

INTELLISPEC™

Series V Operator Guide (5.3) FHCP 3X EZ

Pressco Technology Inc.

75408 Rev. 01



Original Instructions

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Table of Contents

Chapter 1	How to Contact Pressco	5
Chapter 2	Introduction	7
	Welcome!.....	7
	About this Operator's Guide	7
	Typographical Conventions.....	7
	Static Discharge Protection	8
Chapter 3	CE Declarations of Conformity.....	9
	Declaration of Conformity - FHCP3X-EZ System (MS)	10
	Declaration of Conformity - FHCP3X-EZ System (EMC).....	12
Chapter 4	Safety Information and Markings	13
	Safety Considerations	13
	Symbols.....	13
	Warning Devices	15
	Residual Risk	16
	Intended Use.....	17
	Non-intended use	18
	Personal Protective Equipment	18
	Personnel Safety	19
	Lifting heavy objects	21
	Authorized Users.....	21
	Spare Parts Usage	22
Chapter 5	System Specifications	23
	Environmental conditions	23
	System Measurements	23
	Part and Part Handling Specifications	25
	System Electrical Specifications	26
Chapter 6	Installation	27
	Recommendations prior to installation	27
	Instructions for Safe Assembly Operations.....	27
	Shipping and Handling	27
	Assembly, location, and mounting requirements.....	29
	Utilities to be supplied by customer	32
	Commissioning.....	34
Chapter 7	Intellispec Cabinet and User Interface	37
	Emergency E-Stop Button	38
	Navigation Components	38
	User interface input devices	39
Chapter 8	Operating the FHCP 3X system	43
	Power On/ Off	43
	Online / Offline	44
	Part Changeover	44
	Exiting the Intellispec software.....	45

Chapter 9 Navigating Through the System.....	47
On Screen Keyboard (OSK).....	47
User Interface Display - Four Levels.....	48
Menu Toolbar	51
Chapter 10 User Accounts and Login information	53
Log in and log out.....	53
Switching users	53
Changing your password.....	53
Chapter 11 Alarms.....	55
Light tree status	57
Viewing and Clearing Alarms	57
System Alarms Description	58
Chapter 12 Graphs and Image Displays	61
Trend Graphs	61
Machine Part Graphs	61
Sorting Data in Graphs	62
Statistics Grid	64
Reject Images.....	66
Inspections graph.....	67
Walk By Graphic.....	68
Freeze on Defect.....	69
Saving Images	73
Take Screen Shot.....	76
Chapter 13 Tools menu.....	77
Tools menu - System Overview Screen.....	77
Tools menu - Lane Overview and Sensor Overview Screens	78
Chapter 14 Maintenance	85
Maintenance Frequency	86
Cleaning the NEMA 4X Vision Processor filter	88
Cleaning the system cabinet	89
Cleaning Optical Surfaces.....	89
Cleaning Plastic Surfaces - FHCP3X EZ	89
Cleaning Glass Surfaces.....	91
Index	93

Chapter 1

How to Contact Pressco

24/ 7 Customer Support:

+1 440-498-2000

E-mail:

dispatch@pressco.com (*mailto:dispatch@pressco.com*) or *techsupport@pressco.com*
(*mailto:techsupport@pressco.com*)

Customer Service Fax:

+1 440-498-4761

Mailing Address:

Pressco Technology Inc. 29200 Aurora Rd. Cleveland, OH USA 44139-1847

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Web Site:

www.pressco.com (*http://www.pressco.com*)

Business Hours:

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

Chapter 2

Introduction

Welcome!

Congratulations on your purchase of an Intellispec system! The Intellispec is a high-speed machine vision system designed specifically for product and online process monitoring. It is a powerful tool that provides inspection much more reliably than the human eye or sampling methods. The latest PC technology, powerful inspection algorithms, online adjustment capability, and inspection data storage allow the Intellispec to automatically inspect parts with extreme accuracy on high-speed lines. The Intellispec will help you provide the highest quality of products shipped to your customers.

About this Operator's Guide

This Operator's Guide provides operating instructions for the Intellispec vision system. It provides the necessary information to operate an Intellispec that is properly installed and programmed. This guide is not a programming nor hardware maintenance guide. Programming, maintenance, and system setup require specialized training. This training is available from Pressco and may be conducted at your plant or at Pressco in Cleveland Ohio, USA. For more information, **contact Pressco's** (see "**How to Contact Pressco**" on page 5) training department.

This Operator's Guide:

- Is considered an integral part of the system and should be kept handy for future reference as long as the system is being used in your plant.
- Is your responsibility to keep in good condition, in a dry place, and ready for consultation by the **authorized users** (on page 21) of the system.
- Contains the technology implemented at the time of selling and supplying the system and shall not be considered inadequate in case of technological enhancements in the machine or in the manual's illustrations.

Related books include:

- Intellispec Series V Software User's Guide which contains administration and programming information
- Intellispec Series V Hardware Guide which contains servicing information

Typographical Conventions

Following is a list of typographical conventions used in this manual:

- **Bold type** indicates a topic heading or an important item or statement.
- *Italicized type* indicates emphasis.
- Names of main components and system control signals have the first letter of each word capitalized. For example: Processor Cabinet.
- Danger messages appear as shown below:



Danger

Danger messages alert you to specific conditions that can cause serious or fatal personal injury. Danger messages give you important information which must be observed to prevent injury. These messages are set off from the body text as shown here.

- Caution messages appear as shown below:



Caution

Caution messages indicate important information which must be observed to prevent: loss of data, poor system performance, or equipment damage. These messages are set off from the body text as shown here.

- Notes appear as shown below:

❖ *Note: Notes contain special information that warrants being set off from the body text as shown here.*

Static Discharge Protection



Caution

Electronic components can be damaged by static electricity discharge.

Always observe the following precautions before removing, installing or handling any electronic components within the Inspection System:

- Wear an anti-static wristband which is grounded to the Inspection System.
- Stand on an anti-static, grounded floor mat, and lay circuit boards on the mat during any board replacement.
- Keep circuit boards in static shield bags when storing and transporting. Ensure the bag is sealed.

Chapter 3

CE Declarations of Conformity

Declaration of Conformity - FHCP3X-EZ System (MS)



Number	MS4113
Declaration	Pressco Technology Inc. FHCP3X-EZ System is in conformity with Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (recast).
Other Directives	Directive 2004/108/EC of 15 December 2004 on the harmonization of the laws of Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC
Manufacturer	Pressco Technology Inc. 29200 Aurora Road Cleveland, Ohio 44139-1847 USA
Product Identification	Machine Name: FHCP3X-EZ System
Electrical Diagram	Electrical Diagram: 73252W Dated 11/19/2014 1 page (Transformer 230V-115V) Electrical Diagram: 72340E Dated 02/07/2014 1 page (FHCP3X-EZ ASSY)
Standards Used (only major standards listed)	EN60204-1 (2006): Safety of machinery – Electrical equipment of machine Part 1: General requirements EN953 (2009): Safety of machinery – Guards – General requirements for the design and construction of fixed and movable guards EN ISO 13849-1 (2008): Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design EN ISO 13855 (2010): Safety of machinery - Positioning of safeguards with respect to approach speeds of parts of the human body EN1037 (2008): Safety of Machinery – Prevention of unexpected startup EN ISO 14119 (2013): Safety of machinery - Interlocking devices associated with guards - Principles for design and selection EN1837 (1999): Safety of machinery - Integral lighting of machines EN13850 (2008): Safety of Machinery – Emergency stop equipment, functional aspects – Principles for design EN13857 (2008): Safety of Machinery – Safety distances to prevent danger zones from being reached by upper and lower limbs EN ISO 12100 (2010): Safety of machinery - General principles for design - Risk assessment and risk reduction
Technical File	MS4113
Compiler of the Technical File	Safenet Ltd, Notified Body 1674 Denford Garage, Denford, Kettering, Northants., NN14 4EQ, U.K.
Place	Pressco Technology Inc. 29200 Aurora Road Cleveland, Ohio 44139-1847 USA

Signed: Frederick F. Awig

Date: 1 December 2014

Name: **Frederick F. Awig**

Title: **VP of Engineering & Operations**

Being the person authorized by the manufacturer to sign on their behalf.

Declaration of Conformity - FHCP3X-EZ System (EMC)



Number	EMC4113
Declaration	Pressco Technology Inc. FHCP3X-EZ System is in conformity with Directive 2004/108/EC of the European Parliament and of the Council of 15 December 2004 on the approximation of the laws of Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC.
Manufacturer	Pressco Technology Inc. 29200 Aurora Road Cleveland, Ohio 44139-1847 USA
Product Identification	Machine Name: FHCP3X-EZ System
Electrical Diagram	Electrical Diagram: 73252W Dated 11/19/2014 1 page (Transformer 230V-115V) Electrical Diagram: 72340E Dated 02/07/2014 1 page (FHCP3X-EZ ASSY)
Standards Used (only major standards listed)	EN 61000-6-2 (2005): Electromagnetic compatibility – Part 6-2: Generic standards – Immunity for industrial environments EN 61000-6-4 (2007): Electromagnetic compatibility – Part 6-4: Generic standards – Emission standard for industrial environments BSEN 55011 (2007): Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM) radio-frequency equipment
Technical File	EMC4113
Competent Body	Hursley EMC Services, Ltd. Notified Body of the U.K. 1890 Trafalgar House, Trafalgar Close Chandlers Ford, Eastleigh, Hampshire SO53 4BW, Great Britain
Assessment Certificate Number	14R538
Means of Conformity	The product is in conformity with Directive 2004/108/EC based on test results referencing harmonized standards and the use of a Technical File in accordance with Article 7 of the Directive.
Place	Pressco Technology Inc. 29200 Aurora Road Cleveland, Ohio 44139-1847 USA

Signed: Frederick F. Awig

Date: 1 December 2014

Name: **Frederick F. Awig**

Title: **VP of Engineering & Operations**

Being the person authorized by the manufacturer to sign on their behalf.

Chapter 4

Safety Information and Markings

This section contains operator safety information that must be read before operating or servicing the system.



Warning

Do not, under any circumstances, tamper with sealed machine parts or devices. This could result in the removal of protections that might create potentially hazardous conditions.



Warning

This product contains no operator serviceable parts. Refer servicing to qualified personnel. To prevent electrical shock do not open cabinet doors whilst power is connected.

Safety Considerations

Observe the following safety warnings when operating the system or working near it:



Warning

Potential for projectiles to strike persons and cause injury. Keep clear of reject devices.



Warning

Sensitive electronics and High Voltages may be exposed. Keep Processor Cabinet door closed.

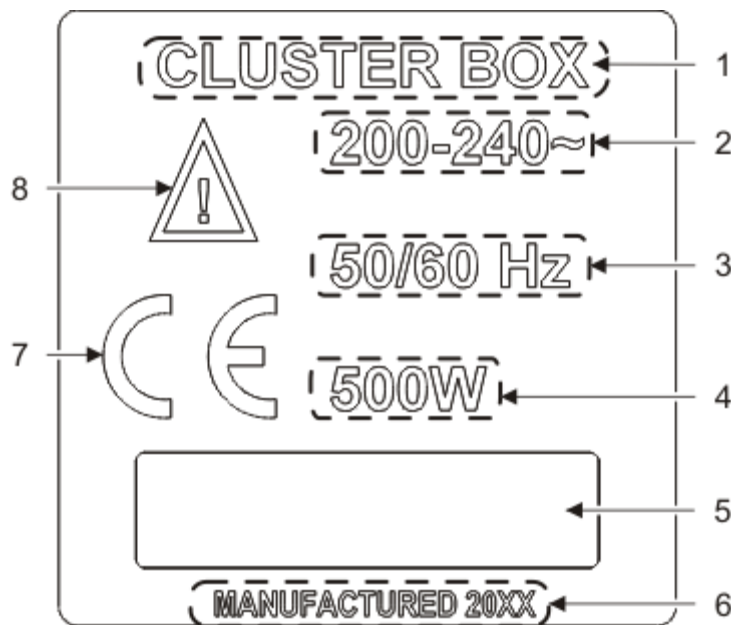
Symbols

The following symbols are used on or near the Intellispec system. Be aware of potential risk hazards.

	CAUTION Risk of danger. Refer to accompanying user documentation before use.
	WARNING Risk of electric shock
	On (supply)
	Off (supply)
	Alternating current
	Protective conductor terminal

Marking

The following illustration shows an example label that you will find on the Intellispec Series V system components.



1 - Name of component. NOTE: Chromapulse model is listed on the front panel of the module. See example below.

2 - Voltage range in Volts AC

3 - Frequency range in Hertz (Hz)

4 - Maximum rated power in watts (W) with all accessories or plug-in modules connected

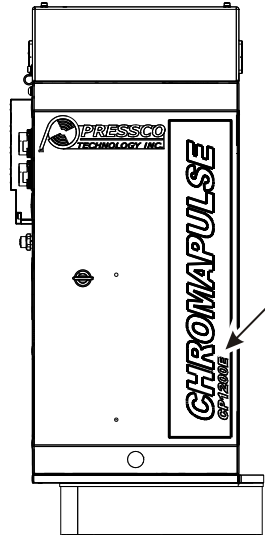
5 - Serial number is listed in this box

6 - Year of manufacture

7 - Component certification

8 - Risk of danger. Refer to accompanying documentation before use.

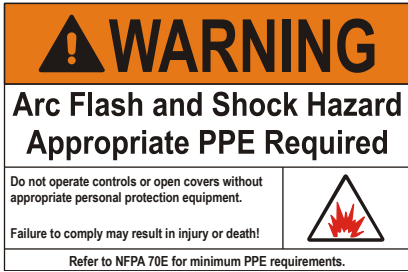
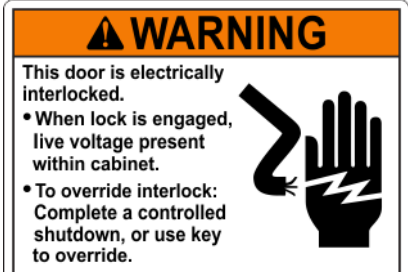
An example of a Chromapulse module label with the model number is shown below.



For additional markings, see the System Specifications section.

Additional Symbols and Labels

The following symbols are used on or near the Intellispec system. Be aware of potential risk hazards.

	High voltage
	Arc flash
	Electrical interlock

Warning Devices

The Intellispec Series V system has warning devices that indicate system failure or report excessive defects or warnings for your production line.

Alarms

User-programmable **alarms** (on page 55) allow you to set the duration of the lights in the optional light tree and the horn if certain criteria are met.

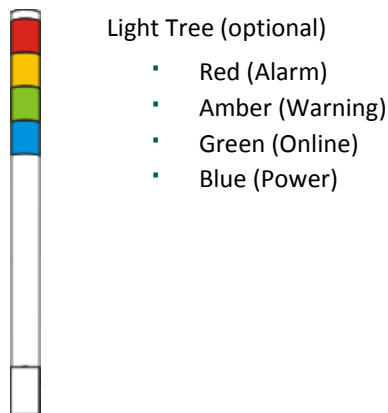
In addition to the light tree, an alarm button is displayed on screen when certain criteria are met. You can click the alarm button to **clear the alarm** (see "**Viewing and Clearing Alarms**" on page 57)(s) and see more detailed information about the alarm condition.



Light Tree

The optional light tree may be mounted on or near an inspection module, or near a cluster box (if applicable). The optional horn, mounted with the light tree provides an audible warning.

For more information, refer to **Light tree status** (on page 57).



Residual Risk

The Intellispec system has been designed to minimize any danger of personal injury. However, the system uses rejection devices to remove defective product from the production stream. Also, the electronics cabinets contain risk of shock if they are opened.

Observe the following safety warnings when operating the system or working near it:



Warning

Potential for projectiles to strike persons and cause injury. Keep clear of reject devices.



Warning

Sensitive electronics and High Voltages may be exposed. Keep Processor Cabinet door closed.

Intended Use

Type of Process

The Intellispec system is intended to monitor container and other special manufacturing processes and identify non-conforming product.

Intended Use

The Intellispec system is designed and constructed for use in an indoor industrial environment, always sheltered from the weather.

Space Required

The Intellispec machine and accompanying sensors must be installed in a place that will enable safe and easy installation, size changeover, user operation, and maintenance procedures.

Non-intended use



Warning

If this instrument is not used as specified, the protection provided by the equipment could be impaired. This instrument must only be used in a normal condition (in which all means of protection are intact).



Important

The Intellispec system should NOT be used for any purpose other than specifically indicated in the section titled ***Intended Use*** (on page 17).

The following uses are **not** intended:

- Use in an explosive environment
- Use in a flammable environment
- Use in a damp, moist, or wet environment, except where specifically indicated

Personal Protective Equipment



Important

Always follow the safety requirements of your plant in addition to the recommendations below.

We recommend, at minimum, use of the following Personal Protective Equipment (PPE):

	Protective clothing
	Protective gloves
	Protective ear plugs or headphones
	Protective eye wear
	Protective foot wear

Personnel Safety

The following rules are recommended to ensure the safety of personnel in charge of machine operation and maintenance.

Do Not:

- Open safety guards during machine operation
- Perform maintenance and repair while the system is running
- Lean on the machine
- Sit on the machine components
- Use the machine for purposes other than those listed in this manual
- Modify parts of the machine
- Allow unqualified personnel to operate or perform maintenance procedures on the machine

During machine operation:

	Only one operator is needed to operate the machine. All others must keep at a safe distance.
	Operators must be familiar with all machinery connected to the Pressco equipment and know how to use emergency stop devices. <i>Note: the emergency stop devices may not be connected directly to the Pressco equipment, but it is important to know how to use them.</i>
	Before putting the Pressco system online, the operator must ensure that all safety devices used with all connected machinery are in place and operational.
	The operator must maintain maximum focus on his work and be alert throughout his shift. If this is not the case, immediately inform the shift supervisor.

When conducting maintenance or repair work:

	Follow the Machine Maintenance Lockout Procedure.
	Before starting the machine, ensure that no person is close to the machine.
	If maintenance or repair requires the disconnection or removal of safety or protection systems, authorized personnel who ensure the prevention of personal injury or damage to the machine must supervise this operation. All machine movements must be performed with limited speed and limited movements.
	Exclusively authorized and trained personnel must carry out maintenance or repair work on electrical components. When running tests with power connected, you must strictly comply with the rules provided.
	Personnel working on higher parts of a machine must wear a harness and hook it on to a structure and must always move with extreme caution. The harness must not be connected to Pressco equipment or structure as it cannot support body weight.

	Never perform lubrication or maintenance procedures on mechanical parts with the machine running.
---	--

Lifting heavy objects



Caution

Some components are heavy. Take proper precautions to prevent personal injury or damage to equipment. If you are not capable of lifting the object alone, ask a capable person to help lift the object, or use a mechanical lifting device

The components do not have handles to lift the equipment. Be sure to:

- Lift equipment from the bottom - do not use wires, brackets, nor other protrusions
- Keep fingers away from sensor lenses to keep the equipment clean
- Proceed slowly

➤ *To safely lift equipment:*



Caution

Do not twist your body when moving the load. Instead take small steps with your feet turning until you are in the correct position.

1. Stand close to the load and center yourself over it with your feet shoulder width apart.
2. Tighten your abdominal muscles.
3. Keeping your back straight, bend your knees and squat down to the floor.
4. Get a good grasp on the load with both hands.
5. Keeping the load close to your body, use your leg muscles to stand up lifting the load off the floor.
 - Your back should remain straight throughout lifting, using only the muscles in the legs to lift the load.
6. To place the load in the appropriate spot, bend at the knees using only your leg muscles to lower the load.

Authorized Users

Trained machine operators, mechanic and electrical maintenance staff, and plant managers are considered authorized users of the Intellispec system. These users should carefully read the information contained in this manual. The plant manager must ensure that the safety recommendations included in this manual are observed.



Warning

Allowing workers who are unfamiliar with the production process to operate the Intellispec system could result in hazard risk.

If you are unclear about any part of this manual, **contact Pressco Technical Support** (see "**How to Contact Pressco**" on page 5).



Important

No worker should ever operate the system outside of his/ her own area of competence and responsibility.

Proper Operation:

Only one worker is to operate the system at any given time. The correct position for the operator is in front of the user interface monitor or control enclosure (if applicable).

Repairs:

Any repair on the system shall be carried out exclusively by Pressco Technology Inc. service personnel or by other service expressly authorized by Pressco Technology Inc.

Spare Parts Usage

The following restrictions apply to replacing parts:



Warning

Using spare parts that are not designed to Pressco's specifications can compromise the safety and effectiveness of the Intellispec system.

- The use of parts that are not within Pressco's design specifications is prohibited. This prohibition applies in particular when the parts involved contain or are connected with safety devices.
- Before resuming production, make sure all safety devices are in working order.

Pressco Technology Inc. shall not be liable in any way if any of the above-described directions are not complied with.

To obtain a spare parts list, contact the customer service department at Pressco. ***How to Contact Pressco*** (on page 5).

Pressco's technicians are available to help customers, in their own plant, to solve any problem that might arise during use and maintenance of the Intellispec system.

