



# Multiline<sup>®</sup> XT

## FRESH VAC<sup>®</sup> MODEL A200 52" (132 cm) SEALING HEAD

MODIFIED ATMOSPHERE  
PACKAGING MACHINE

## USERS GUIDE

CVP P/N M-1110-0161 REV D

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# **SECTION: 1**

# **OVERVIEW**



## **FOREWORD**

This manual contains information which is vital to the proper installation, operation, and maintenance of the CVP A200 FRESH VAC® Modified Atmosphere Packaging (MAP) Machine. Failure to follow the procedures herein outlined shall void the limited warranty.

Additions, modifications, or deletions from the procedures herein outlined may be made by CVP Systems Inc., at its sole option, without liability of any sort accruing to CVP Systems Inc.

This manual shall be considered current as of the date of any such addition, modification or deletion.

Photos, drawings, and illustrations used in this manual are representative and may vary from your equipment.

## CUSTOMER SERVICE

When calling, either for parts or service, have the model and serial numbers available for our customer service representative. This will allow us to more accurately assist you with your machine.

The serial number tag for the A200 Multiline XT sealing head is located on the inside door of the rear control enclosure.

### **Ordering Parts**

Ordering parts from CVP Systems can be accomplished in three different ways; by phone, fax or e-mail. Please include model and serial numbers in all correspondents to CVP Systems.

Phone: 800-422-4720 (US, Canada, & Mexico)  
630-852-1190 (All others)

Fax: 630-852-1386

E-Mail: [spareparts@cvpsystems.com](mailto:spareparts@cvpsystems.com)

## USING THE MANUAL

The following sections of this manual provide an overview for your A200 Multiline XT sealing head installation. They describe the requirements for site installation and provide basic installation instructions.

Information about basic machine operation and maintenance is also provided. It is recommended that anyone involved with the operational mechanics of this machine read the manual before operating or servicing the unit.

The prints and manuals included with the machine contain information which is important to service the unit. They should be stored in a cool, dry location away from the machine so that they are not exposed to high humidity and harsh chemicals.

# SAFETY

## Safety Precautions

It is important that all SAFETY PRECAUTIONS are followed closely when working with machinery. The A200 Multiline XT sealing head is simple and safe to use when properly operated.

Get acquainted with all of the warning labels and safety features of the machine. They are provided for your safety and benefit.

- ONLY ONE OPERATOR MAY USE THIS MACHINE AT ANY ONE TIME.
- THE RED BUTTON IS THE EMERGENCY STOP.
- DO NOT PUT HANDS INTO ANY PINCH POINTS, (areas where two or more parts intersect), SUCH AS THE MANIFOLDS.
- IN CASE OF EMERGENCY DO NOT DISCONNECT AIR.
- DO NOT OPERATE EQUIPMENT WITH BROKEN AND/OR MISSING PARTS.
- DO NOT WORK ON MACHINE WHILE POWER IS ON, UNLESS INSTRUCTED TO DO SO BY OUTLINED PROCEDURES WITHIN THIS MANUAL, OR BY QUALIFIED CVP SERVICE PERSONNEL.

**SERIOUS INJURY OR DEATH** COULD RESULT IF THE POWER SUPPLY IS NOT TURNED OFF BEFORE WORKING WITH CERTAIN COMPONENTS SUCH AS HIGH VOLTAGE LEADS!!!

- DO NOT BYPASS OR ALTER ANY SAFETY COMPONENT.
- DO NOT LEAN ON OR OTHERWISE PLACE BODY PARTS NEAR, ANY MOVING PARTS OF THE EQUIPMENT.
- WHEN POSSIBLE, USE RECOMMENDED TOOLS FOR REPAIR AND ADJUSTMENT.

## Operational Safety

It is important to develop good safety habits to ensure a safe and efficient packaging process. Please adhere to the following:

- USE MACHINE AS DIRECTED BY THIS MANUAL AND CVP PERSONNEL.
- KEEP SURROUNDING AREA FREE OF CLUTTER AND HIGH VOLUMES OF TRAFFIC.
- ONLY USE MACHINE FOR PURPOSE INTENDED.
- FOR APPLICATIONS OTHER THAN PACKAGING, PLEASE CONSULT WITH YOUR CVP SALES REPRESENTATIVE.

# MSDS SHEETS

A Material Safety Data Sheet (MSDS) is an instructional sheet concerning a specific chemical that explains hazards and emergency procedures.

CVP provides MSDS sheets for vacuum pump oils we sell upon request.

Before using vacuum pump oil or any other chemical supplied by CVP, read its MSDS sheet to learn the following:

## Physical and Chemical Changes

- Normal appearance and odor
- Temperature, boiling or melting point, at which its form changes
- How fast it evaporates and rises in air
- Solubility in water

## Fire and Explosion Risks

- Lowest temperature at which vapors catch fire
- Highest and lowest vapor concentrations that can catch fire or explode
- Fire fighting instructions

## Reactivity Risks

- Chance of chemical change or disintegration
- Dangerous reactions to air, water, or specific chemicals
- Decomposition by-products

## Exposure Health Risks

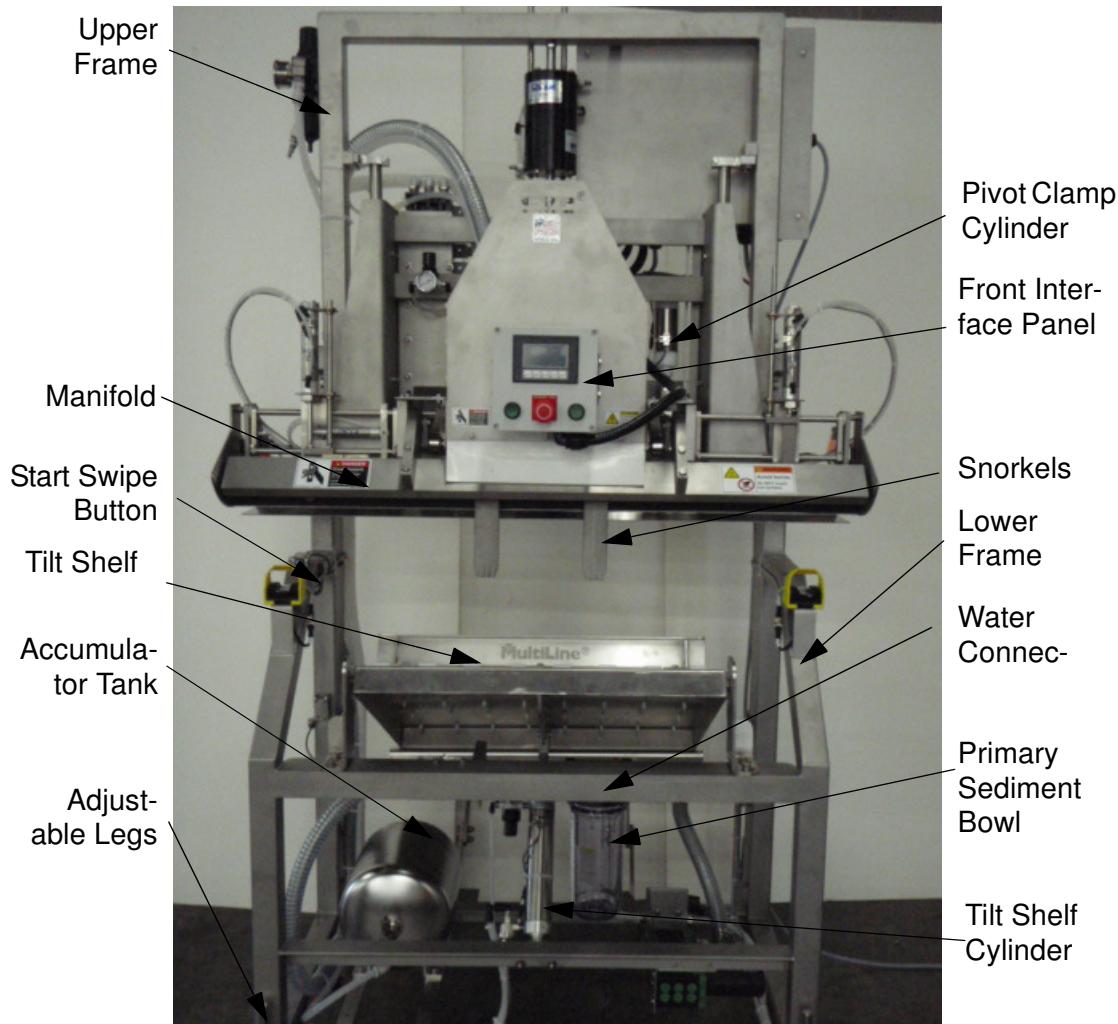
- Hazards and symptoms of inhaling, swallowing, skin, or eye contact
- Fast (acute) or gradual (chronic) appearance of health problems
- Cancer hazard
- Health conditions exposure could make worse
- First aid until medical help arrives

## Precautions to Reduce Risks

- Controls such as ventilation and hygiene
- Respirators, gloves, or other personal protective equipment (PPE)
- Handling spills, leaks, or accidental release

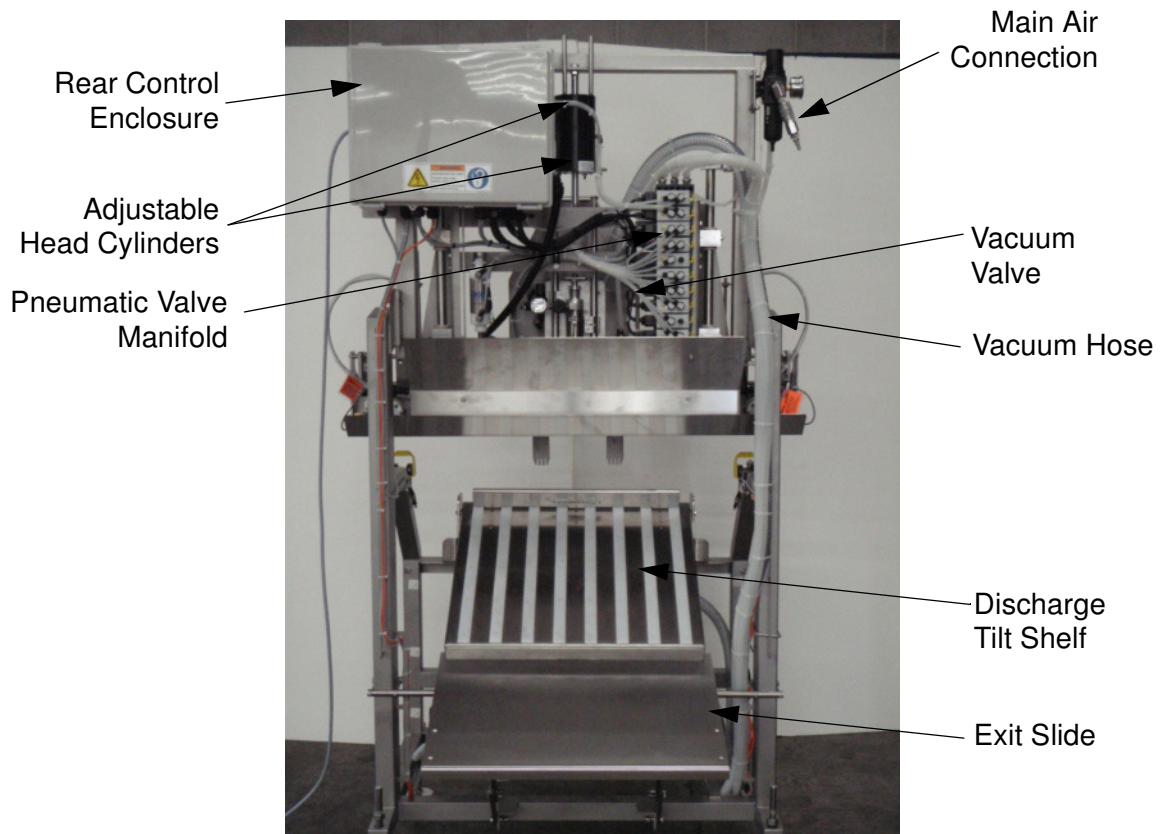
## FEATURES

**Front of Machine** The figure below shows several of the major assemblies of your A200 Multiline XT sealing head as viewed from the front.



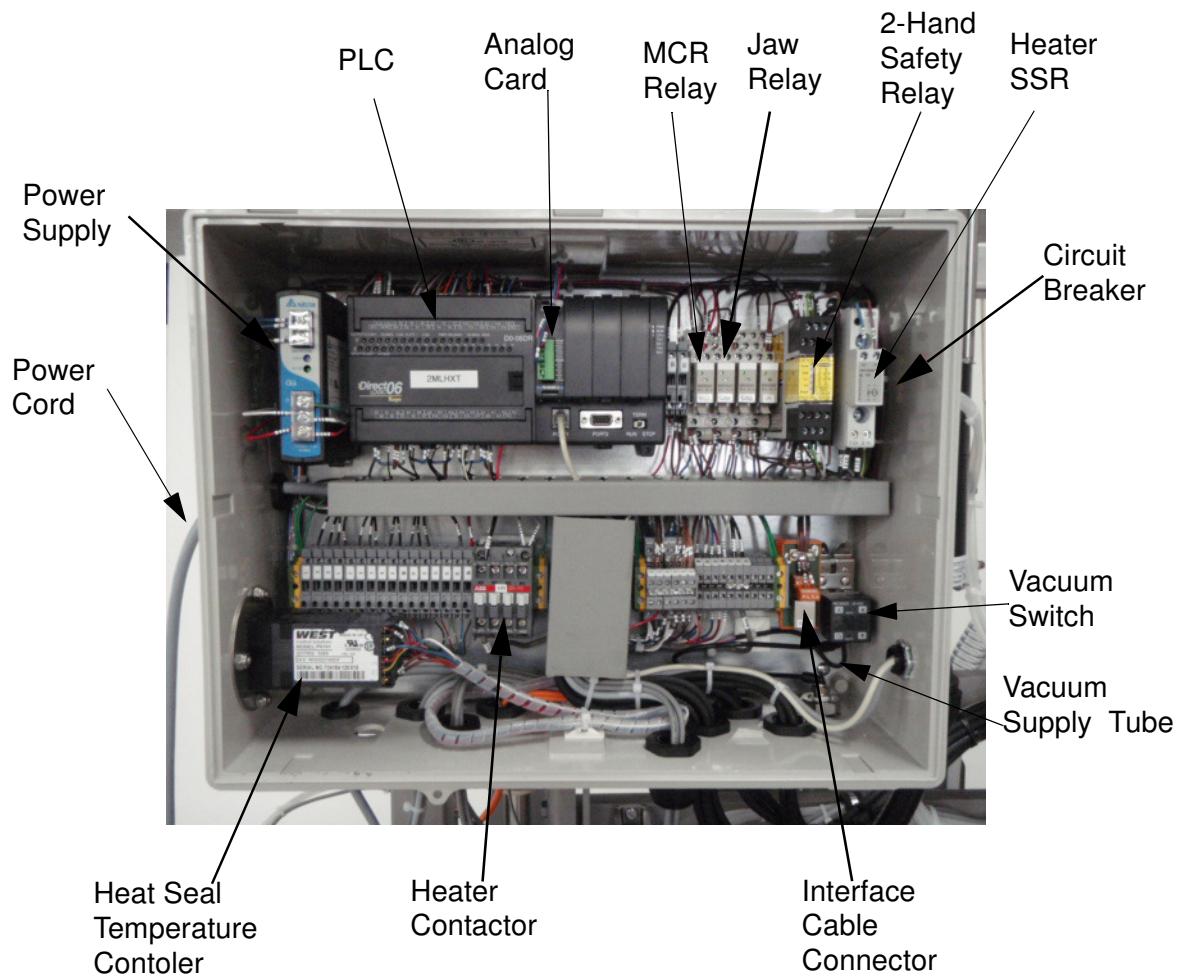
**Figure 1-1.** A200 Multiline XT Front View

**Rear of Machine** The figure below shows some of the major components of the A200 Multiline XT as viewed from the rear.



**Figure 1-2.** A200 Multiline XT Rear View

The figure below shows the components of the A200 Multiline XT sealing head's Electrical Enclosure.



**Figure 1-3.** Electrical Enclosure

Note the location of the machine's electrical, air, gas and water connections in the above photos before proceeding.

# MACHINE UTILITIES

## Electrical

The site should have power as indicated on the serial number plate. The A200 Multiline XT sealing head requires a dedicated service.

This machine comes with a plug-in, power cord located on the back side of the electrical enclosure. The plug may be replaced with one to match your plant standard. Your supply and conductors must be capable of delivering the specified power to the A200 Multiline XT sealing head. Make sure the plug and receptacle are waterproof. This type of connection will make your machine more convenient to move and adjust when necessary.

Power Requirements are as follows:

- 120 Volts, 1 Phase, 20 Amps or
- 220 Volts, 1 Phase, 15 Amps

## Compressed Air

A supply of clean, dry, compressed air is required for proper functioning of the A200 Multiline XT sealing head. The air supply regulator is factory pre-set to the recommended pressure.

The size of the air supply line is critical to the performance of the machine. Before connecting air to the machine, make sure the supply line can supply adequate air pressure to the machine. The supply lines noted below in the air requirements are based on a main supply line running within 50 feet (15.2 m) of the machine.

Air consumption of the machine varies depending on the type of vacuum pump being used. Standard machines with an electric vacuum pump or no pump use approximately 1 CF (28.3 L) of compressed air per cycle. Machines with a venturi vacuum pump will use, in addition to the 1 CF/cycle, 1/2 CFM (14.2 L/min) every second the vacuum pump is operating.

Estimated compressed air requirements are as follows:

- Standard machines - 80 PSI\* (5.4 bar), 4 CFM (113.2 L/min), 3/8" (9.5 mm) supply line
- Venturi pump machines - 87 PSI\* (5.9 bar), 12 CFM (340 L/min), 1/2" (12.7 mm) supply line

\*The recommended air pressure supplied to the machine is 100 PSI (6.8 bar). The indicated air pressure is the regulator setting.

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**Note:** In cold rooms where water is present in the air supply, ice may develop in the pump. Use clean, dry air when using this pump in cold areas.

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**Gas Supply**

The A200 Multiline XT sealing head is equipped to backflush gas into the bag. The gas supply connects to the accumulator tank mounted under the discharge tilt shelf. Gases, such as Nitrogen or Carbon Dioxide, can be supplied to the machine in three ways.

1. Single gas cylinder connected directly to the machine
2. Central bulk gas system connected directly to the machine
3. Gas manifold system mounted to the Multiline conveyor system

10 feet (3 m) of 1/2" (12.7 mm) OD polyflo tubing is provided to connect from the accumulator tank to the gas source. A 2-stage, gas regulator must be used with a gas cylinder supply, or a single-stage regulator from a bulk source.

CVP recommends 80 PSI (5.4 bar) minimum pressure into the regulator within 10 feet (3 m) of the main gas connection. A ball type shut off valve should be used ahead of the gas regulator when using a bulk gas system.

For more information on the gas system see Section 6, "GAS SYSTEM".

Recommended supply line size from a bulk source to the regulator should be as follows:

- 100 to 299 feet (30.5 m to 91.1 m) of run = 3/4" (19 mm) nominal pipe
- 300 to 499 feet (91.4 m to 152.1 m) of run = 1" (25.4 mm) nominal pipe
- Over 500 feet (152.4 m) of run = 1-1/4" (31.8 mm) nominal pipe

Contact CVP for information on the type and amount of gas to be used with your product. As an example, CVP recommends 100% CO<sub>2</sub> gas for packaging fresh poultry at 15 standard cubic inches per pound (0.5 L/kg.). A rough method of determining the cubic inches of gas is to vacuum then gas an empty bag. Calculate volume by multiplying the height x length x width in inches while pressing the bag slightly between two flat surfaces. Adjust the gas time to change the cubic inches and achieve 15 cubic inches per pound of chicken that will be in the bag.

**Water Connection**

A permanent hot water connection can be plumbed to the machine's water inlet if desired. Hot water is used only to backflush the machine's vacuum lines. The mode switch must be in the CLEAN position and the clear vacuum hose moved to the front (CLEAN) position on the quick-connect bulk-head below the discharge tilt shelf. Otherwise, use the supplied female hose adapter fitting on the connection to connect a temporary hot water hose whenever cleaning.

# BAG AND CONTAINER INFORMATION

## Bag and Container Sizes

When a container is on the conveyor, there should be some clearance between the top of the container, (If using a box with flaps, fold the flaps down), and the lowest point of the unit.

If the unit came equipped with the optional adjustable head, make your initial height adjustments with head in the extreme "UP" position and your tallest container in position. After this adjustment has been set, check clearance of the head in lower positions with smaller containers.

The correct bag size is important for packaging products. There are 4 factors to determine the size of a bag:

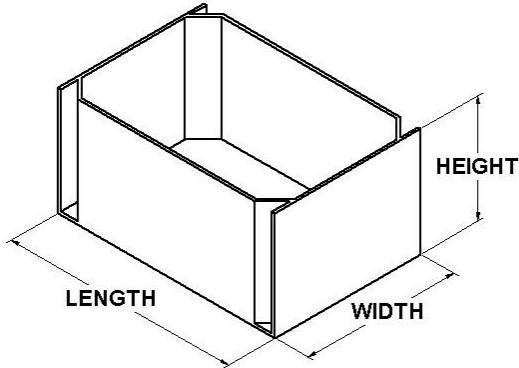
- Width of Container
- Length of Container
- Height of Container
- Container Style (End or Top Load)

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**Note:** The A200 Multiline system is designed to be used with a top loaded container only.

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## Top Loaded Bag Formula



**Figure 1-4.** Top Loaded Container Dimension Reference

Bag Width (Opening) = Width (Container) + Length (Container) + 2" (50.8 mm)

Bag Length = Width (Container) + Height (Container) + 6" (152.4 mm)

**EXAMPLE:**

Using the formula a bag size will be determined based on an end loaded container with the following dimensions:

Length = 21 inches

Width = 15 inches

Height = 10 inches

Bag Width (Opening) = 15 (Container Width) + 21 (Container Length) + 2 = 38 inches

Bag Length = 15 (Container Width) + 10 (Container Height) + 6 = 31 inches

BAG SIZE = 38 inch (W) X 31 inches (L)

With the bag in the container, check to see that the end of the bag will reach above the heat seal bar. The bag should extend a short distance above the top surface of the rear manifold rubber support.

## **SECTION: 2**

# **INSTALLATION**



# INSTALLATION PREPARATION AND REQUIREMENTS

To ensure a successful installation, it is important to adhere to the requirements for installation. Be sure that you can meet all of these requirements so that your installation will go as smooth as possible.

## Work Area

The area used to setup the A200 Multiline XT sealing head should be open and clear for you to work, allowing room for a fork truck to lift the machine. If you are not able to setup the machine where it will be used, make sure you can get the machine to that location after it is assembled.

## Required Equipment

Below is a list of equipment and tools needed to uncrate and install the A200 Multiline XT:

- **FORK LIFT** (To lift the machine off the crate and move in place)
- **C-CLAMP** (To clamp machine to forks)
- **ADJUSTABLE WRENCH** (10 or 12 inch).
- **COMBINATION WRENCH** (3/4 inch).
- **PLIERS** (standard or channel lock).
- **SCREWDRIVERS** (large standard tip & #2 Phillips)
- **VOLTMETER** (minimum rating of 500 VAC)
- **SIDE CUTTERS** (to cut wire ties)

## Utilities

Run the utilities to the operating location prior to setting the machine in place. Refer to Section 1 for details.

## UNPACKING THE A200 Multiline XT

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**Note:** There is a “Tip Indicator” on the outside of the shipping container. Upon receiving your machine, if you find that the indicator shows that the container has been mishandled, please make note of any visible damage to the box or equipment and contact CVP SYSTEMS at 1-800-422-4720.

---

### Uncrating

In most cases, this step has already been completed by the time you are reading this manual. However, in the event you received the manual prior to the machine, follow the next steps to uncrate the machine:

1. Cut the steel band wrapped around the corrugated container.
2. Remove the screws holding the bottom of the corrugated container to the pallet base and lift the corrugated box off the machine.
3. Unscrew the four lag bolts holding the machine to the crate. These are located at the four corners of the base.

### Contents of the Crate

Before continuing, inspect the contents of the crate and the condition they are in. Below is a list of what you will find with the machine:

1. Electrical schematic and Pneumatic drawings for the machine. (Located inside the electrical enclosure)
2. Parts Box

Before continuing, check the contents of the parts box. You should find the following items:

1. Adjustable Legs (Qty - 4): Position in the base of the machine stand to adjust the height of the machine.
2. Spare fuses (5 commonly): One for each used on the machine.
3. Polyflo tubing (10 ft; 3 m): Supplied to connect gas supply from the Multiline conveyor to the gas accumulator tank inside the Multiline stand.

There may be additional items inside the crate depending on the options purchased with the machine.

### Spare Parts

In addition to the spare fuses an optional New Customer Spare Parts Kit is also available. A list of these parts is available upon request.

# ASSEMBLING THE A200 Multiline XT

## Mounting and Adjusting the Legs

Follow these steps to safely mount the adjustable legs

1. Using a forklift, raise the machine off the crate and clamp the stand to the forks to prevent the machine from tipping. Move the machine into the area where it will be operated.
2. While the machine is raised, place the four adjustable legs through the base and thread the nut on to the adjusting rod
3. Set the machine back down on the floor and position in front of the Multi-line conveyor.
4. Connect the air supply to the machine head and set the discharge tilt shelf in the up position.
5. Adjust the height of the machine until the containers transfer smoothly from the upper conveyor to the tilt shelf.
6. With a container on the tilt shelf, lower the shelf to allow the container to transfer to the lower conveyor.
7. Adjust the exit slide until the container transfers smoothly. Make sure the tallest container clears the transfer conveyor on the side of the upper conveyor.

Further height adjustment is covered in the “UPPER FRAME ADJUSTMENT” later in this section. Refer to these topics to be sure you set the machine to the proper operating height.

## Removing Shipping Material

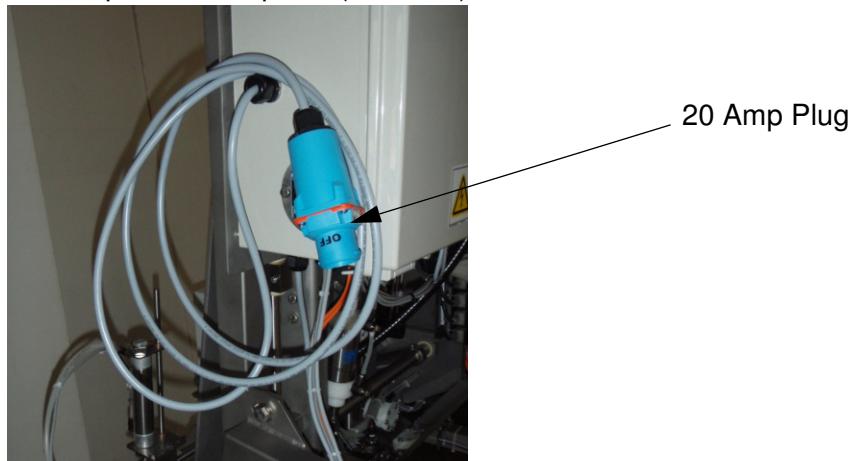
The machine is shipped with several tie downs and shipping blocks. The manifold has two wood blocks in the pivot clamp assemblies keeping the upper manifold in the open position. The snorkels and bag stretchers are tied in the up position. A support board is tied under the tilt shelf to prevent damage to the tilt cylinder. Be sure all blocks and ties are removed before operating the A200 Multiline XT sealing head.

## CONNECTING UTILITIES

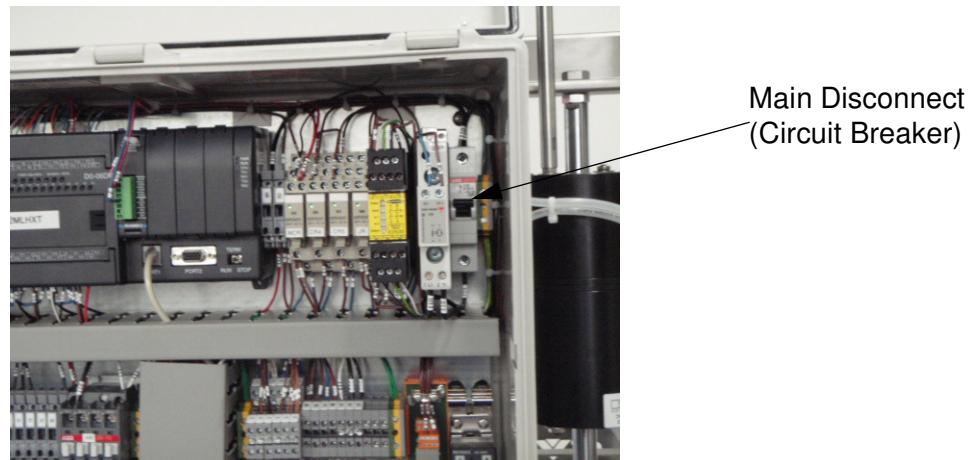
### Electrical Connections

The electrical connections for the A200 Multiline XT sealing head machine are shown below:

1. Plug the power cord into a dedicated 20 amp rated receptacle (for 120V) or 15 amp rated receptacle (for 220V).



**Figure 2-5.** Power Cord



**Figure 2-6.** Main Disconnect

2. Verify that the power supply is properly grounded to the ground lug at the bottom of the electrical panel.
3. Plug in electrical power to the unit.

4. Check the position of the “EMERGENCY OPEN” switch, located on the push-button station at the front of the unit. For testing purposes keep this switch pushed in, “POWER OFF” position.

**Main Air Supply**

Connect your air supply line to the brass air adapter on the filter regulator assembly on the top of the machine. Turn the air supply line “ON” and check regulator. It must read a minimum of 80 PSI (5.4 bar) for the machine to operate correctly.

**Warning:**

**USE COMPRESSED AIR ONLY ON VENTURI VACUUM PUMP MACHINES! USING OTHER GASSES SUCH AS CARBON DIOXIDE FOR MACHINE OPERATION CREATES AN ASPHYXIATION HAZARD.**

**Venturi Vacuum Pump Air Supply**

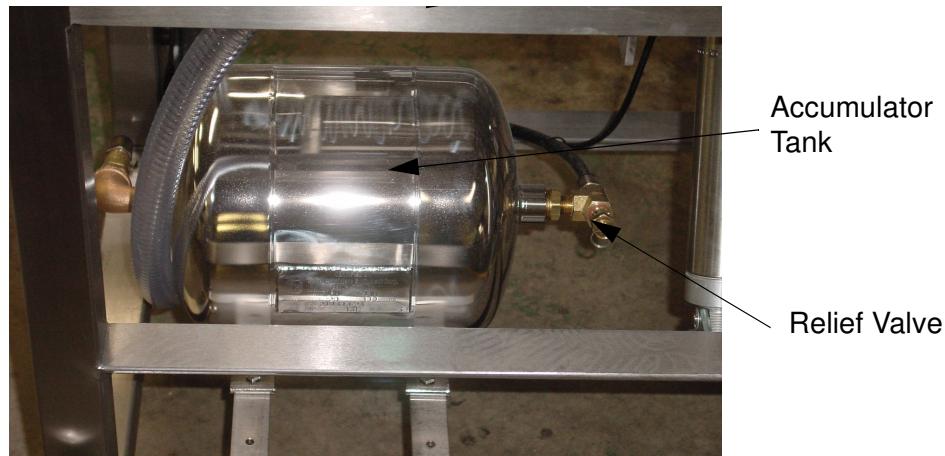
When a venturi vacuum pump is used, the main regulator should be set to 87 PSI (5.9 bar) and the supply line size should be a minimum of 1/2" (12.7 mm).

**Gas Connection**

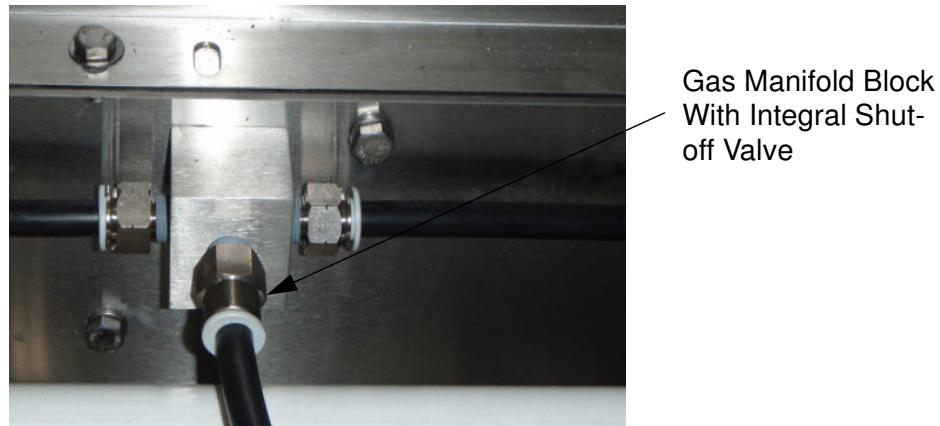
Install a high flow gas regulator to the gas supply run on the Multiline conveyor. If the gas supply is a bulk system, install a ball valve in front of the gas regulator for maintenance purposes.

Connect the regulated gas supply to the gas manifold block on the lower Multiline conveyor, behind the electrical enclosure. Connect the individual gas accumulator tanks on the sealing heads to the gas manifold blocks located at each station on the conveyor using the supplied 1/2" tubing. The tubing connectors on the conveyor’s gas manifold blocks have integral shut-off valves.

Turn the gas supply on and set the gas regulator at 60 to 80 PSI (4.0 to 5.4 bar). Check to see if gas is filling the accumulator by pulling the ring on the pressure relief valve. Gas should expel from the valve if the tank has pressure.



**Figure 2-7.** Accumulator tank



**Figure 2-8.** Gas Connection



## Warning:

**DO NOT CONNECT COMPRESSED AIR TO THE MAIN GAS CONNECTION. THIS WILL CONTAMINATE PRODUCT IN THE BAGS.**

---

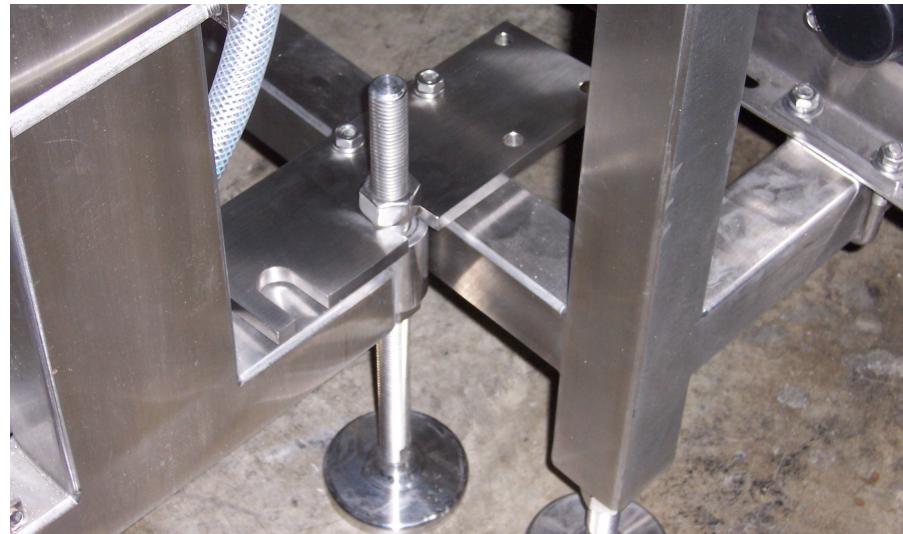
### Machine Communication Cables

The conveyor to machine communication cables must be plugged in for each machine to be able to dump and for the conveyor to be able to push in a box. It is not possible to run a machine if the cable is not hooked up.

Any machine can be connected at any one of the 3 conveyor load/ discharge areas.

**Machine Frame Bracket**

After each machine is in place along the conveyor, fix them in position by attaching the machine frame bracket to the conveyor stand. There are two brackets per machine to lock the sealing heads in position. Put each rear leg of the machine through the notch. Tighten the U-brackets to the conveyor rail and tighten the top leveler nut.



**Figure 2-9.** Machine Frame bracket



# **SECTION: 3**

# **OPERATION**



# MACHINE OPERATION

## Machine Cycle

Below are step by step instructions to cycle the A200 Multiline XT sealing head once. The instructions are made with the assumption that all the timers and switches have been set. The timers and switches will have to be set before operating the machine for the first time. Understanding how the machine operates first will help in selecting the proper settings for your machine.

1. Wait for Load. When ready, the conveyor pushes a container (load) onto the A200 Multiline XT tilt shelf.
2. Head lowers to required height. To manually lower the head, swipe both optical touch buttons and the head will lower down closer to the top of the box. The head can be lowered 1 step (swipe once) or 2 steps (swipe twice).

---

**Note:** The optical touch buttons are mounted on both sides of the shelf area on the frame

---

3. Load the bag (stretcher option). Bring the bag around the stretchers, making sure that the snorkels will extend into bag and not outside of it. Press the left bag stretcher. The stretcher expands and pulls the bag tight. At the same time, the snorkels will extend downward and into bag.
4. Load the bag (clamp option). Press the START button to drop the snorkels. Now maneuver the bag so the snorkels are inside. Hold the bag so it is under both clamps and pulled tight before depressing the left bag clamp. Both clamps will actuate, holding the bag in place.

---

**Note:** If the bag stretcher misses the bag, tap the START button. The bag stretcher will reset allowing you to stretch the bag again. If a box becomes jammed in the manifold, pressing and holding the START button for more than 1 second will reset the bag stretchers, raise the snorkels, and raise the head back to the highest position.

---

5. Press both optical touch buttons simultaneously.
6. Manifold clamps shut.
7. Snorkels draw vacuum.

*Vacuum Time:* The vacuum is drawn for a preset time that can be adjusted through the operator interface.

*Vacuum Switch:* The vacuum is drawn to an adjustable setpoint on the vacuum switch.

