INTELLISPEC™

Series V Operator's Guide

Pressco Technology Inc.

68182 Rev. 03

Original Instructions

Written and designed at:

Pressco Technology Inc. World Headquarters

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Chapter 1

HOW TO CONTACT PRESSCO

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+1 440-498-2000

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Customer Service Fax:

+1 440-498-4761

Mailing Address:

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

Main Phone:

+1 440-498-2600

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 very powerful tool that provides inspection much more reliably than the human eye or sampling methods. The latest PC technology, powerful new 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 3) 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 14) 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 System Manual which contains servicing and programming 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

SAFETY INFORMATION

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.

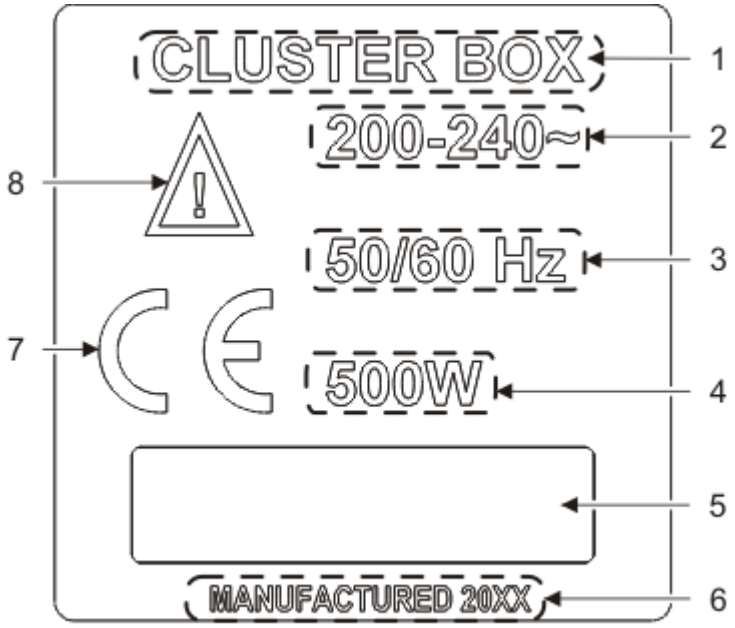
SYMBOLS

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

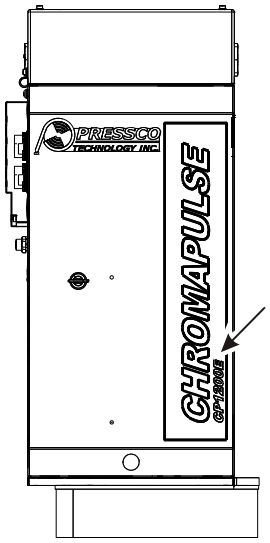
Marking

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*** (on page 15) section.

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 76) 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 78)(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 78).

Light Tree (optional)

- Red (Alarm)
- Amber (Warning)
- Green (Online)
- Blue (Power)

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 10).

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.

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. Note: the emergency stop devices may not be connected directly to the Pressco equipment, but it is important to know how to use them.
	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 carrying out maintenance or repair work:

	Disconnect master switch. For switch locations, refer to the ***Power Up*** (on page 59) and Power Down section.
	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, this operation must be supervised by authorized personnel who must ensure the prevention of personal injury or damage to the machine. All machine movements must be performed with limited speed and limited movements.
	Maintenance or repair work on electrical components must be carried out exclusively by authorized, trained personnel. 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 the structure and must always move with extreme caution.
	Never perform lubrication or maintenance procedures on mechanical parts with the machine running.

For your safety, 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

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 3).

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 3).

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 4

SYSTEM SPECIFICATIONS

This instrument has been designed and tested in accordance with Publication EN61010-1:2001 Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use and has been supplied in a safe condition. The instruction documentation contains information and warnings which must be followed by the user to ensure safe operation and to maintain the instrument in a safe condition.

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 3) 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 9) 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.

SPECIFICATIONS

The following sections contain electrical specifications and measurements for components of the Intellispec Series V system. Your system contains only the components necessary for your application.

User Interface

User Interface Electrical Specifications

The following are electrical specifications for different configurations of the User Interface:

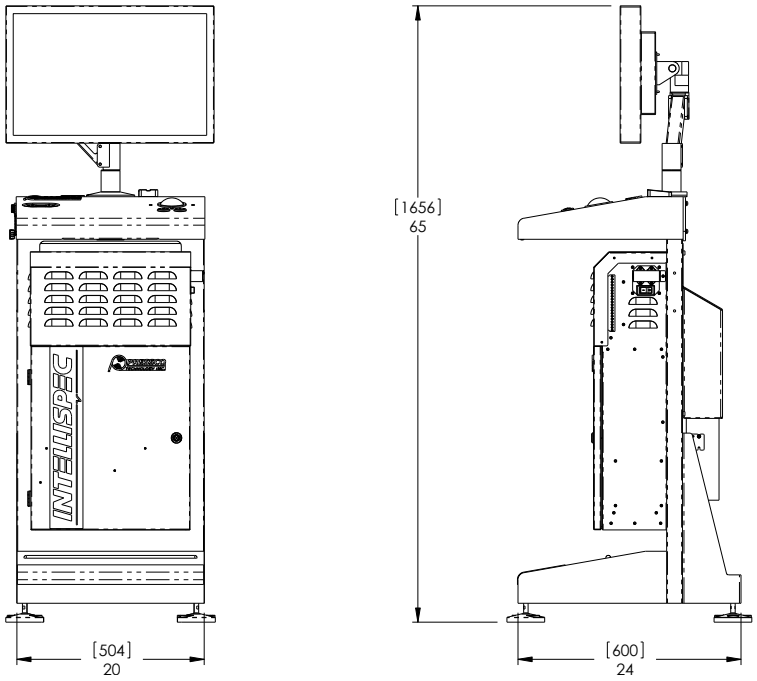
Standard User Interface - No UPS included	
Voltage Range	100-240VAC
Frequency	50/60Hz
Current	5A @ 120VAC, 100% Load

User Interface with Optional 750VA UPS, 120VAC Nominal	
Voltage Range	100-132VAC
Frequency	50/60Hz
Current	6.3A @ 120VAC, 100% Load

User Interface with Optional 1KVA UPS, 230VAC Nominal	
Voltage Range	200-240VAC
Frequency	50/60Hz
Current	4.3A @ 230VAC, 100% Load

User Interface measurements

The following are the weight and dimensions of the Intellispec Series V User Interface (see illustration below):



Measurement	Value
Weight (total user interface)	79.7 Kg [177 lb]
Weight (stand with monitor arm and all attached components)	31 Kg [68 lb]
Weight (computer)	25 Kg [55 lb]
Weight (Monitor)	11.3 Kg max [25 lb]
Weight (UPS)	12.7 Kg [28 lb]
Height	1656 mm [65 in]
Width	504 mm [20 in]
Depth	600 mm [24 in]

Integrated Tunnel Electrical Specifications

The following are electrical specifications for the integrated tunnel (an inspection module that contains cameras and part tracking in one unit, such as the CP/ EV series tunnels).

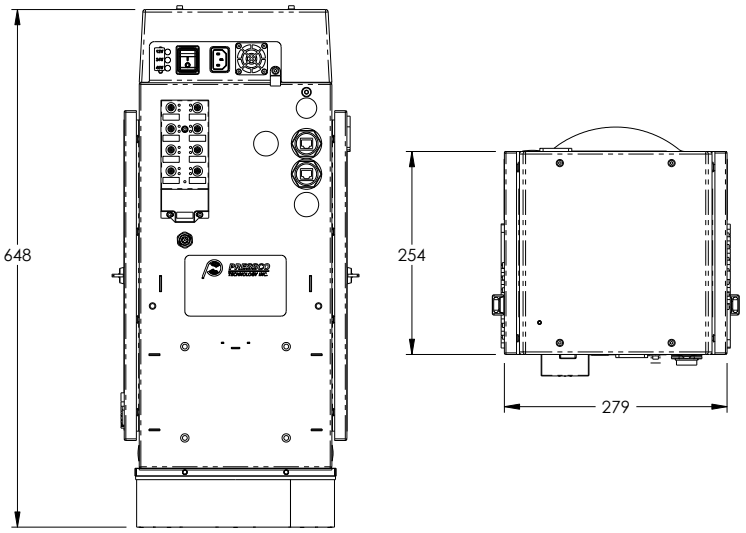
Standard - No UPS	
Voltage Range	100-240VAC
Frequency	50/60Hz
Current	6.2A @ 120VAC, 100% Load

Optional 500VA UPS, 120VAC Nominal	
Voltage Range	100-132VAC
Frequency	50/60Hz
Current	4.1 @ 120VAC, 100% Load

Optional 500VA UPS, 230VAC Nominal	
Voltage Range	200-240VAC
Frequency	50/60Hz
Current	2.2A @ 230VAC, 100% Load

CP/EV module measurements

The following are the weights and dimensions of the CPxx/ EV series inspection modules:



Measurement	Value
Weight	16.4 Kg [36 lb]
Height	648 mm
Width	254 mm
Depth	279 mm

❖ *Note: measurements do not include connectors*

Caution

This object is heavy. Review the section on ***lifting heavy objects*** (on page 13) before moving this object.

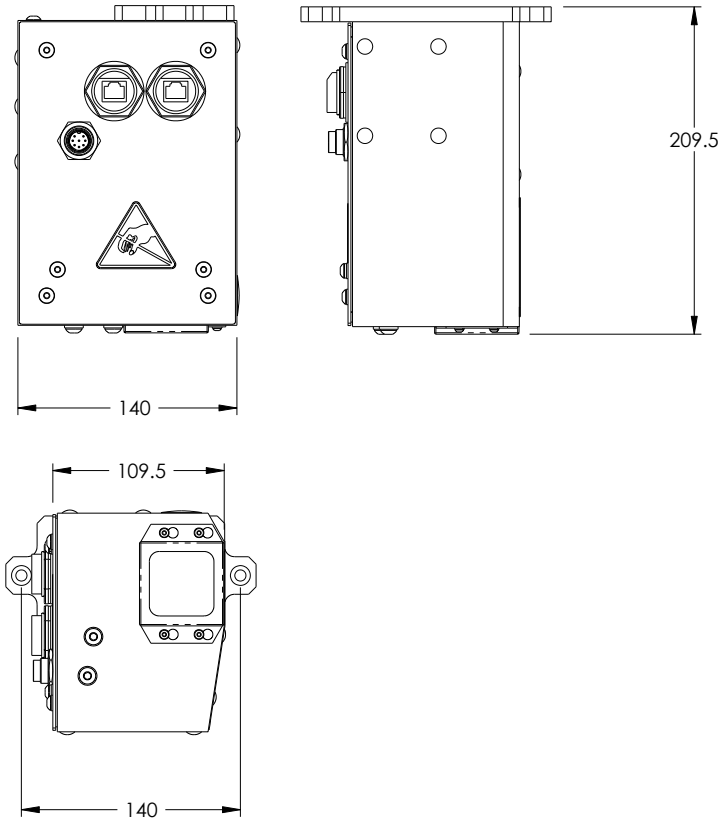
BNS inspection modules weights

The following are weights of Base, Neck, and Seal (BNS) modules and related components:

Measurement	Value
Weight (total base, neck, seal mast and modules)	44 Kg [98 lb]
Weight (base camera module)	2.3 Kg [5 lb]
Weight (neck camera module)	2.7 Kg [6 lb]
Weight (seal camera module with light array)	2.7 Kg [6 lb]
Weight (BNS lower unit - lighting arrays)	8.2 Kg [18 lb]
Weight (BNS mast)	34.6 Kg [77 lb]

Base camera module dimensions Series V

❖ *Note: measurements do not include connectors*



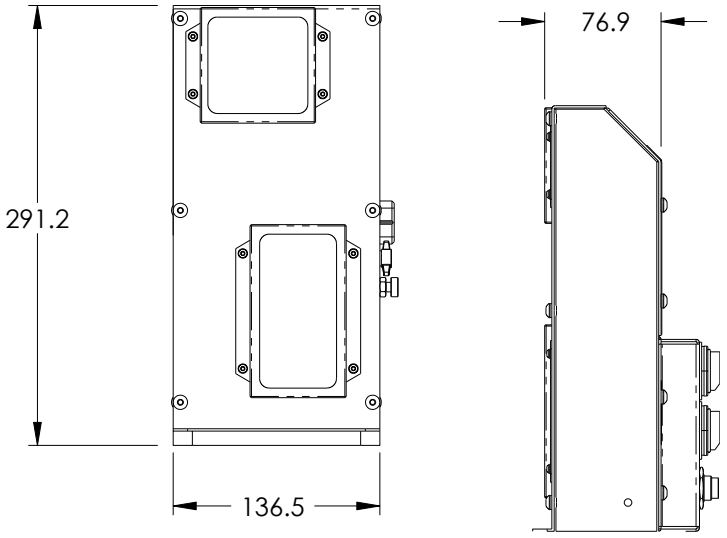
Position module 5 to 15 mm over seal surface.

Measurement	Value
Height (base camera module)	209.5 mm

Measurement	Value
Width (base camera module)	140 mm
Depth (base camera module)	140 mm

Neck/ Sidewall camera dimensions Series V

❖ *Note: measurements do not include connectors*



Measurement	Value
Height	291.2 mm
Width	136.5 mm
Depth	76.9 mm

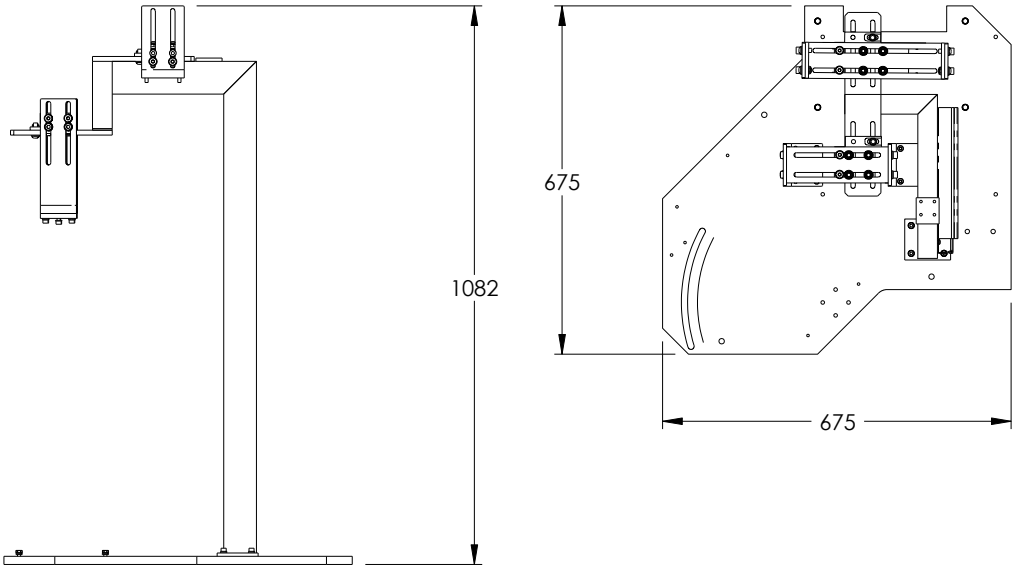
Base/Neck mast dimensions Series V

The following are the dimensions for the mounting mast and lighting arrays for the base and neck camera modules.

❖ *Note: measurements do not include connectors*

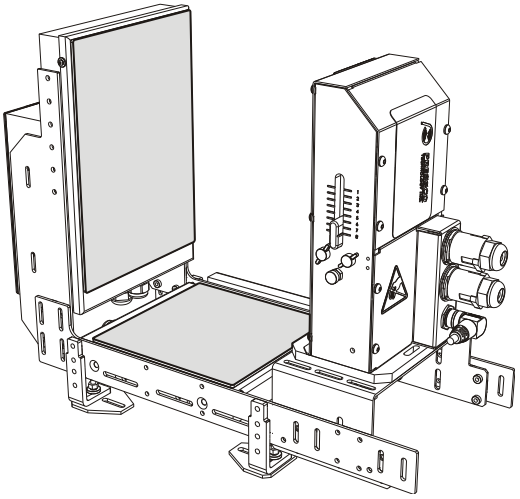
Caution

This object is heavy. Review the section on ***lifting heavy objects*** (on page 13) before moving this object.



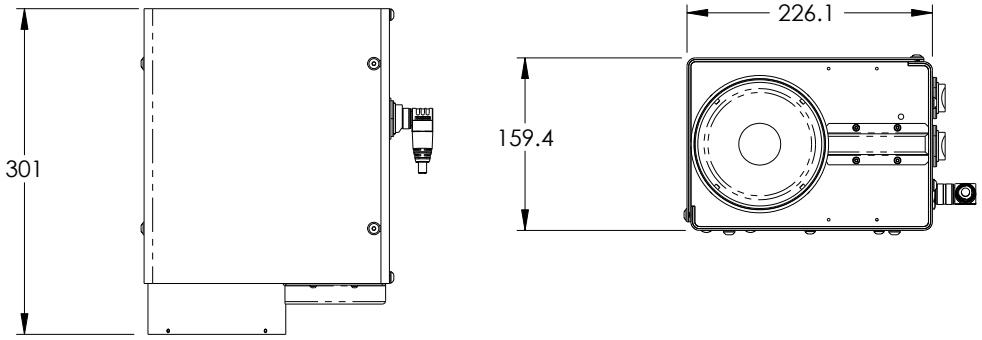
Measurement	Value
Height	1082 mm
Width	675 mm
Depth	675 mm

The base/neck mast holds the lighting arrays for the base and neck inspection modules, shown below.



Seal Surface Inspection module dimensions Series V

❖ *Note: measurements do not include connectors*

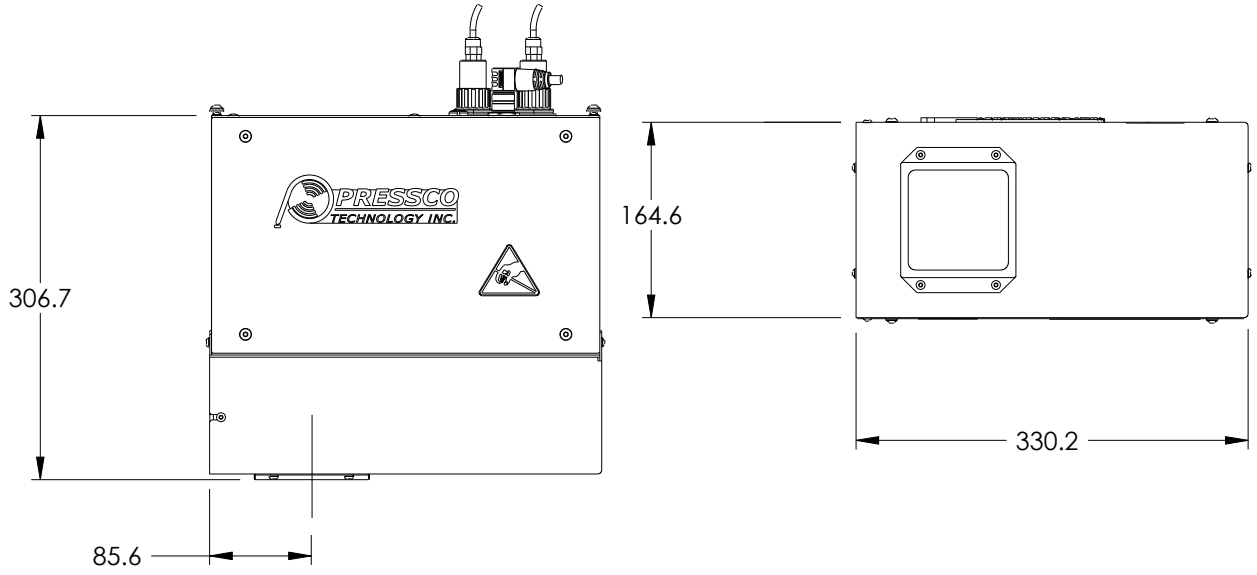


- For finish Ø less than 35 mm, position 112 mm above grippers
- For finish Ø greater than 35 mm, position 175 mm above grippers

Measurement	Value
Height	301 mm
Width	226.1 mm
Depth	159.4 mm

Preform Seal Endcap Inspection module dimensions

❖ *Note: measurements do not include connectors*

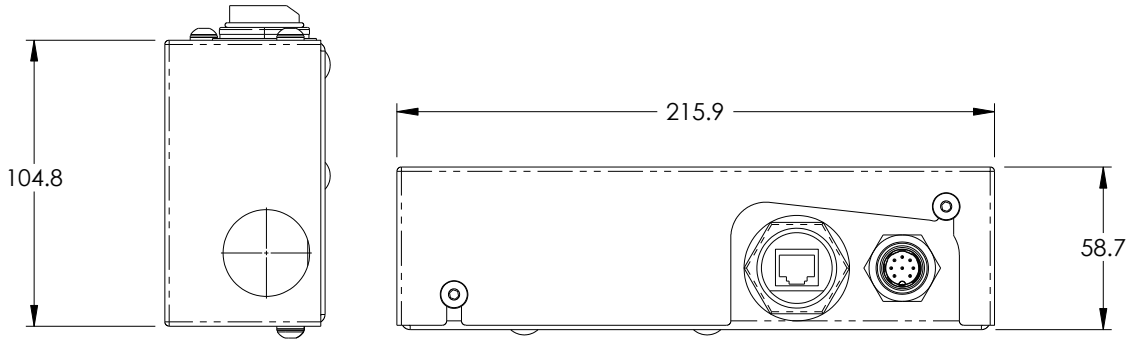


Measurement	Value
Height	306.7 mm
Width	330.2 mm
Depth	164.6 mm
Distance from edge to center of preform	85.6 mm

Position the module from reference "A" to 25 mm above the seal surface of the preform.

Preform Sidewall Inspection module dimensions

❖ *Note: measurements do not include connectors*



Measurement	Value
Height	215.9 mm
Width	104.8 mm
Depth	58.7 mm

Cluster Box Series V

Cluster Box Electrical Specifications

Caution

Before switching on this instrument, ensure the power supply voltage is in the specified range.

❖ *Note: the Cluster Box is not present in all systems. It is mainly used when sensors are installed within a blow molder or similar machinery.*

The following are electrical specifications for different configurations of the cluster box:

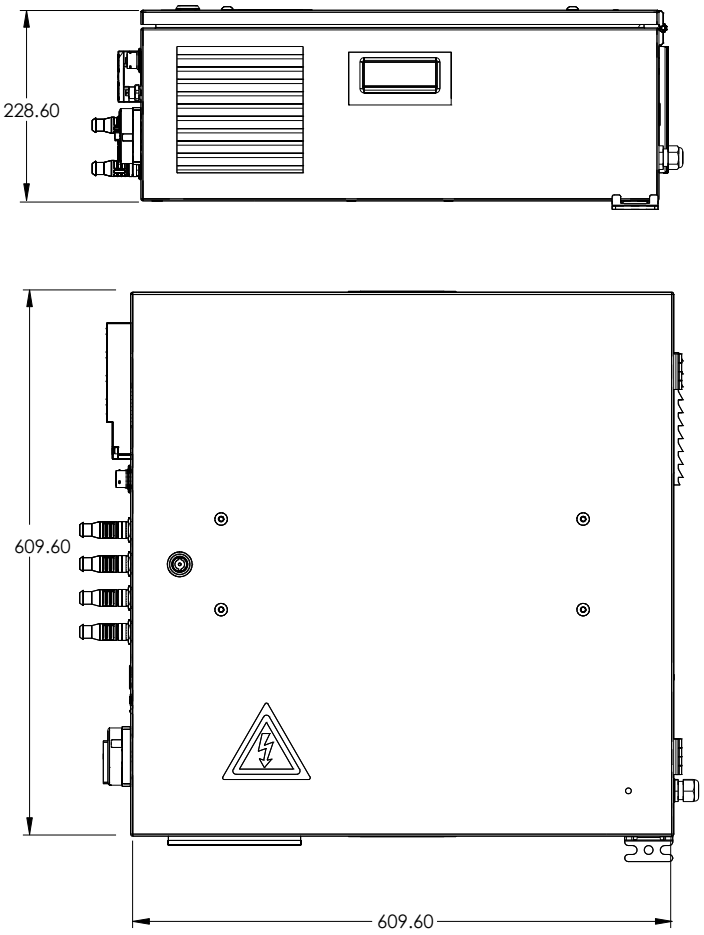
500VA UPS, 120VAC Nominal	
Voltage Range	100-132VAC
Frequency	50/60Hz
Current	4.2A @ 120VAC, 100% Load

500VA UPS, 230VAC Nominal	
Voltage Range	200-240VAC
Frequency	50/60Hz
Current	2.2A @ 230VAC, 100% Load

1KVA Transformer, 400VAC	
Voltage Range	380-420VAC
Frequency	50/60Hz
Current	2.5A @ 400VAC, 100% Load

Classic Cluster Box measurements

The following are the weight and dimensions of the Classic Cluster Box (see illustration below).



