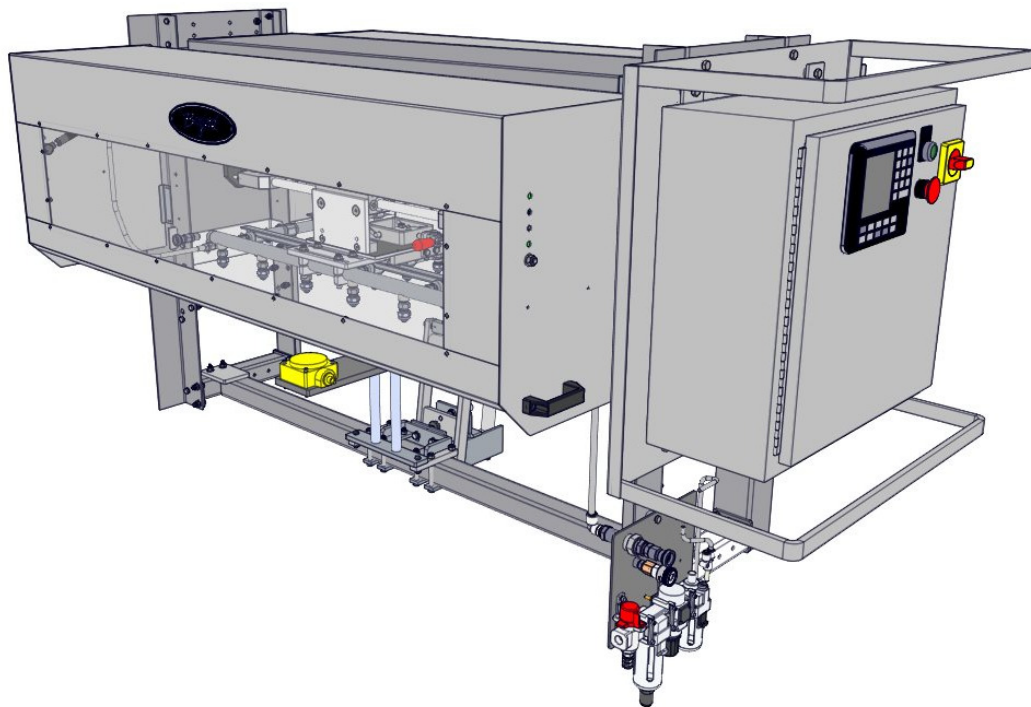




Pattern Splitter

MODEL PSCS-3R / 3L



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Second Edition - Date: May 2016
Manual Part No. _____
Serial # _____

SAFETY PRECAUTIONS

As Burford® Corp. strives to promote safety in the maintenance and operation of Burford® equipment; we request that the following safety procedures be followed, along with any additional safety procedures set by the customer's in-plant safety officers or local codes.

1. Read the manual completely before attempting installation or operation of this unit.
2. This machine may contain programs that are password protected. Contact your supervisor or Burford® Corp. for password.
3. Incoming electrical power must be properly shielded, routed, and grounded. All safety codes should be followed. Study wiring diagrams before attempting installation.
4. Disconnect power to equipment before removing any guards or covers. Replace guards or covers before resuming operation of the unit.
5. Loose clothing, jewelry, and long hair should be considered a safety hazard around mechanical equipment. Ensure that they will not be entangled in the equipment.
6. Keep clear of moving machine parts. Bodily harm and/or serious injury may result from contact with moving gears, sprockets, chains or pneumatically controlled machine components.
7. Do not bypass safety switches.
8. Do not attempt repairs while equipment is running.
9. Use only original equipment parts designed for safe operation of the equipment.
10. Only authorized personnel should be allowed to operate or perform maintenance on the unit.
11. This unit is not wash-down ready. Do not wash the unit or any of its electrical or mechanical components, with any form of high pressure or running liquids.



Caution symbol indicates bodily harm may incur if instructions are not followed.



Stop symbol indicates important instructions to prevent unit damage or adverse effects.



Info symbol indicates useful information to assist in installation and operation of the unit.

DISCLAIMER WARNING

The descriptions and specifications contained in this Service Manual were in effect when this manual was approved for printing. Our policy is one of continuous improvements, and we do hereby reserve the right to discontinue models at any time, or to change specifications, prices, or design without notice and without incurring obligations.

Burford® Corp. expressly disclaims any liability for damages and/or injuries caused because of negligence or misuse of its product. Such negligence or misuse includes, but is not limited to, software/program alteration, removal of guards, faulty wiring due to improper installation, subjecting the unit to wash-down environments or any physical or mechanical changes made to a Burford® unit, by anyone other than a qualified Burford® Technician.

Burford® equipment should only be used for the purpose for which it was sold, and should not be modified in any way without notifying the General Manager of Burford® Corp. in writing of the modification.

The original language for this document is English. Translations to other languages may not be accurate.

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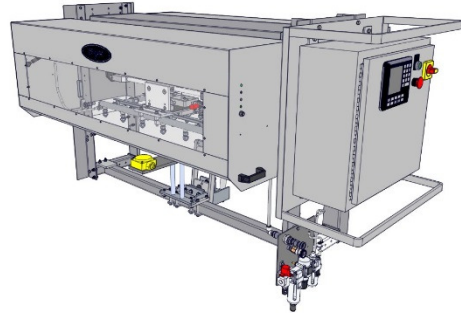
Chapter 1

Introduction

CHAPTER 1: INTRODUCTION

Congratulations on the purchase of your new Burford® Pattern Splitter. We are confident that you will enjoy many years of dependable service from your new unit.

The Burford® Pattern Splitter is a proven Burford® design, backed by over 50 years of manufacturing experience. It is designed to work with your existing product line.



The name Burford® is synonymous with innovation. Since the beginning with the first Twist Tyer machine, Burford® is focused on bringing innovation to the baking industry. Our passion is developing equipment that increases productivity and uniformity while decreasing production costs.

The Burford® PSCS Splitter is designed to provide a knife-like split, of a particular pattern on top of proofed dough. This system provides precise split location in relation to the pan shape and program stored in the motion controller. The Burford® PSCS Splitter brings together precise application, convenience of operation and ease of maintenance in one system. The PSCS can run up to 100 feet per minute, with a pan spacing of six (6) inches, with spacing to be no less than 2”.

The following pages contain installation, operation, and maintenance instructions. To ensure maximum performance, these instructions should be followed with care. All operators should be trained to set up for your specific application and product.

Burford® offers a large lineup of bakery solutions from Oilers to Topper. We invite you to visit our website at www.burford.com to see the other innovative equipment that we can offer to benefit your bakery today.

