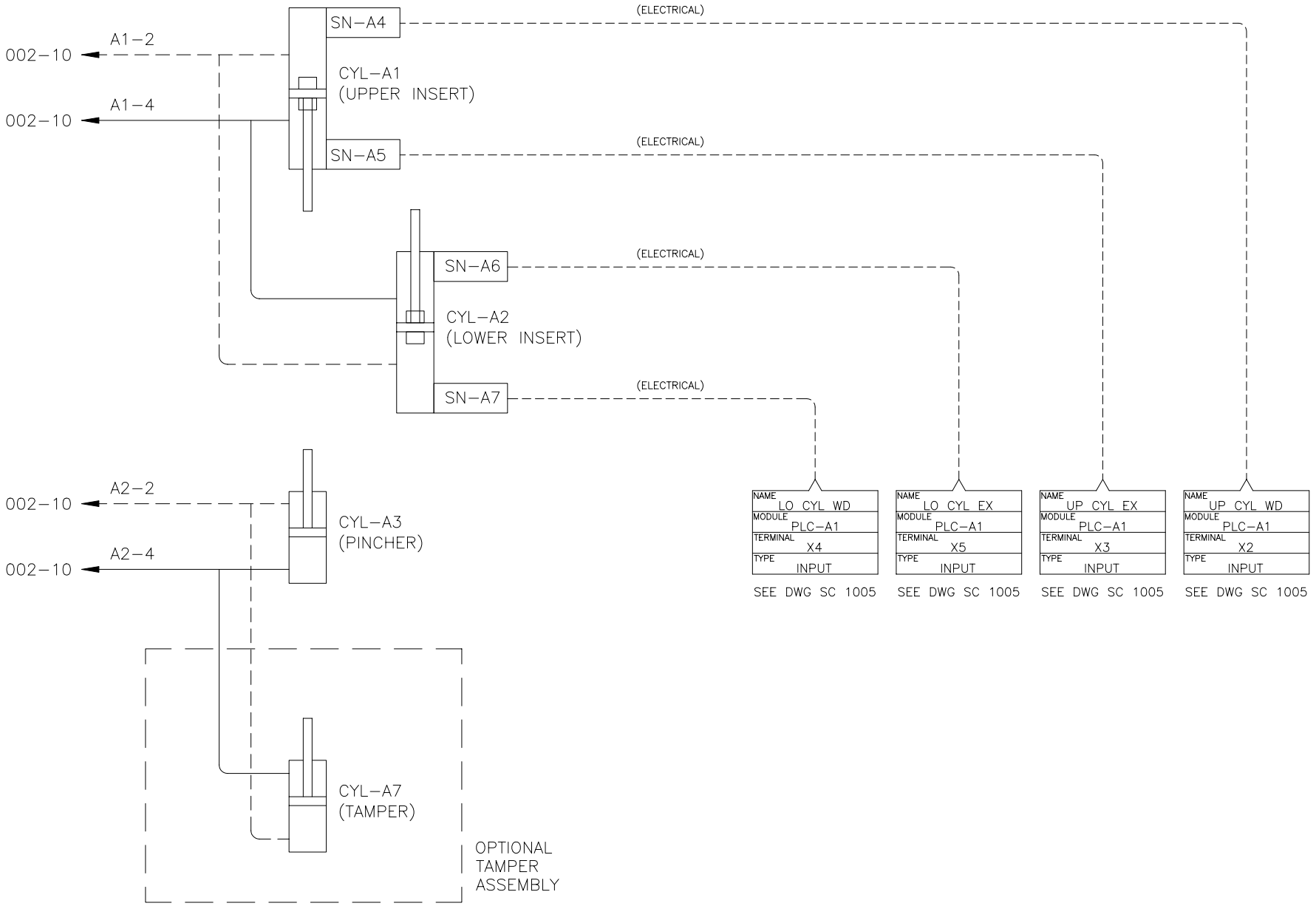


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**DEITZ COMPANY, INC.**
**ROUTE 34, WALL, N.J.**
TECHNICAL DRAWING – PRODUCT INFO

SECTION AIR CYLS: INSERT/PINCH/TAMP
BY SJD2 DATE: 5–23–03
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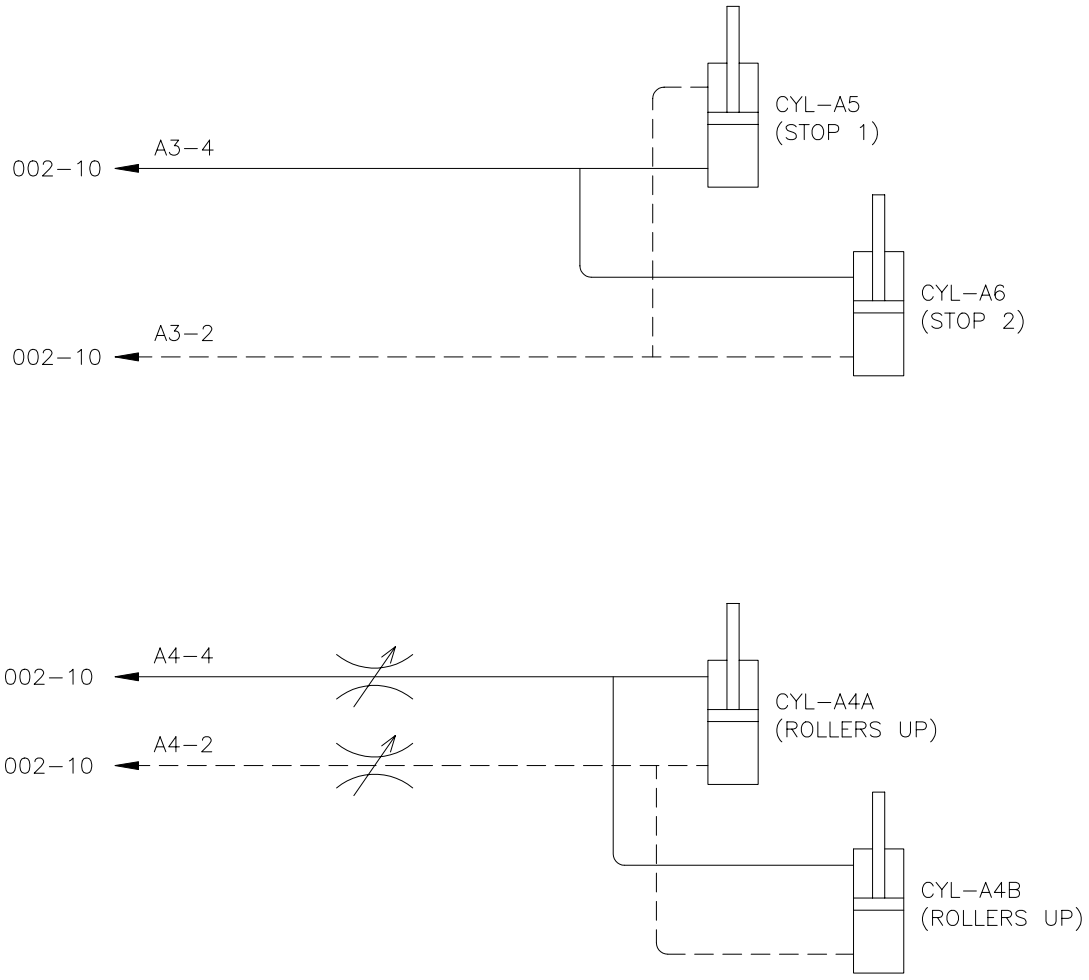
NUMBER SC1006
PAGE 003




| NUMBER | PAGE |
|---|---|
| SC1006 | 004 |

| NOTE | REV | DESCRIPTION | DATE |
|---|---|---|---|
| – | – | – | --/--/-- |

**DEITZ COMPANY, INC.**
**ROUTE 34, WALL, N.J.**
TECHNICAL DRAWING – PRODUCT INFO

| | | | |
|---|---|---|---|
| SECTION | AIR CYLS: GATING/ROLLERS | BY SJD2 | DATE: 5–23–03 |
| TITLE | MODEL CS2 COTTONER AIR LINE SCHEMATIC FROM SERIAL NO. 001 | SHEET | 004 OF 004 |
| | | NUMBER SC1006 | REVISION – |

| Part Number | Description | Type | Quan Used | CALL FOR PRICES | Ref | Where Used |
|---|---|---|---|---|---|---|
| AD0918-2 | Motor Speed Control, LPC2/10 | REPAIR | 1 | | SC1 | Lift Platform |
| AD1054-2 | Stepper Mtr 2 Stk w/Std Conn | REPAIR | 1 | | M3 | Turret drive motor |
| AD1054-3 | Stepper Mtr 3 Stk w/Lock Conn | REPAIR | 2 | | M1, M2 | Roller drive assembly |
| AD1054-4 | Stepper Mtr 2 Stk w/Lock Conn | REPAIR | 1 | | M4 | Carriage drive motor |
| AD1071-1 | CS2/10 Cylinder Rebuild Kit | SPARE | 1 | | | Incl. (1) FM3283F, (2) P0156, (2) P0157 |
| AD1077-x | CS2/10 Mounted Air Cylinder Assembly | SPARE | 2 | | | Incl. (1) FM3238, (2) P0156, (2) P0157, (1) P0158-x |
| FA1014-1 | Pincher Arm Assembly LH Inner | REPAIR | 1 | | | Pincher assembly |
| FA1014-2 | Pincher Arm Assembly RH Outer | REPAIR | 1 | | | Pincher assembly |
| FM1110-2 | CS2 Cotton Stop Pivot Gear | REPAIR | 1 | | | Cotton shelf assembly |
| FM2891-1 | Gearbelt Pulley Mods 16T | REPAIR | 2 | | | Turret & carriage drive assemblies, motor |
| FM2891-4 | Gearbelt Pulley 14T | REPAIR | 2 | | | Roller drive assembly, motor |
| FM2891-5 | Gearbelt Pulley 28T | REPAIR | 2 | | | Roller drive assembly |
| FM2951-1 | Insertion Tube, 3" | CHANGE | 4 | | | Turret tube assembly |
| FM2951-2 | Insertion Tube, 4" | CHANGE | 4 | | | Turret tube assembly |
| FM2951-3 | Insertion Tube, 5" | CHANGE | 4 | | | Turret tube assembly |
| FM2953 | Pivot Block | REPAIR | 2 | | | Roller drive assembly (req. 4 pcs P0308) |
| FM2958-1 | CS1/CS2 Roller Gear, Steel | REPAIR | 2 | | | Roller drive assembly |
| FM2958-2 | CS1/CS2 Roller Gear, Nylon | REPAIR | 2 | | | Roller drive assembly |
| FM2977 | Turret Disc Hub | REPAIR | 2 | | | Turret tube assembly |
| FM3015-2 | Pincher Slide Block | REPAIR | 1 | | | Pincher assembly |
| FM3031 | LP Bevel Gear | REPAIR | 2 | | | Lift Platform |
| FM3049-2 | Cooling Fan Foam Filter Element | SPARE | 2 | | | Upper cabinet, both sides, towards front |
| FM3155-1 | Turret Disc Upper | CHANGE | 1 | | | Turret tube assembly |
| FM3155-2 | Turret Disc Lower | CHANGE | 1 | | | Turret tube assembly |
| FM3156-1 | Tube Ext. .75" ID | CHANGE | 1 | | | Turret tube assembly |

| Part Number | Description | Type | Quan Used | CALL FOR PRICES | Ref | Where Used |
|---|---|---|---|---|---|---|
| FM3156-2 | Tube Ext. 1.00" ID | CHANGE | 1 | | | Turret tube assembly |
| FM3156-3 | Tube Ext. 1.25" ID | CHANGE | 1 | | | Turret tube assembly |
| FM3157-1 | Primary Idler/Pivot Shaft | REPAIR | 1 | | | Turret drive assembly |
| FM3157-2 | Primary Upper Roller Shaft | REPAIR | 1 | | | Turret drive assembly |
| FM3157-3 | Primary Lower Driven Shaft | REPAIR | 1 | | | Turret drive assembly |
| FM3157-4 | Secondary Upper Roller Shaft | REPAIR | 1 | | | Turret drive assembly |
| FM3157-5 | Secondary Driven Pivot Shaft | REPAIR | 1 | | | Turret drive assembly |
| FM3157-6 | Secondary Lower Roller Shaft | REPAIR | 1 | | | Turret drive assembly |
| FM3157-7 | Secondary Driven Idler Shaft | REPAIR | 1 | | | Turret drive assembly |
| FM3185 | Nylon Gear Rack | REPAIR | 1 | | | Cotton shelf assembly |
| FM3196 | Turret Shaft Bearing Retainer Block | REPAIR | 2 | | | Turret drive assembly |
| FM3202-1 | Turret Shaft, for 3" Tubes | CHANGE | 1 | | | Turret drive assembly |
| FM3202-2 | Turret Shaft, for 4" Tubes | CHANGE | 1 | | | Turret drive assembly |
| FM3202-3 | Turret Shaft, for 5" Tubes | CHANGE | 1 | | | Turret drive assembly |
| FM3213 | Roller Subass'y | REPAIR | 4 | | | Roller drive assembly |
| FM3216-1 | Cylinder Tip, Upper, .75 diam x 1.75 | SPARE/REPAIR | 1 | | | Upper insertion cylinder assembly |
| FM3238 | CS2/CS10 Air Cyl Mtg Bar | SPARE/REPAIR | 2 | | | Insertion air cylinders |
| FM3250 | Lower Cylider Ext Guide Bar | REPAIR | 1 | | | Lower insertion cylinder assembly |
| FM3251-1 | Lower Cyl Extension Rod, for 6"cyl | CHANGE | 1 | | | Lower insertion cylinder |
| FM3251-2 | Lower Cyl Extension Rod, for 7"cyl | CHANGE | 1 | | | Lower insertion cylinder |
| FM3251-3 | Lower Cyl Extension Rod, for 8"cyl | CHANGE | 1 | | | Lower insertion cylinder |
| FM3270-1 | Air Cyl Sensor, 13", Upper | SPARE | 2 | | SN4, SN5 | Upper insertion cylinder |
| FM3270-2 | Air Cyl Sensor, 20", Lower | SPARE | 2 | | SN6, SN7 | Lower insertion cylinder |
| FM3283F | CS1 Cylinder Internal Seals Set | SPARE | 1 | | | For rebuilding insertion air cylinder |
| FM3297-1 | Step Motor Indexer, Modified PCL511 | SPARE/REPAIR | 3 | | INDX1, 2, 3 | Electronics panel, rear |

