

QuickCheck



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System Identification

Locate the data plate for this machine and record the information provided in the spaces below. To view current documentation for your machine, scan the QR code:

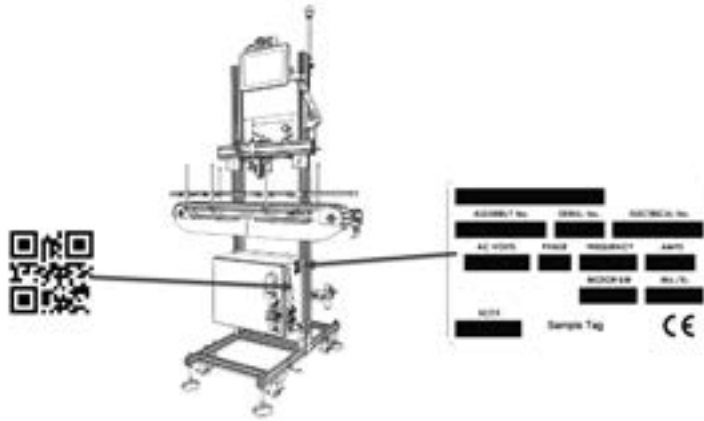


Figure 1: Data Plate and QR Code Locations on Right Side of Panel (click icon)



Supplier of the Equipment:

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ALPS
INSPECTION

1 Introduction

1.1 About This Manual

This Advanced Digital Document (ADD) may be accessed anytime by scanning the QR code located on your machine. The QR code link will always ensure that you are getting the latest version of the manual. Any revisions to the manual are automatically updated in the QR code link. You may also receive a message that an updated manual has been posted for your machine.

This Advanced Digital Document can be integrated into an HMI providing there is enough memory and a usable operating system. Furthermore, links to the training, videos, parts, and troubleshooting techniques may also be integrated into an HMI.

This manual contains information on the safety, transportation, operation, and maintenance of this machine.

The graphics used in this manual may show machine details that may be different than the actual machine. Components of the machine may have been removed for illustrative purposes or the continuing improvement of the machine's design may cause changes that are not included in this publication.

The owner of this machine is responsible for verifying the operator of this machine is properly trained and understands the contents of this manual.

1.2 Documentation

Air Logic Power Systems, LLC; (ALPS), reserves the right to make changes or improvements to the QuickCheck at any time. These changes may not be immediately reflected in the manual accompanying your system. If you notice any inaccuracies or oversights in this manual, please contact the ALPS Service Department.

This manual is protected by U.S. federal copyright laws © 2012 Air Logic Power Systems LLC. However, limited permission is hereby granted to photocopy portions of this manual for training of company personnel only. No part of this manual may be duplicated or transcribed in any form, for any other purpose, except as stated above, without expressed written permission from Air Logic Power Systems LLC.

1.3 Software

Installation of any new or modification of existing software in the QuickCheck Linear Leak Tester not approved by Air Logic Power Systems LLC may adversely affect the operation or performance of the machine and possibly void the warranty and or service agreements. Please consult Air Logic Power Systems Service Department prior to installing or modifying existing software on this machine.

1.4 System Modifications

Mechanical or electrical modifications not approved by Air Logic Power Systems LLC to the QuickCheck leak detection system may also void the warranty and/or service agreements. Please contact the Air Logic Power Systems Sales or Service Department for approval or assistance with any machine modifications.

1.5 Acknowledgments

Trademark and Patent Acknowledgments

All products or product names mentioned in the manual are trademarks of their respective companies. The product name: QuickCheck Leak Tester is protected under the United States patent laws.

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2 ADD Navigation

All links within ADD manual pertaining to maintenance, parts, training, and troubleshooting are shareable by text or email and depending on the operating system of the HMI may be embedded into the HMI.

2.1 Video Links



Video links are available in this manual. Click on the camera icon to view a video demonstration relative to the section of the manual that is being viewed.

2.2 Maintenance Links



Maintenance links are provided throughout this manual to indicate a possible maintenance item. This is for periodic maintenance or may indicate a time that is convenient to perform a maintenance task.

2.3 Parts Link



This manual contains an interactive parts catalog that will link to every available part in this machine. The parts catalog is searchable and the model can be disassembled to find a specific part or learn how to get to a part. This may also lead to a recommended spare parts list for ordering parts. All parts can be ordered directly from this link.

2.4 Troubleshooting Tips



This icon represents suggestive troubleshooting properties during the operation of this machine. What to do when a certain situation arises or a potential situation. These actions are based on experienced usage and historical information.

2.5 Animated Procedure



An animated procedure or instruction will be identified by the animation icon. This is an optional feature that can be embedded into the document.

2.6 Drawings or Schematics



The above icon will bring up a drawing or a schematic. This could be electrical, hydraulic, pneumatic, or mechanical depending which section of the manual is being viewed.

2.7 Virtual Reality, Augmented Reality, and Mixed Reality



The above icon will bring up a virtual world of many types of assets. This can include training, operations, site layout, and much more. Typically this should be viewed using a set of VR goggles but can also be viewed on a PC, phone, or tablet.

2.8 360 Degree Imagery



A 360 degree image is a full parabolic view of an area. Inside a machine, a building, or outdoors. This can be helpful in visualizing how a machine is set up, looking inside, or inside of a shop. The image can be accessed and viewed on a phone, PC, or tablet. Simply rotating the viewer will act as though the user is standing in the environment and can look in any direction for full visibility of the area.

2.9 Customer Service Link



Although this manual contains all the necessary contact information for each machine, this icon is a quick link to send an email to support, customer service or sales from a laptop, PC, phone or tablet.

3 General Information

3.1 General Description of the QuickCheck Leak Tester Machines

The QuickCheck model linear machines are designed to test containers for leaks and other defects at speeds up to 180 BPM/CPM (bottles/containers per minute). The speed capability depends on container size, volume, and the sensitivity in leak detection. The QuickCheck machines use an index motor to advance the bottle and test it as it moves on the conveyor. One or more photo-electric sensors are used to track and test containers.

3.2 Machine Designation and Serial Number Location

This machine is identified with an ID and Serial Number label affixed to the right side of the main enclosure and a label with the 24 Hour service hot-line phone number. The ALPS 24-Hour Service Hot-line is also found inside of the front cover page along with sales and customer Service Phone number.



Figure 2: Main Enclosure



Main Enclosure: serial number and ID label; ALPS 24 Hour service phone number label



Table 1: Machine Label Locations

| Label | |
|-------|---|
| 1 | ALPS 24-hour service hot-line phone number 1-800-325-8717 |
| 2 | Identification and serial number plaque |
| 3 | ALPS rating label |
| 4 | UL Certification Sticker |

3.3 Statement of the intended use for this machinery

ALPS machinery is built solely for the intended purpose of pressure testing plastic containers, bottles, canisters, and seals for leakage. In most instances, this is a precautionary step that is done before the container is filled with product. In instances where the product is pre-packaged, leak testing is done to pressure-test the integrity of the sealing agent. A positively sealed or leak proofed container eliminates the possibility of contamination of the product which keeps foods, beverages, and pharmaceuticals safe for consumers. Conversely positively sealed and leak proofed containers for petrochemical products and cleaning agents eliminates the possibility of the product contaminating the outside world.

With these types of products failure at any stage in the manufacturing process, without post leak detection, can result in product being exposed to the environment. In some cases, this may be cause for environmental concerns.

In particular, the QuickCheck model linear machines are designed to test containers for leaks and other defects at speeds up to 180 BPM/CPM (bottles/containers per minute). The speed capability depends on container size, volume, and the sensitivity in leak detection.

3.4 Scope and Limits of Use

The machine featured in this manual is designed to work with and inspect containers.

- Do not make any adjustments to this machine to process anything other than this product
- Do not run unstable or volatile materials through this machine
- Do not run parts made from any type of materials that are prone to ignite or explode at working temperature
- Do not run hot or recently molded materials exceeding 150°F (65.6°C) through this machine

3.5 Hoisting and Transport Machine

The QuickCheck machines can be rolled manually by two or more individuals. The QuickCheck machine can be raised with the use of a fork lift or pallet jack onto its set of wheels and be moved to accommodate any conveyor line.

3.6 Installing the QuickCheck Machine

Avoid installing this machine downstream from a nearby heat source, such as a blow-molding machine. Containers should be at their coolest state in order for the testing to progress smoothly and without containers sticking to the seal during the testing process.

4 Safety

4.1 General Safety Guidelines

This machine is designed to comply with international design standards and the European Machinery Directives. Therefore, using the machine does not pose a risk to the operator when the instructions in this manual are followed. However, certain precautions must be followed during its use. To understand all the necessary precautions, the machine operator must read the entire manual before operating or performing maintenance on the machine.

Operation and maintenance should only be performed by authorized and trained personnel. Below are some basic safety guidelines:


- Follow local governing codes to ensure a minimum standard of safety.
- Wear protective gloves, eye protection, and hearing protection.
- Operate the machine in a well-ventilated work area.
- Follow the prescribed maintenance schedule.
- Start up and shut down the machine according to the instructions in this manual.
- Do not operate a machine that is damaged or in disrepair.
- Do not store objects on top of machine.

4.2 Safety: Warning Messages Cautions

Caution messages can appear before procedures. Messages of this type indicate possible damage to the machine or loss of data if a step or procedure is not properly observed.

4.3 Warnings

Warning messages imply that a potential health hazard exists in the performance of any random procedure. Please review the following cautions and warnings before operating or performing maintenance on the machine.

| |
|---|
| WARNING! |
| WARNING! DO NOT WEAR LOOSE CLOTHING, LOW-HANGNING JEWELRY, OR ANYTHING THAT CAN BECOME ENTANGLED IN THE MOVING CONVEYOR. WOMEN ARE CAUTIONED TO PIN UP LONG HAIR. THE POTENTIAL FOR SLIGHT TO MODERATE PERSONAL INJURY EXISTS. |
|  DANGER! |
| NEVER ATTEMP TO SERVICE THIS MACHINE WITHOUT FIRST DISCONNECTING ELECTRICAL AND PNEUMATIC POWER AND PERFORMING LOCK-OUT / TAG-OUT PROCEDURES. THE POTENTIAL OF SERIOUS PERSONAL OR FATAL BODILY INJURY EXISTS! |

Cautions and Warnings

Please review the following cautions and warnings before operating or performing maintenance on the machine.

- CAUTION** Read the instructions before using the machine. Only qualified personnel should operate the QuickCheck.
- WARNING** High pressure hoses, fittings and couplings are important for the safety of the machine. Use only hoses, fittings and couplings recommended by ALPS.
- WARNING** To ensure machine safety, use only original spare parts from ALPS or approved by ALPS.
- WARNING** Do not use the machine if a supply cord or important parts of the machine are damaged, e.g. safety devices.

4.4 Safety: Warning Labels and Descriptions

Safety is always critical. The ALPS QuickCheck machine is equipped with a full complement of warning decals and labels. A standard series of warning and caution labels are in place to inform the operator of certain hazards relative to the function of this machine. Please observe these warnings.



Figure 3: Safety Label

4.5 Warning Label Location

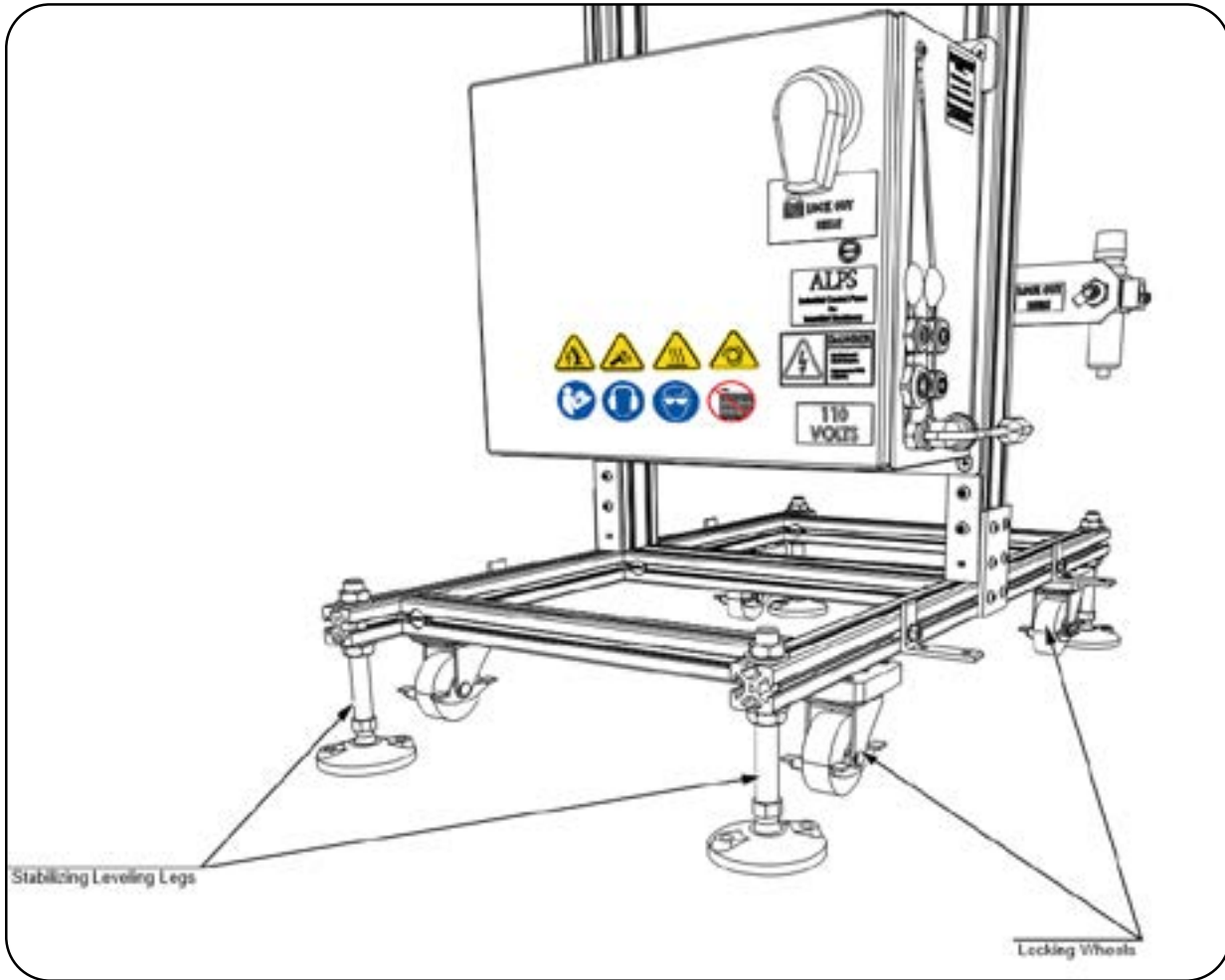











Figure 4: Warning Label Location

4.6 Symbol Definitions

The symbols used on the machine were developed by the International Organization for Standardization (ISO) and are defined below. These symbols may include yellow warnings triangles, blue mandatory action circles, or red prohibited action circles.

| Symbol | Definition |
|---|--------------------------------------|
|  | Electrical Hazard |
|  | Pinch, Belt, Gears, and Wheel hazard |
|  | Possible Hot Surfaces |

| Symbol | Definition |
|---|---|
|  | Lock Out Tag Out |
|  | Machinery Starts Automatically |
|  | Wear hearing protection. |
|  | Wear eye protection. |
|  | Read operator and maintenance manual. |
|  | Do not operate without Safeguard Gate/guard in place. |

Danger! Arc, Shock, and Flash Hazard:

The potential for serious or fatal injury exists. Located on the outer door surface of the High-Voltage Control enclosure. Do not open to explore or attempt to affect repairs in this area. In case of breakdown, initiate Lock-Out Tag-Out procedures to secure the machine. Notify authorized personnel.



Risk of Hot Surfaces Hazard

This symbol can be found in areas where a potential burn hazard exists. QuickCheck servo motors have hot surfaces. Do not touch motor surfaces while in operation or after being recently shut down.



Lock Out Tag Out

This decal appears prominently next to the main power switch on the side of the High Voltage Control cabinet. Lock-out and tag-out procedures are covered in the service and maintenance manual.



Warning! Watch Your Hands and Fingers

This warning is seen on the front of the discharge chute. Do not thrust your hand up this chute while the machine is operating. Contact with moving container material poses a slight to moderate threat of injury.



Danger! Do not operate Without Guards in Place

This warning is located on the lower front portion and rear plexiglass guard of the machine. It cautions the operator not to attempt to operate this machine without a plexiglass guard panel in place. The potential for severe injury exists while the machine is operating. Please keep hands, long hair, low hanging jewelry, and loose clothing away from the moving parts.



Danger! Starts Automatically


This warning is displayed on all plexiglass doors as a warning that the machine starts and stops automatically as a function of its normal operating scheme.



4.7 Safety: Warning Messages

Cautions: Caution messages can appear before procedures. Messages of this type indicate possible damage to the machine or loss of data if a step or procedure is not properly observed.

Warnings: Warning messages imply that a potential health hazard exists in the performance of any random procedure.

 **WARNING** Only trained and or certified personnel should operate or rig the QuickCheck for shipment or movement.

5 QuickCheck Specifications

| | |
|---------------------------|----------------------|
| Power Requirement | 120-230 vac, 1 Phase |
| Air Supply | 60-120 psi |
| Operating Pressure | 60-80 psi |
| Control/Display | 10" HMI |
| Communication | Ethernet Capable |

6 Safety-Operational Status/Conditional Status

6.1 Operational Status: Conditional status of the machine

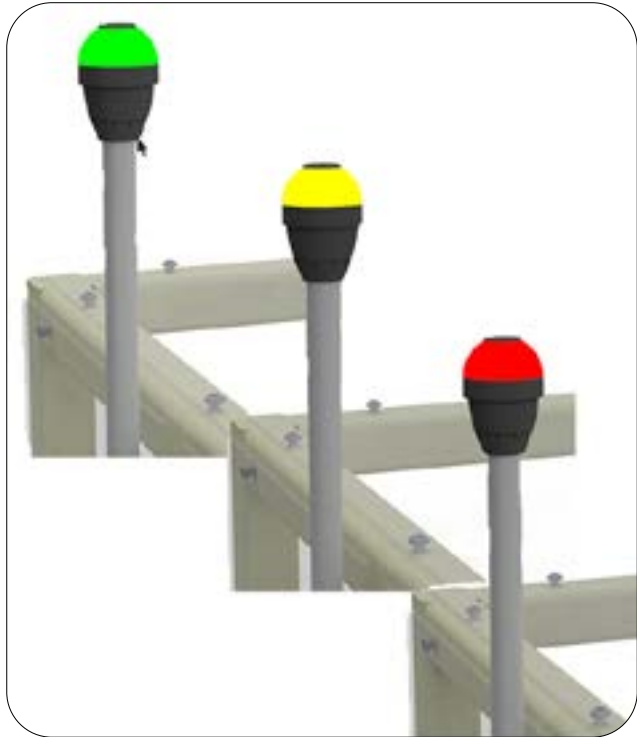


Figure 5: Operational Status Lights

Table 2: HMI Status LED: Color Code Indicates Running Status

| Color | Status/Condition |
|--------|---|
| Green | Normal operating status. |
| Yellow | Machine in bypass Mode or in Pause Condition. |
| Red | Machine stopped, door ajar or waiting for operator to press START. The circuit is open, interrupted, e-stop has been pressed or a fault has occurred. |

