



DECOSPECTOR 360™ Training Guide

DECOSPECTOR 360™ Training Guide | 6.2 Software

Copyright Notice / Contact Us

© 2022 Pressco Technology Inc. All rights reserved.

No part of this manual may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, for any purpose, without the express written permission of Pressco Technology Inc.

The contents of this manual are furnished for informational use only, are subject to change without notice, and should not be construed as a commitment by Pressco Technology Inc.

Written and designed at:

Pressco Technology Inc. World Headquarters

29200 Aurora Road

Cleveland, OH USA 44139-1847

TEL +1-440-498-2600

FAX +1-440-498-2615

www.pressco.com

Business Hours: Monday - Friday, 8:00am - 5:00pm Eastern Time

Customer Support:

Request technical support and remote support: techsupport@pressco.com

24/ 7 Customer Support (for urgent system help): +1-440-498-2000

e-mail: Schedule a service visit: dispatch@pressco.com

Request technical support and remote support: techsupport@pressco.com

Customer Service Fax: +1-440-498-4761

Table of Contents

Module 1 Introduction	5
Module 2 Hardware Overview	7
Deco Interconnect Diagram	8
Control Enclosure and Operator Interface Hardware	9
Inspection Module	13
8 Port I-O Box	14
4 Port I-O Box	15
Module 3 Software Overview	16
Control Panel	17
Overview Panel	26
Module 4 System Tools	39
Alarms	40
Rejector - DecoSpector	42
Forced Reject	45
Settings	49
Module 5 Correlation	51
Viewing Correlation Graphs	52
Mandrel Correlation	54
Print Blanket Correlation	55
Module 6 System Maintenance and Troubleshooting	56
Preventive Maintenance Frequency	57
Clean the Control Cabinet Filters	58
Service Frame	59
Use the Service Frame to Lift the Module for Maintenance	60
Clean the Tunnel Windows	61
Replace the Filter-Regulator Filters	64
Best Practices	65
Module 7 Job Management	71
Part Changeover (Part Type Inspected Previously)	73

New Part (First Time Inspecting a Part)	74
Relearn a Job	78
Module 7 Load Part Images	80
Module 8 Color Analysis	82
Color Measurements	83
Color Analysis Graphs	87
Color Analysis for One Color - Automatic Color Mode	89
Color Display Selection	91
Adjust Color Inspection Sensitivity	93
Color Trend Graphs	94
Module 9 Print Quality Screen	98
Retro-Spec Graph	99
Defect Classification	100

Module 1 Introduction

Welcome! Congratulations on your purchase of a Pressco DecoSpector 360™ system! The DecoSpector is an inspection system that performs extensive product quality checks on 100% of the decorated surface area of printed beverage cans.

The DecoSpector system locates the following on cans:

- Printing flaws (voids, spots, smears, cut blanket, etc.)
- Color conformity to specifications (drift, light, dark, contamination)
- Color to color registration (ghosting, shadows, shifts)
- Missing print coat (clear or white)

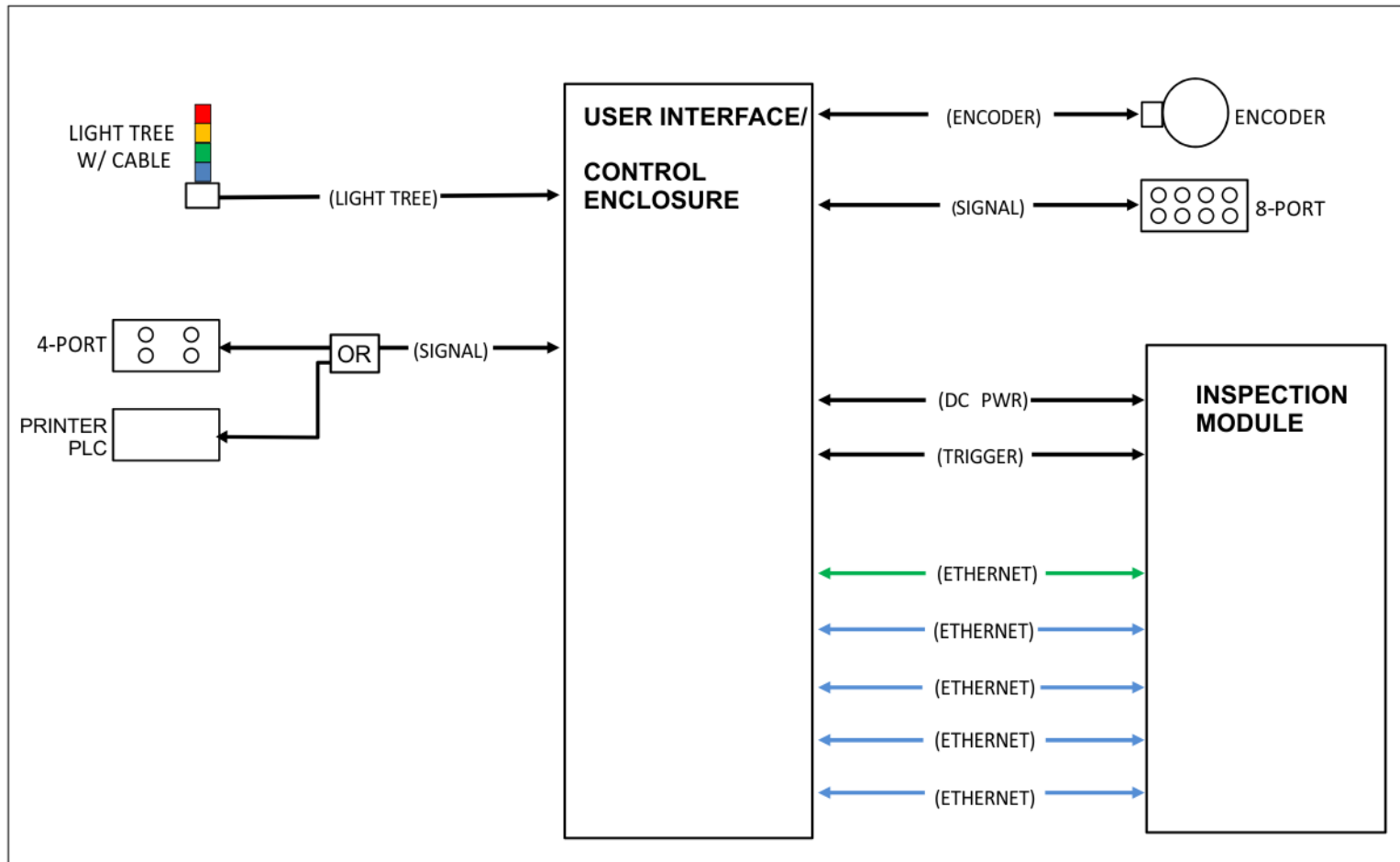
The DecoSpector system correlates defects to print blanket and mandrels, so that you can quickly locate problematic areas and make repairs or adjustments.

The system consists of a touch screen operator interface, a control enclosure, an inspection tunnel, and the associated cables connecting the components.

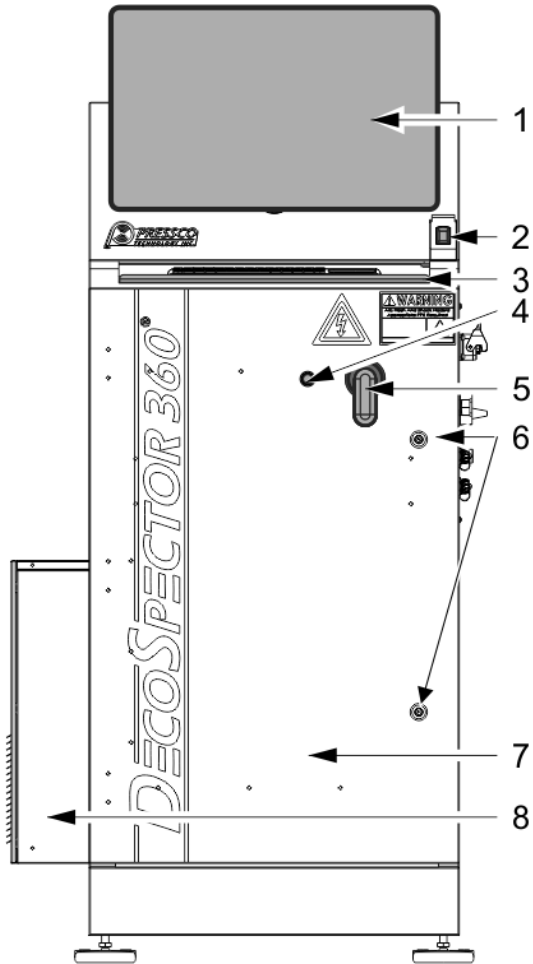
This page left blank intentionally

Deco Interconnect Diagram

This diagram shows a typical DecoSpector 360™ system configuration. Blue Ethernet = Camera. Green = PDN.

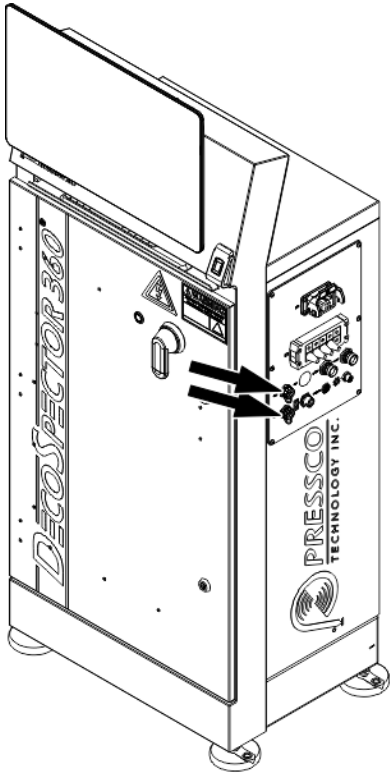


Control Enclosure and Operator Interface Hardware



- 1) Touch screen monitor
- 2) Biometric login device
- 3) Keyboard tray
- 4) Power indicator LED
- 5) Power switch
- 6) Locks (Accessing the internal components with power OFF)
- 7) Vision processor (inside control enclosure)
- 8) Air conditioner

USB Ports



There are USB ports available to back up or transfer data.

Biometric Login Device

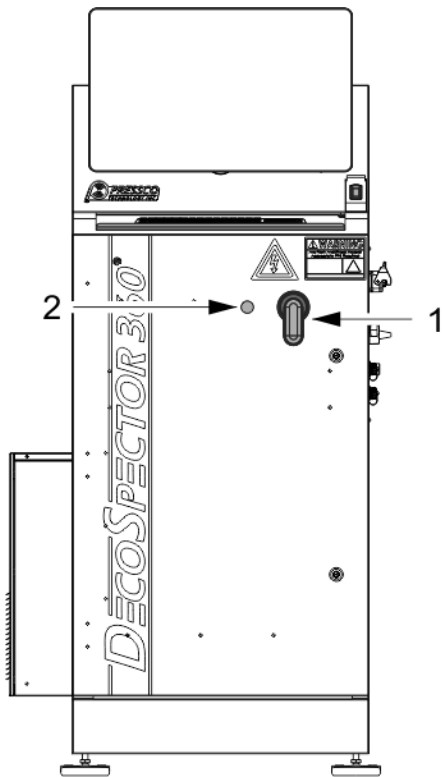
The Biometric Identification login device is used to log in and out of the Pressco system. This device is optional and must be purchased with the system.



To log in with this device, press your finger to the device. The following are conditions for use:

- You must use the same finger as initially set up by your administrator
- If you do not know how your account was set up (or which finger you used), contact your administrator
- If, after three tries, the Pressco does not recognize your finger print, you must log in using the On Screen Keyboard (OSK)

Power On and Off at the Control Enclosure



Power on: Turn on the switch [1] on the front of the cabinet. The power indicator [2] will illuminate. The software will start automatically. (You must log in and put the system online to begin inspection)

Note: it takes about a minute for the computer to start after the main power switch is turned ON

Power off: Turn off the switch on the front of the cabinet. The system, including the computer, shuts down. The UPS shuts down.

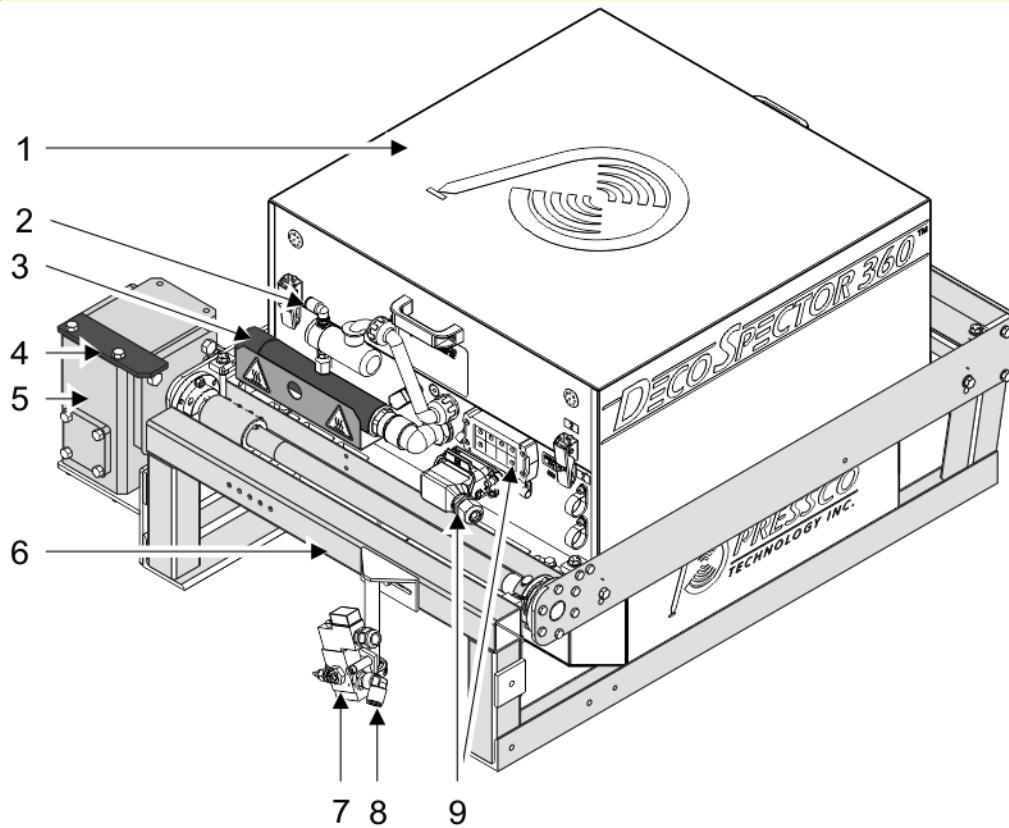
⚠ WARNING - When you shut down power using this switch, there is still voltage present on the UPS inside the unit until it discharges.

! Important - If you want to restart the system, turn off the power, let the software and components completely shut down, and leave the power off for about one minute before turning it back on. This allows the electronic components to correctly reset.

Inspection Module



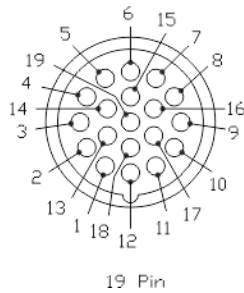
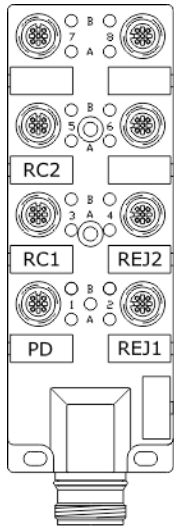
WARNING - Keep hands away from the Vortex cooler [3] to avoid risk of burns.



- 1) DecoSpector 360™ inspection module
- 2) air connection for Vortex cooler
- 3) Vortex cooler
- 4) mechanical stop for the service frame
- 5) gear box for moving the service frame
- 6) service frame
- 7) air connection for the Vortex cooler
- 8) air connection for the rejector
- 9) connection for cables to the control enclosure

8 Port I-O Box

The I/O box is usually mounted near the tunnel. The cable from this box is plugged into the bottom of the control enclosure, connector A. Control Enclosure External Connections



P/D - part detector

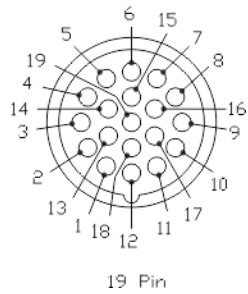
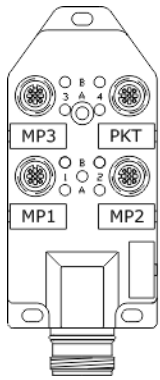
REJ1, REJ2 - rejector 1 and 2*

RC1, RC2 - reject confirm 1 and 2* (optional)

**DecoSpector 360™ does not use rejector 2 nor reject confirm 2*

4 Port I-O Box

The I/O box is usually mounted near the correlation sensors. The cable from this box is plugged into the bottom of the control enclosure, connector B.