■ Specifications

ELECTRICAL

- ☐ 110 V_{AC}, 50/60 Hz, 1 Φ , 15 A
- ☐ 220 V_{AC}, 50/60 Hz, 1 Φ , 15 A
- ☐ 220 V_{AC}, 50/60 Hz, 3 Φ , 15 A
- ☐ 380/460 V_{AC}, 50/60 Hz, 1 Φ , 15 A
- ☐ 380/460 V_{AC}, 50/60 Hz, 3 Φ , 15 A

AIR REQUIREMENTS

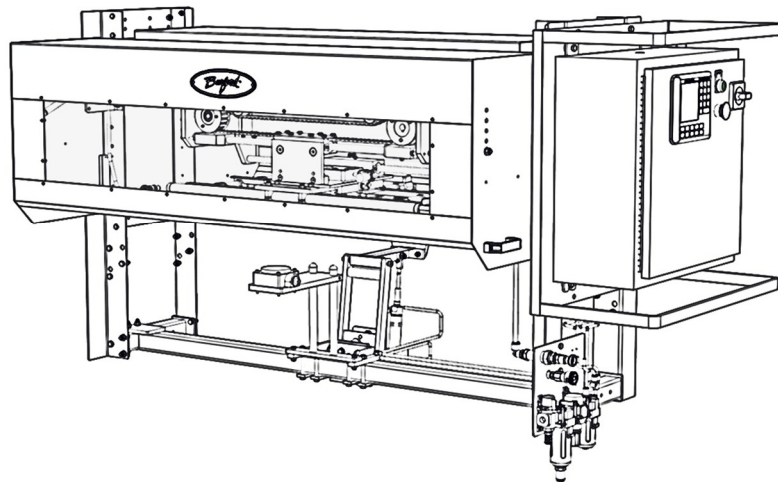
.370 CFM@80 psi maximum

WATER

40 PSI @ 30 GPH

MODELS

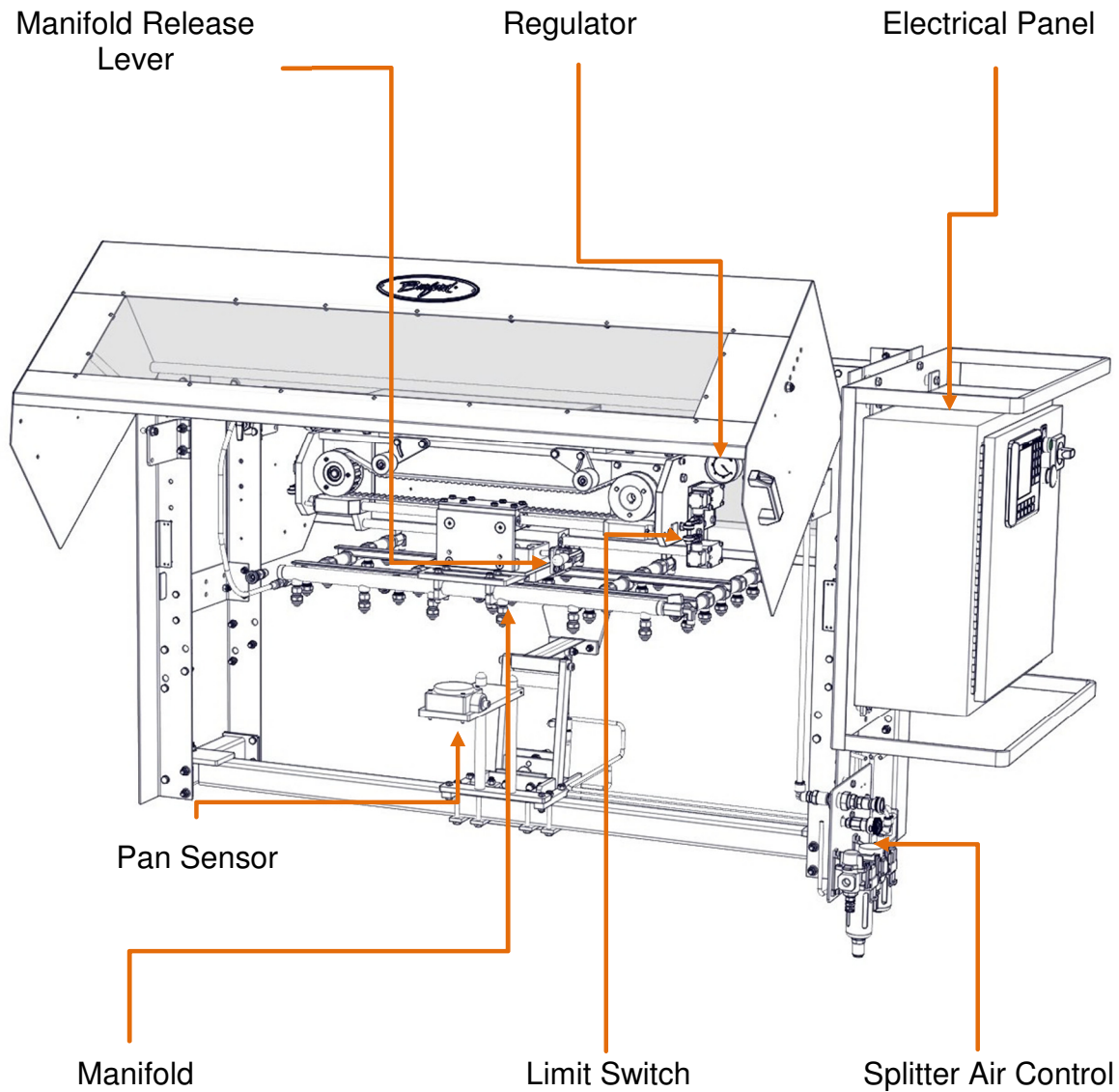
- ☐ PSCS-3R Product travels left to right viewed from operator side.
- ☐ PSCS-3L Product travels right to left viewed from operator side.