Chapter 5

System Specifications

Environmental conditions

The Intellispec Series V system is designed to be safe in the following environmental conditions:

❖ *Note: Please consult Pressco Technology Inc. (see "How to Contact Pressco" on page 5) if your environmental conditions are outside of those listed.*

Condition	Specifications
Indoor/ outdoor use	Indoor use only
Altitude	Up to 2000 meters
Operating Temperature	5 °C to 50 °C
Storage Temperature	0 °C to 70 °C
Humidity	Maximum relative humidity 80 % for temperatures up to 31 °C decreasing linearly to 50 % relative humidity at 50 °C
Mains supply	Voltage fluctuations up to ± 10 % of the nominal voltage
Overvoltage protection rating	Transient overvoltage typically present on MAINS supply NOTE: the normal level of transient overvoltages is impulse withstand (overvoltage) category II of IEC 60364-4-443.
Rated pollution degree	This instrument is designed for use in Installation Category II and Pollution Degree 1 as per EN61010-1 and EN60664 respectively.



Warning

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Sound Pressure Level

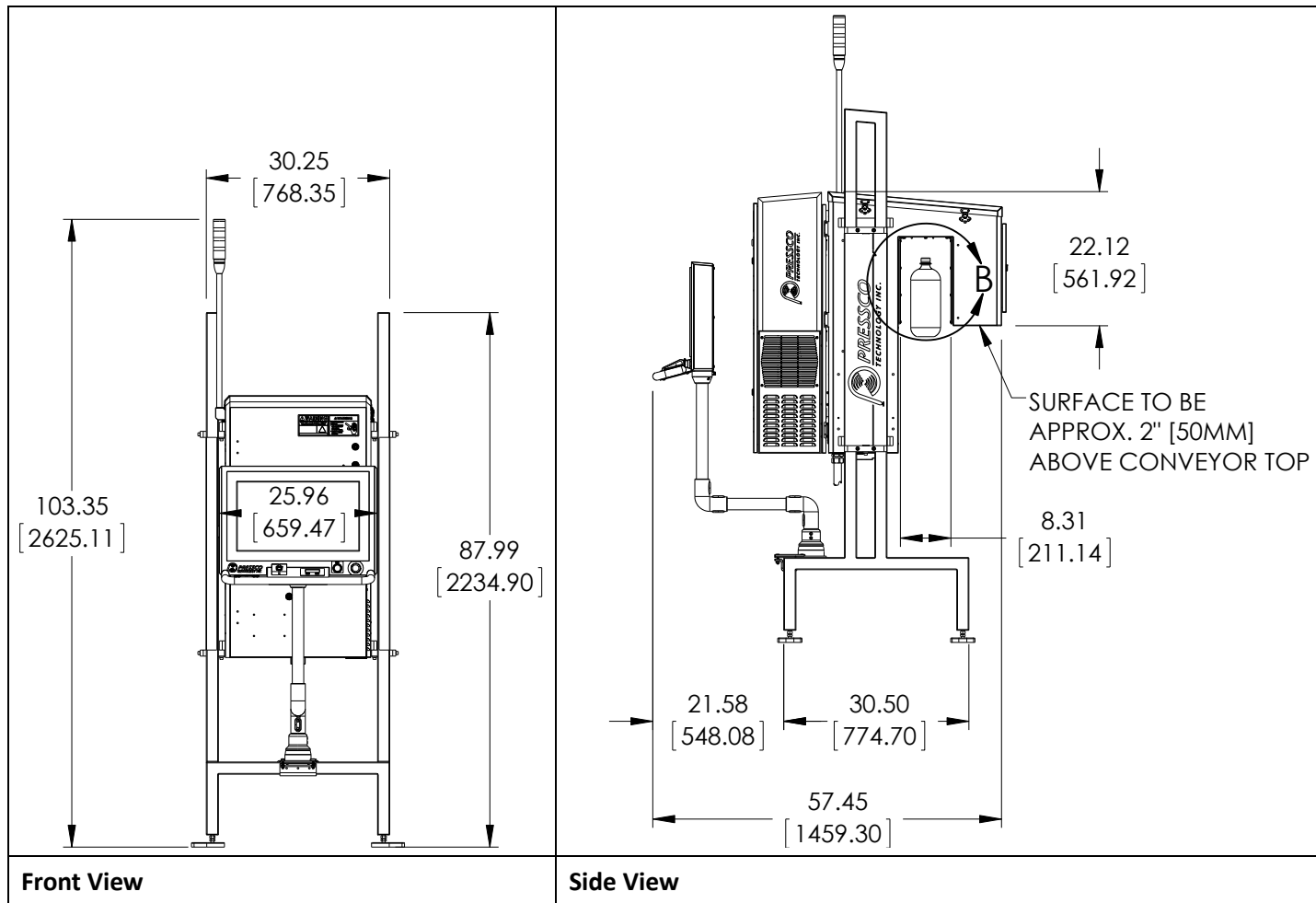
The horn on the optional **light tree** (on page 16) has a maximum 105dB level at 1 meter distance in front of the horn. Use proper hearing protection as specified by your plant safety instructions.

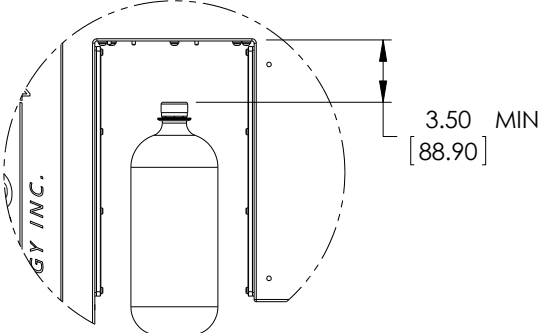
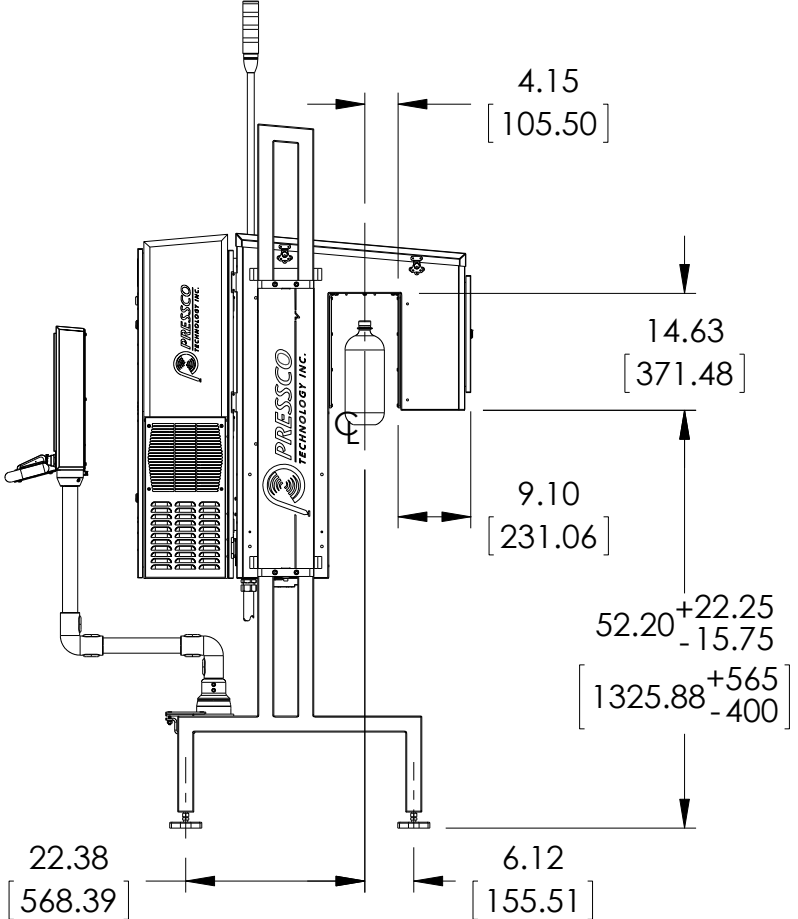
System Measurements

The following are the maximum dimensions of the Fill Height/ Cap Placement System:

Measurement	Value
Height (overall system to top of light tree)	103.35 inches [2625.11 mm]
Height (from conveyor to top of module)	22.12 inches [561.85 mm]
Height (from floor to conveyor) Adjustable	52.20 inches +22.25/- 15.75 inches [1325.88 mm +565/- 400 mm]
Width (of User Interface)	30.25 inches [768.35 mm]
Depth	57.45 inches [1459.30 mm]
Bottle Clearance inside module	3.5 inches minimum [88.90 mm]

❖ *Note (in side view): The surface is to be approximately 2 inches [50mm] above the conveyor top.*



	
Bottle Clearance	Side View

Part and Part Handling Specifications

Closure/ Finish Size

The range of cap/finish sizes that the FHCP 3X system will handle are: **25mm to 38mm** outer diameter. Sports caps and other specialty caps must be evaluated by Pressco Technology Inc. prior to inspection.

Part inspection requirements

- Liquid droplets must be removed from the inspection area (cap and neck ring)
- The fill level inspection is based on inspecting a stable fill level that is unobstructed by the support ring or other bottle features.

Burst Rate

The maximum conveyor rate is **1100 parts per minute**, maximum. Parts will not be inspected properly above this rate.

Conveyance

Bottles must be presented such that there is no slippage between the bottle and conveyor while the bottle is between the vision inspection module part detect and rejecter.

Conveyors must have a ramp function so that upon starting and stopping, bottles do not slide on the conveyor surface.

Conveyors must have a suitable chain tension such that under normal operation, starting or stopping the conveyance surface does not stretch or compress between the vision modules and the drive wheels.

Positioning

In order to accurately measure cap application geometry, bottle must be consistently presented to the vision inspection module. Depending on the range of bottle diameters to be inspected, adjustable rails may be necessary to ensure that bottle centerlines remain consistent on the conveyor.

- Bottles should be positioned +/- 0.125 inches laterally
- Bottles should be upright and perpendicular to the conveyor +/- two degrees

Deviation from these guidelines could potentially cause bottles to be falsely rejected.

Spacing

In order to properly inspect and accurately reject bottles: Bottle Spacing on Conveyor is **> 50 mm** sidewall to sidewall gap. If this spacing is not achievable, narrower spacing will be evaluated on a case by case basis by Pressco Technology Inc.

System Electrical Specifications

The following are electrical specifications for the FHCP 3X inspection module:

Configuration	Specification - 120 V system	Specification - 230 V system
Voltage Range	120 VAC	230 VAC
Frequency	50/ 60 Hz	50/ 60 Hz
Current	5.2A for Air Conditioner 3.8A for Inspection System	2.6A for Air Conditioner 1.9A for Inspection System

Chapter 6

Installation

Recommendations prior to installation

Before the machine is installed, the Pressco installer, together with the Customer (or representative) shall check the following criteria in the environment where the machine is to be installed:

- Work required by contract for the installation of the machine has been carried out
- The plant layout drawing that describes where the machine will be installed is the final drawing agreed to by Pressco Technology Inc.
- The space and height required for installation are actually available
- Only the components included in the installation layout are present in the area where the machine is to be mounted. Ensure no machines or components have been added at a later stage that might hinder mounting or make it more difficult. Should this be the case, immediately contact Pressco's Project Engineering personnel to arrange a suitable solution to the problem.

We recommend the following prior to machine installation:

- Transport the machine in its packaging to the area where it will be installed to minimize possibility of damage
- Carefully remove the packaging material and check components for damage
- Check tightness of mechanical components, as they can loosen during transport
- Prepare the compressed air mains line. Before making final connections, ensure that the pipes are clean and free from any debris.

Instructions for Safe Assembly Operations



IMPORTANT

The site supervisor will be responsible for ensuring that all the various mounting phases are carried out safely and in compliance with current regulations.

The site supervisor will also be required to make sure that all the members of personnel involved in the mounting operations comply with said regulations.

Shipping and Handling



Warning

Only qualified personnel must be involved in the operation of unloading, handling, and lifting the machine. Pressco Technology Inc. shall not be liable for damage to components and/or personal injury resulting from the involvement of unauthorized personnel and/or failure to comply with the directions provided in this manual in relation to lifting and transport.



Important

The site supervisor will be responsible for ensuring that all the various mounting phases are carried out safely and in compliance with current regulations.

Pressco Technology Inc. ships unassembled components in packing cases designed to protect the contents during handling and from exposure to weather.

Unless otherwise specified in the contract with the machine order, the Customer shall supply Pressco Technology Inc. with the means and equipment necessary for the unloading, lifting, and handling of machine parts.

Pressco Technology Inc. deems it important to have one of their technicians supervise the process of unloading, handling, and lifting the machine. The technician can give useful advice as to the logical sequence in which the components should be unpacked and positioned for ease of assembly.

After the machine is delivered, check for any damage that might have occurred during shipping. In case of damage, contact **Pressco Technology Inc** (see "**How to Contact Pressco**" on page 5).

In handling the machine, always keep it close to the ground.



We recommend using a forklift truck with adequate capacity and forks to suit the weight to be lifted (machine plus packaging).

The dimensions and weight of a crate are listed below. Note that this is the maximum size and weight. The size and weight of the crate may be less depending on your configuration. You may receive multiple crates depending on your configuration.

Size	1 crate, 241.3 cm x 132.08 cm x 162.56 cm (95 inches x 52 in. x 64 in.)
Weight	679 kg (1495 lbs.)

Hoisting

The machine is packaged in a wooden box, inside which the parts are individually packaged to prevent shock and sudden movements during transport. It is anchored onto a pallet.



To prevent personal injury in the event that the machine or packaging box should fall, ensure that during hoisting operations no person is standing within the range of action of the hoisting machines.



Hoisting, transporting and placement operations should be supervised by qualified technical staff trained in these specific areas.



Before performing any movement, you should always ensure that the hoisting means and equipment (ropes, hooks, etc.) are suitable for lifting the weight and also verify its stability.



If using a fork lift truck, ensure that the forks extend beyond the opposite side.

Before you start moving the machine, check the stability of the element to be transported.



Storing

The machine should be stored indoors, still packed. Maintain regular temperature and humidity.

Assembly, location, and mounting requirements

The Intellispec requires the following:

Installation

Pressco Technology Inc. recommends that the machine be installed and assembled by Pressco's specialized technicians. This is of vital importance for correct machine operation.



Warning

Pressco Technology Inc. shall not be liable in case of failures or damage to property and/or personal injury resulting from or connected with assembly if this has been carried out by unauthorized personnel, or is not in compliance with the indications given in this manual.

To carry out production and cleaning/ servicing operations, it is important for the machine to have a minimum amount of space all around and away from walls.

Ventilation

Place the Intellispec Series V components in a position with adequate ventilation to allow proper air flow through the air filters.

Component	Spacing
User Interface	Leave 1 meter [39 inches] clear around machine
Cluster box (not used on all systems)	Leave 100 mm clear in front of the fan and vent

Adjusting Module Height to Conveyor

The height of the module should be set properly to the conveyor height during installation. It should not need further adjustment.



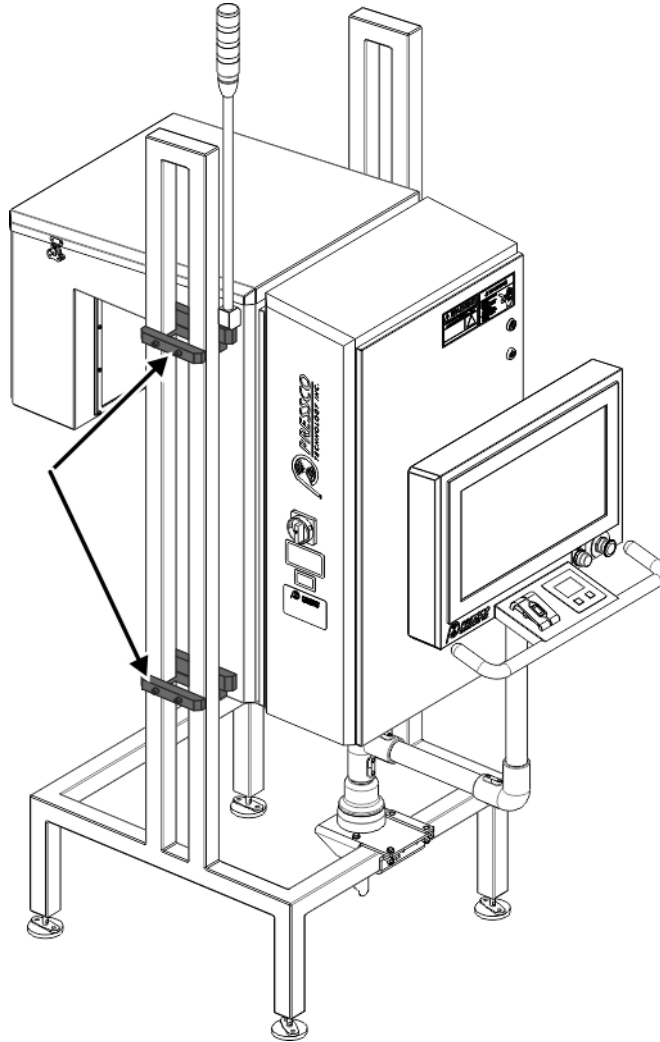
Danger

The module is extremely heavy. Get several people to help you move it if needed.

Use the yellow straps with the ratcheting mechanism to raise or lower the height of the module.



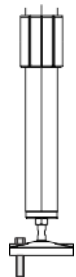
The module has brackets and bolts to make small adjustments to the overall height of the inspection module. You can also adjust it slightly forward and backward to center it over the conveyor.



Securing to Floor

The ground under the machine must be sufficiently solid to sustain the machine mass at the support points. In addition, the floor must be free of bumps, grooves and other surface irregularities. The surface must be flat enough so that the leveling feet of the machine bear weight across their entire surface.

Attach the machine to the floor by installing M12 x 50mm lag bolts into the floor through the hole on the frame foot pad. Do this on one hole in each foot.



Utilities to be supplied by customer

The following utilities are required to operate the Intellispec Series V system. Before making connection, make sure the utility matches the technical specifications. More than one connection of the utilities may be required depending on the number of modules installed. Refer to specific wiring diagrams.

Utility	Requirements
Air supply for rejection device	Pipe size must be such that there will be no pressure decrease during machine operation. Air must be dry and free of oil.
Electrical supply	Provide one each electrical socket to comply with: ▪ User interface electrical specifications (see "System Electrical Specifications" on page 26) (use the specifications that apply to your system) ▪ Integrated tunnel electrical specifications (if applicable) ▪ Cluster box electrical specifications (if applicable)
Internet connection (optional)	Provide a shielded ethernet cable to use Pressco's remote support through the Internet.

Electrical Connection

Pressco recommends that you run two (2) power cables to the FHCP 3X system, capable of handling power for the air conditioner and the system, as stated in the specifications below.



Warning

The electrical connections must meet local and national codes.

Have a qualified electrician connect the correct voltage and amperage wiring to the bottom of the electrical enclosure. See nameplate on electrical enclosure door.

The following are electrical specifications for the FHCP 3X inspection module:

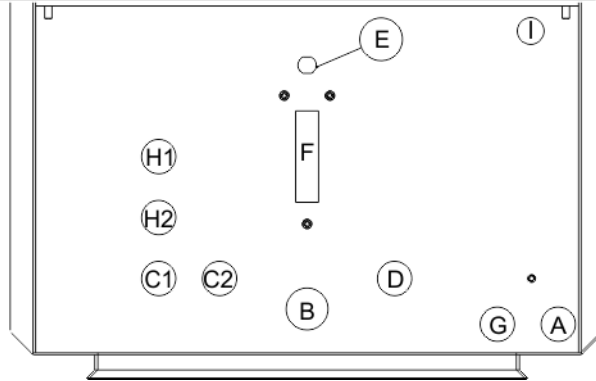
Configuration	Specification - 120 V system	Specification - 230 V system
Voltage Range	120 VAC	230 VAC
Frequency	50/ 60 Hz	50/ 60 Hz
Current	5.2A for Air Conditioner 3.8A for Inspection System	2.6A for Air Conditioner 1.9A for Inspection System

➤ To connect power:

1. Route both power circuits through Sealtite into enclosure through hole A, shown in the diagram below. This view shows the **bottom panel** looking inside the inspection module.
2. Terminate the power circuit conductors at terminal block TB-1. The location of the terminal block TB-1 is on the right-hand wall inside the inspection module.