| Part Number | Description | Type | Quan Used | CALL FOR PRICES | Ref | Where Used |
|---|---|---|---|---|---|---|
| FMA2890 | Gearbelt Pulley 32T | REPAIR | 2 | | | Turret & carriage drive assemblies |
| P0135 | Cooling Air Fan | SPARE/REPAIR | 1 | | FAN1 | Upper cabinet, right side, towards front |
| P0142 | Air Valve 4 Way 24VDC 1/4 Tube | SPARE | 4 | | VAL1,2,3,4 | Electronics panel, rear |
| P0156 | Brass Air Fitting 10-32 To 1/4 Tube | SPARE | 8 | | | Insertion, pincher & roller air cylinders, 2 per |
| P0157 | Insertion Air Cylinder Rod Wiper | SPARE | 4 | | | Upper & lower insertion cyl ass'ys, 2 per |
| P0158-4 | Insertion Air Cyl 4" Stroke | SPARE | 1 | | | Upper for 3" turret tube length |
| P0158-5 | Insertion Air Cyl 5" Stroke | SPARE | 1 | | | Upper for 4" turret tube length |
| P0158-6 | Insertion Air Cyl 6" Stroke | SPARE | 1 | | | Upper for 5", lower for 3" turret tube length |
| P0158-7 | Insertion Air Cyl 7" Stroke | SPARE | 1 | | | Lower for 4" turret tube length |
| P0158-8 | Insertion Air Cyl 8" Stroke | SPARE | 1 | | | Lower for 5" turret tube length |
| P0175 | Roller Pressure Air Cyl 1/2" Stroke | REPAIR | 2 | | | Roller drive assembly |
| P0182 | Grease, Synthetic, for cylinder rebuilds | SPARE | 1 | | | Use when rebuilding air cylinders |
| P0308 | Bearing, Oilite .50x.62x.50 | SPARE/REPAIR | 8 | | | Roller drive assembly (4 per FM2953) |
| P0320 | Bearing, Ball 1604DS 3/8 I.D. | SPARE/REPAIR | 2 | | | Turret drive assembly |
| P0321 | Bearing, Ball 1/2 I.D. 1621DS | SPARE/REPAIR | 10 | | | Roller drive assembly |
| P0337 | Bearing Mounted, 1 Flange Type #1A399 | REPAIR | 4 | | | Lift platform |
| P0338 | Bearing Mounted .50 #1A396-9 | REPAIR | 7 | | | Main frame (1 per) & Lift platform (6 per) |
| P0347 | Bearing Frelon Lined-Open 1/2" | REPAIR | 4 | | | Main Frame |
| P0416 | Belt, Gear - 80T | SPARE | 2 | | | Roller drive assembly |
| P0417 | Belt, Gear - 100T | SPARE | 1 | | | Turret drive assembly |
| P0418 | Belt, Gear - 150T | SPARE | 1 | | | Carriage drive assembly |
| P1718 | Shaft Coupler, Lower Cyl Extension Rod | CHANGE | 1 | | | Lower insertion cylinder |
| P1822-1 | Step Motor Driver/Translator, Small | SPARE/REPAIR | 2 | | SMDT1, 2 | Electronics panel, top |
| P1822-3 | Step Motor Transformer - Small | SPARE/REPAIR | 1 | | SMXF1 | Electronics panel, top |
| P4420 | Motor, Gearhead, 1/8 HP | SPARE/REPAIR | 1 | | M-L1 | Lift Platform |

| Part Number | Description | Type | Quan Used | CALL FOR PRICES | Ref | Where Used |
|---|---|---|---|---|---|---|
| P5016 | Fib-Op Cable (use w/P5018) | SPARE/REPAIR | 3 | | | Cotton, bottle and backup sensors |
| P5018 | Fib-Op Sensor (use w/P5016) | SPARE/REPAIR | 3 | | SN1,2,3 | Electronics panel, rear (see P5016) |
| P5019 | Cordset 4pin (use w/P5018) | REPAIR | 3 | | CS-SN1,2,3 | Electronics panel, rear (see P5016) |
| P5703 | Power Supply 24 VDC | SPARE/REPAIR | 1 | | PS2 | Electronics panel, top |
| P5816 | Relay, DPST 24VDC | SPARE | 2 | | REL2, 3 | Electronics panel, top |
| P6713 | Spring, Gas Filled | REPAIR | 2 | | | Guard door |
| P6924 | Switch PB Blk 22 mm | SPARE/REPAIR | 1 | | SW3 | START switch |
| P6929-1 | Emer Stop Actuator Red (use w/P6929-2&3) | SPARE/REPAIR | 1 | | SW2 | STOP switch |
| P6929-3 | Emer Stop Contact Blk (use w/P6929-1&2) | SPARE/REPAIR | 1 | | SW2 | STOP switch |
| P6931 | Switch, Micro w/roller, 20amp | SPARE/REPAIR | 2 | | SWL1,2 | Lift Platform |
| P6981 | Sensor - Proximity (use w/P6983) | SPARE | 3 | | SN8,9,11 | Turret & carriage drive assemblies |
| P6983 | Sensor Cordset, 3-pin (use w/P6981) | REPAIR | 3 | | CS-SN8,9,11 | Electronics panel, top (see P6981) |
| P7006 | Switch Contact Blk SPST NO | SPARE/REPAIR | 1 | | SW3 | START switch |
| P7508 | Step Motor Transformer - Large | SPARE/REPAIR | 1 | | LGXF1 | Electronics panel, top |
| P9011 | DIN Circuit Breaker 20A | REPAIR | 1 | | CB1 | Electronics panel, rear |
| P9027 | Step Motor Driver/Translator, Large | SPARE/REPAIR | 2 | | LGDT1,2 | Electronics panel, top |
| P9029 | PLC Battery | SPARE | 1 | | | Electronics panel, rear (see P9064) |
| P9034 | PLC Operator Interface OP1510 | SPARE/REPAIR | 1 | | OPTINTF | Front control panel (must be programmed) |
| P9035 | Power Supply 24 VDC Class 2 (PS1) | SPARE/REPAIR | 1 | | PS1 | Electronics panel, rear |
| P9036 | Relay Power-Type-25amp, 25vdc | SPARE | 1 | | REL1 | Electronics panel, rear |
| P9039 | Switch, Main Disconnect | SPARE/REPAIR | 1 | | SW1 | Front panel, rotary switch |
| P9048 | Pincher Air Cylinder | SPARE | 1 | | | Pincher assembly |
| P9051 | Air Exhaust Filter Housing | REPAIR | 1 | | | Rear of machine, below cabinet |
| P9051-1 | Air Exhaust Filter Element | SPARE | 1 | | | Rear of machine, below cabinet |
| P9052 | Air In HD Filter Housing | REPAIR | 1 | | | Rear of machine, below cabinet |

| Part Number | Description | Type | Quan Used | CALL FOR PRICES | Ref | Where Used |
|---|---|---|---|---|---|---|
| P9052-1 | Air In HD Filter Element | SPARE | 1 | | | Rear of machine, below cabinet |
| P9055 | Air Needle Valve | REPAIR | 2 | | | Below Roller Air Valves |
| P9057 | Air Pressure Regulator, Panel Mount | REPAIR | 2 | | | Front panel |
| P9064 | PLC Main Controller DL-06 | SPARE/REPAIR | 1 | | PLC1 | Electronics panel, rear (must be programmed) |

# Using the ***TECHNICIAN ONLY*** Menu Item

## 1A. Explanation

This function allows the qualified technician to access some settings within the PLC that can be used to fine-tune the characteristics of the machine's operation. This function should never be used by the operators or by any personnel who are not authorized to service the machine. Using this function incorrectly can make the machine operate poorly. For most applications, there is never any need to access the function. Section 3-B details how to access and adjust the settings. Factory settings are noted there and should be adequate for most situations.

The following explains the purpose of each setting:

-PASSCODE: in order to limit access to this function, a passcode is required to use it. The passcode is set at the factory to 0 (zero) and should be changed to any 4-digit number by the technician. Make sure you record this number. If you lose the passcode, please call Deitz Company and we will tell you how to recover it.

-OFFSET TURRET: the exact position of the turret, after each 90° move, is controlled by a proximity sensor, which detects a metal pin on the top of the turret assembly. As the turret moves, the metal pin is detected and the stepper motor will come to a stop at a fixed number of steps after the pin is detected. This is the "turret offset" relative to the pin. The theoretical number would be 100, but the actual number to center the turret is around 106. In order to get higher speeds, we prefer that the turret tube come to a stop a bit past center, so the insert cylinder can fire earlier. Therefore, the actual range is 106 to 110. The units are "steps".

***NOTE: The ideal position of the turret relative to the insertion plunger is slightly past center.***

- FEED TIME FACTOR: The insertion cylinders must not extend until the cotton piece is fully clear of the rollers. The amount of time it takes to feed the piece of cotton depends on the length of the cotton. This is the feed time. The Feed Time Factor sets the ratio of length to time. The range is 1-9; factory setting is 6. Any change to this number directly affects cycle time (a larger value increases cycle time). Units are "hundredths of a second".

- PINCH TIME DELAY: After the cotton is fed out of the rollers, the pincher arms compress it before it is inserted into the rear tube. This setting controls the time delay between the pincher action and the insertion action. Any change to this number directly affects cycle time (a larger value increases cycle time). Units are "hundredths of a second".

- FEED LENGTH FACTOR: When the operator selects a number for cotton length, the PLC converts that length number into a certain amount of the rotation of the feed rollers. This rotation may be increase or decreased to account for stretch or slip. A value of 10 represents 100%; that is, the feed rollers will turn the exact length selected. Due to stretching, the actual length produced may be longer. If you wish to compensate for this stretch, you may change this setting. To under feed, make the number lower (such as 9 = 90%). To over feed, make the number higher (11 = 110%). There are no units for this value.

- TEAR LENGTH ADDER: The tear rollers must tear the cotton from the feed rollers and deliver it to the insertion area. Therefore, they must turn more than the feed rollers. The setting is the number of additional steps the tear rollers will make after the feed rollers have stopped. This setting does not affect cycle time. Units are “steps”. One roller revolution = 800 steps.

- TURRET TIME: In order to maximize the top speed of the machine, the insertion plunger will actually begins extending before the turret has come to rest. This value sets the time delay between the start of turret rotation and the action of the insertion plunger. The shorter the delay, the faster the machine can cycle; but if the delay if too short, the plunger will strike the turret. This is only effective when the machine is cycling continuously, such as when the MANUAL insertion mode is held on, or when bottles are coming in at the maximum rate in the AUTO insertion mode. Any change to this number directly affects cycle time (a larger value increases cycle time). Units are “hundredths of a second”.

- MAXIMUM LENGTH: this value is set according to the type of turret assembly that is installed on the machine. For 3 inch long turret tubes, it is set to 6. For 4 inch long tubes, it is set to 7. For 5 inch long tubes, it is set to 9.

- HIGHCNT, MIDCNT & LOWCNT: (display only) This value displays the numbers of insertion cycles the machine has made since new. It is like the odometer on a car. Due to limitations of the display panel itself, only a 4 digit number can be displayed, so this number had been broken down into three parts. HighCnt shows hundreds of millions; MidCnt shows tens of thousands; and LowCnt shows ones.

Section 1B: ***TECHNICIAN ONLY***

***This function adjusts special values in the PLC control program***



1. Press MENU and use UP and DOWN arrows to scroll through the menu choices.


2. When you see ***TECHNICIAN ONLY***, press SELECT or ENTER.

**(NOTE: Please read section 1A to get a complete understanding of this function before making any adjustments.)**



3. You are now requested to enter the passcode to continue. Enter up to 4 digits with the keypad and press ENTER. (The passcode is set to 0 when new)


4. You are now given the option of entering a new passcode. It is recommended that you change the passcode to something other than 0. Enter up to 4 digits with the keypad and press ENTER. If you do not want to change it, just press ENTER,

Write down the NEW PASSCODE _____


5. Change values by using the UP and DOWN arrows.

"Offset Turret A" ranges from 50 to 150. Normal values are from 100 to 110. Factory default is 106.

*(Continued on Next Page)*


6. “Offset Turret B” ranges from 50 to 150. Normal values are from 100 to 110. Factory default is 106.


7. “Feed Time Factor” ranges from 1 to 9. Factory default is 6. This sets a time delay after cotton begins to feed and before insertion cylinders extend. Larger numbers increase cycle time.


8. “Pinch Time Delay” ranges from 1 to 100. Normal values are from 0 to 10. Factory default is 5. This sets a time delay after the pincher begins to close and before the insertion cylinders extend.


9. “Feed Length Factor” ranges from 5 to 15. A value 10 represents 100%. Normal range is 10 or less. Factory default is 8 (80%). The cotton length entered by the operator will be increased or decreased this factor, to account for stretch.


10. “Tear Length Adder” ranges from 500 to 1500. Factory default is 800. Sets the amount of excess rotation by the tear rollers.


11. "Turret Time" ranges from 0-99. Normal values are 5 to 25. Factory default is 18. Do not adjust this unless instructed by a factory technician.


12. "Maximum Length" ranges from 6.0 to 9.0. Set according to the length of turret tubes installed on the machine.


13. The following values display the number of insertion cycles the machine has seen since it was new. The information is for display only and cannot be changed. The number is broken into 3 segments due to display limitations.