PKT - pocket detector

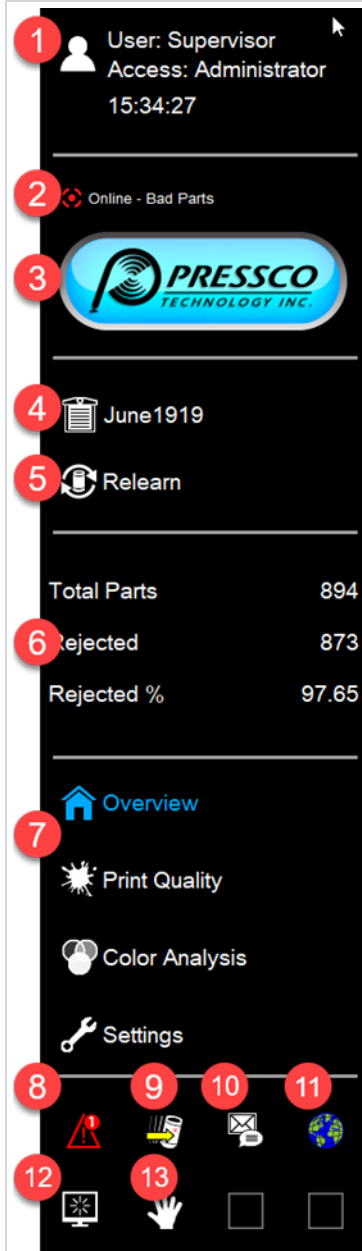
MP1 - MP3 - machine parts. These are configured through Correlation Settings

MP1 = Mandrel

MP2 - Print Blanket


MP3 = Pin Chain

Control Panel



- 1) Log In
- 2) System status
- 3) Online and Offline
- 4) Job Management - to change the part you are inspecting
- 5) Relearn
- 6) Statistics on the Control Panel
- 7) Views from the Control Panel
- 8) Alarms
- 9) Rejector
- 10) Notepad
- 11) Language
- 12) Screen Capture
- 13) Custom Buttons - set up by the Administrator

Log In

 User: Supervisor
Access: Admin

Tap to log in or log out.

If you have a biometric account, press your finger on the biometric device to log in. You must use the same finger that you used when you created the account.

Online and Offline

The button changes depending on system status and whether a user is logged in.



Logged in: System is offline. Tap to put the system online.



Logged in: System is online, capturing images, and/or inspecting parts. Tap to put the system offline.



No user logged in: When you select the button in this state, the system will prompt you to log in.
No user logged in - System is offline.



No user logged in - System is online, capturing images, and/or inspecting parts.

Note: An Administrator can enable or disable the automatic online feature from Settings | System Settings | Go Online After Job Learn.

Statistics on the Control Panel

Total Parts	89
Rejected	0
Rejected %	0.00

Tap the statistics area (more than once) to view more statistics.

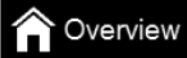
Total Parts	89
Adjacent Cans %	0.00
Register %	2.25



- Press and hold in the statistics area to clear statistics.

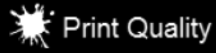
Views from the Control Panel

Select what to display in the Overview Panel (the big part of the screen).



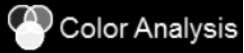
Overview

- Select for the Home screen, or "Overview Panel" on page 26



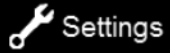
Print Quality

- Select for the "Print Quality Screen" on page 98



Color Analysis

- Select for "Color Analysis" on page 82



Settings

- Select for "Settings" on page 49 such as reject settings and reports

Notepad

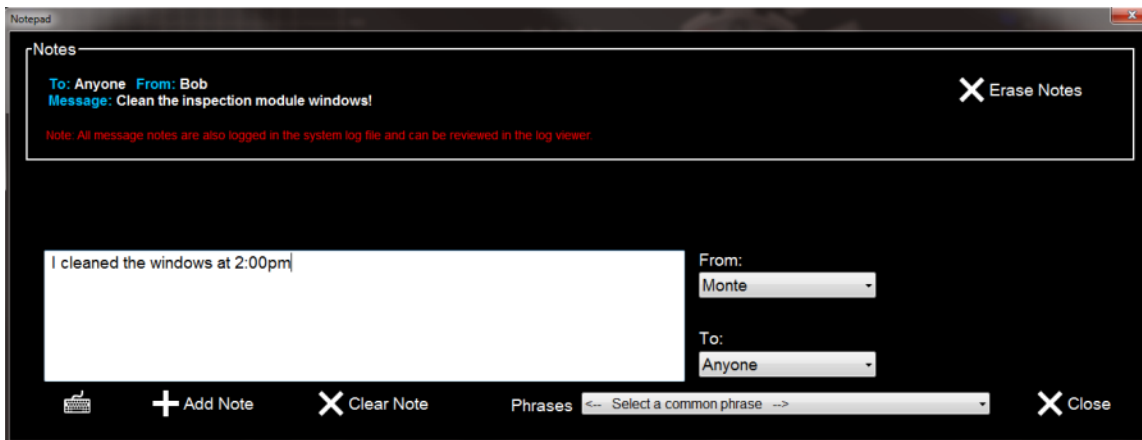


- Add messages to other DecoSpector users. Common phrases (provided from the Phrases drop-down menu) are normally used by Pressco Technicians to leave messages to operators, especially when a remote connection has been set up.

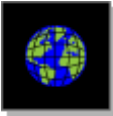


- The icon turns green when you Add Note, then Close the dialog. This notifies other users that there is a message waiting. To remove the green color, select Erase Notes. The icon turns white again. The system saves all messages in the Log Viewer.

Clear Note removes the text in the white box only.



Language



- Select the user interface language. Your language preference is saved with your user account, so your default language is automatically loaded when you log in. This button is normally used to override the current language, or when no one is logged in.

Screen Capture



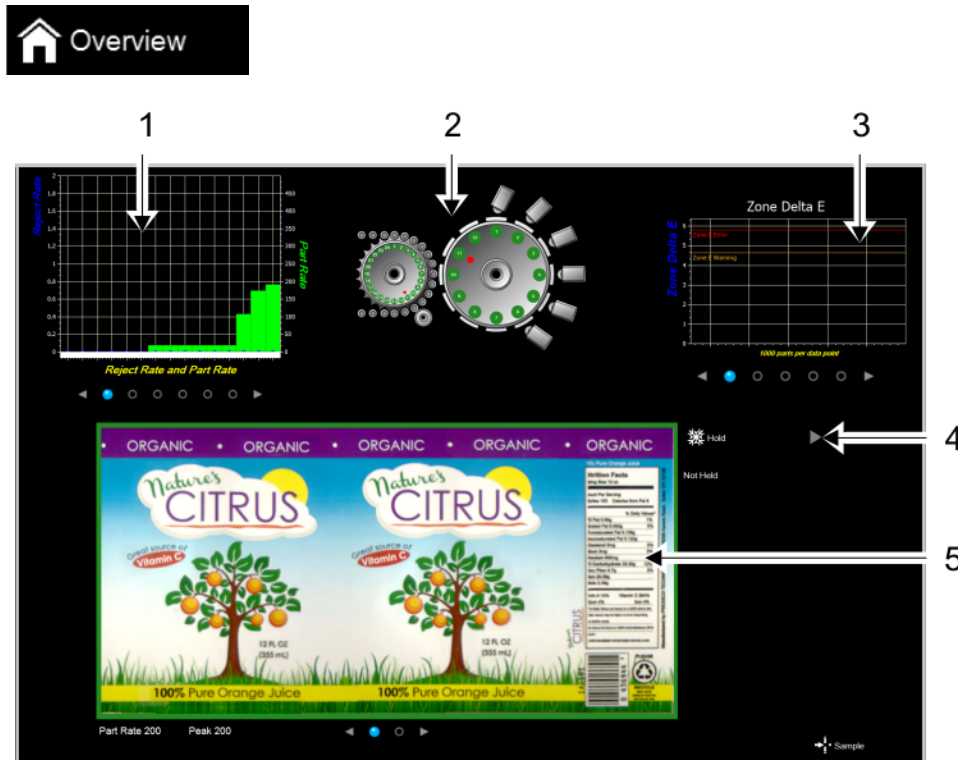
- Capture a screen image for reference, troubleshooting, or to send to Pressco technical support. The system briefly displays the file path after the capture is taken.

Help

Access help from Settings | System Utilities | Help. Displays the Help files.

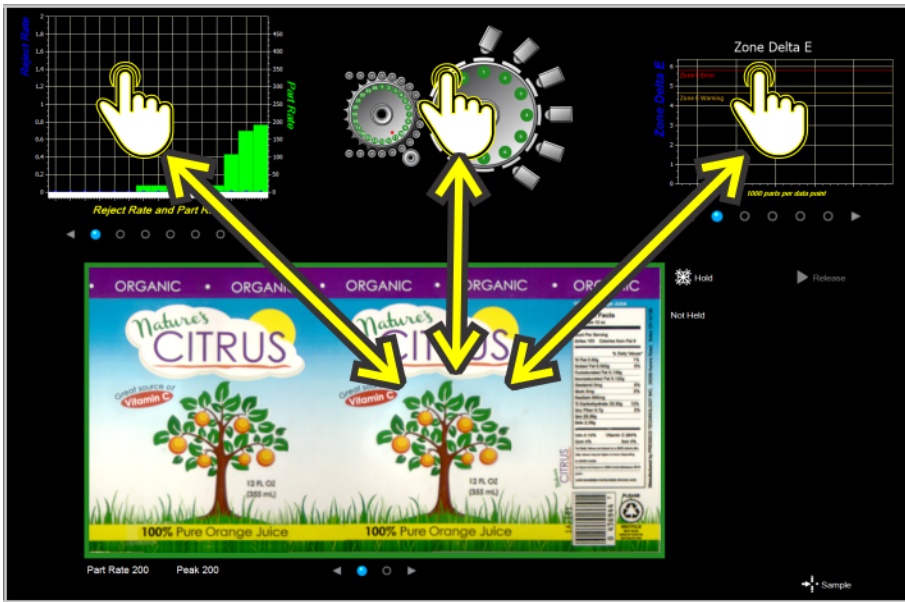
Note: to exit, press the X button in the lower right corner. If the window moves so that you cannot see the X, try pressing the top bar of the help window, and dragging the window up. This allows you to see the controls at the bottom of the screen.

Overview Panel

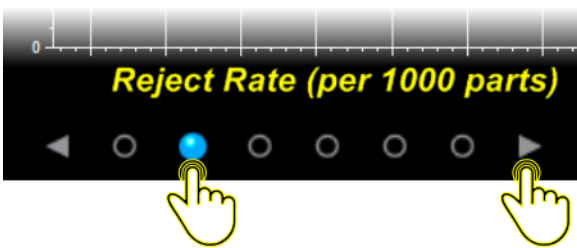


- 1) Statistics Graphs - see "Graphs" on page 28
- 2) "Correlation" on page 51
- 3) "Color Trend Graphs" on page 94 (only if Color Zones are configured)
- 4) You can select what to display from "Overview Display View" on page 50
- 5) "View Live Images and Defects" on page 31

The lower section of the Overview Panel controls system operation and display. When a graph or image is displayed in the lower section, more controls are displayed to the right. Tap a graph or part image in the top section to display it as a large graph or image in the lower section of the panel.



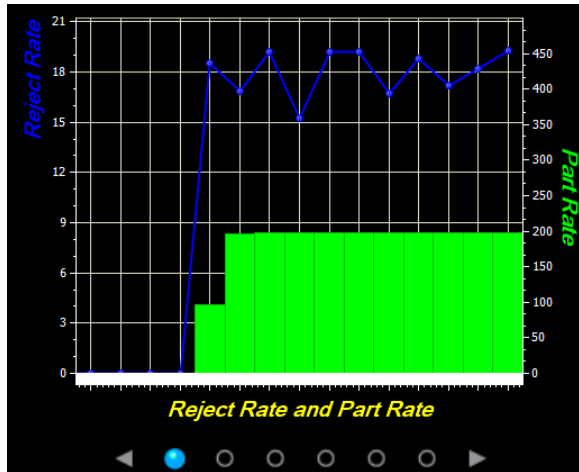
Swipe the graphs or use the buttons to display the different graphs.



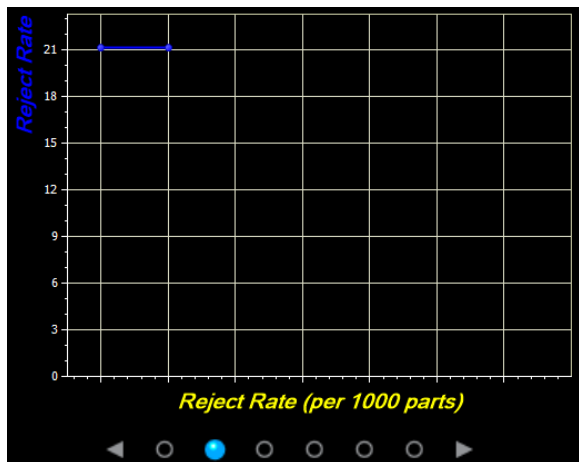
Graphs

The DecoSpector system has several graphs for you to monitor production. The following are examples:

Reject Rate and Part Rate Graph

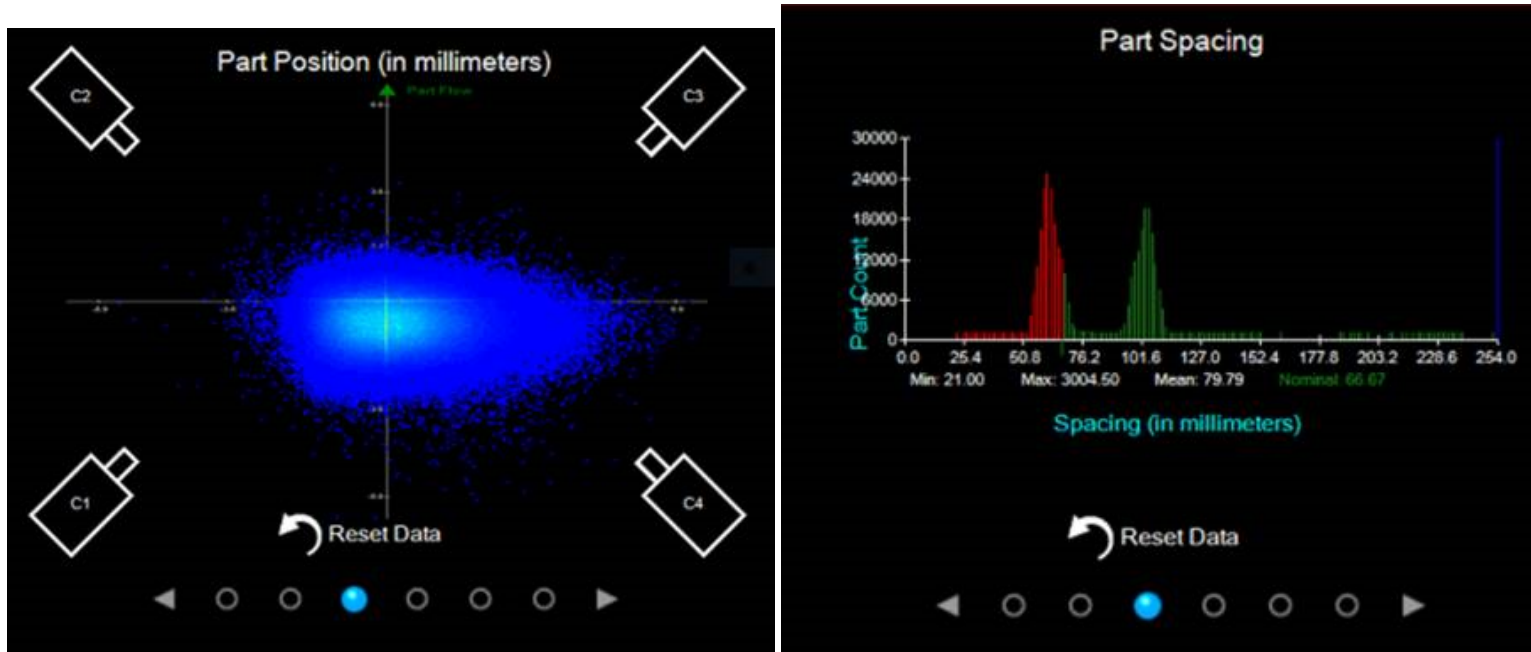


Reject Rate (per 1000 parts) Graph

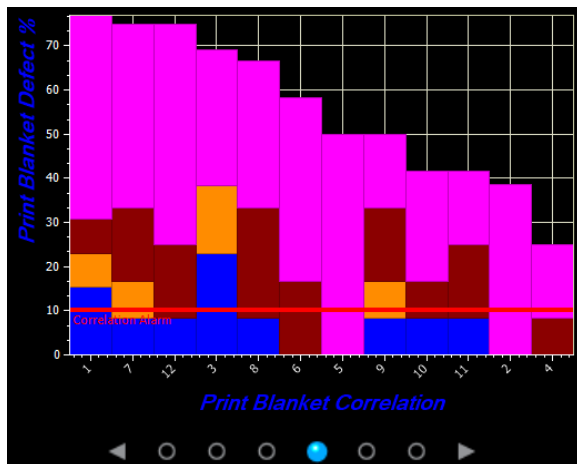


Part Position Feedback

This tool helps determine the position of the part flow, and quality of material handling, within the DecoSpector 360™ tunnel.



