



Scholle
SUREFILL™
22HA-ASEPTIC

Maintenance Manual

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Chapter 1: General Information

1.1 FORWARD – ASEPTIC SYSTEMS OVERVIEW

Aseptic packaging systems do not simply provide a sterile package, what they truly offer is a more energy efficient method of packaging and distributing food products. These systems offer significant cost savings resulting from energy cost to manufacture the packaging material, and that required to distribute empty and filled packages.

The aseptic bag-in-box packaging system is significantly different from traditional systems because of two basic elements. First, the packaging machines themselves are much more sophisticated than traditional fillers. Second, these systems rely on aseptic processing and filling, which requires extremely tight control to assure proper sterilization is achieved and maintained.

Because of the sophistication of these machines, personnel who install, operate, and maintain these systems must be carefully selected and extensively trained. Competent, motivated, and well-trained operators, technicians and mechanics are the key to successful operation of an aseptic packaging plant.

While many functions of these machines are electronically controlled, the opportunity for human error exists. An uncorrected error in system sterilization or maintenance of sterility can easily result in extensive spoilage. This also means that several days of contaminated product can be packed before a serious problem is detected since microbiological testing requires time to obtain results.

First line responsibility, then, must be on the machine operators and their supervisors who are also technically trained so they fully understand aseptic system operation, including product processing and packaging.

Supervisors must understand that while productivity and machine efficiency are certainly their responsibility, they must be equally concerned with quality control. The supervisor's job includes continuous monitoring of all critical controls and he or she must be constantly looking for potential problems, (e.g., maintenance of key equipment), and taking corrective action before they occur.

The QC inspector should also have a strong understanding of the operation of critical machinery, and the aseptic system in general, so that he or she can identify potential problems through observation and not solely rely on the testing of randomly selected samples.

It is advisable to train QC inspectors in the same manner as machine operators. QC personnel must also be adequately trained in microbiology so they are capable of interpreting results of laboratory tests and relating those results to the operation of the aseptic system.

In summary, the successful operation of these new aseptic packaging technologies relies on a highly trained, skilled and motivated work force. These systems are less labor intensive but the technical competence of labor must be significantly greater than is acceptable with traditional food packaging operations.⁽¹⁾

¹ Excerpted from "Aseptic Systems Usher in New Era of Quality Control," by Raymond A. Bourque in PREPARED FOODS, August 1983.

1.2 DISCLAIMER

IMPORTANT: Wherever possible great lengths have been taken to ensure documentation accuracy. However, due to availability and/or specific customer needs, the components and configuration depicted in this manual may not necessarily reflect those of the actual machine. Regardless of component appearance or machine configuration, however, the basic function remains constant and will be covered in this manual.

1.2.1 Important User Information

This manual was designed to meet organizational structures found in the majority of facilities with the following conditions: The plant engineer determines site selection for the filler machine.

Installation and maintenance personnel are trained trades people, including structural mechanics, electricians, and plumbers who are familiar with the building and safety codes in your area. Machine operators are trained in safety practices and also have been trained to be responsible for putting the filler machine on line, running product, and cleaning the equipment at the end of a production run. Because of the variety of uses for the equipment described in this publication, those individuals, companies, or organizations responsible for the application and use of this equipment must satisfy themselves that all necessary steps have been taken to assure that each application and use of this equipment meets all of their performance and safety requirements, including any applicable laws, regulations, codes, and standards.

Illustrations, charts, tables, images, and diagrams shown in this manual are intended solely for purposes of example. Since there are many variables and requirements associated with any particular installation, Scholle Corporation does not assume any responsibility or liability for actual use or application thereof, or for any results obtained. All warranties are disclaimed, including, without limitation, the implied warranties of FITNESS FOR A PARTICULAR PURPOSE, and MERCHANTABILITY.

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1.3 ABOUT THIS MANUAL

This manual is divided into three parts:

1.3.1 Part 1 Installation Manual

Provides the following information to SUREFILL machine planners and installers:

- General information that should be kept in mind when planning the SUREFILL machine installation.
- Specific information on the filler foot-print, services requirements, and sanitation/sterilization requirements for the SUREFILL machine.

1.3.2 Part 2 Operator Manual

Provides SUREFILL machine operators the following information:

- Machine start up sequence
- Components section of the manual includes a general description for each filler component.

- Production run and operating efficiencies
- Machine shut down sequence
- Proper cleaning and sterilization tasks

1.3.3 Part 3 Maintenance Manual

Provides the following technical information:

- Routine servicing tasks to keep the equipment running at peak efficiency
- Typical operating parameters and specifications
- Components section of the manual includes a description of each filler component, diagnostics, adjustment and/or calibration, and troubleshooting methods for individual component
- Diagnostic and troubleshooting information
- Repair and maintenance procedures
- Assembly drawings and schematics needed in the repair and maintenance (2)

Note: Although the manuals listed above apply to most machine configurations, individual configurations may vary.

1.4 WARNINGS, CAUTIONS AND NOTES

The warnings, cautions, and notes defined in this manual provide both general and specific hazards to be addressed when working on or around a Scholle SUREFILL machine.

1.4.1 Warning Definition



WARNING

A **WARNING** alerts you to the highest level of risk. **WARNINGS** inform you a procedure must be done in a particular way to minimize the chances of an accident that could result in personal injury or even loss of life.

Warnings refer to personnel protection and include:

- Observing proper procedures around machinery.
- Assuring that power is OFF before removing or installing equipment.
- Removing rings, watches, or other metal jewelry when working on electronic equipment.
- Lifting no more than 40 pounds.

1.4.2 Caution Definition



CAUTION

A CAUTION alerts you to the responsibility of damage to either tools, equipment, or to the machine itself. A CAUTION recommends a procedure must be done in a certain way to avoid potential problems resulting from improper technique or method.

Cautions refer to equipment protection, including:

- Securely close all cabinet doors and covers during wash down and filling operations.
- Be aware of warning indications.
- Mark connectors when disconnecting.
- Properly ground the machine before start-up.
- Maintain proper interior temperatures.

1.4.3 Note Definition

Note: The purpose of a NOTE is to help you do your job more efficiently. A NOTE may also provide additional information to help clarify a particular point or procedure.

Notes refer to essential operating details, for example:

- The “BYPASS VALVE” is often referred to as the “DIVERT VALVE” on many systems.

1.5 DEFINITION OF TERMS

The following are operation specific terms that may apply to machine components or operation procedures:

1.5.1 Bypass Valve or Divert Valve

The Bypass Valve is often referred to as the DIVERT VALVE.

1.5.2 Bypass Valve Activated

The bypass valve is directing product or FLUSH/CIP solution to the filler. This mode may also be referred to as CLOSED, because product is being diverted into the filler for production.

1.5.3 Bypass Valve Deactivated

The bypass valve is directing product away from the Filler, either to another Filler, back to be recycled through the process system, or to be dumped (Often referred to as OPEN, diverting product AWAY from the filler).

1.5.4 Automatic Filling Cycle

The operator starts the filling cycle by locking the spout of the bag in the filling chamber. When the system is started the filler control then removes the cap from the spout, and inserts the filling head into the spout. The Bypass Valve is ACTIVATED, diverting the product to the filler when either product valve (left or right) is opened. The system fills the bag to a predetermined volume, closes the filling valve, and then recaps the spout for bag removal.

1.5.5 Automatic Sterilization Cycle

A system for Automatic Sterilization of the SUREFILL 22, when properly set-up, started, and maintained, minimizes operator attention. In this case, the Bypass Valve remains DEACTIVATED, separating the filler from the upstream process piping, so each can be sterilized separately. Sterilization must be performed before each production run.

1.5.6 Automatic Flush and Clean In Place (CIP) Cycle

Aseptic systems are typically closed so they may be operated continuously. This design includes the ability to be “Cleaned In Place.” The product valve opens and puts the bypass valve into the activated position so that CIP of both upstream process piping and the Filler can take place.

Note: Before starting CIP, the up-stream equipment should be flushed of product first through the de-activated by-pass valve so that only product in the filler needs to be flushed.

1.5.7 Dust Cover Bags

This is used when the Dust Cover caps (two positions) are used in the filling machine. The dust cover position is when the cap is not fully seated in the spout (pre-fill). The dust cover bag makes it easier for the Filler to uncap the product bag.

1.6 CULINARY STEAM

Steam is then considered culinary quality only after having passed through:

1. An entrainment separator, capable of removing particles 10 microns in size and larger, with an associated steam trap.
2. A sanitary clamp.
3. A check valve.
4. A filter capable of removing 95% of particles two (2) microns in size and larger. Also, the separator and filter must be fitted with a condensate drain.

1.6.1 Acceptable Standard Practices, Publication #: 609-02 Excerpt

The 3-A Accepted Practices for Producing Culinary Steam (602-02) define culinary quality steam as being produced under the following conditions:

1. Feed water must be potable.
2. Feed water treatment must comply with FDA CFR Title 21 Section 173.310 and must be under the supervision of trained personnel.
3. Steam produced from this feed water must be dry and free of chemical carry-over.

1.6.2 Culinary Steam Filters

- Culinary steam filters shall consist of materials, which, under the conditions of intended use, are nontoxic, non-media releasing, and do not release toxic volatiles or other contaminants to the steam.
- Bonding materials in the filter media, if used, shall be nontoxic, nonvolatile and insoluble under all conditions of use.

1.6.3 Culinary Steam, Fabrication and Installation

- Product contact surfaces shall be readily accessible for cleaning and inspection either when in an assembled position or when removed. De-mountable parts shall be readily removable using simple hand tools, if necessary, available to operating and cleaning personnel.
- The system components shall be installed in the following sequence:
 - An entrainment separator with stem trap.
 - A sanitary check valve.
 - A filter.
- The system shall be provided with a method for measuring differential pressure across the filter media to indicate the need for filter replacement or cleaning of reusable filters.

3 "SANITARY STANDARD #609-02," Formulated by: International Association of Milk, food and Environmental sanitarians, United States Public Health Service, the Dairy Industry Committee.

4 This information is in the code of Federal Regulations, CFR Title 21; Part 113 published annually, and is for sale by the Superintendent of documents, U.S. Government Printing Office, Washington, D.C.

1.7 SYSTEM SPECIFICATIONS

Compressed Air Supply

100 PSI @ 15 SCFM (90 PSI min.)

- 1 / 2" pipe, no more than 25 ft. long. The piping connection is: 1 / 2" NPT Female.

Steam Supply

A culinary steam supply regulated to 75 PSI pre-filtered, which connects to the inlet valve, V-13 (3/4" pipe minimum), at the filling machine.

Electrical

- The filling machine normally operates on 480 VAC, 50/60 Hertz, Single Phase Minimum, with a step-down transformer to 110 VAC 50/60 Hertz single phase.
- Terminals are provided for electrical service supplied at 208/220/230/240/ 380/ 400/460/480/500/575/600 VAC, 50/60 Hertz (cps), 3-phase 1KVA service.
- When 3-phase electrical service is connected, the machine will only use two legs.

Piping Connection

- 52 lb. / hr. (23 Kg / hr.) Sterilizing; 20 lb. / hr. (9 Kg / hr.) filling.
- R-12, on the filling machine, is set to the machine's operating requirements at the time of installation (40 PSI).

Product Supply Connection

- 1-1 / 2" Tri-clamp

Chapter 2: System Introduction

The SUREFILL 22HA ASEPTIC is fully automatic, aseptic web filling machine that fills pre-sterilized plastic bags to a predetermined volume. The SUREFILL 22HA ASEPTIC is intended to be used for filling HIGH ACID foods ONLY. High acid foods are defined by the FDA as having a pH less than 4.6, except tomato products which may have a pH less than 4.7. Successful aseptic filling requires that the proper sterile conditions be achieved and maintained CONTINUOUSLY.

Stability of the filling chamber after sterilization is maintained by a positive sterile air supply coming from a micro filter system in conjunction with steam to achieve a minimum of 8 scfm. Each flow source is monitored to ensure air/steam flow balance and stability. Chamber temperature is maintained between 180 degrees F (82 degrees C) and 205 degrees F (96 degrees C).

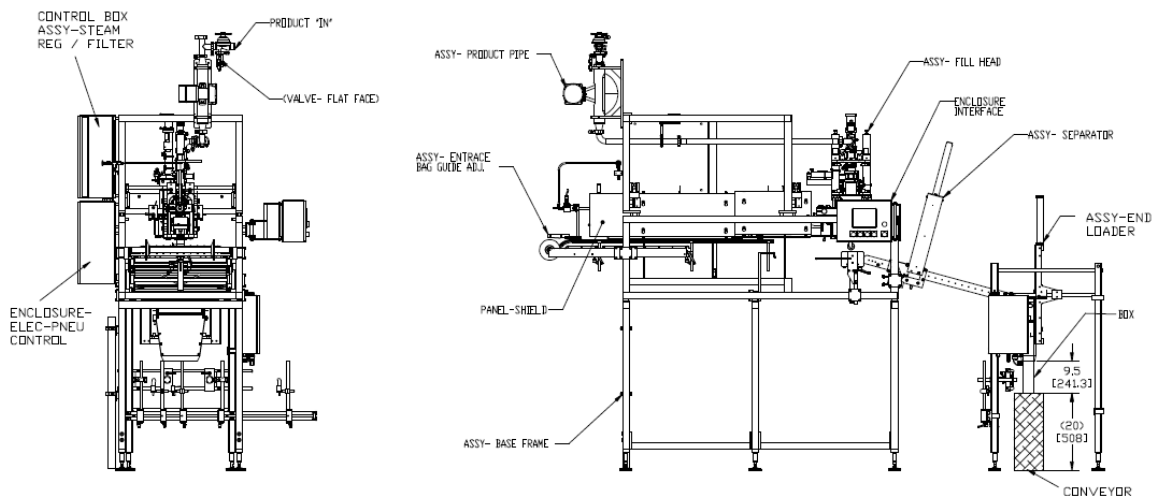


Figure 1. SUREFILL 22-HA ASEPTIC Filling Machine

Fitments are pre-sterilized with saturated steam prior to entering the chamber for a minimum of 2 seconds and at a temperature of 195 degrees F (90 degrees C) to 205 degrees F (96 degrees C).

The bags are provided in a continuous web and are automatically fed into the filling machine directly from the shipping boxes. The bags are advanced to a ready position by the long shuttle.

The spout is then independently advanced to the fill position, where the filling machine removes and raises the airless fill pad, removes the cap from the spout, inserts the filling head into the spout, lowers the airless fill pad, evacuates excess air (Vacuum option), fills the bag to a predetermined volume, closes the filling valve, puffs in a small volume of inert gas (Nitrogen puff option), raises the airless fill pad, recaps the filled bag, lowers the airless fill pad, and then ejects the bag from the chamber.

The bag then passes down an inclined conveyor to a separator station, which parts the bag from the web of unfilled bags at a perforation line on the web.

This system utilizes a “parallel” concept for transferring the filled bags into the final packaging container. This parallel format means that the bags will come from the filling machine, down a roller conveyor in the “spout trailing configuration”, directly onto a transfer conveyor or into a loading station (optional). The station will perform either an end drop or flat drop to transfer the bags into the final container.

For product measurement, the filling machine uses a 'mass' flow meter connected to a digital electronic counter to control the volume of product in each Scholle bag. Movement in the pipe is monitored by these devices and an electronic pulse is registered on the counter as a calibrated representation of product volume. This representation of volume is repeatable and is used as part of the control system.

An operator interface provides the control functions necessary for sterilization, manual operations, and flush/CIP systems. Filling machine status, error/fault messages, timer presets, and monitored temperature locations on the Scholle filling machine are also displayed.

Chapter 3: System Components

3.1 ABB 1900 CHART RECORDER

3.1.1 System Overview

ABB 1900 Chart Recorders used on Scholle SUREFILL machines are microprocessor based, one to four pens chart recorders that measure, display, record, product line, and steam seals. The ABB 1900 features programmable parameters for both input and output.



Figure 1. ABB 1900, 1 to 4-pen electronic Circular Chart Recorder

3.1.2 Security System

A security system is used to prevent tampering with the programmed parameters by restricting access to programming levels, other than the OPERATOR LEVEL; all users have access to this level.

A security password is used to give access to the programming pages. The password can be set to any value from 0 to 9999. The instrument is dispatched with the password set to '0'. (See Section 4.5, "Access to Configuration Levels" in the ABB 1900 Series Circular Chart Recorder OPERATING GUIDE).

3.1.3 Setting Up & Power Up of Recorder

- Check that the input sensors are installed correctly.
- Check that the pen(s) are installed correctly.
- Switch on the supply to the instrument, any power-operated control circuits and the input signals. Wait for the pens to settle.

Note: On power-up, the pens are moved to an off-chart position for automatic referencing. Pen chatter may occur on those pens nearest the reference position. **This is a normal function of the instrument.**

- The start-up sequence is displayed on the faceplate 1 when the supply is first switched on.
- RED Pen (Channel 1)
- GREEN Pen (Channel 2)
- BLUE Pen (Channel 3) – if used/equipped
- BLACK Pen (Channel 4) – if used/equipped The operator should refer to Section 2, “Setting Up” in the ABB 1900 Series Circular Chart Recorder OPERATING GUIDE), for:
 - Instrument Displays at Start-up
 - Power-up Error Codes

3.1.4 Displays & Controls

The displays, LED indicators and operation/programming controls are located on the faceplate on the front panel of the instrument.

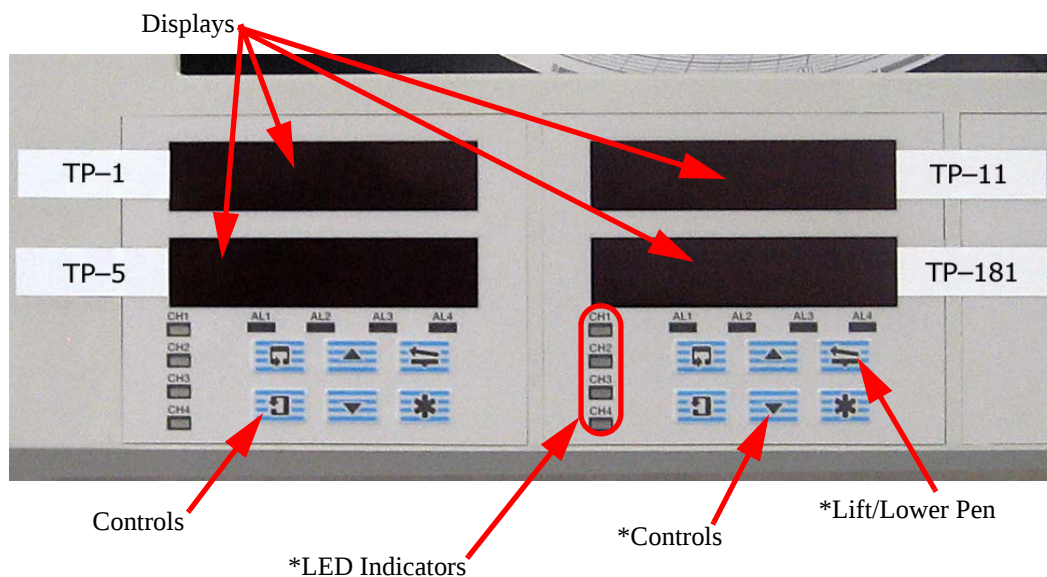
3.1.4.1 Displays and LED Indicators

The displays comprise 2 rows of 6 characters. At the top of each programming page (the page header) both displays are used to describe the particular page selected.

When parameters within the selected page are viewed, the upper display shows the parameter and the lower display shows the value or setting for that parameter.

Alarm and Channel states are indicated by separate LEDs on the faceplate of the front panel of the instrument. (See Section 3, “Displays & Controls” in the ABB 1900 Series Circular Chart Recorder OPERATING GUIDE).

3.1.4.2 Faceplate Display Panel



* = not used with 2-pen recorder.

Figure 2. Faceplate Display Panel

3.1.5 Fitting the Chart

1. Open Chart Recorder door, by lifting lever and pulling door out.



Figure 3. Open Door of Chart Recorder

2. Raise pens, by pressing the LIFT/LOWER PEN function on the display panel (See Figure 2 above).
3. Lift the chart clamp and remove the chart.

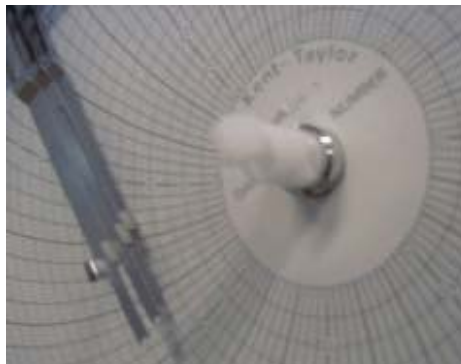


Figure 4. Chart Clamp

4. Fit new Chart ensuring that it is beneath the pen lifter bars.



Figure 5. Chart beneath the Pen Lifter Bars

5. Locate chart under guides (total of 3 guides).



Figure 6. Chart Guides

6. Rotate chart to align the time line with the RED pen.
7. Lower the chart clamp and press down firmly to ensure that the 2 locating pins pierce the paper (See Figure 4).
8. Lower Pens by pressing the LIFT/LOWER PEN function on the display panel (See Figure 2).
9. Close the Chart Recorder door.

3.1.6 Fitting the Pen Capsule(s)

Raise or Lower Pens, by pressing the LIFT/LOWER PEN function on the display panel (See Figure 2, Faceplate Display Panel). The operator should review Section 2.3, “Setting Up” in the ABB 1900 Series Circular Chart Recorder OPERATING GUIDE, for the complete steps related to fitting the Pen Capsule(s).

3.1.7 Use of Controls

Advancing to Next Page

Pressing this SYM. A function on the Faceplate Display Panel, allows the operator to RETURN FROM ANY UPPER MAJOR CATEGORY.



Sym A.

Moving Between Parameters

Pressing this SYM. B function on the Faceplate Display Panel, allows the operator to ADVANCE TO NEXT UPPER MAJOR CATEGORY.



Sym B.

Adjusting a Parameter Value

Pressing the UP or DOWN function on the Faceplate Display Panel, allows the operator to adjust a Parameter Value.



Selecting a Parameter Choice

Pressing the UP or DOWN function on the Faceplate Display Panel, allows the operator to select Parameter.

Note: Continued pressure on the UP and DOWN function switches causes the rate of change of the displayed value to increase. To make small adjustments operate the switches momentarily.

Lifting/Lowering the Pens

Pressing this function on the Faceplate Display Panel, allows the operator to Lift/lower a pen on alternate operations.



Note: This Lift/Lower Pen function switch can be enabled or disabled in the BASIC CONFIGURATION LEVEL - SET UP CHART PAGE. If AUTO PEN LIFT DROP has been selected in the SET UP CHART PAGE, the pens automatically return to their operating positions after a five minute delay.

Selecting Programmable Functions

Pressing this function switch on the Faceplate Display Panel, will ACKNOWLEDGE ALL ALARMS or RETURN OPERATOR TO TOP OF OPERATING PAGE (HOME).



Note: The asterisk function switch only returns the instrument display to the start of the operating page (home) when at the top of any page.

3.1.8 Operation of the Recorder

The operator should refer to Section 4, "Operation" in the ABB 1900 Series Circular Chart Recorder OPERATING GUIDE, for detailed information regarding the following:

- Input Error Messages
- Operating Page Displays
- Alarm Acknowledge Page
- Total Page Displays
- Access to Configuration Levels

3.1.9 General Programming

The programming procedures are used to make changes to the operating parameter values and for scale adjustment.

The programming of all channels must be performed by a Scholle trained technician, using the Faceplate Display Panel.

When changing the input type it may be necessary to reposition the input selector links accordingly (See Section 5, "Connections & Links" of the ABB 1900 Series Circular Chart Recorder PROGRAMMING GUIDE).

3.1.9.1 Preparation for Changes to the Parameters

Ensure that the external alarm/control circuits are isolated if inadvertent operation during programming is undesirable. Any change to the operating parameters is implemented using the UP or DOWN function switches.

Note: The instrument responds instantly to parameter changes which are saved automatically when leaving the current frame.

3.1.9.2 Basic Configuration Level Parameters

Review “Use of Controls” sub-section to:

- RETURN FROM ANY UPPER MAJOR CATEGORY – by using SYMBOL. A on the Faceplate Display Panel.
- ADVANCE TO NEXT UPPER MAJOR CATEGORY – by using SYMBOL. B on the Faceplate Display Panel.
- Pressing the UP or DOWN arrow function on the Faceplate Display Panel, to Adjust or Select a Parameter.

See Figure 7, for the Basic Configuration Level Flow Chart for this Chart Recorder.

3.1.9.3 Set Up Pen Functions

Each Pen selection must proceed DOWN using SYM. B to the last display, then go back UP to first display and repeat the process for the next Pen.

