

Spectra™ 30 Pattern Controller

Customer Product Manual

Part 1124631_01

Issued 10/15



This document contains important safety information
Be sure to read and follow all safety information in this
document and any other related documentation.



NORDSON CORPORATION • DULUTH, GEORGIA • USA
www.nordson.com

Nordson Corporation welcomes requests for information, comments, and inquiries about its products. General information about Nordson can be found on the Internet using the following address: <http://www.nordson.com>.

Address all correspondence to:

Nordson Corporation
Attn: Customer Service
11475 Lakefield Drive
Duluth, GA 30097

Notice

This is a Nordson Corporation publication which is protected by copyright. Original copyright date 2015. No part of this document may be photocopied, reproduced, or translated to another language without the prior written consent of Nordson Corporation. The information contained in this publication is subject to change without notice.

Trademarks

AccuJet, AeroCharge, Apogee, AquaGuard, Asymtek, Automove, Baitgun, Blue Box, Bowtie, Build-A-Part, CanWorks, Century, CF, CleanSleeve, CleanSpray, ColorMax, Color-on-Demand, Control Coat, Coolwave, Cross-Cut, cScan+, Dage, DispenseJet, DispenseMate, DuraBlue, DuraDrum, Durafiber, DuraPail, Dura-Screen, Durasystem, Easy Coat, Easymove Plus, Ecody, Econo-Coat, e.DOT, EFD, Emerald, Encore, ESP, e stylized, ETI-stylized, Excel 2000, Fibrijet, Fillmaster, FlexiCoat, Flex-O-Coat, Flow Sentry, Fluidmove, FoamMelt, FoamMix, Fulfill, GreenUV, HDLV, Heli-flow, Horizon, Hot Shot, iControl, iDry, iFlow, Isocoil, Isocore, Iso-Flo, iTRAX, Kinetix, KISS, Lean Cell, Little Squirt, LogiComm, Magnastatic, March, Maverick, MEG, Meltex, Microcoat, Micromark, Micromedics, Micro-Meter, MicroSet, Millennium, MiniBlue, Mini Squirt, Mountaingate, NexJet, No-Drip, Nordson, Optimum, Package of Values, Paragon, Pattern View, PermaFlo, PICO, PicoDot, Porous Coat, PowderGrid, Powderware, Precisecoat, Printplus, Prism, ProBlue, Prodigy, Pro-Flo, Program-A-Bead, Program-A-Shot, Program-A-Stream, Program-A-Swirl, ProLink, Pro-Meter, Pro-Stream, RBX, Rhino, Saturn, Saturn with rings, Scoreguard, Sealant Equipment & Engineering, Inc, SEE and design, See-Flo, Seal Sentry, Select Charge, Select Coat, Select Cure, Servo-Flo, Shot-A-Matic, Signature, Slautterback, Smart-Coat, Solder Plus, Spectrum, Speed-Coat, SureBead, Sure Coat, Sure-Max, Sure Wrap, Tracking Plus, TRAK, Trends, Tribomatic, TrueBlue, TrueCoat, Tubesetter, Ultra, UpTime, u-TAH, Value Plastics, Vantage, VersaBlue, Versa-Coat, VersaDrum, VersaPail, Versa-Screen, Versa-Spray, VP Quick Fit, Watermark, When you expect more., and X-Plane are registered trademarks of Nordson Corporation.

Accubar, Active Nozzle, Advanced Plasma Systems, AeroDeck, AeroWash, Allegro, AltaBlue, AltaSlot, Alta Spray, Artiste, ATS, Auto-Flo, AutoScan, Axiom, Best Choice, Blue Series, Bravura, CanPro, Champion, Check Mate, ClassicBlue, Classic IX, Clean Coat, Cobalt, Controlled Fiberization, Control Weave, ContourCoat, CPX, cSelect, Cyclo-Kinetic, DispensLink, Dry Cure, DuraBraid, DuraCoat, DuraPUR, Easy Clean, EasyOn, EasyPW, Eclipse, e.dot+, E-Nordson, Equalizer, Equi-Bead, FillEasy, Fill Sentry, Flow Coat, Fluxplus, Freedom, Get Green With Blue, G-Net, Genius, G-Site, IntelliJet, iON, Iso-Flex, iTrend, Lacquer Cure, Maxima, Mesa, MicroFin, MicroMax, Mikros, MiniEdge, Minimeter, Multifill, MultiScan, Myritex, Nano, OmniScan, OptiMix, OptiStroke, Optix, Partnership+Plus, PatternJet, PatternPro, PCI, PharmaLok, Pinnacle, Plasmod, Powder Pilot, Powder Port, Powercure, Process Sentry, Pulse Spray, PURBlue, PURJet, Ready Coat, RediCoat, RollVIA, Quantum, Royal Blue, Select Series, Sensomatic, Shaftshield, SheetAire, Smart, Smartfil, SolidBlue, Spectral, SpeedKing, Spray Works, StediFlo, StediTherm, Summit, SureFoam, Sure Mix, SureSeal, Swirl Coat, TAH, ThruWave, Trade Plus, Trilogy, Ultra FoamMix, UltraMax, Ultrasaver, Ultrasmart, Universal, ValueMate, Versa, Vista, Web Cure, YESTECH, and 2 Rings (Design) are trademarks of Nordson Corporation.

Designations and trademarks stated in this document may be brands that, when used by third parties for their own purposes, could lead to violation of the owners' rights.

Table of Contents

Safety	1-1
Safety Alert Symbols	1-1
Responsibilities of the Equipment Owner	1-2
Safety Information	1-2
Instructions, Requirements, and Standards	1-2
User Qualifications	1-3
Applicable Industry Safety Practices	1-3
Intended Use of the Equipment	1-3
Instructions and Safety Messages	1-4
Installation Practices	1-4
Operating Practices	1-4
Maintenance and Repair Practices	1-5
Equipment Safety Information	1-5
Equipment Shutdown	1-6
Relieving System Hydraulic Pressure	1-6
De-energizing the System	1-6
Disabling the Applicators	1-6
General Safety Warnings and Cautions	1-7
Other Safety Precautions	1-10
First Aid	1-10
Safety Label and Tag	1-11
Overview	2-1
Getting to Know Spectra 30	2-1
Spectra 30 Pattern Controller and Components	2-2
Standard Components	2-3
Add-on Software Licenses	2-3
Comparison Table	2-4
Front Panel	2-5
Base Panel	2-6
Other Sources of Information	2-8
Quick Reference Guide	2-8
Installation Guide	2-8
Product Manual	2-8
Software Update / Online Support	2-8
Using the Prism Utility	2-8

Installation	3-1
Mounting the Spectra 30	3-1
Unpack the Pattern Controller	3-1
Guidelines	3-1
Dimensions	3-2
Mount the Pattern Controller	3-3
Attach the Quick Reference Guide	3-4
Connecting the Spectra 30	3-5
To Disable Open Trigger Warnings	3-6
Internal Wiring	3-7
Important Wiring Details	3-8
Before Setting Up Spectra 30	3-9
 The User Interface	 4-1
Navigating the Touch Screen	4-1
Home Screen Touch Area	4-2
Starting the Spectra 30	4-3
Setup Wizard	4-3
About the Splash Screen	4-6
Add-on Features	4-6
About the Home Screen	4-7
Status Bar Components	4-9
Using the Home Screen	4-12
What you can do from the Home Screen	4-13
Programming Patterns	4-15
Normal Pattern	4-17
Other Pattern Types	4-19
EcoBead Pattern	4-19
Dotted Pattern	4-22
Random Length Pattern	4-24
Mirror Pattern	4-26
Random Dotted Pattern	4-28
Autodot Pattern	4-30
Continuous Pattern	4-33
Setting the Applicators	4-35
Setting the Trigger	4-38
Selecting Recipes	4-40
 Using the Menus	 5-1
Overview	5-1
What you can do from the Main Menu	5-2
Purge Applicators	5-4
Manage Recipes	5-6
Recipe Quick Change	5-7
Manage Recipe Files	5-9
What's Being Saved in a Recipe File	5-13
Recipe Mismatches	5-13
Remote Recipe Selection	5-14
Password Lock/Unlock	5-16
Pressure Run-up	5-17
Tools Menu	5-18
Tools Menu Screens	5-19
System Settings	5-29
Change System Setup Settings	5-30
System Setup Screens	5-30

Troubleshooting	6-1
Diagnostics Tools	6-2
System Status	6-2
Diagnostic Status Symbols	6-3
Component Diagnostic Symbols	6-3
Applicator Symbols	6-3
Trigger Symbols	6-4
Pattern Alerts	6-4
Message Log	6-5
Message Text	6-5
Message Scroll Indicator	6-6
Message Status Indicators	6-6
Resolving Alerts and Faults	6-7
Shortcut Buttons	6-7
System Self-Test	6-8
System Outputs	6-10
System Status Summary Chart	6-11
Defining the System Statuses	6-12
When the System Fails to Start Up	6-14
Controller Board Issues	6-14
Power Supply Board	6-16
Touch Screen Issues	6-17
Ethernet Network Communications Issues	6-19
Calibration Screen	6-20
 Specifications	 7-1
System Specifications	7-1
Encoder	7-1
Distance and Time Based Pattern Controller	7-1
Interface	7-2
Inputs/Outputs	7-2
Recipe Memory	7-2
Replaceable Fuses	7-2
Enclosure	7-3
Patterns	7-3
Applicators	7-4
Triggers	7-4
Pressure Run-up	7-4
Diagnostics	7-5
Add-on Software License	7-5
System Schematic	7-6
 Parts	 8-1
Spectra 30 Pattern Controller Parts List	8-1
Pattern Controller	8-1
Software License	8-1
Service Kits	8-2
Service Parts	8-3
Encoder	8-4
Run-up IP Transducer	8-4
Trigger	8-5
Other System Accessories	8-5

Appendix A	
Using Add-on Software Licenses	A-1
License Part Numbers	A-1
Obtain the Licenses	A-1
Receive the Licenses	A-3
Add the Licenses	A-4
Remove the Licenses	A-6
Appendix B	
Using the Prism Utility	B-1
Save the .NOR File	B-1
Access the Prism Utility	B-2
Restore the .PAT File	B-5
Summary of the User Selected Settings	B-7
Appendix C	
Upgrading to Latest Software	C-1
Upgrade to Latest Software	C-1
Manual Software Upgrade Procedure	C-4
Remove SD Cards	C-4
Upgrade to Latest Software	C-6
Re-install the SD Cards	C-6

Section 1

Safety

Read this section before using the equipment. This section contains recommendations and practices applicable to the safe installation, operation, and maintenance (hereafter referred to as “use”) of the product described in this document (hereafter referred to as “equipment”). Additional safety information, in the form of task-specific safety alert messages, appears as appropriate throughout this document.



WARNING! Failure to follow the safety messages, recommendations, and hazard avoidance procedures provided in this document can result in personal injury, including death, or damage to equipment or property.

Safety Alert Symbols

The following safety alert symbol and signal words are used throughout this document to alert the reader to personal safety hazards or to identify conditions that may result in damage to equipment or property. Comply with all safety information that follows the signal word.



WARNING! Indicates a potentially hazardous situation that, if not avoided, can result in serious personal injury, including death.



CAUTION! Indicates a potentially hazardous situation that, if not avoided, can result in minor or moderate personal injury.

CAUTION! (Used without the safety alert symbol) Indicates a potentially hazardous situation that, if not avoided, can result in damage to equipment or property.

Responsibilities of the Equipment Owner

Equipment owners are responsible for managing safety information, ensuring that all instructions and regulatory requirements for use of the equipment are met, and for qualifying all potential users.

Safety Information

- Research and evaluate safety information from all applicable sources, including the owner-specific safety policy, best industry practices, governing regulations, material manufacturer's product information, and this document.
- Make safety information available to equipment users in accordance with governing regulations. Contact the authority having jurisdiction for information.
- Maintain safety information, including the safety labels affixed to the equipment, in readable condition.

Instructions, Requirements, and Standards

- Ensure that the equipment is used in accordance with the information provided in this document, governing codes and regulations, and best industry practices.
- If applicable, receive approval from your facility's engineering or safety department, or other similar function within your organization, before installing or operating the equipment for the first time.
- Provide appropriate emergency and first aid equipment.
- Conduct safety inspections to ensure required practices are being followed.
- Re-evaluate safety practices and procedures whenever changes are made to the process or equipment.

User Qualifications

Equipment owners are responsible for ensuring that users:

- receive safety training appropriate to their job function as directed by governing regulations and best industry practices
- are familiar with the equipment owner's safety and accident prevention policies and procedures
- receive equipment- and task-specific training from another qualified individual

NOTE: Nordson can provide equipment-specific installation, operation, and maintenance training. Contact your Nordson representative for information

- possess industry- and trade-specific skills and a level of experience appropriate to their job function
- are physically capable of performing their job function and are not under the influence of any substance that degrades their mental capacity or physical capabilities

Applicable Industry Safety Practices

The following safety practices apply to the use of the equipment in the manner described in this document. The information provided here is not meant to include all possible safety practices, but represents the best safety practices for equipment of similar hazard potential used in similar industries.

Intended Use of the Equipment

- Use the equipment only for the purposes described and within the limits specified in this document.
- Do not modify the equipment.
- Do not use incompatible materials or unapproved auxiliary devices. Contact your Nordson representative if you have any questions on material compatibility or the use of non-standard auxiliary devices.

Instructions and Safety Messages

- Read and follow the instructions provided in this document and other referenced documents.
- Familiarize yourself with the location and meaning of the safety warning labels and tags affixed to the equipment. Refer to *Safety Labels and Tags* at the end of this section.
- If you are unsure of how to use the equipment, contact your Nordson representative for assistance.

Installation Practices

- Install the equipment in accordance with the instructions provided in this document and in the documentation provided with auxiliary devices.
- Ensure that the equipment is rated for the environment in which it will be used. This equipment has not been certified for compliance with the ATEX directive nor as nonincendive and should not be installed in potentially explosive environments.
- Ensure that the processing characteristics of the material will not create a hazardous environment. Refer to the Safety Data Sheet (SDS) for the material.
- If the required installation configuration does not match the installation instructions, contact your Nordson representative for assistance.
- Position the equipment for safe operation. Observe the requirements for clearance between the equipment and other objects.
- Install lockable power disconnects to isolate the equipment and all independently powered auxiliary devices from their power sources.
- Properly ground all equipment. Contact your local building code enforcement agency for specific requirements.
- Ensure that fuses of the correct type and rating are installed in fused equipment.
- Contact the authority having jurisdiction to determine the requirement for installation permits or inspections.

Operating Practices

- Familiarize yourself with the location and operation of all safety devices and indicators.
- Confirm that the equipment, including all safety devices (guards, interlocks, etc.), is in good working order and that the required environmental conditions exist.
- Use the personal protective equipment (PPE) specified for each task. Refer to *Equipment Safety Information* or the material manufacturer's instructions and SDS for PPE requirements.
- Do not use equipment that is malfunctioning or shows signs of a potential malfunction.

Maintenance and Repair Practices

- Allow only personnel with appropriate training and experience to operate or service the equipment.
- Perform scheduled maintenance activities at the intervals described in this document.
- Relieve system hydraulic and pneumatic pressure before servicing the equipment.
- De-energize the equipment and all auxiliary devices before servicing the equipment.
- Use only new Nordson-authorized refurbished or replacement parts.
- Read and comply with the manufacturer's instructions and the SDS supplied with equipment cleaning compounds.

NOTE: SDSs for cleaning compounds that are sold by Nordson are available at www.nordson.com or by calling your Nordson representative.

- Confirm the correct operation of all safety devices before placing the equipment back into operation.
- Dispose of waste cleaning compounds and residual process materials according to governing regulations. Refer to the applicable SDS or contact the authority having jurisdiction for information.
- Keep equipment safety warning labels clean. Replace worn or damaged labels.

Equipment Safety Information

This equipment safety information is applicable to the following types of Nordson equipment:

- hot melt and cold adhesive application equipment and all related accessories
- pattern controllers, timers, detection and verification systems, and all other optional process control devices

Equipment Shutdown

To safely complete many of the procedures described in this document, the equipment must first be shut down. The level of shut down required varies by the type of equipment in use and the procedure being completed. If required, shut down instructions are specified at the start of the procedure. The levels of shut down are:

Relieving System Hydraulic Pressure

Completely relieve system hydraulic pressure before breaking any hydraulic connection or seal. Refer to the melter-specific product manual for instructions on relieving system hydraulic pressure.

De-energizing the System

Isolate the system (melter, hoses, applicators, and optional devices) from all power sources before accessing any unprotected high-voltage wiring or connection point.

- 1.. Turn off the equipment and all auxiliary devices connected to the equipment (system).
- 2.. To prevent the equipment from being accidentally energized, lock and tag the disconnect switch(es) or circuit breaker(s) that provide input electrical power to the equipment and optional devices.

NOTE: Government regulations and industry standards dictate specific requirements for the isolation of hazardous energy sources. Refer to the appropriate regulation or standard.

Disabling the Applicators

NOTE: Adhesive dispensing applicators are referred to as “guns” in some previous publications.

All electrical or mechanical devices that provide an activation signal to the applicators, applicator solenoid valve(s), or the melter pump must be disabled before work can be performed on or around an applicator that is connected to a pressurized system.

- 1.. Turn off or disconnect the applicator triggering device (pattern controller, timer, PLC, etc.).
- 2.. Disconnect the input signal wiring to the applicator solenoid valve(s).
- 3.. Reduce the air pressure to the applicator solenoid valve(s) to zero; then relieve the residual air pressure between the regulator and the applicator.

General Safety Warnings and Cautions

Table 1-1 contains the general safety warnings and cautions that apply to Nordson hot melt and cold adhesive equipment. Review the table and carefully read all of the warnings or cautions that apply to the type of equipment described in this manual.

Equipment types are designated in Table 1-1 as follows:

HM = Hot melt (melters, hoses, applicators, etc.)

PC = Process control

CA = Cold adhesive (dispensing pumps, pressurized container, and applicators)

Table 1-1 General Safety Warnings and Cautions

Equipment Type	Warning or Caution
HM	 WARNING! Hazardous vapors! Before processing any polyurethane reactive (PUR) hot melt or solvent-based material through a compatible Nordson melter, read and comply with the material's SDS. Ensure that the material's processing temperature and flashpoints will not be exceeded and that all requirements for safe handling, ventilation, first aid, and personal protective equipment are met. Failure to comply with SDS requirements can cause personal injury, including death.
HM	 WARNING! Reactive material! Never clean any aluminum component or flush Nordson equipment with halogenated hydrocarbon fluids. Nordson melters and applicators contain aluminum components that may react violently with halogenated hydrocarbons. The use of halogenated hydrocarbon compounds in Nordson equipment can cause personal injury, including death.
HM, CA	 WARNING! System pressurized! Relieve system hydraulic pressure before breaking any hydraulic connection or seal. Failure to relieve the system hydraulic pressure can result in the uncontrolled release of hot melt or cold adhesive, causing personal injury.
Continued...	

Table 1-1 General Safety Warnings and Cautions (contd)

Equipment Type	Warning or Caution
HM	 WARNING! Molten material! Wear eye or face protection, clothing that protects exposed skin, and heat-protective gloves when servicing equipment that contains molten hot melt. Even when solidified, hot melt can still cause burns. Failure to wear appropriate personal protective equipment can result in personal injury.
HM, PC	 WARNING! Equipment starts automatically! Remote triggering devices are used to control automatic hot melt applicators. Before working on or near an operating applicator, disable the applicator's triggering device and remove the air supply to the applicator's solenoid valve(s). Failure to disable the applicator's triggering device and remove the supply of air to the solenoid valve(s) can result in personal injury.
HM, CA, PC	 WARNING! Risk of electrocution! Even when switched off and electrically isolated at the disconnect switch or circuit breaker, the equipment may still be connected to energized auxiliary devices. De-energize and electrically isolate all auxiliary devices before servicing the equipment. Failure to properly isolate electrical power to auxiliary equipment before servicing the equipment can result in personal injury, including death.
HM, CA, PC	 WARNING! Risk of fire or explosion! Nordson adhesive equipment is not rated for use in explosive environments and has not been certified for the ATEX directive or as nonincendive. In addition, this equipment should not be used with solvent-based adhesives that can create an explosive atmosphere when processed. Refer to the SDS for the adhesive to determine its processing characteristics and limitations. The use of incompatible solvent-based adhesives or the improper processing of solvent-based adhesives can result in personal injury, including death.
HM, CA, PC	 WARNING! Allow only personnel with appropriate training and experience to operate or service the equipment. The use of untrained or inexperienced personnel to operate or service the equipment can result in injury, including death, to themselves and others and can damage to the equipment.

Equipment Type	Warning or Caution
HM	 CAUTION! Hot surfaces! Avoid contact with the hot metal surfaces of applicators, hoses, and certain components of the melter. If contact can not be avoided, wear heat-protective gloves and clothing when working around heated equipment. Failure to avoid contact with hot metal surfaces can result in personal injury.
HM	CAUTION! Some Nordson melters are specifically designed to process polyurethane reactive (PUR) hot melt. Attempting to process PUR in equipment not specifically designed for this purpose can damage the equipment and cause premature reaction of the hot melt. If you are unsure of the equipment's ability to process PUR, contact your Nordson representative for assistance.
HM, CA	CAUTION! Before using any cleaning or flushing compound on or in the equipment, read and comply with the manufacturer's instructions and the SDS supplied with the compound. Some cleaning compounds can react unpredictably with hot melt or cold adhesive, resulting in damage to the equipment.
HM	CAUTION! Nordson hot melt equipment is factory tested with Nordson Type R fluid that contains polyester adipate plasticizer. Certain hot melt materials can react with Type R fluid and form a solid gum that can clog the equipment. Before using the equipment, confirm that the hot melt is compatible with Type R fluid.

Other Safety Precautions

- Do not use an open flame to heat hot melt system components.
- Check high pressure hoses daily for signs of excessive wear, damage, or leaks.
- Never point a dispensing handgun at yourself or others.
- Suspend dispensing handguns by their proper suspension point.

First Aid

If molten hot melt comes in contact with your skin:

- 1.. Do NOT attempt to remove the molten hot melt from your skin.
- 2.. Immediately soak the affected area in clean, cold water until the hot melt has cooled.
- 3.. Do NOT attempt to remove the solidified hot melt from your skin.
- 4.. In case of severe burns, treat for shock.
- 5.. Seek expert medical attention immediately. Give the SDS for the hot melt to the medical personnel providing treatment.

Safety Label and Tag

Figure 1-1 illustrates the location of the product safety labels and tags affixed to the equipment. Table 1-2 provides an illustration of the hazard identification symbols that appear on each safety label and tag, the meaning of the symbol, or the exact wording of any safety message.



Figure 1-1 Safety label and tag

Table 1-2Safety Label and Tag

Item	Description
1.	 WARNING! Risk of electrical shock. Failure to observe may result in personal injury, death, or equipment damage.

Section 2

Overview

Getting to Know Spectra™ 30

The Spectra 30 pattern controller has the flexibility of having three configurations:

- Time-based

The time based functionality enables the pattern controller to monitor constant line speeds and has an accuracy of +/- 1 ms (1 mm at 60 m/min or 0.1 in. at 500 ft/min).

- Distance (requires encoder)

The distance-based functionality enables continuous tracking of line position to within one millimeter (or 0.1 inch). This allows dispensing of precise adhesive patterns at production speeds that reach 300 m/min (983 ft/min). Distance-based systems can also operate in time-base.

- Distance based functionality with inputs/outputs, including two outputs which are proportional to the line speed (pressure run-up).

NOTE: The needed hardware exists in all the configurations. The functions are enabled by software licenses.

Spectra 30 Pattern Controller and Components

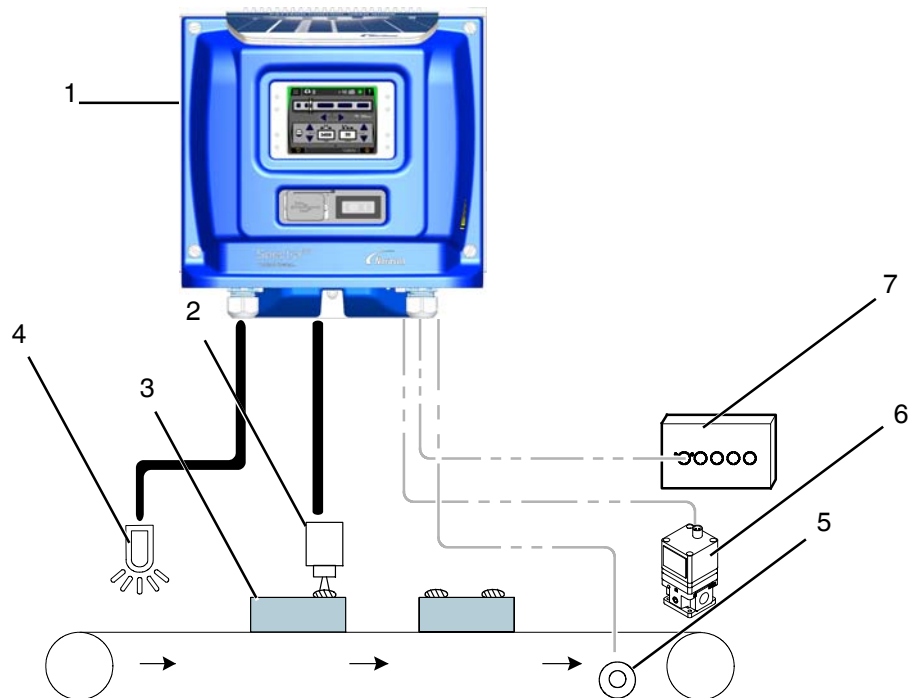


Figure 2-1 Spectra 30 pattern controller and related components

- | | | |
|----------------------------------|-----------------------|--|
| 1. Spectra 30 pattern controller | 3. Product | 6. Pressure run-up transducer (optional) |
| 2. Applicator | 4. Photocell | 7. PLC interface (optional) |
| | 5. Encoder (optional) | |

Standard Components

See Figure 2-1 for the components that make up an integrated pattern control system. The standard components include:

- Spectra 30 pattern controller
- Up to four triggers
- Up to four applicators

Add-on Software Licenses

The time based and distance and time-based configurations can be upgraded through add-on software licenses, which provide the complete ability of the higher option(s). The software licenses can be ordered by specific part numbers. Refer to *Parts* for the software license part numbers.

For instructions on how to obtain add-on software licenses, refer to *Appendix A, Using Add-on Software Licenses*.

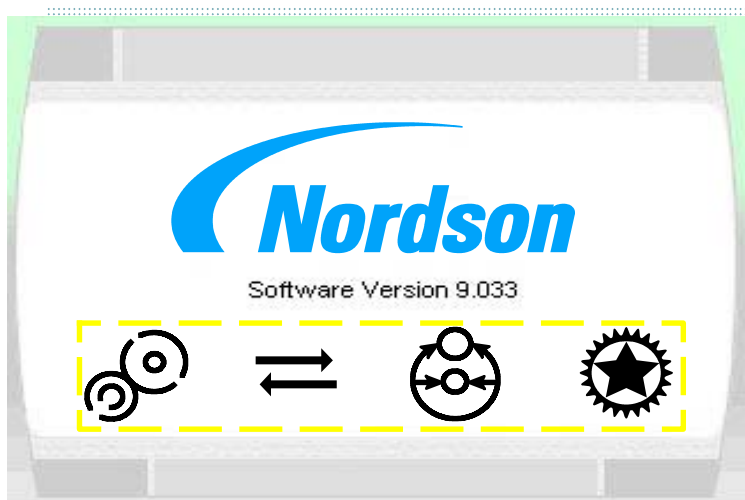


Figure 2-2 Splash Screen with Add-on Software licenses

Comparison Table

The following table compares a pattern controller with or without the add-on features.

Add-on Options	WITH Add-on Features (Software Licences Obtained)	WITHOUT Add-on Features (Software Licences NOT Obtained)
Encoder 	Time, quadrature and single encoder types are available.	Time is the only source available.
	Power to the encoder is enabled.	Power to the encoder is not enabled.
	Current and encoder pulses are detected.	Encoder is not detected.
	Line speed is computed and scaled based on the encoder type and scale value.	Line speed is constant. (Unscaled, the line speed is 1 ms [1 mm at 60 m/min]).
	Encoder screen available.	Encoder screen is not available.
	Enable auto type and direction detection during commissioning.	No auto type and direction detection.
	Encoder icon is displayed and can be touched.	Encoder icon is not visible.
	Encoder related alerts and faults enabled.	No encoder related alerts and faults.
Pressure/Run-up 	Run-up output changes based on the curve defined by the settings.	Run-up does not change.
	Output is powered 0 - 10V and 4 - 20 mA.	Output set to 0 V.
	Run-up icon is displayed and can be touched.	Run-up icon is not visible.
	Run-up related alerts and faults enabled.	No run-up related alerts and faults.
Remote Recall 	Remote Recall check box is displayed and can be touched.	Remote Recall check box is grayed out and disabled.
	Remote recipes are re-callable.	No action for changes to inputs.
	Alerts enabled when a recipe is loaded.	No remote recipe alerts or faults.
Extra Features 	Three additional pattern features are available: Random Dotted, Autodot, and Continuous Includes other added features.	No additional pattern types or added features are available.

Front Panel

The front panel components are as follows:



Figure 2-3 Front panel components

See Figure 2-3 for the location of the following components.

Front Panel Component	Functionality
1. LCD Touch screen	The graphical 3.5 in. integrated LCD touch screen is the interface for setting up and monitoring the pattern controller.
2. Switch	On/Off switch
3. USB Port	This port is used for plugging an USB storage device for: • Upgrading the software • Saving a backup of all system settings and stored recipes • Restoring settings • Capturing screen shots

Base Panel

All the cables are routed through the conduits located on the base panel of the pattern controller.

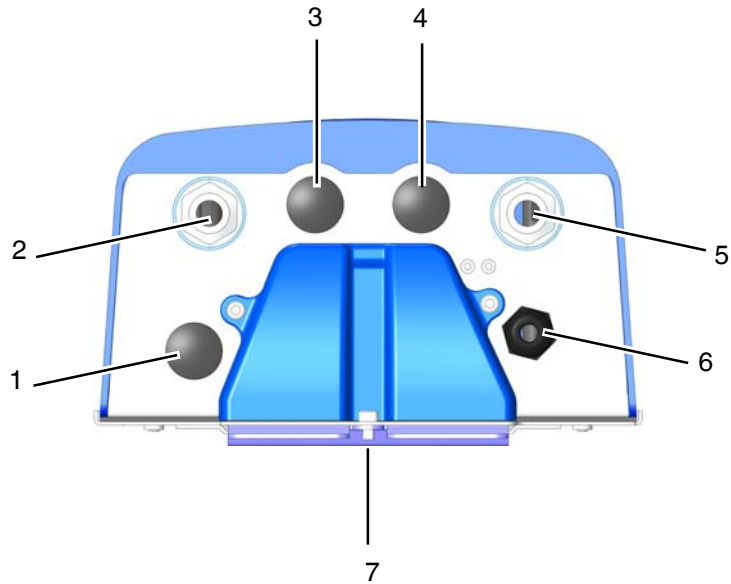


Figure 2-4 Base panel components

See Figure 2-4 for the location of the following component.

Base Panel Component	Functionality
1. System Input/Output (6 in, 2 out)	Connects to a PLC type machine. Output Settings • Alert • Ready Input Settings • Remote recipe • Recall (5, optional) • Unit enable
Continued...	

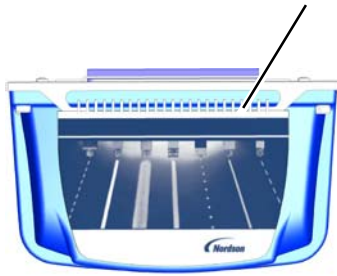
See Figure 2-4 for the location of the following components.

Base Panel Component	Functionality
2. Trigger (1 – 4)	- Connects up to four (4) assignable triggers. - Assigns trigger to any applicator. - Assigns a single trigger to multiple applicators. - Trigger masking prevents false triggers. - Measures and displays product length on-screen in real-time. - PNP/NPN type trigger inputs are compatible with all legacy and industry standard photo-eyes.
3. Encoder	- Supports one encoder - The following types of encoders can be used: - quadrature encoders (RS422) - single phase encoders (NPN)
4. Run-up Outputs and/or Fault Machine Stop	One or two run-up outputs, each connects to a 0-10 V and 4-20 mA pressure transducer. Connects to a PLC input or machine stop circuit (N.O and N.C. contacts).
5. Applicator Outputs (1 – 4)	- Supports four pattern channel outputs - Outputs are 24 VDC, 1Amp maximum per channel - Multiple solenoid coils can be used on one channel up to current limit - Using an optional external power supply the system can support up to 2Amp maximum per applicator, up to a total of 6 Amps.
6. AC Input	Input voltage:120/240 VAC
7. Fan location	This is optional. A cooling fan can be installed in this location.

Other Sources of Information

Refer to the following resources for getting the most out of your system components.

Quick Reference Guide



The Quick Reference Guide is affixed to the top panel of the pattern controller. It provides common setup and pattern generation tasks.

Installation Guide

The Installation Guide provides basic installation, connection, and initial system setup instructions.

Product Manual

Visit <http://emanuals.nordson.com/adhesives> to download the product manuals.

Software Update / Online Support

Visit www.enordson.com/support to view the training videos and to download updates and software utilities.

Using the Prism Utility

This PC utility is used for making advanced changes to the internal settings of the pattern controller. For more details, refer to *Using the Prism Utility* in *Appendix B*.

Download this utility from <http://emanuals.nordson.com/adhesives/software>.

Section 3

Installation



WARNING! Allow only personnel with appropriate training and experience to operate or service the equipment. The use of untrained or inexperienced personnel to operate or service the equipment can result in injury, including death, to themselves and others, and damage to the equipment.



WARNING! Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

Mounting the Spectra 30

Equipment and production line configuration may dictate a variation in the mounting options described in this section. Regardless of the mounting method used, refer to *Guidelines*.

Unpack the Pattern Controller

1. Carefully unpack the pattern controller. Exercise care to prevent equipment damage during unpacking.
2. Inspect for any damage that may have occurred during shipping. Report any damage to your Nordson representative.

Guidelines

- Position the pattern controller as close as possible to the parent machine or production line.
- Mount the pattern controller vertically on the wall or post.
- Ensure that the mounting location provides sufficient clearance around the bottom of the pattern controller to allow room for cable entry.

Dimensions

Use the following dimensions to mount the pattern controller.

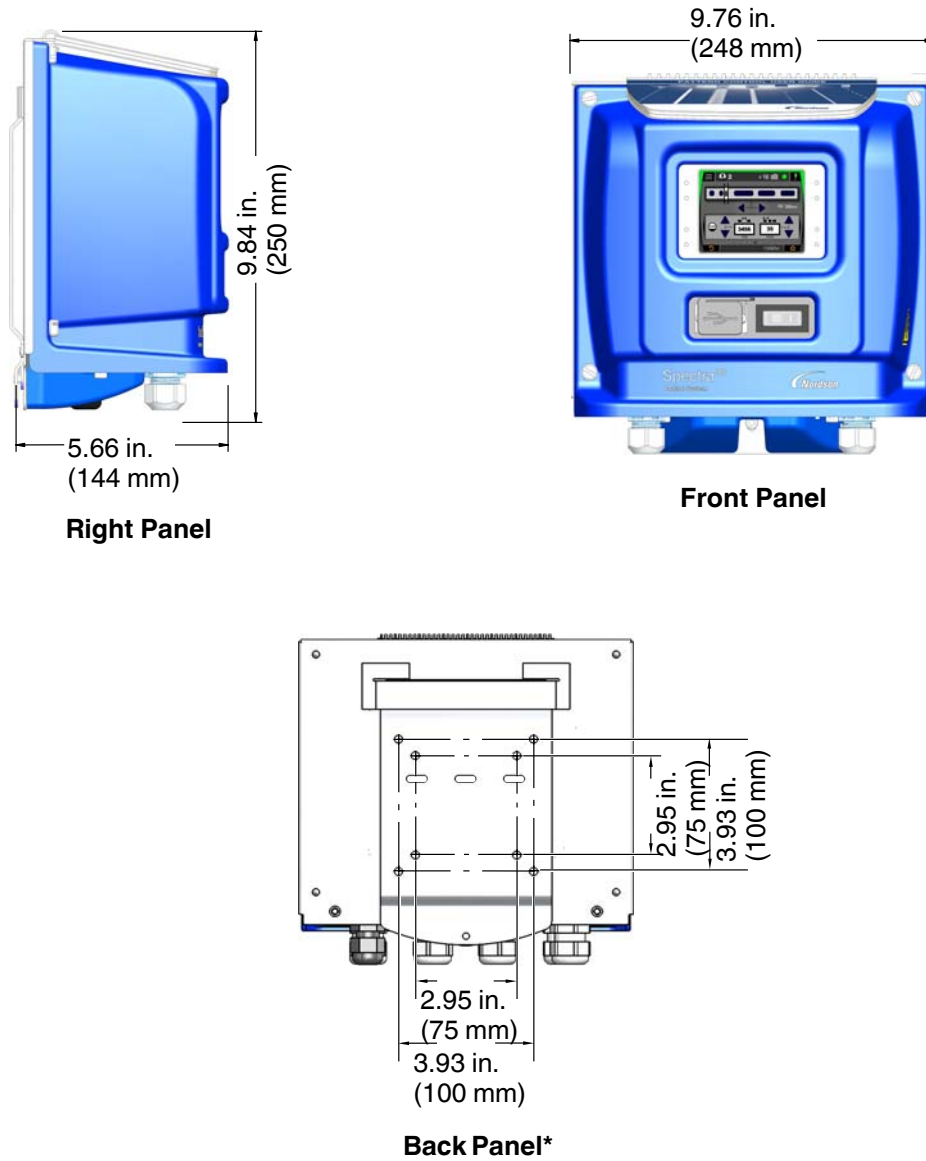


Figure 3-1 Pattern Controller dimensions

***NOTE:** The back mounting plate has a standard VESA mounting pattern, which allows the use of off-the-shelf mounting accessories.