8. Once required vacuum level is reached, vacuum stops.
9. Snorkels dispense gas for preset time denoted in your operator interface.
10. Snorkels and bag stretchers return to “up” position.

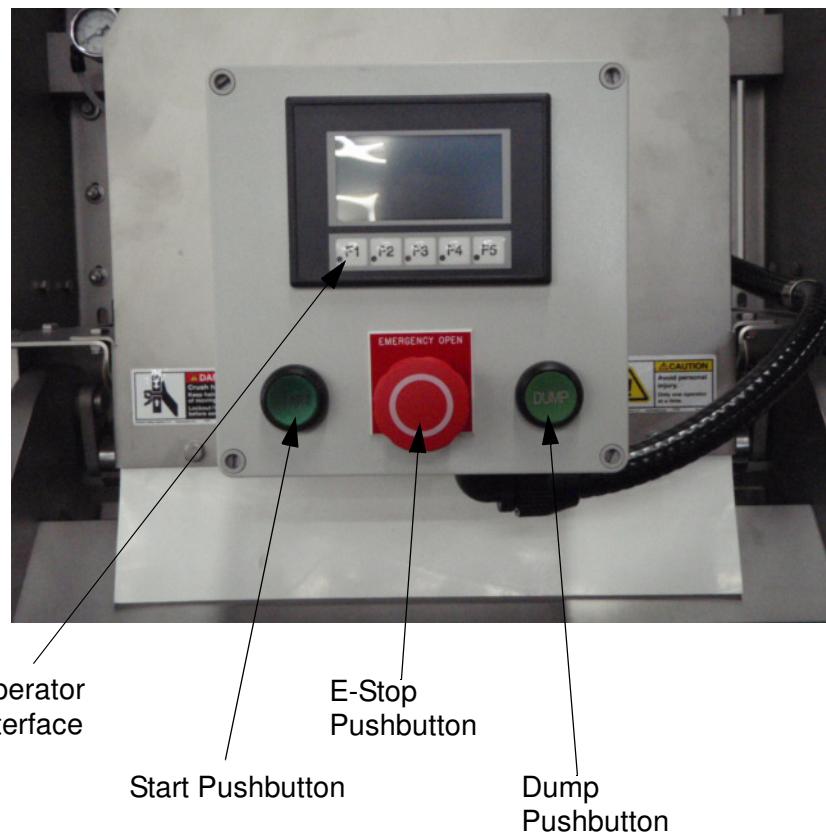
11. Heat seal bar extends for preset time set on the operator interface.
12. Heat seal bar retracts.
13. Manifold opens and releases bag.
14. The shelf tilts automatically, dumping the finished container onto the exit conveyor when it is clear.
15. **One cycle is now complete.** The machine will request another load to start the cycle again.

**Auto-adjust Head** The head will lower automatically depending on the last digit in the appropriate PACKCODE preset. If the last digit is a 3, the head will move to its lowest position. If the last digit is a 2, the head will move to mid-position. If the last digit is a 1, the head will not lower. The head can always be lowered manually. To manually lower the head, swipe both optical touch buttons and the head will move closer to the top of the box. The head can be lowered 1 step (swipe once) or 2 steps (swipe twice).

# OPERATOR CONTROLS

## Controls Overview

Figure 3-1 below shows the controls located on the front panel of the machine.



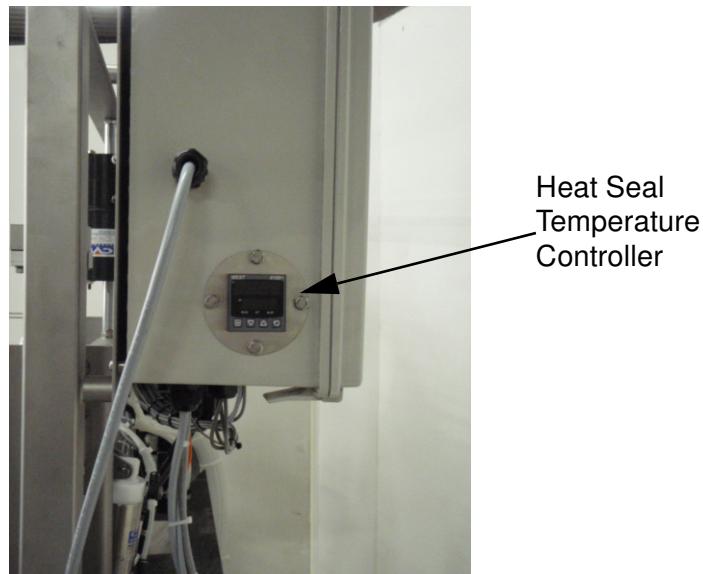
**Figure 3-1.** Operator Control Panel

The operator control panel is the single access point for all the functions of the machine. Selecting the mode and pack setting and adjusting the vacuum level are done from this location. By using the operator Interface, the operator can change vacuum, gas, and seal timers. During initial setup, certain machine settings are configured using the operator interface. The interface also informs the operator at which step of the cycle the machine is in and if there are any faults to report.

Familiarize yourself with the location of the operator controls. Each controller and switch are covered in full detail throughout this manual.

## Heat Seal Temperature Controller

The temperature controller for the heat seal bar is located on the right side of the main electrical enclosure. See Section 7 for details of its operation.



**Figure 3-2.** Heat Seal Temperature Controller

## OPERATION PRECAUTIONS

### Safe Operating Practices

It is important to know and understand the safety precautions before operating the A200 Multiline XT sealing head. Improper and unsafe operating habits will cause injury to the operator.

- **One operator at a time.** The machine is equipped with anti-tie down two hand start buttons. This assures that the operators hands are clear of the manifolds while they close. Bag loading devices are used to hold the bag in place while the operator starts the machine cycle.
- **Do not lean on or near areas of the machine that move.** Loose clothing or parts of your body may become pinched in the machine. The machine is equipped with a jaws closed sensor to open the manifold in the event it closes on someone's hand. As long as the previous precaution is followed this should not happen.
- **Do not operate with loose or damaged parts.** This will only cause harm to the operator and/or additional damage to the machine. Repair or replace faulty parts before operating the machine.
- **Use the machine in the manner for which it was designed.** Operate the machine as directed in this manual or as instructed by a CVP representative. Again, improper use of this machine will result in injury or cause additional damage to the machine.

## MACHINE PERFORMANCE

The A200 Multiline XT will perform satisfactorily providing that proper safety and maintenance procedures are followed.

### What to Expect

The average cycle time is approximately 8-12 seconds (for a single cycle), depending on specific product and condition of machine. Cycle times will be higher on machines running double and triple cycles or large bins.

Shelf life of any given product should increase. However, the length of time will vary depending upon certain aspects of product processing.

Some of these aspects are:

- the **freshness** of the product,
- the **sanitation level** of the processing facility
- the **temperature** of the product
- the **oxygen level** inside package,
- the **quality** of the bag and
- the **quality** of the bag seal.

### Maintaining Performance

When a satisfactory level of performance is achieved take note of the operating procedure. Maintaining that procedure consistently along with routine maintenance of the machine will insure satisfactory performance of the machine and increased shelf life of your product.

### Increasing Performance

If you need to increase the performance of your machine, contact your CVP Representative. There may be an option available or a different configuration to the machine that will increase the performance of the machine.

## **SECTION: 4**

# **PACK/MODE SETTING**



## MODE SELECT

The operator may choose from four operating modes: CLEAN, BYPASS, RUN, and SEAL. The Emergency Stop button must be pulled out and the START button on (lit) to change operating modes.

### Clean Mode

To start a clean cycle, select Pack #6 on the interface. The snorkels will drop and after a 2 second delay, water will be flushed through the snorkels for the CLEAN time set in the operator interface. Swipe both start buttons to start a pulsing action. At the end of the clean cycle, the CLEANING message will disappear from the operator interface screen. Refer to the CLEANING section for more instructions.

### Bypass Mode

Select Pack #5 on the interface. In this mode, the seal bar warms up but the bag stretchers and snorkels will never drop. As soon as a container enters the load area, it is dumped immediately to the exit conveyor. Use this mode if all containers coming into the Multiline require no vacuum/ gas/ sealing. If only a few containers don't need vacuum/ gas/ sealing, switch to RUN mode and press the DUMP button to bypass only those containers as they come in.

### Run Mode

Select Pack 1, 2 or 3 on the interface. The switch must be in one of these Pack settings to run vacuum/ gas/ seal cycles. The vacuum/ gas/ seal timers used are determined by the settings in the Timer (TMR) menu and Pre-set (PRE) menu.

### Seal Mode

Select Pack #4 on the interface. In SEAL mode, the machine will not draw a vacuum or add gas to the package. It will seal only. Bag stretching/clamping is performed before the seal is applied if applicable. Use this mode for testing seals on bags or for packing items not requiring modified atmosphere.

---

**Note:** If a second seal is desired on the vacuum/gas sealed package, switch to Pack #4 and make a new seal above the existing one. When complete, switch back to Pack 1,2 or 3 to continue.

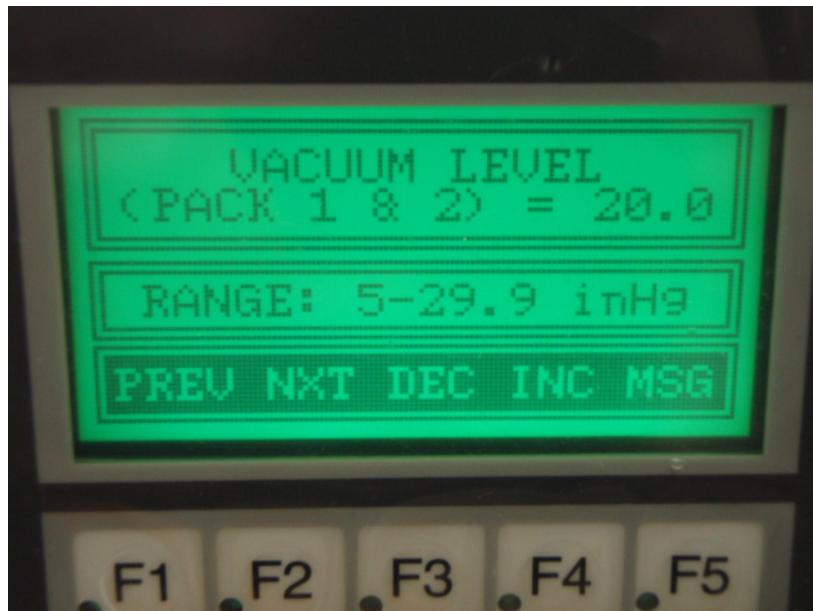
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## PACK SELECT

Press the PAK+ or PAK- button on the interface to select Pack 1,2 or 3. The Pack selected determines the vacuum and gas times the machine uses to process product. Typically these settings are changed only when switching product types, if at all. The operator interface will indicate which package setting is currently selected. Each setting has vacuum level controlled by time or switch. Gas levels are controlled by time only. Typical Pack settings are listed below:

### Vacuum Switch/ Gas Time

In vacuum switch mode, the machine will draw a vacuum until a preset level of vacuum is reached. The Vacuum switch parameter in the Preset menu must be set to 1. This mode is useful when there are a variety of bag sizes or variable product weights and you wish to have a consistent vacuum level. After the vacuum level is reached, a timed amount of gas is injected into the bag to aid in product preservation. The operator screen will display "VAC-GAS SW". The vacuum level is adjustable via the "VACUUM LEVEL" parameter in the Preset menu. The figure below shows the vacuum level set at 20 inches Hg. This setting is applicable in packs 1 & 2. The next Preset menu item is the vacuum level for Pack 3 only. The gas time is adjustable via the GAS-TIME PAC#1, 2 or 3 parameter in the Timer menu.



**Figure 4-1.** Vacuum Level setpoint (only used in vacuum switch mode)

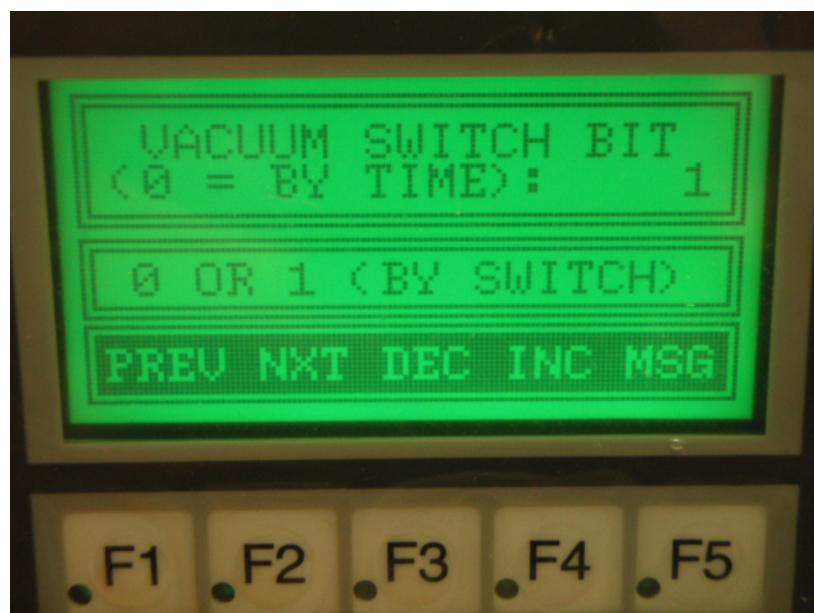
### Vacuum Extend

In vacuum switch mode, the machine will draw a vacuum until a preset level is reached. This level in "Inches Hg" is shown on line 2 of the display. If there is a time entered in the VACUUM EXTEND preset parameter, vac-

uum will continue for this time after the vacuum switch is made. The screen background color changes from green to amber when the vacuum level has been reached. This color change is more noticeable with Vacuum Extend time added.

**Vacuum Time/  
Gas Time**

In vacuum time mode, the machine will draw a vacuum for a programmed amount of time. The Vacuum switch parameter in the Preset menu must be set to 0. This mode is commonly used when there is a consistent bag and product size. After drawing a timed vacuum, a timed amount of gas is injected into the bag to aid in product preservation. The operator screen will display "VAC-GAS TM". The vacuum time is adjustable via the VAC-TIME PAC#1, 2 or 3 parameter in the Timer menu. These timers are only used when the Vacuum switch bit in the Preset menu is disabled. The gas time is adjustable via the GAS-TIME PAC#1, 2 or 3 parameter in the Timer menu.



**Figure 4-2.** Vacuum Switch bit parameter set to switch mode

## MODIFYING PACK SETTINGS

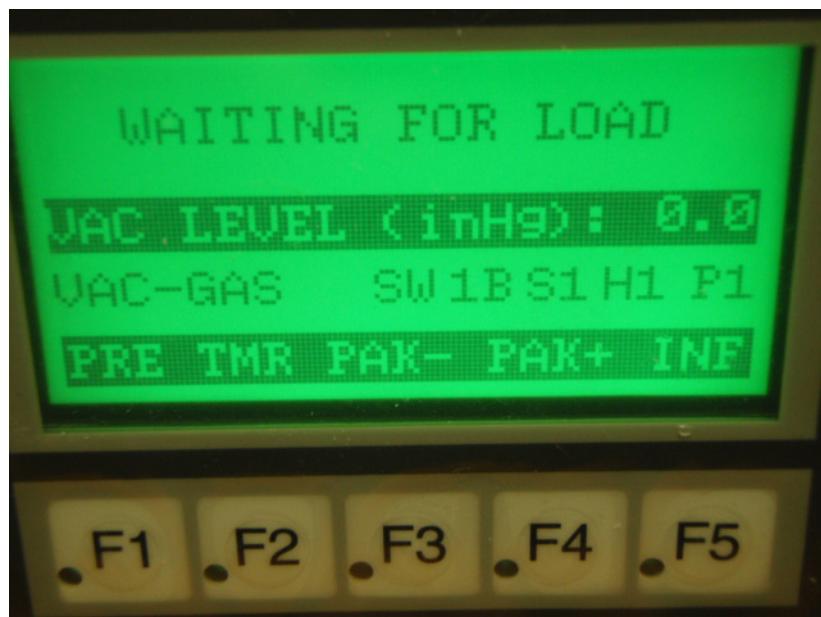
Authorized personnel may change vacuum and gas pack timers and change program preset values on the A200 Multiline XT. Instructions to change password protected timer and preset values are described in Appendix A.

### Pack Switch

There are 6 pack settings. Pack 1-3 are vacuum - gas programs. Pack 4 is seal only, Pack 5 is bypass mode and Pack 6 is clean mode. Line 3 of the display shows a description of the setup for the selected pack.

1. Will show "SW" if the vacuum switch bit is enabled or "TM" if it is disabled.
2. Will show "1B" if the current pack is set for 1 bag per box or "2B" if it is set up for 2 bags per box.
3. Will show "S1" if the current pack is set for stretcher position 1 or "S2" if it is set for stretcher position 2.
4. Will show "H1" if the current pack is set so the head will not adjust after a box is loaded. It will show "H2" if the current pack is set so the head drops one position after a box is loaded. It will show "H3" if the current pack is set so the head drops two positions after a box is loaded.
5. P1 thru P6 indicate pack number 1 thru 6.

The lower display line shows the menus that can be jumped into by pressing their function keys below.



**Figure 4-3.** Pack 1 is selected

- Function Keys**
- Press the PRE key (F1) and the display jumps to the PRESET menu.
  - Press the TMR key (F2) and the display jumps to the TIMER menu.
  - Press the PAK- key (F3) to go down one Pack setting.
  - Press the PAK+ key (F4) to go up one Pack setting.
  - Press the INF key (F5) for more information and the Seal Count Menu.



**SECTION: 5**

**VACUUM PUMPS**



# GENERAL INFORMATION

<b>Pump Description</b>	Selecting the correct pump for your application is determined by the level of vacuum needed, speed of the vacuum flow, type of MAP gases used, and environment in which the pump is to be used. There are two types of vacuum pumps available on the A200 Multiline XT.  The rotary vane style pump uses an electric motor that runs a pump to generate a vacuum. These pumps require oil to aid in the vacuum process, however the pumping speed and vacuum level are higher on this type of pump.  The venturi pump uses compressed air to generate a vacuum. Oil is not used in this pump, decreasing maintenance requirements. For every second of pump operation, 1/2 cubic foot (14.2L) of air is consumed. The larger the volume of air to evacuate, the more air is used.
<b>Pumps Used</b>	The A200 Multiline XT is available with two vacuum pump options. <ol style="list-style-type: none"><li>1. The standard venturi pump is suitable for most applications. This pump works well in applications with incidental moisture and moderate vacuum levels. This pump is also recommended for high oxygen applications. The pump is located on the sealing head stand, below the drop table.</li><li>2. The High Capacity electric pump is recommended where deeper vacuum levels and/or faster vacuum times are required. If your system is equipped with this type of pump, it will be mounted on a separate platform.</li></ol>
<b>Pump Maintenance</b>	The venturi pump has no moving parts and is nearly maintenance-free. This pump only requires a periodic, thorough cleaning.  The electric pump requires periodic oil and filter changes. See Section 10 for more maintenance details.
<b>Filters</b>	The vacuum system is equipped with filters to protect the pumps from debris. The standard filter has a clear acrylic bowl allowing the operator to see the contents and empty when needed. A red button on the top of the filter relieves the vacuum in the sediment bowl when pressed.

---

**Important:** There is an O-ring inside the acrylic bowl for a seal. Without this O-ring the machine will not achieve the vacuum levels as specified.

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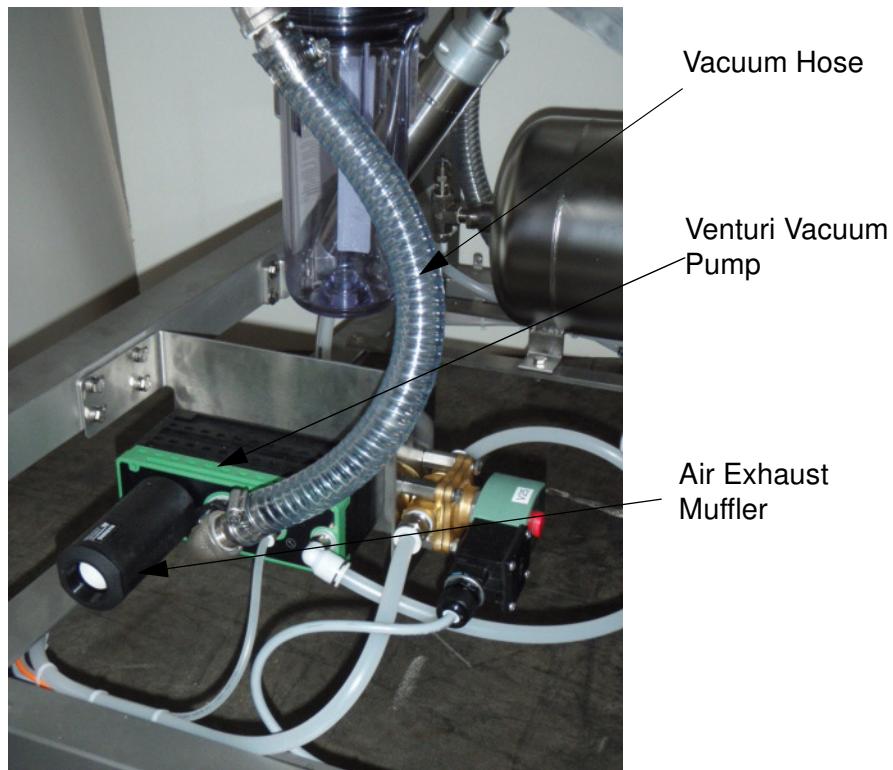
## VENTURI VACUUM PUMP OPERATION

### Start up

The venturi vacuum pump requires no specific start up procedure. However check for debris and water in the sediment bowl and the filter regulator unit before running the vacuum pump.

### Operation

During operation of the A200 Multiline XT, the vacuum pump only runs during the vacuum cycle. When the vacuum cycle begins, the vacuum valve opens to make a clear passage from the snorkels to the vacuum pump. At the same time, an electric solenoid valve opens, feeding compressed air to the venturi pump. This generates the vacuum. The vacuum level that is displayed on the user interface is taken directly from the vacuum pump.



**Figure 5-1.** Venturi Vacuum Pump

---

**Note:** In cold rooms where water is present in the air supply, icing may occur in the pump. Use clean, dry air when using this pump in cold areas.

---



## Warning:

**USE COMPRESSED AIR ONLY WITH THE VENTURI VACUUM PUMP!  
ASPHYXIATION HAZARD EXISTS IF OTHER GASSES ARE  
EXHAUSTED INTO THE MACHINE AREA.**

---

## VACUUM VALVE

### General Information

The vacuum valve closes off the vacuum and gas chamber from the vacuum pump and sediment bowls. The valve is an air operated valve requiring a minimum pressure of 60 PSI (4.0 bar).

# **SECTION: 6**

# **GAS SYSTEM**



# GAS FLUSH SYSTEM

---

**Important:** Do not connect compressed air to the accumulator tank:  
Compressed air is not a modified atmosphere gas. Product contamination will occur.

---



## Warning:

**APPLICATIONS USING OXYGEN REQUIRES SPECIAL “OXYGEN CLEAN” COMPONENTS. CONSULT YOUR CVP REPRESENTATIVE FOR FURTHER DETAILS.**

---

### General Information

The gas system utilizes an accumulator tank, gas sensor and gas valve. Gas is supplied to each machine from the conveyor manifold and controlled by timers in the PLC program. These timers can be adjusted through the operator interface. See Section 4 “Mode and Pack Settings” for additional information on adjusting the timers. The main gas connection is at a bulk-head on the conveyor by the main electrical panel.

### Determining Gas Time

For each pound of product, a certain amount of gas, in cubic inches, is required to backflush into the bag. After determining the type of cycle the machine will run, cycle an empty bag and check the final gas amount in the bag. Adjust the timers accordingly. If more gas is needed, increase the gas timers. If less is needed, decrease the timers.

To check the amount of gas, follow the instructions below:

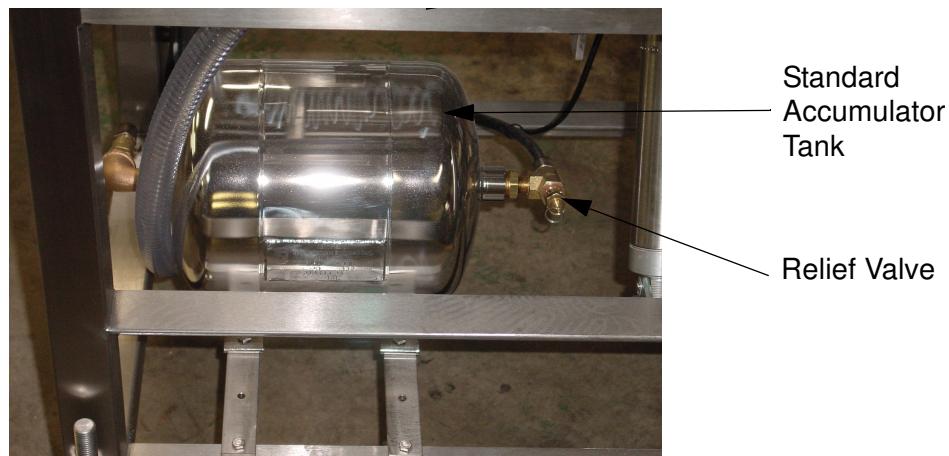
1. Place the bag on a flat surface and place another flat object on top of the bag, i.e. a sheet of card board, parallel to the lower flat surface. This will sandwich the bag.
2. Measure the length and width of the bag as well as the distance between the two flat objects.
3. Multiply these dimensions to determine the volume in the bag.
4. Compare this amount to the amount required.

Consult a CVP Systems representative for the amount of gas per pound required for your application.

### Accumulator Tank

The accumulator tank has a 2-1/2 gallon (9.5 L) capacity and provides for a quicker flow of gas into the bag. Gas supply lines feeding several machines or supply lines travelling long distances have inconsistent gas flows. The gas supply for the machine travels from the Multiline conveyor's bulk sys-

tem to the accumulator tank where there is a check valve and a pressure relief valve. It is located below the discharge shelf of each machine.



**Figure 6-1.** Accumulator Tank

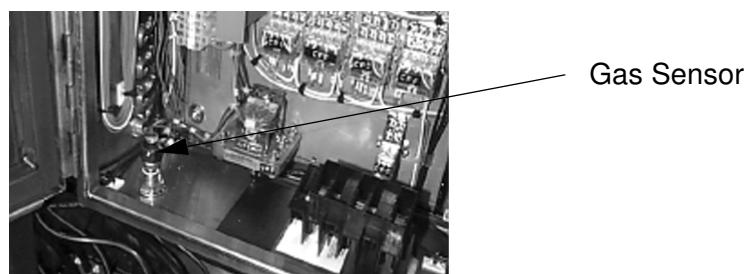
**Gas Supply From  
Multiline  
Conveyor**

When using a Multiline conveyor with the A200 Multiline XT sealing head machine, a gas manifold is mounted to the lower conveyor. The tube fittings on the manifold blocks that connect the gas supply line to the accumulator tank feature an integrated shut-off valve.

To service the gas system, remove the gas supply tube at the conveyor and bleed the gas from the tank by pulling the ring on the relief.

**Gas Sensor**

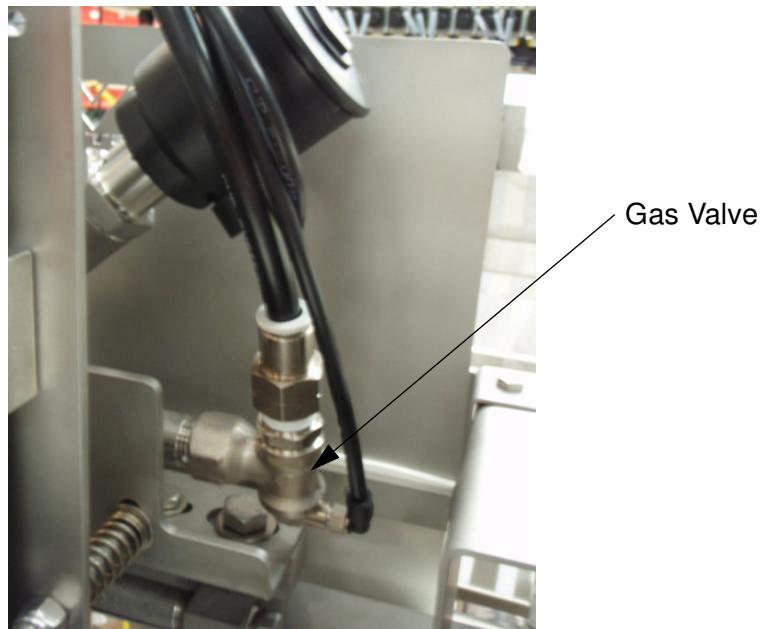
The gas sensor is located in the bottom of the conveyor enclosure. The gas supply manifold runs along the conveyor to supply each machine and the gas sensor. The sensor lets the conveyor program know whether gas is being supplied or not. If there is no gas, the conveyor panel displays a gas fault and prevents boxes from pushing onto the machines from the conveyor.



**Figure 6-2.** Gas Sensor Location

**Gas Valve**

The gas valve is an air actuated valve located above the snorkels, next to the vacuum valve. This valve can be manually actuated by pressing the yellow manual override button on the V9 valve on the pneumatic valve bank.



*Figure 6-3. Gas Valve*



## **SECTION: 7**

# **SEAL SYSTEM**



# HEAT SEAL ADJUSTMENTS

Heat Sealing Plastic Film is a function of:

1. Pressure
2. Dwell
3. Temperature
4. Flatness of Film

## Pressure

The air pressure is controlled by the main regulator. The pressure should be set at 80 PSI (5.4 bar). As the machine is cycled, the pressure should not drop by more than 5 PSI (0.3 bar). Should the gauge show a greater pressure drop than this, check your air supply.

## Dwell

The heat seal dwell is controlled by the SEAL TIME preset in the operator interface. See Section 4 for more information on adjusting the timer. It is important to adjust this time to at least 2.50 seconds for most films as this allows for heat penetration through wrinkles and contamination. It is more desirable to increase the dwell time before increasing the temperature set-point on the controller to get the desired seal integrity.

## Temperature

Temperature of the heat seal bar is controlled by the temperature controller. Temperature should be set between 250 and 300° F (121 and 149° C) depending on the film. See the Temperature Controller instructions in this section for more information on adjusting the setpoint temperature.

## Flatness of Film

It is important to place the bag on the manifold as wrinkle free as possible to minimize leaks. The more wrinkles, the more potential for leaks. Use bag stretchers whenever possible. Check that the box and bag do not move after positioning the bag on the manifold. Be sure the load conveyor is level.

## Setpoint Adjustment

To adjust temperature setpoint, press the **3** key (4th key on bottom). Now tap the **△** or **▽** keys until the desired setpoint is reached. Press **3** again to return to the operation display.

By adjusting the setpoint up or down, seal quality can change dramatically. We recommend that any adjustments be made in 5° F increments. After altering the temperature setpoint (green value on display), let the temperature process value (red value on display) stabilize before attempting to seal bags and test seals. The SP ^ output LED on the temperature controller is on whenever power is supplied to the heating element. The LED flickers as temperature approaches setpoint.

---

**Note:** Initially set temperature at 270° F for testing. Satisfactory seals usually occur between 250° F and 300° F (121 and 149° C).

---

## 6100 TEMP CONTROL SETUP AND ADJUSTING

### Operation Display

- Upper Display: Actual Temperature (red)
- Lower Display: Setpoint Temperature (green)
- Lower Display: "OPEN" indicates thermocouple break
- Lower Display: "[HH]" indicates input sensor fault (overrange)
- Lower Display: "[LL]" indicates input sensor fault (underrange)

---

**Note:** When actual temperature is 5 deg. F or more below setpoint, the low temperature alarm is on. For input sensor fault, check that the thermocouple is type K (red =+, yellow = -). Red to terminal 1, yellow to terminal 2.

---



**Figure 7-1.** 6100+ TEMP. CONTROLLER

As factory-configured by CVP, the red ^ LED to the right of the lower display will light when the controller calls for heat. The ALM LED in the lower display will light when the actual heater temperature (upper display) is lower than the setpoint by 5 deg. F or more.



**Figure 7-2.** 6100+ SETPOINT ADJUSTED TO 270 DEG. F

**Program Menu Entry**

From the operation screen, hold the **Esc** key and press the **Δ** key to enter the operator menu. From the operator menu, press the **Esc** key to return to the operation screen, or from the operator menu, press the **Δ** or **▽** key to scroll thru 9 other menus before wrapping back around to the operator menu.



**Figure 7-3.** 6100+ Operator Menu



**Figure 7-4.** 6100+ Configuration Menu

**Configuration  
Menu Unlock  
Code**

Several of the program menus require an “Unlock Code” to be entered before access is given to view/ change the parameters. The Configuration Menu unlock code is “20”. So with the Configuration Menu entry screen showing, press the key to select entry and enter “20” for the unlock code “ULoc”.



**Figure 7-5.** 6100+ Configuration Menu Unlock Code

**Configuration  
Menu Parameter  
Access**

Pressing the **¶** key after the Unlock code 20 is entered will get you into the Configuration mode parameter list. With an unconfigured controller, Configuration menu parameters must be set before all other menus. Each parameter is in green on the lower display. The current setting is in red on the upper display. Press the **¶** key to scroll thru the list. You can only scroll from top to bottom thru the list. Pressing **¶** again at the end of the list wraps around to the first display parameter.

Press the **▽** or **△** keys to change parameter settings. Hold the **¶** key and press **△** to return to the program menu.

**Table 1: Configuration Mode Parameters**

<b>Parameter</b>	<b>lower display</b>	<b>Description</b>	<b>CVP setting</b>
Input type	InPt	type K thermocouple, deg. F	kF
Scale Range Upper Limit	ruL	hi limit 400 deg. F	400
Scale Range Lower Limit	rLL	low limit 32 deg. F	32
Control Type	CtyP	primary only	SnGL
Control Action	Ctrl	reverse acting	rEv
Alarm 1 type	ALA1	NA	nonE
Alarm 2 type	ALA2	deviation alarm	dE
Deviation alarm 2	dAL2	low temp. 5 deg. F below SP	-5
alarm 2 hysteresis	AHY2	1 deg. F	1
Loop alarm	LAE	disabled	diSA
Alarm inhibit	Inhi	no alarms inhibited	nonE
Output 1 usage	USE1	primary power	Pri
Output 2 usage	USE2	alarm2 - direct acting	A2_d
Output 3 usage	USE3	recorder process value	rEtP
Linear output 3 range	typ3	0-5 volts DC	0_5
Linear output 3 scale max	ro3H	420 deg. F = 5 VDC	420
Linear output 3 scale min	ro3L	0 deg. F = 0 VDC	0
Display Strategy	diSP	adjustable PV & SP	1
Configuration Lock code	CLoc	lock code	20



**Figure 7-6.** 6100+ Configuration Menu first parameter (type K thermocouple input)

**Setup Menu  
Unlock Code**

Several of the program menus require an “Unlock Code” to be entered before access is given to view/ change the parameters. The Setup Menu unlock code is “10”. So with the Setup Menu entry screen showing, press the **Esc** key to select entry and enter “10” for the unlock code “ULoc”.



**Figure 7-7.** 6100+ Setup Menu

**Setup Menu  
Parameter  
Access**

Pressing the **Esc** key after the Unlock code 10 is entered will get you into the Setup mode parameter list. Each parameter is in green on the lower display. The current setting is in red on the upper display. Press the **Esc** key to

scroll thru the list. You can only scroll from top to bottom thru the list. Pressing **Esc** again at the end of the list returns to the operation display.

Press the **▽** or **△** keys to change parameter settings. Hold the **Esc** key and press **△** to return to the program menu.

**Table 2: Setup Mode Parameters**

Parameter	lower display	Description	CVP setting
Input Filter Time Constant	Filt	2.0 seconds	2.0
Offset	OFFS	none	0
Power Level	PPjj	read only	NA
Primary Proportional Band	Pb_P	Band (deg. F)	8.0
Automatic Reset	ArSt	Integral time (s)	5.00
Rate	rAtE	Derivative time (s)	1.15
Manual Reset	biAS	25%	25
Setpoint Upper Limit	SPuL	400 deg. F	400
Setpoint Lower Limit	SPLL	32 deg. F	32
Power Limit	OPuL	100%	100
Output 1 Cycle time	Ct1	0.5 seconds	0.5
Deviation alarm 2	dAL2	low temp. 5 deg. F below SP	-5
alarm 2 hysteresis	AHY2	1 deg. F	1
Autopretune	APt	disabled	diSA
Manual Control	PoEn	disabled	diSA
Setpoint Ramping	SPr	disabled	diSA
ramp value	rP	NA	OFF
setpoint value	SP	270 deg. F or as required	270
Setup menu lock code	SLoc	lock code	10



**Figure 7-8.** 6100+ Setup Menu Unlock Code

**Table 3: Program Menus Select**

Program Menu	upper display	Description	Unlock code
Operator	OPtr	select to return to Oper. screen	none
Setup	SEtP	Setup and PID parameters	10
Configuration	ConF	Configuration parameters	20
Product Information	info	All read only	none
Autotuning	Atun	Autotune start	0
<b>Other Program Menus</b>	From the operation screen, hold the <b>Esc</b> key and press the <b>Δ</b> key to enter the operator menu. From the operator menu, press the <b>Esc</b> key to return to the operation screen, or from the operator menu, press the <b>Δ</b> or <b>▽</b> key to scroll thru 9 other menus before wrapping back around to the operator menu.		
<b>Autotuning</b>	<p>Due to the different characteristics of heater elements, the temperature controller may “overshoot” the temperature setpoint. If the temperature repeatedly overshoots the setpoint and affects the quality of the seal an “Autotune” may be necessary.</p> <p>Autotune ‘teaches’ the controller the main characteristics of the process and ‘learns’ by cycling the output on and off. The results are measured and are automatically programmed in the controller memory.</p>		

Pretuning starts with the heater element cold, tuning occurs during warm-up, preventing overshoot.

#### Autotune Instructions

With the heater element cold, power up the machine. From the operation screen, hold the **ESC** key and press the **Δ** key to enter the operator menu. From the operator menu, press the **Δ** or **▽** key to scroll to the Autotune menu.