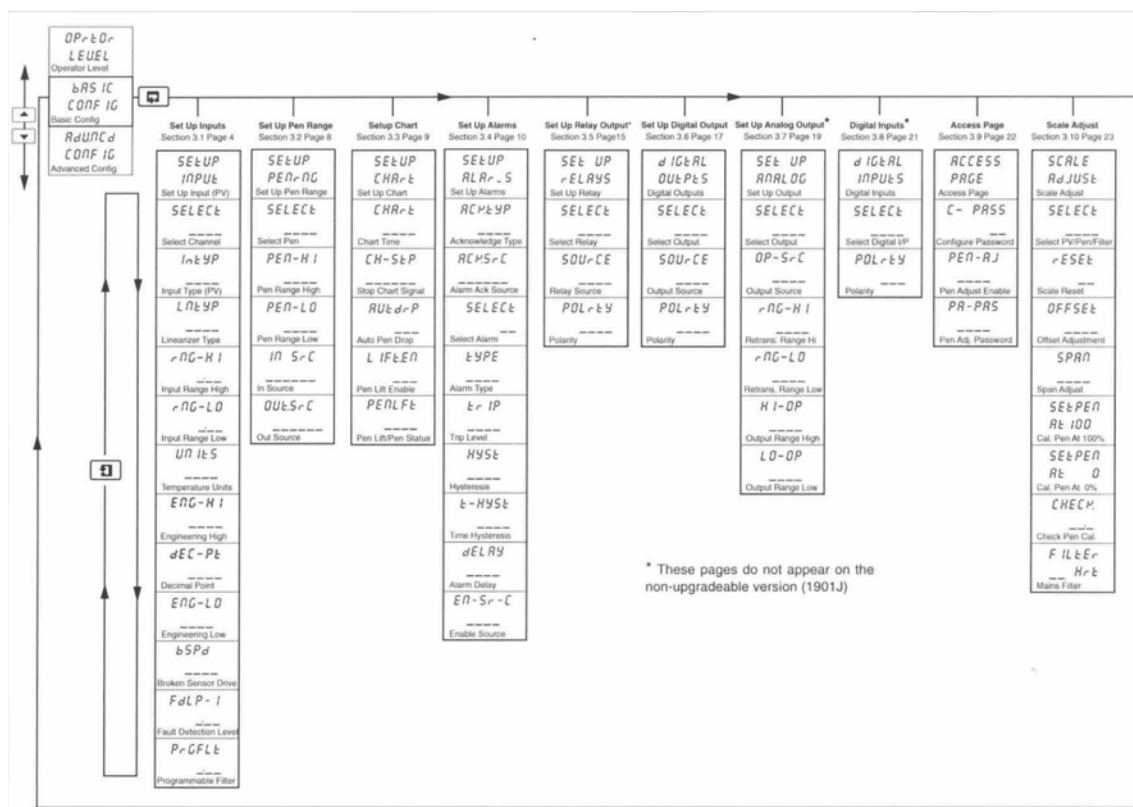
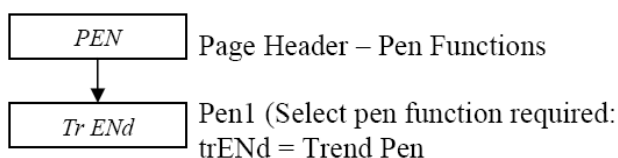
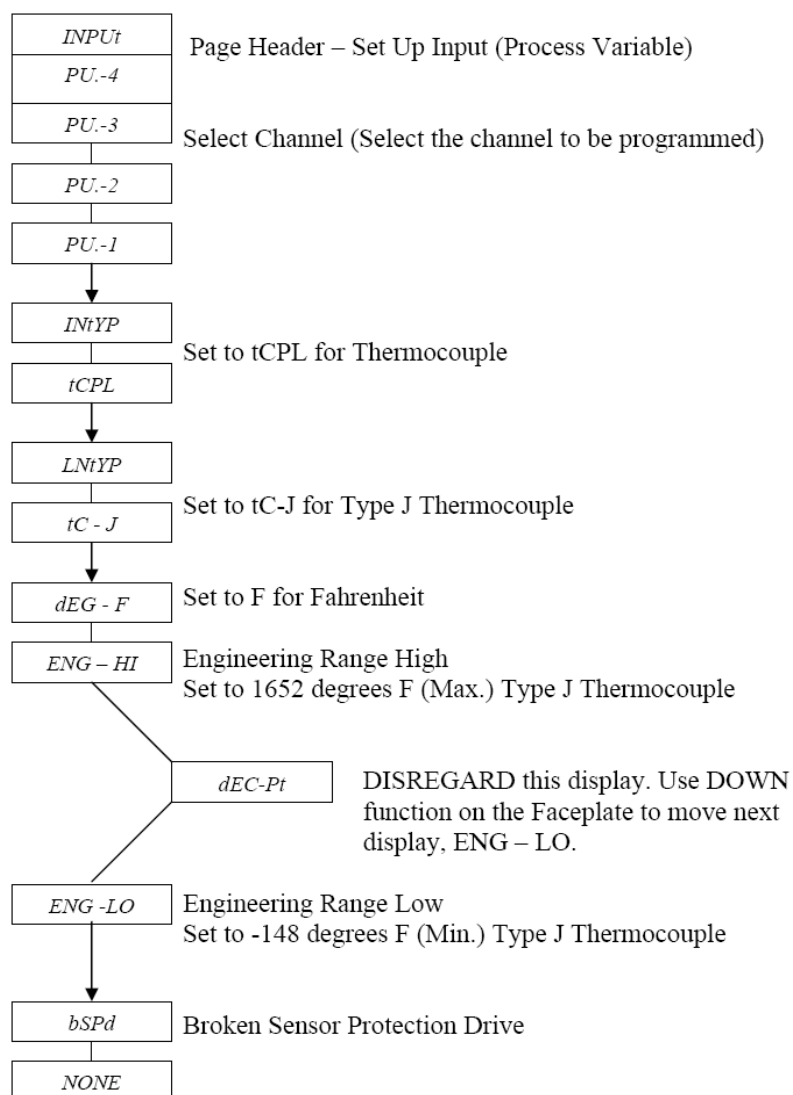


Figure 7. Basic Configuration Level Flow Chart

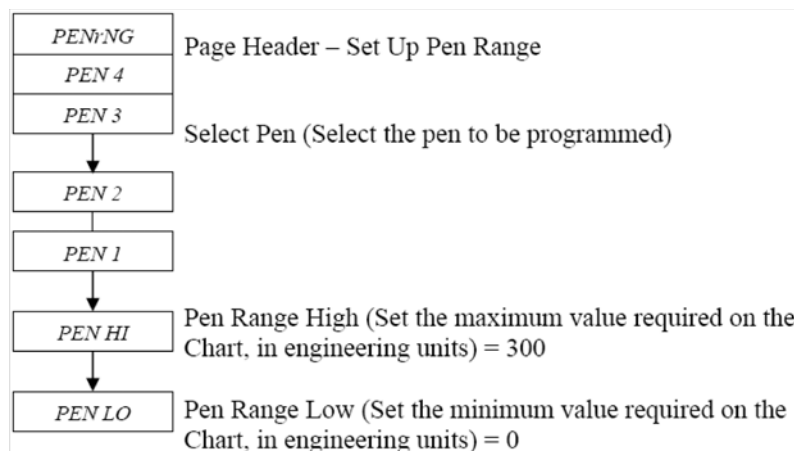
3.1.9.4 Set Up Input (Process Variable)

These are the Set Up Input Parameters, which are used for Set Up Input (Process Variable):

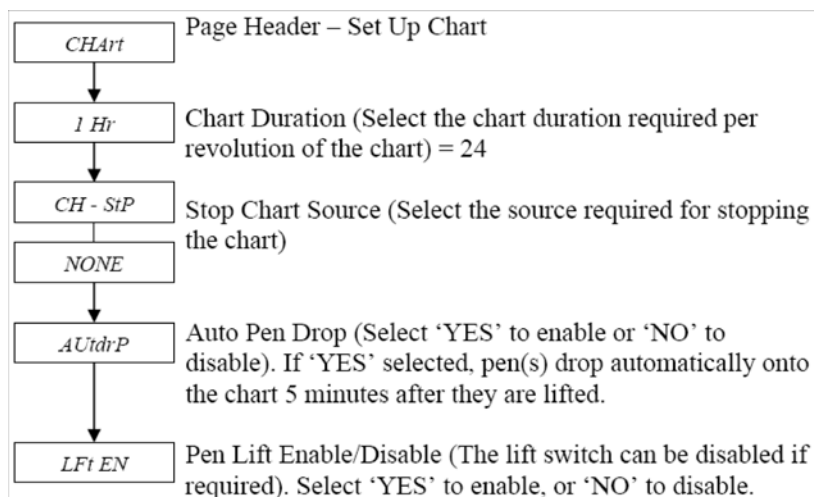


3.1.9.5 Set Up Pen Range /Event Source

Each PEN selection must proceed DOWN using SYM. B to the last display, then go back UP to first display and repeat the process for the next Pen.



3.1.9.6 Set Up Chart



3.1.10 Synchronizing the Chart Recorder to the Panel-View Terminal

1. Press SYMBOL A on the Faceplate Display Panel – TWICE. This is the display:

OprtOr
LEVEL

2. Press DOWN ARROW on the Faceplate Display Panel – ONCE. This is the display:

bASIC
CONFIG

3. Press SYMBOL A on the Faceplate Display Panel – NINE (9) times, until this is displayed:

SCALE
AdJUST

4. Press SYMBOL B on the Faceplate Display Panel – ONCE. This is the display:

SELECT
NONE

5. Press the UP ARROW on the Faceplate Display Panel, ONCE to select the Pen required. This is the display:

SELECT
PV - 1

6. Press SYMBOL B on the Faceplate Display Panel – TWICE, until this is displayed:

OFFSEt

7. Use the UP/DOWN ARROW to match corresponding temperatures on the Panel-View terminal.

8. Press SYMBOL B on the Faceplate Display Panel, until this is displayed:

SELECT
PV - 1

9. Repeat step 6 and 7 above for the other Pens.

3.1.11 Troubleshooting

This is a diagnostic tool to inform the user that the Chart Recorder is functioning properly.

1. Press SYMBOL A on the Faceplate Display Panel – TWICE. This is the display:

*OpriOr
LEVEL*

2. Press DOWN ARROW on the Faceplate Display Panel – ONCE. This is the display:

*bASIC
CONFIG*

3. Press SYMBOL A on the Faceplate Display Panel – NINE (9) times, until this is displayed:

*SCALE
AdJUST*

4. Press SYMBOL B on the Faceplate Display Panel – ONCE. This is the display:

*SELECT
NONE*

5. Press the UP ARROW on the Faceplate Display Panel, ONCE to select the Pen required. This is the display:

*SELECT
PV - 1*

6. Press SYMBOL B on the Faceplate Display Panel – TWICE, until this is displayed:

OFFSEt

7. Use the UP/DOWN ARROW to match corresponding temperatures on the Panel-View terminal.

8. Press SYMBOL B on the Faceplate Display Panel, until this is displayed:

*SELECT
PV - 1*

9. Press UP ARROW on the Faceplate Display Panel, until this is displayed:

*SELECT
PEN - 1*

10. Press SYMBOL B on the Faceplate Display Panel – ONCE, to have this display:

*Set PEN
AT 100%*

11. Press SYMBOL B on the Faceplate Display Panel – ONCE, to have this display:

*Set PEN
AT 0%*

12. Press SYMBOL B on the Faceplate Display Panel – ONCE, to have this display:

*CHECK
50%*

13. Repeat the troubleshooting by pressing SYMBOL B on the Faceplate Display Panel, to select the next Pen (E.G., Pen -2, Pen-3, etc.).

3.2 INFEEED SYSTEM

The infeed of the SUREFILL 22-HA filling machine transports the web of empty bags from the Infeed Roller into the spout fork. The empty bags are supported by the spout between two rails. A push arm (Assy-Shuttle Pusher) is attached to the carriage, on the rodless cylinder.

A Long Shuttle transports the bag the majority of the distance as the bag is being filled. A Short Shuttle transports the bag the final distance into the spout fork.

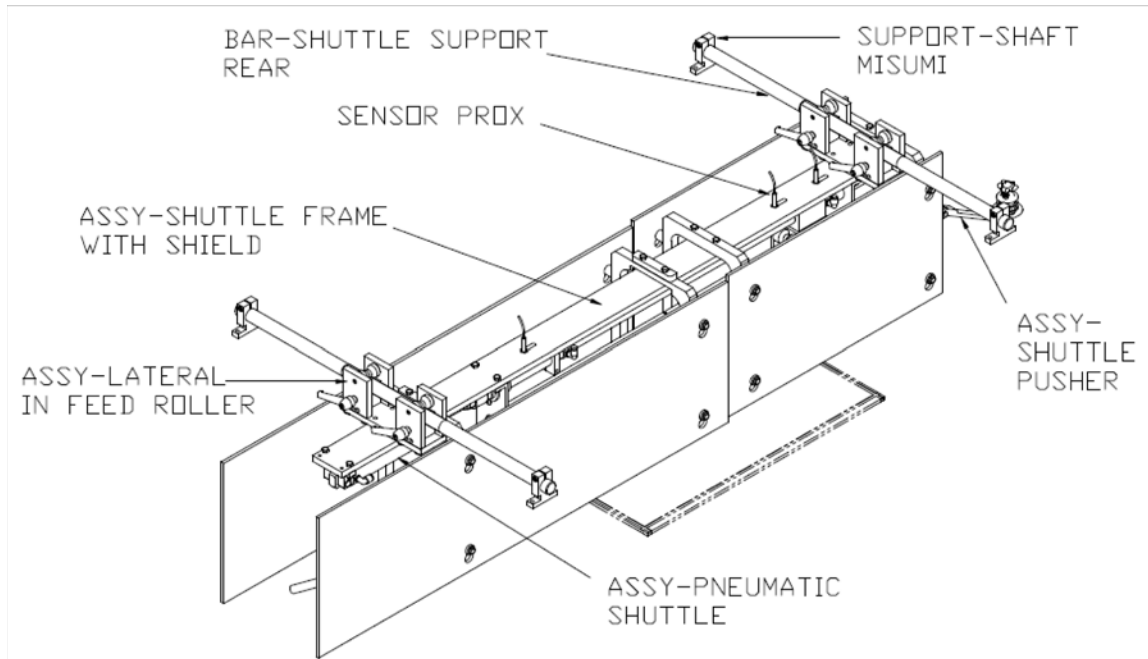


Figure 2. Assembly – In Feed SUREFILL 22-HA

Once a bag has been fed into the spout fork, the short and long shuttle RETRACT, drawing the Shuttle Pusher Assembly back along the web of bags to collect the next bag's spout.

3.3 AIR FILTER REGULATOR ASSEMBLY

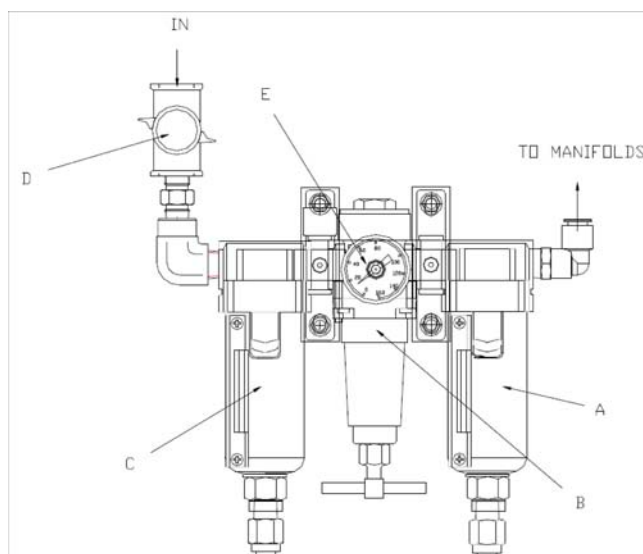


Figure 8. Air Filter Regulator Assembly

ITEM	DESCRIPTION	FUNCTION
A	Micro Mist Separator	Removes all the oil from the Air Regulator.
B	Regulator	Controls the air pressure to the filling machine. Adjustment: Loosen the Lock Nut, and turn bottom handle IN to increase air pressure, or turn OUT to decrease air pressure. Tighten the Lock Nut when finished.
C	Coalescent Filter	Removes liquid and particles for the Air Supply.
D	Air Supply Sup/Exh Valve	Exh Position shuts off the air supply and relieves the air pressure in the filter.
E	Gauge, Regulator	Gauge reads in psi.

Table 1. Air Filter Regulator Assembly Components

To admit air to the filling machine, or to dump air pressure from the filling machine, open or close V-1

To adjust the Filler Main Air Supply, use Regulator R-1 (B). Loosen the lock nut and turn the bottom handle on the regulator Counterclockwise to increase the air pressure, and turn the bottom handle Clockwise to decrease pressure. Tighten the lock nut when you are finished.

3.4 AIRLESS FILL PAD ASSEMBLY

The purpose of the Airless Fill Pad Assembly is to keep air from entering the bag when the cap is removed from the bag spout, and again when the cap is replaced.

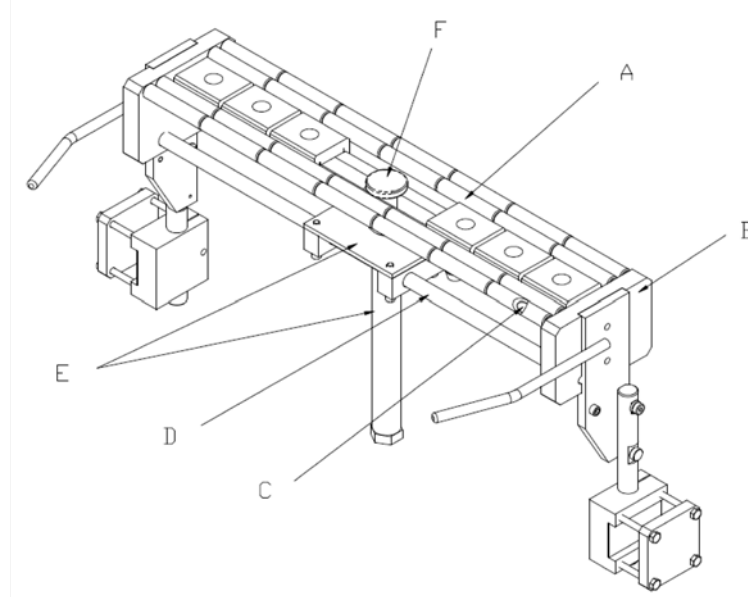


Figure 9. Airless Fill Pad Assembly

ITEM	DESCRIPTION
A	Roller
B	Bracket, Side
C	Rod, Airless Fill
D	Shaft, Airless Fill
E	Assy, Lift Cylinder
F	Pad, Airless Fill

Table 2. Airless Fill Pad Components

Prior to uncapping the bag, the Lift, Cylinder (Airless Fill Pad) (E) rises, pushing the underside of the bag into the spout hole and sealing the spout so air can not enter. The fill pad remains in the UP position as the bag is uncapped and the nozzle is inserted into the spout. Once the nozzle of the Product Valve is firmly in the bag spout, the Airless Fill Pad will drop.

The pad rises again at the completion of the fill operation, again sealing the spout from air entry until the cap is replaced. Once the cap is on, the pad again drops.

3.5 BIO FILTERS

3.5.1 Micro-Filter Elements

The micro-filter element has a specific useful operating life that must be recorded each time a sterilization procedure is initiated. To assure performance, a filter may only experience fifteen (15) 30-minute sterilizing cycles at 250 degrees F (121 degrees C).

Note: It is mandatory that a history be kept of each micro filter element used in your Auto-Fill machine. An identifying number should be etched on the filler element, and this number should be used for recording purposes.

3.5.2 Inspection and Testing of Micro Filters

If there are any doubts about the status of a filter that has not hit fifteen (15) cycles, the filter can be sent for outside testing.

There is only one qualified test for filters, called the DOP or aerosol test. This test can be arranged by the distributor Domnick Micro-Filtration Inc.

Their address is:

Domnick Micro-Filtration Inc.

P.O. Box 3533
Warrenton, VA 20188, USA

Phone: (877) 366-6425
FAX #: (877) 366-6429

Note: After separating the MER3SRH/3 bio-filter cartridge from the sintered 'stone' filter, the bio-filter is disposable at the end of its 15-CYCLE life and cannot be refurbished.

3.5.3 Sample Micro-Filter Element History Form

A sample of a MICRO FILTER ELEMENT HISTORY REPORT SHEET can be found at the back of this manual in "Appendix A". This form can be photocopied and used to record the history of each micro-filter element used in your Scholle SUREFILL machine.

3.5.4 Cleaning Instructions

Item A in both TYPE 1 and TYPE 2 (See Figure 11) is the Bio Filter. It can NOT be cleaned. It can be sent to the distributor for inspection, testing, or replacement if necessary (See "Inspection and Testing of Micro Filters" in this section, for name, address and telephone number).

TYPE 2 (See Figure 11) lower part of this micro-filter contains a 316 sintered stainless steel filter (Item B in Figure 11), which can be cleaned in hot soapy water. The sintered filter is held in place on the body of the bio filter with a hand-nut (Item C in Figure 11).

Remove the nut (Item C) and filter (Item B) for cleaning and retain when disposing of the bio-filter element (Item A in Figure 11).

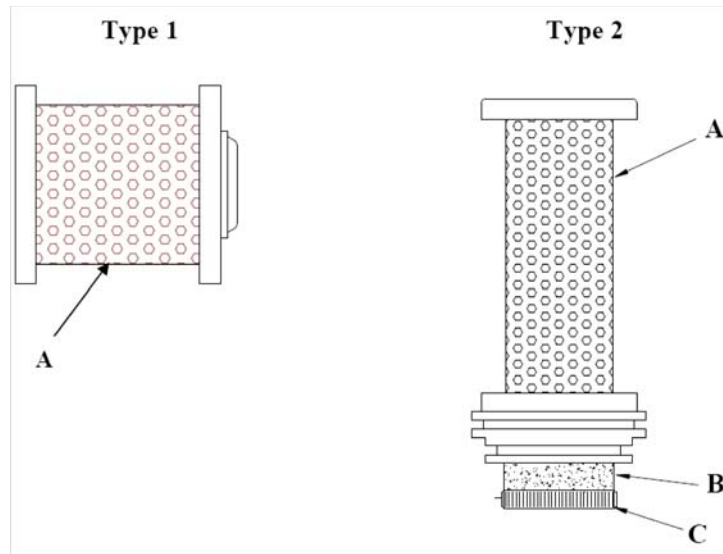


Figure 11. Bio-Filter Assembly

ITEM	DESCRIPTION
A	Bio-Filter
B	Sintered S.S. Filter
C	Hand Nut

Table 3. Bio-Filter Assembly Components

3.6 E-STOP SAFETY MODULE

The purpose of an Emergency Stop Safety Module is to increase the control reliability of an emergency stop circuit.

The customer-supplied E-stop switch must be a “positive-opening device.” This means that its dual-set contacts will open when the actuator is pushed with a certain minimum force, even if a contact was welded in the closed state.

In a functional Category 0 emergency stop circuit, the opening of either of the two E-stop switch contacts immediately removes electrical power from the machine control elements, which react to stop hazardous machine motion and/or other machine hazards. This redundancy of stopping control offered by a two-pole E-stop switch is the first step towards control reliability in an emergency stop circuit. However, failure or defeat of one of the switch contacts to a short-circuit will go undetected, thereby removing the redundancy, and leaving the E-stop circuit prone to eventual failure.

The E-stop switch becomes an input to the E-Stop Safety Module. The Safety Module monitors the condition of both contacts of the E-stop switch.

The output of the E-Stop Safety Module consists of three redundant output switching channels, each of which is the series connection of two forcedguided relay contacts. The three switching output circuits of the E-Stop Safety Module are rated for up to 250V AC at up to 6 amps.

As recommended by the control reliability section of ANSI B11.19. Relays K1 and K2 in the output circuit of the E-Stop Safety Module have mechanically linked contacts which allow the Safety Module circuitry to monitor the contacts of K1 and K2 for failure. If the Safety Module detects failure of any contact of the output relays, the Safety Module output is disabled and cannot be reset.

The E-Stop Safety Module also provides a necessary reset function. Industry standards require that a reset routine be performed after returning the E-stop switch to its closed-contact position. This prevents the controlled machinery from restarting by simply closing the E-stop switch. The E-Stop Safety Module is configured for automatic reset via a twoposition slide switch, located inside, under the lower plug-in wiring barrier.

Note: When automatic reset is used, an alternate means must be established to require routine after the E-stop switch is returned to its closed contact position.

