

NORTHFIELD



CLS

COMPACT LABELING SYSTEM

TOUCH SCREEN

NORTHFIELD CORPORATION
1870 COMMERCE DRIVE
DE PERE, WI 54115
WWW.NORTHFIELDCORP.COM

MANUFACTURER:

NORTHFIELD CORPORATION

1870 COMMERCE DR.

DE PERE, WI 54115

UNITED STATES

MODEL:

NORTHFIELD CLS

SPECIFICATIONS:

VOLTAGE: 115VAC-230VAC

FREQUENCY: 50/60Hz

CURRENT: 5 AMP

AIR: 80 PSI (for some models)

YEAR OF MANUFACTURE:

YEAR: (DATE HERE)

FOR PARTS, SERVICE, AND
TECHNICAL ASSISTANCE
CALL:

**NORTHFIELD CORP.
1870 COMMERCE DR.
DE PERE, WI 54115
920-983-8122 PHONE
920-983-8124 FAX
WWW.NORTHFIELDCORP.COM**

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SECTION 1

Manual Overview

In this manual the Northfield Corporation will give you a comprehensive outlook and reference to help you set-up, maintain and run the *Northfield CLS LABELER*. We at Northfield have trained competent technicians to answer any questions that may arise or anything that is not covered in this manual. You can E-Mail, call, or fax us at northfieldcorp.com, (920) 983-8122 phone (920) 983-8124 fax.

Our regular business hours are Monday thru Friday 7:30 AM to 4:00 PM central time zone with 24 hour emergency service. (Available upon request)

Machine Overview

The *Northfield CLS Labeler* is designed to fit into equipment where other labelers cannot. The small compact design allows you to place the labeler head into your equipment, and the control box on the outside near the operator. The CLS can transform from a merge applicator on a carton line, to a RVB snorkel, mounted on the side of a vertical bagger. The Northfield CLS can be changed over from a left hand labeler to a right hand labeler. The Northfield CLS Labeler has a streamline design to make it the perfect fit into any production line. It was designed with the operator in mind, its operator friendly display will help with making adjustments with little to no down time.

Warnings and Cautions



REMEMBER: AT ANYTIME THERE IS STILL A RISK THAT YOU MAY INJURE YOURSELF, OTHERS OR CAUSE SERIOUS MACHINE DAMAGE. PLEASE USE CAUTION AND COMMON SAFETY PRACTICES WHEN WORKING ON THIS OR ANY MACHINE.

- DO NOT OPERATE THE LABELER WITHOUT THE PROPER TRAINING AND INSTRUCTION.
- KEEP HANDS CLEAR OF THE BELTS AT ALL TIMES, SERIOUS INJURY COULD RESULT IF THE LABELER CYCLES. CYCLING IS CONTROLLED BY OUTSIDE SIGNALS THAT COULD START A CYCLE AT ANY TIME.
- DO NOT ATTEMPT TO CLEAR A JAM WITHOUT SHUTTING DOWN THE POWER.
- DO NOT OPERATE THE LABELER WITHOUT PROTECTIVE GUARDS AND COVERS IN PLACE.
- DO NOT ATTEMPT TO WASH DOWN THE CONTROLLER OR THE LABELER; THEY MUST BE REMOVED OR COVERED DURING WASH DOWN.
- ONLY QUALIFIED PERSONNEL SHOULD SERVICE THE LABELER. SERIOUS PERSONAL INJURY OR EQUIPMENT DAMAGE COULD RESULT.
- WHEN CONNECTING THE CONTROLLER TO THE HEAD CONNECTIONS DO NOT HAVE ANY POWER HOOKED UP.
- IF ANY COMPONENTS OF THE MACHINE WEIGH MORE THAN 39lbs (18kg) IT MUST BE LIFTED BY TWO PEOPLE.
- YOU WILL FIND THESE WARNING LABELS LOCATED ON THE LABELER, DON'T REMOVE COVERS OR GUARDS.



FINGER PINCH



HIGH VOLTAGE



HAND PINCH

SYMBOLS AND THEIR DEFINITIONS

In this section all the symbols that are used on the CLS labeler will be displayed and defined.



= ON

This is used on the ON / OFF button.



= OFF

This is used on the ON / OFF button.



= AUTO

This symbol is used on the selector switch and means that the labeler was switched into AUTO mode. (for AUTO/MANUAL switch definition go to page #?)



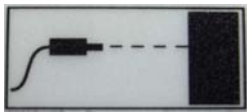
= MANUAL

This symbol is used on the selector switch and means that the labeler was switched into MANUAL mode. (for AUTO/MANUAL switch definition go to page #15)



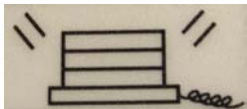
= CYCLE

This symbol is used on the push button that will cycle the labeler once. (For CYCLE definition go to page #15)



= PRODUCT SENSOR

This symbol is used for the product sensor plug. (For product sensor definition go to page #17)



= FAULT BEACON

This symbol is used for the FAULT BEACON plug. (For FAULT BEACON definition go to page #16)



= ENCODER This symbol is used for the
ENCODER plug. (For ENCODER definition go to page #16)



= INTERLOCK This symbol is used for the
INTERLOCK plug. (For INTERLOCK definition go to page #16)

Safety Procedures for Lock out Tag out

LOCK OUT TAG OUT PROCEDURE

Lock out for the electrical is done by unplugging the control box. The plug should be in the vicinity of the operator or who ever is doing the work.

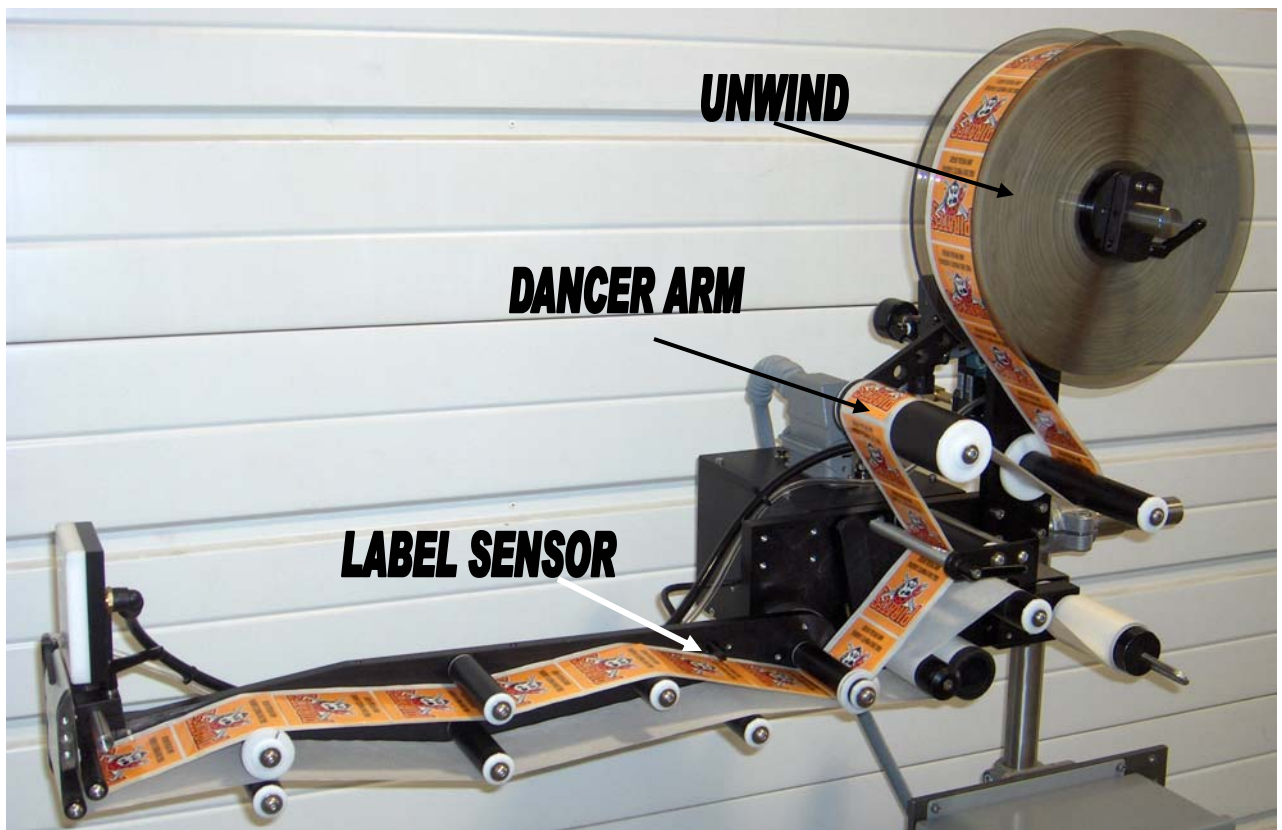
Lock out for the pneumatic power supply is done by removing the supply hose from the labeler.

