PHARMAFILL™

DEITZ COMPANY, WALL, NJ, USA

Model CS1 Cotton Inserter

Model CS1 Cotton Inserter

Operation Manual

Rev C

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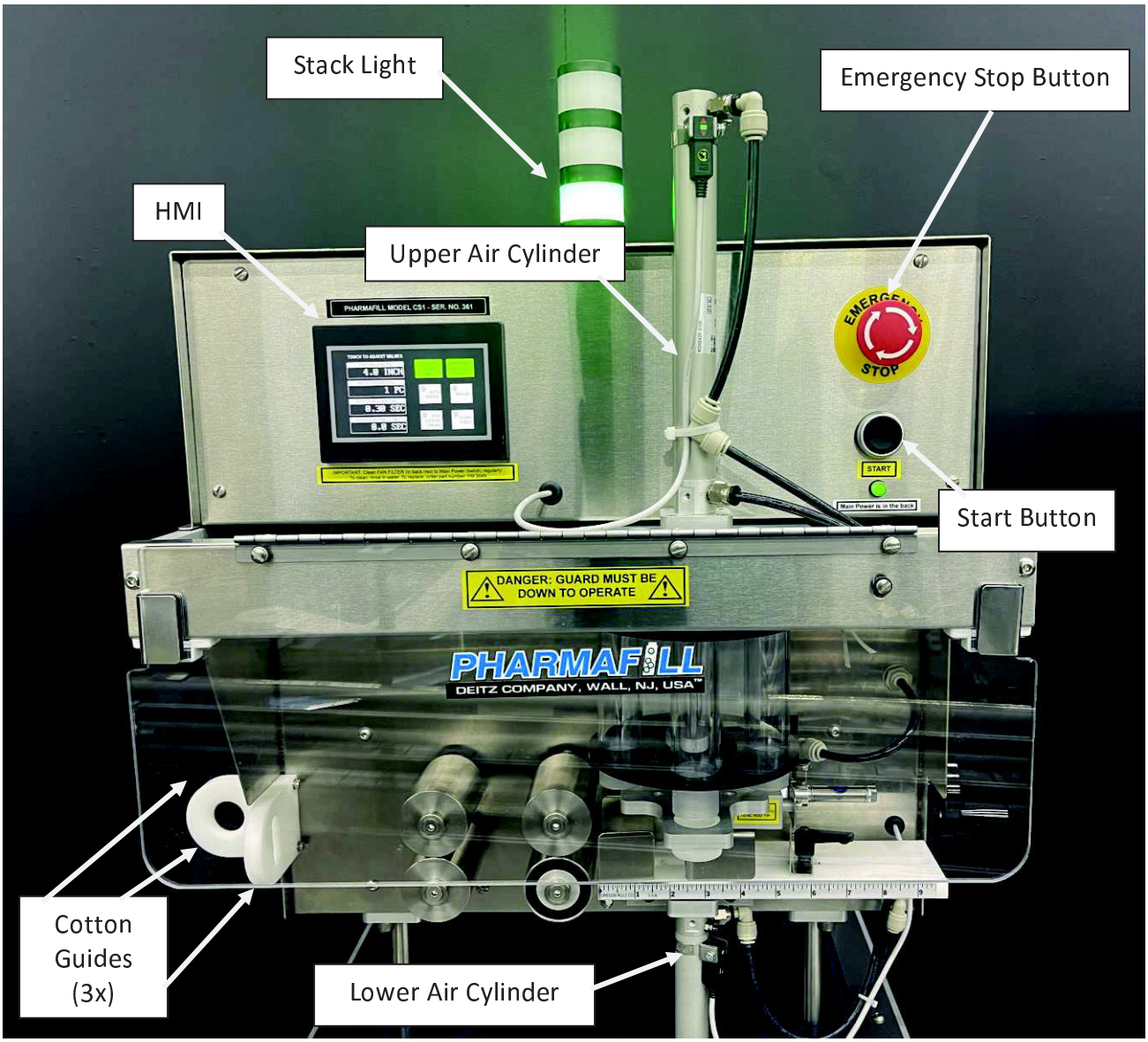
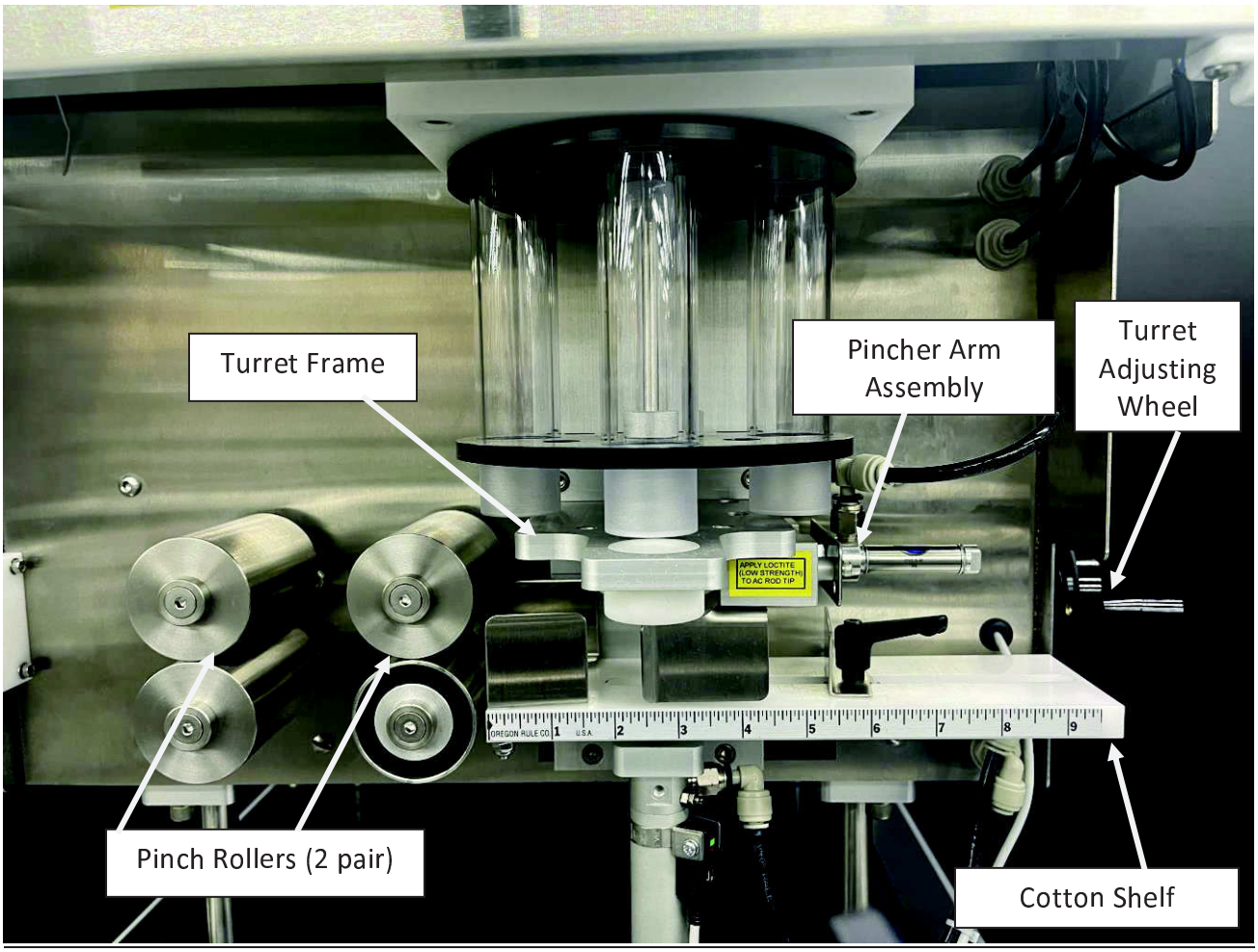
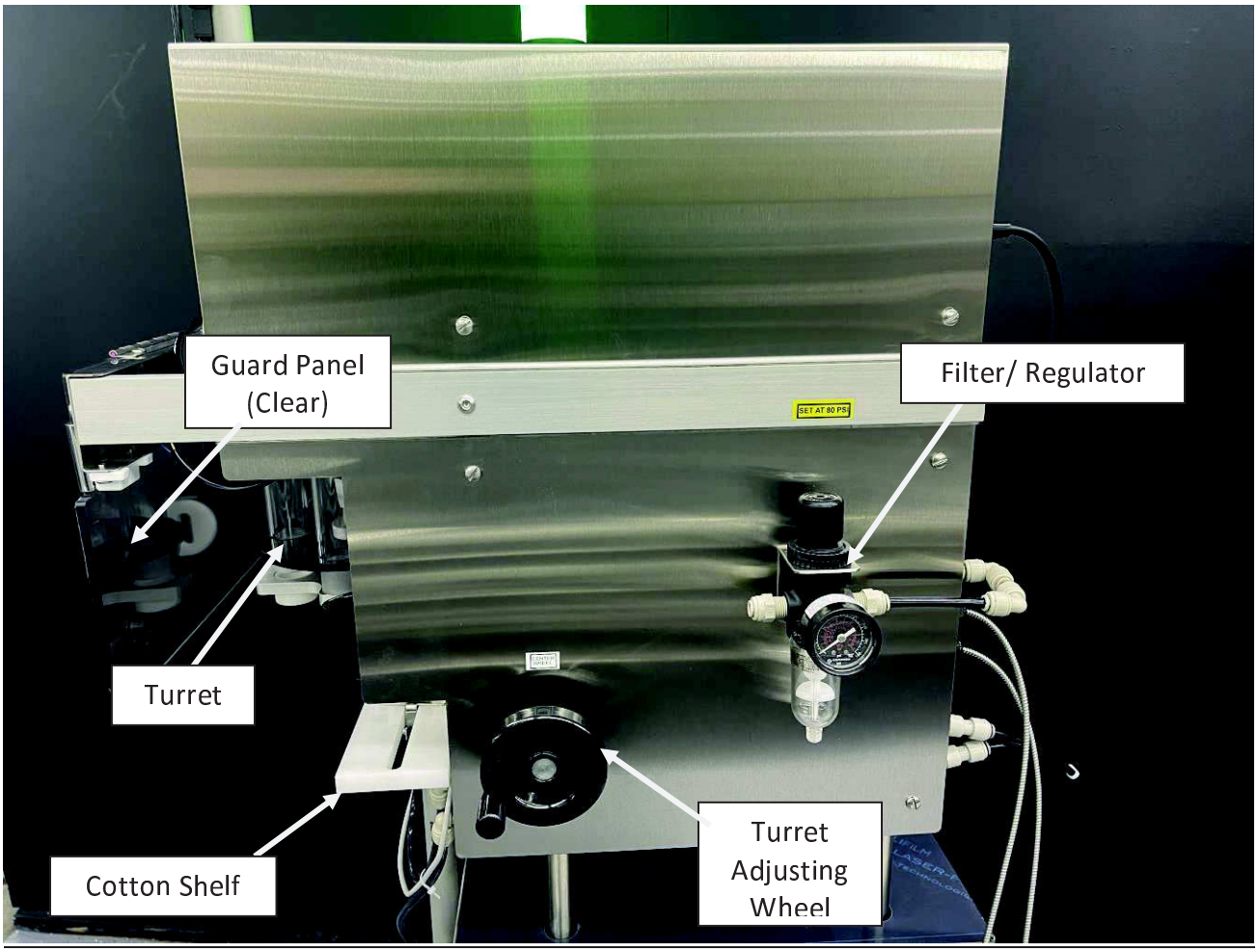
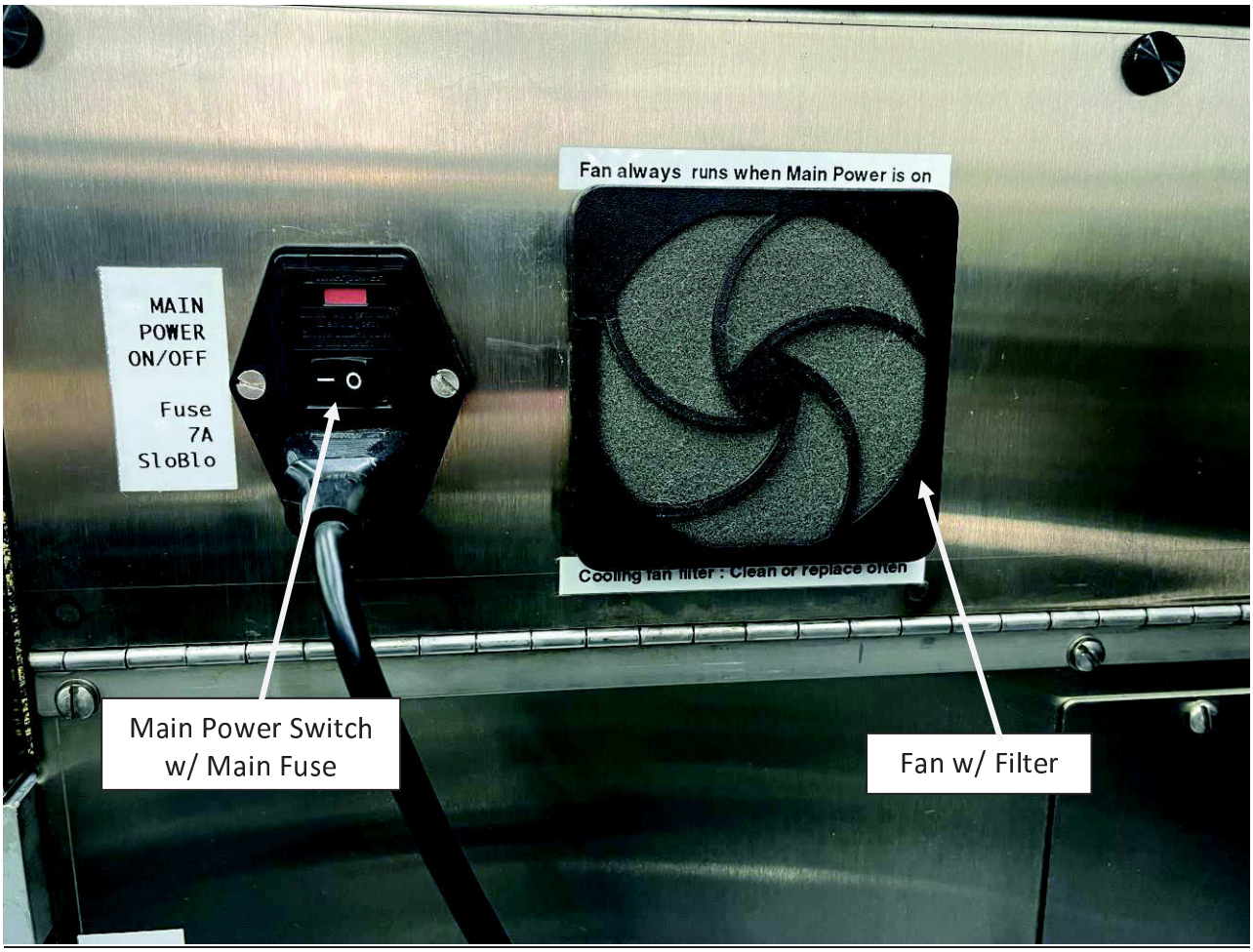
Section 1: ILLUSTRATIONS