Print Blanket Correlation

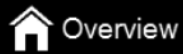


Graphs for Mandrel and Pin correlation are also available.

Statistics Grid

	Count	Percent (%)
Total Parts Inspected	3000	99.569
Total Parts Offline	13	0.431
Total Parts Rejected	443	14.767
Total Parts With Defects	462	15.400
Empty Pockets	0	0.000
Forced Rejects	0	0.000
Part Locate Inconsistency	219	7.300
Adjacent Cans	0	0.000
Out of Round	0	0.000
Registration	219	7.300
Orient	0	0.000
Print Defects	243	8.100
Wrong Color	94	3.133
Scuff	148	4.933
Shadow	0	0.000
Large Color Void	1	0.033
Small Color Void	0	0.000
Color Defects	167	5.567
Missed Acquisitions	0	08/19 18:11
Missed Inspections	0	08/19 18:11
Missed Results	0	08/19 18:11
Encoder Overspeed	0	08/19 18:11

View Live Images and Defects



- View live inspection images.



Put the system online to inspect parts. The live images are updated in the part area. Swipe in the image area or tap the dots below the image to switch between the inspected image and the "error" image. The error image shows only the defects, if any.



To zoom in on the image, use two fingers on the screen and drag apart to see the zoomed image. Then you can pan around the image by holding the image and dragging it on the screen.

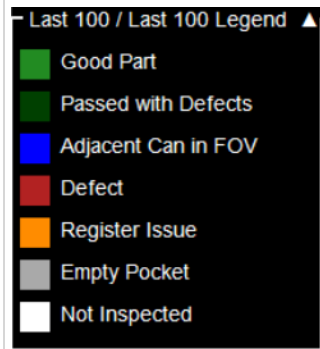
To zoom in using the keyboard, double-left-click on the area desired. To zoom out, double-right-click.

To hold images on screen, use the Freeze on Defect option. ["Hold an Image On Screen" on page 33](#)

Color Borders Around Images

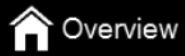
The DecoSpector system displays a different color border around each image depending on the inspection status.

This key is displayed in the "Print Quality Screen" on page 98.



- Green = good part
- Dark Green = a part passed, but it also had defects (example: a shadow detected on a part that had an adjacent can. The shadow is assumed to have been caused by the adjacent can)
- Blue = an adjacent can is in the camera's field of view
- Red = defect
- Orange = registration issue or orientation error
- Gray = empty pocket
- White = part not inspected

Hold an Image On Screen



Use the Freeze on Defect option to hold images on screen.

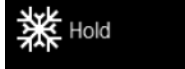


Image is not held. Tap to manually hold.



Image is held.




Tap Release to release the image.

For more options (such as holding defect images automatically), see ["Freeze on Defect Controls" on the next page.](#)

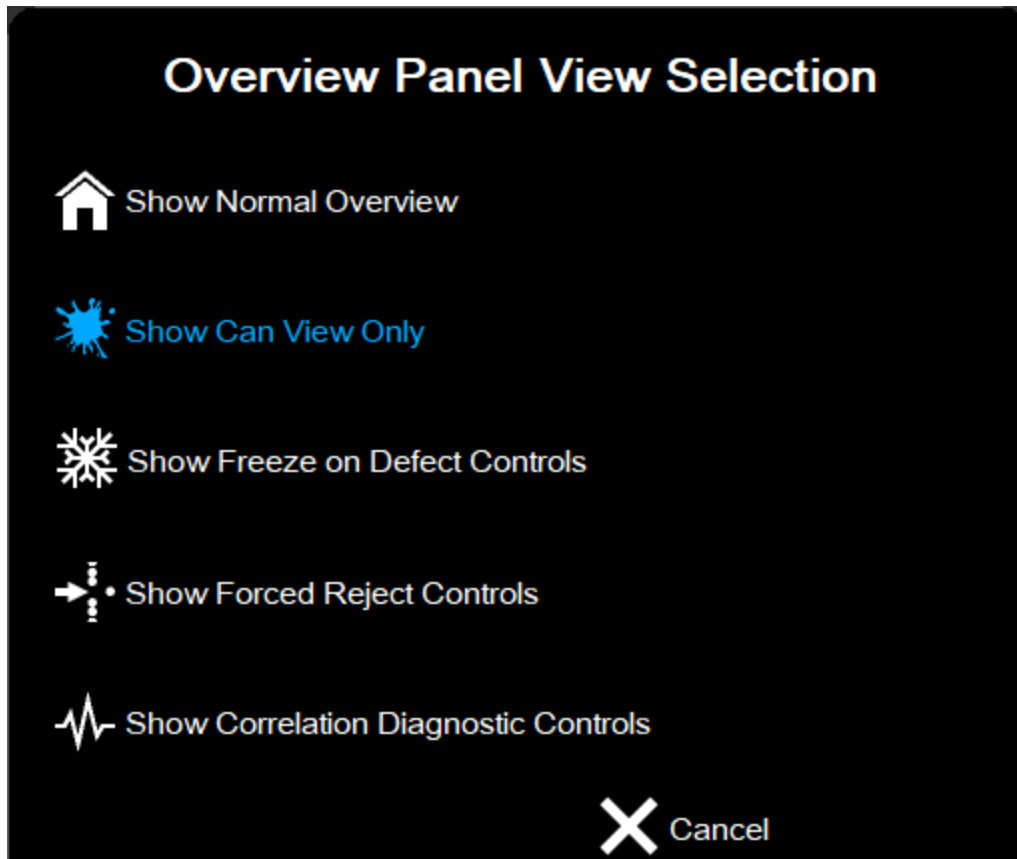
Freeze on Defect Controls

To enable Freeze on Defect Controls:

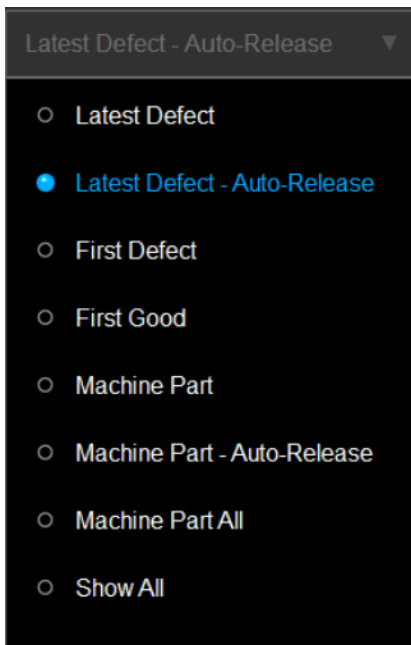
 Settings

 Overview Display View

Enable the controls from the Settings menu: Settings | Overview Display View | Show Freeze on Defect Controls.



The Freeze on Defect Controls are displayed on the home screen. Select when to freeze a defect on screen.



Latest Defect - Freeze the image of the last defective part. Each subsequent failing part freezes on the screen until another part fails.


Latest Defect - Auto-Release - Freeze the last defective image for up to the specified number of seconds, which is selectable next to Release Time.

First Defect - Freeze the image of the first defective part after going online. The image remains on screen until you release it or change Freeze Mode.

First Good - Freeze the image of the first good part after going online. The image remains on screen until you release it or change Freeze Mode.

Machine Part - Freeze the next defective part image correlated to the selected machine part. It remains on screen until the next part correlated to the machine part becomes available and is replaced by the new image. Use the Select button to choose the desired machine part(s).

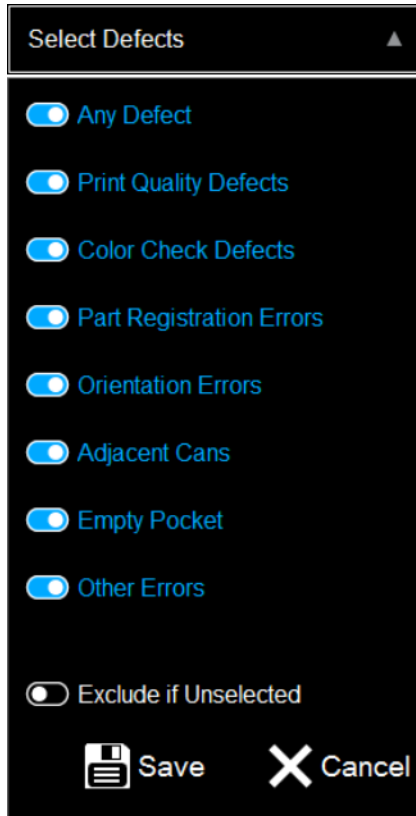
Machine Part - Auto-Release - Freeze the next defective part image correlated to the selected machine part. It remains on screen for the specified time, or until the next part correlated to the machine part becomes available, whichever comes first. Use the Select button to choose the desired machine part(s).

Machine Part All -  Show the part image from the specified machine part(s), whether it passes or fails. It remains on screen until the next part correlated to the machine part becomes available. Use the Select button to choose the desired machine part(s).

Show All - Show all part images, not just the frozen images.

Select Defects controls

Select the type of defects to freeze on screen (used with Freeze on Defect).



= on.

Any Defect - Display any defect.

Print Quality Defects - Display only Print Quality defects, which include: wrong color, scuff, shadow, color void, and too much color.

Color Check Defects - These defects occur when the part fails the tests for Color Zones. Color Zones are optional and are based on your plant specifications.

Part Registration Errors - A registration error occurs when the system does not find the top or side edges of a part.

Orientation Errors - An orientation error occurs when the part is tilted too much. This is also the reason for failure if the system detects a 'tramp can' or wrong label. This check is done automatically by the system.

Adjacent Can Errors - An adjacent can error occurs when the system sees another can (in addition to the can being inspected) in the field of view. The adjacent can may cause shadows or reflections on the part being inspected.

Empty Pocket - The system tests to see if a part is present before proceeding with inspection. If a part is not present, then this is called an Empty Pocket. For accurate production numbers, we need to locate empty pockets. No inspection takes place (for the current part) if the system finds an empty pocket. Empty pockets are found when the system does not locate any feature edges during part location. This can happen if the part is too short, too dark, or there is another severe defect that causes the system not to find the part.

Other Errors - Display other errors that do not fall into the other specified categories.

Exclude if unselected - Do not show the defect types (above) if they are turned off in the menu.

Show Can View Only

This view allows you to view just the can image with details about the part. To see this view, select Settings | Overview Display View | Show Can View Only. The can takes up the entire width of the screen, minus the control panel.

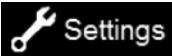


The parts of the screen include:

1. **Print Quality Status:** - This section displays whether the part passed. If not, you will see what made it fail (in this example, a scuff mark).
2. **Correlation:** - This displays the machine parts correlated to the current part shown on screen.
3. **Color Analysis Status:** - If you have color zones set up, you can see whether the part passed color analysis. If you have Show Detailed View enabled (as in our example), you can see the color analysis details for each of the defined colors.
4. **Show Detailed View:** - Shows the color zone information for each of the defined colors (shown in item 3). For more information about Delta E and other values, see "Color Measurements" on page 83.

5. **Hold:** - This is the manual hold button for Freeze on Defect.
6. **Release:** - This is the manual release button for Freeze on Defect.
7. **Latest Defect Hold - or other:** - This shows the Freeze on Defect mode you are currently running.
8. **Sample:** - This allows you to reject one or more parts based on your Forced Reject settings.

Note: To change the Freeze on Defect mode, you will need to go back to the normal home screen.



To go back to the normal home screen: Select Settings | Overview Display View | Show Normal Overview.

Alarms



- Select the alarm icon to clear, configure, or view alarms.

Each alarm is user-configurable to: enable the alarm, turn on the light tree, sound the horn, turn the rejector off, and many other options.

Some alarms, including Inspection speed too slow, General failure, and System power loss cannot be disabled, because they are necessary for system operation.

Clearing Alarms



The alarm icon turns red when an alarm is triggered, and the Active Alarms screen is displayed. The number next to the icon indicates the number of currently triggered alarms.

To see more information about the active alarm, select the alarm name in the left column. More information will be displayed on the right side of the screen.

Select Clear All (or the X) to clear the alarms. If there are no active alarms, no alarms are displayed in the list. If you close the screen without clearing alarms, the alarm icon stays red.

Active Alarms

Active Alarms

Clear All X

Consecutive Defects X

Defects Per N Parts X

Alarm Description:
Defect per N parts

Alarm Cause:
Too many rejects in the last N parts

Alarm State:
Alarm is active and has not been acknowledged.

Trigger Time:
First: June 27, 2016 at 15:05:35, Triggered 1 times
Last: June 27, 2016 at 15:05:35

Active Alarms Alarm Setup Alarm Monitor Alarm History Close

Rejector - DecoSpector

Administrator only



- Tap the rejector icon to change settings.





- This icon indicates that the rejector is disabled.

Reject Settings

Administrator only

To access these settings:

-  - select the rejector button, or
-  Settings | System Calibration | Reject Settings

Reject Settings

Reject Enabled

Reject Missed Results

Reject Registration Errors



Reject Orientation Errors

Reject Out of Round Cans

Reject Color Errors

Reject Empty Pockets

Reject Defects when Adjacent Can is Present

 Save  Cancel

Tip: you can set an alarm feature to Turn the Rejector Off if too many parts are rejected, or some other alarm condition. In Alarms, make sure "Perform Special Action" is enabled for the alarm | and enable "Turn Rejector Off" under Perform Special Action.

Note: Pressco recommends that you enable both Reject Registration Errors and Reject Orientation Errors. These errors are usually found together on deformed cans.

Reject Missed Results - A Missed Result occurs if the system misses the inspection results of a part. This can happen if the inspection time is too long or if the system is too busy to process all the data before the part reaches the reject station.

Reject Registration Errors - A registration error occurs when the system does not find the top or side edges of a part. If the job is set up properly, this does not happen often.

Reject Orientation Errors - An orientation error occurs when the part is tilted too much. This is also the reason for failure if the system detects a 'tramp can' or wrong label. This check is done automatically by the system.

Reject Out of Round Cans - Reject cans that the system determines to be out of round (the rim of the part appears to be an oval instead of a circle).

Reject Color Errors - Color Errors occur when the part fails the tests for Color Zones. Color Zones are optional and are based on your plant specifications.

Reject Empty Pockets - The system tests to see if a part is present before proceeding with inspection. If a part is not present, then this is called an Empty Pocket. For accurate production numbers, we need to locate empty pockets. No inspection takes place (for the current part) if the system finds an empty pocket. Empty pockets are found when the system does not locate any feature edges during part location. This can happen if the part is too short, too dark, or there is another severe defect that causes the system not to find the part.

Reject Defects when Adjacent Can is Present - An adjacent can error occurs when the system sees another can (in addition to the can being inspected) in the field of view. The adjacent can may cause shadows or reflections on the part being inspected.