Mount the Pattern Controller

1. Locate the following components required for mounting the pattern controller.

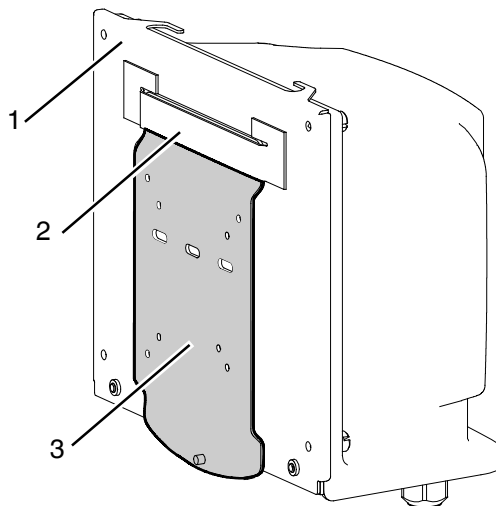


Figure 3-2 Mounting components

- | | |
|------------------|-------------------|
| 1. Back panel | 3. Mounting plate |
| 2. Mounting slot | |

2. Loosen the socket head mounting screw from the pattern controller to remove the mounting plate. Retain the mounting screw for re-installing the mounting plate to the pattern controller.

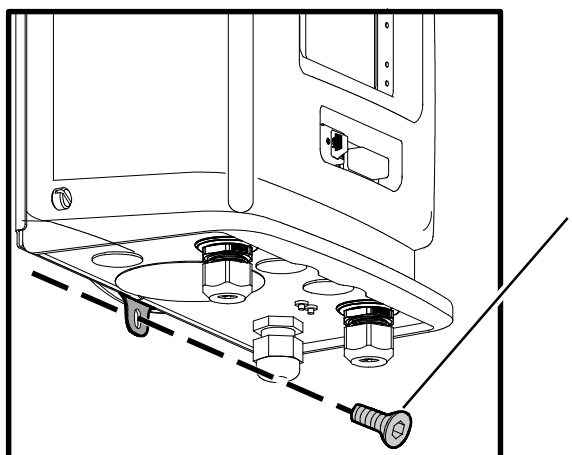


Figure 3-3 Mounting the pattern controller

1. One M5 Socket head screw

Mount the Pattern Controller *(contd)*

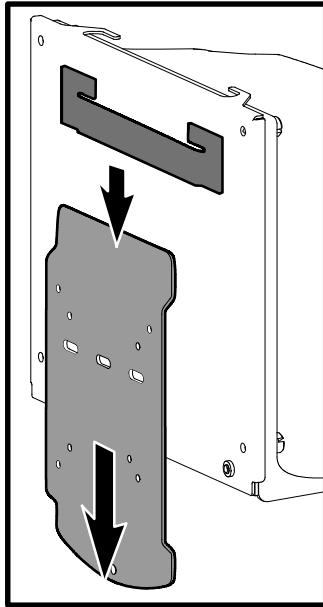
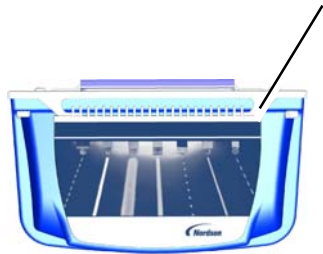


Figure 3-4 Removing the mounting plate

3. Slide the mounting plate out from the mounting slot. See Figure 3-4.
4. Mount the mounting plate on a rigid support (e.g. wall or post) to prevent external vibration.
5. Slide pattern controller into the mounting plate.
6. Secure the mounting plate by installing the screws provided in the ship-with kit. Refer to *Parts* section for the ship-with kit part number.
7. Position the pattern controller and slide it into the installed mounting plate.
8. Using the socket head mounting screw removed in step 2 secure the pattern controller to the mounting plate.

Attach the Quick Reference Guide



The Quick Reference Guide included in the ship-with kit provides an overview of the user interface and common pattern generation tasks.

Slide the spiral bound side of the Quick Reference Guide to the two hooks on either side of the top panel of the pattern controller.

Connecting the Spectra 30



WARNING! Equipment must be properly grounded and fused according to its rated current consumption (see ID plate). Failure to follow the safety procedures can result in serious injury.

1. Remove the pattern controller cover by loosening the four M5 captive screws to access the internal boards.

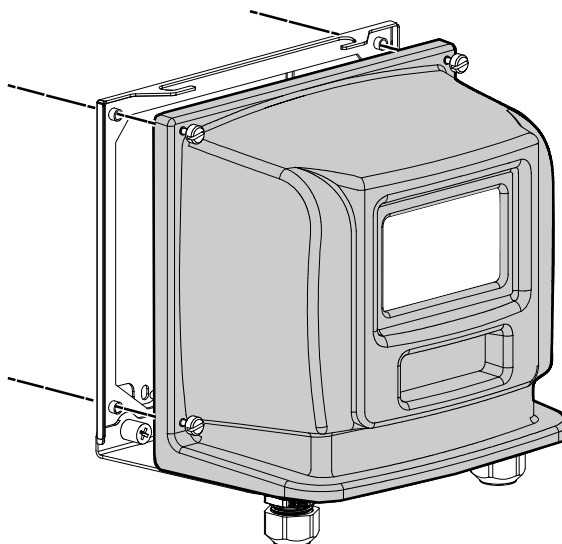


Figure 3-5 Pattern controller cover removal

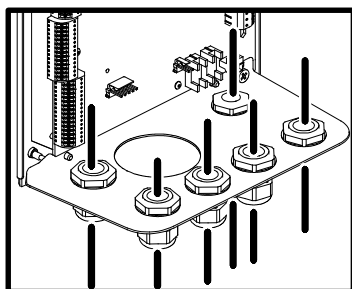


Figure 3-6 Routing the cables

2. Route all the cables through the conduits located on the base panel of the pattern controller, see Figure 3-6.

Refer to the *Wiring Diagram* for connecting the device specific cables to the proper location on the corresponding boards.

To Disable Open Trigger Warnings

For Prox triggers, Limit switches, and Mechanical Switches.

To prevent trigger warnings from appearing randomly, be sure to make the following connections on the Trigger (JP2) location of the controller board.

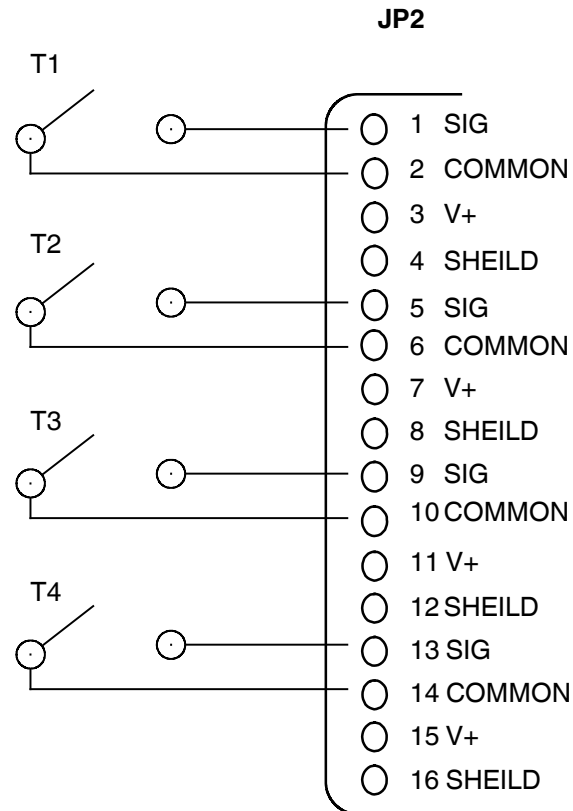
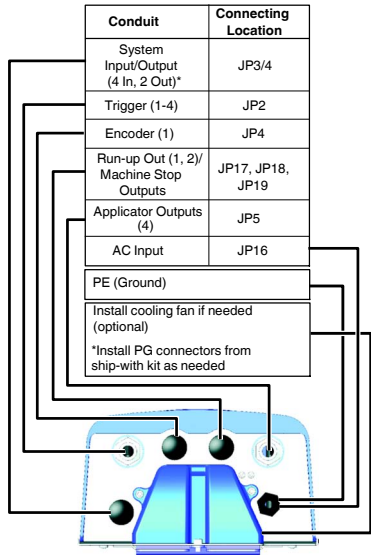


Figure 3-7 Connections for prox triggers, limit switches, and mechanical switches

Internal Wiring

Warning:
Allow only personnel with appropriate training and experience to operate or service the equipment. The use of untrained or inexperienced personnel to operate or service the equipment can result in injury, including death, to themselves and others, and damage to the equipment.



Warning:
Equipment must be properly grounded and fused according to its rated current consumption (see ID plate). Failure to follow the safety procedures can result in serious injury.

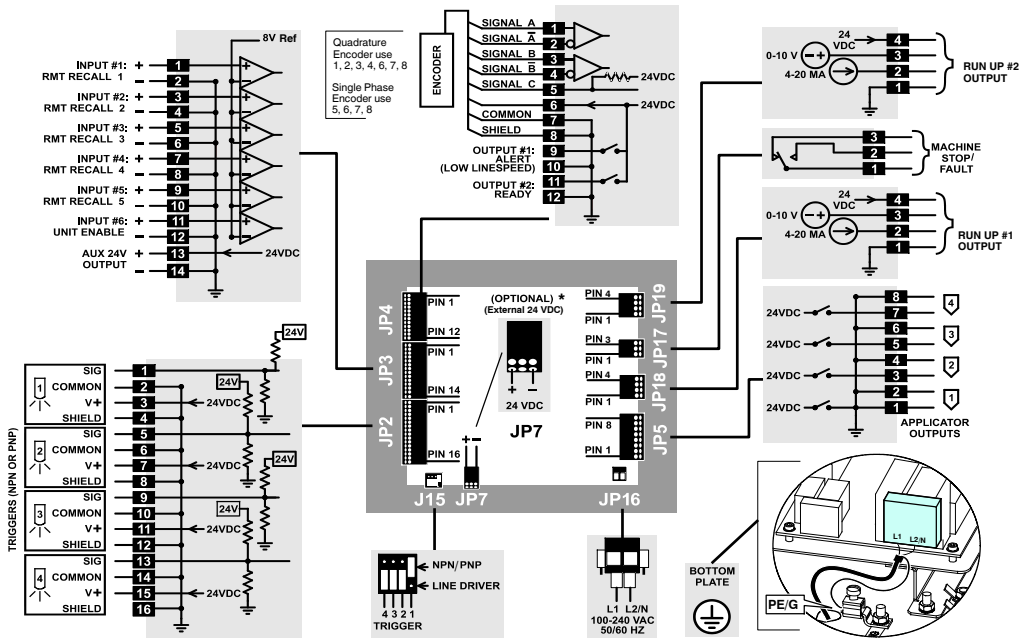
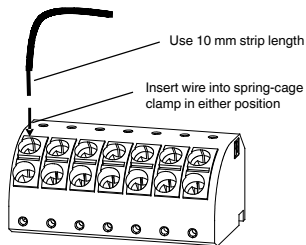


Figure 3-8 Internal board and cable connection details

Important Wiring Details

To Insert Wires in Terminal Blocks:



NOTE: For small gauge stranded wire (20 AWG or smaller), press the release button to open the clamp before inserting the wire.

To Remove Wires from Terminal Blocks:

Press the release button slot with a small screwdriver and pull the wire to remove

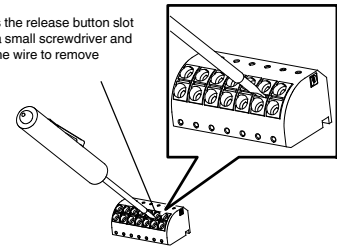


Figure 3-9 Inserting and removing wires from terminal blocks

Wire Gauge Range

JP5 and JP17

5 mm pitch connectors (applicator and run-up), 14 – 24 AWG

JP 2, JP3, JP4 and JP7

3.5 mm pitch connectors (triggers, encoders, and system Input/Output), 16 – 24 AWG, solid or stranded

JP16 -

AC Input Plug: 12 – 24 AWG
Insulation voltage rating: 300V
Insulation temperature rating: 70°C (158°F) min

JP17 -

5 mm pitch terminal block plug, 14 – 24 AWG

JP18 and JP19 -

3.5 mm pitch terminal block plug, 16 – 24 AWG, solid or stranded

Connect to External 24 VDC Power Supply

Do the following if an external 24 VDC power supply is used:

- 1 Disconnect the existing wires on JP7, remove by detaching them from the internal power supply. This prevents the loose wires from shorting to the Control board.
- 2 Connect the positive power lead from the external 24 VDC power supply to JP7 pin 1 and the negative power lead to JP7 pin 3.
- 3 Connect protective earth to the terminal marked PE inside the pattern controller.

Before Setting Up Spectra 30



WARNING! Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

Before setting up the pattern controller make sure of the following:

1. Pattern controller cover removed in step 1 under *Connect Spectra 30* given earlier is re-installed.
2. Pattern controller components are connected.
3. Pattern controller power cable is connected to a grounded outlet.
4. Pattern controller switch is turned on.



Figure 3-10 Main Switch location

This page intentionally left blank.

Section 4

The User Interface

Navigating the Touch Screen

The 3.5 in. touch screen allows you to navigate the user interface by using touch gestures to setup, operate, and maintain the pattern controller. The Spectra 30 pattern controller accepts three primary touch gesture inputs to accomplish all the required tasks.

Frequently used gestures	Tasks performed
Tap Tap once on a item 	Performs actions, such as: • opening a menu • selecting an option • performing a command
Hold Press your finger down and leave it there for a moment 	Allows you to: • see detailed settings
Swipe Start from one end of the screen and then swipe inwards toward the center 	Allows you to • see additional options

Home Screen Touch Area

You can touch the Home Screen components with your fingertips to access the menus and perform the required tasks. The dotted line in the following drawing shows the area on the Home Screen that accepts touch gestures.

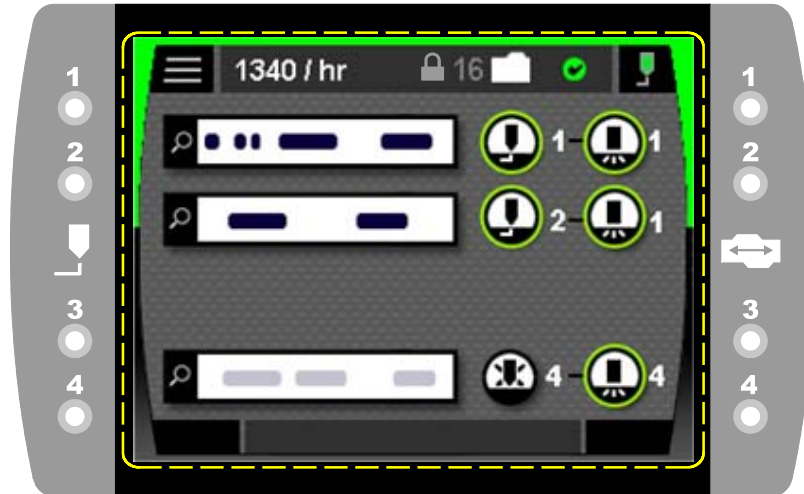


Figure 4-1 Home Screen touch area

Starting the Spectra 30

When you start the pattern controller for the first time a Setup Wizard appears, which serves as a guide through the entire setup process. On every subsequent power up the Splash Screen appears followed by the Home Screen.

Setup Wizard

For a screen-by-screen guide refer to the *Installation Guide*.

The sequence of the Setup Wizard are as follows:

Button	Menu Screens	Function
	Language Selection	Select from any of the language options by pressing the corresponding button. For more information refer to <i>Language in System Setup in Using the Menus, Section 5</i> .
	Component Selection	Select from the pre-programmed list of applicators. For more information refer to <i>Applicator Channel Settings</i> given later in this section. Also refer to <i>Components in System Setup in Using the Menus, Section 5</i> .
	Encoder Selection	Select the encoder type from the available selections. For more information refer to <i>Encoder in System Setup in Using the Menus, Section 5</i> .
	Units and Scale	Set Units and Scale for pattern programming by pressing the corresponding button to either of the following selections: • Milliseconds to set the patterns in time only • Millimeter or inch to set the patterns in distance For more information refer to <i>Units and Scale in System Setup in Using the Menus, Section 5</i> .
Continued...		

Setup Wizard (contd)

Button	Menu Screens	Function
	Input	Set up system inputs for: • Remote recipe selection • Remote system idle NOTE: Set remote idle to active high (24 VDC) or active low (0 VDC). For more information refer to <i>Input in System Setup in Using the Menus, Section 5.</i>
	Output	Set up system outputs for: • Active high (24 VDC) • Active low (0 VDC) NOTE: The fault/machine stop setting is typically set for active low to provide fail safe operation (power off or loose wire condition is faulted). For more information refer to <i>Output in System Setup in Using the Menus, Section 5.</i>
	Machine Settings	Select from the following options: • Individual or multiple recipe files • Select adhesive output On or Off when power is turned on • Line speed value when adhesive output starts and stops (encoder only) For more information refer to <i>Machine Settings in System Setup in Using the Menus, Section 5.</i>
Continued...		

Button	Menu Screens	Function
	Additional Machine Settings	Select from the following options: - Set trigger timeout: - in seconds when in time mode - in distance when encoder is used - Select product skip or palletize - Trigger memory: - enable product queuing after line stop - disable product queuing after line stop For more information refer to <i>Trigger Settings</i> given later in this section. Also refer to <i>Additional Machine Settings</i> in <i>System Setup</i> in <i>Using the Menus, Section 5</i>.
Optional Settings:		
	Passwords	Select a password using the numeric keypad to protect the screens. For more information refer to <i>Password Lock/Unlock</i> in <i>Using the Menus, Section 5</i>.
	Clock	Select the following options for setting the Clock screen: - Set the date Or - Set the time For more information refer to <i>Clock Settings</i> in <i>Using the Menus, Section 5</i>.

About the Splash Screen

The Splash screen appears at every power up.

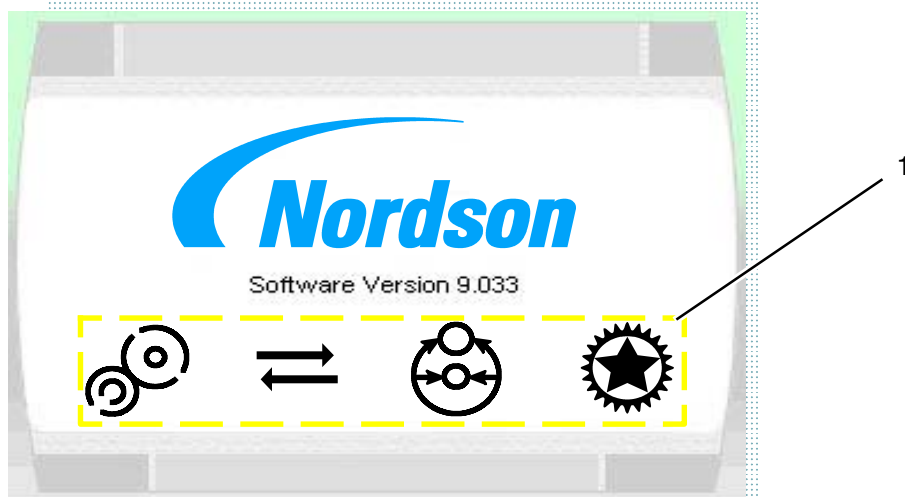


Figure 4-2 Splash Screen

1. Splash screen indicates software licenses installed (see *Add-on Features* given next for details)

Add-on Features

The three pattern controller configurations (time based, distance based, or pressure run-up) can be upgraded by ordering additional software licenses(s). These licenses can be ordered by specific part numbers. Refer to *Parts* for the software license part numbers.

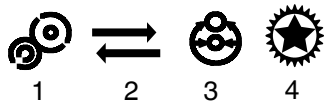


Figure 4-3 Add-on features icons

1. Encoder
2. Remote recall
3. Pressure run-up
4. Extra features

The icons displayed on the Splash screen indicate that software licenses have been ordered for all four add-on features.

The *Comparison Table* in *Overview* compares the pattern controller with or without the add-on options. For instructions on how to obtain add-on options, refer to *Appendix A, Using Add-on Software Licenses*.

About the Home Screen

The following components on the **Home Screen** allow you to navigate through the various screens for setup and operation.

Refer to Table 4-1 for a description of the Home Screen button functionalities.

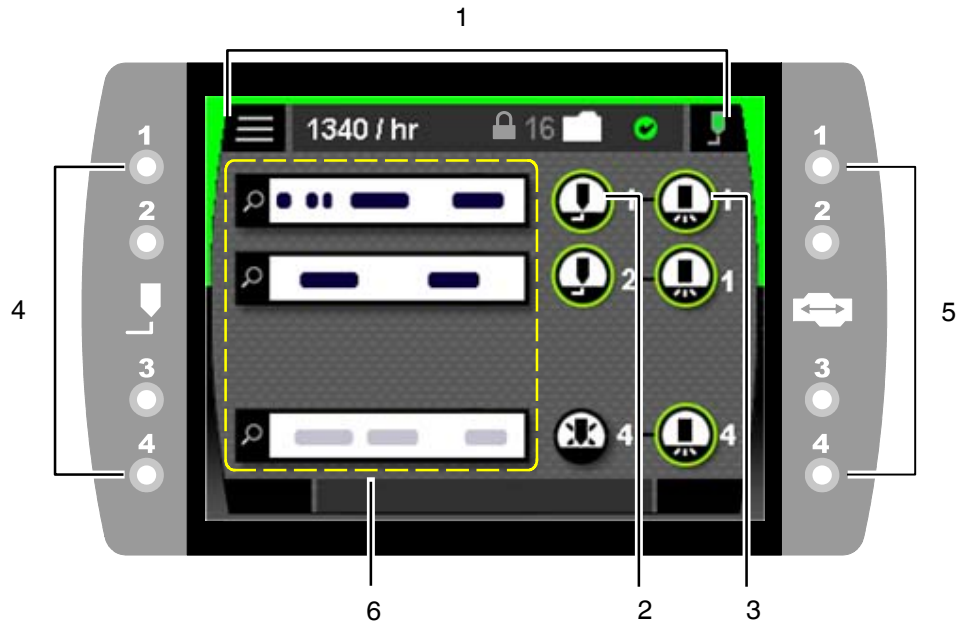


Figure 4-4 Home Screen components

About the Home Screen *(contd)*

See Figure 4-4 for the location of Home Screen components.

Table 4-1 Home Screen components

Item	Component	Functions
1	Status Bar	The status bar contains components to: • Navigate to system menus • Monitor the system • Select and modify recipes • Turn adhesive dispensing on and off

Item	Component	Button State	Status
2	Applicator		Applicator is enabled
			Applicator is disabled
			Applicator is in an alert condition
			Applicator is in a fault condition
3	Trigger		Trigger is enabled
			Trigger is in an alert condition
			Trigger is in a fault condition
4	Applicator LEDs		Applicator is activated
5	Trigger LEDs		Trigger is activated

Item	Component	Functions
6	Pattern	• Displays bead patterns • Allows modification of the bead pattern

Status Bar Components

The Status Bar displays recipe and line status information. The display changes depending on the system functionalities being used and system status.

The following figure shows the components on the Status Bar that allow you to monitor and modify the system's status.

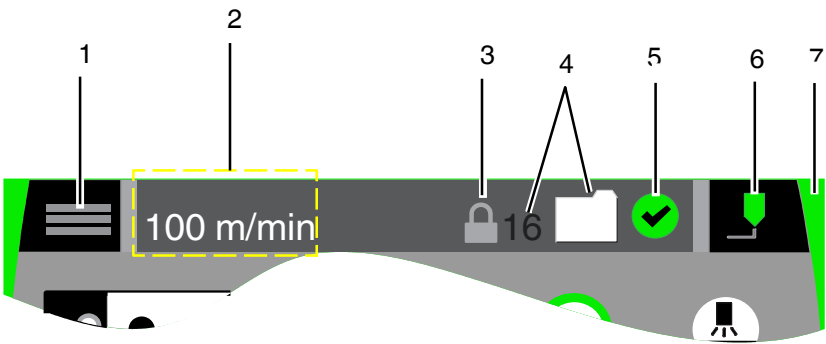


Figure 4-5 Status Bar

Table 4-2 Status Bar components

Item	Component	Button State	Function
1	Main Menu button		Access the menu screens. For more information refer to <i>Using the Menus, Section 5</i> .

Status Bar Components *(contd)*

See Figure 4-5 for the location of the Status Bar components.

Item	Component	Button/Indicator State	System Status
2	Multi Use Area displays one of the following components:		
	Line Status	100m/min	Line Speed
		100/min	Product Rate
		100	Product Count
	Applicator number		Navigates to the next applicator available
	Trigger		Navigates to the next trigger available
3	Screen Lock	 / 	Settings locked or unlocked NOTE: No icon is displayed when Screen Lock is not enabled.
4	Recipe Status	16	Displays recipe number
	Recipes Folder		Active recipe has no unsaved changes
	Not shown in Figure 4-5.		Active recipe has unsaved changes
			Recipes under remote control
5	Diagnostic Status		Pattern Controller is ready/okay
			Pattern Controller is in an alert condition
			Pattern Controller is in a fault condition
			Pattern Controller is offline
6	Adhesive Status		Adhesive is on
			Adhesive idle due to remote condition
			Adhesive idle due to low line speed
			Adhesive is off

Continued...

See Figure 4-5 for the location of the Status Bar component.

Item	Component	Background Color	System State	System Status	System Outputs		
					Ready	Alert	Fault
7	System Status		Run	Adhesive is being dispensed	On	Off	Off
			Idle	System is in idle condition	On	Off	Off
			Alert	System is in alert condition	On	On	Off
			Fault	System is in fault condition	Off	On/Off	On
			Offline	System is offline	Off	Off	Off

Using the Home Screen

The pattern controller is shipped from the factory with most software settings pre-configured and ready to use. However, there are some settings that you must configure and fine tune to best fit your manufacturing process.

Use the Home Screen components to view and re-configure the pattern controller settings.

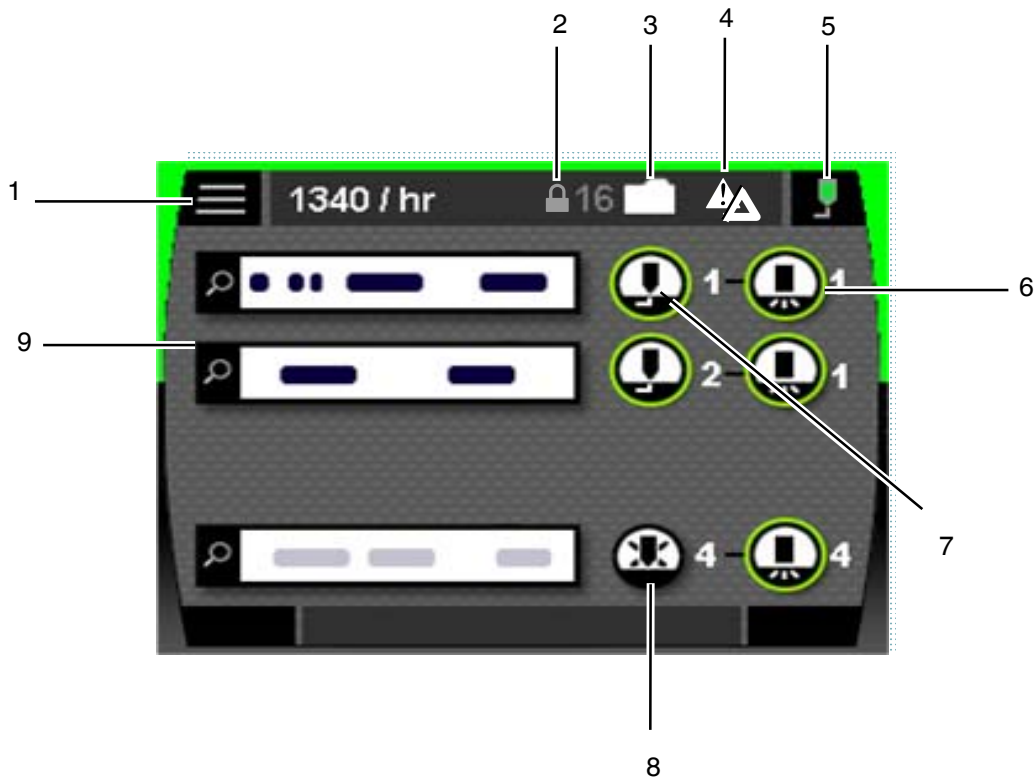
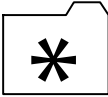
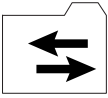


Figure 4-6 Home Screen

- | | | |
|---------------------|-----------------------------------|-------------------------------|
| 1. Main Menu button | 4. Message log/Diagnostics status | 7. Enabled applicator button |
| 2. Password lock | 5. Adhesive button | 8. Disabled applicator button |
| 3. Recipe | 6. Trigger button | 9. Pattern overview |

What you can do from the Home Screen

See Figure 4-6 for the location of the Home Screen components.

Button	Functions
 (Item 1 in Figure 4-6)	Tap to access the Main Menu.
 (Item 3 in Figure 4-6)	You can use two separate touch gestures to perform different Recipe related functionalities: - Tap to run a different recipe. <i>or</i> - Hold to manage Recipe files: - Create a new recipe (up to 50). - Save a recipe. - Save the recipe as a copy. - Delete a recipe.
 (Not shown in Figure 4-6)	When this icon appears, you will be asked if you want to save the modifications made to the current recipe.
 (Not shown in Figure 4-6)	When this icon appears, recipes are selected by remote recipe input. The Recipe screens are not available.
 (Item 5 in Figure 4-6)	Tap to turn dispensing on or off.
Continued...	

What you can do from the Home Screen *(contd)*

See Figure 4-6 for the location of the Home Screen components.

Button	Functions
 (Item 6 in Figure 4-6)	Hold to modify Trigger Settings. - a Polarity - b Masking distance - c Palletize
 (Item 7 in Figure 4-6)	You can use two separate touch gestures to set or modify Applicator functionalities: - a Tap to access the Purge screen. - b Hold to access the Applicator screen.
 (Item 9 in Figure 4-6)	Tap to view or modify the selected pattern. • Pattern type • Trigger number • Gun-to-trigger offset • Copy/Paste patterns • Enable/Disable applicator
 (Item 4 in Figure 4-6)	Tap to: - a Access the message log. Or - b Access diagnostics screen for identifying and troubleshooting system problems.
 (Item 2 in Figure 4-6)	Tap to lock or unlock the settings. A password must be entered to unlock screens. NOTE: No icon is displayed when Screen Lock is not enabled.

Programming Patterns

To access the Pattern Selection screen, do the following:

1. Hold the **Applicator** button on the **Home Screen** to access the **Applicator Setup** screen.

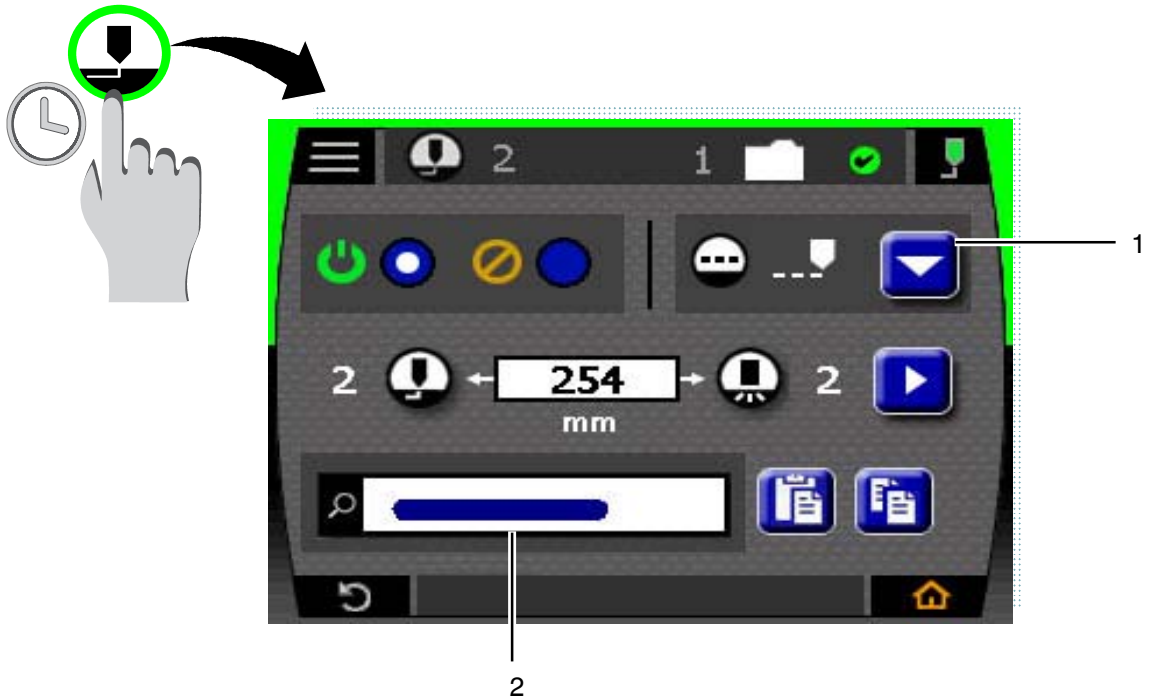


Figure 4-7 Pattern related components

1. Select pattern type button

2. Pattern display

Programming Patterns *(contd)*

2. Tap the **Select Pattern Type** button to access the **Pattern Type Selection** screen.

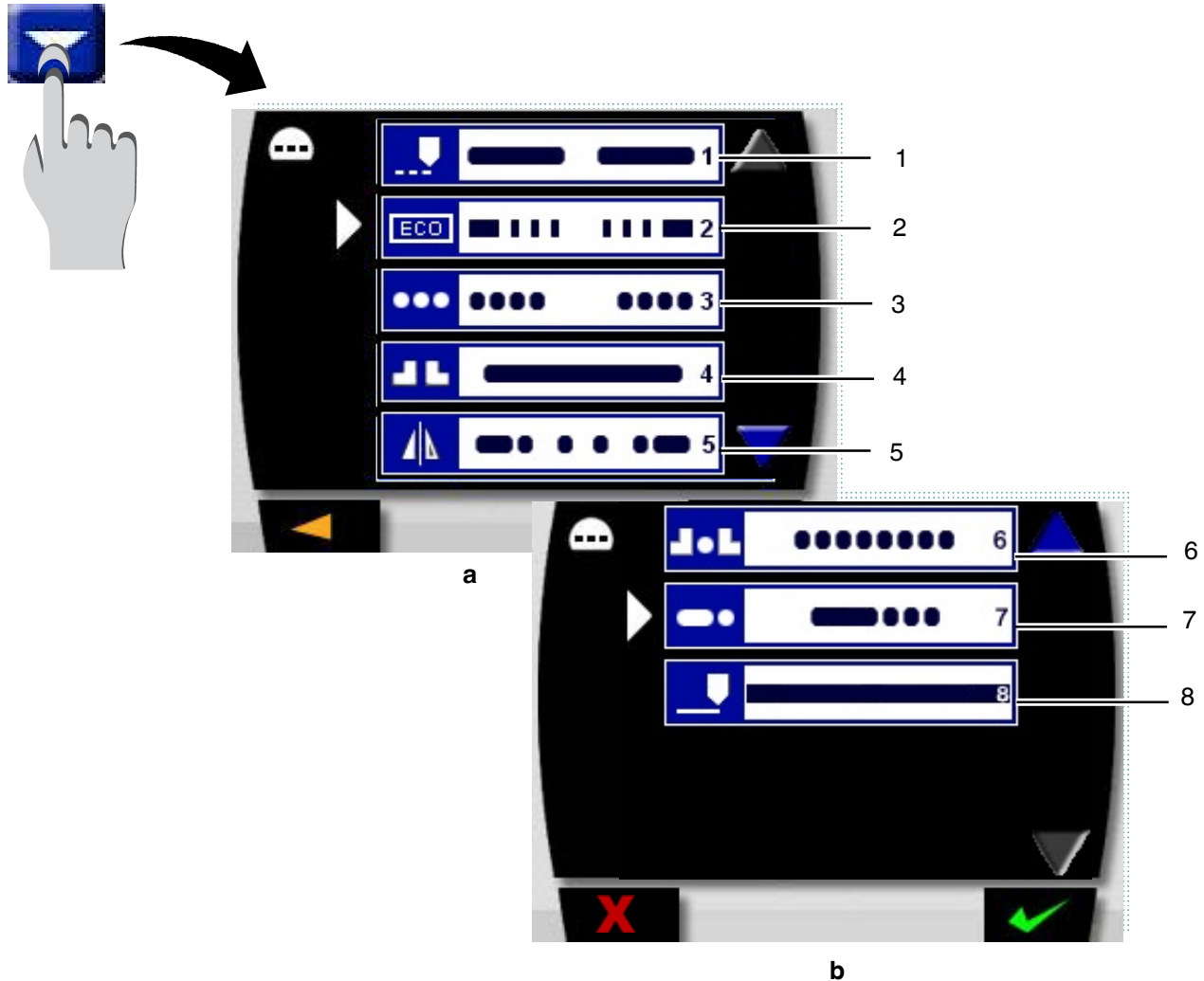


Figure 4-8 Pattern Selection screens

a: Pattern Type Selection screen

- | | | |
|------------------------|------------------------|-------------------------------|
| 1. Normal bead pattern | 3. Dot bead pattern | 5. Random mirror bead pattern |
| 2. EcoBead pattern | 4. Random bead pattern | |

b: Optional Pattern Type Selection screen

- | | | |
|-------------------------------|-------------------------|----------------------------|
| 6. Random dotted bead pattern | 7. Autodot bead pattern | 8. Continuous bead pattern |
|-------------------------------|-------------------------|----------------------------|

3. Select a pattern type from the available selection.

Normal Pattern



Normal patterns or solid beads are generated when the line speed is above the start speed. This is the default pattern type for the system.

Assign the delay and the length values. *Delay* is the distance from the leading edge of the product to the beginning of the bead, and *length* is the distance from the start of the bead to the end of the bead.