Turret Frame
Pincher Arm Assembly
Turret Adjusting Wheel
Pinch Rollers (2 pair)
Cotton Shelf


Guard Panel
(Clear)
Filter/ Regulator
Turret
Cotton Shelf
Turret
Adjusting
Wheel


Fan always runs when Main Power is on
MAIN
POWER
ON/OFF
Fuse
7A
SloBlo
Main Power Switch
w/ Main Fuse
Fan w/ Filter

Section 2 - SAFETY REMINDER

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 3 - INTRODUCTION

Thank you for purchasing a Pharmafill Model CS1 Cotton Inserter. We at Deitz Company hope you will find that the Model CS1 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 started 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.

Section 3 – INTRODUCTION (cont'd)

If used in compliance with the instructions contained in this manual and if 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 instructions 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 must 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 other design considerations. 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 4 - SPECIFICATIONS

Product size range — Continuous coil, cotton or synthetic 6-to-24-gram, low density.

Max. Continuous Speed

Length Setting	Rate per min.
2	88
3	84
4	80
5	76
6	72
7	68
8	64
9	60

Input Requirements

Voltage*	115 VAC 50/60 Hz
Cycles	50/60 Hz
Phase	1
Amperage	7.0 A (inrush)
	5.0 A (continuous)
Compressed Air**	1.5 CFM at 80 PSI
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.

Fuses

Main Fuse — 7.0 A SloBlo (313)

Ref	Type	Load	Value
F1	110 VAC	PLC	1.0 A
F1.1	110 VAC	24VDC Supply	2.0
F2	24 VDC	24VDC Components	0.5
F3	110 VAC	Roller Motor	5.0
F4	110 VAC	FW400 Rectifier (Provides 90+VDC for C/B)	2.0
F5	110 VAC	Transformer for driver	3.0

Dimensions (without Lift Platform) — 26.5 W x 23 D x 24.5 H inches (68 W x 59 D x 63 H cm)

Lift Platform (adjustable top height) — 33 to 45 inches high (83 to 115 cm)

Weight — 300 lb. (137 kg.)

Section 5 – GENERAL INFORMATION – Getting to know the machine

What It Does

This Model CS1 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.

Features

Control Panel
The machine operation is controlled with a Human Machine Interface (HMI). This is a flat panel device with an LED Touch Screen display. Next to the Control Panel are two pushbutton switches labeled “Emergency Stop” and “Start”.

Safety Enclosure
The operator is protected from touching the moving parts of the machine by the safety enclosure, which is made of clear polycarbonate. The front of the enclosure is a hinged door and swings up to provide full access to the components. The Guard Door has an interlock device which will prevent the machine from operating once the door is opened.

Turret
The turret assembly transports and inserts the cut cotton pieces. The turret itself consists of four vertically arranged clear tubes, 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. 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.
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).

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 place 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.

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 must be adjusted manually 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.

Air Pressure Control
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.

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.

Lift Platform
The machine incorporates a manually 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.

Options

Secondary Tamper Assembly
For applications where the cotton pops up out of the bottle 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.

Cotton Box Cover

18” X 18” Stainless steel cover fits most cotton boxes and aids in avoiding contamination of cotton. The opening promotes a consistent direction of flow out of the box and into the machine.

SECTION 6 - INSTALLATION AND SET-UP

NOTE: PLEASE RETAIN THE PACKING CRATE AND MATERIALS UNTIL THE MACHINE IS FULLY OPERATIONAL, TESTED AND APPROVED.

UNPACKING

a. Carefully remove the walls from the pallet.

b. Remove all packing materials, including additional bags and boxes that may be inside.

c. Cut the metal straps that hold that machine to the pallet.

d. Remove the four (4) bolts that hold the machine to the pallet.

e. Raise the skid stops so the caster wheels hold the weight of the machine.

f. Using a ramp, forklift, pallet jack, or several people, remove the machine from the pallet.

g. Inspect all supplied equipment for damage.

h. If any damage is present, notify DEITZ COMPANY immediately. If possible, send a photo.

i. Follow the procedures on the following pages to assemble and test the machine.

INSTALLATION

1. Connect electric (110 VAC 7A) and compressed air line. Adjust air pressure to **80** PSI.

Be sure the machine is level and supply cables are connected safely without creating a hazard.

SET-UP

(See drawing no. TN 0056)

1. Switch on **Main Power** (in back). Cooling fan will start running. Small **indicator light** on front panel will light.

2. Set **Cotton Stop** fully to right end of Cotton Shelf.

3. Place clear **Guard Panel** in lowered position.

4. Twist and release red **Emergency Stop** button.

5. Press **Start** button. **Operator Panel** will light up. **Turret** finds home position.

6. Press **Clear Tubes**. All four tubes will be cycled to remove any stray cotton pieces.

7. Using the **Operator Panel** (see section I), set values for:
    a. **Cotton Length** in inches
    b. **Pieces Per Bottle**
    c. **Bottle Release Time** in seconds
    c. **Insertion Dwell Time** in seconds

8. Load cotton:
    a. Raise **Guard Panel**.
    b. Use one, two or three **Cotton Guide** loops as needed.
    c. Raise upper roller of left set of **Pinch Rollers** by lifting end of roller by hand.
    d. Place cotton so end is between upper and lower roller to trap cotton.
    e. Lower **Guard Panel**.

9. Press **Manual** once. The cotton will feed through the right set of rollers and a piece of random length will be produced.

10. Raise the **Guard Panel** and remove the first piece of cotton. Lower the **Guard Panel**.

11. Press **Manual** again. The second piece produced is the exact length that will be repeated each time.

12. Raise the guard and adjust the **Cotton Stop** from right to left to just barely touch end of cotton piece.

13. Adjust the **Turret** left or right to center on the length of the cotton piece by turning the **Turret Adjusting Wheel** on the right side of machine (turn clockwise to move turret to right). Numbers on scale on front of **Cotton Shelf** show correct turret position relative to **Cotton Length** setting.