Measurement	Value
Weight	45 Kg [99 lb]
Height	609.60 mm [24 in]
Width	609.60 mm [24 in]
Depth	228.60 mm [9 in]

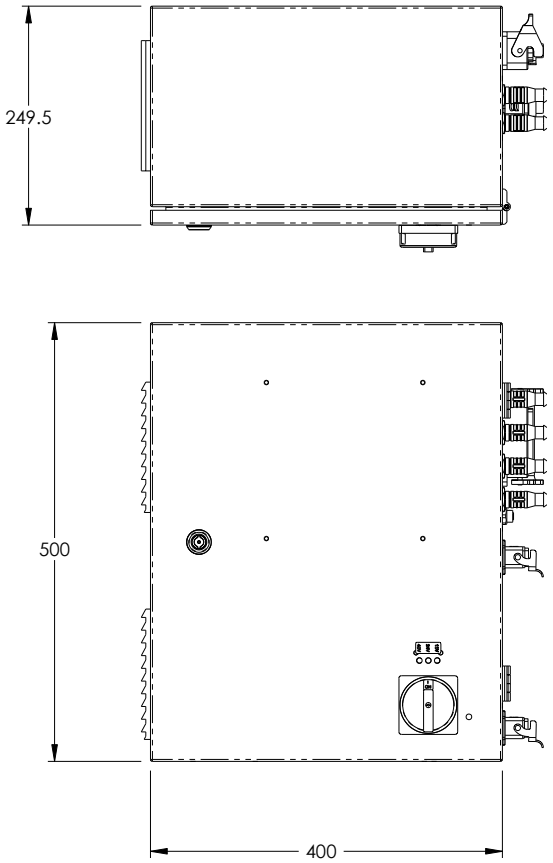
❖ *Note: measurements do not include connectors or switches.*

Caution

This object is heavy. Review the section on ***lifting heavy objects*** (on page 13) before moving this object.

Embedded Cluster Box measurements

The following are the weight and dimensions of the 400V Embedded Cluster Box (see illustration below).



Measurement	Value
Weight	45 Kg [99 lb]
Height	500 mm [19.69 in]
Width	400 mm [15.75 in]
Depth	249.5 mm [9.82 in]

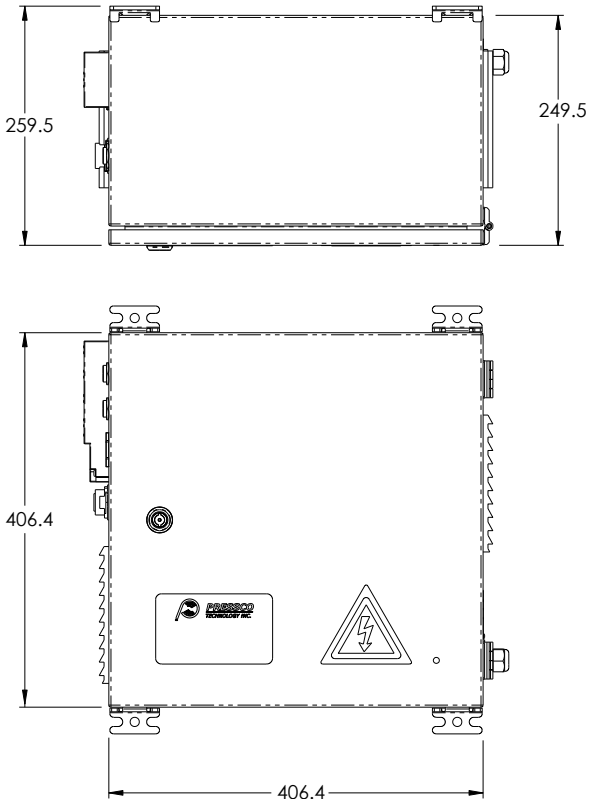
❖ *Note: measurements do not include connectors or switches*

Caution

This object is heavy. Review the section on ***lifting heavy objects*** (on page 13) before moving this object.

Micro and Wash-Down Cluster Box measurements

The following are the weight and dimensions of the Micro or Wash-Down Cluster Box (see illustration below).



Measurement	Value
Weight	30.23 Kg [66.5 lb]
Height	406.40 mm [16 in]
Width	406.40 mm [16 in]
Depth	254 mm [10 in]

❖ *Note: measurements do not include connectors or switches.*

Caution

This object is heavy. Review the section on ***lifting heavy objects*** (on page 13) before moving this object.

DECLARATION OF CONFORMITY - INTELLISPEC SYSTEM

CE

We,

Pressco Technology, Inc. of 29200 Aurora Road, Cleveland, Ohio USA 44139-1847,

hereby declare under our sole responsibility that the following machinery complies with the essential health and safety standards and protection requirements of the following standards:

Electromagnetic Compatibility Directive 2004/108/EC

Low Voltage Directive 2006/95/EEC

Machine description:	**AUTOMATED MACHINE VISION INSPECTION SYSTEM**
Make:	**Pressco Technology Inc**
Model Number:	**INTELLISPEC™ Series V**

We certify the above product and its components have been designed and manufactured using the following transposed harmonized European standards:

EN50081-2 Generic Emissions Standards

EN55011 Class A/CISPR 11

EN 50082-2 Generic Immunity Standards

- **EN61000 4-2 ESD: 4kV CD/8kV AD**
- **EN61000 4-3 RFI: 10V/m**
- **EN61000 4-4 EFT: +/-2kV Power Lines, +/-1kV Signal Lines**
- **EN61000 4-6 Conducted RF**

EN60950 Safety of Information Technology Equipment

A technical construction file for this product is retained at the above address.

Signed: Date:

Name: **Noel E. Morgan Jr.** Title**: VP of Operation**

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

DECLARATION OF CONFORMITY - INTEGRATED TUNNEL

CE

Number: EMC2932

Declaration: The Pressco Technology, Inc. Intellispec Series V Inspection 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 the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC, and with Directive 2006/95/EC of the European Parliament and of the Council of 12 December 2006 on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits.

Manufacturer: Pressco Technology, Inc.
29200 Aurora Road
Cleveland, Ohio 44139-1847
USA

Product Identification: Product Name: Intellispec Series V Inspection System

Standards Used (only major standards listed):

- **EN 61326-1:2006**: Electrical equipment for measurement, control and laboratory use —EMC requirements — Part 1: General requirements
- **EN61010-1 (2001)**: Safety requirements for electrical equipment for measurement, control and laboratory use - Part 1: General requirements

Technical File: MS2932

Place: Pressco Technology, Inc. April 30, 2010
29200 Aurora Rd.
Solon, Ohio 44139-1847
USA

Signed: Date:

Name: **Noel E. Morgan Jr.** Title**: VP of Operation**

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

DECLARATION OF CONFORMITY - EMBEDDED CLUSTER BOX

CE

Number: CE3143

Declaration: The Pressco Technology, Inc. Embedded Cluster Box 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 the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC, and with Directive 2006/95/EC of the European Parliament and of the Council of 12 December 2006 on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits.

Manufacturer: Pressco Technology, Inc.
29200 Aurora Road
Cleveland, Ohio 44139-1847
USA

Product Identification: Product Name: Embedded Cluster Box 66716

Standards Used (only major standards listed):

- **EN 61326-1:2006**: Electrical equipment for measurement, control and laboratory use —EMC requirements — Part 1: General requirements
- **EN61010-1 (2001**): Safety requirements for electrical equipment for measurement, control and laboratory use - Part 1: General requirements

Technical File: EMR3143 and ES3143

Place: Pressco Technology Inc. January 11, 2011
29200 Aurora Road
Cleveland, Ohio 44139-1847
USA

Signed: Date:

Name: **Noel E. Morgan Jr.** Title**: VP of Operation**

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

DECLARATION OF CONFORMITY - CLUSTER BOX

CE

Number: CE2985

Declaration: The Pressco Technology, Inc. Cluster Box 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 the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC, and with Directive 2006/95/EC of the European Parliament and of the Council of 12 December 2006 on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits.

Manufacturer: Pressco Technology, Inc.
29200 Aurora Road
Cleveland, Ohio 44139-1847
USA

Product Identification: Product Name: Cluster Box 66083

Standards Used (only major standards listed):

- **EN 61326-1:2006:** Electrical equipment for measurement, control and laboratory use —EMC requirements — Part 1: General requirements
- **EN61010-1 (2001):** Safety requirements for electrical equipment for measurement, control and laboratory use - Part 1: General requirements

Technical File: EMR2985 & ES2985

Place: Pressco Technology, Inc. April 30, 2010
29200 Aurora Rd.
Solon, Ohio 44139-1847
USA

Signed: Date:

Name: **Noel E. Morgan Jr.** Title**: VP of Operation**

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

Chapter 5

INSTALLATION AND WIRING

SHIPPING AND HANDLING

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.

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.

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 3).

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	152.4 cm x 124.46 cm x 152.4 cm (60 x 49 x 60 inches)
Weight	453.592 kg (1000 lbs.)

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.

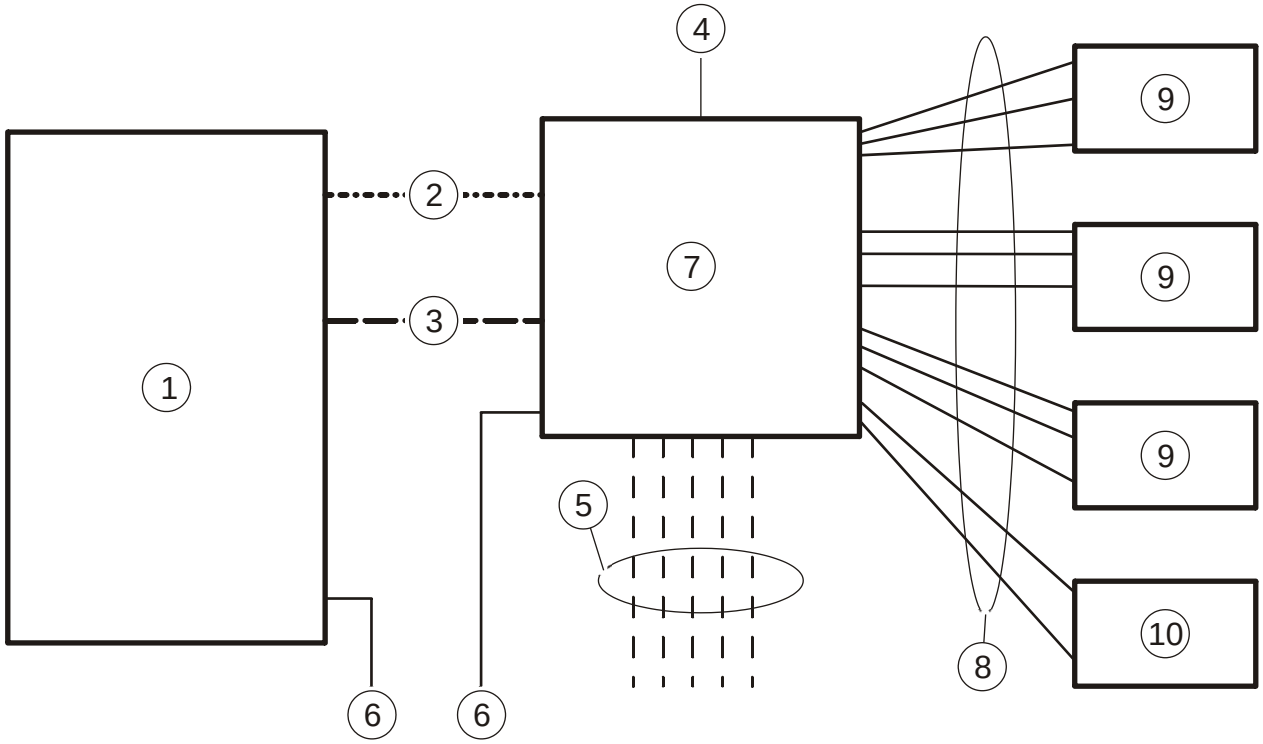
We recommend the following prior to machine installation:

- 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.

SYSTEM BLOCK DIAGRAM - BNS

Below is a basic block diagram for Series V Intellispec. This drawing shows the major components for the system. Your system will contain only the components required for your application. The numbered components are listed in the table below.

The drawing below shows a basic block diagram for a typical BNS system with a cluster box and three sensors (camera modules). The drawing shows camera modules that contain only one camera each.

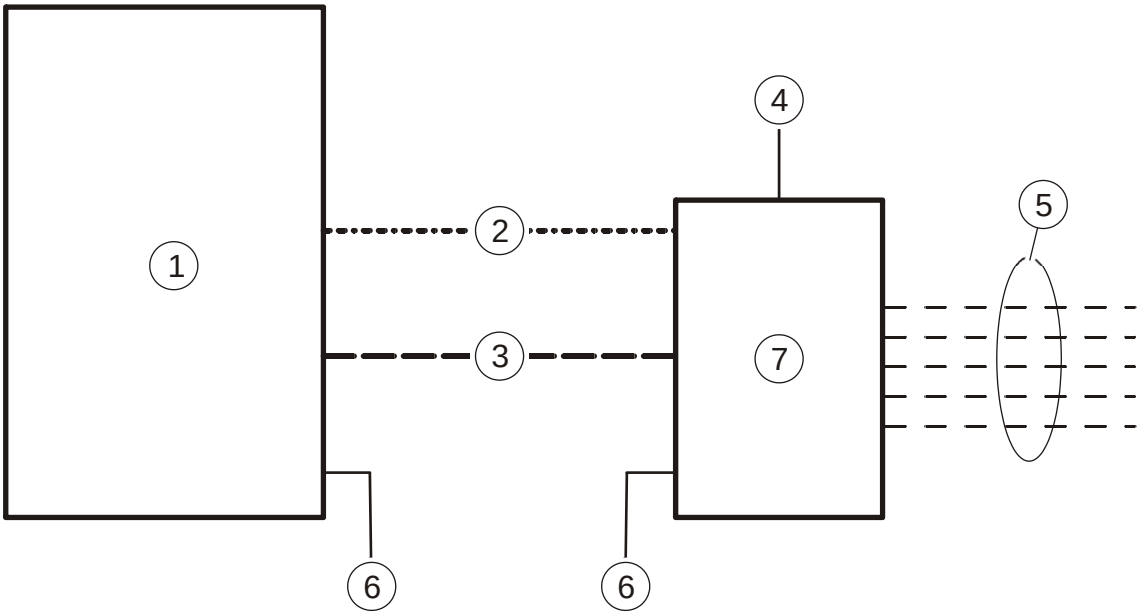


1	User Interface (PC, monitor, and UPS)
2	PDN (Pressco Data Network) ethernet green cable
3	Inspection sensor/ camera ethernet blue cable
4	Light tree (optional)
5	Sensor cables (for part present sensor, encoder, machine part, pocket detect, reject confirm) For details: ***I/O connectors*** (see "***Chromapulse module external connections***" on page 45, "***8 port I/O boxes***" on page 50)
6	AC power
7	Cluster box
8	PDN ethernet green cable, Inspection sensor/ camera ethernet blue cable, power and trigger cable (item 10 has only PDN cable and power and trigger cable)
9	Inspection sensor/ camera module (example: base, neck, seal surface)
10	Light array assembly (for base/neck cameras)

SYSTEM BLOCK DIAGRAM - INTEGRATED TUNNEL

Below is a basic block diagram for Series V Intellispec. This drawing shows the major components for the system. Your system will contain only the components required for your application. The numbered components are listed in the table below.

The drawing below shows a basic block diagram for a system with an integrated tunnel (with one camera).



1	User Interface (PC, monitor, and UPS)
2	PDN (Pressco Data Network) ethernet green cable
3	Inspection sensor/ camera ethernet blue cable
4	Light tree (optional)
5	Sensor cables (for part present sensor, encoder, machine part, pocket detect, reject confirm) For details: ***I/O connectors*** (see "***Chromapulse module external connections***" on page 45, "***8 port I/O boxes***" on page 50)
6	AC power
7	Integrated tunnel (example: CP/EV inspection module)

ASSEMBLY, LOCATION, AND MOUNTING REQUIREMENTS

The Intellispec requires the following:

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*** (on page 16) (use the specifications that apply to your system) ▪ ***Integrated tunnel electrical specifications*** (on page 17) (if applicable) ▪ ***Cluster box electrical specifications*** (on page 24) (if applicable)
Internet connection (optional)	Provide a shielded ethernet cable to use Pressco's remote support through the Internet.

Protective earthing

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.

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.

Cord Connected Equipment

The product will be equipped with a supply cord having an equipment grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with local codes and ordinances.

Do not modify the plug provided with the product - if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

Cable Direct

This product must be connected to a grounded metal, permanent wiring system, or an equipment grounding conductor must be run with the circuit conductors and be connected to the equipment rounding terminal.

Electrical connection

Make sure that the power outlet voltage matches the voltage required by the machine. Refer to the specifications for equipment included with your system:

- ***User interface electrical specifications*** (on page 16)
- ***Integrated tunnel electrical specifications*** (on page 17)
- ***Cluster box electrical specifications*** (on page 24) (if applicable)

Warning

Power Switch is the power disconnect device. Do not position the equipment such that access to the disconnect switch is impaired. If not readily accessible (such as within a rack or mounting out of reach), an additional disconnect device should be installed that can isolate the Live and Neutral lines of the mains power supply, whilst leaving the protective earth intact.

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.

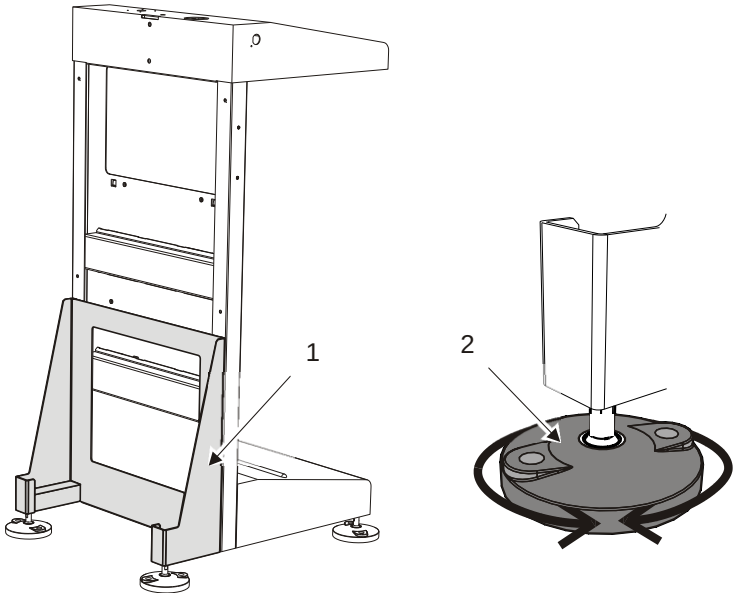
Ventilation

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

Stability of user interface

Ensure the stability of the user interface. Also refer to the directives in the ***Personnel Safety*** (on page 11) section.

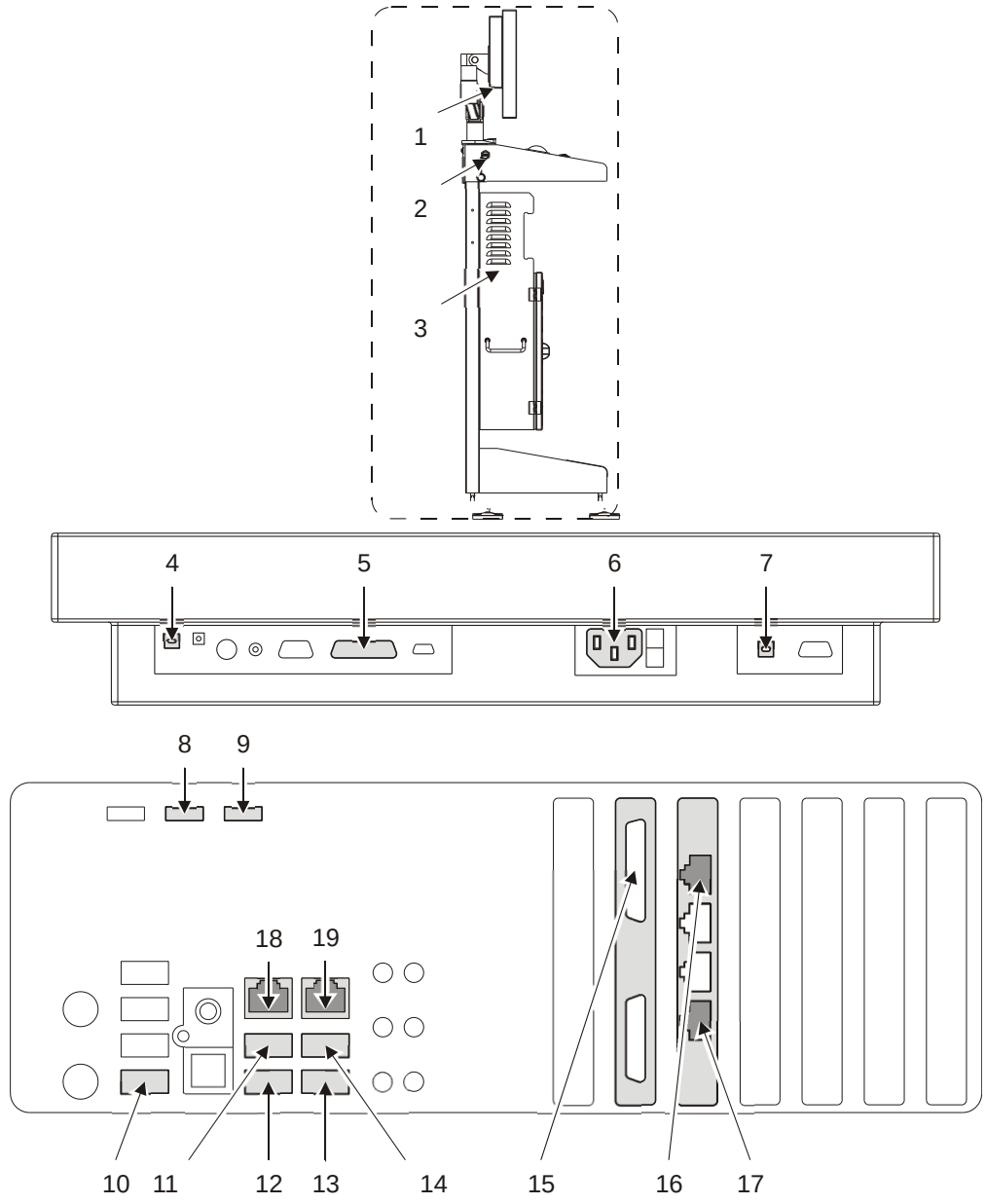


To make sure the user interface is stable:

1. Make sure that the user interface stabilizer [item 1] is secured properly to the user interface.
2. Adjust the feet [item 2] to level the user interface. Proper leveling can help ensure proper operation.

USER INTERFACE EXTERNAL CONNECTIONS

❖ *Note: the connectors not called out in the diagram have no connection*



For more information, refer to ***Wiring diagram user interface/ PC*** (on page 43).