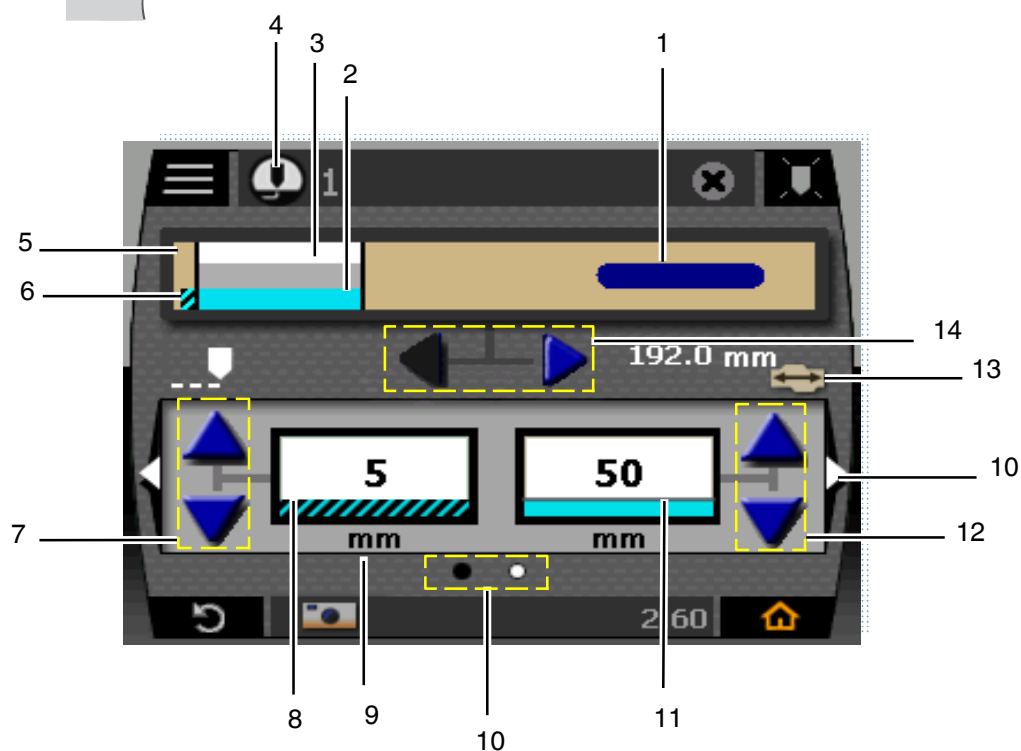


Figure 4-9 Components for setting normal patterns

- | | | |
|------------------------|------------------------------|--------------------------------|
| 1. Unselected beads | 6. Bead delay | 11. Bead length |
| 2. Bead length | 7. Bead delay increment tool | 12. Bead length increment tool |
| 3. Selected bead | 8. Bead delay value | 13. Product length |
| 4. Current applicator | 9. Units used | 14. Bead selector |
| 5. Pattern display box | 10. Panel swipe indicator | |

Normal Pattern (contd)**NOTES:**

- Pattern display (item 5 in Figure 4-9) updates automatically as pattern are modified.
- Select beads by tapping the beads or using the bead selector arrows (item 14 in Figure 4-9).
- Adjust delay or length values using the incremental tools (items 7 and 12 in Figure 4-9), or tapping the bead delay and bead length numeric entry keypads (items 8 and 11 in Figure 4-9).
- Select a different applicator channel by tapping the applicator icon (item 4 in Figure 4-9).
- View product length (item 13 in Figure 4-9) as measured by the assigned trigger input in real-time.

Normal Pattern Swipe Operation

The number of dots on the swipe tool indicates the number of panels available. Two panels are available for pattern edits when Normal pattern is selected.

Access additional pattern setting functionality by swiping firmly left or right on the dotted area on the screens shown below.

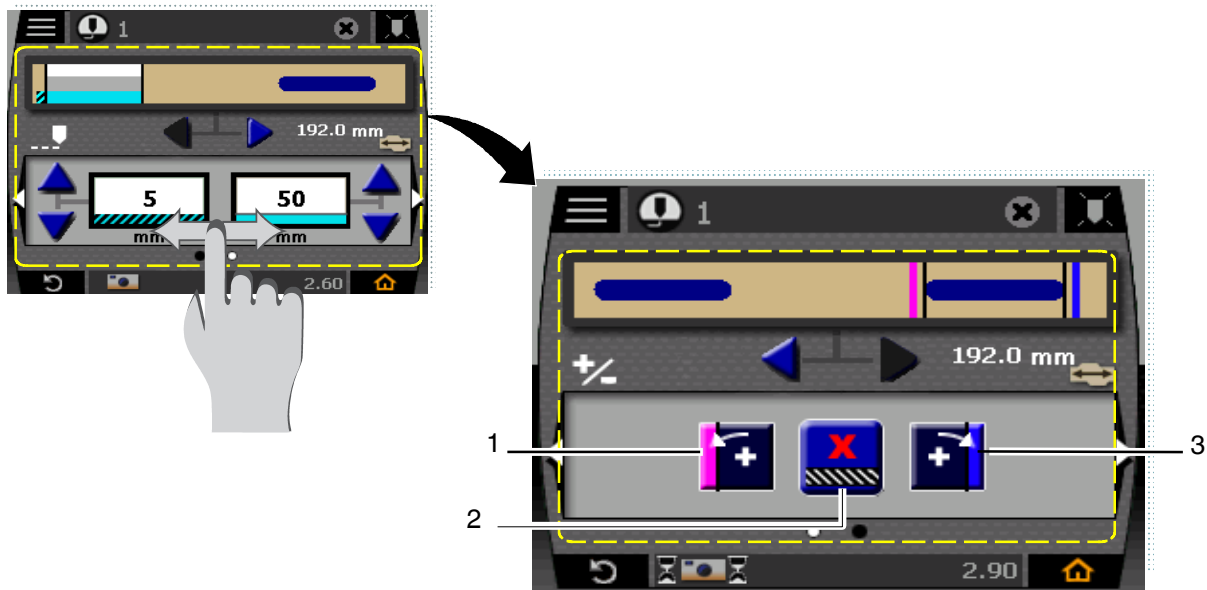


Figure 4-10 Normal pattern screens

1. Insert selected bead before

2. Delete selected bead

3. Insert selected bead after

Other Pattern Types

To change to a different pattern type, go to the **Pattern Selection** screen (see Figures 4-7 and 4-8) and then select a pattern type from the available selection.

EcoBead Pattern

The EcoBead pattern provides adhesive savings of up to 60% while still maintaining full adhesive bond integrity. When enabled, the EcoBead pattern switches the signal to the applicator to produce a pre-defined stitched adhesive pattern, resulting in the user-specified amount of adhesive savings.

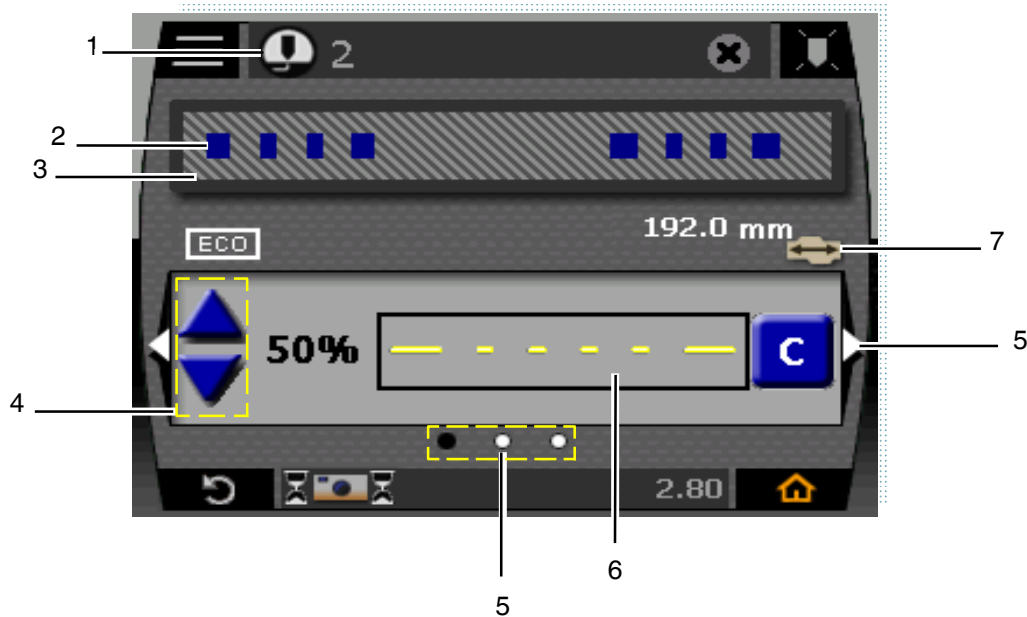
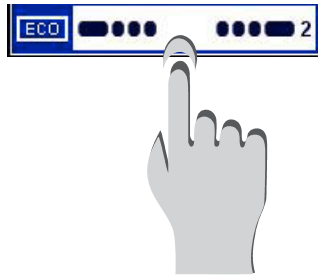


Figure 4-11 Components for setting EcoBead patterns

- | | | |
|-----------------------|--------------------------------|-------------------|
| 1. Current applicator | 4. Bead savings increment tool | 7. Product length |
| 2. EcoBead pattern | 5. Panel swipe indicator | |
| 3. Pattern display | 6. Pre-set EcoBead pattern | |

EcoBead Pattern Swipe Operation

The number of dots on the swipe tool indicates the number of panels available. Three panels are available for pattern edits when EcoBead pattern is selected.

Access additional pattern setting functionalities by swiping firmly left or right on the dotted area on the screens shown below.

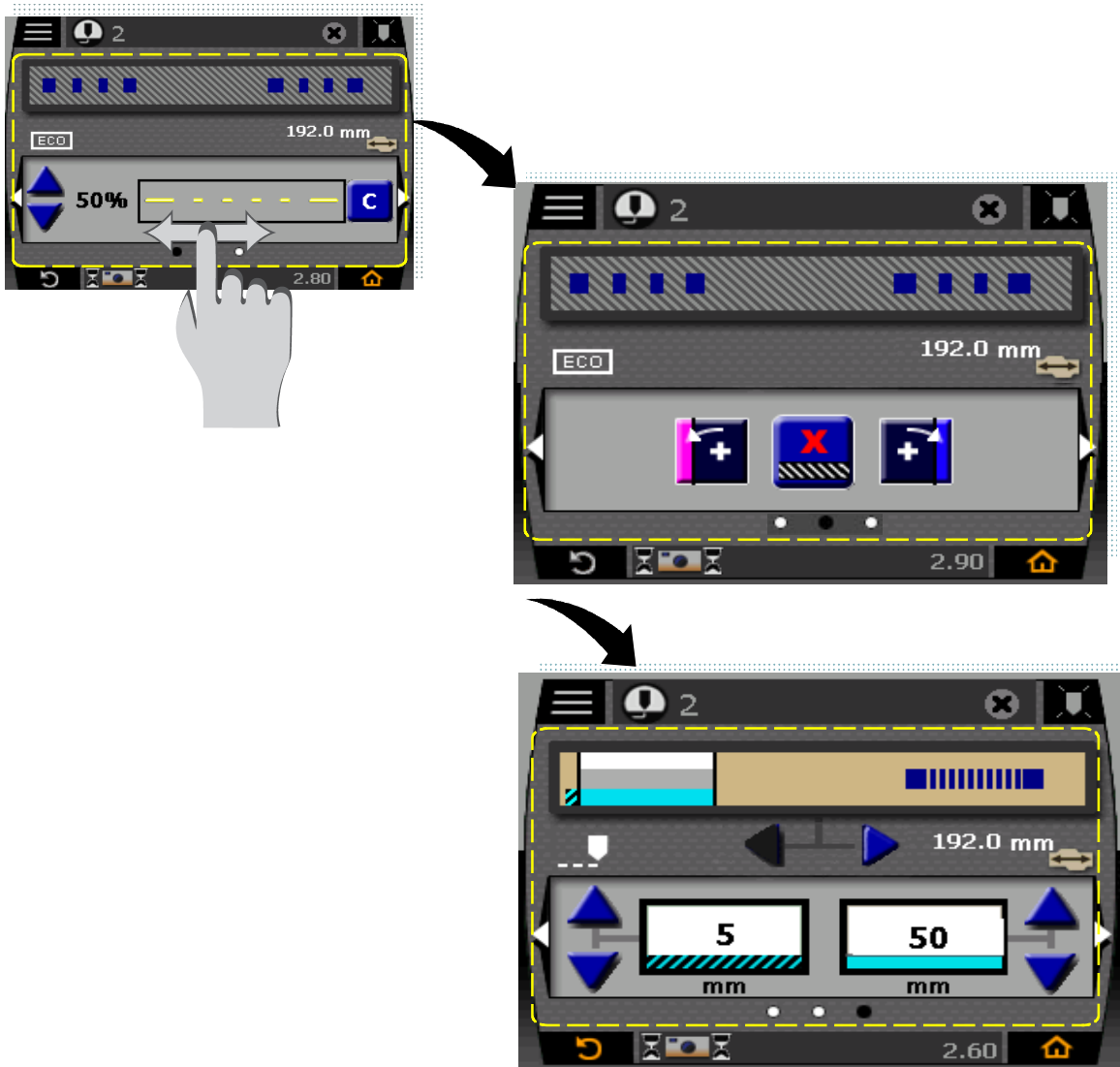


Figure 4-12 EcoBead pattern screens

EcoBead Pattern Styles

Tap the button shown in the figure below to access the EcoBead pattern styles. Select one of the pre-programmed patterns from **A** through **I**.

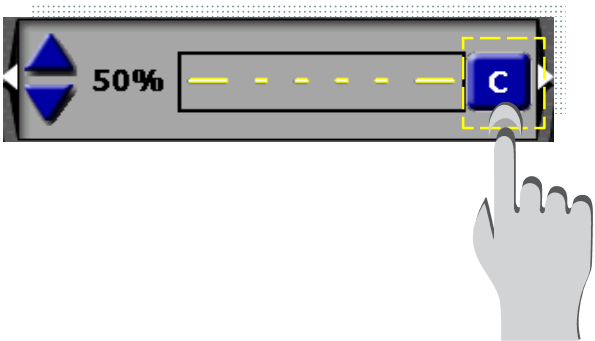


Figure 4-13 Button to access pattern styles (pattern style C shown in the figure above)

EcoBead Pattern Explained

The following figure explains an EcoBead pattern.

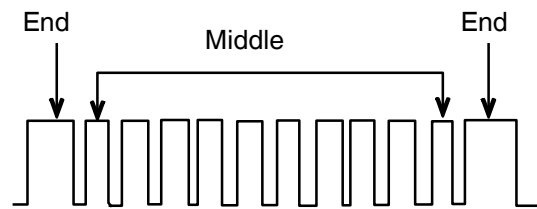


Figure 4-14 EcoBead pattern

Adhesive Savings with EcoBead Patterns

Pattern Style	End (%)	Middle (%)	30%	40%	50%	60%
A	10	5				
B	10	10				
C	15	5				
D	15	10				
E	15	15				
F	20	5				
G	20	10				
H	20	15				
I	20	20				

Dotted Pattern



This pattern type provides patterns of constant weight (volume) of adhesive dots that are spaced by a user-determined distance.

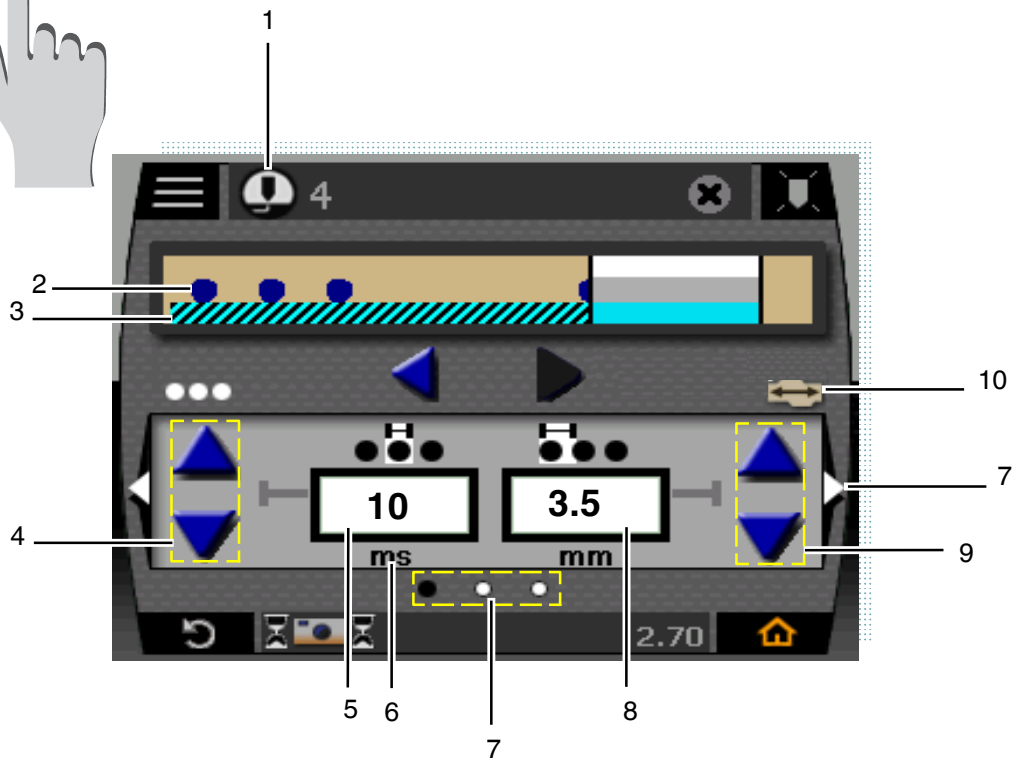


Figure 4-15 Components for setting dot patterns

- | | | |
|-----------------------|---------------------------------------|-----------------------------|
| 1. Current applicator | 4. Dot time increment tool (duration) | 7. Panel swipe indicator |
| 2. Dot pattern | 5. Dot time value (duration) | 8. Dot pitch value |
| 3. Pattern display | 6. Units used | 9. Dot pitch increment tool |
| | | 10. Product length |

Dot Pattern Example

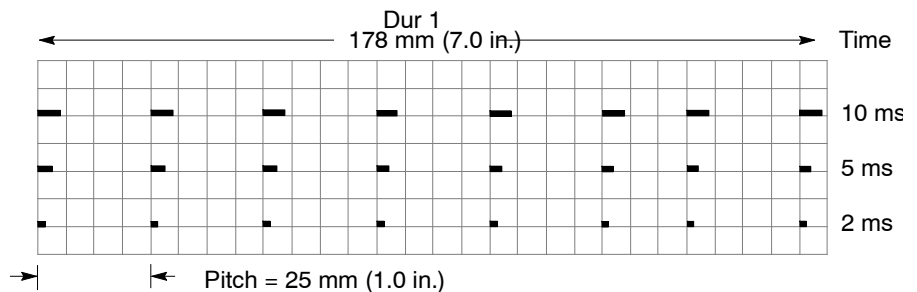


Figure 4-16 Example Dot Pattern Types (Effect on dot size of decreasing gun-on time from 10 ms [top] to 2 ms [bottom])

Dot Pattern Swipe Operation

The number of dots on the swipe tool indicates the number of panels available. Three panels are available for pattern edits when Dot pattern is selected.

Access additional pattern setting functionalities by swiping firmly left or right the dotted area on the screens shown below.

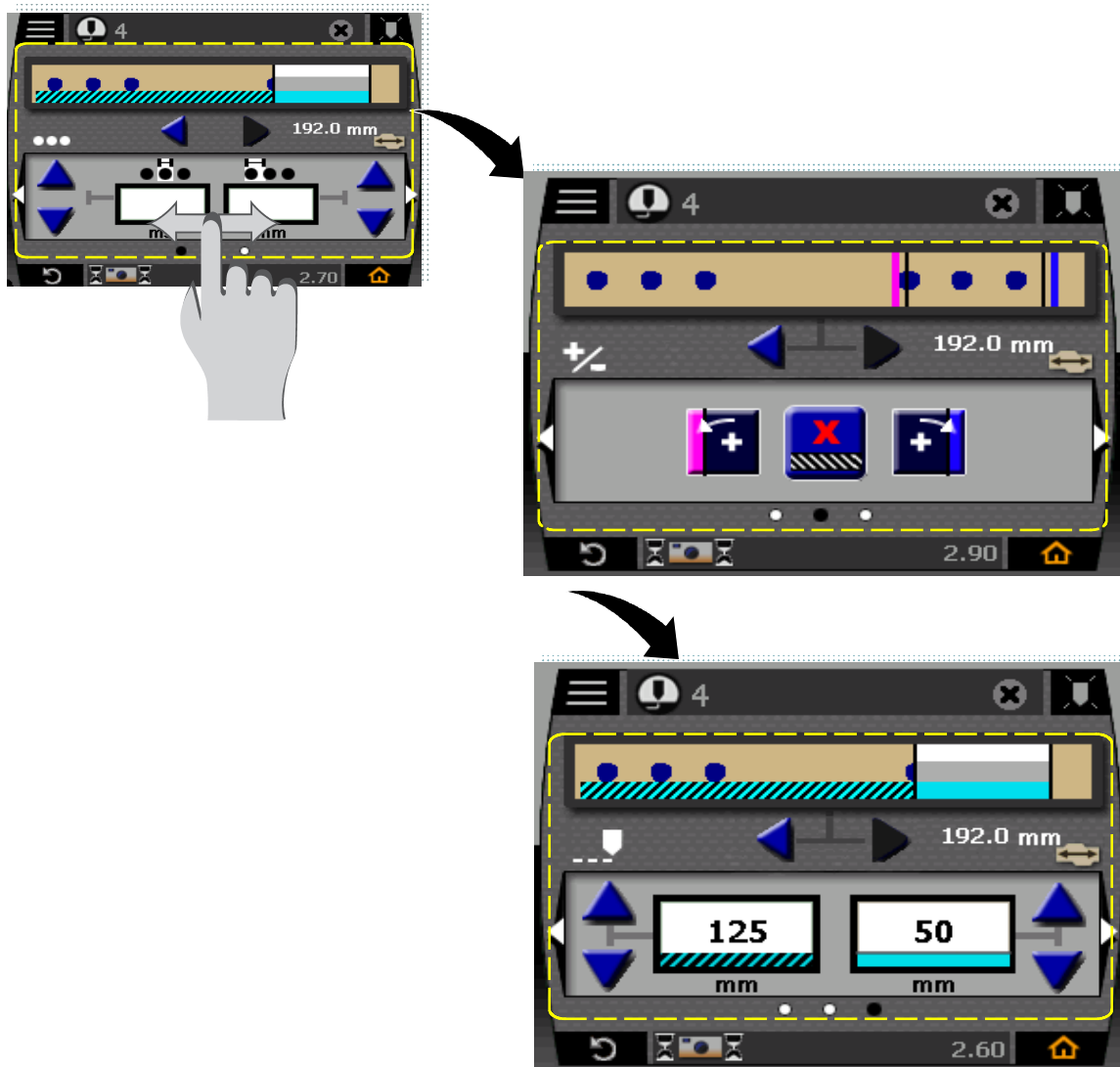
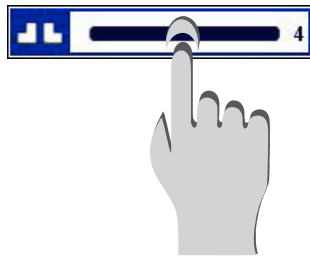


Figure 4-17 Dot pattern screens

Random Length Pattern



This pattern type provides a way to mix products of differing length on the production line during the same production run. When alternating between short and long products on the production line, the system is programmed to automatically determine the length of each product as it passes the trigger, and it then adjusts the bead size to fit the product.

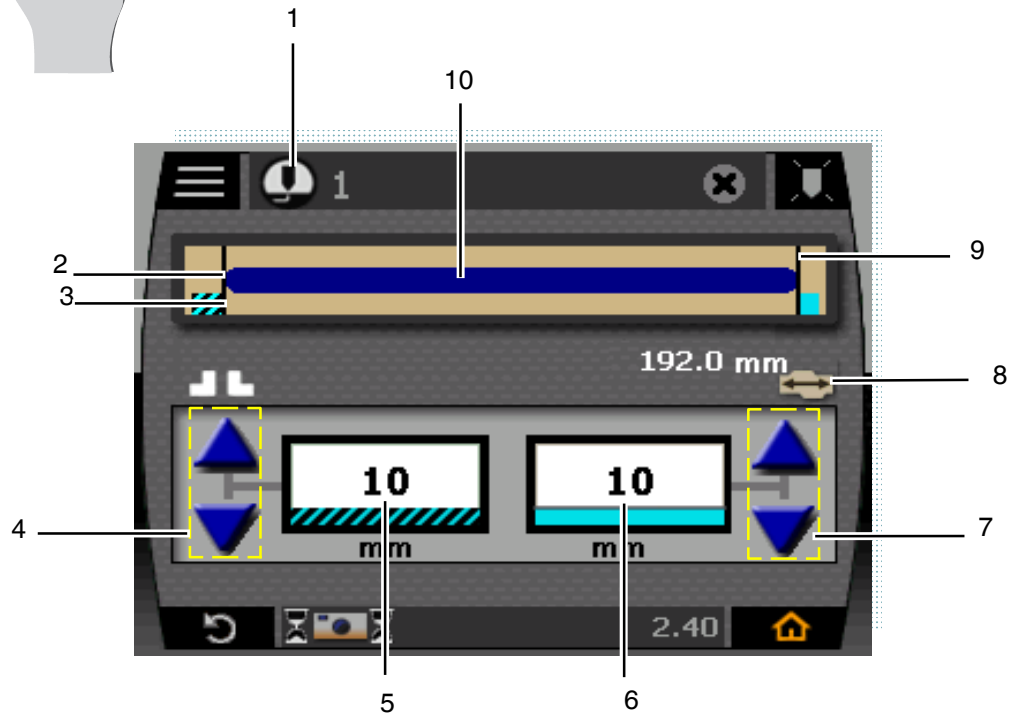


Figure 4-18 Components for setting random bead patterns

- | | | |
|---------------------------------------|--|-------------------------|
| 1. Current applicator channel | 5. Leading edge margin value | 8. Product length |
| 2. Pattern display | 6. Trailing edge margin value | 9. Trailing edge margin |
| 3. Leading edge margin | 7. Trailing edge margin value increment tool | 10. Bead |
| 4. Leading edge margin increment tool | | |

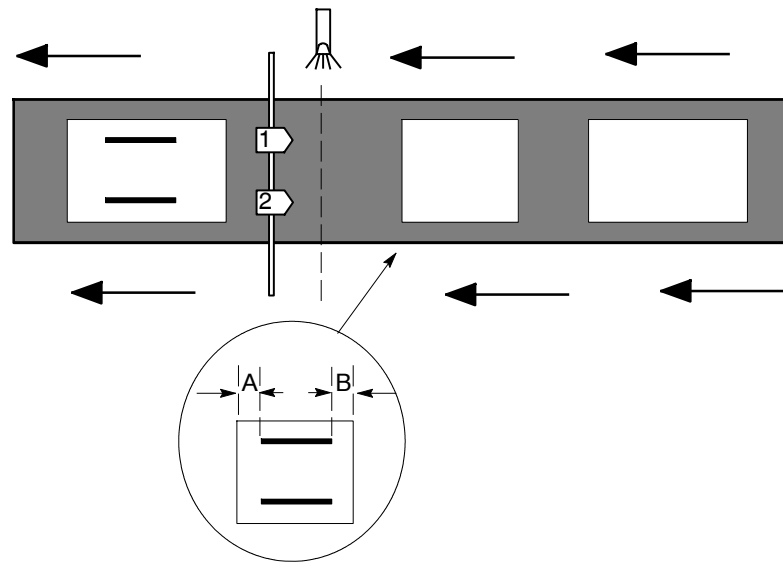
Random Length Pattern Example

Figure 4-19 Random length pattern (A: Leading Edge Margin/B: Trailing Edge Margin)

Mirror Pattern



This bead type places the pattern on the leading edge and a mirror image on the trailing edge.

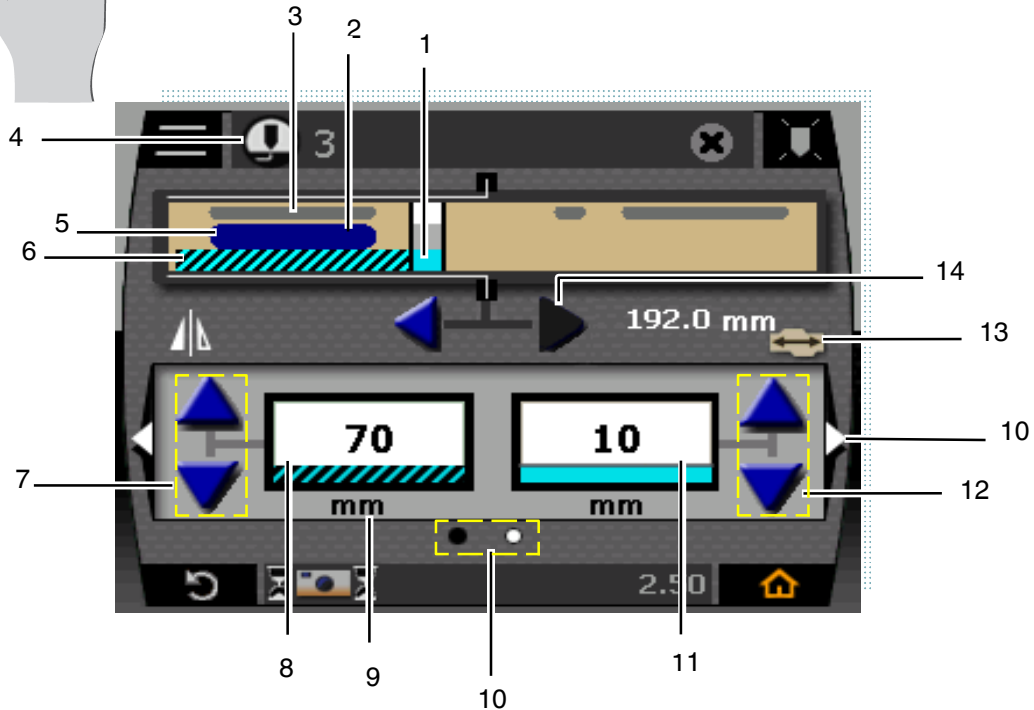


Figure 4-20 Components for setting random mirror mode patterns

- | | | |
|-----------------------|------------------------------|--------------------------------|
| 1. Unselected bead | 6. Bead delay | 11. Bead duration value |
| 2. Bead length | 7. Bead delay increment tool | 12. Bead length increment tool |
| 3. Selected bead | 8. Bead delay margin value | 13. Product length |
| 4. Current applicator | 9. Units | 14. Bead selector |
| 5. Pattern display | 10. Panel swipe indicator | |

Mirror Pattern Example

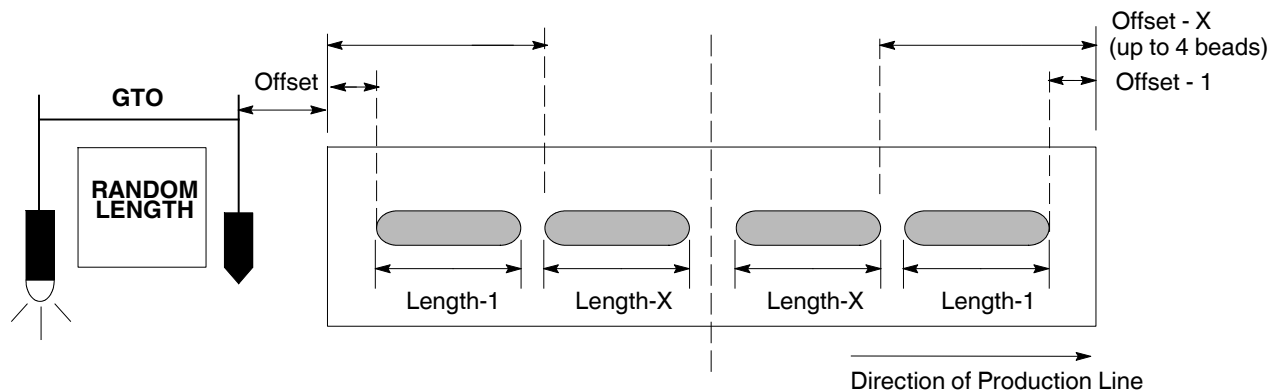


Figure 4-21 Example of Random Mirror Mode Pattern Types

Mirror Mode Swipe Operation

The number of dots on the swipe tool indicates the number of panels available. Two panels are available for pattern edits when Mirror mode pattern is selected.

Access additional pattern setting functionality by swiping firmly left or right on the dotted area on the screens shown below.

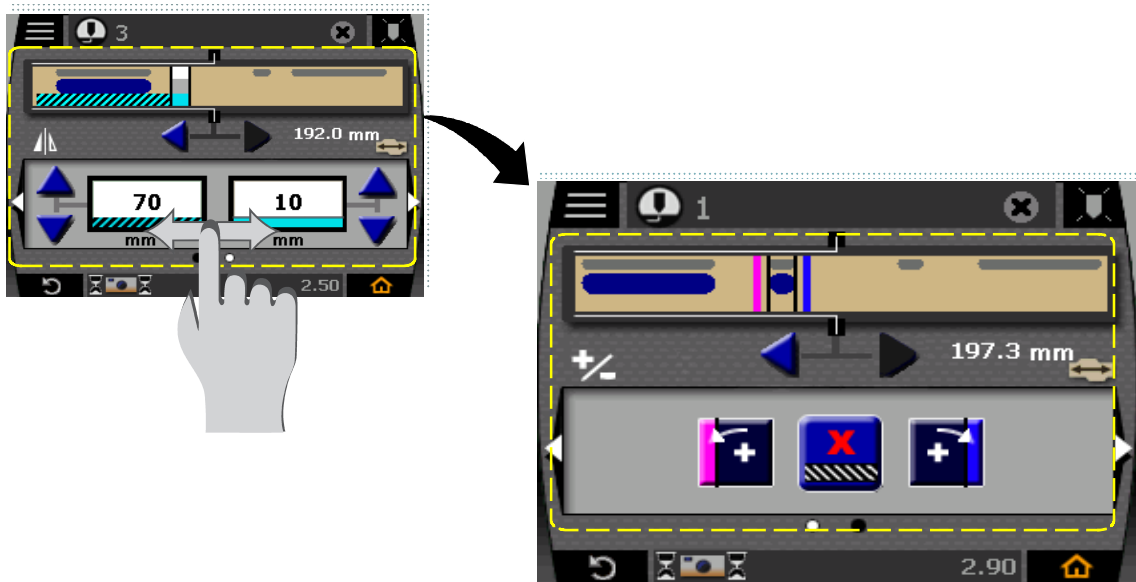


Figure 4-22 Mirror pattern edit screen

Random Dotted Pattern

This pattern type is the same as random length, the only difference is that the dispensed adhesive is a dotted. A gap set at the leading and trailing edges of the product where adhesive is not applied.

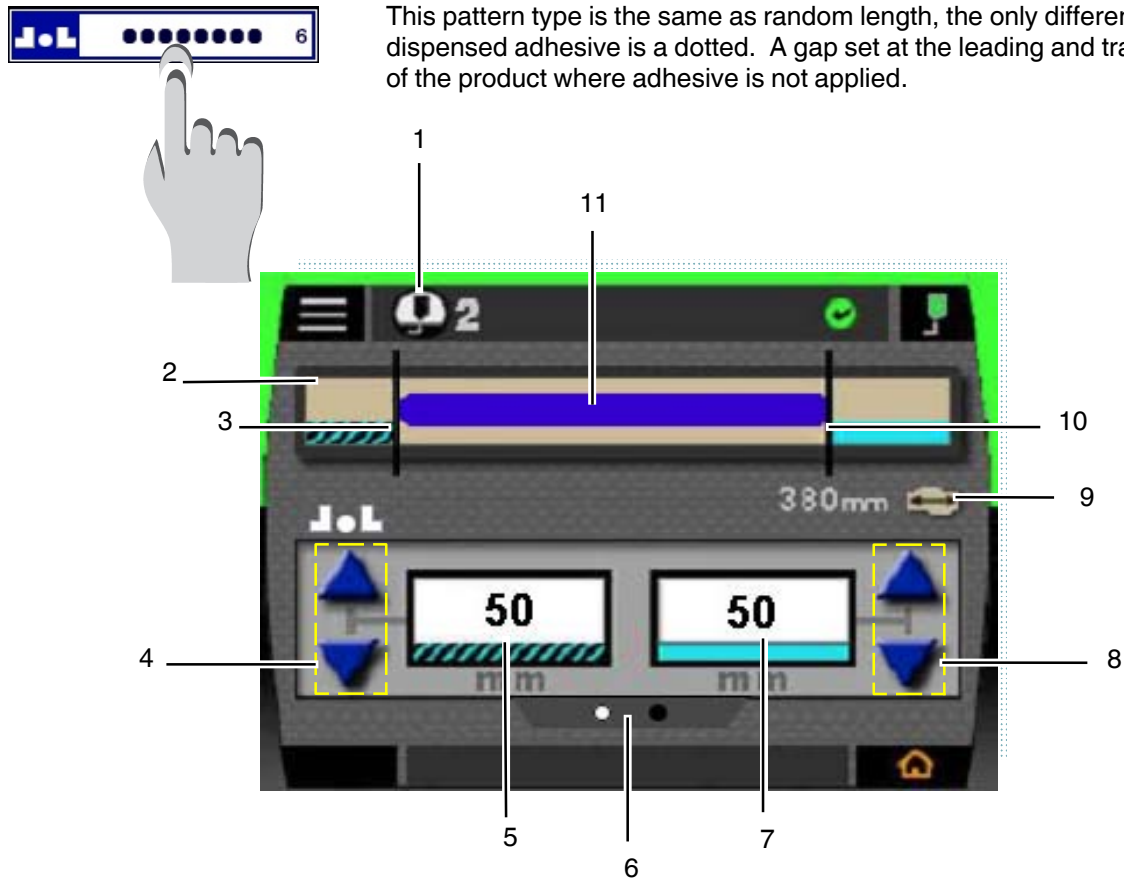


Figure 4-23 Components for setting random bead patterns

- | | | |
|---------------------------------------|--|--------------------------|
| 1. Current applicator channel | 5. Leading edge margin value | 9. Product length |
| 2. Pattern display | 6. Panel swipe indicator | 10. Trailing edge margin |
| 3. Leading edge margin | 7. Trailing edge margin value | 11. Bead |
| 4. Leading edge margin increment tool | 8. Trailing edge margin value increment tool | |

Random Dotted Pattern Swipe Operation

The number of dots on the swipe tool indicates the number of panels available. Two panels are available for pattern edits when Random Dotted pattern is selected.