3. Connect the power leads to terminal block TB-1. See FHCP 3X Electrical Diagram and FHCP 3X Wiring Diagram 1.

VIEW LOOKING INSIDE INSPECTION MODULE



A = POWER IN
 B = TO MONITOR
 C1 = LIS IN (optional)
 C2 = LIS TO JAM BOX (optional)
 D = EXTENDED I/O (optional)
 E = ENCODER
 F = 8-PORT I/O ENTRY
 G = 120 VAC or 230 VAC JAM BOX (optional)
 H1 = DOR CAMERA (optional)
 H2 = DOR PDN (optional)
 I = REMOTE PENDANT (optional)

A - Power in

B - To monitor

C1 - LIS in (optional) [LIS = line information system, a customer-proprietary communication]

C2 - LIS to Jam Box (optional)

D - Extended I/O (optional)

E - Encoder

F - 8-port I/O entry

G - 120 VAC or 230 VAC jam box (optional)

H1 - DOR camera (optional) [DOR = degree of rotation]

H2 - DOR PDN (optional) [PDN = Pressco data network]

I - Remote pendant (optional)

Protective earthing

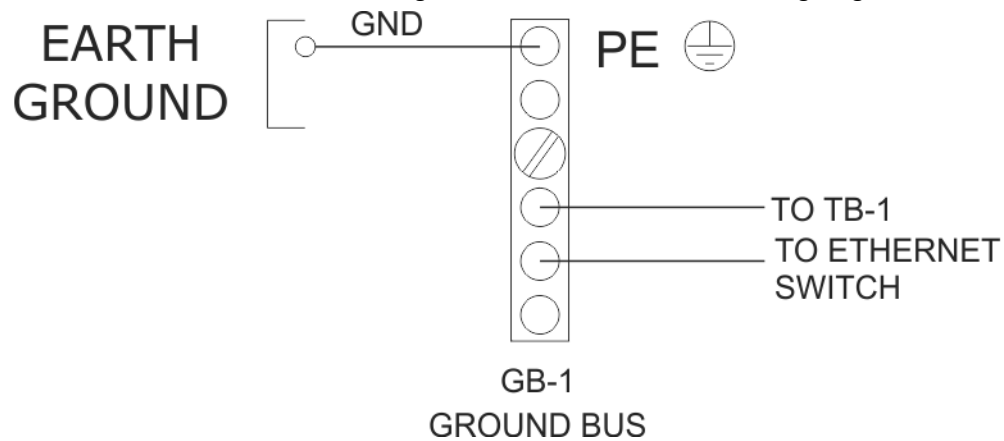


Danger

Improper connection of the equipment grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service technician if you are in doubt as to whether the product is properly grounded.

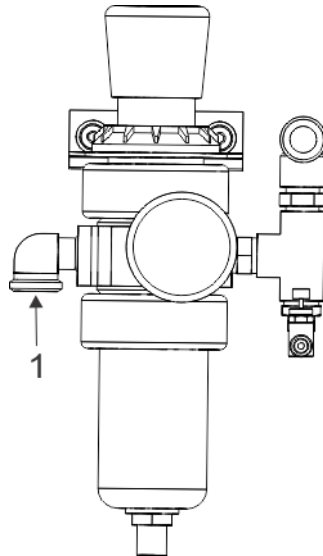
This product must be grounded (earthed). If it should malfunction or break down, grounding provides a path of least resistance for electric current to reduce the risk of electric shock.

Located close to the entry of the incoming electrical supply, a bus bar is provided for connection of the machine to the external protective earthing conductor. This terminal will be marked PE. Other ground conductors can connect to the remaining terminals. See also FHCP 3X Wiring Diagram 1.



Pneumatic Service

Connect plant air supply to the Filter Regulator Lubricator (FRL). Pneumatic requirements: 60 psi, 16 CFM, 3/8 NPT Inlet, and is for the purpose of rejecting parts.



1 - Air supply connection

Commissioning

Before proceeding with the commissioning procedure, a general check should be performed using the table below.

❖ *Note: You must complete these checks before requesting the assistance of our staff for the startup phase.*

Check	Yes	No
Positioning and leveling of the unit		
Connection of compressed air line to connection points		
Connection of power supply to control board using the specifications from the wiring diagrams		

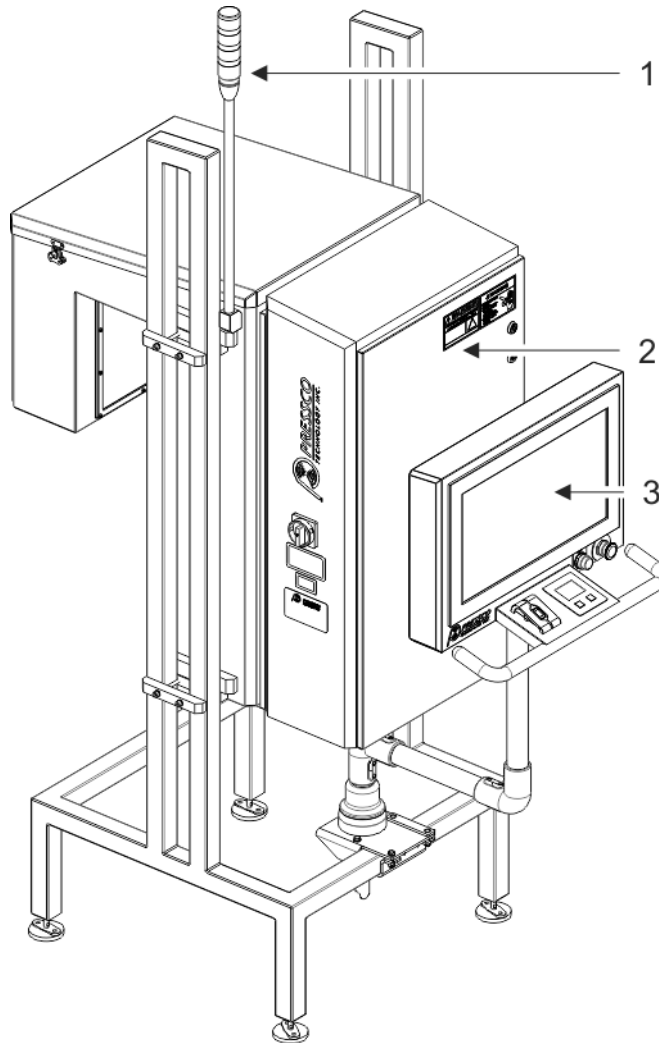
Chapter 7

Intellispec Cabinet and User Interface

The Fill Height Cap Inspection (FHCP) Module inspects filled plastic bottles after they exit the filler. It inspects both the fill height of the bottle and the position of the cap on the bottle.

The user interface attaches to the module through a movable arm. The arm can swing 180 degrees for your convenience.

Also included but not shown in the illustration are: Part Tracking and Rejection Control and Pneumatic Pusher Rejecter



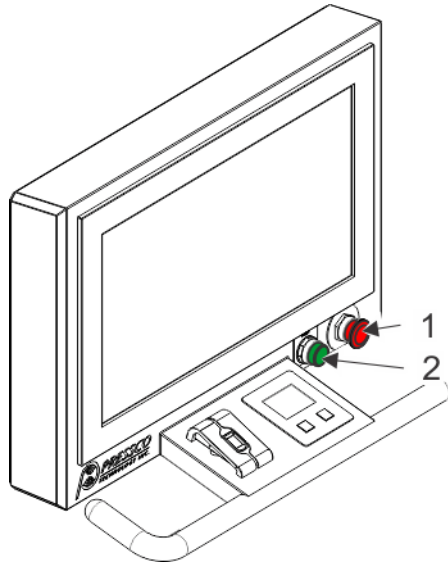
1 - Four segment light tree device

2 - Heavy duty stainless steel enclosure housing, including inspection module and vision processor computer, manufactured with NEMA4X standards

3 - Integrated Operator Interface with trackball

Emergency E-Stop Button

The FHCP 3X has a red E-Stop button [item 1] to stop motor power. The motors are those that move the inspection module up and down, and move the guide rails within the inspection module in and out. The green reset button [item 2] returns power to the motors.



1 - Red E-Stop Button stops motors

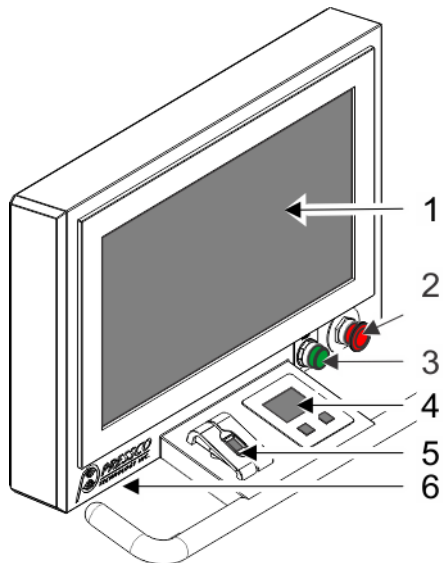
2 - Green button restarts motors

➤ **To use the E-Stop buttons:**

1. Press the red E-Stop button [item 1] to stop the motors.
2. Perform service, or clear part jams.
3. When you have completed servicing the unit, press the green button to reset the motors.

Navigation Components

To operate the software of the FHCP 3X EZ system, use the monitor and associated components, shown below.



1 - Touch Screen Monitor

- 2 - **Emergency E-Stop Button** (on page 38)
- 3 - Reset button to restart motors
- 4 - Glide pad with buttons to move cursor and **select** (see "**How to select menu items**" on page 39) items on the screen.
- 5 - **Biometric login device** (on page 41)
- 6 - Two **USB** (see "**USB Port**" on page 40) convenience ports - underneath:
 - Outside (towards left side of monitor) used for jump drive to create Support Package
 - Inside (towards center of monitor) used for **Mechanical keyboard (MKB)** (see "**Mechanical keyboard (MKB)**" on page 40)

User interface input devices

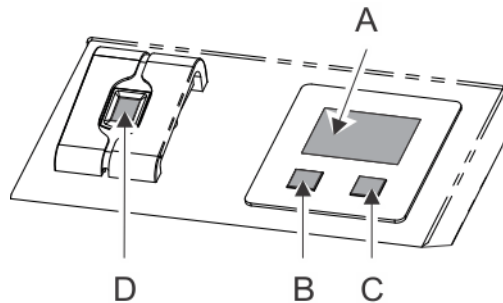
The following devices are available to input information to the Intellispec system:

- Glide pad and buttons
- **On Screen Keyboard (OSK)** (on page 47)
- Touch Screen monitor
- Temporarily connected conventional **Mechanical Keyboard (MKB)** (on page 40)
- **Biometric login device** (on page 41)

How to select menu items

Use the glide pad to select, interact with, and change active objects on the screen. The glide pad will be required for all inspection editing tasks. The glide pad [item A] is located next to the **Biometric login device** (on page 41), as shown below.

Under the glide pad are two buttons. Use the left button [item B] to select and activate objects on the screen. Use the right button [item C] to call up a context-sensitive menu related to the area or object clicked.



The following table shows the actions available for the glide pad and buttons, and the results of those actions.

Item	Action	Result
A - glide pad	Point (move pointer with the glide pad)	Display Tool Tip when hovered over active object
B	Click (Left-click)	When the pointer is over an active object, a click initiates various actions. Nothing happens when the pointer is clicked on a disabled object.
B, B	Double-click	When the pointer is over an active object, a double-click initiates various actions. For example, edit an inspection.
C	Right-click	Display a context-sensitive menu when you click on an enabled object. The context-sensitive menu often contains functions that are also available in a menu bar or other screens. For example, add a point to a polygon.
B + A	Drag (hold the left button while moving your finger on the glide pad)	Examples: move a selected Region of Interest (ROI) around an image or move an inspection in a Tree View to change the order of execution.
D (<i>Biometric login device</i> (on page 41))	Log in or out of the software.	User is logged in or out.

Mechanical keyboard (MKB)

The system supports the temporary connection of a conventional mechanical keyboard using one of the available USB ports. This keyboard will mostly be used for system level tasks such as BIOS configuration, Network configuration, and Operating System level setup.



The keyboard:

- Is primarily used by Pressco Field Service Engineers
- Is stored inside the Vision PC chassis
- Requires a stable location when in use

USB Port

The USB port on the FHCP system is located on the left side of the user interface. A protective cover can be removed when you use the USB port, and replaced when you are finished. See the drawing with the location of the USB port: **Navigation Components** (on page 38).

Use the USB port when you are:

- Importing or Exporting Part Programs from another system How to Create, Copy, or Import a Part Program
- Exporting user accounts
- Importing user accounts
- Creating a Support Package
- Using the **Mechanical keyboard** (see "**Mechanical keyboard (MKB)**" on page 40)
- Saving images, especially to send with a support package (**How to Save Images** (see "**Saving Images**" on page 73))

Biometric login device

The Biometric Identification login device is used to log in and out of the Intellispec 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 Intellispec does not recognize your finger print, you must log in using the **on screen keyboard (OSK)** (see "**On Screen Keyboard (OSK)**" on page 47))

Chapter 8

Operating the FHCP 3X system

Power On/ Off

Power on

➤ Before turning on the power:

Make sure the following are ON. Normally you can leave these ON all the time:

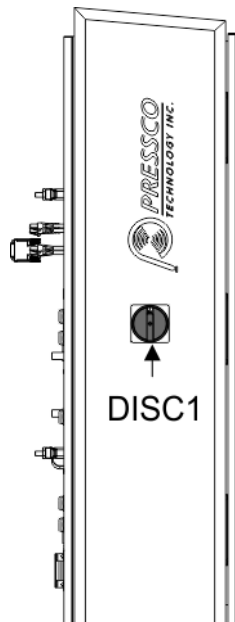
- Power switch on the UPS, located inside the Intellispec Computer Enclosure
- Circuit breakers CB1 and CB2, located inside the inspection module on TB1

➤ To turn on the power to the Intellispec FHCP 3X system:

1. Turn on the rotary disconnect switch (DISC 1, shown in the illustration below). The system will start, and the Intellispec software will load.
2. Verify the red E-stop button on the front panel is pulled out, and not in E-stop mode. **Emergency E-Stop Button** (on page 38)
3. Press the green reset button on the front panel until the light on the button turns green. This will ensure the guide rail and camera motors are enabled for motion. The guide rails will calibrate and move into the correct position for the currently selected part program.
4. Log in to begin using the system.

Power off

To turn the power off to the Intellispec FHCP 3X system, turn off the main power switch (DISC 1).



When you shut down the system:

- The system, including the computer, shuts down,
- The UPS shuts down

❖ *Note: there is a selectable UPS shutdown time that must expire before the computer and UPS shut down (30 seconds default) **System Alarms Description** (on page 58)*

- The software shuts down, and
- The guide rails within the inspection system go to a home position.



Warning

When you shut down power using this switch, there will still be voltage present on the UPS inside the unit until it discharges. The interlock switch will be energized to prevent access to the inside of the unit.



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 40 seconds before turning it back on. This allows the electronic components to correctly reset.

Online / Offline



- The stoplight is the online/offline indicator for each lane. A red light indicates the lane is offline; a green light indicates the lane is online.
- To switch from the online to offline mode, or vice versa, click the stoplight.
- Lanes can be put online or offline independently. If multiple lanes are configured, then one can be offline while another is online.

Part Changeover

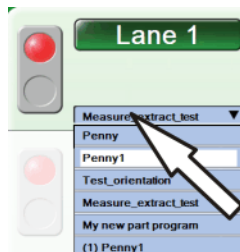
❖ *Note: Some menu items are only available to advanced level users.*

➤ What you need:

- User permission to Switch Part Program

➤ To change parts:

1. **Log in** (see "**Log in and log out**" on page 53).
2. Click the part drop-down menu.



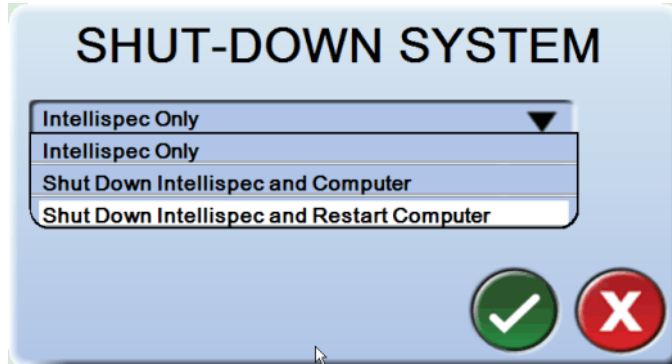
3. Click the name of the new part to inspect. The new part program is loaded on the Intellispec.
4. Put the lane online to begin inspecting new parts.

Exiting the Intellispec software

You must have proper user permissions to exit the software. This prevents unauthorized system shutdowns. Contact your system administrator if you need user permissions.

➤ **To exit Intellispec software:**

1. Log in.
2. Select Home  > Tools  > **Exit System.**
3. A drop-down menu allows you to choose an option:
 - Shut down the Intellispec software only
 - Shut down the Intellispec software and computer
 - Shut down the Intellispec software and restart the computer



4. Choose the desired option from the menu and click the OK  button. The Intellispec software and/or computer shuts down (and restarts if applicable).

Chapter 9

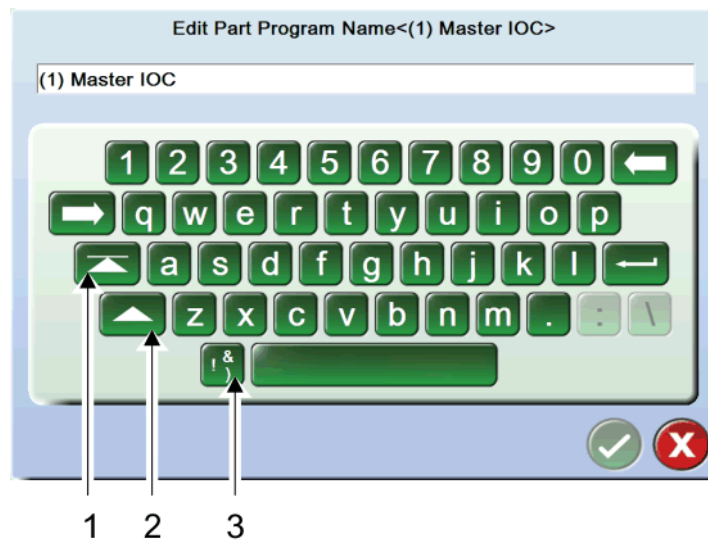
Navigating Through the System

This section describes the regions of the user interface and how to navigate through the software. It also describes how to select items and how to use the user interface buttons.

On Screen Keyboard (OSK)

Keyboards will be displayed depending on what kind of input is needed. Other keys are available, depending on your language. Keys may be grayed out if not applicable to the current operation.

Alphanumeric keyboard



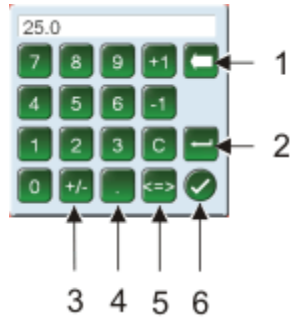
- 1 - **Shift lock** button - capitalizes all letters until you press this button again.
- 2 - **Shift** button - capitalizes one letter, then returns to uncapitalized letters automatically.
- 3 - **Symbols** button - provides additional keys, shown below.



Numeric keyboard

The numeric keyboard is displayed when the input field requires a numeric entry. Most of the buttons are self-explanatory. Additional buttons are described below.

❖ *Note: some buttons are not displayed if they are not appropriate for that field.*



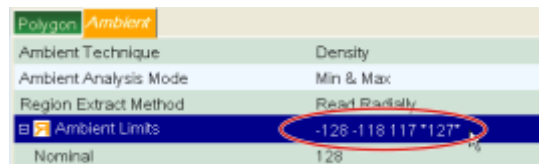
1 - **Backspace** - removes a digit

2 - **Enter** - populates the field in the Intellispec screen without closing the keyboard. This is useful if you want to test a value and see the results of the change immediately.

3 - **[+/-]** makes the number positive or negative

4 - **[.]** available only if a decimal number is valid in the input field

5 - **[<=>]** cycles to the next limit of the parameter. If the parameter has more than two limits, then asterisks will surround the selected value in the menu.



6 - accepts your changes and closes the numeric keypad

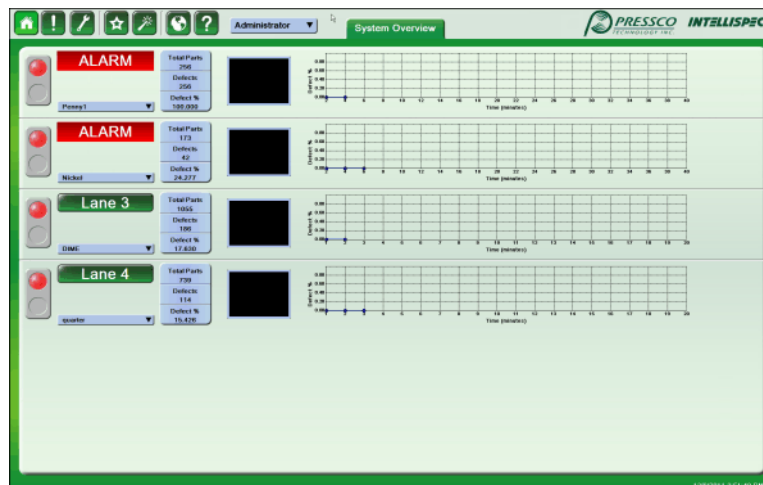
User Interface Display - Four Levels

The display on the user interface has four levels for viewing:

❖ *Note: when you switch between System Overview and Lane Overview modes, you will see one screen 'minimize' to the task bar while your selected screen is displayed. This is normal.*

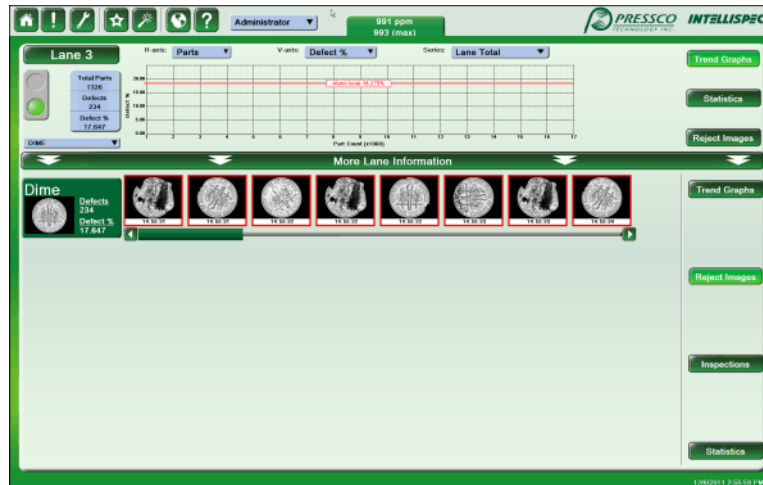
➤ To view the four viewing levels:

1. Select Home to go to level 1, System Overview.
 - **System Overview** - Displays information that represents the complete system as well as a thumbnail line for each Lane that is configured.