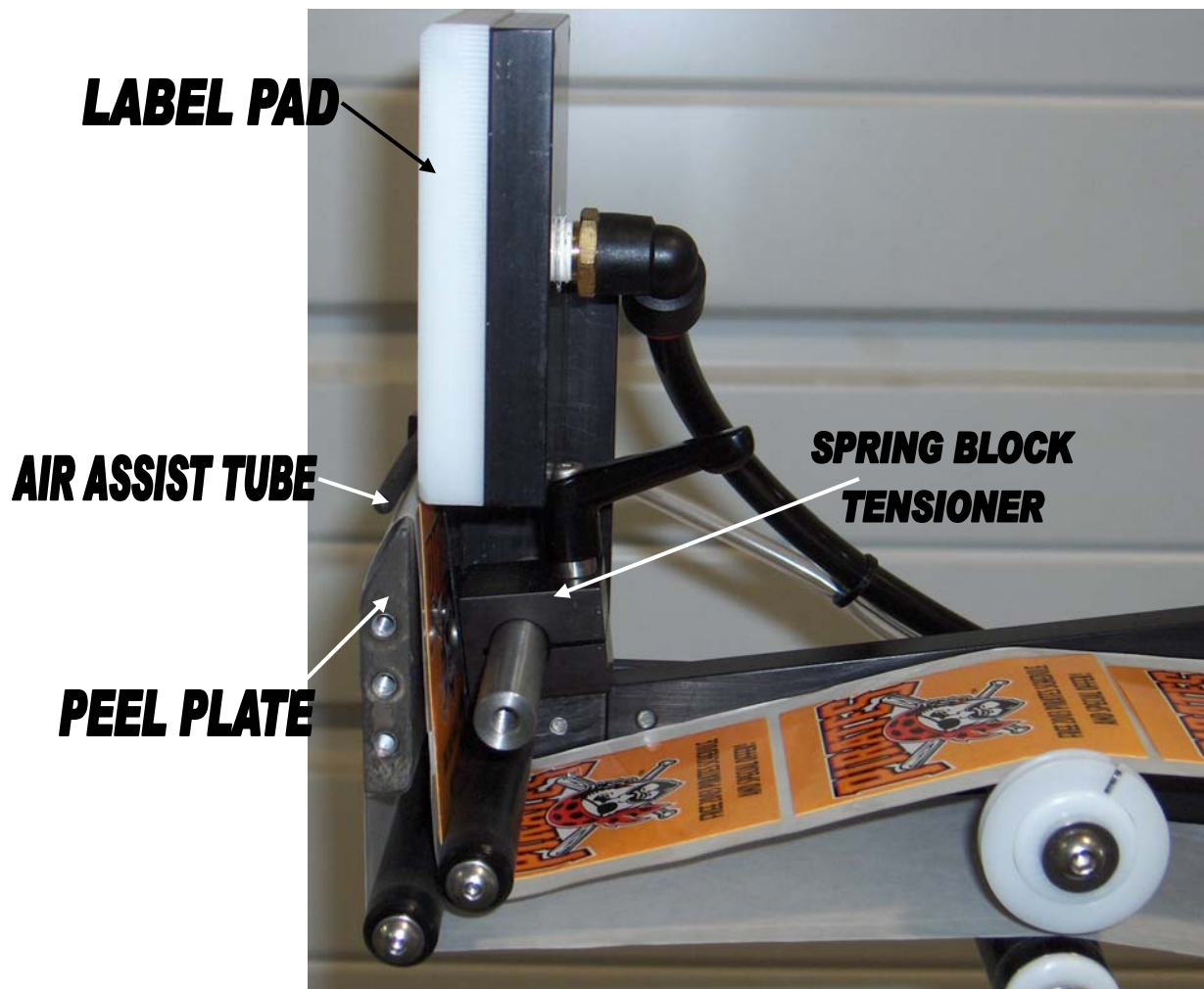
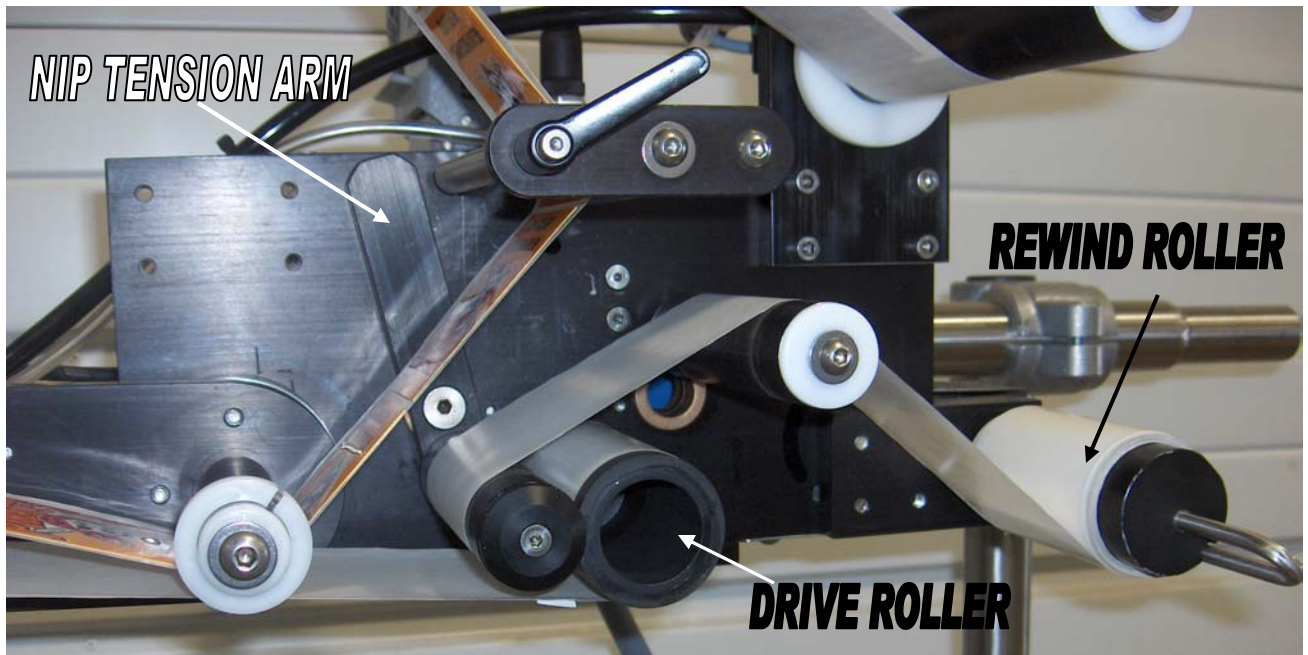
* REMEMBER TO FOLLOW YOUR COMPANY'S LOCK OUT TAG OUT PROCEDURES.

Illustrations

ILLUSTRATIONS SHOULD BE USED DURING AND AFTER TRAINING.
ILLUSTRATIONS ALSO MAY BE USED AS A REFERENCE GUIDE.

Pictures, drawings and diagrams are inserted in the manual for explanation and illustration of machine and controller workings. These illustrations will be useful in showing you where specific items are placed on the machine, as well as specific places to use caution when repairing, performing maintenance, or operating the *Northfield CLS labeler*.





SECTION 2

Machine specifications

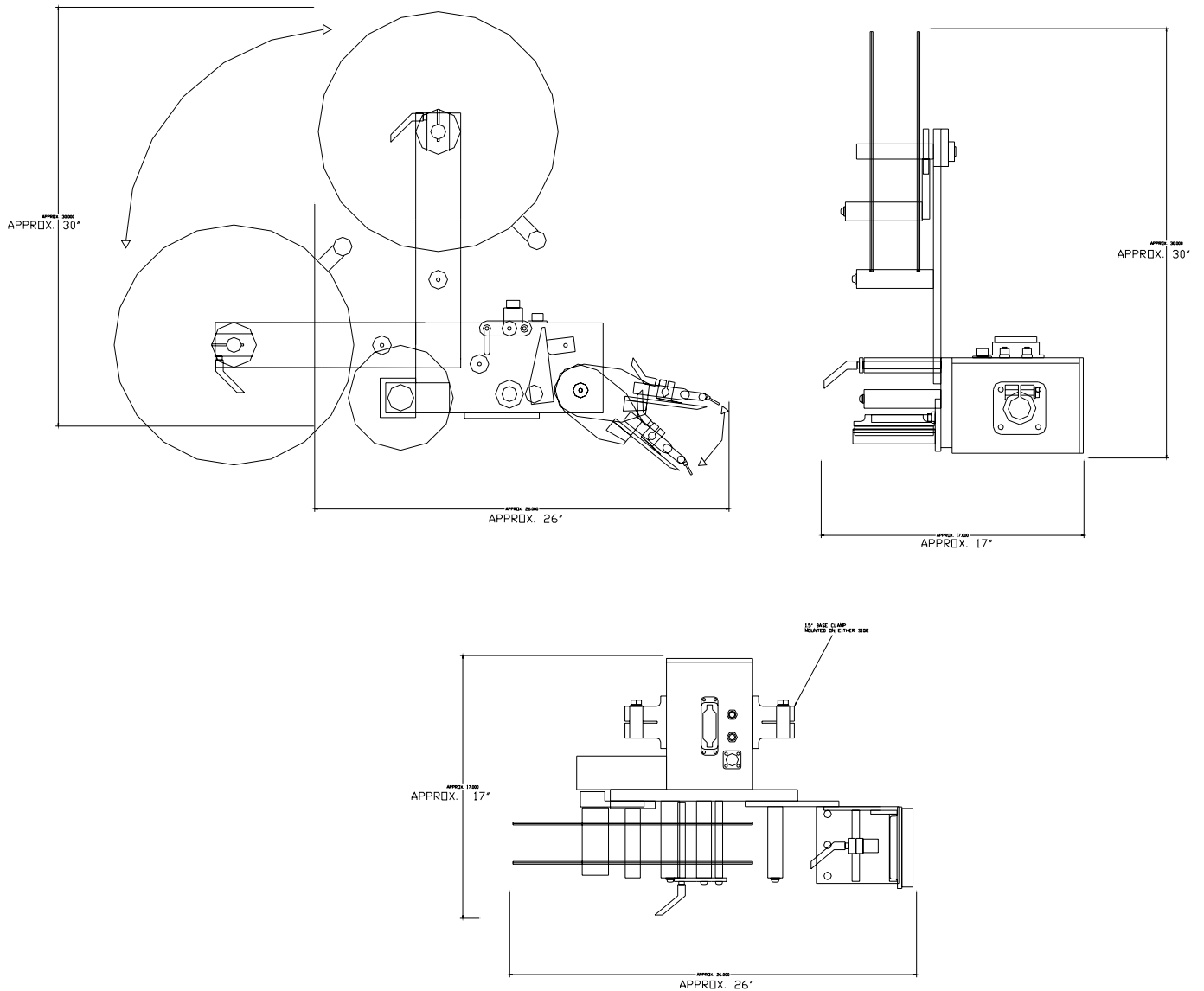
POWER REQUIREMENTS – 115/230 VAC 50/60Hz