1	Monitor connector panel
2	Convenience USB port
3	PC [inside the cabinet]

Monitor connector panel connectors	
4	Auxiliary USB connector
5	DVI input
6	AC power connector

Monitor connector panel connectors	
7	Touch screen USB connector

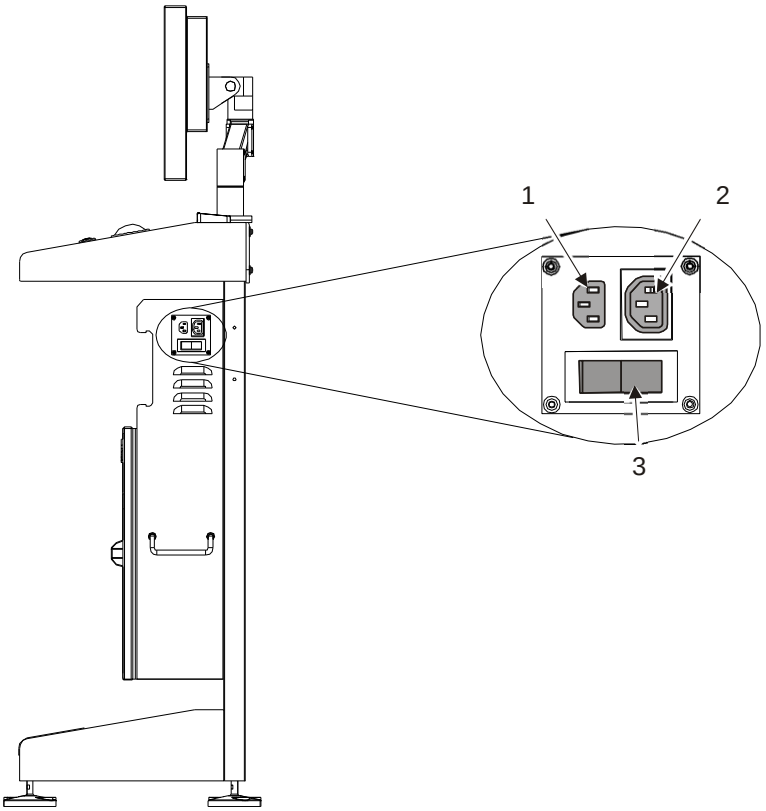
PC connectors	
8	2 pin power connector for camera ethernet switch
9	2 pin power connector for PDN ethernet switch
10	Convenience USB port connector
11	Monitor auxiliary USB connector
12	Monitor touch screen USB connector
13	Trackball USB connector
14	Biometric device USB connector
15	DVI connector
16	Ethernet connector for camera ethernet switch (blue cable)
17	Ethernet connector for PDN ethernet switch (green cable)
18	Optional plant network connection
19	Optional remote user interface connection

Pressco PC outlet wiring

Warning

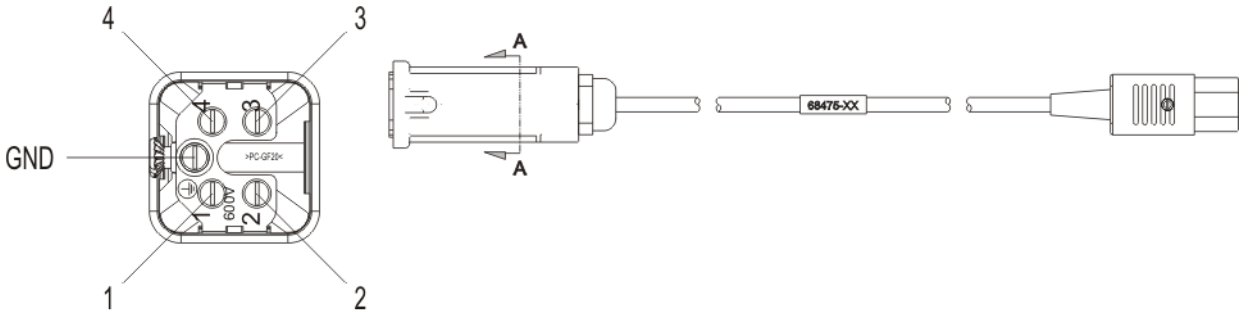
The Pressco PC outlet is only to be used to provide power to the Intellispec PC. Any other use is prohibited.

The power connections for the user interface are found on the right side of the cabinet.



1	PC (computer) power connector
2	Monitor power connector
3	User interface power switch

Wiring details:



SECTION "A-A"

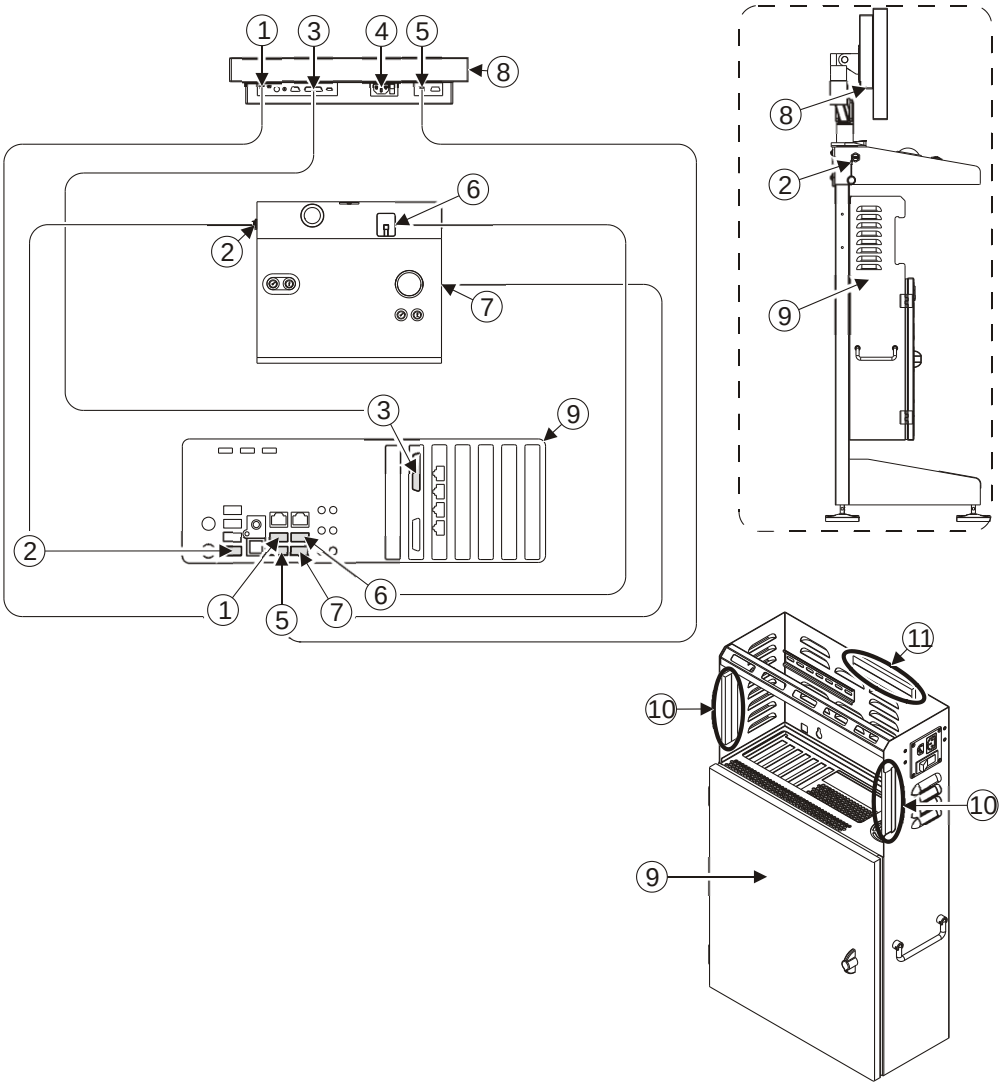
Output: 230VAC, 500W
Outlet mating connector: Harting: insert 09200042611, hood 09200031440
Use wire type UL1015 or equivalent, 16awg (1.44mm2) min.

Wiring chart			
Pin number, 5-pin connector	**Wire color**	**Pin number, 3-pin connector**	**Description**
1	black	L	L1
2	white	N	L2

GND	green	GND	PE

Wiring diagram user interface/ PC

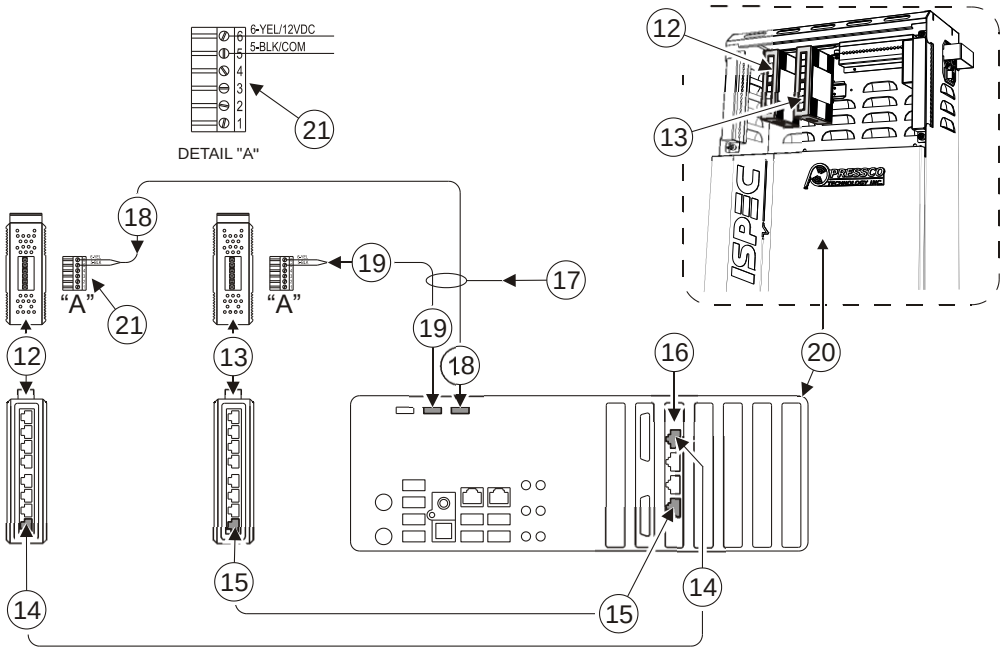
The following diagram shows the wire connections between the monitor, user interface, and PC.



1	Monitor auxiliary USB cable
2	Convenience USB port cable
3	DVI cable (included with monitor). (Remove DVI-VGA adapter if present)
4	AC power in for monitor
5	Touchscreen USB cable (for optional touchscreen monitor)
6	Optional Biometric device -USB cable Do not plug in until application software is installed
7	Trackball USB cable Do not plug in the PS/2 connector
8	View of monitor connector panel

9	PC. Connectors are inside cabinet.
10	Side cable entry locations
11	Cable entry. Route cables behind the PC mounting panel, through the cable entry at the back of the PC.

Wiring diagram ethernet switches

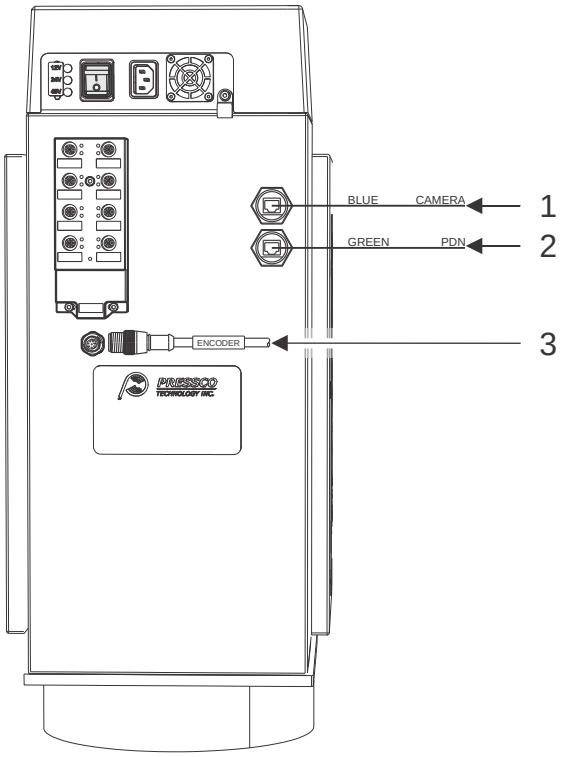


12	Ethernet switch for cameras [on left]
13	Ethernet switch for Pressco Device Network (PDN) [on right]
14	Blue ethernet cable
15	Green ethernet cable
16	Quad ethernet card
17	Two pin power connectors. Cables are included with PC.
18	Two pin power cable
19	Two pin power cable
20	PC
21	Detail "A" Ethernet switch power connection

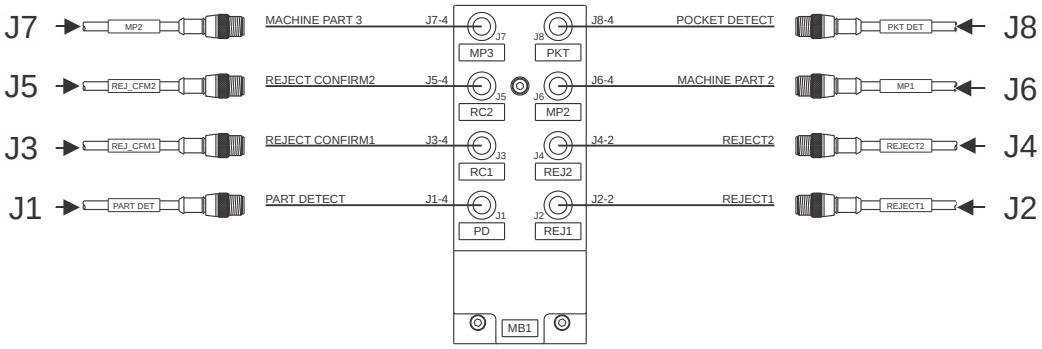
❖ *Note: the Cat-6 ethernet cabling is divided into two groups. The green cabling goes to/from the cameras and lighting circuitry. The blue cabling goes to/from the part tracking circuitry.*

CHROMAPULSE MODULE EXTERNAL CONNECTIONS

❖ *Note: this inspection module is not used in all systems. The configuration of your inspection module may vary.*



8-PORT I/O BOX-MB1



8 port I/O Box MB1		
1		Blue cable - Camera
2		Green cable - PDN (Pressco Device Network)
3		Encoder. 8 pin panel connector.
J1	PD	Part detect
J2	REJ1	Reject 1
J3	RC1	Reject Confirm 1
J4	REJ2	Reject 2

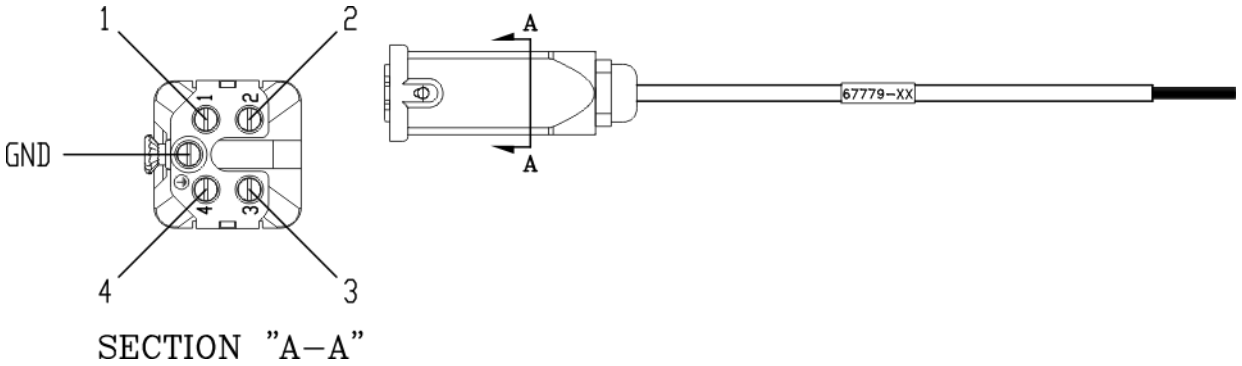
8 port I/O Box MB1		
J5	RC2	Reject Confirm 2
J6	MP2	Machine Part 2
J7	MP3	Machine Part 3
J8	PKT	Pocket Detect

CLUSTER BOX EXTERNAL CONNECTIONS

Cluster Box Mains wiring

The mains voltage supply to the Cluster Box should be wired according to the following diagram. For voltage rating, refer to the ***Cluster Box Electrical Specifications*** (on page 24).

Wiring details:



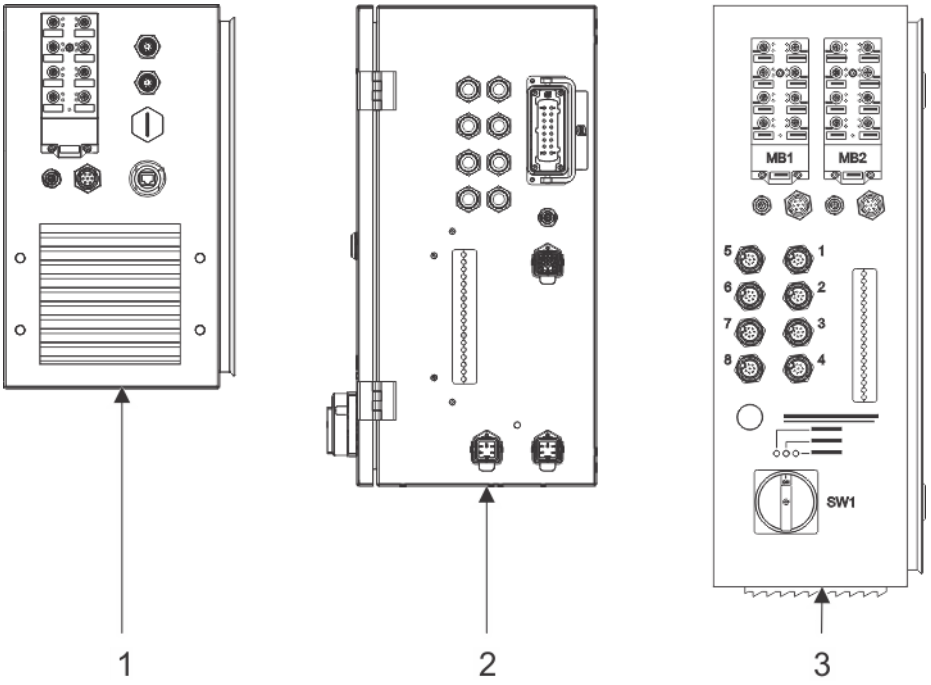
Mains mating connector: Harting: insert 09200042711, hood 09200031440
Use wire type UL1015 or equivalent, 16awg (1.44mm2) min.

Wiring chart		
Pin number, 5-pin connector	**Wire color**	**Description**
1	black	L1
2	white	L2
GND	green	PE

Types of Cluster boxes

There are several types of cluster boxes that differ in size, external wiring, and voltage rating. Use the chart below to identify your cluster box.

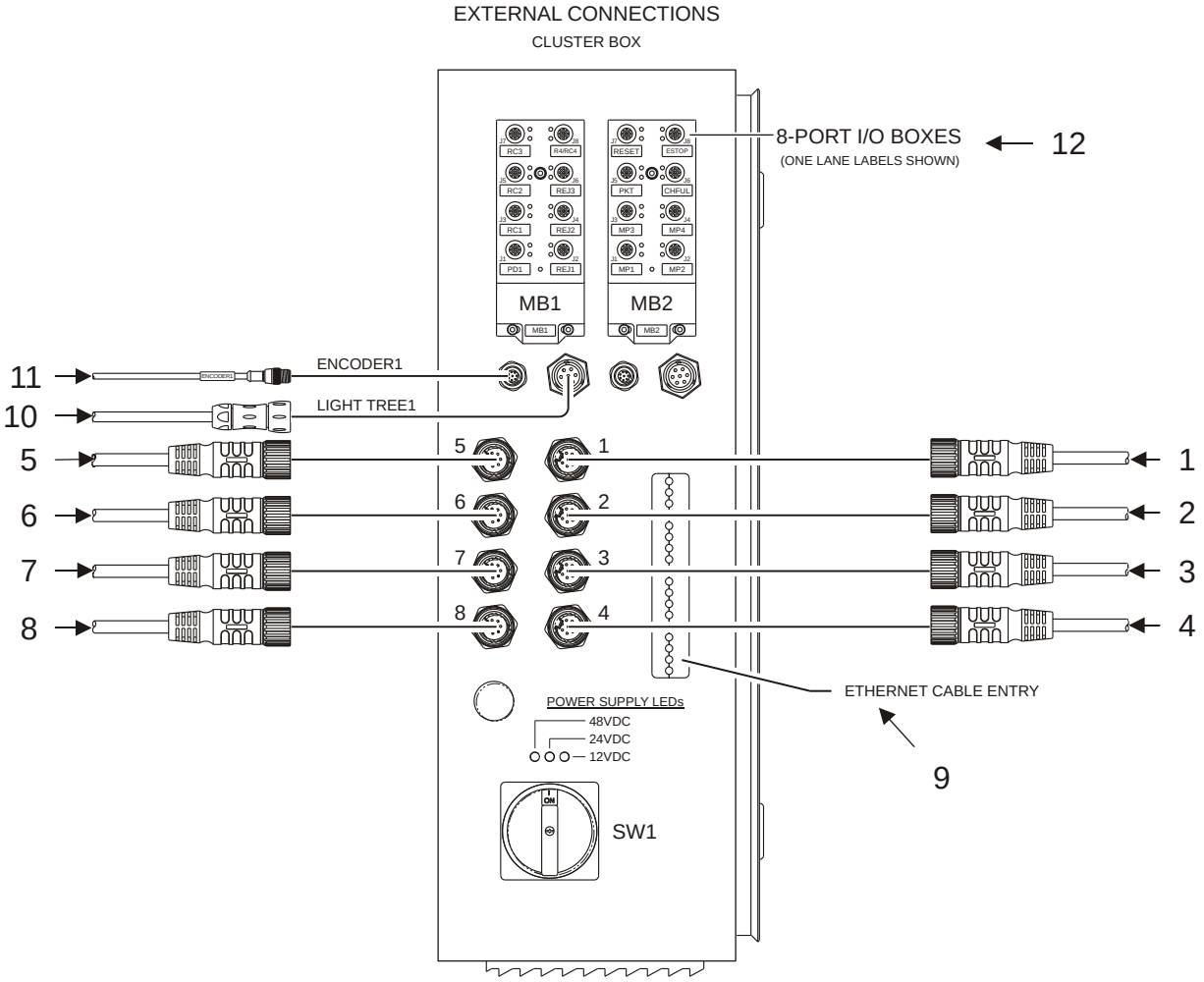
For **external I/O connections**, determine whether your cluster box is a classic, embedded, wash-down, or micro model. The basic shapes are shown below:



1	Micro or Wash-Down cluster box ▪ Note: Wash-Down version has a protective cover over the filter and fan vents
2	Embedded cluster box
3	Classic cluster box

Classic cluster box external connectors

❖ *Note: the cluster box is not included with all systems*

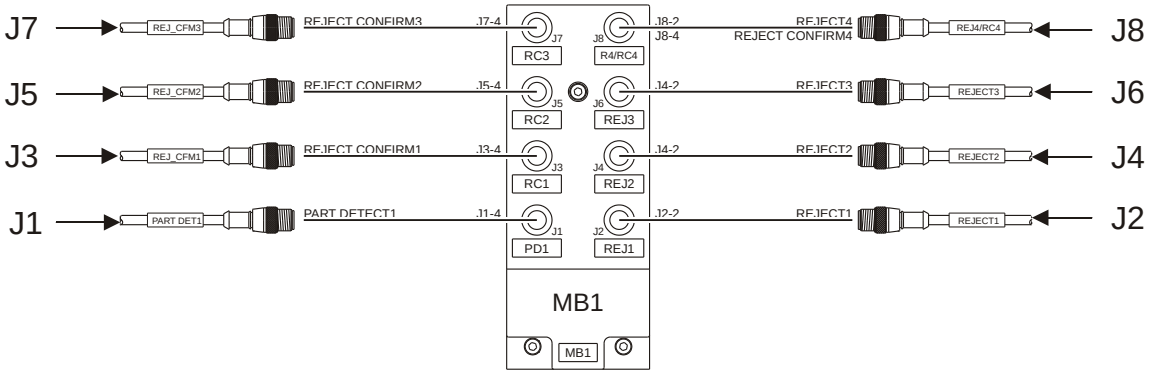


To connect sensors 1-8 and determine the number of network connections, refer to the ***Cluster box system configurations*** (on page 51).