From the display “Atun” press the **ESC** key. With “Ptun” shown in the lower display, tap the **Δ** key to turn autotune ON.

---

**Note:** Autotune will not engage if actual temperature is within 5% of the input range span or 20 deg. F or less from the setpoint. CVP recommends tuning at SP = 270 deg. F

---

The tune program will now start. As long as the “Ptun” parameter is set to ON, autotune is still running. When the tune program is complete, new PID values are automatically entered in the Setup menu. The process temperature will rise to the setpoint and control should be stable. “Ptun” will reset to OFF after a successful autotune.



**Figure 7-9.** 6100+ Autotune DISABLED or DONE

#### Cycle Time

The CVP Systems heater control device is a solid state relay and a 0.5 second cycle time is pre-configured. Cycle time (Ct1) preset in the Setup menu is set to 0.5 in the factory settings list.

A cycle time of 0.5 means that the minimum time the solid state relays can cycle on, off, then back to on is 0.5 seconds. When connected properly, the RELAY ON LED on each solid state relay will light whenever the SP ^ output LED of the controller is on.

## Factory Settings

The controller has two modes, program mode and operating mode. When in program mode the controller can be programmed with settings and functions to suit the application. When in operating mode the controller uses the settings and functions entered in the program mode to control the application and also displays the process variable and setpoint temperatures. The 6100+ temperature controller is set up for the main setpoint output (SP1) to be a solid state relay driver. The SP1 output is 10 VDC, actuating the solid state heater relays whenever the controller is calling for heat.

Menu parameters outside the Configuration and Setup menus should never need to be changed.

---

**Note:** All controllers shipped from CVP Systems, Inc. will have the factory settings listed in tables 1 & 2 pre-configured. No setup is required. CVP part # is 7707-2892.

---

A complete manual can be downloaded off the Web at [www.west-cs.com](http://www.west-cs.com) for the type 6100+ (59300-4) temperature/ Process Controller.

## Changes to Factory Settings

Factory settings allow the operator to change the temperature setpoint. To lock the setpoint, change the diSP setting in the Configuration menu from 1 to 6. Use the **△** key to increase the parameter from 1 to 6. With the 6 flashing, press the **AUTO MAN** key to accept the change. Now all setpoint changes must be made in the Configuration menu via the SP parameter.

Factory settings also show temperature units in deg. F. To show deg. C, change your inPt setting in the Configuration menu from kF to kC. Press the **▼** key once to change kF to kC. With kC flashing, press the **AUTO MAN** key to accept the change. New scale limits must also be entered in the Config. menu. Change the rUL setting to 204 and the rLL setting to 0. A new low temperature alarm deviation must also be entered in the Config. menu. Change the dAL2 setting to -3. New retransmit limits must also be entered. Change the ro3H setting to 215 and the ro3L setting to -18.

As factory-configured by CVP, the SP ^ to the right of the lower display will light when the controller calls for heat. The red ALM LED in the lower display will light when the actual heater temperature (upper display) is more than five (5) °F from reaching the setpoint.

## HEAT SEAL TESTING

Seal quality is a function of time, pressure and the bar temperature. The seal time parameter located on the operator interface controls the length of time the seal bar applies pressure to the bag. This parameter can be different for pack 1, 2, 3 and 4.

With the sealing manifold at the setpoint temperature, load an empty bag on the machine and start a cycle in SEAL mode. After the cycle is complete, inspect the seal. If the seal is weak, increase the dwell time. If the seal appears to be burning through or distorting the film, but the seal is bonded, decrease the time. Repeat this procedure until the optimum setting is achieved. Satisfactory seals usually occur at 2.5 to 3.5 seconds seal time. If this cannot be achieved, you may increase the temperature setpoint and repeat the test.

Start the controller setting at 250° F and slowly raise the setpoint in 5 degree increments as you examine the seals. When seals start to bubble or burn through, back off the temperature, allowing time for cool down before testing another seal.

After your machine has completed its cycle, check the quality of the heat-seal. It is essential that you allow the seal to cool completely before testing it.

**BEGIN BY INSPECTING THE SEAL VISUALLY.** Does the seal appear to be uniform? Does it have a texture similar to that of the Teflon Tape? Does the seal appear to be "hot enough" (sealed well enough to bond both sides of bag securely)? Look for signs of cold spots (sections where seal is visibly inferior in comparison to majority of seal). Look for "hot spots" (sections where seal is visibly burned in comparison to majority of seal). If isolated hot spots or burns are visible in the bag, inspect the seal bar for damage to the teflon tape.

**GIVE SEAL A "TUG TEST".** Pull on both sides of bag, starting at one end and working your way to the other, with a moderate amount of force, trying to separate seal. Is the seal strong and uniform from end to end?

Look for weak areas, where the bag seal separates, due to lack of heat. Look for fold overs and wrinkles. Look for weak areas where the bag tears at the seal caused by too much heat.

**TEST SEAL AT BOTH ENDS IN CORNERS.** Use a dull pointed tool, like a pen or pencil to probe at the seal. Does the tool break through the side, or edges of the bag before it penetrates the corners of the seal?

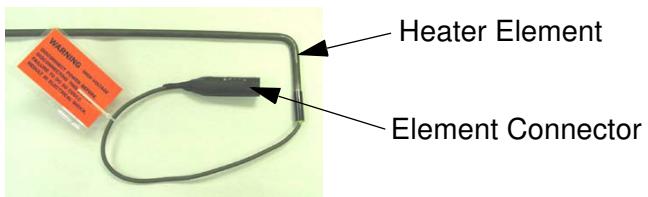
**MOST OF YOUR SEALING PROBLEMS CAN BE CORRECTED BY ADJUSTING TEMPERATURE AND/OR HEAT SEAL DWELL TIME.**

For more information on heat seal problems, causes and corrections, see the TROUBLESHOOTING section of this manual.

## HEAT BAR COMPONENTS

### Heater Element

A tubular resistance type heating element inside of the seal bar is continuously cycled to maintain a constant seal bar temperature. The power is connected to the elements with quick disconnects. The disconnects are water tight to prevent water from entering and shorting out the element. Always disconnect the main power supply to the machine before disconnecting the heater connections. Also note that elements are stamped with the voltage matching the voltage listed on the serial tag of your machine. This stamp is located on one end of the element tube between the bend and the power cable.



**Figure 7-10.** Heater Element



**Figure 7-11.** Seal Bar Thermocouple Connection and Rod Bearing

### Thermocouple

The thermocouple senses the heat seal bar temperature and sends a signal back to the temperature controller. The connection is accessible through a cutout just off-center of the rear manifold. A bayonet cap is wound on a spring at the sensing end of the thermocouple. The cap should be wound back on the spring at least 2" (50.8mm) so when the cap is screwed into the adapter connection on the bar, the thermocouple makes positive contact with metal.



**Figure 7-12.** Thermocouple Removed from Seal Bar

Without the thermocouple positive connection in place, the controller cannot sense the actual bar temperature. The controller will heat the bar constantly and to extreme temperatures. This will warp the heat seal bar causing uneven sealing of bags and requiring bar replacement.

The thermocouple wire is type K. Yellow is considered positive and red is negative. The controller is configured to accept the type K thermocouple signal.

**Teflon Tape**

One layer of Teflon tape is required on the heat seal bar to prevent film from sticking. Tape is usually black in color and should not have any visible damaged areas. Damaged tape will adversely affect the sealing performance of the A200.

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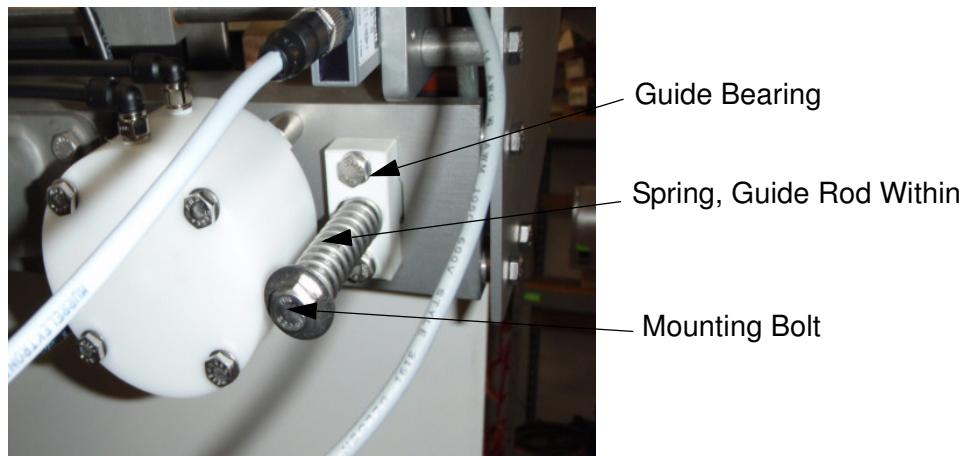
**Important:** More than one layer of teflon tape will affect the quality of the seal.

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Some bars are plasma coated with teflon at the factory and do not require taping. If the coating on these bars becomes damaged, the bar needs to be recoated or taped over the plasma coating. Plasma coated bars can be sent back to CVP Systems for recoating.

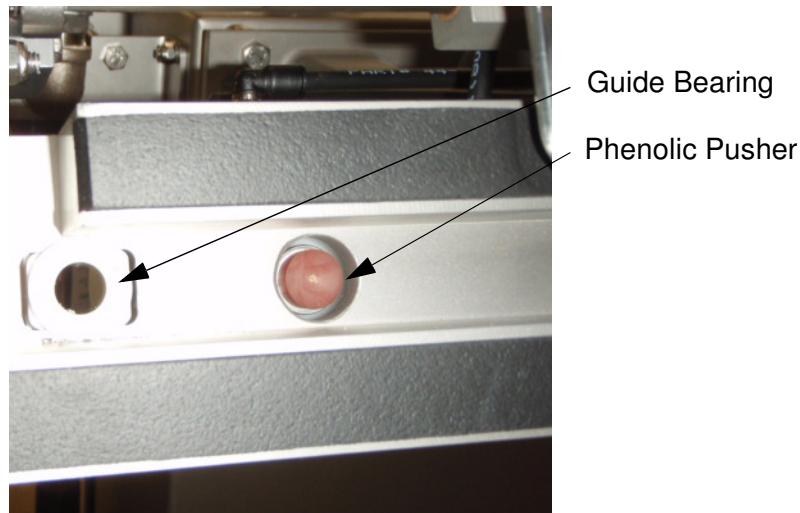
**Pancake  
Cylinders and  
Pushers**

The heat seal bar floats in the lower manifold between an upper and lower sponge rubber that grips the film. When the heat seal bar extends, it pushes out farther than these sponge rubbers and sandwiches the film between the hot bar and the backup rubber in the upper manifold, forming a seal.



**Figure 7-13.** Seal Bar Guide Rod

The guide rods, bolts and springs that hold the heat seal bar are accessible from the backside of the lower manifold. The bushings that go through the manifold openings act as bearings for the guide rods and must be in place so the bar stays centered in the manifold opening. The springs keep the bar in the retracted position until the pancake cylinders push out on the back of the bar, extending it and compressing the springs.



**Figure 7-14.** Pancake Cylinder Pusher (Heat Bar removed)

The pancake cylinders are actuated only for the heat seal dwell time. Valve 5 in the pneumatic valve bank actuates the cylinders. Phenolic pushers are inserted on the pancake cylinder rod ends that push against the heat seal bar. There should be a 1/8" (3.2 mm) gap between the back of the heat seal bar and the inside face of the rear manifold. Replace worn pushers when this gap is less than 3/32" (2.4 mm).

Severely worn pushers will cause the heat bar to transfer heat to the manifold and the bar will be cooler in that area.

**SECTION: 8**

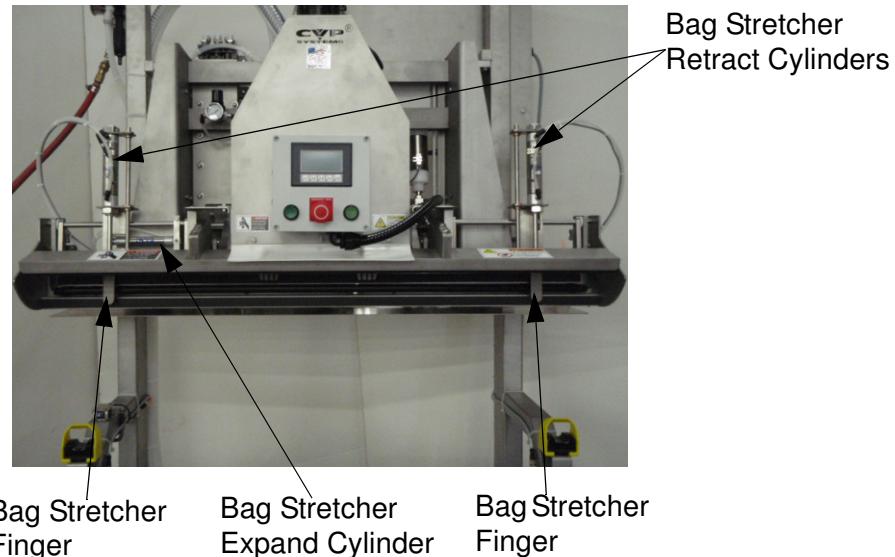
**BAG STRETCHERS**



**General Information**

Bag stretchers are used to hold the bag in the manifold while the operator starts the cycle. A straight and wrinkle free seal is produced due to the manner in which the bag is held.

The bag stretcher holds one bag at a time during a cycle. Two stretcher bars, or fingers, are used with one to each side of the snorkels. The left hand stretcher expands the distance between the stretcher fingers holding the bag in place. Both bag stretcher fingers are adjustable to accommodate various bag widths.



**Figure 8-1.** Standard Bag Stretchers

**Adjusting For Bag Width**

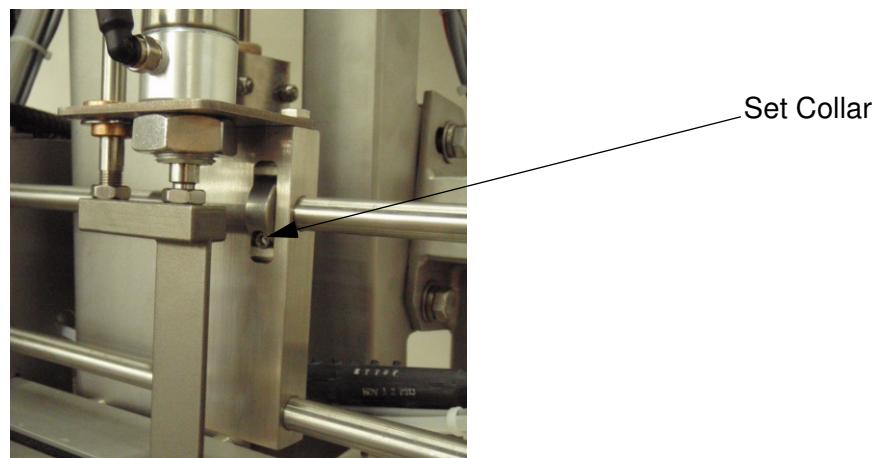
The width of the bag stretchers are easily adjusted. The stretcher mechanisms are mounted to two rods that allow linear movement when the stretchers expand. To expand and hold the bag, a cylinder mounted to a fixed block extends, sliding the left hand bag stretcher mechanism. The right hand bag stretcher mechanism is adjustable, but is locked in a fixed position during operation. The following explains how to adjust the bag stretchers to different bag sizes.

1. On the left hand mechanism loosen the two (2) pinch bolts on the fixed block that the expanding cylinder is attached to. This will require a 7/16" wrench.



**Figure 8-2.** Adjusting the Left Hand Bag Stretcher

2. On the right hand mechanism, using a 9/64" hex key, loosen set collar on the slide block.



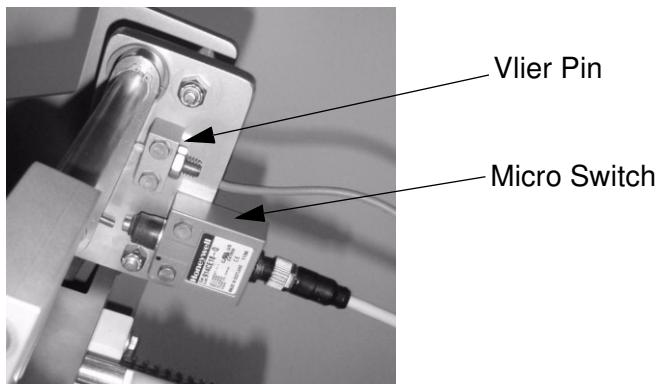
**Figure 8-3.** Right Hand Bag Stretcher

3. Press the left hand stretcher finger to expand the stretcher.
4. Hold the bag up to the stretchers and slide the stretchers to hold the bag. With the bag being held by the stretcher fingers, center the bag to the manifold. Remove the bag and expand the fingers 1/2" (12.7 mm) wider than the bag opening. This will accommodate tolerances in the bag width.
5. Tighten the four hex screws to lock the stretcher mechanisms in place.
6. Reset the machine and test the bag stretchers.

#### **Adjusting Vlier Pin**

The bag stretchers are held off the manifold rubber by spring loaded vlier pins. There are two pins total on a machine with bag stretchers. The pins are located at each end of the manifold. In time, this pin will need to be replaced.

To remove the worn vlier pin, loosen the jam nut with a 1/2" wrench and back the vlier pin out of the block. Thread a new pin into the block until the bag stretcher bars are approximately 1/2" (12.7 mm), or a fingers width, above the manifold. Once adjusted, tighten the jam nut on the vlier pin to hold in position. Test the bag stretchers for proper activation of the stretchers.



**Figure 8-4.** Vlier Pin and Micro Switch

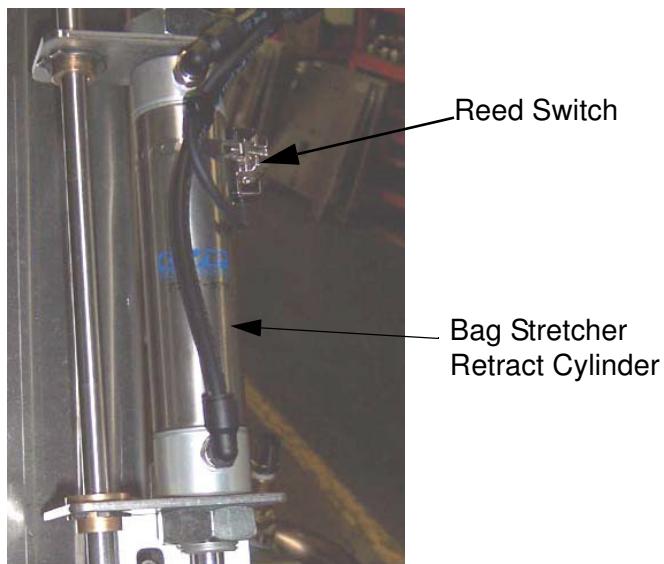
#### **Adjusting the Micro Switch**

The micro switch is mounted next to the vlier pin on the left hand pivot bar. A screw mounted in the swing arm above the micro switch actuates the switch to expand the bag stretchers.

To adjust the screw, loosen the jam nut with a 7/16" wrench. The screw should be easily turned by hand, but if not, a straight blade screwdriver can be used. The screw should be adjusted to actuate the micro switch as the stretcher bars touch the rubber on the manifold. Any higher will cause the stretchers to expand prematurely. Retighten the jam nut to lock the screw in place.

**Adjusting Reed Switches**

The reed switches are located on the end of the bag stretcher retract cylinders and are activated when the bag stretcher bars are retracted. A red LED illuminates when the switches are activated. A third reed switch is located on the snorkel cylinder and is activated when the snorkels are retracted. With all three reed switches activated, the machine knows that the manifold area is clear and the seal bar can be activated.



**Figure 8-5.** Bag Stretcher Reed Switch

The bag stretcher reed switches are wired in series, requiring both to be activated and the LED to illuminate.

To adjust the reed switches, retract the bag stretchers. Loosen the band around the cylinder using a small straight blade screwdriver. Slide the reed switches evenly from the top end of the cylinder down until both LED's illuminate. Tighten the band around the cylinder to hold switches in position.

**Bag Stretcher Operation**

The following is a step by step sequence of operation for bag stretchers.

1. The manifold head may lower automatically after it senses a box on the load shelf. Line 3 of the display will show "H1" if the current pack is set so the head will not adjust after a box is loaded. It will show "H2" if the current pack is set so the head drops one position after a box is loaded. It will show "H3" if the current pack is set so the head drops two positions after a box is loaded. The manifold head can also be manually lowered one or two positions by swiping either optical touch button. This makes it easier to slip the bag around the bag stretchers.
2. As an option, pressing START will manually drop the snorkels. The operator lifts the bag up and slides the bag around the snorkels.
3. The operator lifts the bag up and slides the bag around the stretcher bars.
4. The operator, while holding the bag, presses down on the left stretcher bar actuating a micro switch mounted to the bag stretcher assembly. This will cause the left bag stretcher bar to slide to the left expanding the distance between stretcher fingers holding the bag tight. The snorkels will drop automatically into the bag at this point if not already down.
5. The operator activates the machine cycle by swiping the optical touch buttons.
6. The manifold closes and the machine starts the vacuum gas cycles.
7. At the end of the vacuum/gas cycle the snorkels retract from the manifold. The bag is then sealed.
8. The manifold opens allowing the bag to be taken away from the machine ending the cycle.

## BAG CLAMPS

### General Information

Similar to bag stretchers, bag clamps also serve to hold the bag in the manifold while the operator starts the machine cycle. However, instead of stretching the bag, bag clamps pinch the bag to the rear manifold.

The bag clamps hold one bag at a time during a cycle. Two clamp fingers are used, with one to each side of the snorkels. When activated, air cylinders attached to the clamp fingers retract and hold the bag against the rear sponge rubber. Both bag clamp fingers are adjustable to accommodate various bag widths.

### Adjusting For Bag Width

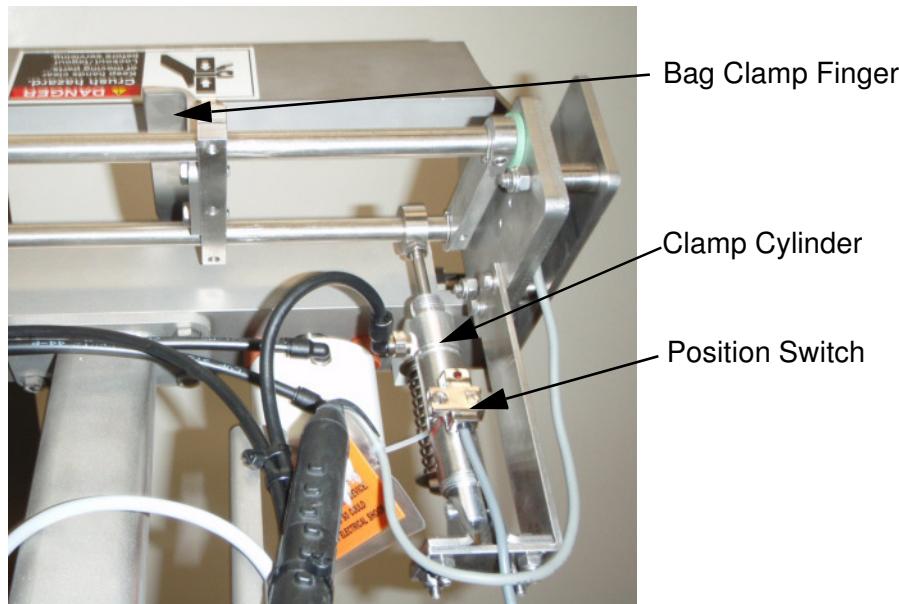
The clamp fingers should be adjusted so that they are positioned 3"-4" from either end of the bag. The left clamp finger in particular should be adjusted so that the operator can depress the finger while simultaneously holding the bag.

To adjust the position of the clamp fingers, loosen the two pinch bolts with a 7/16" wrench. Slide the clamp fingers to the desired position and tighten the pinch bolts.

### Adjusting The Clamp Cylinder Switch

The position switch on the left hand air cylinder controls the point at which the bag clamps activate. To adjust the position of the switch, loosen the screw on the mounting band and slide the sensor forward or backward on the cylinder to the desired position. DO NOT over-tighten the mounting screw or damage to the position switch will result.

The position switch features an LED that lights when the switch is made. This is useful for making adjustments to the activation point of the bag clamps or troubleshooting problems.



**Figure 8-6.** Bag Clamp Cylinder

#### Bag Clamp Operation

The following is a step by step sequence of operation for bag clamps.

1. As an option, pressing START will manually drop the snorkels. The operator lifts the bag up and slides the bag around the snorkels.
2. The operator positions the ends of the bag behind the clamp fingers.
3. While holding the bag taught, the operator presses the left clamp finger to activate both bag clamps. The snorkels will drop automatically into the bag at this point if not already down.
4. The operator activates the machine cycle by swiping the optical touch buttons.
5. The manifold closes and the machine starts the vacuum/gas cycles.
6. At the end of the vacuum/gas cycle the snorkels retract from the manifold. The bag is then sealed.
7. The manifold opens allowing the bag to be taken away from the machine ending the cycle.



**SECTION: 9**

**CLEANING**



# CLEANING INFORMATION

Keeping the equipment clean should become part of your routine maintenance schedule. It will help to prevent mechanical breakdowns and will keep your A200 Multiline XT sealing head in optimal working condition.

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**Important:** Keeping the equipment clean is required by the USDA to prevent bacteria contamination.

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## Types of Sanitizers

There are several types of cleaning solvents currently used in the food industry. The majority of these contain chlorine, which is safe to use for cleaning the A200 Multiline XT sealing head. If you prefer not to use Chlorine based cleaners on the unit, use hot water or cover the machine up during "washdowns".

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**Note:** Best results will occur when hot water is utilized.

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The exterior of the machine is best cleaned by hand with a mild soap and water solution. Care should be taken that all electrical enclosures are securely closed.

Plants that use acid or chlorine based foam to washdown should cover the A200 Multiline XT so that the machine surfaces are protected. In the event that a brownish film or salt crystals appear on the machine, they can easily be removed with a hot soapy water solution. Never use metal scrub pads. White 3M style scrub pads can be used to remove stubborn product buildup but their use should be limited. Continued use can remove anodizing over aluminum parts.

---

**Important:** The machine should be covered if the area around the A200 Multiline machine is foamed as part of your cleaning procedures.

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Machines can be wiped with a light coating of mineral oil to prevent hard water deposits.

## Clean-In-Place Vacuum System

The A200 Multiline XT is designed so that hot water can be flushed through the vacuum system. When done on a regular basis, backflushing will keep the vacuum system relatively clean and free of foreign substances. CVP recommends this is done on a daily basis or after each shift. This will keep the A200 Multiline XT operating at peak efficiency.

For sanitizing the vacuum system, hot water and/or sanitizing solution can be backflushed through the machine.

The A200 Multiline XT has a clear hose that runs to the main vacuum valve with a quick connect coupling on the end. The coupling end is connected to one of two adapters on a bulkhead bracket below the shelf. During normal production operation the hose should be connected to the rear adapter for vacuum. The ball valve for the water should be in the off position. When cleaning the machine the hose should be connected to the front adapter to backflush the machine.



**Figure 9-1.** Vacuum Hose Connected to Vacuum.



**Figure 9-2.** Clear vacuum hose in CLEAN position. Water valve opened.

# MACHINE CLEANING INSTRUCTIONS

1. A hot water supply should be hooked up to the hose adapter on the machine. Water supply valve below the shelf (yellow handle) is closed.
2. Switch the vacuum hose from the vacuum pump/ manifold connector to the water connector and turn the water valve on.
3. Select Pack 6 on the Operator Interface. Snorkels will drop. The main vacuum valve will open after a 2 second delay and the message "CLEANING" will appear on the display.

---

**Note:** When switching to Pack 6 on any machine, the temperature control unit turns off. Also the electric vacuum pump is disabled (if equipped).

---

4. Open the hot water supply valve. Water will be flushed through the snorkels.
5. The clean cycle will flush water through the vacuum system and out the snorkels for predetermined amount of time designated as "CLEANTIME" in the operator interface. The CLEANTIME value is in tenths of seconds (ex: 400 = 40.0 seconds). It is adjustable in the PRESET menu. See Appendix A for more information on adjusting the operator Interface settings.
6. Swiping both optical touch buttons will start a pulsing action (vacuum valve on 3 seconds - off 3 seconds) until the end of clean time. This pulsing action helps dislodge debris that may have built up in the system.



## Warning:

**HOT WATER DISCHARGED FROM THE SNORKELS MAY BE DANGEROUS TO PERSONNEL IN THE AREA. IT IS BEST TO PERFORM A CLEAN CYCLE WITH NO ONE AROUND THE MACHINE.**

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7. At the end of the clean cycle, the pulsing action will stop. Water will continue to flow through the snorkels.
8. Shut off the hot water supply valve.
9. Remove the clear vacuum hose and allow water to drain out. Connect back to the rear (RUN) quick-connect adapter.
10. Turn back to Pack 1, 2 or 3 on the interface. Cycle the machine once. Vacuum will draw residual water in the system back into the clear sediment bowl. Gas will blow any remaining water out of the snorkels.
11. Empty any water which may have accumulated from Primary Sediment Bowl.

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**Note:** When remounting the clear Primary Sediment bowl(s), make sure that the O-ring is in place before tightening

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**Important:** Make it standard practice to empty all filter and sediment bowls of water before starting the machine.

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**Snorkel Cleaning**

If the need for deeper cleaning exists, snorkels can be removed from the machine and cleaned with chlorinated soap solutions mixed to the manufacturer's directions for stainless steel. Snorkels can also be blasted out with high pressure water or air. Parts must be thoroughly rinsed before being returned to the machine.

# **SECTION: 10**

# **MAINTENANCE**



# A200 MULTILINE XT MAINTENANCE SCHEDULE

## Items To Check On A Daily Basis

ITEM	COMPLETED
SEAL QUALITY	
AIR PRESSURE	
SEDIMENT BOWL CONDITION	
OVERALL CONDITION OF MACHINE	
MANIFOLD SPONGE RUBBER CONDITION	
FILTER-REGULATOR CONDITION	
VACUUM HOSE CONDITION	
GAS PRESSURE	
TEFLON TAPE CONDITION	
OXYGEN LEVEL OF PACKAGED PRODUCT	

## Maintenance To Perform On A Daily Basis

FUNCTION	COMPLETED
CLEAN & BACKFLUSH VACUUM SYSTEM	

**Figure 10-1.** Daily Routine

## Maintenance To Perform Twice A Year Or As Needed

ITEM	ACTIONS	DATE
HIGH CAPACITY VACUUM PUMP	CHANGE OIL, DEMISTER FILTER, AND OIL FILTER	
SNORKELS	CLEAN INTERNALLY WITH CLEANER & HIGH PRESSURE WATER, USE COMPRESSED AIR TO DRY	
SNORKEL QUICK EXHAUSTS	REBUILD	
HEAT SEAL BAR	REPLACE TEFLON TAPE	
THERMOCOUPLE	CHECK CONNECTION	
LIGHT BULBS	REPLACE	
HEAT SEAL BAR CYLINDERS	REPLACE	
VALVE BANK EXHAUST	REPLACE	
SILICONE BACK-UP RUBBER	REPLACE	
MANIFOLD SPONGE RUBBERS	REPLACE	

**Figure 10-2.** Maintenance to Perform Twice a Year or as Needed

## REGULAR MAINTENANCE

Regular maintenance is the key to product longevity with the A200 Multiline XT or any other machine. When a preventive maintenance schedule is followed, the operating efficiency of the machine is maintained and breakdowns are reduced. This section of the manual will take you through an extensive routine check of the unit. This is the same type of inspection used by CVP Service personnel to evaluate the condition of older equipment.

Items which need regular attention and/or service are brought to your attention below.

### Visual Inspection

1. Check overall appearance of the machine. Look for things which obviously need attention, such as broken or missing parts, worn out parts, etc.
2. Observe the machine while it is running.
3. Determine if the machine is operating satisfactorily. Get input from the operators and area supervisors. They can readily inform you of any recent malfunctions.
4. Cycle the machine.

### Air Supply Regulator/ Lubricator

Check air pressure:

- Air supply regulator: 80 PSI (5.4 bar)
- Snorkel Regulator: 7-15 PSI (0.5 to 1.0 bar)
- Stretcher Regulator: 15-25 PSI (1.0 to 1.7 bar)
- Check lubricator oil level daily (if equipped)

All of the pneumatic components of the A200 Multiline XT are factory lubricated and sealed for life. Lubricating oil is not required. However, if air lubrication is used it must be continued, as the factory lubrication will be removed and premature failure of these components may result.

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**Note:** Do not use mineral oil or lubricants containing mineral oil. Mineral oil is chemically incompatible with the air cylinder seals, and its use will result in premature cylinder failure.

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Oil can be added to the lubricator prior to pressurization or while under pressure through the fill port. Remove the fill plug and fill with CVP Vacuoil or 10W oil through the fill port. The rate of oil delivery is controlled by turning the adjusting screw CCW for more or CW for less oil delivered. CVP sets the oil rate at one drop of oil every 17-20 cycles of the heat seal cylinders (V5). V5 valve is manually actuated by pressing the yellow manual override button while there is no other air consumption.

Remove air pressure from the system whenever removing the oil bowl to check contents. This can be accomplished by either removing the air supply line or by turning regulator pressure down to zero. Periodically inspect the bowl to detect damage. Replace if cracked or deteriorated. When bowl becomes dirty, wipe only with a clean dry cloth.

**Gas Supply**

Check gas pressure:

- Recommended pressure is 60 to 80 PSI (4.0 to 5.4 bar).

---

**Important:** Inspect supply line for kinks, leaks, or any other physical damage which may adversely affect gas flow.

---

**Sediment Bowl**

**Check sediment bowl:** Water or other foreign particles must be emptied from the bowl. Make sure to replace the black O-ring after emptying. Vacuum loss will occur if the O-ring is missing or installed improperly.



**Figure 10-3.** Sediment Bowl

## SEAL BAR AND MANIFOLD MAINTENANCE

### Heat Seal Bar

Check straightness of heat seal bar by observing this bar in the rear manifold. Bar must be straight for best results. Warped heat seal bars will create an uneven seal resulting in poor seal quality.

1. To correct a warped bar, the bar must be removed. Turn power off before disconnecting the rubber plugs that supply electrical power to the bar. Remove the mounting bolts and springs holding the bar that are accessed from the backside of the rear manifold. Do not lose the white or green colored bushings as these act as bearings for the guide rods. Remove thermocouple and ground wire as well.
2. Place the heat seal bar on a flat rigid surface and check for high areas. With moderate force, push the high points into the flat surface to straighten.
3. Remount into the rear manifold.

---

**Important:** If this procedure does not correct the problem, replace the heat seal bar or return it to CVP Systems Inc. for repair.

---

### Teflon Tape

Check teflon tape on heat seal bar (black in color): Tape should not have any visible damaged areas. If it does, replace with high quality teflon tape which is available from CVP Systems, Inc. Replace any teflon tape that has poor adhesion. Remove old adhesive with solvent and dry completely. Wipe the bar off with alcohol before applying new tape. Apply tape evenly and in line to avoid wrinkles.

---

**Important:** Damaged teflon tape will adversely affect the sealing performance of the A200 Multiline XT.

---



**Figure 10-4.** Teflon Tape on the Heat Seal Bar

**Thermocouple**

**Check the thermocouple connection:** The thermocouple is accessible through the cutout of the rear manifold. It is a very critical part of the temperature control system. If the thermocouple is broken or has a bad connection, the temperature controller cannot sense the actual heat seal bar temperature. Without the thermocouple in place, the heat seal bar will heat to temperatures out of specification and possibly warp the heat seal bar.

---

**Note:** On thermocouple wires, white or yellow is considered positive and red negative.

---

**Changing the thermocouple**

Changing the thermocouple is accomplished by loosening the terminal screws which hold the two thermocouple wires in place inside the user interface enclosure. Remove cord connector from electrical enclosure, loosen the knurled lock collar and slip old thermocouple wire out. Reverse this order to install a new one. It is recommended that some type of "anti-seize" compound be applied to the thermocouple adapter before locking down.

---

**Important:** When replacing the thermocouple, it will be necessary to adjust the bayonet nut on the spring to ensure that the thermocouple tip makes firm contact with the heat seal bar. CVP recommends the cap be wound down on the spring at least 2" (50.8mm).

---



**Figure 10-5. Thermocouple**

**Warning:**

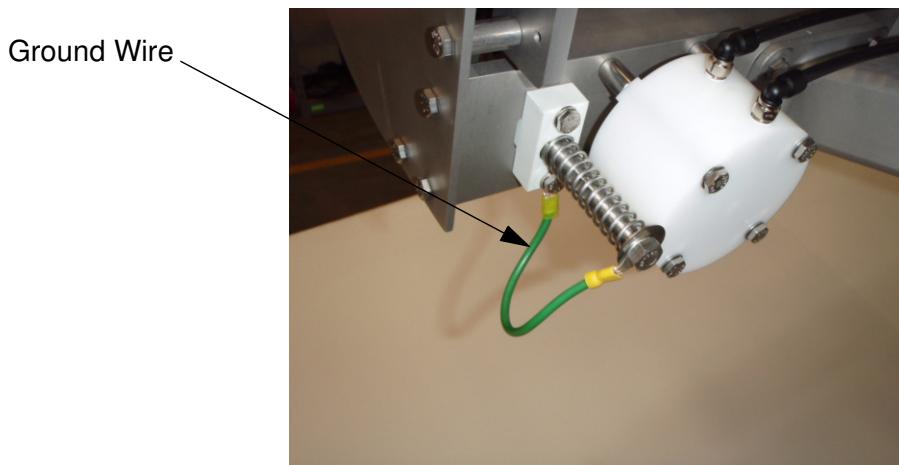
IF THE THERMOCOUPLE IS NOT ATTACHED TO THE HEAT SEAL BAR THE HEATER ELEMENT WILL HEAT TO EXCESSIVELY HIGH

**TEMPERATURES. SERIOUS INJURY AND/OR EQUIPMENT DAMAGE  
MAY RESULT.**

---

**Ground Wire**

The ground wire should be attached to the chassis after completing the installation of the thermocouple.