7 Glossary of Common Terms

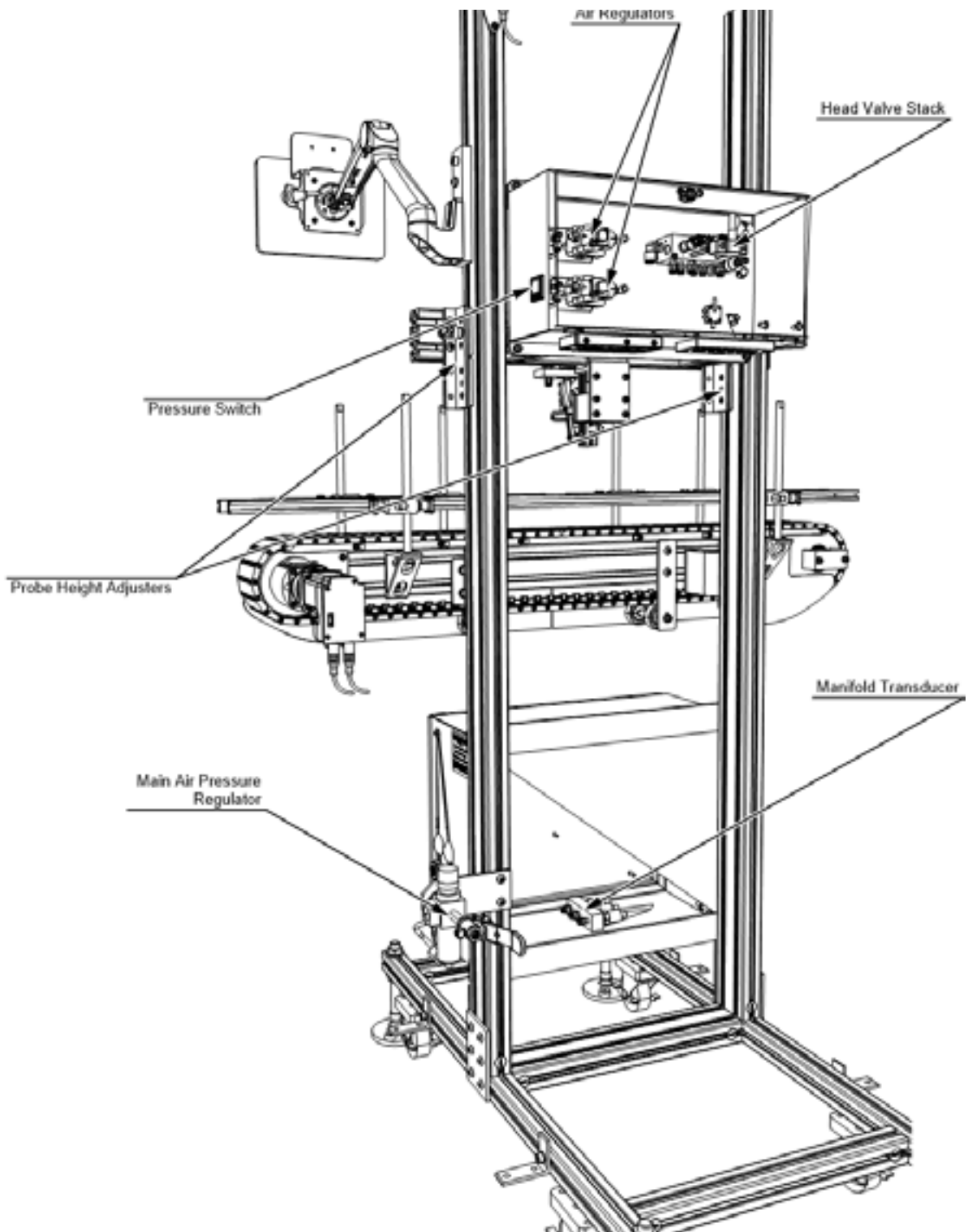
Table 3: Glossary of Terms

| Term | Description |
|----------------------|--|
| Encoder | Generates digital electronic pulses that represent the position, speed of the QuickCheck |
| Air Preparation Unit | Cleans and regulates the incoming air supply, indicates a lockout valve, primary particulate filter, coalescing filter, reject supply regulator, and an QuickCheck supply regulator. |
| Available Test Time | The calculated maximum amount of time to perform the leak test. This calculation is based on the following factors: Max Fill Time, Test 1, Test 2, Probe-Retract and CPM (containers per minute). |
| CPH/CPM//BPH/BPM | Containers Per Hour/ Containers Per Minute / Bottles Per Hour / Bottles Per Minute |
| Downstream Photo-Eye | Photo-eye that senses a backlog of containers at the exit |
| End of T1 Pressure | Test results which displays the pressure in the container at the end of Test 1. |
| End of T2 Pressure | Test results which displays the pressure in the container at the end of Test 2. |
| Fill Pressure | The pressure used to fill the container. This pressure is set in PSI. |
| Fill Valve | The Solenoid valve that controls the air used to pressurize the container. |
| HMI | An acronym meaning: Human Machine Interface. This is also referenced as the Operator Touch Screen. |
| IWC | Inches of water column. (One inch of water = 27.7 IWC = 1 PSI). |
| PE | Acronym for Photo-eye. An electronic sensor for container status communication to the PLC |
| PLC | An acronym for Programmable Logic Controller. |
| Recipe | A set of test setting values that can be saved and used for a particular container. |
| T1 Maximum | An acronym for Test 1 which refers to the maximum allowed pressure percent loss during test one (T1). |
| T1 Minimum | An acronym for Test 1 which refers to the minimum allowed pressure percent loss during Test one (T1). Note: This is normally set to "0" as any container with a loss lower than this is rejected. |
| T1 Pressure Loss | An acronym for Test results for Test 1 which refers to the total pressure loss during Test one (T1). |
| T2 Maximum | An acronym for Test results for Test 2 which refers to the maximum allowed pressure percent loss during test two (T2). |
| T2 Pressure Loss | An acronym for Test results for Test 2 which refers to the maximum during test two (T2). |
| Test 1 (T1) Time | The amount of Time (seconds) that T1 will test a container after the minimum pressure is reached. |
| Test 2 (T2) Time | The amount of Time (seconds) that T2 will test a container after T1 is completed. T2 is an optional Test. |
| Test Leak Orifice | When performing a self-test, a leak path is introduced into the sealed/closed system to represent a leak in the container. The orifice size can help determine the size of the leak that can be detected based on current test settings. |

8 Safety and Air Pressure Control

8.1 Air Pressure Shut-Off and Lock-down

Airflow can be locked in shut-off mode by inserting a padlock through the available lock device on the regulator valve.



8.2 Air Pressured Adjustment

Adjust the turn knob to increase or decrease available air pressure. Should the air pressure fall below normal operating pressure, follow the prompts on the HMI to restart.

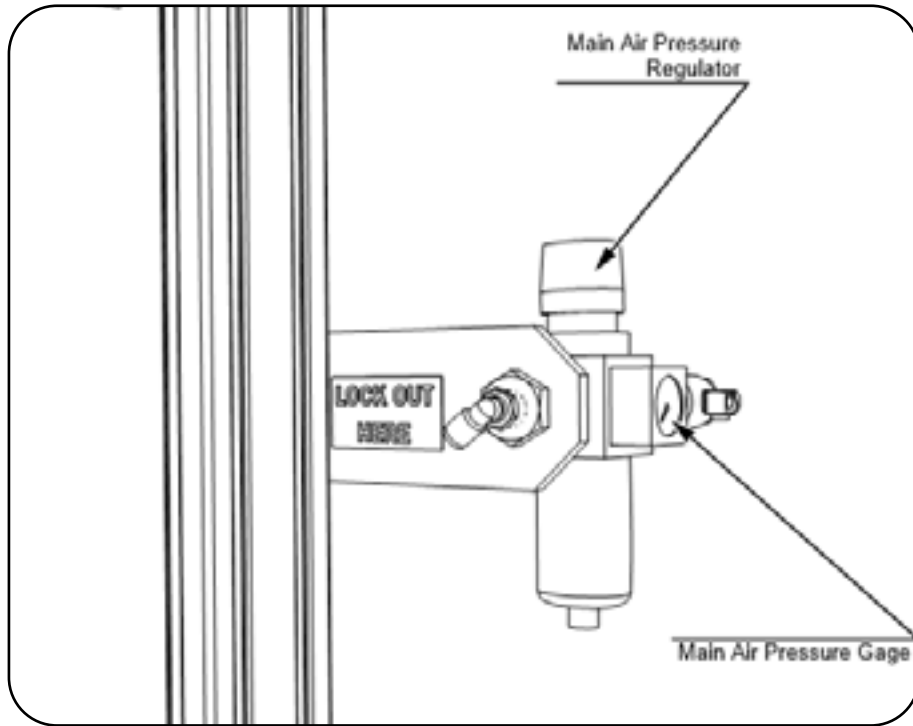


Figure 6: Incoming Air Pressure Regulator

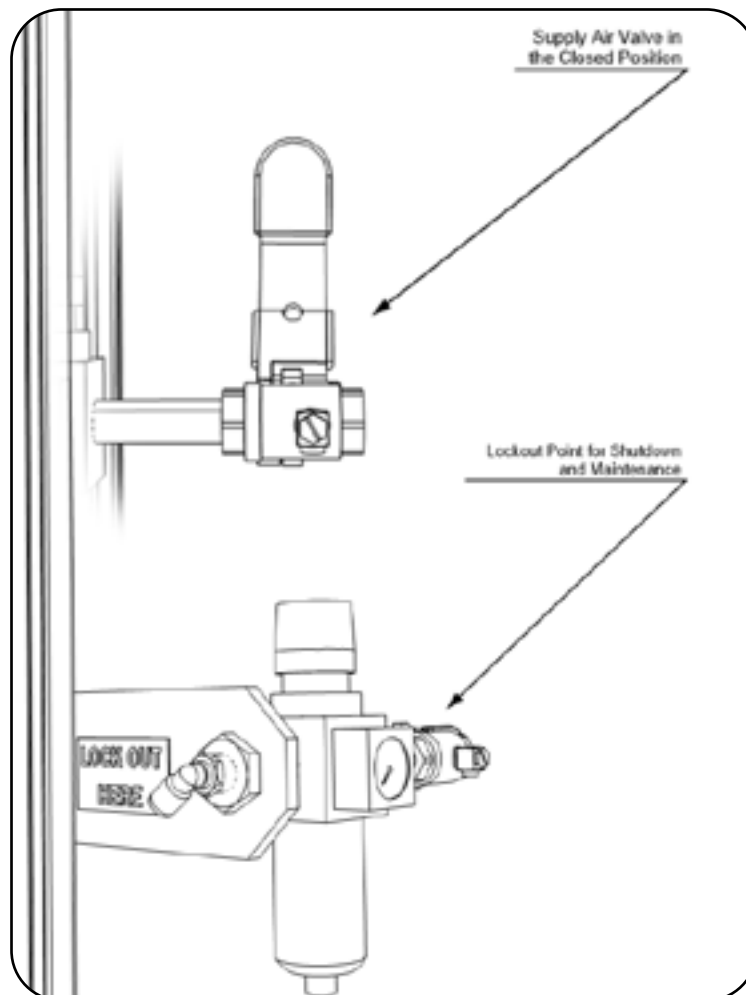
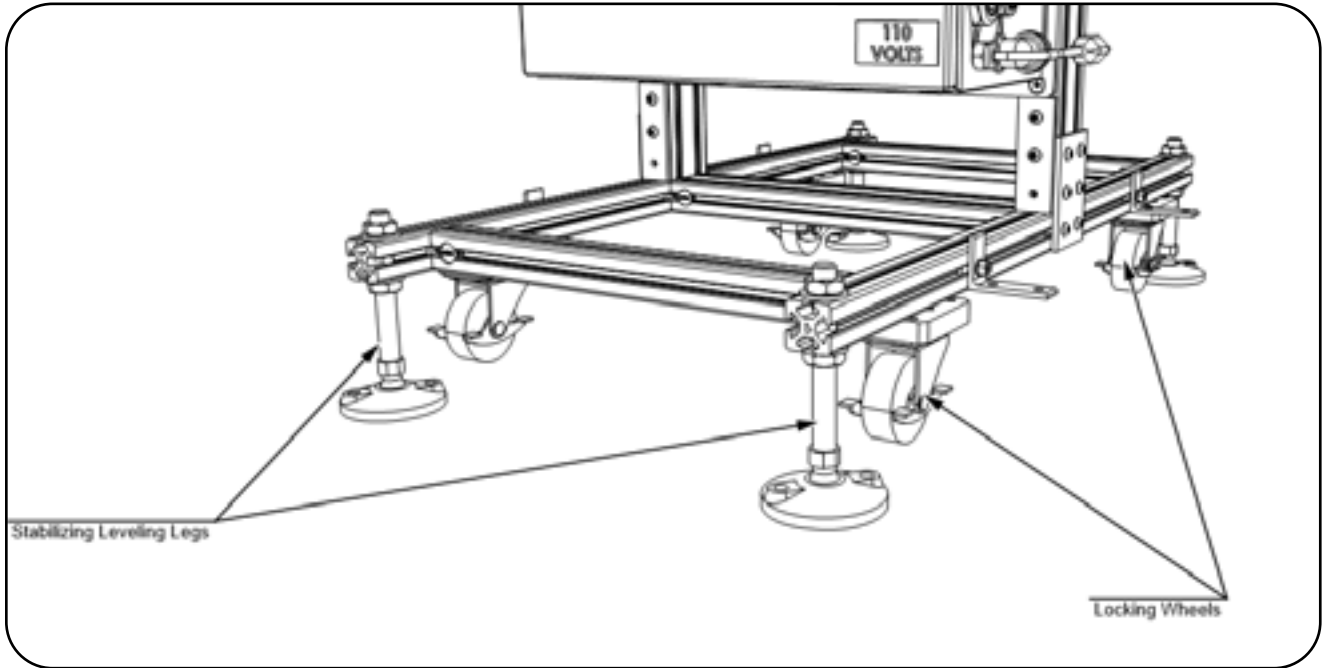


Figure 7: Lock Out for Supply Air

8.3 Wheel-Lock and Mounting Feet Adjustment

Position the QuickCheck machine on a flat and level area of flooring. The QuickCheck machine mounting feet can be adjusted independently (inset) to raise it off the caster wheels to gain stable footing. Use a leveling tool to assure perfect vertical alignment. To use the caster wheel option, engage the brake lever on each wheel to prevent movement.



8.4 System Dimensions

The following is a basic drawing of the height, width, and depth of the QuickCheck to aid in place net to an air source for operations.



9 HMI Emergency Stop, Main Air Shut Off, and Components

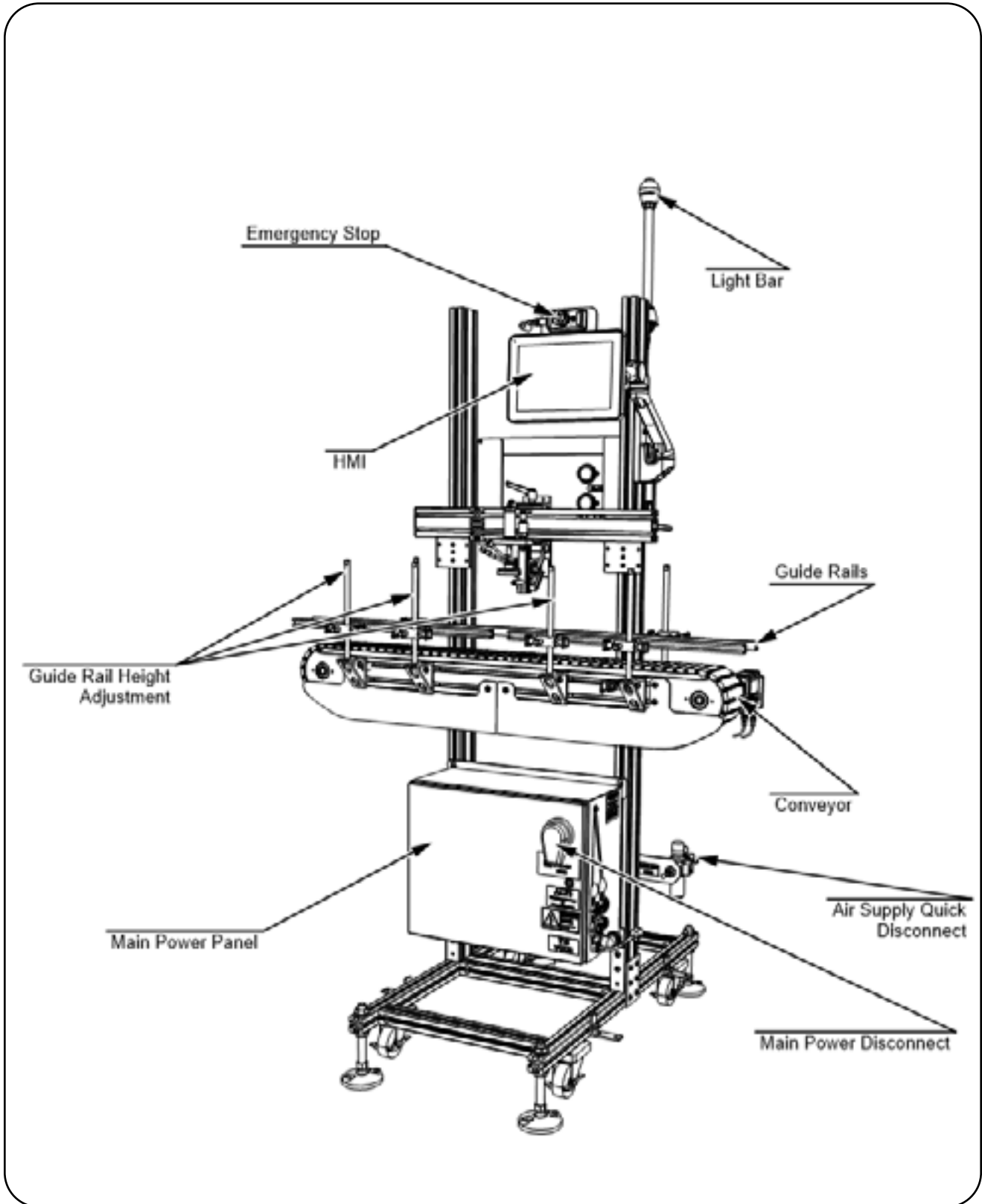


Figure 8: Main Components

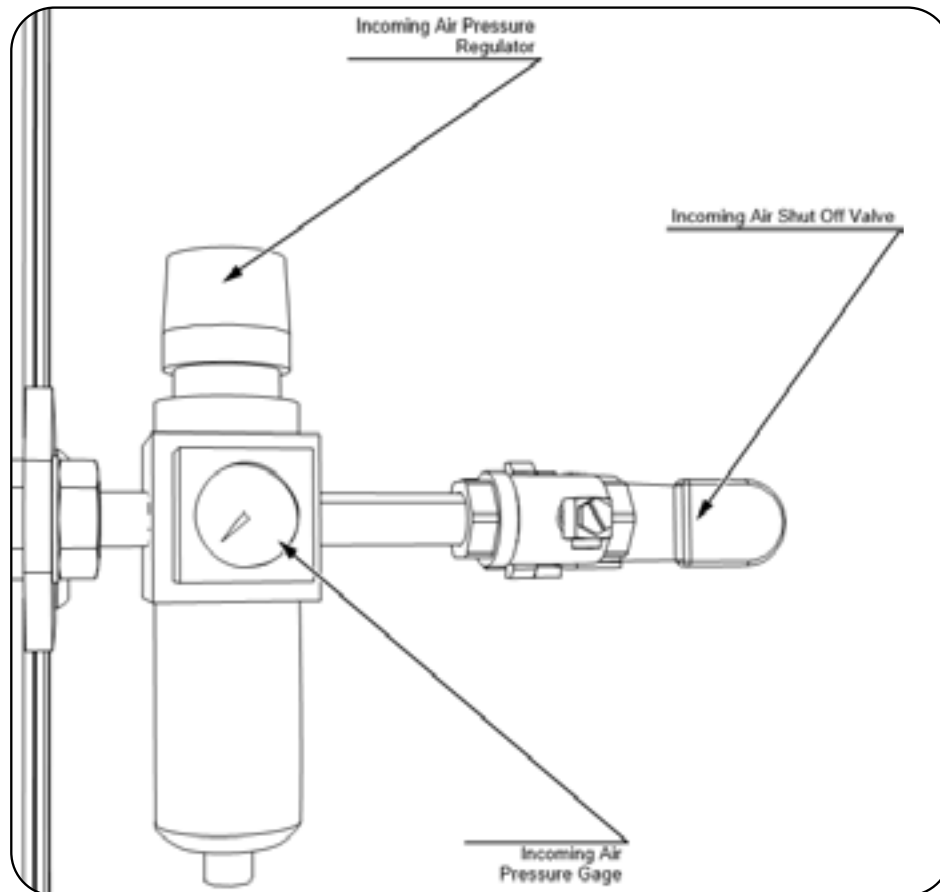


Figure 9: Incoming Air Shut Off Valve

9.1 Carriage Height Adjustment

During installation and during container change over, the carriage assembly may have to be adjusted. The following animation demonstrates how to raise, lower, and lock the carriage into place.



9.2 Guided Rail Adjustment

During installation and container change over, the guided rails may have to be adjusted. The following animation demonstrates how to adjust the guided rails and lock into position.



9.3 Head Adjustment

During initial set up or setting up a new container, the following demonstrates how to adjust the head, left or right and lock into position.



10 Operator Overview

The QuickCheck has a pneumatic schematic and an electrical schematic.

10.1 Schematics

Electrical and Pneumatic Schematics



10.2 Overview

When a container is detected by the QuickCheck test photo eye the conveyor will stop the container under the probe head, and the probe extend and fill valve execute simultaneously. During the pressurization, the container is monitored to insure the sealed container reaches the specified minimum fill time pressure. If the container fails to reach a specified minimum pressure, the container is rejected for a fill failure.

If a fill failure occurs, the test probes may be misaligned; there may be a large hole in the container, or the test settings need to be adjusted. If the container reaches target pressure then the QuickCheck performs Test 1

10.3 Theory of Operation

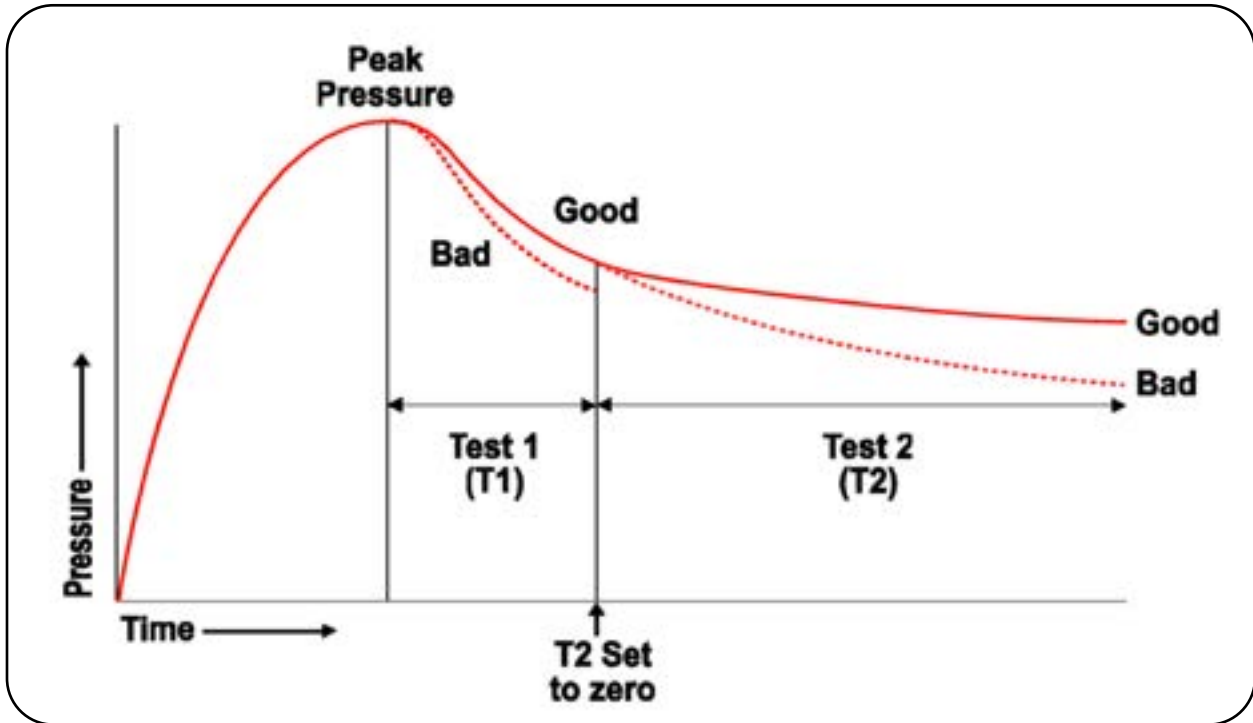


Figure 10: ALPS leak testing pressure decay curve analysis.