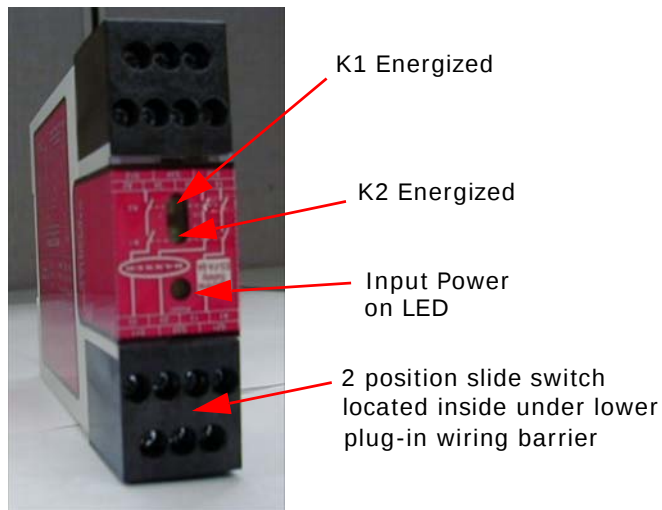


Figure 12. E-Stop Safety Module

3.6.1 E-Stop Switch Requirements

The E-stop switch must provide two contacts which are closed when the switch is in the “armed” position. Once activated, the E-stop switch must open both contacts. The switch may be returned to the closed-contact position only by a deliberate action (such as twisting, pulling, or unlocking).

- Emergency Stop push buttons are located at the filler operator control station where emergency shutdown may be required.
- Stop and Emergency Stop push buttons are continuously operable from all control and operating stations where located.
- Actuators of Emergency Stop devices are colored RED. The actuator of a push button operated device is a palm or mushroomhead type.
- The Emergency Stop actuator is a self-latching type.
- The E-Stop Safety Module must be installed inside an enclosure. It is not designed for exposed wiring.

3.6.2 Automatic Reset Mode

The E-Stop Safety Module is configured for automatic reset via a two-position slide switch (See Figure 12).

The module will reset (and the outputs energize) as soon as the E-stop switch returns to its closed-contact position.

The automatic reset mode is useful for some automated processes.

Note: If automatic reset is used, it is necessary to provide an alternate means of preventing resumption of hazardous machine motion, until an alternate reset procedure is performed.

The alternate procedure must include a Reset switch, located outside the area of dangerous motion, which is positioned so that any area of dangerous motion may be observed by the switch operator during the reset procedure.

Note: The switch is factory set for manual reset mode.

3.6.3 Initial Checkout Procedure



CAUTION

DISCONNECT POWER PRIOR TO CHECKOUT. Before performing the initial checkout procedure, make certain all power is disconnected from the machine to be controlled. Dangerous voltages may be present along the E-Stop Safety Module wiring barriers whenever power to the machine control elements is ON. EXERCISE EXTREME CAUTION WHENEVER MACHINE CONTROL POWER IS OR MAY BE PRESENT. ALWAYS DISCONNECT POWER TO THE MACHINE CONTROL ELEMENTS BEFORE OPENING THE ENCLOSURE HOUSING OF THE E-STOP SAFETY MODULE.

Checkout procedure is as follows:

1. Remove power from the machine control elements.
2. Activate the E-stop switch (open its contacts).
3. Apply power to the E-Stop Safety Module at terminals A1 and A2. Verify that only the INPUT POWER indicator is ON. If either of the other two indicators is ON at this point, disconnect the input power and check all wiring. Return to step 2 after the cause of the problem has been corrected.
4. Arm the E-stop switch (close its contacts).

Note: If configured for automatic reset, K1 and K2 indicators should come ON, and the safety output contacts should close.

If configured for manual reset, close the Reset switch. The K1 and K2 indicators should remain off. Open the Reset switch. The K1 and K2 indicators should both come ON at this time. If either indicator comes ON before the Reset switch is opened, disconnect the input power and check all wiring. Return to step 2 after correcting the problem.

5. Activate the E-stop switch (open its contacts). The K1 and K2 indicators should turn OFF simultaneously. If either indicator remains ON, disconnect the input power and check all wiring. Return to step 2 after the cause of the problem has been corrected.
6. Close the enclosure. Apply power to the Machine Control Elements and perform the Periodic Checkout Procedure.

Note: If more than one E-stop switch is series-connected to one E-stop Safety Module, the above checkout procedure must be run individually for EACH switch.

3.6.4 Periodic Checkout Procedure

The functioning of the E-stop system must be verified on a regular periodic basis to ensure proper operation.

Procedure:

1. With the machine running, engage the E-stop switch (open its contact). Verify that the machine stops.
2. Return the E-stop switch to its closed-contact position. Verify that the machine does not restart.
3. Close and then open the Reset switch (if using manual reset mode). Verify that the machine restarts.

Note: If two or more E-stop switches are series-connected to one E-Stop Safety Module, this test must be individually run for EACH switch.

3.7 FLAT FACE VALVE

The purpose of the Flat Face Valve is to inject steam into the product piping for complete system sterilization, to clean the nipple during C.I.P. process, and also to agitate the solution.

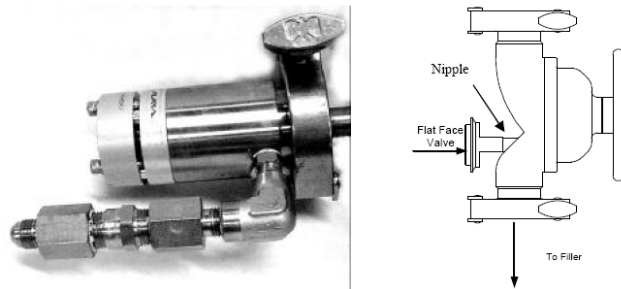
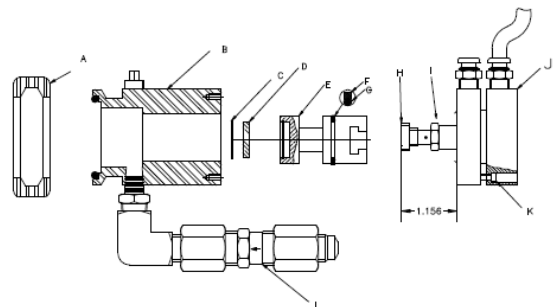


Figure 13. Flat Face Valve (typical)

3.7.1 Maintenance

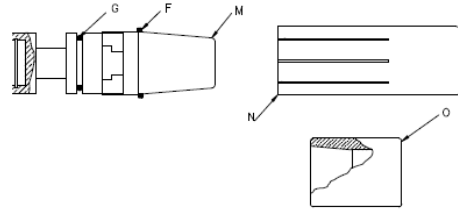
3.7.1.1 Disassembly

1. Remove unit from Divider Valve by uncapping, disconnecting the steam and pneumatic lines.
2. Remove the (4) Allen screws (K) securing the Air Cylinder (J) to the Valve Body (B).
3. Pull the Air Cylinder (J) away from Valve Body (B), which will pull the Valve Piston (E) out of the Valve Body (B).
4. Slide the Valve Piston (E) sideways off the Bolt (H).
5. Remove the Snap Ring (C) and Disk Gasket (D).
6. Cut the Piston Ring (F) being careful not to nick the Valve Piston (E).
7. Remove the "O" Ring (G).
8. Clean all components.



3.7.1.2 Assembly

1. Install a new "O" Ring (G) in the groove in the Valve Piston (E).
2. Set the bottom of the Valve Piston (E) on a flat, hard surface.
3. Center the loading Mandrel (M) on top of the Valve Piston (E).
4. Place a new Seal Ring (F) over the loading Mandrel (M).
5. Use the Seal Pusher (N) to move the Seal Ring (F) down into the groove of the Valve Piston (E).
6. Push the Sizing Tool (O) down over the seal and let set for a couple of minutes to resize the Seal Ring (F).
7. Insert a new Disk Gasket (D) and install the Snap Ring (C).
8. Apply 30 psi of air pressure to the extend side (shown as hose) of the Air Cylinder (J).
9. Adjust the Bolt (H) as necessary to achieve the 1.156" dimension between the face of the bolt and the face of the Air Cylinder (J).
10. Lock the Bolt (H) in place with the Jam Nut (I).
11. Slide the Valve Piston (E) onto the Bolt Head (H).
12. Carefully insert the Valve Piston (E) into the Valve Body (B).
13. Apply Loctite 242 to the threads of the Allen Screws (J) and secure the Air Cylinder (J) to the Valve Body (B).
14. Test the Check Valve (L) for proper orientation. Air should flow in the direction of the air only.
15. Re-clamp the Assembly into the Divider Valve.
16. Reconnect steam lines.
17. Reconnect Pneumatic lines.



3.8 FLOWMETER, CORIOLIS MASS – ENDRESS & HAUSER

The PROMASS 83F40 Coriolis Mass Flowmeter is a measuring device that is used only for measuring the mass flow rate of liquids and gases. The flowmeter system also measures fluid density and fluid temperature. These parameters are then used to calculate other variables such as volume flow. Fluids with widely differing properties can be measured.

The flow measuring system consists of the following components:

- PROMASS 83 Transmitter
- PROMASS Sensor

This compact version includes the Transmitter and Sensor to form a single mechanical unit.

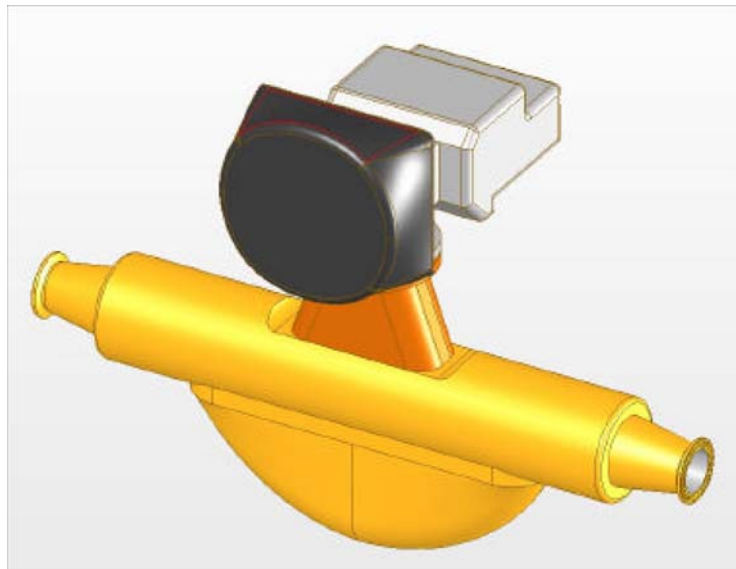


Figure 14. Flowmeter, Coriolis Mass

3.8.1 Operation

3.8.1.1 Quick Operation Guide

You have a number of options for configuring and commissioning the Flowmeter device:

Local Display (option)

The local display enables the operator to read all important variables directly at the measuring point configure bus-specific and device-specific parameters in the field and perform commissioning.

Configuration Programs

The PROMASS Flowmeters are accessed via the surface interface.

Jumpers/Miniature Switches for Hardware Settings

The operator can make the following hardware settings:

- Address mode configuration (select software or hardware addressing).
- Device bus address configuration (for hardware addressing).
- Hardware writes protection enabling/disabling.

3.8.1.2 Local Display and Operating Elements

The local liquid crystal display enables the operator to read all important parameters directly at the measuring point and configure the device using the “Quick Setup” or function matrix. (See ENDRESS+HAUSER Operating Instructions Manual for details).

The display consists of four lines; this is where measured values and/or status variables (direction of flow, empty pipe, bar graph, etc.) are displayed. The backlit liquid crystal display shows not only measured values, but also displays dialog texts, fault messages and notice messages. The operator can change the assignment of display lines to different variables to suit their needs and preferences (See ENDRESS+HAUSER Operating Instructions Manual).

Optical sensors for “Touch Control”.

-- Plus/Minus Keys

- HOME position – direct access to totalizer values and actual values of inputs/outputs.
- Enter numerical values, select parameters.
- Select different blocks, groups and function groups within the function matrix.

Press the +/- keys simultaneously to trigger the following functions:

- Exit the function matrix step by step to the HOME position.
- Press and hold down +/- keys for longer than 3 seconds, to return directly to the HOME position.
- Cancel data entry.

-- Enter Key

- HOME position for entry into the function matrix.
- Save the numerical values that the operator has input or the settings that were changed.

-- Multiplex Mode:

A maximum of two different display variables can be assigned to each line. Variables multiplexed in this way alternate every 10 seconds on the display.

-- Error Messages:

Display and presentation of system/process errors is given to the operator.

-- **Additional Display Functions:**

DEVICE WITHOUT BATCHING SOFTWARE:

From the HOME position, use the +/- keys to open an “Info Menu” containing the following information:

- Totalizer (including overflow)
- Actual values or states of the configured inputs/outputs
- Device TAG number (user-definable).

The +/- keys can also scan individual values within the “Info Menu”.

Press the +/- keys simultaneously [ESC] to return to the HOME position.

DEVICE WITH BATCHING SOFTWARE:

On measuring instruments with installed batching software and a suitably configured display line, the operator can carry out filling processes directly using the local display.

3.8.1.3 Icons

The icons which appear in the display are described in the ENDRESS+HAUSER Operating Instructions Manual.

3.8.1.4 Brief Operating Instructions to the Function Matrix

1. Press HOME position [E] – for entry into the function matrix.
2. Select a Block (E.G., OUTPUTS).
3. Select a Group (E.G., CURRENT OUTPUT 1).
4. Select a Function Group (E.G., SETTINGS).
5. Select a Function (E.G., TIME CONSTANT).

Change parameter / enter numerical values:

- Press +/- keys to select or enter enable code, parameters, and numerical values.
 - Press [E] to save your entries.
6. Exit the function matrix:
 - Press & hold down the +/- keys simultaneously [ESC] for longer than 3 seconds, to go to the HOME position.
 - Repeatedly press the +/- keys simultaneously [ESC] to return step-by-step to the HOME position.

3.8.1.5 Configuring the Flowmeter – General Notes

The Quick Setup menu contains the default settings that are adequate for commissioning. Complex measuring operations on the other hand necessitate additional functions that the operator can configure as necessary and customize to suit the operator's process parameters. The function matrix, therefore, comprises a multiplicity of additional functions which, for the sake of clarity, are arranged on a number of menu levels (blocks, groups, and function groups).

Comply with the following instructions when configuring functions:

- Select the functions as described. Each cell in the function matrix is identified by a numerical or letter code on the display.

- The operator can switch off certain functions (OFF). If the operator does so, related functions in other function groups will no longer be displayed.
- Certain functions prompt the operator to confirm their data entries. Press +/- keys to select “SURE [YES]” and press [E] to confirm. This saves the operator’s setting or starts a function, as applicable.
- Return to the HOME position is automatic if no key is pressed for 5 minutes.
- Programming mode is disabled automatically if the operator does not press a key within 60 seconds, following automatic return to the HOME position.



CAUTION

All functions are described in detail, as is the function matrix itself, in the Endress+Houser “Description of Device Functions” manual.

- The transmitter continues to measure while data entry is in progress.
- If the supply voltage fails all preset and Para materialized values remain safely stored in the EEPROM.

3.8.1.6 Enabling the Programming Mode

The function matrix can be disabled. Disabling the function matrix rules out the possibility of inadvertent changes to device functions, numerical values or factory settings.

A numerical code (factory setting = 83) has to be entered before settings can be changed. If the operator uses a code number of their choice, they exclude the possibility of unauthorized persons accessing the data.

Comply with the following instructions when entering codes:

- If programming is disabled and the +/- keys operating elements are pressed in any function, a prompt for the code automatically appears on the display.
- If “0” is entered as the customer’s code, programming is always enabled.

Changing certain parameters such as all sensor characteristics, for example, influences numerous functions of the entire measuring system, particularly measuring accuracy.

There is no need to change these parameters under normal circumstances and consequently, they are protected by a special code known only to the Endress+Houser service organization.

3.8.1.7 Disabling the Programming Mode

Programming mode is disabled if the operator does not press a key within 60 seconds following automatic return to the HOME position.

3.8.2 Quick Setup “Commissioning”

If the measuring device is equipped with a local display, all the important device parameters and additional functions for standard operation can be configured quickly and easily by means of Quick Setup menus. (See Section 6.3.1: Quick Setup “Commissioning” in the ENDRESS+HAUSER Operating Instructions Manual).

The display returns to the cell SETUP COMMISSIONING (1002), if the operator presses the +/- keys simultaneously [ESC] during parameter interrogation. The stored parameters remain valid.

3.9 MEMORY MODULE (EEPROM) INSTALLATION – SLC503, 504, 505

The EEPROM memory module holds the original program, without the timer settings that have been made to the filler during operation. If the EEPROM is installed in the machine and the machine turned on, the default will be to the original program and all of the modifications will be erased. For this reason, the only time to use the EEPROM is if the controller program in use is degraded or erased.



CAUTION

Always turn off power to the machine before removing the processor and installing the memory module. This guards against possible damage to the module and undesired processor faults.



CAUTION

To avoid memory module damage, handle it by the ends of the carrier or edges of the plastic housing. Also, do not expose the memory module to an electrostatic charge, which can alter or destroy memory.

1. Turn off power to the machine.
2. Remove the processor from the rack by pressing the retainer clips at both the top and bottom of the module and sliding it out.



Figure 15. Processor & Memory Module

3. The memory module is positioned at the side of the processor.
4. Locate the socket on the processor board and place the memory module onto the socket and press firmly in place.
5. Install the processor back into the chassis.

6. Restore power to the machine.

The memory module will automatically load the program into the processor and enter the run mode.

7. Once the program is installed, turn off power to the machine.
8. Remove the processor and remove the memory module.
9. Replace the processor in the rack.
10. Store the EEPROM in a safe place.
11. Battery is used to maintain RAM program when main power to PLC is off.

3.10 OIL INJECTORS

The oil injection into selected steam lines provides lubrication to the “O” rings, and to the Dynamic Steam Seals, preventing seal dry out. The oil injection also provides lubrication to the Cylinder Housing Assembly bearing surfaces.

The purpose of this oil injection system is to extend “O” ring and bearing life by supplying a controlled and consistent FDA approved lubrication into the steam flow.

During production, the pump operates once every 5 cycles.



WARNING

If oil is not added for a period of 10 minutes, the filler will be stopped until the oil is replenished.

A proper oil level must be maintained at all times. If the oil level is allowed to drop the oil level switch, an alarm banner will appear on the PanelView notifying the operator.

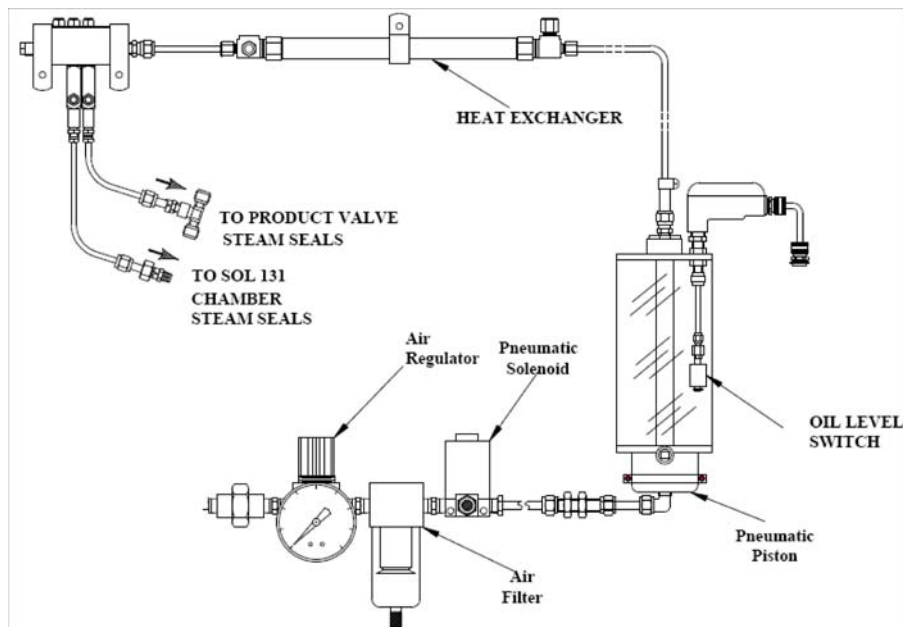


Figure 16. Oil Injection System

3.10.1 Operation

Regulated air filtered air is supplied to the Pneumatic Solenoid. When the Pneumatic Solenoid opens, the air forces the Pneumatic Piston to pump oil through the heat exchanger. The heat exchanger pre-heats the oil before it is injected into the steam trace lines.

3.10.2 Oil Injector Adjustment

Injector output is controlled by the position of the indicator cap, which limits the travel of the packing retainer.

1. Fill the oil injector supply tank with Bel-Ray oil, which is an FDA approved lubricant.
2. Set R-18 to 50 PSI.

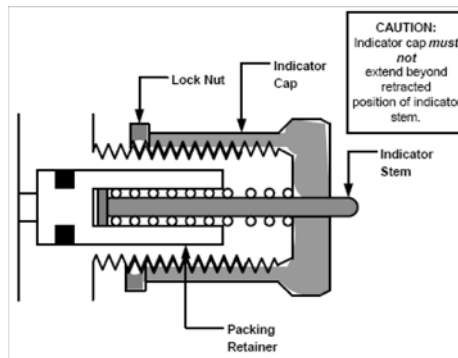


Figure 17. Oil Injector Adjuster

3. Hand tighten indicator cap against its stop (No output).
4. Back the indicator cap off 3 turns for the steam seal output and lock the adjustment in place with the locking nut.

3.10.3 Maintenance of Oil Injection System

If any of the Oil Injection System components are removed, replaced or rebuilt (Rebuild kits are available) the following procedure must be followed.

From the FILLER CONTROLS/SETUP SCREEN on the PanelView terminal:

- Press OILER button 30 to 50 times to Re-prime the Oil Injection System.

3.11 OPERATOR TERMINAL MEMORY CARD

A memory card stores operator terminal application programs. The memory card installs in the back of the terminal with the key slot on top.

To load an application from a memory card:

1. Install the memory card in the terminal (See Figure 18).
2. Enter Configuration Mode as follows:
 - From the MAIN MENU Screen of the PanelView 600 Operator terminal, touch SECURITY SCREEN function.
 - From the SECURITY SCREEN touch PASSCODE function to ENTER the LEVEL 1 Passcode, to access the Configuration Screen.

- When touching the CONFIG SCREEN function, the user will have access to view the Configuration Screen.



Figure 18. Operator Terminal (Rear)

3. From the Configuration Screen, select Memory Card and press the Enter key.
4. Press the [F2] function key (Restore From Card) to begin the transfer.

Since the current application (program) in the terminal will be overwritten, a screen prompt asks:

Proceed with download?

- F1 – Abort
 - F2 - Continue
5. Press [F2]

While the transfer is in progress, the terminal displays the status with a percentage bar.

6. When the transfer is complete, check the validity of the application by resetting and running the application.
7. Remove the Memory Card from the terminal.
8. From the SECURITY SCREEN, touch MAIN function to return to the MAIN MENU screen.

3.12 OPERATOR TERMINAL SCREENS

This section shows all of the terminal screens that are available to the operator for the SUREFILL 22-HA ASEPTIC machine.

Note: See section on Control Devices and Operator Terminal, in the Operator Manual, for more detailed information.

3.12.1 PanelView Operator Screens – Menu Tree

Figure 20 on the following page diagrams the Menu Tree for the PanelView Operator Terminal Screens for the SUREFILL 22-HA ASEPTIC filling machine. These screens are detailed in this section for use in operating the filling machine.

3.12.2 Main Menu Screen

This screen displays and gives access to all the necessary functions available to the operator. The following screens can be accessed from the MAIN MENU screen.