14. Press **Manual** twice. This will result in cotton loading into the front and right-hand tubes.

15. Start conveyor. Set conveyor speed. Place bottles on conveyor.

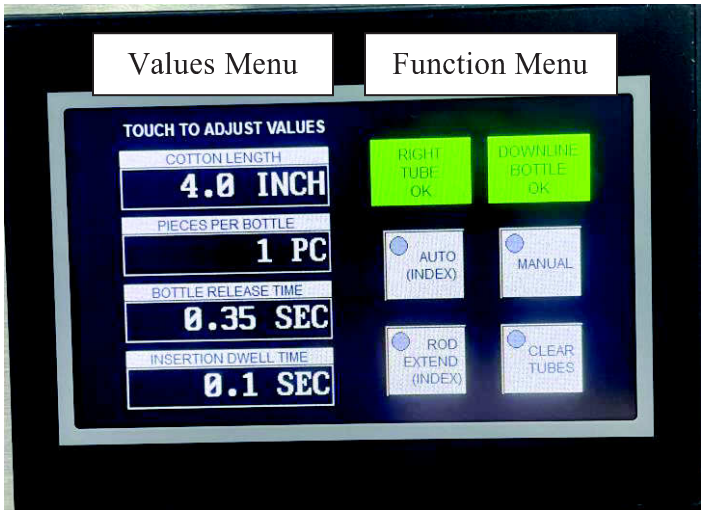
16. Adjust height of machine using handle on front of **Lift Platform**.

17. Press **Rod Extend** and adjust the position of **Bottle Stop 1** (filling station). Press **Rod Extend** again to release. Adjust **Bottle Stop 2** (release distance) to a position one bottle width downstream for Stop 1.

18. Adjust **Bottle Sensor** (starts fill action) to detect the bottle at **Stop 1 or any bottle to the left or upstream**. Adjust **Backup Sensor** (stops action) to detect bottles backing up from the right or downstream direction (already filled with cotton).

19. Press **Auto** to begin automatic operation.

DISPLAY



FUNCTION MENU

The right side of the Operator Panel contains four pushbuttons and two warning indicator lights. Each push button turns green while the button is active.

The four buttons on the lower right side of the Operator Panel work as follows:

Label	Type	Function
Auto	On/Off	Will automatically start filling cycle when bottle is detected by the Bottle Sensor. Disables **Manual** cycle and **Clear Tubes.** Automatic operation will stop if **Tube Empty** lights (see below).
Rod Extend	On/Off	Press to extend and hold the **insertion rods**. Press again to release. Used for set-up and troubleshooting.
Index (Auto/ Rod Extend)	On/Off	Pressing both the Auto and Extend Rod buttons will activate the **Auto Index** function. The will automatically index bottles **without inserting cotton.** Used when cotton is not required but uniform bottle spacing is needed for the next process such as automatic capping and banding. The **Bottle Release Time** setting works just as with **Auto Insert**.

Manual (Hold To Repeat)	On (while pushed)	Starts one **fill cycle** with or without cotton or bottle. Hold down for continuous cycling.
Clear Tubes	On (while pushed)	Empties cotton from all **tubes** by running four consecutive **fill cycles** without feeding cotton. Remove bottle from **filling station** before using this function.

INDICATOR LIGHTS

The lighted indicators on the upper right side of the Operator Panel work as follows:

Label	Cause	Reaction	Solution
Right Tube Empty	Cotton not present in right-hand tube	Stops automatic operation	Turn **Auto** off & find cause. Then press **Manual** to fill tube. Press **Auto** to resume automatic operation Catch unfilled bottle & recycle.
Downline Bottle Backup	Bottles backed-up downline	Stops automatic operation	Operation resumes automatically when downline backup clears. Prevents jams when next process downline is stopped.

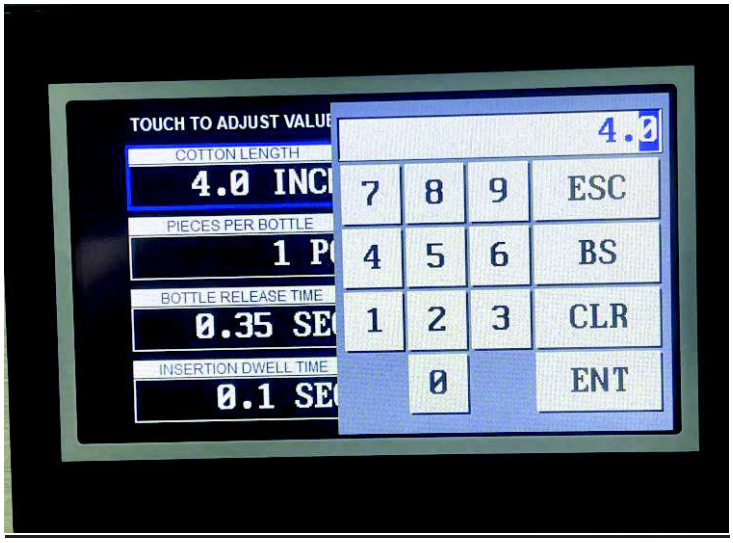
VALUES MENU

The left side of the Operator Panel consists of the Values Menu, a list of four values which may be changed.

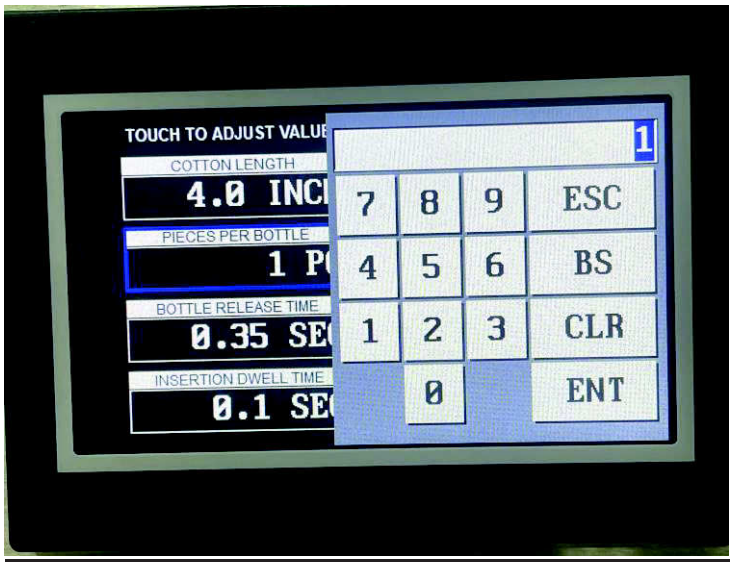
To set each display value:

1. Press the value you wish to view or set. The value will be displayed.
2. Press CLR
3. Key in new value
4. Press ENT
5. Press BS to delete and key errors
6. If you entered this menu but do not wish to make a change, press ESC

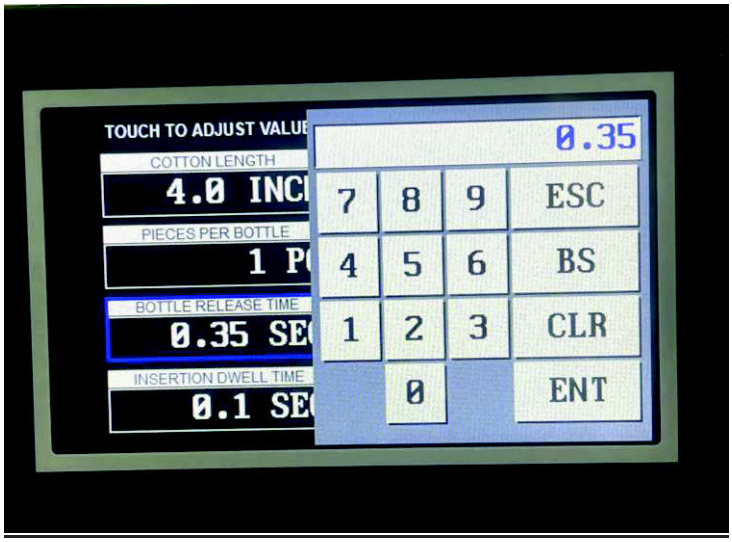
Value	Description	Range of Values
Cotton Length	Straight length of cotton piece	2 to 9 inches



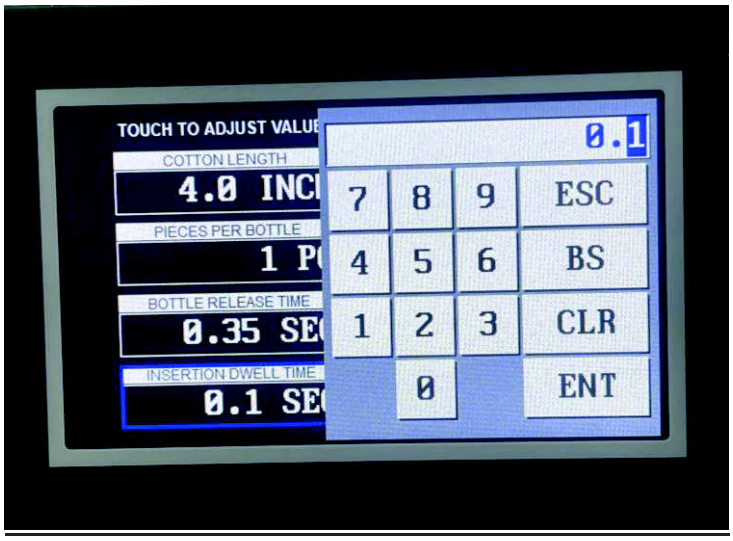
Value	Description	Range of Values
Pieces Per Bottle	Number of pieces of cotton per bottle	1 to 10 pieces



Value	Description	Range of Values
Bottle Release Time	Time to let filled bottle move away	0.1 to 5.0 sec



Value	Description	Range of Values
Insertion Dwell Time	Time plunger remains in bottle	0.0 to 5.0 sec



Section 7 – CLEANING AND MAINTENANCE

Washdown

This machine is not waterproof and is not intended for full wash down. If full washdown is performed on the equipment near the machine, it must be completely protected by a waterproof cover or by other means. Washdown will void the warranty.