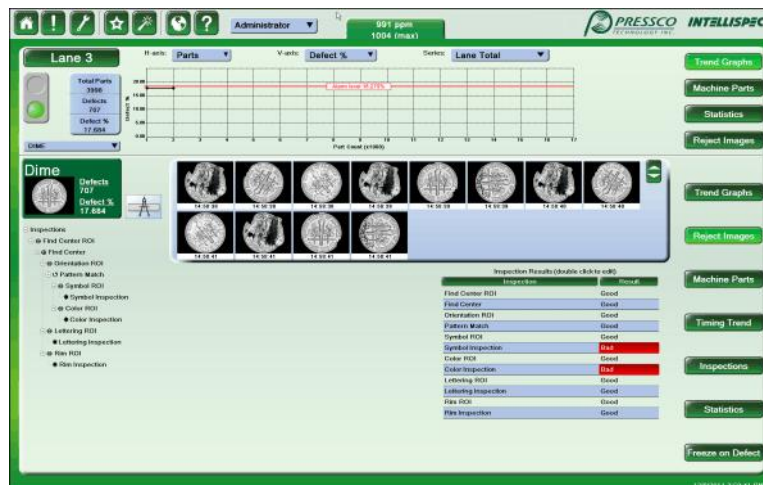
2. Select a Lane button to go to level 2, Lane Overview.

- **Lane Overview** - Displays information for a particular Lane as well as a thumbnail line for each sensor used in that Lane.



3. Select a Sensor button to go to level 3, Sensor Overview.

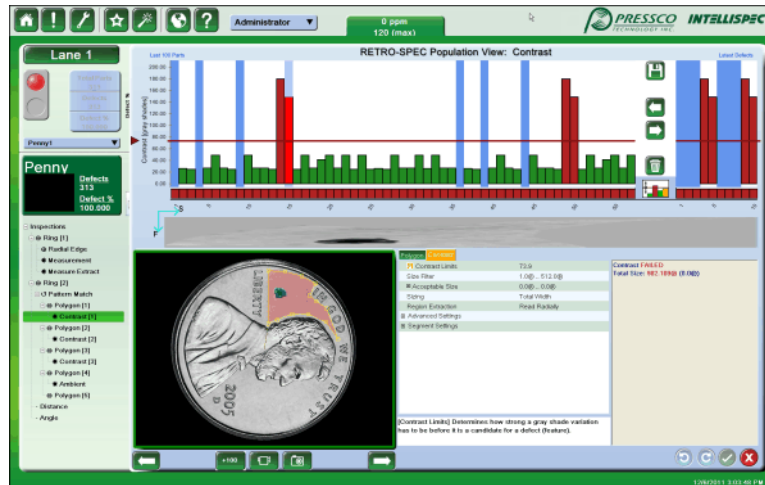
- **Sensor Overview** - Displays information for a particular sensor, including an image area, sensor statistics, a graphics area that displays user-selectable graphs, and a user-selectable inspection list.



4. Double-click an inspection name in the Analysis Inspections list to get to level 4, Inspection Screen.

❖ *Note: Some menu items are only available to advanced level users.*

- **Inspection Screen** - Double-click on any inspection name to see this view, which allows you to see inspection parameters and make changes if necessary.



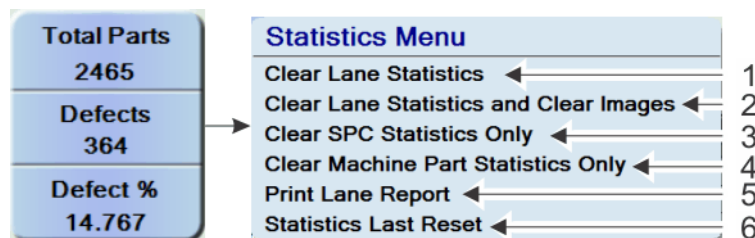
5. Click the exit button  to go back to level 3 Sensor Overview mode.

Statistics menu

Use the Statistics menu in the Lane Overview screen to view, reset, or print statistics.

❖ *Note: Some menu items are only available to advanced level users.*

To view the Statistics menu: Select a Lane button **Lane *n*** > Click over a statistics box.



1 - Clear Lane Statistics

Clear the statistics for the lane only.

2 - Clear Lane Statistics and Clear Images

Clear the statistics for the lane and empty the defective image buffer.

3 - Clear SPC Statistics Only

(Only available if you have Retro-Spec inspections enabled to keep SPC data) Clear the statistics statistical process control. See Statistical Process Control.

4 - Clear Machine Part Statistics Only

(Only available if machine part correlation is enabled on your system) Clear the statistics for the machine parts. See Machine Part Correlation.

5 - Print Lane Report

Send the lane statistics report to the default configured printer.

6 - Statistics Last Reset

Display the date and time when the lane statistics were last reset.

Menu Toolbar



1 - Home - Go to the System Overview Screen

2 - **Alarms** (on page 55)- Clear, view, and set alarms

3 - **Tools menu** (on page 77) - Configure system settings, reports, hardware, part tracking, rejectors, part setup, and more

4 - Star menu - Take screen shots and manage background tasks

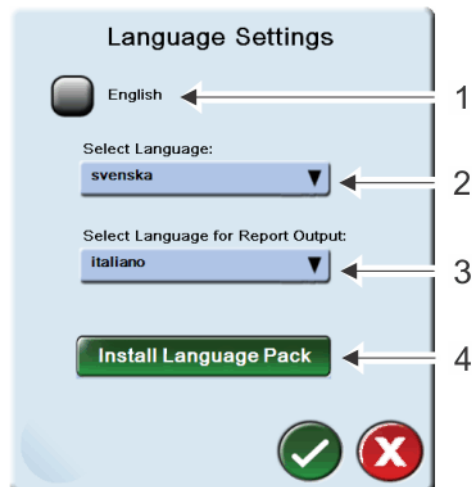
5 - Wizards - Walk By Setup

6 - **Language** (on page 51)

7 - **Help** (on page 52) - Access the help documents, support package utility, remote support, launch Windows Explorer, and determine software version

Language

 Select the language button to select a different language. Choose from the available options.



1 - English

If this box is checked, the names of the available languages are displayed in US English (example: *Swedish* instead of *svenska*).

2 - Select Language

Select the language to display on the user interface.

3 - Select Language for Report Output

Select the language for the reports, such as the Lane Report from the **Statistics menu** (on page 50).

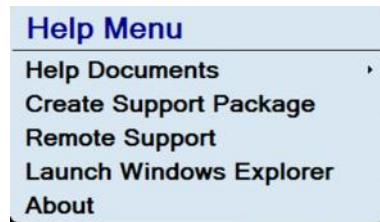
4 - Install Language Pack button

When a new language is available, use this option to install the proper files. You will receive instructions from Pressco to install the language pack.

Help

Select the Help icon  to:

- use the help files
- create a support package
- access Pressco remote support
- open Windows Explorer (administrators only)
- obtain your current software version



➤ *To access the user manuals:*

1. Select the Help icon .
2. Select Help Documents, then select a manual from the list. The user manual is displayed.

Chapter 10

User Accounts and Login information

Log in and log out

➤ *To log in:*

- Select the **Log In** button . Enter your password.
- With the optional **biometric sensor**: Press your finger to the sensor.
 - The system logs you in. If the system fails to recognize your identity after three attempts, then log in through the log in dialog box.

➤ *To log out:*

- Select the button with your name , then select the **Log Out** button.
- With the optional **biometric sensor**: Press your finger to the sensor. The system logs you out.

❖ *Note: When another users logs in, the system automatically logs you out.*

Switching users

The Switch Users option from the Log In menu logs out the current user, and allows a new user to log in.

➤ *To switch users:*

1. Click the Log in button (which has the current user's name displayed).
2. Select Switch Users from the menu.
3. Select the new user name from the drop-down menu.
4. Enter the new user's password. The new user is logged in. The previous user is logged out.

➤ *If you have a biometric sensor:*

Press your finger to the biometric sensor device to log in. The previous user will be automatically logged out by the system.

Changing your password

The Change Password function is available to all users.

❖ *Note: an Administrator can reset a password if necessary.*

➤ *To change your password:*

1. Log in.
2. Select the Log In button to see the Log In menu.
3. Select Change Password. The Change Password dialog box is displayed.
4. Enter your Old Password.
5. Enter a New Password.
6. Confirm your New Password.
7. Select the OK button  to accept the changes. The dialog box closes and your password is changed.

Chapter 11

Alarms

There are three levels of alarms: System, Lane, and Sensor alarms. Most of these are configurable. The table below lists the alarms, possible causes for triggering the alarm, the reset mechanism, and color of the indicator on the light tree. Also refer to the **light tree status** (on page 57) for more information about the lights.

The information in this section is valid as of software version 5.2.042 and 5.3.042

❖ *Note: Alarms are recorded in the system log reader (on page 77), even when the alarms are automatically cleared.*

Alarm Name	Cause	To Reset:	Color in light tree
System Alarms (see "System Alarms Description" on page 58)			
Note: If a system alarm occurs, an alarm icon is displayed in the lower right of the screen (in the Windows system tray)			
UPS	Battery is dead.	Replace battery Reset screen alarm	Not applicable (N/A)
	Or: Plant power is lost and the UPS shutdown time is exceeded. The Intellispec shuts down.	If plant power is restored before the Intellispec shuts down, then the alarm is automatically cleared. Otherwise, restart the system.	N/A

Alarm Name	Cause	To Reset:	Color in light tree
Over temperature	CPU temperature exceeds highest recommended operating temperature. The Intellispec system shuts down. You must wait till the processor cools before resuming operation.	Reset screen alarm	N/A
Lost network connection	If the plant network is configured to communicate with the Intellispec and the network connection is lost, a lost network icon appears in the Windows system tray	Restore plant network connection	N/A
Lane Alarms 			
Percent Defects ¹	Percentage of defects exceeds the set limit	Reset alarm on screen	 Red
Offline ¹	Lane goes offline	Reset alarm on screen	 Green = system is online  Red = system is offline
Chute Full ¹	Reject chute is full	Clear chute Reset alarm on screen	 Red
Blow Molder Door Open ¹	Blow molder door is open	Close blow molder door, which automatically resets alarm	 Red
Power Status ¹	Lane AC Power is lost	Automatic	 Red = AC power is lost  Blue = power is OK
Good Parts ¹	Used as a part counter. When specified number of parts is reached, then alarm is triggered.	Reset alarm on screen	 Red
Jam at Reject Confirm ¹	The reject confirm path has been blocked too long	Reset alarm on screen	 Red
Missed Reject ¹	System missed rejecting a part. Works with Reject Confirm.	Reset alarm on screen	 Red
System Error ¹	Part tracker or other internal system errors	Reset alarm on screen	 Red
Sensor Alarms 			
Percent Rejects ¹	Percentage of rejected parts exceeds the set limit	Reset alarm on screen	 Red

Alarm Name	Cause	To Reset:	Color in light tree
Excessive Rejects ¹	Excessive number of rejects	Reset alarm on screen	 Red
Excessive Warnings ¹	Excessive number of warnings	Reset alarm on screen	 Amber
Consecutive Defects ¹	Too many consecutive defects	Reset alarm on screen	 Red
System Error ¹	Missed part, missed acquisition, missed result, or other internal error	Reset alarm on screen	 Red

¹ If you want to connect an external monitoring device such as a PLC, an optional Extended I/O board is required for each lane.

Light tree status

The lights on the optional light tree will turn on, off, or blink depending on status of certain hardware. Each lane has its own light tree. The table below lists the different states for each light.

Light color	Condition	What it means
Red	On - steady	Alarm condition
Red	On - blinking	Part tracker board lost communication with the host PC or has an error and needs to initiate an alarm
Red	Off	No alarm (OK)
Amber	On	Warning alarm condition
Amber	Off	No warning (OK)
Amber	0.5 second flash	System automatically resets Asynchronous Correlation FIFO (not used in all systems)
Green	On	Lane is online
Green	Off	Lane is offline
Blue	On	Part tracker board has power (OK)
Blue	Off	Part tracker board has no power

Viewing and Clearing Alarms

Use the View/Clear Alarms menu to see which alarms are enabled and disabled.

To get to the **View/Clear Alarms** menu, select an Alarm button

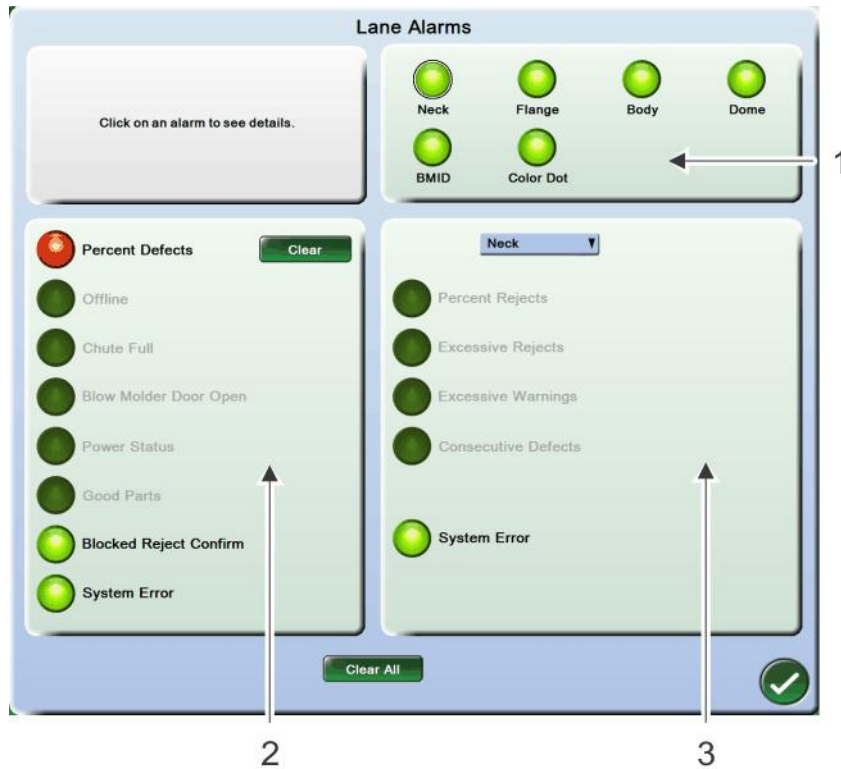
ALARM 

➤ To clear an alarm:

- Select the **Clear** button next to any alarm to clear a single alarm. Or:
- Select the **Clear All** button at the bottom of the screen to clear all alarms.

❖ *Note: some triggered alarms may be from another sensor - select the red sensor indicator [in item 1] to see that sensor's alarms*

❖ *Note: The LED with a white circle around it in the list of sensors [item 1] is the selected sensor*



1	List of sensors in the selected lane. Select an LED to select a sensor.
2	List of Lane alarms
3	List of Sensor alarms. Use the drop-down menu to select a sensor.

The indicators in this screen show whether an alarm is enabled, and whether it is triggered.

	Green Off - the alarm is not enabled nor triggered
	Green On - the alarm is enabled, but has not been triggered
	Red On - the alarm is both enabled and triggered

➤ *To view when an alarm was triggered and who last cleared it:*

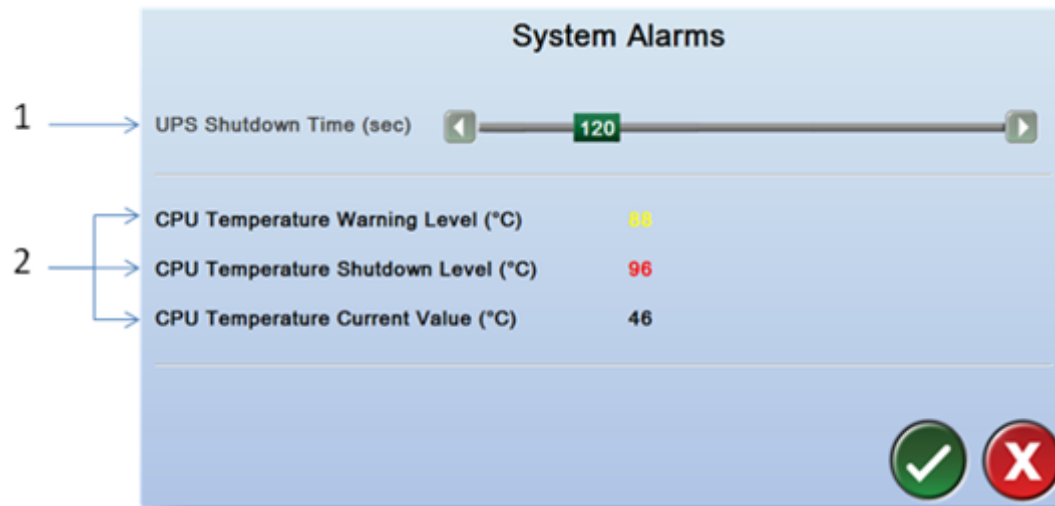
Select an LED in the View/Clear Alarms screen.



System Alarms Description

The system alarms are the UPS (uninterruptible power supply) and CPU temperature alarms. You can configure the UPS shut down time.

To get to this menu: select Home  > Alarms .



1 - **UPS Shutdown Time** – The number of seconds that the UPS will maintain power to the system if AC power has been lost. The Intellispec system shuts down after this time period. This allows for a normal Windows shutdown.

2 - **CPU Temperature** – If a multiple core computer is used, the highest temperature is displayed. If the shutdown CPU temperature is reached, the Intellispec system shuts down.

Chapter 12

Graphs and Image Displays

Several graphs are available on the user interface to help you view inspection trends. This section discusses the buttons on the right side of the screen in the Lane Overview and Sensor Overview modes.

Trend Graphs

Trend Graphs

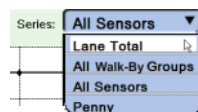
➤ *To view the Lane trend graphs:*

1. Select a lane (click a Lane n button).
2. Click a **Trend Graphs** button on the right side of the screen. The trend graph is displayed.

❖ *Note: There are two Trend Graphs buttons available. One is for the lane; the other is for the sensor. If you are viewing **Lane Overview** mode, then the trend graph in the upper screen is where you select the viewing options. The trend graphs in the lower screen follow the settings from the upper screen. In **Sensor Overview** mode, you can select viewing options separately within the upper and lower screens.*

Trend graphs are available to view statistics based on specified criteria. These graphs are available for each lane and each sensor within that lane. You can select criteria for the H-axis, the V-axis, and Series. If you have an inspection enabled that collects Retro-Spec Statistics, then an additional column of **Inspection** data is available.

For Trend Graphs, you can select which data to display. Select from the Series drop-down menu.



Lane Total

Statistics are averaged for all sensors within the lane.

All Walk-By Groups

Statistics for inspection groups. These groups are defined in the Walk By Graphic setup, and pertain to a specific area of a part.

All Sensors

Statistics for each sensor.

Individual Sensors [names vary]

Statistics for only the selected sensor.

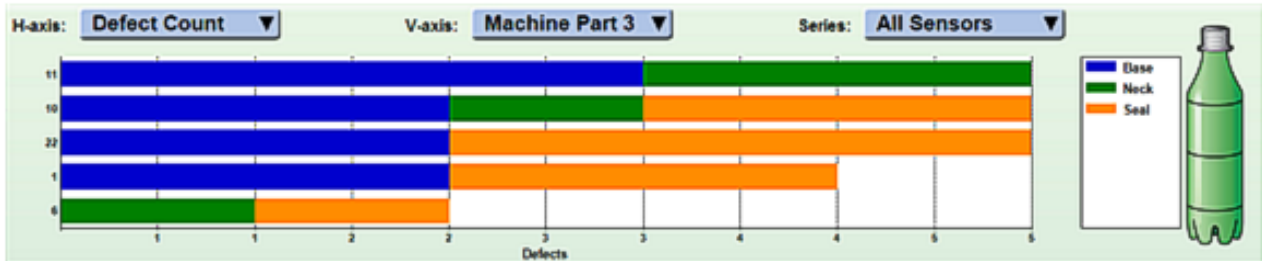
Note: A key (to explain color-coding and data point shape) is displayed to the right of the graph for All Walk-By Groups and All Sensors.