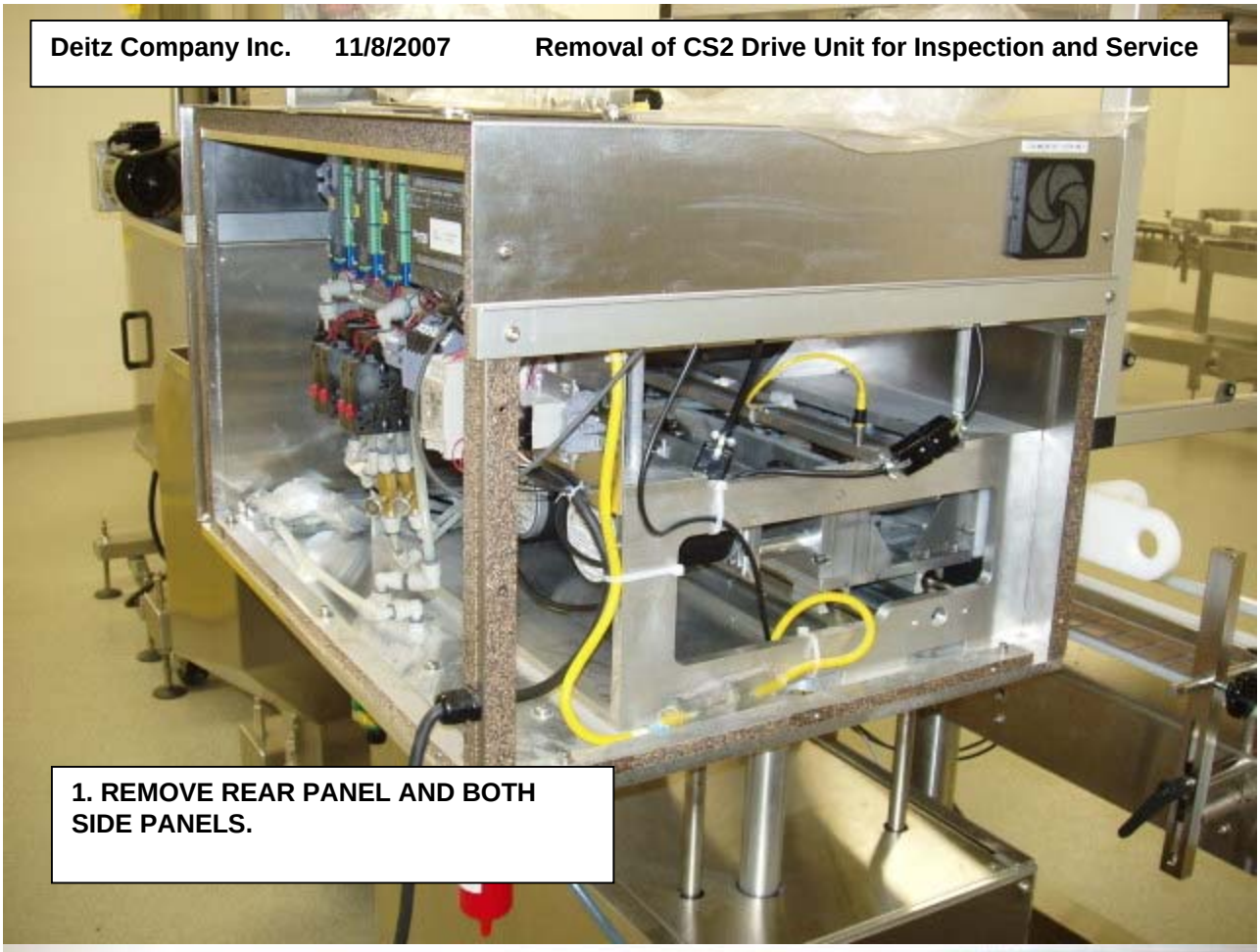
"HighCnt" displays hundred millions.


14. "MidCnt" displays tens thousands.

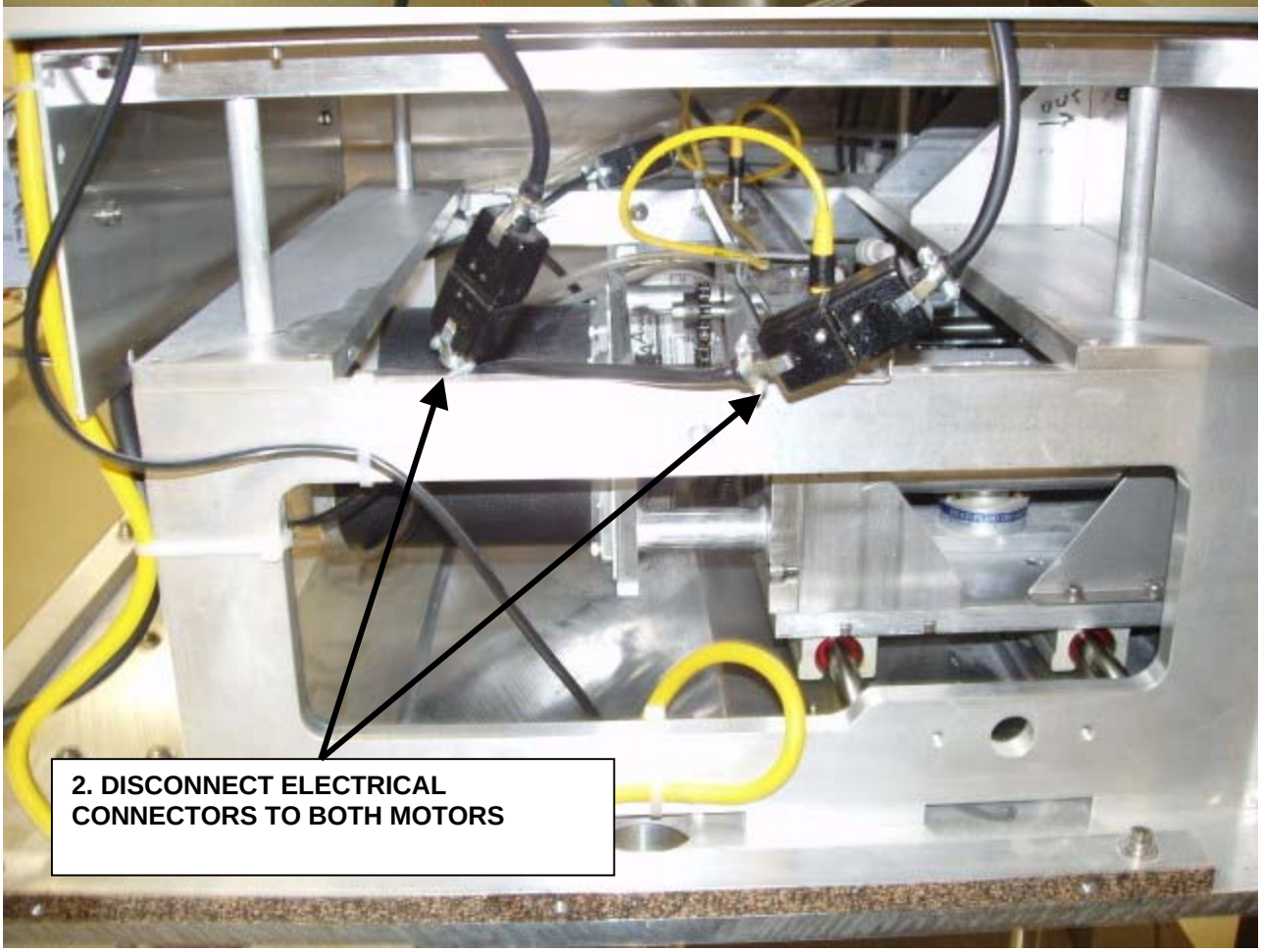

15. "LowCnt" displays ones.

*(END 1-B)*

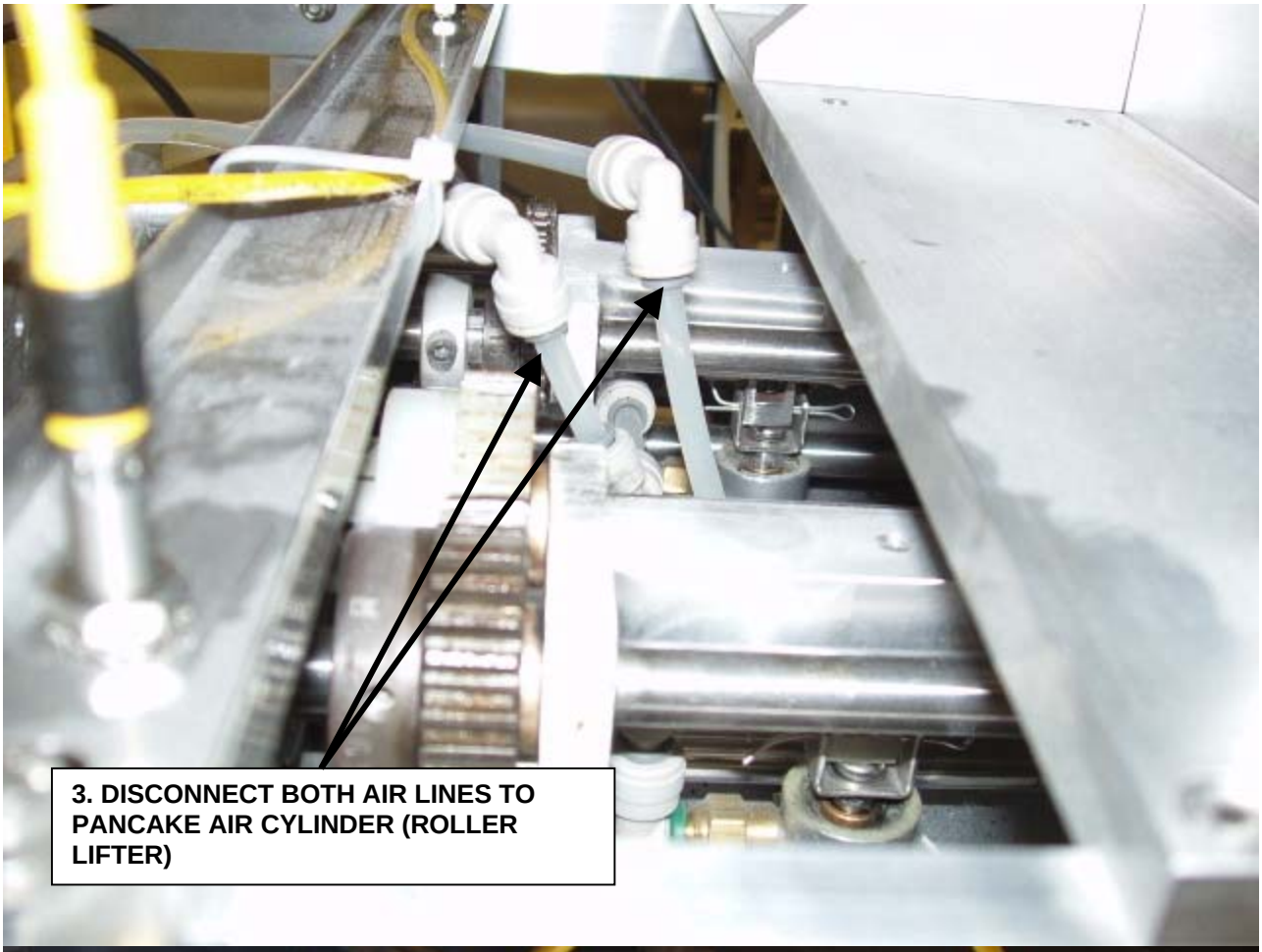
Deitz Company Inc. 11/8/2007 Removal of CS2 Drive Unit for Inspection and Service



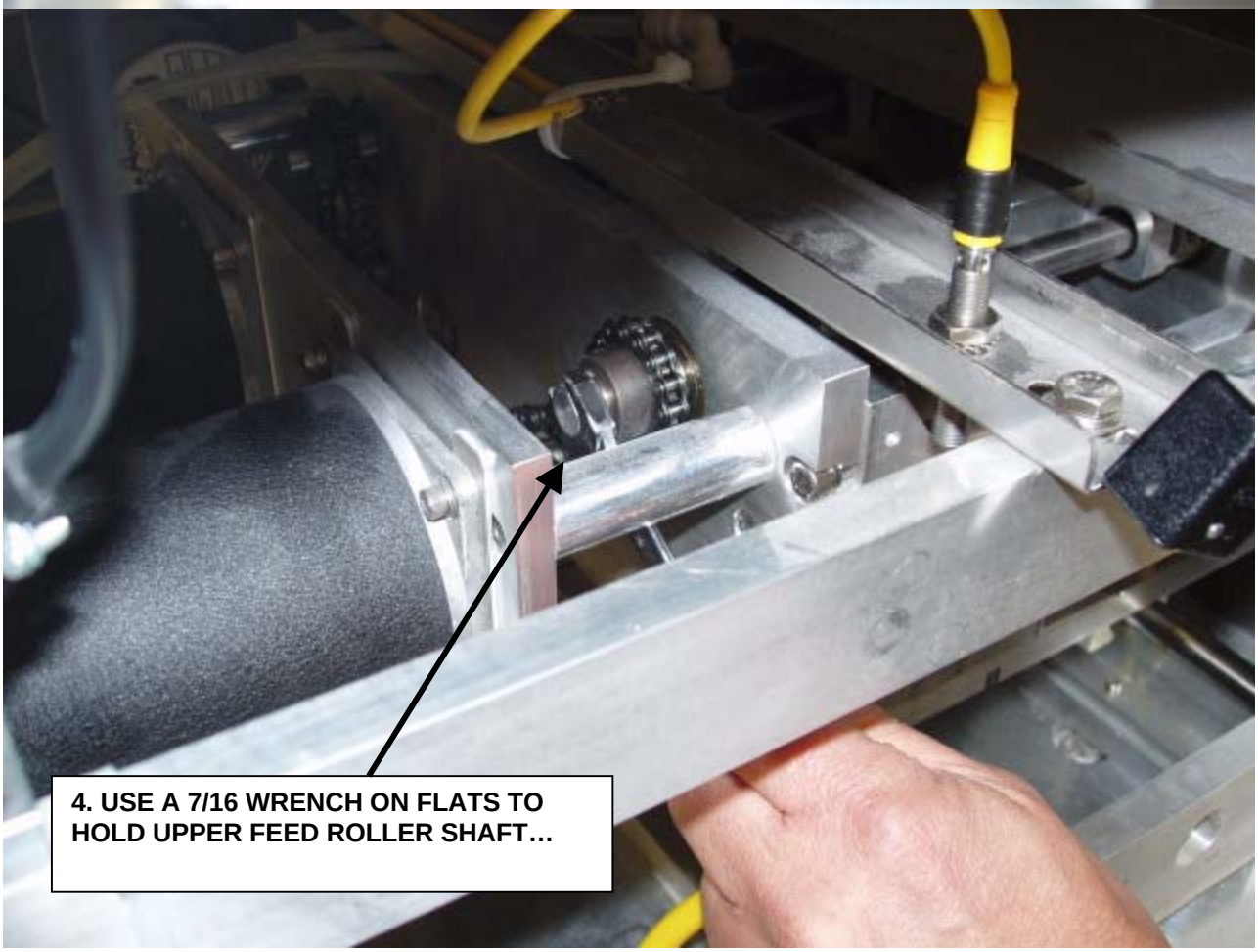
1. REMOVE REAR PANEL AND BOTH SIDE PANELS.