AIR REQUIREMENTS - 80PSI (551KPA) (5BAR) only if the labeler has the option.

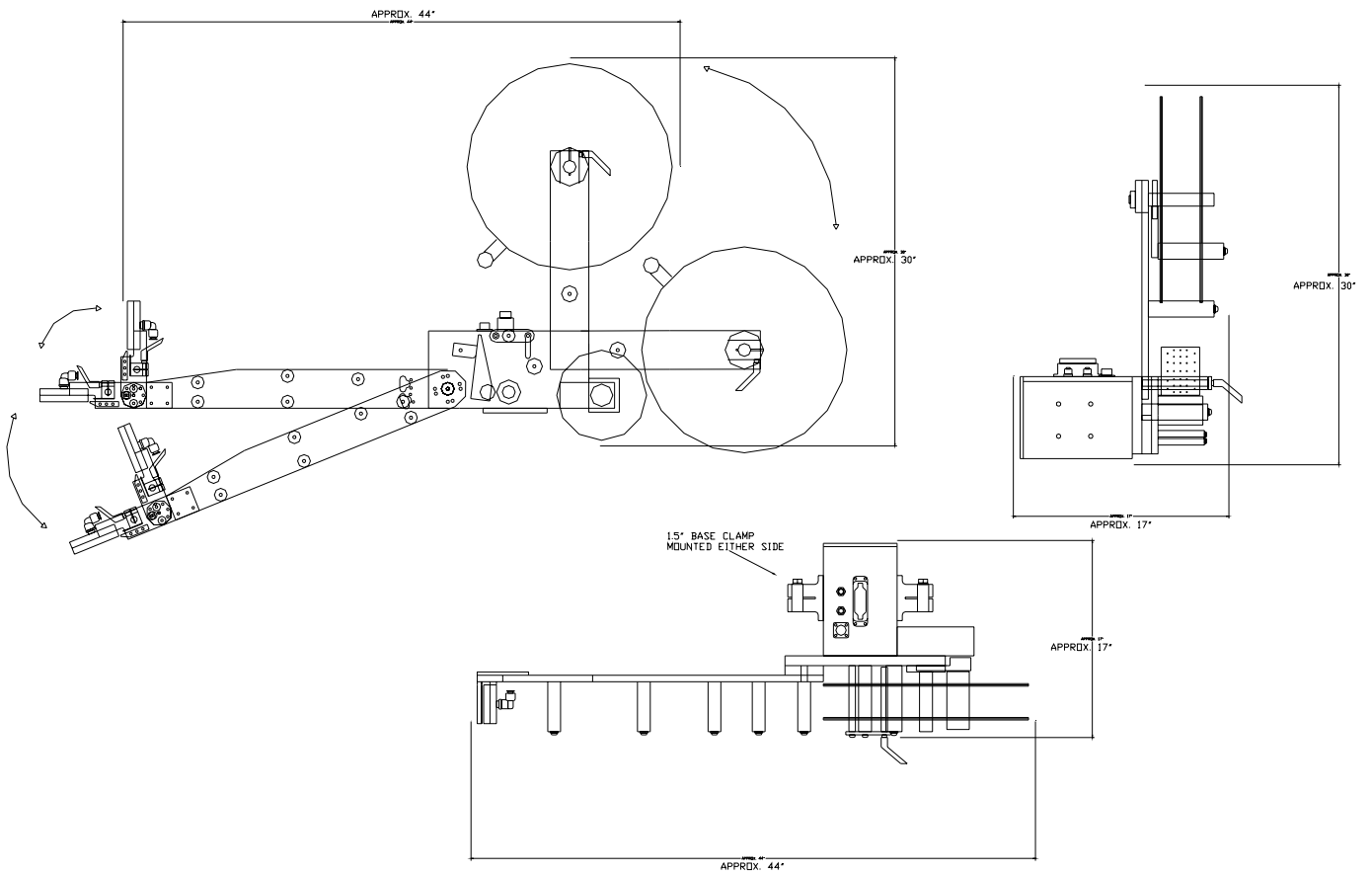
WEIGHT OF THE CONTROLLER – 27 lbs

WEIGHT OF THE HEAD – 51 lbs with RVB snorkel applicator option.

- 40 lbs with merge applicator option.



DIMENSION FOR LABELER WITH MERGE OPTION



**DIMENSION FOR LABELER WITH RVB SNORKEL OPTION
(LENGTH MAY VARY WITH DIFFERENT SNORKEL LENGTHS)**

Parts and Functions

❖ **Overview**

In this section the manual will give a break down of how the *Northfield CLS labeler* works. In this section you should have the knowledge to assemble various parts of the *Northfield CLS labeler*.

❖ **Basic Principles of Operation**

The *Northfield CLS labeler* is a very simple machine in many aspects. By using a product signal from the package line it will trigger the machine to label the product. The *Northfield CLS labeler* can handle both fanfold and roll types of labels. The illustration will show the basic parts and their functions.

FAULT DEFINITIONS

There are three faults that the Northfield CLS Labeler can go into, and in this section they will be list and explained. These fault will show up on the display screen when they happen and turn the fault beacons on.

NO LABELS FOUND = No labels where detected by the label sensor. Problems that will cause this fault are; the web was not routed through the label sensor fork (see webbing diagram), the label sensor was not correctly set-up, or the label sensor was damaged. This fault will turn on the RED fault beacon and will cause the labeler to stop labeling.

WEB BREAK = The web break sensor did not detect the web. Problems that will cause this fault are; the web was not routed correctly (see webbing diagram), the roll or box of label is at the end, or the sensor is not working correctly. This fault will turn on the RED fault beacon and will cause the labeler to stop labeling. (This is an optional fault that can be added to the labeler)

LOW LABEL WARNING = The roll of label is close to the end. Problems that will cause this fault are; the roll of labels is at the end, the sensor is no longer seeing the roll of labels, or the sensor is not working correctly. This fault will turn on the AMBER fault beacon and will not cause the labeler to stop labeling. (This is an optional fault that can be added to the labeler)

NOTE: ALL FAULTS CAN BE CLEARED BY FIXING THE PROBLEM AND PRESSING JOG.

NORTHFIELD CLS LABELER DEFINITIONS OF PARTS AND OPTIONS

Overview

In the basic parts list, there are all of the parts needed to familiarize yourself with the *Northfield CLS labeler*. The explanations given will help you locate and identify the parts. If you can identify the parts, set up and operation of the machine will be easier for you to accomplish.

AIR ASSIST TUBE The air assist tube is a small stainless steel tube mounted on the underside of the peel edge. It helps to guide the label onto the RVB pad, before the vacuum takes over.

AUTO / MANUAL SWITCH This switch enables and disables the product signal. In AUTO mode the machine is set to run and it will also cycle. In MANUAL mode the labeler will only cycle and remain in fault.

CYCLE BUTTON There are two cycle buttons located on the labeler. One is located on the control box, and the other is located on the top of the labeler. These buttons will cycle one label.

DRIVE BELTS Located inside of the labeler, and are used to drive the roller.

EMERGENCY STOP SWITCH This switch is used for turning the power OFF in case of an emergency.

ENCODER This is a device used for speed following on a conveyor line. This device used with the labeler will match the speed of the label to the speed of the conveyor.

FAULT BEACON The fault beacon is the strobe light that goes off if the labeler goes into fault. There are two light options you can have only a red light or a red and amber light. The red light is for critical faults and the amber light is for non-critical faults.