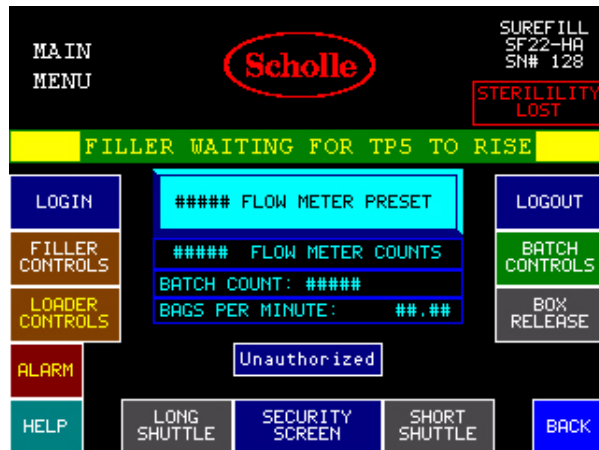


Figure 19. Main Menu Screen

This screen shows the following information and various functions:

- SUREFILL 22-HA SN# 113
- FILLER STATUS
- LOGIN

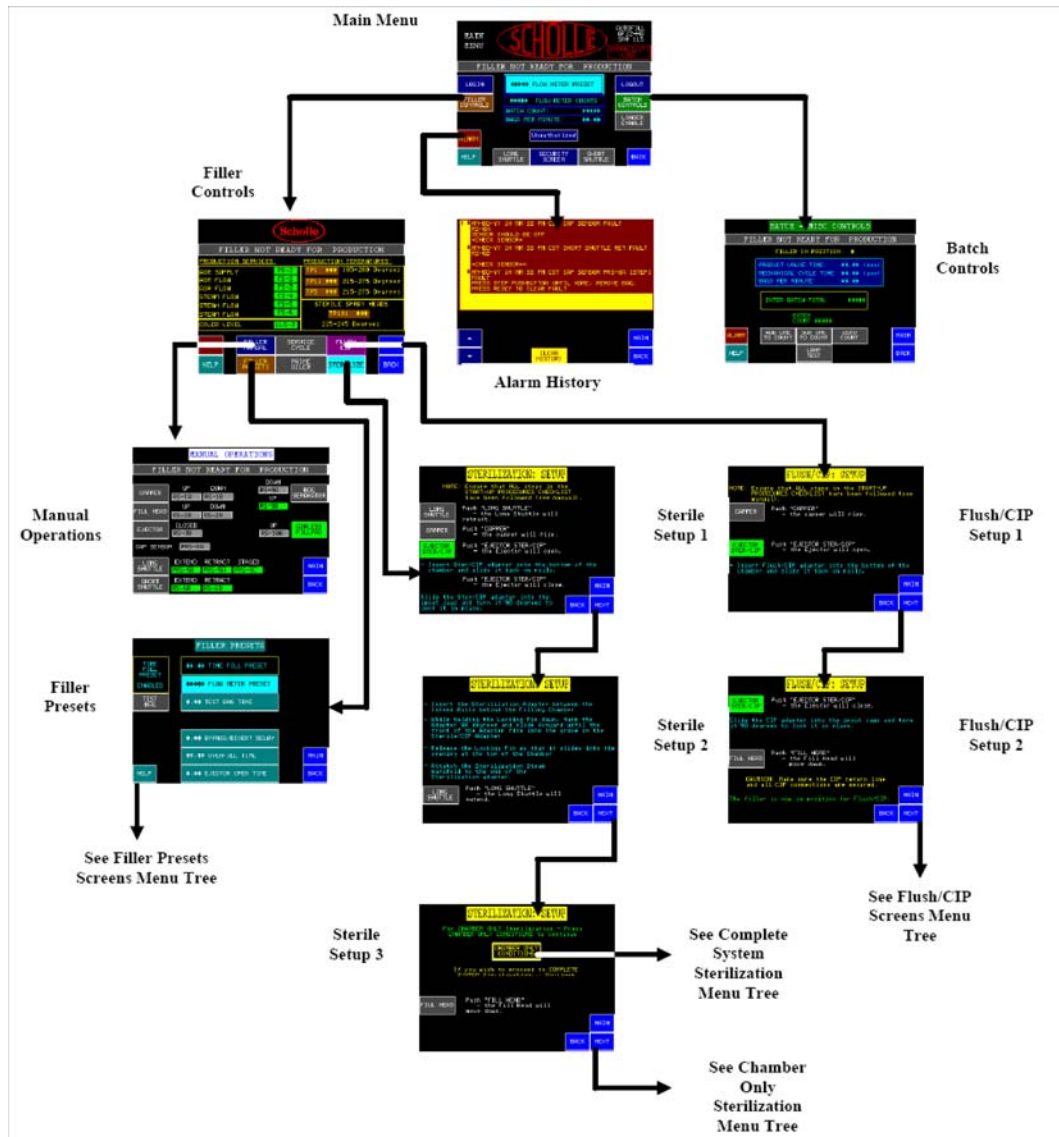


Figure 20. PanelView Operator Screens – Menu Tree

- FLOW METER PRESET indicator
- FLOW METER COUNTS indicator
- BATCH COUNT indicator
- BAGS PER MINUTE indicator
- STERILITY indicator
- SECURITY LEVEL indicator

- Pushbutton Displays:
 - LOGIN function
 - LOGOUT function
 - FILLER CONTROLS function
 - BATCH CONTROLS function
 - LOADER ENABLE function
 - ALARM function
 - HELP function
 - LONG SHUTTLE function
 - SECURITY SCREEN function
 - SHORT SHUTTLE function
 - BACK function

3.12.3 Filler Controls Screen

This screen is accessed from the MAIN MENU screen, by touching the FILLER CONTROLS function.

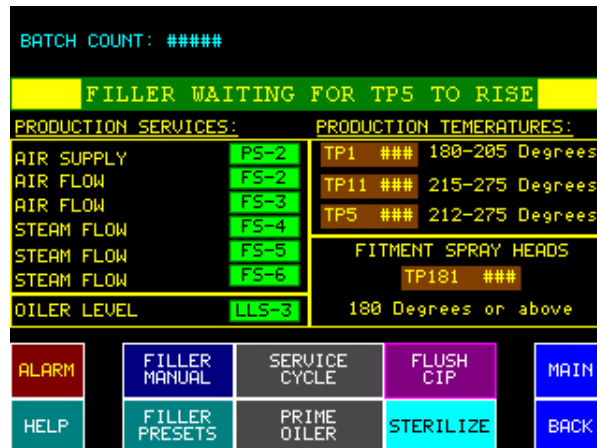


Figure 21. Filler Controls Screen

This screen displays the following information, status of the Filler, and gives the operator access to various controls on the Filler.

The FILLER CONTROLS screen displays the PRODUCTION SERVICES, and examples are listed below:

- AIR SUPPLY (PS-2)
- AIR FLOW (FS-2)
- AIR FLOW (FS-3)
- STEAM FLOW (FS-4)
- STEAM FLOW (FS-5)
- STEAM FLOW (FS-6)
- OILER LEVEL (LLS-3)

The FILLER CONTROLS screen displays the PRODUCTION TEMPERATURES, and examples are listed below:

- TP-1 ____ (180 – 205 Degrees)
- TP-5 ____ (212 – 275 Degrees)
- TP-11 ____ (215 – 275 Degrees)
- TP-181 ____ (180 or above) Pre-sterile Tunnel

The FUNCTIONS shown on this screen are as follows:

- FILLER STATUS – this Filler Status indicator is displayed across the top portion of the screen.
- ALARM – touching this function displays the fault ALARM HISTORY screen.
- HELP – touching this function displays the HELP MENU screen.
- FILLER MANUAL – touching this function displays the Filler MANUAL OPERATIONS screen including: Capper, Fill Head, Ejector, Long Shuttle, Short Shuttle, Bag Separator, Airless Fill Pad, Reed Switches, Proximity Switches, Main Menu, and Back.
- FILLER PRESETS – touching this function displays the Filler Presets screen for enabling or disabling the Time Fill Preset, Flow Meter Preset, and the HSCE Module Preset. Displays Flow Meter Enabled, the Timer Presets, and access to functions: Help, Main Menu, and Back.
- FLUSH/CIP – touching this function opens the FLUSH and CIP SETUP SCREEN 1, for related functions for that process.
- SERVICE CYCLE – touching this function will test the bag cycle without using a product valve to fill a bag.
- PRIME OILER – touching this function primes the oiling system.
- STERILIZE – touching this function opens the STERILIZATION SETUP SCREEN 1, for related functions for that process.
- MAIN – touching this function returns the operator to the Main Menu screen.
- BACK – touching this function returns the operator to a previous screen.

3.12.4 Alarm History Screen

This screen description is detailed in another section in the Maintenance Manual, “Alarms and Faults.”

3.12.5 Batch Controls Screen

This screen displays and gives access to all the necessary functions available to the operator, through the BATCH CONTROLS screen

- 22-HA ASEPTIC STATUS – this Filler Status indicator is displayed across the top portion of the screen.
- FILLER IN POSITION # - displays the step position the Filler is in.
- PRODUCT VALVE TIME – time in seconds.
- MECHANICAL CYCLE TIME – time in seconds.

- BAGS PER MINUTE – displays bags per minute processed – time in minutes and seconds.
- ENTER BATCH TOTAL number – the machine will automatically stop when it reaches the number entered.



Figure 22. Batch Controls Screen

- BATCH COUNT Number – displays the Batch Count in progress.
- Pushbutton Displays:
 - ALARM – touching this function will display the ALARM HISTORY screen
 - ADD ONE TO COUNT – touching this function is used to add one count to the displayed batch total.
 - SUB ONE TO COUNT – touching this function is used to subtract one count to the displayed batch total.
 - ZERO COUNT – touching this function is used to return the Batch Count to Zero.
 - MAIN – touching this function returns the operator to the MAIN MENU screen.
 - HELP – touching this function will display the HELP MENU screen.
 - LAMP TEST – touching this function is used to perform the Filler Lamp Test – turn lamp ON all Filler lamps.
 - BACK – touching this function will return the operator to the previous screen.

The following screens are GRAY in color indicating the OFF position:

- ADD ONE TO COUNT
- SUB ONE TO COUNT
- ZERO COUNT
- LAMP TEST

When these functions are touched, the function turns GREEN in color, indicating the functions are enabled.

3.12.6 Manual Operations Screen

This screen is accessed from the FILLER CONTROLS screen, by touching the FILLER MANUAL function.

This screen allows the operator to manually perform nine functions. The following function is GRAY in color indicating the IDLE or HOME position. When these functions are touched, the function turns GREEN in color, indicating the function is enabled.

- CAPPER – this function when touched moves the Capper to the DOWN and UP positions manually.
- FILL HEAD – this function when touched moves the Fill Head to the UP and DOWN positions manually.
- EJECTOR – this function when touched moves the Ejector to the CLOSED and OPEN positions manually.
- LONG SHUTTLE – this function when touched moves the Long Shuttle to the EXTENDED and RETRACTED positions manually.
- SHORT SHUTTLE – this function when touched moves the Short Shuttle to the RETRACTED and EXTENDED positions manually.
- BAG SEPARATOR – this function when touched moves the Bag Separator to the ENABLED and DISABLED positions manually.
- AIRLESS FILL PAD – this function when touched moves the Airless Fill Pad to the ENABLED and DISABLED positions manually.
- MAIN – this function when touched returns the operator to the MAIN MENU screen.
- BACK – this function when touched returns the operator to a previous screen.

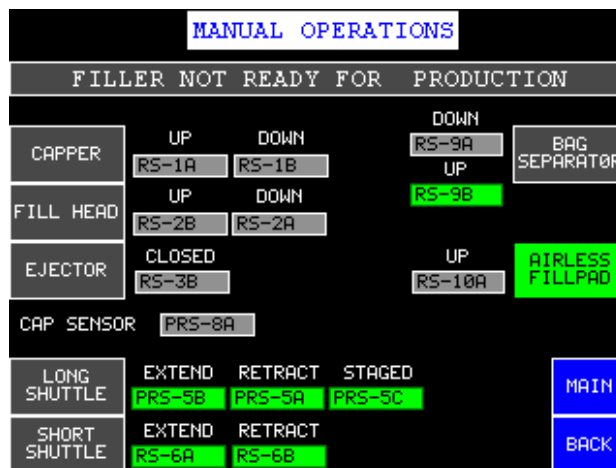


Figure 23. Filler Manual Operations

This screen also displays the following information:

- Reed Switches (ON – Green display, or OFF – Gray display).
 - RS-1A Capper UP
 - RS-1B Capper DOWN
 - RS-2A Fill Head DOWN
 - RS-2B Fill Head UP
 - RS-3B Ejector CLOSED

- RS-6A Short Shuttle EXTEND
- RS-6B Short Shuttle RETRACT
- RS-9A Bag Separator DOWN
- RS-9B Bag Separator UP
- RS-10A Airless Fill Pad UP
- Proximity Switches (ENABLED – Green display, or IDLE – Gray Display).
 - PRS-5A Long Shuttle RETRACT
 - PRS-5B Long Shuttle EXTEND
 - PRS-5C Long Shuttle STAGED
 - PRS-8A Cap Sensor

3.12.7 Filler Presets Screens Menu Tree

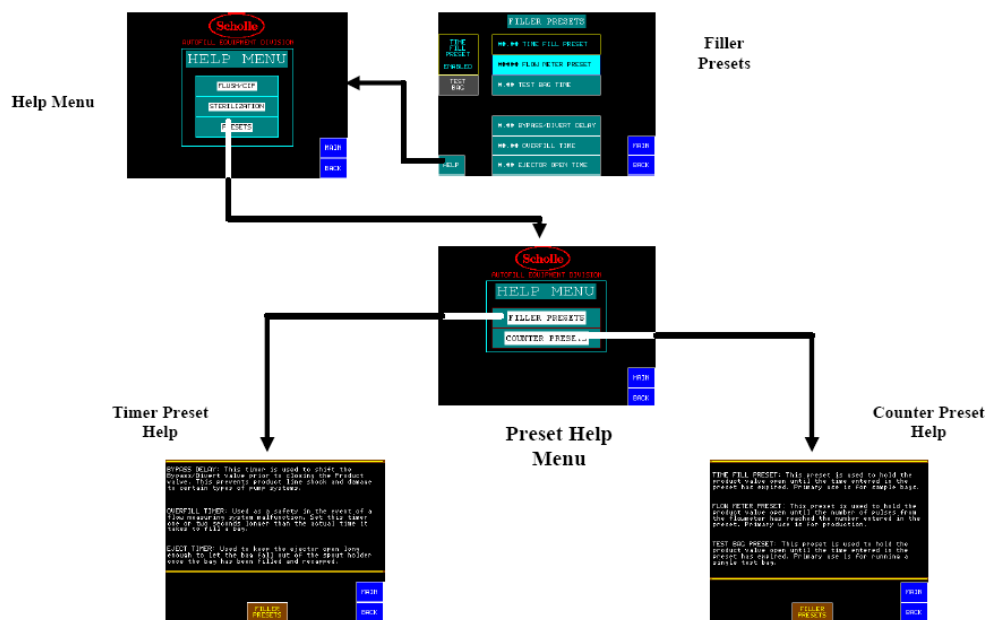


Figure 24. Filler Presets Screens – Menu Tree

3.12.8 Filler Presets Screen

This screen is accessed from the FILLER CONTROLS screen, by touching the FILLER PRESETS function.

The Filler Presets are initially set at Scholle Packaging and are displayed on this screen. The image shown in Figure 25 depicts a typical FILLER PRESETS screen (the screen the operator views, may vary slightly).

This screen can be used by the operator for: TIME FILL PRESET and FLOW METER PRESET.

This screen contains the following functions:

- HELP – touching this function displays the HELP MENU screen.

- TIME FILL PRESET ENABLED/FLOW METER PRESET ENABLED – this function toggles either of the two presets, enabling one or the other.



Figure 25. Filler Presets Screen

- TIME FILL PRESET – this function when touched will display the Virtual Keypad so that a new value may be entered. This preset is only active if enabled.
- FLOW METER PRESET – this function when touched will display the Virtual Keypad so that a new value may be entered. This preset is only active if enabled.
- TEST BAG – this function when touched can test a sample bag of a different product volume that is part of the production run.
- MAIN – this function when touched, returns the operator to the MAIN MENU screen.
- BACK – this function when touched, returns the operator to a previous screen.

When the operator touches a displayed function on the FILLER PRESETS screen (E.G., Test Bag Time, Bypass/Divert Delay, Overfill Time, and Ejector Open Time, etc.), a virtual keypad is displayed on the PanelView.

The display is used to change the Timer Presets as follows:

3.12.8.1 Entering a Value

1. From the Filler Presets screen, the operator should touch the filler component bar that requires a new value to be entered.
2. A virtual keypad will display over the Filler Presets screen.
3. Once a desired filler preset has been chosen, the operator should touch the virtual keypad screen to enter a value (E.G., 0.40). The left arrow symbol (?) can be used to move the decimal point back 1 position, and to escape the Virtual Keypad without changing the original value.
4. The operator should touch the ENTER symbol (↵) on the virtual keypad. The new value is now entered in the component bar.
5. The keypad display is replaced by a revised Filler Presets screen with the corrected value entered in the component bar.

3.12.9 Preset Help Menu Screen



Figure 26. Preset Help Menu Screen

The PRESET HELP MENU screen is accessed from the HELP MENU screen (See Figure 11) by pressing PRESETS function, to display the PRESETS HELP MENU screen, and includes two preset function bars, and two additional functions:

- FILLER PRESETS – this function bar, when touched on this screen, will display the TIMER PRESETS HELP screen.
- COUNTER PRESETS – this function bar, when touched on this screen will display the COUNTER PRESETS HELP screen.
- MAIN – touching this function returns the operator to the MAIN MENU screen.
- BACK – touching this function returns the operator to a previous screen.

3.12.10 Timer Preset Explanations – Timer Presets Help Screen

This screen is accessed from the Time Fill Preset function on the FILLER PRESETS screen. This HELP screen displays Timer Preset Explanations.

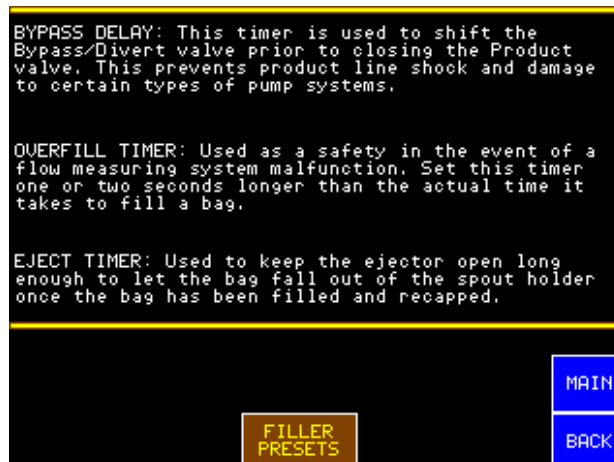


Figure 27. Timer Presets Help Screen

Bypass Delay:

This timer is used to shift the Bypass/Divert valve prior to closing the Product Valve. This prevents product line shock and damage to certain types of pump systems.

Overfill Timer:

Used as a safety in the event of a flow measuring system malfunction, set this timer one or two seconds longer than the actual time it takes to fill a bag.

Eject Timer:

Used to keep the ejector open long enough to let the bag fall out of the spout holder once the bag has been filled and recapped.

There are three functions on this screen:

- FILLER PRESETS – this function when touched, returns the operator to the FILLER PRESETS screen.
- MAIN – this function when touched, returns the operator to the MAIN MENU screen.
- BACK – this function when touched, returns the operator to a previous screen.

3.12.11 Preset Explanations – Counter Presets Help Screen

This screen is accessed from the PRESET HELP MENU screen, by touching the COUNTER PRESETS function bar. This Help screen displays the Counter Preset Explanations.



Figure 28. Counter Presets Help Screen

Time Fill Preset:

This preset is used to hold the product valve open until the time entered in the preset has expired. Primary use is for sample bags.

Flow Meter Preset:

This preset is used to hold the product valve open until the number of pulses from the flowmeter has reached the number entered in the preset. Primary use is for production.

Test Bag Preset:

This preset is used to hold the product valve open until the time entered in the preset has expired. Primary use is for running a single test bag.

There are three functions on this screen:

- FILLER PRESETS – this function when touched, returns the operator to the FILLER PRESETS screen.
- MAIN – this function when touched, returns the operator to the MAIN MENU screen.
- BACK – this function when touched, returns the operator to a previous screen.

3.12.12 Help Menu Screen

The HELP MENU screen consists of three selections:

Flush /CIP

Touching this selection on the HELP MENU screen, will display the FLUSH/CIP SETUP 1 screen (See Flush/CIP procedure sub-section within this Operator Terminal Screens section).

Sterilization

Touching this selection on the HELP MENU screen, will display the STERILE/CIP SETUP 1 screen (See the Sterilization Screens sub-section within this Operator Terminal Screens section).

Presets

Touching this selection on the HELP MENU screen, will display the FILLER PRESET HELP screen (See the Filler Presets sub-section within this Operator Terminal Screens section).

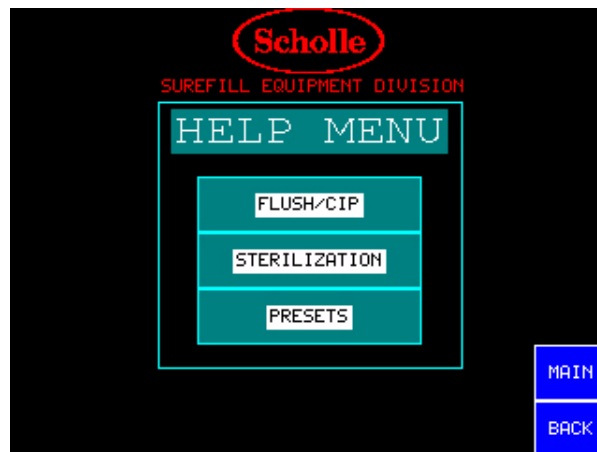


Figure 29. Help Menu Screen

There are two functions on the HELP MENU screen:

- MAIN – touching this function returns the operator to the MAIN MENU screen.
- BACK – touching this function returns the operator to a previous screen.

3.12.13 Sterilization Setup Screens

This screen is accessed from the FILLER CONTROLS screen by touching the STERILIZE function.

Note: Ensure that ALL steps in the START-UP PROCEDURES CHECKLIST have been followed (See Start-Up section in the Operator Manual).

This screen allows the operator to manually perform two functions. The LONG SHUTTLE and CAPPER functions are GRAY in color indicating the IDLE or HOME position. When these two functions are touched, the function turns GREEN in color, indicating the function is Enabled.

1. Touch LONG SHUTTLE function – the Long Shuttle will RETRACT.

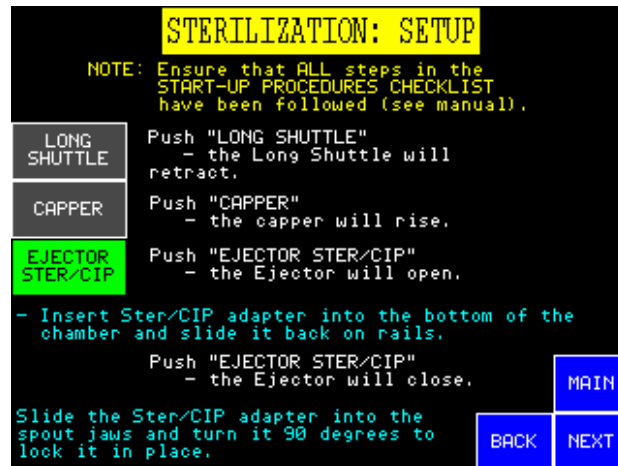


Figure 30. Sterilization Setup Screen 1

2. Touch CAPPER function – the Capper will RISE.
3. Touch EJECTOR STER/CIP function – the Ejector will OPEN.
4. Insert STER/CIP Adapter into the bottom of the Chamber and slide it back on rails.
5. Touch EJECTOR STER/CIP function again, the Ejector will CLOSE.
6. Slide the STER/CIP Adapter into the spout jaws and turn it 90 Degrees to lock it in place.

There are six functions on this screen:

- LONG SHUTTLE – this function when touched moves the Long Shuttle to the RETRACT and EXTEND positions manually.
- CAPPER – this function when touched moves the Capper to the UP and DOWN positions manually.
- EJECTOR STER/CIP – this function when touched will OPEN, and when touched again, will close the Ejector.
- MAIN – touching this function will return the operator to the MAIN MENU screen.
- BACK – touching this function will return the operator to a previous screen.

- NEXT – touching this function will advance the operator to the next STERILIZATION SETUP SCREEN.

3.12.14 Sterilization Setup Screen 2

This screen is accessed from the STERILIZATION SETUP SCREEN 1.

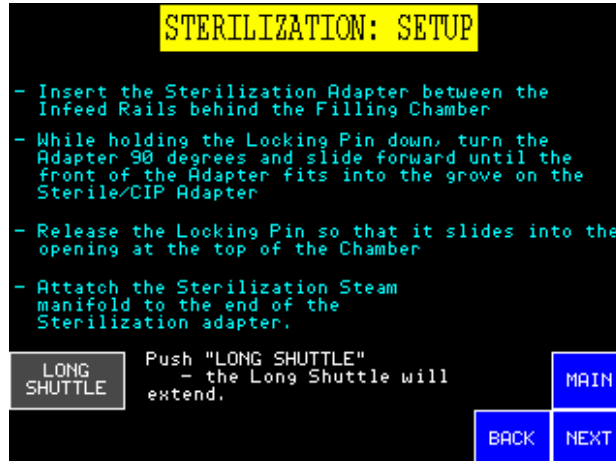


Figure 31. Sterilization Setup Screen 2

The LONG SHUTTLE function is GRAY in color indicating the IDLE or HOME position. When this function is touched, the function turns GREEN in color, indicating that it is enabled.

1. Insert the Sterilization Adapter between the Infeed Rails behind the filling chamber.
2. While holding the locking pin down, turn the Adapter 90 Degrees and slide forward until the front of the Adapter fits into the groove on the Sterile/CIP Adapter.
3. Release the Locking Pin so that it slides into the opening at the top of the chamber.
4. Attach the Sterilization Steam Manifold to the end of the Sterilization Adapter.

There are three functions on this screen:

- LONG SHUTTLE – touching this function, the Long Shuttle will EXTEND.
- MAIN – touching this function will return the operator to the MAIN MENU screen.
- BACK – touching this function will return the operator to a previous screen.
- NEXT – touching this function will advance the operator to the next STERILIZATION SETUP SCREEN.

3.12.15 Sterilization Setup Screen 3

This screen is accessed from the STERILIZATION SETUP SCREEN 2.