10.4 Pressure Test

Untested containers are transferred from line conveyor to the QuickCheck. When the QuickCheck begins to detect containers the test-probes will extend to seal and pressurize the containers. The Pressure Test ensures the container reaches the specified Peak Pressure. If any one of the containers fails to reach Peak Pressure, that container will be rejected for a Fill Failure.

10.5 Test 1 (T1) (Stabilize Test)

T1 is considered a pressure stabilization period. T1 is the time allowed for pressure curve to flatten out. (See the graph above) Test 1 will reject the container if Maximum % percent value is exceeded. If Maximum % value is not exceeded, Test 2 is performed.

10.6 Test 2 (T2) (Leak Test)

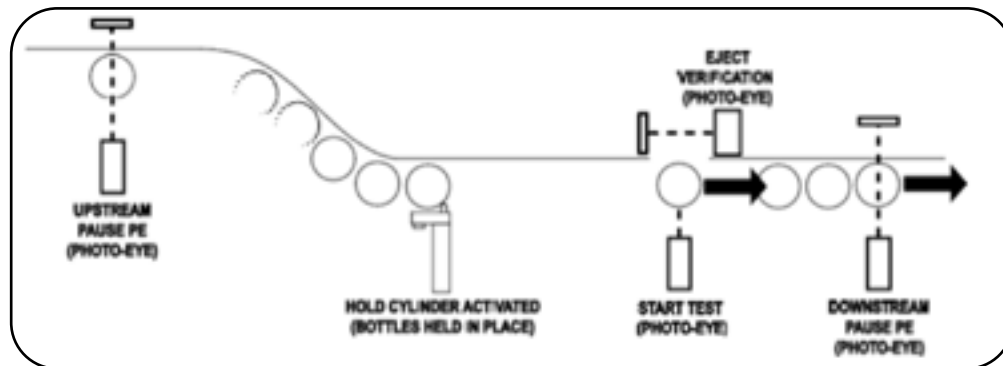
Test 2 is performed for as much time will allow. This is done so the smallest possible leak can be detected. In Test 2 the container will be rejected if the T2 Maximum % percent value is exceeded. If the T2 Maximum % is not exceeded the container is considered good. At the end of this period, the probe is retracted and the test cycle is completed.

10.7 Pressure Decay Values and Percentages.

Unless otherwise specified the pressure values in the HMI displays are usually shown in Inches of Water Column (iWC). This is done for scaling and calibration purposes as iWC units accommodate for a finer scale than PSI. For general purposes and knowledge, one inch of water ≈ 27.7 iWC ≈ 1 PSI

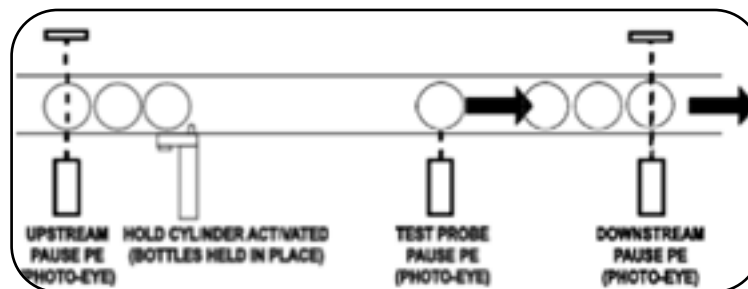
11 Container Handling

Containers transition from the production line conveyor into the QuickCheck test area for leak testing. During this transition containers will be monitored and controlled by various photo eyes, hold and reject cylinders



11.1 Hold (Gate) Cylinder

The spring-loaded hold cylinder is used to avoid any chance of untested containers being pushed by the test point. It mechanically traps upstream containers whenever the QuickCheck goes into STOP mode. The Hold Cylinder stroke should be adjusted to the minimum amount that prevents containers from passing.



11.2 Photo Eye Function and Position

11.3 Photo Eyes Introduction and Positions

Containers transition from the production line conveyor into the QuickCheck conveyor for leak testing. During this transition containers will be monitored and controlled by various photo eyes. The machine will reject failed or untested containers at the reject station.

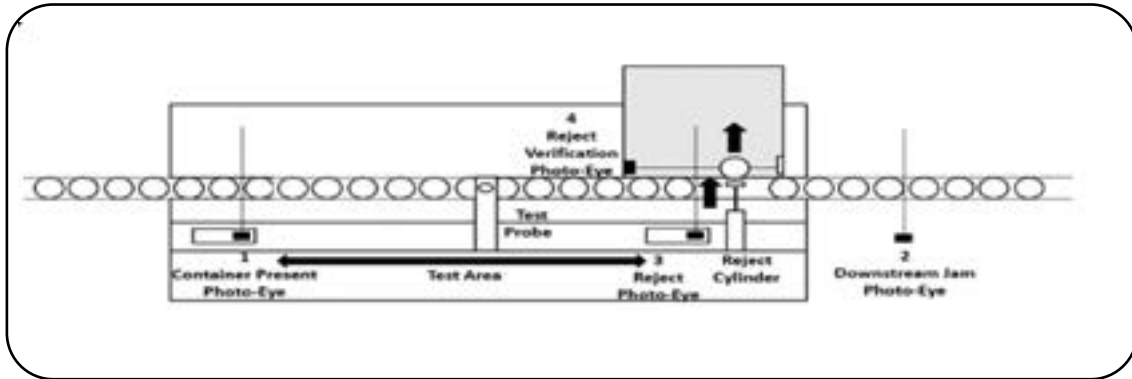


Figure 11: Reject Cylinder

Table 4: Photo eye Function Table

| Ref # | Photo Eye | Function |
|-------|---|---|
| 1 | Container Present Photo-Eye | Monitors the line of incoming containers to determine that a container is present to initiate the test cycle. |
| 2 | Downstream Jam Photo-Eye | Temporarily pauses the machine when the sensor field is broken. It automatically restarts the machine when the sensor field is clear |
| 3 | Reject Photo Eye | Detects a failed container and fires the reject cylinder at the appropriate time. It is also used to detect untested containers that may have been missed by the Container Present Photo-eye (issues an Unexpected Container Warning) |
| 4 | Reject Verification/Chute Monitor Photo-Eye | Verifies that rejected containers have left production line. If the sensor fails to detect the container, or if the sensor field has not been broken after a reject occurs, the machine and conveyor will shut down and an alarm condition called a Reject Verification Fault is generated. |

12 Operator HMI Use



For screen details and navigation see the HMI Screen Navigation in the back of this manual. On-line HMI configuration and settings can also be viewed at www.alpsparts.com, or by clicking on the above link.

12.1 HMI Password Protection

The options and settings built into the QuickCheck are password-protected. A password is required for editing production values. If not previously logged in, when attempting to edit or change settings a password login pops up box and keyboard will appear. The QuickCheck ships with default passwords.

Table 5: ALPS default (shipped) password settings

| Item # | Level | User Name | Password | Allowed |
|--------|-------------|-----------|----------|---|
| 1 | Guest | Guest | NA | View displays |
| 2 | Operator | op | 1111 | Loading recipes and view only |
| 3 | Maintenance | super | 2222 | Set-Up Leak testing and calibration menus |
| 4 | Supervisor | eng | 3333 | All except ALPS |

12.2 ALPS Password Definitions Overview

Level 0 No password: No password is required. Viewing displays only is allowed.

Level 1 Operator: Password is required. Same as level 0 plus loading recipes is allowed.

Level 2 Maintenance/Set-Up: Password is required. Same as level 1 plus editing of all settings, system calibration and altering of recipes including deleting or creating new recipes.

Level 3 Supervisor: Password is required. Same as level 2 plus turning options ON or OFF, resetting counters, putting the system into bypass is allowed, and Custom Users with unique levels and passwords can be created.

With no display activity the system will automatically log out to level 0 with factory default time of 15 minutes

12.3 How to Log In and Out

Log In is accessible through out QuickCheck Menu system. Typically, the screen visible when accessing the HMI will be the last screen displayed when last viewed or changed. However, access to login is available to all screens as illustrated in Figure 5&6. Pressing the lock icon provides access to obtain operator, supervisor, or technician user privileges. Press the Lock on the top of the menu bar to access keypads and enter user login information. Select the lock to log out when logging out.

12.4 How to Enter Passwords



Figure 12: Login Lock for All Screens

1. From any screen, select the lock on the settings navigation menu on the right side of the screen.



Figure 13: Basic Password Screen

2. A password prompt screen appears. Touch the white input area.
3. A QWERTY keyboard appears.



Figure 14: QWERTY Keyboard

4. Enter User name and Password and touch Sign In or press enter on the keyboard. Once logged in, the screen will display the logged in user in the upper left of the HMI screen.



Figure 15: User Group Information

There are three levels of permissions. Once signed in, the operator can press the lock button again to see the advanced login screen to make any necessary changes depending on the level of permissions. Operator for day to day operations, Supervisor for day to day operations, reporting and overrides, and Technical for programming the HMI, troubleshooting, and machine installation.

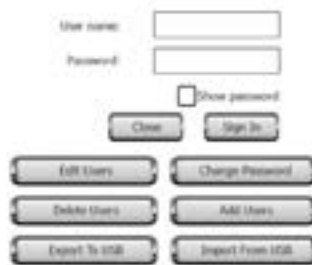


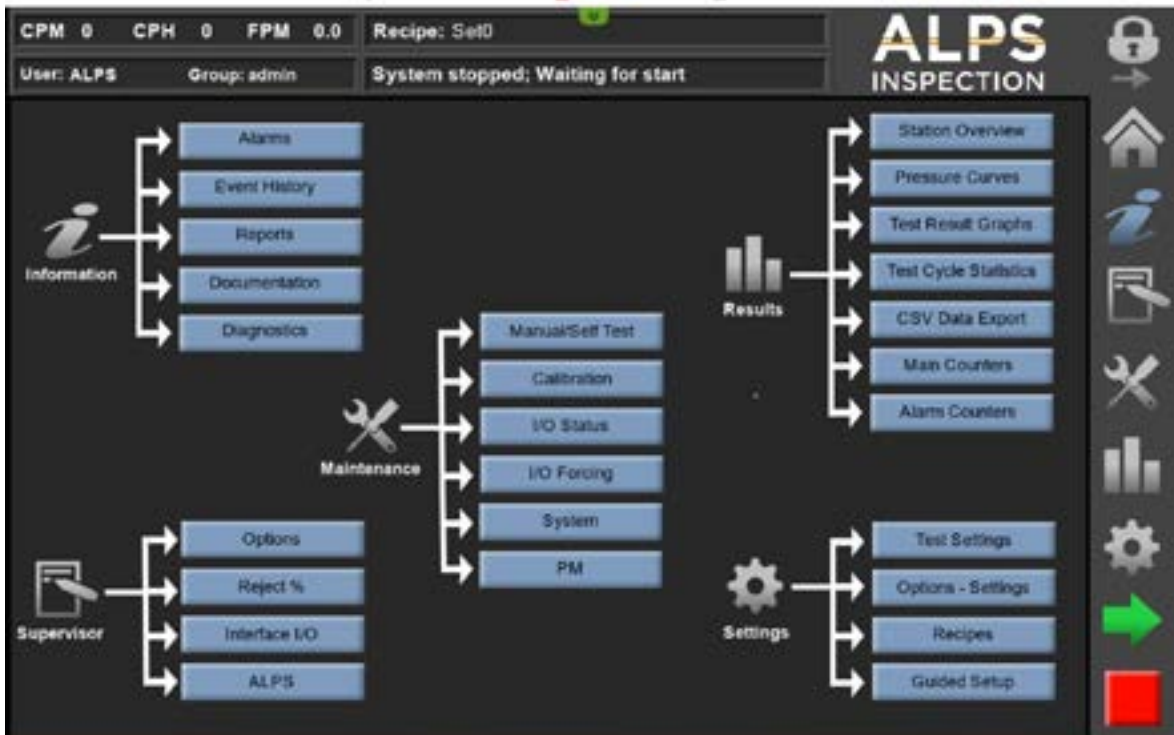
Figure 16: Advanced Password Screen

The advanced password screen will allow users to change settings and supervisors to enter new users. All password information can be exported to a usb drive for storage or reloading passwords.

13 Guided Set Up

The QuickCheck can test a variety of bottles. To set up a different size bottle for a production run, navigate to the settings screen. To add settings in the following screens, tap on the white entry boxes and a numerical or QWERTY keyboard will be displayed to enter data.

1. Select the guided set up icon. The Begin Guided Setup screen will display.



2. Press the green start button (1). The forward advance screen arrow will be displayed on the right of the screen.

NOTE: The graphic displays how to set up the bottle on the conveyor.

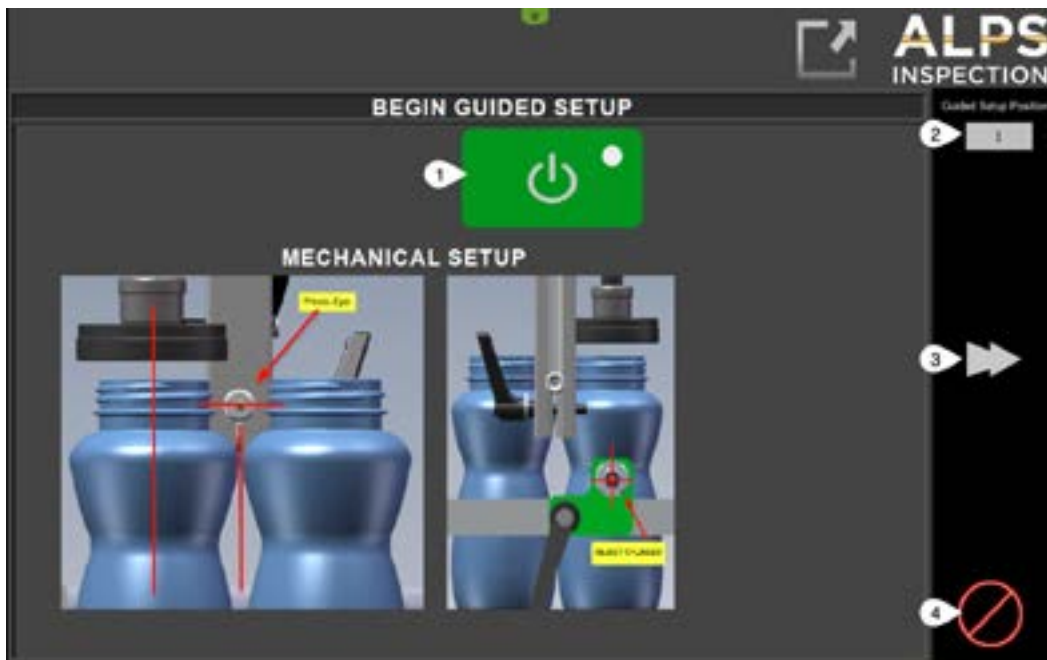


Figure 17: Settings Guided Setup_1

| Ref # | Term | Description |
|-------|---------------------------|---|
| 1 | Guided Setup Start Button | Activates the Guided Setup |
| 2 | Guided Setup Step count | Indicates which step the Guided Setup is at currently |
| 3 | Forward Button | Advances to the next screen |
| 4 | Cancel or Abort | Cancels the Guided Setup; located on each Guided Setup page |

- Place two containers with the 1st container under the Probe Head. Then set the Part Present PE in the center of the two containers, as shown in Figure 16 & 17.



Figure 18: Bottle Line Up with Photo Eye and Probe Example

- Press the forward button (3) to advance on the next screen.
- Enter the bottles dimensions. Neck dimension (1) and container width (2).

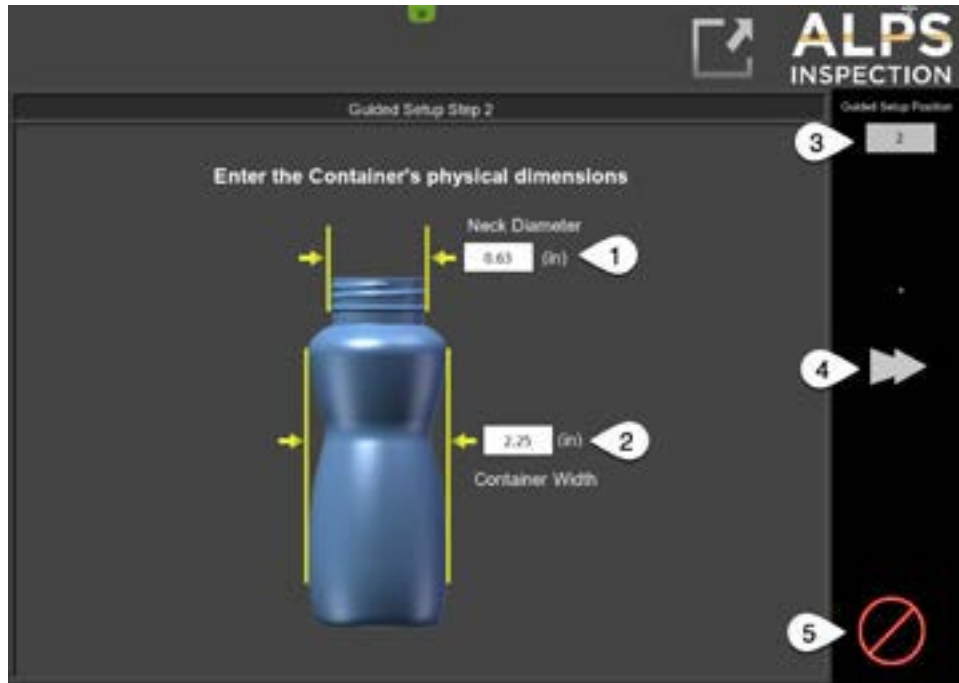


Figure 19: Settings Guided Setup_2

| Ref # | Term | Description |
|-------|----------------------------|--|
| 1 | Neck Diameter | Defines the widest part of the Neck |
| 2 | Container Width | Defines the widest part of the Container |
| 3 | Guided Setup Step count | Indicates which step the Guided Setup is at currently |
| 4 | Page Scroll Forward Button | Page scroll available once a valid Neck and Container Width is entered |
| 5 | Cancel or Abort button | Cancels the Guided Setup; located on each Guided Setup page |

6. Press the forward button (4) to advance to the next screen.
7. A pre-defined probe force will be present based on the neck diameter.

NOTE: The 12 lb. setting may change due to the neck diameter.



Figure 20: Settings Guided Setup_3

| Ref # | Term | Description |
|-------|----------------------------|---|
| 1 | Page Scroll Button Reverse | Steps the Guided Setup back to previous screen |
| 2 | Probe Force Entry | Enter the amount of Force to be applied to the Container |
| 3 | Guided Setup Step count | Indicates which step the Guided Setup is at currently |
| 4 | Page Scroll Forward Button | Will advance to the next Guided Setup Step |
| 5 | Cancel or Abort button | Cancels the Guided Setup; located on each Guided Setup page |

8. Press the forward button (4) to advance to the next screen.



Figure 21: Settings Guided Setup_4

9. Press the green start button (7) to check the pressure.
10. If the "Max Fill Time Out" appears, be sure the bottle is a good container and directly under the Probe Cylinder.



Figure 22: Settings Guided Setup_4a**



Figure 23: Settings Guided Setup_4b**

| Ref # | Term | Description |
|-------|------------------------------------|---|
| 1 | Fill Time | Amount of Fill Time (seconds) |
| 2 | Fill Pressure | Amount of Fill Pressure available. I.e. see Pressure Regulator |
| 3 | Max Peak Pressure Range | Maximum Allowable Peak Pressure |
| 4 | Peak Pressure | Tested/Actual Peak Pressure |
| 5 | Min Peak Pressure Range | Minimum Allowable Peak Pressure |
| 6 | Test Result | Test Result from previous test |
| | Pass, Fill Time-Out, Peak Pressure | Actual Result from previous test. Peak Pressure out of Range results in a non-test situation. |
| 7 | Start Manual Test Button | Activate Manual Test |
| 8 | Page Scroll Button Reverse | Steps the Guided Setup back to previous screen |
| 9 | Guided Setup Step count | Indicates which step the Guided Setup is at currently |
| 10 | Information Button | More Information / Help-screen available |
| 11 | Cancel or Abort button | Cancels the Guided Setup; located on each Guided Setup page |

If Peak Pressure is too Low, do the following;
1. Increase Fill Time, Fill Pressure, or Start Fill Time Pressure.