Cleaning solutions

Stainless steel is resistant to most cleaning solutions. Other contact materials such as aluminum and nonmetallics (plastics, or rubber) are generally less corrosion-resistant and care should be exercised in their cleaning. Aluminum is readily attacked by acids as well as highly alkaline cleaners, which can render the surface non-cleanable. Gear belts are subject to stress cracking and clouding from prolonged exposure to corrosive cleaning agents. Use a USDA approved sanitizing solution that is safe for all materials listed below, in a spray bottle, by lightly wiping down all contact surfaces. In the absence of such a cleaner, recommendations follow.

Recommendations

Electricals/Electronics

Do not clean electrical or electronic components with any kind of solution. DO NOT WET! Compressed air may be used to gently blow off dust. Aerosol contact cleaner may also be used.

Stainless Steel

This material is resistant to damage from most cleaners. Routine cleaning can be done with soap and water, alcohol, or acetone.

Anodized Aluminum

Any highly acidic or alkaline cleaner will etch the aluminum over time and damage it. Soap and water, or alcohol is acceptable.

Clear Plastic

The clear plastic material is polycarbonate (known as Lexan). Cleaning with alcohol or acetone will damage it and should never be used. Ammonia or any strong cleaner will make it cloudy over time. It may be safely cleaned with soap and water.

Other Plastic (Not Clear)

All other manufactured plastic parts are made from acetal (known as Delrin). It is resistant to damage from most cleaners. Routine cleaning can be done with soap and water, or alcohol. White acetal will yellow over time due to exposure to ultraviolet light in the environment. This is normal and cannot be removed by cleaning. Some cleaners may accelerate this process. Purchased items may contain or be enclosed in plastic of unknown composition, therefore it is recommended that these parts be cleaned with soap and water.

Maintenance Items

(Also see Preventative Maintenance Document in Section 10 Technical Documents)

Insertion Air Cylinder

Life expectancy varies widely with each installation, usually due to air supply quality (oil, water). Insertion Air 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 of $40 thereafter. Swapping out a complete assembly will take 10 minutes each. Swapping out the cylinder only and wiper will take up to 30 minutes each (requires complete disassembly). You may also purchase the seal kit to do-it-yourself, but we are not responsible for the quality of your work.

Assemblies

AD1034-1F	CS1 Upper Air Cylinder Assembly
AD1034-2F	CS1 Lower Air Cylinder Assembly
AD1071	CS1 Rebuild Parts Kit
	(1) FM3283F, (2) P0156, (1) P0157

Parts Only

P0158	CS1 Upper Air Cylinder ONLY
	(Also purchase one P0157)
FMA3044-1	CS1 Lower Air Cylinder ONLY
	(Also purchase one P0157)
FM3283F	Cylinder Internal Seal Set
P0157	Air Cylinder Rod Wiper (1 per cylinder assembly)
P0156	Brass Air Fitting 10-32 to ¼” Tube

Section 8 – TECHNICAL INFORMATION

A. Principle of Operation

The Model CS1 converts continuous cotton coil to individual pieces and places them inside a bottle or other container. The cotton coil is cut by the tearing action of two sets of pinch rollers. The cut piece is pushed up into a tube, so that it is folded in half to form an inverted-U shape. The tube moves under a sensor to confirm the presence of the cotton, then into position to align with the bottle filling station. If a bottle is present, the cotton is inserted. Once a bottle is filled, the machine automatically releases the bottle and repeats the cycle.

B. Cycle of Operation

Typical machine cycle (insertion process sequence of operations)

TO START CYCLE - Press **MANUAL** or **AUTO** (bottle must be present at Start Sensor)

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

C. Troubleshooting

1. Bottles fall over or jump suddenly

a. Check the positioning of the Bottle Stops. Use the One Step Index function to test the action.

b. Check that the Release Time is adequate for the conveyor speed and bottle size. Use the Index Bottles Only function to test the action. Increase the Release Time or increase conveyor speed.

2. Cotton comes out top of bottle

a. Check that the Cotton Length is correct for bottle and contents

b. Check that the plunger tip is the correct size for the application.

c. 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 by moving the Pivot Post left or right.

d. 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.

e. Install the optional Tamper Assembly

f. 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

a. Pure cotton coil always runs best, though it produces the most dust. It cuts most easily and consistently.

b. 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

a. 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.

b. 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.

c. Plunger hits turret, turret has no play when power is on: Turret Sensor (proximity) may have failed or connector may have come loose.

5. Insertion cylinders extend, then machine stops in extended position

a. 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

b. Turret sensor may be out of position or is defective. Consult drawing TN 0000.

6. Message: "TURRET ROTATE ERROR"

a. 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.

b. 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.

7. Message: "ROLLER TRAVEL ERROR"

a. 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.

Index of Technical Notes and Drawings (document section begins after this page)

Doc. No.	No. of Pages	Title

(Documents follow last page)

1.	**TN0056 pg 1 of 2**	**Downstream gating set-up, conveyor moving L to R (normal), PLC v 4.0 and up.**
2.	**TN 0056 pg 2 of 2**	**Downstream gating set-up, conveyor moving R to L (unusual), PLC v 4.0 and up.**
3.	**TN 0053 pg 1 of 2**	**Downstream gating set-up, with optional tamper unit installed, conveyor moving L to R (normal), PLC v 4.0 and up.**
4.	**TN 0053 pg 2 of 2**	**Downstream gating set-up, with optional tamper unit installed, conveyor moving R to L (unusual), PLC v 4.0 and up.**
5.	**WD1012 (3 pgs)**	**Electrical wiring diagram**
6.	**SC 1013 (4 pgs)**	**Pneumatic schematic (air line diagram)**
7.	**AD1086-PARTS (2 pgs)**	**Parts List: Wear, Spare and Service Parts**
8.	**AD0994_CCD (1 pg)**	**Contact Compliance Document**
9.	**AD0994_PM (1 pg)**	**Preventative Maintenance Document**