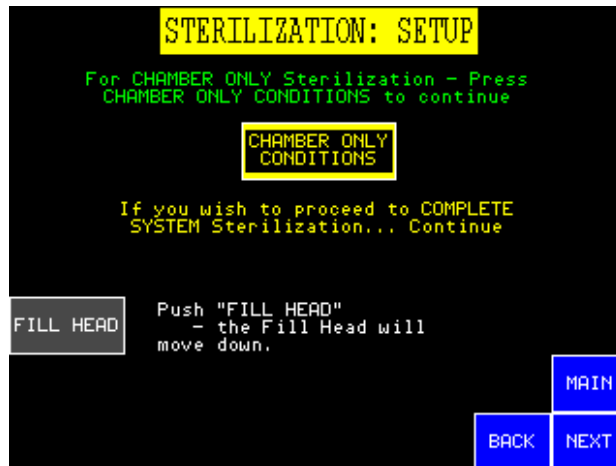


Figure 32. Sterilization Setup Screen 3

This screen allows the operator to manually perform four functions. The FILL HEAD function is GRAY in color indicating the IDLE or HOME position. When this function is touched, the function turns GREEN in color, indicating the function is Enabled.

If you wish to proceed to COMPLETE SYSTEM STERILIZATION.... continue using this screen.

1. Touch FILL HEAD function – the Fill Head will move DOWN. There are four functions on this screen:
 - FILL HEAD – this function when touched moves the Fill Head to the UP and DOWN positions manually.
 - MAIN – touching this function will return the operator to the MAIN MENU screen.
 - BACK – touching this function will return the operator to a previous screen
 - NEXT – touching this function will advance the operator to the next screen, COMPLETE STERILE CONDITIONS (See sub-section 1.1.17, Complete Sterile Conditions Screen).

For CHAMBER ONLY STERILIZATION – touch CHAMBER ONLY CONDITIONS function on the STERILIZATION SETUP SCREEN 3 to continue.

3.12.16 Complete System & Chamber Only Sterilization

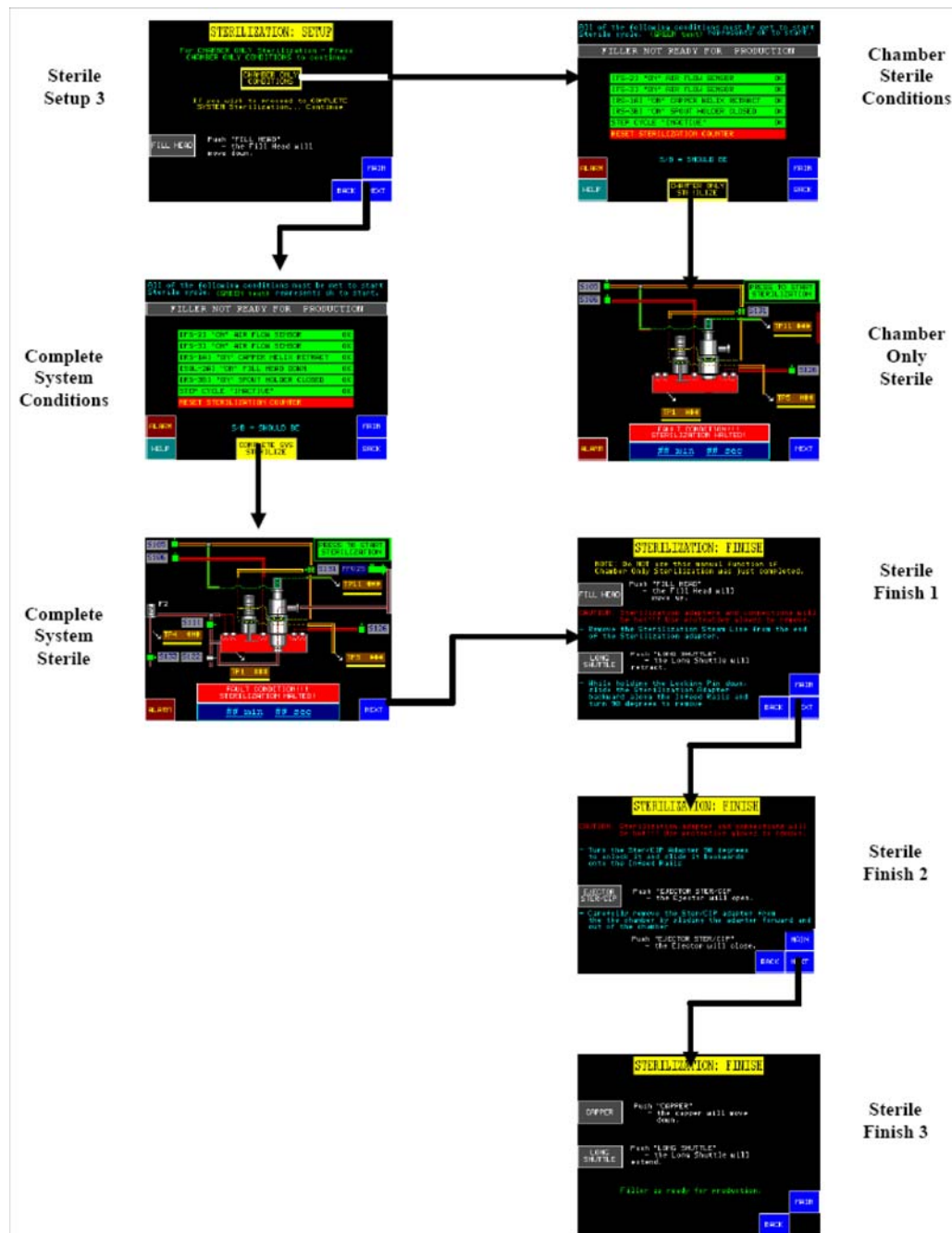


Figure 33. Complete System / Chamber Only Sterilization – Menu Tree

3.12.17 Complete Sterile Conditions Screen

This screen is accessed from the STERILIZATION SETUP SCREEN 3, by touching the NEXT function.

There is a note at the top of the screen:

“All of the following conditions must be met to start Sterilization cycle. (GREEN text) represents OK to start.”

The Status Bar for the Filler is displayed near the top of the screen (GRAY banner with WHITE text).

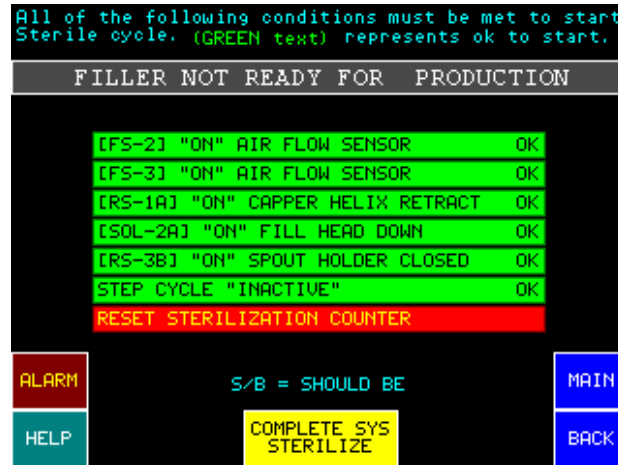


Figure 34. Complete Sterile Conditions Screen

Conditions displayed in RED, with YELLOW text, have NOT been met; therefore the Sterilization process can NOT be started, until the condition is corrected.

Conditions displayed in GREEN, with BLACK text, indicate a condition that has been met; therefore it represents OK to start the Sterilization process.

S/B = SHOULD BE – this message is displayed if the specific condition is not met.

The screen displays five functions to the operator:

- **HELP** – touching this function displays the HELP MENU screen.
- **ALARM** – touching this function displays the fault ALARM HISTORY screen.
- **COMPLETE SYS STERILE** – touching this function will initiate the COMPLETE SYSTEM STERILIZATION process, by displaying the COMPLETE SYSTEM STERILE Screen – if ALL conditions have been met (See section in this manual, “Complete System Sterilization”).
- **MAIN** – touching this function, returns the operator to the MAIN MENU screen.
- **BACK** – touching this function, returns the operator to a previous screen.

3.12.18 Complete System Sterilization

This screen is accessed from the COMPLETE STERILE CONDITIONS screen by touching the COMPLETE SYS STERILE function.

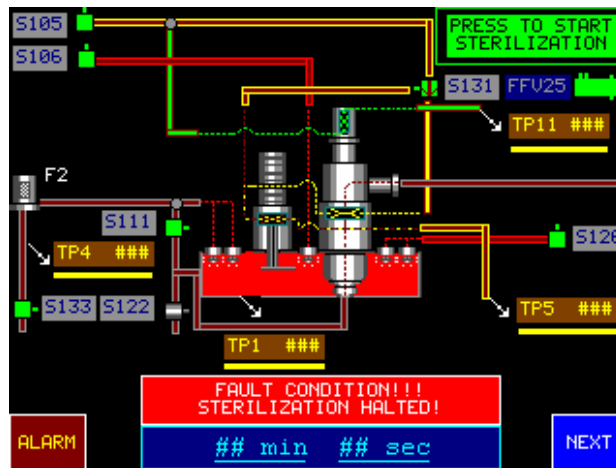


Figure 35. Complete System Sterile Screen

The screen displays related Temperature Points within the complete system (E.G., TP1, TP4, TP5, and TP11).

The screen displays the Flat Face Valve as FFV25. If DISABLED it displays as GRAY in color, and if ENABLED it is BLUE in color.

The screen displays the following solenoids: S105, S106, S111, S122, S126, S131, and S133. If the solenoids are DISABLED they are GRAY in color, and when ENABLED they will display as BLUE in color.

The screen gives the status of the sterilization process (E.G., STERILIZATION COMPLETE), along with the Elapsed Time for the process, in Minutes and Seconds.

When PRESS TO START STERILIZATION function is touched, and held for 3 seconds, it will START the Complete System Sterilization process with a GREEN color display. Touching this function again for 3 seconds will STOP the Complete System Sterilization process.

There are two other functions on this screen:

- ALARM – touching this function displays the fault ALARM HISTORY screen.
- NEXT – touching this function will display the STERILE FINISH SCREEN 1, to complete the System Sterilization procedure after the Filling Machine has been sterilized (See sub-section “Sterile Finish Screen 1”).

3.12.19 Chamber Sterile Conditions Screen

This screen is accessed from the STERILE SETUP SCREEN 3, by touching the CHAMBER ONLY CONDITIONS function.



Figure 36. Chamber Sterile Conditions Screen

There is a note on the top of the screen:

“All of the following conditions must be met to start Sterilization cycle. (GREEN text) represents OK to start.”

The Status Bar for the Filler is displayed near the top of the screen (GRAY banner with WHITE text).

Conditions displayed in RED, with YELLOW text, have NOT been met; therefore the Sterilization process can NOT be started, until the condition is corrected.

Conditions displayed in GREEN, with BLACK text, indicate a condition that has been met, therefore it represents OK to start the Sterilization process.

S/B = SHOULD BE – this message is displayed if the specific condition is not met.

The screen displays five functions to the operator:

- ALARM – touching this function displays the fault ALARM HISTORY screen.
- HELP – touching this function displays the HELP MENU screen.
- CHAMBER ONLY STERILIZE – touching this function will initiate the CHAMBER ONLY STERILIZATION process, by displaying the CHAMBER ONLY STERILE screen – if ALL conditions have been met (See section in this manual, Chamber Only Sterilization”).
- MAIN – touching this function, returns the operator to the MAIN MENU screen.
- BACK – touching this function, returns the operator to a previous screen.

3.12.20 Chamber Only Sterilization Screen

This screen is accessed from the CHAMBER STERILE CONDITIONS screen, by touching the CHAMBER ONLY STERILIZE function.

The screen displays related Temperature Points monitored during CHAMBER ONLY STERILIZATION (E.G., TP1, TP5, and TP11).

The screen displays the following solenoids: S105, S106, S126, and S131. If the solenoids are DISABLED they are GRAY in color, and when ENABLED they will display as BLUE in color.

The screen gives the status of the sterilization process (E.G., STERILIZATION COMPLETE), along with the Elapsed Time for the process, in Minutes and Seconds.

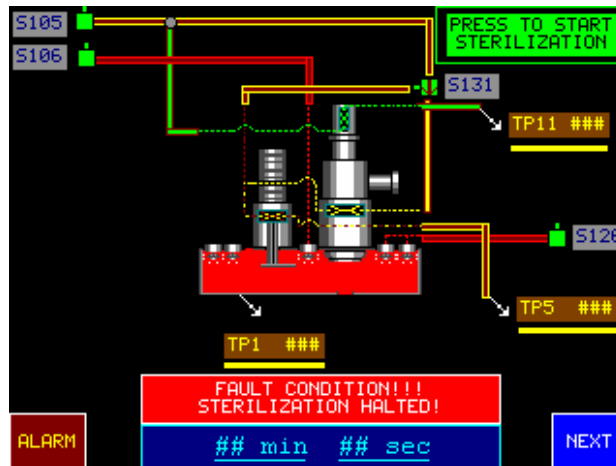


Figure 37. Chamber Only Sterile Screen

When PRESS TO START STERILIZATION function is touched and held for 3 seconds, it will START the Chamber Only Sterilization process with a GREEN color display. Touching this function and holding it for 3 seconds will STOP the Chamber Only Sterilization process.

There are two other functions on this screen:

- ALARM – touching this function displays the fault ALARM HISTORY screen.
- NEXT – touching this function will display the STERILE FINISH SCREEN 1, to complete the Chamber Only Sterilization procedure after the chamber has been sterilized (See sub-section “Sterile Finish Screen 1”).

3.12.21 Sterile Finish Screen 1

This screen is accessed from the COMPLETE SYSTEM STERILIZATION screen OR the CHAMBER ONLY STERILIZATION screen, by touching the NEXT function.

Note: The Fill Head is already in the UP position if coming out of CHAMBER ONLY STERILIZATION, and does not need to be touched again.

The FILL HEAD and LONG SHUTTLE functions are GRAY in color indicating the IDLE or HOME position. When these two functions are touched, the function turns GREEN in color, indicating the function is Enabled.

Note: Do NOT use this manual function if Chamber Only Sterilization was just completed.

1. Touch FILL HEAD function – the Fill Head will move UP.



Figure 38. Sterile Finish Screen 1



CAUTION

Sterilization adapter and connections will be hot!!! Use protective gloves to remove.

2. Remove the Sterilization Steam Line from the end of the Sterilization Adapter.
3. Touch LONG SHUTTLE function – the Long Shuttle will RETRACT.
4. While holding the Locking Pin down, slide the Sterilization Adapter backward along the Infeed Rails and turn 90 Degrees to remove.

There are five functions on this screen:

- FILL HEAD – this function when touched moves the Fill Head to the UP and DOWN position manually.
- LONG SHUTTLE – this function when touched, the Long Shuttle will RETRACT.

- MAIN – touching this function will return the operator to the MAIN MENU screen.
- BACK – touching this function will return the operator to a previous screen.
- NEXT – touching this function will advance the operator to STERILE FINISH SCREEN 2.

3.12.22 Sterile Finish Screen 2

This screen is accessed from the STERILE FINISH SCREEN 1, by touching the NEXT function on the STERILE FINISH SCREEN 1.

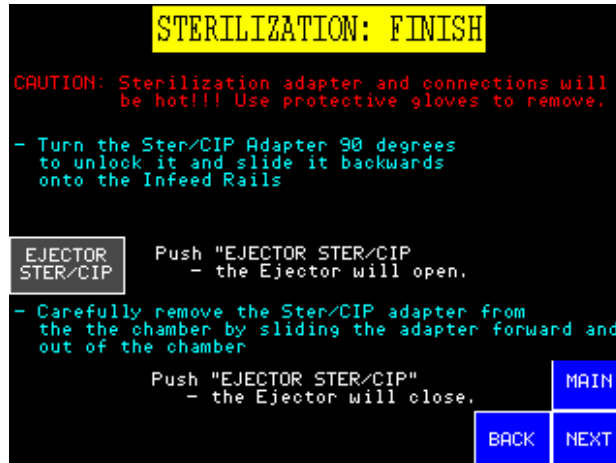


Figure 39. Sterile Finish Screen 2

The EJECTOR STER/CIP function is GRAY in color indicating the IDLE or HOME position. When this function is touched, the function turns GREEN in color, indicating the function is Enabled.



CAUTION

Sterilization adapter and connections will be hot!!! Use protective gloves to remove.

1. Turn the STER/CIP Adapter 90 degrees to unlock it and slide it backwards onto the infeed rails.
2. Touch the EJECTOR STER/CIP function – the Ejector will OPEN.
3. Carefully remove the Ster/CIP Adapter from the back of the chamber by sliding the adapter forward and out of the chamber.
4. Touch the EJECTOR STER/CIP function – the Ejector will CLOSE.

There are four functions on this screen:

- EJECTOR STER/CIP – touching this function will cause the Ejector to OPEN. Touching again will CLOSE the Ejector.
- MAIN – touching this function will return the operator to the MAIN MENU screen.
- BACK – touching this function will return the operator to a previous screen.
- NEXT – touching this function will advance the operator to STERILE FINISH SCREEN 3.

3.12.23 Sterile Finish Screen 3

This screen is accessed from the STERILE FINISH SCREEN 2, by touching the NEXT function on the STERILE FINISH SCREEN 2.



Figure 40. Sterile Finish 3 Screen

The CAPPER and LONG SHUTTLE functions are GRAY in color indicating the IDLE or HOME position. When these two functions are touched, the functions turn GREEN in color, indicating the function is enabled.

1. Touch the CAPPER function – the Capper will move DOWN.
2. Touch the LONG SHUTTLE function – the Long Shuttle will move into the EXTEND position.

There are four functions on this screen:

- CAPPER – this function when touched moves the Capper to the UP and DOWN positions manually.
- LONG SHUTTLE – this function when touched moves the Long Shuttle to the EXTEND and RETRACT positions manually.
- MAIN – touching this function will return the operator to the MAIN MENU screen.
- BACK – touching this function will return the operator to a previous screen.

The Filler is ready for Production.

1. Touch the CAPPER function – the Capper will RISE.
2. Touch the EJECTOR STER/CIP function – the Ejector will OPEN.
3. Insert Flush/CIP Adapter into the bottom of the chamber, and slide it back on the rails.

There are five functions on this screen:

- CAPPER – this function when touched moves the Capper to the UP and DOWN positions manually.
- EJECTOR STER/CIP – this function when touched moves the Ejector to the OPEN and CLOSE positions manually.
- MAIN – touching this function, returns the operator to the MAIN MENU screen.
- BACK – touching this function, returns the operator to a previous screen.
- NEXT – touching this function advances the operator to the FLUSH/CIP SETUP SCREEN 2.

3.12.26 Flush/CIP Setup Screen 2

This screen is accessed from the FLUSH/CIP SETUP SCREEN 1, by touching the NEXT function on the FLUSH/CIP SETUP SCREEN 1.

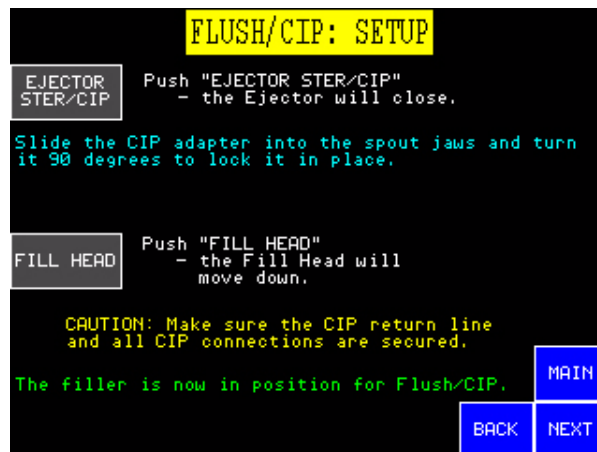


Figure 43. Flush/CIP Setup Screen 2

The EJECTOR STER/CIP and FILL HEAD functions are GRAY in color, indicating the IDLE or HOME position. When these two functions are touched, the function turns GREEN in color, indicating the function is enabled.

1. Touch the EJECTOR STER/CIP function – the Ejector will CLOSE.
2. Slide the CIP Adapter into the spout jaws and turn it 90 degrees to lock it in place.
3. Touch the FILL HEAD function – the Fill Head will move DOWN.



CAUTION

Before proceeding, make sure ALL FLUSH/CIP connections and return lines are secured.

The Filler is now in position for the Flush/CIP process.

There are five functions on this screen:

- EJECTOR STER/CIP – this function when touched moves the Ejector to the OPEN and CLOSE positions manually.
- FILL HEAD – this function when touched moves the Fill Head to the UP and DOWN positions manually.
- MAIN – touching this function, returns the operator to the MAIN MENU screen.
- BACK – touching this function, returns the operator to a previous screen.
- NEXT – touching this function advances the operator to the FLUSH/CIP CONDITIONS screen.

3.12.27 Flush /CIP Conditions Screen

This screen is accessed from the FLUSH/CIP SETUP SCREEN 2, by touching the NEXT function on the FLUSH/CIP SETUP SCREEN 2.

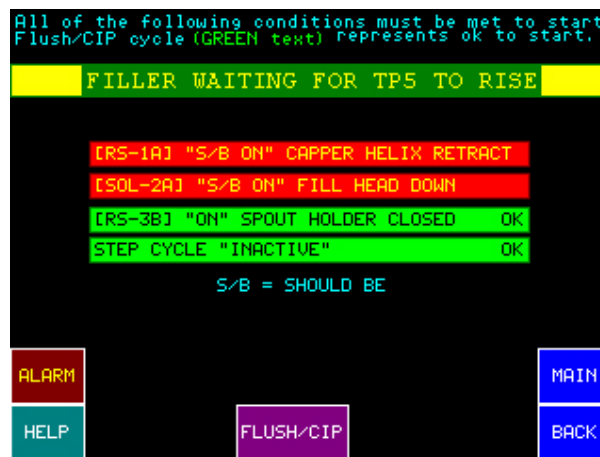


Figure 44. Flush /CIP Conditions Screen

There is a note at the top of the screen:

“All of the following conditions must be met to start the Flush/CIP cycle. (GREEN text) represents OK to Start.”

The Status Bar for the Filler is displayed near the top of the screen (RED banner with WHITE text).

Conditions displayed in RED, with YELLOW text, have NOT been met; therefore the Flush/CIP process can NOT be started, until the condition is corrected.

Conditions displayed in GREEN with BLACK text, indicate a condition that has been met, therefore it represents OK to start the Flush/CIP process.

S/B = SHOULD BE – this message is displayed if the specific condition is not met.

There are five functions displayed on this screen:

- ALARM – touching this function displays the fault ALARM HISTORY screen.
- HELP – touching this function displays the HELP MENU screen.
- FLUSH/CIP – touching this function displays the FLUSH/CIP CONTROLS screen.
- MAIN – touching this function, returns the operator to the MAIN MENU screen.
- BACK – touching this function, returns the operator to a previous screen.

3.12.28 Flush/CIP Controls Screen

This screen is accessed from the FLUSH/CIP CONDITIONS screen, by touching the FLUSH/CIP function.

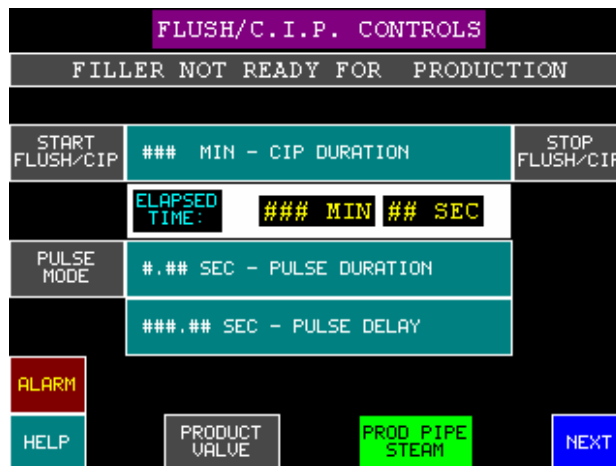


Figure 45. Flush/CIP Controls Screen

This screen displays the status of the Filler, and the Elapsed Time for the Flush/CIP process is displayed in minutes and seconds.

- **### MIN – CIP DURATION** – the value entered into this Preset, controls the amount of time the CIP cycle runs before it automatically stops.
- **#.## SEC – PULSE DURATION** – this value controls the time the Product Valve remains closed, if the Pulse Mode is enabled.
- **##.## SEC – PULSE DELAY** – this value controls the delay between the Product Valve opening and closing, if the Pulse Mode is enabled.

The following functions are GRAY in color, indicating the IDLE or HOME position. When these functions are touched, the function turns GREEN in color, indicating the function is enabled.

There are eight functions displayed on this screen:

- **START FLUSH/CIP** – touching this function will advance the operator to the FLUSH/CIP FINISH SCREEN 1, to finish the Flush/CIP cycle, if all conditions have been met on the FLUSH/CIP CONDITIONS screen.
- **PULSE MODE** – touching this function allows the operator to begin CIP pulse mode. Touching this function again, will stop the CIP pulse mode.
- **ALARM** – touching this function displays the fault ALARM HISTORY screen.
- **HELP** – touching this function displays the HELP MENU screen.
- **PRODUCT VALVE** – this function when touched moves the Product Valve to the OPEN and CLOSE positions manually.
- **PROD PIPE STEAM** – touching this function allows the operator to turn ON or OFF the Product Pipe Steam Seals.
- **STOP FLUSH/CIP** – touching this function will STOP the Flush/CIP cycle.
- **NEXT** – touching this function advances the operator to the FLUSH/CIP FINISH 1 screen.