If Peak Pressure is too High, do the following;
1. Decrease Fill Time, Fill Pressure, or Start Fill Time Pressure.

If this does not work, the Pressure Limits can be adjusted accordingly.

Figure 24: Guide Setup Step 4 Help Screen

11. If the "Peak pressure is out of range" is displayed, adjustments to the pressure have been automatically established. When Peak Pressure comes back "out of range" press the green start button again and the QuickCheck will automatically make adjustment to the settings in the system to the correct settings and will display that the system is ready.

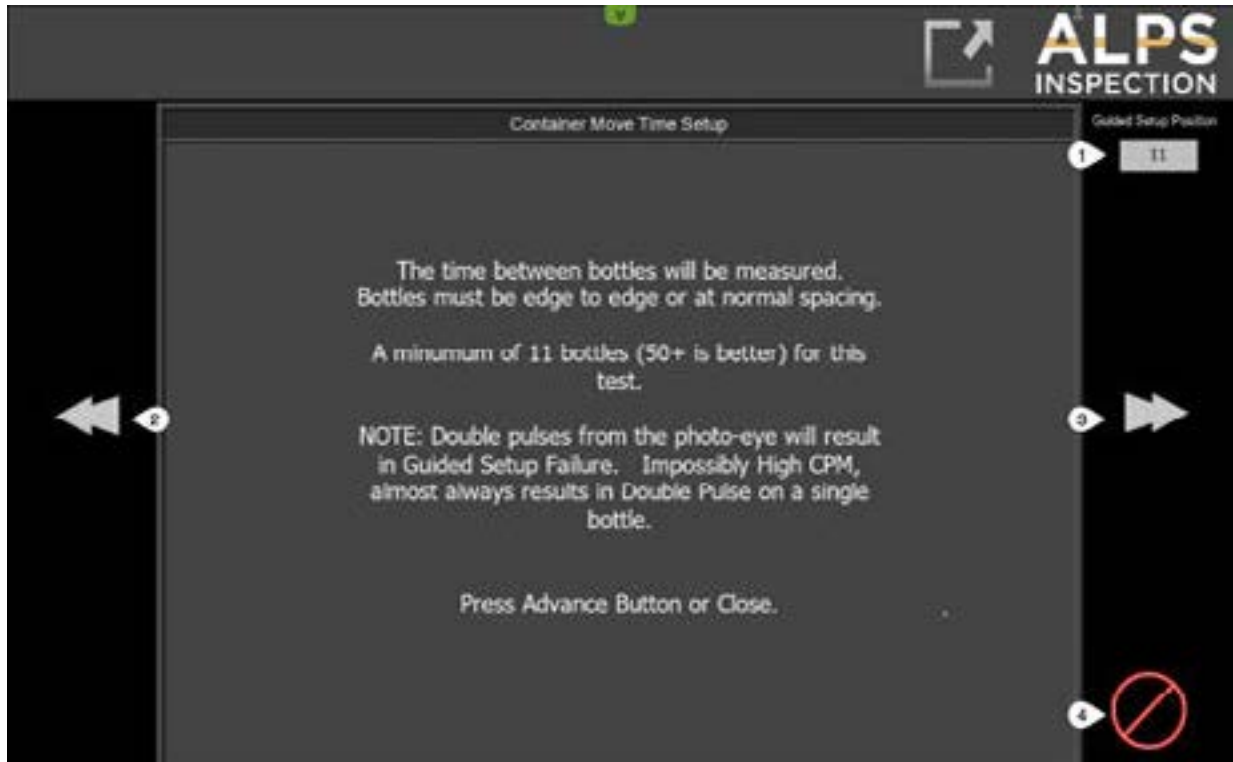


Figure 25: Settings Guided Setup_11**

| Ref # | Term | Description |
|-------|----------------------------|---|
| 1 | Guided Setup Step count | Indicates which step the Guided Setup is at currently |
| 2 | Page Scroll Button Reverse | Steps the Guided Setup back to previous screen |
| 3 | Page Scroll Forward Button | Will advance to the next Guided Setup Step |
| 4 | Cancel or Abort button | Cancels the Guided Setup; located on each Guided Setup page |

12. Once the pressure is correct press the forward button to advance to the next screen.
13. Press the Forward button to proceed.



Figure 26: Settings Guided Setup_5**

| Ref # | Term | Description |
|-------|----------------------------|--|
| 1 | Probe Extend Time(s) | From the Previous successful test, Probe Extend Time |
| 2 | Probe Retract Time(s) | From the Previous successful Test, Probe Retract Time |
| 3 | Fill Time(s) | From the Previous successful Test, Fill Time |
| 4 | Choke Neck Probe | If a Choke Probe is being used, press Choke Neck Probe. 0.080(sec) is added to the Probe Retract Time. |
| 5 | Guided Setup Position | Indicates which step the Guided Setup is at currently |
| 6 | Information Button | More Information / Help-screen available |
| 7 | Page Scroll Button Reverse | Steps the Guided Setup back to previous screen |
| 8 | Page Scroll Forward Button | Will advance to the next Guided Setup Step |
| 9 | Cancel or Abort button | Cancels the Guided Setup; located on each Guided Setup page |

If the optional choke neck feature is installed, this screen will auto calculate the settings.

14. Press the Forward button to proceed and to follow the screen prompts

15. Press the Forward or back buttons to navigate.

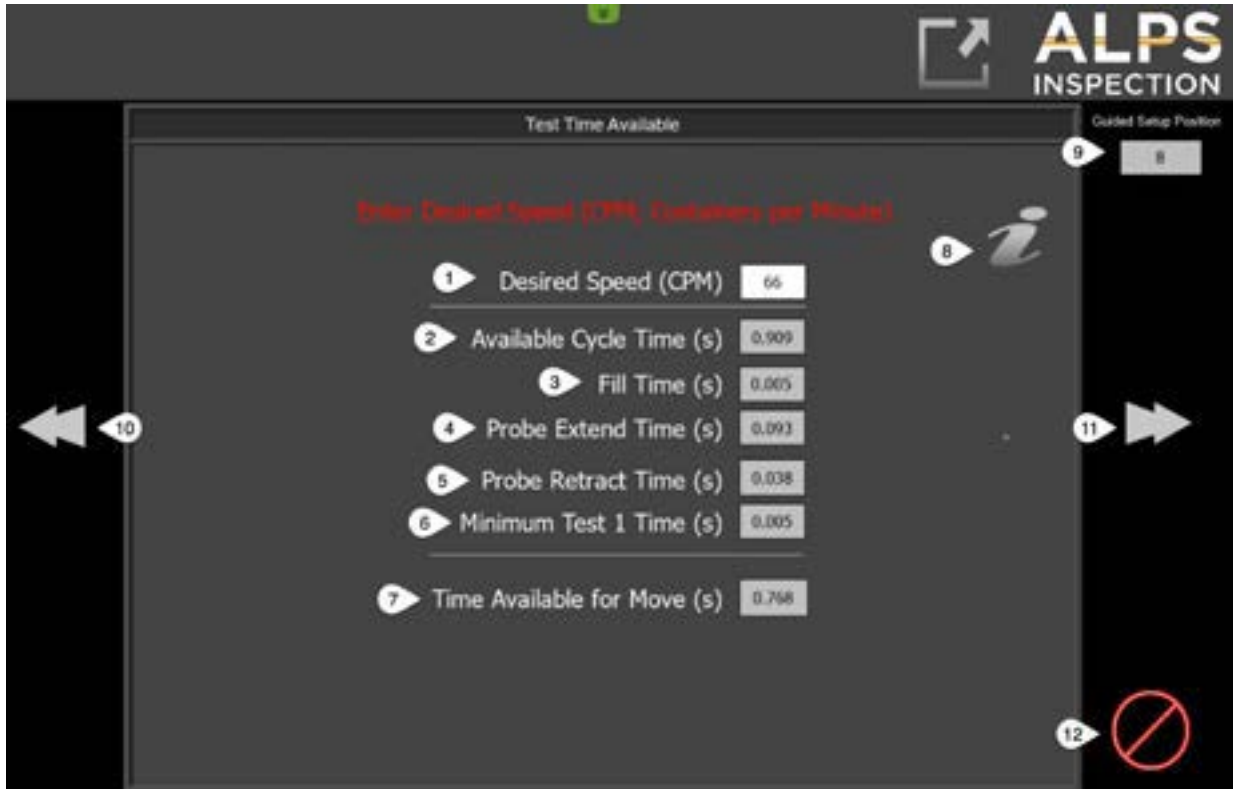


Figure 27: Settings Guided Setup_8**

| Ref # | Term | Description |
|-------|---------------------------------------|---|
| 1 | Desired Speed (Containers per Minute) | Enter the Desired Container per Minute. |
| 2 | Available Cycle Time (seconds) | Total Cycle time available (60 / CPM) |
| 3 | Fill Time | Container Fill Time per Test |
| 4 | Probe Extend Time (s) | Amount of time for the Probe to Extend. |
| 5 | Probe Retract Time (s) | Amount of time for the Probe to Retract. |
| 6 | Minimum Test 1 Time (s) | Allowable Test 1 (T1) Time. |
| 7 | Time Available to Move (s) | Maximum Allowable Container Movement time |
| 8 | Information Button | More Information / Help-screen available |
| 9 | Guided Setup Step count | Indicates which step the Guided Setup is at currently |
| 10 | Page Scroll Button Reverse | Steps the Guided Setup back to previous screen |
| 11 | Page Scroll Forward Button | Will advance to the next Guided Setup Step |
| 12 | Cancel or Abort button | Cancels the Guided Setup; located on each Guided Setup page |

16. Enter in desired containers per minute (1).. Box (7) will display the calculated time available to move.

17. Press the Forward button to proceed .

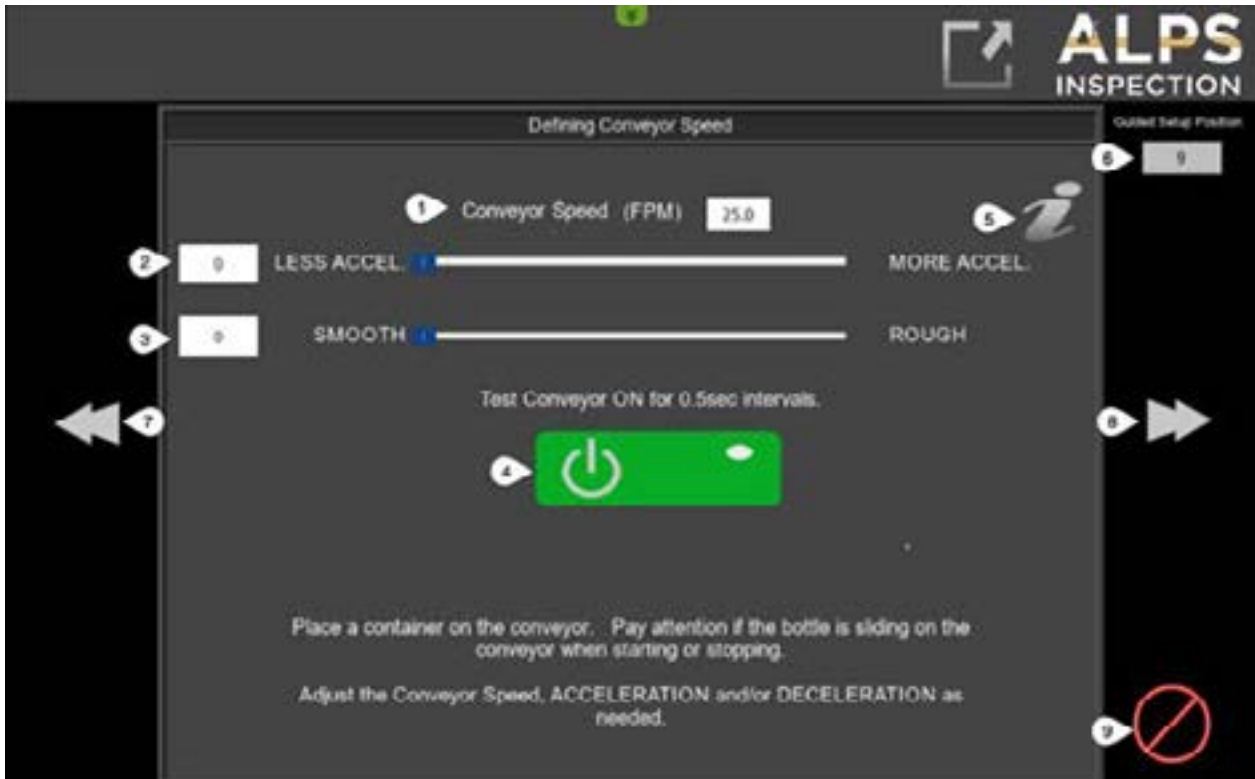


Figure 28: Settings Guided Setup_9**

| Ref # | Term | Description |
|-------|---------------------------------------|--|
| 1 | Conveyor Speed | Conveyor Speed Starting point. This value can be increased or decreased. |
| 2 | Conveyor Accel / Decel Conveyor Rates | Defines the Acceleration and Deceleration of the Conveyor. |
| 3 | Conveyor Jerk Rates | Defines the Jerk Rate of the Conveyor. |
| 4 | Conveyor Start Button | Starts the Conveyor Moving on 0.5sec intervals. |
| 5 | Information Button | More Information / Help-screen available |
| 6 | Guided Setup Step count | Indicates which step the Guided Setup is at currently |
| 7 | Page Scroll Button Reverse | Steps the Guided Setup back to previous screen |
| 8 | Page Scroll Forward Button | Will advance to the next Guided Setup Step |
| 9 | Cancel or Abort button | Cancels the Guided Setup; located on each Guided Setup page |

18. The defining conveyor speed screen will display. Use the settings on this screen to control the “jerk Motion” of the bottles. If the bottles keep moving and tipping, reduce the acceleration and smoothness.
19. Press the green start button (4) and observe the conveyor to see if the bottles are moving off center or tilting from the speed of the conveyor and the start/stop motion. Adjust accordingly with sliders (2&3).
20. Press the Forward button to advance to the Photo Eye set up screen.

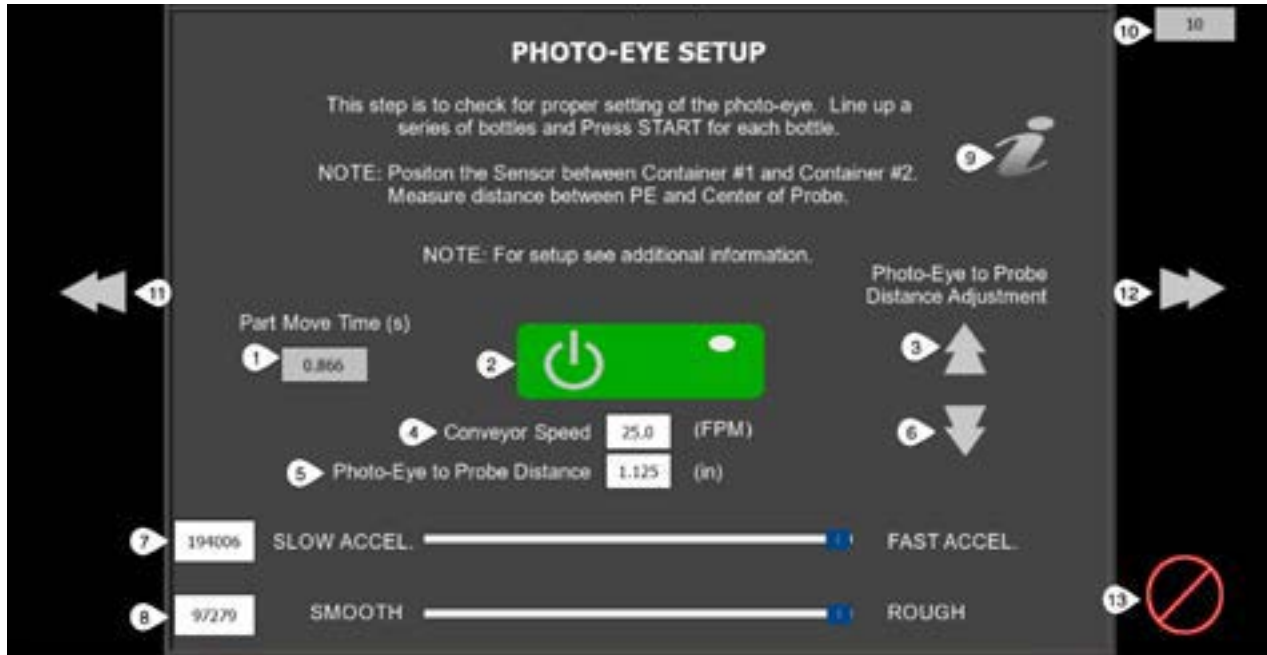


Figure 29: Settings Guided Setup_10**

| Ref # | Term | Description |
|-------|--|--|
| 1 | Maximum Part Move Time (s) | Maximum Available part move time from Guided Setup #8 |
| 2 | Start Photo Eye / Conveyor Test Button | Activates the Conveyor and will stop for each Container seen by the Photo-Eye. |
| 3 | Increase Photo-Eye Probe Distance Button | Increase Photo-Eye Probe Distance by 0.0.50" each time |
| 4 | Conveyor Speed | Desired Conveyor Speed |
| 5 | Photo-Eye to Probe Distance | Entry for Distance of Probe to Photo-eye |
| 6 | Decrease Photo-Eye Probe Distance Button | Decrease Photo-Eye Probe Distance by 0.0.50" each time |
| 7 | Conveyor Accel / Decel Rates | Defines the Conveyor's Acceleration & Deceleration Rate |
| 8 | Conveyor Jerk Rates | Defines the Conveyor Jerk Rates |
| 9 | Information Button | More Information / Help-screen available |
| 10 | Guided Setup Step count | Indicates which step the Guided Setup is at currently |
| 11 | Page Scroll Button Reverse | Steps the Guided Setup back to previous screen |
| 12 | Page Scroll Forward Button | Will advance to the next Guided Setup Step |
| | Cancel or Abort button | Cancels the Guided Setup; located on each Guided Setup page |

- Setting the Photo-eye and distance.
1. Place Container #1 under the Probe. Place Container#2 next to Container #1.
 2. Positon the Photo-eye Sensor between Container #1 and Container #2. Make sure the Photo-eye Sensor is not Active.
 3. Measure distance between PE and Center of Probe.
 4. Enter the measured value.
 5. Each Container should stop under the center of Probe. Adjust the Distance if required.

Figure 30: Information Button Screen

21. This screen is to line the bottle center to the probe using the fiber optic photo eye. Press the green start button (2) and observe where the bottle lands under the probe.
22. If the bottle is overshoots or under shoots the probe, use the up and down arrows (3&6)to adjust the speed accordingly to align the bottle each time the conveyor stops.
23. Press the forward arrow (12) to advance to the next screen.

NOTE: The photo eye starts and stops the conveyor based on the bottle passing in front of the eye. If the bottles are not aligned, they will be rejected continuously.

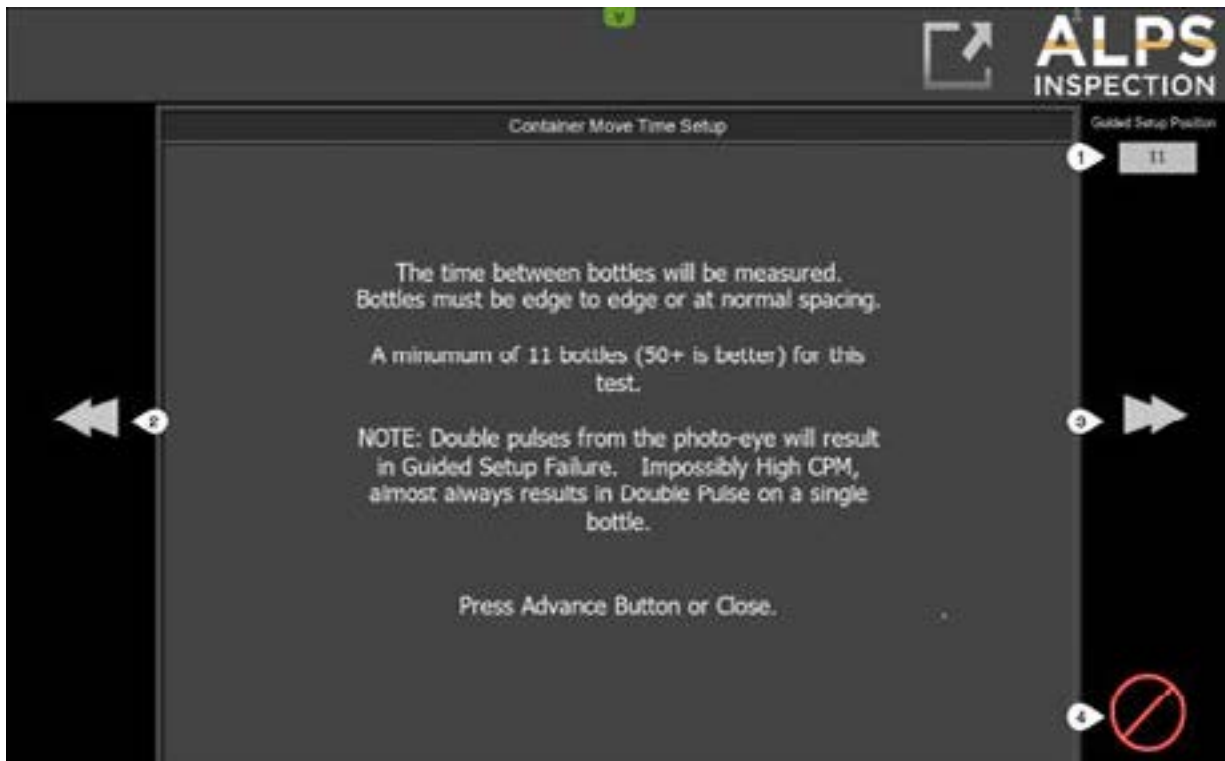


Figure 31: Settings Guided Setup_11**

| Ref # | Term | Description |
|-------|----------------------------|---|
| 1 | Guided Setup Step count | Indicates which step the Guided Setup is at currently |
| 2 | Page Scroll Button Reverse | Steps the Guided Setup back to previous screen |
| 3 | Page Scroll Forward Button | Will advance to the next Guided Setup Step |
| 4 | Cancel or Abort button | Cancels the Guided Setup; located on each Guided Setup page |

24. Set up 11-50 bottles on the conveyor to run a test. Press the forward arrow (3) to advance to the next screen.

25. This run will define the fastest move time.



Figure 32: Settings Guided Setup 12a**

26. Press the green start button (1) to start the test.



Figure 33: Settings Guided Setup 12b**

27. Once enough bottles have ran to test the time, a message will appear to stop the test.
28. Press the stop button (1) to stop the test.
29. If the test passes, green text will state that the test passes and the speed could be increased to speed up production if necessary. If red text appears the test has failed and the conveyor speed will need to be reduced and re-tested.