FUSES Located in the control panel, the fuses help to protect the electrical components from damage, from power surges, or shorts in the circuits. There are three fuses located in the control panel (Fuse #1 is a 5 amp. Slow blow fuse and is used for the 110 VAC incoming power. Fuse #2 is a 10 amp. Slow blow fuse and is used for the 48 VDC power supply. Fuse #3 is a 1 amp. Fast act fuse and is used for the 24 VDC power supply.)

INTERLOCK The interlock option locks the labeler and the packaging machine together. It does this by completing a circuit between the labeler and the packaging machine, so if the labeler goes into fault it will shutdown the packaging machine.

LABEL TENSION BRUSH This is an adjustable brush to help create tension on the label liner.

MOTOR Located inside of the labeler under the cover. It is used to drive the rollers.

NIP ROLLER The spring-loaded nip roller provides positive pressure to the label liner that passes between the drive and nip roller assemblies.

PEEL PLATE The peel plate is located at the end of the applicator nose. When the label liner is pulled around the peel plate, the label separates from the liner.

POWER SUPPLY #1 Located in the control panel, this device supplies the 24vdc to the components in the control panel which requires 24vdc.

POWER SUPPLY #2 Located in the control panel, this device supplies the 48vdc to the components in the control panel which requires 48vdc.

PRODUCT SENSOR This sensor detects the product and gives a signal to the machine, and lets it know when it's time to apply the label.

RELAYS Located in the control panel, relay # 1 and relay # 2 takes a signal from the motor drive. When the labeler goes into fault, the signal comes from the drive. It cuts the power to the relays which will open the signal on relay # 1, which is for the shutdown option. Relay # 2 will complete the circuit and turn on the fault beacon.

SET DELAY OPTION This option allows the operator to set a delay in time from when the product signal is given, to when the label is deployed.

SET LENGTH OPTION This option allows you to set the length of different labels. The way to measure the label and get the correct length, is to measure from the leading edge to the trailing edge of the label. Then enter the length, in inches, into the display.

UNWIND Is an option to operate the labeler using labels in a roll format.

VALVE BANK The valve bank is for the RVB option only. The valve bank controls the air pressure to the label pad, for the air blast and the vacuum. The valve bank also controls the air pressure for the air assist tube.

Section3

Control Panel and Operator Interface

Overview

In this section you will familiarize yourself with the control panel, and how to navigate through the operator interface. There are illustrations to help you set up the interface. This section is designed to minimize downtime and increase your productivity by giving you detailed instruction on this important feature of the *Northfield CLS labeler*.

Operator Control Panel

The control panel is designed to be self-contained. There are some connections you will have to make on the bottom of the panel to the labeler for operation. Every connection has its own unique connector so there will be no confusion.



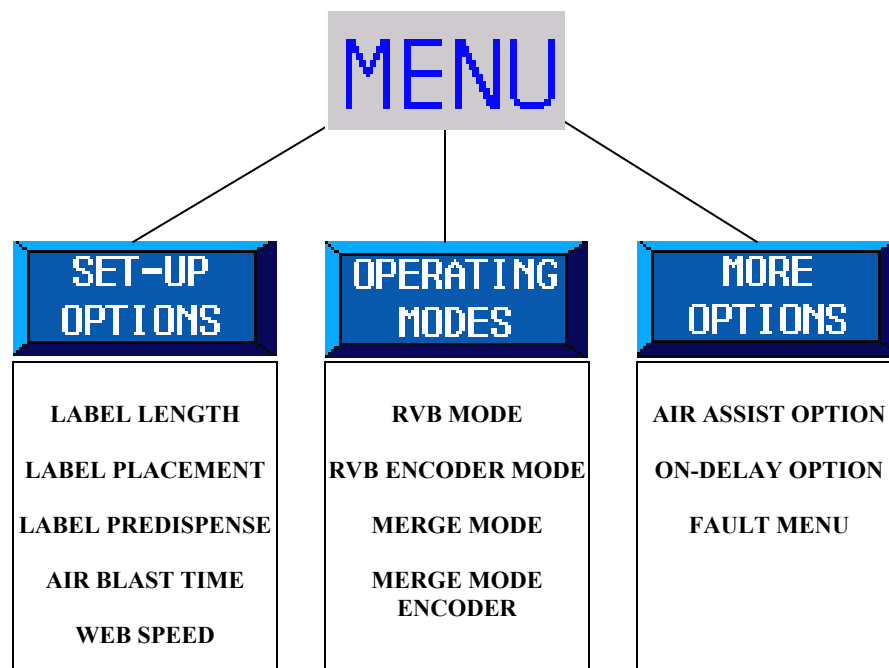
REMEMBER: AT ANYTIME THERE IS STILL A RISK THAT YOU MAY INJURE YOURSELF, OTHERS, OR CAUSE SERIOUS MACHINE DAMAGE. PLEASE USE CAUTION AND COMMON SAFETY PRACTICES WHEN WORKING ON THIS OR ANY MACHINE.

WHEN CONNECTING THE CONTROLLER TO THE HEAD. DO NOT HAVE ANY POWER HOOKED UP.

PROGRAMMING GUIDE



This is the main screen. Pressing the HOME button on any page will bring you to the main screen. From this screen you can access all the option by pressing the MENU button.



Section 4

Set-up Procedures

Overview

This section will help you set-up the *Northfield CLS labeler* after it has been shipped to your location. It is a good idea to visually inspect the *Northfield CLS labeler* for any damage before setting it up. If any damage occurred during the shipping process notify your supervisor immediately.

Bracketry set-up

Mount the labeler head in the location that labeling will take place using the supplied brackets or stand. Knowing the label position is needed when mounting the labeler. When machines are sold without a stand the stability of the machine is then the responsibility of the end user when incorporating it within their system. A pre-installation survey is recommended for new applications to determine location, brackets, and any options needed to ensure a successful promotion. Other things taken into consideration are, product spacing and speed, orientation, linear speed, and convenience for the operators. For these survey services please contact Northfield Corporation.

Machine Set-up

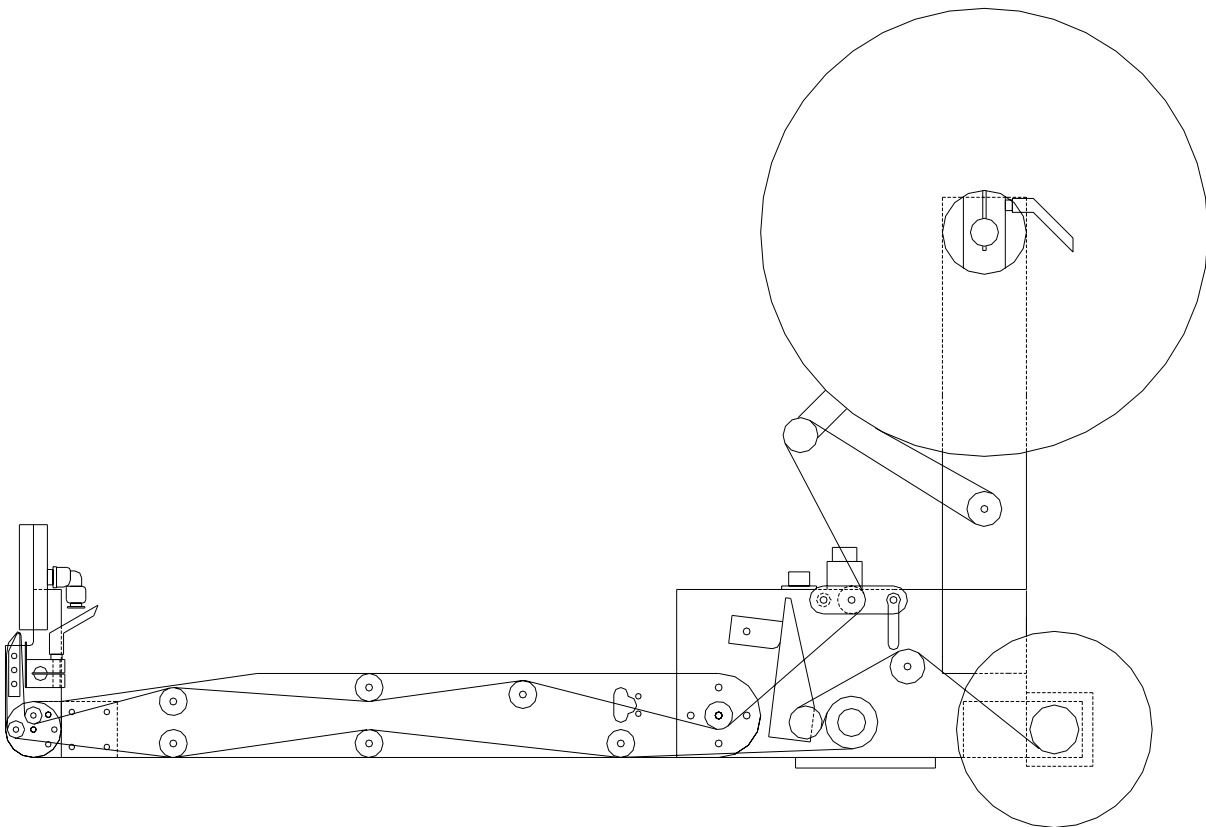
Machine set-up is a very important part of any project.