Adjacent Cans:

Adjacent can detection is impacted by three things:

- Adjacent cans in the Field of View – this is a true material handling issue that cannot be corrected by software, but detected
 - The diffuser is getting dirty – "[Clean the Tunnel Windows](#)" on page 61
 - Bad adjacent can settings – Part Locate Settings
-

Forced Reject

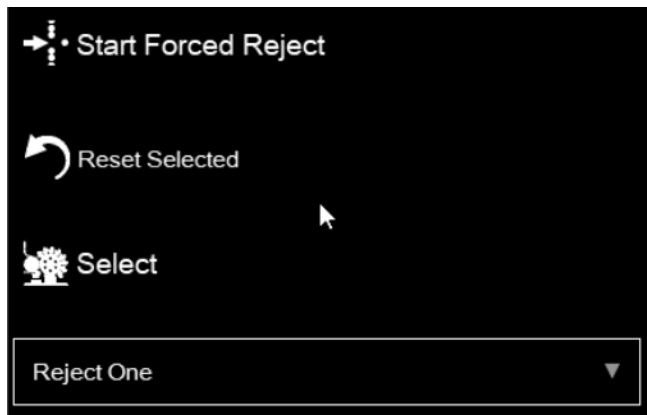
Force any part to be rejected. The system will reject all parts associated with the selected components, regardless of the pass/fail condition of those parts. This provides a means of handling an emergency situation until repairs on machine can be made. If you know there is a serious problem with a particular component, you can use this method to ensure that no part from the defective machine component passes the inspection process.

Tip: Forced Reject can be used for everyday quality checks if you would like to inspect dry cans versus wet cans.

Note: the DecoSpector system must be online to reject parts


To set up Forced Reject:

1. Select Settings | Overview Display View.
2. Select Show Forced Reject Controls. These are displayed on the right side of the home screen.

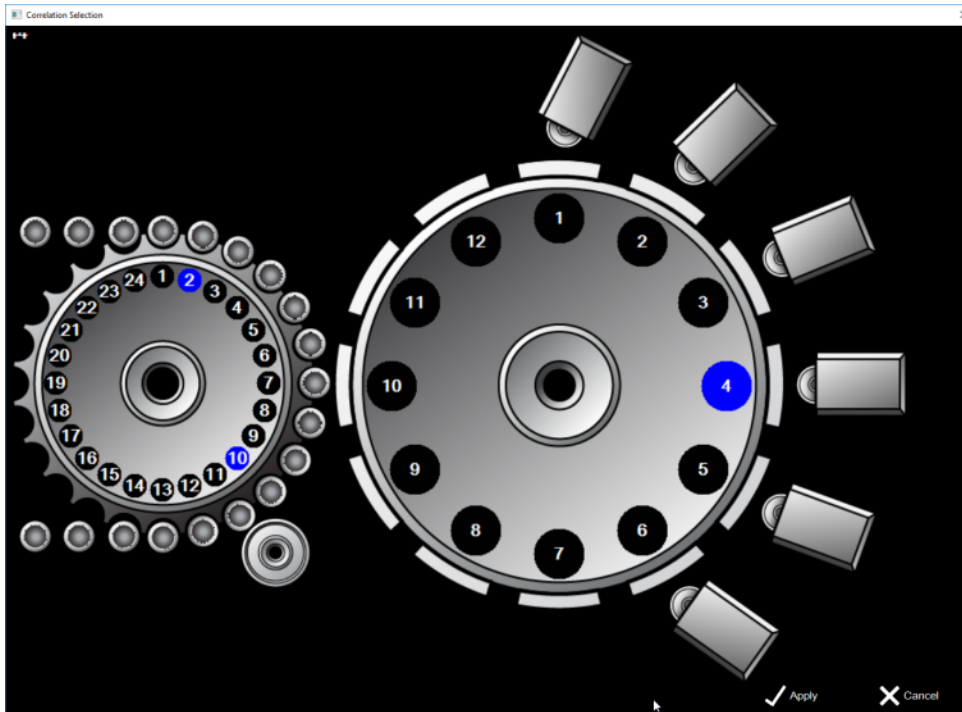


3. To select a different option than what is displayed, select the drop-down menu and make another selection.




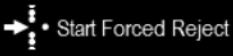
4.  Tap the Select button to select different machine parts. A graphic with machine parts is displayed. [shown below]
5. Tap each machine part that you want reject correlated parts from. In the example below, mandrels 2 and 10 and print blanket 4 are all selected.

Note: even if you select a Forced Reject option such as "Reject One Round of Print Blanket," you can still select other machine parts from the graphic.



6. Tap Apply to save changes and exit. The correlation graphic at the top of the Home (Overview) screen highlights the selected machine parts.

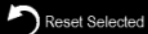
To use Forced Reject:

1.  Put the system online to inspect parts.
2.  Tap the Start Forced Reject button. The system rejects those parts correlated to the selected machine parts and conditions you selected. The border around the part image turns gray when a part is rejected through Forced Reject. A message stating Forced Reject Completed is displayed when all the reject criteria is met.

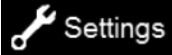


Starting Forced Reject
 [Mandrel = 19, Print Blanket = 1 (1 of 1)]
 [Mandrel = 20, Print Blanket = 2 (1 of 1)]
 [Mandrel = 2, Print Blanket = 3 (1 of 1)]
 [Mandrel = 3, Print Blanket = 4 (1 of 1)]
 [Mandrel = 4, Print Blanket = 5 (1 of 1)]
 [Mandrel = 5, Print Blanket = 6 (1 of 1)]
Forced Reject completed.


Notes about Forced Reject:


-  **Reset Selected** To reset the Forced Reject options to the default values, select the Reset Selected button. (If the system is still in Forced Reject mode, you may need to cancel Forced Reject before making changes)
- The system uses an OR function to reject parts. That is, if you select mandrel 2 and print blanket 4, the system will reject the first part correlated to either machine part.
- When using Reject One or Reject Continuous, you must Select which correlated machine parts to reject.
- When using Reject Next N or Reject N, you can change the number of N parts on the screen by pressing and holding the number next to Reject Count.
- You can add additional correlated machine parts by tapping the Select button and selecting more machine parts.


Settings





- Adjust system settings. A grayed out item means that only higher user levels have permission to access that item.

 Overview Display View

 System Calibration

 System Settings

 System Utilities

 Global Utilities

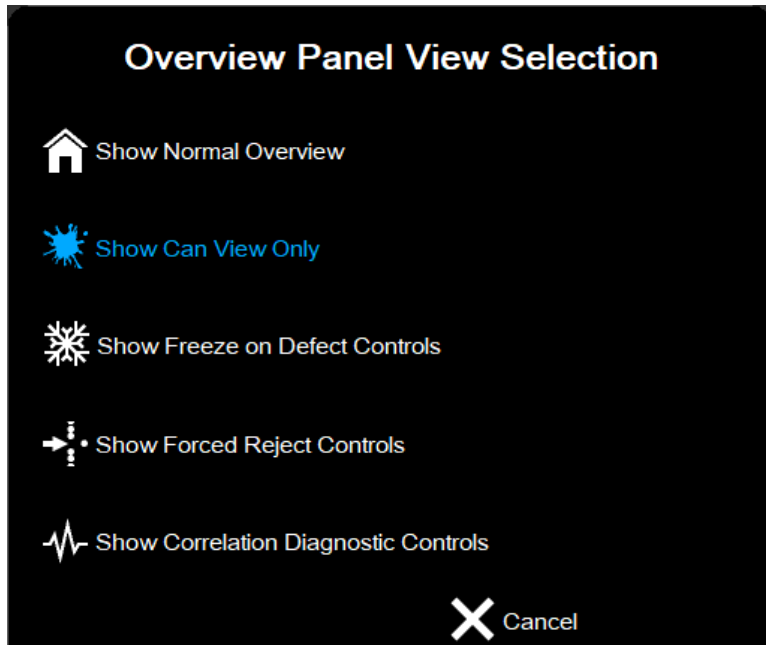
"Overview Display View" on the next page

System Calibration, Settings, and Utilities are for Administrators only.

Exit the Software from Global Utilities.

Overview Display View

Select what to display on the Overview screen. To get to this menu:



Show Normal Overview: - Resets the home screen to default, hiding Freeze on Defect, Forced Reject, and Diagnostic Controls.

Show Can View Only: - This view allows you to view just the can image with details about the part. "Show Can View Only" on page 37

Show Freeze on Defect Controls: - Show the "Freeze on Defect Controls" on page 34 on the home screen.

Show Forced Reject Controls: - Show the "Forced Reject" on page 45 controls on the home screen.

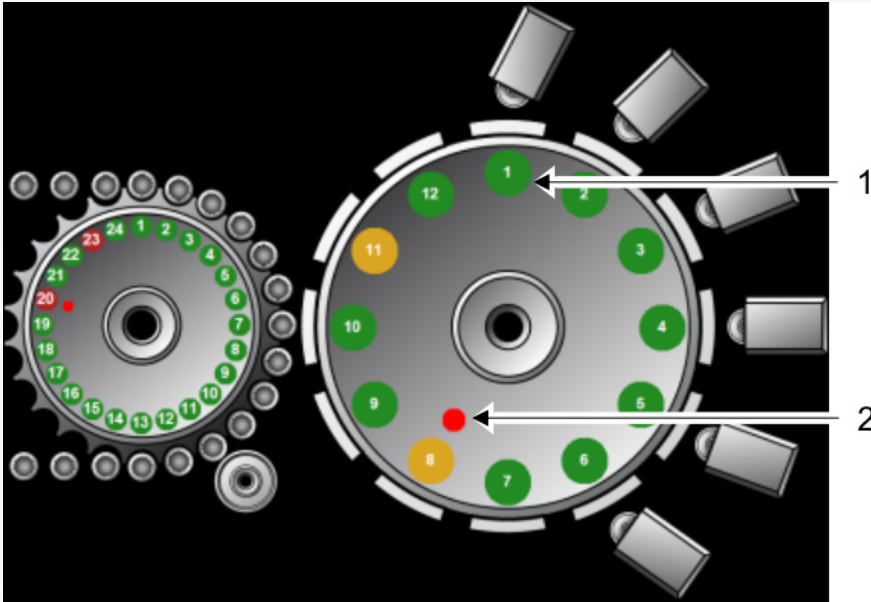
Show Correlation Diagnostic Controls: - Show the correlation value where the current part is, and show that the system is tracking machine parts. Correlation Diagnostics

Module 5 Correlation

The DecoSpector system provides correlation to the following machine parts: Mandrel, Print Blanket, and Pin Chain

Note: Correlation is set up using Correlation Settings. This is usually performed during installation by Pressco.

The correlation graphic on the Home (Overview) screen shows the status of machine parts.



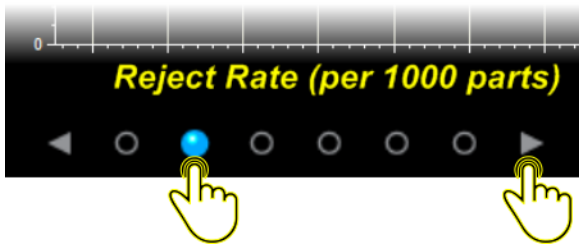
1) The large dots with numbers show the alarm condition of the machine part. The color is dependent on the defect % of each component, and is hard-coded in the software. Clearing statistics resets the color to green.

- Red = alarm condition [$> 10\%$ defects]
- Yellow = warning [$5\% - 10\%$ defects]
- Green = OK. No excessive machine part defects. [$< 5\%$ defects]

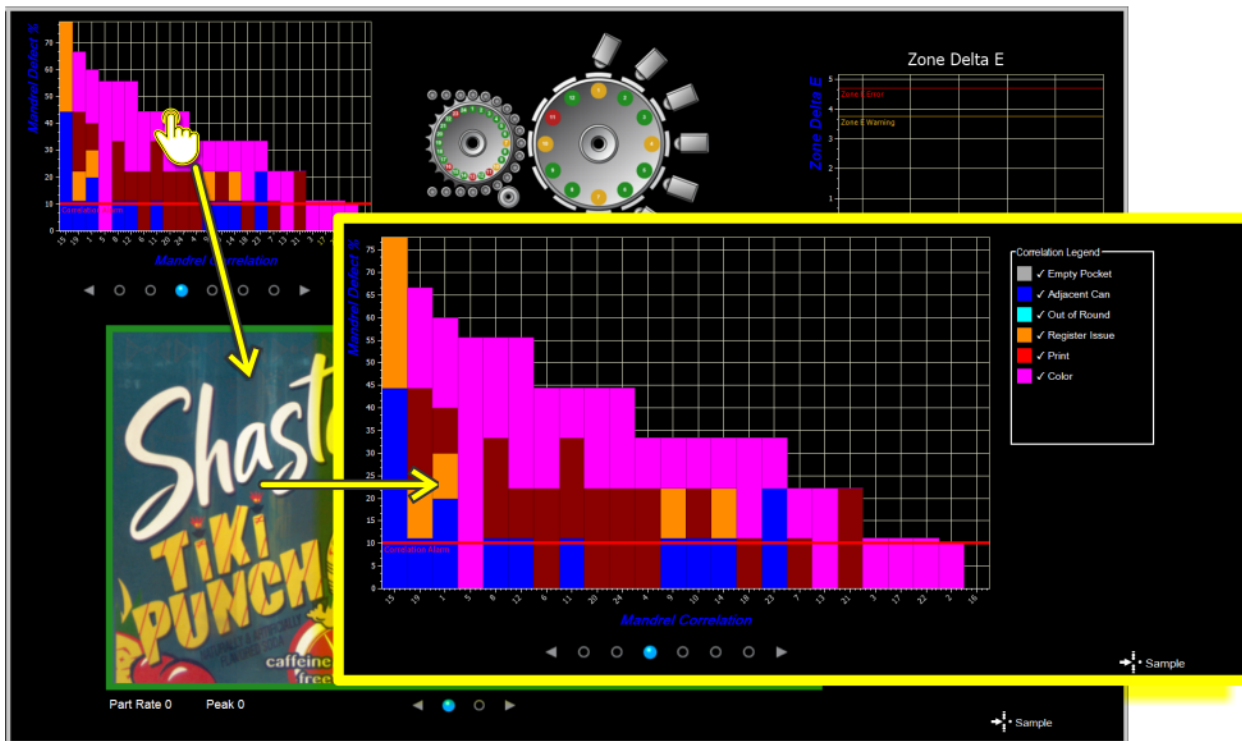
2) The small red dot indicates where the last failing part came from.

Viewing Correlation Graphs

Swipe the graphs or use the buttons to display the different graphs.

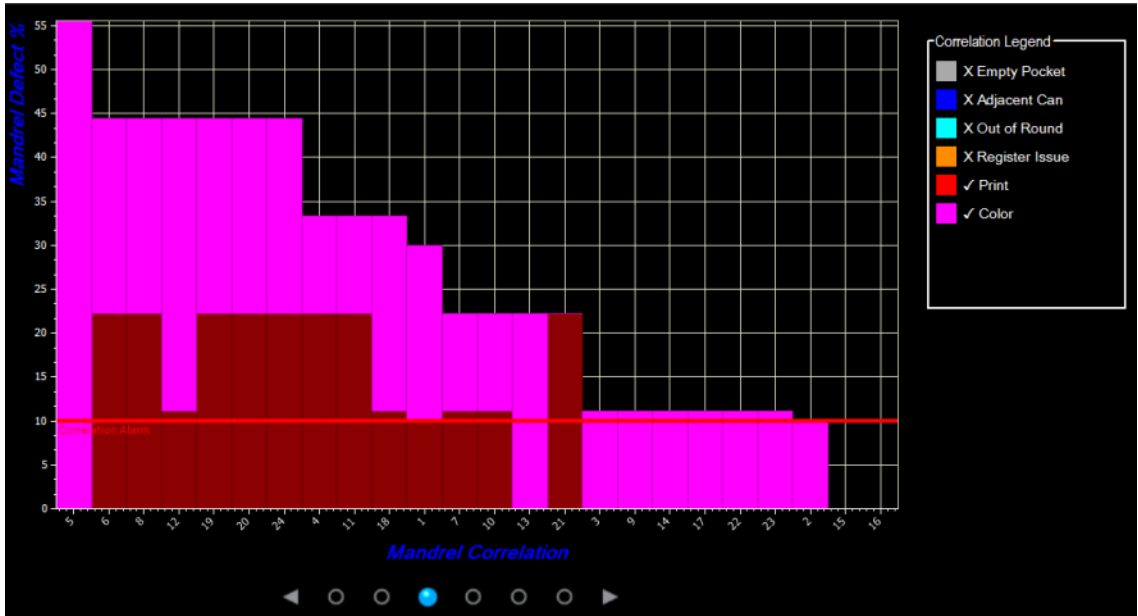


To see a larger graph, click the graph in the upper screen. The graph will be displayed in the lower screen.



The correlation graphs are color coded based on the reason the parts failed. The legend is displayed when you view a larger graph in the lower screen. The legend allows you to filter what you want to see. Click on a color to select or de-select an option. An 'X' means that information will not be shown. In the example below, the Empty Pocket, Adjacent Can, Out of Round, and Register Issue correlation data is not displayed.