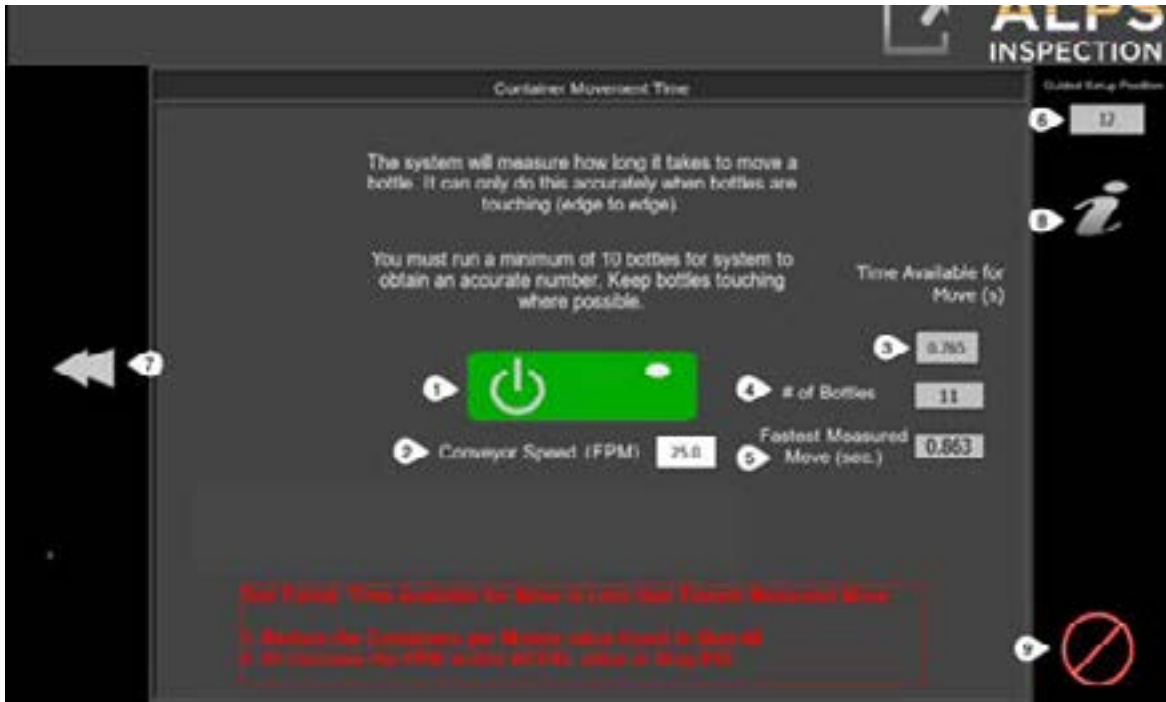


Figure 34: Settings Guided Setup 12c**



Figure 35: Settings Guided Setup 12d**

| Ref # | Term | Description |
|-------|--------------------------------------|--|
| 1 | Start/Stop Container Movement Button | Activates the Conveyor to determine the Minimum Conveyor Movement Time. |
| 2 | Conveyor Speed | Desired Conveyor Speed |
| 3 | Time Available to Move (s) | Maximum Allowable Move Time as found on Step #8 |
| 4 | # Of Bottles | Number of Containers Tested for Quickest Move Time |
| 5 | Fastest Measured Move time (s) | Displays the Fastest Move Time. This time must be less than the Maximum Allowable Move Time. |
| 6 | Guided Setup Step count | Indicates which step the Guided Setup is at currently |
| 7 | Page Scroll Button Reverse | Steps the Guided Setup back to previous screen |
| 8 | Information Button | More Information / Help-screen available |
| 9 | Cancel or Abort button | Cancels the Guided Setup; located on each Guided Setup page |
| 10 | Page Scroll Forward Button | Will advance to the next Guided Setup Step |

30. Press the forward arrow to advance to the next screen.

31. Press the forward arrow to advance to the next screen.

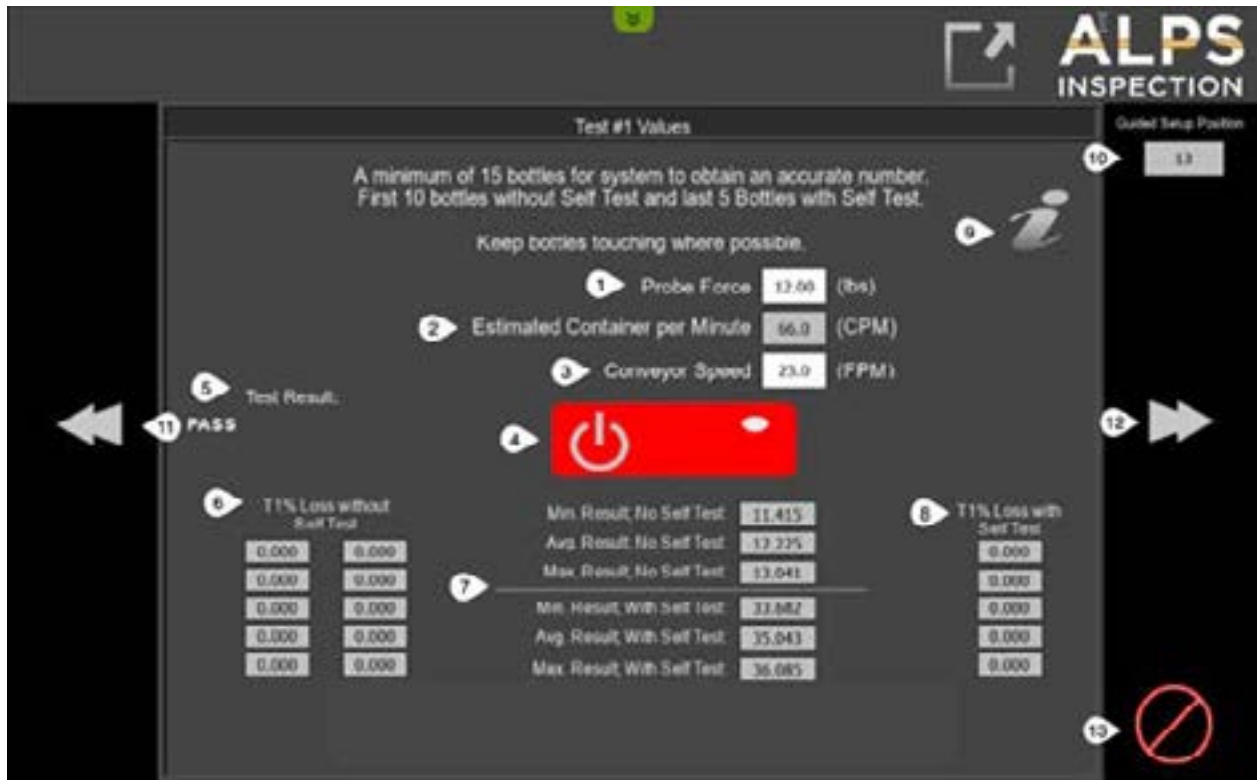


Figure 36: Settings Guided Setup 13**

32. To complete the guided set up, a final test using 15 proven bottles must be performed to test all systems and to arbitrarily reject a test bottle to prove functionality.

33. Once the bottles are set up for the test. Press the green start button (4) to start the test and the button will turn red while the test is being performed.

34. Once the test is complete, a pass or fail screen will appear with text at the bottom of the screen. Red is fail, green is pass.

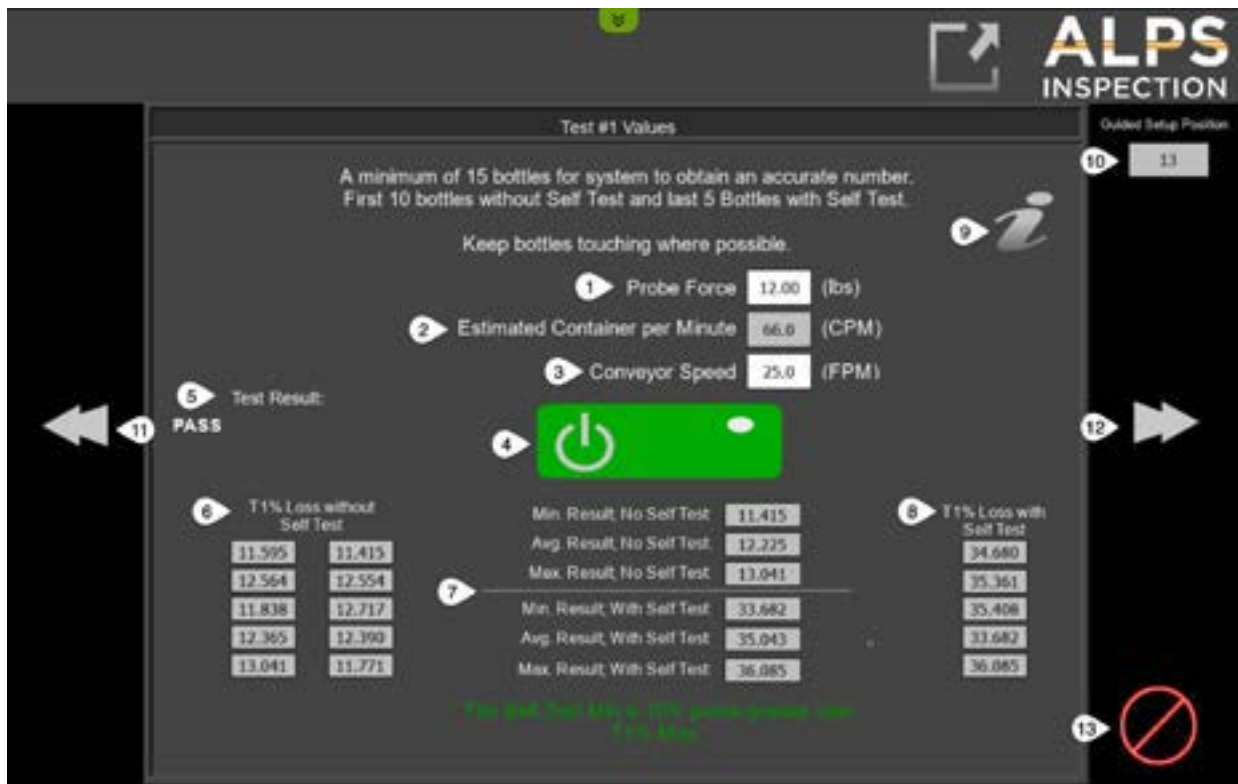


Figure 37: Settings Guided The Self Test Pass Screen**

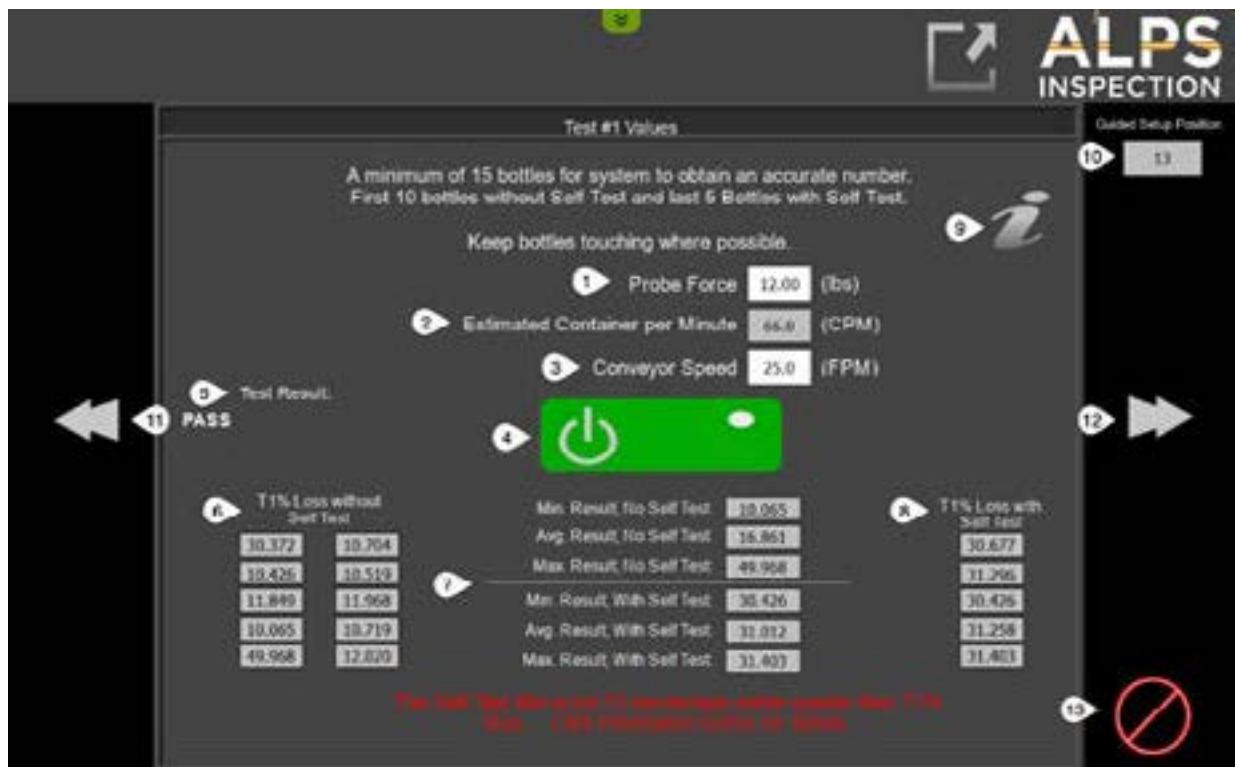


Figure 38: Settings Guided Self Test Fail Screen**

| Ref # | Term | Description |
|-------|--------------------------------------|--|
| 1 | Probe Force (lbs) | Amount of pressure applied to the Neck of the Container. |
| 2 | Estimated Container per Minute (CPM) | Estimated Container per Minute based on Conveyor speed and Containers Tested. |
| 3 | Conveyor Speed (FPM) | Desired Conveyor Speed |
| 4 | Start/Stop T1 Test | Activates/Deactivates |
| 5 | Test Result | Result of the last Container Tested. |
| 6 | T1% Loss WITHOUT Self Test | 10 tests are performed Without Self Test and the Results are listed accordingly. |
| 7 | Min Result; No Self Test | Of the 10 test of NO Self Test, this is the Minimum Result. |
| | Ave Result; No Self Test | Of the 10 test of NO Self Test, this is the Average Results |
| | Max Result; No Self Test | Of the 10 test of NO Self Test, this is the Maximum Result. |
| | Min Result; With Self Test | Of the 5 test of WITH Self Test, this is the Minimum Result. |
| | Avg Result; With Self Test | Of the 5 test of WITH Self Test, this is the Average Result. |
| | Max Result; With Self Test | Of the 5 test of WITH Self Test, this is the Maximum Result. |
| 8 | T1% Loss WITH Self Test | 5 tests are performed With Self Test and the Results are listed accordingly |
| 9 | Information Button | More Information / Help-screen available |
| 10 | Guided Setup Step count | Indicates which step the Guided Setup is at currently |
| 11 | Page Scroll Button Reverse | Steps the Guided Setup back to previous screen |
| 12 | Page Scroll Forward Button | Will advance to the next Guided Setup Step |
| 13 | Cancel or Abort button | Cancels the Guided Setup; located on each Guided Setup page |

If the Test has Failed:

1. Rerun the test again.
2. If Result of "T1% Without Self Test" is 25% or greater on average, then increase the Probe Pressure in Step #3.
 - 2a. Re-run test again.
3. If T1% Loss with Self Test is not at least 10% points above T1% Loss, then;
 - 3a. Increase the Probe Pressure.
 - 3b. Increase the Conveyor parameters to decrease the Bottle to Bottle Move time. This will allow for a longer T1 Time.
 - 3c. Or increase Self Test Orifice size.
 - 3d. Re-run test again.

Figure 39: Guide Setup Step 13 Help Screen

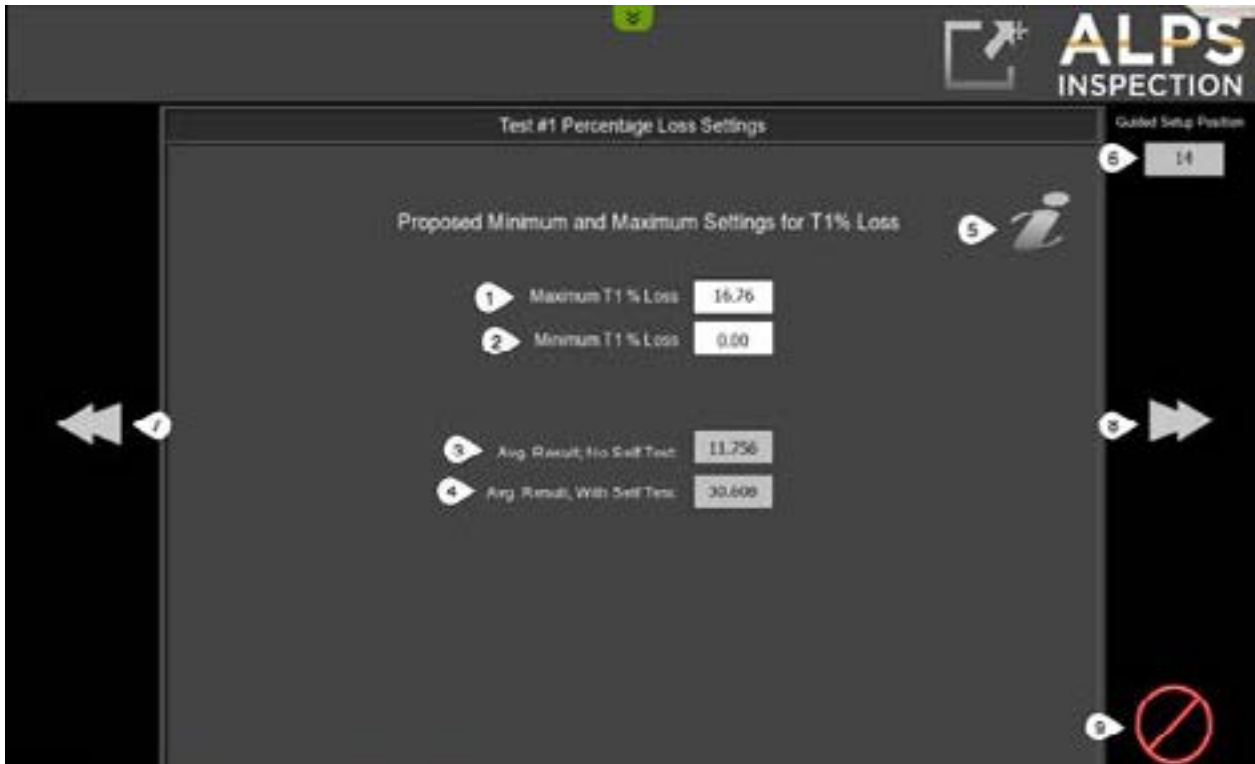


Figure 40: Settings Guided 14

| Ref # | Term | Description |
|-------|----------------------------|---|
| 1 | Maximum T1 % Loss | The calculated and proposed Maximum T1% setting. |
| 2 | Minimum T1% Loss | The calculated and proposed Minimum T1% setting. |
| 3 | Avg Result_ No Self Test | Information Only; Average T1% Loss Without Self Test Result |
| 4 | Avg Result_ With Self Test | Information Only; Average T1% Loss With Self Test Result |
| 5 | Information Button | More Information / Help-screen available |
| 6 | Guided Setup Step count | Indicates which step the Guided Setup is at currently |
| 7 | Page Scroll Button Reverse | Steps the Guided Setup back to previous screen |
| 8 | Page Scroll Forward Button | Will advance to the next Guided Setup Step |
| 9 | Cancel or Abort button | Cancels the Guided Setup; located on each Guided Setup page |

NOTE:

1. To ensure that a bad container is Rejected, be sure that the Max setting is between the Average T1% Loss and Self-Test T1% Loss setting.