Access additional pattern setting functionality by swiping firmly left or right on the screens shown below.

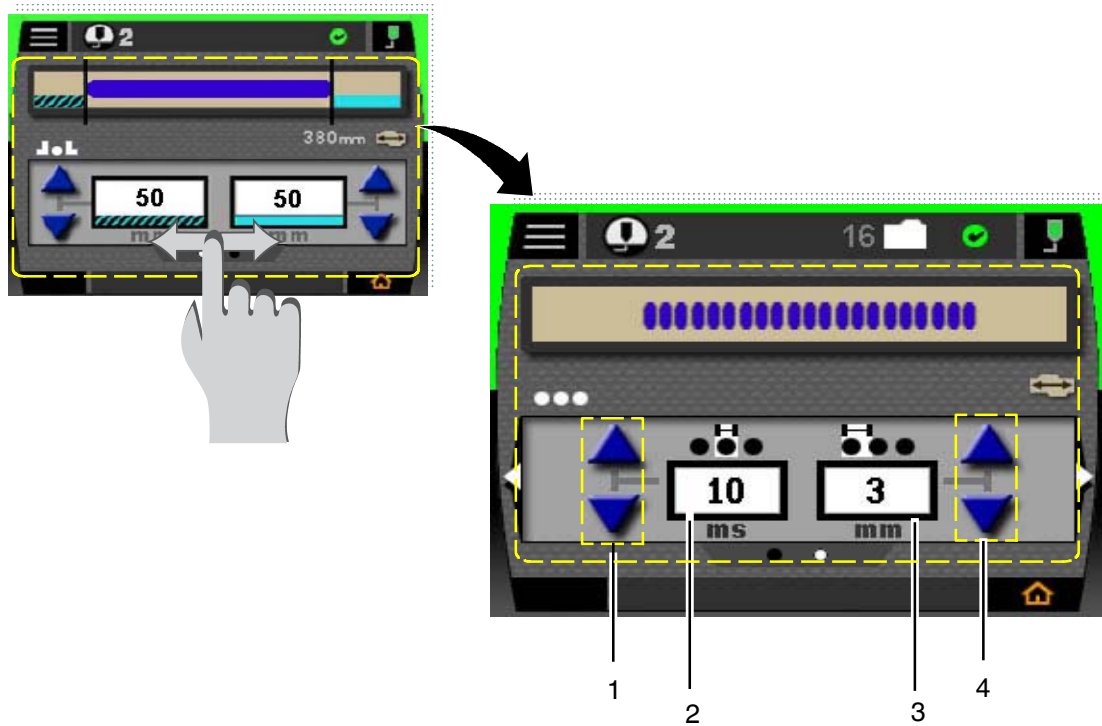
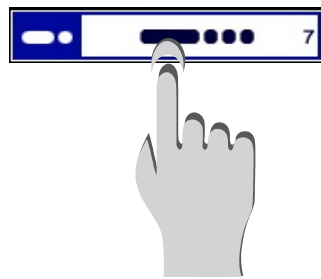


Figure 4-24 Random dotted pattern edit screen

- | | |
|--|-----------------------------|
| 1. Dot duration increment tool (time) | 3. Dot pitch increment tool |
| 2. Dot duration (time value) | 4. Dot pitch |

Autodot Pattern



This pattern type dispenses dot beads when the system is set at a lower activation speed and dispenses normal beads when the system is set above the activation speed. This bead type is used to relieve residual pressure after a sudden machine stop.

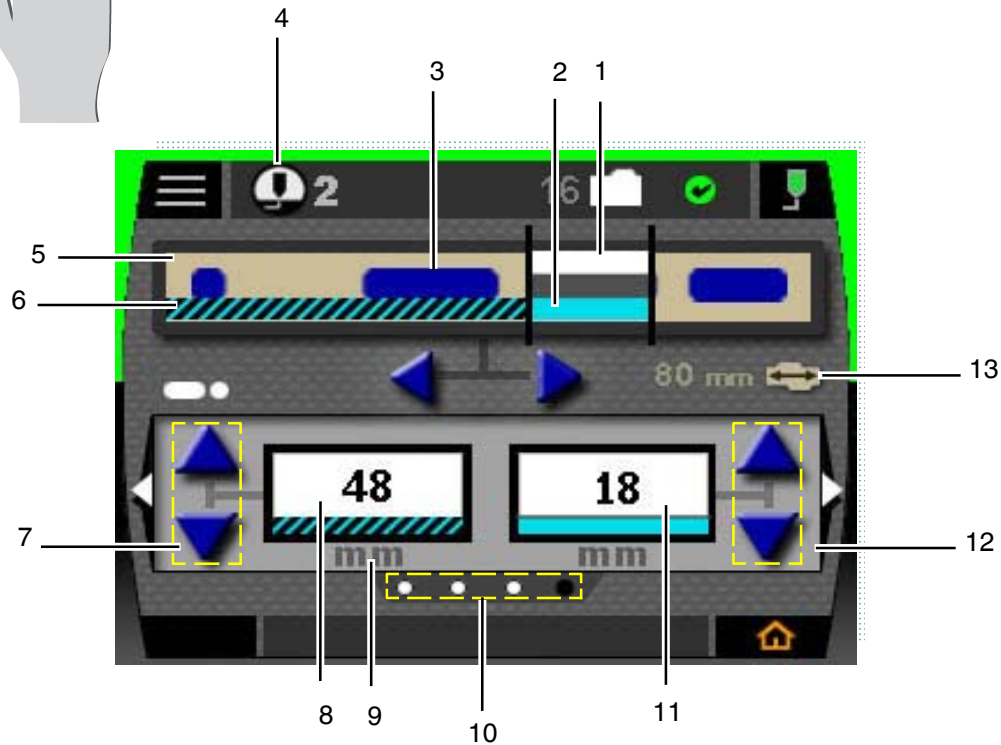


Figure 4-25 Components for setting dot patterns

- | | | |
|-----------------------|-------------------------------------|--------------------------------|
| 1. Selected pattern | 6. Bead offset | 11. Bead length value |
| 2. Pattern length | 7. Bead offset value increment tool | 12. Bead length increment tool |
| 3. Unselected bead | 8. Bead offset margin value | 13. Product length |
| 4. Current applicator | 9. Units used | |
| 5. Pattern display | 10. Panel swipe indicator | |

Autodot Pattern Example

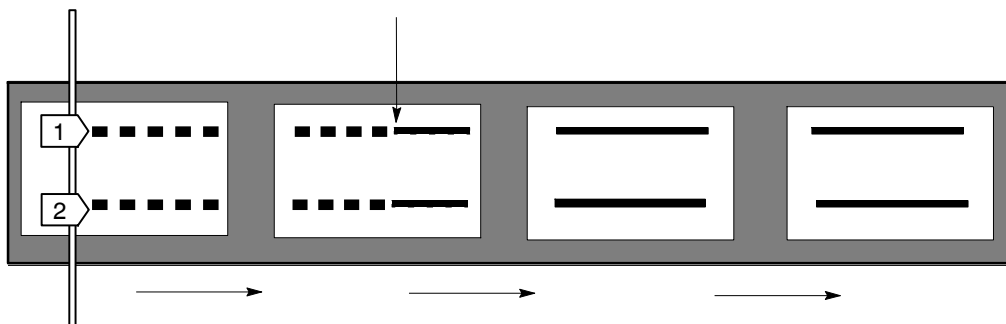


Figure 4-26 Example of Autospot Pattern type for accelerating line speed

Autodot Pattern Swipe Operation

The number of dots on the swipe tool indicates the number of panels available. Four panels are available for pattern edits when Autodot pattern is selected.

Access additional pattern setting functionalities by swiping firmly left or right on the following screens.

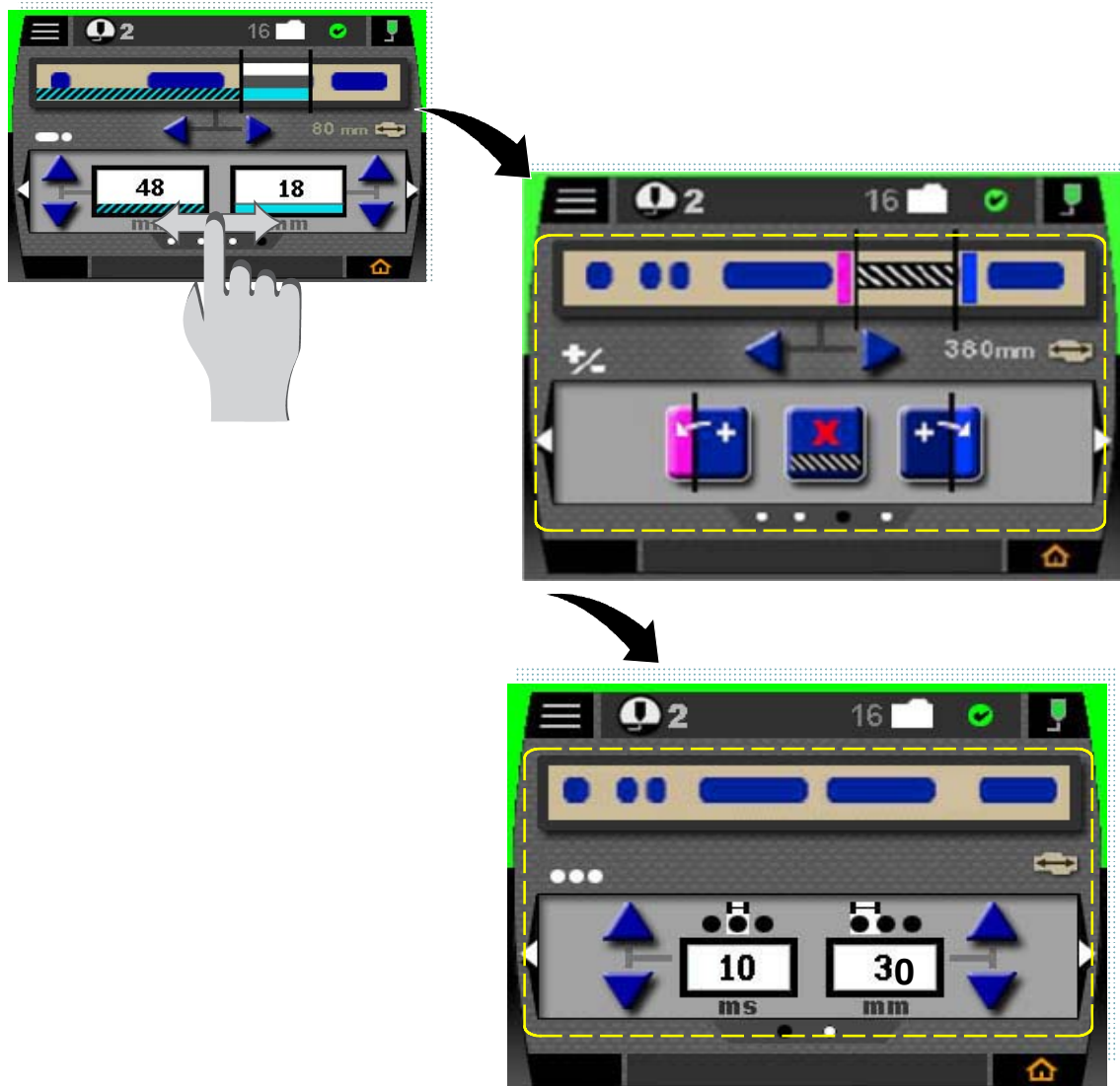


Figure 4-27 Dot pattern setup screen

Autodot Pattern Swipe Operation (contd)

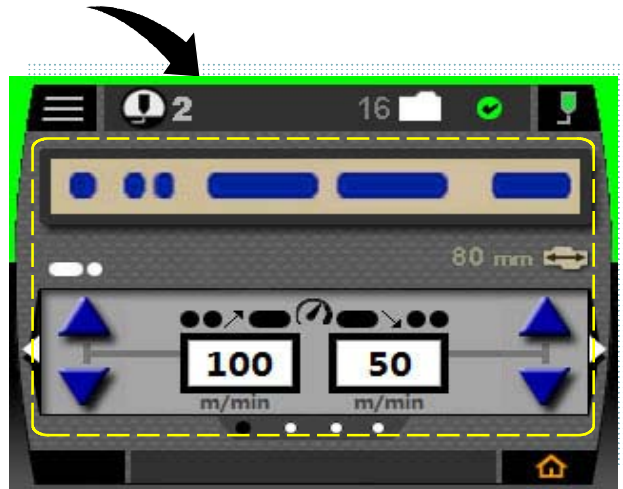
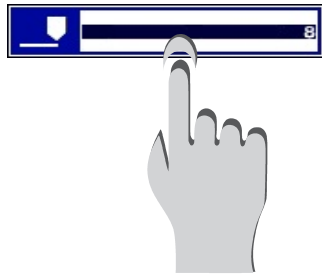


Figure 4-28 Start speed Stop speed settings



Continuous Pattern

This pattern type provides continuous adhesive application above a preset line speed. When this pattern is selected, the applicator outputs remain open until the production line slows below the preset stop speed. With continuous gluing no pattern is programmed and no trigger signal is required unless *cut gap** feature is used.

Assign the start and stop speed for the continuous bead.

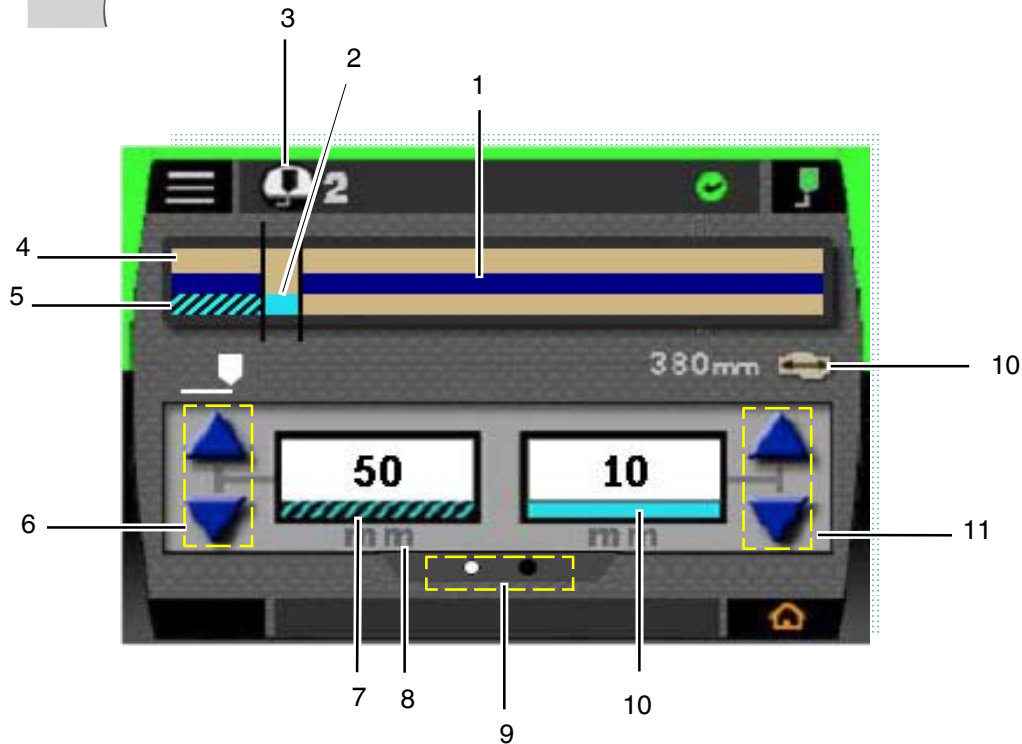


Figure 4-29 Components for setting dot patterns

- | | | |
|-----------------------|--------------------------------|-------------------------------|
| 1. Continuous pattern | 5. Delay length before gap | 9. Panel swipe indicator |
| 2. Gap length | 6. Delay length increment tool | 10. Gap length value |
| 3. Current applicator | 7. Delay length value | 11. Gap length increment tool |
| 4. Pattern display | 8. Units used | 12. Product length |

* *Cut gap* is an optional feature of continuous patterns.

- To set this feature, program an adhesive free gap by using the gap delay and gap length.
- To disable this feature, program the gap length value to 0.0 mm.

Continuous Pattern Swipe Operation

The number of dots on the swipe tool indicates the number of panels available. Two panels are available for pattern edits when Continuous pattern is selected.

Access additional pattern setting functionality by swiping firmly left or right on the panel shown below.

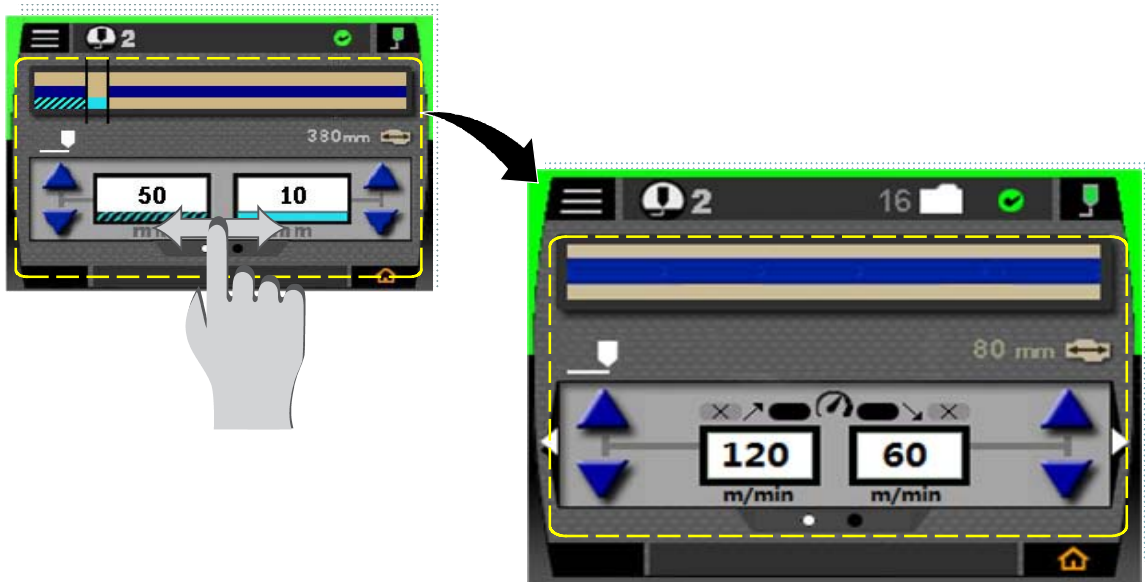
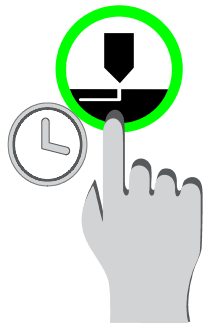


Figure 4-30 Start speed Stop speed settings

Setting the Applicators



Hold the **Applicator button** on the **Home Screen** to access the **Applicator Setup** screen.

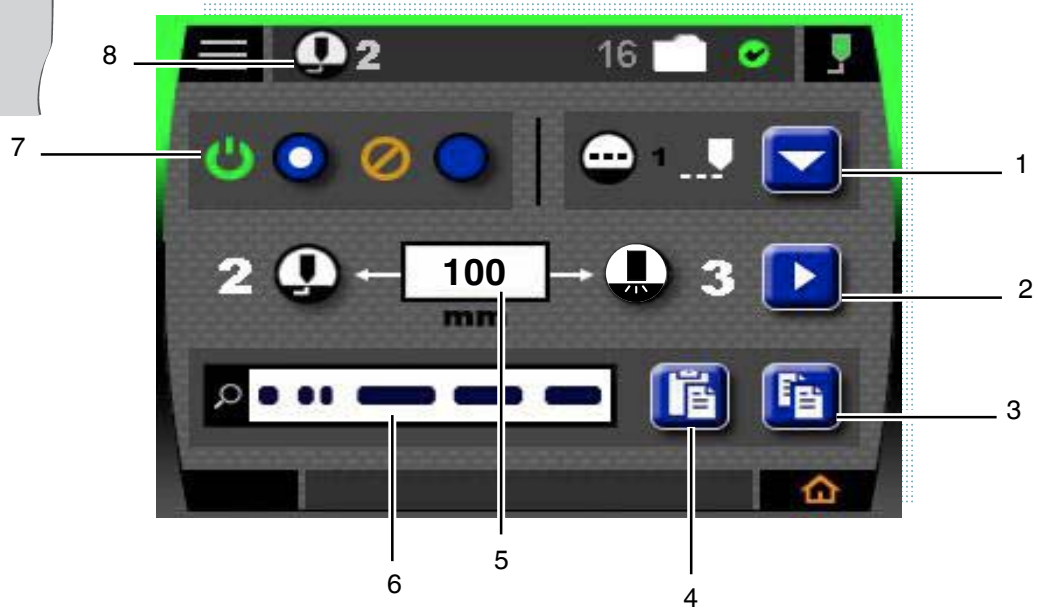


Figure 4-31 Applicator screen components

- | | | |
|------------------------|--------------------------------|------------------------------|
| 1. Select pattern type | 4. Copy pattern | 7. Applicator Enable/Disable |
| 2. Select trigger | 5. Gun-to-trigger offset (GTO) | 8. Current applicator |
| 3. Paste pattern | 6. Pattern overview | |

Setting the Applicators *(contd)*

Use the following components to assign or modify the applicator settings:

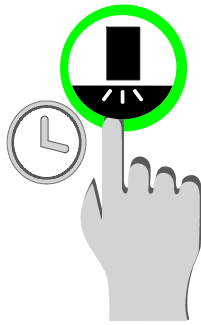
See Figure 4-31 for the applicator screen components.

Tap	Action
 (Item 1 in Figure 4-31)	Select a pattern type from the available list: • Normal • Dot • EcoBead • Random length • Mirror Optional Patterns • Random dotted • Autodot • Continuous For details refer to <i>Pattern Programming</i> , given earlier.
 (Item 2 in Figure 4-31)	Select the next trigger (1- 4) for triggering the applicator. Only installed triggers are selectable.
 (Item 8 in Figure 4-31)	Select an applicator channel (1 - 4). Only installed applicators are selectable.
100 (Item 5 in Figure 4-31)	Use the numeric keypad to enter gun-to-trigger offset (GTO). NOTE: GTO is the distance from the center line of the gun nozzle to the center line of the trigger lens.
<i>Continued...</i>	

See Figure 4-31 for the applicator screen components.

Tap	Action
  (Item 7 in Figure 4-31)	Enable the applicator for dispensing adhesive.
 (Item 4 in Figure 4-31)	Copy the pattern settings into the clipboard.
 (Item 3 in Figure 4-31)	Paste the settings from the the pattern clipboard. NOTE: This button can be enabled only when there is a pattern in the clipboard.
 (Item 6 in Figure 4-31)	View/modify the pattern.

Setting the Trigger



Hold the **Trigger** button on the **Home Screen** to access the **Trigger Setup** screen.

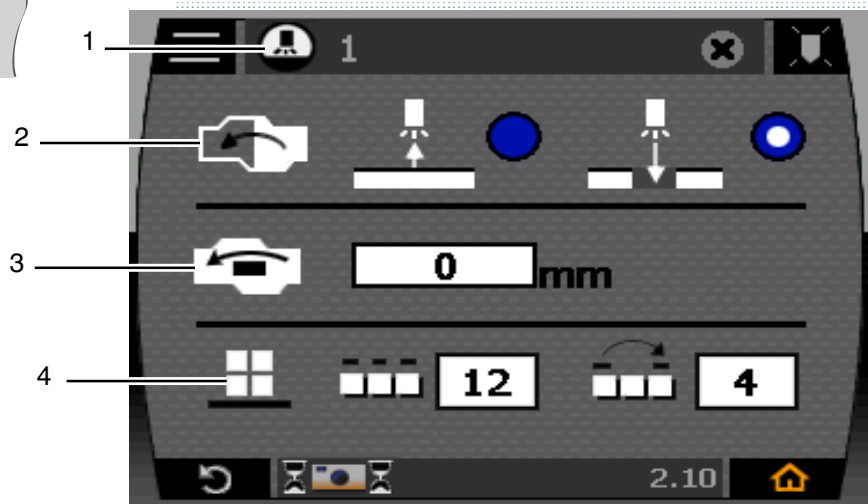


Figure 4-32 Trigger screen components

1. Current trigger

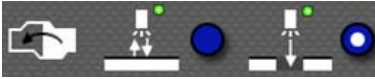
2. Trigger polarity

3. Masking distance

4. Palletize settings

Use the following components to assign or modify the trigger settings:

See Figure 4-32 for the trigger screen components.

Tap	Action
 (Item 1 in Figure 4-32)	Tap to select the next trigger.
 (Item 2 in Figure 4-32)	Select this setting to determine the Trigger Polarity (light on or dark on) of the trigger (1 - 4).
 (Item 3 in Figure 4-32)	Select Masking Distance when the products contain holes or have cutouts. This setting is used to lock the trigger for a predetermined distance.
 (Item 4 in Figure 4-32)	Select Palletize Settings for programming the number of consecutive products that will receive adhesive and the number of consecutive products that will be skipped before pattern generation starts. NOTE: The Product Skip function operates only on one of the triggers. The system automatically selects the first active trigger for the skip function. Other triggers continue to operate normally without the skip function. The Product Skip function in the Trigger Settings screen appears only when the first active trigger is selected. NOTE: Palletize settings will not be available if the Product Skip setting is not selected on the <i>Additional Machine Settings</i> screen. Refer to <i>Additional Machine Settings in System Setup in Using the Menus, Section 5</i>.

Selecting Recipes

To access the Recipes Selection screen, do the following:

1. Tap the **Recipes Folder** button from the **Status Bar**.
2. Scroll up or down in the Recipes Selection screen to select the saved recipe you wish to run.

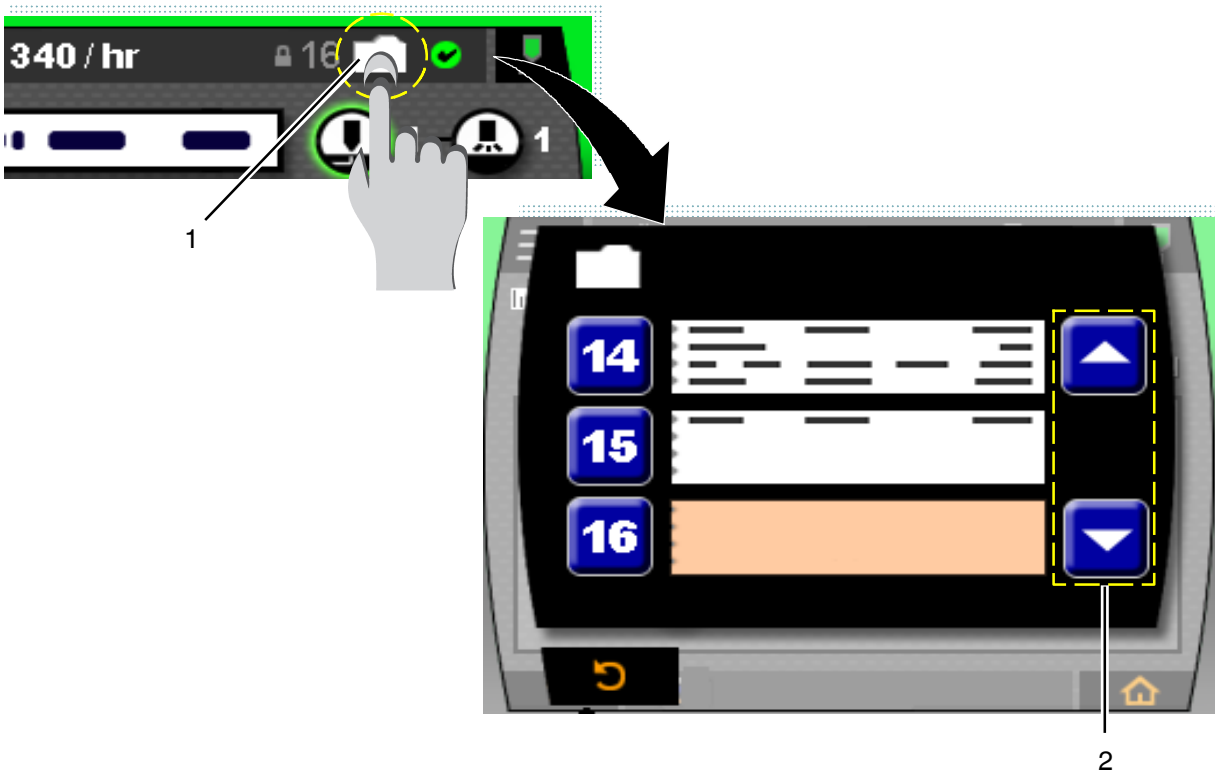


Figure 4-33 Recipes Folder button on Home Screen and Recipes Selection screen

1. Recipes Folder button

2. Scroll buttons

For more information on selecting and managing recipes refer to *Manage Recipes* in *Using the Menus, Section 5*.

Recipe Changes

Recipes which have been changed, have a * displayed on the Recipes Folder indicating that changes were made.

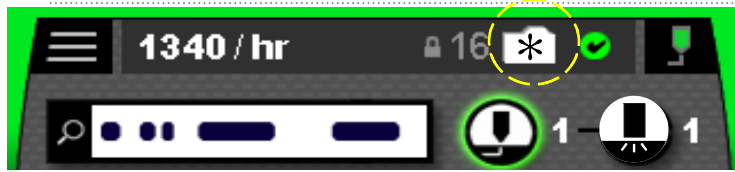


Figure 4-34 Recipes button location on Home Screen

If the current recipe has unsaved changes, the Confirm Save Changes dialog box appears up on tapping the Recipe Folder. See the following figure:



Figure 4-35 Recipe Confirm Screen

- a. Tap ✓ to save changes and select the recipe number you wish to run next.
- or
- b. Tap ⛔ to discard changes.

For more details on Recipes refer to *Manage Recipes* in *Using the Menus Section 5*.

This page intentionally left blank.

Section 5

Using the Menus



WARNING! Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

Overview

Use the Main Menu screen components to navigate, configure, and fine tune the pattern controller settings.

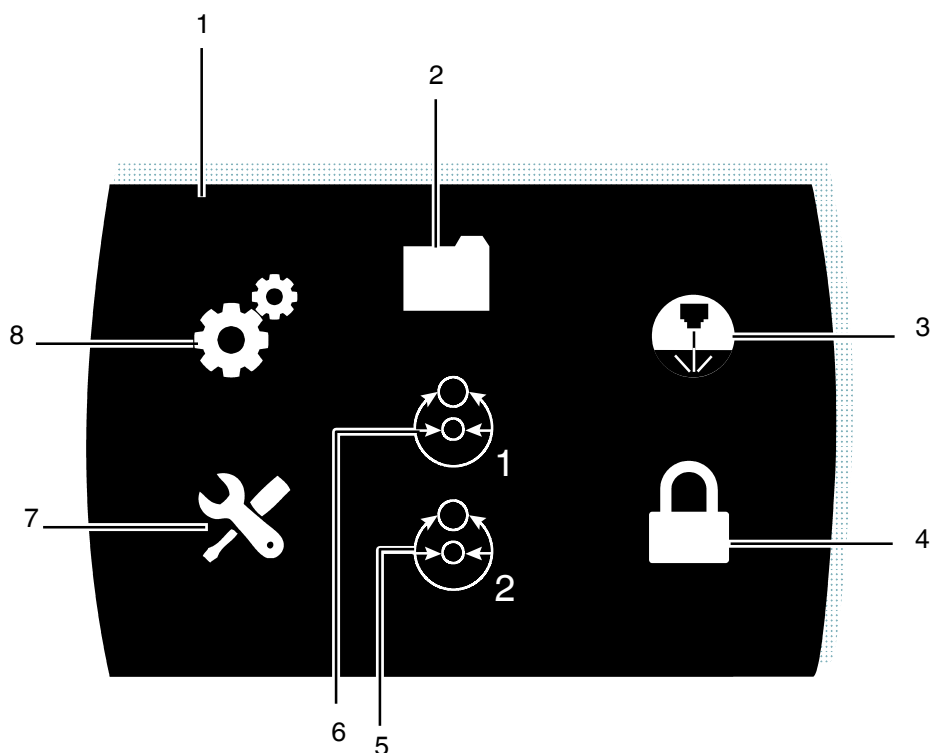


Figure 5-1 Main Menu screen

- | | | |
|------------------------|------------------------------|-------------------------|
| 1. Main Menu screen | 4. Password lock/unlock Menu | 7. Tools Menu |
| 2. Manage Recipes Menu | 5. Pressure Run-up 1 Menu | 8. System Settings Menu |
| 3. Purge Menu | 6. Pressure Run-up 2 Menu | |

What you can do from the Main Menu

See Figure 5-1 for the location of the Main Menu screen buttons.

Assign or Modify the System Settings Menu

Button	Function
 (Item 6 in Figure 5-1)	Tap to access the System Settings Menu to set or modify the following functionalities: - a Language - b Encoder - c Units/Scale - d Components - e Input - f Output - g Machine Settings

Assign or Modify the Tools Menu

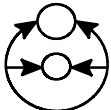
Button	Function
 (Item 3 in Figure 5-1)	Tap to access the Tools Menu to set or modify the following functionalities: - a Backup and Restore - b Clean Screen - c System Information - d Message Log - e Self Test

Assign or Modify the Purge Menu

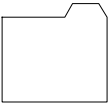
Button	Function
 (Item 7 in Figure 5-1)	• Purge any single applicator • Hammer (fast cycle) any single applicator • Flush any combination of applicators

See Figure 5-1 for the location of the Main Menu screen buttons.

Assign or Modify the Pressure Run-up Screen

Button	Function
 (Item 4 in Figure 5-1)	Tap to access the Pressure Run-up screen to regulate the system pressure to maintain proper adhesive volume during line speed changes. This menu is used to set the two-point linear pressure profile.

Assign or Modify Manage Recipe Files Screen

Button	Functions
 (Item 2 in Figure 5-1)	Tap to access the Manage Recipe Files screen to complete the following tasks: - a Create a new recipe (up to 50) - b Save a recipe - c Save the recipe as a copy - d Delete a recipe - e Select a recipe to be used for operation

Modify the Lock/Unlock Screen

Button	Functions
 (Item 5 in Figure 5-1)	Tap to access the Lock/Unlock screen to enable or disable the use of a password to prevent any changes to settings.

Purge Applicators

Use this screen to regularly purge, flush, or hammer the applicators to allow them to remain free of residue or any build up.

NOTE: All purge, hammer, and flush functions shut off when leaving the Purge menu.

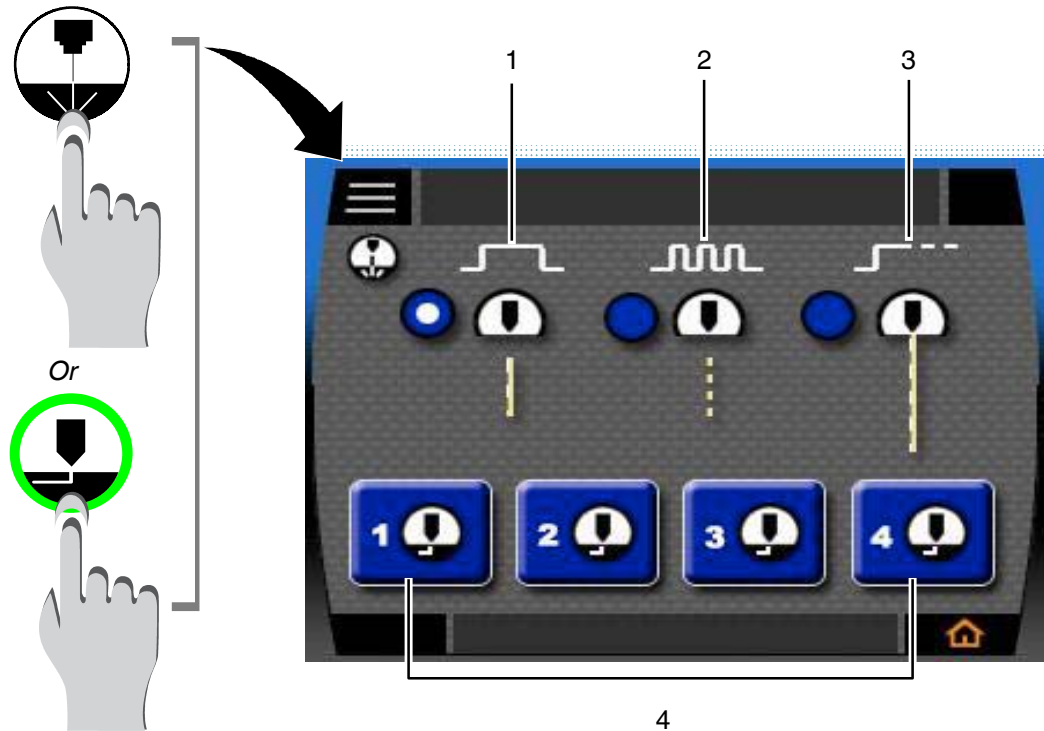


Figure 5-2 Purge screen

1. Purge

2. Hammer

3. Flush

4. Applicator buttons

NOTE: The applicator button is grey when it is not installed.

Purge

Select Purge for hot melt adhesives. This mode removes trapped air or material from the adhesive applicator or nozzle, or relieves system pressure when the applicator is turned on.

1. Hold a specific applicator button for purging.
2. Release the applicator button to stop purging.

Hammer

Select Hammer to allow the applicator output to actuate rapidly.

1. Hold a specific applicator button for hammering.
2. Release the applicator button to stop hammering.

Flush

Select Flush to open one or more applicators for an extended period.

1. Tap the applicator button to turn on a specific applicator. Multiple applicators may be flushed by tapping specific buttons.
2. Tap the applicator button again to stop flushing.

NOTE: All purge, flush, and hammer functions stop when leaving this screen.