Addendums or additional technical data

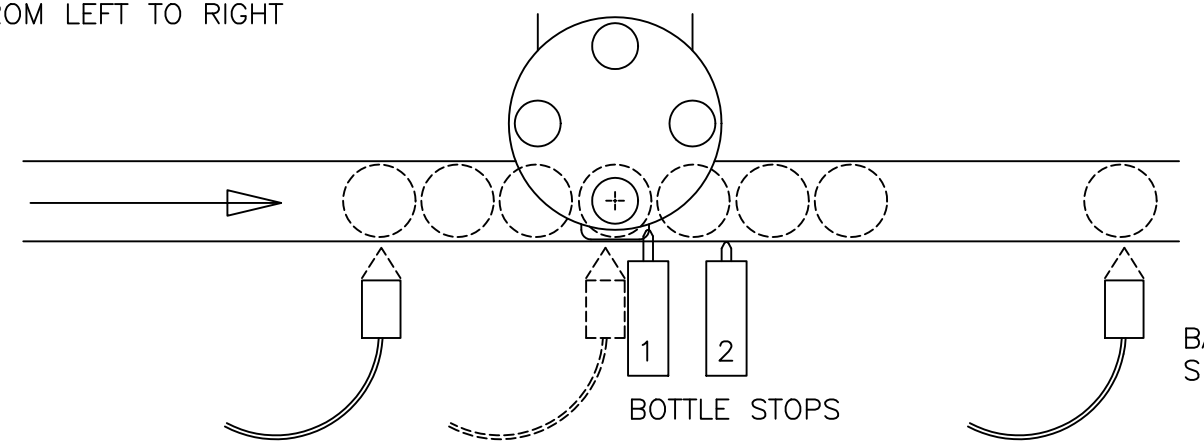
NOTE	REV	DESCRIPTION	DATE
–	–	–	–

REVISION A

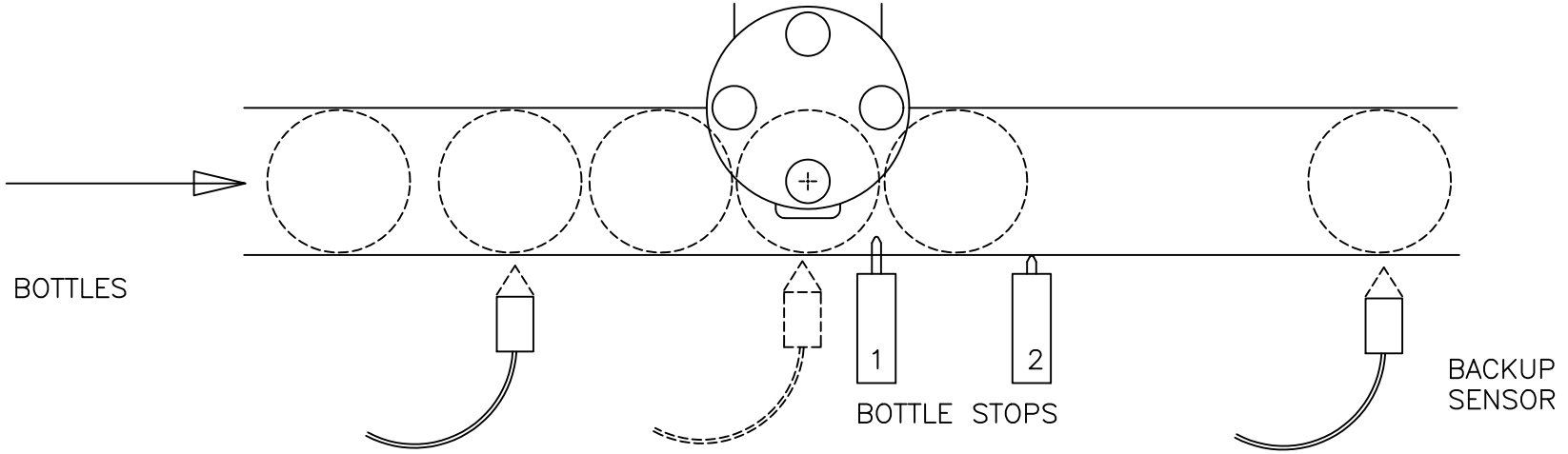
NUMBER: TN 0056

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: TN 0056

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 2

NUMBER TN 0056

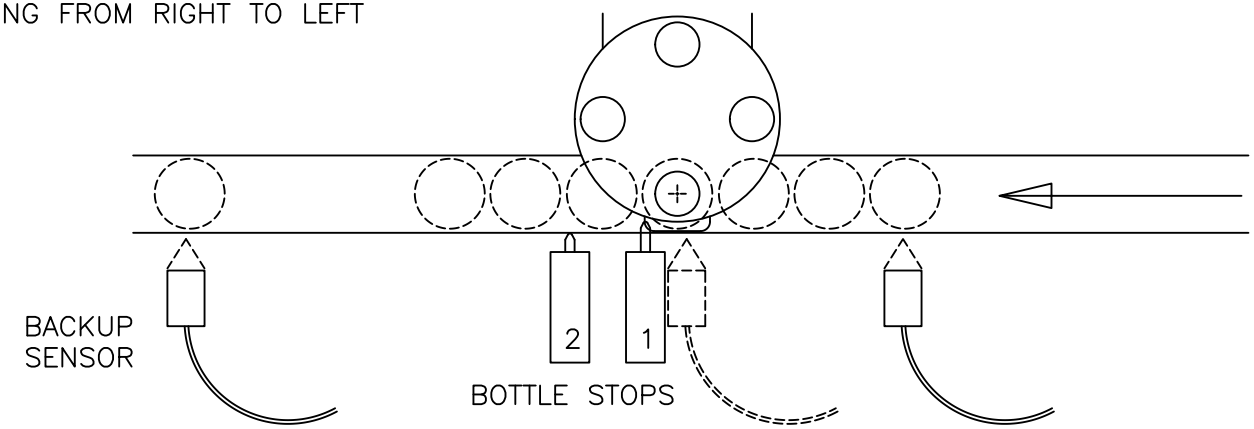
REVISION A

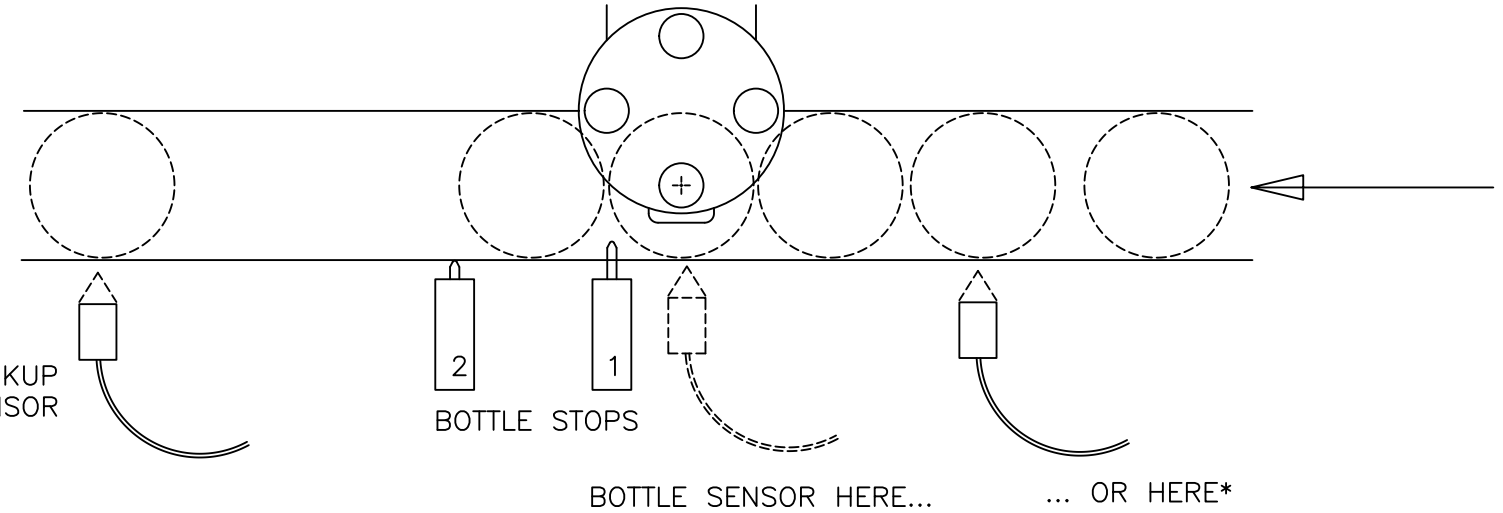
NOTE	REV	DESCRIPTION	DATE
–	–	–	–

REVISION A

NUMBER: TN 0056

CONVEYOR MOVING FROM RIGHT TO LEFT





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

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

NUMBER: TN 0056

REVISION A

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

PRODUCT CS1 WITHOUT TAMPER OPTION

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

BY SJD2 DATE: 11/11/02

SHEET 2 OF 2

NUMBER TN 0056

REVISION A

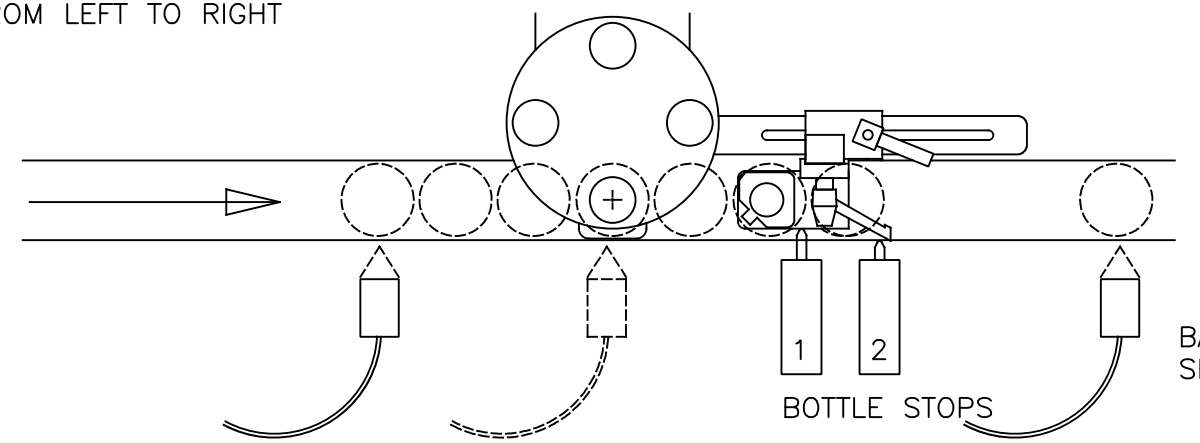
NOTE	REV	DESCRIPTION	DATE
–	A	REDUCED FROM FOUR TO TWO BOTTLE STOPS	10/19/01
–	B	ADDED RIGHT–TO–LEFT VERSION	11/11/02

REVISION B

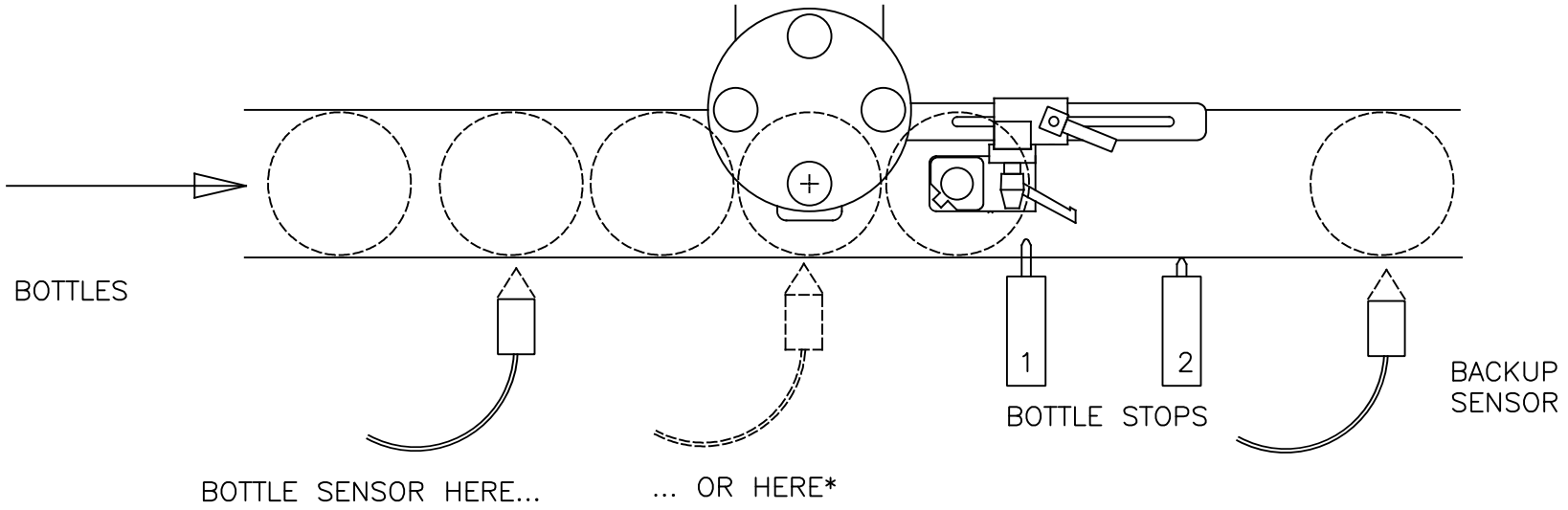
NUMBER: TN 0053

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: TN 0053

REVISION B

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: 5/1/01

SHEET 1 OF 2

NUMBER TN 0053

REVISION B

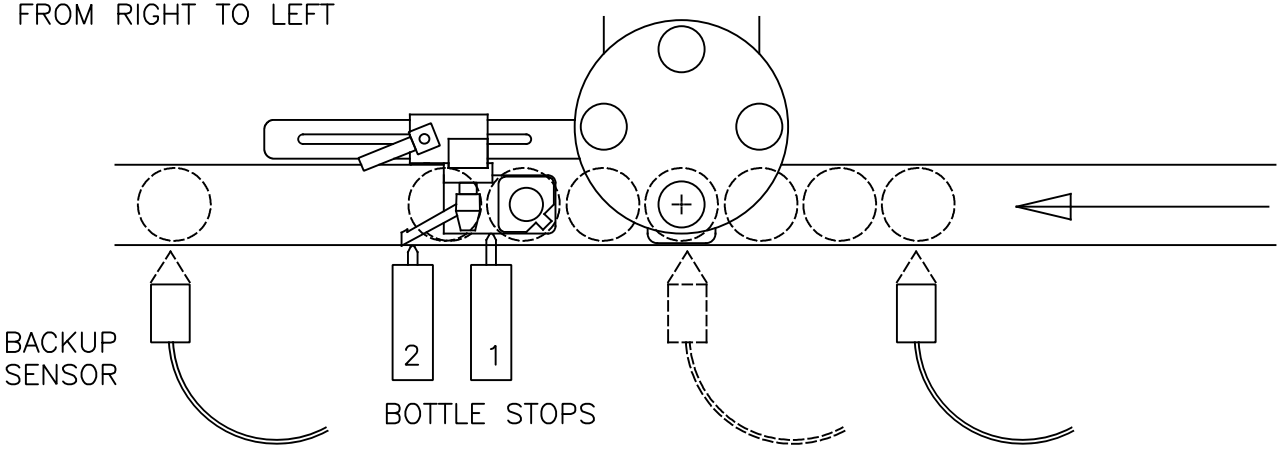
NOTE	REV	DESCRIPTION	DATE
–	A	REDUCED FROM FOUR TO TWO BOTTLE STOPS	10/19/01
–	B	ADDED RIGHT–TO–LEFT VERSION	11/11/02