Figure 41: Guide Setup Step 14 Help Screen



Figure 42: Settings Guided final Screen

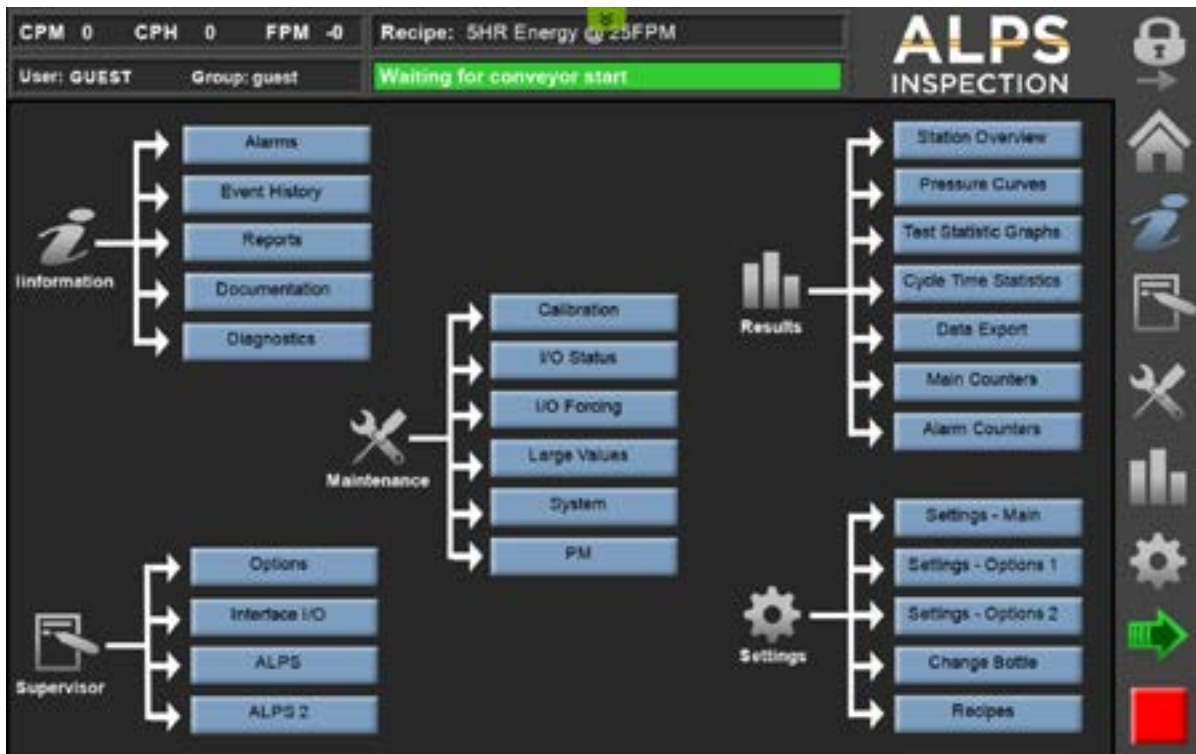
| Ref # | Term | Description |
|-------|----------------------------|---|
| 1 | Guided Setup Step count | Indicates which step the Guided Setup is at currently |
| 2 | Page Scroll Button Reverse | Steps the Guided Setup back to previous screen |
| 3 | Page Scroll Forward Button | Will advance to the next Guided Setup Step |
| 4 | Cancel or Abort button | Cancels the Guided Setup; located on each Guided Setup page |

35. Test is complete.

14 How to Edit Settings with the HMI

Test setting values that were loaded from a recipe or entered randomly may need to be changed from time to time. To save any changes made refer to the Recipe Menu section.

The following is the HMI navigation screen:



14.1 Changing settings and values

Leak test production by the QuickCheck requires proper settings. The Settings Menu is where all the settings for production are viewed and edited. Boxes that are white can be selected and new values entered. All screens can be viewed and their respective functionality in the HMI Navigation guide in the back of this manual. To access a settings screen, press the settings icon.



Figure 43: Settings Options

| Labels | | |
|--------|---|---|
| 1 | Accu-Height Result | |
| a | Last 10 Results (in) | Displays the last 10 Results of the Accu-Height. |
| b | Last 100 Stats : Max. /Avg. / Min. (in) | Displays the Maximum, Minimum, and Average Accu-Height valve of the last 100 results. |
| c | Clear Arrays | Clears all 100 of the Accu-Height array values |
| d | Graph Image | Button to show a graph of the Accu-Height results |
| 2 | Accu-Height Setup | |
| a | Accu- Height Too High Count | Counter for Accu-Height Too High Failures |
| b | Accu-Height Too Short Count | Counter for Accu-Height Too Short Failures |
| c | Calibration: Max (in) | Accu-Height Maximum limit |
| d | Calibration; Bottle Height | Accu-Height Known Container |
| e | Calibration: Min (in) | Accu-Height Minimum limit |
| f | Actual (in) | Accu-Height Actual Container height |
| g | Calibrate button | |
| 3 | Down Bottle; Option | |

| Labels | | |
|--------|---------------------------------|---|
| a | Down Bottle PE Debounce (s) | Timer for Down Bottle PE Debounce, Prevents a double trigger. |
| b | Down Bottle Delay Timer (s) | Delays the Down Bottle Reject Blow-off |
| c | Down Bottle Blow Pulse Time (s) | Time duration of the Down Bottle Reject Blow-off |
| d | Down Bottle Duration Time (s) | The Time the Down Bottle takes to pass in front of the PE. |
| e | Down Bottle PE | Input of the Down Bottle Photo-Eye Sensor |
| f | Alarm Mode | Activate an Alarm Warning or No Alarm Warning |
| 4 | Diverter; Option | |
| a | Parts Before Diverting | The number of containers remaining before switching the Diverter Gate. |
| b | Current Diverter Count | Current number of Containers counted. |
| c | Counter Reset | Reset the Diverter Count |
| d | Photo-eye Re-Arm (s) | The amount of time lapse prior to re-activating the Photo-eye. To prevent double trigger. |
| e | Diverter Eye Input | Diverter Photo-Eye sensor input signal |
| f | Gate Output | Diverter Gate Solenoid output signal |
| 5 | Down-stream Jam Timer; Option | |
| a | Downstream Jam PE Delay (s) | Amount of Time the Sensor is ON, before Downstream Jam is activated |
| b | Downstream Jam PE OFF Delay (s) | Amount of Time the Sensor is OFF, before Downstream Jam PE Delay is enabled. |
| c | Downstream Jam PE Input | Downstream Jam PE input signal |
| 6 | Reject Verification; Option | |
| a | Reject Verification Time (s) | Amount of time allowed for the Rejected Container to pass the Photo-eye. |
| b | Last Reject Elapsed Time (s) | Amount of time the previous Rejected Container took to pass the Photo-eye. |
| c | Chute Intrusion Alarm | Chute Intrusion Alarm option looks for the Reject Verification PE to ON too long. |

Steps to change values:

1. Press on any white value box and the appropriate keyboard will appear.
2. Enter the new value and press ENTER.

If a user does not have access, a red lock icon will popup.

If a user does not have access to a setting, a red lock will appear and no changes can be entered

The allowable minimum and maximum values are displayed in the following tables. Exceeding MAX and MIN limits is not permissible. Use the popup keyboard to make any changes



Figure 44: Settings_Testing Settings

| Labels | | |
|----------------|--------------------------|---|
| 1 | Test Settings | |
| Test Settings | | |
| a | Fill Time(s) | Amount of time the Fill Valve will remain ON after the Start Fill Time Pressure is achieved |
| b | Test Time 1 (s) | Amount of time the TEST TIME #1 is active after the FILL TIME is achieved |
| c | Max Fill Time(s) | Maximum time allowed for the START FILL TIME PRESSURE to be achieved |
| d | Probe Retract(s) | A fixed time for the PROBE RETRACT |
| Test Limits | | |
| e | Minimum T1% Loss | Actual T1% must exceed this limit |
| f | Maximum T1% Loss | Actual T1% must not exceed this limit |
| Test Pressures | | |
| g | Minimum Peak Pressure | Actual Peak Pressure must exceed this limit |
| h | Maximum Peak Pressure | Actual Peak Pressure must not exceed this limit |
| i | Start Fill Time Pressure | The point of when a good seal is reached and the FILL TIME begins |

| Labels | | |
|--------|--------------------------------------|---|
| j | Probe Force (Pounds) | FOR ELECTRONIC REGULATORS ONLY. Setting for the amount of force applied to the container |
| k | Fill Pressure (psi) (Reference Only) | FOR ELECTRONIC REGULATORS ONLY. Setting for the amount of Air Pressure applied to the container |
| 2 | Conveyor Speed | |
| a | Desired Speed | Desired Conveyor Speed |
| b | Potential Container / Minute (CPM) | Takes the Minimum Test-To-Test time and Calculates the Containers per Minute. |
| c | Conveyor Stop Time (s) | Amount of time when NO Containers are seen, a Stop command is issued. |
| d | Conveyor Stop Time Remaining (s) | Amount of time remaining before the Conveyor will Stop. |
| 3 | General Settings | |
| a | Reject Pulse Time (s) | Amount of time the Reject Cylinder / Blow-off is ON. |
| b | PE to Probe Distance (s) | Amount of Distance between the Part Present Photo-eye and Center of Probe. |
| c | Bottle Debounce (s) | Amount of Time the Part Present Photo-eye will re-set. |
| d | PE ON Too Long (s) | Amount of Time the Part Present Photo-eye is ON before an Alarm is triggered. |
| e | PE OFF Too Long (s) | Amount of Time the Part Present Photo-eye is OFF before an Alarm is triggered. |
| 4 | Conveyor Motor Settings | |
| a | More Accel | Conveyor settings for Acceleration / Deceleration. |
| b | Less Accel | Conveyor settings for Acceleration / Deceleration. |
| c | Rough | Conveyor settings for Jerk. |
| d | Smooth | Conveyor settings for Jerk. |

15 HMI Navigation and Information

HMI Serial Number Location

This manual will use an existing machine setup to illustrate typical machine HMI navigation. Each screen illustrated may or may not be applicable to each installation. Each HMI is identified with an ID and Serial Number that can be accessed on the home screen along with the current firmware version. The below illustration identifies the location of the HMI information including the IP addresses.

15.1 Screen Navigation

On the right side of the HMI screen are the navigation icons. Touching each icon will execute a popup screen to aid in navigating through the system. Each popup will have a screen menu. Press on any of the menu items to access that screen or press any one of the listed menus to go to the desired screen.

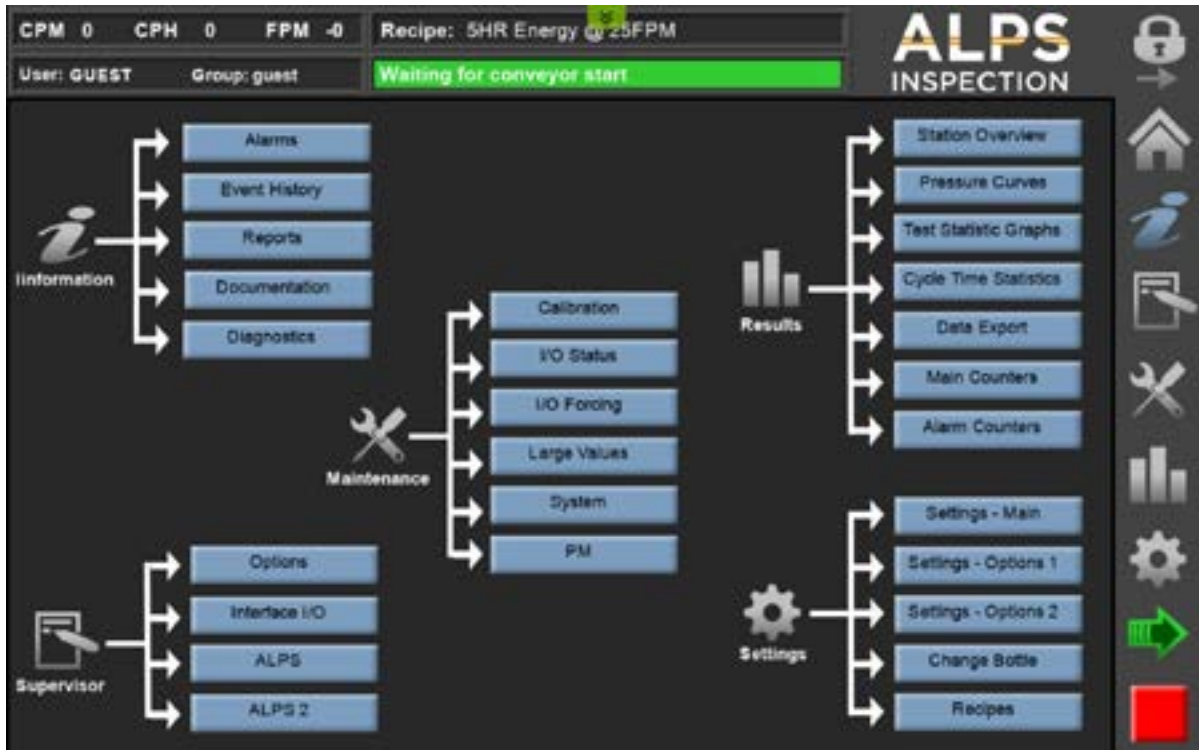


Figure 45: HMI Navigation Flowchart

15.2 Home Screen

The Home Screen shows the current production information and status of the last 10 tests.



Figure 46: Home Screen

| Label | | |
|-------|----------------------|---|
| 1 | Counters | |
| 2 | All Station Counters | |
| a | Total | Total containers tested on machine, does not include the self test |
| b | Accepted | Total containers accepted on machine, does not include the self test |
| c | Rejected | Total containers rejected on machine, does not include the self test |
| d | Reject % | Total containers rejected percentage on machine, does not include the self test |
| e | Alarm Count | Total alarm count since the last reset |
| 3 | Self Test Counter | |
| a | Total | Total self tests performed. |
| b | Passed | Total self tests passed. |
| c | Rejected | Total self tests rejected |
| d | Reject % | Total self test reject percentage. Should be 100%. |
| 4 | Recent Test Results | |
| 5 | Head | Current head number for previous test |
| 6 | Test Result | Current test results for previous test; pass or 'reason for failure' |

| Label | | |
|-------|---------------------|--|
| 7 | T1% Loss | Current value of T1% Loss for the previous test |
| 8 | Peak | Current value of Peak Pressure (inches of H2O) for the previous test |
| 9 | End T1 | Current value of T1 End Pressure for the previous test. |
| 10 | Test t | Current value of test time for the previous test. |
| 11 | Avail. Time | N/A for the QuickCheck |
| 12 | Machine Information | |
| 13 a | Version | Current software version. |
| b | Serial # | Leak tester serial number |
| c | PLC IP Address | Current PLC's IP address |
| d | HMI IP Address | Current HMI's IP address |
| e | WIFI Address | Wifi Network Address |
| f | Date & Time | Current Date |
| 14 | Recent Rejects | |
| 15 | Reject | Display of the last (4) rejects |
| 16 | Test Result | Test result display of the last (4) rejects in perspective of which head; pass or ' reason for failure'. |
| 17 | T1% Loss | T1% Loss display of the last (4) rejects in perspective of which head |
| 18 | Peak | Current value of Peak Pressure (inches of H2O) for the previous test |
| 19 | End T1 | Current value of T1 End Pressure for the previous test |
| 20 | TOD | Time of display |



Figure 47: QuickCheck Home Screen

Creating new table



Figure 48: Home Screen 2

| Label | | |
|-------|-------------------------|-----------------------------|
| 1 | Hourly Totals | |
| 2 | Total Accepts Per Hour | |
| 3 | Total Rejects Per Hours | |
| 4 | Reject % Per Hour | |
| 5 | CPM | Containers per Minute graph |

15.3 HMI Alarm Counter Screen

The Alarm Counter will keep track of how many times the various alarms may have occurred.

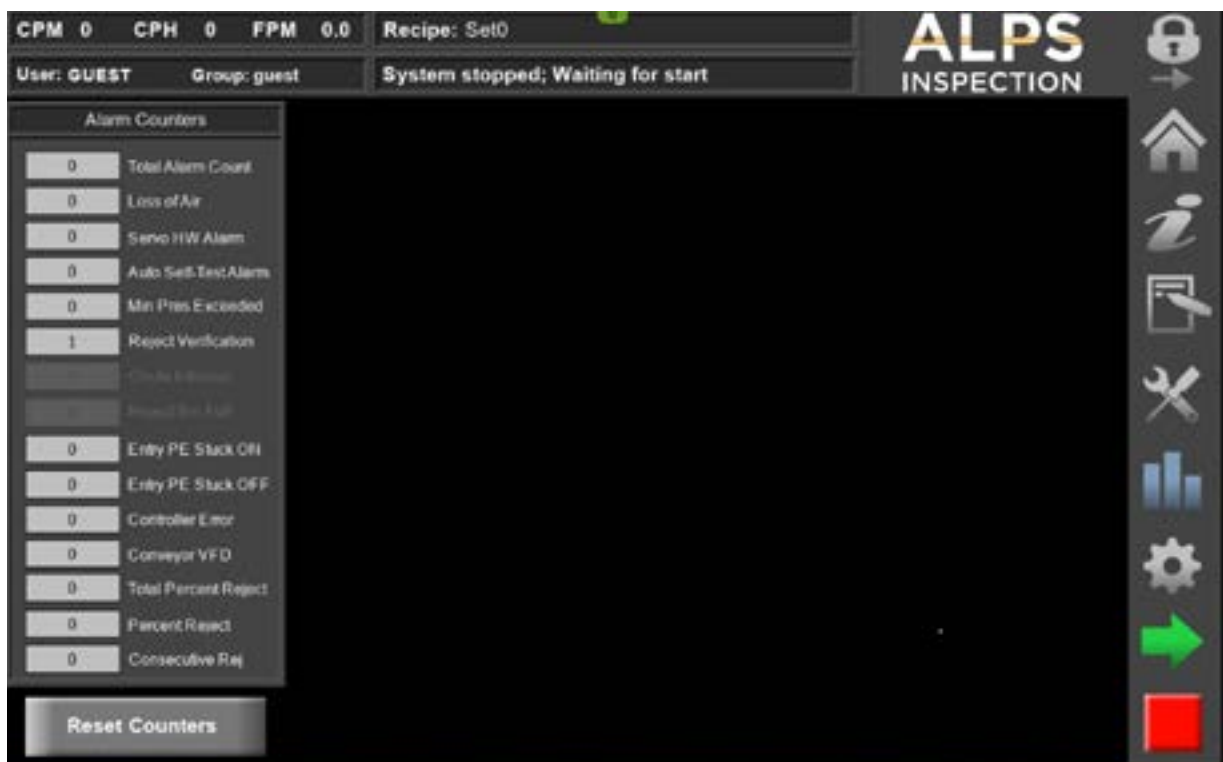


Figure 49: Alarm Counter Screen

Creating new Table

15.4 Alarm Screen

The Alarm Log will keep a record of all alarms that occurred and include time and date stamp. From any screen press the INFORMATION button to access the alarm screen.



Figure 50: Alarms Screen

| Label | | |
|-------|----------------|---------------------------------------|
| 1 | Alarm Reset | Home Screen / Reset the active alarms |
| 2 | Name | Alarm name |
| 3 | Time | Time the alarm occurred |
| 4 | Description | Description of posted alarm |
| 5 | From: - To: | Time period of alarm history |
| 6 | Alarms History | Title of this block |
| 7 | Duration | Time period alarm history |
| 8 | Refresh | To refresh the alarm history |
| 9 | Backward | Alarm history page scroll; backwards |
| 10 | Clear Buffer | Clear alarm history |
| 11 | Forward | Alarm history page scroll; forward |

The next screen will display events that are recorded whenever a change is made or login or logout occurs.

15.5 How to use Alarm Log

The Alarm Counter will keep track of how many times the various alarms may have occurred. The Alarm Log will keep a record of all alarms that occurred and include time and date stamp. From any screen press the results icon and select Alarm Counters to access the alarm screen.

Alarm Log provide a detailed list real time machine alarms. To access the alarm log that will display each event, press the information icon and choose Alarms.

There are four options icons use:

1. Alarm reset can be pressed when the cause of the alarm has been corrected.
2. Warning can be reset by may reactivate if there is an impending issue.
3. Duration can be changed from 1 minute to 4 weeks.
4. Clear buffer will remove all the alarm history.
5. Forward and backward will navigate to additional alarms over the course of time that they are saved in the buffer.

15.6 Diagnostics Results

The container pressure should stabilize and remain constant. When the Self-Test is administered the container should lose pressure, assuming all test valves and air pressure is functioning properly. However, if the container does not maintain pressure consider the following:

1. Probe pressure is not high enough to seal container
2. The durometer of the seal is not sufficient for the container consider changing it to softer or harder durometer
3. Container is misaligned with test probe

To save externally, select either export to usb or view report and save.

15.7 Event History



Figure 51: Event History

| 1 | From: - To: | Time period of event history |
|----|---------------|---|
| 2 | Event History | Title of this block |
| 3 | Duration | Time period of the search |
| 4 | Refresh | Refresh the search |
| 5 | Column Filter | Select a filter to near the search |
| 6a | Record ID | Record number |
| b | Time Stamp | Time stamp of event |
| c | User Name | Operator or technician that is logged in |
| d | Operation | Event performed by the operator or technician |
| e | Information | Which tag was changed |
| 7 | Backward | Which tag was changed |
| 8 | Clear Buffer | Clear event log |
| 10 | Forward | Event page scroll; forward |

16 Running QuickCheck Reports and Documents

Navigate to the Reports Screen. System reports are generated from the Diagnostics screen and the Reports screen. Reports can be viewed on screen or saved to an external memory device or file. To generate a report, press the generate report icon. A generating report popup will appear.