- ✓ After the machine is inspected for shipping damage you should mount the labeler head on the brackets provided
- ✓ After the head is secure you can start the set-up procedure.
- ✓ Mount the controller in a place where it can be easily accessed
- ✓ Connect the Harting connections from the control panel to the labeler head

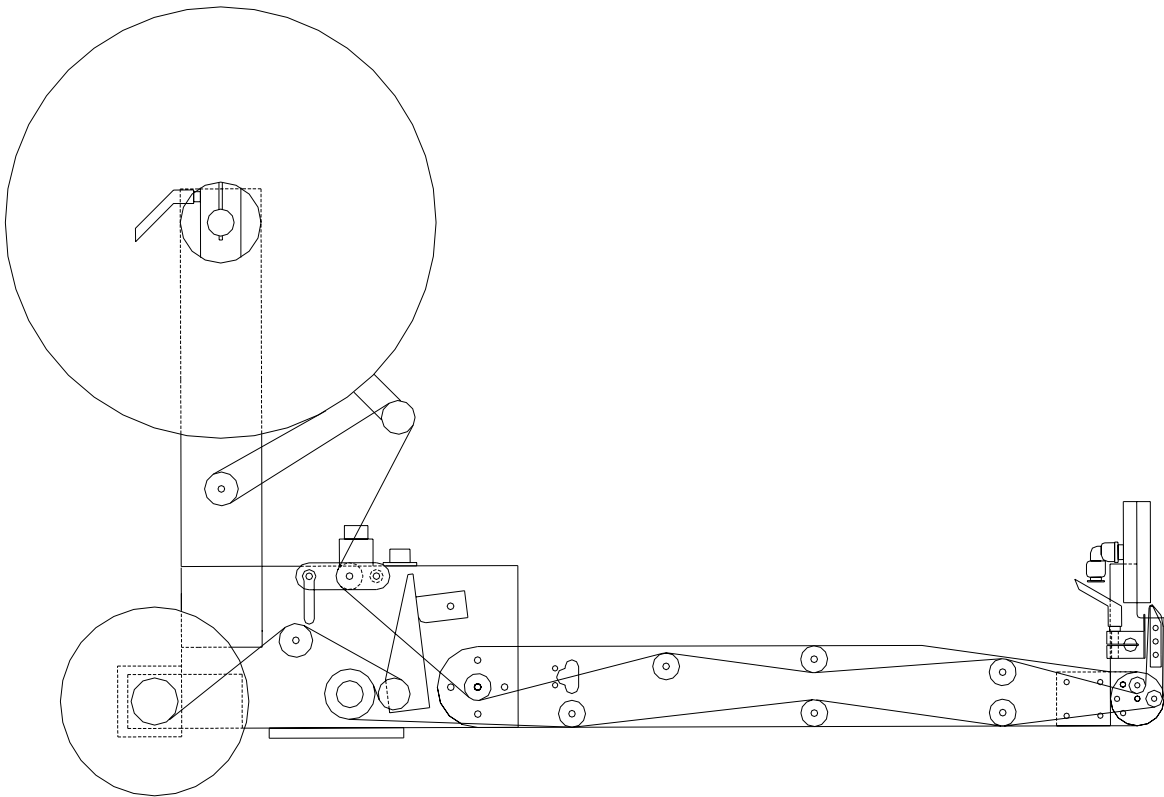
Threading Labels

Before threading the labels on the labeler disconnect the air and power from the machine or you may be caught between the drive and the nip rollers if the machine cycles unexpectedly.

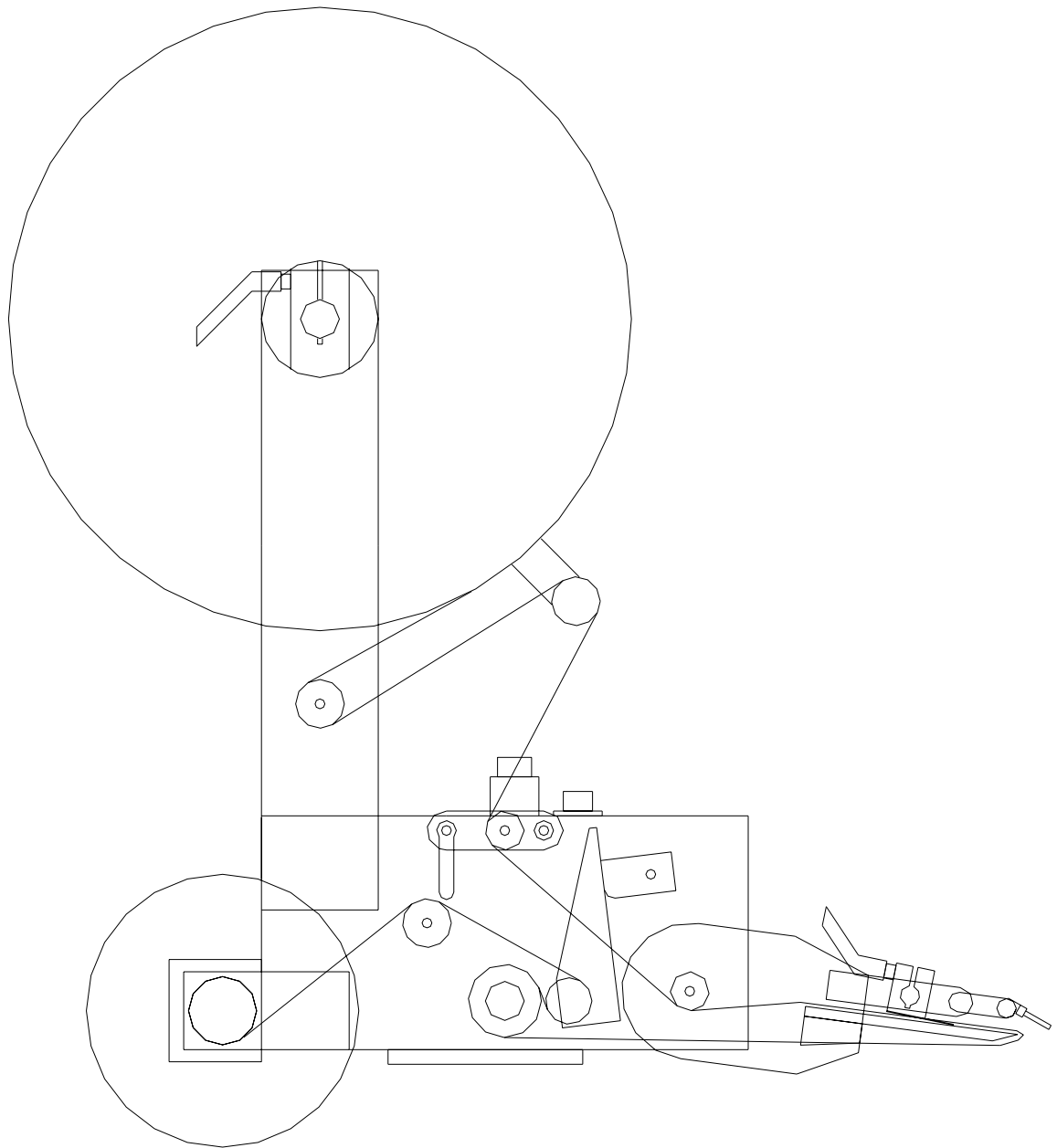
1. Refer to the web diagram
2. Remove 3 feet of labels from the leading part of the roll.
3. When threading labels make sure the tension brush is against the roller. This will keep the web tight between there and the peel plate.
4. Make sure you thread the web through the label sensor.
5. When bring the web around the peel plate make sure you do not go over the air assist tube. The web should go in between the peel plate and the air assist tube.
6. Then replace the spring tension block back into the center of the web and apply some tension to the web. Too much tension will cause web breaks.