REVISION B

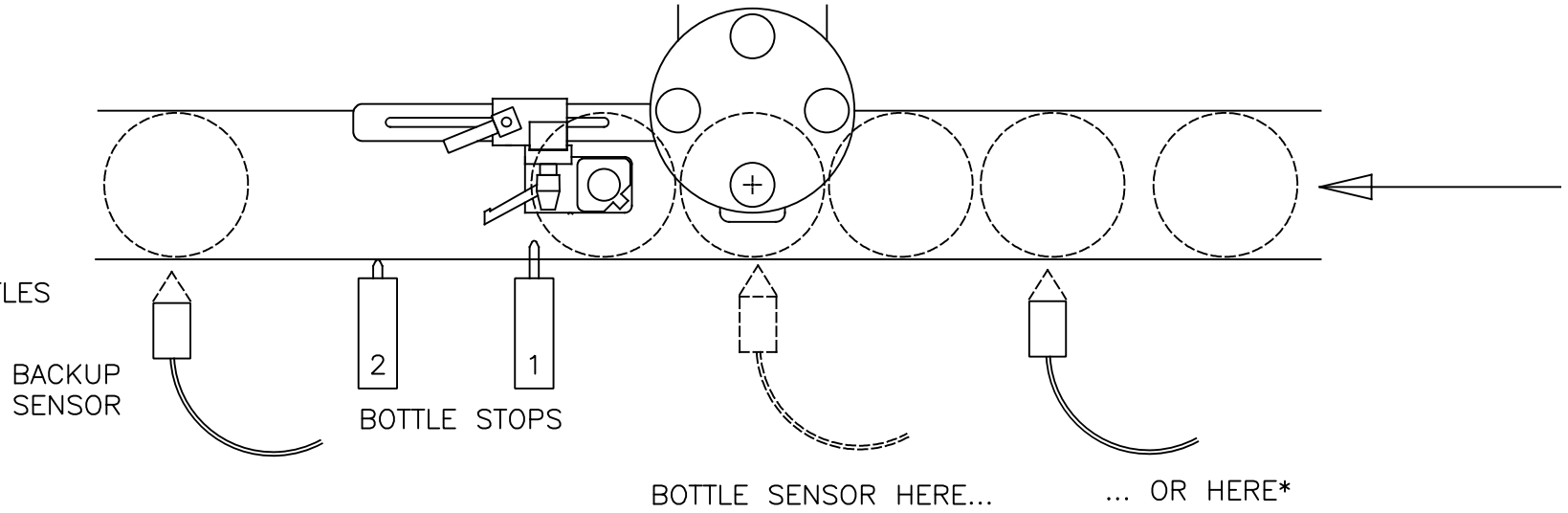
NUMBER: TN 0053

CONVEYOR MOVING FROM RIGHT TO LEFT

SMALL BOTTLES



LARGE BOTTLES



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

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

NUMBER: TN 0053

REVISION B

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: 5/1/01

SHEET 2 OF 2

NUMBER TN 0053

REVISION B

NOTE	REV	DESCRIPTION	DATE
–	K	WIRE "W/BU" FROM HO–Y1 WAS ON "DT" TERMINAL #2, TB4 TERMINALS WERE NUMBERED 1 THRU 10 ON DRAWING	1/19/22

REVISION K

NUMBER: WD1012

TURRET STEPPER MOTOR

HMI

HMI TOUCHSCREEN (REAR VIEW)

DATA CABLE

WH/GN
GN
WH
WH/RD
RD
BK

GN #18 GA. (12") LUGS AT BA. END

TERMINATE ON /77 ELECTRICAL PANEL SCREW

NO CONNECTION

OR

BU BU

BN BU

X1

DT

BK/WH BK

BN/WH BN

TB2

CORDSETS

BU WH W/BU

HO–Y1 HO–Y2 HO–C W/BK

SNx TURRET PROX
SN5 UPPER
SN6 LOWER

BN BU

W/B/RD W/B/BU

X0 X1

GN YL RD

Y3 Y4 Y5

STACK LIGHT
BU SL–COM
BK SL–GRN
BN SL–YEL
WH SL–RED

X4 X5 X6

W/BN W/RD W/GY

BU BK/WH BN/WH BN BK BK16 GN WH GN WH SENSOR #3 SENSOR #2 SENSOR #1

BK16

TB1

F1 F2 F3 F4 F5 F6

PS1 POWER SUPPLY 24 VDC

+ + – – CK

G N L

ALL BK16

BK

ALL BU22

ALL BN22

PLC

GN16

X2 NO CONNECTION

X3 NO CONNECTION

CORDSETS (3)

FUSES
F1 – 1A
F2 – 2A
F3 – 5A SLO
F4 – 2A
F5 – 3A SLO
F6 – 2A

SEE DIAMOND BOXES LIKE ABOVE FOR PLC INPUT & OUTPUT CONNECTIONS
ALSO SEE PLC DETAIL ON PAGE 3

WD1012	X	CS1 COTTONER WIRING DIAGRAM	AD0953–6	MODEL CS1
PART NO#	QTY. REQ'D	DESCRIPTION	NEXT ASSEMBLY	USED ON

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

MATERIAL:

FINISH:

RE–DRAWN BY: SJO

DATE: 2020–09–18

SHEET 1 OF 3

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

TITLE: CS1 COTTONER WIRING DIAGRAM

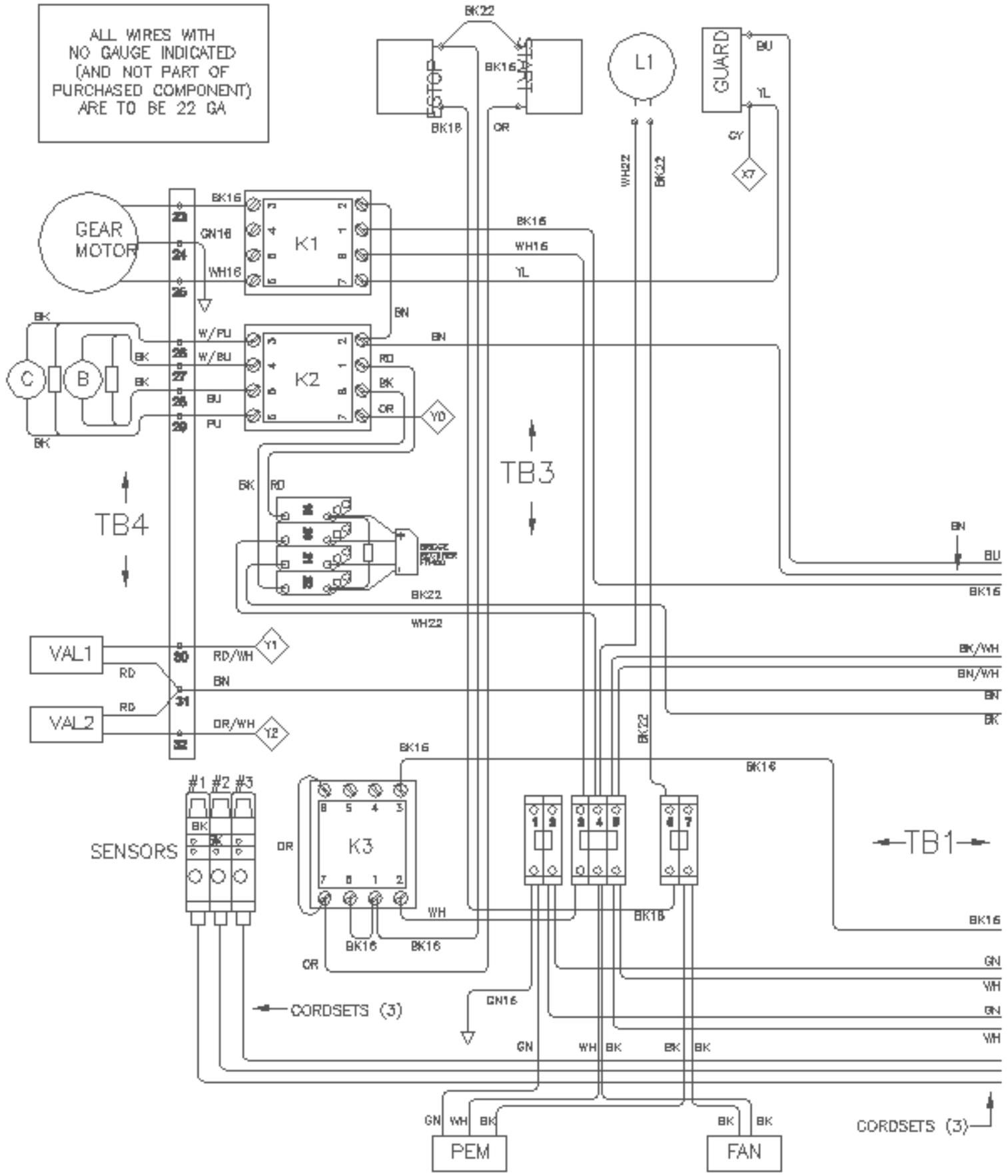
NUMBER: WD1012

REVISION K

NOTE	REV	DESCRIPTION	DATE
–	K	WIRE "W/BU" FROM HO–Y1 WAS ON "DT" TERMINAL #2, TB4 TERMINALS WERE NUMBERED 1 THRU 10 ON DRAWING	1/19/22