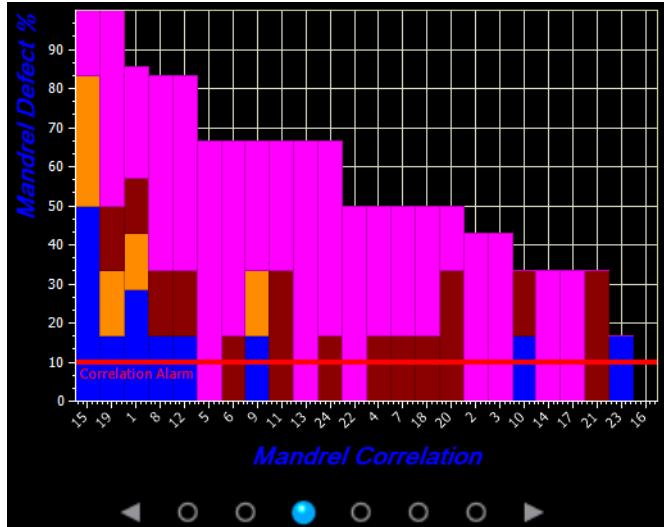
Tip: typically, only Print and Color defects matter, since a mandrel or print blanket have nothing to do with the other defect categories.



Gray = Empty Pocket
 Blue = Adjacent Can
 Cyan = Out of Round
 Orange = Register Issue
 Red = Print Defect
 Magenta = Color Defect

Mandrel Correlation

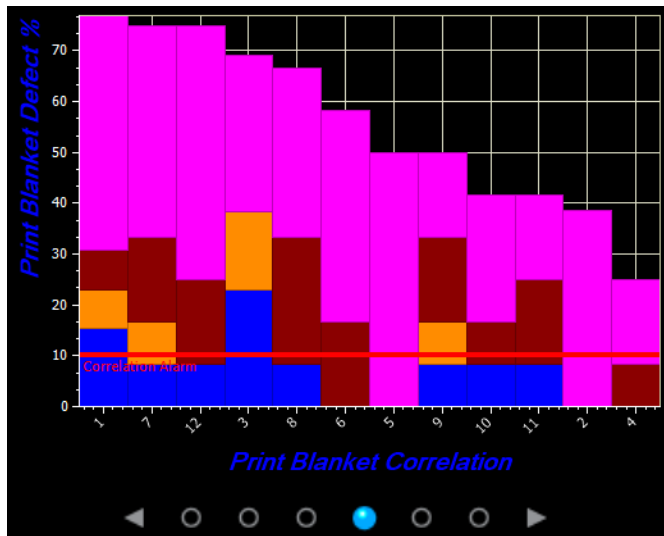
Mandrel Correlation Graph



The mandrel numbers are located on the bottom of the graph. This is sorted in descending order, left to right, from the highest number of failed parts to the lowest number of failed parts.

Print Blanket Correlation

The print blanket numbers are located on the bottom of the graph. This is sorted in descending order, left to right, from the highest number of failed parts to the lowest number of failed parts.



Preventive Maintenance Frequency

! *IMPORTANT - The windows inside the inspection tunnel need to be cleaned regularly. The frequency depends on plant conditions, and could be as much as three or four times per shift.*

Action	Frequency - Number of times per:					Supplies Required
	Shift	Day	Week	Month	Year	
"Clean the Tunnel Windows" on page 61	1					Part number: 74284 - Kit Window Cleaning DS2 (includes plexiglass cleaner and lint-free wipes)
"Clean the Control Cabinet Filters" on the next page				1		Recommended: "RP Super Filter Coat Adhesive." Find this on the Internet or in a hardware store near you.
Replace the two Filter/ Regulator Filters: 30 minutes "Replace the Filter-Regulator Filters" on page 64					3	Part number: 67622 - Kit Oil Removal Replacement Filters

Clean the Control Cabinet Filters

The filter should be cleaned once a month for best results. The filter is located on the side of the cabinet. Replace with a new filter when necessary.

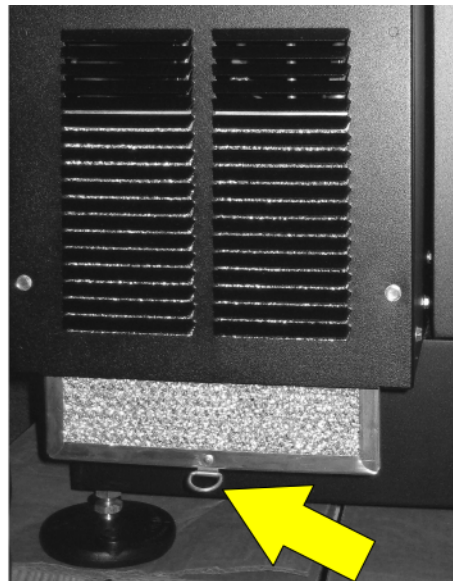
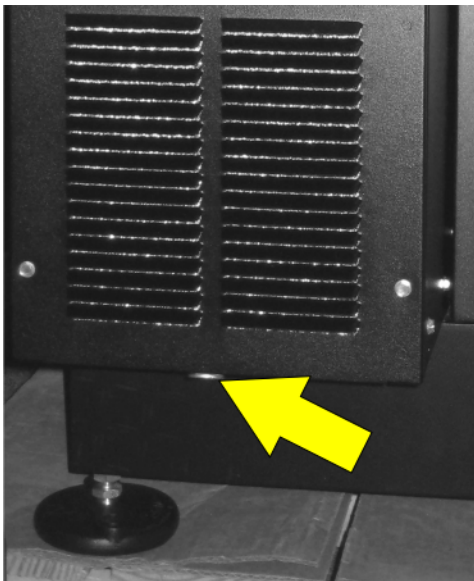
Note: You may need to clean the filters weekly depending on plant conditions

What you need:

Recommended: "RP Super Filter Coat Adhesive." Find this on the Internet or in a hardware store near you.

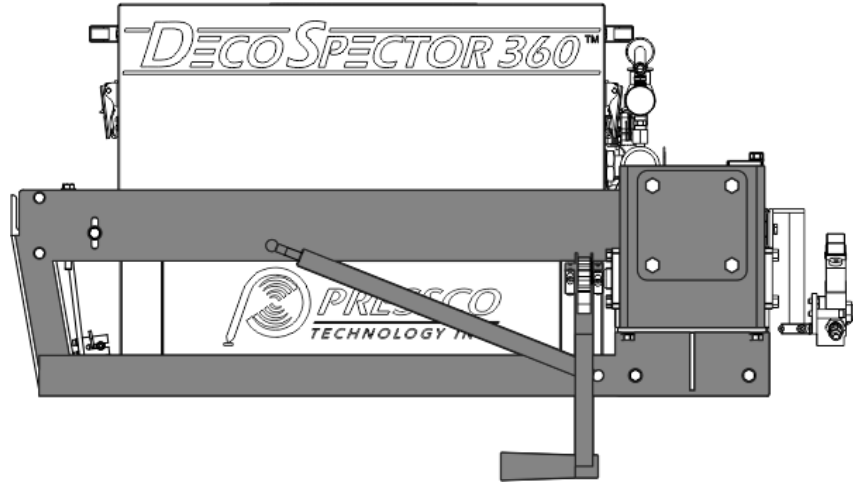
To clean the filter:

1. Pull the ring on the bottom of the filter cover, and pull the filter down to remove it. (see photo below)
2. Remove the filter and clean it. DO NOT use caustic solutions.
 - If the filter contains dry dust and dirt, flush the filter with warm water from the exhaust side to the intake side
 - If the filter contains oily dust and dirt, clean it in soapy water, then rinse in clear water
3. Dry the filter completely [placing it with a corner down will assure complete drainage].
4. Recoat the filter with "RP Super Filter Coat Adhesive." Spray both sides for best results.
5. Place the filter back inside the filter cover.



Service Frame

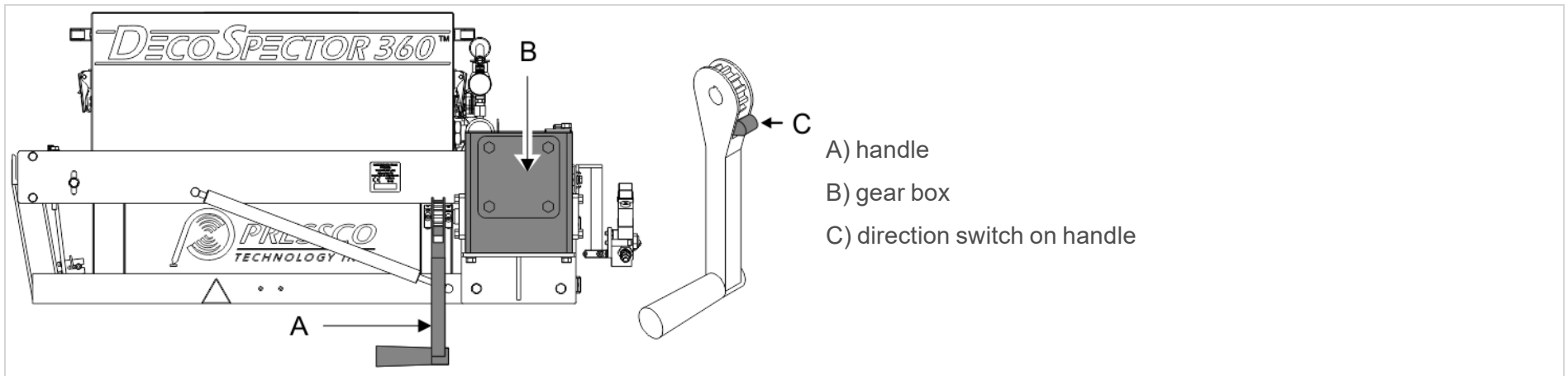
The service frame is used during inspection module maintenance and calibration.



- ⚠ WARNING** - This product contains no operator serviceable parts. Contact Pressco for service. How to Contact Pressco
- Do not open the gearbox enclosure. Oil may spill from the gearbox if it is opened.
 - KEEP OFF the service frame. The service frame is not for lifting persons.
 - KEEP OUT from under the raised service frame until it is secured by the locking device.

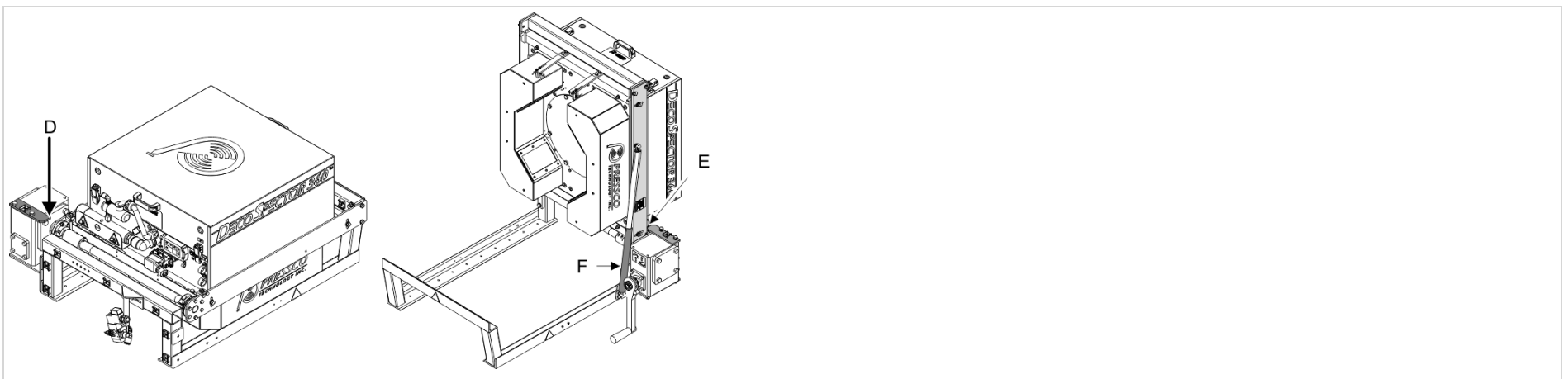
Use the Service Frame to Lift the Module for Maintenance

1. Use the handle [A] to lift the module. Turn handle [A] clockwise = module moves up. The handle contains a ratchet device, allowing movement in only one direction at a time.
2. Move the module up until it reaches the stop position [D].
3. Clean the module windows and perform other maintenance procedures as necessary.




When you are finished with maintenance:

1. Push to release the locking mechanism [F].
2. Use the switch [C] on the handle to change directions.
3. Crank the handle [A] to lower the module. Turn handle [A] counter-clockwise = module moves down.



Clean the Tunnel Windows




The inspection tunnel windows need to be cleaned at least once per shift, depending on plant conditions.

 **Important** - Debris and contamination could build up on both the glass and plastic surfaces. This dirt could appear in the inspection windows, causing false rejects of parts, missed defects, or it could degrade lighting. Clean glass and plastic surfaces often.

What you need:

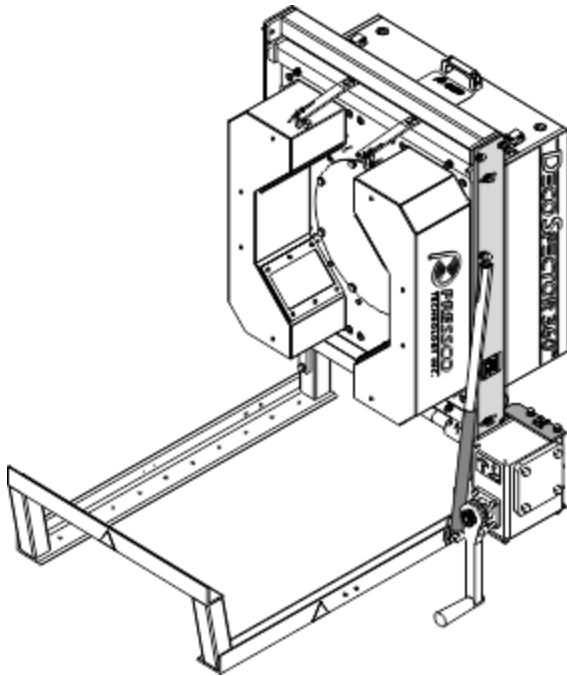
- Soft, clean, oil-free cloths
 - Recommended: Part number: 81945. It includes one bottle of lens cleaning solution and one box of lens cleaning wipes.
 - You may use supplies already in your plant, designed to clean safety glasses, such as Uvex Clear S463 liquid lens cleaner, with Honeywell Uvex Clear Lens Cleaning Tissues
- Mild soap and water solution
- Flashlight to see inside tunnel area
- Stopped production line - only for a short time when you swing the tunnel open and closed

Do NOT use:

-  Regular paper towels to clean the surfaces. These may scratch the surfaces or leave lint.
-  Alcohol-based solvents. These may damage the plastic surfaces.
-  Harsh chemicals. These may damage multiple surfaces.

To clean the windows:

1. Ensure the production line is stopped, and the area surrounding the tunnel is clear (of people, parts, equipment).
2. Turn the service frame handle clockwise to move the tunnel up and away from the production line.
3. Push the locking mechanism into place.



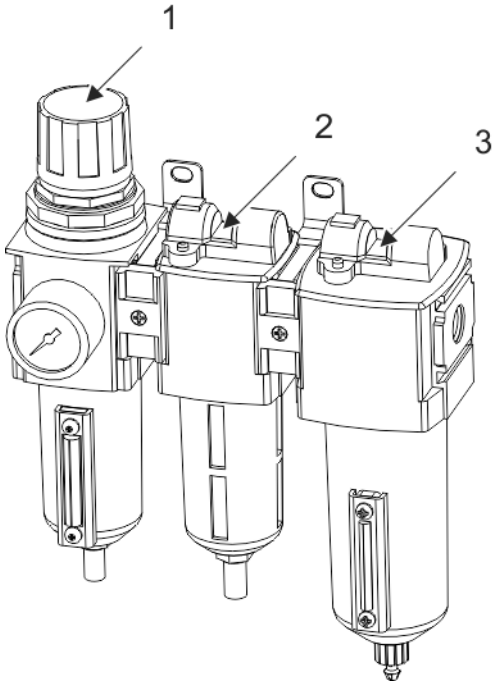
4. If desired, signal to someone in your plant to restart production, while you clean the windows.
5. Using a soft cloth and mild cleansing solution, clean all inspection and lighting windows inside the tunnel. Make sure all grease, oil, and other debris is removed.



6. If you have started production, signal to someone to stop it again.
7. Push to release the locking mechanism on the service frame.
8. Flip the switch to change directions of the service frame.
9. Crank the handle to lower the module back into place.
10. Start production.
11. Select the Relearn button in the DecoSpector 360™ software, so that the system learns parts with the newly cleaned windows.