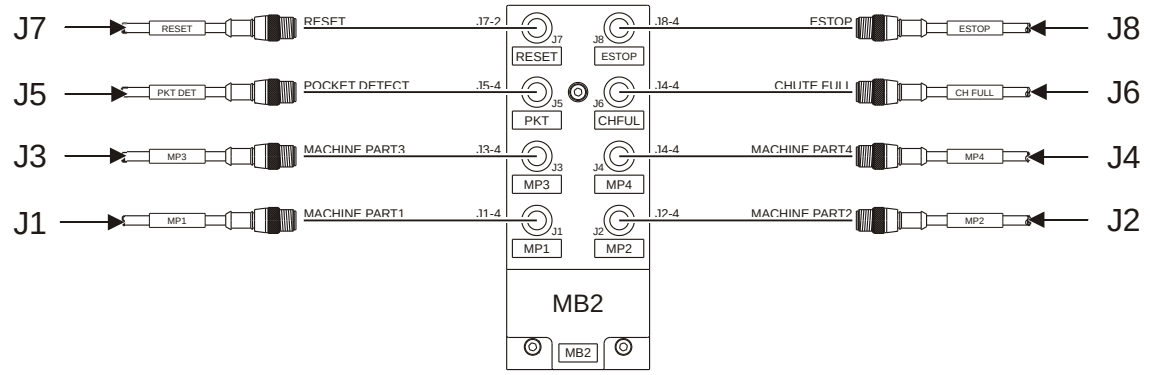
9	Ethernet cable entry
10	Light Tree 1
11	Encoder 1
12	***8 port I/O boxes*** (on page 50)

8 PORT I/O BOXES

8-PORT I/O BOX-MB1



8-PORT I/O BOX-MB2



8 port I/O box MB1		
J1	PD1	Part detect 1
J2	REJ1	Reject 1
J3	RC1	Reject Confirm 1
J4	REJ2	Reject 2
J5	RC2	Reject Confirm 2
J6	REJ3	Reject 3
J7	RC3	Reject Confirm 3
J8	R4/ RC4	Reject 4/ Reject Confirm 4

8 port I/O box MB2			**For typical base/neck/ seal configuration in a blow molder**
J1	MP1	Machine Part 1	Cavity
J2	MP2	Machine Part 2	Spindle
J3	MP3	Machine Part 3	Infeed transfer arm
J4	MP4	Machine Part 4	

J5	PKT	Pocket Detect	
J6	CHFUL	Chute Full	
J7	RESET	Reset	
J8	ESTOP	Emergency stop	

Cluster box system configurations

Eight-sensor cluster boxes should be wired according to the configuration in the following tables. Please note the following:

- Starting with port 1 – connect the modules in order, skipping a connection if and only if the module just connected has two cameras (2 camera sidewall and PSE).
- Label the cables on the cluster box side with matching designations (1 to 8). Label the other end of the cable with the module name.
- Modules are to be connected in the order listed here:
  1) Base
  2) Neck or Sidewall
  3) Seal
  4) Preform Seal/Endcap
  5) Preform Wall
  6) IMASS Base
  7) Imass Wall (uppermost)
  8) Imass Wall (next uppermost)

Use the table below that matches your system configuration, and connect the modules accordingly.

- [*] T connection to lighting controller
- [+] Module connects to endcap lighting

B2WS-PSEPW-M	
Channel	**Module**
1	Base*
2	Sidewall
3	-
4	Seal
5	PSE+
6	-
7	PW*
8	Imass Base

BNS-PSEPW-M2	
Channel	**Module**
1	Base*
2	Neck
3	Seal

4	PSE+
5	-
6	PW*
7	Imass Base
8	Imass Wall

BNS-M3	
Channel	**Module**
1	Base*
2	Neck
3	Seal
4	Imass Base
5	Imass Wall
6	Imass Wall
7	-
8	-

BWS-PSEPW-M2	
Channel	**Module**
1	Base*
2	Sidewall
3	Seal
4	PSE+
5	-
6	Pw*
7	Imass Base
8	Imass Wall

B-PSEPW-M	
Channel	**Module**
1	Base*
2	PSE+
3	-
4	PW*
5	Imass
6	-
7	-
8	-

B-M2	
Channel	**Module**

1	Base*
2	Imass Base
3	Imass Wall
4	-
5	-
6	-
7	-
8	-

PSEPW-M	
Channel	**Module**
1	PSE+
2	-
3	PW
4	Imass
5	-
6	-
7	-
8	-

NS-PSE	
Channel	**Module**
1	Neck*
2	Seal
3	PSE*
4	-
5	-
6	-
7	-
8	-

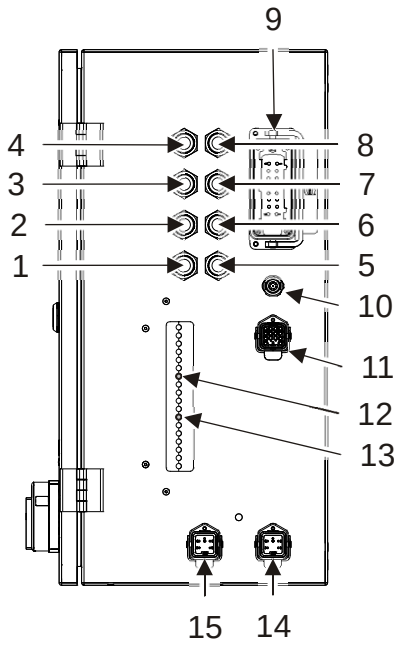
Network Connections

(1) indicates one network cable connection, (2) indicates two network cable connections

Module	**PDN (green)**	**Data (blue)**
Base	1	1
Neck	-	1
Sidewall	-	1
Sidewall (2 camera)	-	2
Seal	1	1
PSE	2	2

Network Connections (1) indicates one network cable connection, (2) indicates two network cable connections		
PW	1	1
Imass	1	-
Controller	1	-
Computer	1	1

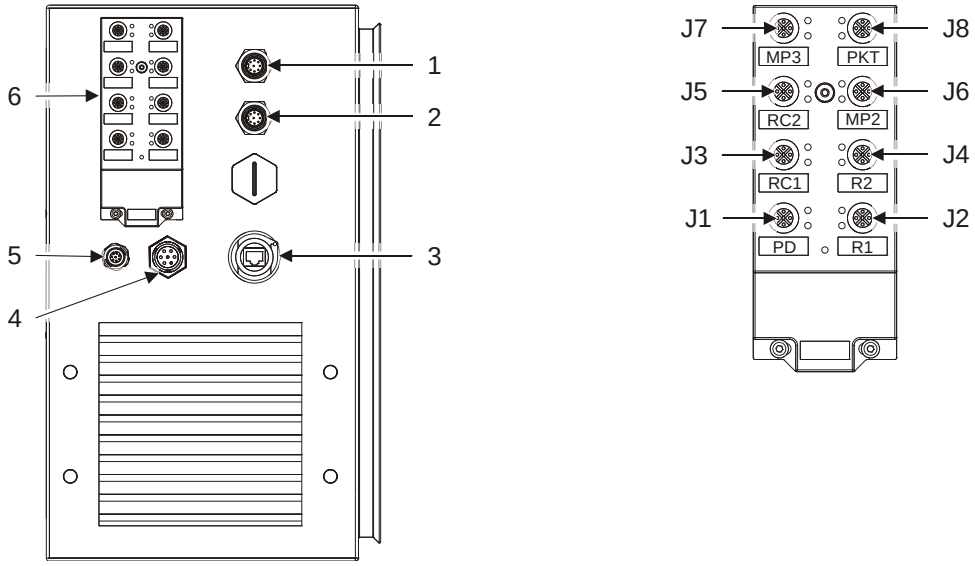
Embedded Cluster box external connections



To connect sensors 1-8 and determine the number of network connections, refer to the ***Cluster box system configurations*** (on page 51).

9	To PCC (programmable controller)
10	Pressco encoder
11	Light tree and horn
12	PDN network (green)
13	Sensor network (blue)
14	230 V to Pressco PC
15	400 V supply

Wash-Down and Micro Cluster box external connections



❖ *Note: the Wash-Down version of this box has a protective cover over the filter and fan vents*

1	Sensor 1
2	Sensor 2
3	PDN network (green)
4	Light tree and horn
5	Encoder
6	8 port I/O box (refer to table below)

❖ *Note: Sensor network (blue) cable goes directly from the sensors to the Intellispec computer*

J1	PD	Part Detect
J2	R1	Reject 1
J3	RC1	Reject Confirm 1
J4	R2	Reject 2
J5	RC2	Reject Confirm 2
J6	MP2	Machine Part 2
J7	MP3	Machine Part 3
J8	PKT	Pocket Detect

Replacing fuses in the cluster box

Warning

For continued protection against fire hazard, replace fuses only with the same type and ratings. The use of other fuses or materials is prohibited.

Warning

Disconnect the product from the mains supply before replacing the fuse(s).

For fuse rating, refer to the table below pertaining to the ***type*** (see "***Types of Cluster boxes***" on page 47) and voltage rating of your cluster box.

❖ *Note: the Wash-Down and Micro Cluster boxes do not contain replaceable fuses.*

Classic Cluster box 120VAC fuses		
Part Number	**Fuse**	**Value**
66780	FU1	5A, 600VAC, Time Delay, Class CC
59164	FU2	0.5A, 250VAC, 5x20mm

Classic Cluster box 120VAC fuses		
Part Number	**Fuse**	**Value**

Classic Cluster box 230VAC fuses		
Part Number	**Fuse**	**Value**
65345	FU1	3A, 600VAC, Time Delay, Class CC
65345	FU2	3A, 600VAC, Time Delay, Class CC
51818	FU3	0.5A, 250VAC, 5x20mm

❖ *Note: Fuse kit 66990 is available. It contains all the above fuses.*

Classic Cluster box 400VAC fuses		
Part Number	**Fuse**	**Value**
65345	FU1	3A, 600VAC, Time Delay, Class CC
65345	FU2	3A, 600VAC, Time Delay, Class CC
65346	FU3	10A, 600VAC, Time Delay, Class CC
51818	FU4 (quantity 2)	0.5A, 250VA, 5x20mm

❖ *Note: Fuse kit 66990 is available. It contains all the above fuses.*

Embedded Cluster box fuses		
Part Number	**Fuse**	**Value**
65345	FU1	3A, 600VAC, Time Delay, Class CC
65345	FU2	3A, 600VAC, Time Delay, Class CC
65346	FU3	10A, 600VAC, Time Delay, Class CC
51818	FU4 (quantity 2)	0.5A, 250VAC, 5x20mm

❖ *Note: Fuse kit 66990 is available. It contains all the above fuses.*

COMMISSIONING

Before placing the machine into operation, make sure the following checks are completed:

Completed	Yes	No
Positioning and leveling of the unit		
Connection of compressed air line to connection points		
Connection of power supply to user interface cabinet		
Connection of power supply to cluster box (if applicable)		
Connection of power supply to integrated inspection module(s) if applicable		
Proper wiring from user interface cabinet to sensor module(s) and cluster box (if applicable) using the wiring diagrams		

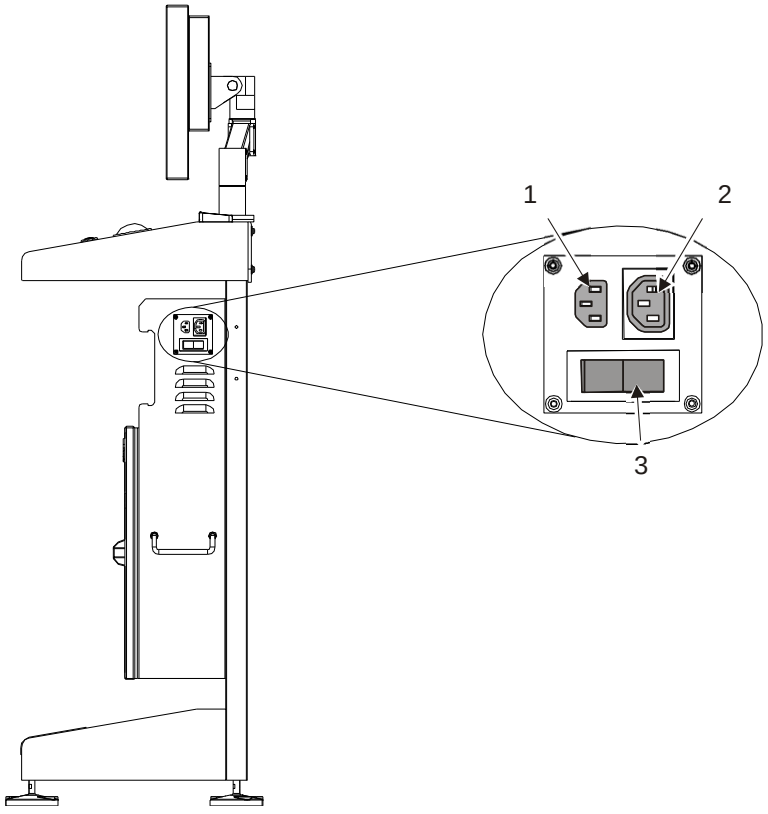
Chapter 6

OPERATION

POWER UP

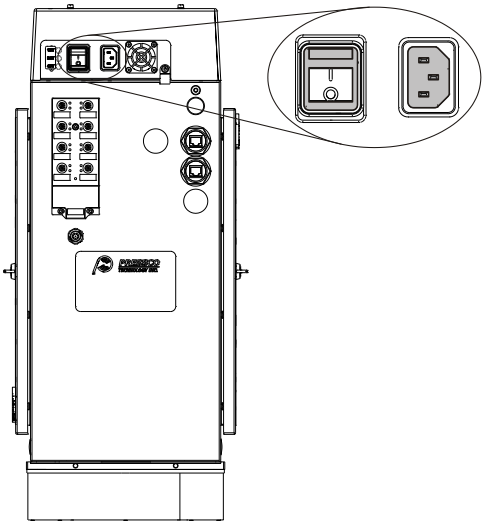
Intellispec Series V systems have multiple power switches. Make sure the power switches are turned on for the user interface, each camera module, and cluster box (if applicable). See the illustrations below for power switch locations.

The power connections for the user interface are found on the right side of the cabinet.



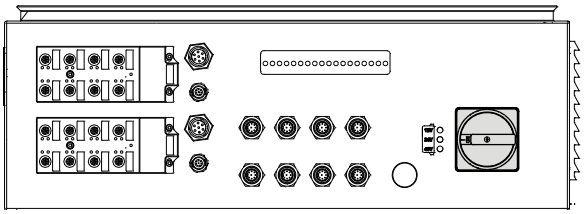
1	PC (computer) power connector
2	Monitor power connector
3	User interface power switch

Each integrated camera module (for example the CPV series of inspection tunnels) has its own power on/off switch.



In system configurations that have a cluster box:

- if the cluster box has a UPS, open the cluster box door and switch on the UPS, then
- turn the external on/off switch to power all camera modules connected to the cluster box.



Power Down

To completely power down all components of the Intellispec, make sure the following power switches are turned off:

- User interface
- Integrated inspection modules (if applicable)
- Cluster box (if applicable)
- UPS inside the Cluster box (if applicable). Open the Cluster box door to switch off the UPS.

The user interface, inspection modules, and cluster box are all independent of each other. Therefore, if you need to service any of the above modules, any one can be turned off by itself.

Important

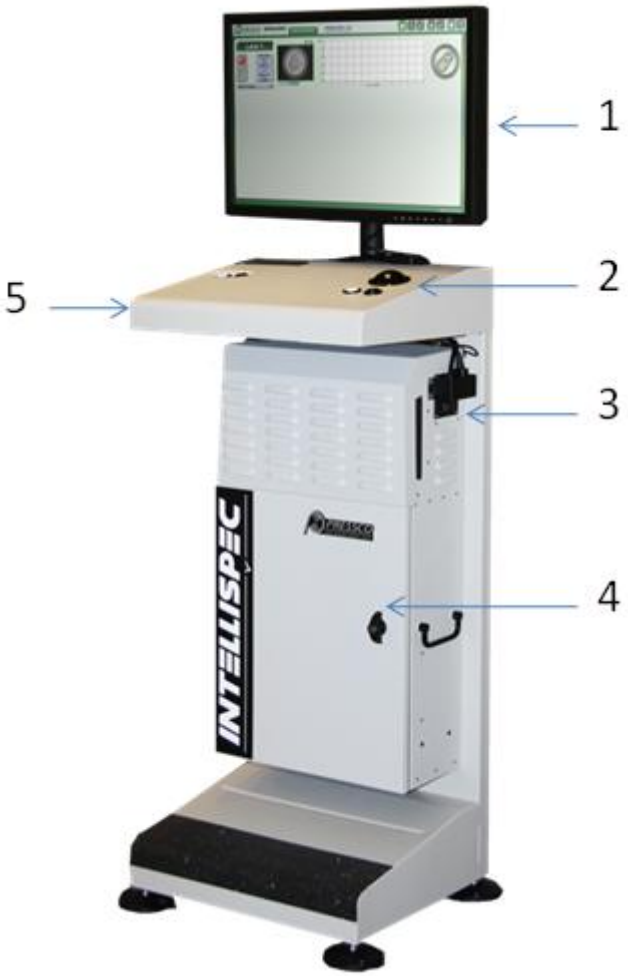
If you re-start the computer, turn off the User Interface power and leave it off for about 40 seconds before turning it back on. This allows the electronic components to correctly reset.

To see the locations of the power switches, refer to ***Powering on the system*** (see "***Power Up***" on page 59).

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.

INTELLISPEC CABINET AND USER INTERFACE

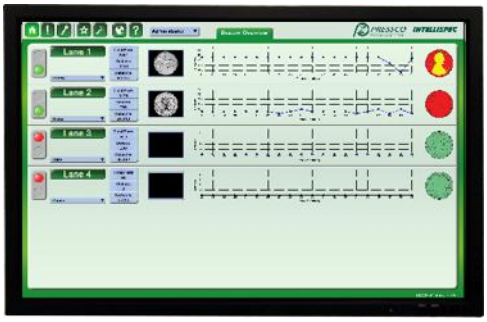


1	24" Diagonal color LCD with optional touch screen. An on-screen keyboard (OSK) is displayed when needed.
2	Trackball with two sets (left-handed or right-handed) of buttons: Select buttons [✓] and Information buttons [i]
3	Vision processor on/off switch.

4	Inside the cabinet: ▪ Ethernet switches ▪ Vision processor ▪ Mechanical keyboard (MKB)
5	USB convenience port is mounted on the side of the user interface.

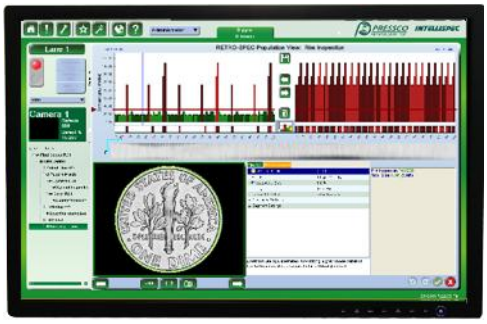
Monitor

The standard monitor is an LCD color monitor mounted on a mechanical arm to allow the user to tilt or swivel the screen for best viewing. It has an area of 1920 x 1200 pixels and a diagonal size of about 24 inches.



Touch Screen Monitor (optional)

Some Intellispec systems have a touch screen monitor installed. It has an area of 1920 x 1200 pixels and a diagonal size of about 24 inches. This is used primarily for high level navigation, obtaining information from the system, and responding to alarms. It is not to be used for inspection setup or configuration tasks, as those tasks require detailed input.



Use the touch screen to:

- Log in / out
- Put the system online / offline
- Clear statistics
- Print reports
- Acknowledge or reset Alarms
- Navigate the menus (from System Overview to Lane View to Sensor view, etc.)

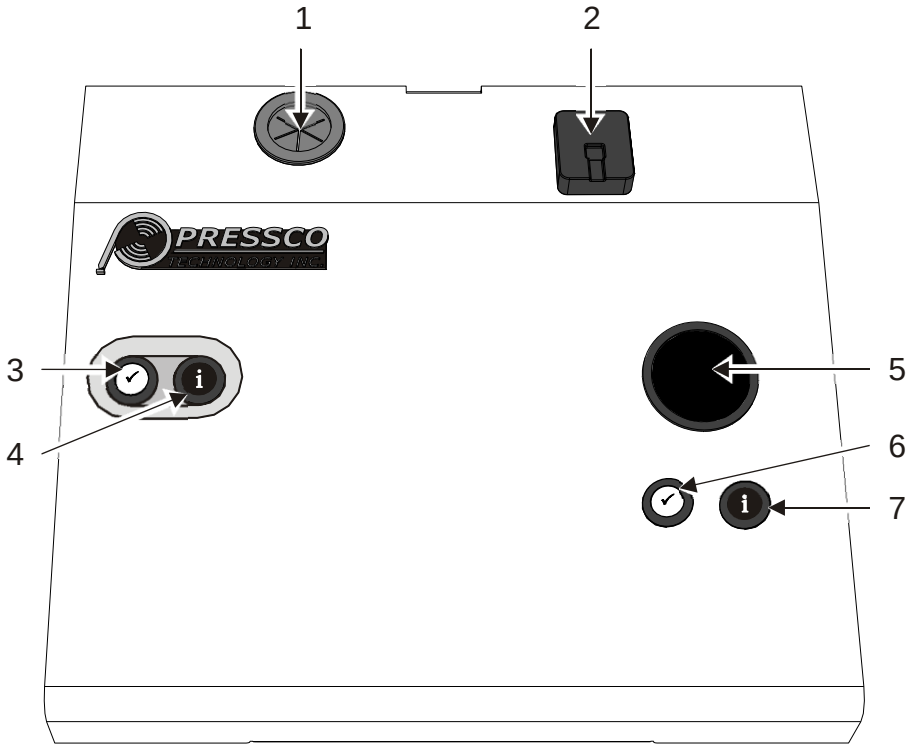
USER INTERFACE INPUT DEVICES

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

- ***Trackball and buttons*** (see "***How to select menu items***" on page 63)
- ***On Screen Keyboard (OSK)*** (on page 64)
- ***Touch Screen monitor (optional)*** (on page 62)
- Temporarily connected conventional ***Mechanical Keyboard (MKB)*** (on page 66)
- ***USB Ports*** (on page 66)
- Optional Biometric Identification login ***device*** (see "***Biometric login device***" on page 67)

User interface selection devices

The user interface hardware consists of several buttons and selection devices:



1	(not a button) Grommet for user interface equipment cords.
2	Optional Biometric Identification login device
3 and 4	Secondary set of buttons, used with track ball. See also items 6 and 7.
5	Track Ball
6	Button (left-click) to select and activate objects on screen
7	Button (right-click) to call up a context-sensitive menu about the selected object on screen

How to select menu items

Use the track ball to select, interact, and change active objects on the screen. The track ball will be required for all inspection editing tasks.

Under the track ball are two buttons. Use the left button (the primary button ✓) to select and activate objects on the screen. Use the right button i to call up a context-sensitive menu related to the area or object clicked. A second set of each button type is located on the left side of the podium for two-handed operation.

❖ *Note: Swapping the button assignments is not supported. The second set of buttons is to accommodate left-handed users.*

The following table shows the actions available for the track ball and buttons, and the results of those actions.