16.1 HMI Reports Screen



Figure 52: Reports

| Label | | |
|-------|------------------------|--|
| 1 | Shift Setup | |
| 2 | Shift Enable | Select to enable shift report |
| 3 | End Time | Time period of when the report will end |
| 4 | Report Duration | Time period of report |
| 5 | Production Report | |
| 6 | Days | Select which day to generate a report |
| 7 | Custom Report Duration | Custom report based on this time period |
| 8a | Generate Report | Using the custom report duration, a report will be generated |

| Label | | |
|-------|----------------------|--|
| b | Export Report to USB | The generated report will be exported to USB device. |
| c | Email Report | The generated report will be emailed |
| d | View Report | The generated report can be viewed |
| 9 | Alarm Reports | |
| 10 | Events Report | |

16.2 Results CVS Data Export



| Labels | | |
|--------|---------------------------|-------------------------------|
| 1 | USB Export | |
| a | Export Production Log | Export production log to USB |
| b | Export Head 1 Accepts Log | Export head adepts log to USB |
| c | Export Rejects Log | Export reject log to USB |
| d | Export Alarm Log | Exports alarm log to USB |
| e | Export Event Log | Exports event log to USB |
| 2 | HMI Memory Export | |

| Labels | | |
|--------|---------------------------|--------------------------------------|
| a | Export Production Log | Exports production log to HMI memory |
| b | Export Head 1 Accepts Log | Exports Head 1 Accepts to HMI memory |
| c | Export Rejects Log | Exports Rejects log to HMI memory |
| d | Export Alarm Log | Exports Alarm log to HMI memory |
| e | Export Event Log | Exports Event log to HMI memory |
| 3 | Delete Data | |
| a | Clear Production Log | Clears the Production log |
| b | Clear Head 1 Accepts Log | Clears the Head 1 Accepts log |
| c | Clear Head 1 Rejects Log | Clears the Head 1 Rejects log |
| d | Clear Alarm Buffer | Clears the Alarm buffer |
| e | Clear Event Buffer | Clears the Event buffer |

16.3 Documentation Screen



Figure 53: Documentation

| Label | | |
|-------|------------------|---|
| 1 | Hardware Manuals | List of pertinent PDF hardware information. |

| Label | | |
|-------|--------------|------------------------------------|
| 2 | ALPS Manuals | List of pertinent PDF user manuals |
| 3 | Drawings | List of pertinent PDF drawings |

16.4 Diagnostic Overview

16.5 Diagnostics

Ideally Station Diagnostic is a great tool to check if the test probe is sealing the container properly. In addition to this, it can help in determining if test probe valves are functioning properly.

16.6 How to use Diagnostic Screen

1. Stop production flow of containers into the QuickCheck.
2. Status should say: System Stopped: Waiting for Run Button.
3. Place container under test probe for desired station to test.
4. If applicable for insight view reject and reject % production.
5. Select Probe Valve Output and hold.
6. Probe Valve should extent.
7. If available AUX 1 and 2 should toggle.

16.7 Station Diagnostics

The System Diagnostics allows the operator to view pertinent information pertaining to the system and to generate a report of current performance.



Figure 54: Diagnostics Generate Report Updating numbers

| Label | | |
|-------|---------------------------|---|
| 1 | PLC Information | |
| 2 | PLC Error Code | Error code produced by the PLC |
| 3 | EtherCat Error Code | Error code produced by ethercat network |
| 4 | NX IO Bus Error Code | Error code produced by NX I/O BUS |
| 5 | Motion Control Error Code | Error code produced by motion control |
| 6 | Ethernet I/P Error Code | Error code produced by ethernet IP |
| 7 | Non-Interrupt | |
| a | Last Scan Time | Previous PLC scan time |
| b | Minimum Scan Time | PLC's minimum scan time |
| c | Maximum Scan Time | PLC's maximum scan time |
| d | Exceeded Count | How many times the PLC scan time exceeded the maximum scan time |
| 8 | Interrupt | |
| a | Last Scan Time | Previous PLC scan time |
| b | Minimum Scan Time | PLC's minimum scan time |

| Label | | |
|-------|-------------------------|--|
| c | Maximum Scan Time | PLC's maximum scan time |
| d | Exceeded Count | How many times the PLC scan time exceeded the maximum scan time |
| 9 | HMI Information | |
| a | Available System Memory | Available HMI Memory |
| b | Free flash Memory | Total free flash memory of HMI |
| c | Total Up Time (hours) | Total HMI run time hours |
| d | Back-light Time (hours) | Total back-light hours of HMI |
| e | USB Free Space | Free space of USB drive |
| f | USB Total Space | Total space of USB device |
| g | OS Version | Operating system version |
| h | Runtime Version | Exit firmware version |
| 10 | Diagnostic Report | |
| 11 | Generate Report | Selecting this tab will generate a report. This may take several minutes to complete |
| 12 | Export Report To USB | Export report to USB device |
| 13 | View Report | View generated report on HMI screen |

16.8 System Options Overview and Interface I/O

To access the system options overview screen press the supervisor icon. From the navigation menu select options.

16.9 Options Screen



Figure 55: Supervisor Options

NOTE: All options, Green is ON and Gray is OFF

| Labels | | |
|--------|------------------------|---|
| 1 | Options | |
| a | Reject Verification | Activate Reject Verification Option |
| b | Alarm Siren | Activate Alarm Siren Option |
| c | Blow On Downstream Jam | Activate Downstream Jam Blow-off Option |
| d | Blow On Alarm Stop | Activate Alarm Stop Blow-off Option |
| e | Diverter/Counter | Activate Diverter / Counter Option |
| f | Stop Gate/Brake | Activate Stop Gate/Brake Option |
| g | Reject Bin Full Eye | Activate Reject Bin Full Photo-eye Option |
| h | Down Bottle | Activate Down Bottle Option |
| i | Vent Value | Activate Vent Valve Option |

| Labels | | |
|--------|-----------------------------|---|
| j | Active Test 2 | Activate Test 2 Option |
| k | Downstream Jam Delay | Activate Downstream Jam Delays |
| 2 | Reject Alarm Settings | |
| a | Reject Verify Alarm Bypass | Jump to Supervisor Reject Percent page |
| 3 | Height Option Section | |
| a | Height Option Section | Select the different Height Checking Options |
| b | Height Check Timing Section | Select when the Height check will occur in the Leak Test. |
| 4 | System Bypass | |
| a | Active System Bypass | System Bypass Mode will de-activate the Leak Tester and allow Containers to Pass-By. |
| 5 | Auto Self Test | |
| a | Auto Self Test | Activate Auto Self Test Mode |
| b | Alarm Mode: Warning | Change between Alarms modes. Either Alarm Mode or Warning Mode when the Self Test Passes a Container. |
| c | Auto Self Test Interval | How often the Auto Self Test will perform a Self Test |
| d | Counts to Auto Self Test | Containers remaining until the Auto Self Test |

16.10 Select Height Option



Figure 56: Supervisor Height Options Section_a

| Ref # | Term | Description |
|-------|-------------|---|
| 1 | None | No Height Check will be performed |
| 2 | Accu Height | Accu-Height check will be performed. Analog probe cylinder sensor option. |
| 3 | Dual Height | Dual Height check will be performed. Two probe cylinder sensor option. |

| Ref # | Term | Description |
|-------|-------------------------|--|
| 4 | Top Load | Top Load Height check will be performed. Single probe cylinder sensor option |
| 5 | Choke Neck with Sensing | Choke Neck Sensing will be performed. |

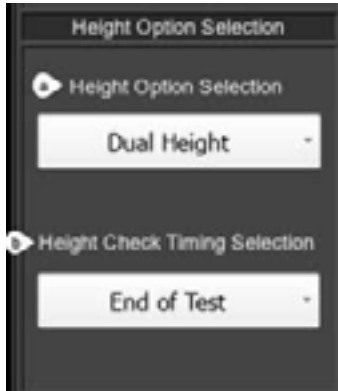


Figure 57: Supervisor Height Options Section_b

| Ref # | Term | Description |
|-------|-----------------|--|
| 1 | End of Test | Showing which option has been Selected |
| 2 | Beginning of T1 | Height Option will be checked at the Beginning of Leak Test. |
| 3 | End of Test | Height Option will be checked at the End of Leak Test. |

16.11 Interface I/O

Interface I/O is an option used with a choke neck sensing probe or for gross height detection. The gross height detection uses proximity sensor(s) to monitor how far the test probe travels or does not travel depending on the situation. The idea is if the test probe travels to far the container is most likely to small, not far enough to tall, and just right the container is good.

The choke neck sensing probe monitors the probe with a proximity switch(s) in the event the probe

moves upward the container is assumed to have an obstruction in the neck. There are two possible inputs per station for use of to allow for varying combination of use.

| Function | Description |
|----------------------|---|
| Aux Test OFF/ON | Turn ON or OFF |
| Aux at Start of Test | Checks probe position at start of leak test |
| Aux During Test | Checks probe position during leak test |
| Aux at End of Test | Checks probe position at end of leak test |

17 How to use Interface I/O

To turn on function select where test should occur. Only one selection is possible for each Auxiliary. The function that is ON will be highlighted in yellow.

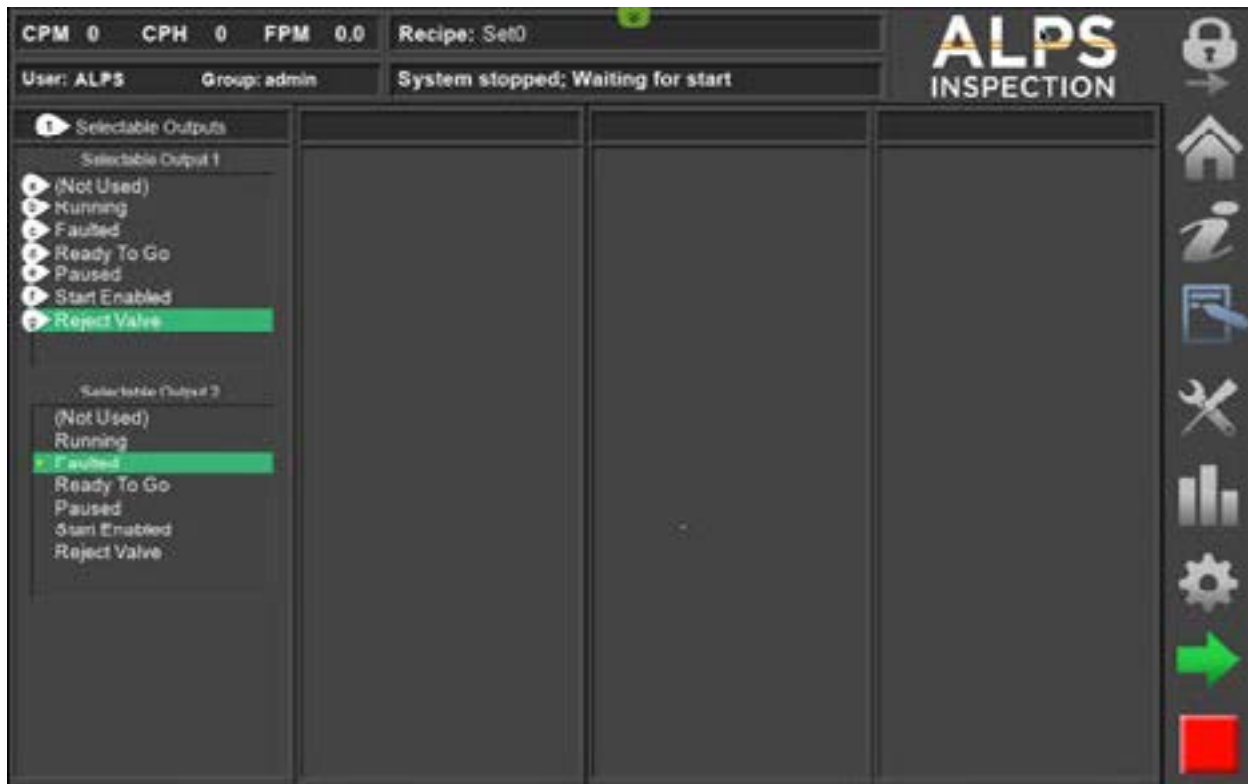


Figure 58: Supervisor Interface I/O

| 1 | Selectable Outputs | |
|---|--------------------|---|
| a | Not Used | NO Selectable Outputs are selected |
| b | Running | Selectable Output is ON when the System is Running. |
| c | Faulted | Selectable Output is ON when the System is Faulted / Master Alarm. |
| d | Ready To Go | Selectable Output is ON when the System is Ready to Go. No faults and not Enabled.. |

| | | |
|---|---------------|--|
| | | |
| e | Paused | Selectable Output is ON when the System is Paused. Master Pause. |
| f | Start Enabled | Selectable Output is ON when the System is Enabled. |
| g | Reject Valve | Selectable Output is ON when the Reject Valve is Active. |

17.1 I/O Status Screen



Figure 59: I/O Status

| Label | | |
|-------|-------------------|--|
| 1 | Digital Inputs | |
| a | Safety OK | Safety circuit is working |
| b | Test PE | Sensor detects when a Container is present to test. |
| c | Spare | TBD |
| d | Spare | TBD |
| e | Upstream Prime PE | Ensure enough Containers are ready. |
| f | Downstream Jam PE | Detect a conveyor jam after the tester. |
| g | Reject Verify PE | Verify a Rejected Container was rejected. |
| h | Diverter Gate PE | Diverter Counter Photo-eye to count the number of tested parts into a box. |
| i | Down Container PE | Detects a down container |

| Label | | |
|-------|--------------------------------|--|
| j | Aux 1 | Probe Cylinder Height Sensor, number 1 |
| k | Aux 2 | Probe Cylinder Height Sensor, number 2 |
| l | Vacuum Switch, OK | Vacuum switch activation Input |
| m | Main Air Pressure Switch | Main Air Pressure Switch |
| n | Spare | TBD |
| 2 | Digital / Analog Inputs | |
| a | Bottle Pressure | The raw value of the Bottle Pressure Transducer |
| b | Spare | TBD |
| c | Spare | TBD |
| d | Accu-Height Sensor | The raw value of the Accu Height sensor option. |
| e | Part Pressure Gauge | Part Pressure indicator during a test |
| 3 | Digital Outputs | |
| a | Reject Valve | Reject cylinder of a defective container |
| b | Upstream Blow-off Valve | When the tester is not active, Upstream Blow-off removes all containers |
| c | Probe Valve | Probe Cylinder actuation valve |
| d | Fill Valve | Valve used to pressurize the Container for a test |
| e | Self Test Valve | Self Test artificially introduces a defined orifice into the closed system. |
| f | Downstream Gate Cylinder Valve | To divert all Containers into the Reject bin. |
| g | Down Bottle Valve | Reject any fallen Container |
| h | Diverter Counter Valve | Divert Containers into a specific box |
| i | Selectable Output 1 | Selectable Output between Running, Faulted, Ready to Go, Paused, Enabled, & Reject Valve |
| j | Selectable Output 2 | Selectable Output between Running, Faulted, Ready to Go, Paused, Enabled, & Reject Valve |
| k | Green Light | Solid Green - Running; Flashing Green - Ready to Run |
| l | Yellow Light | Warning |
| m | Red Light | Alarm |
| n | Alarm Horn | Alarm Horn |
| o | Vent Valve | To inject a positive pressure when retracting the probe |
| p | Spare | TBD |
| q | Spare | TBD |
| r | Spare | TBD |

| Label | | |
|-------|-----------------------------------|---|
| 4 | Analog Outputs | |
| a | External Conveyor Reference Speed | Speed reference for an External Conveyor to match speeds. |
| b | Fill Regulator | Analog Signal for Fill Regulator (Electronic Regulator option) |
| c | Probe Regulator | Analog Signal for Probe Regulator (Electronic Regulator option) |
| d | Spare | TBD |

17.2 I/O Forcing Screen



Figure 60: I/O Forcing

*The Tester has to be in a stopped state in order for the Force I/O to work.
Once in a Force State, the Tester is disabled*



| Label | | |
|-------|----------------------|--------------------------------------|
| 1 | Test Head Outputs | |
| a | Probe (psi) | Probe Pressure Indicator |
| b | Fill (psi) | Fill Pressure Indicator |
| c | Speed (FPM) | Conveyor Speed Indicator |
| 2 | Digital Outputs | |
| a | Main Reject | Force Main Reject Cylinder. |
| b | Upstream Gate / Blow | Force Upstream Gate / Blow-Off Valve |
| c | Up / Downstream Blow | Force Up / Downstream Blow-Off Valve |
| d | Down Bottle | Force Down Bottle Valve |
| e | Diverter Valve | Force Diverter Counter Valve. |
| f | Selectable Out 1 | Force Selectable Output 1 |
| g | Selectable Out 2 | Force Selectable Output 2 |
| h | Red Light | Force Red Light |
| i | Yellow Light | Force Yellow Light |
| j | Green Light | Force Green Light |
| k | Siren | Force Siren |



Figure 61: Calibration

| Label | | |
|--------------------|---|--|
| 1 | Analog Calibration - Container Pressure | |
| a | Station Select | Selection between head 1-2 |
| b | Raw Value | Container pressure in engineering units |
| c | Scaled Value | Scaled value of the container pressure in inches of H2O |
| Calibration Values | | |
| d | Raw Zero | Container pressure at zero pressure in engineering units |
| e | Slope | Conversion factor when converting engineering units to scaled units |
| f | Start Calibration | Start Bottle Transducer Calibration process. |
| g | Cancel | Cancel Bottle Transducer Calibration process. |
| 2 | Analog Calibration - Probe Pressure | |
| a | Force (psi) | Reference only; target value of applied pressure to the probe; pound per inch ^2 |
| 3 | Analog Calibration - Fill Pressure | |
| a | Pressure (psi) | Reference only; target value of applied fill pressure; pound per inch ^2 |
| 4 | Analog Calibration - Limits | |
| a | Station Min ADC Low | Input; Minimum Analog/ DC Low limit for all head container pressure transducer |
| b | Station Min ADC Hi | Input; Minimum Analog/ DC High limit for all head container pressure transducer |
| c | Station Max ADC Low | Input; Maximum Analog/ DC Low limit for all head container pressure transducer |
| d | Station Max ADC Hi | Input; Maximum Analog/ DC High limit for all head container pressure transducer |
| 5 | Analog Calibration- Factory Defaults | |
| a | Load Head Default | Over write the current Pressure Transducer Calibration with the default Calibration. |
| 16 | CPM Calculation | |
| a | Number of Containers | Minimum containers to calculate the cpm and cph |

17.3 Downstream Pause Photo-Eye

The downstream Pause PE is used to prevent downstream line stoppages from backing up into the testing area. The downstream photo-eye should be set a minimum of 4-5 containers downstream of test head. Whenever this eye is blocked by containers, the QuickCheck will stop processing containers and post a message on the display that the machine is waiting for the downstream photo-eye. When the photo-eye clears, container flow will resume.

QuickCheck Production Operations

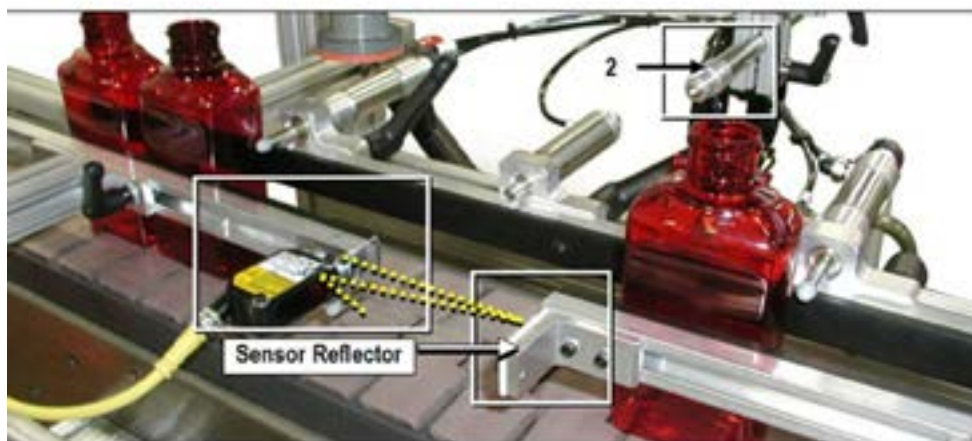
Containers transition from the production line to the QuickCheck conveyor for leak testing will be monitored and controlled by various photo eyes, hold and reject cylinders.