3.12.29 Flush/CIP Finish Screen 1

This screen is accessed by touching the START FLUSH/CIP function on the FLUSH/CIP CONTROLS SCREEN.

The FILL HEAD and EJECTOR STER/CIP functions are GRAY in color indicating the IDLE or HOME position. When these two functions are touched, the function turns GREEN in color, indicating the function is enabled.

1. Touch the FILL HEAD function – the Fill Head will move UP.



CAUTION

Sterilization adapter and connections will be hot!!! Use protective gloves to remove.

2. Turn the CIP Adapter 90 degrees and slide it back on the rails.
3. Touch the EJECTOR STER/CIP function – the Ejector will OPEN.
4. Carefully remove the Flush/CIP adapter from the Chamber.

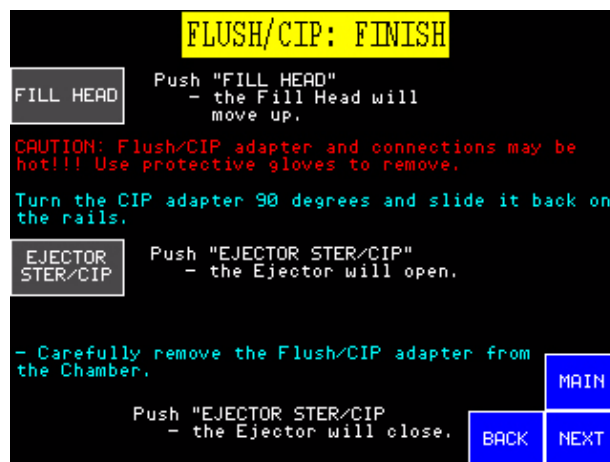


Figure 46. Flush/CIP Finish Screen 1

5. Touch the EJECTOR STER/CIP function – the Ejector will CLOSE.

The screen provides five functions for the operator:

- FILL HEAD – this function when touched moves the Fill Head to the UP and DOWN positions manually.
- EJECTOR STER/CIP – this function when touched moves the Ejector to the CLOSED and OPEN position manually.
- MAIN – touching this function, returns the operator to the MAIN MENU screen.
- BACK – touching this function, returns the operator to a previous screen.
- NEXT – touching this function advances the operator to the FLUSH/CIP FINISH SCREEN 2.

3.12.30 Flush/CIP Finish Screen 2

This screen provides three functions for the operator:

- CAPPER – this function when touched moves the Capper to the DOWN and UP positions manually.
- MAIN – touching this function, returns the operator to the MAIN MENU screen.
- BACK – touching this function, returns the operator to a previous screen.

This screen is accessed from the FLUSH/CIP FINISH SCREEN 1, by touching the NEXT function.

The CAPPER function is GRAY in color indicating the IDLE or HOME position. When this function is touched, the function turns GREEN in color, indicating the function is enabled.

1. Touch the CAPPER function – the Capper will move DOWN.



Figure 47. Flush/CIP Finish Screen 2

The Filler is ready for sterilization or shutdown.

3.13 PRESSURE RELIEF VALVE (PRV) – OPERATION & ADJUSTMENT

3.13.1 Component Overview

For steam to generate temperature it must be under pressure and flowing. If these two conditions are not met the steam will turn into condensate (water) and will cool down to room temperature.

The PRV is a spring loaded adjustable valve found at the end of a steam circuit and is used to generate back pressure while still allowing flow. Once the valve is adjusted, the spring will then maintain the desired pressure and temperatures.

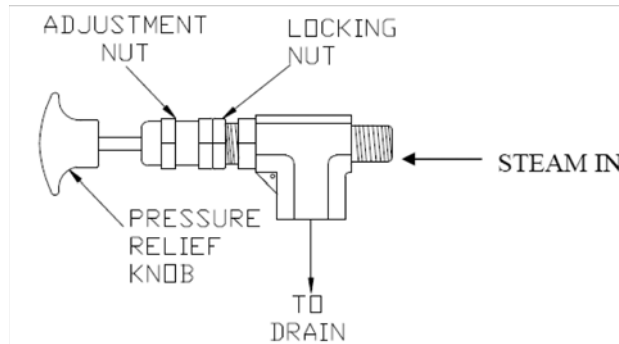


Figure 48. PRV (typical)

3.13.2 Adjustment

When the system is turned on, condensate may build up in the steam circuit, as indicated by a lack of temperature increase.

To correct the problem, do the following:

1. Pull the pressure relief knob out until the condensate stops coming out the drain, then release to allow the PRV to function.
2. Wait 2 or 3 minutes to allow time for the temperature to increase before proceeding.

Note: Monitor the temperature on the panel view or on the Chart Recorder.

3. To adjust the temperature, first back off the locking nut and turn it clockwise as far as possible by hand.
4. Next, turn the adjustment nut counter-clockwise until there is approximately a 3/8" gap between the adjusting nut and the locking nut.
5. Now turn the adjusting nut clockwise 1 / 2 turn. Wait 2 or 3 minutes to allow the temperature to stabilize.

Note: If the adjustment nut is turned in too far, the temperature will drop.

6. When the temperature nears the temperature desired, make the adjustment in 1 / 4 turn increments.
7. Repeat step 3 & 4 until the desired temperature is reached.

8. Lock the adjustment nut in place with the locking nut.

Note: Once the PRV is adjusted for the correct temperature, it should need no further adjustment.

3.14 PRESSURE SWITCH – NITROGEN / AIR / VACUUM

This Pressure Switch provides a signal to the processor that will create a fault, if in-coming Air pressure/Nitrogen or Vacuum drops below the set level.

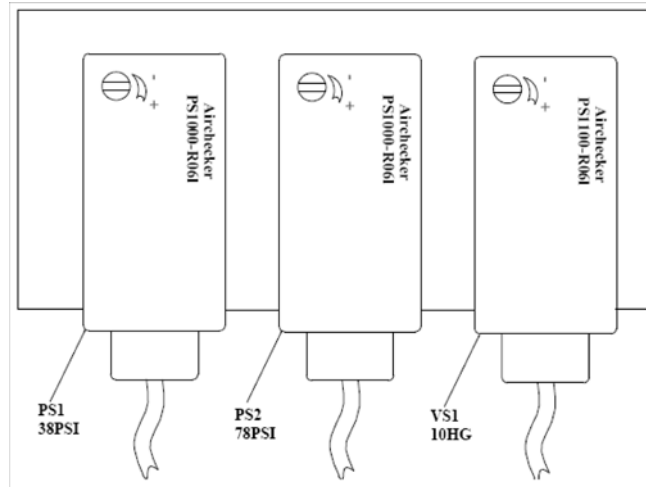


Figure 49. View of Pressure Switches/Vacuum Switch

3.14.1 Adjustment and Setting of Pressure Switches

Note: Use a screw driver which has the adequate size for the trimmer, and turn it lightly with fingertips.

3.14.1.1 Adjustment of PS-1 (Nitrogen – Gas)

1. Adjust PS-1 with regulator R4 to 38 PSI.
2. Nitrogen gas pressure is set by setting the pressure trimmer. Pressure becomes larger by turning the trimmer in a clockwise direction.

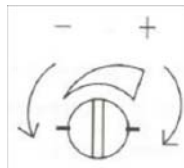


Figure 50. Pressure Setting Trimmer

3. Turn the trimmer until the LED on the sensor illuminates.

Note: Regulator MUST be re-set back to original setting, after adjustment.

3.14.1.2 Adjustment of PS-2 (Air)

1. Adjust PS-2 with regulator R6 to 78 PSI.
2. Air pressure is set by setting the pressure trimmer. Pressure becomes larger by turning the trimmer in a clockwise direction.
3. Turn the trimmer until the LED on the sensor illuminates (See Figure 50).

Note: Regulator MUST be re-set back to original setting, after adjustment.

3.14.1.3 Adjustment of VS-1 (Vacuum)

1. Adjust VS-1 with regulator R8 to 10 in. Hg.
2. Vacuum is set by setting the pressure trimmer. For the high vacuum rate, turn the trimmer in the counterclockwise direction.
3. Turn the trimmer until the LED on the sensor illuminates (See Figure 50).

Note: Regulator MUST be re-set back to original setting, after adjustment.

3.14.2 Removal of Pressure Switch

Depress the poly fitting with one finger, and pull out the switch body with the other hand.

3.14.3 Installation of Pressure Switch

1. Insert reducer shaft of the switch into the poly fitting.
2. Press in the switch body, to position the switch.



CAUTION

Do not reverse the connection of the BROWN wire (+) and the BLUE wire (-), as the switch is un-protected. The power supply wire is BROWN. The BLUE wire is used for GND.

3.14.4 Maintenance / Check of the Pressure Switch

Perform periodic check to confirm if the switch operates correctly.

3.15 REED SWITCHES

The air cylinders used by Scholle have internal magnets on the piston that are used to activate reed switches.

The reed switches internal contacts will close when placed in a magnetic field. The reed switches used by Scholle have a built in LED that illuminates yellow when the switch contacts close, then the PLC receives the signal.

3.15.1 Assembly of Reed Switch to Bracket

The Reed Switch Sensor/Cable Assembly is inserted into the Bracket as shown in Figure 51 below, and the sensor is locked in place with the locking screw, by turning 1/4 turn CCW (See Figure 52).

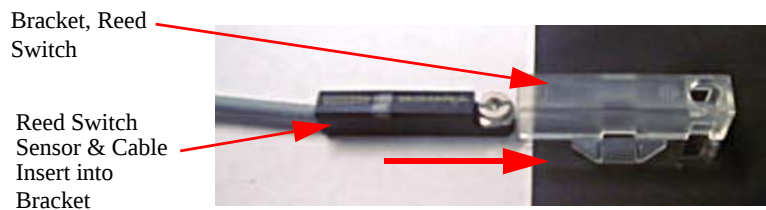


Figure 51. Reed Switch Cable Assembly inserts into Bracket

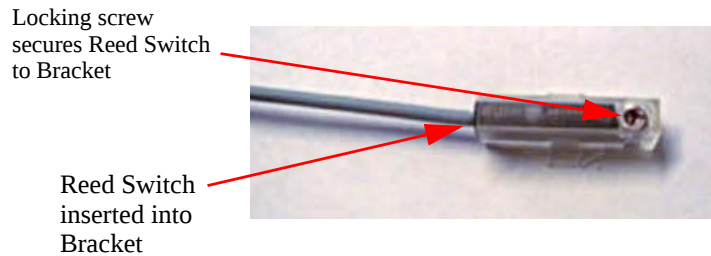


Figure 52. Reed Switch mounted into Bracket

Mounting Clamp is inserted through the bottom of the Reed Switch Bracket, and mounted on the Air Cylinder (See Figure 53).

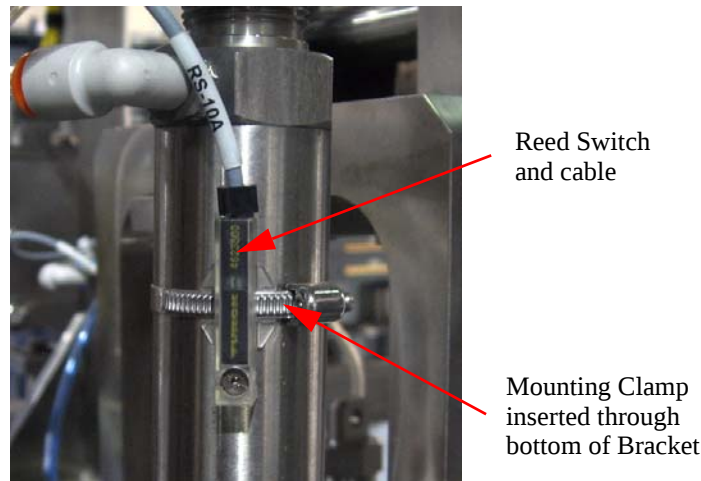


Figure 53. Reed Switch Mounted on Filling Machine

Sensor switches, such as reed switches, signal the filler processor about the status and position of the machine components to monitor all machine operations.

3.15.2 Adjustment

Loosen the reed switch mounting clamp and move it to the farthest end of the cylinder (Rod end when extended, closed end when retracted). Then gradually move the switch toward the center of the cylinder until the reed switch LED comes on. Re-tighten the mounting clamp.

3.15.3 Reed Switch Testing

3.15.3.1 Failure of Reed Switch to illuminate

1. Place a small magnet next to the Reed Switch.

If the Reed Switch illuminates:

- Adjust the position of the Reed Switch on the cylinder

If the Reed Switch does NOT illuminate:

- Connect a NEW Reed Switch to the cable and test with the magnet.

If the NEW Reed Switch does NOT illuminate:

- Check the Reed Switch cable wiring.

3.15.3.2 Reed Switch is on all the time

1. Disconnect the cable to the reed switch.
 - Check the PLC input for this Reed Switch.
2. If the input is OFF, the Reed Switch is bad. Replace the switch.
3. If the input remains ON, the cable is the cause of the problem.

3.16 SANITIZER/AIR REGULATORS ASSEMBLY

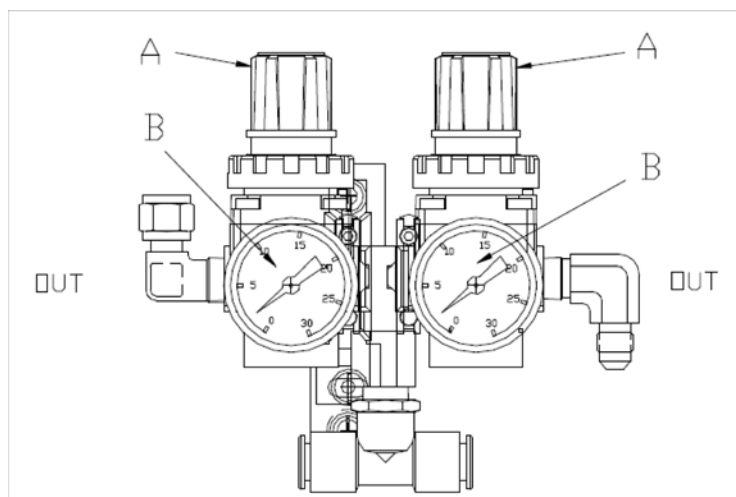


Figure 54. Sanitizer Air Regulators Assembly

ITEM	DESCRIPTION	FUNCTION
A	Air Regulator	Controls the air pressure to the filling machine. Adjustment: Pull the knob UP and turn it in to increase out, or to decrease the air pressure. Push it back DOWN to lock it in place.
B	Gauge, Air Regulator	Gauge reads in psi.

Table 4. Sanitizer Air Regulators Assembly Components

To admit air to the filling machine, or to dump air pressure from the filling machine, open or close V-1 (See Flow Diagram in Appendix B of the Maintenance Manual).

To adjust Regulator R-1 (A), pull knob UP and turn Counterclockwise. This will increase air pressure and Clockwise will decrease air pressure.

Push it back DOWN to lock the Regulator.

3.17 STEAM REGULATOR

This steam regulator is actually two regulators in one assembly. The smaller of the two is the pilot regulator and is mounted to the body of the larger unit. The pilot regulator is the adjustable unit.

The addition of the smaller pilot regulator allows more linear control of the pressure setting. Pressure is increased when the regulating valve is turned clockwise.

The nominal pressure setting should be 30 –60 psi.

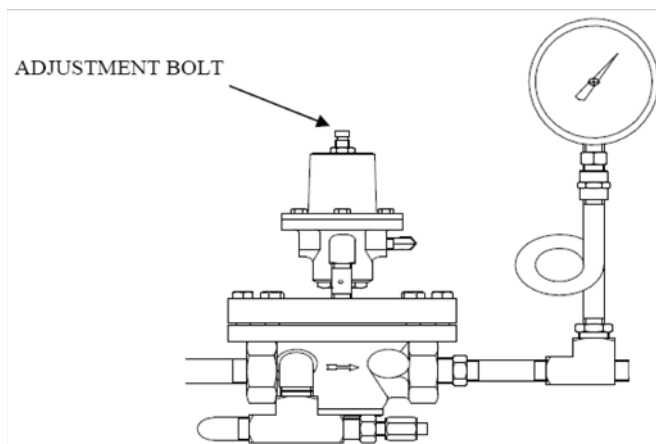


Figure 55. Steam Regulator (Typical)

3.18 STEAM SEALS

Steam seals protect the sterile side of the filler from outside contamination by providing a barrier between the product and the ambient environment.

The steam seals in the product piping are formed in an island created by inner and outer O-rings.

Steam seals may be dynamic or static. When dynamic, steam under pressure flows through the seal, creating a live steam barrier. When static, steam under pressure enters the seal, but does not exit, creating a sterile condensate barrier.

Pressure relief valves regulate the pressure and temperature to the steam seals.

3.19 FITMENT STEAM MANIFOLD

This system uses saturated steam at a temperature of 195 degrees F (90 degrees C) to 205 degrees F (96 degrees C) for a minimum of 2 seconds to pasteurize the fitment for aseptic filling for high acid products. High acid foods are defined by the FDA as having a pH less than 4.6, except tomato products which may have a pH less than 4.7. The system is supplied by a steam solenoid (SOL-181) and monitored at the source to ensure a sufficient amount of steam flow is provided to the fitment sterilization manifold. The temperature range for the thermocouple (TP-181) is between 225 degrees F (107 degrees C) and 245 degrees F (118 degrees C). A reading above or below this parameter will halt the system. The auto-cycle will not be allowed to continue until this temperature is within the defined parameters.

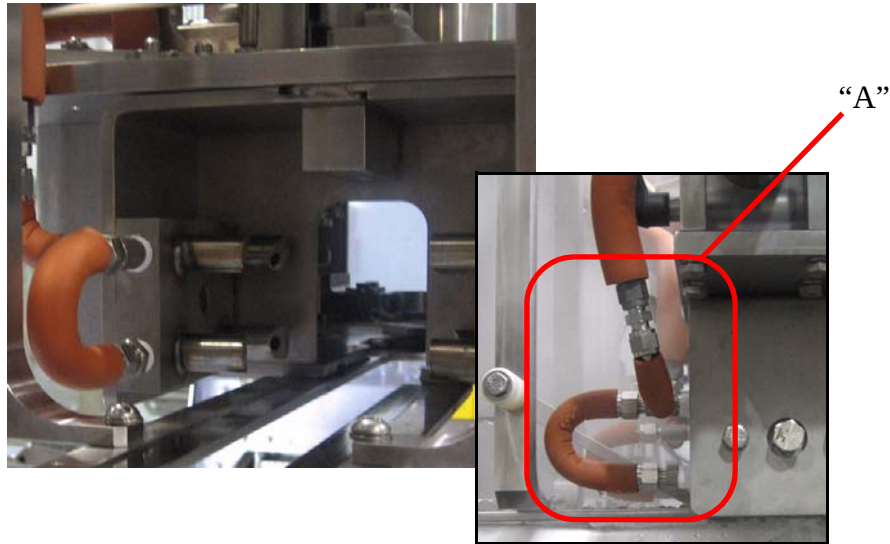


Figure 56. Fitment Steam Manifold

Note: It is important to ensure ALL steam fittings and connections are tight and there are no steam leaks in the system. See item “A” above.



WARNING

Steam fittings and assemblies are EXTREMELY HOT! The operator should wear proper protective clothing/equipment and use extreme caution when working around these assemblies.

Note: Ensure that ALL steps in the START-UP PROCEDURES CHECKLIST have been followed (See Start-Up section in this manual).

To adjust the temperature and flow to the Fitment Steam Manifold, a needle valve (V-181) located on the steam regulator assembly on the top of the filling machine.

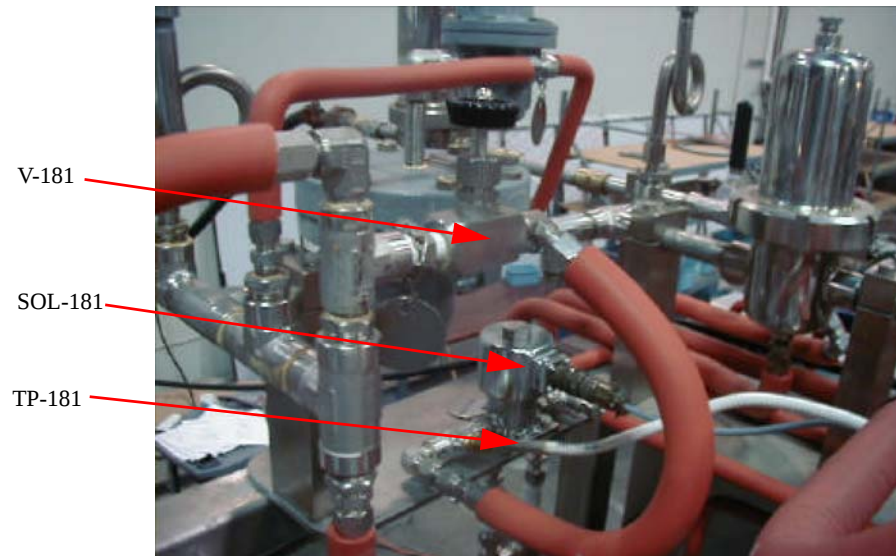


Figure 57. Fitment Steam Manifold Supply

Assuming Start-up procedures have been followed, adjustment is as follows:

1. Close Needle valve V-181.
2. From the MAIN MENU access the security screen by touching the SECURITY function. (Only level 1 and 2 security clearances can access this screen).
3. Touch the function TURN ON STEAM SEALS. This will energize solenoid SOL-181 allowing steam to flow to the Fitment steam manifold.
4. Open Needle valve V-181 seven turns and monitor the temperature on the chart recorder or the Operator display screen.
 - Open or close the needle valve by 1 turn increments until the temperature is set-
tles at 235 degrees.

3.20 CHAMBER FLOW SWITCHES

Stability of the filling chamber after sterilization is maintained by a positive sterile air supply coming from a micro-filter system at .01 microns in conjunction with steam to achieve a minimum of 8-10 scfm. Each flow source is monitored to ensure air/steam flow balance and stability.

Chamber temperature is maintained between 185 degrees F (85 degrees C) and 195 degrees F (90 degrees C). Modified air and steam are dispersed into the chamber through five diffusers. The three steam diffusers surround the filling and capping area. The two air diffusers are located at the front of the machine and are used to keep the temperature of the chamber within an acceptable range and provide the required flow rates to maintain positive pressure in the chamber during production. (Reference Flow Diagram).

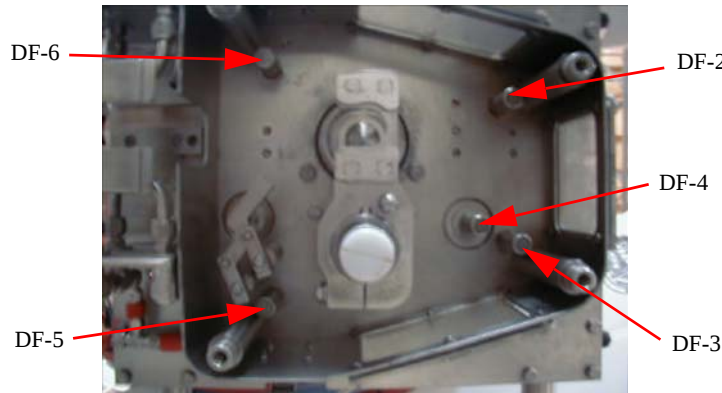


Figure 58. Steam / Air Diffusers

Steam and air flow rates are monitored through stainless steel flow switches which are calibrated to actuate at a flow rate of 1.5 scfh. Adjustment of the switches is made through a needle valve associated with each diffuser and must be done with the chamber completely assembled and steam seals turned on.

Note: It is important to ensure ALL steam fittings and connections are tight and there are no steam leaks in the system.



WARNING

Steam fittings and assemblies are EXTREMELY HOT! The operator should wear proper protective clothing/equipment and use extreme caution when working around these assemblies.

Note: Ensure that ALL steps in the START-UP PROCEDURES CHECKLIST have been followed (See Start-Up section in this manual).

3.20.1 Chamber Air Flow Switches

Assuming Start-up procedures have been followed, adjustment for the air flow switches is as follows:

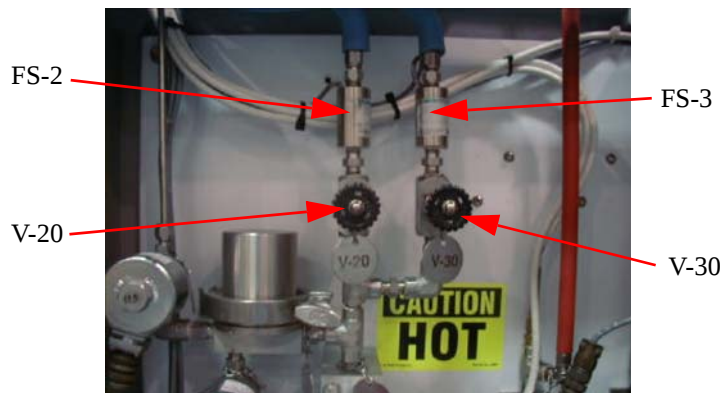


Figure 59. Chamber Air flow Switches

1. Close Needle valves V-20, V-30.
2. Ensure that Regulator R-2 is set at 40 to 45 PSI
3. From the MAIN MENU touch the FILLER CONTROLS function. This will display the FILLER CONTROLS screen and the Chamber flow switch indicators.
4. Open Needle valve V-20 seven to ten turns and monitor the flow switch FS-2 indicator on the Operator display screen.
 - Open or close the needle valve by 1 turn increments until the indicator on the Operator display screen turns green. This indicates a flow rate of approximately 1.5 scfm has been reached.
5. Open Needle valve V-20 two turns beyond the point when the indicator turned green.
 - This will prevent the switch from going low during production and fluctuations with air flow.
6. Repeat this process with V-30 and FS-3.