Manage Recipes

Use recipes to save and manage adhesive pattern settings for easy recall when you produce the same products in the future. Each recipe saved contains details such as pattern types, applicator settings, and trigger settings. As many as 50 recipes can be saved.

The Recipes button located in the top navigation bar of the screen navigates to two different Recipe Management screens.

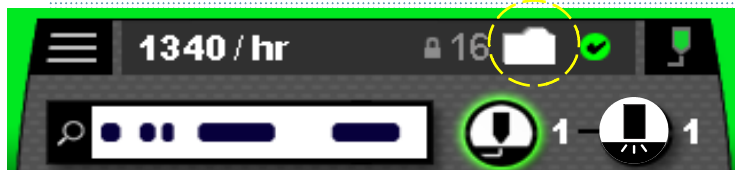


Figure 5-3 Recipes button location on Home Screen

- Tap the button for Recipe Quick Change
- Hold the button to Manage Recipe Files

Selecting Multiple Recipes

To enable the use of multiple recipes, do the following:

1. Go to the **System Settings** Menu.
2. Tap the **Machine Settings** button.
3. Tap to use Multiple Recipe Files.

For additional details on selecting a single recipe or multiple recipes refer to *Machine Settings* in *System Settings* given later in this section.

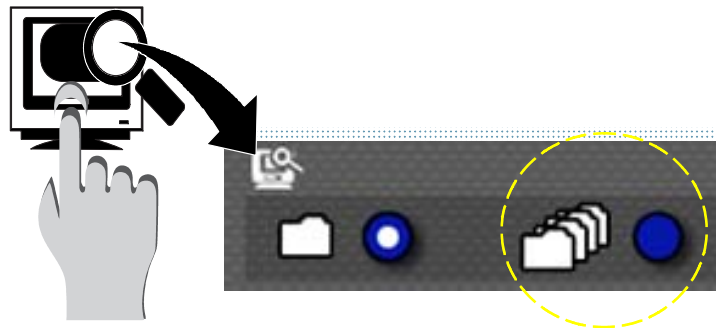


Figure 5-4 Single and Multiple recipes selection buttons on the Machine Settings screen

Recipe Quick Change

To access the Recipes Selection screen, do the following:

1. Tap the **Recipes Folder** button from the **Status Bar**.
2. Scroll up or down in the Recipes Selection screen to select the saved recipe you wish to run.

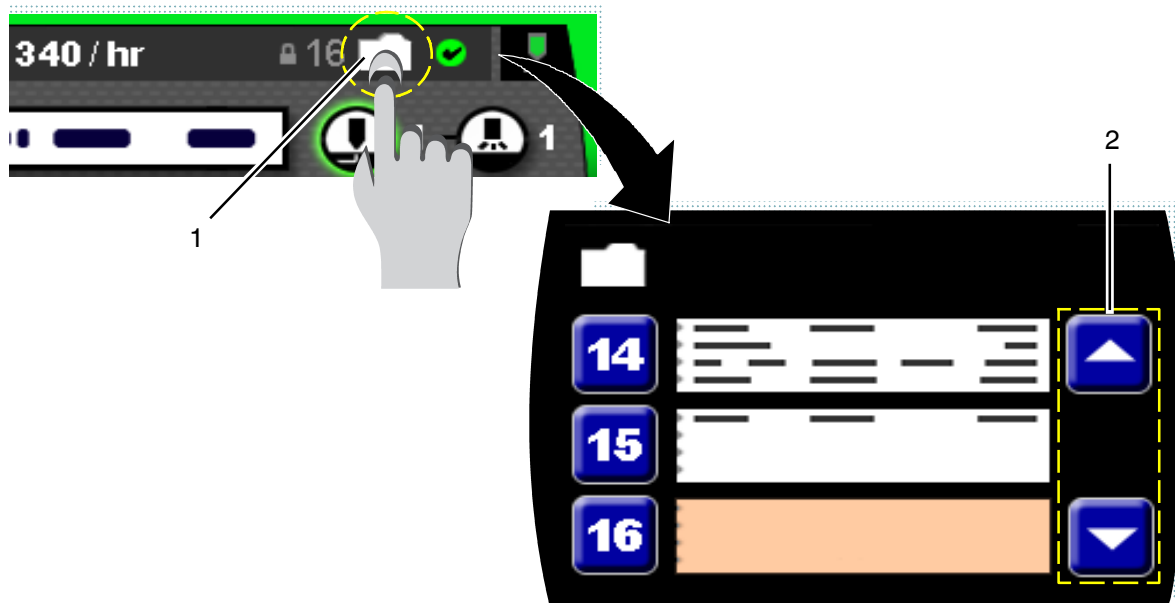


Figure 5-5 Recipes Folder button on Home Screen and Recipes Selection screen

1. Recipes Folder button

2. Scroll/swipe buttons

Recipe Changes

Recipes which have been changed have a * displayed on the Recipes Folder icon indicating that changes were made.

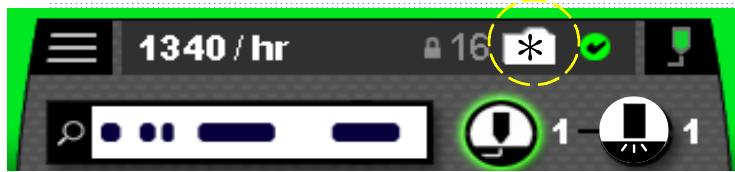


Figure 5-6 Recipes button location on Home Screen

If the current recipe has unsaved changes, the Confirm Save Changes dialog box appears, see the following figure:



Figure 5-7 Save Recipe Confirm Screen

- a. Tap ✓ to save changes and select the recipe number you wish to run next.

or

- b. Tap ⛔ to cancel.

NOTE: Changes will not be saved if a new recipe is opened.

Manage Recipe Files

You can Manage Recipe Files from the Main Menu:

- Tap the Recipes button from the **Main Menu**

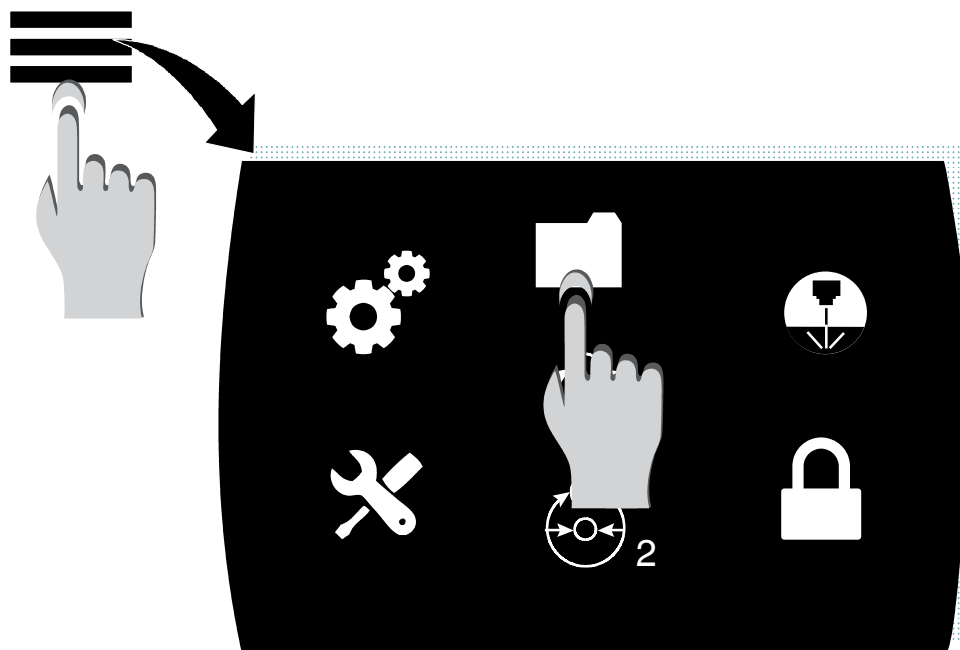


Figure 5-8 Recipes button on Main Menu

Or

- Hold the Recipes button from the **Home Screen**

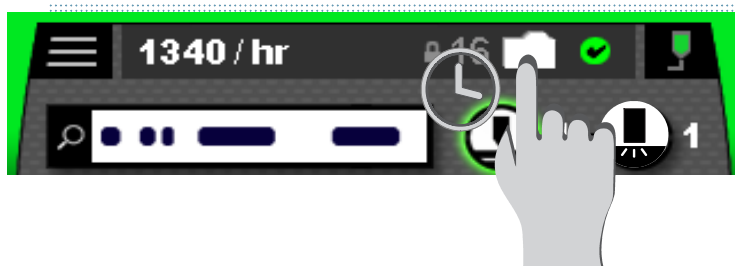


Figure 5-9 Recipes button on Home Screen

Manage Recipe Files (contd)

You can access the Manage Recipes Files screen by tapping the Recipes button from Main Menu.

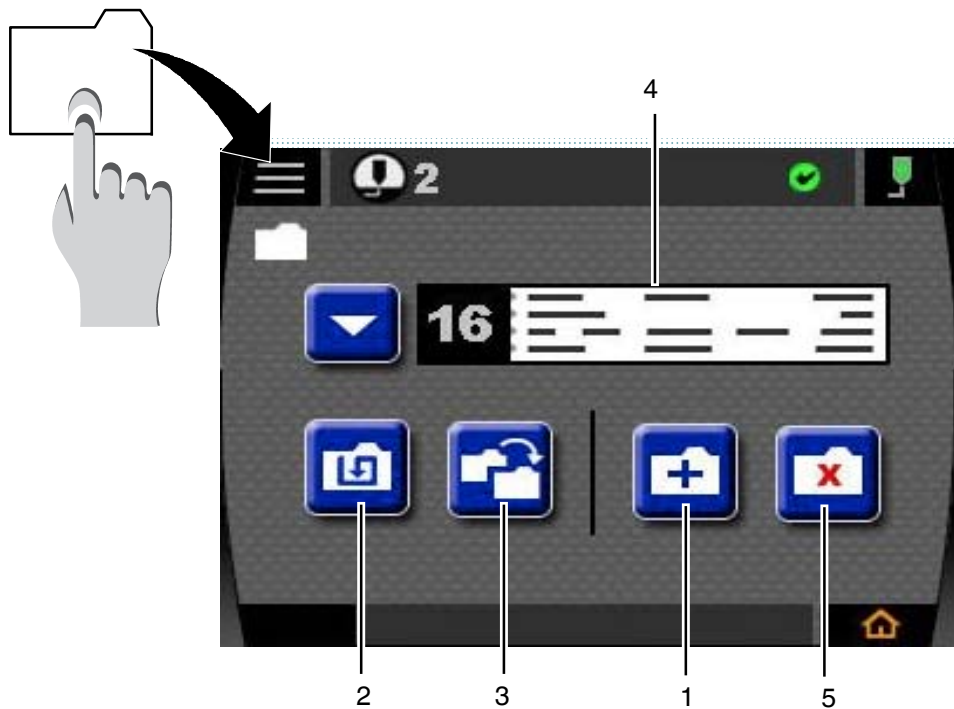


Figure 5-10 Manage Recipes Files

- | | | |
|----------------------|------------------------------------|--------------------|
| 1. Create new recipe | 3. Save recipe to another location | 5. Delete a recipe |
| 2. Save recipe | 4. Recipe selection | |

The components in Figure 5-10 are described in detail next.

Create A New Recipe

Button	Functions
 (Item 1 in Figure 5-10)	1 Tap the Create New Recipe button on the Manage Recipes Files screen.
16 	2 Select an unused recipe slot number. NOTE: When a new recipe is created, the contents of the Master Recipe Template (Recipe 0) is copied into the new recipe location. NOTE: To modify the Master Recipe Template, create a recipe in any location and save a copy to Recipe Location 0. Refer to <i>Save Recipe File to a Different Location</i> given below.

Save Recipe

Button	Functions
 (Item 2 in Figure 5-10)	1 Once your pattern settings are complete, tap the Save Recipe button. 2 Tap ✓ to save the recipe.

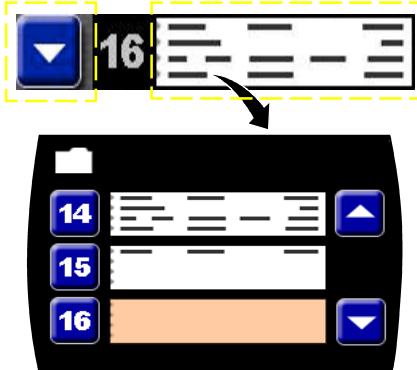
Save Recipe To A Different Location

The **Save Recipe As** button on the Manage Recipe Files screen saves a copy of the current recipe to a different recipe file location. The copy then becomes the active recipe and can be modified as needed.

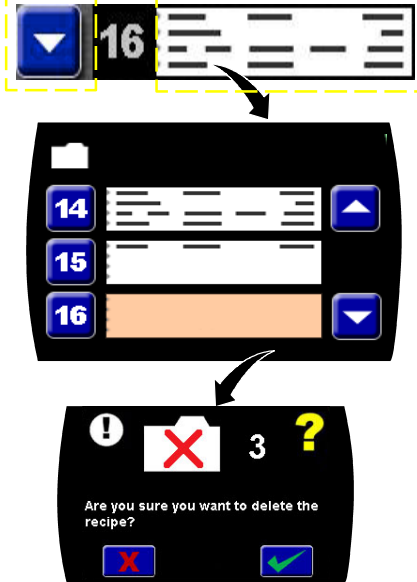
NOTE: To save a recipe to a file location which already contains a recipe, you must first delete that recipe.

Button	Functions
 (Item 3 in Figure 5-10)	1 Tap the Save Recipe As button.
16  (Item 4 in Figure 5-10)	2 Select an unused recipe slot number.

Select a Different Recipe To Run

Button	Functions
	1 Tap the Recipe Selection arrow button or the pattern thumbnail on the Manage Recipe Files. 2 Tap the arrow to scroll up or down to view the saved recipes. 3 Tap an existing recipe you want to use to run. NOTE: The display automatically returns to the Home Screen with the selected recipe as the active recipe.

Delete Recipe

Button	Functions
 (Item 5 in Figure 5-10)	1 Tap the Delete button. 2 Tap the arrows to scroll up or down to view the saved recipes.
	3 Tap the recipe number button or pattern thumbnail of the recipe you wish to delete. 4 Tap  to accept the setting, or tap  to cancel.

What's Being Saved in a Recipe File

This is a list of functionalities that are saved under recipes:

- Pattern configurations
- Applicator settings
- Bead length
- Trigger settings
- Trigger to applicator assignment
- Pressure settings

NOTE: When Recipe settings are changed under *Manage Recipe*, the Recipes Folder icon displays *. Refer to *Recipe Changes* given earlier in this section for more details.

Recipe Mismatches

A recipe mismatch occurs when a recipe requires components that are not in the current machine configuration. This will result in defective adhesive application. A recipe mismatch can be caused by:

- Removal of the encoder
- Removal of an applicator
- Removal of trigger

Mismatch conditions are indicated by an icon on the recipe in the recipe selector.



Figure 5-11 Recipes mismatch buttons

1. Mismatch length

2. Mismatch trigger

3. Mismatch applicator

Recipe Mismatches (contd)

Mismatch Button	Description
 (Item 1 in Figure 5-11)	This button appears when an encoder (different machine mode) has been removed and/or added.
 (Item 2 in Figure 5-11)	This button appears when an applicator that is required by a recipe has been removed.
 (Item 3 in Figure 5-11)	This button appears when a trigger that is required by a recipe has been removed.

For *Fixing Recipe Mismatch Problems* refer to *Troubleshooting*.

Remote Recipe Selection

Recipe selection can be controlled from the PLC rather than within the controller system.

If it is not included in your system you will need a software license for remote control capability. If no license for remote inputs, the check box is grayed out (not selectable). For software license part numbers refer to *Parts, Section 8*. For instructions on obtaining and adding software licenses refer to *Using Add-on Software Licenses* in *Appendix A*.

Tap the check box on the Input screen to enable the Remote Recipe Selection feature, see the following figure:

NOTE: Selecting Remote Recipe enables multiple recipes automatically. You can select as many as 31 remote recipes.

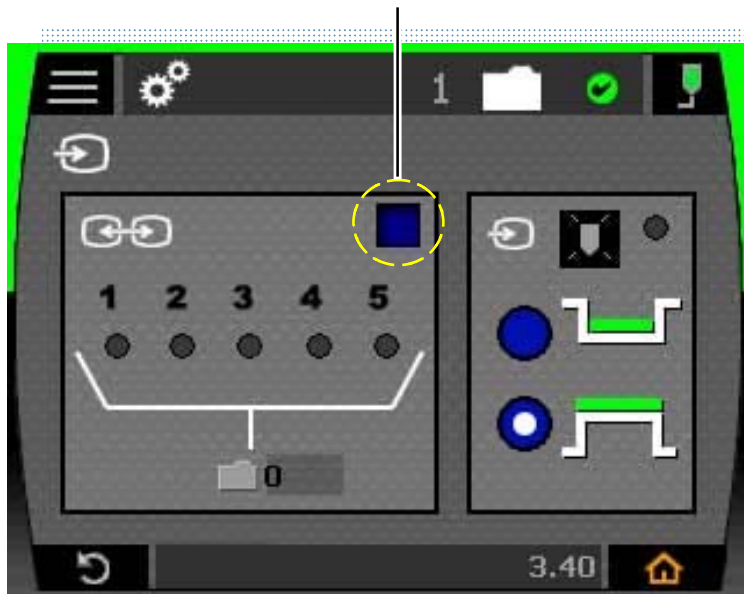
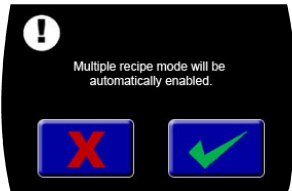


Figure 5-12 Remote recipes enable check box

Remote Recipe Enable Pop-ups

The following pop-up screens are displayed when remote recipe is enabled or disabled:

Pop-up Screen	Description
	When you enable remote recall and a single recipe is enabled, the system automatically switches to multiple recipes prompting the pop-up screen on the left. Select ✓ to confirm.
	When you disable multiple recipes and remote recall is enabled, the system automatically disables remote recall prompting the pop-up screen on the left. Select ✓ to confirm.

Password Lock/Unlock

Use this screen to enable or disable password protection of the settings. This screen can be accessed from:

- Main Menu
- Machine Settings, refer to *Machine Settings* (item 5) under *System Settings*, given later in this section

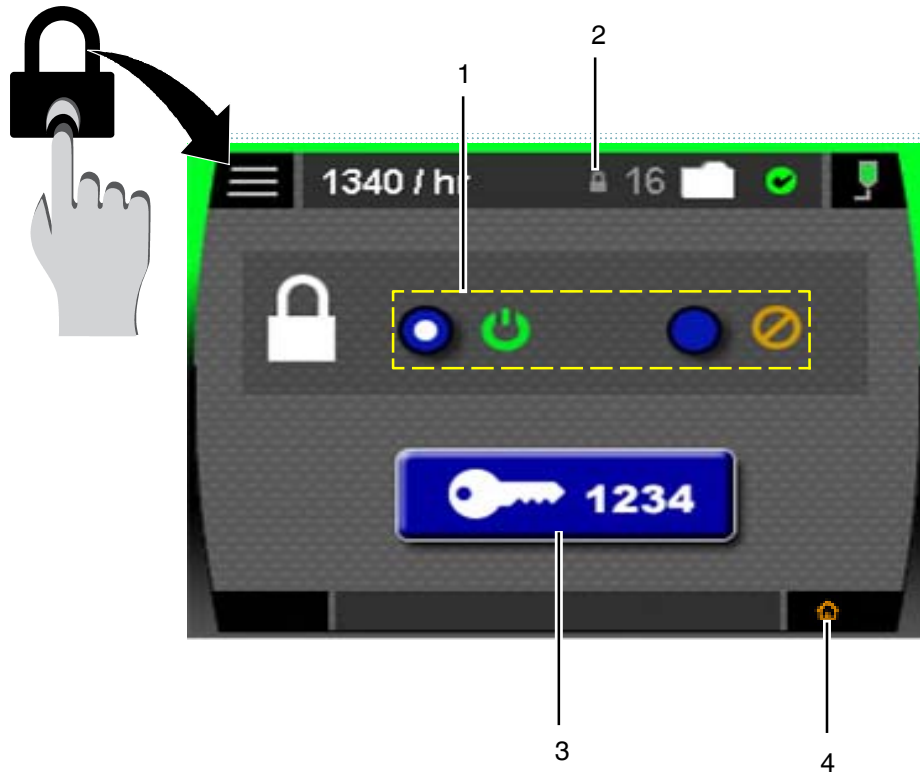


Figure 5-13 Password Lock/Unlock menu

1. Password enable/disable buttons

2. Lock icon

3. Set/change password button

4. Home icon button

1. Tap the Set/Change Password button (item 3 in Figure 5-13) to open the numeric keypad and assign a four digit system password code.
2. Tap Password Lock enable (item 1 in Figure 5-13) to password protect the settings, or tap Password Lock disable to remove password protection.

NOTES:

- When the settings are password enabled and locked, the lock icon appears on the status bar.
- When the settings are password enabled and unlocked, unlock icon appears on the status bar.
- When the passwords are disabled, no lock or unlock icon appears on the status bar.

Pressure Run-up

Use this screen to set the two-point linear pressure curve. This setting allows the pattern controller to accurately regulate the system pressure to maintain proper adhesive volume during line speed changes.

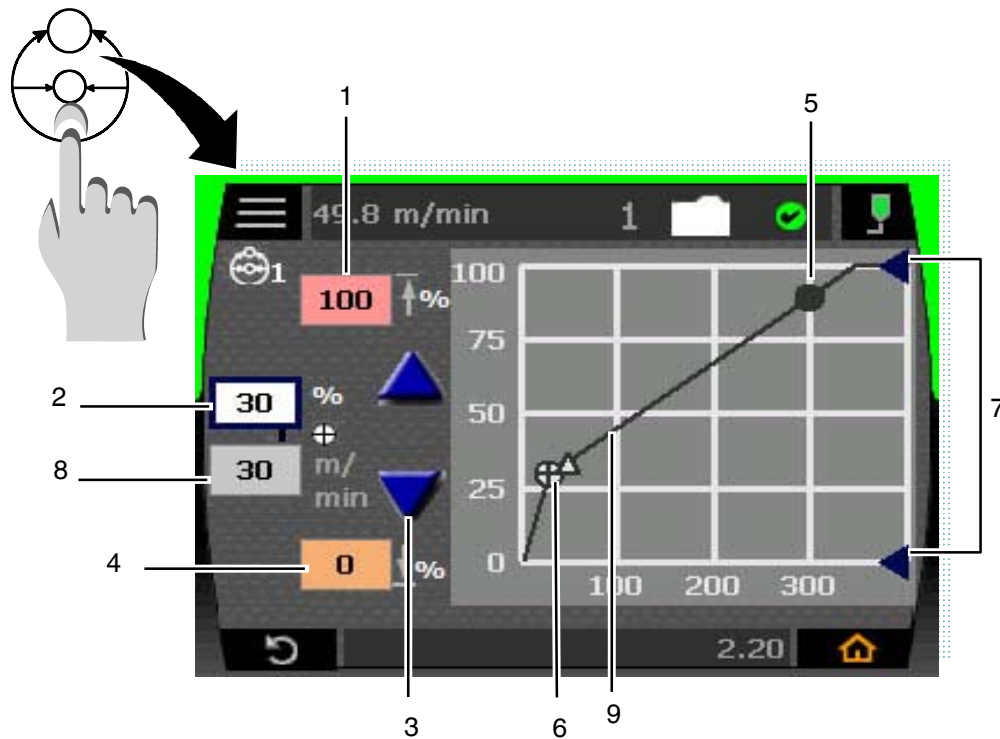


Figure 5-14 Pressure Run up menu

- | | | |
|---|-------------------------------|--|
| 1. Maximum Line Pressure (percent) | 4. Minimum Pressure (percent) | 8. Line speed for corresponding pressure point setting (items 5 or 6 in Figure 5-14) |
| 2. Pressure Setting in percent for end points (items 5 or 6 in Figure 5-14) | 5. Set point 1 (unselected) | 9. Set line |
| 3. Pressure point setting Increase/Decrease | 6. Set point 2 (selected) | |
| | 7. Display graph | |

1. Tap Maximum Line Pressure to open the numeric keypad, assign the maximum pressure cutoff limit.
2. Tap Minimum Line Pressure to open the numeric keypad to set the minimum line pressure cutoff limit.

NOTE: The relationship of the pressure output and the line speed appears in the display graph.

3. Select upper pressure point (see item 5 in Figure 5-14) and enter pressure (%) at the corresponding line speed.
4. If a lower pressure point is desired, tap a lower pressure point (see item 6 in Figure 5-14) and enter pressure and line speed in percent.

Tools Menu

Use the components in this screen to setup administrative tasks for the system.

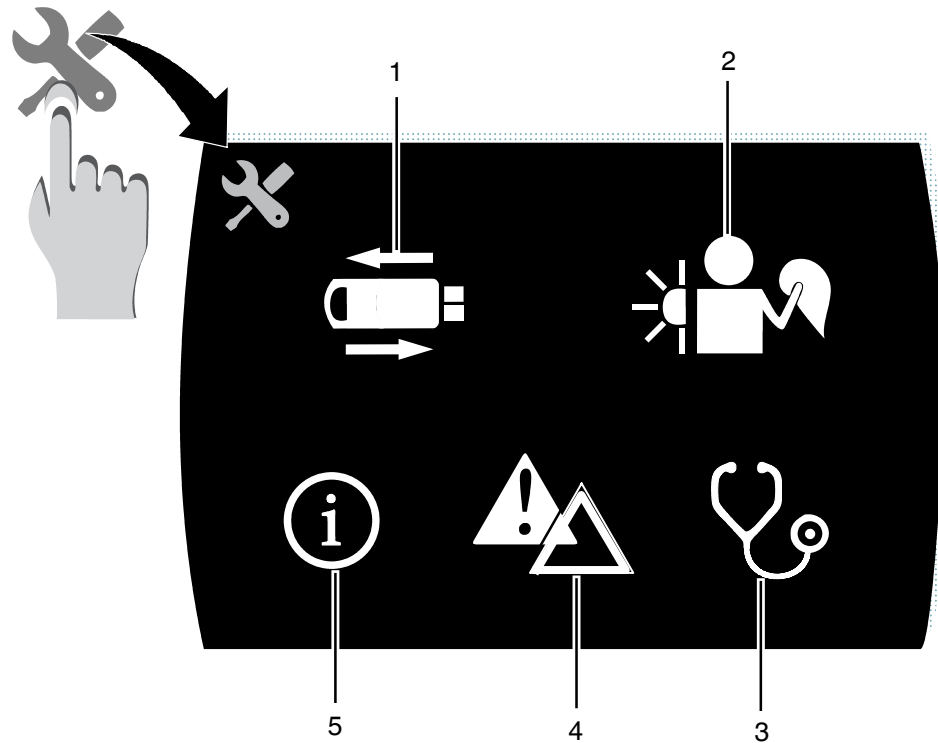
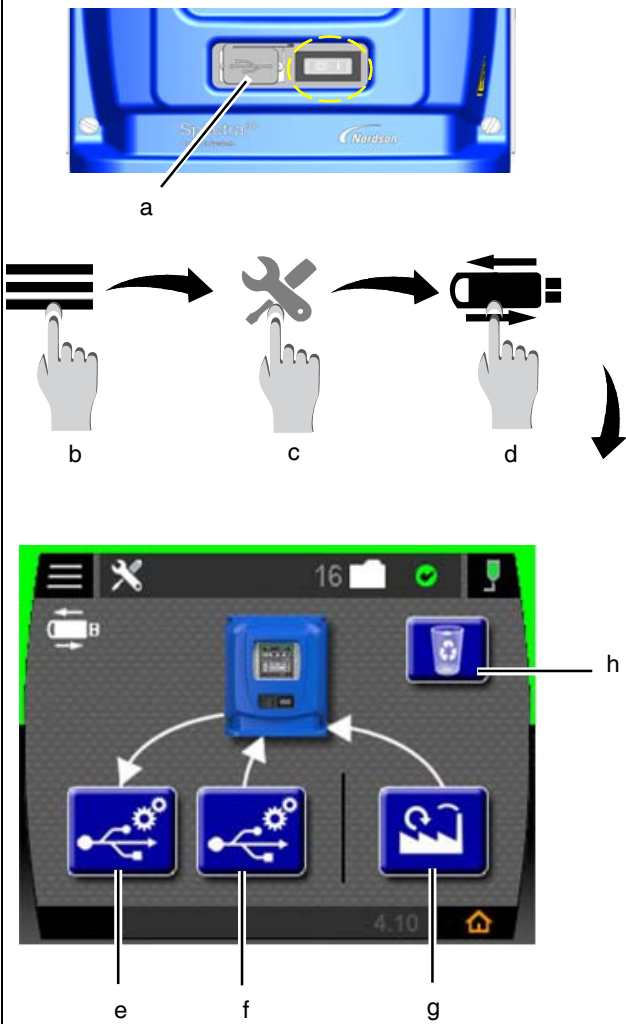


Figure 5-15 Tools Menu components

- | | | |
|--------------------------------|-------------------------------------|-----------------------|
| 1. System Backup/Restore/Reset | 3. Self Test | 5. System Information |
| 2. Clean Screen | 4. Message Log/Diagnostic indicator | |

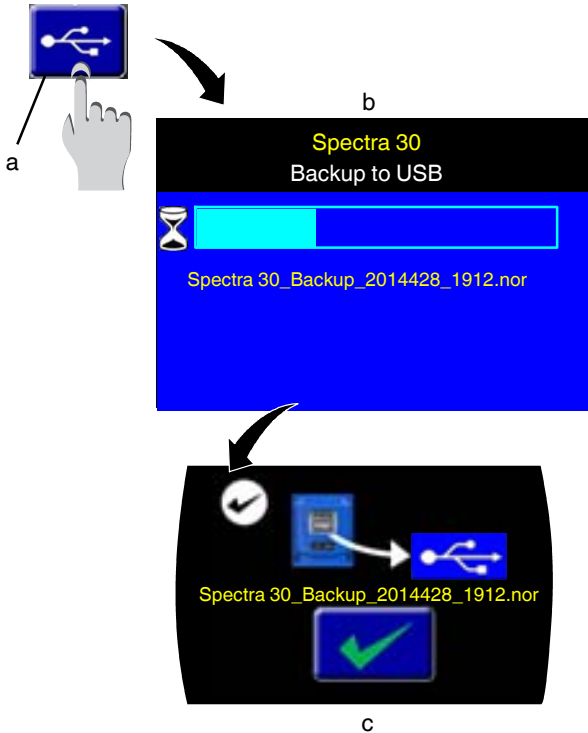
The components in Figure 5-15 are described in details in *Tools Menu Components*.

Tools Menu Screens

Item	Menus	Action
1 System Backup		Access System Backup/Restore/Reset: - a Insert an USB memory device in the location shown on the pattern controller. - b Tap to access the Main Menu. - c Tap to access the Tools Menu. - d Tap the System Backup/Restore/Reset button on the Tools Menu screen, to access the Backup/Restore screen. - e Backup settings to USB. - f Restore settings from USB. - g Factory reset. - h Archive recovery.

Continued...

Tools Menu Screens (contd)

Item	Menus	Action
Backup Settings to USB	 The diagram illustrates the backup process in three steps: (a) tapping the USB icon, (b) the progress bar screen, and (c) the confirmation screen.	a Tap Backup settings to USB button on the System Backup/Restore screen. b The progress bar screen appears to indicate that the files are being copied into the USB device. c Tap ✓ to close the dialog box. NOTE: To check if the files have been saved to the USB device do the following: - Plug the device into the computer. - Open the folder called <i>Backup</i>. The files follow this naming convention: Spectra30_Backup_YearMonthDate_Time .nor The file name of the backup file is displayed for future references. Backup files have the extension .nor

Continued...

Item	Menus	Action
Restore settings from USB	a b c d e	a Tap Restore from USB button on the Backup/Restore screen. b A screen with a list of files appears. Tap to select the file that you want to restore, and then tap Restore. NOTE: Tap Cancel to cancel/bypass this functionality. c Tap ✓ to allow the selected files to be restored from the USB device to the pattern controller. NOTE: Tap X to cancel restore. d The progress bar screen appears to indicate that the files are being copied to the pattern controller. e Tap ✓ to close the dialog box.

Continued...

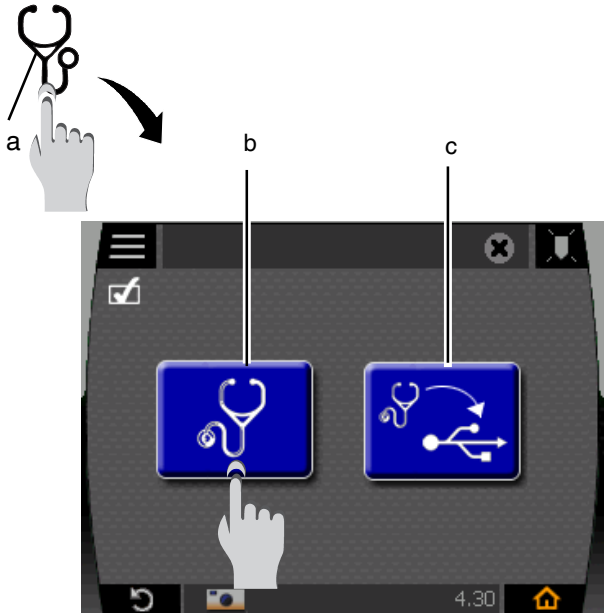
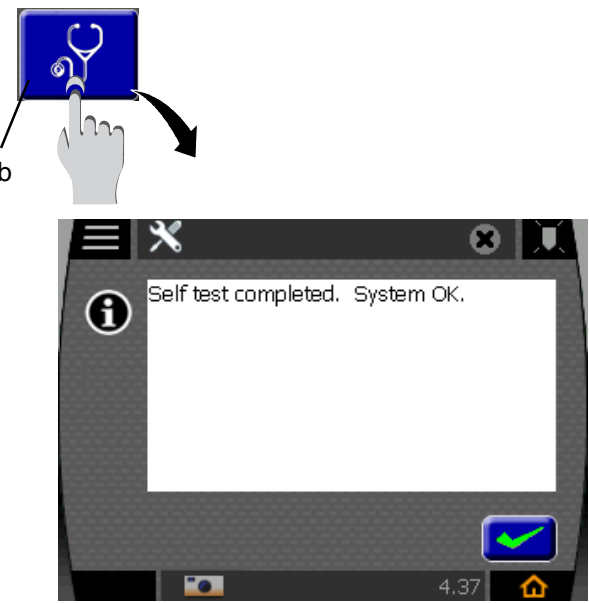
Tools Menu Screens (contd)

Item	Menus	Action
Factory Reset	The diagram illustrates the Factory Reset process in three steps: a: A hand taps the Factory Reset button (represented by a factory icon with a circular arrow) on the Backup/Restore screen. b: A confirmation screen appears with the text "Are you sure you want to factory reset the unit?". It features two buttons: a red X (cancel) and a green checkmark (confirm). c: A screen shows the unit will restart in 60 seconds, with a checkmark icon and a factory icon.	a Tap Factory Reset button on the Backup/Restore screen. b Tap to reset to the factory settings. NOTE: Tap to cancel factory reset. c The system will take a few seconds to initialize while resetting to the factory settings. Once the reset is complete, the pattern controller restarts and opens the Setup Wizard for first time startup.

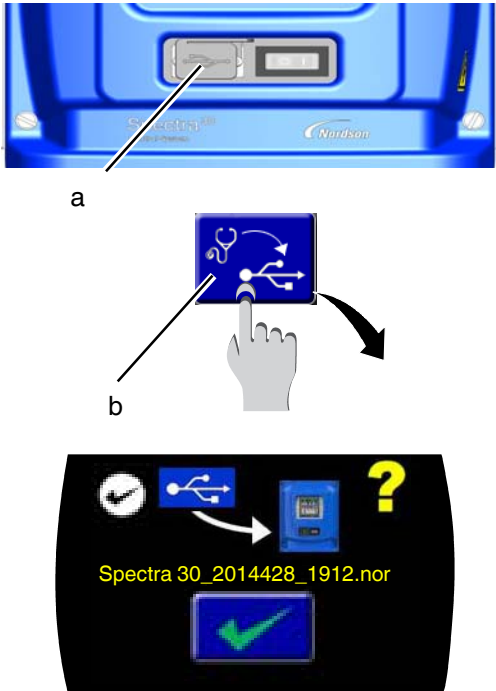
Continued...

Item	Menus	Action
Archive Recovery		a Tap Archive Recovery button on the Backup/Restore screen. b Tap to select from one of the four Archive Recovery options: • Undo last reset, recovers system data prior to the last factory reset. • Undo last restore, recovers the system data prior to the last restore from a USB. • Undo last software upgrade, recovers a prior software version installed. • Re-install current software, reinstates the current software c Tap ✓ to access Archive Recovery Confirm screen. NOTE: Tap X to cancel this functionality. d Tap Install to confirm and proceed with one of the archive recovery options selected in step b. Or tap Cancel to cancel/bypass this functionality.
2 Clean Screen		a Tap the Clean Screen button for touch screen maintenance. b Use the Brightness Slider to adjust the touch screen brightness. c Tap the Clean Screen button to disable the touch functionality. After 30 seconds, the touch functionality is enabled.

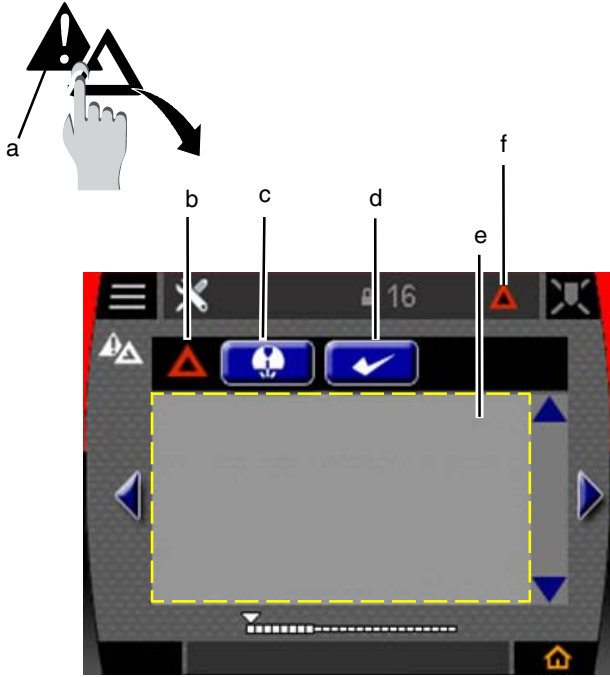
Tools Menu Screens (contd)

Item	Menus	Action
3 Self Test		a Tap the Self Test button to test the system's self-test process. Self test checks the system's input and output functions.
Run Self Test		b Tap the Run Self Test button to begin the self-test process. • If the self-test passes, the message shown in figure on the left appears. • If the self-test fails, an alert or fault occurs detailing the problem. For more details refer to <i>Troubleshooting, Section 6</i>.