17.4 Test Photo-Eye (PE)

The test photo-eye is used for probe positioning on the container for the leak test. This eye must be adjusted properly for accurate test probe placement. For proper setup of the Test PE please refer to the Advanced Operator Manual

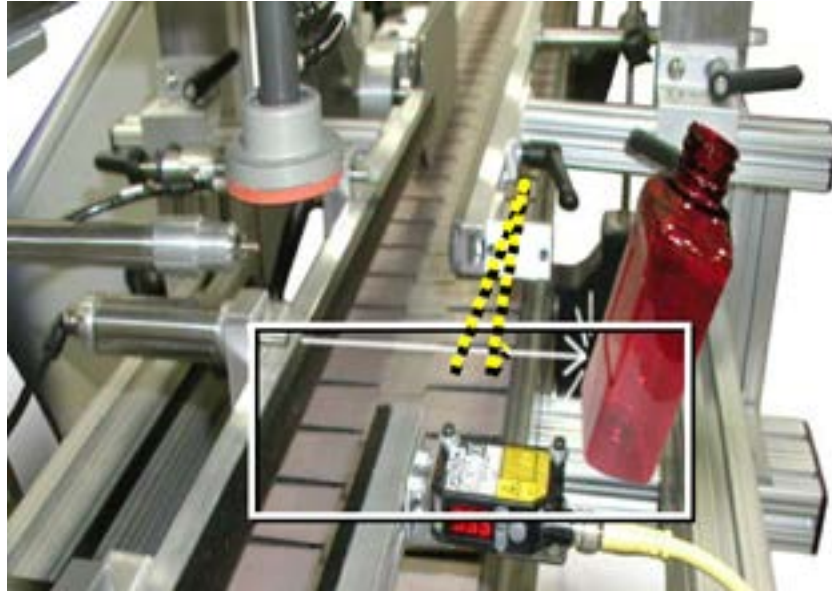
18 Reject Verification Sensor (Optional)



| COMPONENT | FUNCTION |
|-----------|----------|
|-----------|----------|

| | | |
|---|------------------------|---|
| 1 | Reject Verification PE | Detects that a defective container has been ejected |
| 2 | Test Photo-Eye (PE) | Detects container presence for testing |

18.1 Reject Verification Photo-Eye



Upon test completion the test probe will retract. If the container is PASSES the container will advance down the line. If the container FAILS a reject cylinder will knock it off the line. The reject verification sensor confirms that a container that FAILS is rejected. Failure to detect the FAILED container will result in an alarm and machine stoppage.

18.2 Downstream Pause Photo-Eye

The downstream Pause PE is used to prevent downstream line stoppages from backing up into the testing area. The downstream photo-eye should be set a minimum of 10-15 containers downstream of test head. Whenever this eye is blocked by containers, the QuickCheck will stop processing containers by extending the hold cylinder and posting a message on the display that the machine is waiting for the downstream photo-eye. When the photo-eye clears, container flow will resume

18.3 Test Pressures & Reject Limits Overview

These Setting Screen contains the time settings, and pressures, and pressure limits required to perform leak tests on the QuickCheck. Navigation between each section is accomplished by touching the section or box that you want to change. Boxes with a white background can be selected to change the value. Boxes with a gray background are for reference only and cannot be altered on the present screen.

Table 6: Test Pressure and Reject Limits

| Setting | Range | Description |
|--------------------|---------------------|--|
| Fill Time | 0.01 to 10 seconds | Time specified for the fill valve will remain on to fill the container |
| Test 1 Time | 0.005 to 10 seconds | Time specified for pressure stabilization |
| Test 2 Time | 0 to 20 seconds | Time allowed for monitoring pressure loss. |
| Maximum fill time | 0.02 to 15 seconds | Time permitted to reach "START FILL TIME PRESSURE". Fill Time will begin when this pressure is achieved. |
| Probe retract Time | 0.01 to 5 seconds | Time allowed for test probe to clear container |

Table 7: Time Limit Setting Description 1

| Setting | Range | Description |
|------------------------|----------------|---|
| Minimum test 1 percent | -50 to 10 % | The pressure percentage loss must be above the range value selected to be considered good |
| Maximum test 1 percent | Min T1 to 75 % | The pressure percentage loss must be below the range value selected to be considered good |
| Minimum test 2 percent | -75 to 10 % | The pressure percentage loss must be above the range value selected to be considered good |
| Maximum test 2 percent | Min T2 to 75 % | The pressure percentage loss must be below the range value selected to be considered good |

Table 8: Time Limit Setting Description 2

| Setting | Range | Description |
|--------------------------|-----------------|---|
| Minimum peak pressure | 0.5 to 25 InH2O | Container pressure must reach the value entered or it will be rejected (Units are Selectable) |
| Maximum peak pressure | 1 to 25 InH2O | Container pressure must not exceed the value entered or it will be rejected (Units are Selectable) |
| Start fill time pressure | 1 to 10 InH2O | Required pressure for "Fill time" to start counting. (Units are Selectable) |
| Probe force | POUNDS | Probe force on the container (option maybe viewable only) (Units are Selectable) |
| Fill Pressure | PSI | Available pressure fill pressure (option maybe viewable only) (Units are Selectable) |

18.4 Test Pressures & Reject Limits Helpful Hints

Refer to Container Change Over Section for further assistance with test settings not mentioned here

Table 9: Helpful Hint Chart

| Function | Hint | Action |
|--|--|---|
| Fill Time and Fill Pressure | Increasing fill pressure will help pressurize the container faster which can allow for faster fill times. The Fill Time and Fill Pressure are related to container shape and volume. Too much Fill Time or Fill Pressure will cause over pressure. | Keep fill times to a minimum |
| Test 1 Time | T1 use is relative to container shape and size. More flex in the container may mean longer settle times and vice versa. Most times the T1 time is sufficient to do the entire leak test | Keep T1 time to a minimum. With smaller containers T1 time can perform the entire test. T2 can be 0 |
| Test 2 Time | T2 should be set for as long as possible. Review Quick View display menu Cycle Timers Last test time versus last cycle time. Last test time should be slightly shorter than cycle time. Any additional time may be added to T2 | Set T2 time as long as possible. Check Quick View Cycle timers for assistance. |
| Maximum Fill Time & Start Fill Time Pressure | Fill Time will not exceed the Max Fill Time. However, the fill time will use only the necessary time to reach the Start Fill Time Pressure. | Set Maximum Fill Time Pressure to as fast as possible. Set Fill time pressure high enough to ensure container is sealed but low enough to allow for faster Maximum Fill Time. |
| Probe Retract Time | Clear the container unless it's a choke neck probe. | Set to minimum time unless using a choke neck probe |
| Probe Force | Probe Force is relative to a good seal to allow for pressurization | Apply only enough force to ensure the container can be sealed and pressurized |

18.5 The Settings Menu

The leak tests performed by the QuickCheck depend on proper test settings. The Settings Menu is where leak test perimeters, reject limits, recipes, guided set up, and photo eyes may be accessed

Supervisor Password

Changing any setting or perimeter requires a supervisors log in the default password for the supervisor is (111

Recipes

Introduction Recipes

A Recipe is a saved data file that contains all the settings menu information for a particular job and container. A recipe can be saved, created, deleted, and loaded. This manual will cover all functions in recipes except for loading an existing recipe. Please see the Quick start manual for loading an existing recipe

Steps Create New Recipe same Title:

Load to Memory Card

This creates a back-up for recipes which can be performed at any time. The recipes may be backed up to hardware (HMI memory) or memory card.

Always backup recipes to memory card before any software upgrades

1. If backing up to memory card and not hardware open the control enclosure and insert memory card into the HMI as shown.
2. Select LOAD to MEMORY CARD. The Load Recipe to Memory Card screen appears.
3. Prompt will ask which location to backup recipes: Choose memory card or hardware
4. Click on the download icon below.
5. Finish by selecting All recipes will be backed up automatically to the memory location chosen
6. Open the enclosure and withdraw the memory card for later use, secure the enclosure

Load Recipe from Memory Card

Recalling recipes from memory card or hardware for use may be done at any time provided recipe was backed up prior to this procedure

1. Open the control enclosure and insert memory card into the HMI as shown.
2. Select this prompt selection for download source; Choose memory card or hardware.
3. Select to complete the process

18.6 Recipes



Figure 62: Recipes

| Label | | |
|-------|--------------------------|--|
| 1 | Recipe Control | |
| 2 | Select a Recipe | Selection of recipe |
| 3 | Delete | Deletes the selected recipe |
| 4 | Create New Recipe | Name entry for new recipe |
| 5 | Create | Create new recipe with the above name |
| 6 | Import /Export | Allows the Recipes to be Imported or Exported to a memory location |
| 7 | Selected Recipe Data | |
| 8a | Fill Time | Selected recipe fill time |
| b | T1 Time | Selected recipe T1 time |
| c | T2 Time | Selected recipe T2 time |
| d | Max Fill Time | Selected recipe max fill time |
| e | Probe Retract Time | Selected recipe probe retract time |
| f | Min Peak Pressure | Selected recipe Minimum peak pressure time |
| g | Max Peak Pressure | Selected recipe Maximum peak pressure time |
| h | Start Fill Time Pressure | Selected recipe start fill pressure time |

| Label | | |
|-------|----------------------------|---|
| i | T1 Min Loss Percent | Selected recipe T1 minimum loss percentage |
| j | T1 Max Loss Percent | Selected recipe T1 maximum loss percentage |
| k | T2 Min Loss Percent | Selected recipe T2 minimum loss percentage |
| l | T2 Max Loss Percent | Selected recipe T2 maximum loss percentage |
| m | Probe Force | Selected recipe probe force |
| n | Fill Pressure | Selected recipe fill pressure |
| o | Reject Position inches | Selected recipe reject position (inches) |
| p | Head 1 Position Inches | Selected recipe Head 1 position (inches) |
| 9 | Load | Load selected recipe to current recipe command |
| 10 | Save | Save current recipe to selected recipe command |
| 11 | Page Down | Scroll down to new recipe command |
| 12 | Current Recipe Data in PLC | |
| 13a | Fill Time | Current recipe fill time setting |
| b | T1 Time | Current recipe T1 time setting |
| c | T2 Time | Current recipe T2 time setting |
| d | Max Fill Time | Current recipe maximum fill time setting |
| e | Probe Retract Time | Current recipe probe retract time setting |
| f | Min Peak Pressure | Current recipe minimum peak pressure setting |
| g | Max Peak Pressure | Current recipe maximum peak pressure setting |
| h | Start Fill Time Pressure | Current recipe start fill pressure setting |
| i | T1 Min Loss Percent | Current recipe T1 minimum loss percentage setting |
| j | T1 Max Loss Percent | Current recipe T1 maximum loss percentage setting |
| k | T2 Min Loss Percent | Current recipe T2 minimum loss percentage setting |
| l | T2 Max Loss Percent | Current recipe T2 maximum loss percentage setting |
| m | Probe Force | Current recipe probe force setting |
| n | Fill Pressure | Current recipe fill pressure setting |
| o | Reject Position inches | Current recipe reject position setting |
| p | Head 1 Position Inches | Current recipe Head 1 position setting |

18.7 Introduction to Conveyor

There are several factors to consider when setting QuickCheck conveyor speeds. How fast the host conveyor is moving, container transition, available test time, containers sliding on the conveyor when starting and stopping. It is important to understand that the host conveyor and the QuickCheck conveyor must run at the same rate (feet per minute). Since the QuickCheck conveyor indexes (starts and stops) to leak test containers the QuickCheck conveyor must run faster to keep up with the host conveyor. How much faster depends on the container per minute rate (CPM) and desired leak test time. In regards to this, the faster the QuickCheck conveyor must move to keep up, the more difficult it will be to transition containers, and bottle management from slipping. Applying this thinking to the QuickCheck leak test system means the QuickCheck conveyor speed and the leak test times are diametrically opposed to one another. In other words if conveyor speeds increase to accommodate an increase in container per minute rates then the leak test times must be decreased. Conversely to this, if the CPM rates decrease the leak test time may be increased. Please refer to the new container set up guide in this manual for more information on Conveyor Setup



Figure 63: Settings Guided Setup_9

| Labels | | |
|---------------|-----------------|---|
| 1 | Test Settings | |
| Test Settings | | |
| a | Fill Time(s) | Amount of time the Fill Valve will remain ON after the Start Fill Time Pressure is achieved |
| b | Test Time 1 (s) | Amount of time the TEST TIME #1 is active after the FILL TIME is achieved |

| Labels | | |
|----------------|--------------------------------------|---|
| c | Max Fill Time(s) | Maximum time allowed for the START FILL TIME PRESSURE to be achieved |
| d | Probe Retract(s) | A fixed time for the PROBE RETRACT |
| Test Limits | | |
| e | Minimum T1% Loss | Actual T1% must exceed this limit |
| f | Maximum T1% Loss | Actual T1% must not exceed this limit |
| Test Pressures | | |
| g | Minimum Peak Pressure | Actual Peak Pressure must exceed this limit |
| h | Maximum Peak Pressure | Actual Peak Pressure must not exceed this limit |
| i | Start Fill Time Pressure | The point of when a good seal is reached and the FILL TIME begins |
| j | Probe Force (Pounds) | FOR ELECTRONIC REGULATORS ONLY. Setting for the amount of force applied to the container |
| k | Fill Pressure (psi) (Reference Only) | FOR ELECTRONIC REGULATORS ONLY. Setting for the amount of Air Pressure applied to the container |
| 2 | Conveyor Speed | |
| a | Desired Speed | Desired Conveyor Speed |
| b | Potential Container / Minute (CPM) | Takes the Minimum Test-To-Test time and Calculates the Containers per Minute. |
| c | Conveyor Stop Time (s) | Amount of time when NO Containers are seen, a Stop command is issued. |
| d | Conveyor Stop Time Remaining (s) | Amount of time remaining before the Conveyor will Stop. |
| 3 | General Settings | |
| a | Reject Pulse Time (s) | Amount of time the Reject Cylinder / Blow-off is ON. |
| b | PE to Probe Distance (s) | Amount of Distance between the Part Present Photo-eye and Center of Probe. |
| c | Bottle Debounce (s) | Amount of Time the Part Present Photo-eye will re-set. |
| d | PE ON Too Long (s) | Amount of Time the Part Present Photo-eye is ON before an Alarm is triggered. |
| e | PE OFF Too Long (s) | Amount of Time the Part Present Photo-eye is OFF before an Alarm is triggered. |
| 4 | Conveyor Motor Settings | |
| a | More Accel | Conveyor settings for Acceleration / Deceleration. |
| b | Less Accel | Conveyor settings for Acceleration / Deceleration. |
| c | Rough | Conveyor settings for Jerk. |
| d | Smooth | Conveyor settings for Jerk. |

| Setting | Function |
|--------------|----------|
| Acceleration | Torque |

| Setting | Function |
|---------------|--------------------------|
| Velocity | Speed in feet per minute |
| Current Level | Current supply to motor |

19 Photo Eye Settings



Figure 64: Settings Guided Setup_10

| Labels | | |
|----------------|-----------------------|---|
| 1 | Test Settings | |
| Test Settings | | |
| a | Fill Time(s) | Amount of time the Fill Valve will remain ON after the Start Fill Time Pressure is achieved |
| b | Test Time 1 (s) | Amount of time the TEST TIME #1 is active after the FILL TIME is achieved |
| c | Max Fill Time(s) | Maximum time allowed for the START FILL TIME PRESSURE to be achieved |
| d | Probe Retract(s) | A fixed time for the PROBE RETRACT |
| Test Limits | | |
| e | Minimum T1% Loss | Actual T1% must exceed this limit |
| f | Maximum T1% Loss | Actual T1% must not exceed this limit |
| Test Pressures | | |
| g | Minimum Peak Pressure | Actual Peak Pressure must exceed this limit |

| Labels | | |
|--------|--------------------------------------|---|
| h | Maximum Peak Pressure | Actual Peak Pressure must not exceed this limit |
| i | Start Fill Time Pressure | The point of when a good seal is reached and the FILL TIME begins |
| j | Probe Force (Pounds) | FOR ELECTRONIC REGULATORS ONLY. Setting for the amount of force applied to the container |
| k | Fill Pressure (psi) (Reference Only) | FOR ELECTRONIC REGULATORS ONLY. Setting for the amount of Air Pressure applied to the container |
| 2 | Conveyor Speed | |
| a | Desired Speed | Desired Conveyor Speed |
| b | Potential Container / Minute (CPM) | Takes the Minimum Test-To-Test time and Calculates the Containers per Minute. |
| c | Conveyor Stop Time (s) | Amount of time when NO Containers are seen, a Stop command is issued. |
| d | Conveyor Stop Time Remaining (s) | Amount of time remaining before the Conveyor will Stop. |
| 3 | General Settings | |
| a | Reject Pulse Time (s) | Amount of time the Reject Cylinder / Blow-off is ON. |
| b | PE to Probe Distance (s) | Amount of Distance between the Part Present Photo-eye and Center of Probe. |
| c | Bottle Debounce (s) | Amount of Time the Part Present Photo-eye will re-set. |
| d | PE ON Too Long (s) | Amount of Time the Part Present Photo-eye is ON before an Alarm is triggered. |
| e | PE OFF Too Long (s) | Amount of Time the Part Present Photo-eye is OFF before an Alarm is triggered. |
| 4 | Conveyor Motor Settings | |
| a | More Accel | Conveyor settings for Acceleration / Deceleration. |
| b | Less Accel | Conveyor settings for Acceleration / Deceleration. |
| c | Rough | Conveyor settings for Jerk. |
| d | Smooth | Conveyor settings for Jerk. |

Introduction to Photo Eye

Photo-Eye Bottle De-bounce: This is a timer that tells the test photo-eye when to look for the next container after a completed test. If this timer is set the sensor is basically blind (off) right after the leak test is performed for the period of time entered. For a typical container this value can remain at 10 seconds. For containers that may have an additional material such as an f-style handle the delay should be set accordingly.

Photo-Eye On Too Long timer: This is a safety feature that makes sure the test photo eye is not stuck in the on position. If the photo-eye is permanently blocked and stays on, the system may allow untested containers to pass. If this timer is set to zero, the safety timer is turned OFF. If it is set for something other than zero and the photo-eye stays on that period of time the system will alarm and stop

Photo-Eye Off Too Long timer: This is a safety feature to make sure the photo-eye has not failed and checks to ensure the photo eye is turning on. If container flow does not reach the machine for the set time of the 'Off Too Long' timer, the machine will alarm and stop. If this timer is set to zero, the safety timer is turned OFF. If it is set for something other than zero and the photo-eye stays off too long, the system will alarm and stop.

Reject verification timer (optional): A defective container must trigger the reject verification eye with in this time frame or an alarm will occur. The Last Reject Elapsed Time is a notification of how much time it took for the bottle to be rejected and pass through the Reject Verification PE. The Reject Verification Time should exceed the Last Reject Elapsed Time.

| Photo-Eye | Minimum | Maximum | Default | When To Adjust |
|------------------------------|---------|---------|---------|---|
| Photo-Eye Re-Arm Delay | 0.01 | 10 | 0 (off) | When using F-Style containers that may Cause the photo eye to trigger more than once on a single container. |
| Photo-Eye On Too Long timer | 0 | 20 | 0 (off) | May be set at the discretion of the Advanced operator or supervisor |
| Photo-Eye Off Too Long timer | 0 | 600 | 0 (off) | May be set at the discretion of the Advanced operator or supervisor |
| Reject verification timer | .050 | 1 | 1 | May be set at the discretion of the Advanced operator or supervisor |

Test Result Settings and Navigation

Selecting Test Results or Detail Timers will allow navigation between the two by using the navigation arrows

| Function | Range |
|------------------------|--------------|
| Minimum peak pressure | .5 to 25 IWC |
| Maximum peak pressure | 1 to 25 IWC |
| Minimum Test 1 percent | Min: 0 % |
| Maximum test 1 percent | Max: 75 % |
| Minimum Test 1 percent | Min: -75 % |
| Maximum test 2 percent | Max: 75% |

Counters

Introduction to Counters

Counters keep track of production statistics and defective container failures.

The counters do not auto reset themselves. If desired for production tracking purposes remember to reset counters to 0 from job to job

Counters Navigation

Selecting any Counter menu will allow navigation between all of the counters by using the navigation arrows

Alarm Counters

Introduction to Alarm Counters

The Alarm counters keeps track of how many times a specific alarm may have occurred.

The Alarm counters do not auto reset themselves. If desired for production tracking purposes remember to reset Alarm counters to 0 from job to job

Alarm Counters Navigation

Alarm Log

Introduction to Alarm Log

The alarm log tracks every production alarm with date and time stamp occurrence.

The Alarm log memory and will hold a large amount of alarm event history. However log memory does have limitations and eventually older alarm events will be over written.

Navigation in Alarm Log

Maintenance Menu

The maintenance menu has three main elements to it. These are manual test, I/O diagnostics, and analog calibration. The manual test function is a key element in the maintenance menu and is where containers can be leak tested independent of production. I/O diagnostics is useful for checking the functionality of key devices. The analog calibration display is where the leak test pressure transducer are scaled and calibrated. These functions are factory set and not described in this manual. In the event analog inputs become out of range and calibration is required please refer to the service and maintenance manual.

20 QuickCheck Technical Resources

20.1 CE Certificate

The following link is to the QuickCheck CE certification.



20.2 QuickCheck Maintenance and Maintenance Schedule

Click on the following link for QuickCheck maintenance and scheduled maintenance.



20.3 QuickCheck Installation Guide

Click on the following link to access the QuickCheck installation guide.



20.4 Calibrations

The QuickCheck is equipped with pressure transducers and pressure regulators that are linked to the HMI. The transducers and regulators will need to be calibrated if the QuickCheck is not operated for a long period of time, 6 months or more. They will also need calibrated if any major maintenance is performed, replacements, or new additions to the machine. It is recommended that a periodical calibration is performed every year while the QuickCheck is operating.

Transducer Calibration

The following link provides detailed instructions for calibrating the pressure transducer/s for the QuickCheck.



Pressure Regulator Calibration

The following link provides detailed instructions for calibrating the pressure regulator/s for the QuickCheck.



20.5 QuickCheck Interactive Parts Catalog

This manual has a high level parts catalog for the QuickCheck. Parts can be searched, identified, and ordered for replacements or recommended spare parts. Access the parts catalog with the following icon.



20.6 HMI Navigation and Information Quick Reference

The following icon will open the HMI Screen Navigation and label information document. This is for quick screen reference and definition of all screen functions. This information is captured in this manual, however not in sequential order to the navigation screen.



20.7 SCADA

The following link will open the SCADA information file.