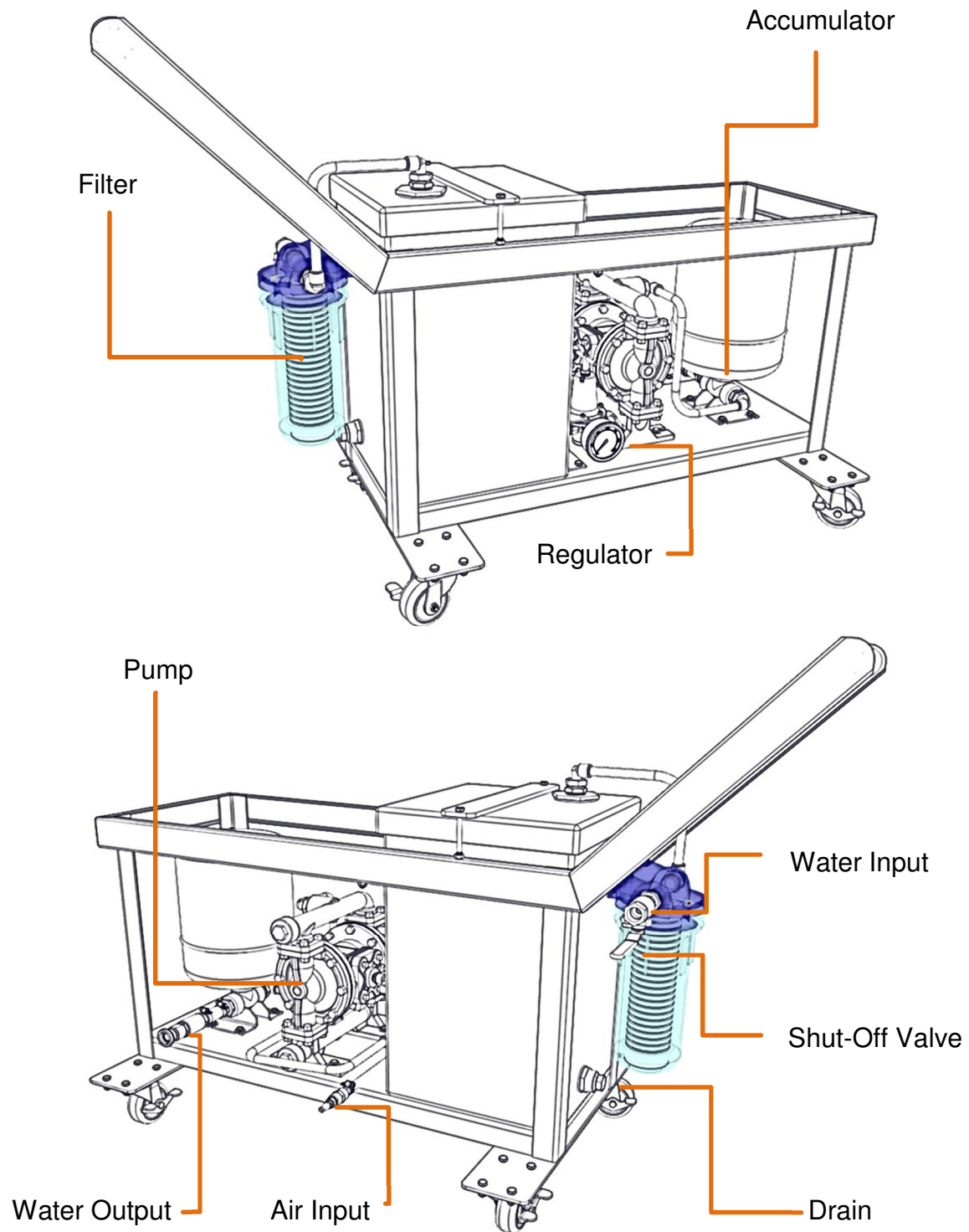
**Model PSCS-3R
Shown**

■ Unit Identification

Below are the main components that make up your Splitter. Take a few minutes to familiarize yourself with the unit.



■ Pump Cart Identification



Chapter 2

Key Components

CHAPTER 2: KEY COMPONENTS

Below is a list of key components that you must familiarize yourself with to gain a better understanding of how the Splitter functions.

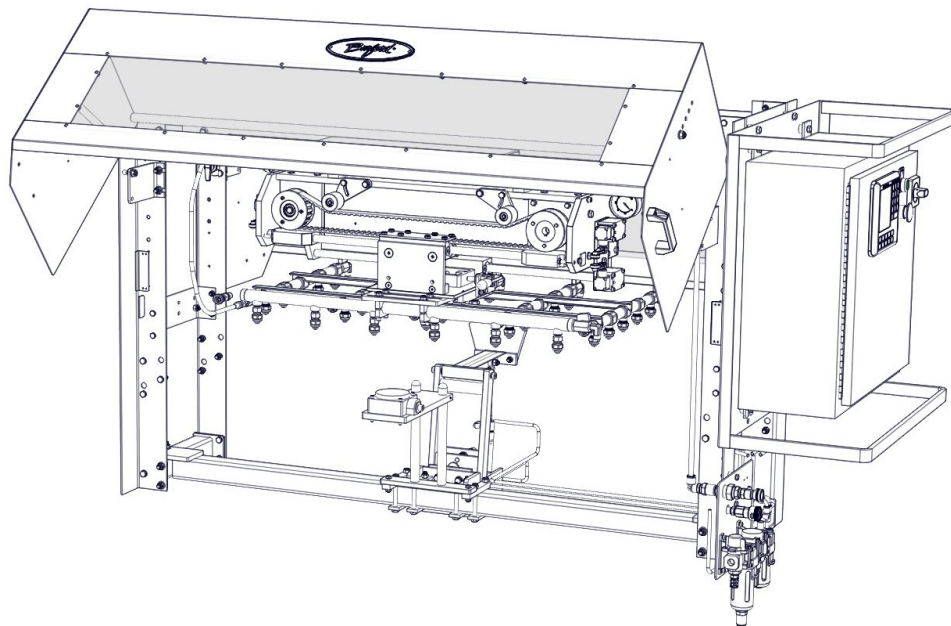
■ Splitter

The Splitter contains components to ensure a desirable split to your product. The unit is able to deliver three different modes of operations: Straight, Cross, and Pattern splits.

- The Pattern Split Manifold is used to create a pattern in the dough.
- The Cross Split is used when your dough needs to be split the hard way across the pan.
- The Straight Split is used if the dough is to be split the easy way.

The split valves apply a high pressure jet of water to the dough. When the high pressure jet comes in contact with the dough, a split will occur. The pressure of the water is adjustable to achieve the desired results.