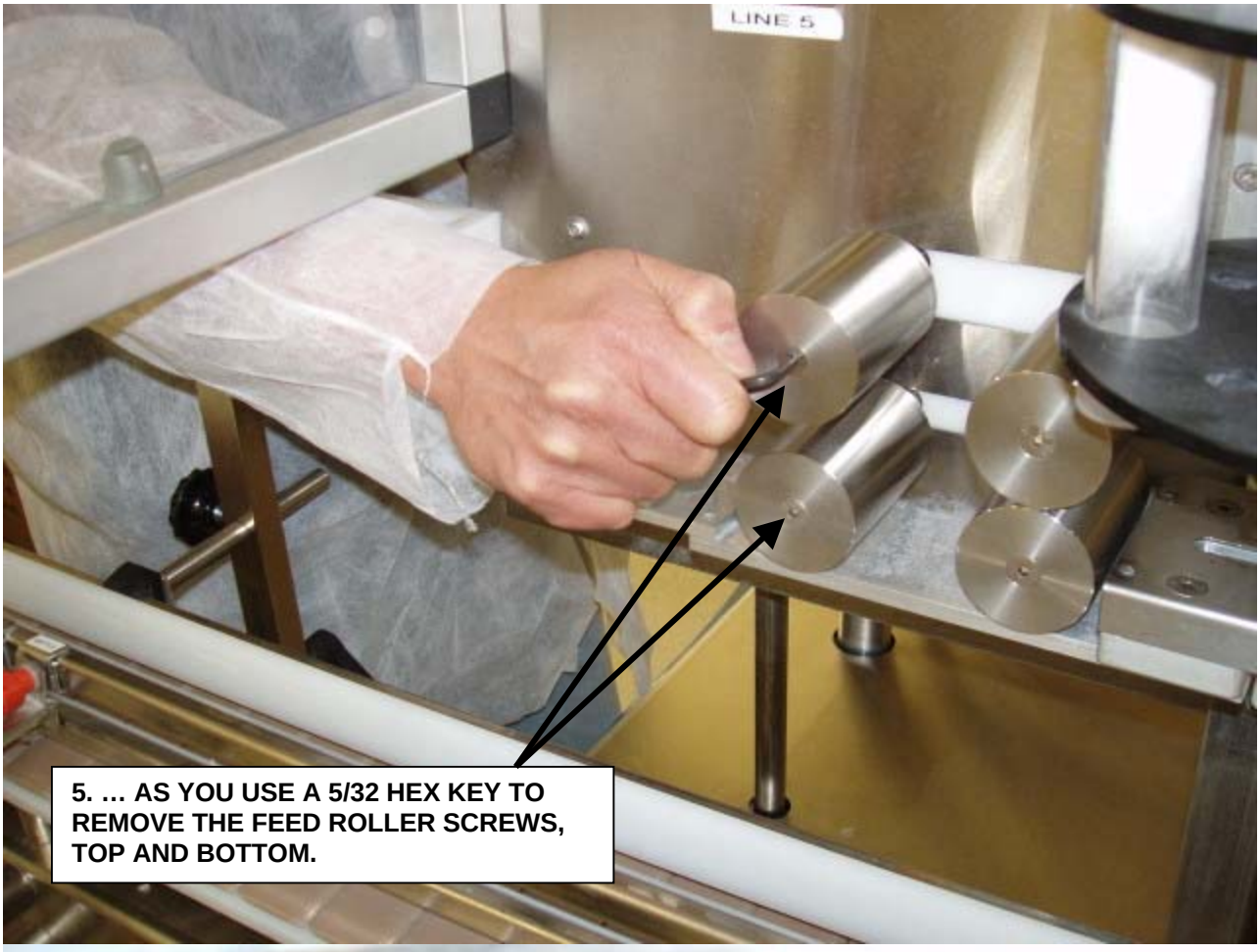
2. DISCONNECT ELECTRICAL CONNECTORS TO BOTH MOTORS



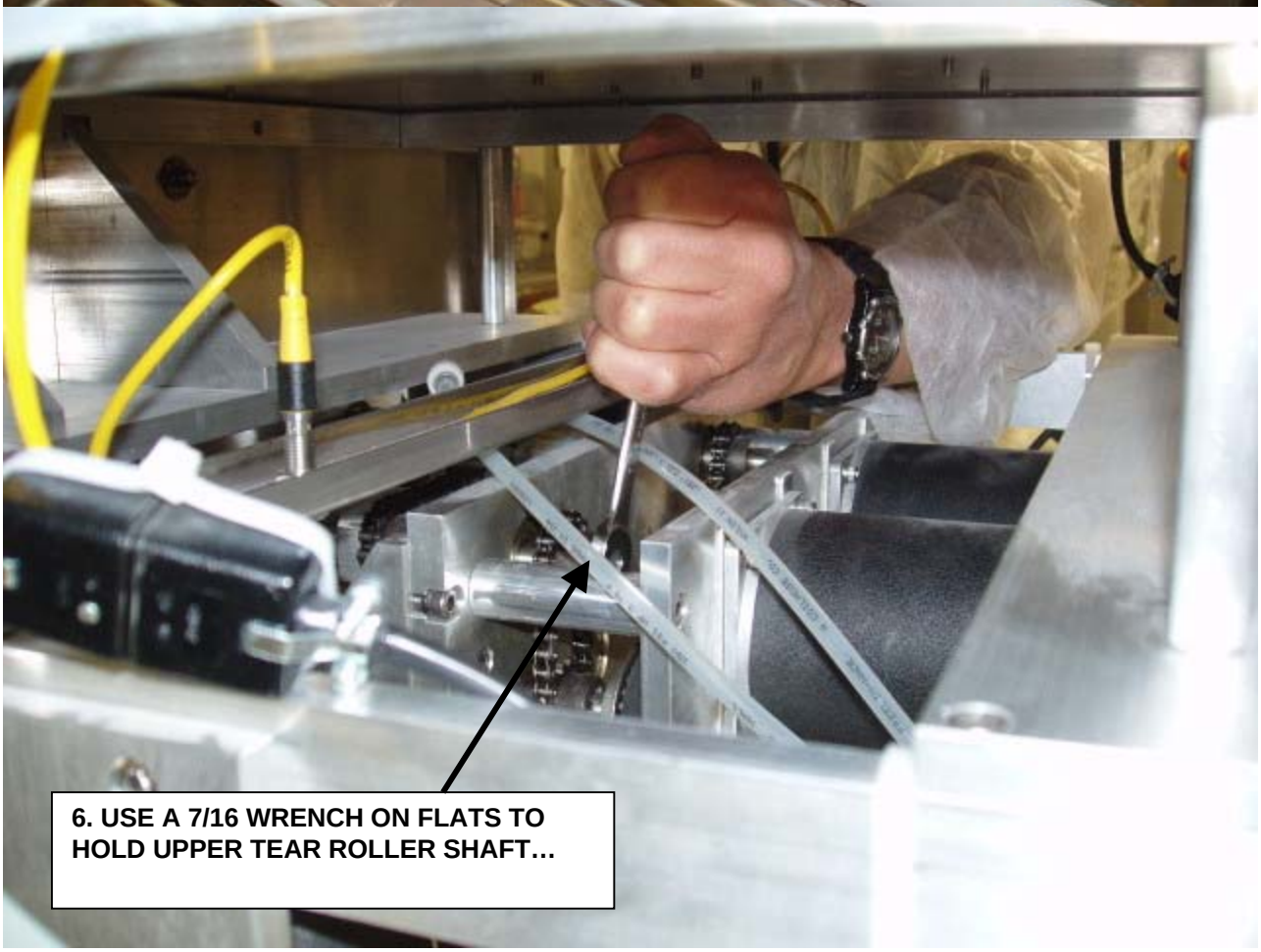
**3. DISCONNECT BOTH AIR LINES TO PANCAKE AIR CYLINDER (ROLLER LIFTER)**



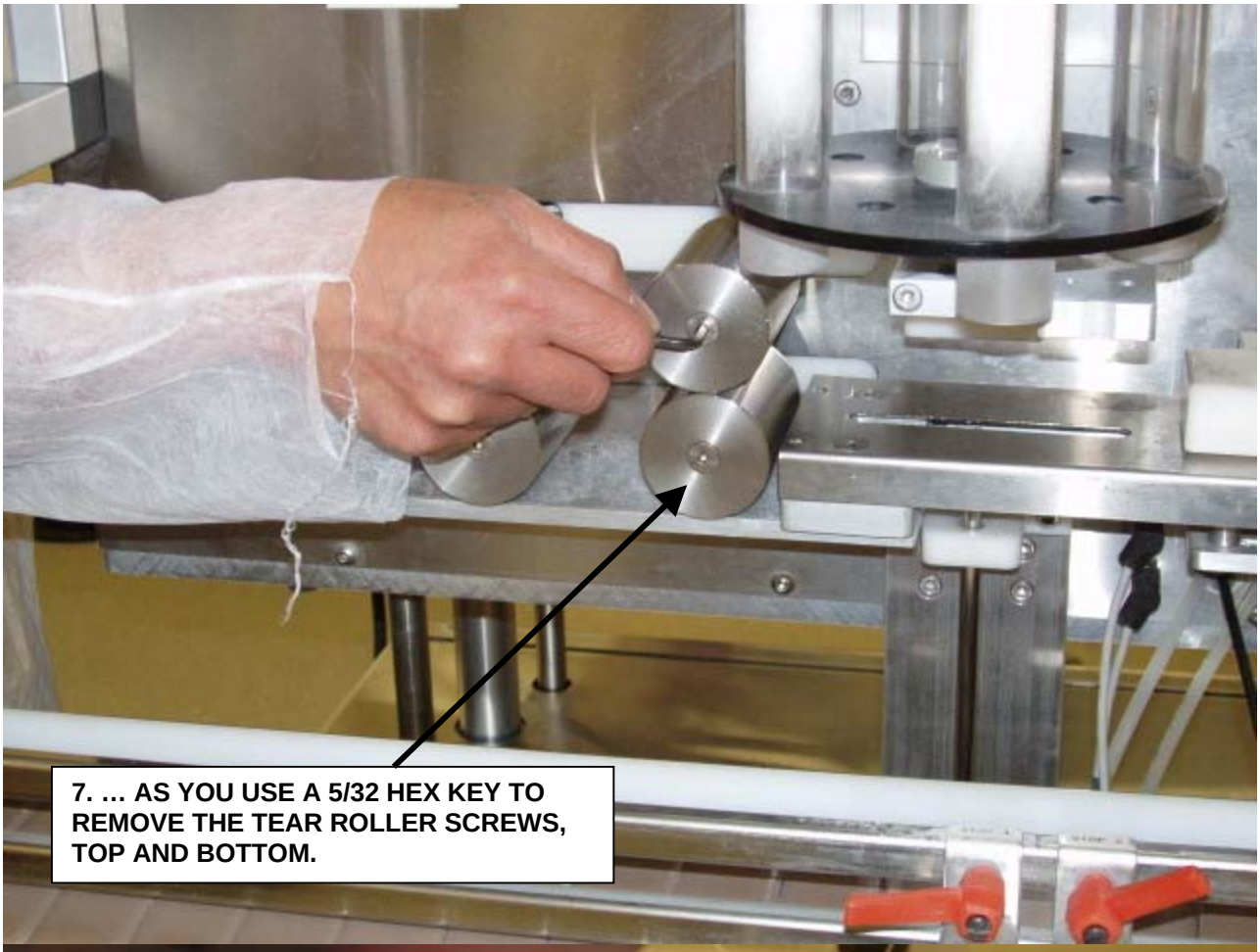
**4. USE A 7/16 WRENCH ON FLATS TO HOLD UPPER FEED ROLLER SHAFT…**