3.20.2 Chamber Steam Flow Switches

Assuming Start-up procedures have been followed, adjustment for the steam flow switches is as follows:

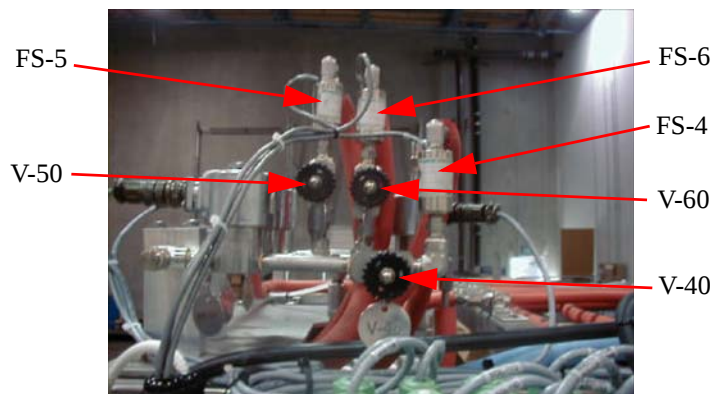


Figure 60. Chamber Steam Flow Switches

1. Close Needle valves V-40, V-50 and V-60.
2. From the MAIN MENU access the security screen by touching the SECURITY function. (Only level 1 and 2 security clearances can access this screen).
3. Touch the function TURN ON STEAM SEALS. This will energize solenoids SOL-106, SOL-126 and SOL-105 allowing steam to flow to the Chamber.
4. From the MAIN MENU touch the FILLER CONTROLS function. This will display the FILLER CONTROLS screen and the Chamber flow switch indicators.
5. Open Needle valve V-40 seven to ten turns and monitor the flow switch FS-4 indicator on the Operator display screen.
 - Open or close the needle valve by 1 turn increments until the indicator on the Operator display screen turns green. This indicates a flow rate of approximately 1.5 scfm has been reached.
6. Open Needle valve V-40 two turns beyond the point when the indicator turned green.
 - This will prevent the switch from going low during production and fluctuations with steam flow.
7. Repeat this process with V-50 and FS-5 as well as V-60 and FS-6.

Chapter 4: Maintenance

4.1 MAINTENANCE AND REPAIR

Organizational level maintenance is conducted by the customer organization in the field. This level of maintenance maintains the SUREFILL system equipment by servicing, removing, replacing, and adjusting systems and components.

4.1.1 Scheduled Maintenance Elements

Scheduled maintenance consists of inspections and maintenance actions that are conducted at specific time intervals or after specified accumulated time periods to ensure safe and suitable operation of the SUREFILL machine.

A daily inspection is conducted by the operator either once a day or prior to starting the machine for the first time after a downtime.

Periodic inspections are required at regular time intervals to discover conditions that may have arisen during operation or since the last inspection, if the machine has been idle.



WARNING

Insure that the main air supply valve is off and set the main power switch to OFF, before performing disassembly.



CAUTION

Support components and assemblies during disassembly and assembly. Handle components and assemblies carefully. Components and assemblies can be easily damaged.
Take care not to damage O-ring grooves while removing the O-rings.
Always replace damaged O-rings.

Note: Identify and document the orientation of components, assemblies, and connections before performing disassembly.

4.1.2 Troubleshooting Elements

This maintenance is performed in response to a system or component malfunction. Maintenance problems require the technician to troubleshoot a system malfunction to a failed component, and then repair or replace that component.

4.1.3 Removal and Installation Procedures

Procedures for replacing components are provided in this manual under system or component headings.

4.1.4 Scheduled Maintenance Table

Assembly / Component	Task	Frequency
Fill Valve	Refer to the Fill Valve removal and disassembly procedures, and Fill Valve Assembly procedures. Inspect, clean, and replace as indicated.	After Each Production Run
Exterior Surfaces	Clean	After Each Production Run
S.S. Oiler Injection System	Check the oil level. Add oil if necessary. Refer to the Maintenance Materials table in this section.	After Each Production Run
Air Filter (F-1) and (F-3)	Verify that the automatic drain in the filter bowl is operating. Inspect bowl. Clean if necessary. Inspect filter element. Replace if necessary.	At Start Up of the Filler
Uncapper Slide	Grease / lubricate at the grease fitting. Refer to the Maintenance Materials table.	After Each Production Run
Capper Swing Bushing and Thrust Bearing	Pump approximately 1 shot from a lever-type grease gun into each of the three (3) zerk fittings located on the capper bushings.	After Each Production Run
Gripper Jaws	Disassemble the cap jaws from the jaw holder, clean and inspect the bushings and shafts, grease and reassemble.	After Each Production Run
Long Shuttle Cylinder	If necessary, rotate the air cylinder slide to clean shaft and lightly grease.	After Each Production Run
Long Shuttle Pusher Pivot	Clean Roller.	After Each Production Run
Short Shuttle Pivot	Remove the retaining clip from the short shuttle pivot pin, remove the pivot pin. Clean and inspect the pin and bushing, grease and reassemble.	After Each Production Run; replace monthly
Cylinder Block Assembly	Remove Air Spring; Grease / lubricate at the two (2) grease fittings with State WG Grease. Refer to the Maintenance Materials table.	After Each Production Run
Fill Head / Capper Assembly	Refer to the Fill Head Disassembly and Assembly procedures. Inspect, clean, and replace as indicated. Reset per the Mechanical Adjustment and Alignment procedures.	After Each Production Run; replace monthly
SLC Back-up Battery	Check the Battery Low LED on the SLC. The back-up battery for the SLC is low if the LED is illuminated.	After Each Production Run; replace Annually

Table 5. Scheduled Maintenance Tasks

4.1.5 Maintenance Materials



CAUTION

All lubricants used must be approved for use in your industry.

Grease or Lubricant	Scholle Part No.	Vendor Part No.
3M General Purpose Adhesive Cleaner	NA	051135-08984
Loctite 222	NA	NA
Loctite 242	NA	NA
Loctite 262	NA	NA
Loctite 7471 (Primer)	P03974	22477
Bel-Ray Lubricant 30 (Oiler Injection System)	P07879	NA
State WG Grease (Food Grade White Grease)	P03840	NA

Table 6. Maintenance Materials

4.2 GENERAL MAINTENANCE PRINCIPLES

4.2.1 Preventive Maintenance

The underlying principle of preventive maintenance is to maintain an SUREFILL machine by lubricating, adjusting, tightening, cleaning and inspecting for wear AND repairing the machine before it breaks or malfunctions.

Most downtime during production shifts can be eliminated, by maintaining the SUREFILL machine and anticipating repair needed. Fixing the machine only after it breaks becomes very costly in terms of lost production.

4.2.2 Inspection and Replacement of O-Rings

Each time an assembly is taken apart for cleaning and greasing, every ORing and gasket must be inspected for nicks, cuts and wear. Any O-Ring or gasket that shows wear or damage must be replaced since the cost of the ORing is small compared to the cost of downtime and lost or damaged product.

Any O-Ring seal which needs to be replaced frequently is a good indication of possible damage to the sealing surface. The sealing surface should be inspected for damage, nicks or other irregularities. The material and hardness of the seals has been selected for wear resistance, support of metal parts and temperature resistance.

State White food grade grease should be used on mechanical bushings, and related metal parts. The O-Rings in the Capper Assembly should be inspected whenever the capper is disassembled for cleaning and repair.

4.2.3 Inspection and Replacement of Mechanical Parts

When the Auto-Fill machine malfunctions because of a problem with a mechanical part or unusual wear is noticed on mechanical parts, the associated parts should be inspected and replaced if necessary. Prompt replacement of worn or damaged parts will prevent damage to associated parts and prevent a machine malfunction which could damage other parts.

The operator should look for improper operation of the machine, listen for unusual sounds and look for indications of wear and damage. Various parts which become loose as the machine experiences normal wear should be inspected for play.

4.2.4 Use of Loctite and Lock Washers

High-speed production equipment is constantly subject to vibration and shock from the rapidly moving mechanical parts. Threaded fasteners will eventually come loose because of this vibration and shock, frequently causing catastrophic damage to associated parts.

To prevent the loosening of threaded fasteners, all bolts **MUST** have a combination of lock washers and Loctite thread-locking compound applied at the time of assembly or reassembly. Where it is impractical to use lock washers, the use of Loctite becomes mandatory to prevent the loosening of threaded fasteners and the resulting malfunction and damage.

4.2.5 General Maintenance of Wiring, Hoses, and Mechanical Assemblies

In addition to the scheduled maintenance of mechanical parts, all wiring and pneumatic tubing should be kept neatly dressed and replaced if damaged or worn. Particular attention should be paid to any wiring or tubing which is near moving mechanical parts. Tubing or wiring which is rubbing on any moving parts can be quickly worn through, causing machine malfunction. All mechanical assemblies should be cleaned regularly. Keeping all parts properly adjusted, tightened down and in good mechanical condition will minimize down time caused by SUREFILL machine malfunction.

4.2.6 General Cleaning Principles

Besides cleaning and conditioning, there are supplementary good practices essential for the proper maintenance of stainless steel equipment. They are simple and cost nothing, yet they can make a big difference in the appearance and productive life of the equipment. Here are some good ones to keep in mind.

1. Equipment should be allowed to dry completely and promptly after the rinsing, cleaning or conditioning. Covered units should be left open.

Fittings, wrenches or other objects should not be left resting on wet stainless steel surfaces, where they might prevent drying and “passivation” of the metal.

2. When brushing a stainless steel surface, either for cleaning or conditioning, follow the direction of the polishing lines or “grain” of the metal. Avoid the use of steel wool, metal brushes or metal scouring (Scotch Brite) pads. If necessary, use stainless steel pads.
3. When steam is used in mechanized cleaning, do not direct spray continuously at one spot while the steam nozzle is close to the metal, as this may set up strains in the metal.

4. Cleaning or sanitizing solutions should be thoroughly rinsed from stainless surfaces. Chlorine bactericide solutions should not remain in contact with the metal for more than 20 minutes before being rinsed off.
5. If a surface gets scratched, the scratches should be polished out by one competent to do so. The surface should be cleaned and exposed to the air for passivation.
6. Follow the use of any acidic cleaner or conditioner with a rinse, then with neutralization with an alkaline cleaning solution, then with a final rinse.
7. Use only cleaning and brightening materials which are reputable and specifically recommended for use on stainless steel, and apply them at the recommended temperature and concentration.

4.2.7 Cleaning Guide Chart

Job	Material
Routine Cleaning	Soap; ammonia; detergent; oakite; general cleaner
Fingerprints and Smears	Arcal 20; Lac-O-Nu; Lamin Wash; O-Cedar Cream Polish; Stainless Shine; Oakite
Stubborn Stains and Discoloration	Allchem Concentrated Cleaner; Samae; Twinkle; Cameo Copper Cleaner; Grade FFF or Grade F Ital Pumice; Whiting or talc; Liquid Nu Steel; Copper's or Revere Stainless Cleaner; Household Cleansers; Lumin Cleaner; Zudd; Restoro; Sta-Clean; Highlight Allen Polish; Penny-Brite; Copper Brite; Oakite 84-M; Oakite 31
Beerstain	Dubois B-R5727 or Oakite #31
Grease and Fatty Acids; Blood; Burnt-on or Baked-on Foods; Milkstain	Easy-off; De-Grease-it; 4% to 6% hot solution of such agents as trisodium phosphate; or sodium tripolyphate; 5% to 15% caustic soda solution; Oakite #67
Grease and Oil	Any good commercial detergent or caustic cleaner.

Table 7. Cleaning Guide Materials

Note: Use of propriety names is intended only to indicate a type of cleaner and does not constitute an endorsement. Omission of any proprietary cleaner does not imply inadequacy. All products should be used in strict accordance with instructions on package.

4.3 SOLENOID VALVE MAINTENANCE

The solenoid valves – also called “Peter Paul” valves – must be inspected and cleaned on a seasonal schedule, prior to season start-up, or after the machine has been idled for a long period of time.

4.3.1 Disassembly

1. A special wrench set is supplied with the machine. Use the box end of this wrench to remove the nut from the back of the valve and remove the solenoid.

REMOVE CABLE -
Power must be “OFF”



Figure 61. Remove nut from back of valve

2. With the spanner on the other side of the wrench, remove the plunger assembly.



Figure 62. Remove Plunger Assembly



CAUTION

Take care not to let the spanner wrench slip! A slip of the spanner wrench may dent the plunger body, causing the plunger to stick.

3. Inspect the plunger seal (A) for cracks or other damage.
4. Inspect the plunger seat (B) for damage.
5. Inspect the plunger body (C) for scoring or dents.

6. Inspect the gasket (D).

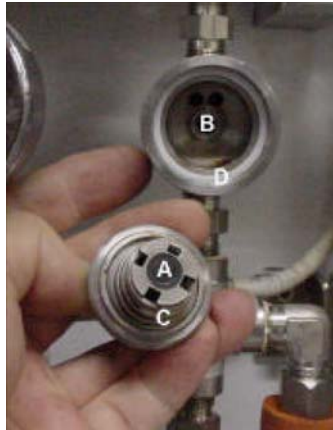


Figure 63. Inspect the Plunger seal, seat, body and gasket

Note: Repair kits are available.

4.3.2 Assembly

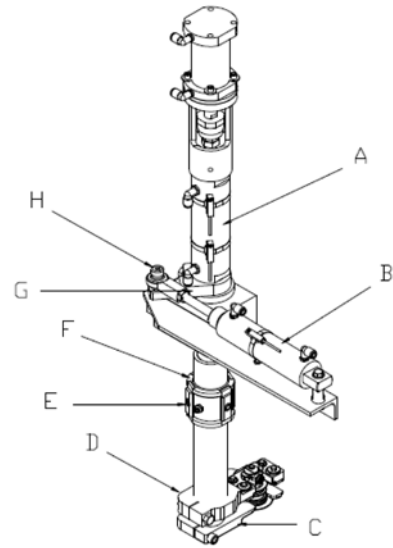
1. Inspect the plunger assembly into the plunger body and check that the plunger moves easily.
2. Insert Gasket (Teflon) into Solenoid Body.
3. Reassemble the valve and tighten the plunger assembly with the spanner, again taking care not to let the spanner slip and dent the plunger body. Do not over tighten!
4. Insert Spacer Ring over Plunger Assembly.
5. Replace the solenoid over the plunger assembly and tighten the nut with the box end wrench. Again, do not over-tighten.
6. Reattach Power Cable.

4.4 HELIX MECHANISM ASSEMBLY MAINTENANCE

Refer to Drawing #2723015 Assembly - Helix Mechanism, in Appendix B - Maintenance Manual Drawings binder.

4.4.1 Helix Mechanism Assembly Removal

1. Insert the Product Valve Stop between the Product Valve Support Slide and the Chamber Top Plate.
2. Turn off the main Air Supply (V-1).
3. Disconnect the Air Hoses on the Eject Air Cylinder (B).
4. Disconnect hoses on the Uncapper Air Cylinder (A).
5. Disconnect Reed Switches (RS-1A, RS-1B, and RS-3B) from Air Cylinders A & B.
6. Remove Spout Holder Plate (C) with an Allen Wrench (5/16"). Rotate the Spout Holder for removal.



CAUTION

Do not lose key when removing the Spout Holder.

7. Using a 9/16" Box Wrench, remove (4) mounting bolts from Chamber bottom plate. Remove the Chamber Bottom Plate and Chamber Side Walls together.
8. Using a 5/16" Allen Wrench, remove Capper Assembly (D) and Key (I).



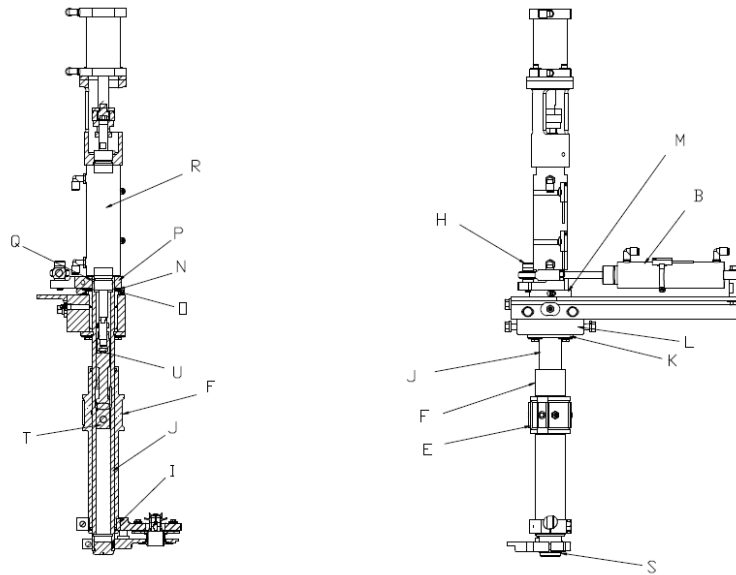
CAUTION

Do not lose key when removing the Capper Assembly and Key.

9. Remove (4) 3/8" Bolts from the Capper Support Bracket. Lift entire assembly up & off Support Plates, and out of the Bearing Block.

Take the Helix Mechanism Assembly to a clean bench, for balance of this procedure.

4.4.2 Helix Mechanism Disassembly Maintenance

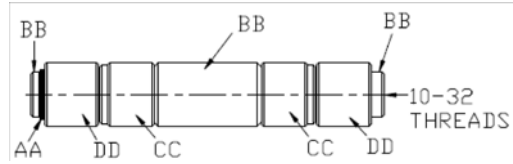


1. Remove Slide Double Helix Assembly (F) from the Uncapper Post (J) by removing the (4) Bearing Helix Covers (E).
2. Remove the two Cam Helix Pins, by pulling out through the entire assembly by inserting a #10-32 x 2.00 long Screw into the Pin (not shown).
3. Remove the Slide Double Helix Assembly (F), by pulling straight down off the Uncapper Post (J).
4. Disconnect the Eject Air Cylinder (B) from the Capper Yoke (G), by removing the Shoulder Bolt (H) from the Rod End Bearing.
5. Loosen Bolts on Uncapper Post Retainers (K), and slide open.
6. Pull Uncapper Double Helix Post (F), from the Fillhead Support Block (L).
7. Remove Capper Grease Ring (M), from the Fillhead Support Block (L).
8. Remove the (2) Thrust Washers (N) and Thrust Bearing (O), from the Uncapper Double Helix Post (F).
9. Remove Capper Yoke (P) from the Uncapper Double Helix Post (F) by loosening the Pinch Bolt, and slide down to expose the set screws.
10. Remove the Key (Q) from the Uncapper Double Helix Post (F).
11. Remove the Set Screw from the Uncapper Double Helix Post (F).
12. Using a Strap wrench and a 1-7/8" Wrench (supplied by Scholle Packaging), unscrew the Uncapper Double Helix Post (F) from the Uncapper Air Cylinder (R).
13. Remove the Uncapper Double Helix Post (F) down off the Uncapper Drive Shaft (T).

4.4.3 Clean Parts and Inspection – Capper / Uncapper Assembly

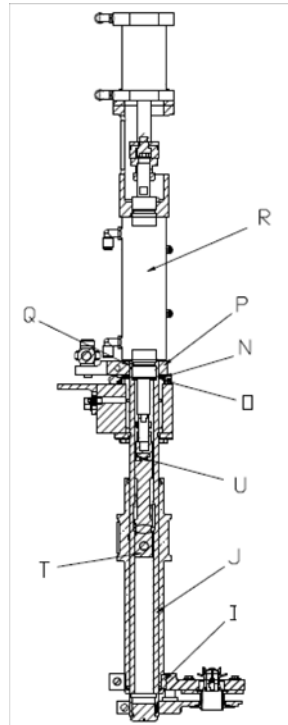
Refer to Drawing #2723150 Assembly - Cam Helix Pin, in Appendix B – Maintenance Manual Drawings binder.

1. Disassemble the Helix Cam Pin assemblies by removing the one Retaining Ring (AA), from Pin-Helix (BB).
2. Clean Pin-Helix (BB), Bearing-Helix Pin (CC), and Retaining Ring (AA), by sliding the Bushing-Pin Retainer (DD) and (CC) off (BB). Clean and check for dry-fit and wear.
3. Remove the (2) “O” Rings from the Slide Double Helix Assembly (F).
4. Inspect the Dust Cover Air Cylinder assembly. Attach to the top of the Uncapper Air Cylinder (R). Check Jam Nut and Stop for tightness.
5. Degrease and clean all components with detergent and water.
6. Inspect all parts for scratches, galling, loss of plating and wear, etc. Minor scratches can be polished out using fine grit scotch bright pad. Major galling needs repairing or replacement.
7. Inspect all “O” Rings for cuts, aging, and wear. Replace as needed.

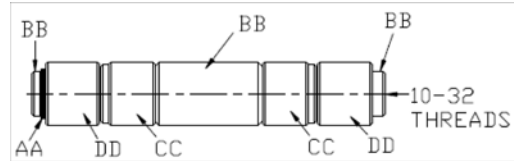


4.4.4 Re-assembly of Capper / Uncapper Assembly

1. Apply State White Grease into the slot on the Fillhead Cylinder Swivel (U), and slide the Uncapper Shaft (T) into the slot. Ensure that the shaft rotates freely.
2. Extend the Uncapper Air Cylinder Rod (R) to the fully extended position.
3. Verify overall length of assembly is at 9.635”, measuring from the bottom of the Air Cylinder to the center line of second pin hole (5/8”). If not, break loose the Jam Nut and readjust the Fillhead Cylinder Swivel (U).
4. Apply a light coat of grease to the Uncapper Shaft (T) and the Fillhead Cylinder Swivel (U).
5. Re-install the Cylinder Post Shim(s) onto the Uncapper Air Cylinder (R) landing.
6. Lightly coat the Uncapper Air Cylinder (R) threads with State White Grease.
7. Install the Uncapper Double Helix Post (F) and the Capper Yoke (G), which were not removed from the Post. Tighten the Post onto Cylinder, replace the Set Screw. Replace the key (Q), and slide the Yoke back into place and tighten the Pinch Bolt.
8. Tighten by holding the Uncapper Air Cylinder (R) with a 1-7/8” Wrench (supplied by Scholle Packaging), and a Strap Wrench.
9. Reinstall and grease the Thrust Bearing Assembly (O), and Grease Ring onto the Capper Post.
10. Slide the Capper Support Block (L) back onto the Capper Post.

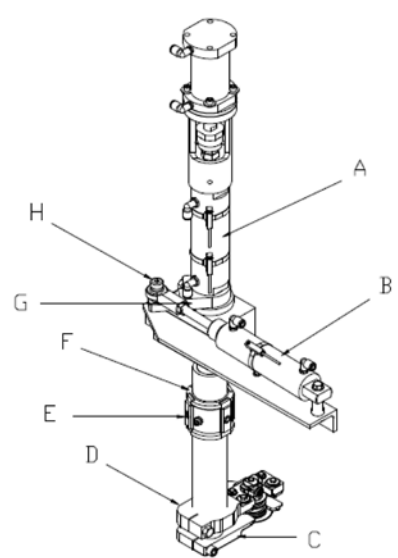


11. Lock Retainer Plates around the Copper Post.
12. With the Uncapper Drive Shaft (T) fully extended, rotate the Uncapper Drive Shaft (T) to align pin holes to the Helix cut outs.
13. Install the Slide Double Helix Assembly (F) onto the Copper Post and grease the "O" Rings first.
14. Coat the Helix Pin (BB) with State White Grease.
15. Slide the Helix Pin Bearing (CC) and the Bushing Pin Retainer (DD). The bushings should rotate on the diameter, smoothly on the Helix Pin (BB).
16. Install Retaining Ring (AA) onto the Helix Pin (BB).
17. Install the Helix Pin Assembly through the Slide Double Helix, Copper Post and Copper Drive Shaft. Reattach the four Pin Retainer Plates.
18. Check Slide Assembly so that it moves up and rotates, moves down freely and smoothly.