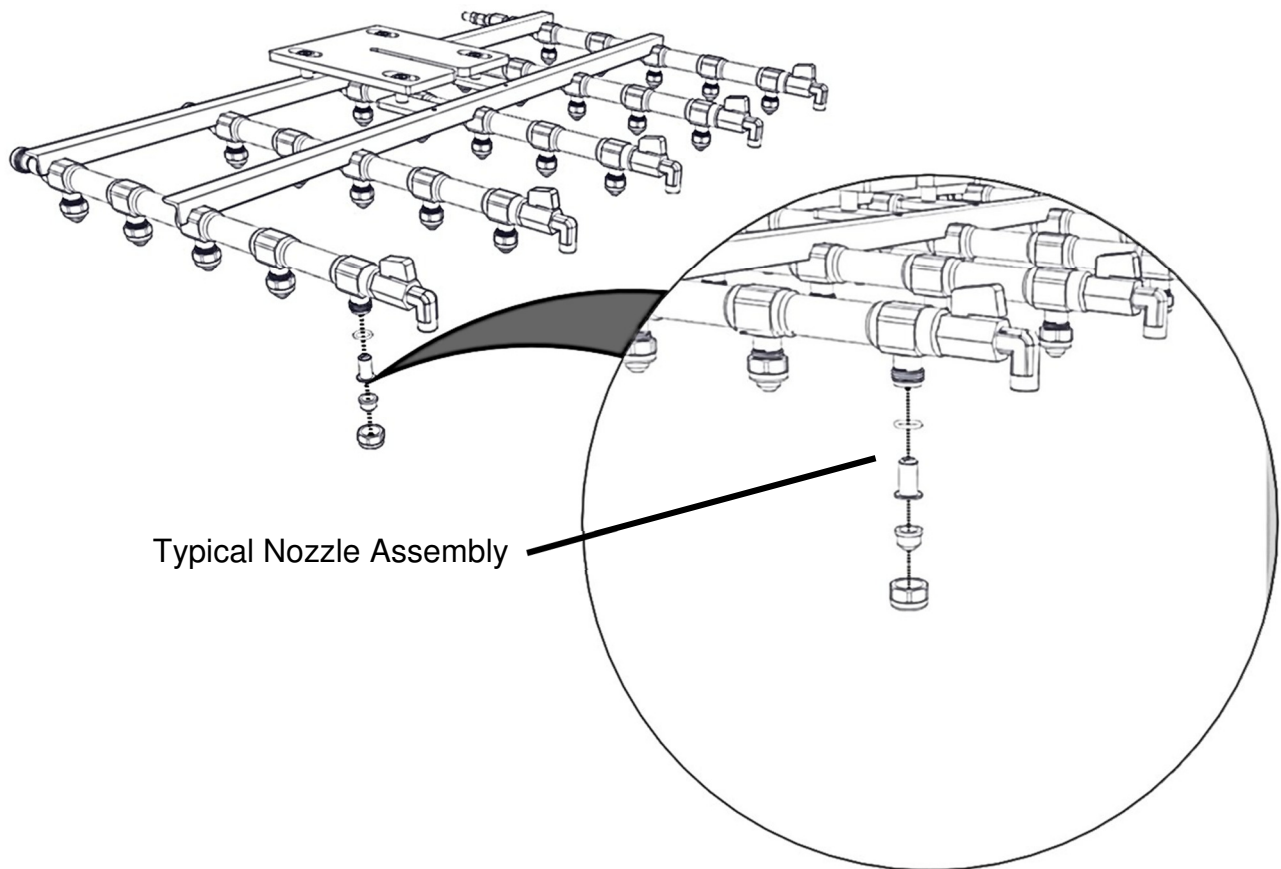
The Splitter contains the Regulator, Split Valves, Pan Sensor, and the Control Panel. All of these components work in unison to deliver a consistent split to your product.



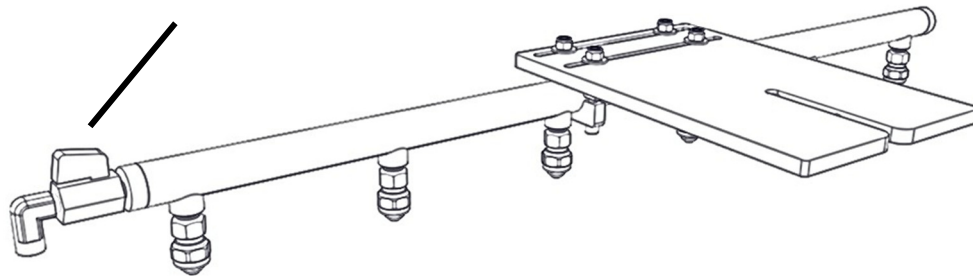
■ Manifold

The Manifold directs the high pressure jets of water to the exact location of your product desired. The Manifold specifications were built using your pan dimensions at the time of ordering the unit.

Pattern and Cross Split Manifold



Bleeder Valve (Open to Purge)