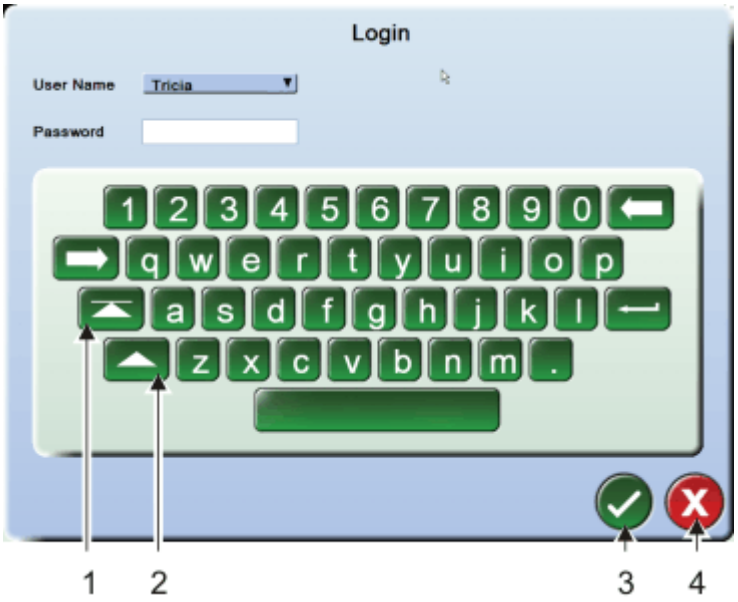
Action	Result
Point (move pointer with the track ball)	Display Tool Tip when hovered over active object
Click (Left-click) ✓	When the pointer is over an active object, a click initiates various actions. Nothing happens when the pointer is clicked on a disabled object.
Double-click ✓ ✓	When the pointer is over an active object, a double-click initiates various actions. For example, edit an inspection.
Right-click i	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.
Drag (hold the left button while moving the track ball)	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.

On Screen Keyboard (OSK)

Different types of on screen keyboards will be displayed depending on what kind of input is needed. When you want to type text or numbers into a field, right-click or double-click on a text input field to display the appropriate keyboard.

- If alphanumerical input is needed, a full alphanumeric keyboard will be displayed
- In numeric input only is needed, a smaller, numeric keypad only will be displayed

ALPHANUMERIC KEYBOARD

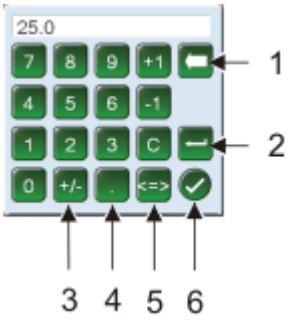


1	Shift lock button - capitalizes all letters until you press this button again.
2	Shift button - capitalizes one letter, then returns to uncapitalized letters automatically.
3	OK button - accepts the typed information and closes the keyboard screen.
4	Cancel button - disregards the typed information and closes the keyboard screen.

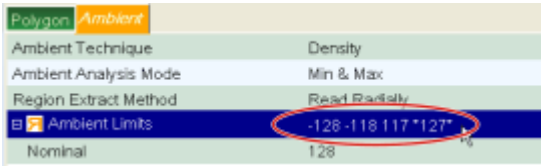
NUMERIC KEYBOARD

The numeric keypad 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

Mechanical keyboard (MKB)

The system supports the temporary connection of a conventional mechanical keyboard using one of the available ***USB ports*** (on page 66). This keyboard will mostly be used for system level tasks such as BIOS configuration, Network configuration, and Operating System level setup.

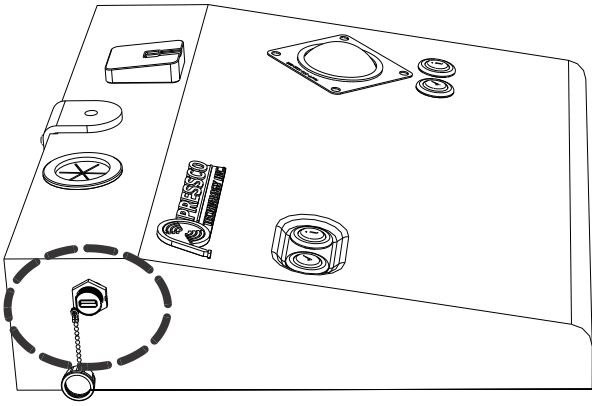
The keyboard:

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

USB Ports

There are USB ports available to back up or transfer data, and also to connect the optional mechanical keyboard. One is mounted on the side of the user interface pedestal.

Some touch screen monitors have additional USB connectors on the side of the monitor.



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 64))

USER INTERFACE DISPLAY - 4 LEVELS

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

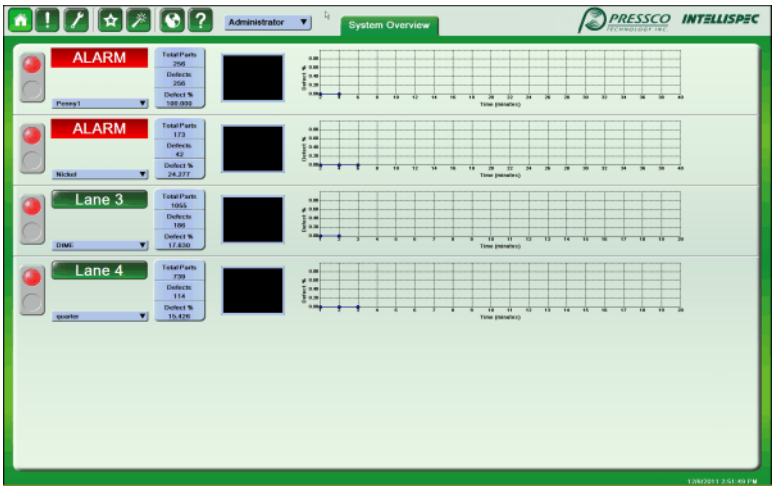
Look at the tab at the top of the screen to quickly determine which level you are viewing (from System Overview to Sensor Overview). The tab will read "System Overview" [level 1], "Lane n" [level 2], or "sensor name" [level 3]. In the Inspection Screen [level 4], the tab also reads "sensor name," but the inspection graphs and parameters are available to view and edit.

❖ *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:

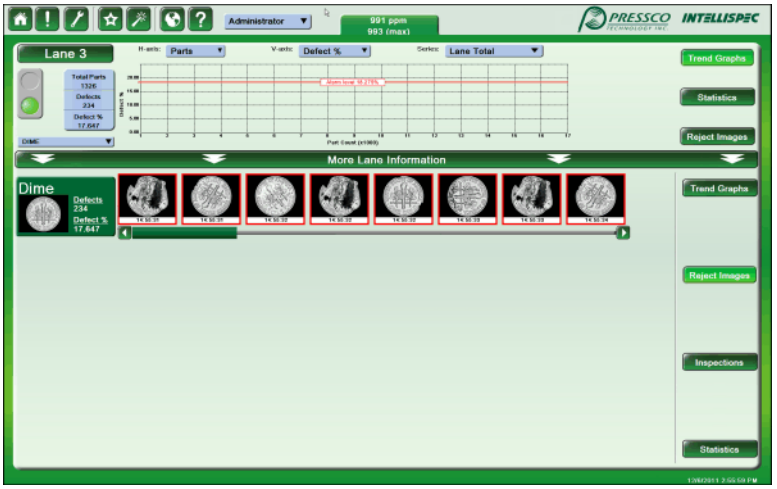
1. Click the Home button  to go to level 1, System Overview.

- System Overview - Displays information that represents the complete system as well as a thumbnail line for each Lane that is configured. More information about the ***System Overview screen*** (on page 70).



2. Click a Lane button 

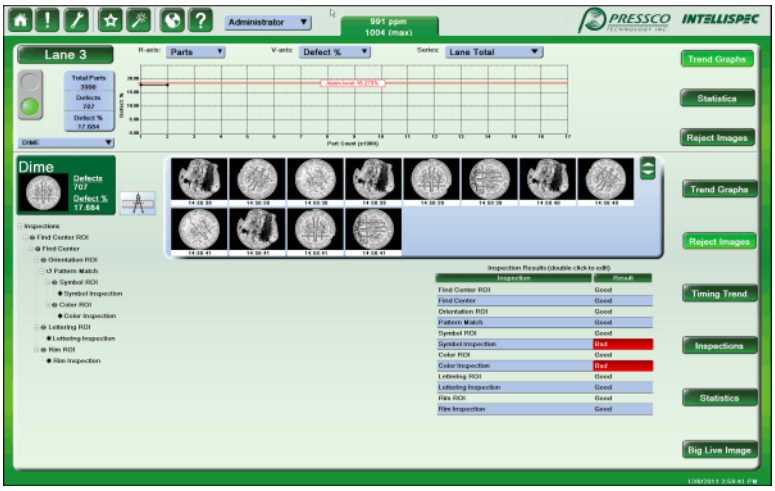
to go to level 2, Lane Overview.
   - Lane Overview - Displays information for a particular Lane as well as a thumbnail line for each sensor used in that Lane. More information about the ***Lane Overview Screen*** (on page 71).



3. Click 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. More information about ***Sensor Overview Screen*** (on page 72).

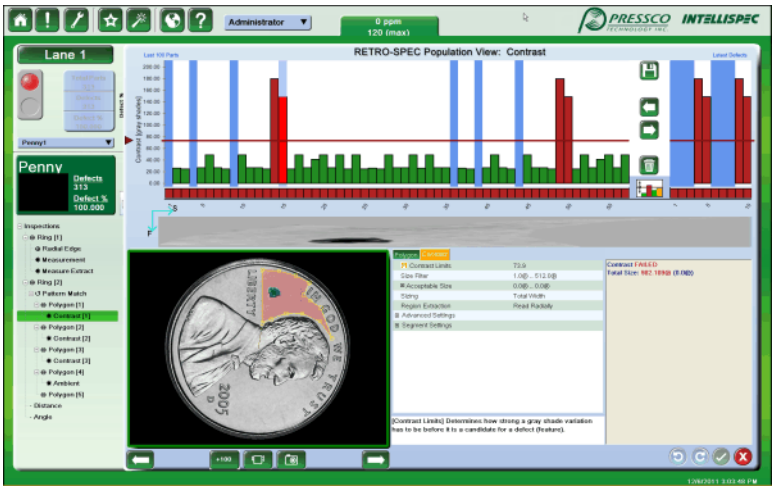


4. Double-click an inspection name 

in the Analysis Inspections list to get to level 4, Inspection Screen.

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

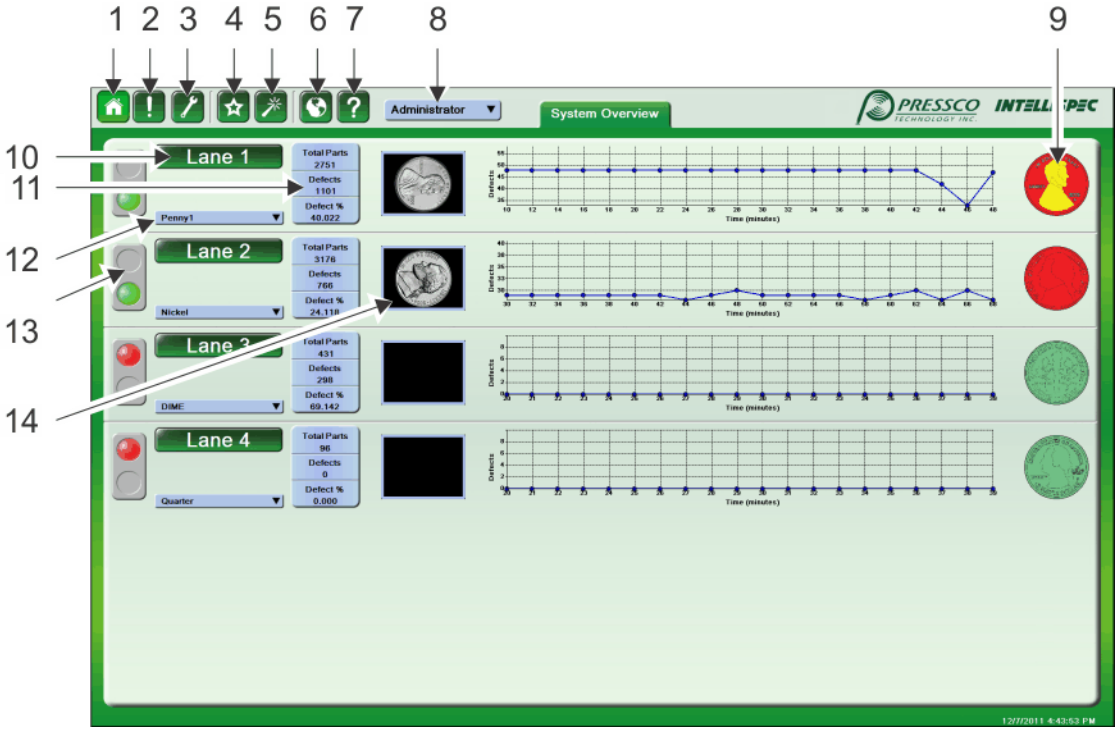
- Inspection Screen - Double-click on any inspection name to see this view, which allows you to see inspection parameters and make changes if necessary.



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

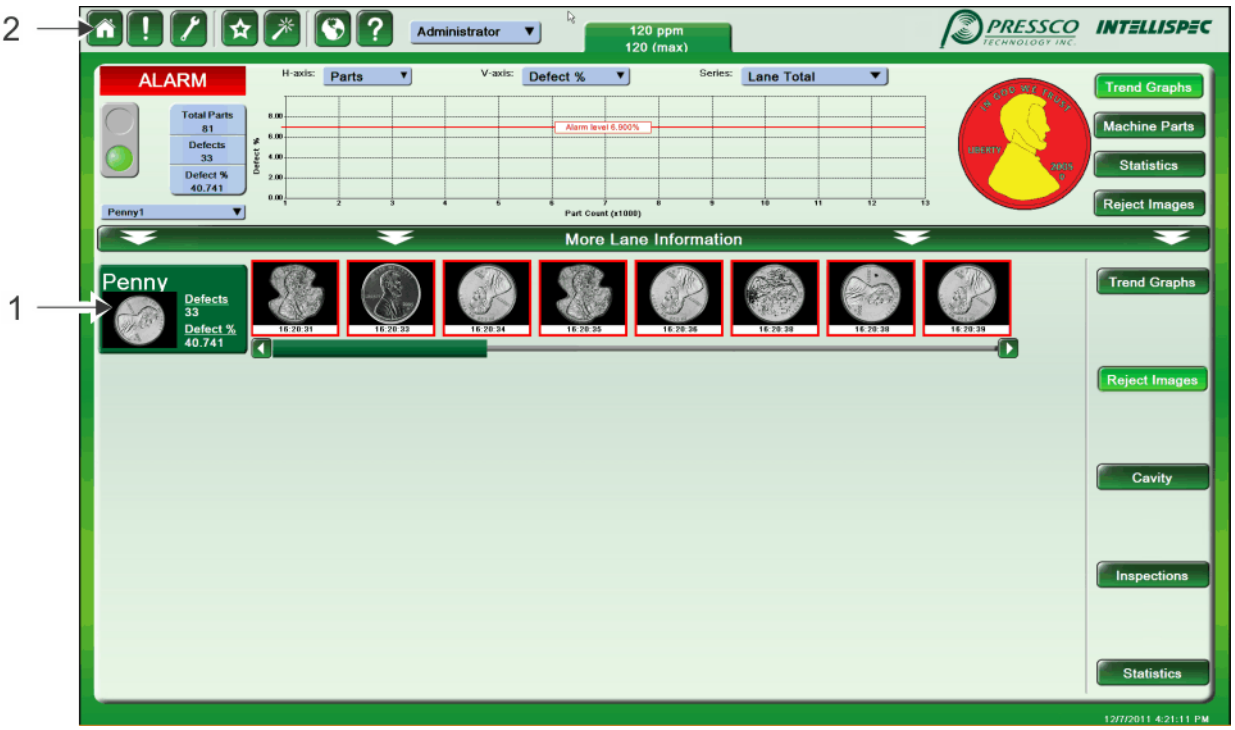
System Overview screen

For a description of the toolbar icons, see ***Menu Toolbar*** (on page 73).



1	Home
2	Alarms
3	System Settings
4	Favorites
5	Wizards
6	Language
7	Help menu (Remote support only at System Overview)
8	Log in
9	Walk By Graphic
10	Click to go to Lane Overview
11	Lane Statistics
12	Current Part Program
13	Online/ Offline
14	Heartbeat Image

Lane Overview Screen



1	Click the sensor button to toggle to detailed Sensor View and back
2	Switch to System Overview

More Lane Information

Under the Lane Overview screen, click the More Lane Information bar to display additional graphs, statistics, or an additional Walk By graphic. Buttons on the right side of the screen provide different viewing options.

Sensor Information

Under the Lane Overview screen, click the Sensor Information bar (at the bottom of the screen) to display the default sensor information. Graphs, images, or statistics are displayed depending which button on the right is selected.

Statistics menu

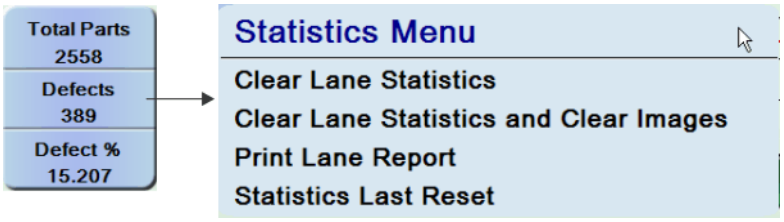
Use the Statistics menu in the Lane Overview screen to view, reset, or print statistics.

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

To view the Statistics menu:

1. Go to the Lane Overview screen by clicking a Lane n button.

2. Click over a statistics box. The Statistics menu is displayed. The items in the menu are described below.



Clear Lane Statistics

Clear the statistics for the lane only.

Clear Lane Statistics and Clear Images

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

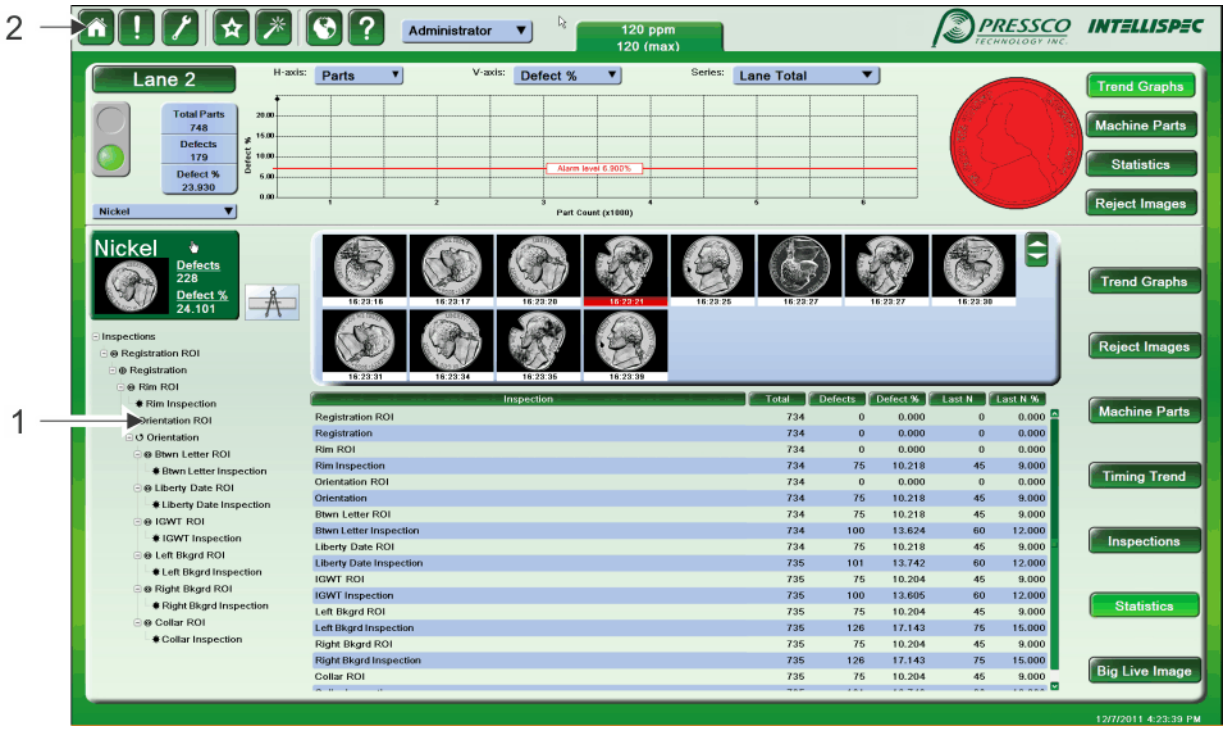
Print Lane Report

Send the lane statistics report to the default configured printer.

Statistics Last Reset

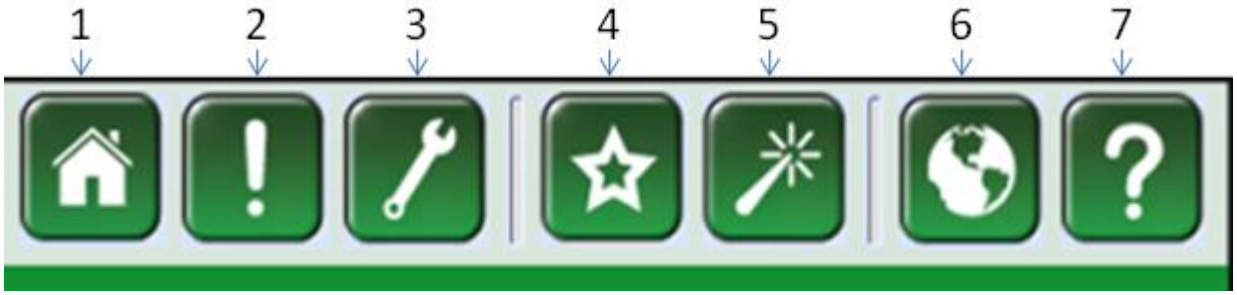
Display the date and time when the lane statistics were last reset.

Sensor Overview Screen



1	Double-click to open Inspection View
2	Switch to System Overview

MENU TOOLBAR



1	Home
2	Alarms
3	Tools
4	Favorites
5	Wizards
6	Language
7	Help

Home

Click Home to return to the System Overview Screen. If a region or inspection editor menu is open, you must close it before anything else can be selected. The Home button is highlighted in the System Overview screen.

Alarms

When this icon is selected, a different pop-up window appears depending on what screen you are on. For more information, refer to the section about ***alarms*** (on page 76).

Tools

When this icon is selected, a different pop-up window appears depending on what screen you are on. For more information, refer to the section about ***tools*** (see "***Tools menu***" on page 93).

Favorites

From the Lane and Sensor Overview screens, you can select between Print Screen and Defect Database.

Wizards

From the Lane or Sensor Overview screens, select wizards that assist in setting up certain features. At the present time the only wizard is for setting up the Walk By graphic. This allows you to select group names, inspections assigned to each group, and values that determine when areas of the Walk By graphic turn to yellow, red, or back to normal (green).

Language

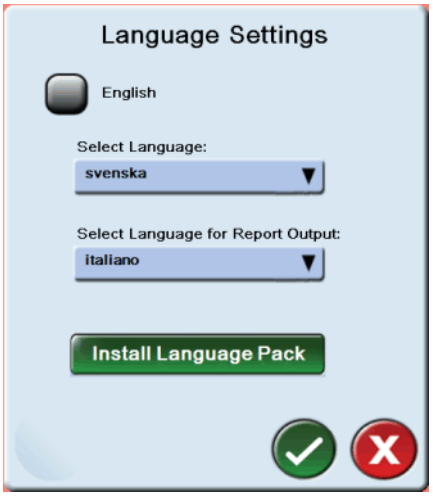
Select an available language from this menu.

Help

From the Lane or Sensor Overview screens, access the help documents, support package utility, remote support option, and software version.

Language

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



English

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

Select Language

Select the language to display on the user interface.

Select Language for Report Output

Select the language for the reports, such as the Lane Report from the ***Statistics menu*** (on page 71).

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

Click the Help icon  to:

- access Pressco remote support
- create a support package
- obtain your current software version, or
- use the help files.