Machine Part Graphs

Machine Part Graphs are available when you have the Correlation option installed. Machine Parts Graphs display defect information for each machine part. Below is a list of possible combinations for Defect % and Defect Count.

H-axis	V-axis	Series
Defect %	Machine Parts	Lane Total All Sensors
Defect Count	Machine Parts	Lane Total All Sensors

An example graph is displayed below. It shows defects for a machine part type, and the number of defects correlated to each sensor.

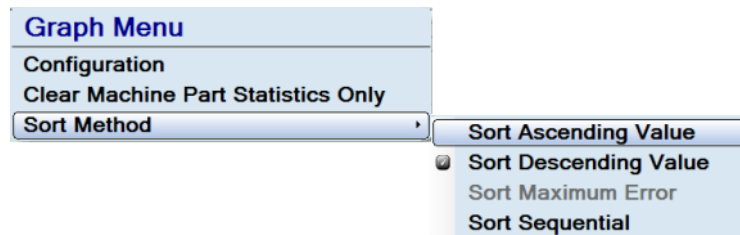


Sorting Data in Graphs

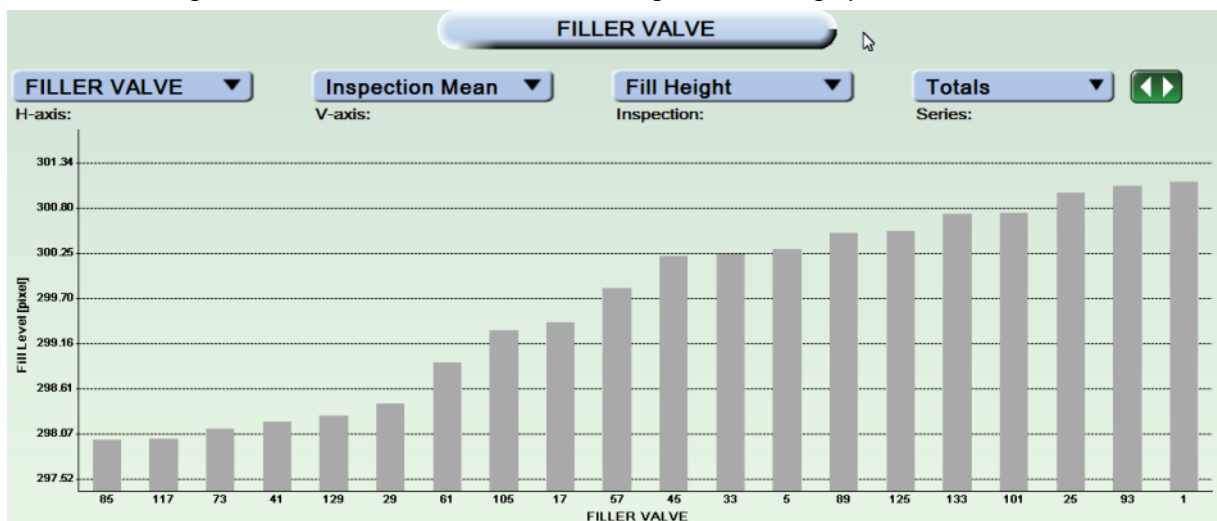
Change the order of the displayed data in the Trend Graphs or Machine Part Graphs (if configured).

❖ *Note: when you change sorting order, it affects the **Trend Graphs** or **Machine Part Graphs** in the upper and lower screens. Other graphs are not affected.*

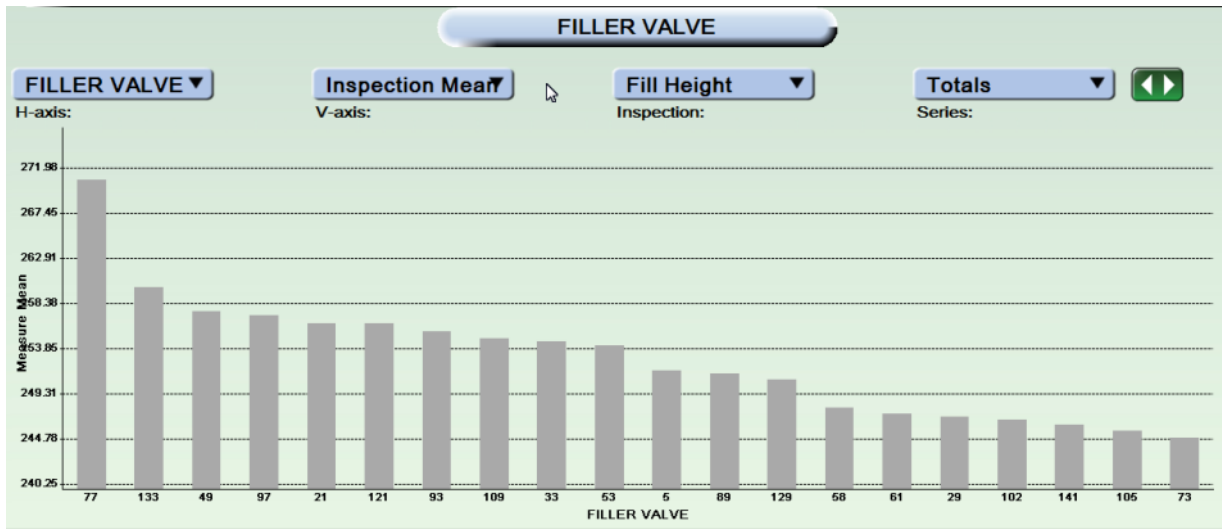
To sort the graph data: Right-click over a graph > select Sort Method > select an option. The data on the graph is sorted. The options are explained below.



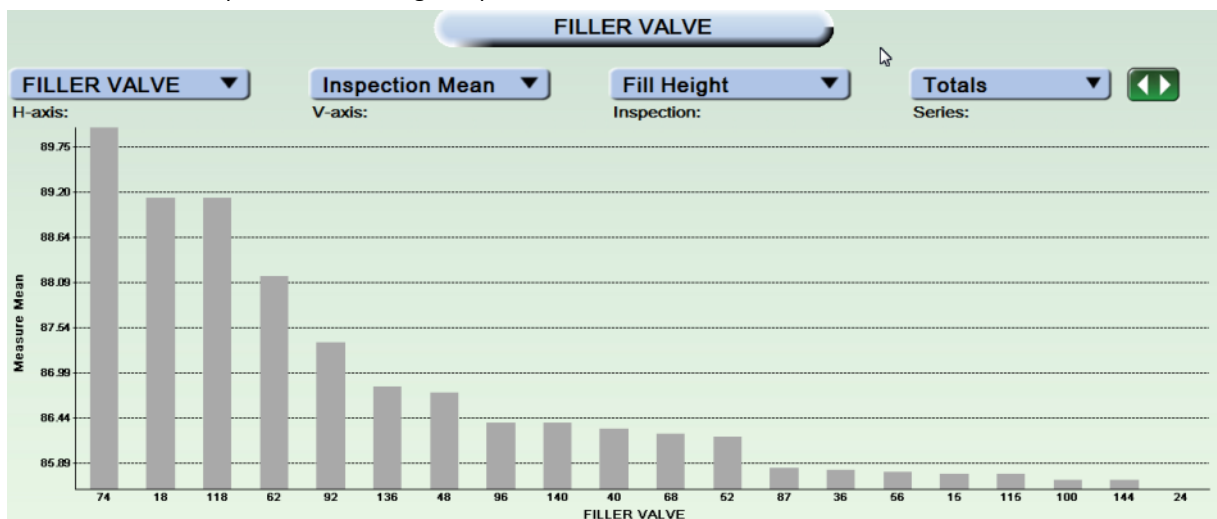
- **Sort Ascending Value** – Sort from low to high result. In the example below, the machine part with the highest number of defects is shown on the right side of the graph.



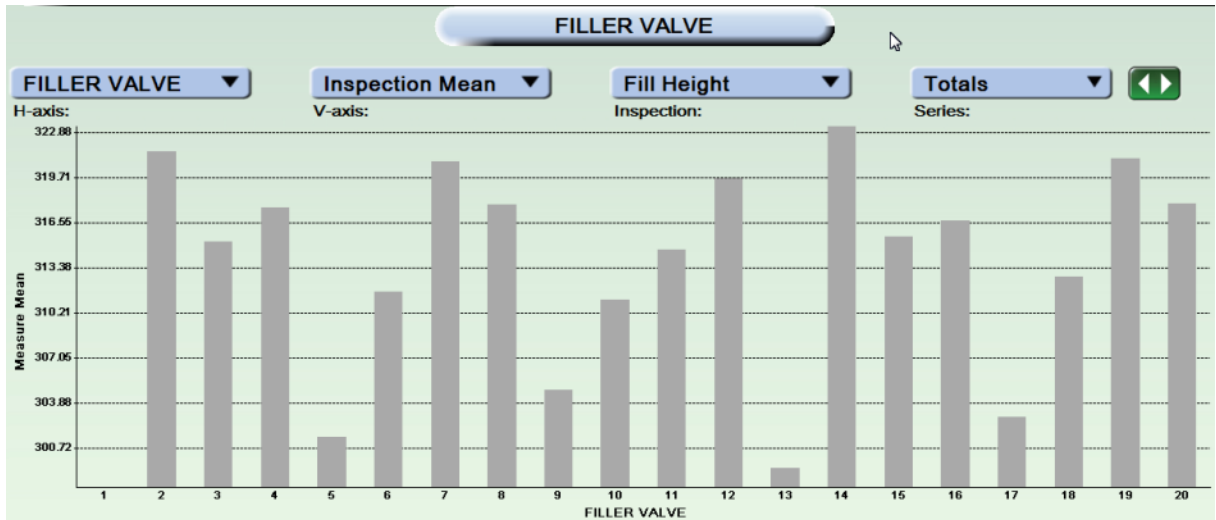
- **Sort Descending Value** – Sort from high to low result. In the example below, the machine part with the highest number of defects is shown on the left side of the graph.



- **Sort Maximum Error** – [Available when Keep Retro-Spec Statistics is enabled for an inspection, Totals is selected for the graph Series, and Inspection Mean is selected for V-Axis] Sort the data by machine part where the highest peak shows the furthest value from nominal, as an absolute value.



- **Sort Sequential** – Display an ordered list of machine parts.



Statistics Grid

Statistics

The Statistics Grid displays information about each Sensor. There are two types of Statistics Grids: Lane and Sensor.

Lane Statistics Grid

The Lane Statistics Grid (in Lane Overview mode) displays general information about each Sensor. It shows the Total number of parts run, Sensor, Defects, Defect %, Last N, and Last N %.

Show: Sensors	Detail: All				
Sensor	Total	Defects	Defect %	Last N	Last N %
Rivet	56748	56748	100.000	953	95.300
Panel	56748	56748	100.000	953	95.300

Sensor Statistics Grid

This grid is available when you display Sensor information. It shows specific information for each sensor, including Inspection, Total number of parts run, Defects, Defect %, Last N, and Last N %.

Inspection	Total	Defects	Defect %	Last N	Last N %
Pattern Match	56748	56748	100.000	953	95.300
Radial Edge	56748	0	0.000	0	0.000
Ring	56748	0	0.000	0	0.000
Ring	56748	0	0.000	0	0.000

❖ *Note: you can **configure** (see "Statistics Grid options" on page 65) the statistics display. Your system may not display all of the above-mentioned items.*

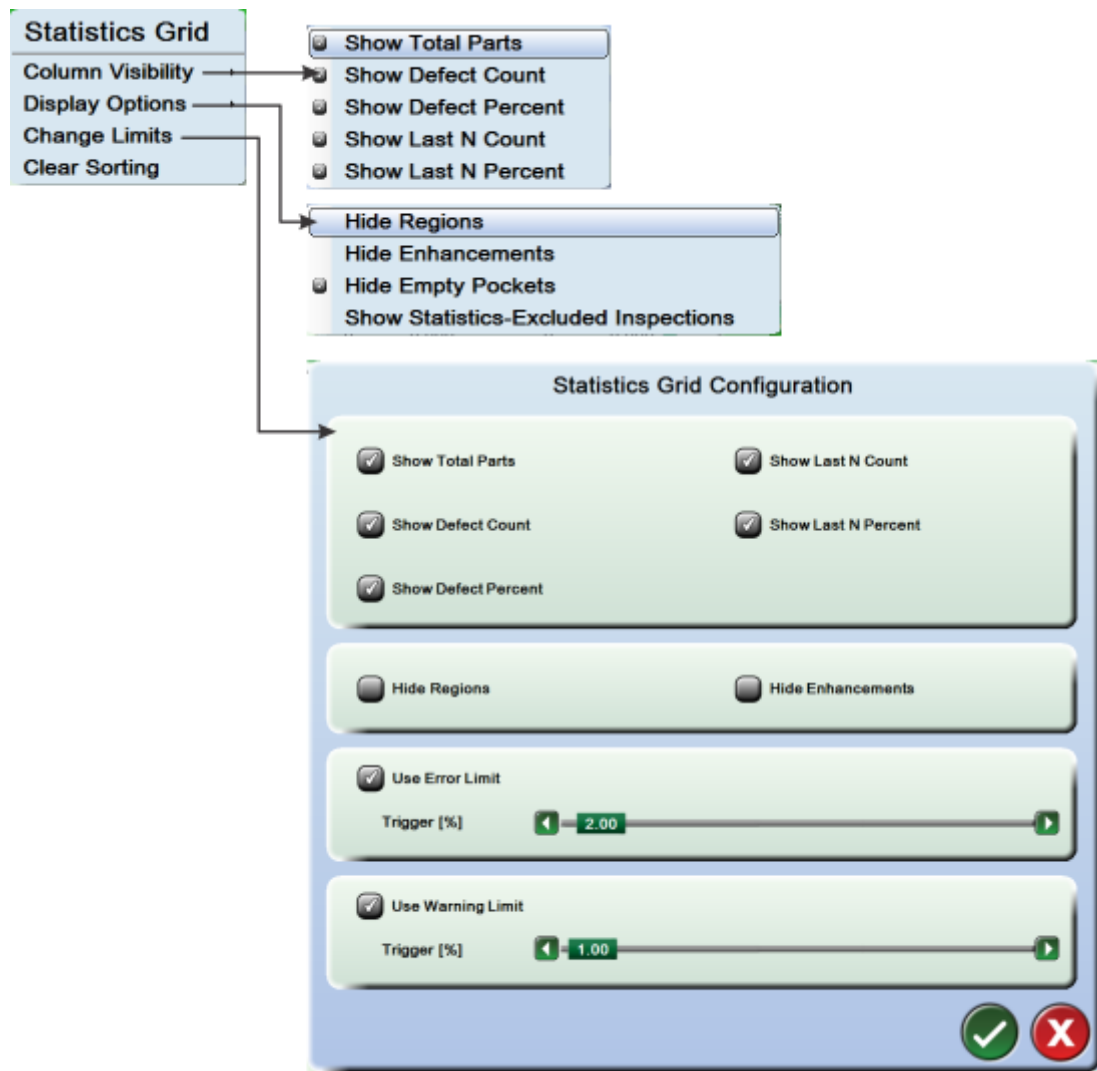
Sorting order

To sort any column in ascending or descending order, select the button at the top of the column. Select it again to toggle to the opposite order. Right-click to clear sorting in the statistics grid.

Inspection	Total	Defects	Defect %	Last N	Last N %
Pattern Match	56748	56748	100.000	953	95.300
Radial Edge	56748	0	0.000	0	0.000
Ring	56748	0	0.000	0	0.000
Ring	56748	0	0.000	0	0.000

Statistics Grid options

These settings are applied to all statistics grids, whether in the Lane Overview or Sensor Overview mode. Right-click over any statistics grid to see the options. These are explained below.



Column Visibility

The number of columns in the grid.

Display Options

The number of rows in the grid. This only affects the statistics grids in the Sensor Overview level.

Hide Regions

Hide regions such as Ring, Adaptive, or Rectangle from the grid.

Hide Enhancement

Hide enhancements such as Clipping, Stretch Grayshades, or Power Filter.

Hide Empty Pockets and Show Statistics-Excluded inspections

Show or hide Empty Pocket or Statistics-Excluded inspections.

Change Limits

Change the number of columns and rows of the grids in the first two sections of the menu. These are the same as Column Visibility and Display Options.

Use Error Limit

Causes the **Defect %** and **Last N %** columns to display in red if the trigger percentage is exceeded. This allows you to see these statistics from a distance.

Use Warning Limit

Causes the **Defect %** and **Last N %** columns to display in yellow if the trigger percentage is exceeded. This allows you to see these statistics from a distance.

Clear Sorting

Puts the sorting order back to the default setting.

Reject Images

Reject Images

Reject Images are images from the last 100 defects from a sensor (or all sensors for Lane Overview mode).

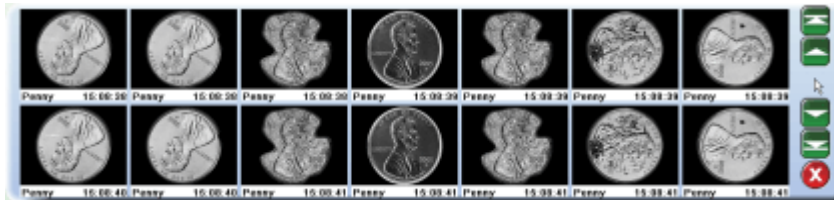
➤ To view Reject Images:

Select a **Reject Images** button. Note: there are buttons for **Lane** and **Sensor** levels - these display images for the entire lane or just the sensor.

Lane Reject Images show failed images from different Sensors. Below the image is the name of the Sensor it came from and what time it was rejected. Selecting an image will take you to its Sensor.



Sensor Reject Images show failed images from that Sensor only.



➤ **To use the images:**

- Select an image from the Lane Reject images to display the Sensor information in the lower part of the screen.

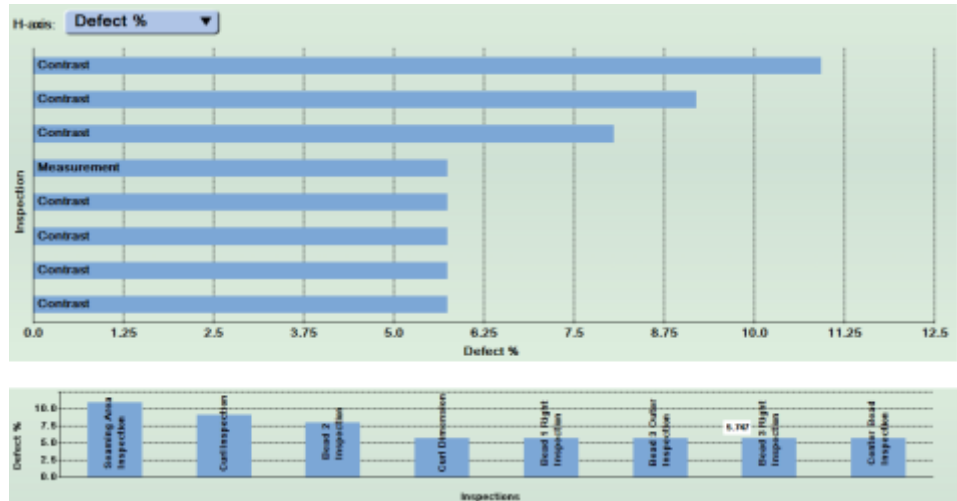


- Select one of the small images to display a larger version of that image.
- Select the large image to display a magnified portion of the image. This is useful to see small defects. Click and drag on the magnified portion to navigate around the image.

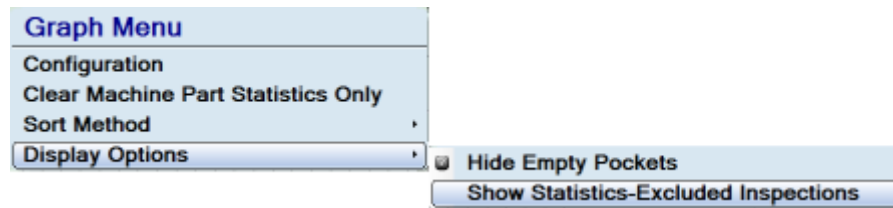
Inspections graph



Select the **Inspections** button to display the Defect Count or Defect % for the selected sensor. It displays the failed inspections in descending order of failure. The example below shows the graphs in both Lane Overview and Sensor Overview modes.



When you right-click over the graph, you can choose to view or hide Empty Pocket or Statistics-Excluded inspections.



Walk By Graphic

Walk-by

This is a graphic representation of a part so that you can quickly identify which area of the part is failing. It is called Walk By because you can quickly walk by the Intellispec and look at the graphic to determine the status of inspection:

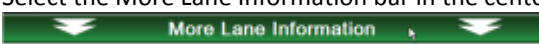
- **Green** = passing parts
- **Yellow** = warning. The spoilage rate is approaching, but has not yet reached a critical level. You can make changes to the manufacturing process before the failure rate gets too high.
- **Red** = failing parts

Set up warning or failure limits in Walk By Setup.