REVISION: K

NUMBER: WD1012



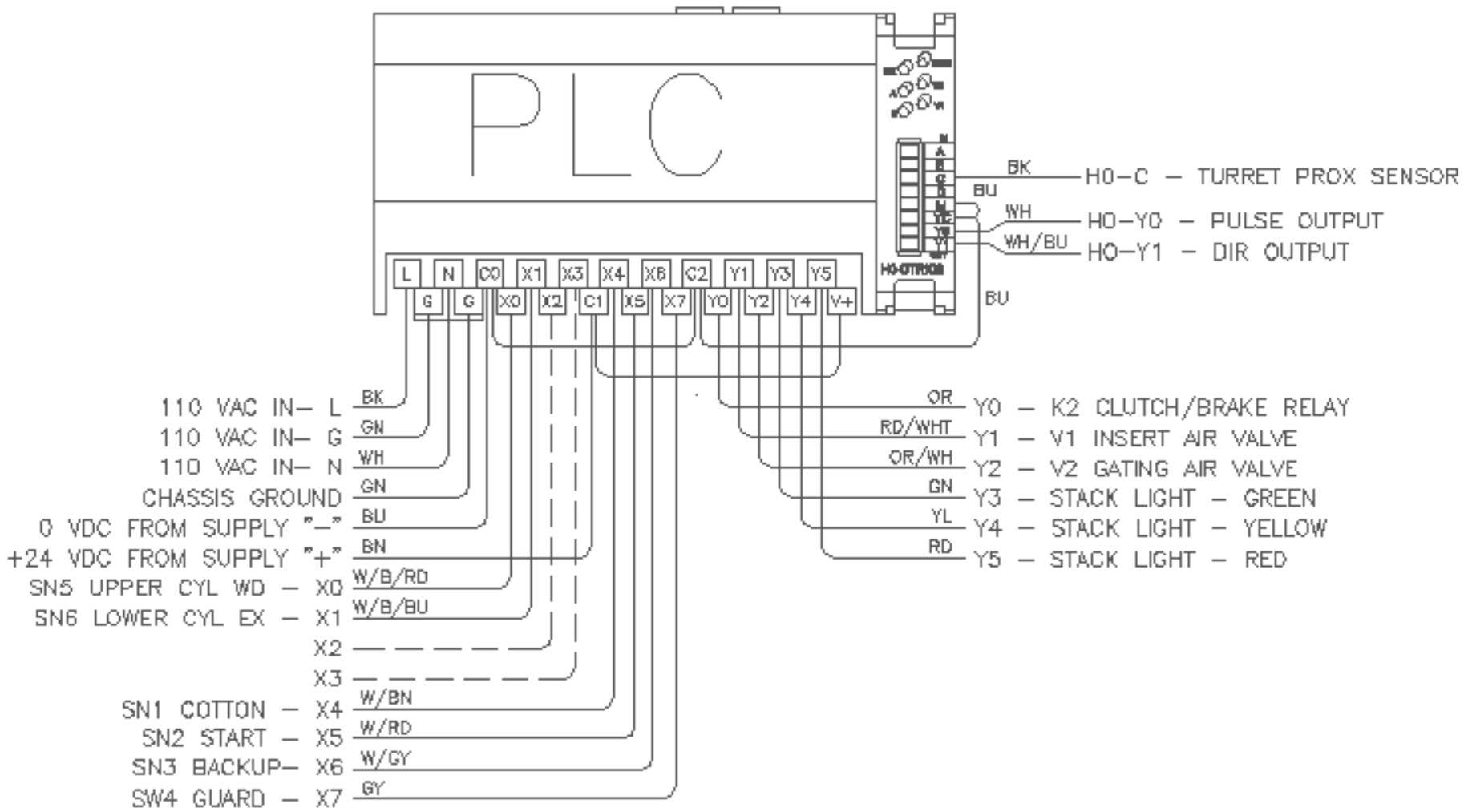
WD1012	X	CS1 COTTONER WIRING DIAGRAM	AD0953–6	MODEL CS1
PART NO#	QTY. REQ'D	DESCRIPTION	NEXT ASSEMBLY	USED ON

UNLESS OTHERWISE SPECIFIED: TOL: DEC= .XXX ±.005 FRAC= ±1/64 .XX ±.01	MATERIAL:	RE–DRAWN BY: SJD	DATE: 2020–09–16
	FINISH:	SHEET 2 OF 3	
DEITZ COMPANY, INC. ROUTE 34, WALL, N.J.	TITLE: CS1 COTTONER WIRING DIAGRAM	NUMBER: WD1012	REVISION K

NOTE	REV	DESCRIPTION	DATE
–	K	WIRE "W/BU" FROM HO–Y1 WAS ON "DT" TERMINAL #2, TB4 TERMINALS WERE NUMBERED 1 THRU 10 ON DRAWING	1/19/22

REVISION K

NUMBER: WD1012



WD1012	X	CS1 COTTONER WIRING DIAGRAM	AD0953–6	MODEL CS1
PART NO#	QTY. REQ'D	DESCRIPTION	NEXT ASSEMBLY	USED ON

UNLESS OTHERWISE SPECIFIED: TOL: DEC= .XXX ±.005 FRAC= ±1/64 .XX ±.01	MATERIAL:	RE-DRAWN BY: SJD	DATE: 2020–09–16
	FINISH:	SHEET 3 OF 3	
DEITZ COMPANY, INC. ROUTE 34, WALL, N.J.	TITLE: CS1 COTTONER WIRING DIAGRAM	NUMBER: WD1012	REVISION K

CONTENTS

1. NOTES AND REVISIONS

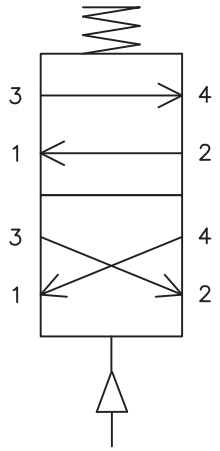
2. INLET/CONTROL VALVES

3. AIR CYLS: INSERT/PINCH/TAMP

4. AIR CYLS: GATING

NOTES

TYPICAL AIR VALVE
4 PORT/2 POSTION
24 VDC

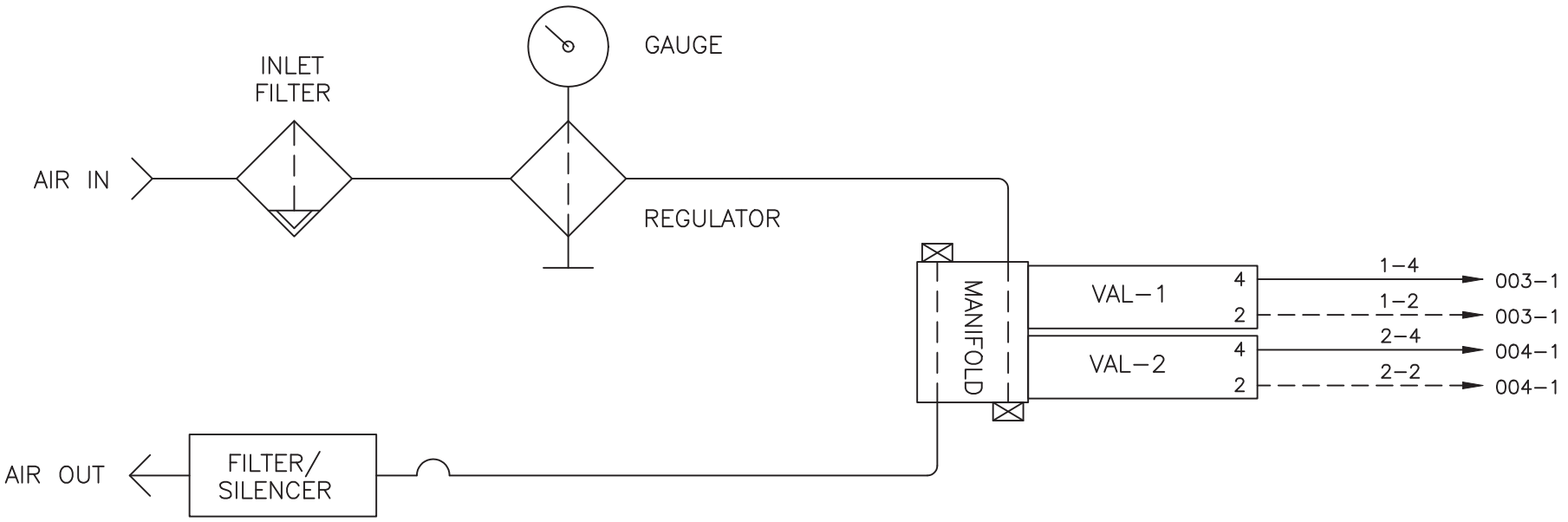


NOTE	REV	DATE
–	–	--/--/--

NUMBER SC1013 PAGE 001

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

SECTION	NOTE AND REVISIONS	BY SJD2	DATE: 5-23-03
TITLE	MODEL CS1 COTTONER AIR LINE SCHEMATIC FROM SERIAL NO. 001	SHEET 001 OF 004	
		NUMBER SC1013	REVISION –