To access the user manuals:

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

PART CHANGEOVER

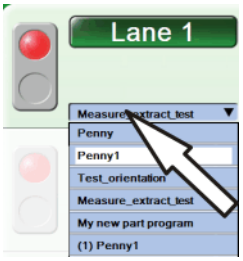
❖ *Note: Some menu items are only available to advanced level users.*

What you need:

- User permission to Switch Part Program

To change parts:

1. ***Log in*** (see "***Logging in and logging out***" on page 75).
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 system online to begin inspecting new parts.

USER ACCOUNTS AND LOGIN INFORMATION

Logging in and logging out

Each user account has a list of permissions and restrictions. This is to give administrators more control over the system, and restrict others from performing tasks like changing lighting, or adding and editing inspections. When you log in, you can perform the tasks made available to you.

To log in, follow either of the steps below:

- Click the Log In button 

to display the login dialog box. Select your user name from the drop-down list. Enter your password using the On Screen Keyboard by touch screen or trackball and buttons. The password characters will not be shown for security reasons.
- [With the optional **biometric sensor**] Press your finger to the sensor. The system will automatically determine your identity and log you in. If the system fails to recognize your identity after three attempts, the log in dialog box will appear, to allow you to log in with your user name and password.

To log out, follow either of the steps below:

- Click the Log In button that displays your user name. The account drop-down menu appears. Select the Log Out button. The system logs you out.
- [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. Click the Log In button with your user name 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. Click the OK button  to accept the changes. The dialog box closes and your password is changed.

ALARMS

There are three levels of alarms within the Intellispec system: 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 78) for more information about the lights.

The information in this section is valid as of software version 5.0.475.

❖ *Note: Alarms are recorded in the system* **log reader** *(on page 94), even when the alarms are automatically cleared.*

Alarm Name	Cause	Reset Mechanism	Color in light tree
System Alarms **(see "***System Alarms Description***" on page 80)**			
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. Or:	Manually [you must first replace battery]	Not applicable (N/A)

Alarm Name	Cause	Reset Mechanism	Color in light tree
	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 condition is automatically cleared. Otherwise, you must restart the system manually.	N/A
Over temperature	CPU temperature exceeds highest recommended operating temperature. The Intellispec system shuts down. You must wait till the processor cools before resuming operation.	Manually	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	Restoring plant network connection	N/A
Lane Alarms			
Percent Defects[1]	Percentage of defects exceeds the set limit	Manually	Red
Offline[1]	Lane goes offline	Manually	Green when system is online Red when system goes offline
Chute Full[1]	Reject chute is full	Manually [you must first clear chute]	Red
Blow Molder Door Open[1]	Blow molder door is open	Automatically [by closing blow molder door]	Red
Power Status[1]	Lane AC Power is lost	Automatically	Off when AC power is lost Blue when power is OK
Good Parts[1]	Used as a part counter. When specified number of parts is reached, then alarm is triggered.	Manually	Red
System Error[1]	Missed rejects, part tracker, or other internal system errors	Manually	Red
Sensor Alarms			
Percent Rejects[1]	Percentage of rejected parts exceeds the set limit	Manually	Red
Excessive Rejects[1]	Excessive number of rejects	Manually	Red
Excessive Warnings[1]	Excessive number of warnings	Manually	Amber
Consecutive Defects[1]	Too many consecutive defects	Manually	Red

Alarm Name	Cause	Reset Mechanism	Color in light tree
System Error[1]	Missed part, missed acquisition, missed result, or other internal error	Manually	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)**
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. A green light indicates that the alarm has not been triggered, while a red light indicates the alarm has been triggered.

To get to the View/Clear Alarms menu:

- Click an Alarm button 

. The View/Clear Alarms menu is displayed.

Or:

1. View the Lane Overview or Sensor Overview screen by clicking either a Lane n button or Sensor button.
2. Click the Alarms button  to view the Alarms menu.
3. Select View/Clear Alarms from the menu. The menu shown below is displayed.

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

Click an LED in the View/Clear Alarms screen.

To clear an alarm:

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

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

1	List of sensors in the selected lane. Click 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.

❖ *Note: The LED with a white circle around it in the list of sensors [item 1] is the selected sensor. The drop-down menu also indicates the selected 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

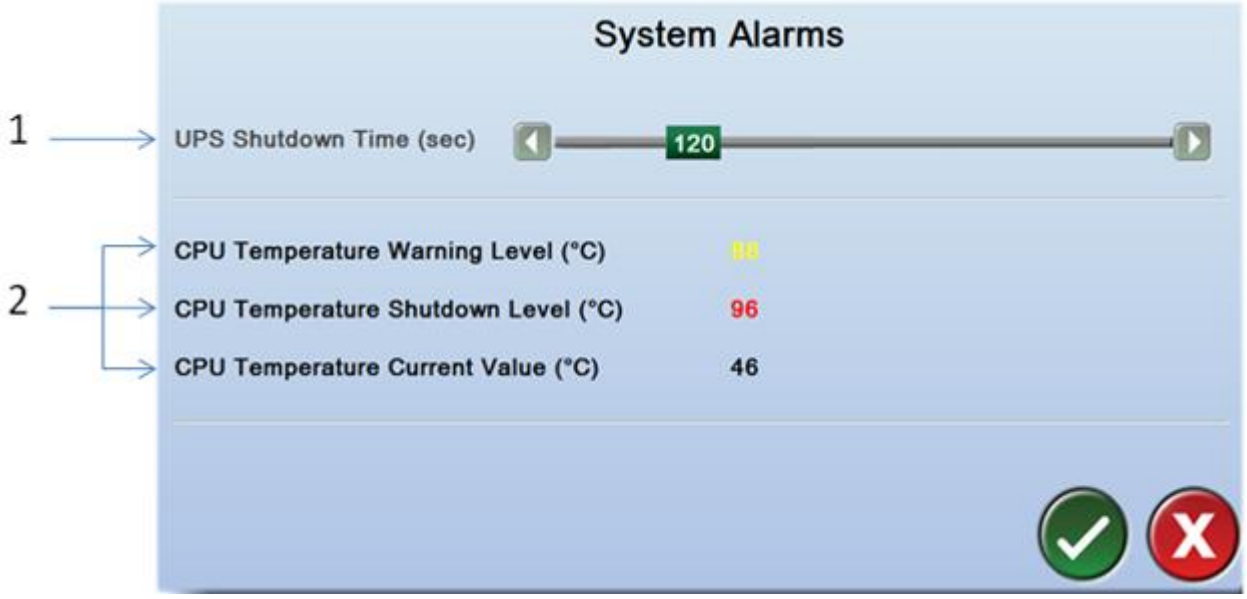
System Alarms Description

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:

1. Click the Home button  to view the System Overview screen.

2. Click the Alarms button  to view the system alarms. The screen shown below is displayed.



1	UPS Shutdown Time – Set 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 – Displays the current, warning, and shutdown temperatures associated with the computer CPU. If a multiple core computer is used, the highest temperature is displayed. If the shutdown CPU temperature is reached, the Intellispec system shuts down.

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

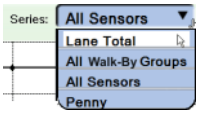
To view the Lane trend graphs:

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

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. There is an adjustable Alarm Level for Defect %. Both the H-axis and V-axis adjust automatically to higher and lower values. The Alarm Level will adjust as well. Below is a list of possible combinations for Time and Parts based graphs.

H-axis	V-axis	Series
Time	Defect % Defect Count Defect Cost Parts and Defects	Lane Total All Walk-By Groups All Sensors Individual Sensors
Parts	Defect % Defect Count Defect Cost	Lane Total All Walk-By Groups All Sensors Individual Sensors

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



Lane Total

Displays the statistics averaged for all sensors within the lane.

All Walk-By Groups

Displays the 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

Displays the statistics for each sensor.

Individual Sensors [names vary]

Displays the 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.

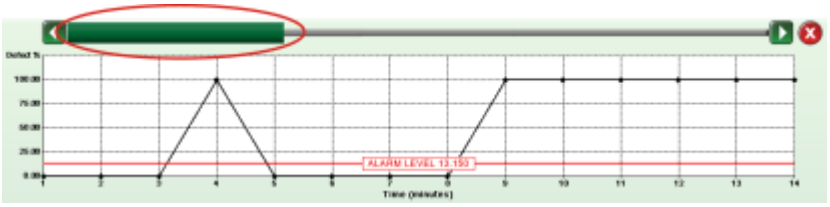
To change the graph criteria:

1. Click any button (next to H-axis, V-axis, or Series) to view the drop-down menu options.
2. Select the desired criteria. The graph is updated to display based on your chosen criteria.

When the data falls outside of the current viewing range (example, time) a scroll button  becomes available next to the Series drop-down box.

To view other data:

1. Click the scroll button  . A scroll bar becomes available.



2. Click and drag the scroll bar to view the desired data.
3. To exit, click the exit button  . The graph returns to the current data.

Multiple Trend Graphs

In the ***Sensor Overview screen*** (on page 72), the upper and lower portions of the screen can display different trend graphs. For example, you could display a time based graph at the top of the screen, and a part based graph at the bottom of the screen. When the Trend Graph button is available on the right side of the screen in multiple locations, you could view any combination of trend graphs as you wish.

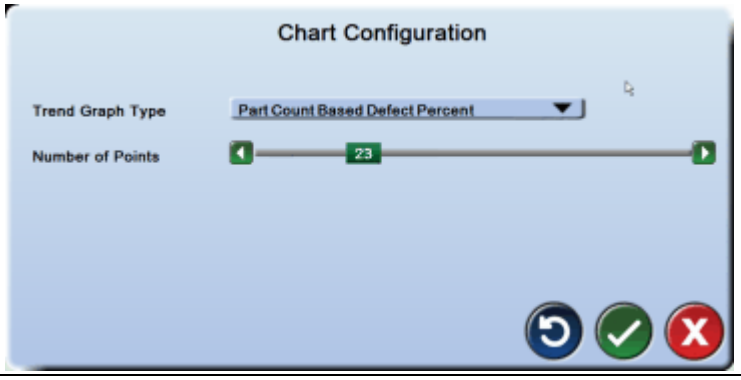
Trend Chart Configuration - System Overview

This is the setting for the trend chart displayed on System Overview screen.

❖ *Note: the vertical axis setting is automatically scaled to best represent the data on the chart.*

To change the chart configuration:

1. Click the Home button  to view the System Overview screen.
2. Right-click over the trend chart. The Chart Configuration menu is displayed.



3. Choose from the available trend chart types, and select the number of points to display on the chart.
4. Click the OK button to accept changes and exit the menu. The selected chart is displayed in the System Overview screen.

❖ *Note: these changes affect all trend charts in the System Overview screen*

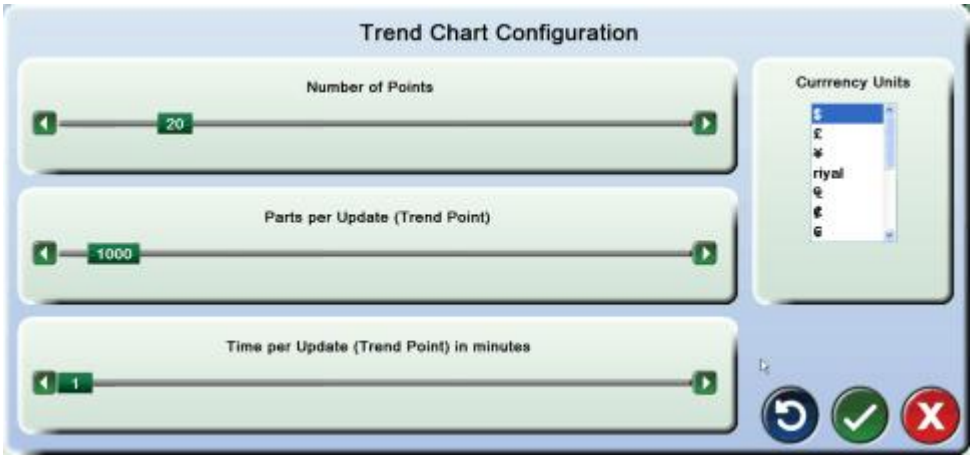
Trend Chart Configuration - Lane Overview

These settings affect the display of all the trend charts in the Lane Overview or Sensor Overview screens.

❖ *Note: the statistics for the lane are reset when you change a configuration setting.*

To change the trend chart display:

1. View the Lane Overview or Sensor Overview screen by clicking either a Lane n button or a Sensor n button.
2. Click one or all of the Trend Charts buttons on the right side of the screen to display a trend chart.
3. Right-click over one of the trend charts. The Graph Menu is displayed.
4. From the Graph menu, select Configuration. The Trend Chart Configuration menu is displayed.

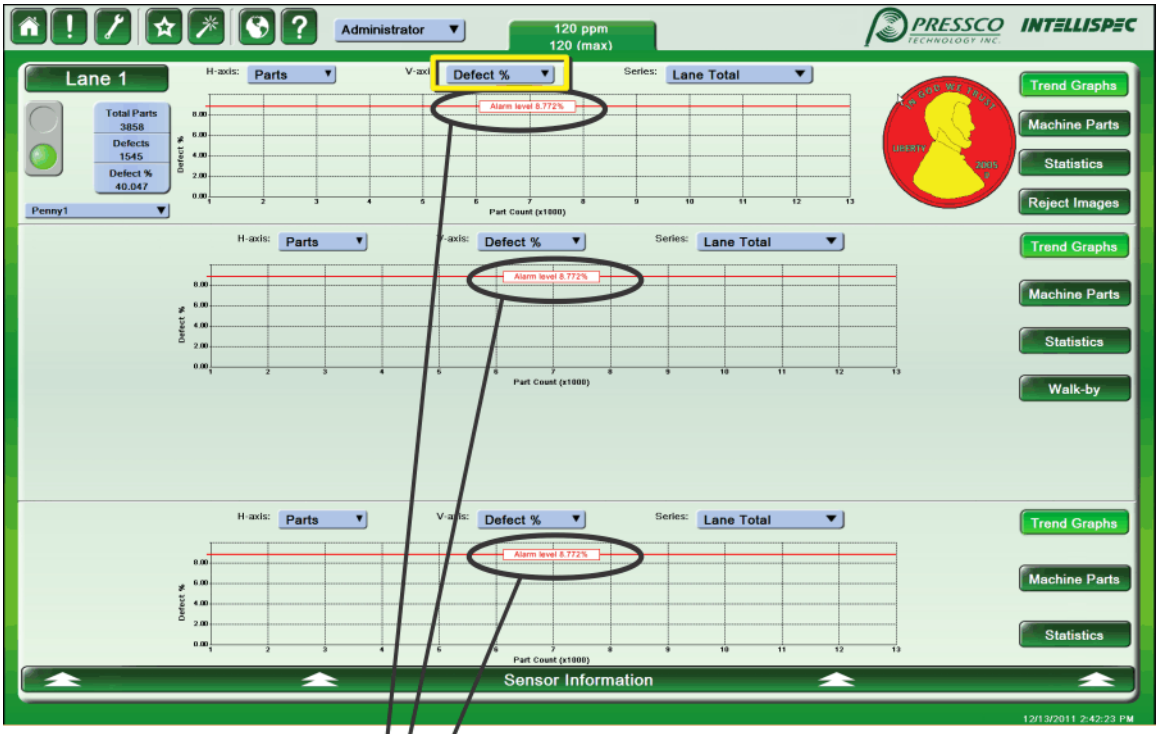


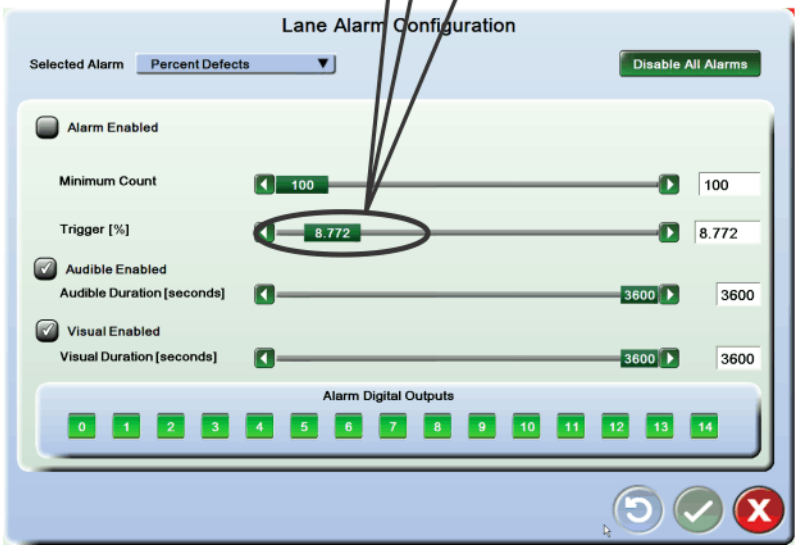
5. Select the desired settings from all the available parameters.
6. Click the OK button to save your changes and exit the screen. All the trend charts for the selected lane are updated to reflect your changes.

Alarm Percentages in Trend Charts

The alarm level can be adjusted when Defect % is selected for the V-axis. Click and drag on the red Alarm Level line to adjust it. This also changes the alarm percentage in the Lane Alarm Configuration menu. The illustration below shows Sensor Overview mode with Trend Charts displayed for both Lane and Sensor. Changing the alarm percentage in any one of the Trend Charts or Lane Configuration menu changes the percentage in all the other locations.

❖ *Note: Changing this alarm percentage does not affect the alarm percentage level in the Walk By Graphic.*



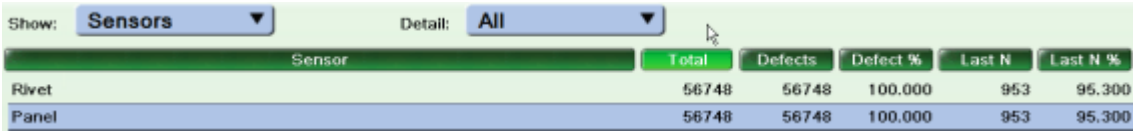


Statistics Grid

The Statistics Grid displays information about each Sensor. There are two different 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 %.



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 86) the statistics display. Your system may not display all of the above-mentioned items.*

To display the statistics grid, click the Statistics button on the right side of the screen. There may be multiple buttons, depending which screen you are viewing.

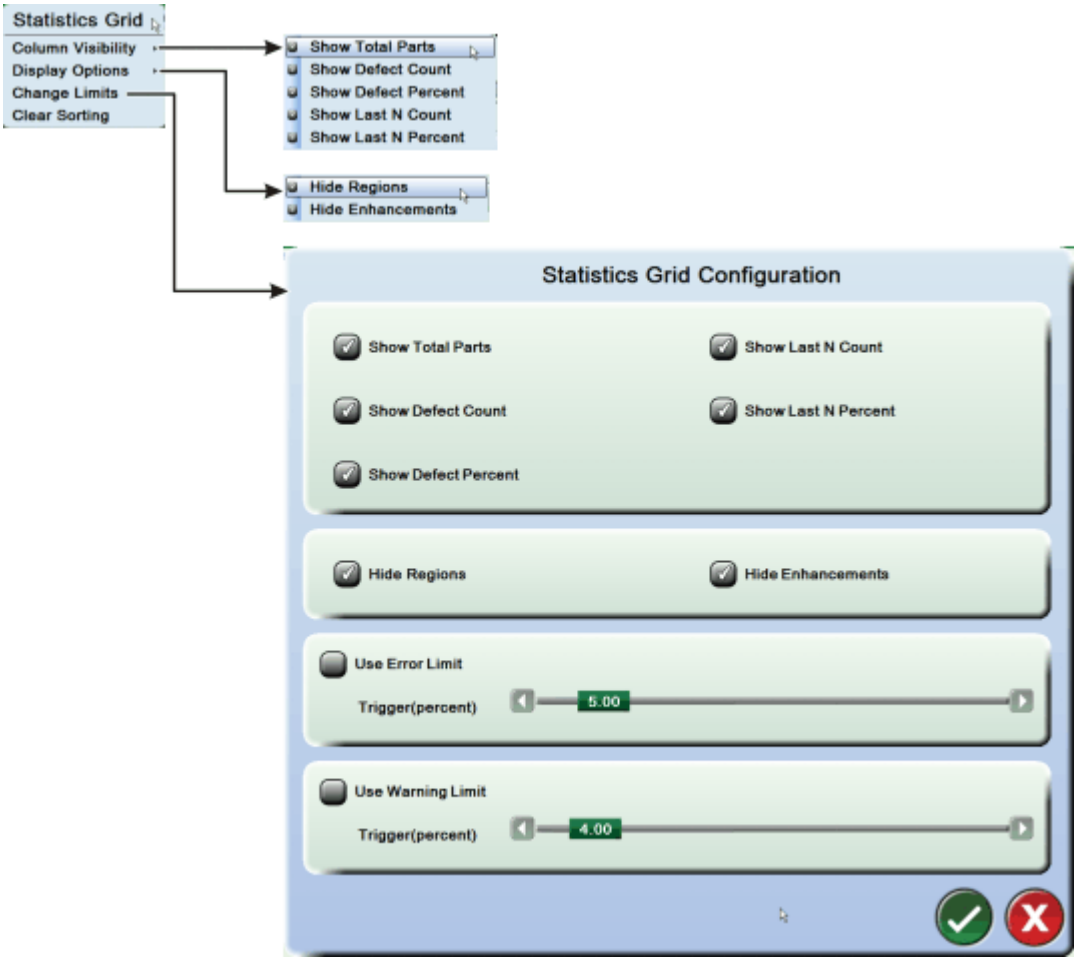
SORTING ORDER

To sort any column in ascending or descending order, click the button at the top of the column. Click 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

To change what is displayed in the statistics grids, use the options menu. These settings are applied to all statistics grids, whether in the Lane Overview screen, or Sensor Overview screen. Right-click over any statistics grid to see the options. These are explained below.



COLUMN VISIBILITY

Change the number of columns that are displayed in the grid.

DISPLAY OPTIONS

Change the number of rows that are displayed in the grid. This only affects the statistics grids in the Sensor Overview level.

Hide Regions

If this is checked, then the inspection regions are not displayed in the grid. This means the Ring, Polygon, Rectangle, or Adaptive regions that identify the inspection area, but do not have any reject criteria.

Hide Enhancement

If this is checked, then the inspection enhancements such as Clipping, Stretch Grayshades, or Power Filter are not displayed in the grid.

CHANGE LIMITS

This menu allows you to 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.

The lower two sections of this menu allow you to enable and change limits for inspection.

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. To sort any column in ascending or descending order, click the button at the top of the column. Click it again to toggle to the opposite order.

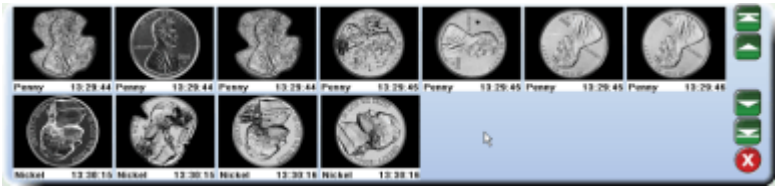
Reject Images

Reject Images are images from the last 100 defects from a sensor (or all sensors for Lane Overview mode). These images are available in the Lane Overview screen and the Sensor Overview screen.

To view Reject Images:

1. From the System Overview screen, click a Lane n button to display lane information.
2. Click a Reject Images button on the right side of the screen. Note: there are buttons for Lane and Sensor levels - these display images for the entire lane or just the sensor.

- **Lane Reject Images** show a variety of images from different Sensors. Below the image is the name of the Sensor it came from and what time it was rejected. You can scroll through the images using the arrows. Clicking on an image will bring you to the Sensor from which it failed.



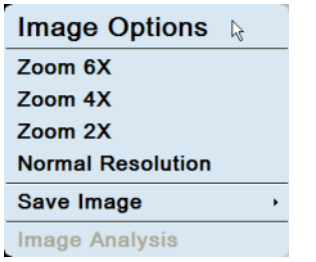
- **Sensor Reject Images** show snapshots of failed images from that Sensor only. Below the snapshot is the time it was rejected.