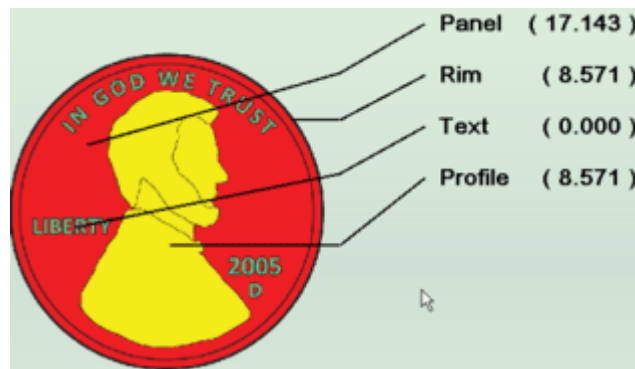
There are two Walk By Graphics:

- A **small** Walk By Graphic is displayed in System Overview, Lane Overview, and Sensor Overview modes
- A **large** Walk By Graphic can be displayed in Lane Overview mode

➤ To see the large Walk By Graphic:

1. Select a Lane button .
2. Select the More Lane Information bar in the center of the screen.

3. Select the Walk By button on the right side of the screen. 

The large Walk By Graphic displays the group names, pointing to the appropriate areas on the part. It also displays the defect percentage for each of those groups, from inspection results.



Using the Walk By Graphic

View inspection information by selecting on the areas of the graphic. The example below shows:

- The Panel group was selected - all the inspections for Panel are displayed in the table
- The Panel area in the Walk By Graphic is red - The average defect % for the group of inspections exceeds the failure limit from the Walk By setup

Inspection	Total	Defects	Defect %	Last N	Last N %
Polygon	312615	26794	8.571	78	7.800
Contrast	312615	44658	14.285	130	13.000
Polygon	312615	26794	8.571	78	7.800
Contrast	312616	35727	11.428	105	10.500
Polygon	312616	26795	8.571	79	7.900
Contrast	312616	44659	14.286	131	13.100

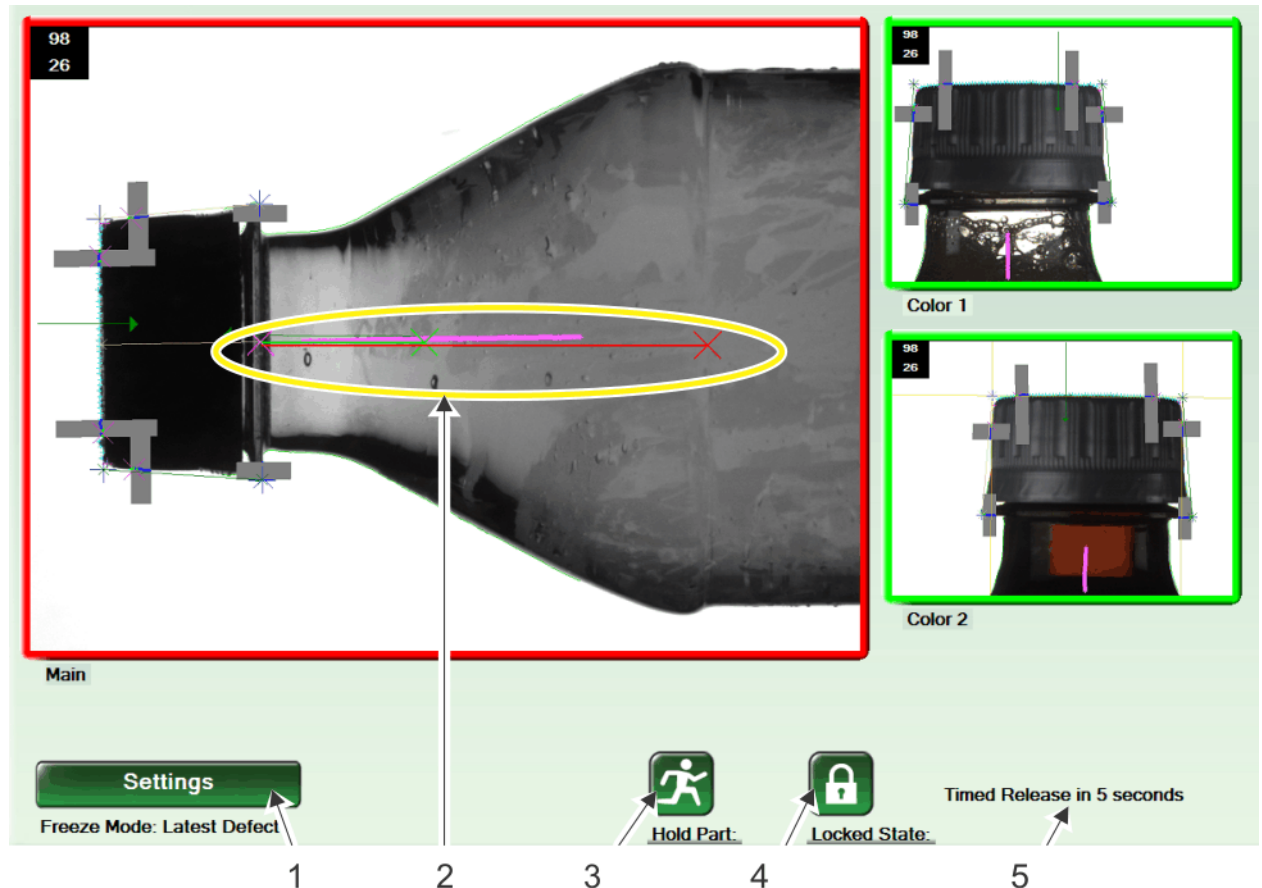
Double-click an inspection from the table to open and edit that inspection. Note: Some menu items are only available to advanced level users.

Freeze on Defect

Freeze on Defect

Automatically freeze an image when a lane is online. The frozen image depends on your selection. Freeze on Defect is available from Lane Overview or Sensor Overview screens, and appears slightly different from each mode. Select the **Freeze on Defect** button from the right side of the screen to see the image(s).

The screen below is an example of Freeze on Defect images in Lane Overview mode. This lane has three sensors.



2 - Graphics are optional

3 -  = Hold an image.  = Held image.

4 -  = Locked image. Select this button to release an image.  = Unlocked image.

5 - Information is displayed when the optional Timed Release feature is used

➤ **To use Freeze on Defect:**

- Select any image (while in Freeze on Defect mode) to display it as the large image.
- Right-click over any image to use the **Freeze on Defect Options menu** (on page 72)
- Select the **Settings** button to use the **Freeze on Defect Setup menu** (on page 70)

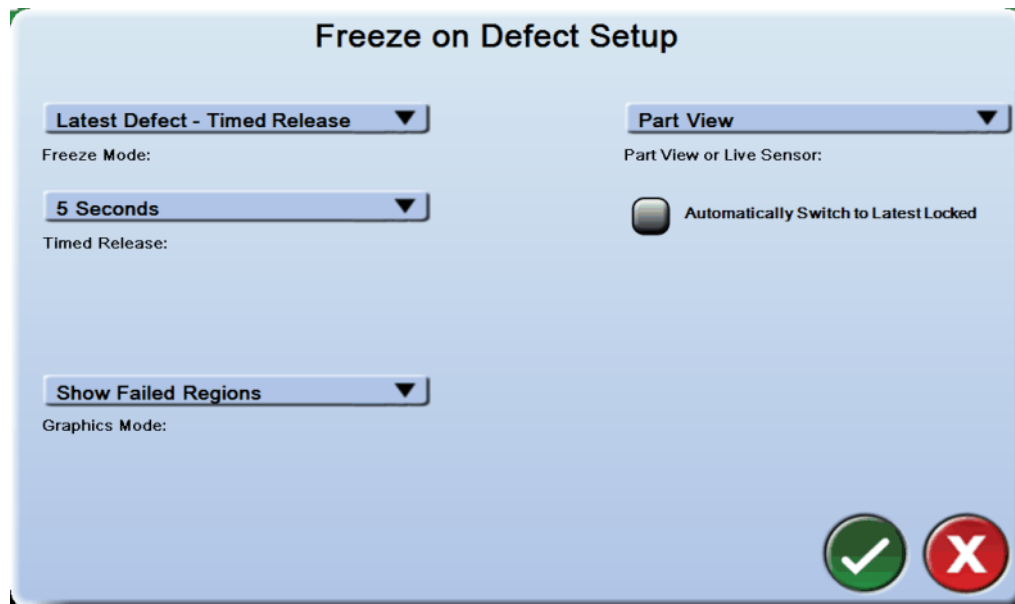
➤ **To exit Freeze on Defect:**

- Select another button on the right side of the screen (example: Trend Graphs).

Freeze on Defect Setup menu



Select the **Settings** button from Freeze on Defect mode. Menu options change based on where you entered from.



Freeze Mode

Disabled

Do not automatically hold an image. Images will be updated continuously, except if you select the Hold Part  button.

Latest Defect

Freeze the last rejected part. Each subsequent failing part will freeze on the screen until another part fails.

Latest Defect - Timed Release

Hold the last defective image for up to the specified number of seconds (set by **Timed Release**). If another defect occurs during the countdown, its image is frozen and the Timed Release countdown resets.

First Defect

Freeze the image of the first defective part after going online. The image freezes until you release it (select ) or change Freeze Mode.

First Good

Freeze the image of the first good part after going online. The image freezes until you release it (select ) or change Freeze Mode.

Machine Part

Freeze the next part image correlated to the selected machine part. It freezes until the next correlated image becomes available and is replaced by the new image.

Use the Select Machine Part button

Select Machine Part

to choose the desired machine part.

Machine Part - Timed Release

Freeze the next part image correlated to the selected machine part. It remains on screen for the specified time, or until the next correlated image becomes available, whichever comes first. Use the **Timed Release** settings to set the display time.

Timed Release

Set the desired display time. A countdown is displayed on the screen. When the time expires, a new sensor image is displayed.

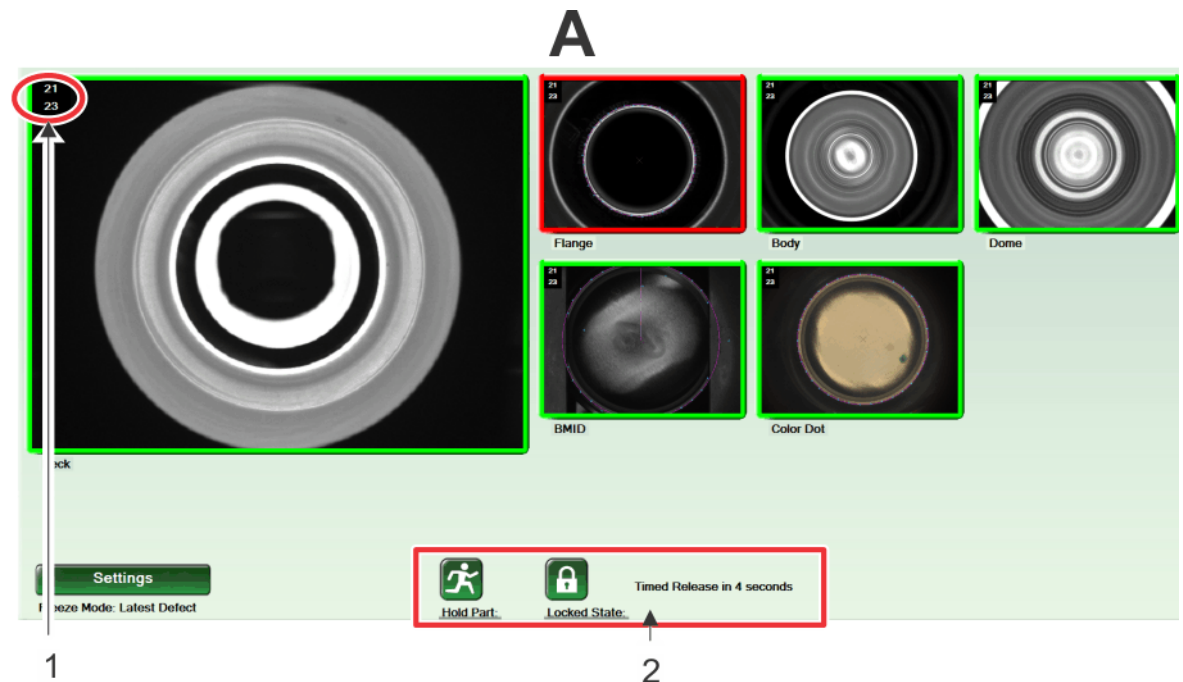
Graphics Mode

As of this publication, the only mode that works correctly is Show No Graphics.

Part View or Live Sensor

[Only if you have more than one sensor and you entered from Lane Overview mode]

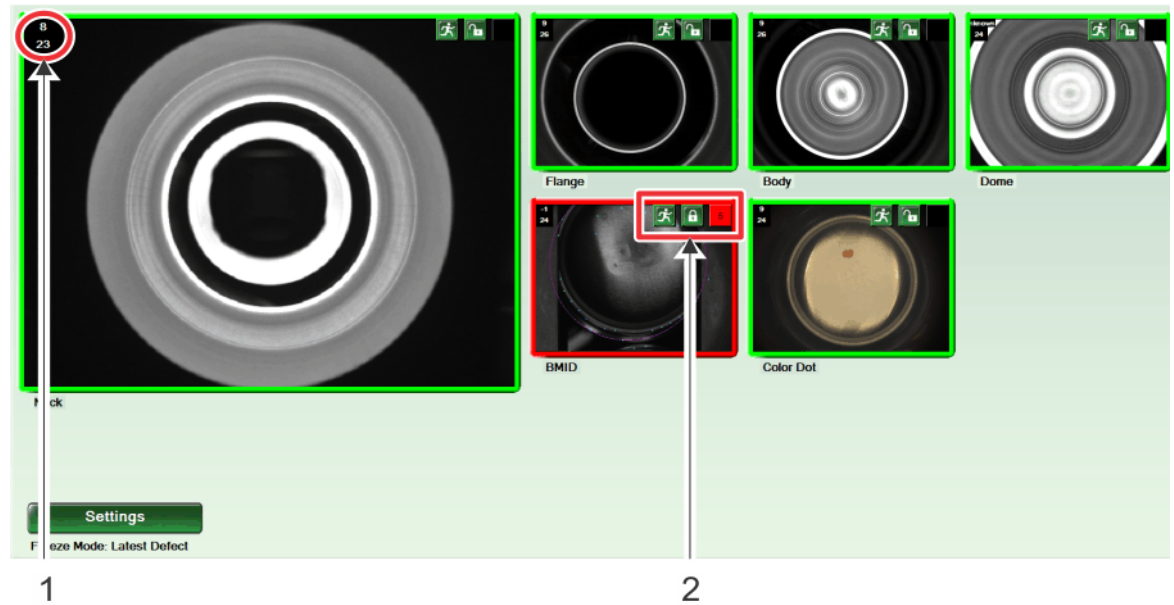
Part View mode [item A below] - The images displayed are all the same part [item 1]. This is useful if you have cameras located far apart, and you only want to look at one part at a time.



A		Part View mode
B		Live Sensor mode
1		Machine parts (only if you have "Show Correlation Values in Images" checked in the Machine Part Correlation menu)
2		Freeze on Defect state

Live Sensor mode [item B below] - Displays the last inspected images. If your sensors are located far apart, the images may be different parts [item 1]. This mode is usually used when your sensors are close together, such as in a BNS application.

B

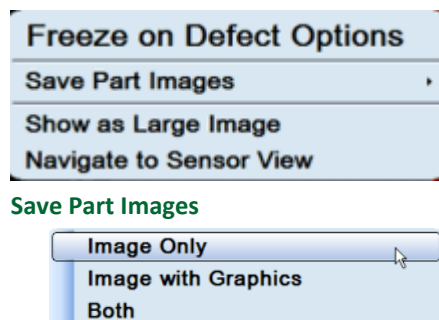


Automatically Switch to Latest Locked

[Only if you entered from Lane Overview mode] If you have more than one camera, this switches the large image to the camera that most recently met the freeze frame conditions.

Freeze on Defect Options menu

This menu is available from Freeze on Defect mode. Right-click over one of the images to see the menu.



- **Image Only** - bitmap (.bmp) image with no graphics. Note: only bitmap images can be loaded back into the Intellispec.
- **Image with Graphics** - portable network graphic (.png) current image with inspection graphics
- **Both** - Save both files - (.bmp) with no graphics, and (.png) with graphics

When you save an image, a dialog box provides options. The image is saved to the default location shown, unless you specify a different location. A default file name is provided for you. Select the keyboard icon to rename the image.



Show as Large Image

[Available if you entered from Lane Overview mode, and the lane has multiple cameras] Display the current image as the large image.

Navigate to Sensor View

Go back to Sensor Overview mode and display the Reject Images screen for the selected sensor.

Saving Images

There are a number of ways to save an image within the Intellispec system. Images can be saved whether the lane is online or offline, except the option: "Saving Images Automatically" - that option allows you to save information while the lane is online.

Save any image: In most parts of the system, right-click over any image to save it. A Save Image menu item will be displayed. Select the desired type of image, and save it. When the system asks you where to save it, use the disk icon to browse to a location. If you are using a USB device, insert the device and browse to it. This is useful to save images to include with a **Support Package**.

More information about how to save images from different locations can be found through the links below:

Saving Images Through the Sensor Menu (see "***Save Images Through the Sensor Menu***" on page 73)

Saving Images Automatically (on page 75)

Saving Reject Images (see "***Save Reject Images***" on page 76)

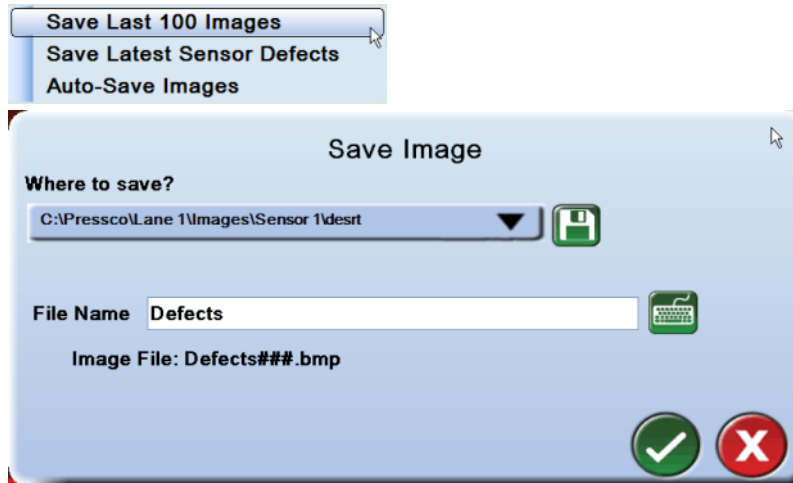
Save Images Through the Sensor Menu

Save a set of images from one sensor (up to 100 images). You can use these images to set up and test part programs. You can save images whether the lane is online or offline.

❖ *Note: Some menu items are only available to advanced level users.*

➤ **To save images:**

1. Right-click over the Sensor button > Save Images, choose the desired option.



2. For the last 100 images or latest sensor defects, a dialog box prompts you to change directories. Select the disk button  to browse to a different folder if desired.
3. Type a prefix for the set of image files, if desired. The default "Defects" prefix is provided for you.
4. Select the OK button  to save the images.

Save Last 100 Images

Save the last 100 images captured by the current sensor.

Save Latest Sensor Defects

Save the latest defect images shown in the Reject Images thumbnails, up to 100 images.

See also **Save Images Automatically** (see "**Saving Images Automatically**" on page 75)

Saving Images Automatically

Save up to 1000 images from one sensor when the lane is online. To get to this menu: Right-click a sensor button > **Save Images** > **Auto-Save Images**.

The screenshot shows the 'Image Auto-Save' dialog box with the following fields and buttons:

- 1 - Selected Sensor: Main
- 2 - Save Location: C:\Pressco\Lane 1\Images\Sensor 1
- 3 - File Name: Auto
- 4 - Quantity: 287 (1 .. 1000 Parts)
- 5 - Skip N Parts Between Saves: 0
- 6 - By Inspection: -- Any Inspection --
- 7 - Part Status: Passing or Failing
- 8 - Registration: Not Registered
- 9 - Use Correlation: [checked]
- 10 - Machine parts: FILLER VALVE (1 .. 144), CAPPER HEAD (1 .. 36)
- 11 - Stop Auto-Save
- 12 - Status window showing Auto-Save started and saved images.
- 13 - Numeric keypad.

Status window content:

```

Auto-Save started.
Correlation(FILLER VALVE / CAPPER HEAD)
Saved 001 of 287.,Correlation( 37, 1) (Good Part)
Saved 002 of 287.,Correlation( 73, 1) (Good Part)
Saved 003 of 287.,Correlation(109, 1) (Good Part)
  
```

- 1 - **Selected Sensor** - Select one or all sensors.
- 2 - **Save Location - Save To** - Select the location to save the images. A default image path is provided. To change the location, select the disk icon and browse to the desired location.
- 3 - **File Name** - Create a file name, descriptive of the part you are inspecting. The system automatically adds numbers to the name, and indicates whether the part passed [P] or failed [F]. Example: "Auto0001_S1_P.bmp." This indicates the first image saved [0001], from sensor 1 [S1] and it passed inspection [P].
- 4 - **Quantity** - Quantity of images to auto-save, up to 1000.
- 5 - **Skip N Parts Between Saves** - Check the box if you do not want to save consecutive images. Enter the number [N] of parts to skip between saved images.
- 6 - **By Inspection** - Only available when you have one sensor selected [in item 1]. Save images related to an inspection. Use the drop-down menu to select the inspection from the current part program.
- 7 - **Part Status - Part Result** - Save images that pass or fail inspection, or both. When images are saved, the file name contains [P] for passing or [F] for failing.
- 8 - **Registration** - Save images that failed registration [Not Registered], had a found center [Centered], or had a found center and orientation [Centered and Oriented].
- 9 - **Use Correlation** - [available if correlation is installed] Save images correlated to specific machine parts.
- 10 - **Machine parts** - [available if correlation is installed] Select the machine part(s) to save images from. Also enter a machine part number in the box provided.
- 11 - **Start Auto-Save** - Select **Start Auto-Save** to start saving images. Select **Stop Auto-Save** to stop the process.