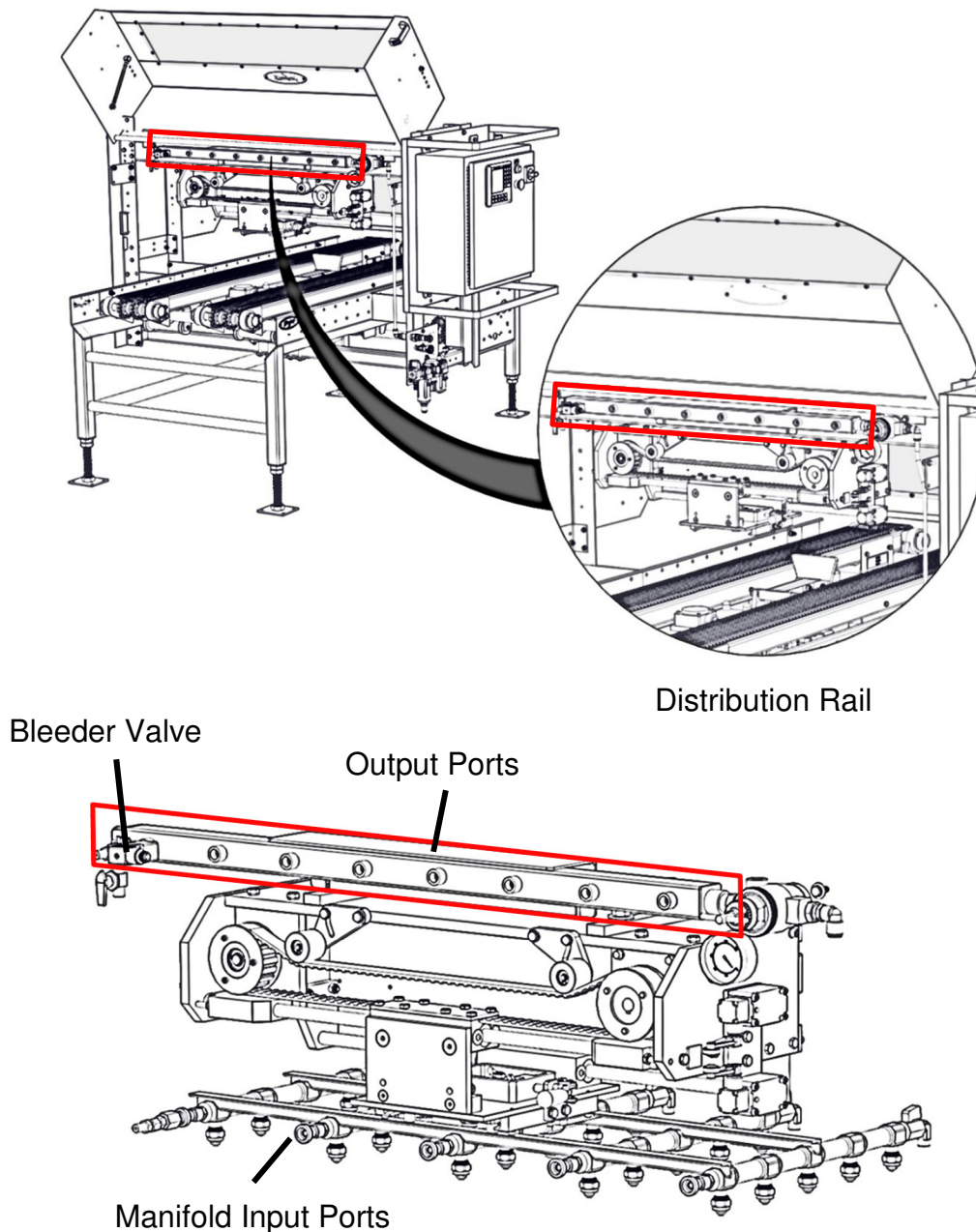


Straight Split Manifold

■ Distribution Rail

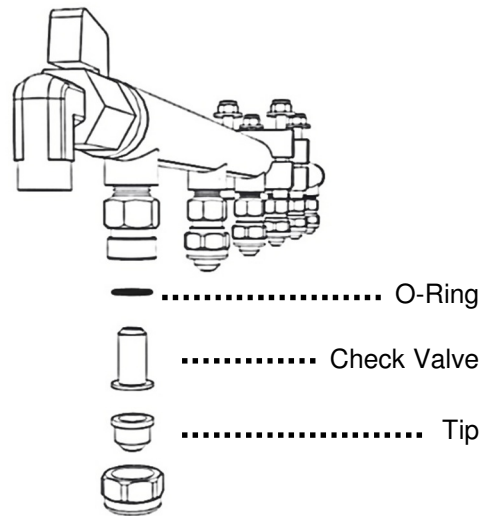
The Distribution Rail supplies the individual rows of the manifold with pressurized water. A hose is connected from each of the Distribution Rails output ports to the input ports on each row of the manifold. The straight split manifold only has one input port. Stow any unused hoses in the designated holders.

A Bleeder Valve is located on the Distribution Rail for first stage purging.



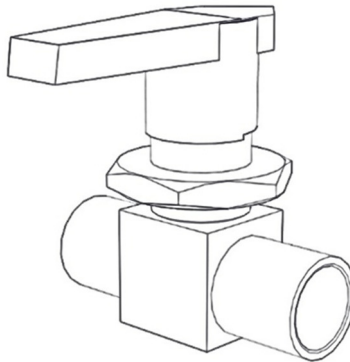
■ Split Tip

The Split Tip contains the components to ensure a desirable split. A check valve is used to close the valve once the pressure reaches a minimum pressure. The check valve prevents air from getting into the hydraulic system which may lead to dripping. An O-Ring gasket seals the split nozzle and prevents any leaking. A tip is used to direct the water into a pressurized jet with an orifice size specific for your needs. Different orifice sizes are available to meet a wide range of applications. Contact your Burford for more information.

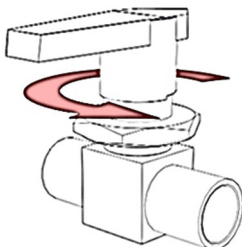


■ Bleeder Valve

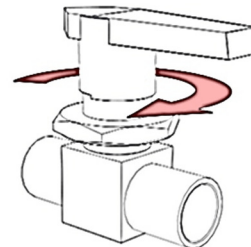
The Bleeder Valves are used to purge the system from air. Open the valve to remove any air from the system. There is a Bleeder Valve on the Distribution Rail and on the Manifold rows.



Open

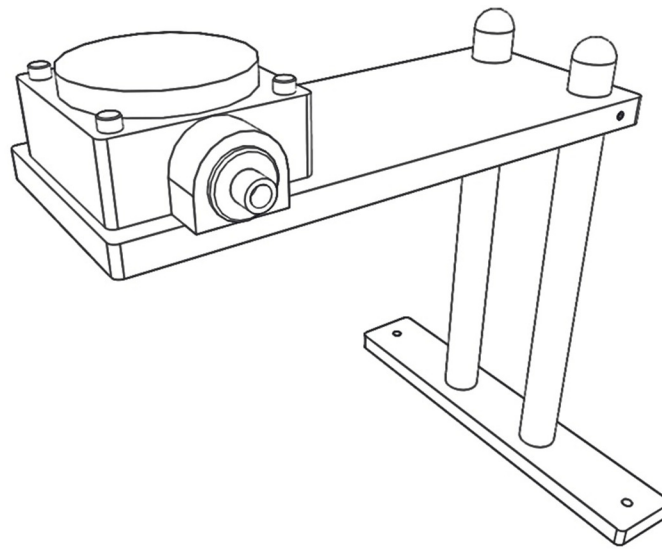


Close



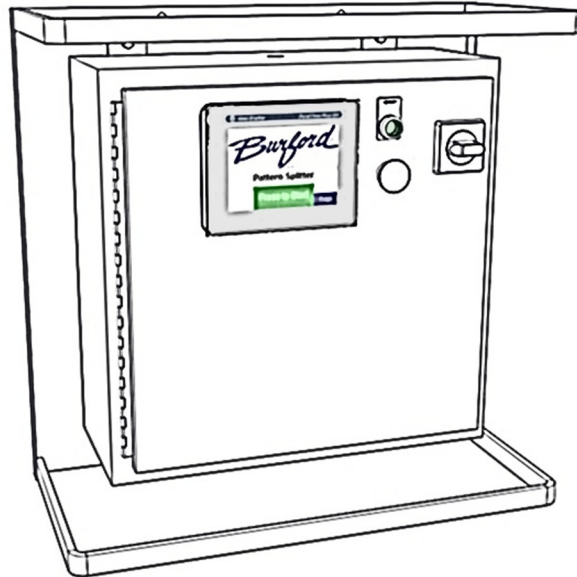
■ Sensor

The 80mm proximity sensor is used to detect the pan and begin the Split cycle. The mounting bracket is mounted on two rods that allow vertical adjustment.