Replace the Filter-Regulator Filters

The filter/ regulator assembly shown below is installed with the inspection module. Replace filters.



	Pressco part number	Description	Replace at least:
1		Filter/ regulator. No filter change necessary.	
2	67620	Filter oil removal	Every 2000 hours
3	67621	Filter oil vapor removal	Once per year
	67622	Kit (contains one each of 67620 and 67621) It is easier to replace both of these filters at the same time	

Best Practices

This section includes practices you can use regularly to keep the DecoSpector 360™ and the inspection process running smoothly.

How to Avoid False Rejects

Learn and Adjust:

- Use the Relearn button to relearn the part.
 - If the system is not programmed to go online automatically, select Show Templates.
 - If the system automatically goes online, select the Print Quality button, load images, select Options, then select Show Template Mean Images
 - If the templates look OK (that is, there are no gaps or smears, and the image looks clear), then adjust the defect size and sensitivity through the Print Quality screen
- After the learn is complete, load the last 100 defects and last 100 images in the Print Quality screen
- Review the latest defects and determine if the DecoSpector is rejecting good/ sellable cans. If it is, find the failing classification (in red) and adjust size and sensitivity accordingly.
- Review the last 100 images and determine if the system is missing any defects. If it is, then adjust the defect size and sensitivity to the proper error threshold to reject bad cans.

Defect Size vs. Sensitivity

Defect Size is the count or total area of defective pixels found over the entire view of the can. It is not just a count of the number of pixels. Instead, the system uses a weighted pixel count to help identify the severity of the defect as well.

Sensitivity is used to determine which pixels in an image are defective. It is important to set the sensitivity properly.

- Anything below the sensitivity value is considered good
- Anything above the sensitivity value is considered bad
- A very high sensitivity will detect very severe defects, but it will completely ignore a defect that is not as severe, even if that defect covers a very large area of the can. Not all deco defects show up as a severe change, so we strongly advise against using extremely high sensitivity values.
- Example: if the normal good can contrast is 45, then do not use sensitivity values of 100 or more. The system would see no defects if they show up between 45 and 100.

Voids (Small vs. Large)

Small voids: to detect small ink voids, use a low defect size (20 - 50) and mid defect sensitivity (45 - 65).

Large voids: to detect large ink voids, select a high defect size (300 - 1500) and low defect sensitivity (35 - 55).

Adjusting for the System Missing Defects

If the DecoSpector is missing defects on your parts:

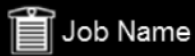
1. Load the last 100 images in Print Quality.
2. Locate the classification that is detecting a difference from the current can and the label template. This will show up as a spike in the green area below the unwrapped image.
3. Adjust the defect size and/ or the sensitivity threshold to a value that best detects the missing defect, and still allows the good cans to pass.
4. Save the new settings.

Troubleshooting the Can Line

How to use secondary correlation to identify the root cause of the defect.

- Bodymaker: if the system is rejecting cans with a body defect, identify the BMID and alert the manager on duty in that department. If the rejected cans have the same body-maker ID, then the cause is probably that body maker. If the ID numbers are mixed, then there may be a can stuck somewhere in the conveyor system damaging cans as they go by.
- Trimmer: if the system is rejecting for trim hairs, identify the BMID of the bad trimmer and alert the manager on duty in that department
- Washer: if you see cans that have too much acid or too little acid in the washer, or washer waves, or ink voids caused by water droplets from the washer, alert the manager on duty in that department
- UV Rim Coat: if you see ink voids caused by UV splatter, alert the manager on duty in that department
- Blanket Defects: if the system is rejecting cans for a tear in the blanket, dents in a blanket, creases in the blanket, or worn blankets, stop the line and replace all blankets. NOTE: you can also used "**Forced Reject**" on **page 45** to reject a specific blanket or mandrel continuously.
- Pin Chain: if the system is rejecting for top edge defects, you may have a bent pin or the pin chain timing may be off

Module 7 Job Management



- Tap the job name icon (in the control panel) to open the job menu.

Note: You will learn new cans each time you change production. When you save a job, the lighting and inspection settings are saved.

The screenshot shows the Job Management interface. On the left, a list of jobs is displayed, with 'Can 011618' selected. On the right, a 'Job Options' menu is open, listing various actions with numbered arrows (1-9) pointing to them. Below the menu, the 'Selected Job' and 'Loaded Job' information is shown, along with images of the respective product labels.

Number	Icon	Option	Description
1	New	New	Create a new label
2	Load	Load	Load selected label into system -- Ready to run
3	Relearn	Relearn	Collect new images -- Relearn label
4	Color Zones	Color Zones	Configure color zones -- Add, delete and position
5	Inspection Zones	Inspection Zones	Configure inspection sensitivity zones -- Add, delete and position
6	Setup	Setup	Manually configure the label
7	Rename	Rename	Change the name of the label
8	Delete	Delete	Remove the label from the system
9	Copy	Copy	Make a copy of the job

Selected Job: Can 011618
12 ounce Standard
Standard Can
Last Loaded On: No Information

Loaded Job: Shasta Tiki Punch
12 ounce Standard
Standard Can

ORGANIC * ORGANIC * ORGANIC * ORGANIC * ORGANIC

100% Pure Orange Juice

Shasta Shasta
TIKI PUNCH

Close

1) **New** - New Part (First Time Inspecting a Part)

2) **Load** - in the left column, select the job or label you want to inspect, then select Load "**Part Changeover (Part Type Inspected Previously)**" on page 73

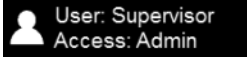

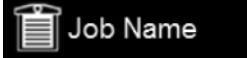
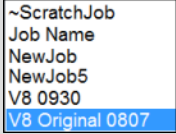
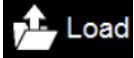
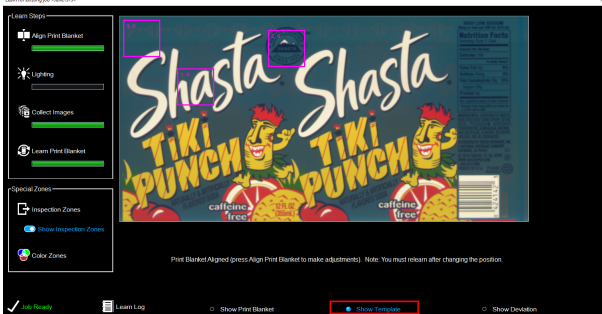


3) **Relearn** - Relearn the label

- 4) **Color Zones** - If your system uses automatic colors, then you will not see this option.
 - 5) **Inspection Zones** - Increase or decrease sensitivity on portions of the label
 - 6) **Setup** - Advanced Job Settings *Pressco Technician access only*
 - 7) **Rename** - rename the job or label
 - 8) **Delete** - remove the job or label from the system *Administrator only*
 - 9) **Copy** - make a copy of the job or label
- Job Learn Settings - *Pressco Technician access only*

Part Changeover (Part Type Inspected Previously)

If you have inspected a part type previously, you will change the Job and relearn the part.

To change parts:

Step	Button or Menu Item
1. Log in to the Pressco system. (Operators may change part jobs.)	
2. Make sure the system is offline, so the button face is not blue.	
3. Select Job icon (in the Control Panel) to open Job menu.	
4. Select the job name of the part you want to inspect.	
5. Select Load to load the job. The icon turns blue while the system loads the job. Wait until the job is loaded.	
6. Select Relearn. Wait while the system learns the label.	
<p>7. Select Show Templates*. Make sure the images are clear, and they resemble your label. If not, select Relearn again.</p> <p>*You will only see Show Templates if the system is not programmed to go online automatically. An Administrator can enable or disable the automatic online feature from Settings System Utilities Go Online After Job Learn. An Administrator can enable or disable the automatic online feature from Settings System Settings Go Online After Job Learn.</p>	
8. Select Job Ready to close the Learn menu.	
9. Put the system online.	

Note: the learn process may take much longer than normal if part handling is not correct. If there are physically damaged cans, off center cans, or adjacent cans in the image, then the system will have difficulty learning the can label.

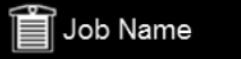
New Part (First Time Inspecting a Part)



Log in. Take the system offline (so the face of the button is not blue).

Allow the production line to run so that the system captures part images.

To create a new job:

1.  Select Job Name | New from the Job Management menu. Wait while the system automatically detects the parts. The system automatically determines the best can size and can style settings to use with the new part.

If your system is set up to stop learning while you review this dialog, you can review the parts it is learning, select whether to check to see if the cans were from the current job, or select Abandon to continue. (If there is only one part size in the system, then the Learn Auto-Detect process is ignored.)

Loaded Job: June1919

Current Part



Can Size Name: 12 ounce Standard

Can Style: Standard Can

Auto Detect is Completed

Part 20: Can Size is not Calibrated yet.
 Transitioning to the Best Can Style phase.
 Loaded Can Size <12 ounce Standard>
 Find Best Can Style --> Looking for a part to run color analysis on.
 Restore Job <12 ounce Standard> Settings
 Auto Detect is Completed

Can Size Summary

Can Size <12 ounce Standard> is optimum setup <95.00 %> of the time.
 Can Size <021018 part size> is optimum setup < 0.00 %> of the time.
 Can Size <12 ounce nonstandard> is optimum setup < 0.00 %> of the time.
 Best Can Size is <12 ounce Standard>.

Can Style Summary

'Bare Aluminum' color percentage < 0.03 %>, (Bare Aluminum Threshold is 5.00 %).
 Average Can Color <RGB (82.1, 101.9, 98.1)>.
 'Standard' Style Delta L < 0.88>.
 'Dark' Style Delta L < 3.70>.
 'Light' Style Delta L <-3.51>.
 This is a 'Standard' can.

Detection Complete - Found Information

Skipping Check for Current Job

Can Size Name: 12 ounce Standard

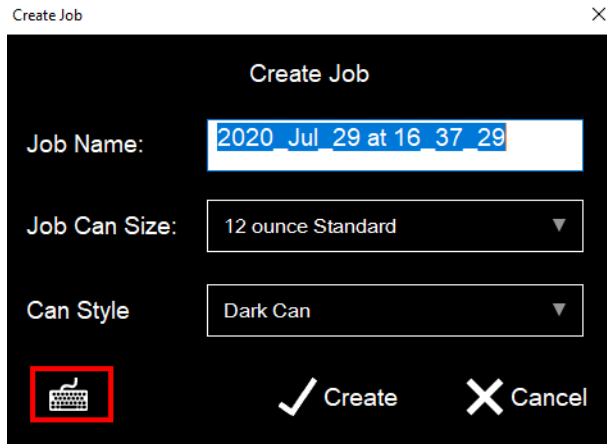
Can Style: Standard Can

✓ Continue

✗ Abandon

If your system is set up to automatically proceed, then the next dialog will appear.

2. The system provides a default name with the date and time. Rename, if desired, using the on screen keyboard.



3. Select a Job Can Size and Can Style. Select Create.
4. Wait until the system prompts you to align the print blanket. Select OK. To learn how to align the print blanket, see [Align the Print Blanket](#).



5. Align the print blanket and select Save Alignment.
6. If your system is configured to "Go Online After Job Learn,"* then you are finished. The system automatically finishes learning and goes online to inspect parts.

The system collects part images, adjusts lighting, and creates templates. The system saves the templates, which are used as the standard to which it compares inspected parts during online operation. The system will post a message that says Learn Deco Finished.

If your system is not configured to "Go Online After Job Learn:"

1. Select Show Template. Make sure the images are clear, and they resemble your label. If not, select Relearn again.

Learn for existing job <June1919>

Learn Steps

- Align Print Blanket
- Lighting
- Collect Images
- Learn Print Blanket

Special Zones

- Inspection Zones
 - Show Inspection Zones
- Color Zones

Print Blanket Aligned (press Align Print Blanket to make adjustments). Note: You must relearn after changing the position.

Job Ready Learn Log Show Print Blanket Show Template Show Deviation

2. Select Job Ready to finish the learn process.
3. Put the system online to inspect parts.

Note: An Administrator can enable or disable the automatic online feature from Settings | System Settings | Go Online After Job Learn.

Relearn a Job



Relearn job icon

Use Relearn:

- during part changeover, when a job already exists
- if you have been running the same part for several hours, to detect subtle process changes
- if inspection is not working correctly. First, "[Clean the Tunnel Windows](#)" on page 61, and then Relearn. If the windows get dirty over time, this can affect inspection performance.

To use Relearn:

Select the Relearn icon from the home screen or Job menu. The system will automatically collect part images, go through Pre-Calibration and Part Fixture steps*, and then go online to inspect parts.**



Note: the learn process may take much longer than normal if part handling is not correct. If there are physically damaged cans, off center cans, or adjacent cans in the image, then the system will have difficulty learning the can label.

*Pre-Calibration only occurs if the job can size is not already calibrated. The system may prompt you to align the print blanket, only if the consistency data for the part is out of specification. Move the image so that it looks like your print blanket.




**The system must be set up to go online automatically. If not: Put the system online to inspect parts.

Note: An Administrator can enable or disable the automatic online feature from Settings | System Settings | Go Online After Job Learn.

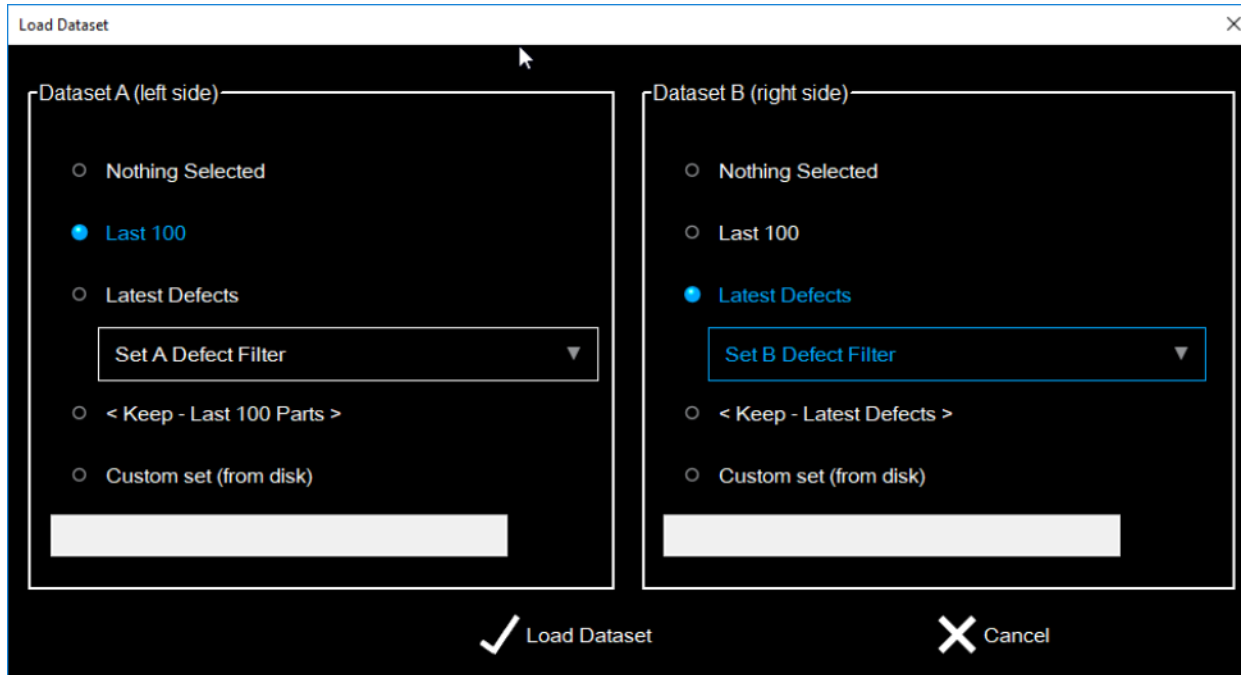
Module 7 Load Part Images

Note: The images must already be saved to system hard drive, or have occurred within the last 100 parts inspected.

To load part images (in Print Quality or Color Analysis):

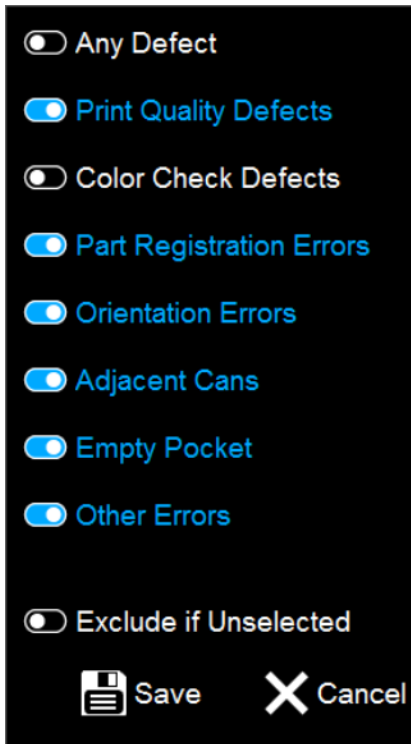
1.  - Tap the load icon.
2. Select images to load for Data Set A (left side of the graph) and Data Set B (right side of the graph).