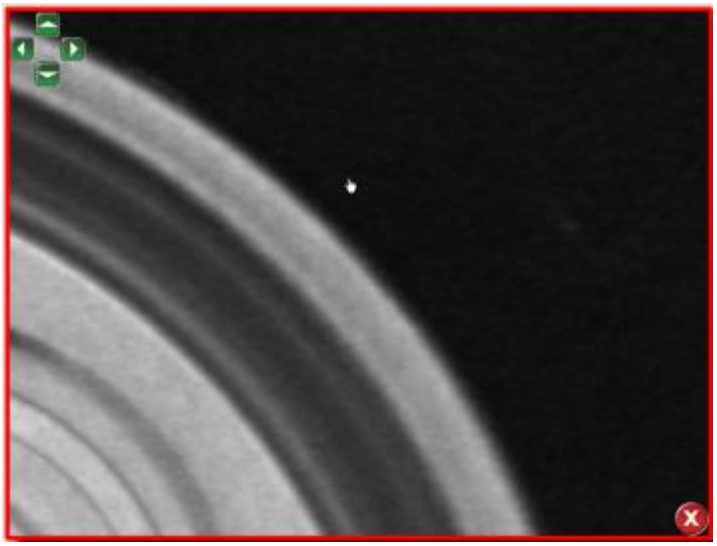
To use the images:

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

- Click any one of the small images to display a larger version of that image.
- Click on 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. Click in the magnified area to toggle the magnifier.

- Right-click on the image to choose a zoom amount. An enlarged image, the same size as the ***Big Live Image*** (on page 90) is displayed. Use the navigation arrows, or click and drag the cursor to pan around the image.
- From the pop-up menu, you may also choose Image Analysis (when the lane is offline).
- Click the exit button to close the zoom window



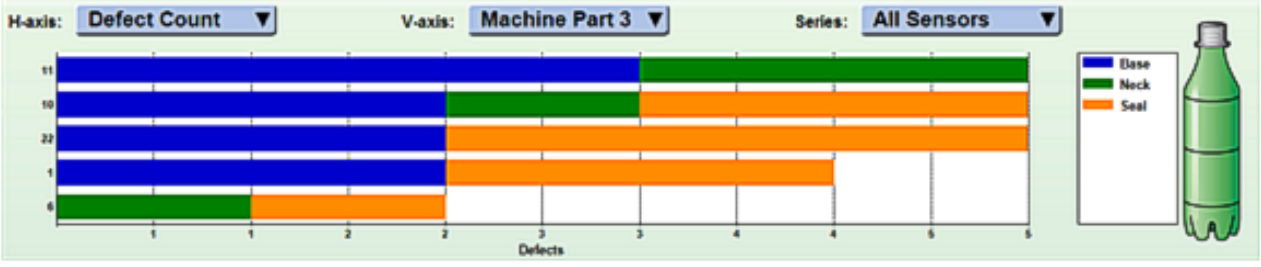


Machine Part Graphs

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.

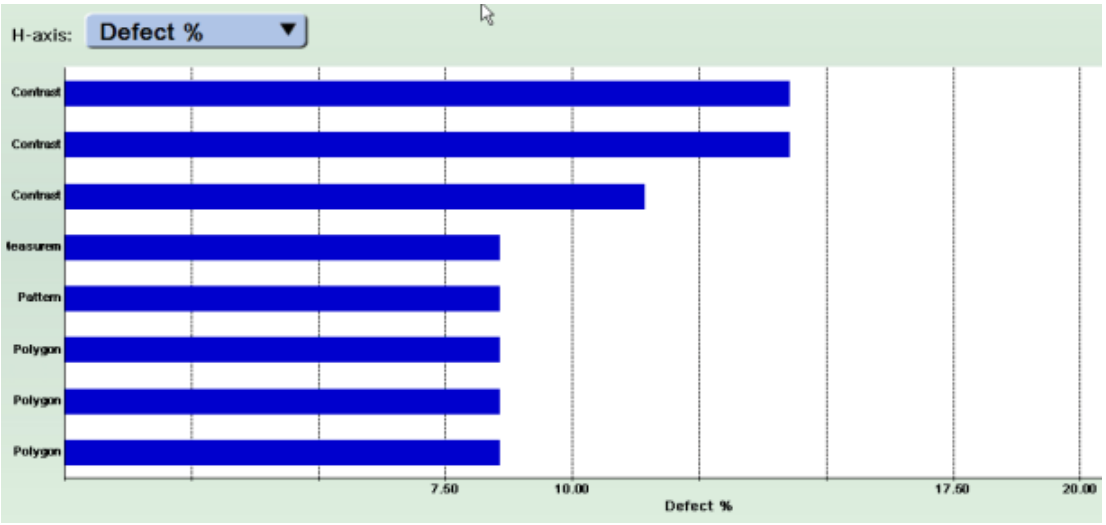
H-axis	V-axis	Series
Defect %	Machine Parts	Lane Total All Sensors
Defect Count	Machine Parts	Lane Total All Sensors

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



Inspections graph

Click the Inspections button on the right side of the screen to see the Inspections Graph. This graph displays the Defect Count or Defect % for the selected sensor. It displays the failed inspections in descending order of failure. The example below is the graph shown in Sensor Overview mode. In Lane Overview mode, the bars are displayed vertically instead of horizontally.



Big Live Image

Click the Big Live Image button in Sensor Overview mode to view an enlarged image of the last part that was inspected.

This image is updated when the lane is online and the camera is snapping images. The image is outlined in green if the part is passing, yellow if it is in a warning state, or red if the part is failing. You can view this image from a distance to quickly see how the inspection process is performing.

Walk By Graphic

This feature uses 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** areas indicate that parts are passing inspection.
- **Yellow** warning areas notify you that the spoilage rate is approaching, but has not yet reached a critical level. This allows you to make necessary changes to the manufacturing process before the failure rate gets too high.
- **Red** areas indicate the spoilage rate has exceeded user defined limits.

The defect percentage rate at which each group reaches warning or failure limits is defined in Walk By Setup.

There are two available 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:

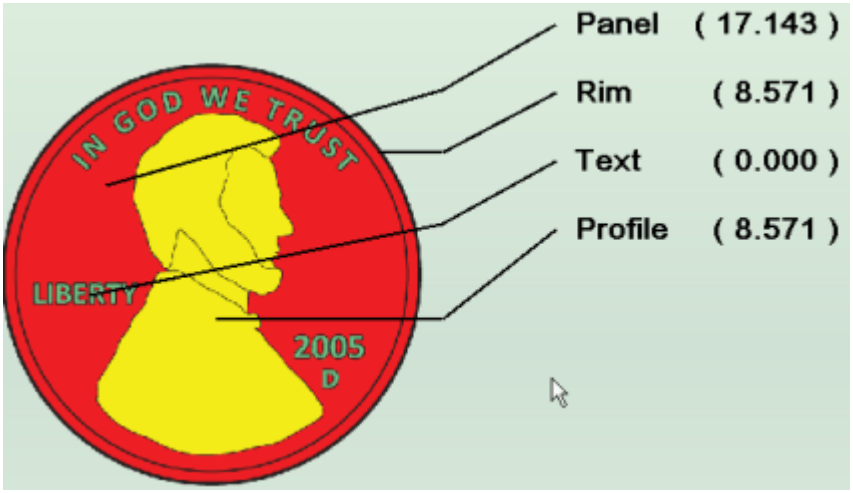
1. Click a Lane n button to view the Lane Overview mode.

2. Click the More Lane Information bar in the center of the screen to display more graph options.

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

The Walk By Graphic is displayed in the center of the screen.

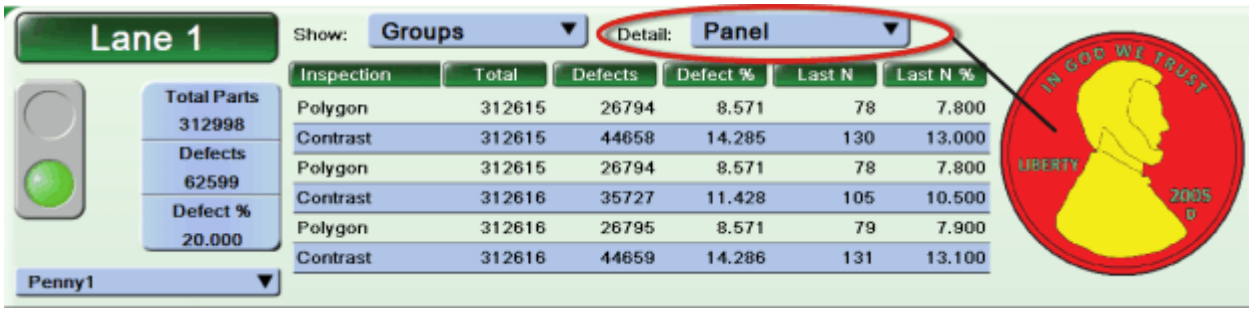
The large Walk By Graphic displays the group names, pointing to the appropriate areas on the part. It also displays the current defect percentage for each of those groups, from inspection results.



Using the Walk By Graphic

You can view inspection information by clicking on the areas of the graphic. The Intellispec will display the configured inspection group and detail. The example below shows:

- The Panel group was clicked - 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



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

TOOLS MENU

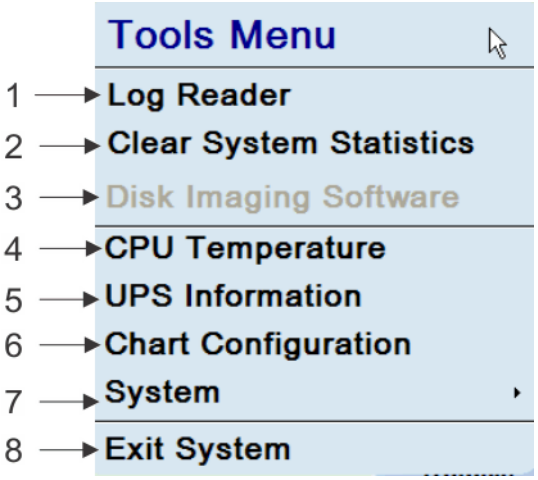
This section covers the Tools menus that occur throughout the Intellispec system. The Tools menu has relevant tools for the following screens:

- ***System Overview screen*** (see "***Tools menu - System Overview Screen***" on page 93)
- Lane Overview screen
- Sensor Overview screen

Tools menu - System Overview Screen

To view the Tools menu:

1. Log in. (Some items may be grayed out if you do not have permissions to use the items)
2. Click the Home button  to view the System Overview screen.
3. Click the Tools button  to view the Tools menu.



1	***Log Reader*** (on page 94) – 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 – Displays the current, warning, and shutdown temperatures associated with the computer CPU. 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 divisions for the horizontal axis for the chart displayed in the System Overview Screen
7	System - Set system date and time or set up a printer
8	Exit System – Shut down Intellispec software

Log Reader

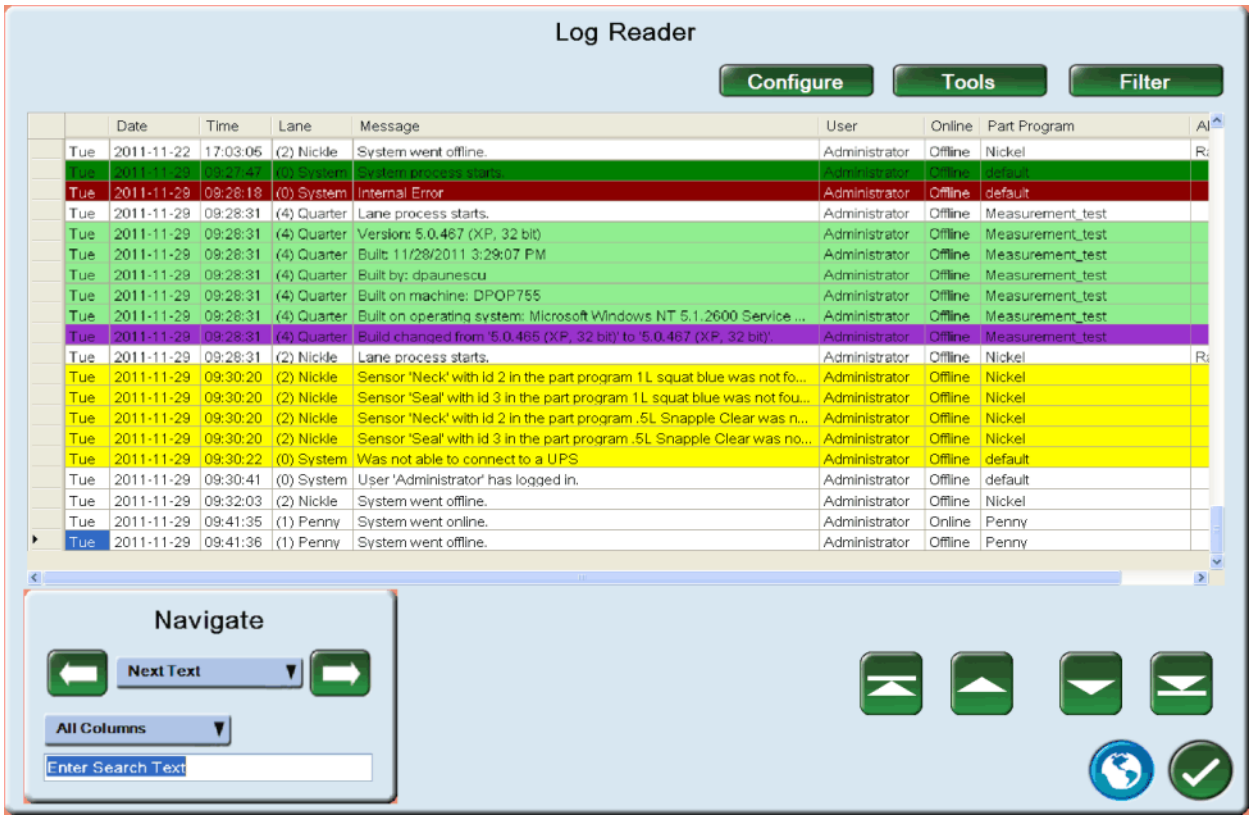
The log reader displays the Intellispec event history including:

- User log in and log out information
- Part program changes

> *Note: detailed part program changes are found in the* **Part Program Change Log** *(on page 95)*

- Alarms, when triggered and cleared
- System errors
- System starting information
- Lane online/ offline history
- Lighting changes

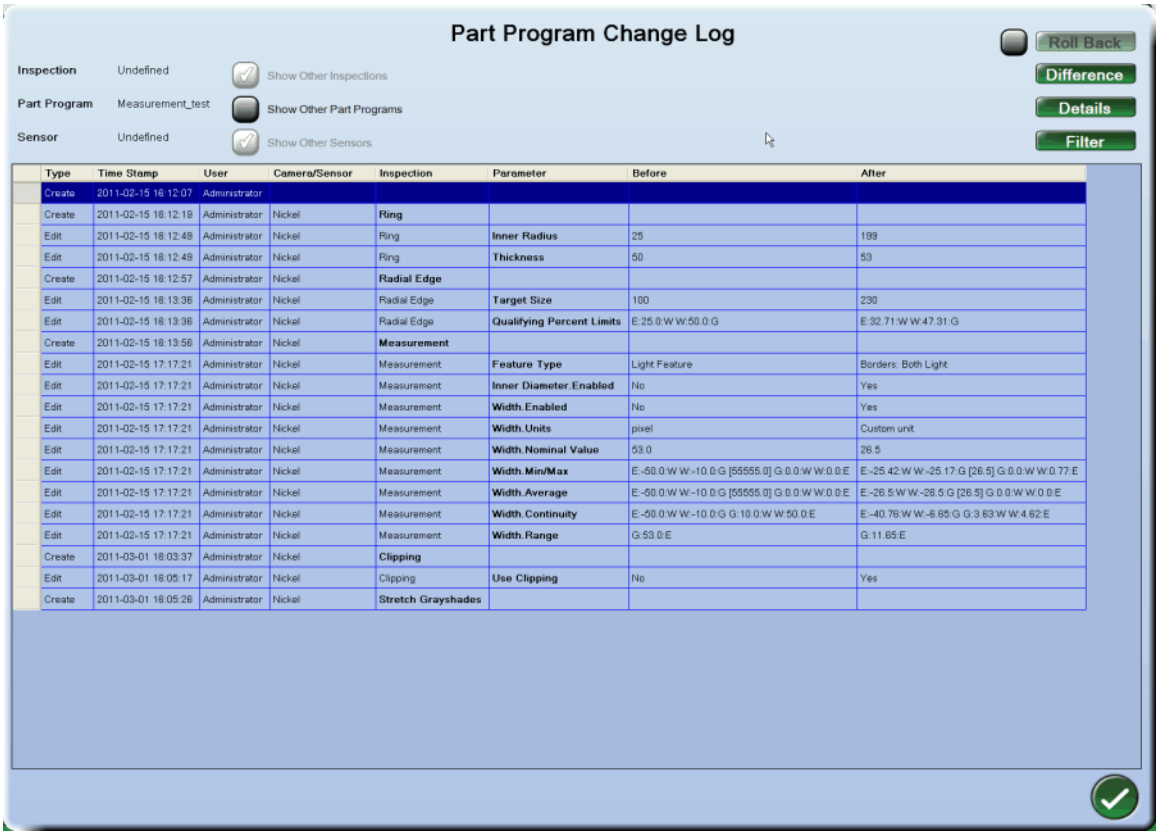
Text files of the logs are stored at: C:\Pressco\Logs.



	Date	Time	Lane	Message	User	Online	Part Program
Tue	2011-11-22	17:03:05	(2) Nickle	System went offline.	Administrator	Offline	Nickel
Tue	2011-11-29	09:27:47	(0) System	System process starts.	Administrator	Offline	default
Tue	2011-11-29	09:28:18	(0) System	Internal Error	Administrator	Offline	default
Tue	2011-11-29	09:28:31	(4) Quarter	Lane process starts.	Administrator	Offline	Measurement_test
Tue	2011-11-29	09:28:31	(4) Quarter	Version: 5.0.467 (XP, 32 bit)	Administrator	Offline	Measurement_test
Tue	2011-11-29	09:28:31	(4) Quarter	Built: 11/28/2011 3:29:07 PM	Administrator	Offline	Measurement_test
Tue	2011-11-29	09:28:31	(4) Quarter	Built by: dpaunescu	Administrator	Offline	Measurement_test
Tue	2011-11-29	09:28:31	(4) Quarter	Built on machine: DPOP755	Administrator	Offline	Measurement_test
Tue	2011-11-29	09:28:31	(4) Quarter	Built on operating system: Microsoft Windows NT 5.1.2600 Service ...	Administrator	Offline	Measurement_test
Tue	2011-11-29	09:28:31	(4) Quarter	Build changed from '5.0.465 (XP, 32 bit)' to '5.0.467 (XP, 32 bit)'.	Administrator	Offline	Measurement_test
Tue	2011-11-29	09:28:31	(2) Nickle	Lane process starts.	Administrator	Offline	Nickel
Tue	2011-11-29	09:30:20	(2) Nickle	Sensor 'Neck' with id 2 in the part program 1L squat blue was not fo...	Administrator	Offline	Nickel
Tue	2011-11-29	09:30:20	(2) Nickle	Sensor 'Seal' with id 3 in the part program 1L squat blue was not fou...	Administrator	Offline	Nickel
Tue	2011-11-29	09:30:20	(2) Nickle	Sensor 'Neck' with id 2 in the part program .5L Snapple Clear was n...	Administrator	Offline	Nickel
Tue	2011-11-29	09:30:20	(2) Nickle	Sensor 'Seal' with id 3 in the part program .5L Snapple Clear was no...	Administrator	Offline	Nickel
Tue	2011-11-29	09:30:22	(0) System	Was not able to connect to a UPS	Administrator	Offline	default
Tue	2011-11-29	09:30:41	(0) System	User 'Administrator' has logged in.	Administrator	Offline	default
Tue	2011-11-29	09:32:03	(2) Nickle	System went offline.	Administrator	Offline	Nickel
Tue	2011-11-29	09:41:35	(1) Penny	System went online.	Administrator	Online	Penny
Tue	2011-11-29	09:41:36	(1) Penny	System went offline.	Administrator	Offline	Penny

PART PROGRAM CHANGE LOG

The part program change log lists the inspections, and the edit history for each. You can view all inspections from one sensor, other sensors, or even other part programs. This is helpful especially if you want to see the previous settings for an inspection.



Type	Time Stamp	User	Camera/Sensor	Inspection	Parameter	Before	After
Create	2011-02-15 16:12:07	Administrator					
Create	2011-02-15 18:12:19	Administrator	Nickel	**Ring**			
Edit	2011-02-15 18:12:49	Administrator	Nickel	Ring	**Inner Radius**	25	199
Edit	2011-02-15 18:12:49	Administrator	Nickel	Ring	**Thickness**	50	53
Create	2011-02-15 18:12:57	Administrator	Nickel	**Radial Edge**			
Edit	2011-02-15 18:13:36	Administrator	Nickel	Radial Edge	**Target Size**	100	230
Edit	2011-02-15 18:13:36	Administrator	Nickel	Radial Edge	**Qualifying Percent Limits**	E:25.0:W W:50.0:G	E:32.71:W W:47.31:G
Create	2011-02-15 18:13:56	Administrator	Nickel	**Measurement**			
Edit	2011-02-15 17:17:21	Administrator	Nickel	Measurement	**Feature Type**	Light Feature	Borders: Both Light
Edit	2011-02-15 17:17:21	Administrator	Nickel	Measurement	**Inner Diameter Enabled**	No	Yes
Edit	2011-02-15 17:17:21	Administrator	Nickel	Measurement	**Width.Enabled**	No	Yes
Edit	2011-02-15 17:17:21	Administrator	Nickel	Measurement	**Width.Units**	pixel	Custom unit
Edit	2011-02-15 17:17:21	Administrator	Nickel	Measurement	**Width.Nominal Value**	53.0	26.5
Edit	2011-02-15 17:17:21	Administrator	Nickel	Measurement	**Width.Min/Max**	E:-50.0:W W:-10.0:G [55555.0] G:0.0:W W:0.0:E	E:-25.42:W W:-25.17:G [26.5] G:0.0:W W:0.77:E
Edit	2011-02-15 17:17:21	Administrator	Nickel	Measurement	**Width.Average**	E:-50.0:W W:-10.0:G [55555.0] G:0.0:W W:0.0:E	E:-26.5:W W:-26.5:G [26.5] G:0.0:W W:0.0:E
Edit	2011-02-15 17:17:21	Administrator	Nickel	Measurement	**Width.Continuity**	E:-50.0:W W:-10.0:G G:10.0:W W:50.0:E	E:-40.76:W W:-8.65:G G:3.63:W W:4.62:E
Edit	2011-02-15 17:17:21	Administrator	Nickel	Measurement	**Width.Range**	G:53.0:E	G:11.65:E
Create	2011-03-01 18:03:37	Administrator	Nickel	**Clipping**			
Edit	2011-03-01 18:05:17	Administrator	Nickel	Clipping	**Use Clipping**	No	Yes
Create	2011-03-01 18:05:26	Administrator	Nickel	**Stretch Grayshades**			

To view the part change log:

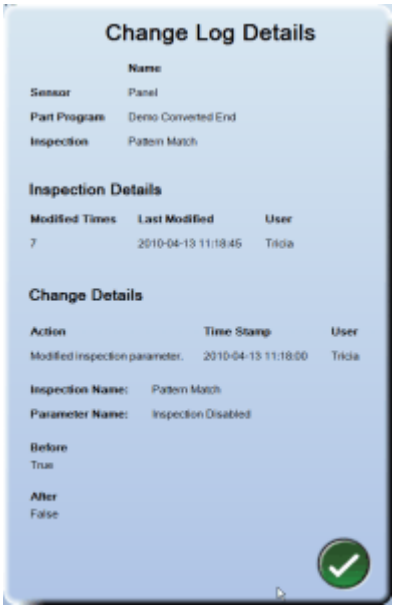
1. Click a sensor button 

to go to Sensor Overview mode.
2. Right-click over a sensor button or inspection name and select **Part Program Change Log** from the Inspection menu. If you right-clicked over an inspection name, and the current inspection has never been changed since it was set up, no data is displayed.
3. Click any of the available check boxes to view other inspections, inspections from other part programs, or inspections from other sensors. Some boxes are dependent on others; for example, you must click a dark gray check box before a light gray check box becomes active.