■ Control Panel

The Control Panel contains the Operator Interface, the E-Stop, and the Main Disconnect.



■ HMI

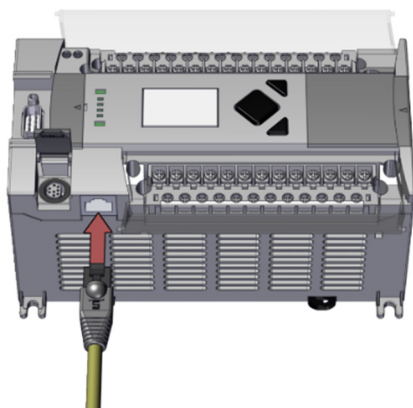
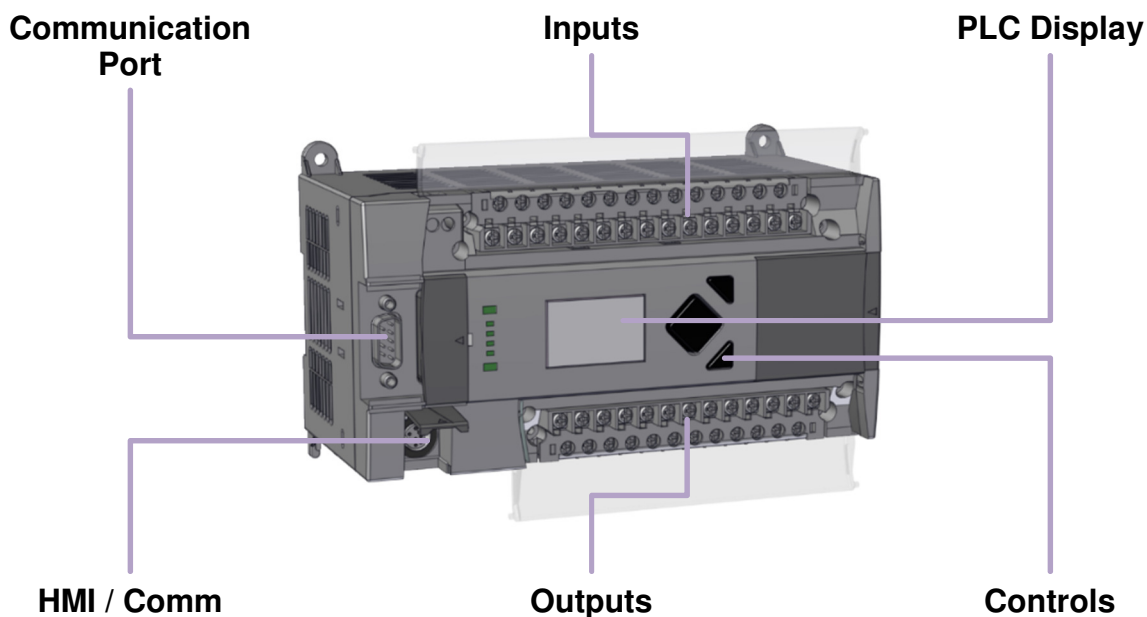
The HMI, (Human Machine Interface), is where the interactions between the unit and software occur. It allows the operator to input parameters that controls the unit.



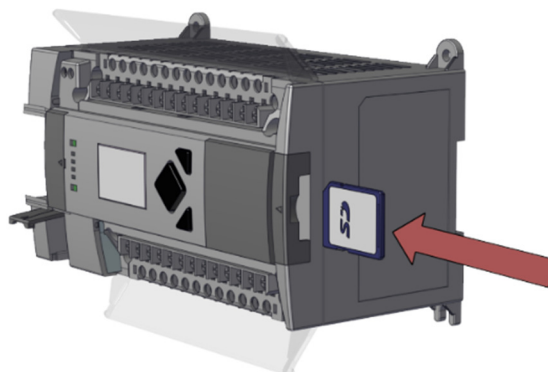
Allen Bradley Panel View 600 Plus

■ PLC

The PLC (Programmable Logic Controller) is a digital computer used for the automation of the unit. The PLC contains proprietary Burford® software that executes the operations of the unit. Shown below is a typical PLC, the one in your unit may be different. Reference the Electrical Schematic that came with your unit for information regarding the particular PLC in your unit.