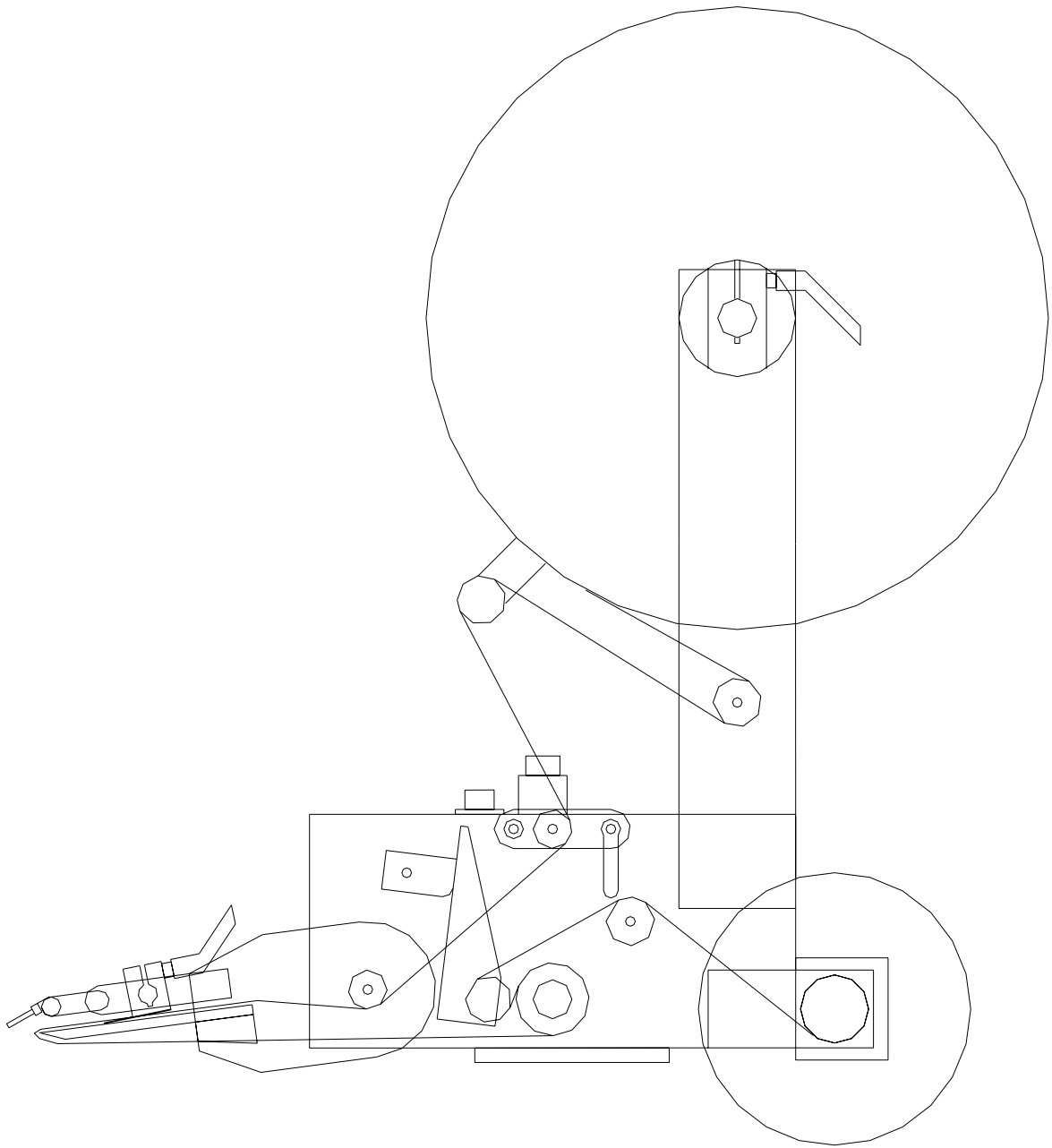
LEFT HAND RVB WITH SNORKEL WEBBING DIAGRAM



RIGHT HAND RVB WITH SNORKEL WEBBING DIAGRAM



RIGHT HAND MERGE WEBBING DIAGRAM



LEFT HAND MERGE WEBBING DIAGRAM

LABEL SENSOR SET-UP

The label sensor is a “U”-shaped fiber optic and is connected to the sensor body, which is mounted inside the head of the labeler.

The label sensor can be set-up by going into the display under SETUP on the main menu, then under ADVANCED OPTIONS, ENTER PASSWORD, then press YES on the AUTO LABEL SET-UP page. After you press JOG twice, the labels will begin to advance. After three labels pass through the label sensor, the sensor will now be set-up.



LABEL LENGTH SET-UP

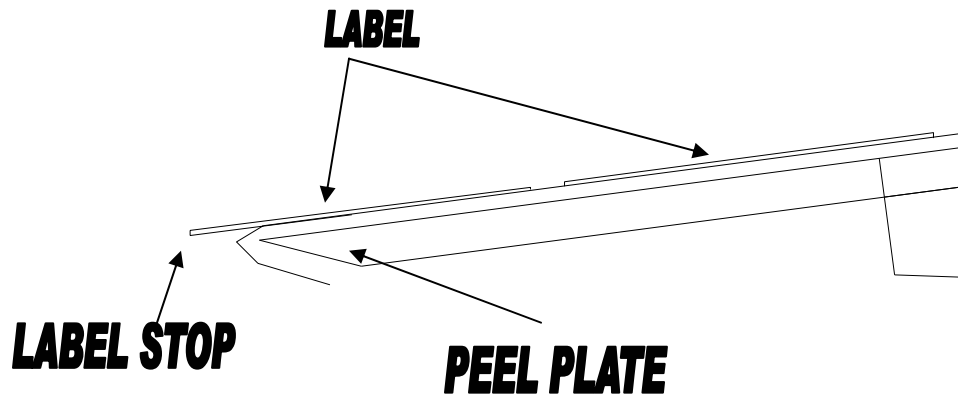
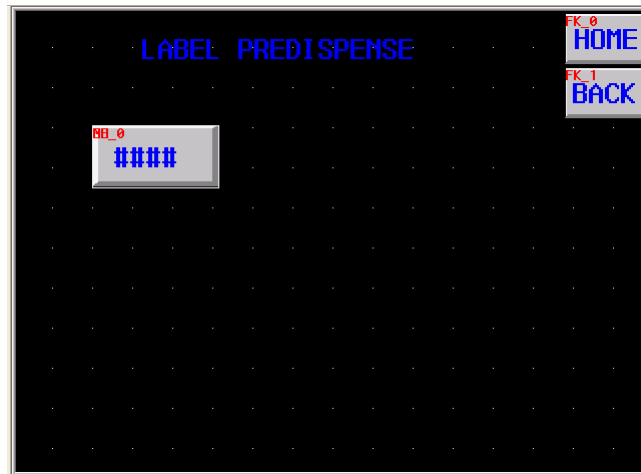
Label Length is determined by measuring the label from leading edge to trailing edge. This is the LABEL LENGTH.



After the LABEL LENGTH page is presented, you can now enter the LABEL LENGTH. To enter a new length just type in the key pad the number you wish and press the enter key.

LABEL PREDISPENSE

Label Predispense is where the label stops on the peel plate. This number can be adjusted in the display.



THIS DIAGRAM IS SHOWING LABEL STOP ON A MERGE LABELER, IF YOU HAVE THE RVB OPTION THEN YOU WANT THE LABEL STOP TO BE FLUSH WITH THE EDGE OF THE PEEL PLATE.

Cleaning Procedures

Cleaning

The *Northfield CLS Labeler* must not be sprayed down. If the labeler is mounted on a piece of equipment that needs to be washed down, the labeler must be removed or covered in plastic and sealed so that no water touches the labeler. **The labeler is not water tight!**

If the labeler needs to be cleaned you must wipe it down with a cleaning solution. If the labeler is running in a food environment, the labeler must be cleaned with a disinfectant. The black roller should only be cleaned with soap and warm water. If the wrong solution is use on the black rollers, it could break down the rubber.

SET-UP RECORD SHEET

NORTHFIELD CLS LABEL SET-UP SHEET

COMPANY:

ADDRESS:

CONTACTS:

LINE # OR NAME:

TECH:

--	--

PLACE LABEL HERE

SERIAL #

LABELER MODE:

MERGE

RVB

ENCODER

ON

OFF

--

LABELER DIRECTION:

LEFT HAND

RIGHT HAND

--

SET UP OPTIONS

LABEL LENGTH:

INCHES

TIME DELAY:

SEC.

WEB SPEED:

IPM

LABEL STOP:

AIR BLAST TIME:

ms

AIR ASSIST OPTION

YES

NO

MISSING LABEL

--	--	--	--

ADVANCED OPTIONS

FAULTS OPTIONS

LOW LABEL

FAULT

ON

OFF

WEB BREAK

FAULT

ON

OFF

ON DELAY

OPTION

ON

OFF

ON DELAY TIME:

ms

--	--	--	--

--	--	--	--

AIR SETTINGS

VACUM PRESSURE

psi

AIR BLAST

psi

AIR ASSIST

psi

--	--	--	--	--

COMMENTS:

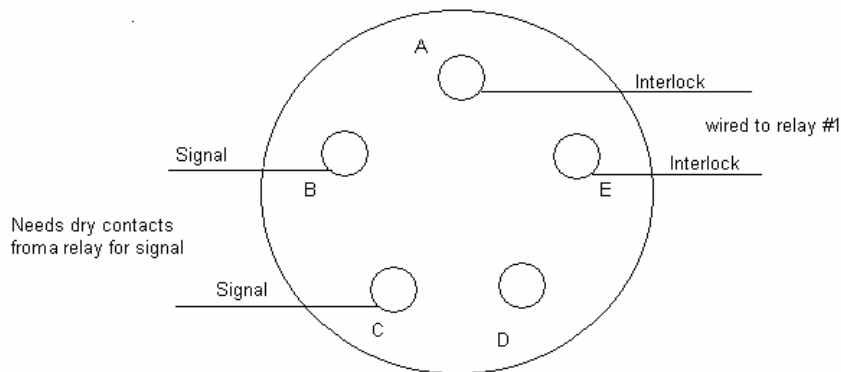
Section 5

APPENDIX

This section will provide a comprehensive parts list, electrical and mechanical schematics, of the head and the electrical panel, and any accessories that may come with the *Northfield CLS Labeler*.