**Figure 10-6.** Ground Wire

**Warning:**

**RE-ATTACH THE GROUND WIRE TO GUIDE ROD TO AVOID  
ELECTRICAL SHOCK.**

---

**Seal Bar Back Up Rubber**

The seal bar back up rubber, located in the upper manifold, will need to be replaced if the rubber becomes damaged or the surface is uneven. In time the silicon rubber will become too hard to form around the profile of the seal bar causing the seal to look faded along the edge of the seal on the bag.

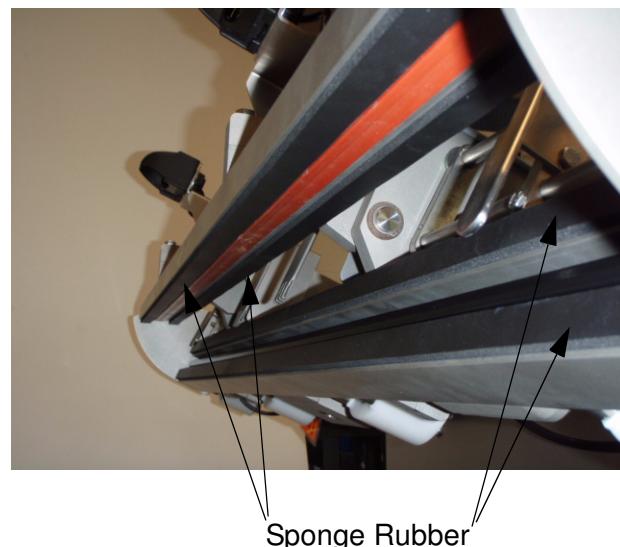
To replace, perform the following:

1. Remove the six (6) 1/4-20 screws in the upper manifold holding the back up bar in position.
2. Using a razor knife remove the silicone rubber from the bar.
3. Clean residue from the bar using adhesive remover. When all the adhesive is removed, clean the bar a final time with a clean rag and isopropyl alcohol.
4. Wipe the rubber clean with a clean rag and alcohol.

5. Apply an even layer of RTV. CVP recommends "GE" brand RTV 157. This adhesive is available at most industrial supply companies.
6. Lay the silicone rubber on the back up bar and align the edges of the bar and rubber.
7. Turn the bar over and clamp to a straight surface, with the rubber facing down. RTV 157 sets in one hour and will cure in 24 hours.
8. Mount the bar back in the manifold.

***Hint:*** An alternative clamping method is to mount the back up bar in the manifold, close the manifold, and extend the seal bar by pressing and locking the manual override button on the heat seal bar valve (V5). This will clamp the rubber in place.

### Manifold Sponge Rubber

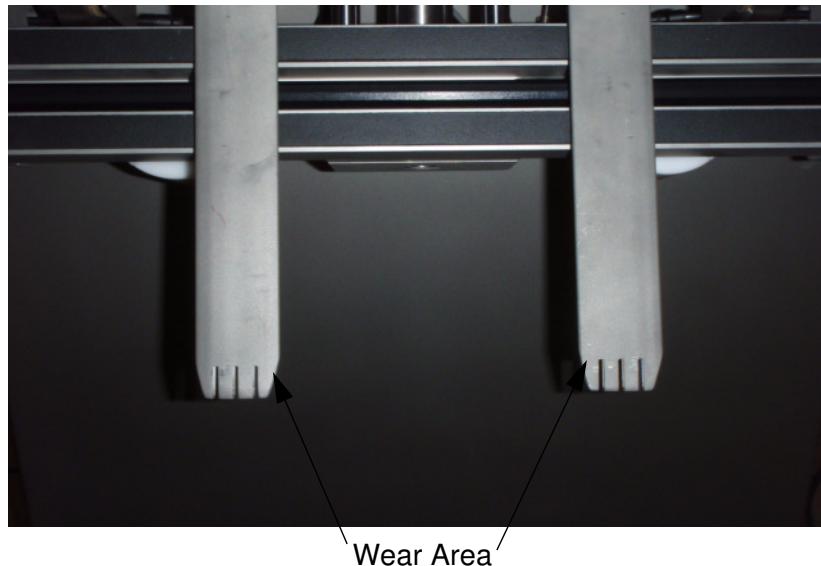


**Figure 10-7.** Sponge Rubber

The black sponge rubber on the front and rear manifolds hold the bag tight during each cycle and prevent loss of vacuum during snorkel pullout. When these sponge rubbers become damaged, worn or dry-rotted, they should be replaced. Worn sponge rubber will cause poor vacuum performance due to leaks.

To change sponge rubber, pull off old rubber, clean and dry mounting surface, and stick new sponge rubber in place. Degrease the manifold groove with solvent to remove residues and old adhesive before applying new rubber.

## SNORKEL MAINTENANCE



**Figure 10-8.** Snorkel Wear Area

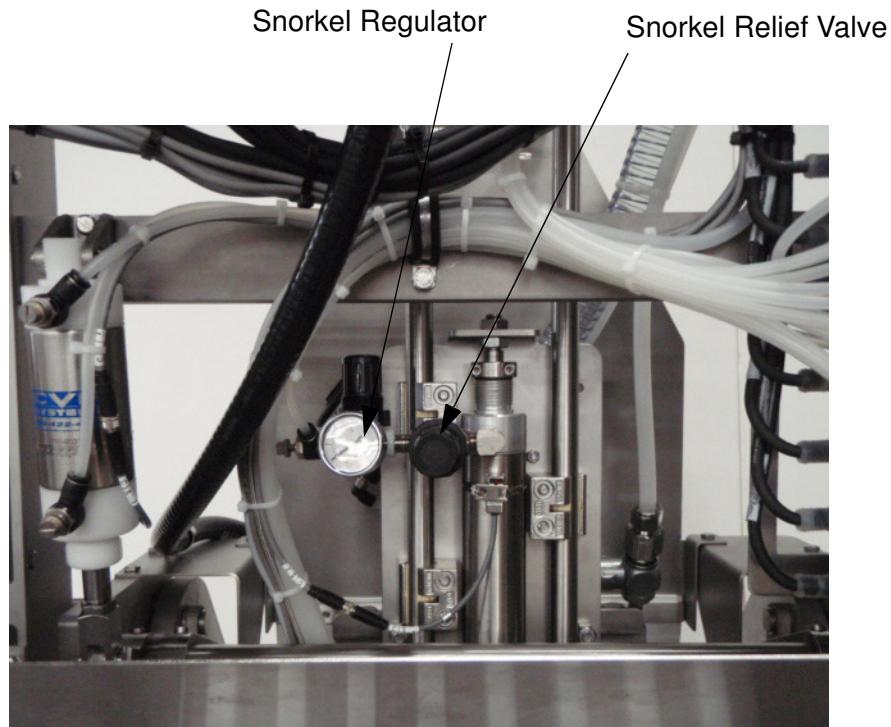
### Snorkel Wear

1. Keep the exterior of the snorkels clean for best heat sealing results. Do not use soap or any other cleaners which will leave a residue behind.
2. Inspect snorkels for wear or sharp edges around the tips. Replace worn and/or damaged snorkels. It is recommended that you keep a spare set of snorkels on hand at all times.

---

**Important:** If the finish of the snorkels becomes polished, it may cause the bags to stick to the snorkels (especially if moisture is present). The snorkels can be bead blasted or replaced as needed.

---



**Figure 10-9.** Snorkel Regulator

#### **Snorkel Regulator**

The snorkel regulator should be set between 7 to 15 PSI (0.5 to 1.0 bar). Adjust so the force of the extending snorkels does not damage product in the bag.

1. To adjust, unlock knob, then turn clockwise to increase pressure, counterclockwise to lower it.
2. Adjust while snorkels are extended.
3. Cycle the machine and observe the speed at which the snorkels retract. If the snorkel retracts too slow or not at all, the air pressure may be set too high. Readjust and cycle again.

#### **Snorkel Relief Valve**

Adjust for least resistance during snorkel retraction.

To adjust, unlock knob, then turn clockwise to increase pressure, counterclockwise to decrease resistance. When turning knob counterclockwise expect to hear air hissing from relief port. Turn knob just slightly clockwise until hissing stops. This is the point of least resistance. Adjust after the Snorkel Regulator has been set.

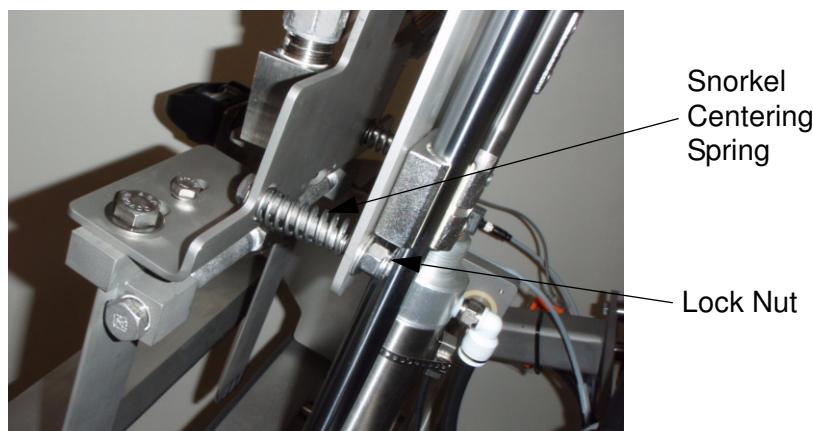
#### **Snorkel Space Position**

The snorkel assembly features a spring-loaded pivot. When the manifold is open and the snorkels are extended, there should be approximately 1/2"

space between the snorkels and the sponge rubber to facilitate easier bag loading.

If snorkel adjustment is necessary:

1. Lower the snorkels by pressing the override button on the snorkel down valve (commonly V1).
2. Loosen or tighten the locknuts on the snorkel centering spring to achieve the desired spacing. Adjust both springs to evenly distribute the spring force to both sides.



**Figure 10-10.** Snorkel Centering Spring

#### **Snorkel Guide Shafts and Bearings**

The linear shaft and bearings that guide the snorkels up and down movement should be inspected periodically for excessive play and replaced when necessary.

The plastic linear bearings are designed to be used in wet or dry environments without lubrication. However, if lubrication is required, use only the following types of lubricant:

- Waylube Oil
- Lightweight oil
- Petroleum-based grease
- 3-in-1 oils

---

**Note:** The following lubricants are chemically incompatible with the linear bearings and their use will result in premature bearing failure:

---

- PTFE Sprays
- WD-40
- Flourocarbons
- Silicon oils, grease, or spray

# MANIFOLD MAINTENANCE

## Adjusting Manifold Clamp Speed

The pivot clamp cylinders use flow controls on the back of the upper frame to control the speed of each cylinder. This helps the clamps close simultaneously. While reading the instructions that follow, refer to the figure below for locations of control devices.



**Figure 10-11.** Adjust Clamping Speed

Perform the following steps to adjust the manifold clamp speed.

1. To adjust clamping speed, loosen locknuts on the flow controls.
2. Opening the center flow control will increase the speed of the opening of the clamp (turn knurled wheel clockwise). Turning it counterclockwise will decrease the speed of the opening of the clamp.
3. Opening the left flow control will increase the speed of the closing of the clamp (turn knurled wheel clockwise). Turning it counterclockwise will decrease the speed of the closing of the clamp.

## BAG STRETCHERS

### Bag Stretcher Regulator

Unlock knob, then turn clockwise to increase pressure, counterclockwise to lower it. Set at 15 to 25 PSI (1.0 to 1.7 bar) when left bag stretcher is extended.

---

**Important:** When pressure is set too high, heat seals will appear to be stretched and wrinkled. When pressure is too low, bags will not stay secured to stretcher bars.

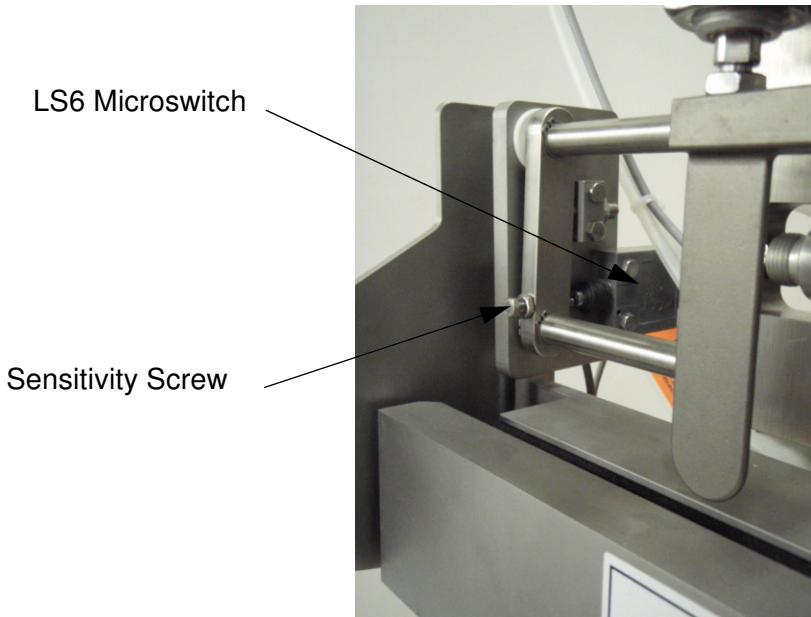
---

### Bag Stretcher Flow Controls

The bag stretcher flow control is adjusted at full counterclockwise position for greatest speed.

### LS6, Bag Stretcher Expand

Adjusted to activate LS6, microswitch, as the left bag stretcher bar makes contact with black sponge rubber when pressed. This will expand the stretcher to hold the bag on the bag stretcher fingers.



**Figure 10-12.** LS6 Microswitch

To adjust, loosen locknut on sensitivity screw. Turn screw clockwise to increase sensitivity, or counterclockwise to decrease sensitivity. Tighten locknut once adjustment is complete.

# VACUUM SWITCH

**VS2, Snorkel Vacuum Switch**

The VS2 digital vacuum switch is used to measure the vacuum level inside the bag. It is mounted inside the main electrical enclosure. There is an auxiliary display on the user interface. The vacuum switch indicates the amount of vacuum being drawn in inches of mercury (inches Hg). When the operator display changes color from green to orange, the vacuum setpoint has been reached. The switch sends a 1-5 VDC signal to the PLC analog card proportional to the vacuum level.

**Adjusting the Vacuum Switch Setpoint**

To change the vacuum switch set point, press the PRE key on the operator interface and adjust the Vacuum Level presets. There is a separate setpoint for Packs 1 & 2 and for Pack 3 only.

Vacuum level is adjustable from 5 to 29.9 inches Hg . For more information on operator interface adjustments, see Appendix A.

**Zero the Vacuum Switch**

In measurement mode and with the vacuum pump off, press the "A" key for 2 seconds or more to adjust the zero point of the switch.

**Factory Settings**

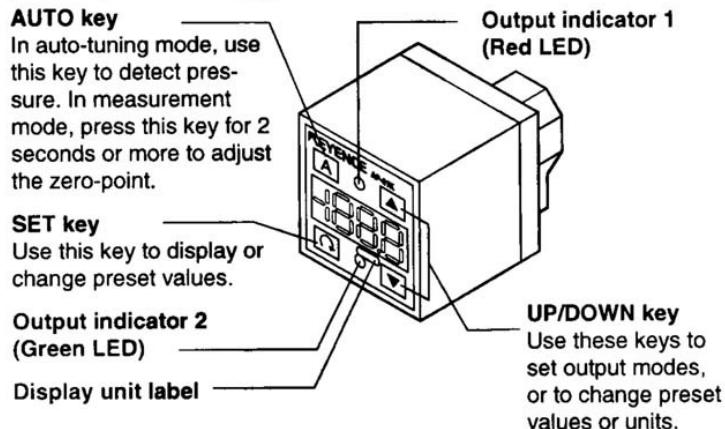
Also from measurement mode, holding the SET key for 5 seconds will display factory preset values (operation mode). These settings determine display and control properties for the vacuum switch. Tap the SET key to scroll through the five parameters. They should be set as follows:

- 1. INCH**
- 2. F-3**
- 3. NO**
- 4. 2.5**
- 5. 2-C**

Press the SET key again and return to the operating display (measurement mode).

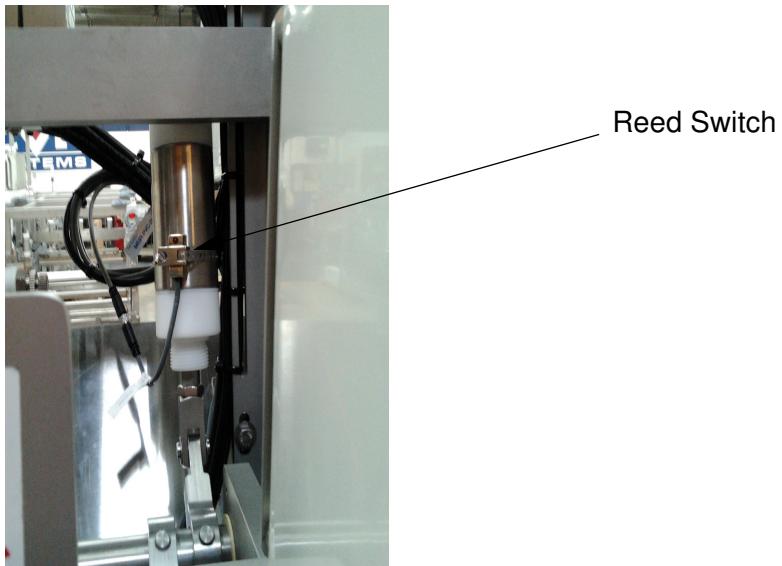
Use the UP or DOWN keys to change preset values to match the above. Tapping the set key after the last preset returns to measurement mode.

### PART NAMES AND FUNCTIONS



**Figure 10-13.** Vacuum Switch Part Names and Functions

**Adjusting LS1/PRX1** Adjust so that switch is actuated when front manifold clamps into position.



**Figure 10-14.** Proximity Switch

Adjust the position of the reed switch so that the red indicator light is on when the manifold is fully closed and locked. Misadjustment of the switch will result in a “JAWS CLOSED FAULT” on the user interface display.

## ADJUSTABLE HEAD

<b>Adjust Speed of Head</b>	Adjust the machine head for comfortable up and down speed of upper mainframe.  To adjust, loosen locknuts on adjusting screws, located on V11 and V12 solenoid valves. Turn adjusting screws clockwise to decrease speed. Turn counterclockwise to increase speed. Do not allow head to "slam" into down position.
<b>Linear Shaft and Bearings</b>	The linear shaft and bearings that guide the head's up and down movement should be inspected periodically for excessive play and replaced when necessary.  The plastic linear bearings are designed to be used in wet or dry environments without lubrication. However, if lubrication is required, use only the following types of lubricant: <ul style="list-style-type: none"><li>• Waylube Oil</li><li>• Lightweight oil</li><li>• Petroleum-based grease</li><li>• 3-in-1 oils</li></ul>

---

**Note:** The following lubricants are chemically incompatible with the linear bearings and their use will result in premature bearing failure:

---

- PTFE Sprays
- WD-40
- FlourocARBONS
- Silicon oils, grease, or spray



## **SECTION: 11**

# **TROUBLESHOOTING**



# COMMON PROBLEMS

## Not creating enough vacuum in the bag:

### Increase the vacuum level:

- Vacuum switch

On the operator interface increase the vacuum switch setpoint. Remember that the vacuum switch reads in inches of mercury and has a 5-29.9 adjustment range. In vacuum switch mode, the machine will draw a vacuum until a preset level of vacuum is reached. The Vacuum switch parameter in the Preset menu must be set to 1. The vacuum level is adjustable via the “VACUUM LEVEL (Pack 1&2)” parameter or the “VACUUM LEVEL (Pack 3)” parameter in the Preset Menu.

- Vacuum Timer

To change the vacuum timer setting you must use the Cmore operator screen. The vacuum time is adjustable via the VAC-TIME PAC#1, 2 or 3 parameter in the Timer menu. These timers are only used when the Vacuum switch bit in the Preset menu is disabled. For more information on the operator screen, please refer to Appendix A.

### Check the foam rubber.

- The foam rubber that clamps the bag in position for each cycle may begin to form a memory over time. Examine the four pieces of rubber, two on the front manifold and two on the rear manifold for deformations. If both pieces of foam rubber do not seal tightly against each other, air may leak into the bag limiting the level of vacuum that may be reached.

### Pump Problems.

- For venturi pumps, check the air supply to the pump regulator. It is located on the upper frame of the machine. Make sure that the pump holds a constant air pressure during operation. If pressure drops more than 5 PSI (0.3 bar) during a cycle, the supply line needs to be larger. The optimal working pressure is 87 PSI (5.9 bar) and at that pressure air usage will be 30-scfm (849 L/min) whenever drawing vacuum.
- Also, for venturi pumps, check for ice in the pump ports. Water in the air supply may freeze in the pump ports and restrict air flow. The pump needs to be thawed and cleaned. See Section 10, Vacuum Pump Maintenance for the Venturi Vacuum Pump. If the problem persists, an air dryer must be installed in the air supply system and a heater cord wrapped around the pump body.
- For electric high capacity vane pumps, first visually inspect the pump. Note the color of the vacuum oil in the sight glass. Does it need to be changed? Check the pump exhaust for smoke coming out. If there is, the demister may need to be changed or there may be too much oil in the pump. For more in-depth analysis of the vane vacuum pump refer to the Vacuum System section of the manual.

**Vacuum lines.**

- Examine the main vacuum hoses connected to the snorkels for any holes or cracks in the line. Check the hose clamps on the ends of the hose line connected to the hose barbs. Check that the hose clamps are tight to eliminate any leaks.
- Check the tubing connected to the vacuum switch. Over time the tubing may have unseated itself allowing a small vacuum leak. There are two locations to check. First check the rear of the vacuum switch in the operator interface panel. Next check at its connection to the main vacuum line. This tubing is connected to the vacuum plumbing through a round brass valve most commonly connected to the gas valve assembly. (see A-200 lower frame assembly for more details)
- Inspect snorkel for debris inside or damage.

**Sediment Bowl.**

- Check o-ring is in place in the groove on top of the clear bowl. If not in place, there will be a vacuum leak. Also check all filters for any debris.
- If there is an autodump valve on the bowl, ensure that the valve is not stuck open or tubed backwards. The actuator should close the valve during the vacuum cycle.

**Vacuum Quick Connect.**

- The vacuum quick connect hose leading to the main vacuum valve should be connected to the filter and Piab pump connection (rear connection on the bulkhead block). The front connection on the block is only to be used when cleaning.
- Check seals in quick connection for leaks.

**Gas Valve.**

- Check gas valve for leaks or failure.

**Piab Valve.**

- An electric solenoid valve (V26) controls the air supply to the venturi type Piab pump. Output Y6 actuates V26 whenever the program calls for vacuum. If the Y6 output light illuminates and the fuse is good, check solenoid valve operation.

**Problems with inconsistent gas levels****Supply Line.**

- Verify there is a consistent supply of gas. If there are multiple machines with the same supply confirm that the lines can supply them simultaneously. A gas accumulator tank may be necessary.

**Gas Valve.**

- Check the gas valve on the machine to make sure that it is operating consistently, meaning that it is seated and opening properly. This can be done by checking the machine schematic and overriding the valve to see if it is reacting consistently time after time.
- There is a spring-loaded check valve at the outlet of the the gas valve that may be clogged.

### **Bag Placement.**

- Control the placement of the bag to insure consistent volumes in each bag. If the bag is not placed in the same position every time there will be a different volume of bag to fill, and thus a different amount of gas in each bag causing inconsistency between packs.

### **Vacuum Valve.**

- Check that vacuum valve is fully closed during the gas cycle.

### **Shutoff Valve.**

- Each gas connection from the manifold on the conveyor has its own shutoff valve. Check that this ball valve is fully open when running.

## **Problems with seals:**

### **Check heat timer.**

- Adjust heat timer in the preset menu. See the Heat Sealing section of this manual. Note there is a separate heat seal time for Packs 1 &2 and for pack 3.

### **Check bar temperature.**

- Adjust setpoint temperature on the West 6100 temperature controller. See the Heat Sealing section of this manual.

### **Check seal bar.**

- Teflon taped bar

Check teflon tape covering bar for bare spots or wrinkles. If tape is not smooth and consistent across the bar, replace the tape.

- Plasma coated bar

Examine the leading edge of the seal bar for nicks, scratches or other wear marks which may cause poor seals. If your bar has these problems, replace the bar.

- Check heater power plug-in connections.

- Check that the thermocouple sensor is making good contact with the manifold. Verify that the thermocouple is a type K and that the CAL 9400 is configured for a K thermocouple input. If the thermocouple fails or is not connected, the CAL 9400 controller display will flash “inPt: Fail”.

**Check manifold rubbers.**

- Inspect foam rubbers (black) and silicone backup rubber (red). They should be pliable and show no signs of damage.

**Check Pancake cylinders.**

- Confirm that all pancake cylinders are extending properly and that the phenolic insulators (pusher insert) are in place. If not, bar pressure will be uneven.
- Check for leaking rod seals. Leaking seals can create cold spots on the heat seal bar.

## A200C HEAD OPERATOR INTERFACE FAULT DISPLAY

**Snorkel or Stretcher fault:**

**Description:** During each machine cycle, the snorkels and bag stretchers (if equipped) must be retracted before the seal bar activates so that they are not crushed by the seal bar. If the snorkel/bag stretcher cylinder sensors do not detect the snorkels/bag stretchers in the up position, the machine will stop and display a "SNORKEL FAULT" or "STRETCHER FAULT". Similarly, if the program commands the snorkels or stretchers to extend and still receives the signal that they are retracted, the fault message will appear.

**Response:** Check to see that the snorkels and bag stretchers are in fact fully retracted and in the up position. If not, one of the actuating cylinders may have been damaged.

If the snorkel and bag stretchers are in the fully retracted position and a snorkel/stretcher fault is displayed, loosen the mounting strap for the sensor and slide it up or down the cylinder until it lights. The magnet that actuates the cylinder sensor is near the top when it is in the retracted position. If the cylinder switch will not light then it may have failed.

**Vacuum fault:**

**Description:** When the machine is running in "Vacuum Switch" mode it will keep the pump running until the vacuum switch reaches a preset value. If this value is not achieved the machine will stop and display a "VACUUM FAULT"

**Response:** Check to see if there is a hole in the bag, or if one of the snorkels is outside the bag (sometimes the snorkel will be under, not inside the bag).

Determine whether or not the vacuum level is set to a reasonable level. Normal values for a machine that has been in the field for some time are as follows: Piab, 20-22" Hg (508-559 mm), SV-40 23-25" Hg (584-635 mm). If the value is too high, set it to a lower value or run in vacuum time mode. If the set vacuum level is appropriate to your machine configuration, troubleshoot as a vacuum level problem.

**Jaw closed fault:**

**Description:** After the start buttons have been activated, the front manifold is given one second to close. If it has not closed completely after this time it will open and the machine will display a "JAW CLOSED FAULT". The manifold will open and the machine will have to be restarted.

**Response:** Open the pivot clamp cylinder flow controls located on the rear of the upper frame slightly. This will allow the manifold to close more quickly.

Manually close the manifold by using the yellow manual override button on V1. Check the input light A4 on the PLC to verify the cylinder switch has been made. If it does not light, check to see if the switch located on the pivot clamp cylinder has come out of adjustment. To check, loosen the clamp and move until it is “seen” by the switch. The red indicator light will be on when it senses the cylinder magnet.

If you are not able to get the cylinder switch to make by the above steps, the switch is defective and should be replaced.

**Shelf Down Fault**

**Description:** The shelf is locked in the down position by the program. The discharge photoeye below the shelf (input X10) continued to see a load after the shelf was down.

**Response:** Clear the jam and press START to raise the shelf. The shelf will not go back up until START is pressed with the photoeye path clear. If there is no jam, check if the photoeye is out of adjustment or has failed.

**Shelf Up Fault**

**Description:** The cylinder switch on the shelf cylinder for the UP position is not on and the program expects the shelf to be UP.

**Response:** If the shelf is not up, check that there is 87 psig (5.9 bar) minimum air pressure to the machine. If the shelf is up, check that the switch on the cylinder is lit up. If it is not lit, adjust the switch on the cylinder to see if it will pick up the magnet inside the cylinder. When adjusted properly, the cylinder switch and input X11 will light when the shelf is up. If not, the reed switch may have failed.

**Temperature Fault**

The temperature has remained below the controller setpoint and not risen for one minute. Check that heater power supply is connected. Check that the heater relay in the machine junction box is pulled in. The temperature controller should be powered and the output LED to the right of the lower display should be lit. When lit, the LED on the face of the SSR relay should also light.

Also check that the thermocouple is connected to the bayonet fitting in the rear of the heat seal bar. The clip should be wound up about 2 inches on the spring to provide enough force to press the thermocouple end securely to the metal inside the well.

**Warning:**

LET THE BAR COOL BEFORE ATTEMPTING TO CONNECT OR  
DISCONNECT THE THERMOCOUPLE BAYONET FITTING.

---

Temperature has exceeded 410 deg F. Power to the controller is removed until reset. NOTE: If operating below setpoint, the controller ALM light will be ON.

**Vacuum Sensor Fault** Occurs when the 0-5VDC signal is not received from the vacuum sensor.

**Jaw Open Fault** The Jaw Closed Cylinder switch is ON when the program is commanding the Jaw to be open.

## TEMP. CONTROLLER ERROR MESSAGES

<b>Thermocouple fault:</b>	Lower Display “ <b>OPEN</b> ” indicates that the thermocouple circuit is broken. Check wiring and connection
	Lower Display “ <b>HH</b> ” indicates that the thermocouple input is overrange. Lower Display “ <b>LL</b> ” indicates that the thermocouple input is underrange. Check thermocouple type and connection. The 6100 controller is preprogrammed for a type K thermocouple input (red =+, yellow = -). Red to terminal 1, yellow to terminal 2.
<b>Low Temperature fault</b>	The red ALM LED in the lower display will light when the actual heater temperature (upper display) is more than five (5) °F from reaching the setpoint.

## VACUUM SWITCH ERROR CODES

- Zero Point fault** Display shows “**E**” indicating that a zero point adjustment was executed at a vacuum level +5% of full scale. Only perform a zero point adjustment at atmospheric pressure. Hold the A key for 2 seconds to zero the display with no pressure or vacuum applied to the switch.
- Overcurrent fault** Display shows “**Ec**” indicating there was an overcurrent condition on output 1 or output 2. Depower unit. Most likely there is short to ground on the white or black vacuum switch wires.
- Range Fault** Display shows “**FFF**” indicating that the applied pressure or vacuum was outside of the display range. The display range is 0 to -29.9” Hg (0-760 mm). Most likely there is a positive pressure being applied to the switch. This could be caused by the gas valve sticking open or a malfunctioning vacuum switch relief valve. If the error occurs during vacuum, most likely the transducer in the switch has come out of calibration.

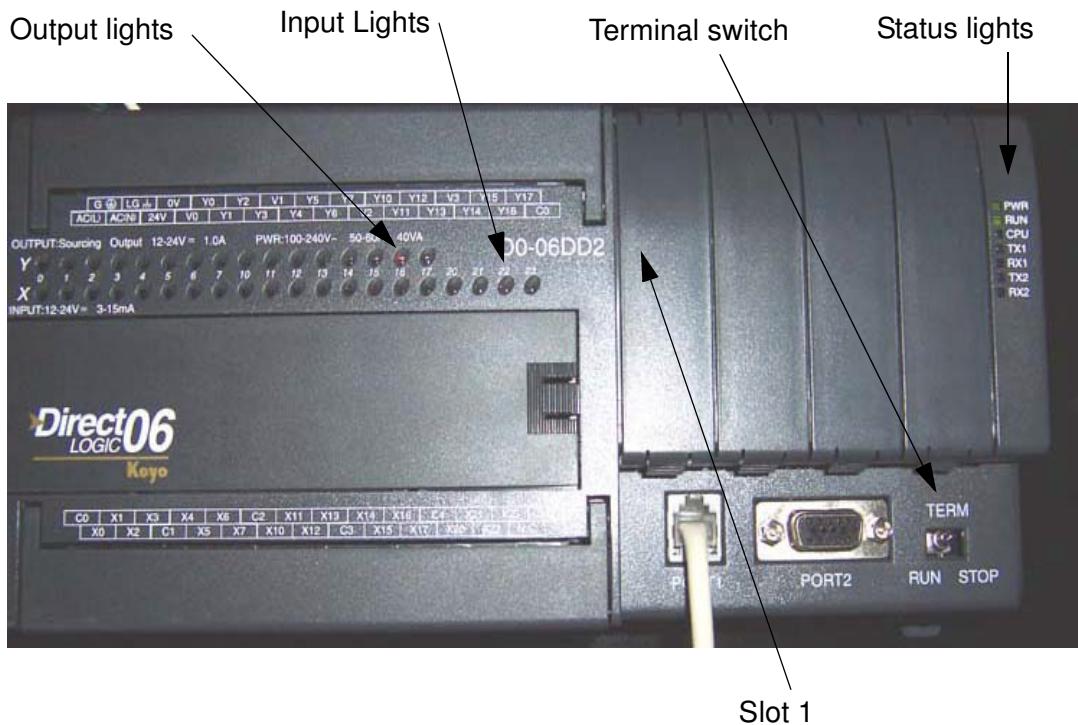
## TROUBLESHOOTING THE PLC

### Reading The I/O Status Lights

The I/O status lights on the PLC and valve bank are important tools used in troubleshooting the Multiline Head machine. There are 16 outputs wired to the top terminals and the output lights are labelled Y0 thru Y17. There are 20 inputs wired to the bottom terminals and the input lights are labelled X0 thru X23.

If you wish to check the status of an input or output, determine which input or output is used. Check the electrical schematic included with your machine. The inputs are arranged to the left side of the drawing and the outputs to the right. Make a note of the input or output you wish to check.

Check the I/O light, if it is on then the input or output you are checking is on. The solenoid connectors on the pneumatic valve bank illuminate when energized by a PLC output.



**Figure 11-1.** Status Lights on the PLC

Normally, the RUN and PWR status lights should be on steady and the TX1 and RX1 lights should be flashing. This indicates data is being transmitted and received at serial port 1 where the interface is plugged in.

**Troubleshooting  
The I/O Status  
Lights**

- The exact point in the machine's sequence of operations where a problem is occurring can be pinpointed by monitoring the status lights.
- Determine where in the sequence of operation the machine is failing to function. For example, "the #2 pusher is not coming out"; or "the exit conveyor should be on at this point, but it isn't".
- Consult the electrical schematic and note which output controls the action that is at issue. For example, Y3 extends pusher #2; or Y15 energizes the exit conveyor starter.
- Check to see if the output is in the proper state. For example, does Y3 come on when pusher #2 extends?
- If the output is correct, then check the output's fuse, solenoid, valve, and relay (if any). The goal is to examine each component between the PLC and the activating component, and discover which is not functioning.
- If the output is not being activated then most likely the machine is waiting for an input. Determine from the schematic which inputs must be made before the required output will trigger. For example, for pusher #2 to push, inputs for infeed #2 (X7), pusher #2 retracted (X3) and gas pressure (X2) must be on. If they are not on it can be seen that the problem is with missing input signal(s), not the pusher output circuit.

**Troubleshooting  
using the I/O  
status lights:**

- The exact point in the machine's sequence of operations where a problem is occurring can be pinpointed by monitoring the status lights.
- Determine where in the sequence of operation the machine is failing to function. For example, "the heat seal is not coming on"; or "the manifold should open at this point, but it doesn't".
- Consult the electrical schematic and note which output controls the action that is at issue. For example, Y1 extends the snorkels; or Y0 controls the front manifold.
- Check to see if the input is in the proper state. For example, does X6 come on when the snorkels are up? Does X4 come on when the manifold closes?
- If the output is correct, then check the output's fuse (if fused), solenoid, valve, and relay (if any). The goal is to examine each component between the PLC and the activating component, and discover which is not functioning.
- If the output is not being activated then most likely the machine is waiting for an input. Determine from the schematic which inputs must be made before the required output will trigger. For example, both start buttons must be made before the manifold will clamp. From the schematic it can

be seen that inputs X2 and X3 must both be made. The JR relay and the 2-Hand relay must be actuated before the manifold will close. If they are not actuated it can be seen that the jaw close valve cannot come on.

## TROUBLESHOOTING SPECIFIC PROBLEMS:

### **Manifold won't close.**

- Check the light inside each start button to see if it lights when the button is activated.
- Check inputs X2 and X3 to see if they light when the start buttons are activated.
- When the operator display reads "PRESS START BUTTONS", check output A0. It should light when the start buttons are swiped simultaneously. The output card may be defective if it does not come on.
- Check fuse FU3, replace if needed. Check fuses (2) on the output card itself. They are plug-in type, reddish-brown in color, 3.15 amp slow blow fuses.
- If your machine has a 2 hand safety relay, it should activate when both start buttons are pressed. If not, it may be defective. Check all wiring including CONTINUITY between Y1 and Y2 terminals.
- Verify valve V3 operates manually by pressing the manual override. If no operation, troubleshoot as a pneumatic problem.
- Verify that solenoid V3 operates electrically by applying 24 VDC directly to fuse FU3. If no operation, replace solenoid.
- Replace valve V3.

### **The machine is not working at all.**

- Confirm that the machine has power.
- Check the MCR relay for power. If there is no power, check fuse FU1.
- Verify that the emergency stop button is pulled out.
- Check the operator interface for error messages. Press the **MSG** button. The display may be on a setup page and not show the error message. If there is an error message, troubleshoot as shown in the error messages section.
- Verify that the switch on the PLC is in the **Term** position.
- Verify that the **Power** and **RUN** lights on the PLC are lit. If not, check fuse FU1. Confirm that there is AC power feeding the PLC.
- If the PLC **Power** light is lit but the **RUN** light is not, see if toggling the switch from **RUN** back to **Term** will bring it back into RUN mode. If the PLC is powered and the **Power** or **Run** lights are unlit then the PLC may need to be replaced.