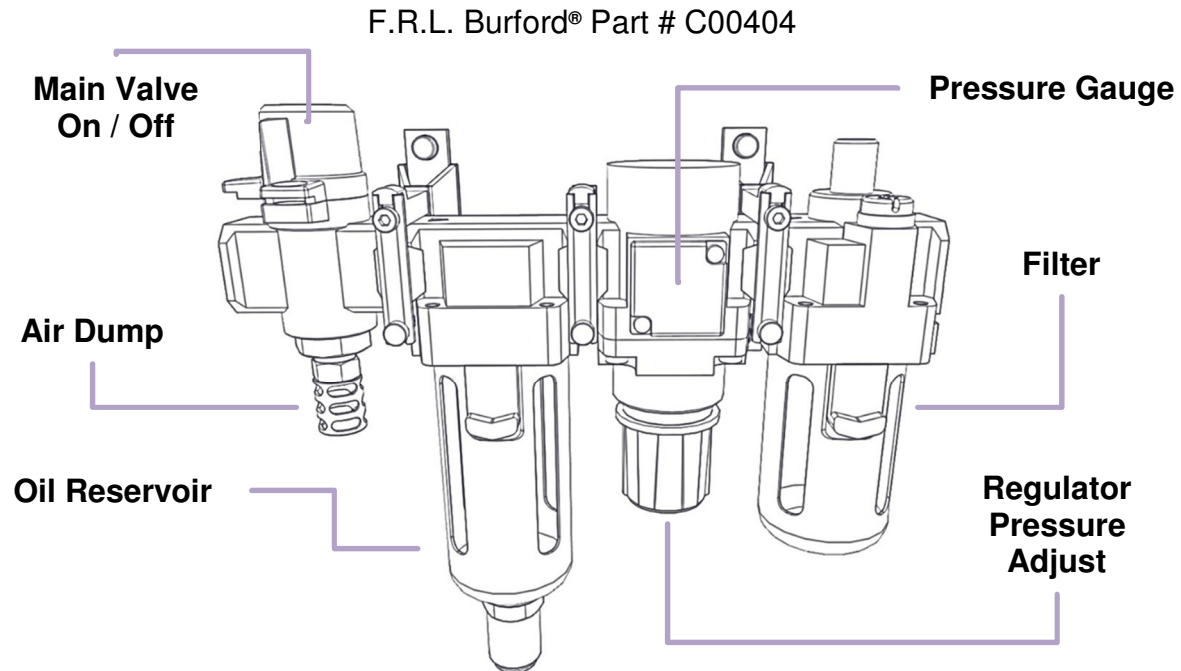
**Ethernet
HMI / Comm.**



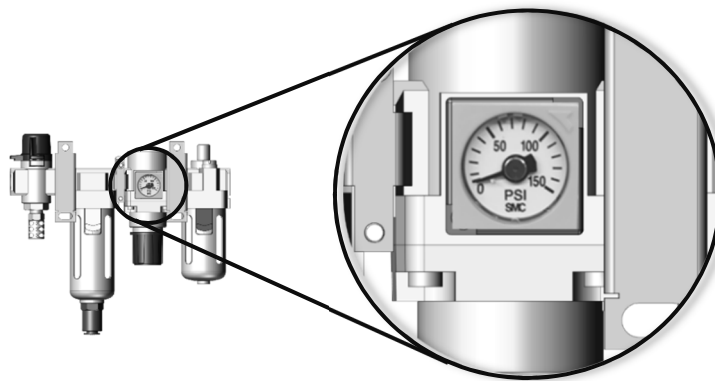
SD Card Slot.

■ F.R.L. Description

The F.R.L. (Filter, Regulator, and Lubricator) controls the amount of air pressure delivered to the unit. The Splitter uses the air to raise and lower the Pan Stop for the Cross Splitter function.



A pressure gauge indicates the output pressure of the F.R.L. The normal operating pressure is 60 psi.

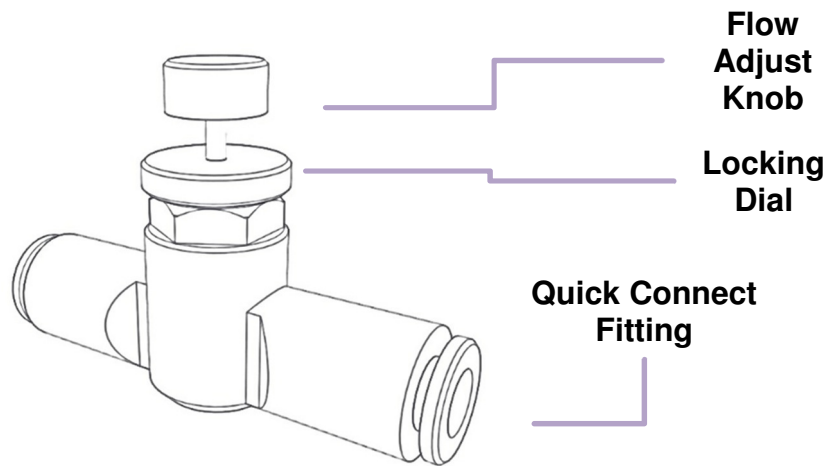
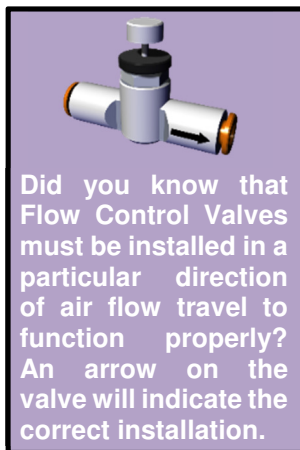


Pneumatic Oil must be kept in the Oil Reservoir at all times. Burford® recommends Parker Pneumatic Oil F442. Check Reservoir weekly.

■ Air Flow Controls

The rise and fall speed of the Pan Stop is controlled by the two Air Flow Control valves located on the lift solenoid valve. The speed should be set for the desired cycle rate, but to avoid premature wear, they should be adjusted so that the Pan Stop assembly will travel smoothly through a cycle, not hitting too hard or too fast in any direction.

Flow Control Valve.

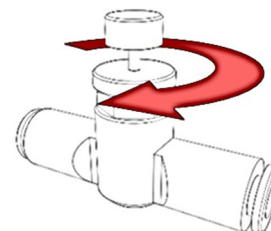
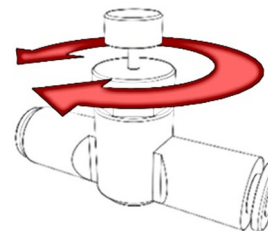
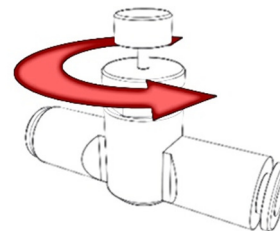


Adjustment

Release the locking dial by turning it anti-clockwise. This will allow the adjustment knob to turn freely.

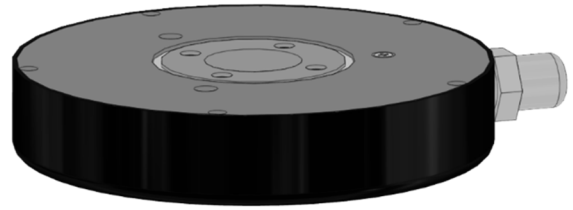
Rotate the adjustment knob until desired flow is achieved.

Lock the valve by turning the Locking Dial clockwise until firmly seated.



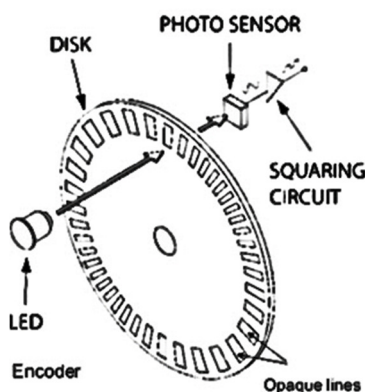
■ Encoder

The simplest definition of an Encoder is the process of converting information from one format to another. In our application we use a device called a Rotary Encoder. A Rotary Encoder, also called a shaft encoder, is an electro-mechanical device that converts the angular position, or motion, of a shaft or axle to an analog or digital code. There are two main types: absolute and incremental (relative). The Splitter utilizes a digital, incremental Rotary Encoder that is fixed to the conveyor drive shaft. This allows the software in the PLC to calculate the speed of the pans on the conveyor in real time. The software uses this data to calculate precisely when to move the Manifold and when to start the splits according to the setup parameters for the selected variety in Pattern Mode.