Please feel free to contact Northfield if any questions or problems arise. For parts ordering please contact Randy at (920) 983-8122, or fax in your order at (920) 983-8124. Please have the part number and quantity when calling, in order to expedite your delivery.

5 PIN WIRING DIAGRAM (INTERLOCK & SIGNAL)



This is a drawing of the five pin Amphenol on the bottom of the control box.

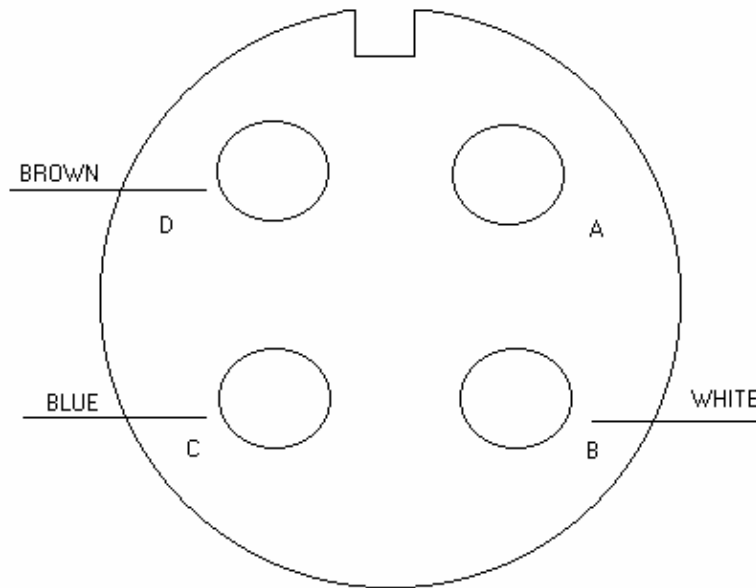
Pins B and C

Pins B and C are used for a signal from a dry contact that will tell the labeler when to apply a label. Do not apply power to these pins; it will destroy the input on the I/O card. If you only have a powered signal then use it to power a relay for a dry contact.

Pins A and E

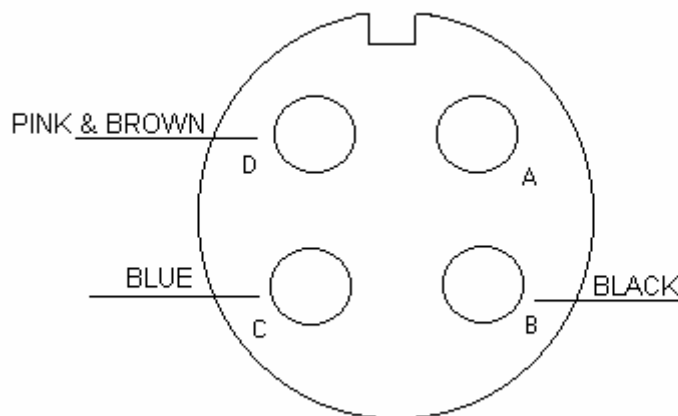
Pins A and E are used for tying in the labeler to the product line's plc or shut down signal. Pins A and E are wired into a normally open contact. If the power is off or the labeler is in fault, then the signal is broken and the product line will not run. This is done so you don't run product without the label.

PRODUCT SENSOR WIRING DIAGRAM

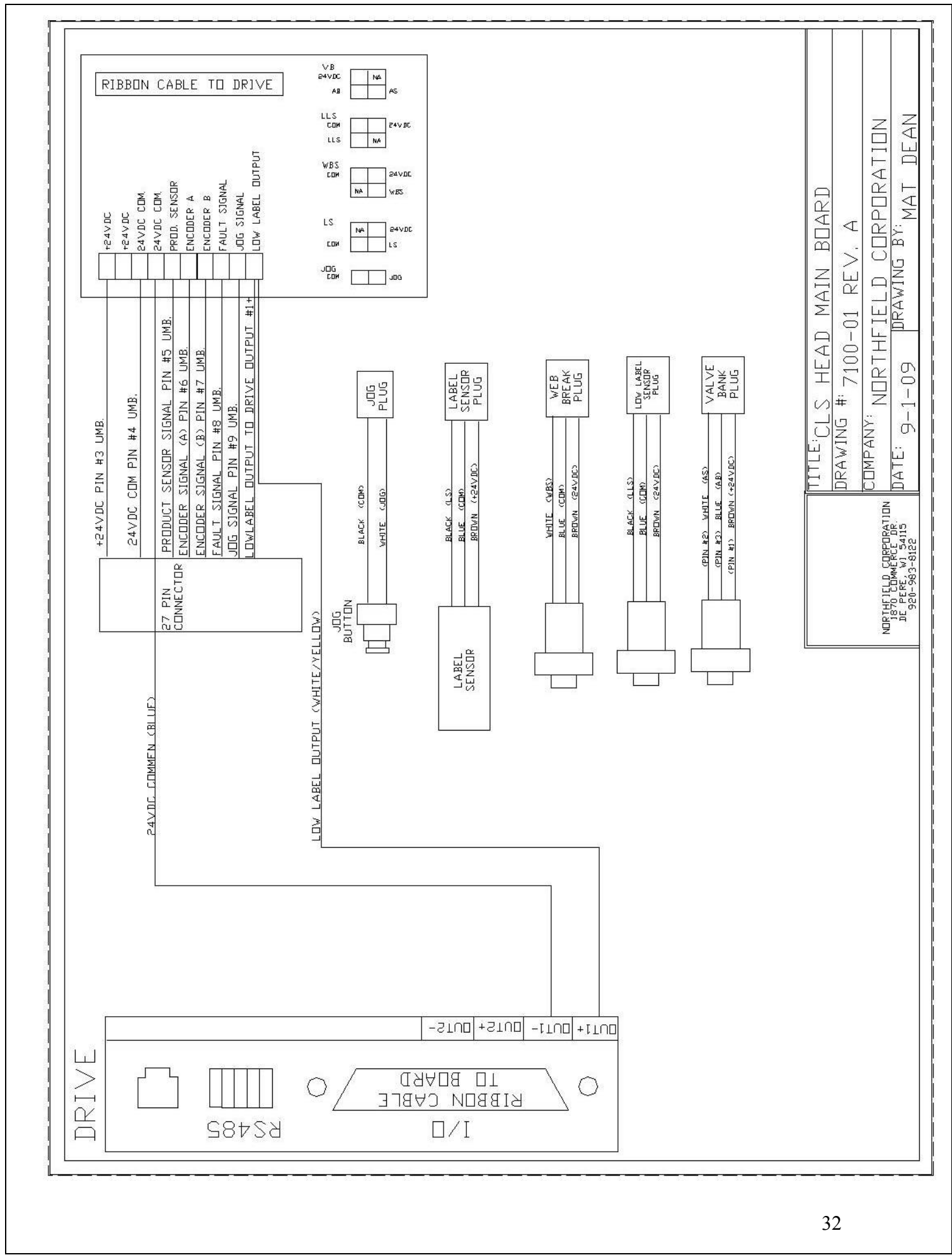


This is a drawing of the connector on the Banner product sensor.

AROMAT PRODUCT SENSOR WIRING DIAGRAM



This is a drawing of the Aromat product sensor.



TITLE: CLS HEAD MAIN BOARD	
DRAWING #: 7100-01 REV. A	
COMPANY: NORTFIELD CORPORATION	
DATE: 9-1-09	DRAWING BY: MAT DEAN

NORTFIELD CORPORATION
1870 COMMERCE DR.
DEERFIELD, IL 60015
980-983-8122

DRIVE

RS485

RIBBON CABLE
TO BOARD

I/O

OUT1+ OUT1- OUT2+ OUT2-

DISPLAY COM PIN 17
DISPLAY RX+ PIN 15
DISPLAY RX- PIN 16
DISPLAY TX+ PIN 13
DISPLAY TX- PIN 14

27 PIN
CONNECTOR

+48VDC PIN #1 UMB.
48VDC COM PIN #2 UMB.