Note: when you select Custom Set (from disk), up to 49 images from the selected folder are loaded.



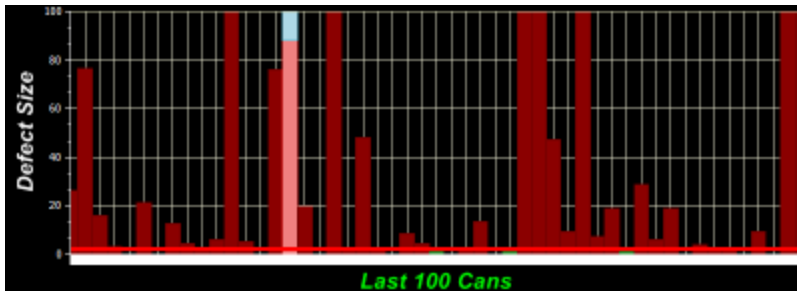
Tip: Look at the Last 100 images, in addition to Latest Defects. If you only look at the latest defects, you may be missing parts that are just barely passing, that you want to reject.

3. If you select Latest Defects, you can filter which defects you want to see. Make your selection from the drop-down menu:



Any Defect switches all options on or off.

4. After the images are loaded, tap one of the bars at the top of the screen to see the corresponding image, which is displayed below the graph. In the Color Analysis screen, the graph looks different than below. You can select any point on the graph to select a part.
5. Select Load Dataset and WAIT until the system finishes loading the images. (**LOADING** is displayed during the load process. The name of the data set is displayed when loading is complete)



Module 8 Color Analysis

Color Analysis

This section describes how the system monitors your part's colors. The colors (or zones) need to be defined when the job is created or updated.

 *To view anything on this screen, you must load a fresh set of images. See "[Load Part Images](#)" on page 80*

The system sets up colors using either Automatic or Manual colors. This is set up during installation.

Color Measurements

The DecoSpector 360™ takes several color measurements. Use the measurement that best matches your plant's color measurement process.

In the following examples, the "standard color" is Blue: RGB: 28, 82, 162. The color squares represent different measured values. The numbers under the squares represent the number shown on the scale to the left of the DecoSpector graph.

Your standard colors are computed when the system "learns" your parts.

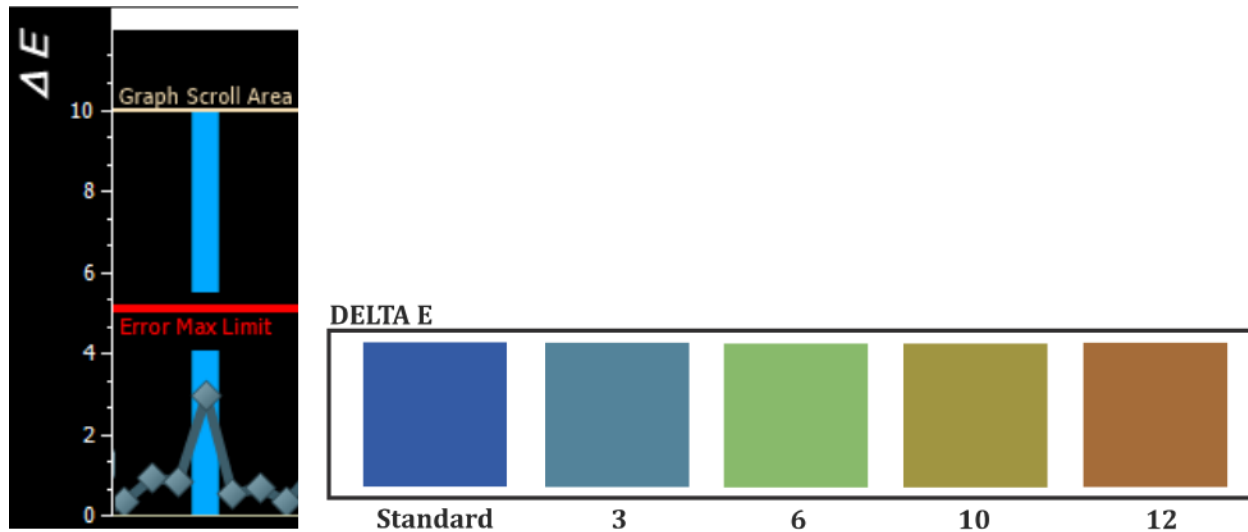
Delta E

Delta E is a measurement used to indicate how much a color deviates from an accepted standard.

The inspection provides Delta E detection by measuring color separation on a scale of 0 - 100. A value of zero indicates that there is no discernible difference in color from the reference value. A value of one indicates the minimum human perceptible difference in color. The colors are measured in RGB, and converted to L*a*b* color space for Delta E measurements.

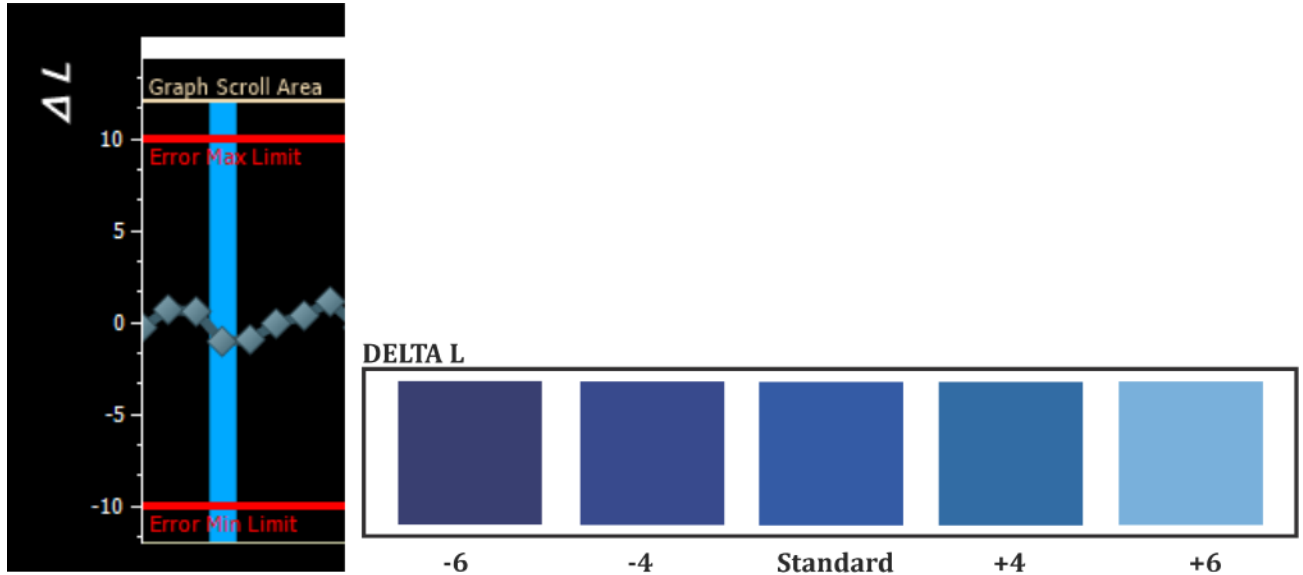
On the Delta E graph, the further away a measured color is from the standard, the more different the color.

Delta L, Delta H, and Delta C are all components of the Delta E measurement.



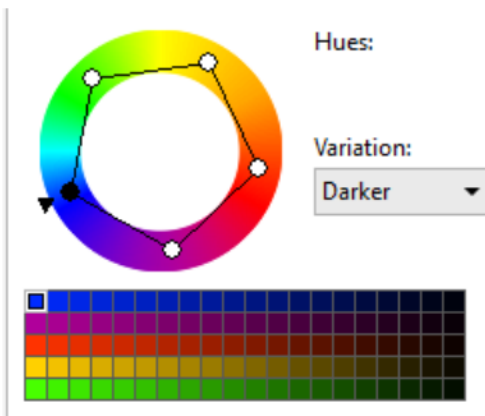
Delta L

Lightness. On the Delta L graph, a negative number represents a color that is darker than the standard. A positive number represents a lighter color than the standard.

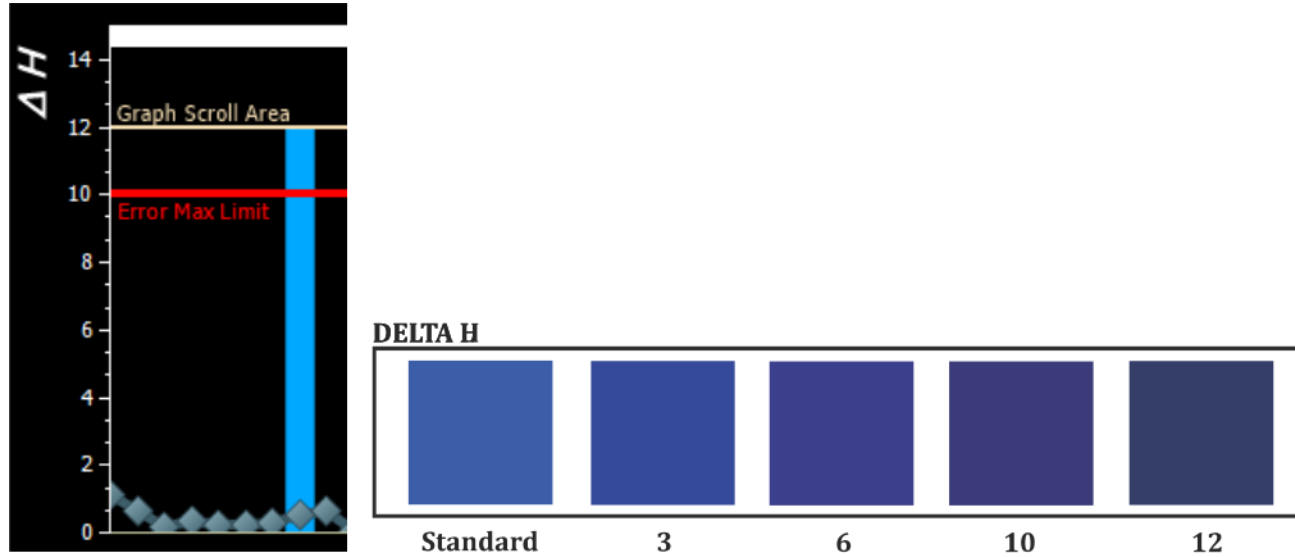


Delta H

Hue. The attribute of color that enables an observer to classify it as red, green, blue, purple, etc., and excludes white, black, and shades of gray. [Source: <http://www.thefreedictionary.com/hue>]

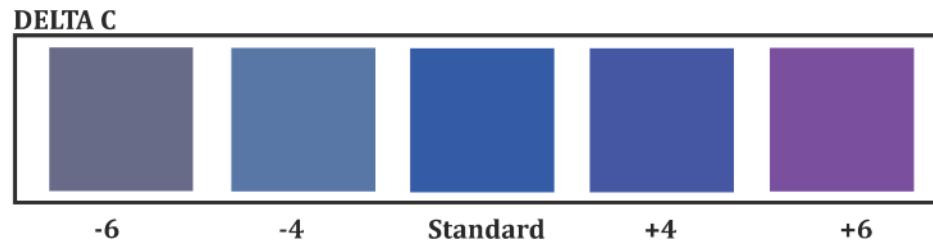
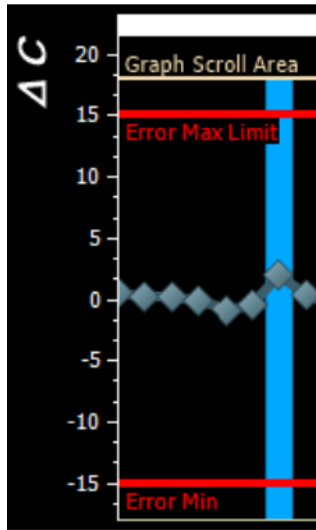


On the Delta H graph, the higher the number, the further away that color is from the standard.



Delta C

Colorfulness. The system may find an area to be more blue or less blue, for example. On the Delta C graph, a negative number means that the measured area is less colorful than the standard. A positive number means that the measured area is more colorful than the standard.



Color Analysis Graphs

This example graph shows the default setup. To see parts, select the Load icon and select a set or sets of part images.

Tip: If your system is excessively rejecting a specific color, select Color Display Selection. Then disable the problem color.



- 1) Data Set A - our example loaded Last 100 Images
- 2) Data Set B - our example loaded Latest Defects - Any Defects
- 3) Color key
- 4) Inspection results for the selected part
- 5) Can Color = the measured color on the selected part. Master Color = the learned color that the part should match.
- 6) "Color Display Selection" on page 91 - Select the colors you want to display or measure
- 7) Use the radio button to select which color measurement graph you want to display. "Color Measurements" on page 83

Color Analysis for One Color - Automatic Color Mode

You can view the inspection results for one color. To see parts, select the Load icon and select a set or sets of part images.

Last 100 Cans

Latest Defects

Color Legend:

- Light Blue
- Corn Silk
- Gold
- Brown
- Dark Olive
- (1)Slate Gray
- Dim Gray
- (2)Slate Gray

Part Status: PASSED

Correlation: Mandrel - 20

Print Blanket - 8

Pin - 884

Timestamp: 12/22/2021 15:26:38.523

Part Rate: 200

Limits:

$\Delta E = 4.7$

$\Delta L = -10.0$ to 10.0

$\Delta H = 5.1$

$\Delta C = -15.0$ to 15.0

Zone Name	ΔE	ΔL	ΔH	ΔC
Light Blue	0.3	0.1	0.2	0.3
Corn Silk	3.0	-2.1	1.2	-1.9
Gold	2.0	-1.1	0.2	-1.6
Brown	2.4	0.7	1.7	-1.6
Dark Olive	3.2	-0.0	1.7	-2.7
(1)Slate Gray	0.9	-0.8	0.5	0.2
Dim Gray	2.1	-1.3	1.1	1.1
(2)Slate Gray	2.1	1.4	0.4	1.5

Color Display Selection

- Light Blue
- Corn Silk
- Gold
- Brown
- Dark Olive
- (1)Slate Gray
- Dim Gray
- (2)Slate Gray

-Can Color

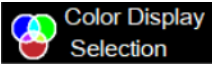
-Master Color

To see the information for one color:

1. Select one part (bar) in the Retro-Spec graph.
2. Only the selected color measurement graph is shown at the top of the screen (Delta E, etc.).
3. Select the desired color block from under the part image (example, Light Blue).
4. The selected color is highlighted in cyan on the image (the highlight is cyan, regardless of the color you are looking for).
5. You can select any color measurement to the left of the image (Delta E, etc.).
6. The selected color is highlighted in the results section.

When you select the image or color block again, the display reverts to all displayed colors.

Color Display Selection



This icon is displayed in the lower left corner of the Color Analysis screen.

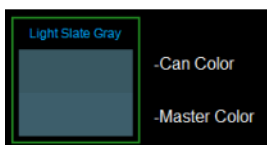
Select which colors you want to view or analyze. Choose from colors that were previously set up through Automatic Colors or Manual Color Zones.

Select the Color Display Selection icon. Then select the color(s) you want to view (the colors with will be displayed). Save changes and exit.

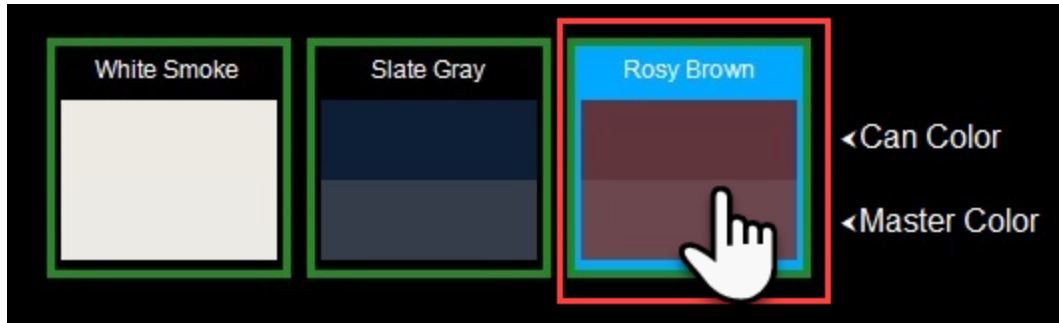
Is Enabled - [Only when using Automatic colors] If a color is enabled, then the DecoSpector will analyze that color. If the color is disabled (the switch is not blue), then the system will not analyze that color. You can have the system analyze a color, but not show it in Color Analysis if you choose.