**5. … AS YOU USE A 5/32 HEX KEY TO REMOVE THE FEED ROLLER SCREWS, TOP AND BOTTOM.**

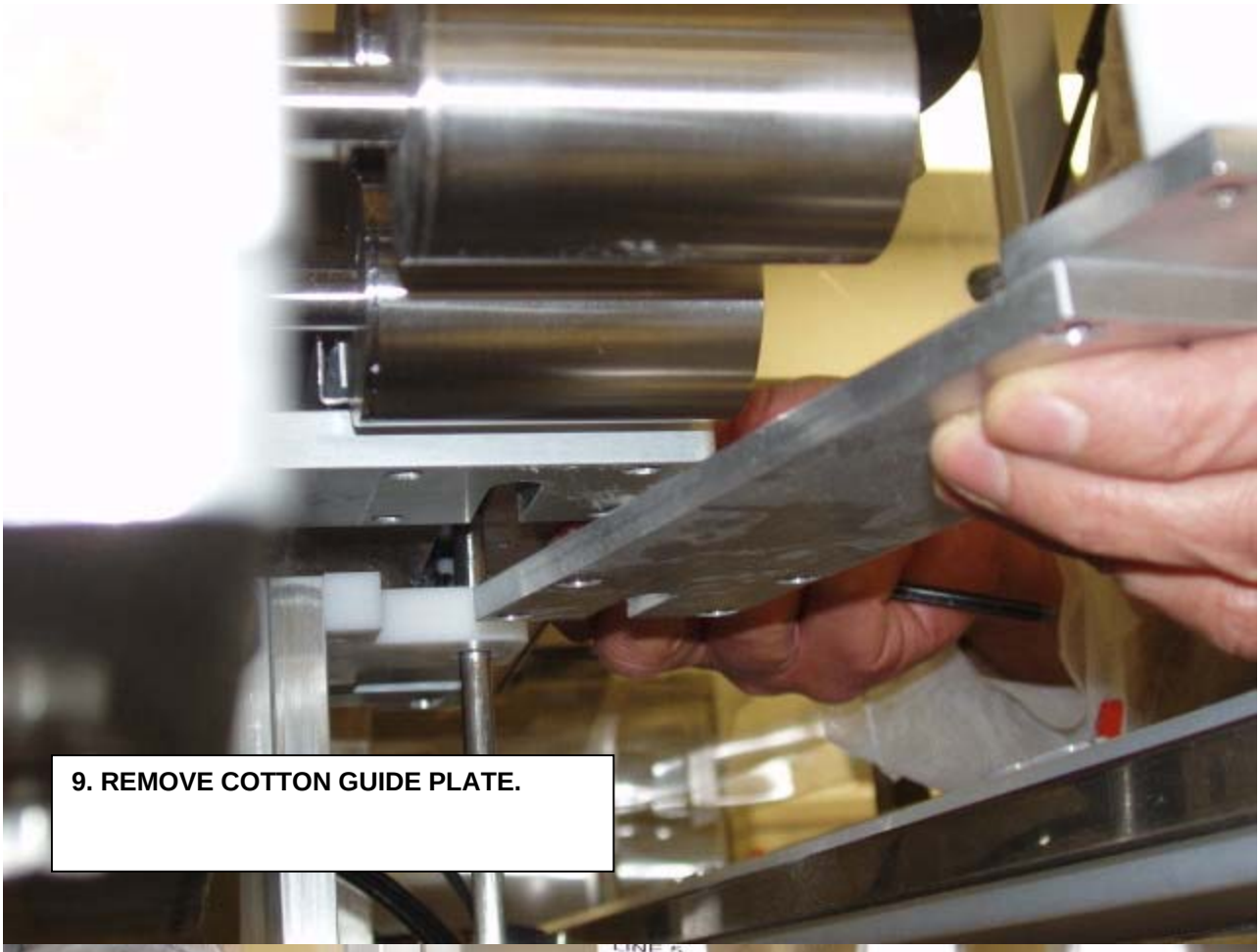


**6. USE A 7/16 WRENCH ON FLATS TO HOLD UPPER TEAR ROLLER SHAFT…**



**7. … AS YOU USE A 5/32 HEX KEY TO REMOVE THE TEAR ROLLER SCREWS, TOP AND BOTTOM.**

**8. USE A 5/32 HEX KEY TO REMOVE FOUR SCREWS HOLDING COTTON GUIDE PLATE. THIS WILL ALSO MAKE COTTON SHELF LOOSE.**

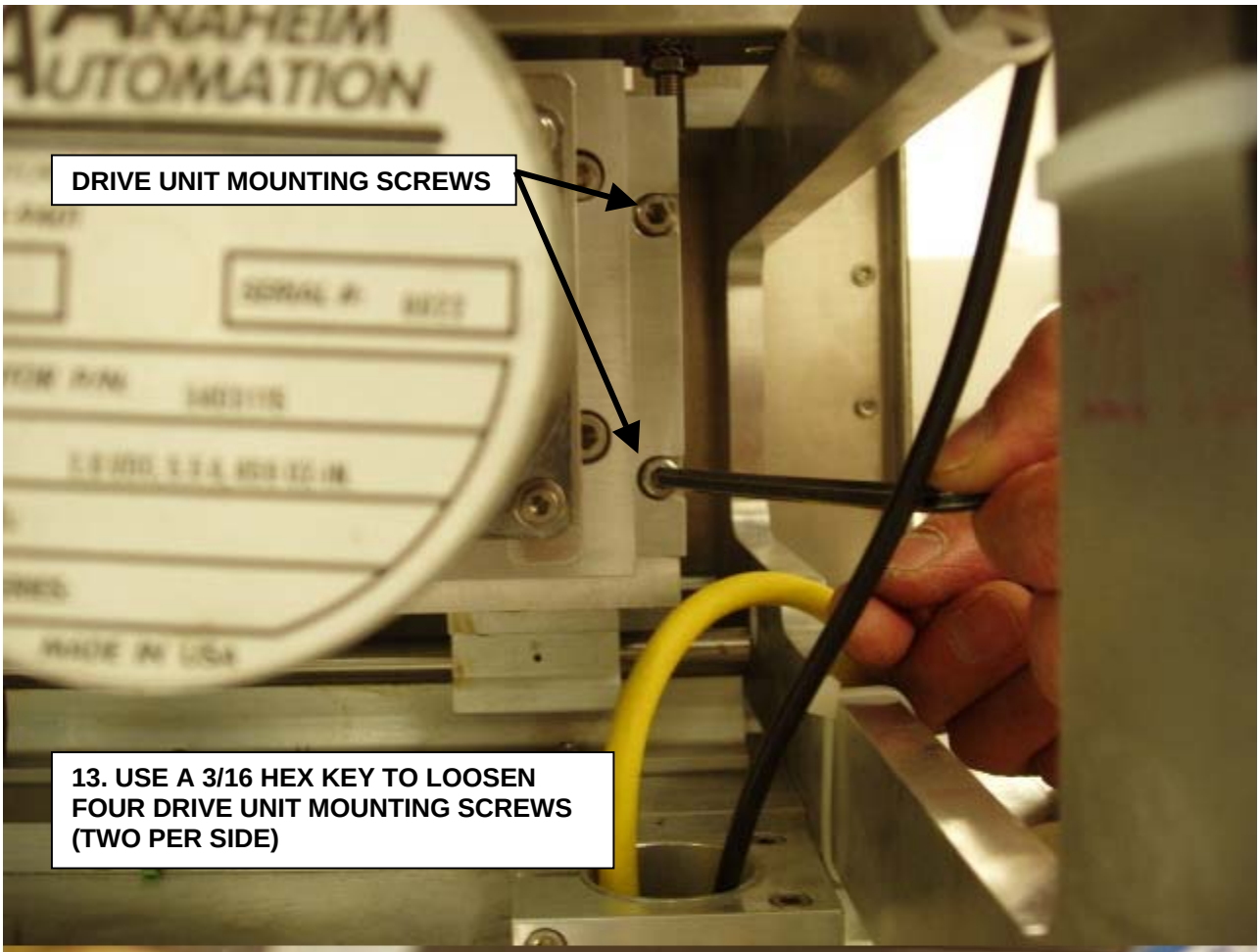


**9. REMOVE COTTON GUIDE PLATE.**

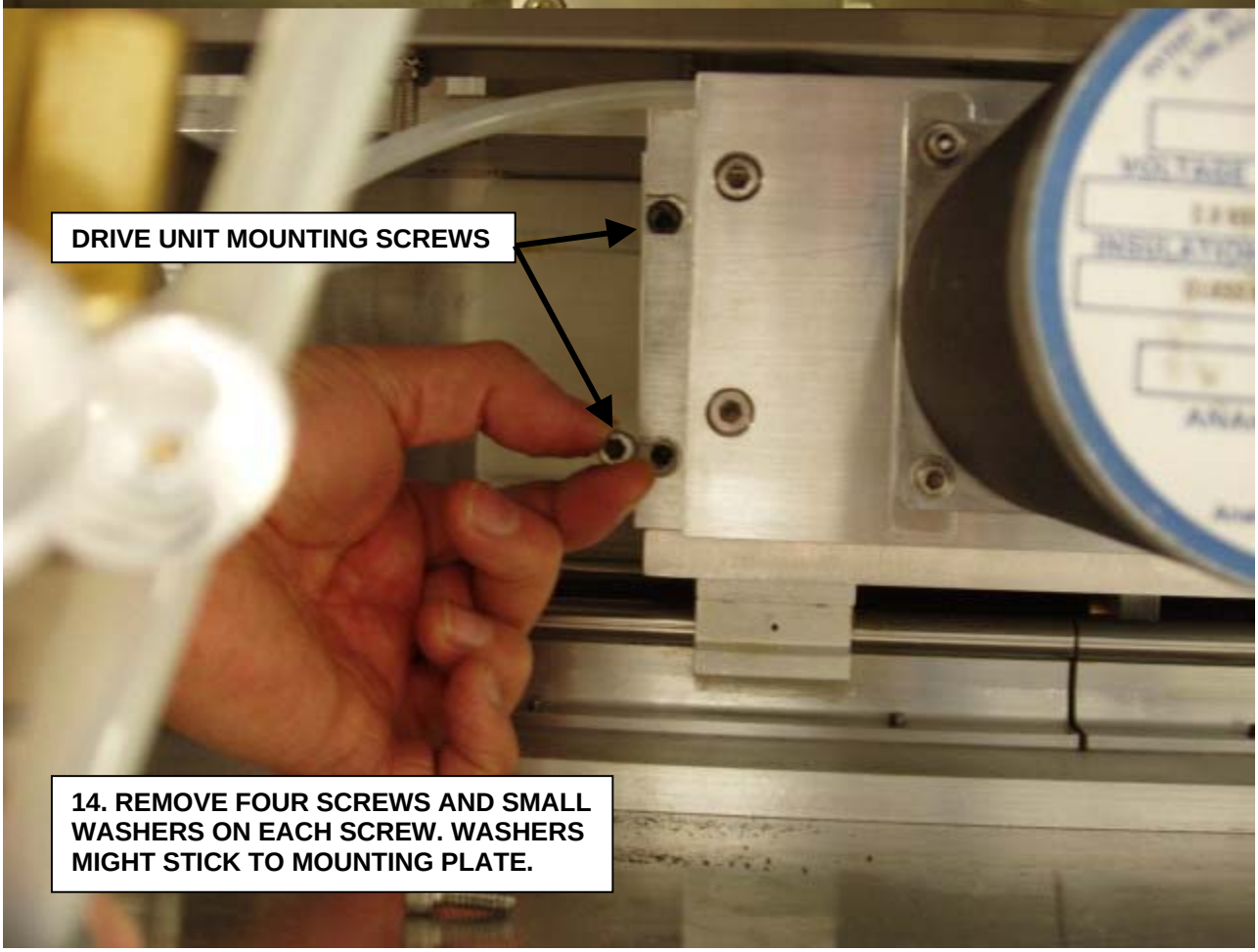