### **The machine does not seal**

- If the heat bar extends and the machine pauses in the seal stage for an appropriate amount of time, troubleshoot as a seal quality problem. Try adjusting heat seal settings on the operator interface.

- If the heat seal settings are OK, check the red ^ LED to the right of the lower display. It comes on when the controller is calling for heat. When it lights, the SSR relay indicator lights should also light. Check heater element and both heater power fuses. Always check heater element with main power disconnected

**Table 4:** Standard CVP Heater Elements

CVP Part #	Nominal Size (in.)	Volts	Watts	Approx. Ohms
C-7707-141-B	48	220	1800	27
C-7707-141-I	48	120	1800	8

- If the seal bar does not extend, check output Y4. If the output does not activate, the problem is not a seal problem. It might be a stretchers or snorkel up fault.
- Inspect the seal bands for continuity or short to ground. Check if the heat seal circuit breaker has tripped. This is a 16 amp, 2-pole breaker located by the impulse transformer. Check that the current switch is operating properly and that the current input is being received at the PLC.
- Examine fuse FU7, Solenoid V5 and valve V5, in that order.

#### **Load won't push into the machine**

When the A200 Multiline XT is ready to accept a new container (load) for a vacuum/ gas/ seal cycle, the program turns on the "LOAD PRODUCT" output. This output is number 14 (Y14). If this output light is not on, check the following:

1. E- stop on machine must be pulled out.
2. Switch must be in RUN or SEAL mode.
3. The A200 load area must be clear. The load photoeye and input 17 (X17) must be OFF.
4. The last cycle must have been completed. Press and hold the RESET button for more than one second to abort the cycle.

If the sealing head is sending a load request, check that the request is being sent to the conveyor program. The load request from each of the three sealing head PLCs is sent to the Multiline conveyor PLC:

1. Input X14 on the conveyor PLC indicates a load request from machine 1.
2. Input X15 on the conveyor PLC indicates a load request from machine 2.
3. Input X16 on the conveyor PLC indicates a load request from machine 3
4. The Conveyor POWER ON light must be illuminated.

If the conveyor is receiving the load request input, there are several conditions that would cause the pusher not to push:

1. There is no air pressure to the A200 Multiline conveyor. Air pressure should be 80 psig (5.4 bar) minimum. Try to manually extend pusher #1, #2 or #3 by pressing the yellow button on V3, V4 or V5.
2. There must be a load in the loading area of the conveyor system to push. If there is a load, the photoeye and infeed PLC input for the corresponding conveyor zone must be lit up.
3. Check that the pusher retracted prox switch is lit. This switch must be lit in order to energize the extend output solenoid. Check the corresponding input light on the PLC. If this is not lit but the prox switch is, the cable might be faulty.
4. Check that there is not a Pusher Jam message on the interface (inside the conveyor panel). Pusher operation is disabled until the jam is cleared. Check photoeye operation in the loading zone. The photoeye must go off after pusher retraction or a jam alarm occurs. Whenever the pusher is actuated by the program, the pusher retracted input must be seen again in less than 2 seconds or it generates a jam alarm.
5. If the output light for the pusher is illuminated, check the output fuse and solenoid for the valve. Check connections inside the solenoid connector and junction block.
6. Check gas pressure. Pushers are disabled if gas pressure drops below 20 psig (1.4 bar). Input 2 (X2 on the PLC) must be lit.

**Shelf won't discharge load**

When the A200 machine has completed the vacuum gas cycle, the message DISCHARGE will appear on the interface. The program is waiting for the lower conveyor zone at the machine AND the one upstream to be clear before dumping. If both zones are clear with the photoeyes and corresponding exit zone inputs in the conveyor PLC off, check the following:

1. The outfeed conveyor clear input for the machine (X15) is not energized. If the photoeye in the exit conveyor zone OR the upstream zone is sensing a load, the relay will not energize.
2. Check the EXIT CLEAR outputs in the conveyor PLC. Y5 is exit zone 1, Y6 is exit zone 2 and Y10 is exit zone 3. The output will light when it is clear to dump.
3. The exit conveyor photoeyes in Zones 1, 2 or 3 (inputs X11, X12 or X13) are blocked by a jam.
4. The discharge photoeye (X10) on the machine is blocked by a jam. This photoeye is below the tilt shelf on the right side of the machine. This photoeye must be clear for the shelf to go back up also.
5. The tilt shelf up reed switch on the cylinder must be lit indicating that the shelf is up before it can go down. The corresponding input (X11) in the machine head control panel must also be lit up. Check cable connections.

**Photoeye Display** All photoeyes on the multiline conveyor and machines are wired for “dark on” operation. When a target is sensed, the orange operation indicator light on the photoeye will illuminate. The black wire from the photoeye cable is wired to the PLC input which should light at the same time.



**Figure 11-2.** Photoeye on the A200 Multiline XT

**Photoeye setting** Photoeyes on the upper conveyor loading zones and on the exit conveyor dump zones should be adjusted for maximum sensitivity by turning the adjustment pot fully clockwise.

The photoeye before the tote infeed stop should have the preset manually adjusted down so that it only senses about halfway across the conveyor. Similarly, the photoeye on the loading zone of each machine should sense about halfway across the load shelf. The discharge photoeye beneath the shelf of each machine should sense about halfway across the stand. This will prevent false readings.

All photoeyes are interchangeable but as you can see, some of their pre-sets must be different.

## ASSISTANCE

When calling, for technical assistance or service, have the model (A200 Multiline XT) and serial numbers available for our customer service representative. This will allow us to more accurately assist you with your machine.

The serial number tag for the A-200 Multiline Conveyor is located inside the main electrical enclosure door on the print pocket.

Contacting CVP Systems can be accomplished in three different ways; by phone, fax or e-mail. Please include model and serial numbers in all correspondents to CVP Systems.

Phone: 800-422-4270 (In the US, Canada, & Mexico)  
630-852-1190 (All others)

Fax: 630-852-1386

E-Mail: [service@cvpsystems.com](mailto:service@cvpsystems.com)



# **SECTION: 12**

# **ASSEMBLIES**

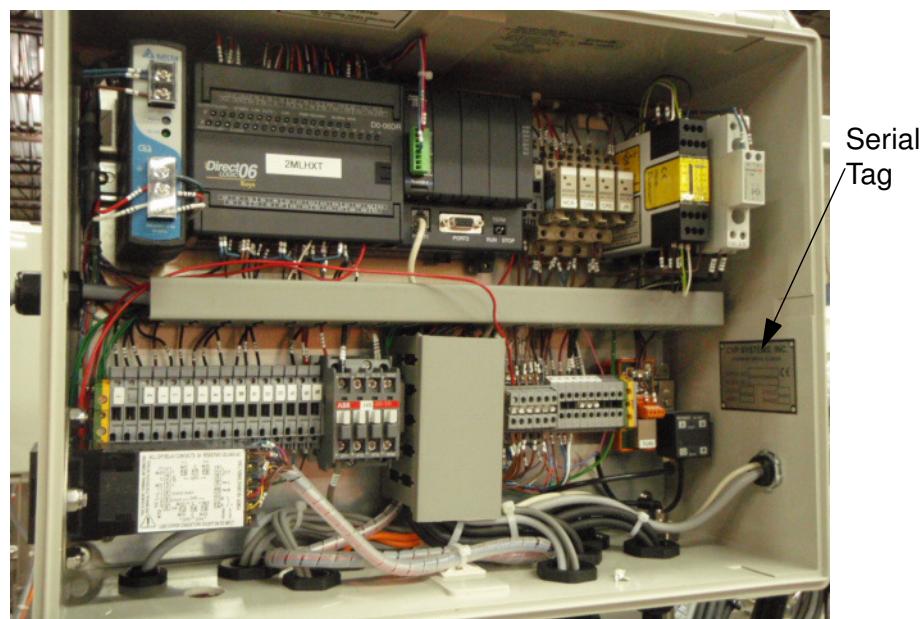


## MACHINE ASSEMBLIES

### Customer Service

This section contains subassemblies for the A200 C Multiline XT. By using the subassembly drawings you will be able to find the part(s) needed to repair the A200 C Multiline XT. If you can not find the part(s) needed, contact CVP customer service for assistance. When calling for parts or service, have the model and serial numbers available for our customer service representative to more accurately assist you:

The serial number for the A200 C Multiline XT sealing head is located inside the main electrical enclosure. (See Figure 12-1)



**Figure 12-1.** Serial Tag Location

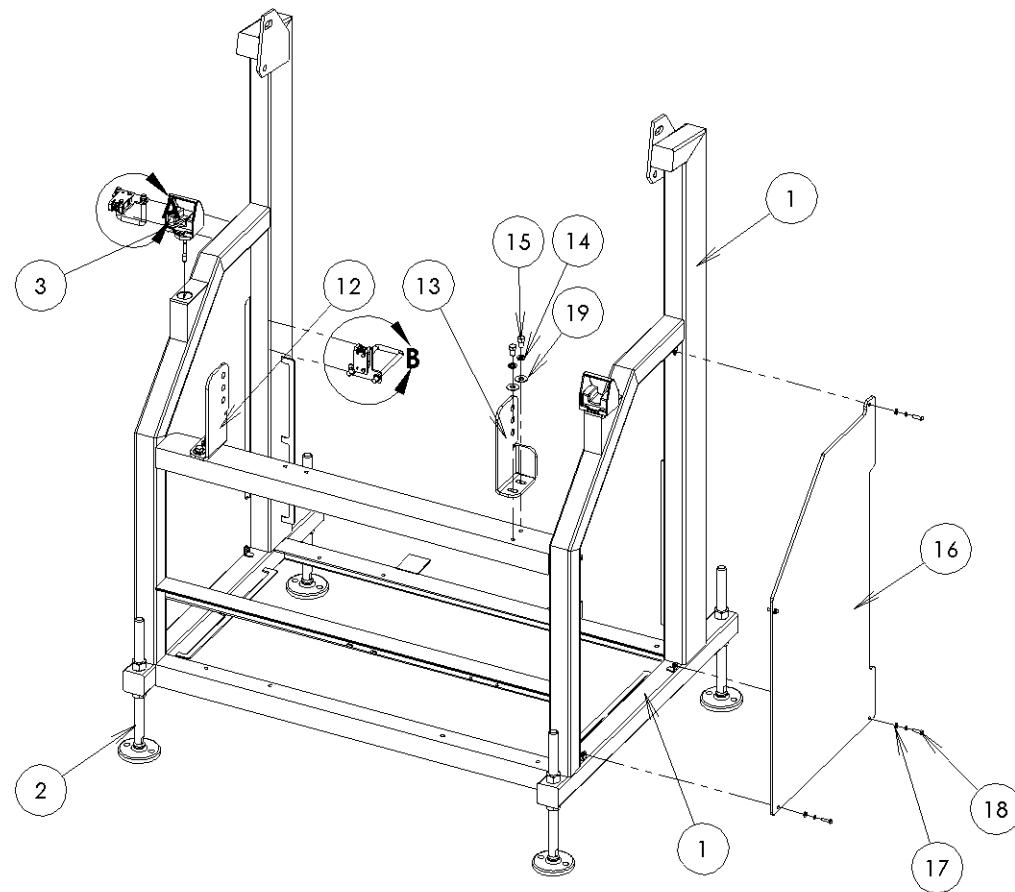
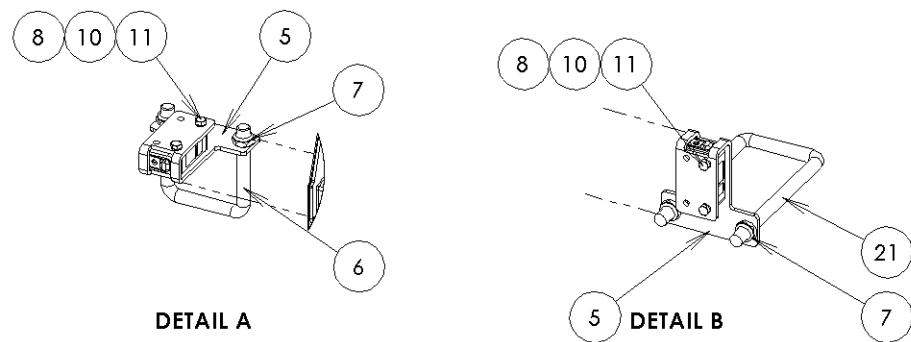
### Ordering Parts

Ordering parts from CVP Systems can be done by phone, fax or e-mail. Please include model and serial numbers in all correspondents to CVP Systems.

Phone: 800-422-4720 (In the US, Canada, & Mexico)  
630-852-1190 (All others)  
Fax: 630-874-0229  
E-Mail: [spareparts@cvpsystems.com](mailto:spareparts@cvpsystems.com)

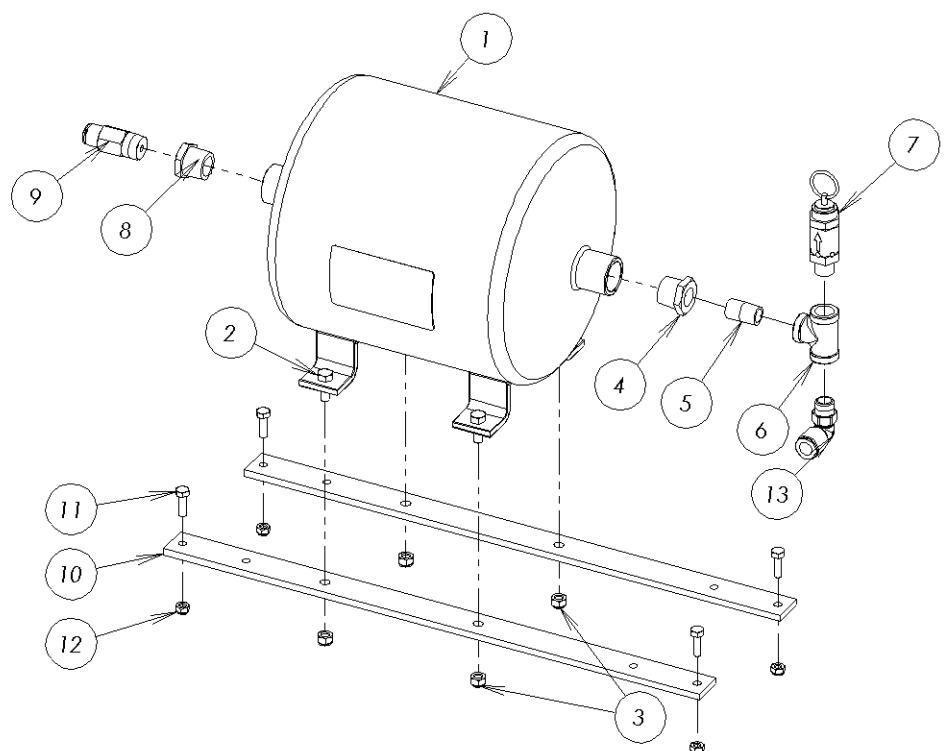
## STAND ASSEMBLY

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	D-9743-1147	WELDMENT, A200 MULTILINE STAND FRAME
2	4	7707-1925	FEET, LEVELING 12"
3	2	1110-0126-1	SWITCH.OPTO TOUCH.W/COVER.SAFETY
4	2	7707-1741	CABLE, 5-PIN, 10M
5	2	B-7707-1811	MULTILINE PHOTO EYE BRACKET
6	1	3060T71	U-BOLT, SQUARE
7	4	LN3/8-16LP	NUT, LOCK, LOW PROFILE
8	2	9743-1281	PHOTOEYE, DIFFUSE
9	2	9743-1045	CABLE, PHOTOEYE, 10M
10	4	LW8	WASHER, LOCK
11	4	HHM4X.7X16	SCREW, HEX HEAD METRIC
12	1	B-9743-1418L	SHELF SUPPORT, LEFT
13	1	B-9743-1418R	SHELF SUPPORT, RIGHT
14	4	LW3/8	WASHER, LOCK
15	4	HH3/8-16X5/8	SCREW, HEX HEAD
16	2	C-9743-1417	SIDE PANEL, A200ML HEAD
17	8	FW10-A	WASHER, FLAT
18	8	HH10-32X3/4	SCREW, HEX HEAD
19	4	FW3/8-A	WASHER, FLAT
20	8	LW10	WASHER, LOCK
21	1	9743-1137	U-BOLT

**ASSEMBLY NUMBER: D-9743-1171**

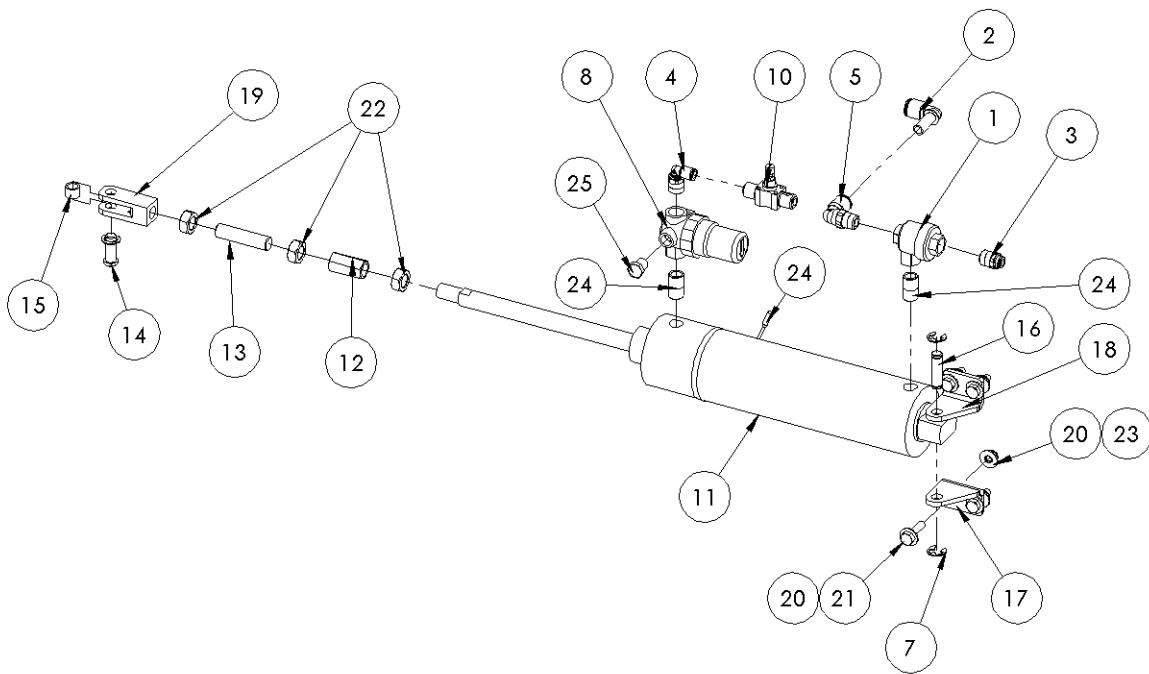
## ACCUMULATOR TANK ASSEMBLY

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	C-7707-306	ACCUMULATOR TANK
2	4	HH5/16-18X7/8	SCREW, HEX HEAD
3	4	LN5/16-18	NUT, LOCK
4	1	SSB3/4NPTX3/8	BUSHING, REDUCING
5	1	SN3/8NPT	NIPPLE, CLOSE, 3/8NPT
6	1	4464K49	TEE, 3/8 NPT
7	1	7707-2515	SAFETY RELIEF VALVE
8	1	SSB3/4NPTX1/2	BUSHING.HEX.SS.0.75NPT X 0.50
9	1	7707-2903	CHECK VALVE 1/2 NPT X 1/2 TUBE
10	2	C-8013-1249	BAR, CLAMP-ACCU. TANK MOUNT
11	4	HH1/4-20X7/8	SCREW, HEX HEAD
12	4	LN1/4-20	LN 1/4-20
13	1	269P-08-06	FITTING.TBG.ELB.1/2OD X 3/8NPT

**ASSEMBLY NUMBER: C-7707-607-6**

## TILT CYLINDER ASSEMBLY

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	0243-420	VALVE, QUICK EXHAUST
2	1	0243-0571	FITTING, TBG, ELB, PUSH-IN, 3/8OD
3	1	268P-04-04	FITTING.TBG.STR.1/4OD X 1/4NPT
4	1	269P-04-04	FITTING.TBG.ELB.1/4OD X 1/4NPT
5	1	269P-06-04	FITTING.TBG.ELB.3/8OD X 1/4NPT
6	1	0550-1321	SWITCH, SOLID STATE
7	2	5133-37H	RETAINING CLIP, 3/8"
8	1	7707-118	REGULATOR, 1/4NPT
10	1	7770-56-00	FLOW CONTROL, 1/4"
11	1	9743-1258	CYLINDER, 2" BORE, ANODIZED ENDS
12	1	9743-1306	NUT, COUPLING, 1/2"-20 UNF
13	1	9743-1307	STUD, THREADED, 1/2"-20 UNF x 2" LG
14	1	9743-1516	CLEVIS PIN W/ RET RING
15	1	AA507-11	BEARING, SLEEVE
16	1	B-7707-1152	PIN CLEVIS
17	1	B-9743-1433L	PIVOT, LEFT
18	1	B-9743-1433R	PIVOT, RIGHT
19	1	B-9743-1434	ROD END
20	8	FW1/4-A	WASHER, FLAT
21	4	HH1/4-20X1	SCREW, HEX HEAD
22	3	JN1/2-20	NUT, JAM
23	4	LN1/4-20	NUT, LOCK
24	2	NPBCN 1/4 NPT	NPB NIPPLE 1/4 NPT
25	2	NPBHP 1/8 NPT	NP BRASS HEX PLUG 1/8 NPT

**ASSEMBLY NUMBER: C-9743-1134-1**

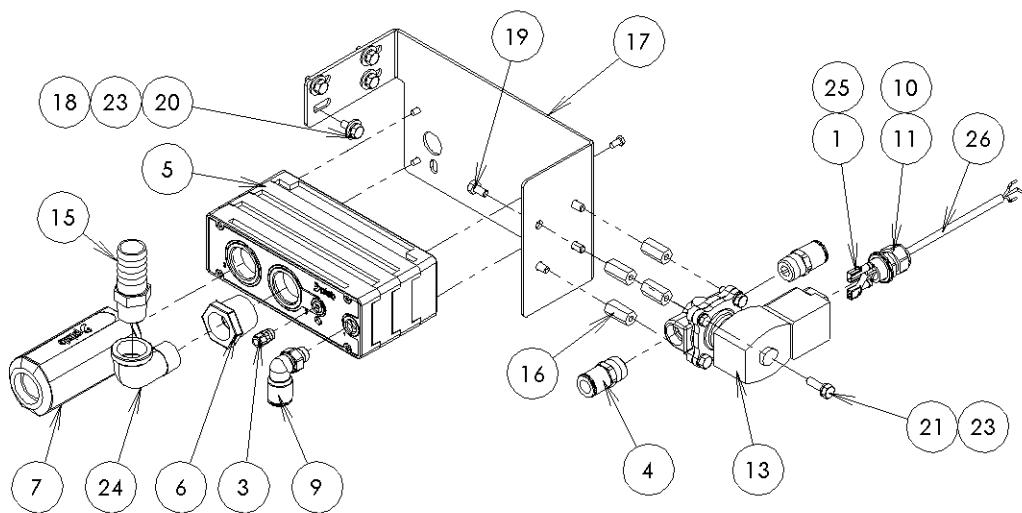
## VACUUM PUMP ASSEMBLY

ITEM NO.	-0/QTY.	-1/QTY.	PART NUMBER	DESCRIPTION
1	2	2	14RB-2577	DISCONNECT, FEMALE
2	1	1	264P-08	FITTING, TUBING, ELBOW, 1/2OD
3	1	1	268P-04-02	FITTING.TBG.STR.1/4OD.1/8NPT
4	2	2	268P-08-08	FITTING.TBG.STR.1/2NPT.1/2OD
5	1	1	1110-0077	VAC PUMP, PI CLASSIC
6	1	1	1110-0079	BUSHING.HEX.SS.1.25NPT X 0.75NPT
7	1	1	1110-0139	PI MUFFLER
8	1	1	1110-0202	FITTING, TGB, RED, 1/2OD X 3/8OD
9	1	1	3109-62-14	ELBOW, 1/2 OD X 1/4 NPT
10	1	1	5262	SEALRING
11	1	1	7707-1634	CORD GRIP, 1/2", 1 HOLE DOME
12	2	2	9537-1432	HOSE, HIGH FLOW
13	1	-	9537-1452	VALVE.ASCO GAS.120VAC
14	-	1	9537-1487	VALVE,ASCO GAS,220VAC
15	1	1	9743-1140	BARB, HOSE, 1"ID X 3/4NPT
16	4	4	9743-1289	STANDOFF, HEX
17	1	1	C-9743-1285	BRACKET, MOUNTING, PIAB PUMP
18	4	4	FW1/4-B	WASHER, FLAT
19	4	4	HH1/4-20X1/2	SCREW, HEX HEAD
20	4	4	HH1/4-20X5/8	SCREW, HEX HEAD
21	4	4	HH1/4-20X7/8	SCREW, HEX HEAD
22	2	2	HSS-16	HOSE CLAMP, S.S.
23	8	8	LW1/4	WASHER, LOCK
24	1	1	NPBSE3/4NPT	ELBOW.NPB.0.75NPT X 90DEG.STREET
25	1	1	RB14-10	TERMINAL RING, INSULATED
26	11	11	RC18-3	WIRE, BLACK CORD SJO

OPTIONS-

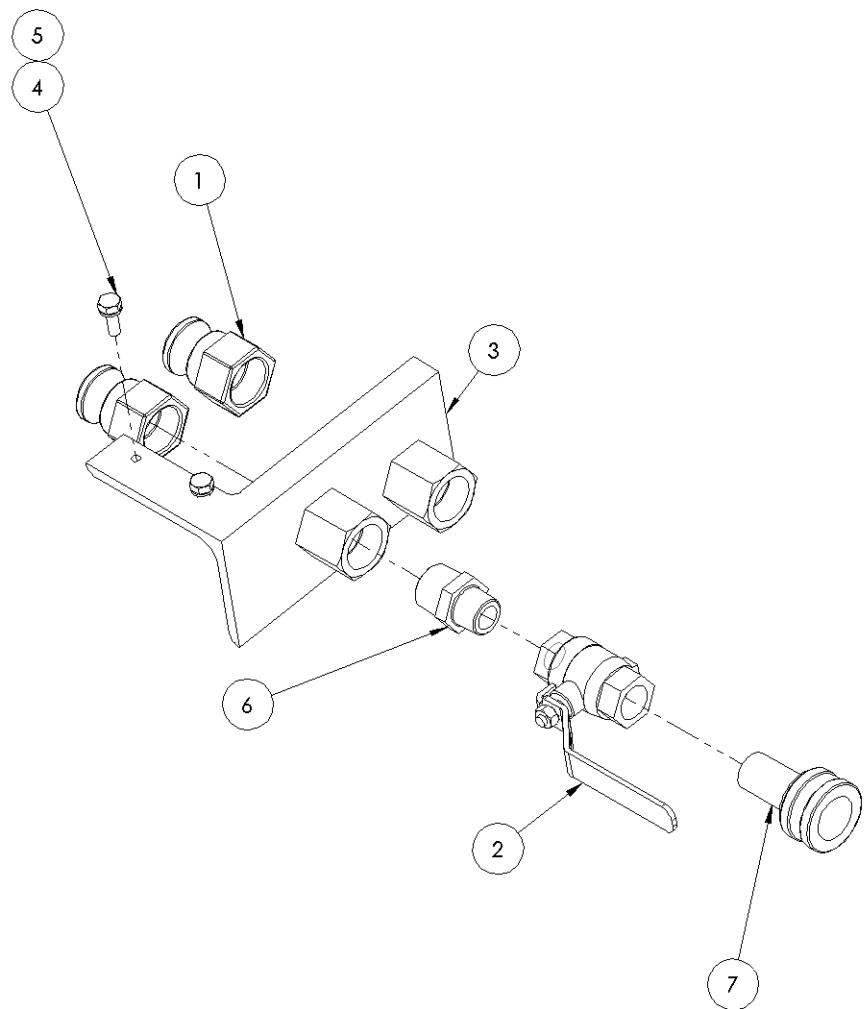
-0: 120 VAC

-1: 220 VAC

**ASSEMBLY NUMBER: C-9743-1497**

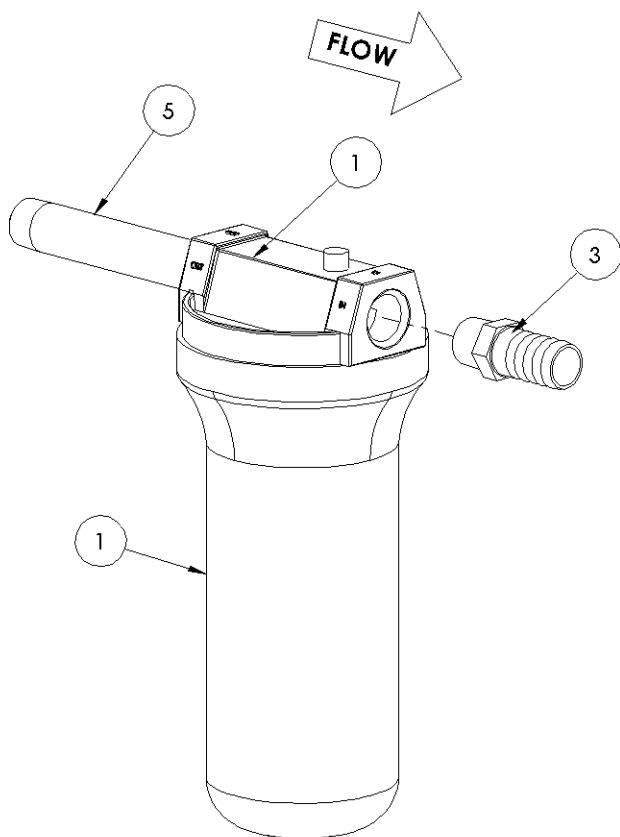
## BULKHEAD ASSEMBLY

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	2	1110-0090	MALE ADAPTER, 3/4 NPT
2	1	9743-1517	BALL VALVE, 1/2"NPT SS, REST FLOW
3	1	C-9743-1290	WELDMENT, BULKHEAD
4	2	HH1/4-20X3/4	SCREW, HEX HEAD
5	2	LW1/4	WASHER, LOCK
6	1	NPBRN3/8NPTX1/4NPT	REDUCING NIPPLE
7	1	NPBSHC3/4X3/8NPT	CONNECTOR HOSE

**ASSEMBLY NUMBER: C-9743-1294**

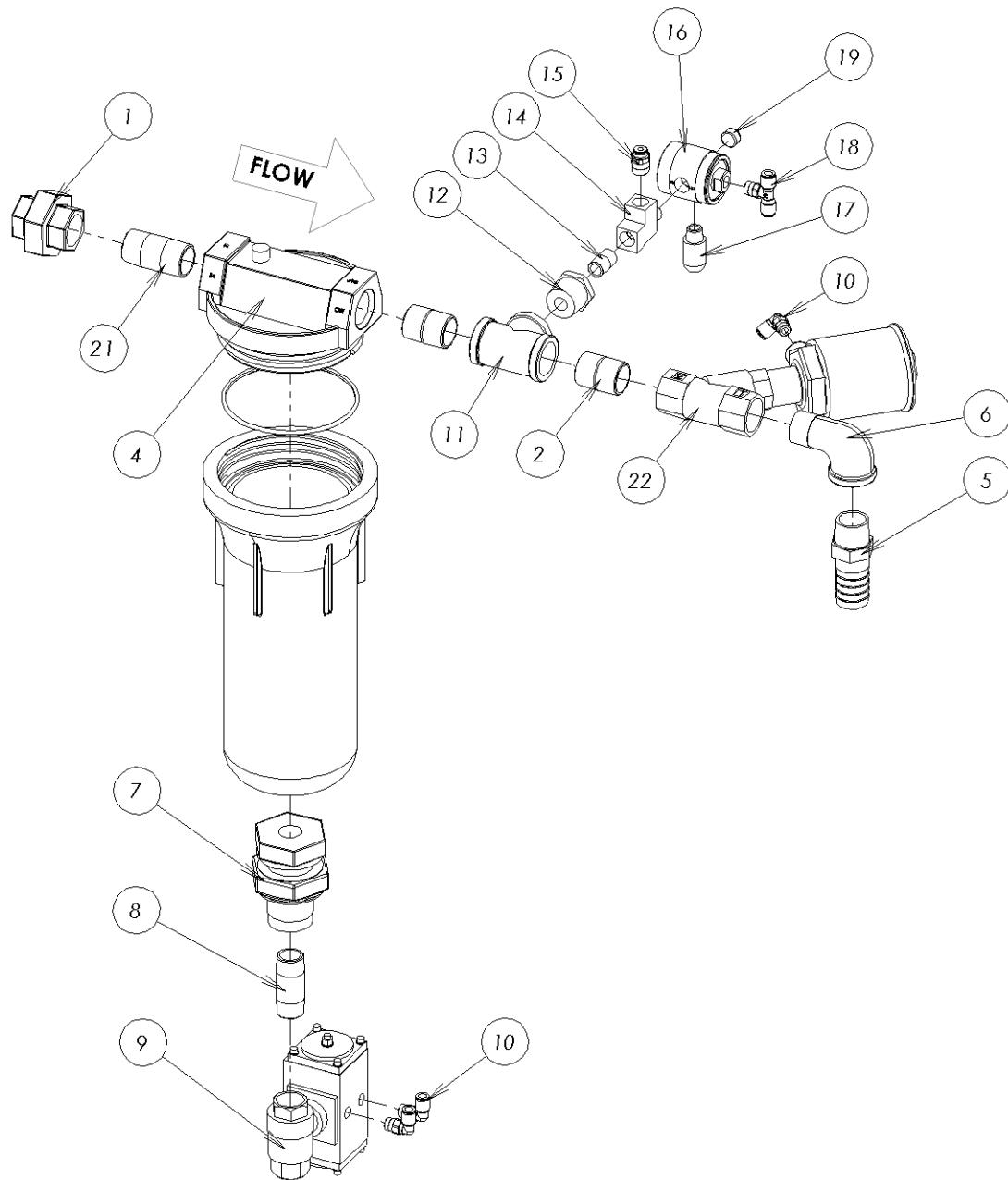
## SEDIMENT BOWL ASSEMBLY

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	7707-156	SEDIMENT BOWL
2	1	151120	O-RING, SEDIMENT BOWL
3	1	NPBMBR1.0IDX3/4NPT	BARB, HOSE, 1"ID X 3/4NPT
5	1	NPBN3/4NPT6LG	NPB NIPPLE 3/4 NPT

**ASSEMBLY NUMBER: D-9743-1293-2**

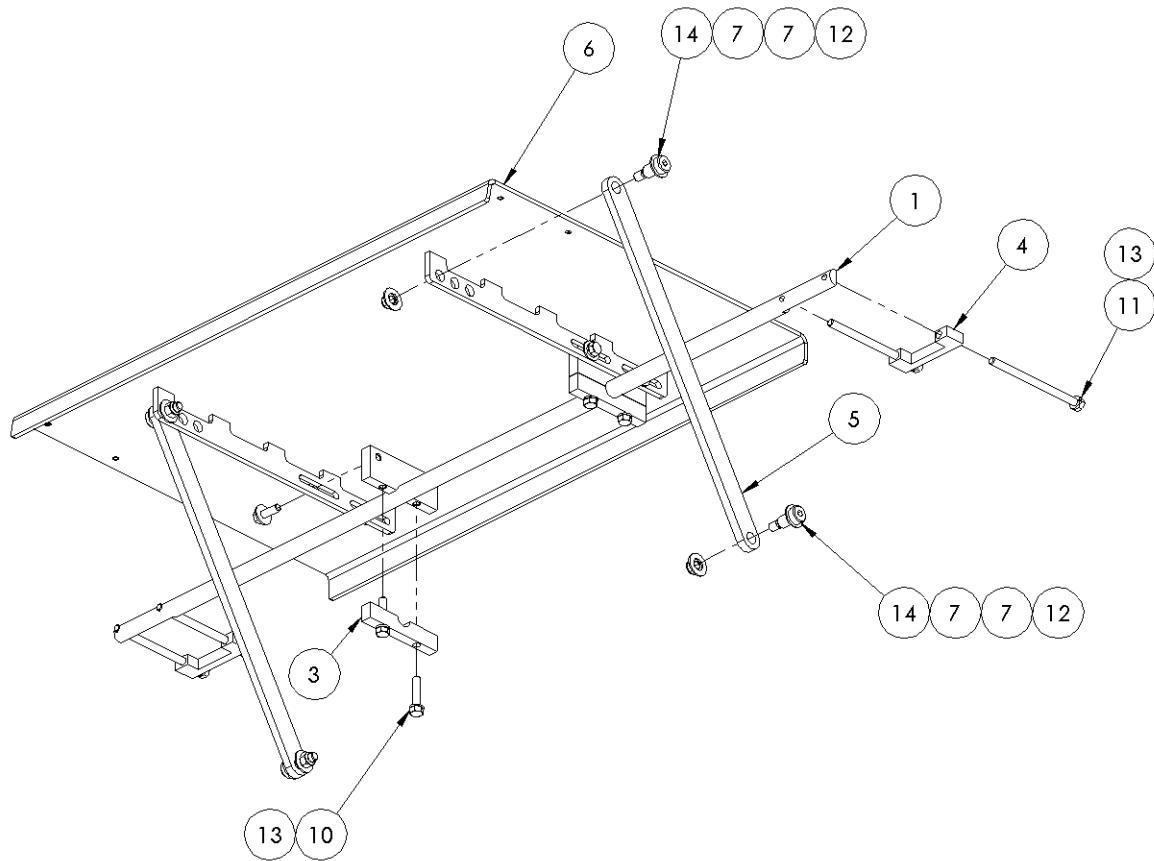
## SEDIMENT BOWL ASSEMBLY, AUTO DUMP

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	NPBUI3/4NPT	NPB UNION 3/4 NPT
2	2	NPBCN 3/4 NPT	NPB NIPPLE 3/4 NPT
3	1	151120	O-RING, SEDIMENT BOWL
4	1	B-7504-545	SEDIMENT BOWL W/ DRAIN
5	1	9743-1140	BARB, HOSE, 1"ID X 3/4NPT
6	1	NPBSE3/4NPT	ELBOW.NPB.0.75NPT X 90DEG.STREET
7	1	7707-902	BULKHEAD, 1/2" NPT
8	1	SN1/2NPTX2	NIPPLE.SS.0.50NPT X 2.00LG
9	1	7707-2208	BALL VALVE, PNEUMATIC
10	3	269P-04-02	FITTING.TBG.ELB.1/4OD X 1/8NPT
11	1	NPBT3/4NPT	NPB TEE 3/4 NPT
12	1	NPBBU3/4NPTX1/4NPT	NPB BUSHING, 3/4NPT TO 1/4NPT
13	1	NPBCN 1/4 NPT	NPB NIPPLE 1/4 NPT
14	1	NPBST 1/4 NPT	NPB STREET TEE 1/4 NPT
15	1	268P-04-04	FITTING.TBG.STR.1/4OD X 1/4NPT
16	1	7707-496	VALVE, 2-WAY, NC (PRESSURE)
17	1	9537-1258	MUFFLER.POLY.0.25NPT
18	1	272P-04-02	FITTING.TBG.TEE.1/4OD X 1/8NPT
19	1	NPBHP1/4NPT	PLUG, HEX 1/4NPT
20	2	264P-04	FITTING.TBG.TEE.1/4OD
21	1	NPBN 3/4 NPT 2 LG	NPB NIPPLE 3/4 NPT
22	1	7707-2372	VALVE.PISTON.SS.0.75NPT.50MM.NC