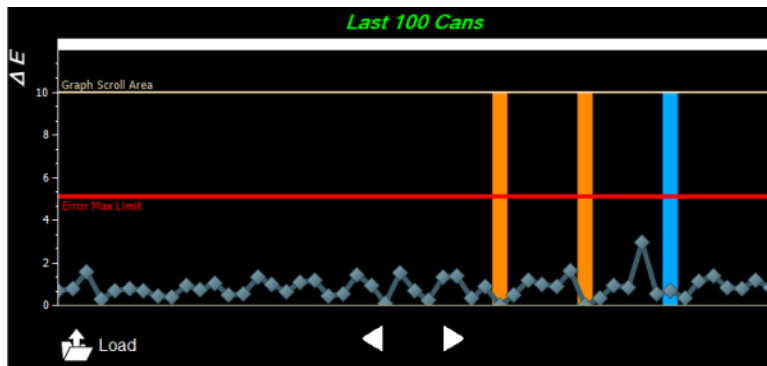
The selected colors will be displayed below the image as Can Color and Master Color.



When you select one of the color blocks, it will be outlined in cyan.



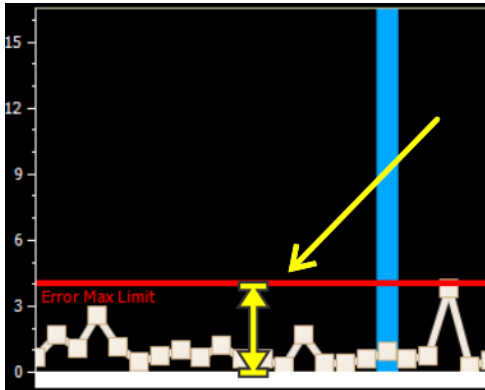
The graphs at the top of the screen will show only the selected color(s) from the Select Display Colors dialog box. If a color is not checked, then you will not see it in the Color Analysis graphs, nor under the image.



Adjust Color Inspection Sensitivity

Administrator only

Move the red bar(s) to adjust inspection sensitivity. In the Delta E graph, moving the red line up decreases sensitivity (fewer failed parts). Moving the red line down increases sensitivity (more failed parts).



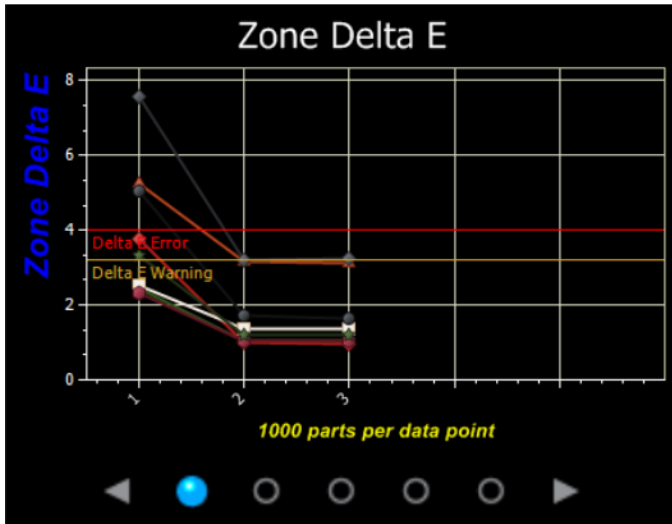
Note: when you move the Error Limit bar, it affects all monitored colors. To see all color plots on the graph, click on the image outside of a color zone.

You can adjust sensitivity for other color measurements. The Delta L and Delta C graphs have positive and negative sensitivity levels. For information, see "[Color Measurements](#)" on page 83.

Color Trend Graphs

Overview

On the home screen, you can view several color monitoring graphs. Swipe over the graph or select one of the dots under the graph to select different graphs. A dot is added to the chart every 1000 parts to indicate how the color is trending.



Color Analysis

You can set the Error and Warning limits for these graphs in the Color Analysis screen. Use the Retro-Spec graph at the top of the screen to adjust the limits. See also Adjust Color Alarm Limits.

You can select a specific color graph to display using the following steps.

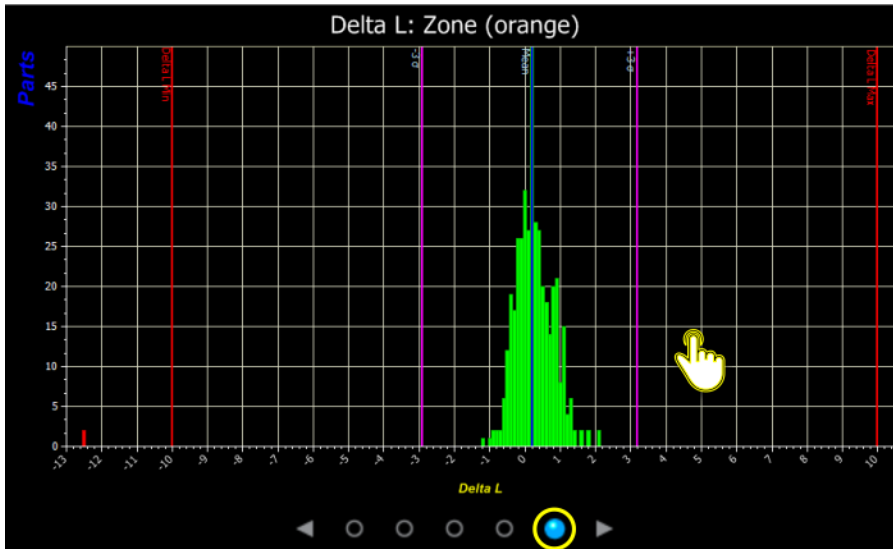
Note: Before selecting a graph you must: Set up Color Zones or use Automatic Color Zones

To choose a graph:

1. Select the graph in the upper right corner of the home screen to view it as a large graph in the center of the screen.



2. Select the rightmost dot to view the user-selectable graph.



3. Click on the graph to bring up the zone setup screen.

If you are using Automatic Colors:



- Select a color from the drop-down menu.
- Select a color measurement (Delta E, Delta L, Delta H, or Delta C).

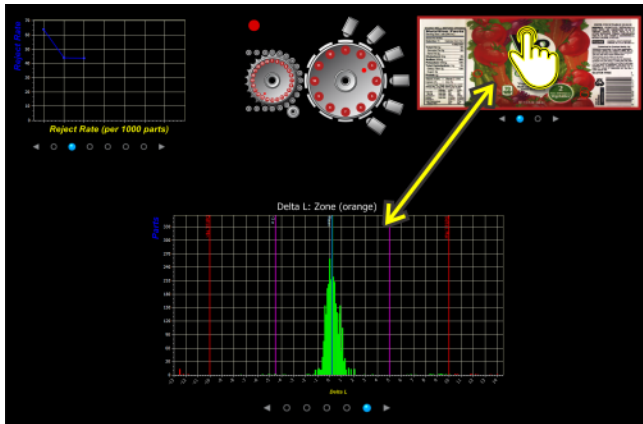
If you are using Manual Color Zones:



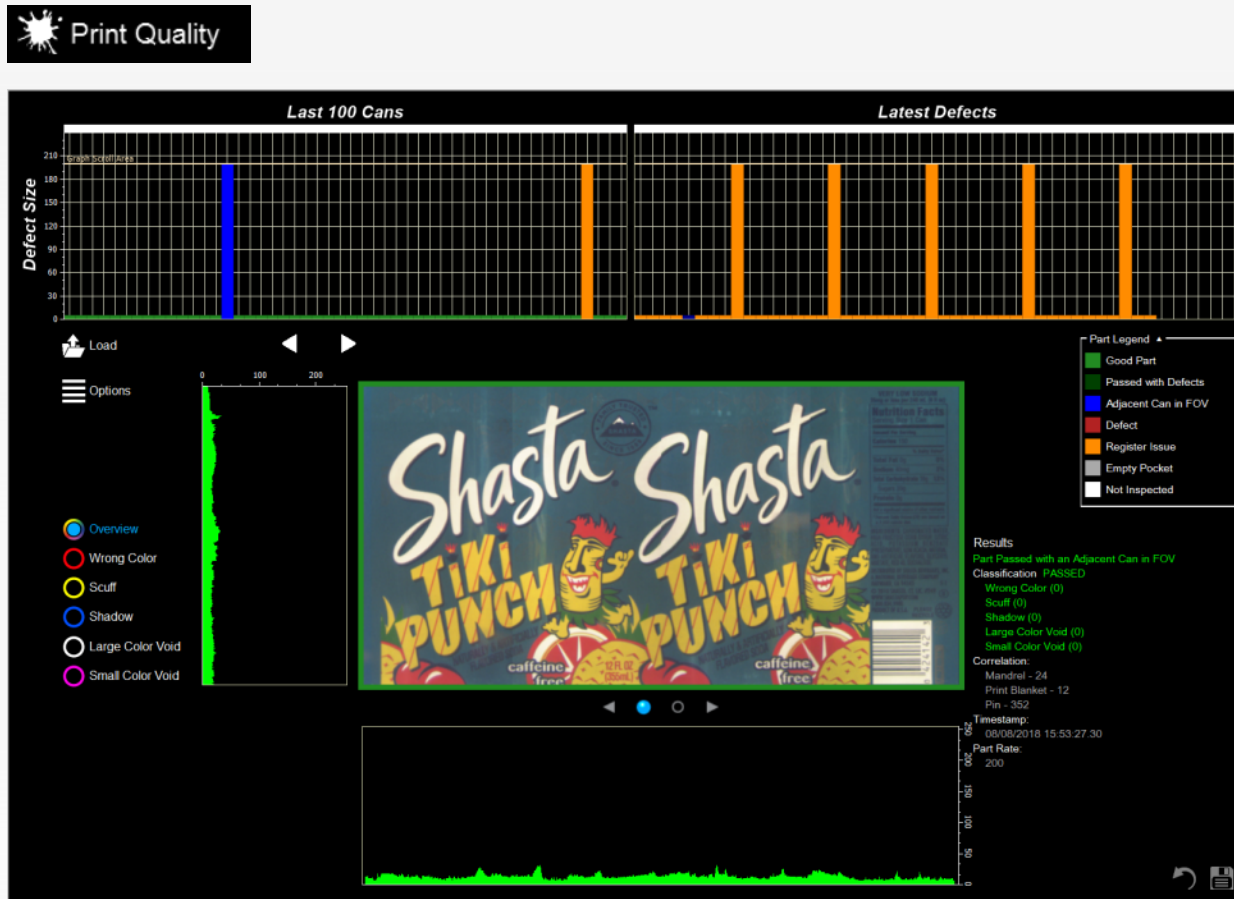
- Select one of the color zones on the image (yellow circle turns blue when you select it). The Zone Name is displayed in the upper right of the screen.
- Select a color measurement (Delta E, Delta L, Delta H, or Delta C).

Select OK to save changes and exit. The selected graph is displayed on screen.

To move the graph to the upper right of the home screen, select the part image. The graph and the part image will switch places.



Module 9 Print Quality Screen



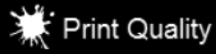
This screen allows you to view recently inspected parts through the Retro-Spec interface. This allows you to see trends in inspection. It also allows you to change inspection settings and try them on images without interfering with current inspection.

You must be an Administrator to save changes.



To view anything on this screen, you must load a fresh set of images. See "Load Part Images" on page 80

Retro-Spec Graph

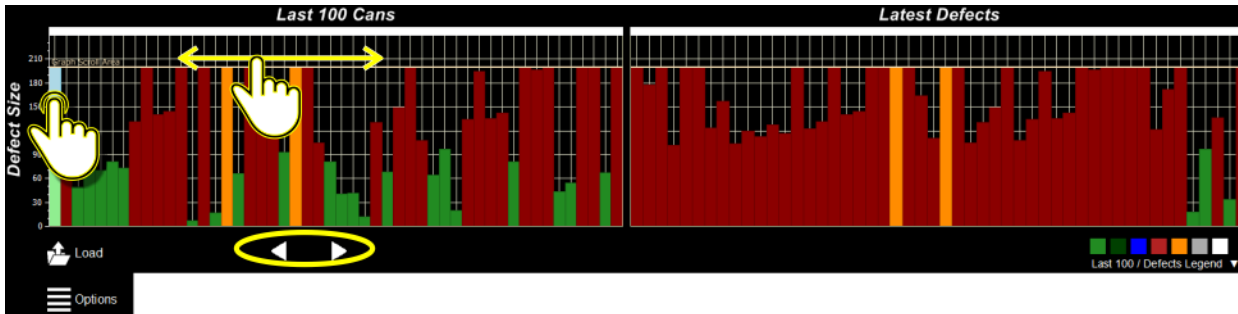


Print Quality

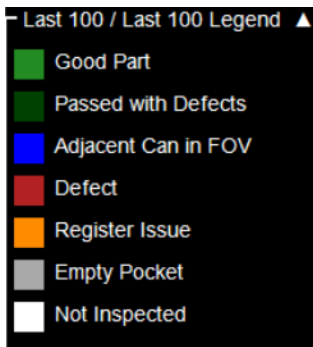
- Tap the Print Quality icon to see the Retro-Spec interface.

To view parts on the Print Quality screen, "[Load Part Images](#)" on page 80.

The Retro-Spec graph can load up to 200 parts at a time, 100 in each Data Set (A and B). Each bar on the graph represents a different part. Select a bar to see the part image below the graph. Approximately 50 parts per graph are shown at a time. To scroll, press and drag on the graph or use the arrows under the graph.



The bars on the graph are color-coded, and the legend is displayed below the graph (if enabled). See also "[Color Borders Around Images](#)" on page 32

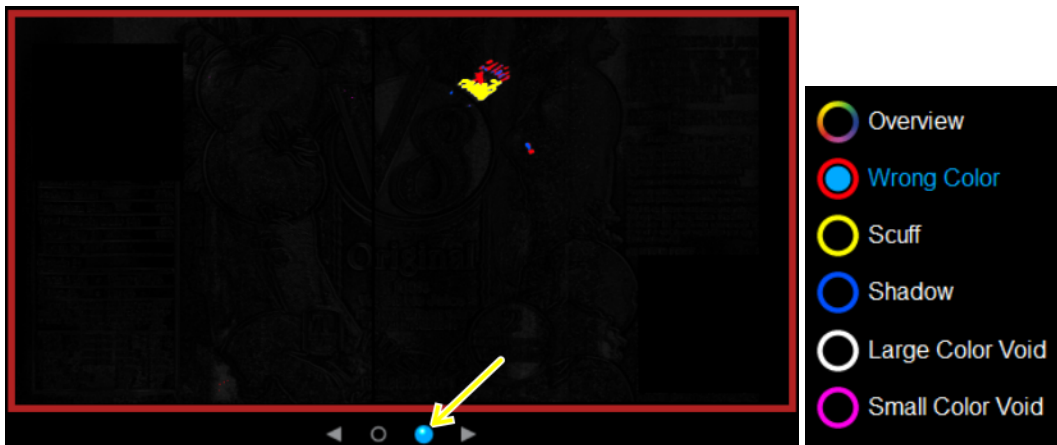


Defect Classification



When you view the Error image in the Retro-Spec interface, you can see what type of defect occurred on each part. The defects are color-coded in the Error image. You can select the type of defect to view. The Overview selection shows all defect types.

Note: one defect can fall into more than one classification.



Note: The system determines the strongest classification for each pixel and colors it accordingly. You may see one defect show up in multiple classification views (example, shadow and too much color). This means the pixels in the defect area had strong characteristics in multiple classifications.

Wrong Color - The system found color somewhere on the label where it was expecting a different color, such as finding green when it was expecting to see red.

Scuff - The system found an area on the label that was too bright.

Shadow - The system found an area on the label that was too dark.

Large Color Void - The system found no color where it was expecting to see color, in a relatively large area.

Detecting Large Color Voids

To detect color voids you will need to reduce the sensitivity and greatly increase your defect size. Color void is looking for large area changes and not good at detecting small pixel sized defects.

Example: If you are using a sensitivity close to 50 for all the classification sensitivity values, then you may want to try a color void sensitivity around 40 and adjust up or down from there as needed. The defect size will be anywhere from 100 to 500 depending on how sensitive you have made the classification and what size defect you want to catch.

Note: See Adjust Inspection Settings for information about changing sensitivity.

Small Color Void - The system found no color where it was expecting to see color, in a relatively small area.