**10. REMOVE ALL FOUR ROLLERS.**


**11. REMOVE ALL FOUR LOCATING PINS FROM ROLLER SHAFTS.**

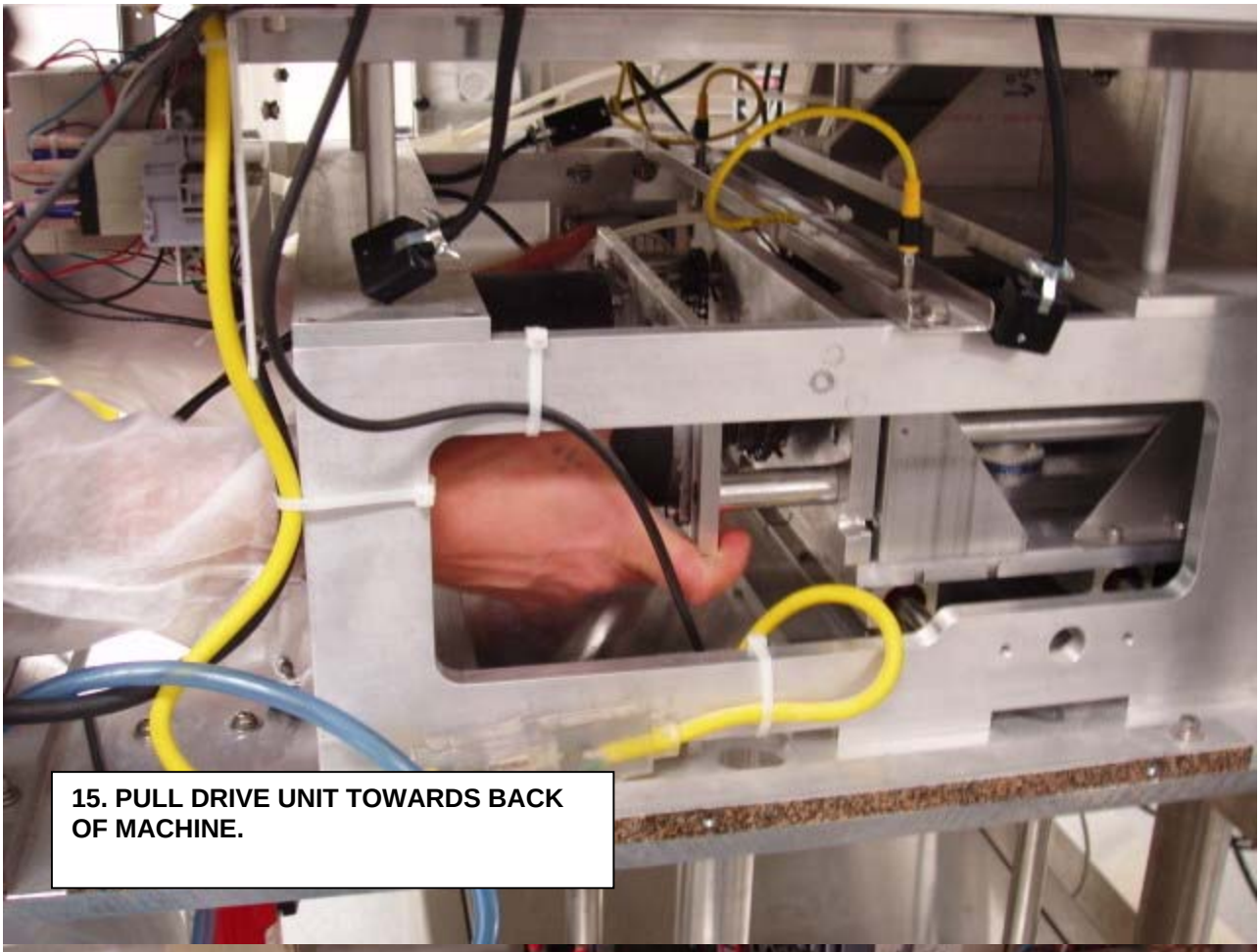

**12. COTTON SHELF REMAINS IN PLACE LOOSELY.**



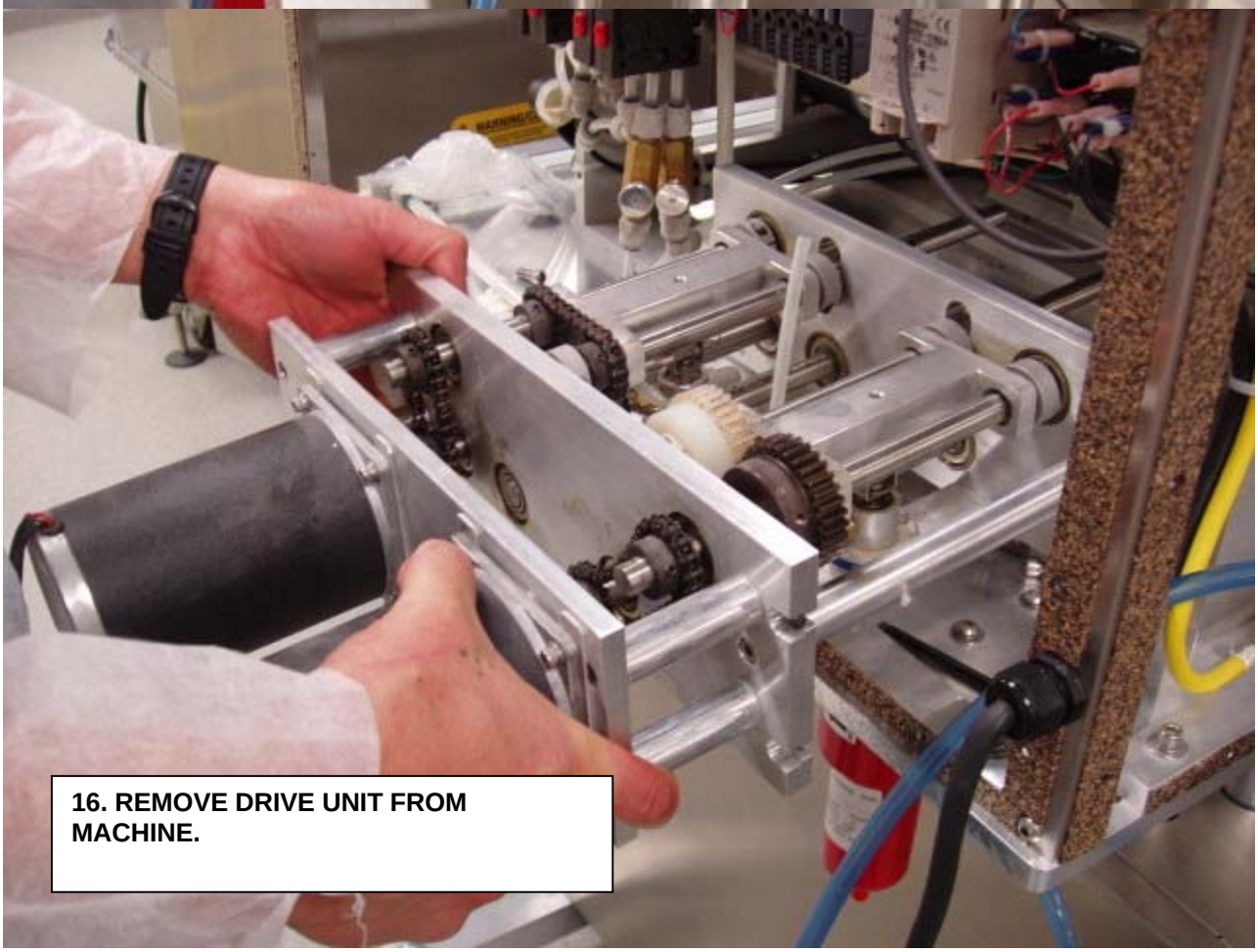

13. USE A 3/16 HEX KEY TO LOOSEN FOUR DRIVE UNIT MOUNTING SCREWS (TWO PER SIDE)



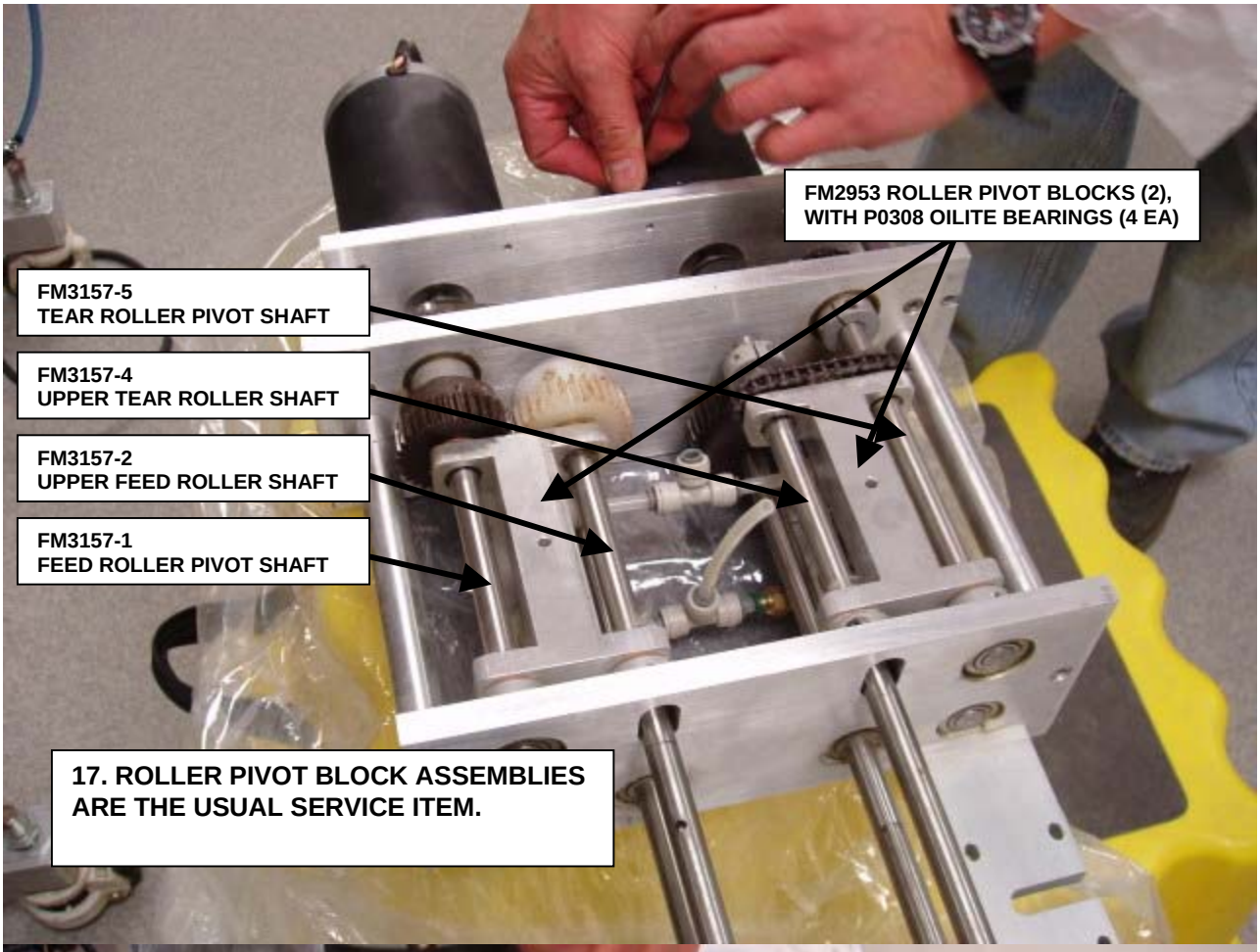

14. REMOVE FOUR SCREWS AND SMALL WASHERS ON EACH SCREW. WASHERS MIGHT STICK TO MOUNTING PLATE.



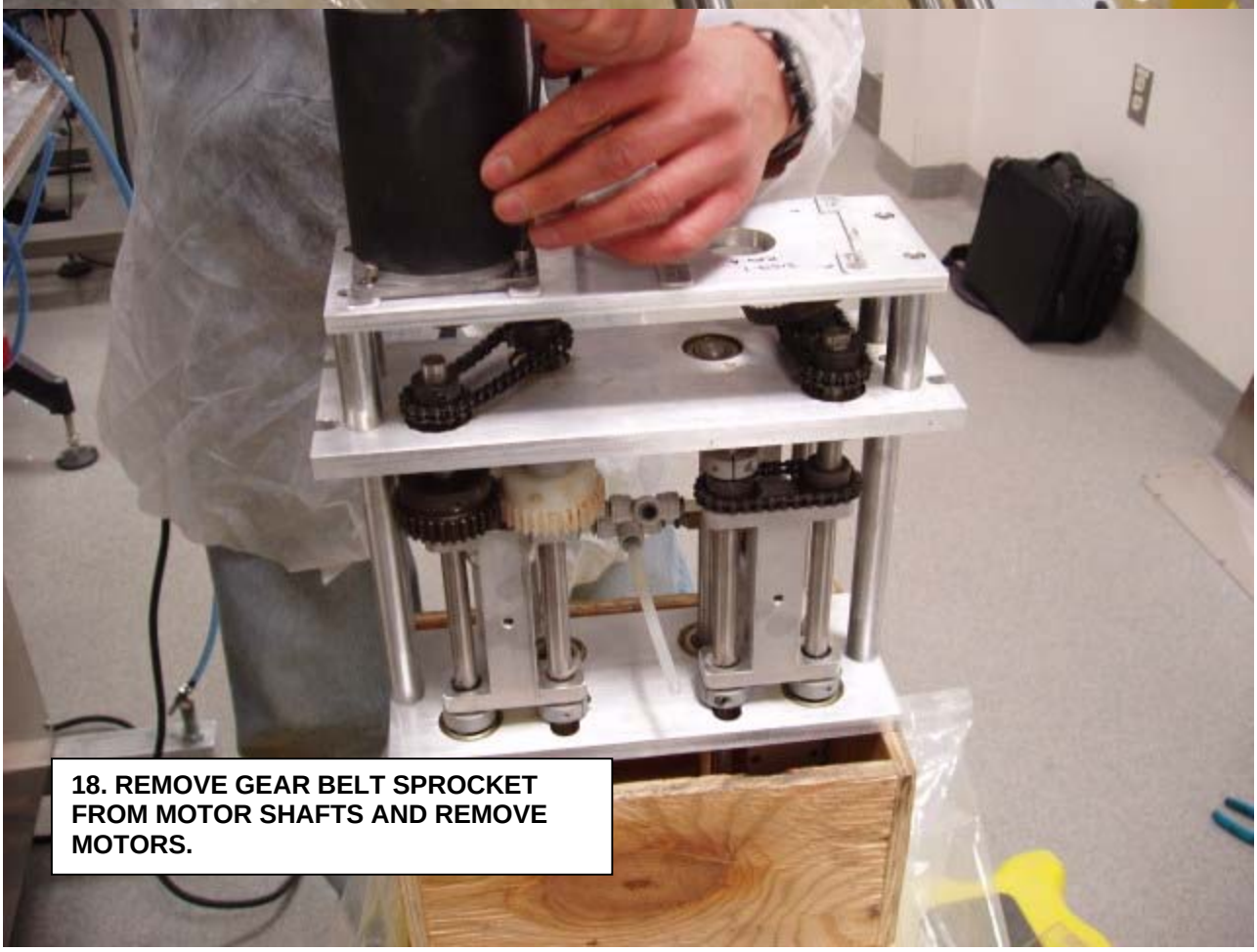
**15. PULL DRIVE UNIT TOWARDS BACK OF MACHINE.**