**ASSEMBLY NUMBER: C-9743-1500**

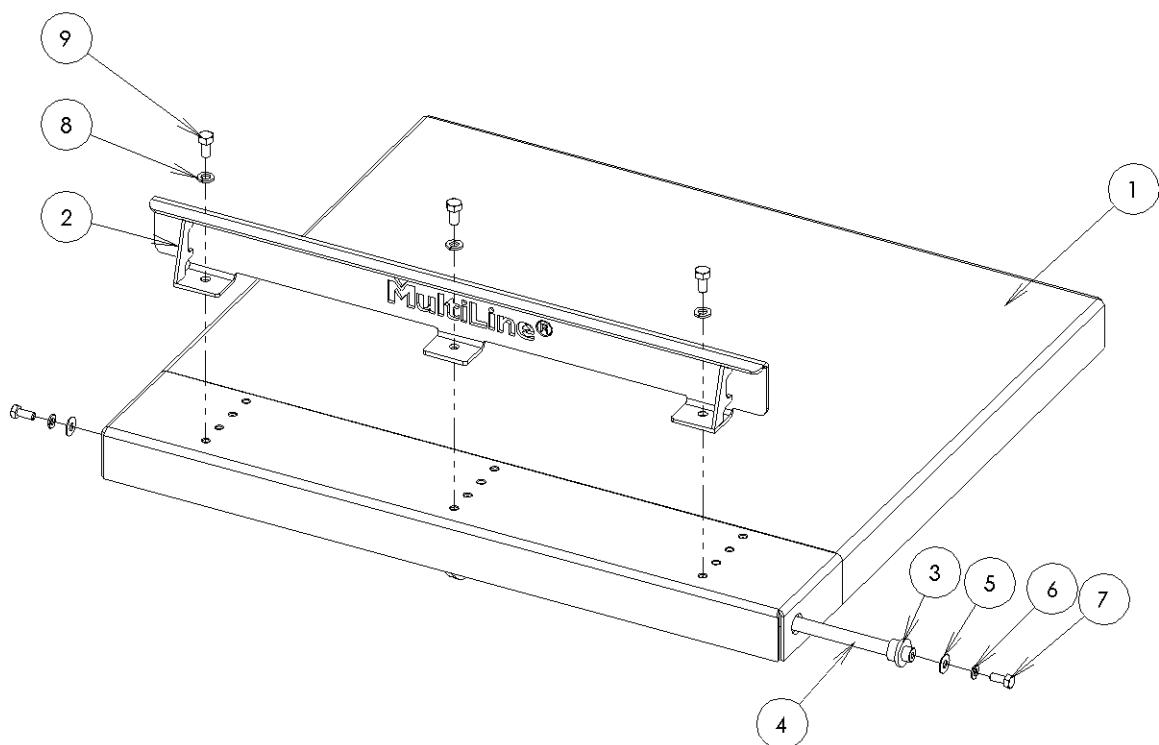
## TRANSFER SLIDE ASSEMBLY

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	B-9743-1181	MOUNTING SHAFT, EXIT SLIDE
2	2	B-9743-1491	SLIDE PLATE MOUNT
3	2	B-9743-1492	SUPPORT BAR MOUNT
4	2	B-9743-1495	EXIT SLIDE, FRAME MOUNTING BLOCK
5	2	B-9743-1515	SUPPORT, EXIT SLIDE
6	1	D-9743-1489	EXIT SLIDE
7	8	FW1/2-B	WASHER, FLAT
8	4	FW5/16-B	WASHER, FLAT
9	4	HH5/16-18X1	SCREW, HEX HEAD
10	4	HH5/16-18X1-1/2	SCREW, HEX HEAD
11	4	HH5/16-18X5	SCREW, HEX HEAD
12	4	LN3/8-16	NUT, LOCK
13	12	LW5/16	WASHER, LOCK
14	4	SB1/2X3/4	BOLT, SHOULDER

**ASSEMBLY NUMBER: D-9743-1490**

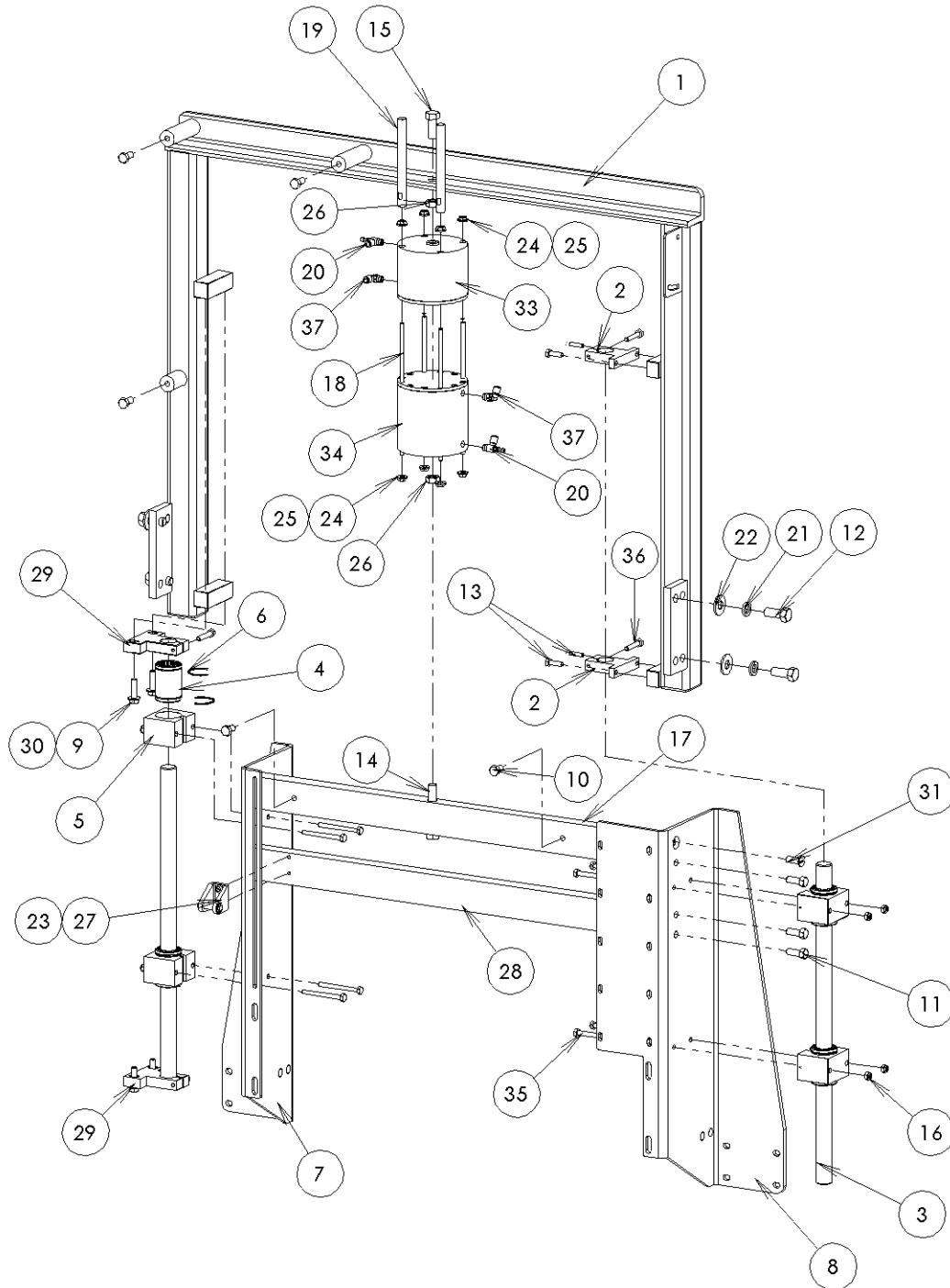
## DROP TABLE ASSEMBLY

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	C-9743-1507	WELDMENT, DROP TABLE, RIGIDIZED
2	1	C-9743-1487	WELDMENT TABLE STOP
3	2	B-7707-2514	BEARING, FLANGED SLEEVE
4	1	B-9743-1430	PIVOTING ROD
5	2	FW1/4-A	FLAT WASHER
6	2	LW1/4	WASHER, LOCK
7	2	HH1/4-20X5/8	SCREW, HEX HEAD
8	3	LW5/16	WASHER, LOCK
9	3	HH5/16-18X5/8	SCREW, HEX HEAD

**ASSEMBLY NUMBER: D-9743-1508**

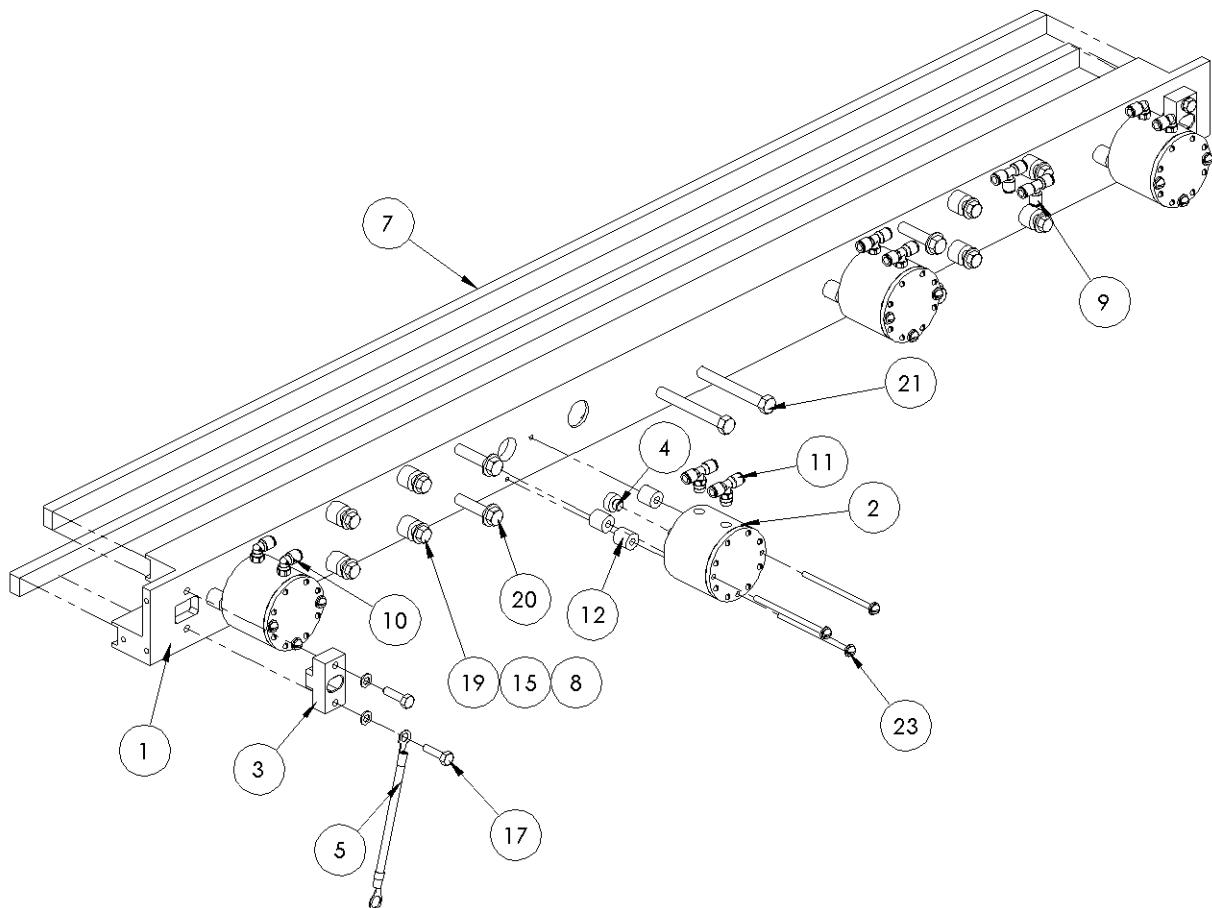
## ADJUSTABLE HEAD ASSEMBLY

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	D-1110-0129	WELDMENT, ADJ. HEAD
2	2	B-7707-2685	SHAFT SUPPORT, 1"
3	2	B-1110-0135	LINEAR SHAFT, 1" DIA X 20" LG
4	4	1110-0134	LINEAR BEARING
5	4	B-0210-0571	BLOCK, LINEAR BEARING
6	8	0210-0573	EXT. RETAINING RING 1 9/16" OD.
7	1	C-1110-0130	BRKT, MANIFOLD SUPRT, RIGHT
8	1	C-1110-0131	BRKT, MANIFOLD SUPRT, RIGHT
9	4	HH5/16-18X1-1/4	SCREW, HEX HEAD
10	2	HH3/8-16X5/8	SCREW, HEX HEAD
11	6	HH3/8-16X1	SCREW, HEX HEAD
12	4	HH1/2-13X1-1/4	SCREW, HEX HEAD
13	4	HH1/4-20X7/8	SCREW, HEX HEAD
14	1	HH1/2-20X3	SCREW, HEX HEAD
15	1	HH1/2-20X1-1/4	SCREW, HEX HEAD
16	8	LN1/4-20	NUT, LOCK
17	1	B-1110-0133	CROSS BAR, ADJ. HEAD, UPPER
18	4	B-7707-464-2	ROD, THREADED, 8-1/4
19	2	B-7707-2586	ROD, NON-ROTATE
20	2	9537-1184	FLOW CONTROL
21	4	LW1/2	WASHER, LOCK
22	4	FW1/2-B	WASHER, FLAT
23	2	PH1/4-20X5/8	SCREW, PAN HEAD
24	8	FW1/4-A	WASHER, FLAT
25	8	JN1/4-20	NUT, JAM
26	2	JN1/2-20	NUT, JAM
27	1	D-55205-SS	BRACKET.PIVOT.SS.2.0 BORE CYL
28	1	B-1110-0148	CROSS BAR, ADJ. HEAD, LOWER
29	2	B-1110-0152	SHAFT SUPPORT, 1"
30	4	0210-1130	WASHER 5/16 ID X 3/4 OD X 1/16 THK.
31	2	FH3/8-16X1	SCREW, FLAT HEAD MACHINE
32	3	HH3/8-16X3/4	SCREW, HEX HEAD
33	1	7707-1626	CYLINDER, AIR, 3" X 2"
34	1	7707-2050	CYLINDER, AIR, 3" X 3"
35	8	HH1/4-20X2-3/4	SCREW, HEX HEAD
36	4	HH1/4-20X1-1/2	SCREW, HEX HEAD
37	2	269P-04-02	FITTING, TBG, ELBOW, 1/4 OD X 1/4 NPT

**ASSEMBLY NUMBER: D-1110-0132**

## REAR MANIFOLD ASSEMBLY

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	C-1110-0233	REAR MANIFOLD
2	4	B-8013-54	CYLINDER, PANCAKE
3	2	B-7707-2186	BLOCK, BEARING, HEAT SEAL ROD
4	4	B-7707-925	PUSHER INSERT, 1/4"
5	1	B-7707-715	ASS'Y, GROUND WIRE, HEAT SEAL BAR
6	1	B-7707-187	RUBBER, SPONGE, 1/2"x3/4"x57"
7	1	B-7707-187	RUBBER, SPONGE, 1/2"x3/4"x57"
8	8	0243-0667	SPACER
9	2	264P-04	FITTING.TBG.TEE.1/4OD
10	4	269P-04-02	FITTING.TBG.ELB.1/4OD X 1/8NPT
11	4	272P-04-02	FITTING.TBG.TEE.1/4OD X 1/8NPT
12	12	1110-0069	SPACER, 5/8" OD X 5/8" L
13	12	FW10-A	WASHER, FLAT
14	4	FW1/4-B	WASHER, FLAT
15	8	FW5/16-A	WASHER, FLAT
16	4	FW3/8-C	WASHER, FLAT
17	4	HH1/4-20X1	SCREW, HEX HEAD
19	8	HH5/16-18X1-1/4	SCREW, HEX HEAD
20	4	HH3/8-16X2-1/4	SCREW, HEX HEAD
21	2	HH3/8-16X3-3/4	SCREW, HEX HEAD
22	12	LW10	WASHER, LOCK
23	12	RH10-32X3-1/2	SCREW, ROUND HEAD

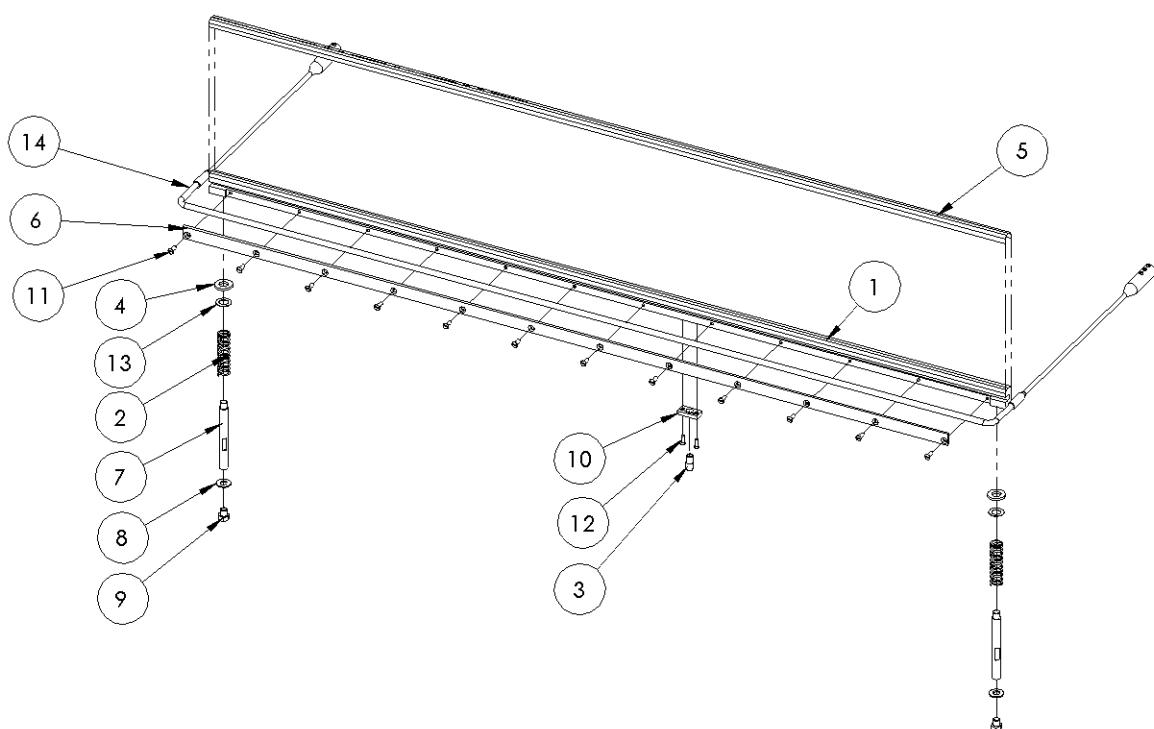
**ASSEMBLY NUMBER: C-1110-0232-1**

## HEAT SEAL BAR ASSEMBLY

ITEM NO.	-0/QTY.	-1/QTY.	PART NUMBER	DESCRIPTION
1	1	1	C-1110-0237	SEAL BAR, .48" MAN
2	2	2	7707-132	SPRING
3	1	1	7707-139	ADAPTER, THERMOCOUPLE
4	2	2	B-1110-0084	SPACER, HEAT SEAL RETRACT
5	1	1	BLK 5451-3M-1-1_2	TEFLON TAPE W/BACKING BLACK
6	1	1	B-1110-0238	RETAINER PLATE, .52"
7	2	2	B-7707-282	ROD, HEAT SEAL BAR
8	2	2	FW3/8-A	WASHER, FLAT
9	2	2	HH3/8-16X3/8	SCREW, HEX HEAD
10	1	1	B-7707-281	PLATE, THERMOCOUPLE MTG
11	12	12	FH10-32X1/2	SCREW, SLOTTED FLAT HEAD
12	2	2	FH8-32X1/2	SCREW, SLOTTED FLAT HEAD
13	2	2	FW1/2-A	WASHER, FLAT
14	1	-	1110-0243	HEATER ELEMENT, 120V
15	-	1	1110-0243-1	HEATER ELEMENT, 220V

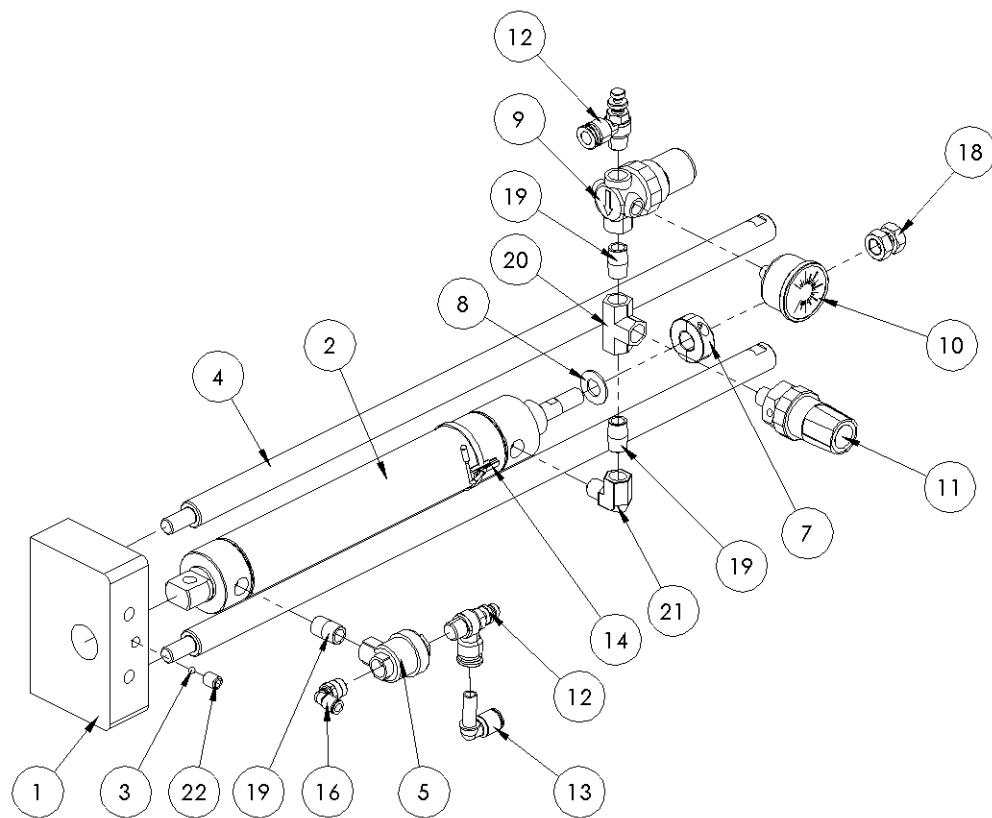
**OPTIONS:**

- 0: 120VAC
- 1: 220VAC

**ASSEMBLY NUMBER: C-1110-0236**

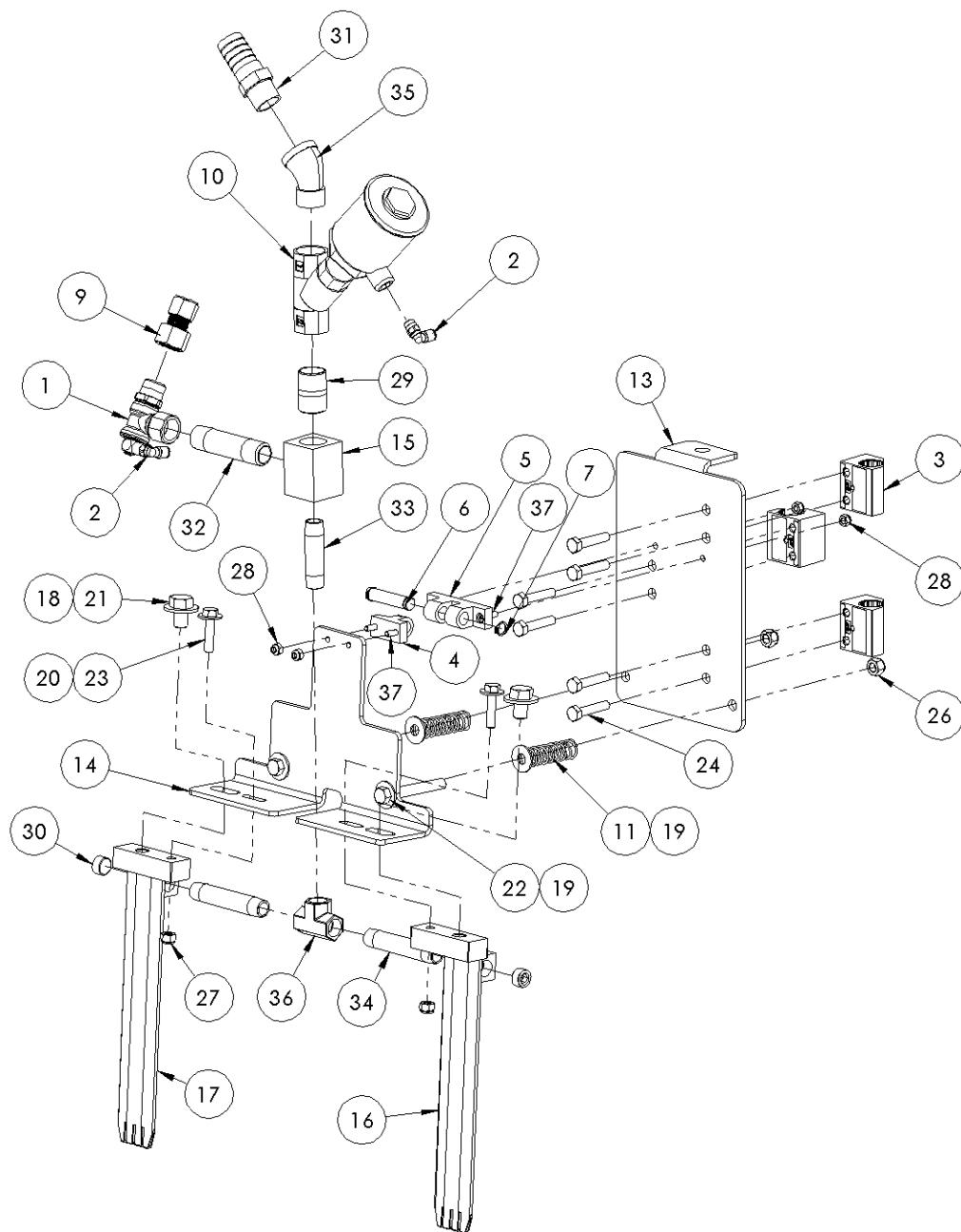
## SNORKEL GUIDE ASSEMBLY

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	B-1110-0004	CYL MTG BLOCK, SNORKEL
2	1	1110-0056	CYLINDER, AIR
3	1	7707-2765	NYLON BALL, 3/16"
4	2	B-1110-0013	LINEAR SHAFT
5	1	0243-420	VALVE, QUICK EXHAUST
7	1	1110-0109	SHAFT COLLAR, 9/16" BORE
8	1	B-7707-149	RUBBER GASKET
9	1	7707-118	REGULATOR, 1/4NPT
10	1	7707-489	GAUGE, PRESSURE
11	1	7707-252	VALVE, RELIEF 1/4 NPT
12	2	7707-2355	FLOW CONTROL, 1/4NPT TO 3/8 TUBE
13	1	0243-0571	FITTING, TBG, ELB, PUSH-IN, 3/8OD
14	1	0550-1321	SWITCH, SOLID STATE
16	1	269P-04-04	FITTING.TBG.ELB.1/4OD X 1/4NPT
18	2	JN1/2-20	NUT, JAM
19	3	NPBCN 1/4 NPT	NPB NIPPLE 1/4 NPT
20	1	NPBT 1/4 NPT	NICKEL PLATED TEE 1/4 NPT
21	1	NPBSE 1/4 NPT	NPB STREET ELBOW 1/4 NPT
22	1	ST3/8-16X1/2	SCREW, SET, CUP POINT

**ASSEMBLY NUMBER: C-1110-0041-1**

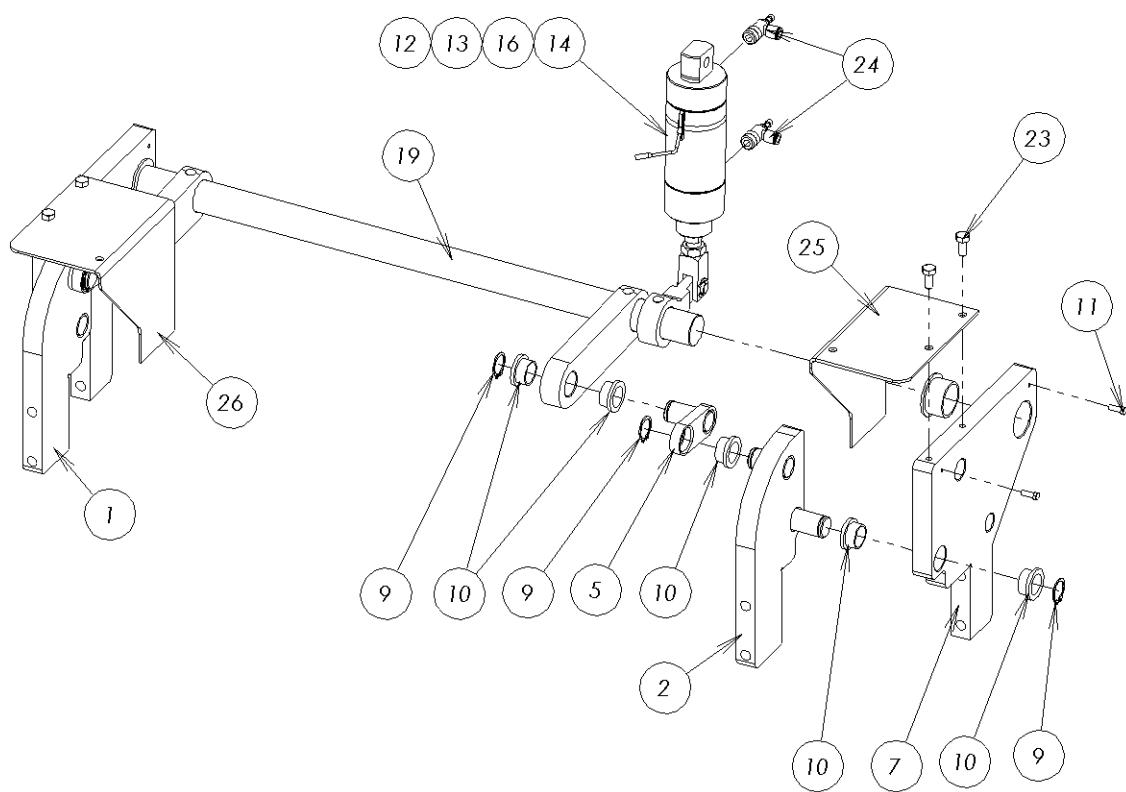
## SNORKEL ASSEMBLY

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	0210-2257	LOCKOUT VALVE
2	2	269P-04-02	FITTING, TBG, ELBOW, 1/4 OD X 1/4 NPT
3	3	1110-0027	LINEAR BEARING, 20MM
4	1	1110-0028	HINGE, FRONT
5	1	1110-0029	HINGE, REAR
6	1	1110-0030	PIN, 12MM
7	2	1110-0031	RETAINING RING, 11MM
8	1	1110-0089	FEMALE COUPLER, 3/4 NPT
9	1	1110-0156	COMPRESSION FITTING, 1/2OD X 1/2NPT
10	1	7707-2372	VALVE.PISTON.SS.0.75NPT.50MM.NC
11	2	8013-103	SPRING
12	12	9537-1432	HOSE, HIGH FLOW
13	1	B-1110-0011	SNORKEL MTG PLATE, REAR
14	1	B-1110-0012	SNORKEL MTG PLATE, FRONT
15	1	B-1110-0016	JUNCTION BLOCK
16	1	C-7707-1037	SNORKEL.A200
17	1	C-7707-1037-1	SNORKEL.A200
18	2	FW1/2-B	WASHER, FLAT
19	4	FW3/8-A	WASHER, FLAT
20	2	FW5/16-B	WASHER, FLAT
21	2	HH1/2-20X3/4	SCREW, HEX HEAD
22	2	HH3/8-16X3	SCREW, HEX HEAD
23	2	HH5/16-18X1-3/8	SCREW, HEX HEAD
24	6	HHM8X1.25X40	SCREW, HEX METRIC
25	2	HSS-16	HOSE CLAMP, S.S.
26	2	LN3/8-16	NUT, LOCK
27	2	LN5/16-18	NUT, LOCK
28	4	LN10-32	NUT, LOCK
29	1	NPBCN 3/4 NPT	NIPPLE, LG BRASS
30	2	NPBHP3/8NPT	NPB HEX PLUG, 3/8 NPT
31	2	NPBMBR1.0IDX3/4NPT	BARB, HOSE, 1"ID X 3/4NPT
32	1	NPN1/2NPTX3-1/2	1/2" CLOSED NIPPLE
33	1	NPN3/8NPT2-1/2LG	NPB NIPPLE 3/8 NPT
34	2	NPN3/8NPTX3-1/2LG	NPB NIPPLE 3/8 NPT
35	1	NPBSE3/4NPTX45DEG	STREET ELBOW
36	1	NPBT3/8NPT	NPB TEE 3/8 NPT
37	4	SH10-32X5/8	SCREW, SOCKET HEAD

**ASSEMBLY NUMBER: C-1110-0042**

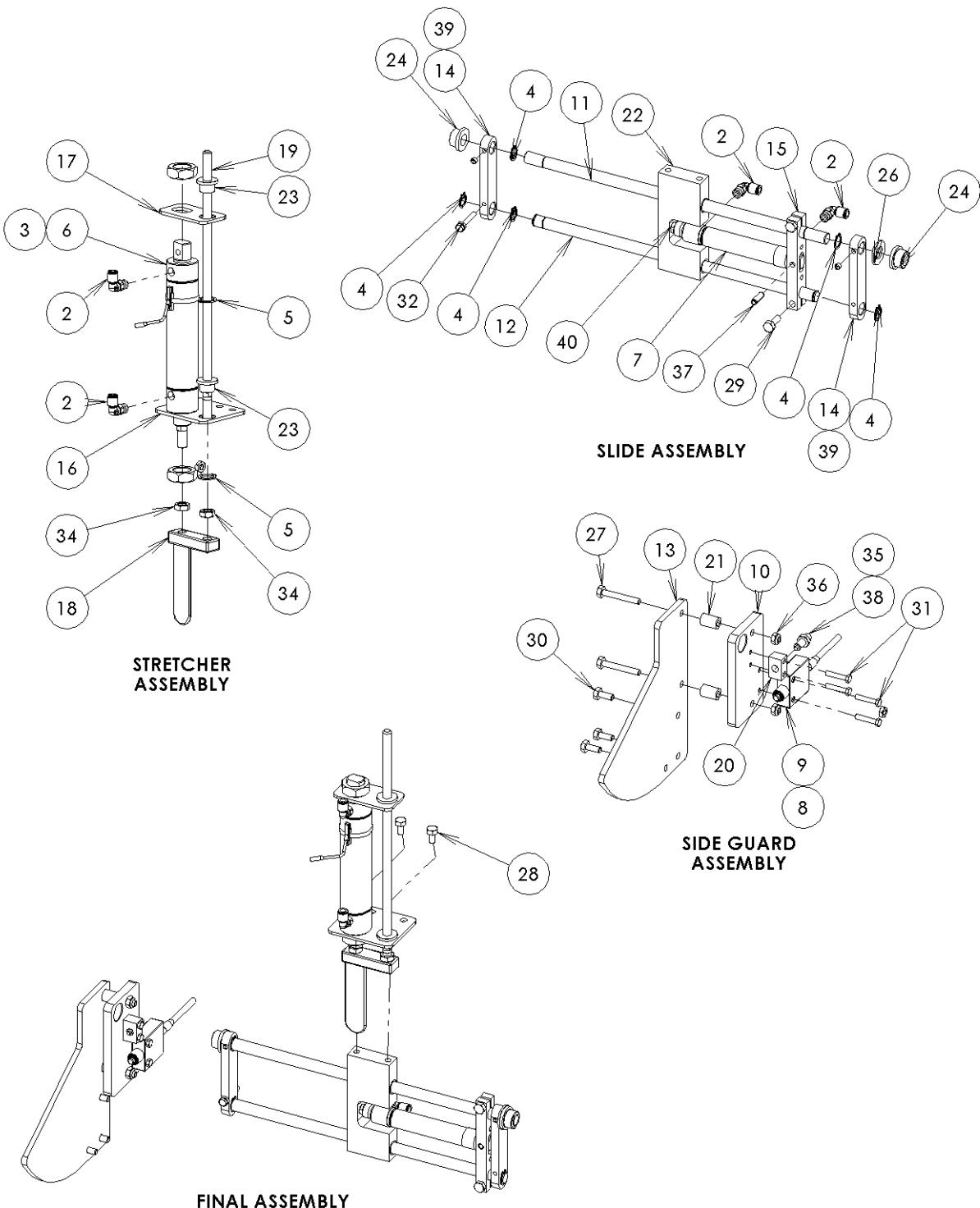
## JAW CLAMP ASSEMBLY

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	C-1110-0007L	PIVOT, FRONT LEFT
2	1	C-1110-0007R	PIVOT, FRONT RIGHT
3	2	B-1110-0008	ASS'Y, PIVOT LINK
4	2	B-1110-0006	PIVOT, REAR
5	2	1110-0034	BEARING, 1.125 BORE
7	6	7707-161	RETAINING RING
8	10	703-01009-016	BEARING, FLANGE 3/4 X 7/8 X 1/2
11	4	HH8-32X1/2	SCREW, HEX HEAD
12	1	8013-1788	CLEVIS.CYL.2.00BORE.SS
13	1	1110-0033	CYLINDER, 2" BORE X 1.5" STROKE
15	1	0550-1321	SWITCH, SOLID STATE
16	1	C-1110-0128	ASS'Y, PIVOT SHAFT
17	4	HH1/4-20X5/8	SCREW, HEX HEAD
18	2	7665-56-14	FLOW CONTROL, 1/4 NPT TO 1/4 TUBE
19	1	B-1110-0145	PIVOT GUARD, RIGHT, ML
20	1	B-1110-0144	PIVOT GUARD, LEFT, ML