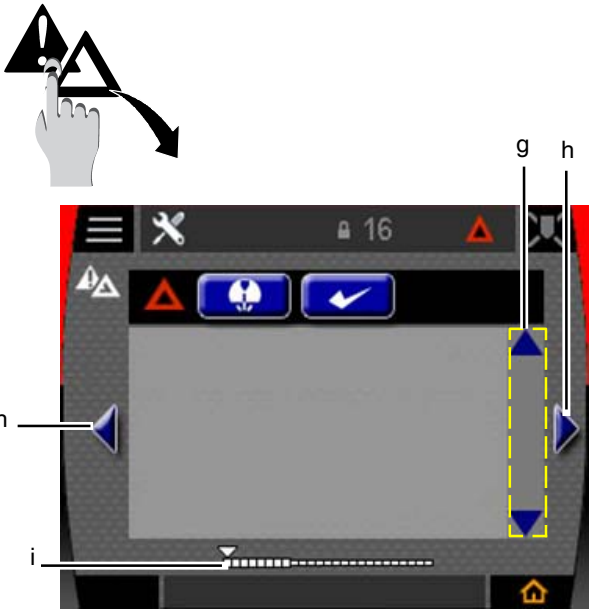
Continued...

Item	Menus	Action
Self Test, contd.		
Save Test Results to a USB Drive		c Save Self Test Results button 1 Insert an USB drive in the front panel of the pattern controller. 2 Tap this button to save the test results to an USB drive. 3 Tap ✓ to close the dialog box.

Tools Menu Screens (contd)

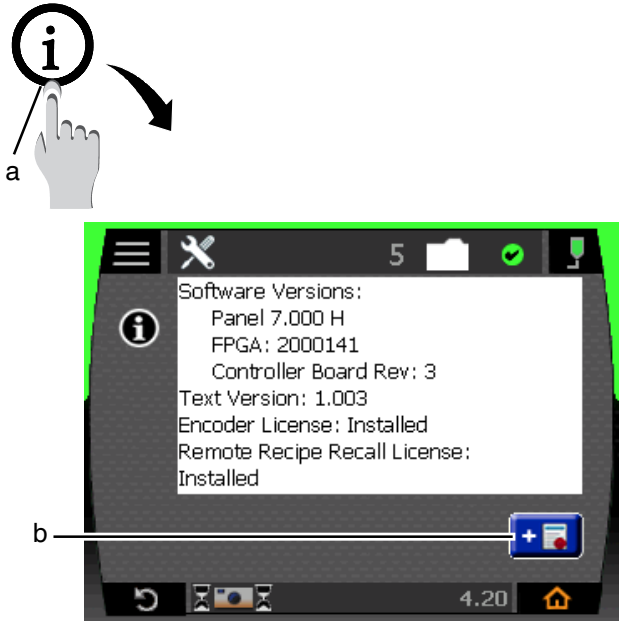
Item	Menus	Action
4 Message Log		a Tap the Message Log button to view system events. The Message Log can also be accessed by tapping the Diagnostic button in the Status Bar. b Message status indicators:  : Active Fault  : Inactive Fault  : Active Alert  : Inactive Alert c Shortcut button: Depending on the type of alert or fault, the short cut buttons assist in resolving the problem. d Acknowledge button: Acknowledge stops the flashing of the screen background (yellow or red). For some faults or alerts, acknowledge may also clear (make inactive) the fault or alert condition. e Message section has three parts: • Fault/Alert Name • Fault/Alert Description • Troubleshooting tips f Diagnostic Status/Message Log button

Continued...

Item	Menus	Action
Message Log, contd.		g Scroll bar is used to view additional screen text. h Left/right navigation buttons are used to move to the next/previous message. i Message log navigation: The location indicator shows where you are in the message log. • Each message is represented by one white “box” • Thick boxes indicate active conditions (always shown at the beginning of the log, sorted by time of occurrence) • Thin boxes indicate inactive conditions (always shown at the end of the log, sorted by time of occurrence) • The white triangle pointer indicates the message you are currently viewing

For more information on *Message Log* refer to *Troubleshooting, Section 6*.

Tools Menu Screens (contd)

Item	Menus	Action
5 System Information	 The diagram illustrates the navigation to the System Information screen. A hand is shown tapping an information icon ('i') labeled 'a'. Below this, a screenshot of the System Information screen is shown, labeled 'b'. The screen displays the following text: <pre> Software Versions: Panel 7.000 H FPGA: 2000141 Controller Board Rev: 3 Text Version: 1.003 Encoder License: Installed Remote Recipe Recall License: Installed </pre> At the bottom right of the screenshot, there is a blue button with a white plus sign and a document icon.	a Tap the System Information button to view details about the system. b Tap the License button to upgrade the system with add-on features. The following add-on licenses are available: • Encoder • Pressure/Run-up • Remote recall • Extra features The add-on licenses can be ordered by specific part numbers. Refer to <i>Appendix A, Using Add-on Software Licenses</i> for instructions on how to add-on software licenses.

System Settings

Use this screen to set up the pattern controller according to your production line requirements.

NOTE: When the pattern controller is powered for the first time, the Setup Wizard serves as a guide through the setup process. Refer to *Setup Wizard* in *The User Interface, Section 4*.

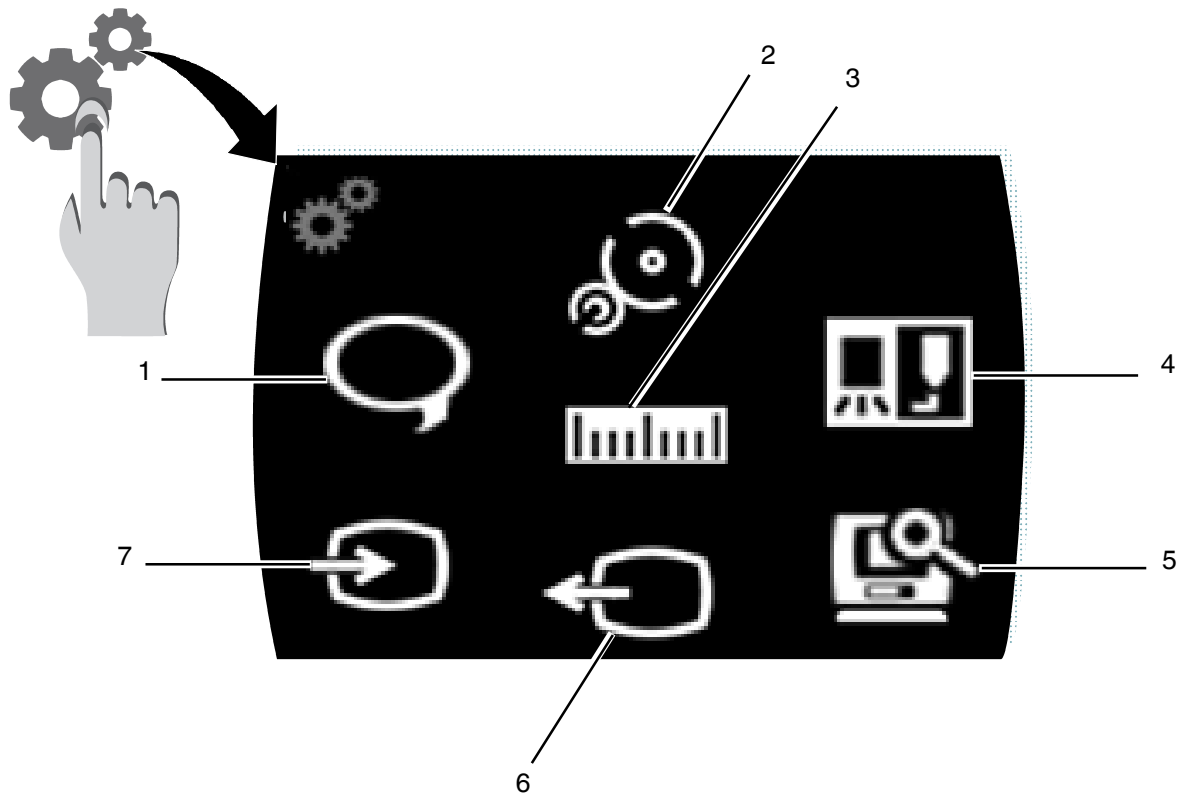


Figure 5-16 System Settings components

- | | | |
|--------------------|---------------------|----------|
| 1. Language | 4. Components | 7. Input |
| 2. Encoder | 5. Machine Settings | |
| 3. Units and Scale | 6. Output | |

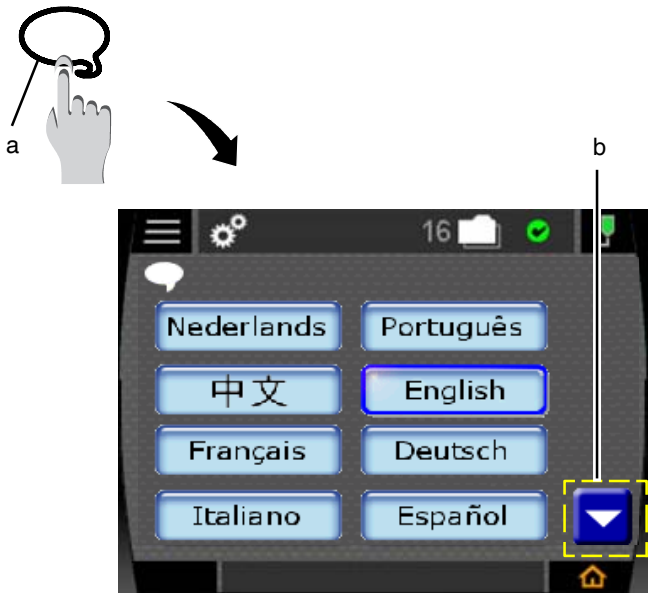
The components in Figure 5-16 are described in detail in *System Setup*, given next.

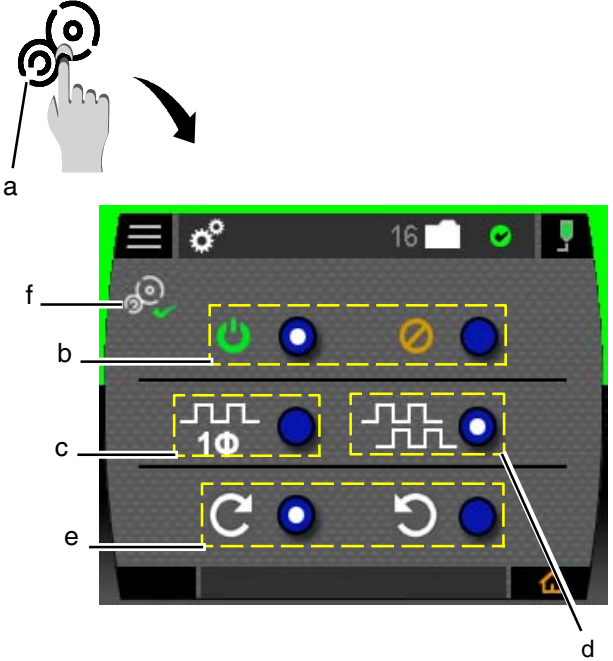
Change System Setup Settings

Changing the following settings are a one-time change that are carried over to all recipes.

- Language
- System units
- Scaling and units
- Applicator type
- Gun-to-trigger Offset
- Applicator compensation
- Input/Output settings
- Installed components

System Setup Screens

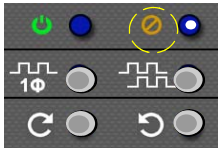
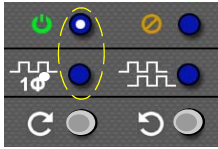
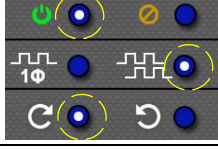
Item	Menu	Action
1 Language		a Tap the Language button on the System Settings screen. b Tap the scroll button to view more selections.

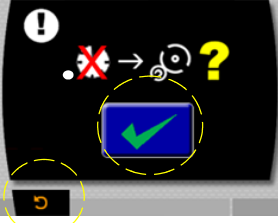
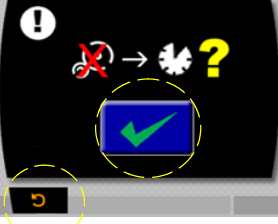
Item	Menu	Action
2 Encoder		You need a software license to enable the encoder function. If no license is installed in your unit, the encoder icon (a) will not appear in the menu. a Tap the Encoder button on the System Settings screen. b Tap to enable or disable the encoder. If the encoder is disabled, the line must run at a fixed speed to ensure accurate patterns c Tap to select a single phase (single-ended) type of encoder. This type of encoder only detects forward movement. d Tap to select quadrature type of encoder. This type of encoder tracks forward and backward line travel. e If the line speed display in the status bar reads negative, use this setting to reverse the encoder travel direction. f Encoder icon status:  encoder detected and license available to enable encoder operation.  encoder not detected.  encoder detected, license missing to enable encoder operation.

Continued...

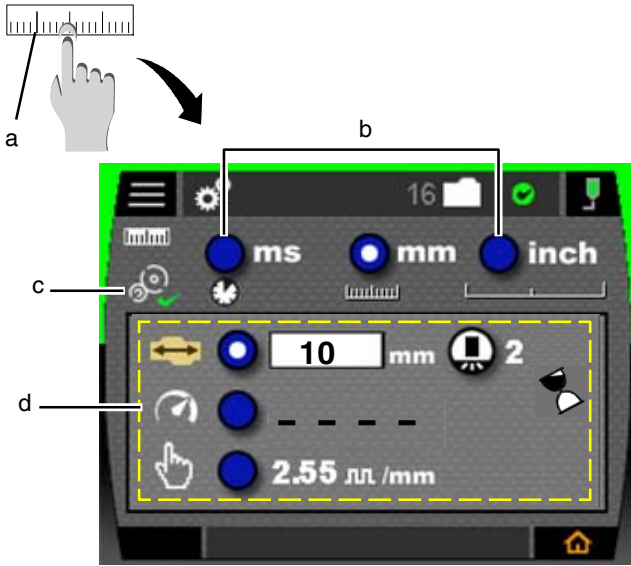
NOTE: Once the pattern controller is in encoder mode the only way to go back to time mode is by doing a factory reset. Refer to *Factory Reset* given earlier under *Tools Menu*.

System Setup Screens *(contd)*

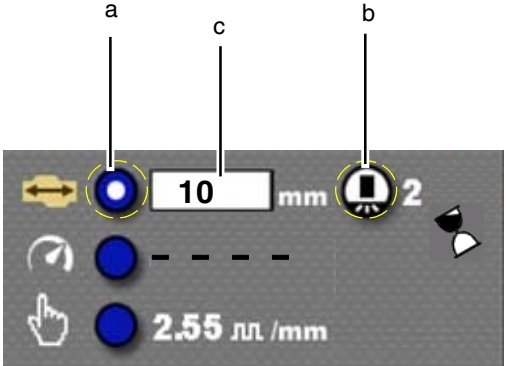
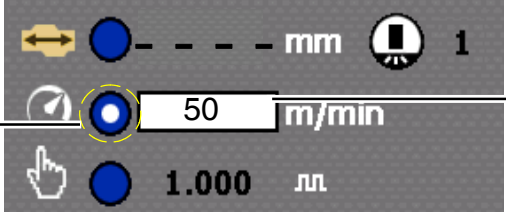
Item	Menu	Action
	Encoder Settings: 	Tap the button shown in the figure on the left to select no encoder.
		Tap the buttons shown in the figure on the left to select a single phase encoder.
		Tap the buttons shown in the figure on the left to select a quadrature encoder.

Item	Encoder Pop-up Screens	Encoder State/Action
		Encoder needs to be run in order to detect direction.
		Encoder license is present but the encoder is not installed.
		Encoder is detected but the encoder license is not installed.
		Tap ✓ to confirm that the encoder is turned ON. Tap ↺ to cancel the settings.
		Tap ✓ to confirm that the encoder is turned OFF. Tap ↺ to cancel the settings.

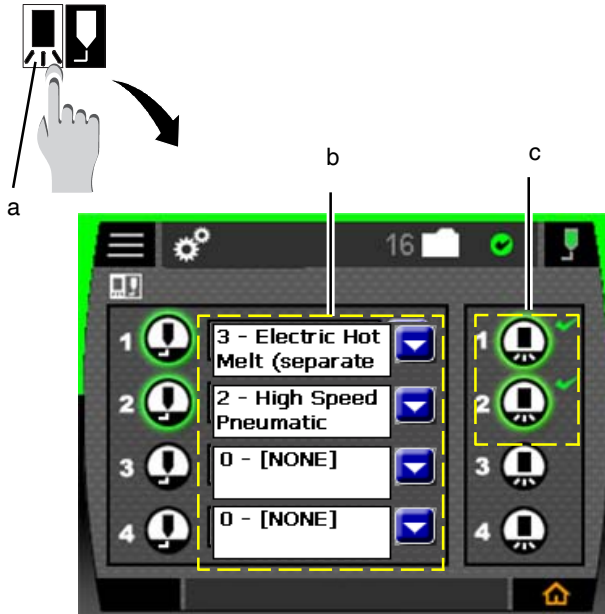
System Setup Screens (contd)

Item	Menu	Action
3 Units/Scale	 The screenshot shows the 'Units/Scale' menu. Callout 'a' points to a ruler icon at the top left. Callout 'b' points to three unit selection buttons: 'ms', 'mm', and 'inch'. Callout 'c' points to an encoder status icon (two concentric circles with a checkmark). Callout 'd' points to a dashed box containing a speed setting of '10 mm' and a feed rate of '2.55 mm/min'.	If you don't use an encoder, scaling can still be used to allow patterns to be programmed in distance, but the scaling is only accurate at one line speed. When you use an optional encoder, scaling ensures that the line speed displays correctly and that programmed pattern measurement is accurate at all line speeds. a Tap the Units/Scale button on the System Settings screen. b Select how you want to program the patterns: • ms (milliseconds) • mm (millimeter) • inch (in.) c For Encoder icon status:  encoder detected and license available to enable encoder operation.  encoder not detected.  encoder detected, license missing to enable encoder operation.

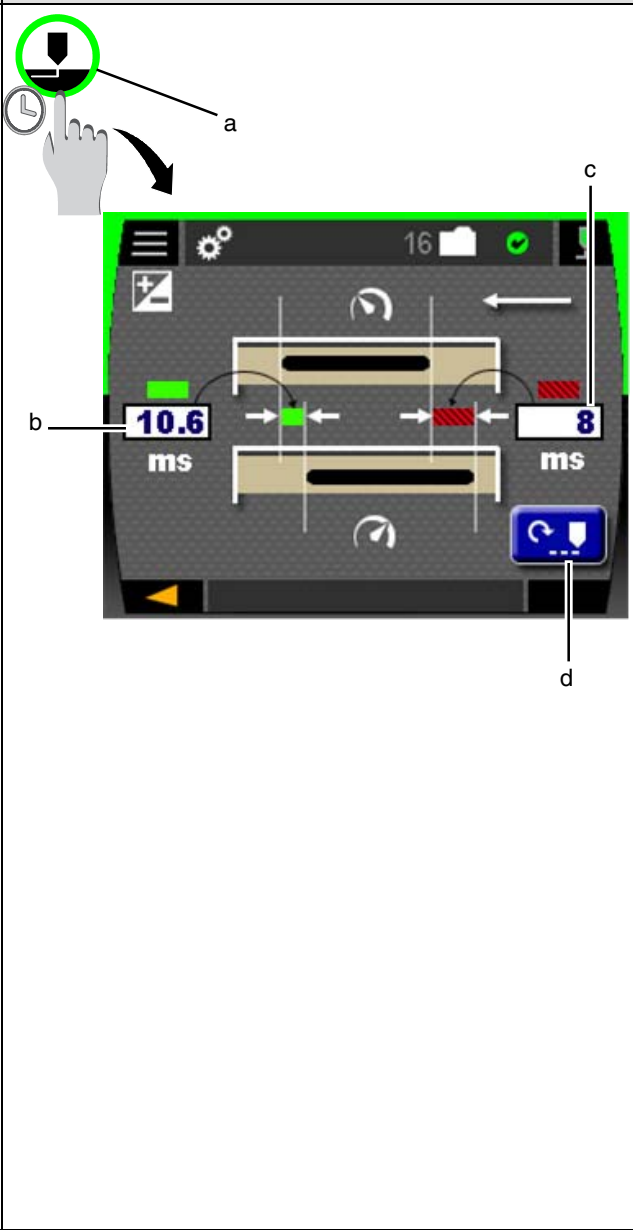
Continued...

Item	Menu	Action
Scale using product length		d Use one of the three methods of scaling the pattern controller: 1 Measure with the actual product length in line where the trigger detects the product. 2 Tap to select scale by product length. See <i>a</i> in the figure on the left. 3 Tap to use a different trigger input for length measurement. See <i>b</i> in the figure on the left. 4 Enter the measured product length from step 1. See <i>c</i> in the figure on the left. NOTE: The hourglass symbol appears until a product is detected on the trigger input. If no product is detected after 30 seconds, the system will keep the existing scale factor. 5 Run at least one product past the trigger. 6 The system calculates the resulting scale.
Scale using line speed		Make sure the line is running at a known constant speed. 1 Tap to select scale by line speed. See <i>a</i> in the figure on the left. 2 Enter the known line speed. See <i>b</i> in the figure on the left. NOTE: The system calculates the resulting scale. NOTE: This method is disabled until a valid line speed is detected on the encoder input.
Scale manually		NOTE: Manual scaling is normally used only with an encoder. 1 Tap to scale manually. 2 Enter the number of pulses per millimeter (or per inch) of line travel.

System Setup Screens (contd)

Item	Menus	Action
4 Components	 The screenshot shows the 'Components' menu. At the top, there are icons for a list and a down arrow. A hand icon points to the 'Components' button (a). Below this, there is a list of applicator families (b) and a set of trigger icons (c). The applicator list includes: 3 - Electric Hot Melt (separate), 2 - High Speed Pneumatic, 0 - [NONE], and 0 - [NONE]. The trigger icons are numbered 1 through 4. A green circle around the trigger icon 1 indicates it is activated.	The components screen is used to set up the pattern controller with only the applicator channels and triggers that are being used in your application. Only the components that are installed on this screen will show up in other menus and screens. a Tap the Components button on the System Settings screen. b Tap the box or down arrow to access list of applicator families. From the list, pick the type of applicator installed on your line. NOTE: By default, applicators are set to 0 – none. When an applicator type is selected the icon will be activated, indicated by a green circle around the icon. c Tap the trigger icons to activate each installed trigger. NOTE: A check mark indicates that the system has automatically detected the presence of a photocell on the trigger input. Trigger inputs can be manually activated even if the system does not detect a photocell.

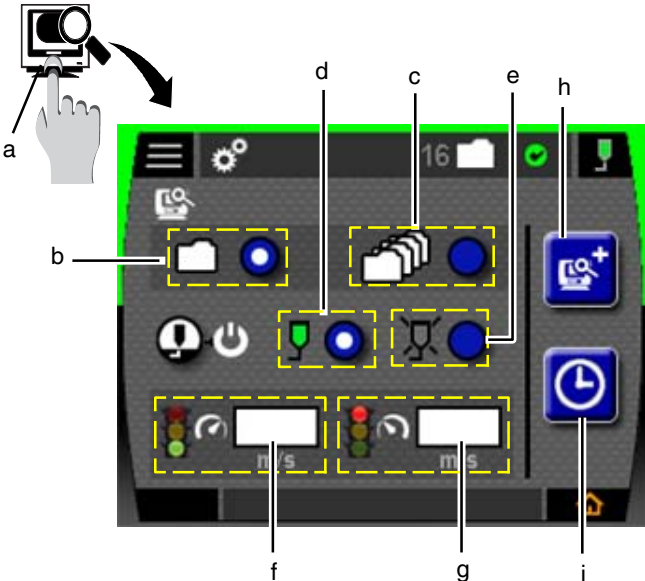
Continued...

Item	Menus	Action
Compensation		Compensation values are set automatically based on your applicator selection. The default values can be changed when necessary. Compensation adjusts for any shift in patterns as the line speed changes from low to high. This shift is caused by the mechanical delays in the applicator. There is a separate setting for on-delay (see step b) and off-delay (see step c). • If the patterns shift backward as the line speeds up, a larger compensation is needed • If the pattern shifts forward as the line speeds up, a lower compensation value is needed. • If the pattern shifts in the leading edge (on-delay), it can be adjusted independently of the trailing edge (off-delay) of the pattern. a Hold the Applicator button on the Components screen to access the Compensation menu. b Tap numeric keypad to enter the leading edge compensation. c Tap numeric keypad to enter the trailing edge compensation. d Tap to reset the compensation to the factory default setting.

Continued...

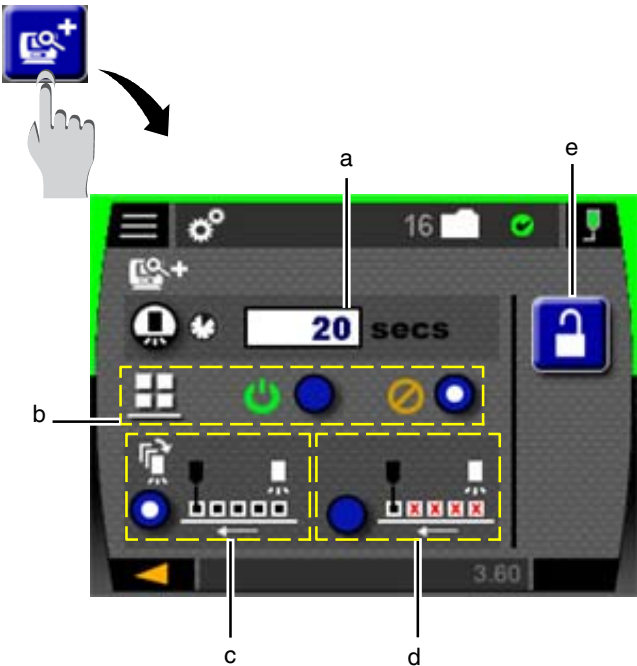
System Setup Screens *(contd)*

Item	Menus	Action
Compensation, <i>contd.</i>		<u>Recommended settings:</u> 1 Set both compensation values to zero. 2 Apply an adhesive pattern at a very low speed. 3 Apply an adhesive pattern at the highest normal run speed. 4 Measure the shift in the leading and trailing edge of the bead. 5 Convert the pattern shift to time (ms): Metric: <u>Edge shift (mm)*60</u> = Compensation (ms) Line Speed (m/min) English: <u>Edge shift in.</u> = Compensation (ms) Line Speed (ft/min) *500

Item	Menus	Action
5 Machine Settings	 The screenshot shows the Machine Settings menu. Callout 'a' points to the Machine Settings button in the top left. Callout 'b' points to the single recipe file button. Callout 'c' points to the multiple recipe files button. Callout 'd' points to the 'ON' adhesive application button. Callout 'e' points to the 'OFF' adhesive application button. Callout 'f' points to the numeric keypad for start speed. Callout 'g' points to the numeric keypad for stop speed. Callout 'h' points to the 'Additional Machine Settings' button. Callout 'i' points to the 'Clock Settings' button.	a Tap the Machine Settings button on the System Settings screen. <u>Recipe Files</u> b Tap to use single recipe file. <i>Or</i> c Tap to use multiple recipe files. <u>Power On Default</u> d Tap to turn ON adhesive application when the controller is first powered. <i>And</i> e Tap to turn OFF adhesive application when the controller is first powered. <u>Start/Stop Speed</u> f Tap numeric keypad to set the line speed to start adhesive application. <i>Or</i> g Tap numeric keypad to set the line speed to stop adhesive application. This value must be less than the value set adhesive start application. h Tap to access Additional Machine Settings. <i>Refer to Additional Machine Settings</i> given next. i Tap to set the clock. <i>Refer to Clock Settings</i> given later in this section.

Continued...

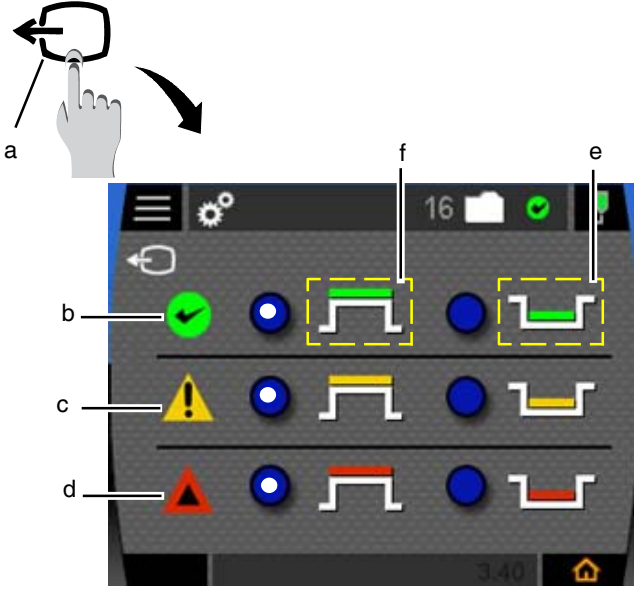
System Setup Screens (contd)

Item	Menus	Action
Additional Machine Settings		<u>Trigger Timeout</u> a The system will give an alert if a trigger input is on for more than the trigger timeout setting. When an encoder is used, the timeout should be set to the length of the machine. When no encoder is used, the timeout period should be set in seconds, as desired. A setting of "0" disables this feature. <u>Product Skip</u> b The controller can skip the application of adhesive to certain products when this feature is enabled. The skip setting is made on the Trigger Settings screen when this feature is enabled. NOTES: • The Product Skip function only operates on one of the triggers. The system automatically selects the first active trigger for the skip function. Other triggers operate as normal triggers (without the skip function). The Product Skip function in the Trigger Settings screen only appears when the first active trigger is selected. • Palletize settings will not be available if the Product Skip setting is not selected in this screen. • For information on Palletize Settings refer to <i>Trigger Settings in User Interface, Section 4</i>.
<i>Continued...</i>		

Item	Menus	Action
		<u>Product Queue Memory</u> When the line stops, products that have already passed the photocell are placed in the product queue. These products in the queue can have adhesive applied to them or they can be skipped according to the Product Queue Memory setting. - c Tap to enable adhesive application on products in the queue when the line stops. - d Tap to disable adhesive application on product in the queue when the line stops (default). - e Tap Lock/Unlock Settings button. Refer to <i>Lock/Unlock Menu</i> given earlier in this section for details.

System Setup Screens *(contd)*

Item	Menus	Action
Clock Settings	a b	There are two sequential setup screens: • Date • Time a Date setup numeric pad comes first. Make sure to follow one of the two date setup formats. Tap ✓ to go to Time setup screen b Time setup numeric pad comes second. Make sure to select one of the time setup formats. Tap ✓ to go back to Machine Settings screen

Item	Menu	Function
6 Output		The pattern controller is equipped with three standard outputs. Select an output to indicate that the line speed is above the start speed. a Tap the Output button on the System Settings screen. b System Ready output signal indicates that the system is functioning normally and ready to apply adhesive when enabled. The System Ready output can be programmed to be: f: active high (24 VDC) Or e: active low (0 VDC) when the system is ready. c Alert output signal output indicates that an Alert condition is present. The Alert output can be programmed to be: f: active high (24 VDC) Or e: active low (0 VDC) when the system is ready. NOTE: Output can be reconfigured as a minimum speed output using the Prism Utility available at www.enordson.com/support. d Fault/Machine Stop output is a SPDT(Single Pole Double Throw) dry contact output with both normally open and normally closed contacts. Use this setting to set the power off condition either to fault (e) or no fault (f).

Continued...

System Setup Screens (contd)

Item	Menu	Function
7 Input		The pattern controller is equipped with six fixed inputs. The first five inputs are for Remote Recipe Selection (add-on software feature), and one input is for Remote System Idle. a Tap the Input button on the System Settings screen. b Tap the check box to enable the Remote Recipe Selection. Refer to the <i>Recipe Codes Table</i> given next for setting up inputs for Remote Recipe Selection. NOTE: The Prism utility can be used to change the polarity of these inputs. Refer to <i>Using the Prism Utility</i> in <i>Appendix B</i> for details. c Tap to set Remote System Idle to: 1 <i>Active low</i> (0 VDC) setting The system will be disabled when no voltage is present on the input. 2 <i>Active high</i> (24 VDC) setting The system will be disabled when 24 VDC is present on the input. d LED indicates incoming voltage (hardware signal) e LEDs showing input. f Binary recipe number from LED signals.

Remote Recipe Codes Table

Use the codes in this table for setting up inputs for Remote Recipe Selection.

Recipe Number	State of Input 1-5	Recipe Number	State of Input 1-5
1	10000	16	00001
2	01000	17	10001
3	11000	18	01001
4	00100	19	11001
5	10100	20	00101
6	01100	21	10101
7	11100	22	01101
8	00010	23	11101
9	10010	24	00011
10	01010	25	10011
11	11010	26	01011
12	00110	27	11011
13	10110	28	00111
14	01110	29	10111
15	11110	30	01111
16	00001	31	11111

This page intentionally left blank.

Section 6

Troubleshooting



WARNING! Allow only personnel with appropriate training and experience to operate or service the equipment. The use of untrained or inexperienced personnel to operate or service the equipment can result in injury, including death, to themselves and others, and damage to the equipment.



WARNING! Observe all safety instructions and regulations concerning energized unit components (active parts). Failure to observe may result in an electric shock.



WARNING! Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

This section contains troubleshooting procedures. These procedures cover common problems that you may encounter. If you cannot solve the problem with the information given here, contact your local Nordson representative for help.

Diagnostics Tools

The Spectra 30 pattern controller has extensive diagnostic tools to assist you in identifying and troubleshooting problems with the system.

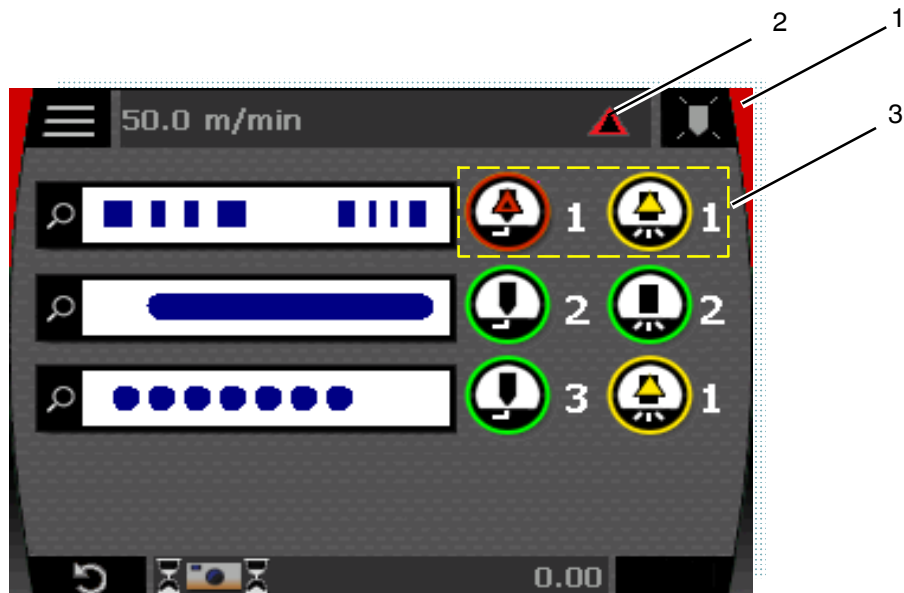


Figure 6-1: Diagnostics Tools components

1. System Status

2. Diagnostic Status Symbol

3. Component Diagnostic Symbol

System Status

The background color of the touch screen shows at a glance the status of the system.

Background Color	State
	Run
	Idle
	Alert
	Fault
	Offline

NOTE: If a fault and a warning both exist, fault takes priority in determining system status. For more details refer to the *System Status Summary Chart* in the *System Outputs* section given later.

Diagnostic Status Symbols

The diagnostic status symbol in the status bar changes when a problem occurs with the system.

Indicator State	System Status
	Okay
	Alert
	Fault
	Offline

Tap the symbol at any time to open the message log.

Component Diagnostic Symbols

The components on the home screen will change when a problem occurs with that component.