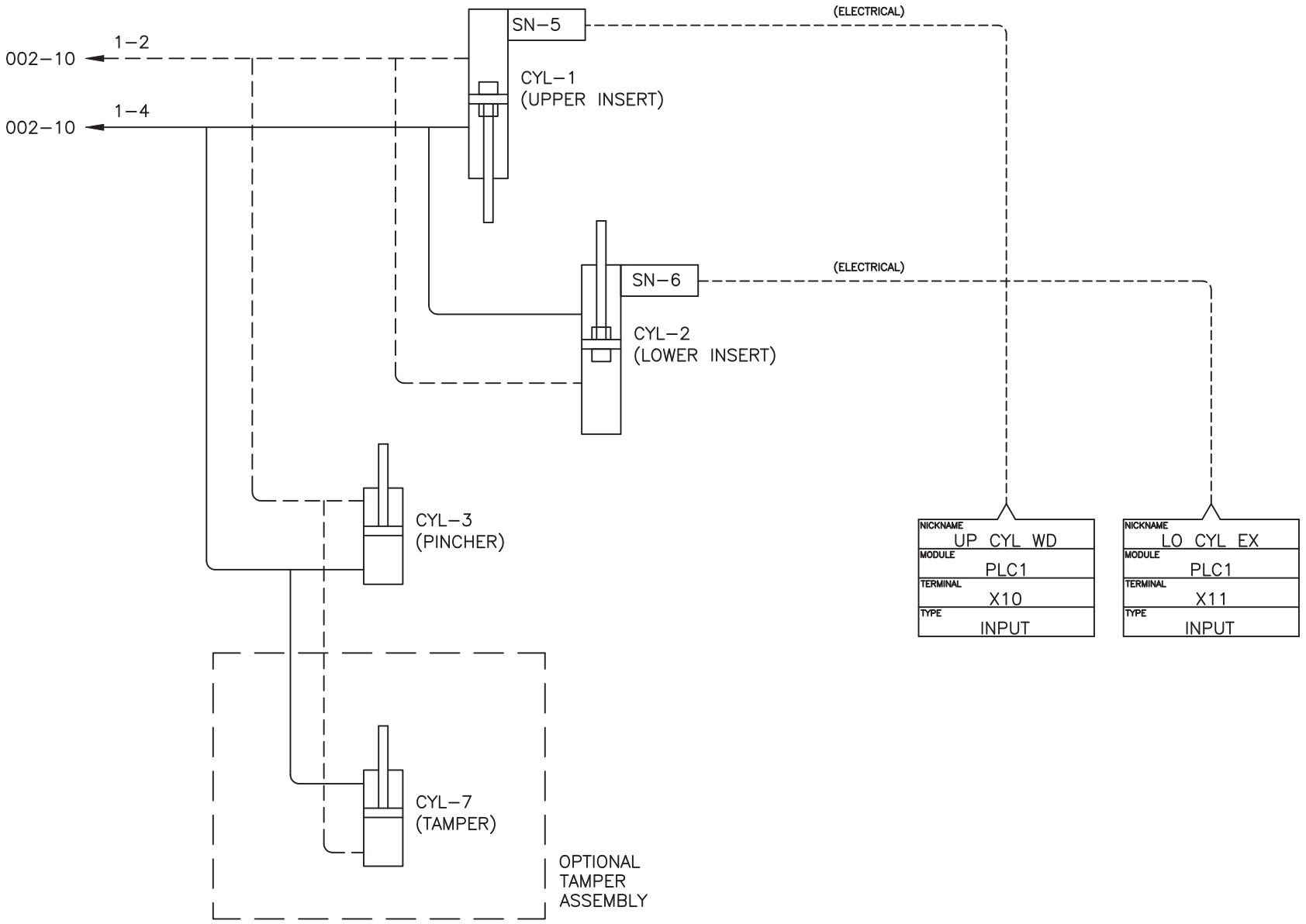


NUMBER	SC1013
PAGE	002

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

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

SECTION	INLET/CONTROL VALVES	BY SJD2	DATE: 5–23–03
TITLE	MODEL CS1 COTTONER AIR LINE SCHEMATIC FROM SERIAL NO. 001	SHEET 002 OF 004	
		NUMBER SC1013	REVISION –



NUMBER	PAGE
SC1013	003

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

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

SECTION AIR CYLS: INSERT/PINCH/TAMP

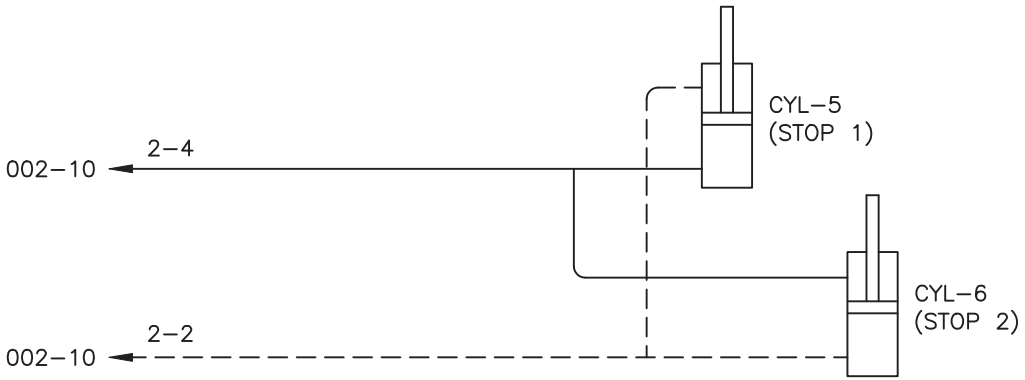
TITLE MODEL CS1 COTTONER
AIR LINE SCHEMATIC
FROM SERIAL NO. 001

BY SJD2 DATE: 5–23–03

SHEET 003 OF 004

NUMBER SC1013

REVISION –



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

NUMBER SC1013 PAGE 004

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

SECTION AIR CYLS: GATING/ROLLERS

TITLE MODEL CS1 COTTONER
AIR LINE SCHEMATIC
FROM SERIAL NO. 001

BY SJD2 DATE: 5–23–03

SHEET 004 OF 004

NUMBER SC1013

REVISION –

January 2022

CS1 Wear & Spare Parts

CS1 Wear Parts Kit

Item No.	Description	Price per Unit	Quantity	Total
AD1086-1	CS1 Wear Parts Kit			
• Consisting of:				
○ AD1071	Air Cylinder Rebuild Parts Kit	$ 40.00	1	$ 40.00
○ AD1085-1	Spare Fuse Kit	$ 16.00	1	$ 16.00
○ FM3049-2F	Air Filter Element	$ 12.00	1	$ 12.00
○ FMA3044-1	Lower Air Cylinder, 8" Stroke	$ 298.00	1	$ 298.00
○ P0158-7	Upper Air Cylinder, 7" Stroke	$ 141.00	1	$ 141.00
○ P5816	Relay, DPST 24 VDC	$ 27.00	1	$ 27.00
Total				**$ 534.00**

CS1 Spare Parts Kit (Mead Valve & 105 PLC)

Item No.	Description	Price per Unit	Quantity	Total
AD1086-2	CS1 Spare Parts Kit (Mead Valve & 105 PLC)			
• Consisting of:				
○ FA1015-1	Pincher Arm, LH (inboard)	$ 110.00	1	$ 110.00
○ FA1015-2	Pincher Arm, RH (outboard)	$ 110.00	1	$ 110.00
○ FA1042	Pincher Side Block	$ 46.00	1	$ 46.00
○ FM2978-1	Cylinder End (Upper) .75 OD	$ 29.00	1	$ 29.00
○ FM3264F	Gating Air Cylinder, 1" Stroke	$ 119.00	1	$ 119.00
○ P0141	Air Cylinder, 1-Way, Small	$ 56.00	1	$ 56.00
○ P0142	Air Valve 24VDC, ¼ Tubing	$ 188.00	1	$ 188.00
○ P0160	Air Cylinder Auto-Switch w/LED	$ 132.00	1	$ 132.00
○ P0414	Belt Timing 90XL037	$ 9.00	1	$ 9.00
○ P1807	PLC CPU 105 Series	$ 595.00	1	$ 595.00
○ P1810	PLC-to-HMI Interconnect Cable	$ 66.00	1	$ 66.00
○ P1822-1	Stepper Driver, Small	$ 309.00	1	$ 309.00
○ P1836	HMI – 4" Touch Screen	$ 607.00	1	$ 607.00
○ P2736	Flatwasher Nylatron .262ID X	$ 2.00	1	$ 2.00
○ P5018	Fiber Optic Sensor/Amplifier (D10)	$ 154.00	1	$ 154.00
○ P5814	Relay, DPST 110 VAC (Red)	$ 27.00	1	$ 27.00
○ P6501	Full Wave Rectifier FW400	$ 4.00	1	$ 4.00
○ P6981	Sensor – Proximity Switch PNP	$ 132.00	1	$ 132.00
Total				**$ 2,695.00**

CS1 Spare Parts Kit (SMC Valve, 05 PLC)

Item No.	Description	Price per Unit	Quantity	Total
AD1086-3	CS1 Spare Parts Kit (SMC Valve, 05 PLC)			
• Consisting of:				
○ FA1015-1	Pincher Arm, LH (inboard)	$ 110.00	1	$ 110.00
○ FA1015-2	Pincher Arm, RH (outboard)	$ 110.00	1	$ 110.00
○ FA1042	Pincher Side Block	$ 46.00	1	$ 46.00
○ FM2978-1	Cylinder End (Upper) .75 OD	$ 29.00	1	$ 29.00
○ FM3264F	Gating Air Cylinder, 1” Stroke	$ 119.00	1	$ 119.00
○ P0141	Air Cylinder, 1-Way, Small	$ 56.00	1	$ 56.00
○ P0227	Air Valve 24VDC, ¼ Tubing	$ 120.00	2	$ 240.00
○ P0160	Air Cylinder Auto-Switch w/LED	$ 132.00	1	$ 132.00
○ P0414	Belt Timing 90XL037	$ 9.00	1	$ 9.00
○ P1835	PLC Module	$ 468.00	1	$ 468.00
○ P1811	PLC 05 Series	$ 290.00	1	$ 290.00
○ P1810	PLC-to-HMI Interconnect Cable	$ 66.00	1	$ 66.00
○ P1822-1	Stepper Driver, Small	$ 309.00	1	$ 309.00
○ P1836	HMI – 4” Touch Screen	$ 607.00	1	$ 607.00
○ P2736	Flatwasher Nylatron .262ID X	$ 2.00	1	$ 2.00
○ P5018	Fiber Optic Sensor/Amplifier (D10)	$ 154.00	1	$ 154.00
○ P5814	Relay, DPST 110 VAC (Red)	$ 27.00	1	$ 27.00
○ P6501	Full Wave Rectifier FW400	$ 4.00	1	$ 4.00
○ P6981	Sensor – Proximity Switch PNP	$ 132.00	1	$ 132.00
Total				**$ 2,910.00**

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 CS1 Cotton Inserter Type AD0994

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
FM2979	Cotton Guide Loops	Acetal	FDA 21 CFR 177.2480
FM2952	Rollers	INOX AISI 304	ASTM Standard
FM3033	Cotton Shelf Guides	INOX AISI 304	ASTM Standard
FM3014	Pincher Arms	INOX AISI 304	ASTM Standard
FM2973	Cotton Shelf	INOX AISI 304	ASTM Standard
FM3034	Stop Plate	INOX AISI 304	ASTM Standard
FM2978	Insert Cylinder Rod Tip	INOX AISI 303	ASTM Standard
FM2961	Tube Extension	Acetal	FDA 21 CFR 177.2480
FM2951	Turret Tube	Polycarbonate	FDA 21 CFR 177.15803
FM2978	Upper Cylinder Rod Top	Acetal	FDA 21 CFR 177.2480

Signed _____ **Position** _____ **Date** _____

This document is submitted only in English language.

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

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. Guard Door
    a. Inspect condition of magnetic catches. Replace if necessary.
    b. Inspect condition and function of safety switch. Replace if necessary.
    c. Inspect condition of clear panel. Replace if necessary.
5. Miscellaneous
    a. Clean or replace cooling fan air filter.
    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 covers and inspect drive unit. Clean internal spaces prior to inspection.
    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 turret horizontal drive screw. Clean and lubricate screw with a small amount of lithium grease.
    b. Inspect condition of hand wheel and handle. It should turn easily and turret should move side to side smoothly.