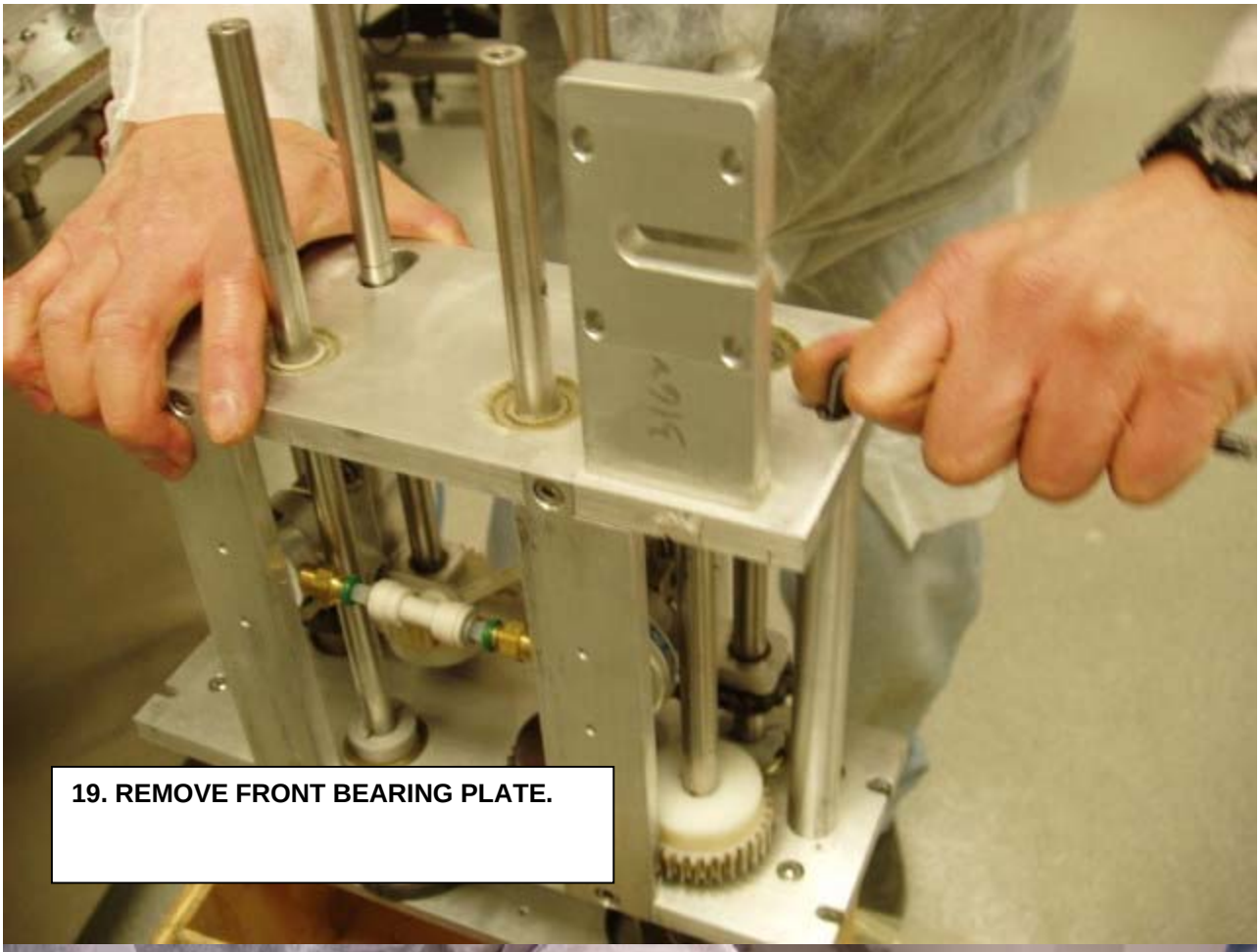
**16. REMOVE DRIVE UNIT FROM MACHINE.**




**17. ROLLER PIVOT BLOCK ASSEMBLIES ARE THE USUAL SERVICE ITEM.**

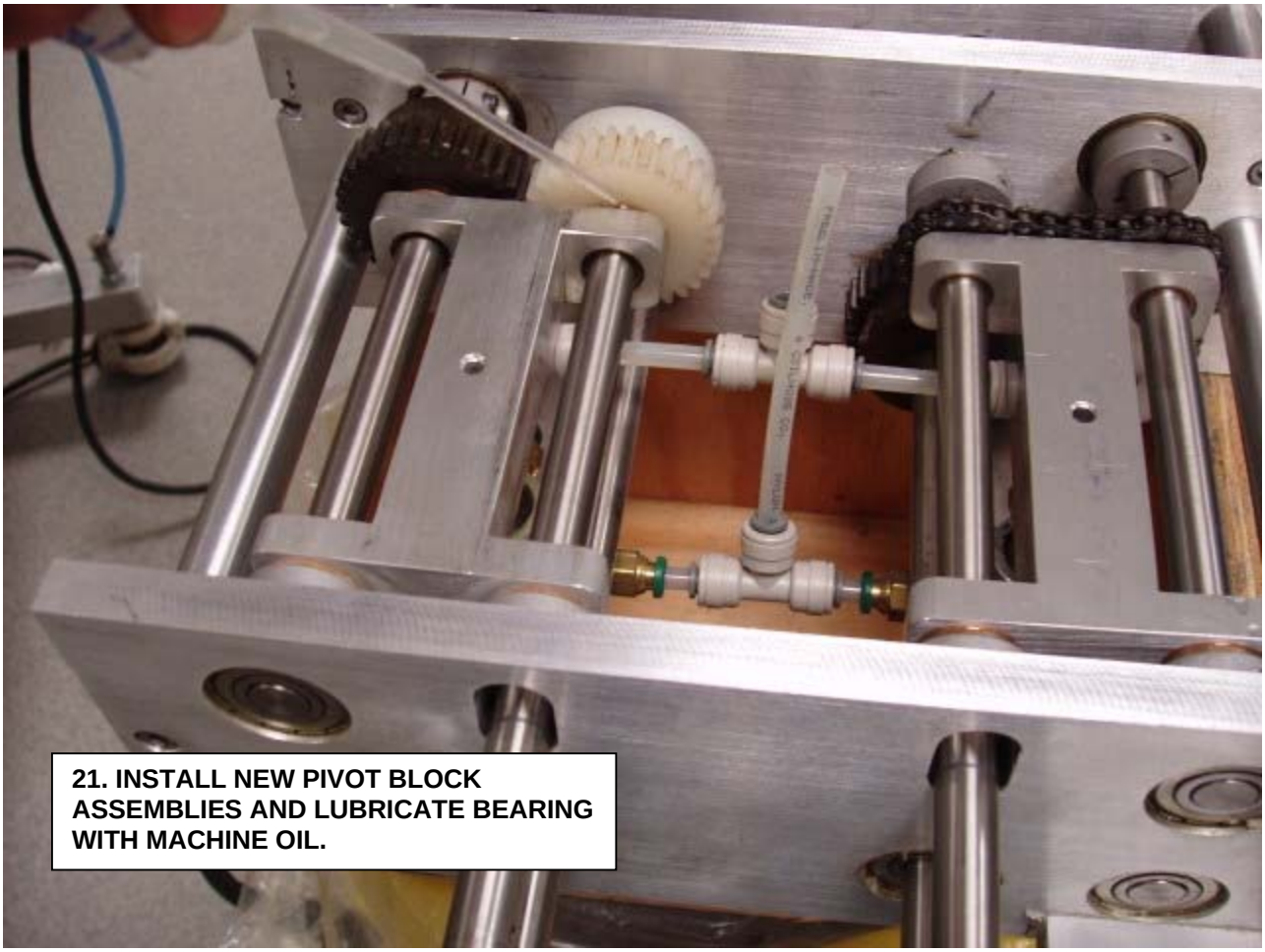


**18. REMOVE GEAR BELT SPROCKET FROM MOTOR SHAFTS AND REMOVE MOTORS.**



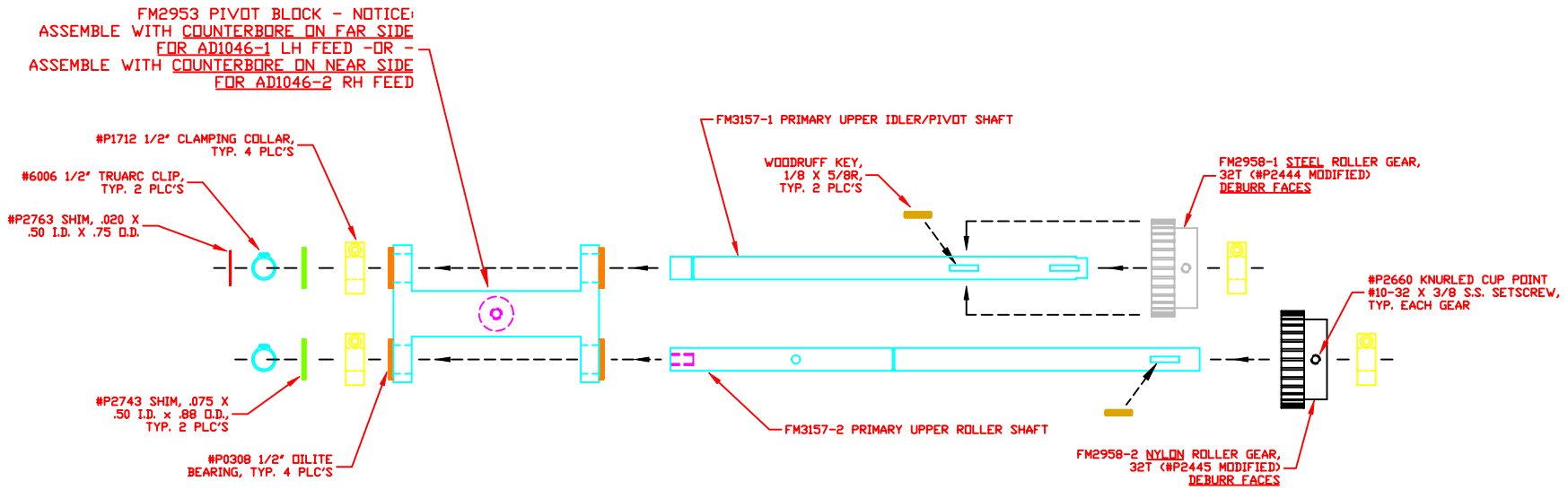
**19. REMOVE FRONT BEARING PLATE.**

**20. REMOVE PIVOT BLOCK ASSEMBLIES FOR INSPECTION AND SERVICE.**

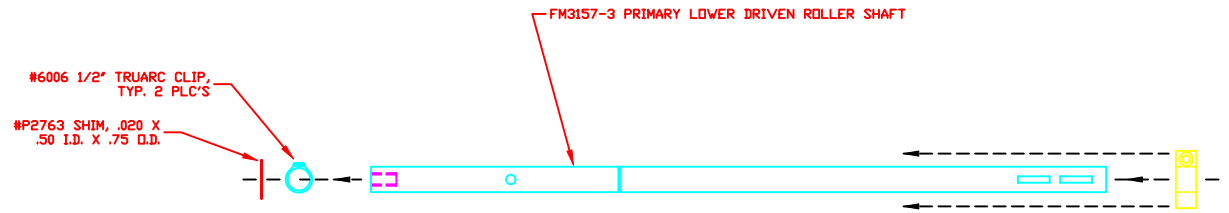


**21. INSTALL NEW PIVOT BLOCK ASSEMBLIES AND LUBRICATE BEARING WITH MACHINE OIL.**

| NOTE | REV | DESCRIPTION | DATE |
|---|---|---|---|
| | - | - | - |




UPPER PRIMARY ROLLER & IDLER SHAFT SUB-ASSEMBLY




LOWER PRIMARY DRIVEN ROLLER SHAFT SUB-ASSEMBLY

| PART NO# | QTY. REQ'D | DESCRIPTION | NEXT ASSEMBLY | USED ON |
|---|---|---|---|---|
| AD-1046-2 | 1 | CS10 ROLLER ASSY, RH FEED | AD1039 | MODEL CS10 |
| AD-1046-1 | 1 | CS2 & CS10 ROLLER ASSY, LH FEED | AD0998/1039 | MODEL CS2/10 |

UNLESS OTHERWISE SPECIFIED:
TOL: DEC= .XXX ±.005 FRAC= ±1/64
.XX ±.01

MATERIAL: ---

FINISH: ---

DRAWN BY: KEVIN JOHNSON DATE: 10/30/02

SCALE: 1 = 1

SHEET 1 OF 8

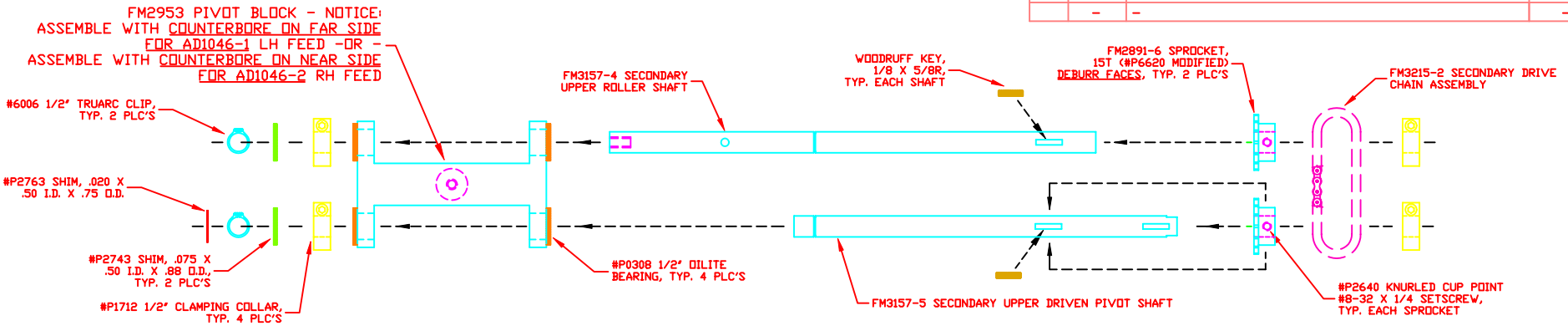
DEITZ COMPANY, INC.
ROUTE 34, WALL, N.J.

TITLE: CS2 & CS10 ROLLER ASSEMBLIES (LH & RH FEED)

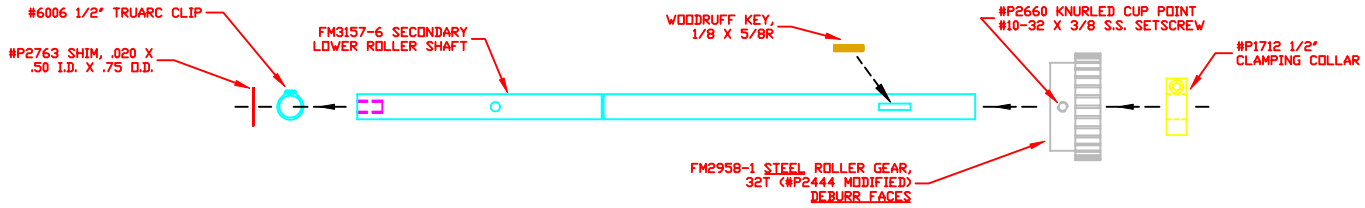
NUMBER: AD-1046

REVISION -

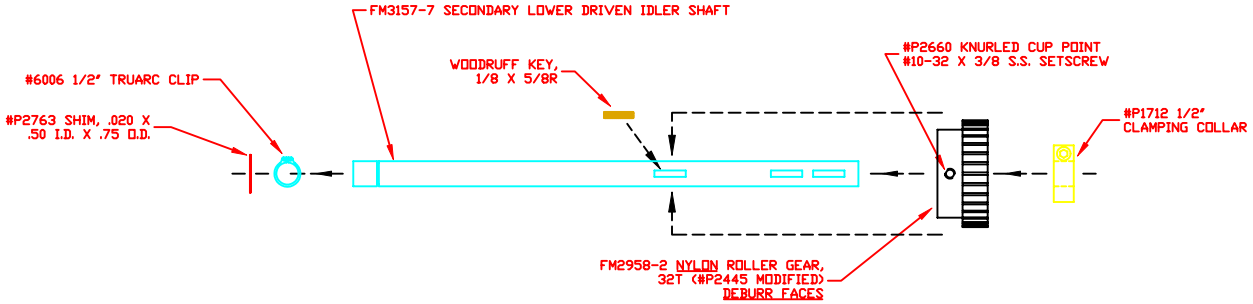
| NOTE | REV | DESCRIPTION | DATE |
|---|---|---|---|
| | – | – | – |




UPPER SECONDARY ROLLER & IDLER SHAFT SUB–ASSEMBLY




LOWER SECONDARY ROLLER SHAFT SUB–ASSEMBLY




LOWER SECONDARY DRIVEN IDLER SHAFT SUB–ASSEMBLY

| PART NO# | QTY. REQ'D | DESCRIPTION | NEXT ASSEMBLY | USED ON |
|---|---|---|---|---|
| AD–1046–2 | 1 | CS10 ROLLER ASSY, RH FEED | AD1039 | MODEL CS10 |
| AD–1046–1 | 1 | CS2 & CS10 ROLLER ASSY, LH FEED | AD0998/1039 | MODEL CS2/10 |

UNLESS OTHERWISE SPECIFIED:
TOL: DEC= .XXX ±.005 FRAC= ±1/64
.XX ±.01

MATERIAL: ---

FINISH: ---

DRAWN BY: KEVIN JOHNSON DATE: 10/30/02

SCALE: 1 = 1

SHEET 2 OF 8

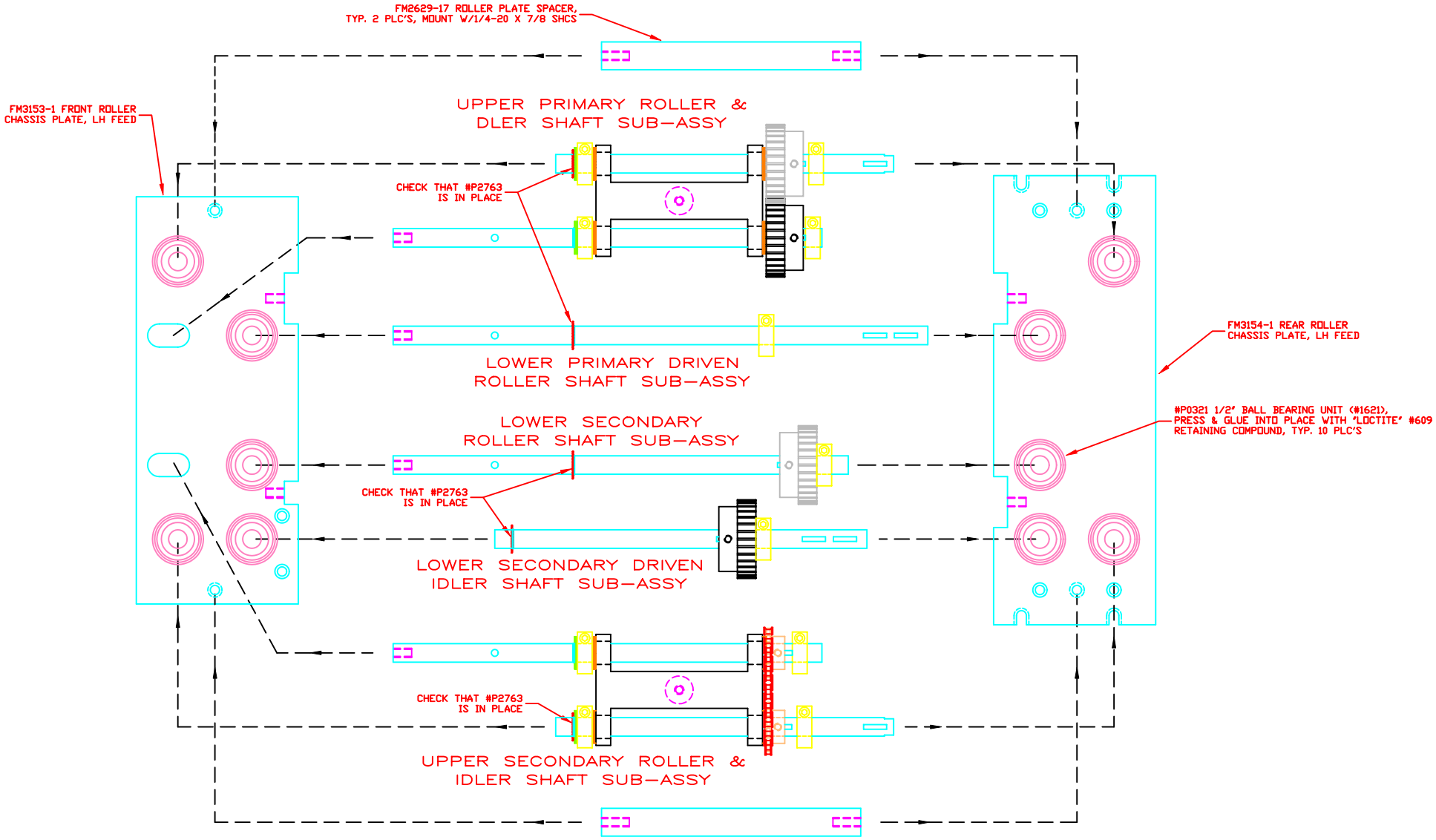
DEITZ COMPANY, INC.
ROUTE 34, WALL, N.J.