**ASSEMBLY NUMBER: C-1110-0043-1**

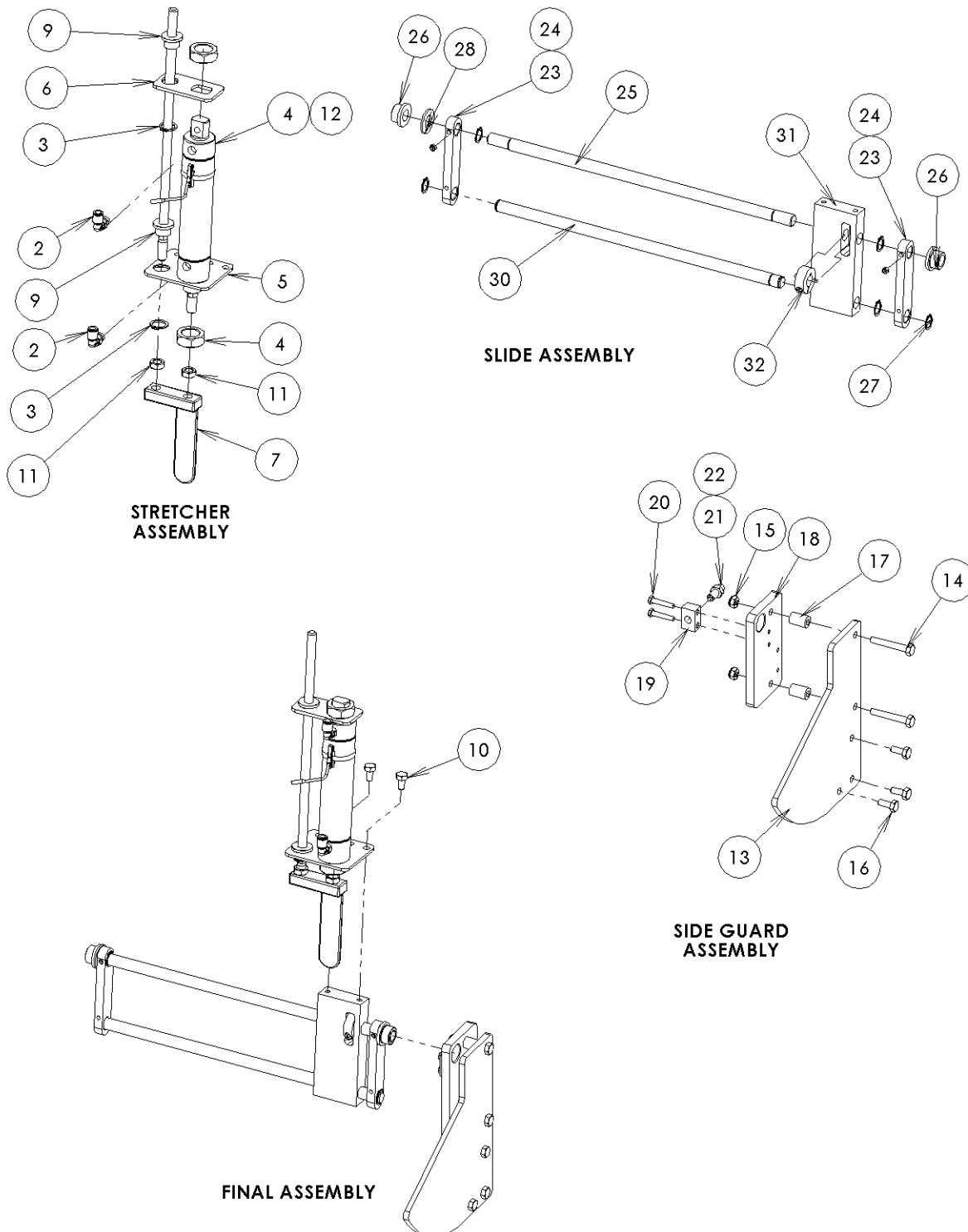
## BAG STRETCHER ASSEMBLY, LEFT

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	264P-04	FITTING.TBG.TEE.1/4OD
2	4	269P-04-02	FITTING.TBG.ELB.1/4OD X 1/8NPT
3	1	0550-1321	SWITCH, SOLID STATE
4	5	5100-50H	CLIP, RETAINER
5	2	5555-62H	RING, RETAINING
6	1	7707-979	CYLINDER, AIR
7	1	7707-1651	CYLINDER, AIR
8	1	7707-1741	CABLE, 5-PIN, 10M
9	1	7707-2692	LIMIT SWITCH, NO CABLE
10	1	B-1110-0018	BAG STRETCHER MOUNT, INBOARD
11	1	B-1110-0242	SHAFT, GUIDE TOP
12	1	B-1110-0241	SHAFT, GUIDE BOTTOM
13	1	B-1110-0066	BAG STRETCHER MOUNT, OUTBOARD
14	2	B-7707-953	ARM, PIVOT
15	1	B-7707-955	BAR, ADJUST
16	1	B-7707-956	BRACKET, CYLINDER
17	1	B-7707-957	PLATE, GUIDE
18	1	B-7707-958	BAR, STRETCHER
19	1	B-7707-964	ROD, GUIDE
20	1	B-7707-965	SPACER, VLİER PIN BLOCK
21	2	B-7707-975	SPACER, 1/4"ID X 1/2"OD X 3/4"
22	1	B-7707-2226	ASS'Y, SLIDE BLOCK, BAG STRETCHER
23	2	FB610-4	BEARING, FLANGE
24	2	FP812-4	BEARING, FLANGED
25	1	FW1/2-A	WASHER, FLAT
26	1	FW1/2-B	WASHER, FLAT
27	2	HH1/4-20X1-3/4	SCREW, HEX HEAD
28	2	HH1/4-20X1/2	SCREW, HEX HEAD
29	2	HH1/4-20X3/4	SCREW, HEX HEAD
30	3	HH1/4-20X5/8	SCREW, HEX HEAD
31	4	HH10-32X1	SCREW, HEX HEAD
32	1	HH10-32X1-1/4	SCREW, HEX HEAD
33	1	HN10-32	NUT, HEX
34	2	JN3/8-24	NUT, JAM
35	1	JN5/16-18	NUT, JAM
36	2	LN1/4-20	NUT, LOCK
37	1	RP1/4X3/4	PIN, ROLL
38	1	SSS-D56	PIN, VLİER
39	2	ST1/4-20X3/16	SCREW, SET, CUP POINT
40	1	JN1/4-28	NUT, JAM

**ASSEMBLY NUMBER: C-1110-0239**

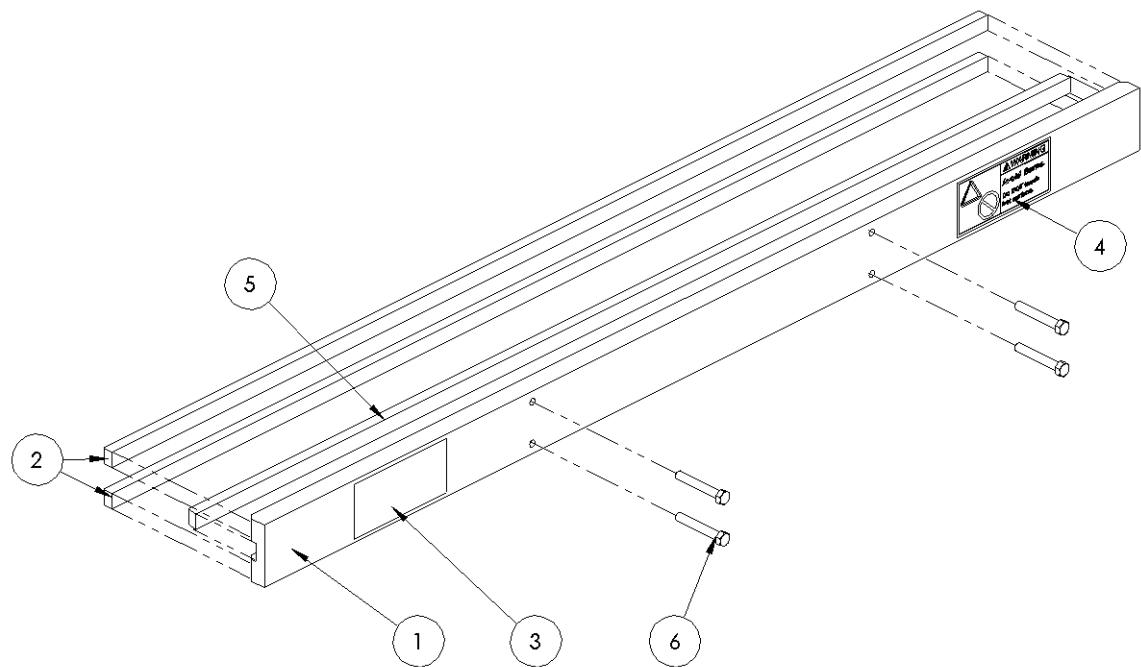
## BAG STRETCHER ASSEMBLY, RIGHT

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	264P-04	FITTING.TBG.TEE.1/4OD
2	2	269P-04-02	FITTING.TBG.ELB.1/4OD X 1/8NPT
3	2	5555-62H	RING, RETAINING
4	1	7707-979	CYLINDER, AIR
5	1	B-7707-956	BRACKET, CYLINDER
6	1	B-7707-957	PLATE, GUIDE
7	1	B-7707-958	BAR, STRETCHER
8	1	B-7707-964	ROD, GUIDE
9	2	FB610-4	BEARING, FLANGE
10	2	HH1/4-20X1/2	SCREW, HEX HEAD
11	2	JN3/8-24	NUT, JAM
12	1	0550-1321	SWITCH, SOLID STATE
13	1	B-1110-0066	BAG STRETCHER MOUNT, OUTBOARD
14	2	HH1/4-20X1-3/4	SCREW, HEX HEAD
15	2	LN1/4-20	NUT, LOCK
16	3	HH1/4-20X5/8	SCREW, HEX HEAD
17	2	B-7707-975	SPACER, 1/4"ID X 1/2"OD X 3/4"
18	1	B-1110-0018	BAG STRETCHER MOUNT, INBOARD
19	1	B-7707-965	SPACER, VPLIER PIN BLOCK
20	2	HH10-32X1	SCREW, HEX HEAD
21	1	SSS-D56	PIN, VPLIER
22	1	JN5/16-18	NUT, JAM
23	2	B-7707-953	ARM, PIVOT
24	2	ST1/4-20X3/16	SCREW, SET, CUP POINT
25	1	B-1110-0242	SHAFT, GUIDE TOP
26	2	FP812-4	BEARING, FLANGED
27	5	5100-50H	CLIP, RETAINER
28	1	FW1/2-B	WASHER, FLAT
29	1	FW1/2-A	WASHER, FLAT
30	1	B-1110-0241	SHAFT, GUIDE BOTTOM
31	1	B-7707-2225	BLOCK, FIXED, BAG STRETCHER
32	1	B-7707-963	CLAMP, COLLAR

**ASSEMBLY NUMBER: C-1110-0340**

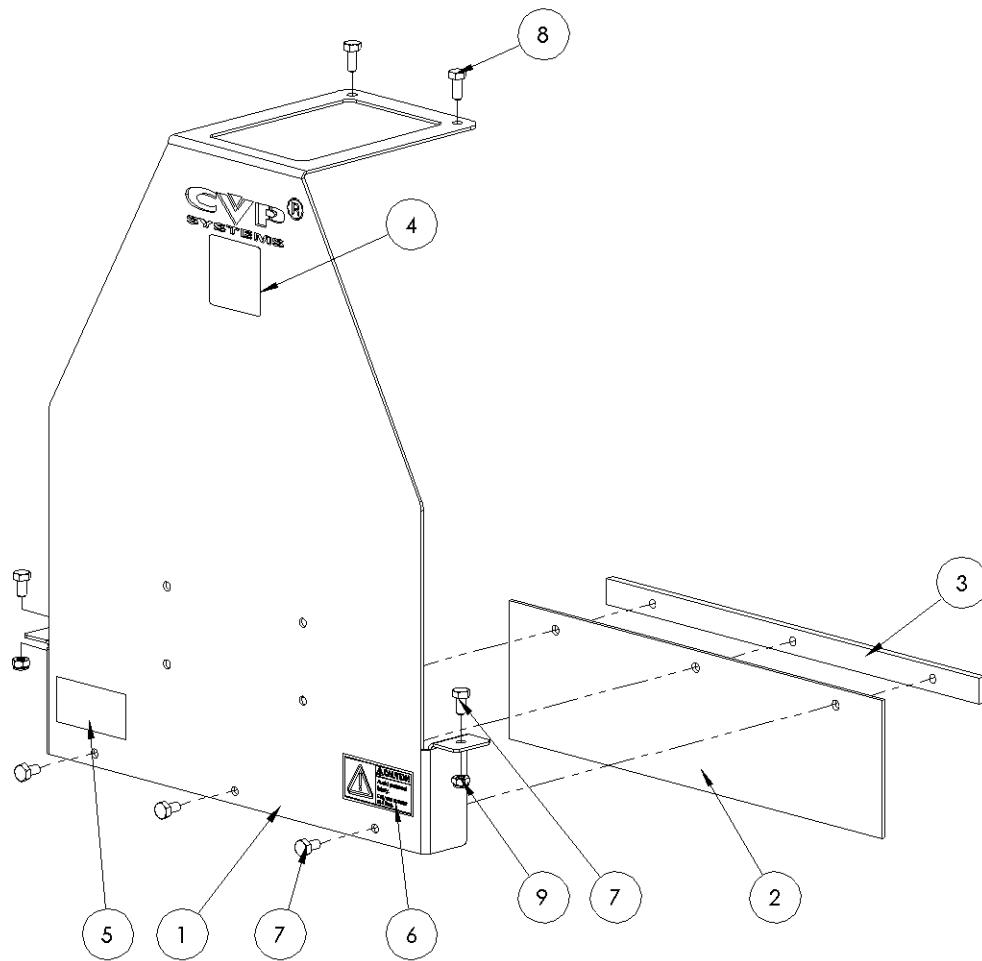
## FRONT MANIFOLD ASSEMBLY

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	C-1110-0235	FRONT MANIFOLD
2	2	B-7707-187	RUBBER, SPONGE, 1/2"x3/4"x57"
3	1	7707-2360	LABEL, DANGER - MANIFOLD
4	1	7707-2359	LABEL, DANGER HOT - AVOID BURNS
5	1	B-7707-182	SILICONE RUBBER, ORANGE
6	4	HH3/8-16X2-1/2	SCREW, HEX HEAD

**ASSEMBLY NUMBER: C-1110-0234**

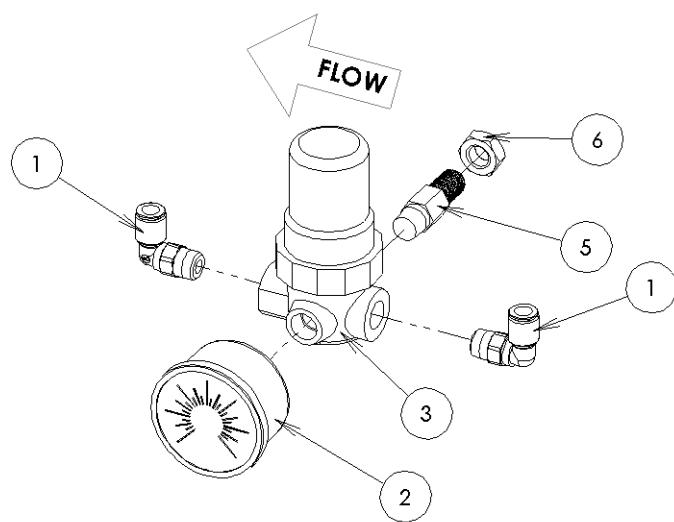
## SNORKEL GUARD ASSEMBLY

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	C-1110-0218	GUARD, SNORKEL
2	1	B-1110-0095	FLAP, SNORKEL GUARD
3	1	B-1110-0094	RETAINER, SNORKEL GUARD
4	1	1110-0078	LABEL, MADE IN USA
5	1	8013-2107	WARNING LABEL, CRUSH HAZARD
6	1	8013-2106	LABEL, CAUTION - ONE OPERATOR
7	5	HH1/4-20X1/2	SCREW, HEX HEAD
8	2	HH1/4-20X5/8	SCREW, HEX HEAD
9	2	LN1/4-20	NUT, LOCK

**ASSEMBLY NUMBER: B-1110-0220**

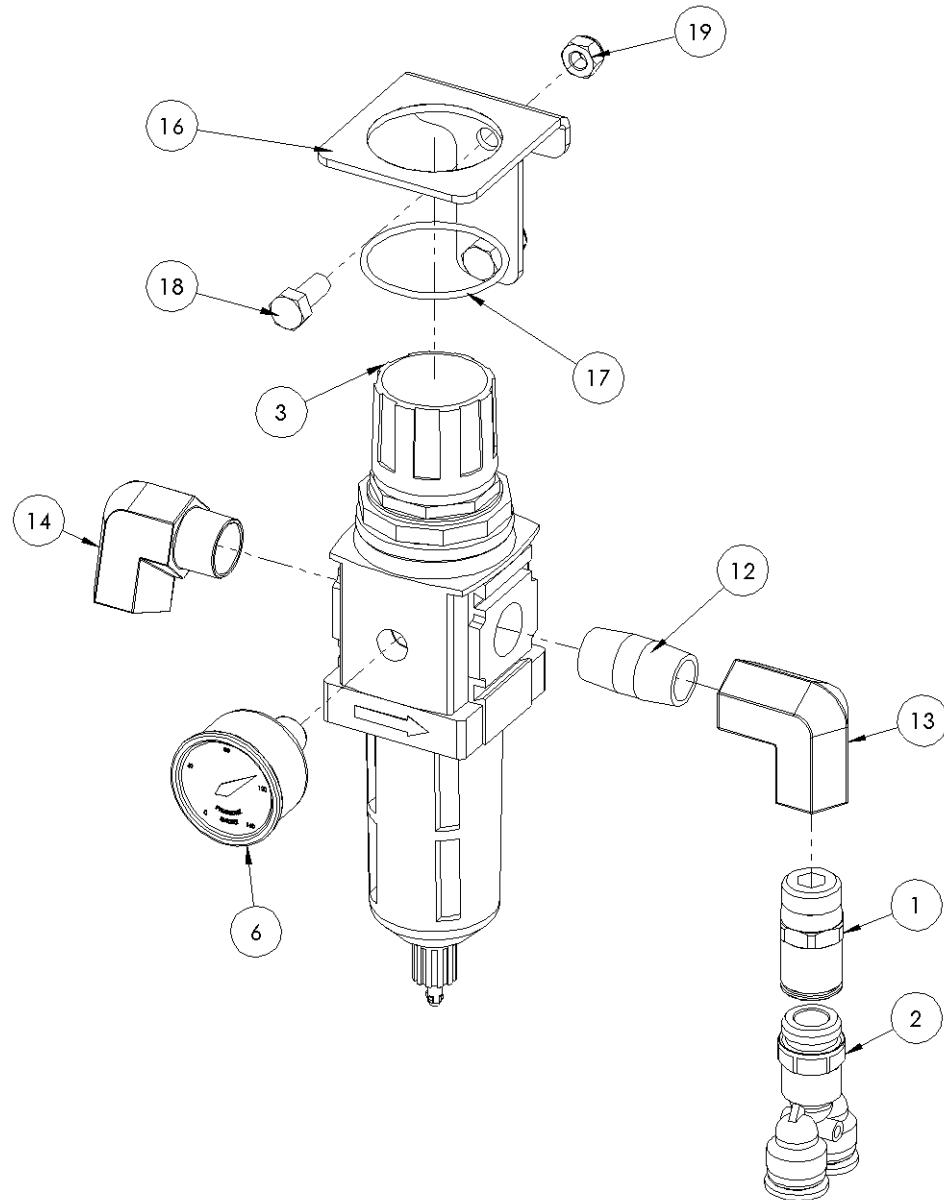
## REGULATOR ASSEMBLY, BAG STRETCHER

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	2	269P-04-02	FITTING, TBG, ELBOW, 1/4 OD X 1/4 NPT
2	1	7707-489	GAUGE, PRESSURE
3	1	7707-1098	REGULATOR, 1/8NPT
4	2	7770-56-00	FLOW CONTROL, 1/4"
5	1	B-8013-2060	FRL MTG. STUD
6	1	JN3/8-16	NUT,JAM

**ASSEMBLY NUMBER: B-1110-0143**

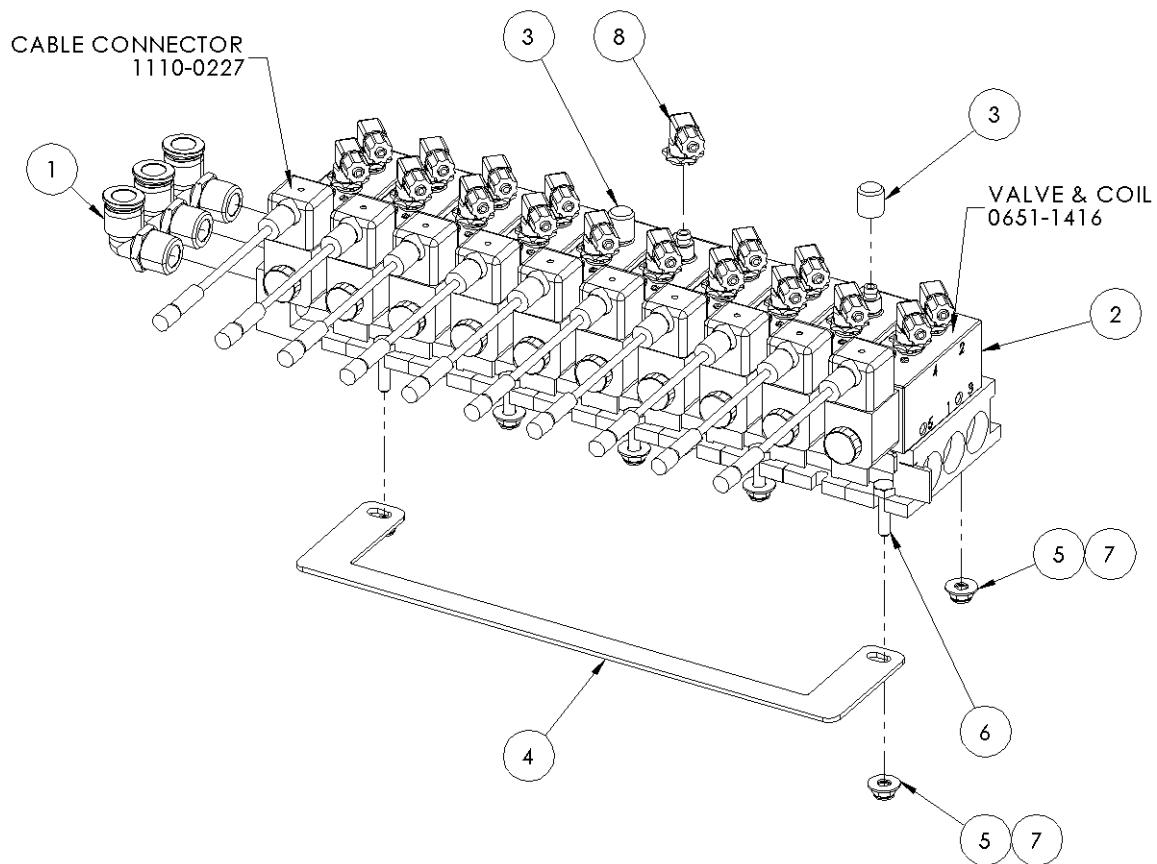
## FILTER/REGULATOR ASSEMBLY

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	268P-08-08	FITTING.TBG.STR.1/2OD X 1/2NPT
2	1	273P-08-08	FITTING.TBG.WYE.1/2OD
3	1	0651-1529	FILTER, REG, 1/2NPT, W/AUTO DRAIN
6	1	7501-162	GAUGE.PRESSURE.0.25NPT
12	1	NPBCN 1/2 NPT	NPB CLOSED NIPPLE 1/2 NPT
13	1	NPBE1/2NPT	ELBOW, 1/2NPT
14	1	NPBSE1/2NPT	NPB STREET ELBOW 1/2 NPT
15	-	PH8-32x7/8	SCREW, PAN HEAD
16	1	B-7707-3077	REG MTG BRKT
17	1	7707-3108	O-RING, #134
18	2	HH5/16-18X3/4	SCREW, HEX HEAD
19	2	LN5/16-18	NUT, LOCK

**ASSEMBLY NUMBER: B-1110-0047-1**

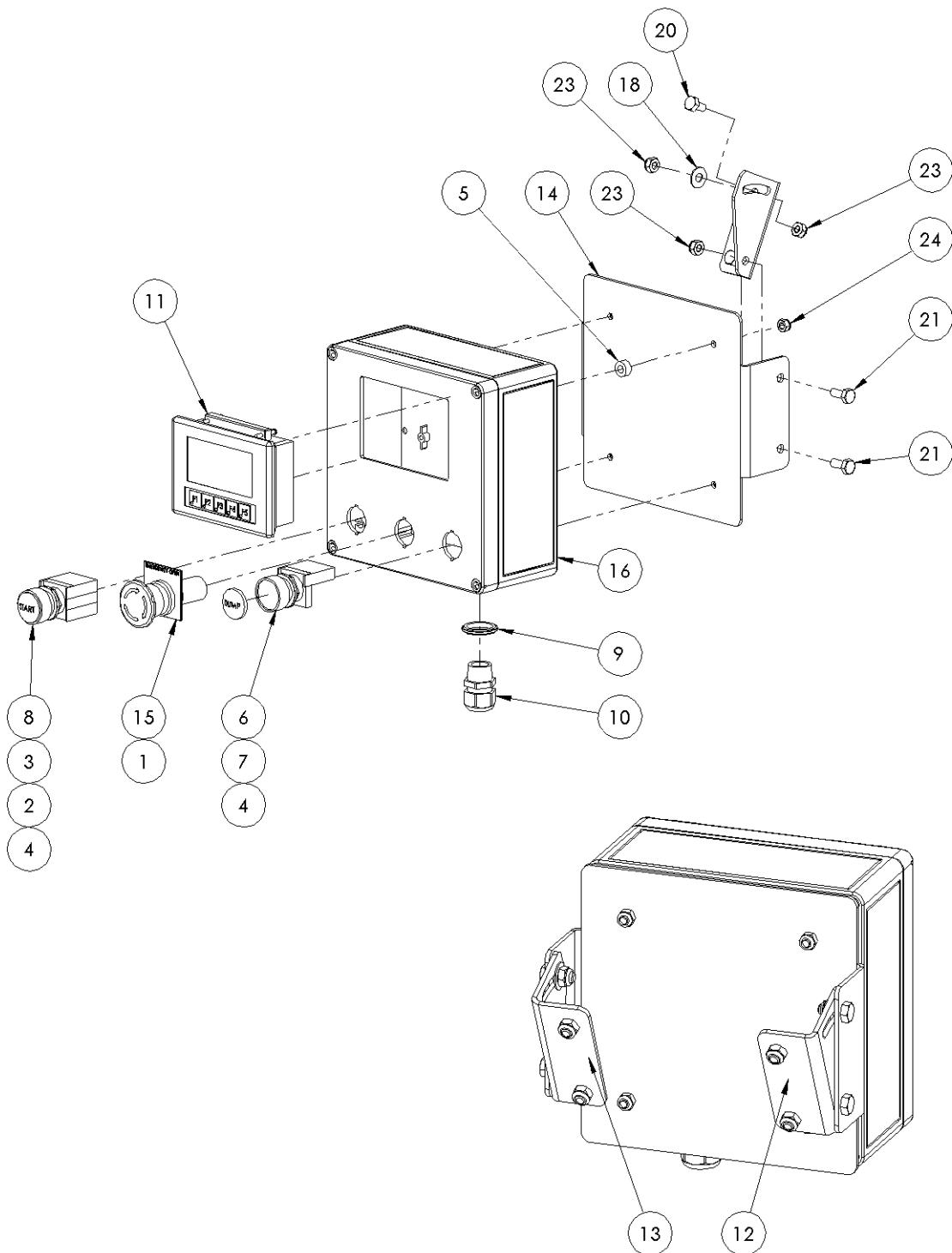
## VALVE BANK ASSEMBLY

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	3	269P-08-08	FITTING.ELB.1/2 NPT TO 1/2 OD
2	1	1110-0155	ASS'Y, VALVE, 10 BANK
3	2	9130-886	CAP.VALVE
4	1	B-1110-0213	WIRE TIE BAR
5	10	FW1/4-A	WASHER, FLAT
6	10	HH1/4-20X1	SCREW, HEX HEAD
7	10	LN1/4-20	NUT, LOCK
8	18	P68949	ADAPTER.VLV.ELB.1/4OD TUBE

**ASSEMBLY NUMBER: C-1110-0212**

## USER INTERFACE ASSEMBLY

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	0550-1154	EMERGENCY STOP
2	1	0651-1516-1	24V LIGHT UNIT
3	1	0651-1519-1	NC CONTACT
4	2	0651-1520-1	NO CONTACT
5	4	1110-0086	SPACER, 1/4 ID X 1/2 OD X 1/4L
6	1	1110-0215	PUSH BUTTON, BUTTONLESS
7	1	1110-0216	BUTTON, ETCHEDED, DUMP
8	1	1110-0217	PUSHBUTTON, ETCHEDED, START
9	1	5262	SEALRING
10	1	9537-1194	CORD GRIP, 1/2", 2 HOLE DOME
11	1	9537-1753-P	OPERATOR INTERFACE
12	1	B-1110-0141	MTG BRKT A, USER INTERFACE
13	1	B-1110-0195	MTG BRKT, USER INTERFACE, RH
14	1	B-1110-0214	MTG PLATE, HMI
15	1	B-9537-1101	LEGEND PLATE, EMERGENCY OPEN
16	1	B-9743-1513	HMI ENCLOSURE, A200C ML HEAD
17	1	DV-1000CBL	CABLE INTERFACE
18	2	FW1/4-A	WASHER, FLAT
19	1	FW10-A	WASHER, FLAT
20	4	HH1/4-20X1/2	SCREW, HEX HEAD
21	4	HH1/4-20X5/8	SCREW, HEX HEAD
22	15	JZ7C20-AWG	7 COND. CABLE
23	8	LN1/4-20	NUT, LOCK
24	4	LN10-32	NUT, LOCK
25	4	PH10-32X5/16	SCREW, PAN HEAD
26	3	WBL 18AWG	BLUE WIRE, 18GA
27	3	WBR 18AWG	BROWN WIRE, 18GA, 5' LG

**ASSEMBLY NUMBER: C-9743-1514**

## MAIN ELECTRICAL ENCLOSURE ASSEMBLY

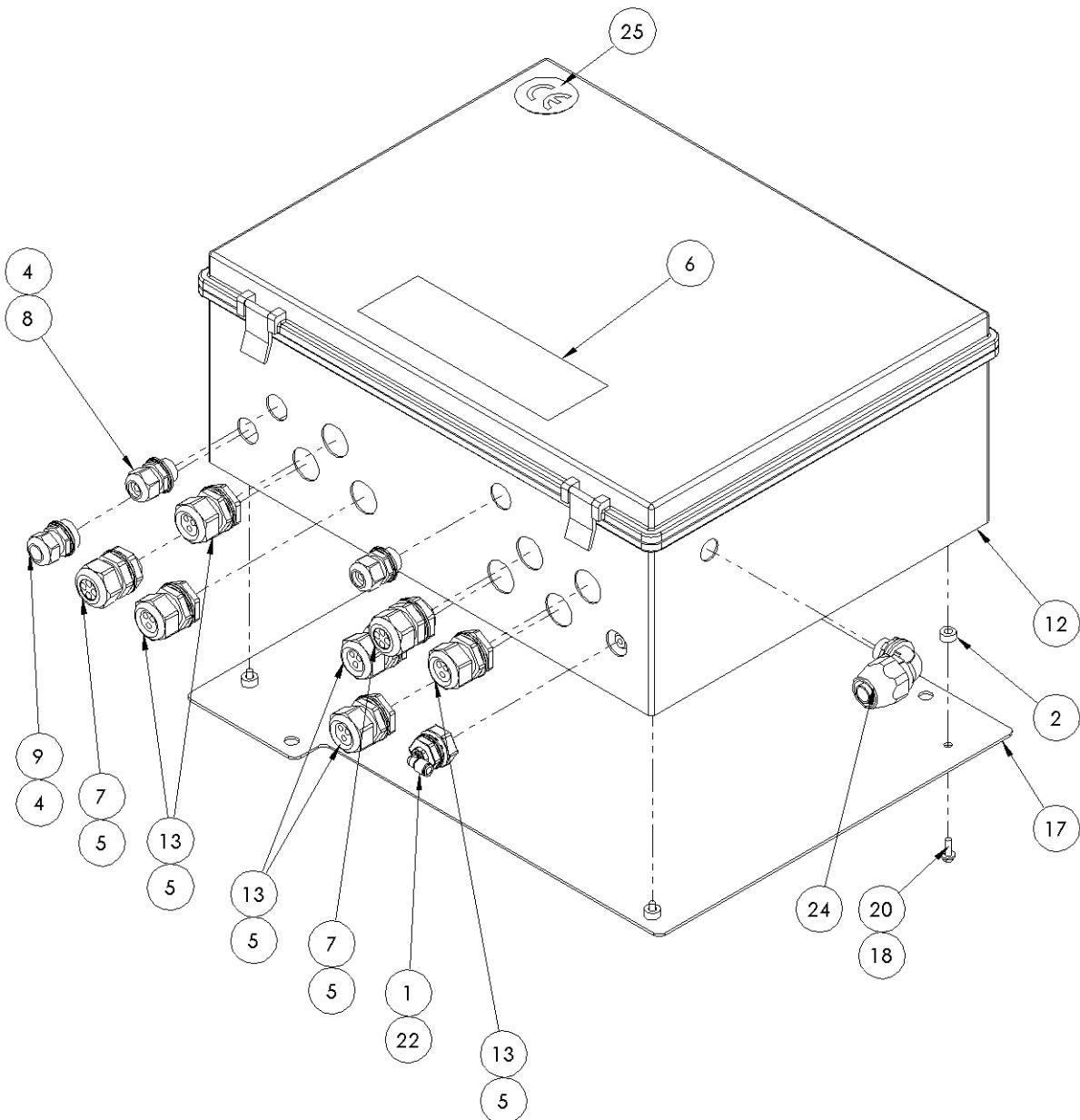
ITEM NO.	-0/QTY.	-1/QTY.	PART NUMBER	DESCRIPTION
1	1	1	269P-04-04	FITTING.TBG.ELB.1/4OD X 1/4NPT
2	4	4	1110-0086	SPACER, 1/4 ID X 1/2 OD X 1/4L
3	1	1	4/14/3109	ELBOW, 5/32OD X 1/4NPT
4	5	5	5262	SEALRING
5	7	7	5263	SEAL, 3/4" RING
6	1	1	7707-532	LABEL, DANGER HIGH VOLTGE
7	2	2	7707-1633	CORD GRIP.3/4NPT.4-HOLE.NYL
8	2	2	7707-1634	CORD GRIP, 1/2", 1 HOLE DOME
9	2	2	7707-1705	CORD GRIP, 1/2"
10	2	2	7707-2135	CONNECTOR, FEMALE, 3M
11	1	1	7707-2892	TEMP CONTROLLER
12	1	1	7707-2931	ENCLOSURE, PLASTIC
13	5	5	9537-1193	CORD GRIP.3/4NPT.3-HOLE.NYLON
14	1	-	9537-1840	RECEPTICLE 120V
15	1	-	9537-1841	PLUG 120V
16	2	2	B-1110-0210	ADAPTER PLATE, TEMP CONTROLLER
17	1	1	B-9743-1511	ENCLOSURE MTG PLATE
18	4	4	FW10-A	WASHER, FLAT
19	4	4	HH1/4-20X5/8	SCREW, HEX HEAD
20	4	4	HH10-32X5/8	SCREW, HEX HEAD
21	4	4	LN1/4-20	NUT, LOCK
22	1	1	NPBBH 1/4 NPT-15/16 LG	NPB BULKHEAD ADAPT 1/4 NPT
23	1	1	RC 14-3	CORD BLACK TYPE SO
24	1	1	ST9050	1/2" SEALTITE CON, 90DEG
25	1	1	B-7707-1901	LABEL, CE
26	-	1	9537-1842	RECEPTICLE 220V
27	-	1	9537-1843	PLUG 220V