4.4.5 Mounting the Copper / Uncapper Assembly

1. Grease the Helix Slide Post, Top Plate Copper Bushing Guide "O" Ring.
2. Lift entire assembly up and align Post assembly to Bushing Guide. Lower down through Guide and onto the Copper Support Block (L).
3. Re-install (4) 3/8" Bolts to lock the Copper Support Bracket to the Support Plates.
4. Install the Key (I) onto the Helix Slide Post. Slide on the Copper Assembly (D), use a 9/16" Box Wrench to tighten pinch bolt.
5. Verify that the Copper Assembly (D) moves up and down freely.
6. Install the Chamber Side Walls and Bottom Plate, with (4) mounting bolts, using a 1/4" Allen Wrench.
7. Install the Spout Holder Plate (C) to the Uncapper Double Helix Post (F), and align to the Uncapper Plate Pin. Use a 5/16" Allen Wrench to tighten the pinch bolt. Rotate the Spout Holder for installation, in the HOME position.
8. Reconnect the Copper Yoke (G) to the Cylinder Rod End Bearing (B).
9. Connect Reed Switch (RS- 1A, RS-1B, and RS-3B) to the Forward Infeed Support.
10. Connect the hoses on the Uncapper Air Cylinder (A), and the Dust Cover Air Cylinder.
11. Connect the Air Hoses on the Eject Cylinder (B).



4.5 CAPPER ASSEMBLY MAINTENANCE

The Capper Assembly is designed primarily for a Flextap type fitment. It is also designed for conversion to 6300/1900/Sentry/FTC type caps.

Note: Refer to Drawing Number 2712120 Assy-Capper, in Appendix B of the Maintenance Manual, for more information.

4.5.1 Inspection

Check the Jaw-Cap-Left (D) and Jaw-Cap-RH (C) for play. If there is no movement in any direction other than rotation around points A and B, or “O” Rings (J) (See Figure 65), the Flange Bearings (Top and Bottom) are worn.

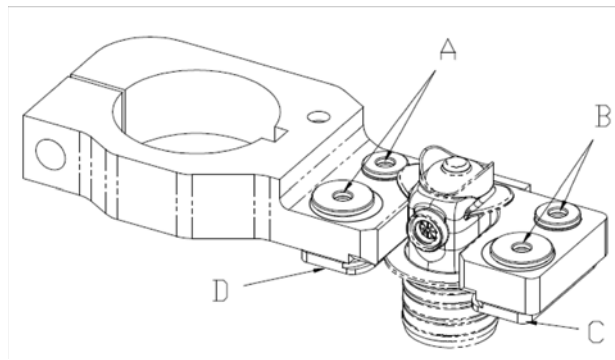


Figure 64. Capper Assembly

4.5.2 Disassembly

1. Remove the four Pivot Pins (E), and related items:
 - Jaw-Cap-Left (F)
 - Jaw-Cap-Right (G)
 - Two Flange Bearings (H)
 - Two Bottom Flange Bearings (I)
 - Two Silicone O-Rings (J).
2. Remove the four #6-32 X .38 long Hex Head Cap Screws (not shown) with related items:
 - Two Flange Bearings (H)
 - Two O-Ring Spacers (K)
 - Two Front Thrust Bearings (L)
 - Two Top-Flange Bearings (M)
 - Two Rear Thrust Bearings (N).
3. The Dowel Pin is pressed into the Capper Plate. Remove this item only if badly worn or damaged (galled).

4. The Cap Stop (P) with mounting hardware, two #8-32 X .375 long Hex Head Cap Screws does NOT need to be dis-assembled.

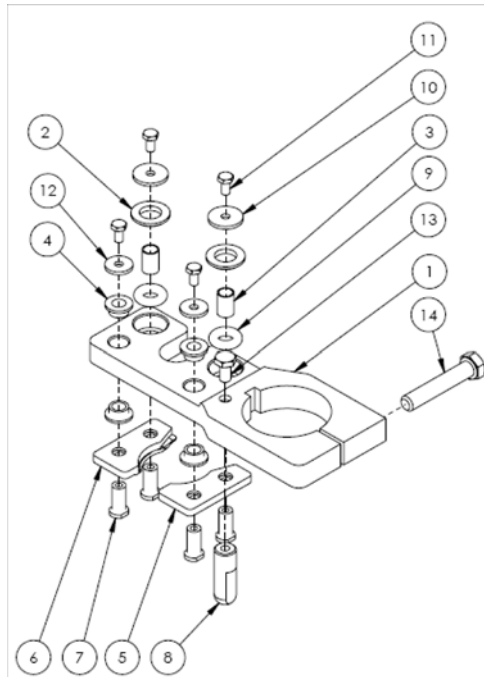


Figure 65. Disassembly of Capper Assembly

4.5.3 Cleaning and Inspection

1. Remove all the old grease, and clean the Capper Plate (1), the Cap Jaws (5, 6), and all related parts with detergent and water.
2. Inspect the Top-Flange Bearing (M) and the Bottom-Flange Bearing (I) for wear. If worn, they must be replaced.
3. Inspect the Silicone O-Rings (9) for defects. If deformed or defective, the O-Rings need to be replaced.

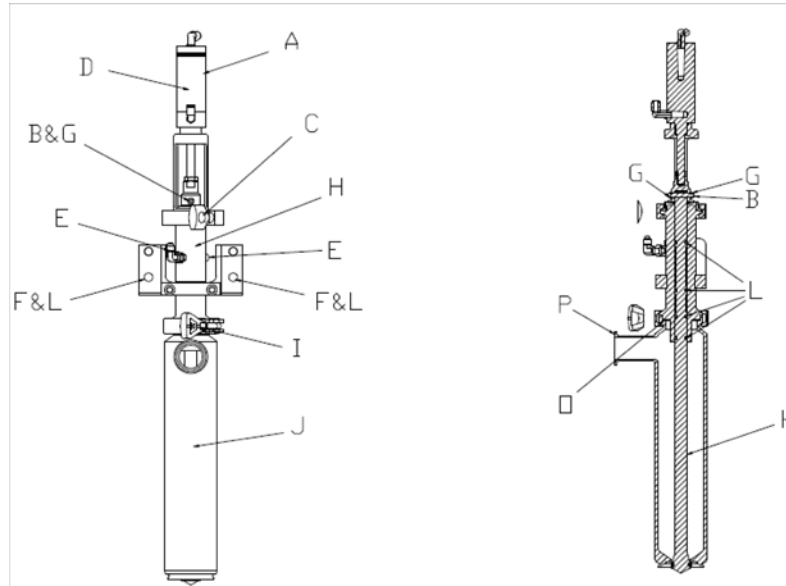
4.5.4 Re-assembly

1. Install the four Pivot Pins (7) to mount these related items to the Capper Plate (1):
 - Jaws (5, 6)
 - Two Flange Bearings (4)
2. Install the four #10-32 X .375 long Hex Head Cap Screws with related items:
 - Two Flange Bearings (4)
 - Two O-Ring Spacers (9)
 - Two Front Thrust Rings (12)
 - Two Rear-Thrust Rings (10)

Once Hex Head Cap Screws are tightened down, check that the Left and Right Cap Jaws open & close freely.

4.6 PRODUCT VALVE MAINTENANCE

4.6.1 Removing the Product Valve from the Filler



1. Raise the safety cover (A) and remove the Plunger Pin (B) and ORings.
2. Remove the Clamp (C) and pull the Air Cylinder Assy (D) up and off the Product Valve and set it aside. It is not necessary to disconnect the airlines (See Figure on the left above).
3. Disconnect the two Steam trace lines at (E) (See Figure on the left above).
4. Remove the two Pins (Locating) (F) and the two O-Rings (L) (See Figure on the left above).
5. Disconnect Product Piping from Product Valve Body (P) (See Figure on the right above).
6. Pull the entire Product Valve Assembly up and out of the Product Valve Guide Housing (H) (See Figure on the left above).

4.6.2 Disassembly

1. Remove Clamp (I) and separate the Fill Valve Body (J) from the Plunger – Guide Housing (H).
2. Slide out the Plunger (K) from the Plunger Valve Guide Housing (H). Note the orientation of the Guide Body.

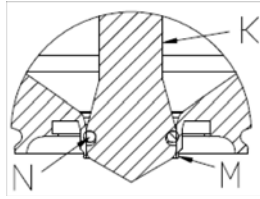
4.6.3 Cleaning and Inspection

1. Remove all O-Rings (L) and (N).

Note: If the Teflon "O" ring (I) is to be replaced, the old "O" ring must be cut off.

2. Inspect Product Valve Plunger (K) for signs of wear, galling, nicks, cuts, etc. Any damage must be removed and polished smooth.

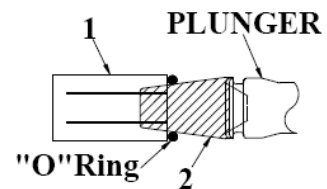
3. Inspect Product Valve Nozzle (M) for damage. Inspect Face seal for cuts and tears damage. Replace if necessary.



4. Check the Product Valve Body (J) for wear and galling.
5. Check Product Valve Guide Housing (H) for wear and galling.
6. Using Detergent and water to clean all components thoroughly.

4.6.4 Replacing the Teflon “O” ring

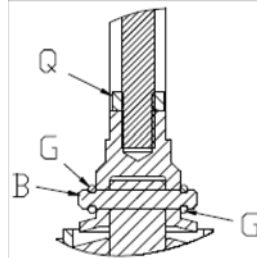
1. Taking care not to damage the “O” ring groove in the Product Valve Plunger (K), use a Utility knife to cut the Teflon “O” ring (N).
2. Place the loading mandrel (2) over the nose of the plunger.
3. Place the New “O” ring on the loading mandrel and use the Pusher (1) to push the “O” ring down the mandrel until it drops into the “O” ring groove of the plunger.
4. Place the sizing tool (3) on a table with the small diameter down.
5. Push the “O” ring end of the Plunger down into the sizing tool (3) until the Plunger contacts the table.
6. Leave in this position several minutes to allow the “O” ring to be compressed back to its original size.



4.6.5 Re-Assembly

1. Heavily coat all “O” rings except the Teflon “O”ring (N) with State White Grease.
2. Install the Product Valve Plunger (K) into the Plunger Valve Guide Housing (H). Remove and clean off the excess grease. Note orientation of Guide Housing.
3. Install Gasket (O) in the top of the Product Valve Body (J), but do NOT grease.
4. Place the Plunger Valve Guide (H) into the Product Valve Body (J) and install the Clamp (I). Do NOT tighten at this time.
5. Inspect the two “O” rings in the Product Valve Guide (on the top chamber plate, not shown) and replace if necessary.
6. Lubricate these “O” rings with State White Grease.
7. Install the Product Valve Body (J) into the Product Valve Guide (H).
8. Install two Locating Pins (F) and O-Rings (L).

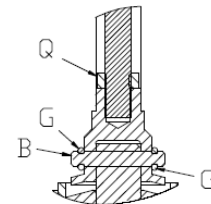
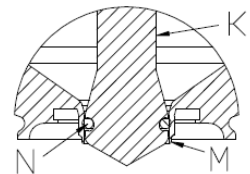
9. Install the Gasket at (P) and reconnect the product pipe using the sanitary clamp.
10. Reconnect the Steam Trace Lines (E).
11. Slide the Air Cylinder onto the product valve and align to the Detent holes and insert the Plunger Pin (B).



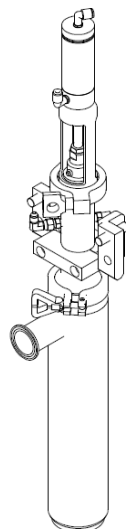
12. Install the Plunger Pin (B) and O-Rings (G).
13. Install the Clamp (C) onto the Product Valve Guide Housing (H).
14. Tighten all clamps (C) and (I).

4.6.6 Adjustment of the Product Valve Plunger

1. Apply 80 PSI of air pressure to the extend side (Top Fitting) of the air cylinder.
2. If the stroke of the Product Valve Plunger is correct, the radius on the nose of the Product Valve Plunger (K) will flow into the radius of the Product Valve Nozzle (M).
3. If not, loosen the Jam Nut (Q).
4. Remove the Air Pressure from the Air Cylinder and screw the air cylinder shaft in and out depending on the adjustment required.
5. Re-apply the air pressure and re-check the adjustment.
6. If correct, repeat steps 4 & 5.
7. Tighten the Jam Nut (Q).



The Product Valve Assembly is now completely assembled, and is shown in the image below.



Chapter 5: Troubleshooting

5.1 ALARMS AND FAULTS

The AF 22 HA-ASEPTIC sensors constantly monitor all operational conditions and trigger an alarm when a fault occurs. The PanelView 600 notifies the operator by displaying the fault(s) with a bright red and yellow banner. This banner is designed to cover most of the display.

5.1.1 Fault Identification

The PanelView displays:

- Fault descriptions
- The device at fault
- The condition not met
- What action should be taken to correct the fault?

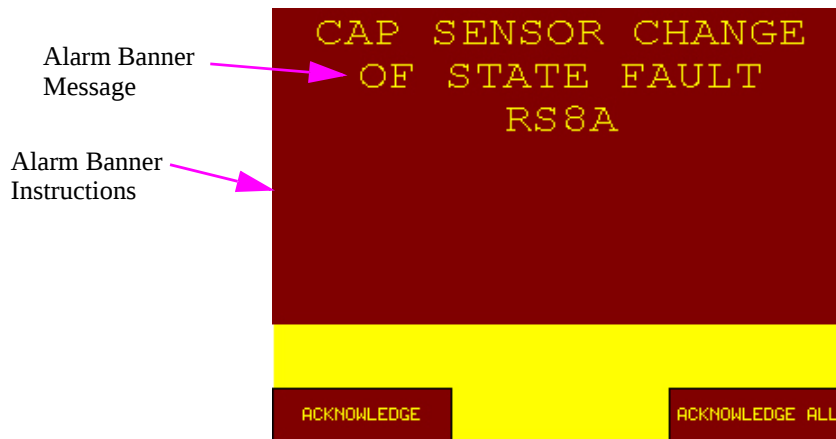


Figure 66. Alarm Banner Screen

5.1.2 Alarm Banner Description

- Top portion of the banner displays the faults one at a time.
- Middle portion of the banner displays an instruction.
- The bottom portion of the banner displays two functions: ACKNOWLEDGE and ACKNOWLEDGE ALL.

When activated by a fault, the Alarm Banner:

- Notifies the operator that a fault has occurred and informs the operator where the fault occurred.
- Depending on the severity of the fault, the system requires the operator to correct the fault before the Filling Machine will continue its operation.
- Maintains a history of faults for review.

The dark red and yellow alarm banner is designed to be seen. When the banner is present, THE OPERATOR MUST READ THE TEXT, and acknowledge the fault by pressing the appropriate function.

Function	Function Description
Acknowledge	Touching this function clears present screen message. If there are more than one fault, the next fault will be displayed, then the next fault. Once all faults are acknowledged the Alarm Banner screen goes away.
Acknowledge All	Touching this function clears ALL fault messages, and the Alarm Banner screen goes away.

Table 8. Alarm Banner Screen Functions

The bottom portion of the alarm banner is the fault history, with a description, date, and time the fault occurred.



WARNING

The alarm banner only informs the operator that a fault condition exists. Merely touching the function on the screen, DOES NOT SOLVE THE FAULT CONDITION! The function "Acknowledge All" is used to continue the cause of the fault(s) and make the required corrections to prevent recurrence. The operator must correct the fault an/or reset the filler to continue.

5.1.3 Position Sensor Faults

Sensor	Alarm Banner Message	Manual	Step	Auto
RS-1A	Capper Helix Retracted (Capper Up)	X	X	X
RS-1B	Capper Helix Extended (Re-Cap Only)	N/A	X	X
RS-2A	Fill Head Down	N/A	X	X
RS-2B	Fill Head Up	X	X	X
RS-3B	Spout Holder Closed	X	X	X
PRS-5A	Long Shuttle Retracted	X	X	X
PRS-5B	Long Shuttle Extended	N/A	X	X
PRS-5C	Long Shuttle Staged	X	X	X
RS-6A	Short Shuttle Extended	X	X	X
RS-6B	Short Shuttle Retracted	X	X	X
PRS-8A	Cap Sensor (Cap In Place)	N/A	N/A	X
RS-9A	Separator Down (Right)	X	N/A	X
RS-9B	Separator Up (Left)	X	N/A	X
RS-10A	Airless Fill Pad Up	N/A	X	X

Table 9. Position Sensor Faults

5.1.4 Production Faults

Thermocouples	Alarm Banner Message	LOW	HIGH
TP-1	Filling Chamber	180F	200F
TP-5	Product Valve Guide/Capper Steam Seals	214F	266F
TP-11	Product Valve Plunger/Poppet Steam Seals	214F	266F
TP-181	CAP STERILE SPRAY TUNNEL	225F	245F

Table 10. Thermocouples – Production Faults

Service Sensors	Alarm Banner Message	LOW
PS-1	Nitrogen Pressure Sensor (IF EQUIPPED)	38 PSI
PS-2	Compressed Air Pressure Sensor	75 PSI
VS-1	Vacuum Sensor (IF EQUIPPED)	10" HG
FS-1	Sanitizer Flow Switch (IF EQUIPPED)	32 ML/MIN
FS-2	Chamber Air Flow Switch	1.5 SCFH
FS-3	Chamber Air Flow Switch	1.5 SCFH
FS-4	Chamber STEAM Flow Switch	1.5 SCFH
FS-5	Chamber STEAM Flow Switch	1.5 SCFH
FS-6	Chamber STEAM Flow Switch	1.5 SCFH
LLS-1	Sanitizer Level Switch 1 (IF EQUIPPED)	30%
LLS-2	Sanitizer Level Switch 2 (IF EQUIPPED)	15%

Table 11. Service Sensors – Production Faults

Production Interrupts	Alarm Banner Message
Overfill Fault	Stops Fill - must STEP out of cycle.
Upstream Process Input	Will not allow Filler to start next cycle until corrected.
LLS-2 Sanitizer Level (5 minute) Lockout (if equipped)	Will not allow Filler to start next cycle until corrected.
Safety Door Open (if equipped)	Pauses Filler - action continues when door is closed.
LLS-3 Oiler Level Switch	Warning message Only. Refill.
Product Line Sterility Lost - loss of services: Upstream Process Input Lost. Power Turned Off. CIP Started. Complete System Sterilization started.	Filler will not allow another bag to be filled until complete system sterilization is re-done.
Chamber Only Sterility Lost - loss of services: Steam Seals Turned Off. Power Turned Off. FS-2, FS-3, FS-4, FS-5, FS-6 are Low, and TP1 & TP11 are Low. Complete System Sterilization started.	Filler will not allow another bag to be filled until complete system sterilization is re-done.
Loader Fault/No Box in Place (if equipped and enabled)	Pauses Filler - action continues when Loader condition corrected.

Table 12. Production Interrupts – Production Faults

5.1.5 Sterilization Faults

Complete System Sterilization	Alarm Banner Message	LOW	HIGH
TP-1	Filling Chamber	199F	
TP-4	Product Line / F1 Filter	249F	276F
TP-5	Product Valve Guide/ Capper Steam Seals	249F	276F
TP-7	Product Valve Poppet/F2 Filter (if equipped)	249F	276F
TP-11	Product Valve Plunger/ Poppet Steam Seals	249F	276F
TP-13	F2 Filter Steam Seals (if equipped)	249F	276F

Table 13. Complete System Sterilization Faults

Complete System Cooldown	Alarm Banner Message	LOW	HIGH
TP-1	Filling Chamber	129F	
TP-5	Product Valve Guide/Capper Steam Seals	214F	276F
TP-11	Product Valve Plunger/Poppet Steam Seals	214F	276F

Table 14. Complete System Cooldown Sterilization Faults

Chamber Only Sterilization	Alarm Banner Message	LOW	HIGH
TP-1	Filling Chamber	204F	
TP-5	Product Valve Guide/Capper Steam Seals	249F	276F
TP-11	Product Valve Plunger/Poppet Steam Seals	249F	276F
TP-13	F2 Filter Steam Seals (if equipped)	249F	276F

Table 15. Chamber Only Sterilization Faults

5.1.6 Clearing Faults

When the operator presses “ACKNOWLEDGE” or “ACKNOWLEDGE ALL” functions on the Alarm Banner screen, the message will disappear.

The problem that caused the fault must be corrected before continuing the operation.

1. After the corrective action has been taken, press the RESET pushbutton.
2. If a fault is still recovering the indicated message will again be displayed (Flashing FILL CYCLE STOP) in the HOME position, this means a fault is still active. After the fault condition has been corrected, pressing the RESET pushbutton will clear the fault.

ALARM BUFFER:

This window displays information about the faults that have occurred during production or sanitization.

1. The time the fault occurred.
2. The time the fault was acknowledged.
3. The description of the fault.

CLEAR HISTORY:

By touching this function, all faults stored in the Alarm History Buffer **will not be deleted**.

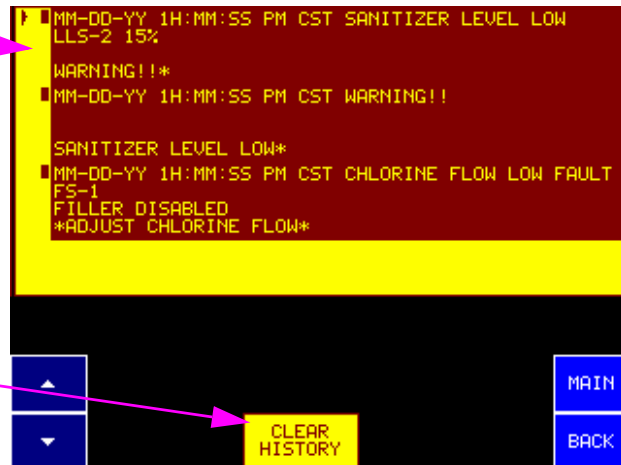


Figure 67. Alarm History Screen

The screen display the fault history of the filling machine with a description, date, and time fault condition occurred. Provided the fault history has not been cleared, Quality Control, Supervision, or Maintenance personnel, may view the description of the fault and the date and time the operator acknowledged the fault.

Note: Touching the clear history function will bring up another screen. On this screen there will be two options: ABORT? or CONTINUE? Touching the ABORT function will return the user to the previous screen. Touching the CONTINUE function WILL DELETE ALL ALARMS IN THE BUFFER.

5.2 SEQUENCE OF OPERATION

This Sequence Of Operation procedure can be accessed by the operator from either Operator Interface Enclosure. When the black FILL CYCLE STEP pushbutton is pushed, the Filling Machine is moved incrementally through the automatic filling cycle – one step at a time, provided all the conditions have been met to start the automatic filling cycle.

Note: The separator and product valve do not operate during the filler step cycle.

Each time the black FILL CYCLE STEP pushbutton is pressed, the Filling Machine will move through the following sequence:

- STEP 0 – the HOME position. Ejector Closed, Fill Head Up, Product Valve Closed, Airless Fill Down, Short Shuttle Retracts, and Long Shuttle Staged.
- STEP 1 – Short Shuttle Extends.
- STEP 2 – Short Shuttle Retracts, and Long Shuttle Retracts.
- STEP 3 – Capper Up, Separate Bag, Cap Sensor Off, and Long Shuttle Extends.
- STEP 4 – Fill Valve Down, and Airless Fill Up. Auto Cycle Only:
- STEP 5 – Fill Valve Up, and Airless Fill Up.
- STEP 6 – Capper Down, ReCap's, and Airless Fill Down.
- STEP 7 – Capper Relax, Airless Fill Down, and Ejector Open.
- STEP 8 – Ejector Closed, Dust Cover Extends, and Capper Retracts.

5.3 COMPLETE STERILIZATION OPERATION FLOW CHART

The following pull-out page, diagrams the Complete Sterilization Operation Flow Chart for the SURE-FILL 22-HA system that is used by the Mechanical Technician.

The electro-pneumatic circuitry and its resultant mechanical and electrical action are controlled by the program contained within the Allen Bradley PanelView 600 programmable controller.

Note: The Maintenance Technician should refer to the Electrical Schematic in Appendix B of the Maintenance Manual.

5.4 CHAMBER / BIO-FILTER STERILIZATION FLOW CHART

The following pull-out page, diagrams the Chamber and Bio-Filter Sterilization Operation Flow Chart for the AF 22-HA system that is used by the Mechanical Technician.

The electro-pneumatic circuitry and its resultant mechanical and electrical action are controlled by the program contained within the Allen Bradley PanelView 600 programmable controller.

Note: The Maintenance Technician should refer to the Electrical Schematic in Appendix B of the Maintenance Manual.

Appendix A: Micro Filter Element Sample Form

MICRO FILTER ELEMENT HISTORY			MICRO FILTER NUMBER					
STER. CYCLE	FILLER #	POS. ON FILLER	MAX. TEMP.	STER. TIME	FILL DATE STOP	FILL DATE STOP	TEST RESULTS AFTER FILL	SPVR. SI
NEW		F-		MIN.				
2		F-		MIN.				
3		F-		MIN.				
4		F-		MIN.				
5		F-		MIN.				
6		F-		MIN.				
7		F-		MIN.				
8		F-		MIN.				
9		F-		MIN.				
10		F-		MIN.				
11		F-		MIN.				
12		F-		MIN.				
13		F-		MIN.				
14		F-		MIN.				
15		F-		MIN.				