TITLE: CS2 & CS10 ROLLER ASSEMBLIES (LH & RH FEED)

NUMBER: AD–1046

REVISION –

| NOTE | REV | DESCRIPTION | DATE |
|---|---|---|---|
| | – | – | – |




*AD1046-1 LH FEED ASSY SHOWN*

| PART NO# | QTY. REQ'D | DESCRIPTION | NEXT ASSEMBLY | USED ON |
|---|---|---|---|---|
| AD-1046-2 | 1 | CS10 ROLLER ASSY, RH FEED | AD1039 | MODEL CS10 |
| AD-1046-1 | 1 | CS2 & CS10 ROLLER ASSY, LH FEED | AD0998/1039 | MODEL CS2/10 |

UNLESS OTHERWISE SPECIFIED:
TOL: DEC= .XXX ±.005 FRAC= ±1/64
.XX ±.01

MATERIAL: ---

FINISH: ---

DRAWN BY: KEVIN JOHNSON DATE: 10/30/02

SCALE: 1 = 1

SHEET 3 OF 8

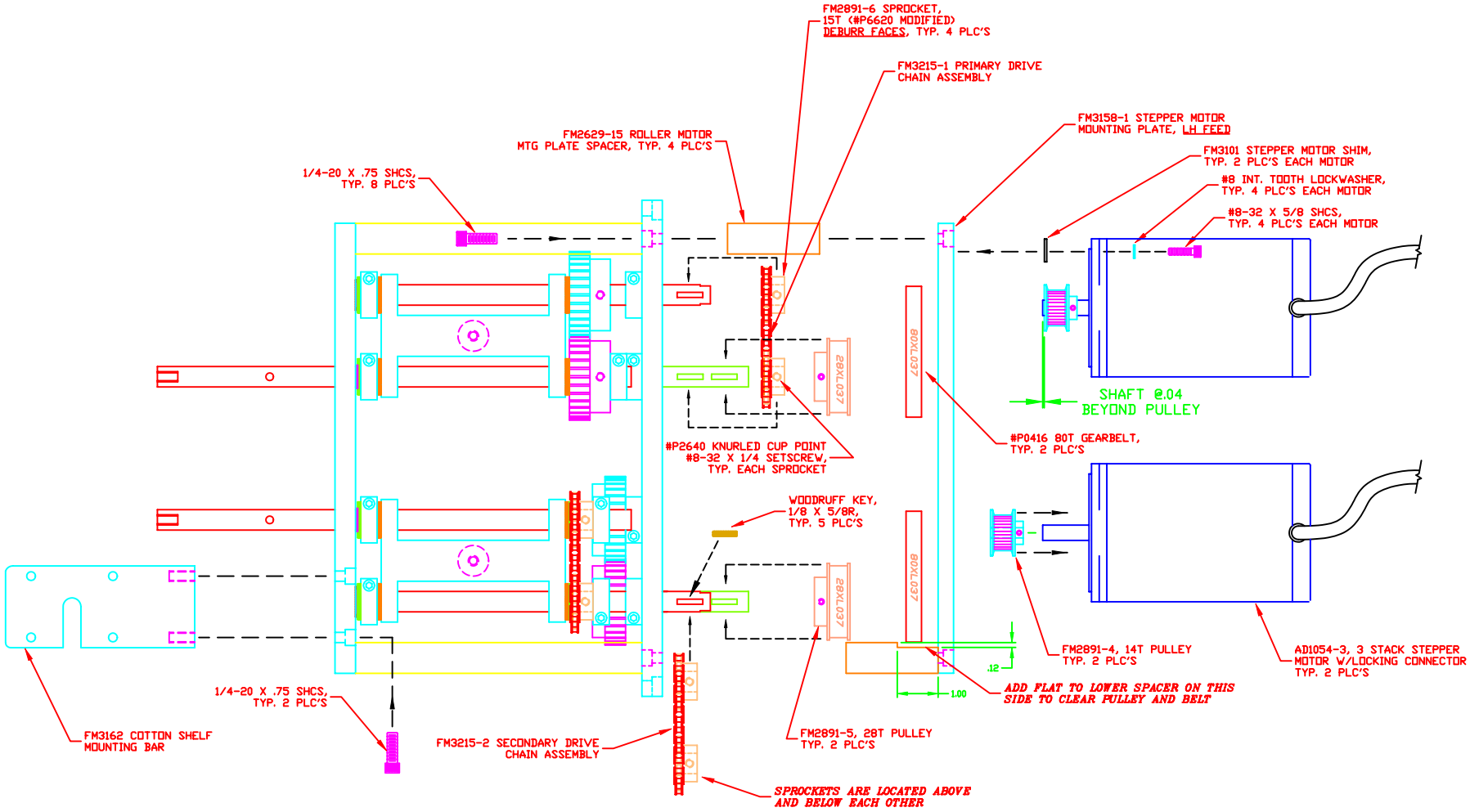
DEITZ COMPANY, INC.
ROUTE 34, WALL, N.J.

TITLE: CS2 & CS10 ROLLER ASSEMBLIES (LH & RH FEED)

NUMBER: AD-1046

REVISION –

| NOTE | REV | DESCRIPTION | DATE |
|---|---|---|---|
| | – | – | – |




## AD1046–1 LH FEED ASSY SHOWN

| PART NO# | QTY. REQ'D | DESCRIPTION | NEXT ASSEMBLY | USED ON |
|---|---|---|---|---|
| AD–1046–2 | 1 | CS10 ROLLER ASSY, RH FEED | AD1039 | MODEL CS10 |
| AD–1046–1 | 1 | CS2 & CS10 ROLLER ASSY, LH FEED | AD0998/1039 | MODEL CS2/10 |

UNLESS OTHERWISE SPECIFIED:
TOL: DEC= .XXX ±.005 FRAC= ±1/64
.XX ±.01

MATERIAL: ---

FINISH: ---

DRAWN BY: KEVIN JOHNSON DATE: 10/30/02

SCALE: 1 = 1

SHEET 4 OF 8

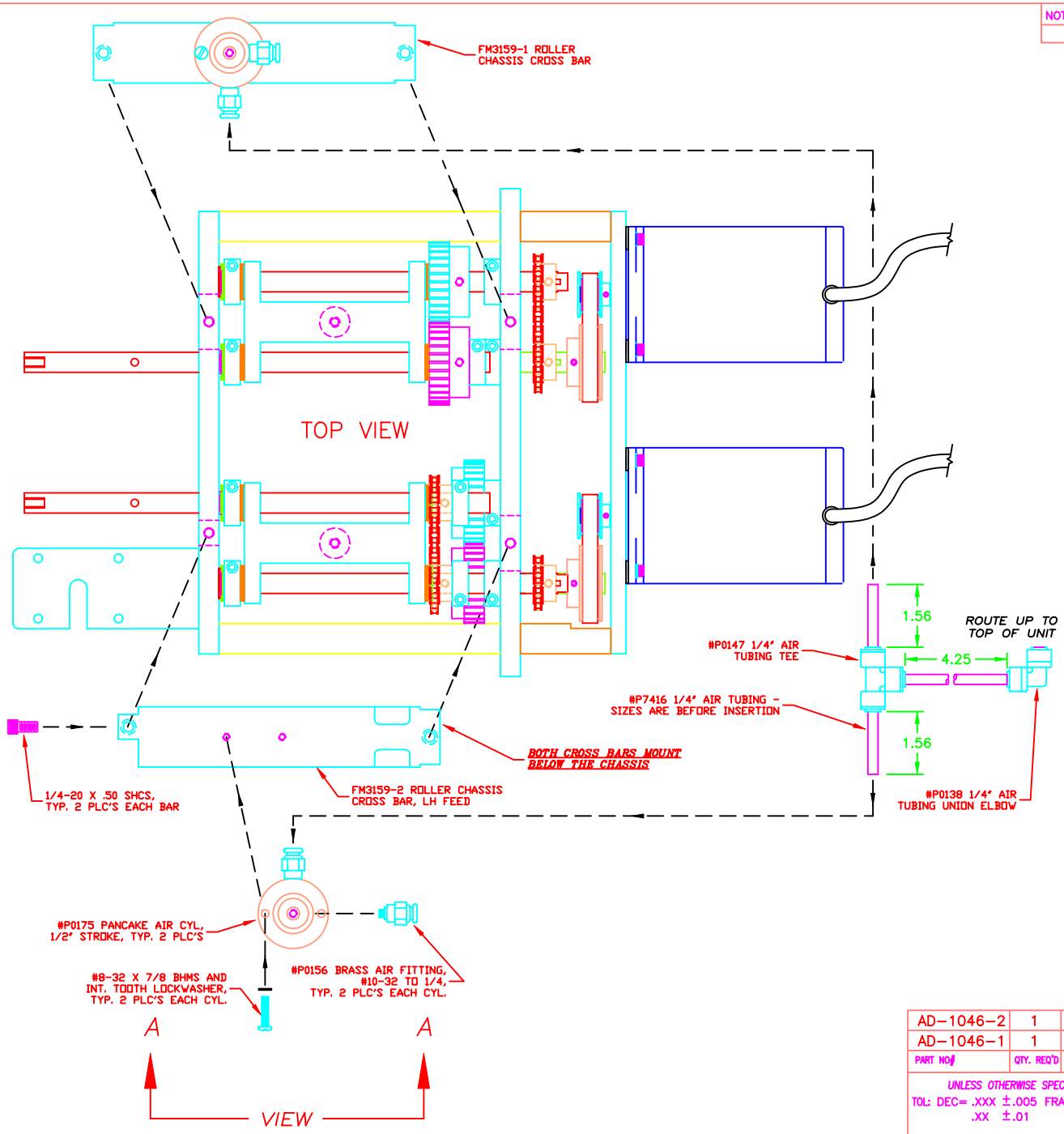
DEITZ COMPANY, INC.
ROUTE 34, WALL, N.J.

TITLE: CS2 & CS10 ROLLER ASSEMBLIES (LH & RH FEED)

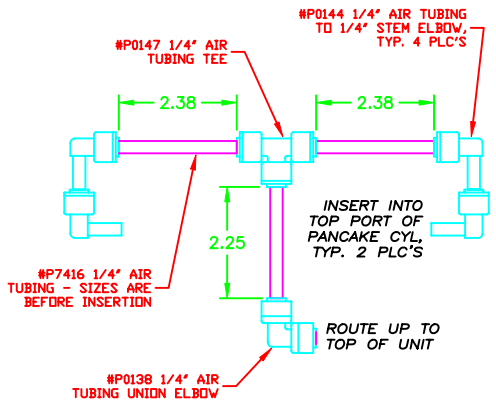
NUMBER: AD–1046

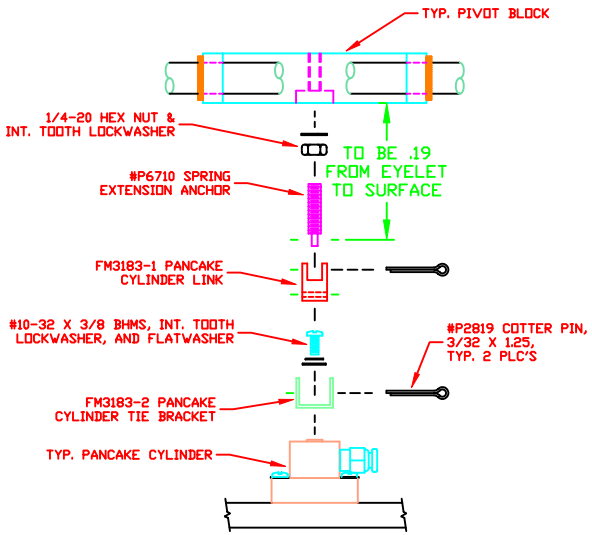
REVISION –

| NOTE | REV | DESCRIPTION | DATE |
|---|---|---|---|
| | – | – | – |




AD1046-1 LH FEED ASSY SHOWN




SIDE VIEW – TYP. CYL. TO PIVOT BLOCK

VIEW "A–A"

| PART NO# | QTY. REQ'D | DESCRIPTION | NEXT ASSEMBLY | USED ON |
|---|---|---|---|---|
| AD-1046-2 | 1 | CS10 ROLLER ASSY, RH FEED | AD1039 | MODEL CS10 |
| AD-1046-1 | 1 | CS2 & CS10 ROLLER ASSY, LH FEED | AD0998/1039 | MODEL CS2/10 |

UNLESS OTHERWISE SPECIFIED:
TOL: DEC= .XXX ±.005 FRAC= ±1/64
.XX ±.01

MATERIAL: ---

FINISH: ---

DRAWN BY: KEVIN JOHNSON DATE: 10/30/02

SCALE: 1 = 1

SHEET 5 OF 8

DEITZ COMPANY, INC.
ROUTE 34, WALL, N.J.

TITLE: CS2 & CS10 ROLLER ASSEMBLIES (LH & RH FEED)

NUMBER: AD-1046

REVISION –