VOLTAGE
CLAMP

R2
R1
VOUT+
VOUT-
VIN-
VIN+

RED
WHITE/RED

JUMPER

GRN/YLL W

BLACK

WHITE

RED

INFEED MOTOR

GOES TO 15 PIN
CONNECTOR ON
INFEED DRIVE

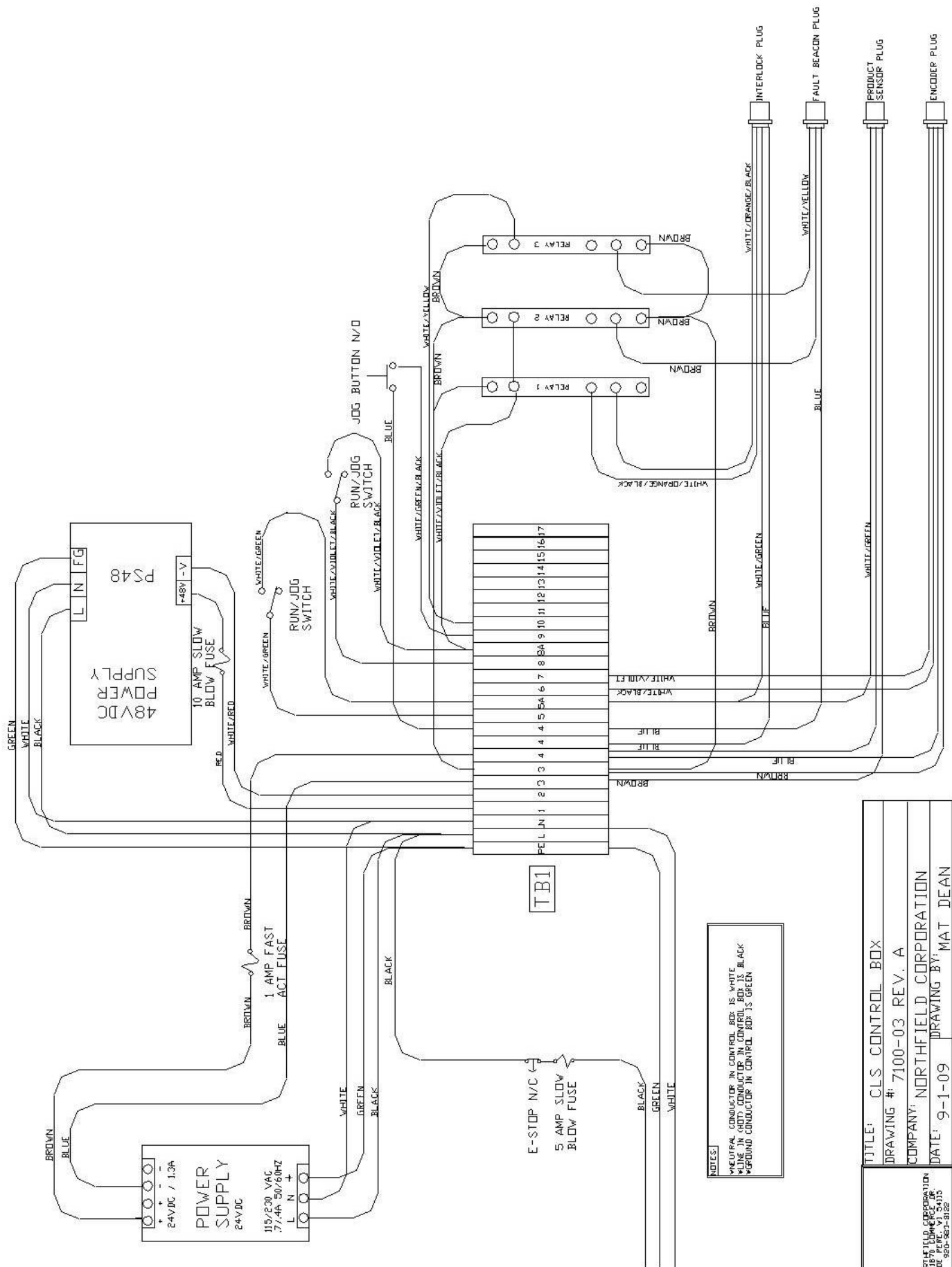
TITLE: CLS MOTOR AND DRIVE

DRAWING #: 7100-02 REV. A

COMPANY: NORTHFIELD CORPORATION

DATE: 9-1-09 DRAWING BY: MAT DEAN

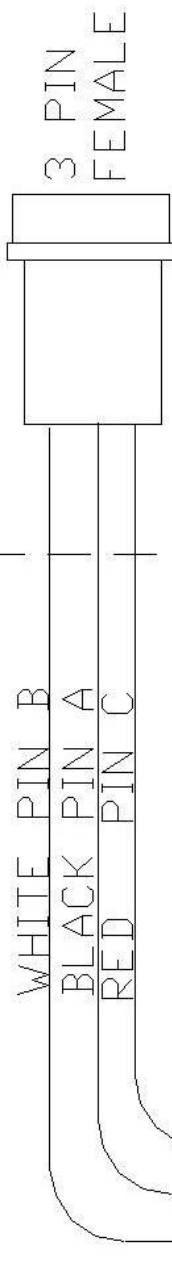
NORTHFIELD CORPORATION
1870 COMMERCE DR.
DE PERE, WI 54115
920-963-8122



NOTES:
 1. NEUTRAL CONDUCTOR IN CONTROL BOX IS WHITE
 2. LINE IN (HOT) CONDUCTOR IN CONTROL BOX IS BLACK
 3. GROUND CONDUCTOR IN CONTROL BOX IS GREEN

NORTHFIELD CORPORATION 100 NORTHFIELD AVENUE DE PERE, WI 54105 920-383-8122	TITLE: CLS CONTROL BOX	
	DRAWING #: 7100-03 REV. A	
	COMPANY: NORTHFIELD CORPORATION	
	DATE: 9-1-09 DRAWING BY: MAT DEAN	

FAULT BEACON



<div>NORTHFIELD CORPORATION 1870 COMMERCE DR. CLARK COUNTY, MISSOURI 650-583-8122</div>	TITLE: CLS FAULT BEACON WIRING	
	DRAWING #: 7100-04 REV. A	
	COMPANY: NORTHFIELD CORPORATION	
	DATE: 9-1-09	DRAWING BY: MAT DEAN

CLS (AMP) HEAD PLUG WIRING

- 1 +48VDC POWER FOR BLUE DRIVES
- 2 48VDC COM. POWER FOR BLUE DRIVES
- 3 +24VDC POWER
- 4 24VDC COM.
- 5 PRODUCT SENSOR SIGNAL
- 6 ENCODER SIGNAL (A)
- 7 ENCODER SIGNAL (B)
- 8 FAULT SIGNAL
- 9 JOG SIGNAL
- 10
- 11
- 12
- 13 DISPLAY RxA
- 14 DISPLAY RxB
- 15 DISPLAY TxA
- 16 DISPLAY TxB
- 17 DISPLAY COM.
- 18 GROUND

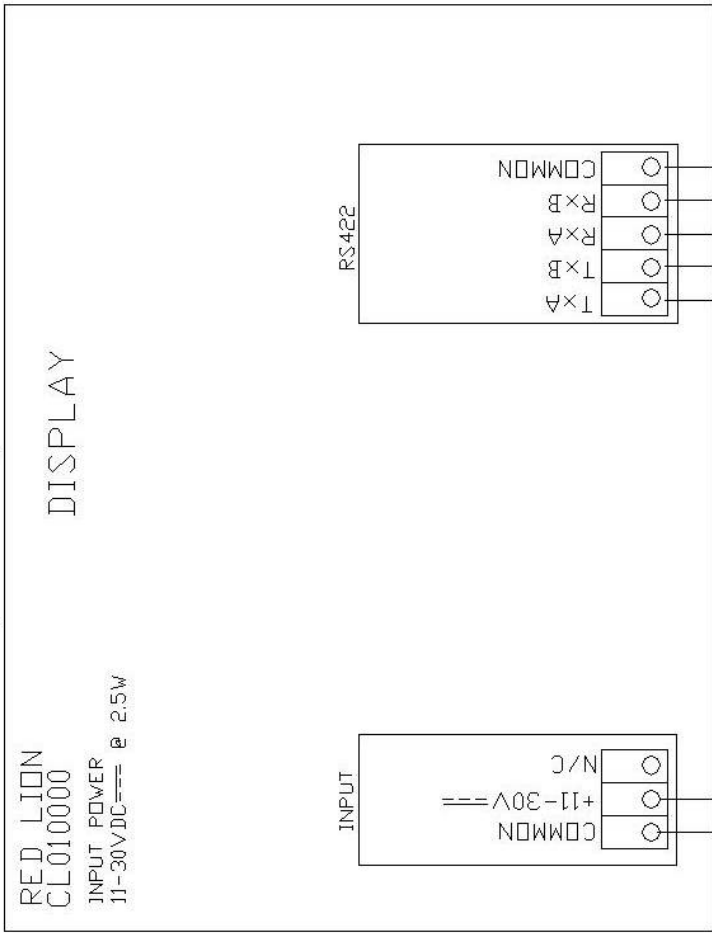
A	B	C
1	1	17
2	2	10
3	3	11
4	4	12
5	5	13
6	6	14
7	7	15
8	8	16
9	9	

FEMALE PLUG
WITH MALE PINS

NOTE: 18" FOR THE LENGTH OF THE WIRE

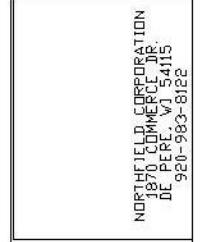
NORTHFIELD CORPORATION 1870 COMMERCE DR. DE PERE, WI 54115 920-983-8122	TITLE:	CLS UMB. PLUG
	DRAWING #:	7100-05 REV. A
	COMPANY:	NORTHFIELD CORPORATION
	DATE:	9-1-09
		DRAWING BY: MAT DEAN

DISCL01



NORTHFIELD CORPORATION
1870 COMMERCE DR.
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