12 - **Numeric keypad**

13 - **Status** - Displays the status of the auto-save process.

Save Reject Images

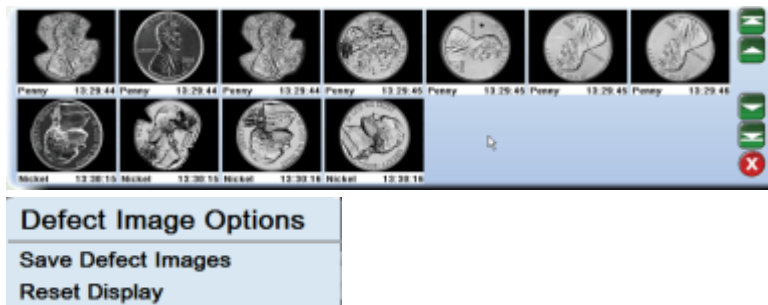
Save images from parts that were considered defective. This can be done when the **Reject Images** button is selected. Up to 100 images can be saved at a time. These images can be loaded at a later time to assist in programming inspections or training.

Images can be saved whether the lane is online or offline.



➤ To save reject images:

1. Right-click over any image displayed in the reject image area on the screen. The Defect Image Options menu is displayed.



2. Select **Save Defect Images** from the menu. A default name and directory are provided for you.
3. Change the directory or file name if desired and select the OK button to exit. The images are saved as bitmap (.bmp) images. Each image is given a unique name.

Reset Display

Resets the reject image display to show all failed parts, instead of images from only one part or one inspection.

Take Screen Shot

Capture an Intellispec screen image. This is different from saving individual part images through the **Save Image** (see "**Save Images Through the Sensor Menu**" on page 73) function. A screen shot is useful to illustrate a problem to technical support, or to capture settings for future setup.

➤ To capture the current full Intellispec screen:

1. Select the Star button  > Take Screen Shot. An onscreen keyboard is displayed with a default image name.
2. Re-name the screen shot if desired.
3. Select OK to save the image. The image is saved as a Portable Network Graphic (.png) file to C:\Pressco\DataExport\ScreenShots.

Chapter 13

Tools menu

This section covers the Tools menus that occur throughout the Intellispec system. The Tools menu has relevant tools for the following screens:

- **System Overview screen** (see "**Tools menu - System Overview Screen**" on page 77)
- **Lane Overview screen** (see "**Tools menu - Lane Overview and Sensor Overview Screens**" on page 78)
- Sensor Overview screen

Tools menu - System Overview Screen

To get to this menu: Select the Home button  > Tools .

❖ *Note: Some menu items are only available to advanced level users.*

Tools Menu		
Log Reader	←	1
Clear System Statistics	←	2
Disk Imaging Software	←	3
CPU Temperature	←	4
UPS Information	←	5
Chart Configuration	←	6
Defect Writing	←	7
System	←	8
Exit System	←	9

- 1 - **Log Reader** - Open the Intellispec log
- 2 - **Clear System Statistics** – Clear the entire system statistics (all Lanes)
- 3 - **Disk Imaging Software** – Open Acronis Echo software for backing up system hard drive
- 4 - **CPU Temperature** – If a multiple core computer is used, the highest temperature is displayed. If the shutdown CPU temperature is reached, the Intellispec system shuts down.
- 5 - **UPS Information** – Display Uninterruptible Power Supply (UPS) information and settings
- 6 - **Chart Configuration** – Choose the Trend Graph type and the number of points for the chart in the System Overview Screen
- 7 - **Defect Writing** - [Only if Defect Database option is installed and enabled] Enable or disable defect recording for multiple lanes.
- 8 - **System** - Set system date and time or set up a printer
- 9 - **Exit System** – Shut down Intellispec software

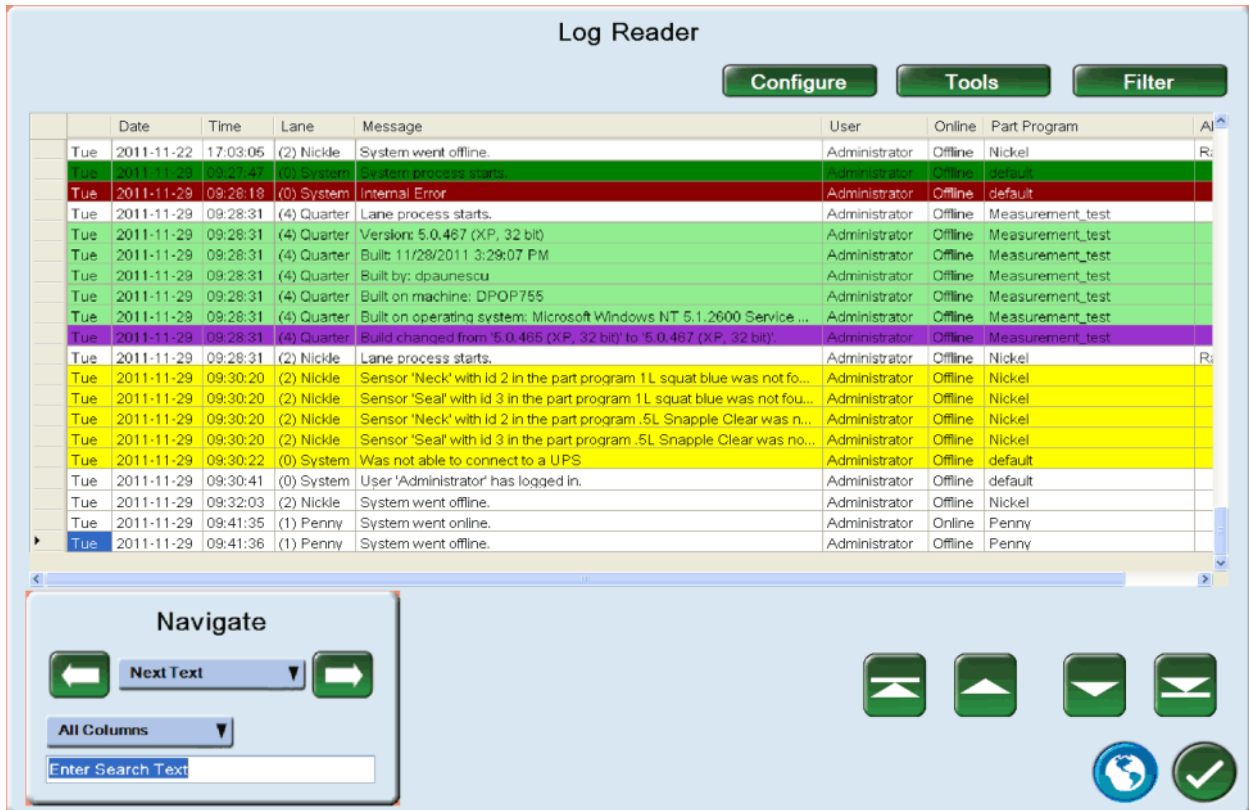
Log Reader

The log reader displays the Intellispec event history including:

- User log in and log out information
- Part program changes. Note: detailed part program changes are found in the Part Program Change Log
- Alarms, when triggered and cleared
- System errors
- System starting information
- Lane online/ offline history
- Lighting changes

Text files of the logs are stored at: C:\Pressco\Logs.

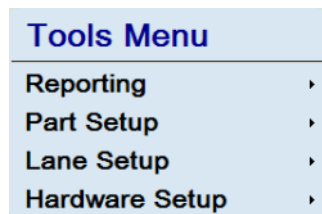
To get to this menu: select Home  > Tools  > Log Reader.



Tools menu - Lane Overview and Sensor Overview Screens

The Tools menu is the same in both Lane Overview and Sensor Overview screens.

To view the Tools menu: From Lane or Sensor Overview mode, select Tools .



Reporting (on page 79)

Part Setup (on page 80)

Lane Setup (on page 82)

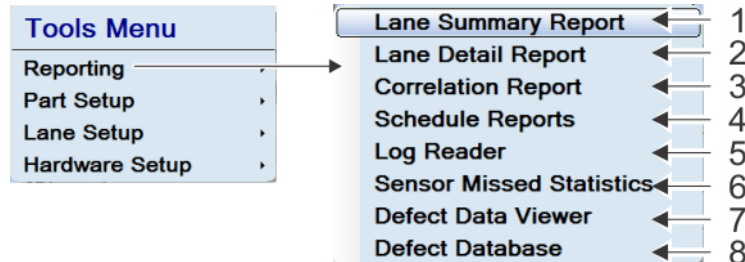
Hardware Setup

Reporting

The Intellispec generates many different reports to provide inspection detail. Many of these reports can be transferred outside of the Intellispec.

❖ *Note: Some menu items are only available to advanced level users.*

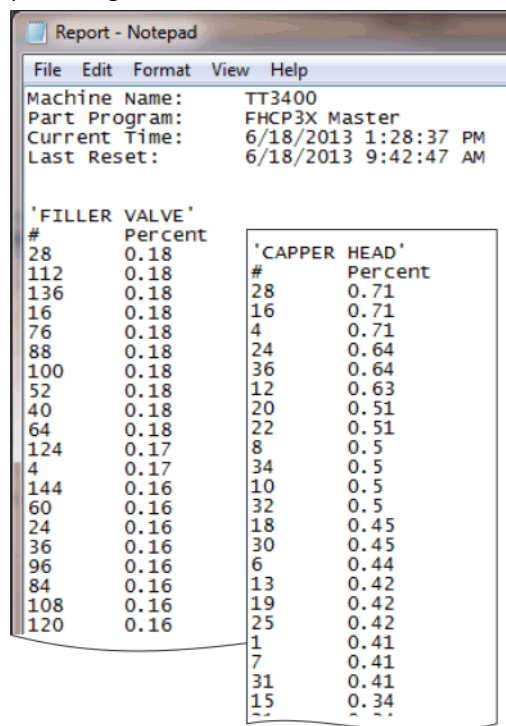
To view reports: Select a Lane button **Lane n** > Tools  > **Reporting**.



- 1 - **Lane Summary Report** - summary of the statistics for the current lane
- 2 - **Lane Detail Report** - lane and sensor defect statistics by inspection
- 3 - **Correlation Report (on page 79)** - [if correlation is enabled] percentage of defects by machine part
- 4 - **Schedule Reports**
- 5 - **Log Reader** - Open the Intellispec log
- 6 - **Sensor Missed Statistics** (on page 80) - the number of missed parts for the lane
- 7 - **Defect Data Viewer** - [if enabled] view the images in the defect database
- 8 - **Defect Database** - [if enabled] view the inspection data from the defect database

Correlation Report

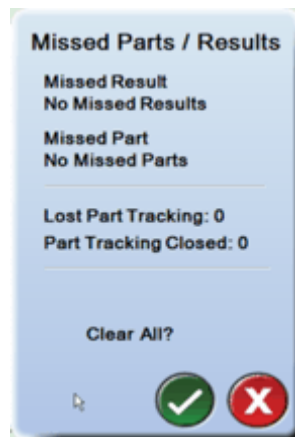
This report contains the percentage of defects by machine part, sorted from highest to lowest percentage of failure.



'FILLER VALVE'		'CAPPER HEAD'	
#	Percent	#	Percent
28	0.18	28	0.71
112	0.18	16	0.71
136	0.18	4	0.71
16	0.18	24	0.64
76	0.18	36	0.64
88	0.18	12	0.63
100	0.18	20	0.51
52	0.18	22	0.51
40	0.18	8	0.5
64	0.18	34	0.5
124	0.17	10	0.5
4	0.17	32	0.5
144	0.16	18	0.45
60	0.16	30	0.45
24	0.16	6	0.44
36	0.16	13	0.42
96	0.16	19	0.42
84	0.16	25	0.42
108	0.16	1	0.41
120	0.16	7	0.41
		31	0.41
		15	0.34
		~	~

Sensor Missed Statistics

Displays the number of missed parts and missed part tracking for the sensor.



This information is recorded in the **Log Reader** (on page 77).

Missed Results

This can occur if you set the Reject Delay Calibration incorrectly. Another cause could be kinks or intermittent connections to cables, or the inspection time for the lane is too long.

Lost Part Tracking

This occurs if the system loses connection to the Part Tracker. You may be able to change the Missed Packets Exception threshold to prevent loss of connection.

Error messages

Part Tracker Exception

If you see an error "Part Tracker Exception" on the Intellispec screen, this means that power was lost to the Cluster Box or Part Tracker.

➤ To reset the part tracker board:

Push the **Reset** button on the part tracker board. This is found inside the inspection module or Cluster Box.

Lost Part Tracking

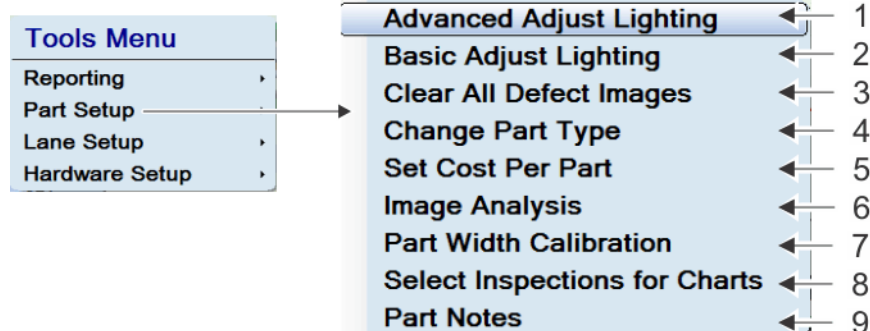
If you see a "Lost Part Tracking" message, possibly the power was lost to the Cluster Box or Part Tracker inside an inspection module. Reset the Part Tracker board as described above.

Part Setup

The Part Setup menu provides access to lighting, part display options in charts, and part width calibration.

Some menu items are only available to advanced level users.

To get to this menu: From Lane Overview mode, select Tools  > **Part Setup**.



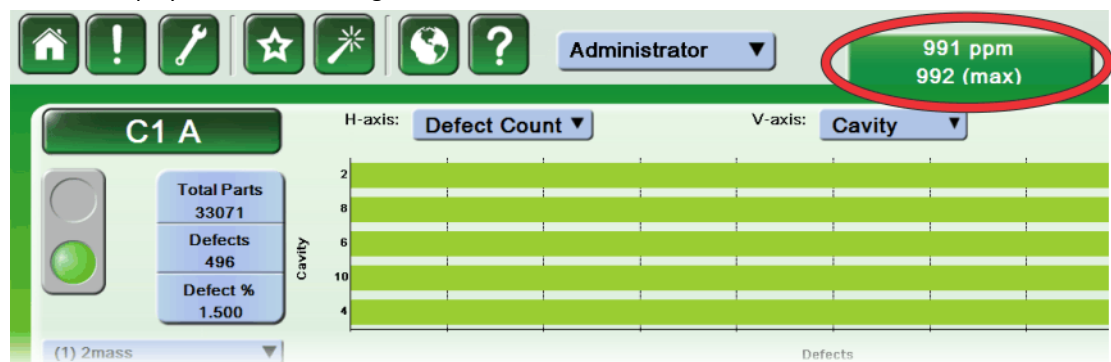
- 1 - **Advanced Adjust Lighting**
- 2 - **Basic Adjust Lighting**
- 3 - **Clear All Defect Images** - Remove all images from the Reject Images buffer.
- 4 - **Change Part Type** - Select the type of part to be displayed on the Walk By Graphic for the current lane.
- 5 - **Set Cost Per Part** - Set the cost of each product, to be used with the "Defect Cost" trend chart.
- 6 - **Image Analysis** - Determine the gray shade value for any pixel or group of pixels in your image.
- 7 - **Part Width Calibration** - Set the number of encoder pulses that the part detect sensor "sees" the part.
- 8 - **Select Inspections For Charts** - Select which inspections (up to 8) to display on the Trend Chart and Timing Trend.
- 9 - **Part Notes** - Add setup and programming information about the part. This is especially helpful if you or someone else need to modify the part program later.

Part Rate

The part rate is displayed in Lane Overview and Sensor Overview modes. You can reset the part rate by right-clicking over the part rate tab and selecting **Reset Part Rate**.

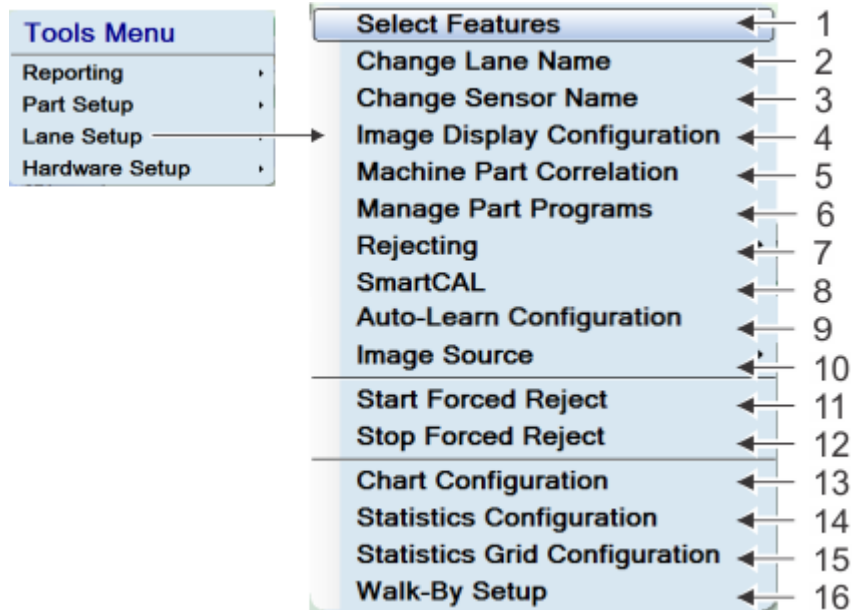
The part rate displays:

- a) **ppm (parts per minute)** - The average rate over the last five seconds. It is updated once per second.
- b) **max** - The maximum rate found for all individual parts in the last five seconds determined in [A].
The displayed value is the largest value found in the last five minutes.



Lane Setup

Some menu items are only available to advanced level users.



- 1 - **Select Features** - Enable optional features.
- 2 - **Change Lane Name** - Change the name of the current lane.
- 3 - **Change Sensor Name** - Change the name of the selected sensor.
- 4 - **Image Display Configuration** - Set the frequency, rotation, and other display options for the sensor images.
- 5 - **Machine Part Correlation** - Configure up to four different machine parts for correlation. [This option only appears when Correlation is configured] (This is usually done by the Pressco installer)
- 6 - **Manage Part Programs** - Create, delete, or edit part programs.
- 7 - **Rejecting** - Rejector Enable/ Disable and Reject Missed Results
- 8 - **SmartCAL** - SmartCAL allows you to load a set of images, run them with the current part program, and make sure the part program is passing or rejecting parts as you expect.
- 9 - **Auto-Learn Configuration** - [This option only appears if you have an Extended I/O board, and you have enabled Auto-Learn] Configure the Extended I/O bits to use with Auto-Learn.
- 10 - **Image Source** - Select images to display on the lane.
- 11 - **Start Forced Reject** (on page 83) - Force parts to be rejected based on correlation to a specific machine part.
- 12 - **Stop Forced Reject** - Stop the Forced Reject process.
- 13 - **Chart Configuration** - Set the number of columns in the Trend Chart and the currency type to be used in the "Cost per Part" trend chart.
- 14 - **Statistics Configuration** - Change the display settings for the charts displayed by the Statistics buttons.
- 15 - **Statistics Grid Configuration** - Change the amount of information for the charts displayed by the Statistics buttons.
- 16 - **Walk By Setup** - Set up the group names, inspections assigned to each group, and the criteria determining when the areas of the graphic turn green, yellow, or red.