Applicator Symbols

Button State	Status
	Enabled
	Disabled
	Alert
	Fault

Trigger Symbols

Button State	Status
	Enabled
	Alert
	Fault

Pattern Alerts

Button State	Status
	Display
	Alert

Message Log

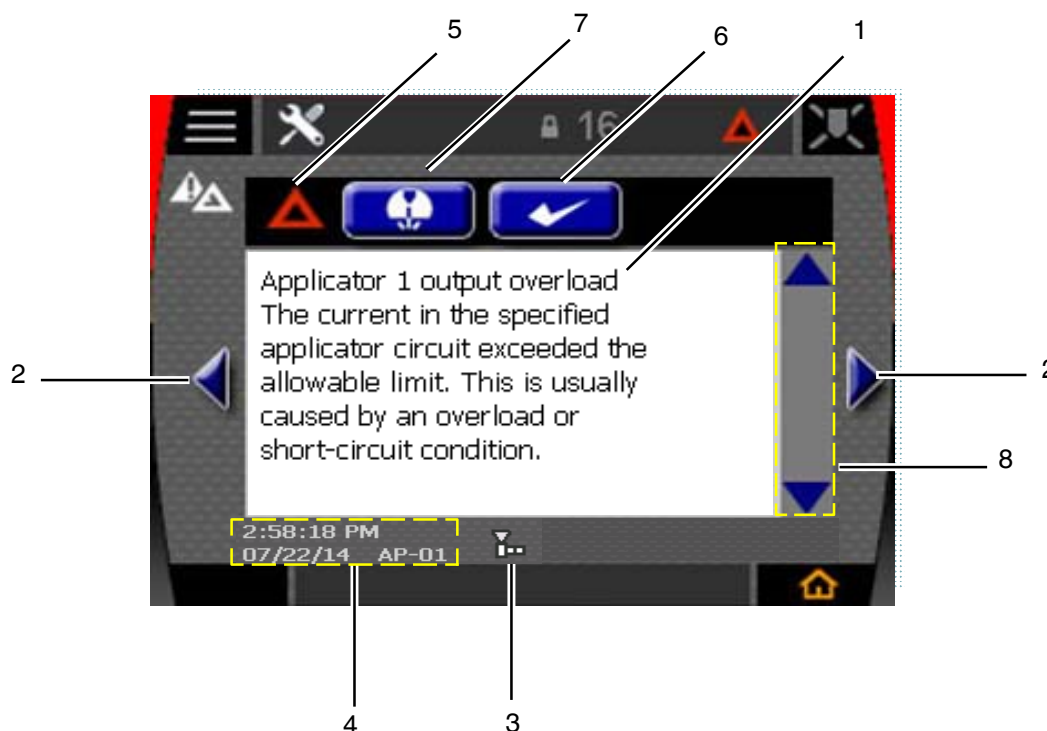


Figure 6-2: Message Log components

- | | | |
|---------------------------------|-----------------------------|--------------------|
| 1. Message text | 4. Time/date stamp | 7. Shortcut button |
| 2. Next/previous message button | 5. Message status indicator | 8. Scroll bar |
| 3. Message scroll indicator | 6. Acknowledge button | |

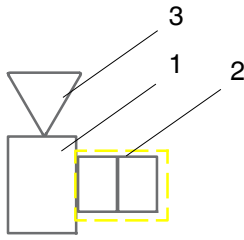
Message Text

Each Fault or Alert Message contains three parts:

- Fault/Alert Name, a short name
- Fault/Alert Description, details of the condition
- Troubleshooting tips, suggested checks to resolve the problem

NOTE: When necessary, use the scroll bar (item 8 in Figure 6-2:) to see additional text. You can also slide your finger up and down in the message box.

Message Scroll Indicator



The Message Scroll Indicator (item 3 in Figure 6-2:) shows the number of active and inactive messages and your current position in the log. This indicator contains a maximum of 25 messages.

- Each tall block in the indicator shows an active fault or alert.
- Each short block indicates shows an inactive fault or alert.
- The triangle indicates your current position in the log.

Figure 6-3: Message Scroll indicator

1. Tall block
2. Short block
3. Triangle

Message Status Indicators

The Message Status Indicator (item 5 in Figure 6-2:) provides the type and status of each message:

Indicator State	Status
	Active Fault
	Inactive Fault
	Active Alert
	Inactive Alert

NOTES:

- Active Faults and Alerts are always sent to the beginning of the log, and are sorted by time of occurrence.
- Inactive Faults and Alerts are always sent to the end of the log, and are sorted by time of occurrence.
- To move to the next or previous message, use the left and right message navigation buttons (item 2 in Figure 6-2:).
- Each message includes a time and date stamp of the message along with a message code (item 4 in Figure 6-2:).

Resolving Alerts and Faults

When a fault or alert condition occurs, the screen background color flashes red or yellow until the message has been acknowledged.



Tap the button (item 6 in Figure 6-2:) on the Message Log screen to acknowledge the message. After the alert or fault has been acknowledged, the background stops flashing. Depending on the type of fault or alert, holding the acknowledge button may also clear the fault or alert condition, sending it to the inactive section of the log.

If the fault or alert condition continues after the message has been acknowledged, further steps must be taken to resolve the problem. Use the troubleshooting tips in the message log as a guide.

Shortcut Buttons

See item 7 in Figure 6-2: for the location of the shortcut button. Depending on the type of events that occur, one of the following button appears on Message Log screen:

Button	Event
	Purge
	Applicator
	Machine Settings
	Self Test
	Components
	Archive

These buttons provide menu shortcuts that are related to the message. The messages provide corrective actions.

System Self-Test

A comprehensive system self-test is available that loops back outputs to inputs to verify the functions of controller board hardware. If the system passes self-test, then the problem is most likely somewhere outside the Spectra 30 pattern controller system.

To access the Self Test screen, do the following:

1. Tap the **Tools** button from **Main Menu**.
2. Tap the **Self Test** button.

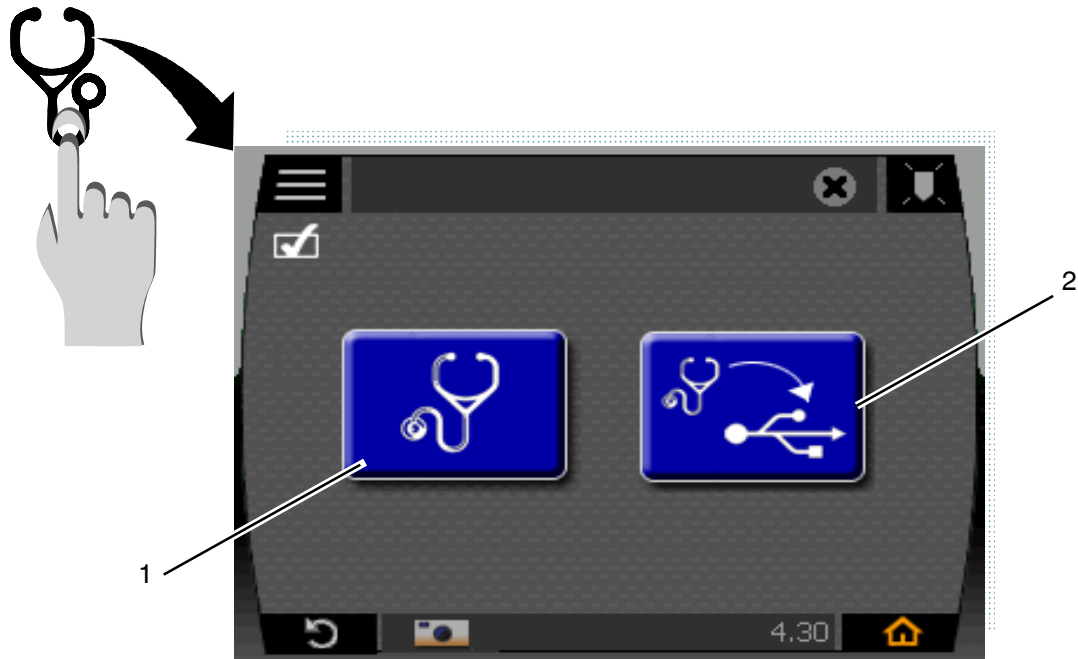


Figure 6-4: Access Self Test screen

1. Run self test button

2. Save results to a USB drive button

Self Test Screen Status



Figure 6-5: Self Test screen status

1. Screen during self-test

2. Screen after a successful test

If the self-test fails, a fault or alert will be generated that will provide details about the failure. Tap the Diagnostic icon in the Status Bar to go to the Message Log.



Figure 6-6: Diagnostic icon on the Status Bar

System Outputs

There are three system outputs that provide system status:

- Ready
An active output indicates that the pattern controller is ready for you to run the line and produce products. The Ready output is not affected by Alerts or Standby.
- Alert
An active output indicates that an Alert condition exists. Alert conditions do not normally prevent you from producing products, but should be investigated as soon as possible.
- Fault/Machine Stop
The SPDT (Single Pole Double Throw) dry contact output is activated while a Fault condition exists.

Refer to the *System Status Summary Chart* for an details.

NOTES:

Refer to the *Internal Wiring Details in Installation, Section 3* for instructions on how to connect the system outputs.

Refer to the *System Settings in Using the Menus, Section 5* for instructions on how to change the polarity of the system outputs.

System Status Summary Chart

System State	Back-ground Color	Description	System Outputs				Adhesive Status	
			Ready	Alert	Fault Machine Stop	Diagnostic Icon	Status	Icon
Run		System is ready to run	On	Off	Off		On	
Alert		System is ready to run but a problem may exist	On	On	Off		On	 OR 
Idle		System is ready to run but waiting for line speed to increase or release from remote input	On	Off	Off		Idle Remote input	 
							Idle Line Speed	 
Fault		Serious problem condition. System not able to run	Off	On/Off	On		Off	
Offline		Adhesive Off or Set-up Wizard Backup/restore is in progress/ Software upgrade	Off	Off	Off		Off	

Defining the System Statuses

Term	Definition	Corrective Action
Fault	- This is a serious condition that causes a Machine Stop via the output contacts. - Fault condition auto-navigates the screen to Message Log. - A condition is classified as a fault when it will likely prevent the line from making good products. - The Ready output is off during a Fault condition.	A Fault causes Adhesive to turn Off. You must manually turn it back on once the Fault is cleared. Faults do not clear automatically. They must be tested or acknowledged.
Alert	- This is a less serious error condition that requires attention, but it does not cause a machine stop. - The Ready output stays on during an Alert condition. - An Alert does not automatically go to Message Log. You must press on the flashing yellow triangle in the Status Bar or use the menu to get Message Log.	Alerts may clear automatically for conditions where the test is continuous and the condition no longer exists. Other Alerts require a retest before being cleared.
Cleared	A Fault or Alert is Cleared either when the condition goes away or immediately after being acknowledged if no re-test is required. If the condition must be tested, the Fault/Alert is not cleared (remains active) until a self-test is performed and found to be no longer present	All Faults and Alerts are acknowledged and cleared: - at the start of self-test - on power down of the system - on factory reset NOTE: If the condition still exists (is detected again) a new Fault or Alert is generated.
Continued...		

Term	Definition	Corrective Action
Active/Inactive	• A Fault/Alert that has been cleared is said to be Inactive. • A Fault/Alert that is still present or has not been retested is said to be Active. Active Faults and Alerts will appear first in the message log, sorted by time of occurrence. • Inactive Faults and Alerts appear after Active ones, also sorted by time of occurrence. • The Message Log contains a maximum of 25 messages and older messages are pushed out of the log as new ones enter.	A factory reset clears all the settings and recipes. The No Faults or Alerts message is displayed after Factory Reset until the first Alert or Fault occurs.

When the System Fails to Start Up



WARNING! Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.



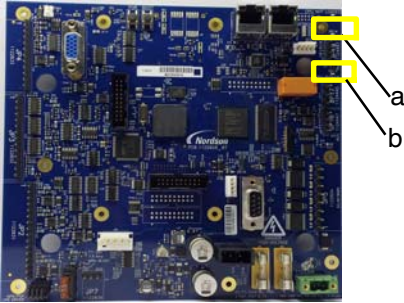
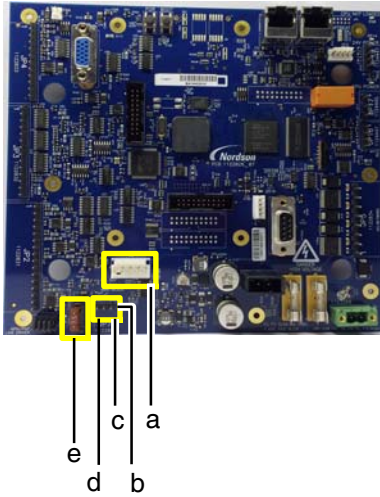
WARNING! The power supply is electrically energized and presents a shock hazard. Use caution while performing the troubleshooting steps below

The following tables provide some potential causes for a system failing to power up successfully. Perform corrective actions in this section with the pattern controller cover removed.

Refer to *System Schematics* in *Specifications* section.

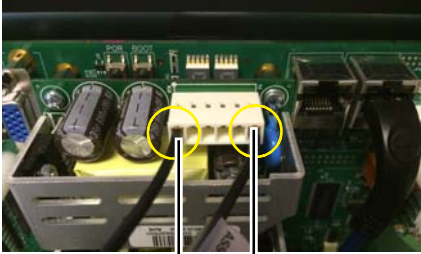
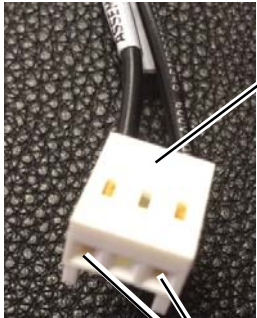
Controller Board Issues

Problem	Controller Board	Corrective Action
1. Missing AC Input Power or Blown Fuse		Note the following components on the Controller Board: a. JP16 b. DS17 c. F2 d. F3 AC input power is supplied to the system continually on terminal block JP16. The presence of power can be confirmed using the neon lamp DS17. If DS17 is not lit, check fuses F2 and F3 for continuity and replace if necessary.
<i>Continued...</i>		

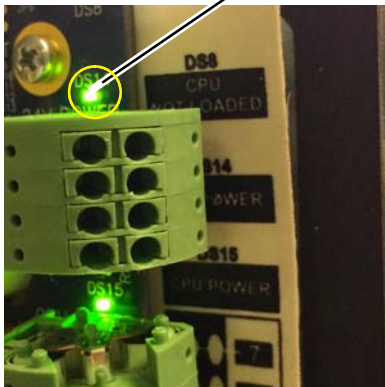
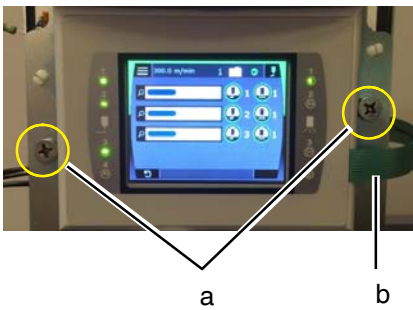
Problem	Controller Board	Corrective Action
2. Controller Board Fails to Start Up		Note the following components on the Controller Board: a. DS14 b. DS15 The control switch on the front of the pattern controller switches power from the 24 VDC Power Supply to the Controller Board and the LCD touch screen. Refer to the <i>System Schematic in Specifications, Section 7</i>. Power to the Controller Board can be observed by DS14 in the upper right corner of the board (item a). Power for the CPU (processor) is derived from the 24VDC with an on-board regulator on the Controller Board. CPU Power is indicated by DS15 (b). For the Controller Board to run, both CPU power and 24 VDC power LEDs must be lit.
Confirm Power to Touch Screen		Note the following components on the Controller Board: a. JP8 b. JP7 c. Com d. 24 VDC e. F1 Power to the touch screen can be confirmed by the screen being lit. • Check for 24 VDC input power at JP7 between pins 1 and 3 as shown in the figure on the left. • If 24 VDC is present, check fuse F1 for continuity and replace if necessary. • If 24VDC is not present, check the output voltage of the Power Supply as shown in the figure on the left.

Continued...

Power Supply Board

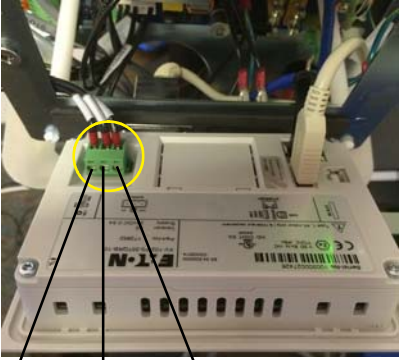
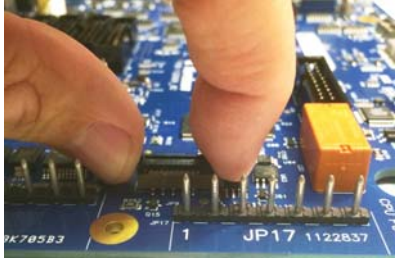
Problem	Power Supply Board	Corrective Action
Check 24 VDC Power Supply Output Voltage	 b a	Note the following Power Supply Board components: a. 24 VDC b. Com c. J100 d. 120 - 240 VAC • If there is no output from the power supply, check the input line voltage to the supply by disconnecting the cable from J100 at the bottom of the Power Supply Board and measuring with a meter.
	 c d	• If AC power is present at J100 and the Power Supply has no output voltage, replace the power supply • If AC power is not present at J100, refer to <i>Missing AC Input Power or Blown Fuse</i> given earlier.

Touch Screen Issues

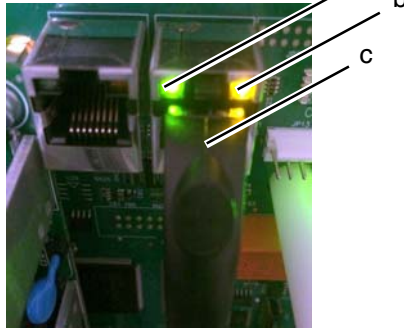
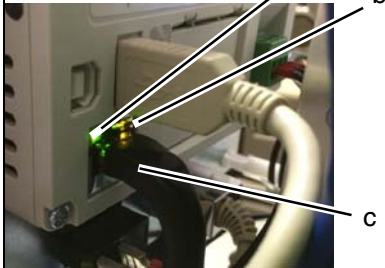
Problem	Power Supply Board	Corrective Action
Touch Screen Fails to Start Up		Note the following components: a. DS14 First make sure that 24 VDC is being supplied to the Controller Board by verifying that DS14 is lit. If not, refer to <i>Controller Board Fails to Start Up</i> given earlier.
Remove Touch Screen		1 Remove the two touch screen retaining screws and disconnect the flex cable from the Controller Board. a. Two touch screen screws. See the image below in <i>Remove Touch Screen</i>. b. Flex cable

Continued...

Touch Screen Issues *(contd)*

Problem	Power Supply Board	Corrective Action
<i>Remove Touch Screen, contd.</i>	 c d e	Note the following components on the touch screen rear panel: c. Common d. PE e. 24 VDC 2 Tilt the touch screen down to access the rear panel and measure the input power to the touch screen. You should measure 24 VDC when the control switch to the unit is turned on. 3 If you do not measure 24 VDC, check the cable between JP8 on the Controller Board and the touch screen. Repair or replace cable as necessary: • Reconnect the flex connector cable from the touch screen LED overlay into the Controller Board. Refer to <i>Reconnect the Flex Connector Cable</i> given below. • Replace the retaining screws to the touch screen 4 If you measure 24 VDC and the touch screen does not start up (no back light visible), replace the touch screen.
<i>Reconnect the Flex Connector Cable</i>		1 Open the flex connector socket insert by gripping the outsides and gently pulling up, see the figure on the left. 2 Gently insert the end of the flex connector cable into the open slot. 3 Gently push down on outside of the insert to lock the cable in place.

Ethernet Network Communications Issues

Problem	Power Supply Board	Corrective Action
Touch Screen Fails to Communicate		If the touch screen fails to communicate with the Controller Board for more than 30 seconds, the network communications error screen will appear. The most common cause of this error is a poorly connected or broken Ethernet cable between the touch screen and the Controller Board.
		Note the following diagnostics LEDs: a. Link LED (solid) b. Data LED (flashing) c. Ethernet cable Use the diagnostic LEDs on the Controller Board and touch screen to check for proper network operation. Refer to the diagnostics LEDs shown in the figure on the left.
Diagnosing Ethernet Problems		Note the following components: a. Data LED (flashing) b. Link LED (solid) c. Ethernet cable When diagnosing Ethernet problems, first make sure both the touch screen and the Controller Board are powered and running, refer to the previous troubleshooting sections. If Ethernet LEDs show an abnormal condition, check to make sure the ends of the Ethernet cable are inserted fully until an audible click is heard or felt.

Calibration Screen

Tap anywhere on the splash screen to open the Calibration screen. See Figure 6-7:

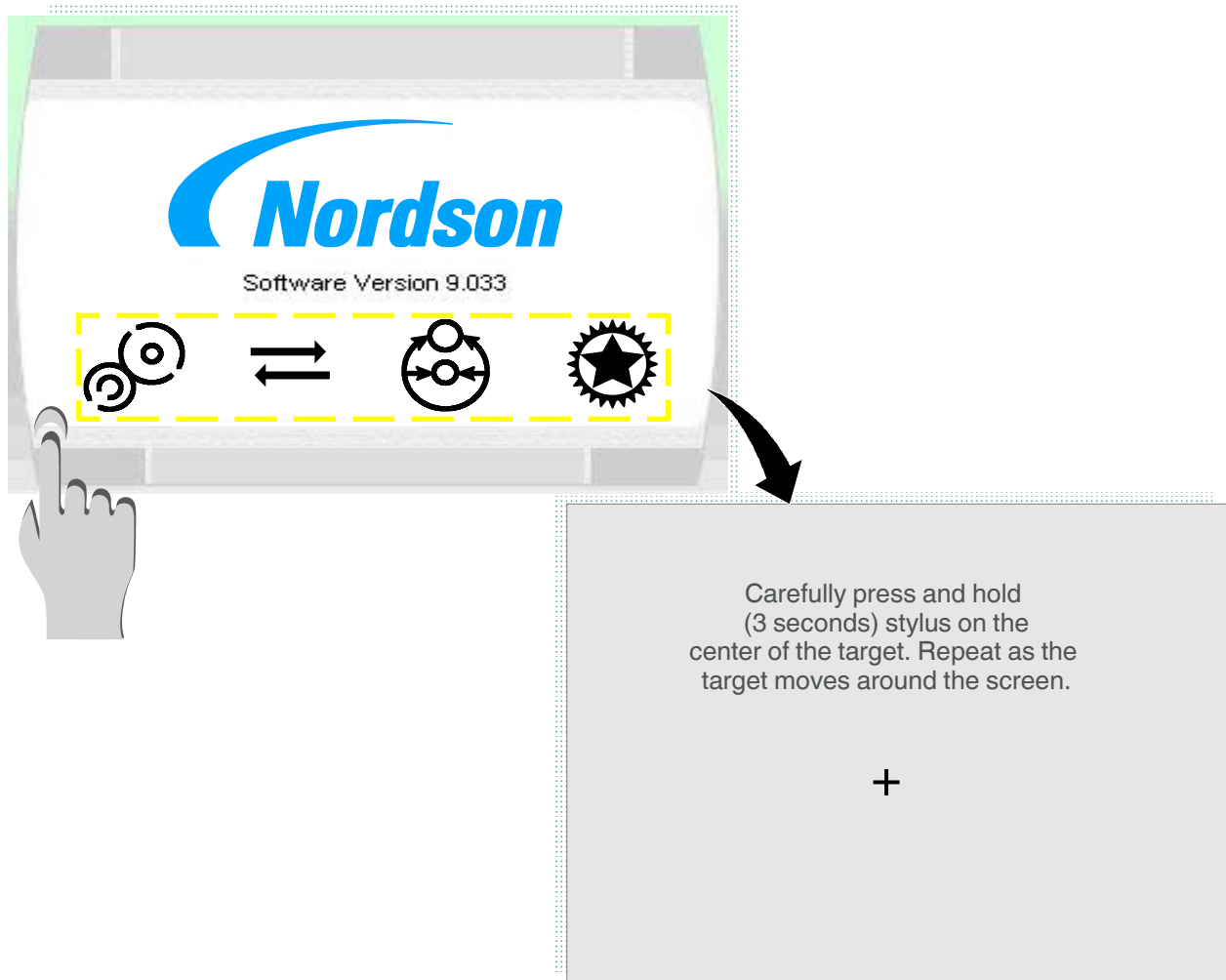


Figure 6-7: Splash and Calibration Screens

If you do not tap the Splash screen the Home Screen appears after a brief delay.

Section 7

Specifications

System Specifications

Item	Specification
Maximum operational line speed	Time Based Pattern Controller ONLY: Not available Distance and Time Based Pattern Controller 300 m/min
Input voltage	100 - 240 VAC, 1.6 Amp maximum, 1 Phase, 50/60 Hz
Internal power supply	Built-in 24 VDC
Units of measure	Inches or millimeters

Encoder

Distance and Time Based Pattern Controller

Item	Specification
Encoder inputs	Single-ended NPN single-phase and differential quadrature encoders supported
Encoder scaling	Yes
Encoder power supply output	24 VDC, 250 mA maximum
NOTE: Encoder operation is optional.	

Interface

Item	Specification
User interface	3.5 graphic touch screen LED
Password lockout	Enable or disable password lockout feature
Language support	Text for upgrade and diagnostics only
Offline advanced settings	Yes, it is available with the <i>Prism Utility</i> , refer to <i>Appendix B</i> .

Inputs/Outputs

Item	Specification
Digital input/output	Ready and alert outputs (24 VDC) Fault output (SPDT contact, 24 VAC 2A max.) System Enable Input Remote Recipe recall (5 inputs select one of 31 recipes)
Remote enable	Enable or disable remote enable
Remote program recall	Yes (optional)

Recipe Memory

Up to 50 recipes.

Replaceable Fuses

- F1 – 7.5 Amp, 32V mini-blade fuse (P/N 1122386).
- F2, F3 – 5x20 mm fast blow, 4 Amp 250V fuse (P/N 114876)

Enclosure

Item	Specification
Enclosure type	Plastic vertical/wall mount
Dimensions	Width: 9.76 in. (248 mm) Height: 9.084 in. (250 mm) Depth: 5.66 in. (144 mm)
Enclosure IP rating	IP44 (for mounting on the wall) IP54 (kit available, see <i>Parts</i> section)
Temperature range	0 - 45 °C (0 - 113 °F) 50 °C (122 °F) with the fan option
CE approval	Yes
UL approval	Yes
ROHS WEEE	Yes
Environmental conditions	Indoor use only

Patterns

Item	Specification
Pattern resolution	Time Based Pattern Controller ONLY: 1 ms Distance and Time Based Pattern Controller 1 mm
Program memory	50
Independent pattern channels	4
Pattern type	Normal Dot EcoBead Random length Mirror mode Optional Patterns Random dotted Autodot Continuous
Maximum beads per channel	24 per programmed channel output
Time mode	Available

Applicators

Item	Specification
Applicator outputs	Two terminal block per channel. 24 VDC, 1 Amp maximum per channel
Compensation	Auto set based on applicator type selection (manual adjust)
External power supply	Yes. Using an external 24 VDC supply the applicator output can be increased to 2.0 Amp per channel up to a total of 6 Amps.

Triggers

Item	Specification
Independent triggers	Four
Product queuing	Ten
False trigger block	Yes
Stuck photocell detection	Yes
Signals accepted	NPN or PNP. 24 VDC line driver with jumper setting change, 3 mA current draw maximum
Trigger power supply output	24 VDC, 250 mA maximum per trigger

Pressure Run-up

Item	Specification
Run-up Outputs	Two
Number of points on curve	Two
Output type	4 - 20 mA and 0 - 10V
Run-up loads	4 - 20 mA: ≤ 600 Ohms 0 - 10V: ≥ 1000 Ohms
Run-up power supply output	24 VDC, 250 mA maximum

Diagnostics

Item	Specification
Messages	Detailed text
Diagnostic log size	Twenty five (25)
Troubleshooting assistance	Troubleshooting tips included

Add-on Software License

The three pattern controller configurations (time based, distance based, or pressure run-up) can be upgraded by ordering additional licenses(s). These software licenses can be ordered by specific part numbers. Refer to *Parts* for the software license part numbers.

The add-on features are:

- Encoder
- Pressure/Run-up
- Remote recall
- Extra features

To obtain an add-on license, go to the dedicated licensing website <https://spectra30-license.nordson.com>.

Schematics

System Schematics

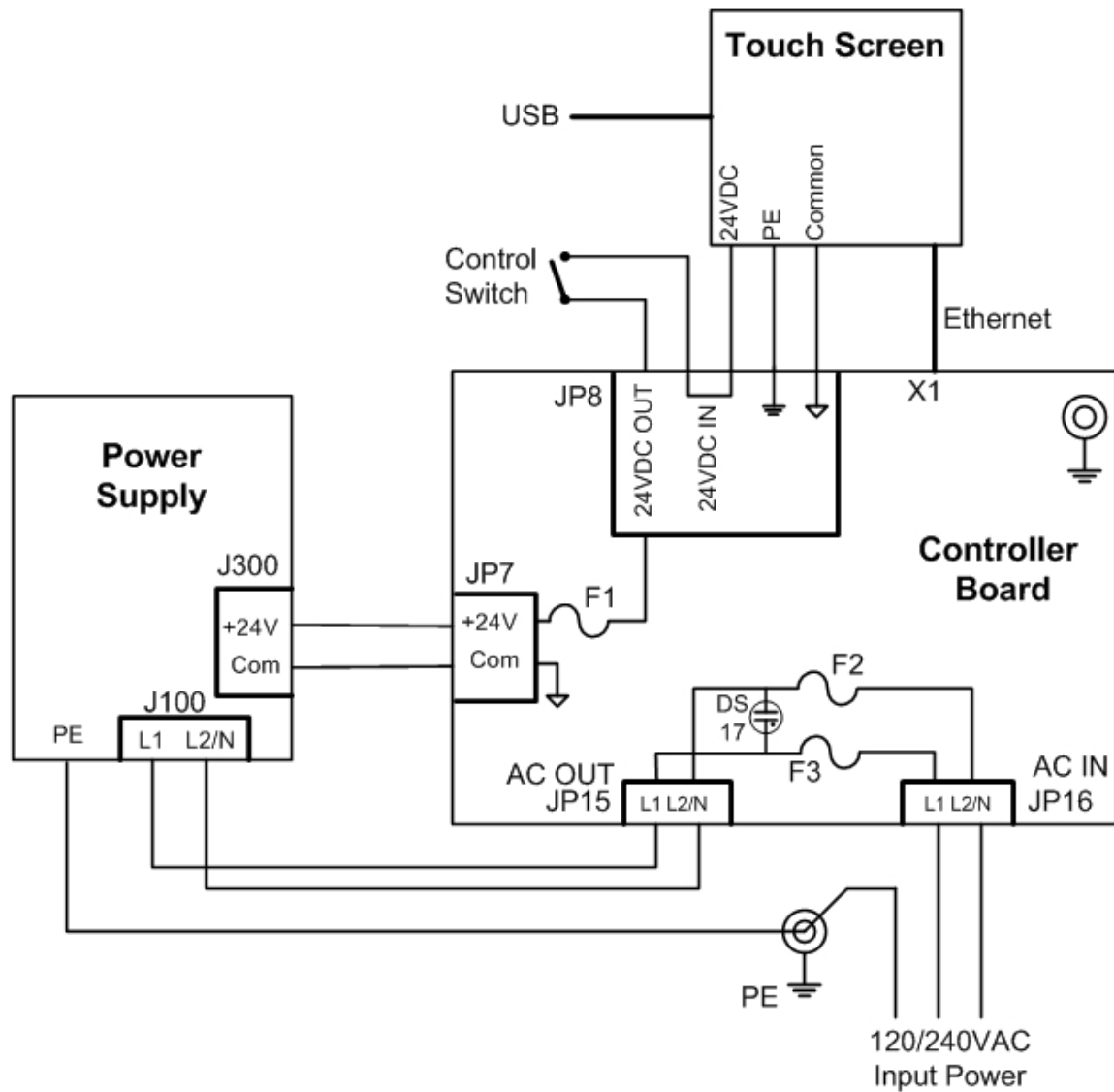


Figure 7-8 System Schematic

External Power Supply

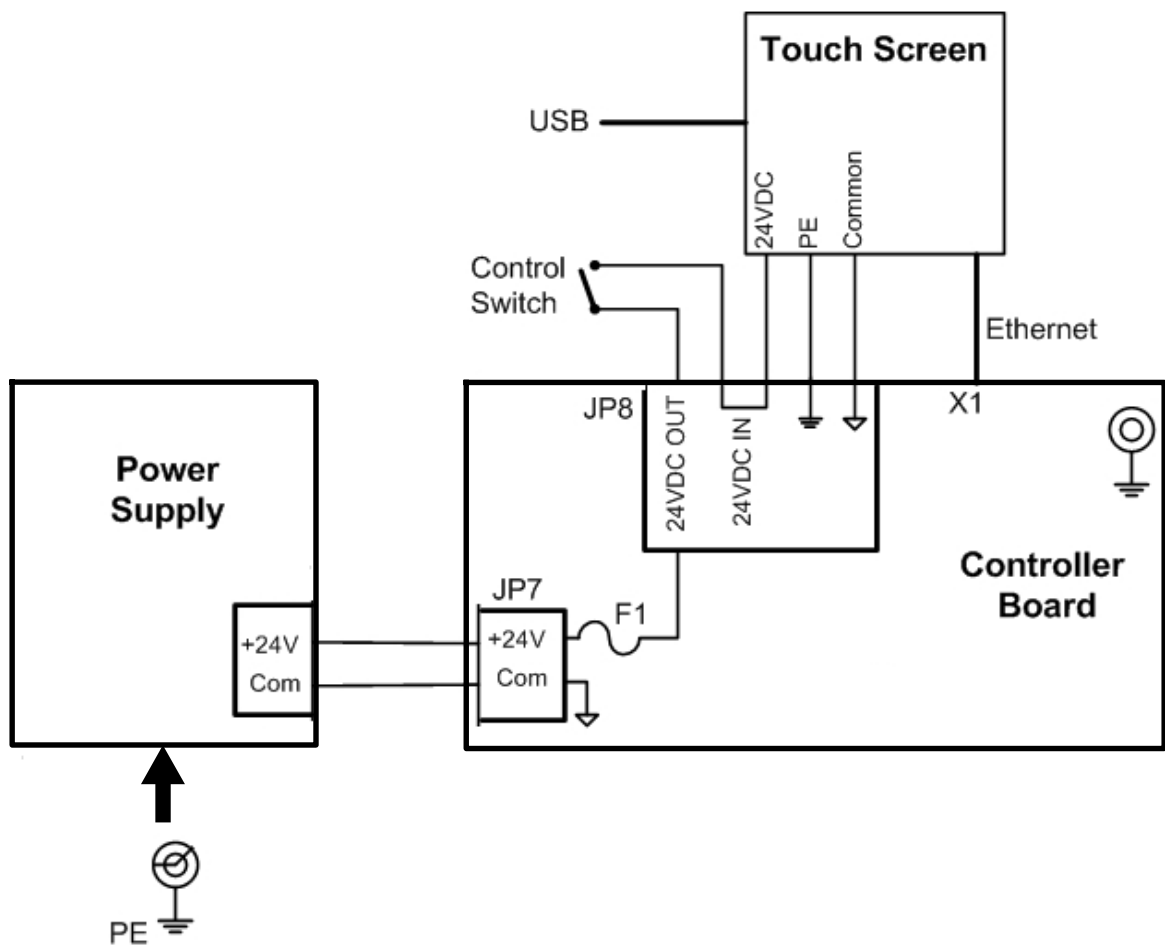


Figure 7-9 External Power Supply Schematic

For external power supply installation instructions refer to *Connect to External 24 VDC Power Supply* in *Installation*.

This page intentionally left blank.

Section 8

Parts

Spectra 30 Pattern Controller Parts List

Pattern Controller

Part Number	Description
1123742	CONTROLLER,SPECTRA30,TIME MODE
1123743	CONTROLLER,SPECTRA30,ENCODER
1124670	CONTROLLER,SPECTRA30,ENCODER,2RU,REM

Software License

Part Number	Description
1123914	LICENSE,SOFTWARE,ENCODER,SPECTRA30
1123915	LICENSE,SOFTWARE,RUN-UP,SPECTRA30
1123916	LICENSE,SOFTWARE,REMOTE RECIPE, SPECTRA30
1124590	LICENSE,SOFTWARE,PREMIUM,SPECTRA30

Service Kits

See Figure 8-10 for the location of the main kit components.