**OPTIONS:**

-0: 120VAC

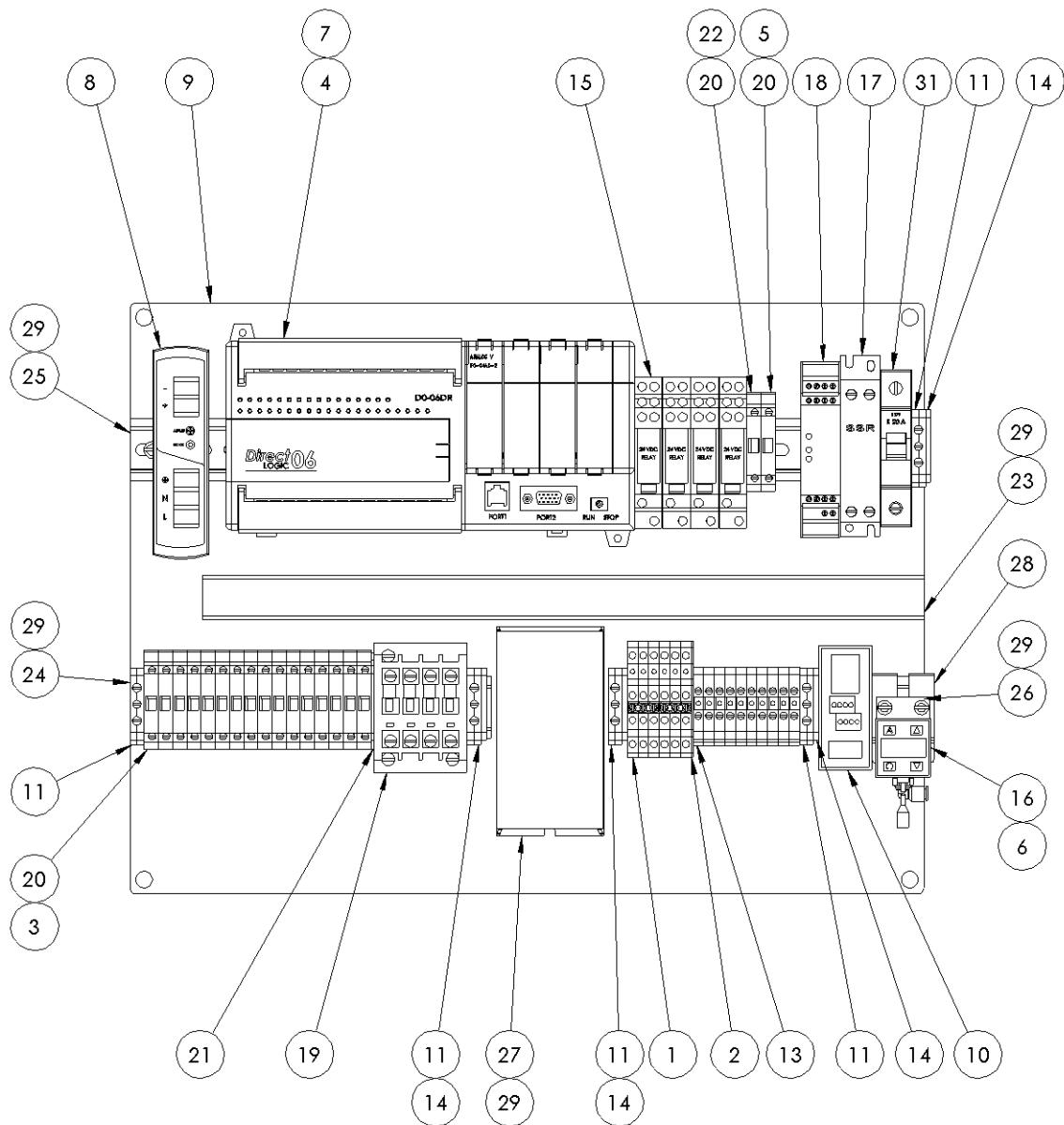
-1: 220VAC

**ASSEMBLY NUMBER: C-1110-0211**



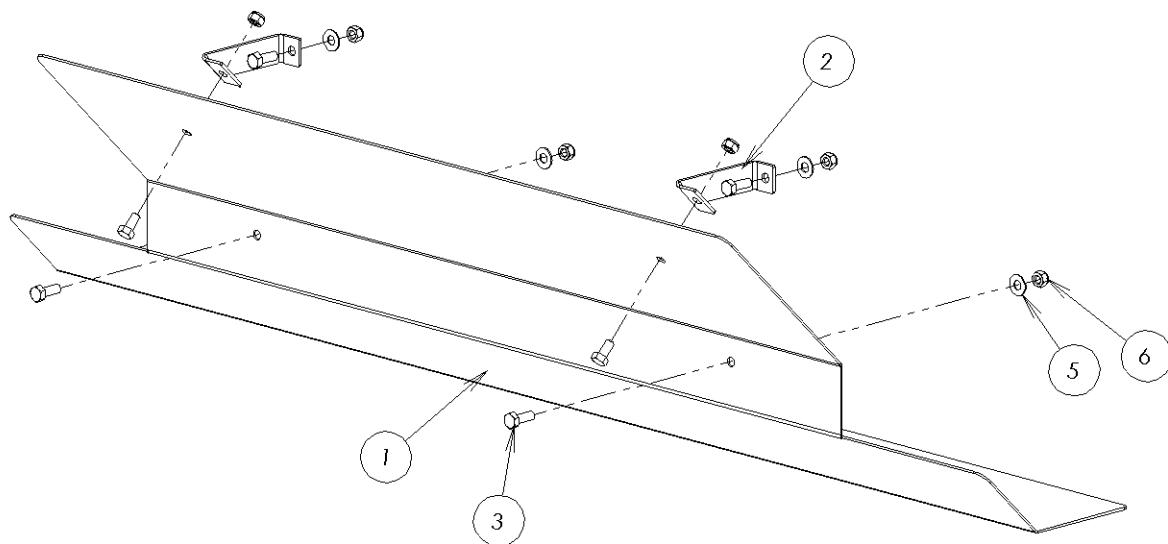
## ELECTRICAL PANEL ASSEMBLY

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	6	0210-2442	TERM BLOCK.M 4/6.D2.GRAY
2	1	0210-2443	TERM BLOCK END.M 4/6.D2.GRAY
3	16	217.315	FUSE.5 X 20MM.0.315A
4	1	0550-1201-P	PLC, DL06, 16 RELAY OUT, W/ PROGRAM
5	1	2173.15	FUSE.5 X 20MM.3.15A
6	1	4/11/3109	FITTING.TBG.ELB.5/32OD X 1/8NPT
7	1	7707-2752	ANALOG VOLTAGE MODULE
8	1	7707-2794	POWER SUPPLY, 60W
9	1	7707-2932	ELECTRICAL PANEL
10	1	7707-3075	TERM BLOCK, 8 POLE TO RJ45
11	5	8013-429	TERM BLOCK.8MM.22-8AWG.GRN/YEL
12	2	8013-432	JUMPER ENTRELEC, 3 POLE
13	10	8013-434	TERM BLOCK.6MM.22-10AWG.GRAY
14	4	8013-437	TERM BLOCK.END SECTION.GRAY
15	4	9537-1023	RELAY OMRON, 24VDC
16	1	9537-1217	SWITCH.VACUUM.DIGITAL.0-29Hg.PNP
17	1	9537-1323	SOLID STATE RELAY
18	1	9537-1426	RELAY, 2 HAND SAFETY
19	1	9537-1552	CONTACTOR W/NO 4TH POLE
20	18	115131.06	FUSE BLOCK.8MM.5 X 25MM.GRAY
21	1	118624.27	FUSE BLOCK.END SECTION.GRAY
22	1	218004	FUSE.5 X 20MM.4.00A
23	1	B-0210-2254	DUCT.WIRING.GRAY.1.00W X 3.00H X 16LG
24	1	B-1110-0222	DIN RAIL, 8"
25	1	B-1110-0223	DIN RAIL, 17 3/4"
26	1	B-1110-0224	DIN RAIL, 7"
27	1	B-9537-1445	WIREWAY 5 3/16"
28	2	FM4	DIN CLIP
29	12	PH10-32X5/16	SCREW, PAN HEAD
30	2	PHM4X0.7X8	PAN HEAD SCREW METRIC SLOTTED
31	1	S271-K20	20A 1 POLE CB

**ASSEMBLY NUMBER: D-1110-0221**

## DRIP PAN ASSEMBLY

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	C-1110-0136	DRIP PAN
2	2	B-1110-0147	MTG. BRKT, DRIP PAN
3	4	HH5/16-18X7/8	SCREW, HEX HEAD
4	2	HH5/16-18X5/8	SCREW, HEX HEAD
5	4	FW5/16-A	WASHER, FLAT
6	6	LN5/16-18	NUT, LOCK

**ASSEMBLY NUMBER: B-1110-0137**



# **APPENDIX: A**

# **PLC INTERFACE**



# MAIN MESSAGE SCREEN

## General Information

The operator interface is located on the front panel. The screen on the interface prompts the operator through each step of the vacuum, gas and sealing cycle. The following messages will appear:

1. WAITING FOR LOAD
2. PRESS STRETCHER BAR
3. PRESS START BUTTONS
4. VACUUMING, GASSING
5. SEALING, COOLING
6. DISCHARGE

The operator interface communicates with the PLC via a serial cable running from the rear of the interface to port 1 on the PLC. The cable has an RJ12 phone jack type connector on each end. For communication to take place, the mode switch on the PLC must be in the TERM position (stands for TERMINAL) and the RUN indicator must be lit. When the PLC mode switch is in TERM position, program presets and timers may be changed via the interface.

Putting the mode switch into RUN position forces the PLC into RUN mode. However, no program changes can be made via the interface until switching back to TERM. Error code "E525" appearing on the screen indicates that the PLC mode switch is not in the TERM position.

## Display Areas

The upper display area shows operator messages and prompts. Each Pack sequence prompts the operator through each step. For example, at the start of a new Pack sequence, the "WAITING FOR LOAD" message will appear until a box is pushed onto the shelf. Then the operator will be prompted to "PRESS STRETCHER BAR" followed by "PRESS START BUTTONS", etc.

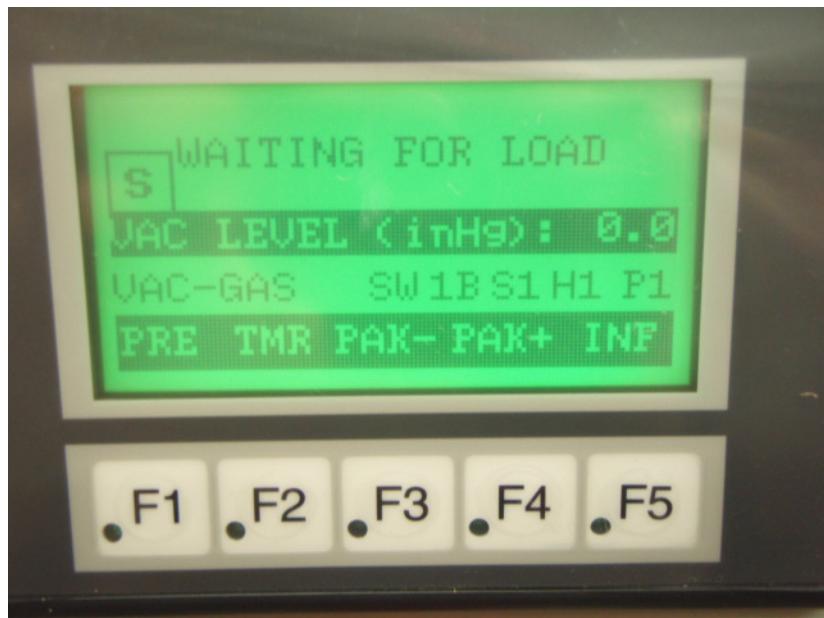
On the second line of the screen is the actual vacuum level read at the snorkels in "inHg" units. In operation, the screen background color will change from green to amber when the vacuum level reaches setpoint. Snorkels will continue vacuuming for the vacuum extend time setting (if any) after reaching setpoint, then inject gas for the programmed time.

The third line of the screen shows currently selected pack information. There are 6 pack settings. Information is displayed in order on the line as follows: 1) Description, 2) Vac Switch, 3) # Bags per box, 4) Bag Stretcher position, 5) Head position, 6) Pack number.

1. Pack 1-3 are vacuum - gas programs. Pack 4 is seal only, Pack 5 is bypass mode and Pack 6 is clean mode.

2. Will show "SW" if the vacuum switch bit is enabled or "TM" if it is disabled.
3. Will show "1B" if the current pack is set for 1 bag per box or "2B" if it is set up for 2 bags per box.
4. Will show "S1" if the current pack is set for stretcher position 1 or "S2" if it is set for stretcher position 2.
5. Will show "H1" if the current pack is set so the head will not adjust after a box is loaded. It will show "H2" if the current pack is set so the head drops one position after a box is loaded. It will show "H3" if the current pack is set so the head drops two positions after a box is loaded.
6. P1 thru P6 indicate pack number 1 thru 6.

The lower display line shows the menus that can be jumped to by pressing either that area on the lower display or the function key below it.

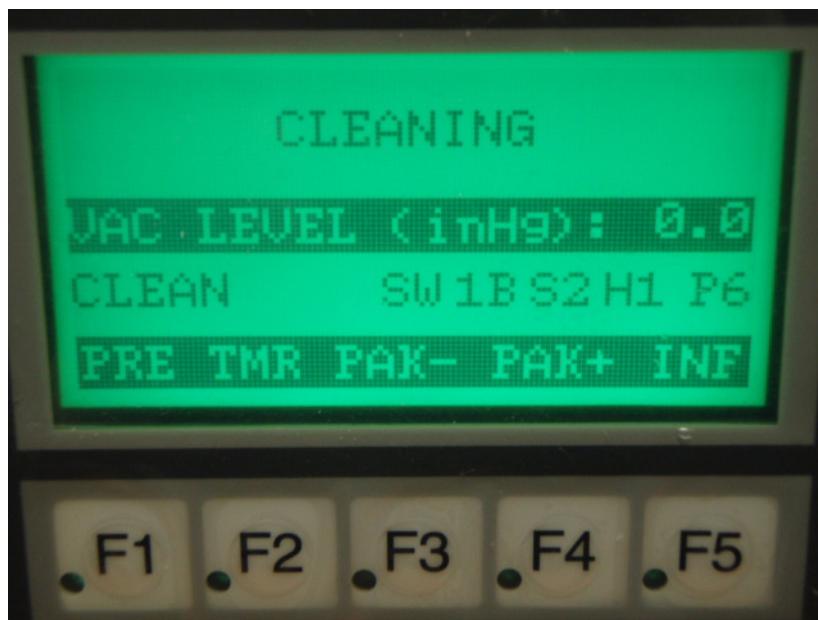


**Figure A-1.** Main Message Screen

<b>Function Keys</b>	Press the PRE key (F1) and the display jumps to the PRESET menu. Press the TMR key (F2) and the display jumps to the TIMER menu. Press the PAK- key (F3) to go down one Pack setting. Press the PAK+ key (F4) to go up one Pack setting. Press the INF key (F5) for more information and the Seal Count Menu.
----------------------	---

**Clean Mode**

When Pack 6 is selected, the machine is in CLEAN MODE.



**Figure A-2.** Clean Mode Screen

Before entering CLEAN MODE, disconnect the hose to the Vacuum generator at the clear sediment bowl. Install the hose adapter at the sediment bowl and hook up hot water there. Position a barrel below the snorkels to catch water.

Enter Pack 6. Snorkels will drop. Turn on the hot water supply. Water will flush through the snorkels for the time programmed (CLEAN TIME in the preset menu).

---

**Note:** Swiping the Start buttons during the flush will start a pulsing action (3 seconds ON/ 3 seconds OFF) with the water for the rest of the cycle.

---

At the end of the CLEAN TIME, pulsing action will stop. Water will continue to flush through the snorkels until manually shut off. Shut off water, empty bowl, drain and reattach hose to vacuum supply before leaving pack 6.

---

**Note:** In CLEAN MODE the vacuum pump is disabled.

---

**Bypass Mode**

When pack 5 is selected, the machine is in BYPASS mode. Select BYPASS mode to automatically dump all loaded boxes to the lower conveyor as soon as they are seen on the shelf and the exit is clear.

---

**Note:** Only use BYPASS mode if ALL incoming packages need to be bypassed. If only select boxes need to be bypassed, use the DUMP button on the front panel.

---

**Seal Only Mode**

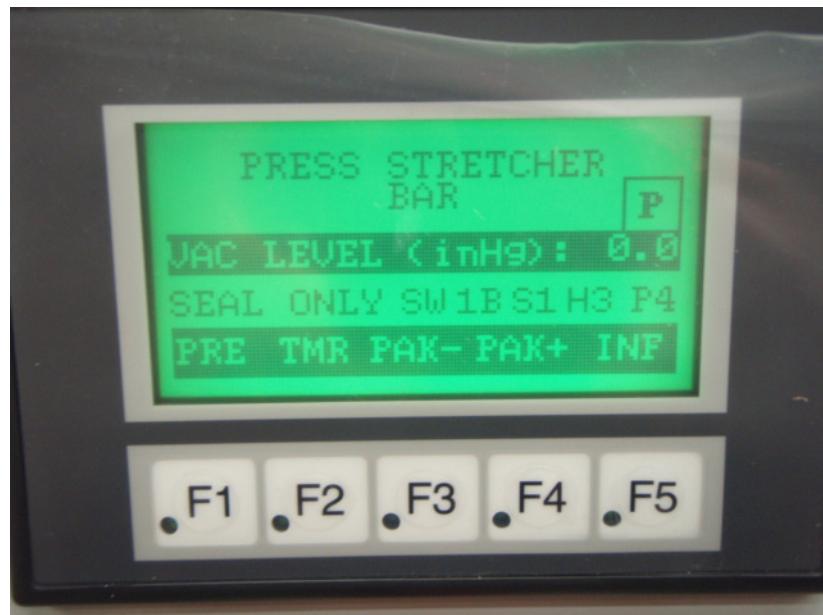
When pack 4 is selected, the machine is in SEAL ONLY mode. Seal parameters of the last pack are remembered but the vacuum and gassing steps will be skipped. Snorkel will be retracted.

Use this mode for testing seals on bags or for packing items not requiring modified atmosphere. This mode is also useful to put a double seal on a finished bag.

---

**Hint:** Press the S key in the main menu at any time to jump to Seal Only from the current pack. Press the P key from the Seal Only Pack to return to the last pack.

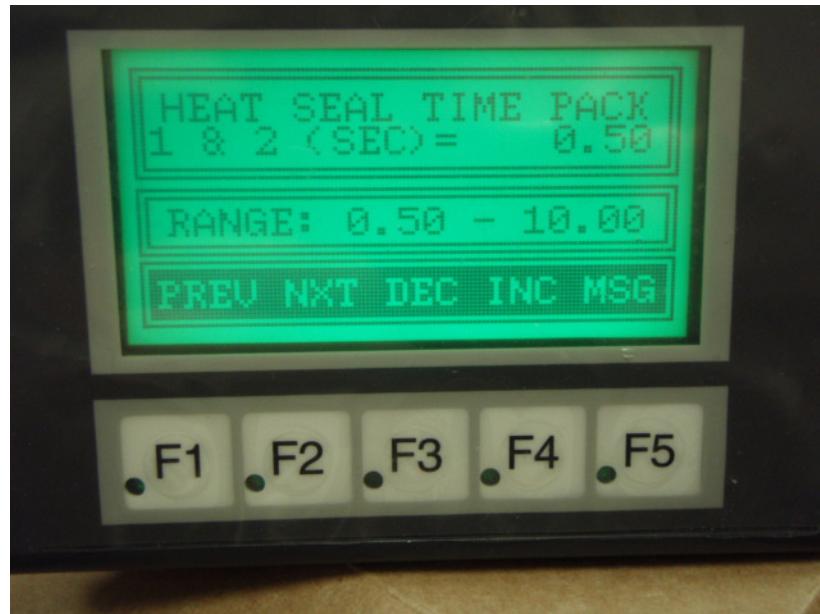
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**Figure A-3.** First Preset menu item

**Preset Menu**

Enter the Preset menu by pressing the PRE key (F1) in the main menu. The first preset screen appears, HEAT SEAL TIME PACK 1 & 2.



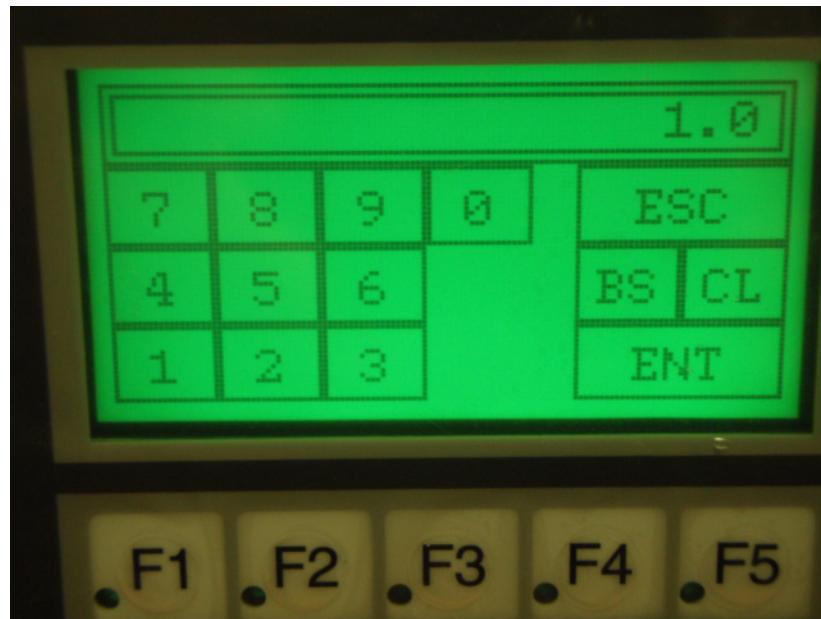
**Figure A-4.** First Preset menu item

The upper box shows the current value of the preset. Use the DEC key (F3) and INC key (F4) to change the value. The middle box gives the units and adjustable range. Use the PREVIOUS key (F1) and NEXT key (F2) to advance through the 12 individual Preset parameters. Hit the MSG key (F5) to return to the main menu and enable the changed settings.

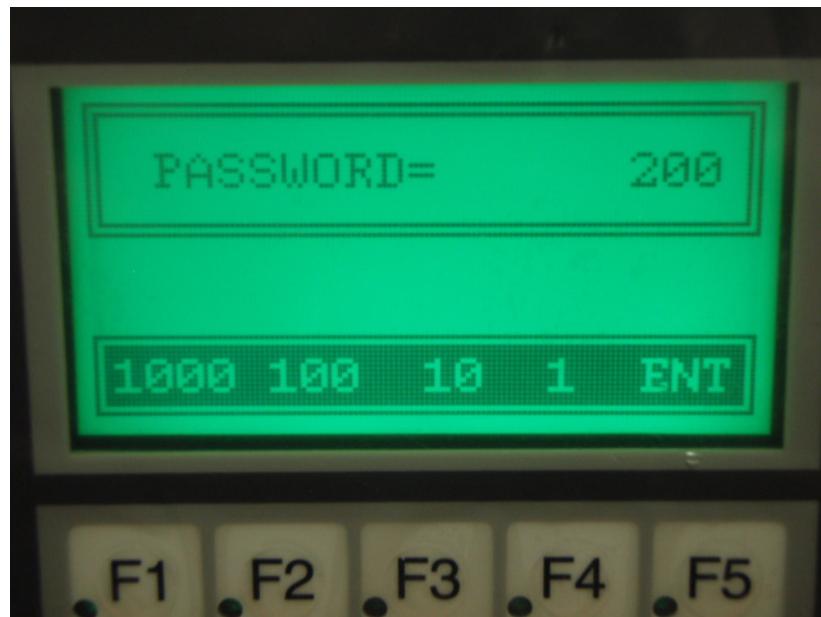
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**Hint:** To change preset values using the numeric keypad, touch the value you want to change (0.5 in the figure above) on the touchscreen. The popup keypad will appear. Type in the new value (1.0 in the figure below) and press ENT. You will see the new value in the settings menu.

---



Only the first 3 menu items are unprotected. Hitting the NEXT (F2) key from the COOL TIME preset screen brings up the ENTER PASSWORD screen.



**Figure A-5.** Enter Password Popup Screen

The password is "200". Press the 100 key twice to enter 200. Or you can touch the password value and the numeric keypad will pop up where you can type in 200. Then press ENT on the keypad. Press the ENTER key (F5) at the lower right to enter the password and advance to the first pro-

tected PRESET item. If the wrong password is entered, access will be denied.

If the password is correct, the first protected preset screen will appear for TILT DOWN TIME.



**Figure A-6.** Top Protected Preset Item (Tilt Down Time)

**Preset Functions** Preset functions are described below in their order on the menu:

#### TOP OF MENU

1. Heat Seal Time Pack 1 & 2: This is the heat time for the seal cycle in Pack 1 & 2. It is the time the heat seal bar is pressed to the bag to make a seal. (0.50-10.0 sec. adjustment range)
2. Heat Seal Time Pack 3: This is the heat time for the seal cycle in Pack 3. It is the time the heat seal bar is pressed to the bag to make a seal. (0.50-10.0 sec. adjustment range)
3. Cool Time: This is the time that the heat seal bar is removed from the bag before the jaws open and the bag drops. (0-6.00 sec. adjustment range)
4. Tilt Down Time Setting: This is the time the tilt shelf is allowed to lower and discharge the product before returning to the UP position. (1.0 to 10.0 seconds adjustment range)
5. Vacuum Fault Timer: Vacuum Fault Time is how long the machine may draw a vacuum through the snorkel in a Vacuum Switch Pack mode to try to reach the Vacuum Level Setting. If this time is exceeded, the machine cycle aborts with a fault message. This is done to alert the operator of a problem such as a tear in the bag. NOTE: On very large

bags, the timer value may need to be increased to allow the machine to finish drawing a vacuum. (1.0-99.9 sec. adjustment range)

6. Pack #1 Code: Sets the bags per cycle, stretcher position, and head position for Pack #1. The first digit is bags per cycle and can be a 1 or 2. The second digit is bag stretcher position and can be a 1 or 2. The third digit is the head position and can be 1, 2 or 3. For 1, the head will not drop after a box pushes in. For 2, the head will drop one position. For 3, the head will drop 2 positions. (111 to 223 adjustment range)
7. Pack #2 Code: Sets the bags per cycle, stretcher position, and head position for Pack #2. The first digit is bags per cycle and can be a 1 or 2. The second digit is bag stretcher position and can be a 1 or 2. The third digit is the head position and can be 1, 2 or 3. For 1, the head will not drop after a box pushes in. For 2, the head will drop one position. For 3, the head will drop 2 positions. (111 to 223 adjustment range)
8. Pack #3 Code: Sets the bags per cycle, stretcher position, and head position for Pack #3. The first digit is bags per cycle and can be a 1 or 2. The second digit is bag stretcher position and can be a 1 or 2. The third digit is the head position and can be 1, 2 or 3. For 1, the head will not drop after a box pushes in. For 2, the head will drop one position. For 3, the head will drop 2 positions. (111 to 223 adjustment range)
9. Vacuum during Snorkel Pullup Preset: When enabled, snorkel continues vacuuming on the last step of a cycle until completely retracted from the bag. Use for meat packing or for packing any heavy, bulk product that will not be lifted out of the bag by the vacuum. When disabled, snorkel vacuum is off before snorkel is retracted from the bag for the final sealing step. Factory setting:0 = disabled
10. Clean Time: This is the water flush timer used in CLEAN mode. (0-999.9 sec. adjustment range)
11. Vacuum Level (Pack 1 & 2): This the vacuum level setpoint at the snorkels for pack 1 and 2 when the vacuum switch is enabled (preset 14 below). The range is 5 to 29.9 inches Hg.
12. Vacuum Level (Pack 3): This the vacuum level setpoint at the snorkels for pack 3 when the vacuum switch is enabled (preset 14 below). The range is 5 to 29.9 inches Hg.
13. Vacuum Extend Timer: This is the OFF delay timer for the vacuum switch. This timer extends the time a vacuum is drawn after the vacuum switch is made. Use this timer if your product is in a very deep bag or outgasses since the actual vacuum at the snorkels may be different may be different than at the bottom of the bag. Factory setting:0 = no off delay
14. Vacuum Switch Bit: This is the vacuum switch enable bit. When set to "1" vacuum is controlled by the vacuum switch. When set to "0", vacuum is controlled by the selected pack timer in the TIMER menu. (Factory setting = 1)

#### BOTTOM OF MENU

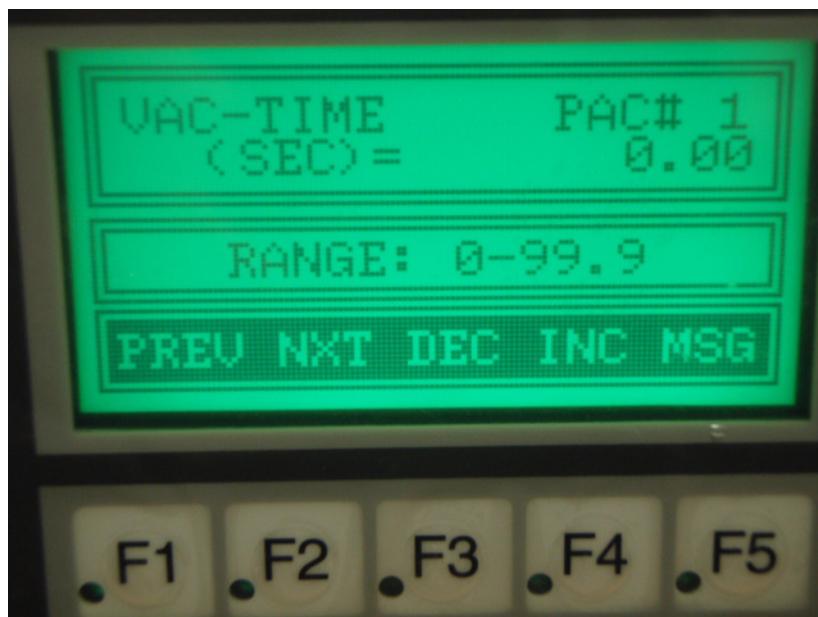
**Timer Menu**

Enter the Timer menu by pressing the TMR key (F2) in the main menu. After entering the password, the first timer screen appears, VAC-TIME PACK # 1.

**Hint:** Zeroes may be entered for the gas timer timer values to skip the gas cycle (Vacuum Only).

**Timer Functions**

The upper box shows the current value of the timer. Use the DEC key (F3) and INC key (F4) to change the value. The middle box gives the units and adjustable range. Use the PREVIOUS key (F1) and NEXT key (F2) to advance through the 6 individual Timer parameters. Hit the MSG key (F5) to return to the main menu and enable the changed settings.



**Figure A-7.** First Timer Preset

Timer functions are described below in their order on the menu:

**TOP OF MENU**

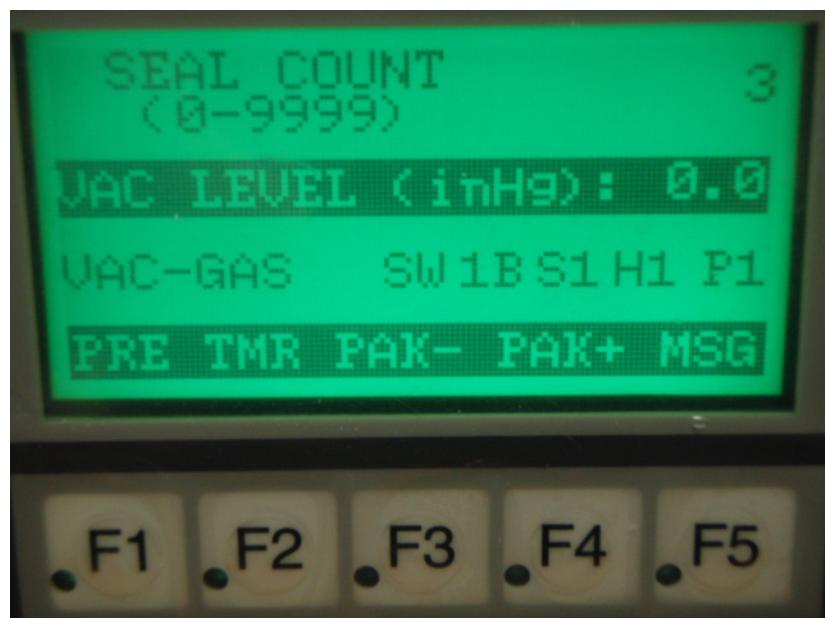
1. Vacuum Time Pack #1: This is the time for the vacuum cycle in Pack 1 when the vacuum switch is disabled (Vacuum Switch Bit Preset = 0). 0 to 99.9 seconds is the adjustment range.
2. Vacuum Time Pack #2: This is the time for the vacuum cycle in Pack 2 when the vacuum switch is disabled (Vacuum Switch Bit Preset = 0). 0 to 99.9 seconds is the adjustment range.

3. Vacuum Time Pack #3: This is the time for the vacuum cycle in Pack 3 when the vacuum switch is disabled (Vacuum Switch Bit Preset = 0). 0 to 99.9 seconds is the adjustment range.
4. Gas Time Pack #1: This is the time for the gas cycle in Pack 1. 0 to 99.9 seconds is the adjustment range.
5. Gas Time Pack #2: This is the time for the gas cycle in Pack 2. 0 to 99.9 seconds is the adjustment range.
6. Gas Time Pack #3: This is the time for the gas cycle in Pack 3. 0 to 99.9 seconds is the adjustment range.

#### BOTTOM OF MENU

**Seal Count**

Check the running count by pressing the INF key (F5) in the main menu. Now press the SEAL key (F3) to display the SEAL COUNT menu.



**Figure A-8.** Seal Count screen

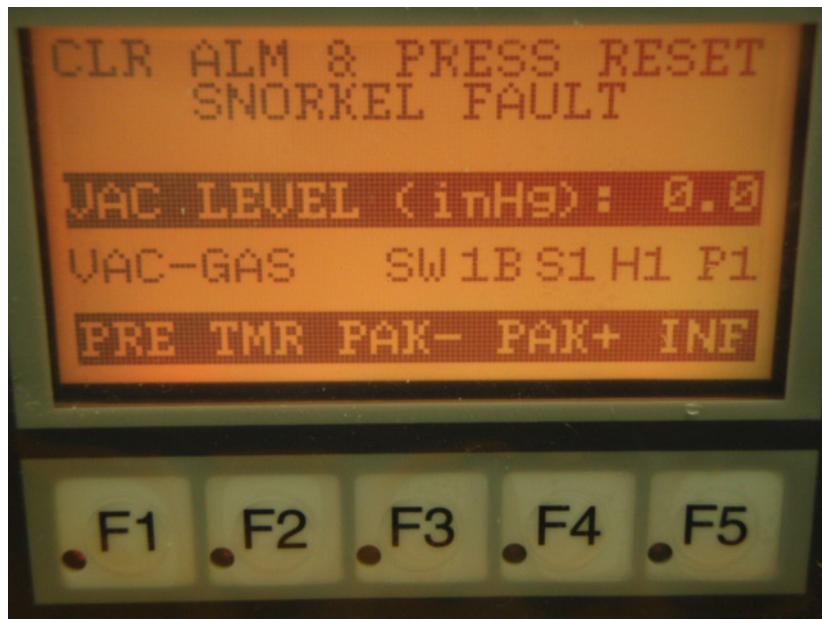
One non-resettable counter increments every time the heat seal bar actuates. At 9999, it wraps around to zero again. Press MSG (F5) to return to the main menu.

**Information Menu** Enter the Information menu by pressing the INF key (F5) in the main menu. Now press the MORE key (F4). Contact information for CVP Systems is

displayed as well as the program name for the screen. Press MSG (F5) to return to the main menu.

### Alarms

Alarms that occur during operation of the A200-C vacuum packaging machine must be acknowledged. When alarms occur, an alarm popup window appears on the interface. The background color of the screen will change from green to flashing red to alert the operator.



**Figure A-9.** Alarm condition - Snorkel Fault

The above figure shows a typical alarm popup screen. When the fault condition is corrected, press the START/ RESET button to acknowledge the alarm and return to the main menu. In this case, the Snorkel retracted cylinder switch did not come on when expected. Any one of nine alarm messages may appear:

1. Vacuum Fault: Occurs if the actual vacuum time exceeds the vacuum fault time.
2. Snorkel Fault: Occurs if the program expects the snorkel to be in the retracted position and the Snorkel retracted PLC input is not ON.
3. Jaw Close Fault: The program commanded the jaw to close and the Jaw Close input was not received within one second.
4. Low Gas Fault: In Gas Pack settings, the fault occurs when the Gas Pressure PLC input is not received. Jumper if not used.
5. Temperature Fault: The temperature has remained below the controller setpoint and not risen for one minute. Check that heater power supply is

connected. Or temperature has exceeded 410 degF. Power to the controller is removed until reset. NOTE: If operating below setpoint, the controller ALM light will be ON.

6. Vacuum Sensor Fault: Occurs when the 0-5VDC signal is not received from the vacuum sensor.
7. Jaw Open Fault: The Jaw Closed Cylinder switch is ON when the program is commanding the Jaw to be open.
8. Shelf Down Fault: The shelf remains in the lower position and the discharge photoeye is blocked indicating a jam. Remove the jam and press "RESET" to correct the fault.
9. Shelf Up Fault: The tilt shelf should be in the up position but the reed switch is not activated nor is the lower reed switch. A jam may have occurred, remove the jam and press "RESET" to correct the fault.

See the Troubleshooting section of the manual for more information on correcting fault conditions.





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