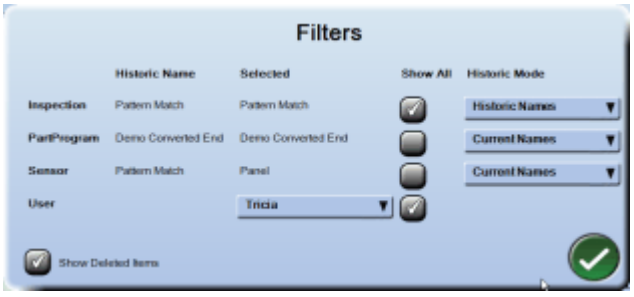
To view a full column width, click and drag the column title to re-size that column.

Type	Time Stamp	User	Part Program	Inspection
Create	2010-08-20 08:26:29	Tricia	Penny1	

Click the **Details** button to see more information about the highlighted item. A pop-up window displays more information, including the number of times the inspection was modified.



Click the **Filter** button to choose the items to display in the log. As soon as you select any option, the Change Log is updated. Some options are dependent on others; for example, if you want to see the Historic Names for the Sensor, you must choose Historic Names for Inspection first.

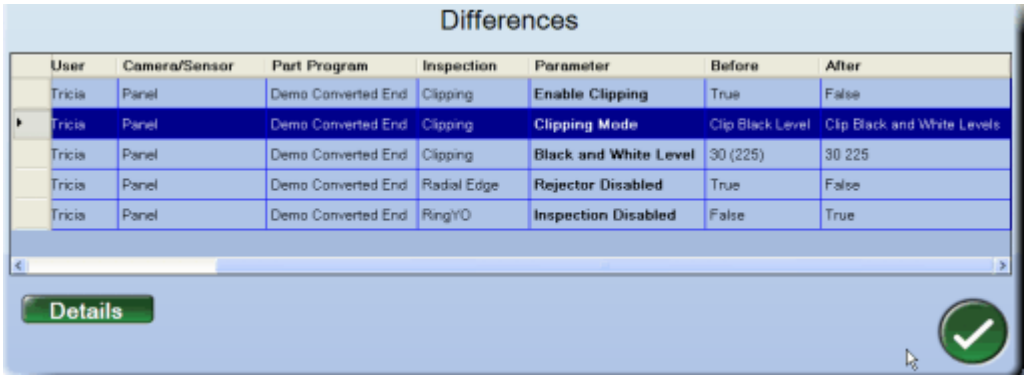


To see inspection differences:

1. Click the **Difference** button to see a list of differences in inspections. A Mark Start/ Mark Stop menu is displayed, and the inspections in the list are highlighted in magenta (depending where your cursor is).

2. Click the **Mark Start** button.

3. Click on the first item in the list where you want to begin viewing inspection differences. (this is similar to holding the Shift key and selecting multiple items in a list)
4. Click the **Mark Stop** button.
5. Click on the last item in the list where you want to view inspection differences. Your selected items are highlighted in magenta.
6. Click the OK button in the Mark Start/ Mark Stop menu. A Differences table is displayed. This allows you to view a shorter list of items, only those of which have been changed. Only edited (not created) inspections are included.

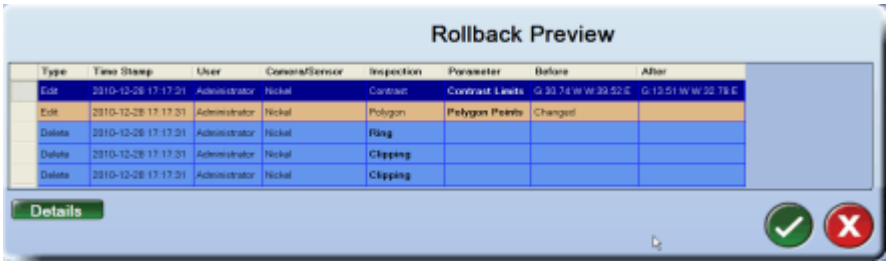


ROLLBACK

This feature allows you to restore the part program to a previous state, allowing you to undo several changes at once.

To use the Rollback feature:

1. Check the box next to the Rollback button at the top of the Part Change Log Viewer screen.
2. Scroll down towards the bottom of the inspection list. The latest changes are at the bottom of the list.
3. Choose a line where you want to delete the latest changes, including the selected line.
4. Click the Rollback button near the top of the screen. A Rollback Preview is displayed so that you can see what will be deleted.



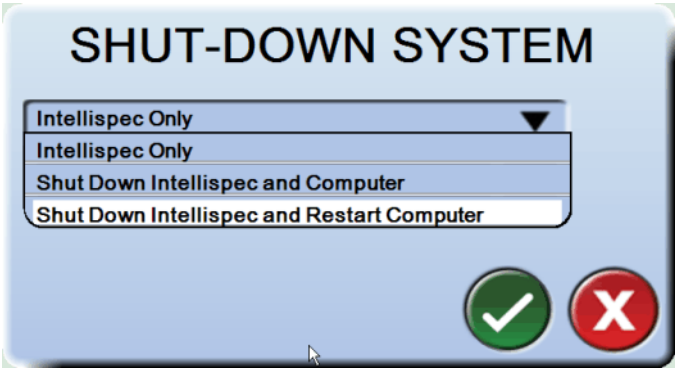
5. If desired, click the Details button to see the inspection change details of each line.
6. If you are ready to delete the displayed lines, click the OK button. The lines are deleted, and the part program is changed back to a previous state.

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. Click the Home button  .
3. Click the Tools button  to display the Tools menu.
4. Click the Exit System option.
5. 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



6. 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 7

MAINTENANCE FREQUENCY

Follow the guidelines for cleaning and maintenance of the Intellispec system and the inspection modules.

Intellispec Processor Cabinet and General Components			
Item	**Description**	**Once per day or shift**	**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**	
Vision Processor filter	Rinse in clean water; use mild soap and water solution if oily. ***Cleaning the Vision Processor filter*** (on page 100)		**X**
Cluster Box filters (if applicable)	Rinse in clean water; use mild soap and water solution if oily. ***Cleaning the Cluster Box filters*** (on page 101)		**X**

Inspection Modules Chromapulse			
Item	**Description**	**Once per day or shift**	**Once per month**
Part Detect Sensor and Reflector	Clean with soft, clean, oil-free cloth dampened with mild soap and water solution. Wipe dry. ***Cleaning the Part Detector*** (on page 105)	Once per week	
Camera lens	Clean only with lens tissue and lens cleaner. Be careful not to alter focus or aperture. ***Cleaning the Camera Lens*** (on page 104)		**X**
Glass surfaces: Beam Splitter and Secondary lens	Clean with soft, clean, oil-free cloth dampened with lens cleaning solution. ***Cleaning the Chromapulse Beam Splitter*** (on page 103)		**X**
Ellipsoidal mirror	Normally does not need cleaning. If dirty, blow off dust with compressed air, and follow instructions. ***Cleaning the Ellipsoidal Mirror*** (on page 105)		Only if dirt appears on image
Plastic surfaces: Dome light or Ring light diffusers	Clean with soft, clean, oil-free cloth dampened with mild soap and water solution. Wipe dry.		**X**

Fan filters CP4422EV	Rinse in clean water; use mild soap and water solution if oily. ***Cleaning the Chromapulse Fan Filters*** (see "***Replacing/ Cleaning the Chromapulse CP4422EV Fan Filters***" on page 101)		**X**
Filter/ Regulator	Replace filters ***Replacing Filter/ Regulator Filters*** (on page 107)	Oil removal filter - replace every **2000 hours** Oil vapor removal filter - replace every **12 months**	

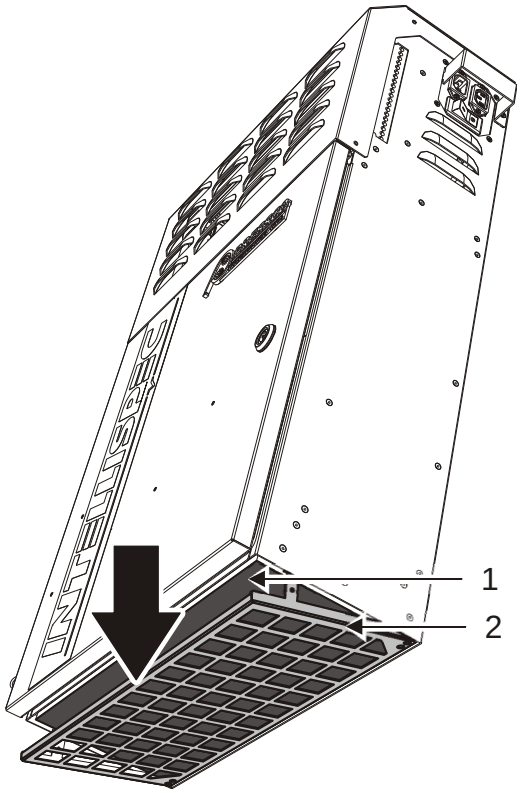
CLEANING THE VISION PROCESSOR FILTER

The filter for the vision processor should be cleaned once a month for best results. The filter is located underneath the user interface cabinet. Replace with a new filter when necessary.

❖ *Note: Frequency of cleaning will depend upon plant conditions*

To clean the filter:

1. With your fingers, pull down the front of the grate [item 2]. The grate is hinged, and opens wide enough to remove the filter.
2. Remove the filter [item 1] 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 underneath the user interface cabinet.
4. Push the grate closed.



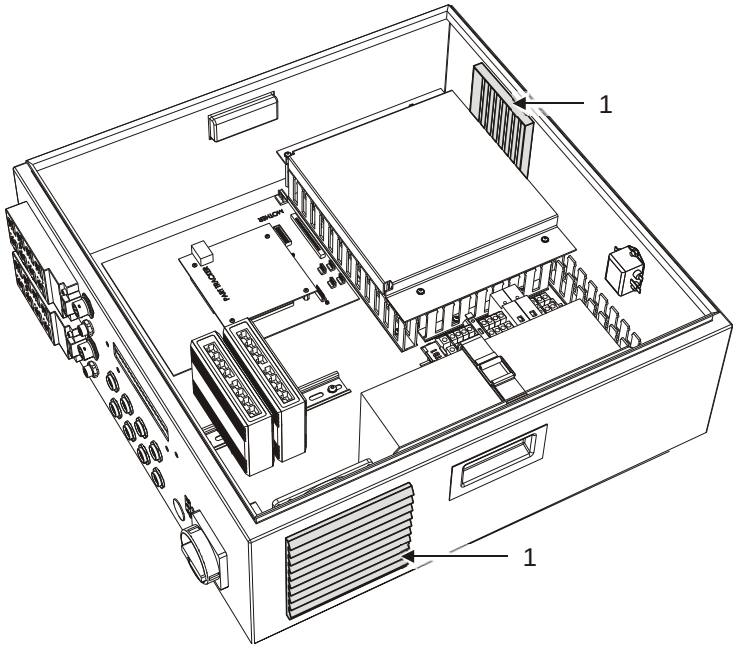
1	Part number 66621 - filter for vision processor

2	Grate to hold filter in place

CLEANING THE CLUSTER BOX FILTERS

Clean the filter on the vents when they get dirty. We recommend that you clean them at least once a month. Remove the covers to access the filters.

- If the filter contains only dry dust and dirt, rinse it in plain water
- If it contains oily dust and dirt, clean it in soapy water



❖ *Note: the illustration shows a Classic cluster box. However, all types of cluster boxes use the same filter replacement.*

To replace a filter, use the part number listed below:

	Part Number	Description
1	65779	Replacement filter element (same part number is used in both locations)

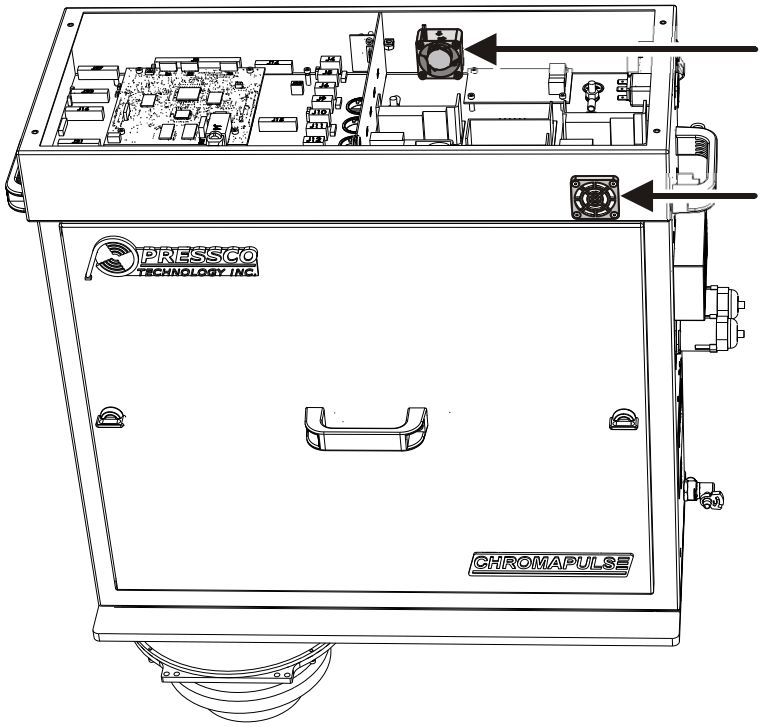
REPLACING/ CLEANING THE CHROMAPULSE CP4422EV FAN FILTERS

We recommend that you replace the filters once a month, using the part number listed below.

If you do not have replacement filters, clean them once per month. Remove the covers to access the filters.

- If the filter contains only dry dust and dirt, rinse it in plain water

- If it contains oily dust and dirt, clean it in soapy water



To replace a filter, use the part number listed below:

	Part Number	Description
1	66446	Replacement filter element (same part number is used in both locations)

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 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:

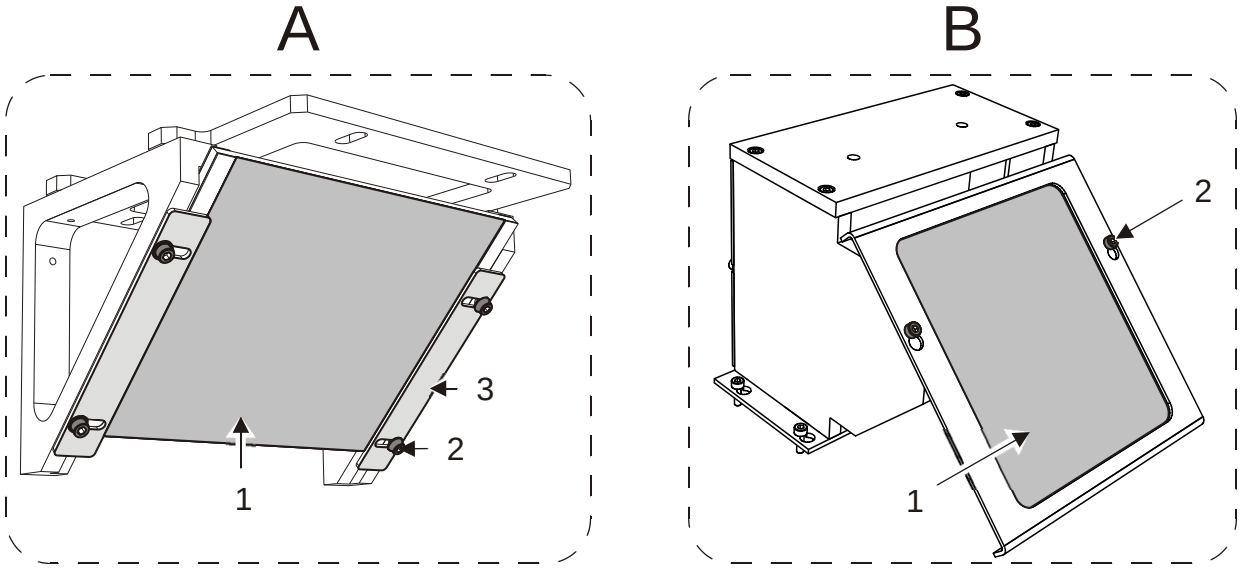
- Blow off dust with canned, compressed air
- Use a clean non-abrasive cloth dampened with lens cleaning solution
- Use lens tissue and lens cleaning solution on camera lenses
- If surface has compound on it, first clean with alcohol, then with lens cleaning solution

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

CLEANING THE CHROMAPULSE BEAM SPLITTER

You must remove the Beam Splitter (on some Chromapulse models) to access the bottom side for cleaning. The method for removing the beam splitter depends on your inspection module.

In the illustration below, item A is used in preform sidewall endcap (PSE) modules. Item B is used in seal surface modules and some Chromapulse modules (example: CP750EV, CP1200EV, and more).



1	Beam Splitter
2	Screws
3	Retaining plates

To clean beam splitter:

1. ***Raise the camera*** (see "***Cleaning the Camera Lens***" on page 104) if necessary. Be sure to note the camera position before moving it.
2. Loosen the screws [item 2] and carefully remove the beam splitter.
   - **Item A** has four screws. Slide the retaining plates [item 3] to the sides and remove the beam splitter.
   - **Item B** has two screws. Loosen the screws to remove the beam splitter.
3. Clean the beam splitter [item 1].
   - Blow off dust from beam splitter with canned, compressed air.
   - ***Clean the glass*** (see "***Cleaning Glass Surfaces***" on page 102) on the beam splitter.
4. Replace the beam splitter assembly.
   - **Item A** - Replace the beam splitter with the reflective side to the outside. Slide the retaining plates back in plates and tighten the screws.
   - **Item B** - Replace the beam splitter with glass to the inside. Tighten the screws.

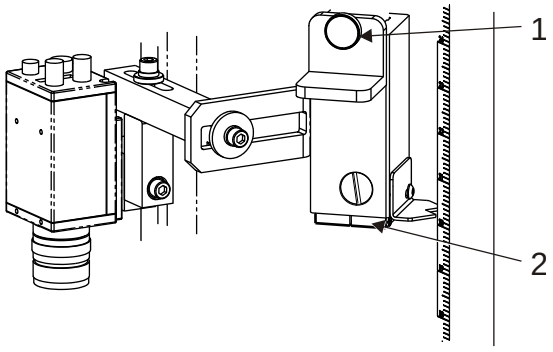
CLEANING THE CAMERA LENS

Caution

Do not touch the lens with fingers or oily cloths.

To clean the camera lens:

1. Raise the camera to access the lens by loosening the height adjustment screw. The clamping bracket should remain in place.
2. Clean all camera lenses with lens tissue and lens cleaning fluid. Be careful not to alter the focus or aperture of the cameras.
3. Slide the camera back into position as marked by the clamping bracket.
4. Tighten the height adjustment screw
5. Re-adjust aperture and focus if needed.



1	Camera height adjustment screw
2	Clamping bracket - camera height reference

CLEANING PLASTIC SURFACES

Plastic surfaces that may require cleaning are:

- Dome Light Diffuser
- Ring Light Diffuser
- Light Shield (if present)
- Beam Splitter Diffuser (if present)

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

To clean plastic surfaces:

Do	Do Not
Use canned compressed air to blow away dust	Do not wipe away dirt as plastic coating may be scratched
Use a clean, non-abrasive cloth dampened with mild soap and water solution. Saturate surface completely to let particles wash away.	Do not use paper towels or paper napkins – these may scratch surfaces
Dry the surface with clean, compressed air	

CLEANING THE ELLIPSOIDAL MIRROR

This mirror provides the enhanced neck image for optimal inspection of the neck of a can.

Warning

The special surface of the mirror can be easily scratched. Take special precautions and do not touch the surface of the mirror.

❖ *Note: This mirror does **not** require periodic cleaning. Contact Pressco Service if the mirror has dirt or marks that cannot be blown off with clean, compressed air.*

In most systems, the mirror has a built-in air cleaning system. Air is blown through the module to keep dust and debris off the mirror and out of the module. There are no bottom shields on these modules. You do not have to clean the mirror in these modules.

CLEANING THE PART DETECTOR

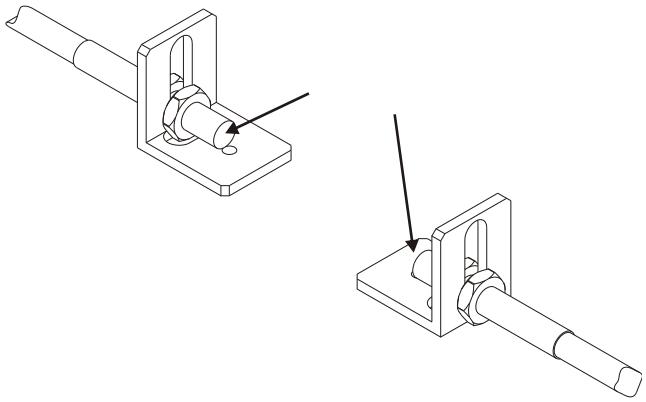
Your system will be equipped with either a part detector or proximity sensor, depending on your application. The proximity sensor does not use a reflector. However, the cleaning procedure for either of these types of sensors is similar.

The part detect sensor and reflector surfaces of the part detector must remain clean to properly detect parts. Clean these surfaces regularly to prevent dirt and oil build-up.

To clean the part detector:

- Clean the part detector surfaces with a soft, clean, lint-free cloth dampened with a mild soap and water solution.
- Clean the sensors on both sides of the conveyor.
- 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.*

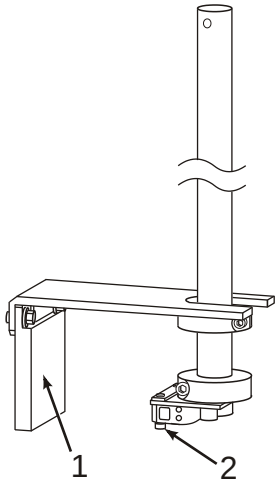


CLEANING THE PART DETECTOR AND REFLECTOR

The part detect sensor and reflector surfaces of the part detector must remain clean to properly detect parts. Clean these surfaces regularly to prevent dirt and oil build-up.

Clean the part detector 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.

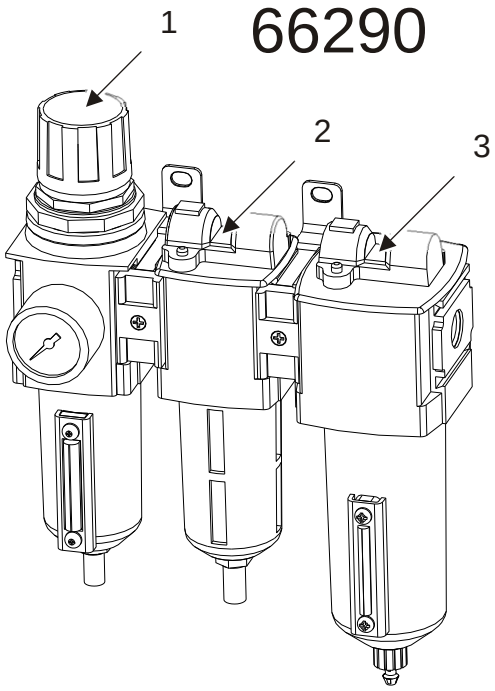
The frequency of cleaning will depend on plant and process conditions.



1	Part detect reflector
2	Part detect sensor

REPLACING FILTER/ REGULATOR FILTERS

The filter/ regulator assembly shown below is installed with CP4422EV inspection modules.



1	Filter/ regulator. No filter change necessary.
2	Filter oil coalescing
3	Filter oil vapor

Use the following part numbers and replace as indicated:

Pressco part number	Description	Use in item number (above)	Replacement frequency
67620	Filter element oil removal	2	Every 2000 hours
67621	Filter element oil vapor removal	3	Every 12 months
67622	Kit (contains one each of 67620 and 67621) ▪ You may find it easier to replace both of these filters at the same time		

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