Item	Part Number	Description
1	1123816	KIT,PWRSUP,SPECTRA
2	1123817	KIT,HMI,SPECTRA

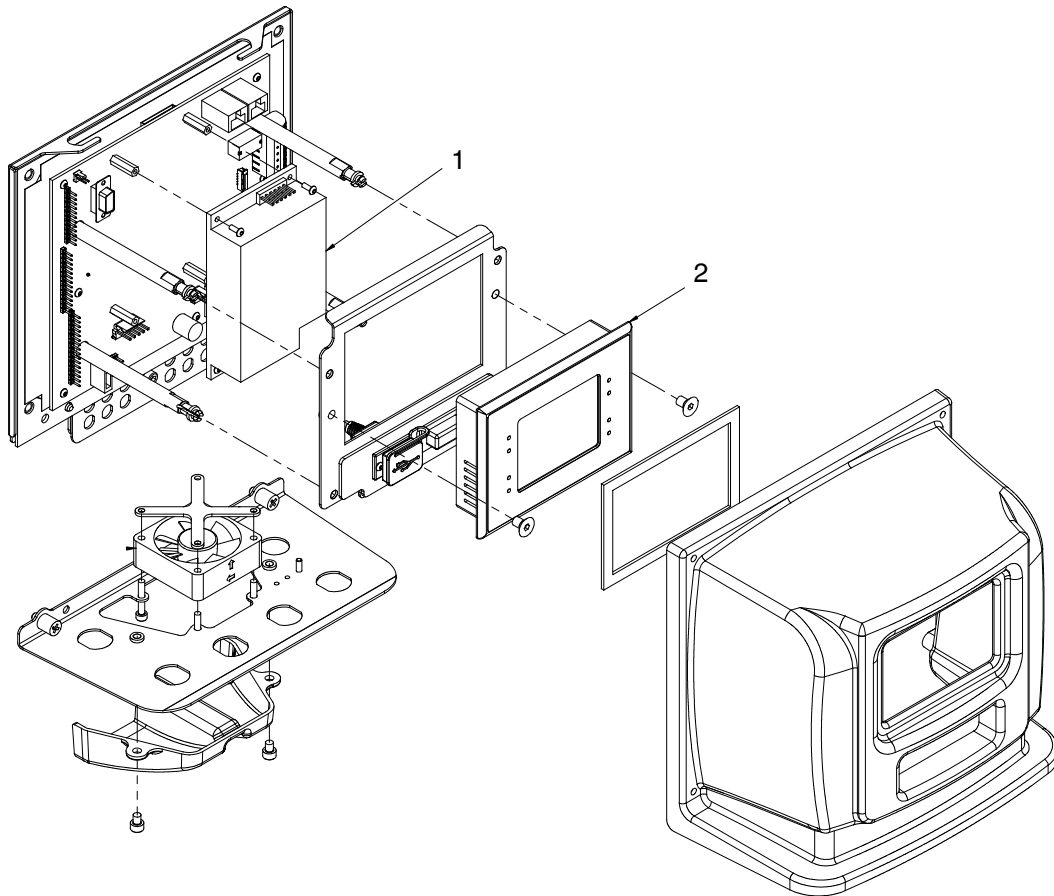


Figure 8-10 Location of the kit components

Service Parts

Part Number	Description	Quantity
1124669	KIT, SHIP WITH, SPECTRA30 (BPC)	1
1123358	CONN,PLUG,2POS,5.08MM,W/SCREWS,MVS TBW	1
1122834	CONN,TB PLUG,8POS,5MM,SPRING	1
1122833	CONN,TB PLUG,12POS,3.5MM,SPRING	1
1122832	CONN,TB PLUG,14POS,3.5MM SPRING	1
1122831	CONN,TB PLUG,16POS,3.5MM,SPRING	1
1122386	FUSE,MINI-BLADE,7.5AMPS,32VDC	1
1124447	TERM BLOCK HDR 4POS M VERT 3.5MM	1
1124445	TERM BLOCK HEADER 3POS M 5MM BLACK	1
114876	FUSE,4.00,FAST-ACTING,250V,5X20	1
1123338	STRAIN RELIEF,SNAP-IN,DOUBLE-D,W/SEAL	1
933607	CONNECTOR,STRAIN RELIEF,PG-11	1
277894	SCREWDRIVER,#0 FLATHEAD	1
1123918	PLATE,MOUNTING,SPECTRA	1
1123400	COVER,MAIN,BPC	1
1122902	SCR,CAPTIVE,M5X16LG,SS	1
1017947	SWITCH,ROCKER,SPST,250V,16A,GOLD	1
1015904	THRDSPCRMM,MALE/FEM,SS,HEX,M3,19M MLG	1
1123584	SHROUD,VENT,BPC	1
1122909	CABLE,USB,TYPE A COUPLER,FEMALE BULKHEAD	1
1122910	CABLE,ETHERNET,SHIELDED,CAT 5E,RJ45/RJ45	1
1122911	HARNESS,AC TO POWER SUPPLY AC INPUT,BPC	1
1122912	HARNESS,24VDC OUT TO ENGINE BOARD,BPC	1
1122959	HARNESS,POWER SWITCH,BPC	1
1123287	SPACER,SNAP TOP,BPC	1
1123920	PLATE,BOTTOM,SPECTRA	1
1123917	PLATE,FRONT,SPECTRA	1
1123595	FRAME,MAIN,SPECTRA	1
1123664	COVER,USB,SPECTRA	1

Encoder

Part	Description	Quantity
772050	SPEEDSENS, ENCDR, 500PULSE, 10MM	1
772051	SPEEDSENS, ENCDR 500PULSE, 3/8IN	1
772052	CABLASSY, ENCDR, 10POS, CIR, 30FT	1
772053	CABLASSY, ENCDR, 10POS, CIR, WATERWASH, 30FT	1
772055	SPEEDSNS, ENCODER, OPTICAL, 1KPLS	1
772056	SPEEDSNS, ENCODER, OPTICAL, 1KPLS	1
1022679	SPEEDSENS, ENCDR, 2500PULSE, 10MM	1
1022678	SPEEDSENS, ENCODER, 2500PULSE, 3/8IN	
7302371	WHEEL, ENC, CIRC 250MM, d=10MM, WEAR RES	1
311453	WHEEL, ENC, CIRC 500MM, d=10MM, W/RUBBER	1
311454	WHEEL, ENC, CIRC 500MM, d=10MM, WEAR RES	1
296144	WHEEL, FRICTION, .50 METER, 3/8 INCH DIA	1
1032422	CABLE, ENCODER, SPLITTER, 10 PIN	1
1086111	KIT, BRACKET, ENCODER, EPC-30	1

Run-up IP Transducer

Part	Description	Quantity
154890	TRANSDUCER ASSY, EXT. RANGE. KIT	1
1123923	KIT, RUN UP, 4-20mA, PISTON/GEAR, INSTALL	1
1123960	KIT, RUN UP, 0-10 VDC, PISTON/GEAR, INSTALL	1
1124026	KIT, TUBING, AIR RUN UP	1
1124258	FILTER/REGULATOR, 3/8 G PORT, AUTO DRAIN	1
1124259	REGULATOR, ELECTRO-PNEU, 4-20 mA	1
1124260	REGULATOR, ELECTRO-PNEU, 0-10V	1
377385	CABLE, RUN UP/ HARD WIRING, 2MTR	1
7300642	CABLE, RUN UP EPC30/ HARD WIRING, 10MTR	1
377228	CABLE, EXT, REPEAT, ENC, STR. 5 M	1

Trigger

Part	Description	Quantity
131474	SENSOR, RETROREFLECTIVE MODE	1
131475	SENSOR, RETROREFLECTIVE,POLAR	1
131476	SENSOR, DIFFUSE MODE	1
145278	CABLE, FIBER OPTIC, BIFURCATED	1
1020483	CABLE,FIBEROPT,OPPOSED,IT23S,SS,3FT	1
1020484	CABLE,FIBEROPT,OPPOSED,IT26S,SS,6FT	1
145279	LIGHT ASSEMBLY,UPPER COVER	1
145974	LENS,FIBER OPTIC	1
1020500	KIT,PHOTOSENS,3'FIBEROPT,6'CABLE	1
1020501	KIT,PHOTOSENS,6'FIBEROPT,6'CABLE	1
1020502	KIT,PHOTOSENS,3'FIBEROPT,15'CABLE	1
1020503	KIT,PHOTOSENS,6'FIBEROPT,15'CABLE	1
1020504	KIT,PHOTOSENS,3'FIBEROPT,20'CABLE	1
1020505	KIT,PHOTOSENS,6'FIBEROPT,20'CABLE	1
1020506	KIT,PHOTOSENS,3'FIBEROPT,25'CABLE	1
1020507	KIT,PHOTOSENS,6'FIBEROPT,25'CABLE	1
1022692	KIT,PHOTOSENS,8'FIBEROPT,6'CABLE	1

Other System Accessories

Part	Description	Quantity
1124687	BRACKET, VESA MOUNT, BASIC TILT	1
1124688	BRACKET, VESA MOUNT, TILT, SWIVEL	1
1124689	BRACKET, VESA MOUNT, EXTENSION ARM, TILT, SWIVEL	1
1124690	BRACKET, VESA MOUNT, POLE STAND, 750MM	1
1124691	BRACKET, VESA MOUNT, POLE ADAPTOR, 42-50MM	1
1124020	SIMULATOR, SPECTRA30, 4 TRIG, 1 ENC	1

This page intentionally left blank.

Appendix A

Using Add-on Software Licenses

The following instructions pertain to obtaining and adding the Spectra 30 software licenses.

License Part Numbers

The available add-on licenses are ordered by part number based on the Spectra 30 model purchased:

Part Number	Description
1123914	LICENSE,SOFTWARE,ENCODER,SPECTRA30
1123915	LICENSE,SOFTWARE,RUN-UP,SPECTRA30
1123916	LICENSE,SOFTWARE,REMOTE RECIPE, SPECTRA30
1124590	LICENSE,SOFTWARE,PREMIUM,SPECTRA30

Each Spectra 30 pattern controller has a unique set of license keys that is matched to the part number and the unit serial number.

Obtain the Licenses

To obtain an add-on license, go to the dedicated licensing website <https://spectra30-license.nordson.com>. See the screen in the following page and make the appropriate entries.

Obtain the Licenses *(contd)*

1 **Customer Information**

Company: Cust. #:

Contact:

Address:

City: State:

Zip Code: **2** **Region:**

Phone:

Email:

5 **Procurement Method**

☒ PO Number

☐ Other

☐ Send license number and purchase receipt to this address

3 **Controller Part Number:** **Serial Number:**

6

4 **Features**

☐ PN 1123914 Encoder Enabled

☐ PN 1123915 Run-up

☐ PN 1123916 Remote Recall

7

Comments:



Figure A-1 Add-on licenses screen

Complete the following information before placing your order:

1. Enter Customer Contact information.
2. Select customer service center region.
3. Enter Part number and Serial number.
4. Select type of license being requested.
5. Enter the Purchase information. As an optional feature you can attach a PDF file of the purchase order.
6. Search for licenses already installed or purchased.

7. Select one of the following:

a. Request a quote

You will be contacted by the customer service center in your selected region with the quotation information you requested.

or

b. Purchase a new license:

- If you have attached a PDF file of the purchase order, no further information is required by the customer service center. The order will be entered.
- If you have not attached a PDF file of the purchase order, you will be contacted by your customer service center to complete the order process.

Receive the Licenses

Once the order process has been completed, you will be contacted via email with the 16-digit license key.

Add the Licenses

1. Access the System Information screen.

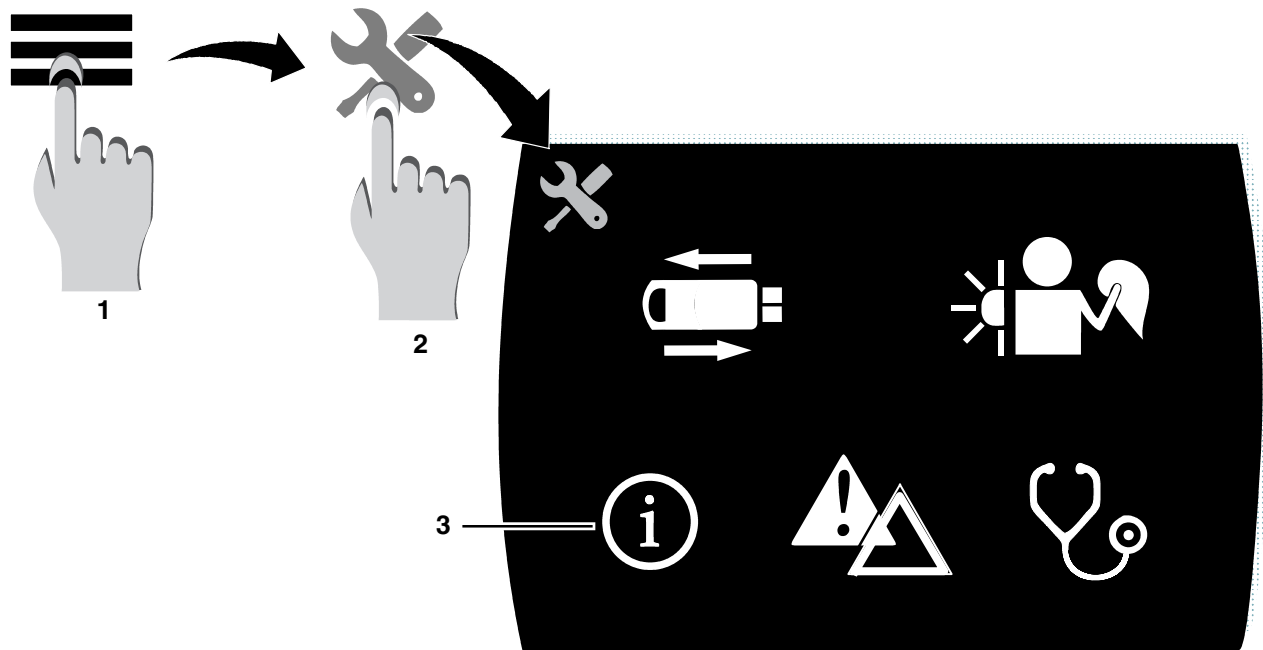


Figure A-2 Access System Information screen

1. Main Menu button

2. Tools button

3. System Information button

2. Tap the **License** button to access the numeric keypad.



Figure A-3 License button on System Information screen

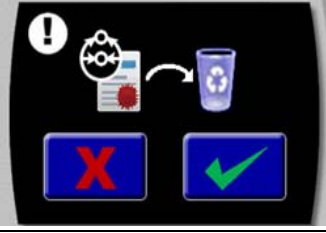
3. In the numeric keypad enter the 16-digit add-on license number.



Figure A-4 Numeric keypad

Add the Licenses *(contd)*

- Here are the license pop-up screens that will see Enter the 16-digit add-on license number.

License Pop-up Screens	Encoder State/Action
 A black screen with a white checkmark icon in the top left, a gear icon with a red 'X' in the center, and a large green checkmark in the bottom right.	License added confirmation.
 A black screen with a white exclamation mark icon in the top left, a gear icon with a red 'X' in the center, and a large green checkmark in the bottom right.	License removal confirmation.
 A black screen with a yellow warning triangle icon in the top left, a large red 'X' in the center, and the text 'Incorrect License for this Unit.' below it.	Incorrect license entered.

- Check that your license is now installed by reviewing the System Information screen.

Remove the Licenses

- Access System Information and then tap the **License** button to access the numeric keypad. See Figures A-2 and A-3.
- In the numeric keypad enter the 16-digit number of the add-on license you want to remove.
- In the confirmation pop-up screen that appears tap ✓ to confirm.

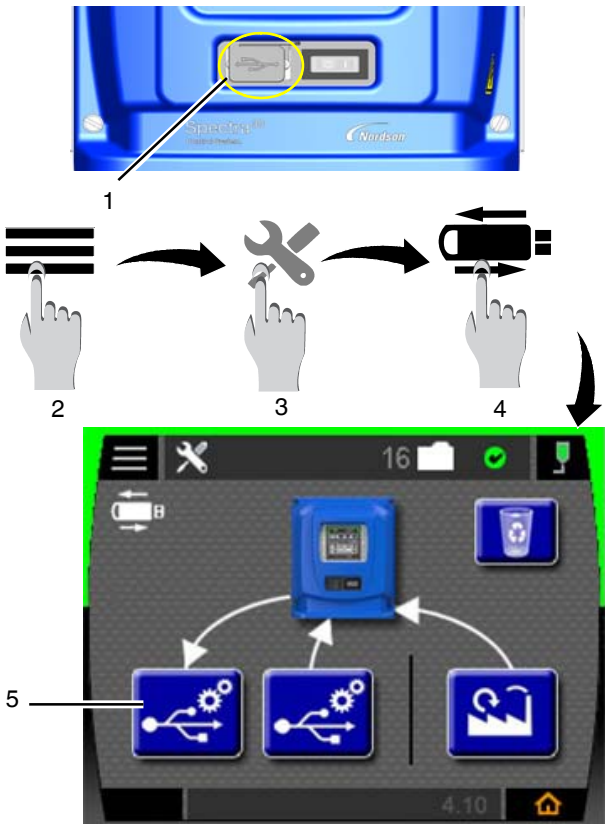
Appendix B

Using the Prism Utility

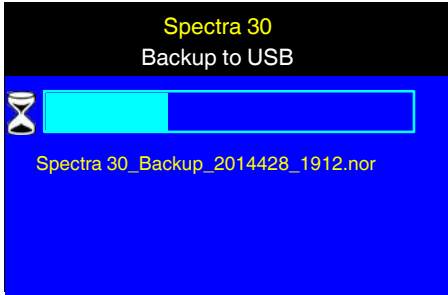
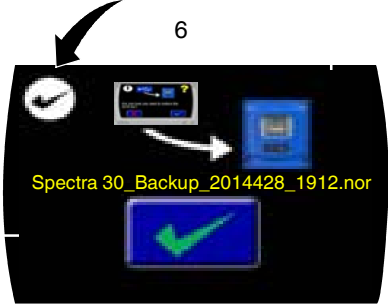
This PC utility is used for making advanced changes to the internal settings of the pattern controller. Before using this utility you will need to create a back up file from the pattern controller to USB memory device.

Save the .NOR File

Follow these step by step instructions to back up the pattern controller settings into a USB memory device and save into your PC.

Menus	Action
 1 2 3 4 5	Access System Backup/Restore/Reset: 1 Insert the USB memory device in the location shown on the pattern controller. 2 Tap to access the Main Menu screen. 3 Tap to access the Tools Menu screen. 4 Tap the System Backup/Restore/Reset button to access the Backup/Restore/Reset screen. 5 Tap Backup settings to USB.

Save the .NOR File *(contd)*

Menus	Action
 	6 The progress bar screen appears to indicate that the files are being copied into the USB device. 7 Tap ✓ to close the dialog box. 8 Insert the USB device into your PC. 9 Go to the Prism utility. 10 Select Open .NOR file and go to your USB drive location. 11 Go to the folder called <i>Backup</i>, then select and open the .NOR backup file. 12 Select OK in the consecutive messages that appear. NOTE: To view the settings that have been recently backed up NOR file on the PC, go to Unit Information 1 and Unit Information 2 tabs.

Access the Prism Utility

1. Go to <http://emanuals.nordson.com/adhesives/software/>.
2. Click on **Spectra 30** from the list.
3. Follow the instructions on the web page to download and install the **Prism utility**.
4. Navigate to the downloaded file, **Spectra30_Prism.zip**. Open the zip file, select **Spectra30_Prism.msi** and run it.
5. In the Prism menu you can make changes using options in the following screens:
 - Custom Settings tab, see Figure B-1
 - Alert-Fault Masking 1 tab, see Figure B-2
 - Alert-Fault Masking 2 tab, see Figure B-3

NOTE: Unit Information 1 and Unit Information 2 tabs display the user selected settings and are for reference only.

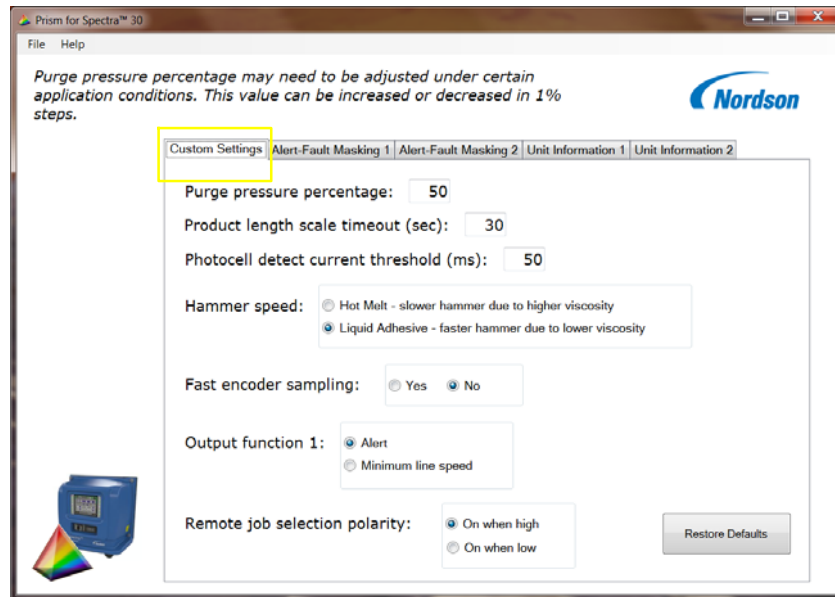


Figure B-1 Settings available in the Custom Settings tab

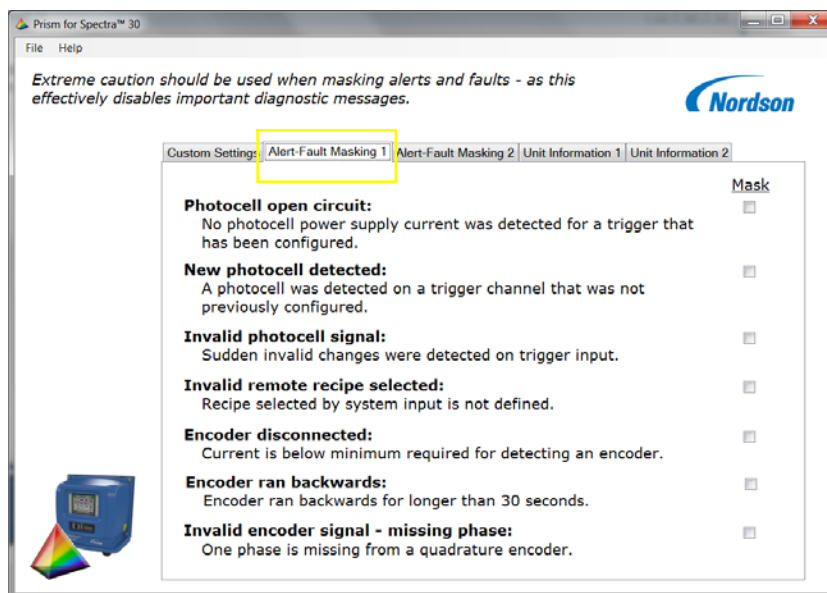


Figure B-2 Settings available in Alarm-Fault Masking 1 tab

Access the Prism Utility *(contd)*

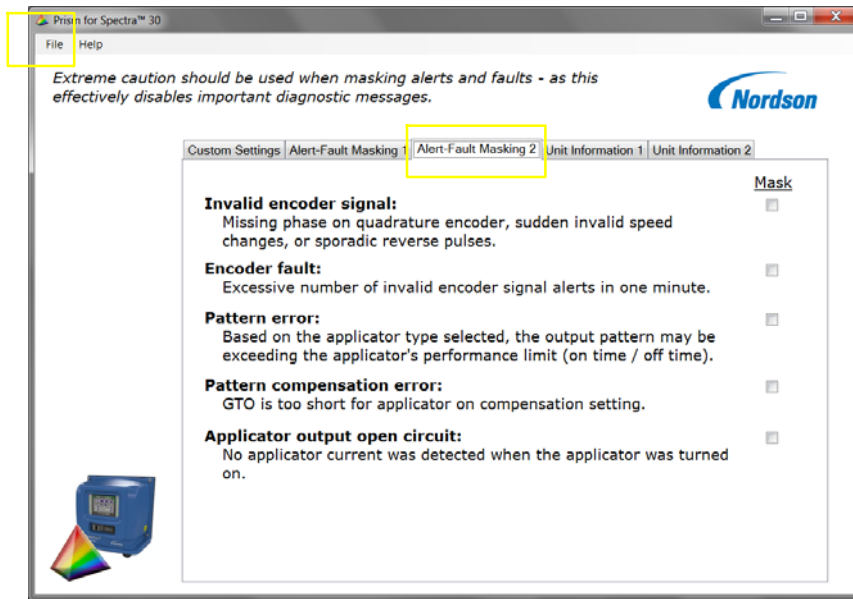


Figure B-3 Settings available in Alarm-Fault Masking 2 tab

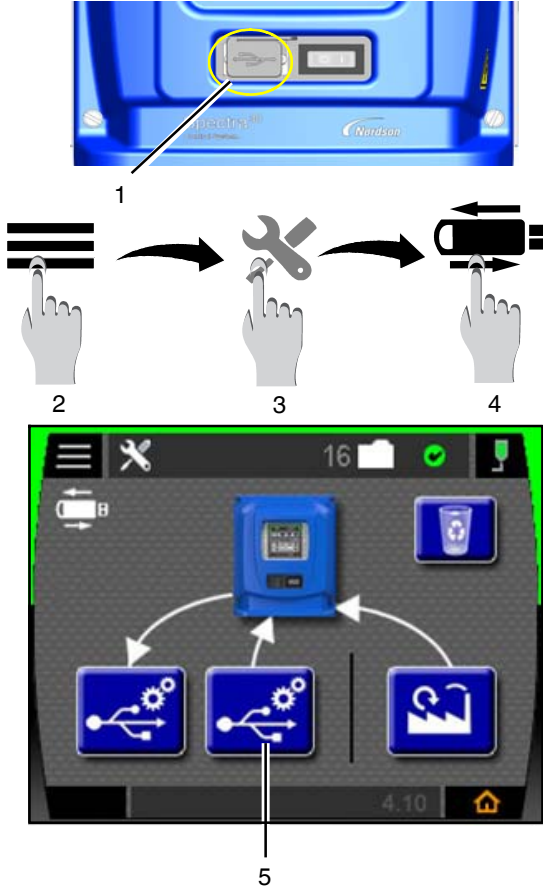
6. After making your selections, navigate to **File**. Select **Create PAT file**. The file is restored to your default Documents folder. Note the file name shown on the screen:

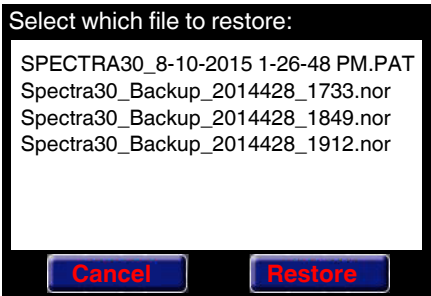
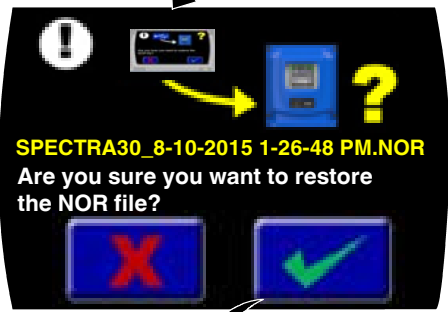
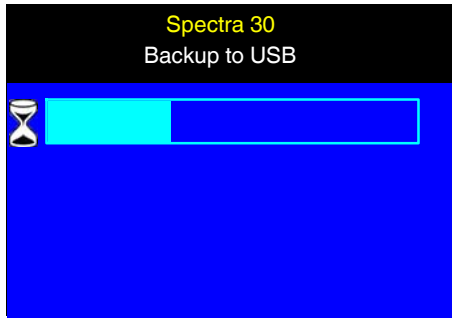
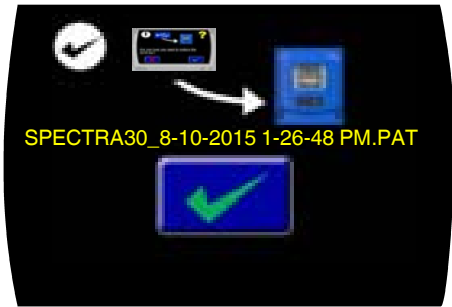
File name format: **Spectra30_1_yyyy-mm-dd_hhmm.pat**

7. Insert a USB memory device in your computer.
8. Copy the .PAT file from your Documents folder to the USB memory device. For instructions on how to restore the file in the pattern controller refer to *Restoring the .PAT File* given next.

Restore the .PAT File

Follow these step by step instructions to save the .PAT file in your pattern controller.

Menus	Action
 1 2 3 4 5	Access System Backup/Restore/Reset: 1 Insert the USB memory device containing the .PAT file in the location shown on the pattern controller. 2 Tap to access the Main Menu screen. 3 Tap to access the Tools Menu screen. 4 Tap the System Backup/Restore/Reset button to access the Backup/Restore/Reset screen. 5 Tap Restore Settings from USB.
	<i>Continued...</i>

Menus	Action
6  7   8 	6 From the Select which file to restore screen, select the .PAT created and then tap Restore. 7 Do either one of the following: • Tap ✓ to allow the selected files to be restored from the USB device to the pattern controller. • Tap X to cancel/bypass this functionality. NOTE: The progress bar screen appears to indicate that the file is being imported into the pattern controller. 8 Tap ✓ to close the dialog box.

Summary of the User Selected Settings

These screens display the user selected settings.

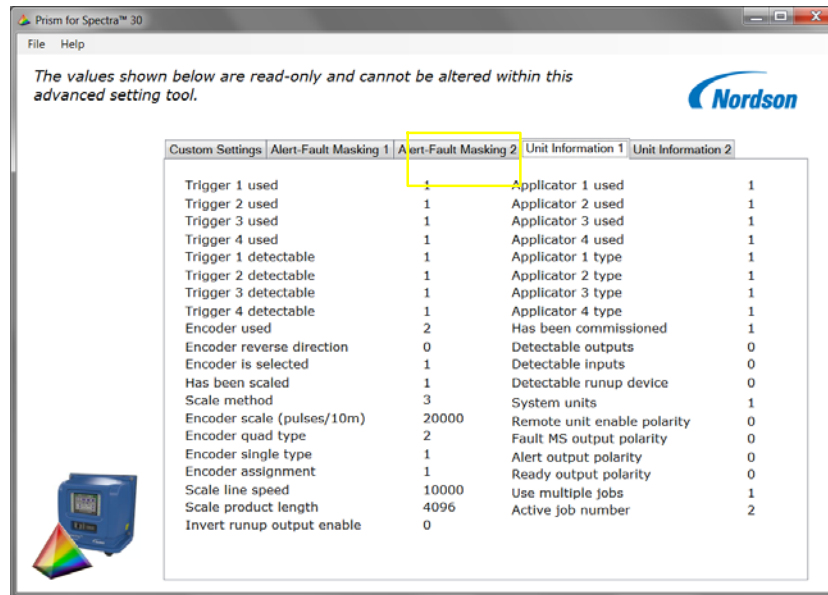


Figure B-4 Unit Information 1 tab

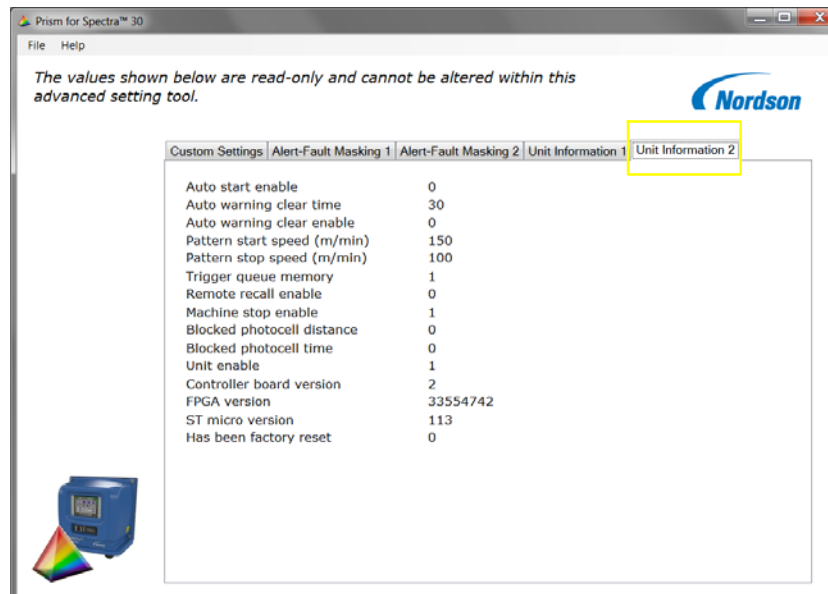


Figure B-5 Unit Information 2 tab

This page intentionally left blank.

Appendix C

Upgrading to Latest Software

Upgrade to Latest Software

The following instructions pertain to upgrading to the latest software available.

1. Insert the USB memory device in your PC.
2. Go to <http://emanuals.nordson.com/adhesives/software/>. The latest version is always available in this location.

See Figure C-1.

3. Click on **Spectra 30** from the list of products.
4. Select **Spectra 30 Control System Software Version X.XXX**.

Upgrade to Latest Software *(contd)*



Figure C-1 Adhesives Software web page

1. Spectra 30 product link

2. Spectra 30 Software download link



Figure C-2 Location for USB memory device

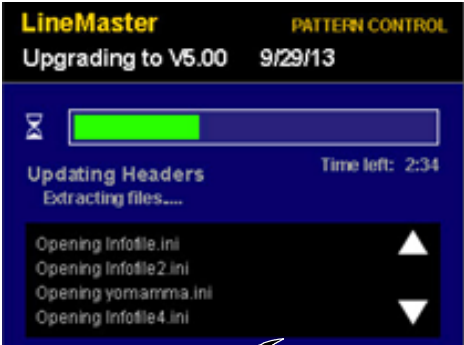
5. Click on the link and select Save As or Save Target As.

6. Select the PC drive where your USB memory device is installed and click Save.

File name example: SPECTRA30_V8.006_D2015-06-18.dat

7. Insert the USB memory device into the Spectra 30 pattern controller. See location in the figure on the left.

8. Follow the onscreen instructions to download the current software.

Menus	Action
a.  b.  c. 	a Tap Install to proceed with downloading the latest software version. b The progress bar screen appears to indicate that the file is being downloaded. c Tap Complete on the System Upgrade Complete screen. d The system will reboot and restart.

Manual Software Upgrade Procedure



WARNING! The internal boards contain energized electrical components with potentials that can cause serious injury or equipment damage. Allow only qualified personnel to perform the following procedures.

Perform a manual software upgrade procedure in case of a failed or partial software upgrade. There are two SD cards that need to be accessed and upgraded:

- Touch screen
- Controller board

Remove SD Cards

Follow these instructions to remove the SD cards from the touch screen and Controller board.

1. Disconnect and remove power from the system.
2. Remove the pattern controller cover by loosening the four M5 captive screws to access the SD cards.
3. Locate the touch screen SD card and remove.

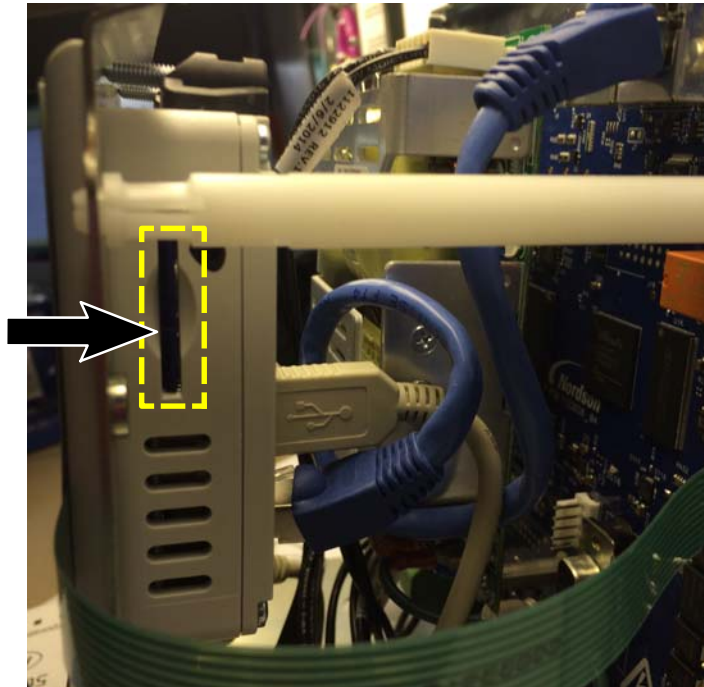


Figure C-3 Pattern controller right side view with cover removed, displaying touch screen SD card location

4. Locate the Controller board SD card and remove.

NOTE: This SD card is located at the back of the board and can be easily accessed from the top.

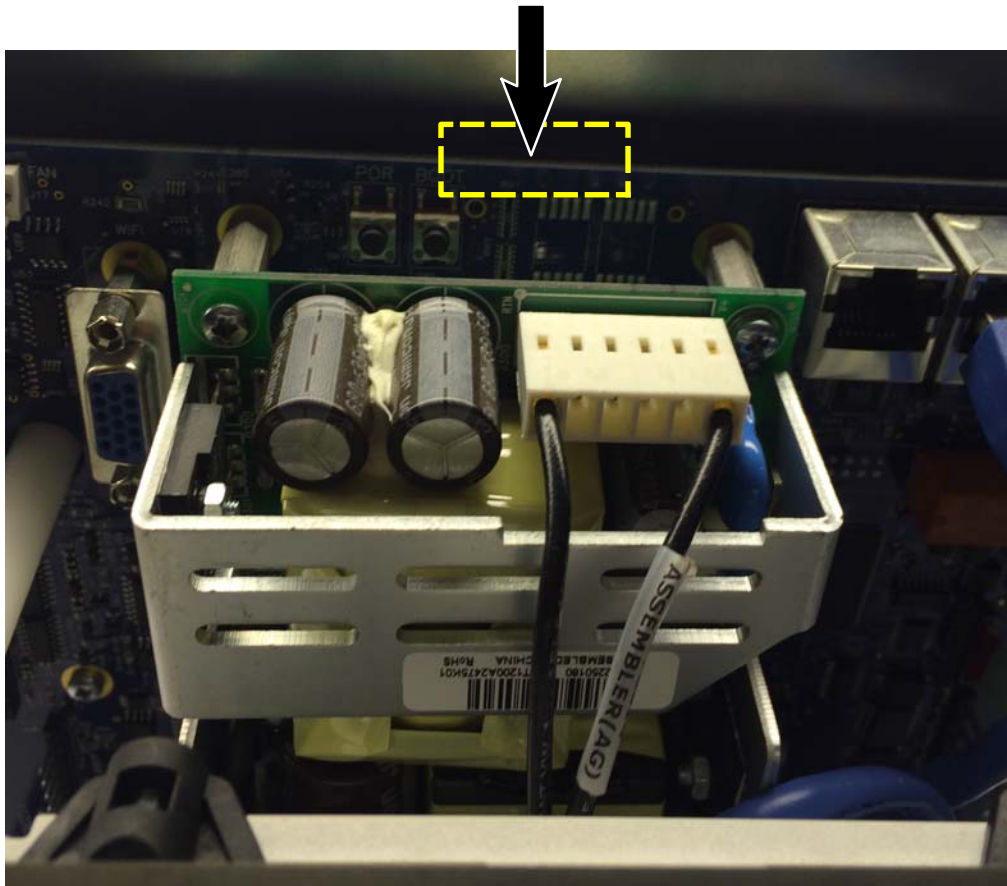


Figure C-4 SD card location on the controller board

Retain both the SD cards.

Upgrade to Latest Software

Follow these instructions to upgrade the SD cards with the latest software.

1. Insert the touch screen SD card using a reader memory device in your PC.
2. Go to <http://emanuals.nordson.com/adhesives/software/>. The latest version is always available in this location.
3. Click on **Spectra 30** from the list of products.
4. Select **Spectra 30 Control System Software Version X.XXX**.
5. Click on the link and select Save As or Save Target As.
6. Select the PC drive where your SD card memory device is installed and click Save. Complete the following:
 - a. Save the software upgrade file (.dat file) onto the root of the touch screen SD card.
 - b. Remove the SD card from the reader memory device when the save function is complete.
7. Insert the Controller board SD card in the reader memory device.
8. Select the PC drive where your SD card memory device is installed and click Save. Complete the following:
 - a. Save the software upgrade file (.dat file) onto the Controller board SD card.
 - b. Remove the SD card when the save function is complete.

Re-install the SD Cards

Follow these instructions to reinstall the SD cards.

1. Reinstall both SD cards with the latest software onto their respective locations. For SD card locations see figures C-3 and C-4.
2. Reinstall the pattern controller cover by tightening the four M5 captive screws.
3. Reconnect power and switch on the pattern controller.

Upgrade will be completed automatically during the power up process.