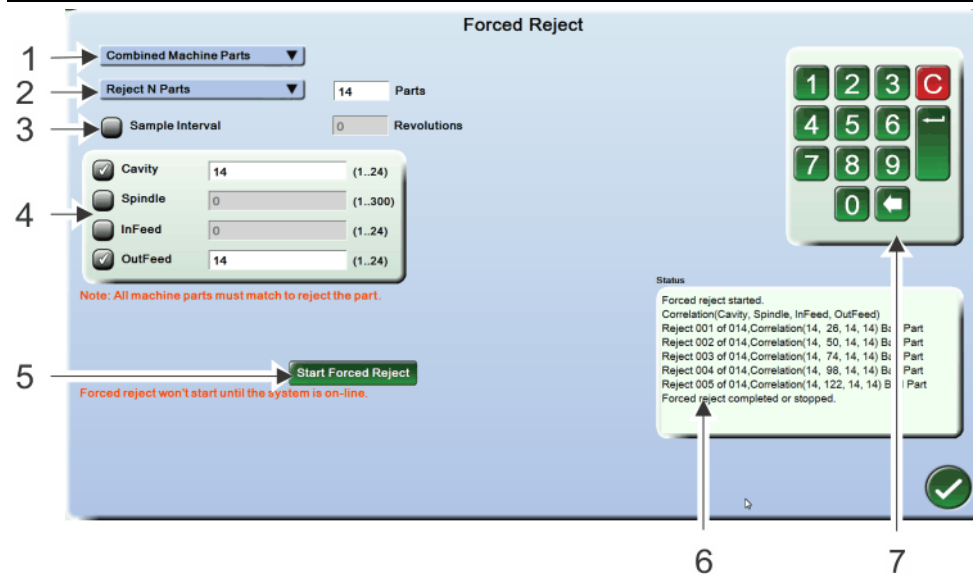
Forced Reject

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 a blow-molder or other 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.

❖ *Note: the correlation check boxes and machine parts are only displayed if your machine is using correlation.*

To get to this screen: From Lane or Sensor Overview mode, select Tools  > **Lane Setup** > **Start Forced Reject**.

❖ *Note: the lane must be online to force rejects*



1 - Any Part/ Single Machine Part/ Combined Machine Parts (drop-down menu)

Any Part - Reject any part, regardless of correlation to a machine part.

Single Machine Part - Reject a part correlated to one machine part (example: cavity, or fill valve). Use the keypad to enter the machine part number or series of machine part numbers.

Combined Machine Parts - All correlated machine parts are displayed (as in the example above). Check the boxes next to the desired machine parts. Use the keypad to enter the desired machine part number.

❖ *Note: Combined Machine Parts is an AND function. The part must be correlated to each machine part and number entered. If there are no such parts, then no part will be rejected. In our example, if we typed Cavity 14 and Outfeed 17, no such part exists; therefore none would be rejected.*

2 - Reject One Part/ Reject N Parts/ Continuous Reject (drop-down menu)

Reject one part, 'N' parts, or continuously reject from a specific machine part. Select the **Start Forced Reject** button to begin rejecting. If you select Single or Combined Machine Parts in the above drop-down menu, the part(s) must meet that criterion.

Reject One Part - Reject the next part that reaches the reject station, regardless of its inspection status.

Reject N Parts - Enter a number of parts you want to reject, regardless of their inspection status.

Continuous Reject - Reject all parts regardless of their inspection status, until you select the **Stop Forced Reject** button.

3 - Sample Interval

Only reject parts every n number of intervals. If you enter **3 Revolutions**, then the system will reject parts on every third revolution. If you select Single or Combined Machine Parts in the first drop-down menu, the part(s) must meet that criterion.

4 - Select Machine Part

The names of your machine part components [only shown if you select Single or Combined Machine Parts in the first drop-down menu].

Rejector

(Not shown - only applicable with multiple rejectors) Specify which rejector to force rejection of the part.

5 - Start Forced Reject/ Stop Forced Reject

When you select **Start Forced Reject**, the criteria specified are applied and the parts are rejected. Select the **Stop Forced Reject** button to stop the reject process. Note that if you only reject one part, or specify a number of parts, the button toggles back to **Start Forced Reject** automatically.

6 - Status Box

Displays information about the rejection process.

7 - Numeric Keypad

Type numbers of parts or correlation to machine parts.

Chapter 14

Maintenance

When conducting maintenance or repair work:

	Follow the Machine Maintenance Lockout Procedure.
	Before starting the machine, ensure that no person is close to the machine.
	If maintenance or repair requires the disconnection or removal of safety or protection systems, authorized personnel who ensure the prevention of personal injury or damage to the machine must supervise this operation. All machine movements must be performed with limited speed and limited movements.
	Exclusively authorized and trained personnel must carry out maintenance or repair work on electrical components. When running tests with power connected, you must strictly comply with the rules provided.
	Personnel working on higher parts of a machine must wear a harness and hook it on to a structure and must always move with extreme caution. The harness must not be connected to Pressco equipment or structure as it cannot support body weight.
	Never perform lubrication or maintenance procedures on mechanical parts with the machine running.

Maintenance Frequency

Intellispec Series V Computer enclosure, FHCP 3X module, and general components				
Item	Description	Once per day or shift	Once per week	Once per month
Observe Proper inspection	Verify that defective parts are being rejected by inserting a known defective part through inspection	X		
Observe Proper inspection	Verify that no stray parts are stuck in or near the inspection module or reject station	X		
Observe Proper inspection	Verify that no buildup of dirt or contaminants has occurred on inspection module, part detector, or conveyor. Clean if necessary.	X		
Observe Proper inspection	Verify that each sensor image is properly centered, focused, and properly lit. Adjust if necessary.	X		
Plastic surfaces: Inspection tunnel windows	Clean with soft, clean, oil-free cloth dampened with mild soap and water solution. This should be cleaned each day after each system wash down. Wipe dry. <i>Cleaning Plastic Surfaces</i> (see " <i>Cleaning Plastic Surfaces - FHCP3X EZ</i> " on page 89)	X		
FHCP 3X inspection system cabinet	Clean system cabinet after wash-down, and/or as needed <i>Cleaning the system cabinet</i> (on page 89)		X	
Vision Processor Computer Filter	Rinse in clean water; use mild soap and water solution if oily. Use the procedure that matches the equipment in your plant. <i>Cleaning the NEMA 4X Vision Processor filter</i> (on page 88)			X
Part Detect Sensor and Reflector	Clean with soft, clean, oil-free cloth dampened with mild soap and water solution. Wipe dry. <i>Cleaning the Part Detector</i> (on page 90)	Only if needed. These items are inside the inspection module enclosure, and should not need cleaning under normal conditions.		
Camera lens	Clean only with lens tissue and lens cleaner. Be careful not to alter focus or aperture. <i>Cleaning the Camera Lens</i> (on page 92)			
Glass surfaces: Mirrors	Clean with soft, clean, oil-free cloth dampened with lens cleaning solution. <i>Cleaning Glass Surfaces</i> (on page 91)			

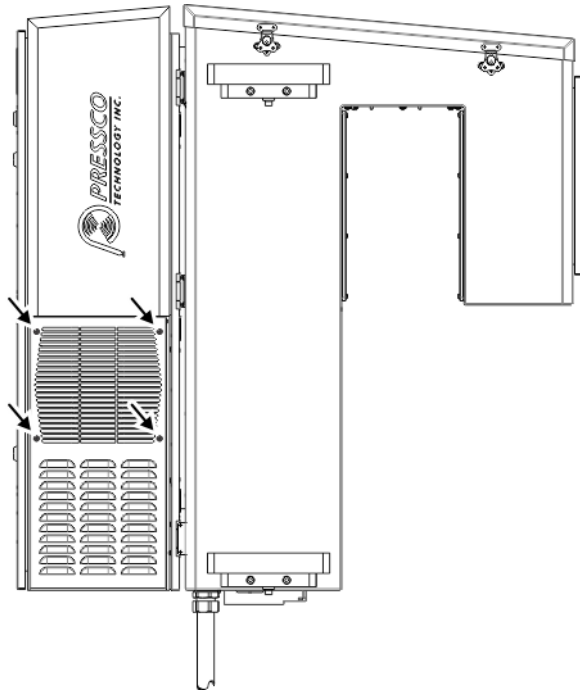
Cleaning the NEMA 4X Vision Processor filter

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*

➤ *To clean the filter:*

1. Remove the four screws that hold the filter cover.
2. Remove the filter and clean it.
 - If the filter contains dry dust and dirt, rinse it in plain water
 - If the filter contains oily dust and dirt, clean it in soapy water, then rinse in clear water
3. Dry the filter completely, then place it back inside the cabinet.
4. Replace the filter cover and replace the four holding screws.



Cleaning the system cabinet

This unit is NEMA 4X standard, and does not need any parts covered during plant wash-down or unit cleaning.

After a plant wash-down, or at least once per week, clean the exterior of the vision processor.

➤ **To clean:**

- Use stainless steel cleaner and clean, dry cotton rags, lint-free cloths, or soft non-abrasive paper towels
- Wipe the exterior surface of the cabinet after a wash-down, or once per week

Cleaning Optical Surfaces



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, or it could degrade lighting. Clean glass and plastic surfaces often to avoid false rejects.

To maintain proper image quality and system performance, the clear glass and plastic surfaces on the Inspection Modules must be cleaned on a regular basis. Dirt and debris that appear in the image can cause false rejects. An oily film on optical surfaces can cause false rejects or missed defects.

Cleaning Plastic Surfaces - FHCP3X EZ

The inspection tunnel windows on both sides are plastic. They require periodic cleaning.

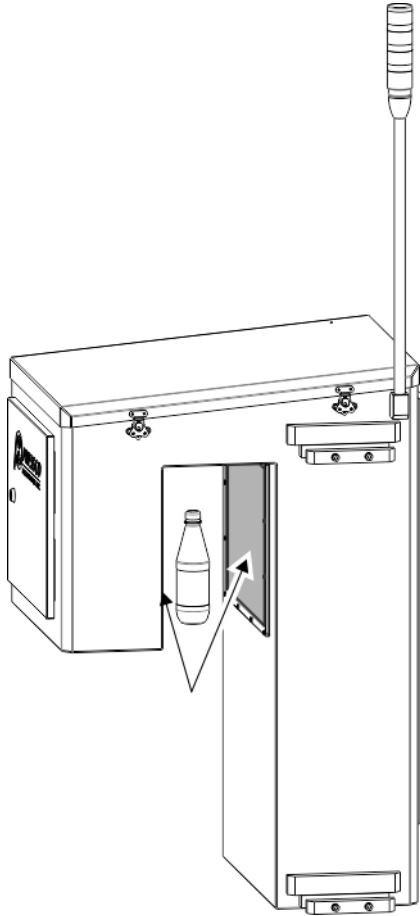
Other items, such as backlight diffusers and the part detect sensor and reflector, are located inside the tunnel enclosure, and should not need cleaning under normal conditions.

❖ *Note: Cleaning frequency will depend on plant and process conditions.*

➤ **To clean plastic surfaces:**

- Use canned compressed air to blow away dust
- Use a clean, non-abrasive cloth dampened with mild soap and water solution. Saturate surface completely to let particles wash away.
- Dry the surface with clean, compressed air

❖ **DO NOT:** Use paper towels, paper napkins, or dry cloths – these may scratch surfaces



Cleaning the Part Detector

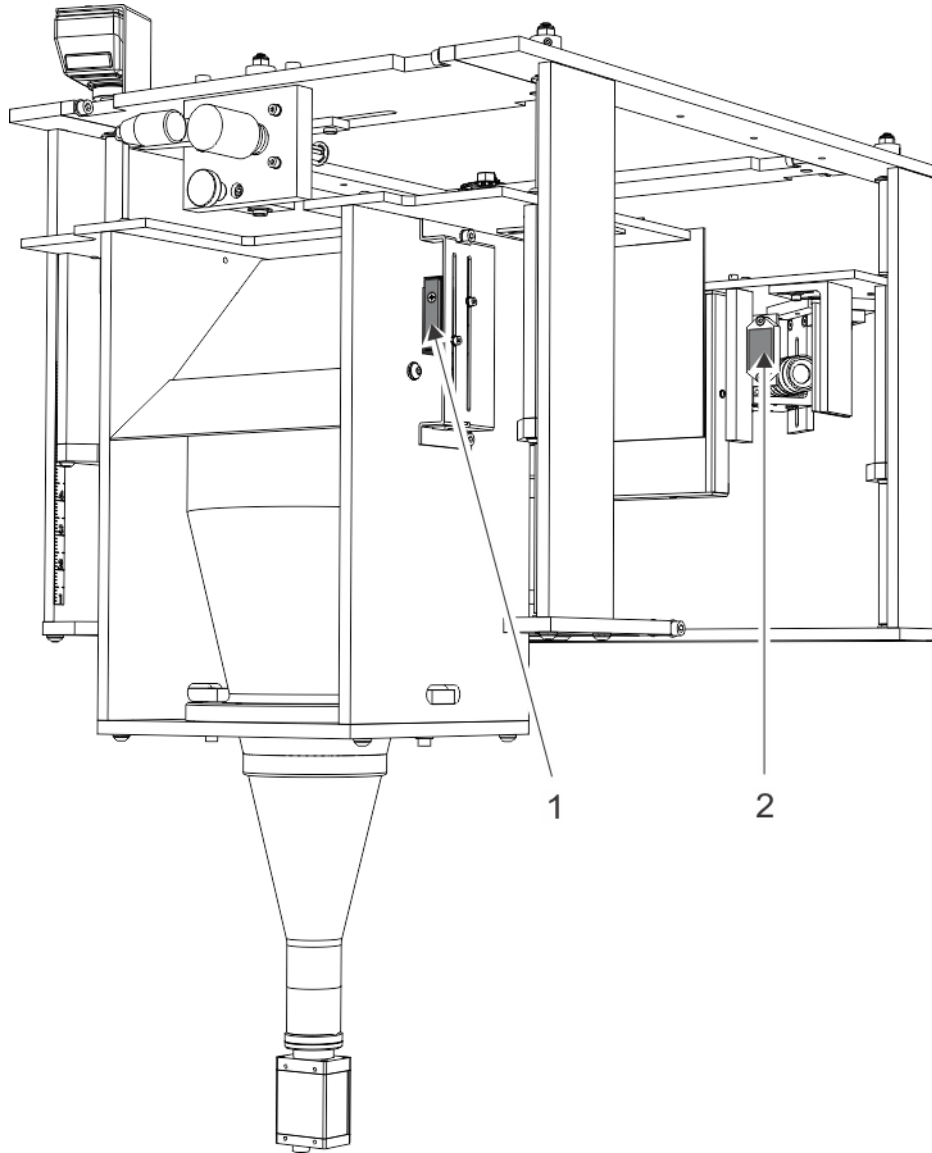
Under normal conditions, you do not need to clean these components, as they are inside the inspection module enclosure. Be sure to keep the inspection windows clean so that the optical components inside can properly detect parts and defects.

If these items need cleaning, follow the instructions below.

➤ **To clean the part detector:**

- Clean the part detector and reflector surfaces with a soft, clean, lint-free cloth dampened with a mild soap and water solution.
- Do not use a glass cleaning solution or strong solvent on the plastic surfaces as they might be damaged.

❖ *Note: The frequency of cleaning will depend on plant and process conditions.*



1 - Part detect sensor (lens is towards the center of the tunnel)

2 - Part detect reflector

Cleaning Glass Surfaces

Glass surfaces that may require cleaning are:

- Camera Lens
- Beam Splitter (if present)
- Secondary lens (if present)
- Secondary mirror (if present)

➤ **To clean glass surfaces:**

- Blow off dust with canned, compressed air
- Use a clean non-abrasive cloth dampened with lens cleaning solution
- Use lens tissue and lens cleaning solution on camera lenses
- If surface has compound on it, first clean with alcohol, then with lens cleaning solution

❖ *Note: Cleaning frequency will depend on plant and process conditions.*

Cleaning the Camera Lens

Under normal conditions, you do not need to clean these components, as they are inside the inspection module enclosure. Be sure to keep the inspection windows clean so that the optical components inside can properly detect parts and defects.

If these items need cleaning, follow the instructions below.

Clean all camera lenses carefully.



Caution

Do not touch the lens with fingers or oily cloths.

➤ **To clean the camera lenses:**

1. Clean all camera lenses with lens tissue and lens cleaning fluid. Be careful not to alter the focus or aperture of the cameras.
2. Re-adjust aperture and focus if needed.

Index

A

ABOUT THIS OPERATOR'S GUIDE • 7
ADDITIONAL SYMBOLS AND LABELS • 15
ADJUSTING MODULE HEIGHT TO CONVEYOR • 29
ALARMS • 16, 55
ALARMS -- CLEARING • 57
ASSEMBLY, LOCATION, AND MOUNTING
REQUIREMENTS • 29
AUTHORIZED USERS • 21
AUTO-SAVE IMAGES • 75

B

BIOMETRIC LOGIN DEVICE • 41

C

CE DECLARATIONS OF CONFORMITY • 9
CHANGING YOUR PASSWORD • 53
CLEANING GLASS SURFACES • 91
CLEANING OPTICAL SURFACES • 89
CLEANING PLASTIC SURFACES - FHCP3X EZ • 89
CLEANING THE CAMERA LENS • 92
CLEANING THE NEMA 4X VISION PROCESSOR FILTER •
88
CLEANING THE PART DETECTOR • 90
CLEANING THE SYSTEM CABINET • 89
COMMISSIONING • 34
CORRELATION REPORT • 79

D

DECLARATION OF CONFORMITY - FHCP3X-EZ SYSTEM
(EMC) • 12
DECLARATION OF CONFORMITY - FHCP3X-EZ SYSTEM
(MS) • 10

E

ELECTRICAL CONNECTION • 32
EMERGENCY E-STOP BUTTON • 38
ENVIRONMENTAL CONDITIONS • 23
ERROR MESSAGES • 80
E-STOP • 38
EXITING THE INTELLISPEC SOFTWARE • 45

F

FORCED REJECT • 83

FREEZE ON DEFECT • 69
FREEZE ON DEFECT OPTIONS MENU • 72
FREEZE ON DEFECT SETUP MENU • 70

G

GRAPHS AND IMAGE DISPLAYS • 61

H

HELP • 52
HOISTING • 28
HOW TO CONTACT PRESSCO • 5
HOW TO SELECT MENU ITEMS • 39

I

INSPECTIONS GRAPH • 67
INSTALLATION • 27, 29
INSTRUCTIONS FOR SAFE ASSEMBLY OPERATIONS • 27
INTELLISPEC CABINET AND USER INTERFACE • 37
INTENDED USE • 17
INTRODUCTION • 7

L

LANE SETUP • 82
LANGUAGE • 51
LIFTING HEAVY OBJECTS • 21
LIGHT TREE • 16
LIGHT TREE STATUS • 57
LOG IN AND LOG OUT • 53
LOG READER • 77

M

MACHINE PART GRAPHS • 61
MAINTENANCE • 85
MAINTENANCE FREQUENCY • 86
MARKING • 14
MECHANICAL KEYBOARD (MKB) • 40
MENU TOOLBAR • 51

N

NAVIGATING THROUGH THE SYSTEM • 47
NAVIGATION COMPONENTS • 38
NON-INTENDED USE • 18

O

ON SCREEN KEYBOARD (OSK) • 47
ONLINE / OFFLINE • 44
OPERATING THE FHCP 3X SYSTEM • 43

P

PART AND PART HANDLING SPECIFICATIONS • 25
PART CHANGEOVER • 44
PART RATE • 81
PART SETUP • 80
PERSONAL PROTECTIVE EQUIPMENT • 18
PERSONNEL SAFETY • 19
PNEUMATIC SERVICE • 34
POWER ON/ OFF • 43
PROTECTIVE EARTHING • 33

R

RECOMMENDATIONS PRIOR TO INSTALLATION • 27
REJECT IMAGES • 66
REPORTING • 79
RESIDUAL RISK • 16

S

SAFETY CONSIDERATIONS • 13
SAFETY INFORMATION AND MARKINGS • 13
SAVE IMAGES THROUGH THE SENSOR MENU • 73
SAVE REJECT IMAGES • 76
SAVING IMAGES • 73
SAVING IMAGES AUTOMATICALLY • 75
SECURING TO FLOOR • 31
SENSOR MISSED STATISTICS • 80
SHIPPING AND HANDLING • 27
SORTING DATA IN GRAPHS • 62
SOUND PRESSURE LEVEL • 23
SPARE PARTS USAGE • 22
STATIC DISCHARGE PROTECTION • 8
STATISTICS GRID • 64
STATISTICS GRID OPTIONS • 65
STATISTICS MENU • 50
STORING • 29
SWITCHING USERS • 53
SYMBOLS • 13
SYSTEM ALARMS DESCRIPTION • 58
SYSTEM ELECTRICAL SPECIFICATIONS • 26
SYSTEM MEASUREMENTS • 23
SYSTEM SPECIFICATIONS • 23

T

TAKE SCREEN SHOT • 76
TOOLS MENU • 77

TOOLS MENU - LANE OVERVIEW AND SENSOR
OVERVIEW SCREENS • 78

TOOLS MENU - SYSTEM OVERVIEW SCREEN • 77

TREND GRAPHS • 61

TYPOGRAPHICAL CONVENTIONS • 7

U

USB PORT • 40

USER ACCOUNTS AND LOGIN INFORMATION • 53

USER INTERFACE DISPLAY - FOUR LEVELS • 48

USER INTERFACE INPUT DEVICES • 39

USING THE WALK BY GRAPHIC • 68

UTILITIES TO BE SUPPLIED BY CUSTOMER • 32

V

VENTILATION • 29

VIEWING AND CLEARING ALARMS • 57

W

WALK BY GRAPHIC • 68

WARNING DEVICES • 15

WINDOWS EXPLORER • 52