The Encoder is used for the Pattern. The Pattern Mode is used to select a precise location of the cavity in which to start and stop the split sequence relative to the pan location.

How They Work

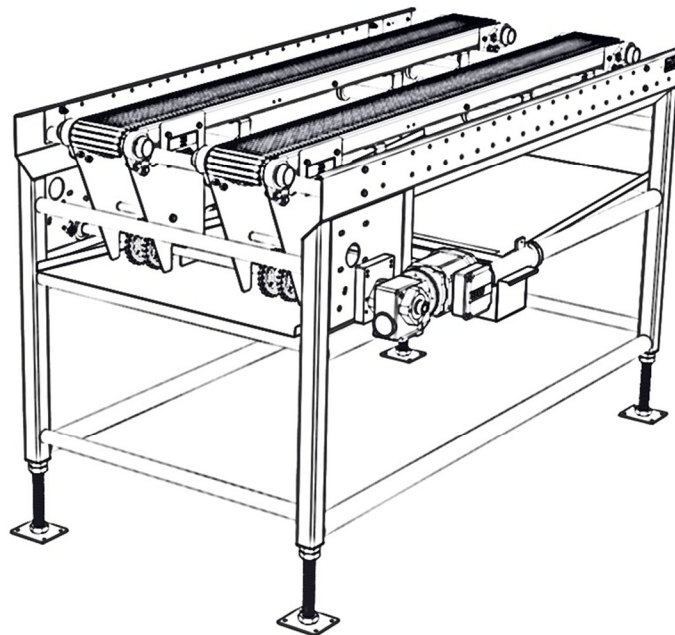


To the left is a simplified view of an Optical, Incremental Rotary Encoder. The LED emits a light beam which passes through the transparent slits in the opaque disk. When the photo sensor receives the light, it produces a sinusoidal wave form, which is transformed into a square wave or pulse train. The pulse signal is then sent to the PLC controller which will then use the data according to the programmed software.

By using the data in relation to time we are able to gather a lot of information about our shaft. Since the encoder has a fixed resolution, (the number of slits), the controller can simply count the pulses and know when a revolution is made. Since each pulse is a certain distance the controller can calculate speed by counting the number of pulses within a time interval.

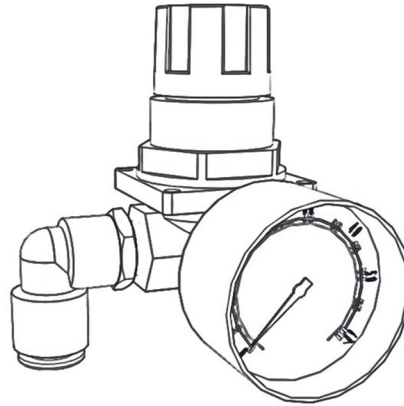
■ Conveyor (Optional)

An optional conveyor is available for your Splitter. The conveyor transfers product through the unit. Contact Burford® today to inquire about the great benefits of our conveyor systems.



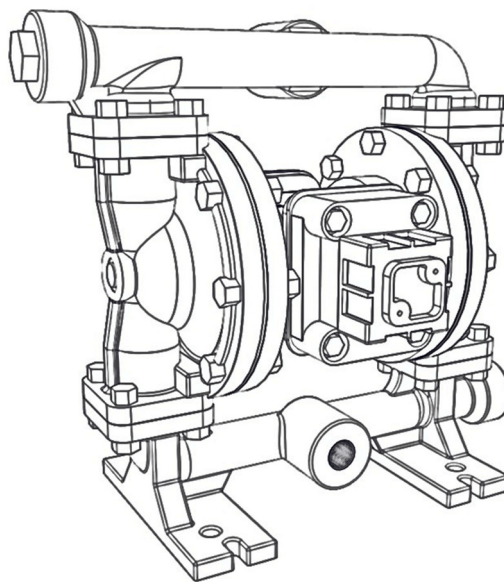
■ Pressure Regulator

The pressure regulator is a valve that automatically cuts off the flow of liquid at a certain pressure. An adjustable knob is used to control the amount of pressure desired. In our application it is used to control the amount of water pressure supplied to the split nozzles.



■ Diaphragm Pump

The Diaphragm Pump is a positive displacement pump that uses a reciprocating rubber diaphragm and valves on either sides to pump the water into the hydraulic system. The pump is powered by a supply of air and pressure can be controlled by the air regulator feeding the pump. The Output pressure of the pump is a 1:1 ratio of the input air pressure.

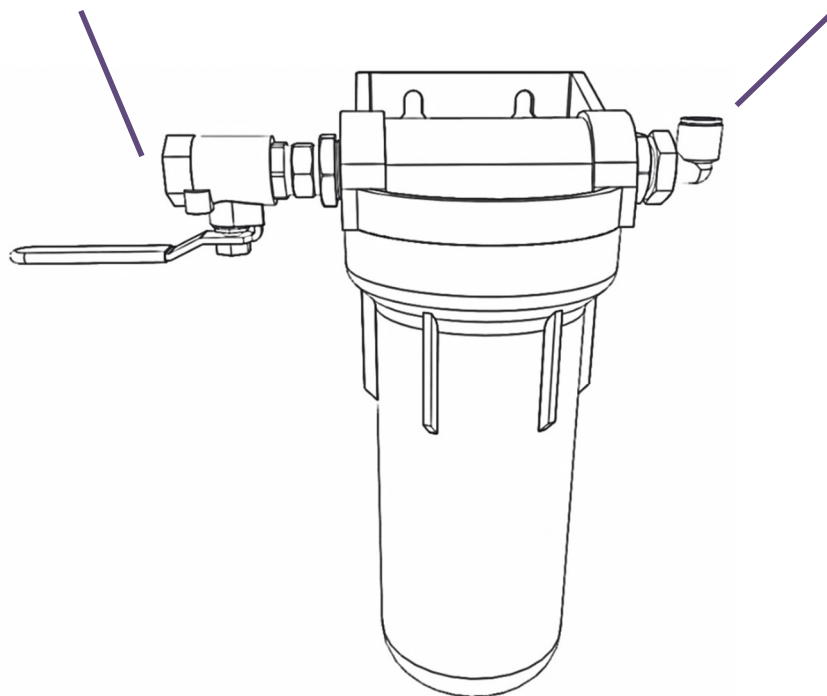


■ Water Filter

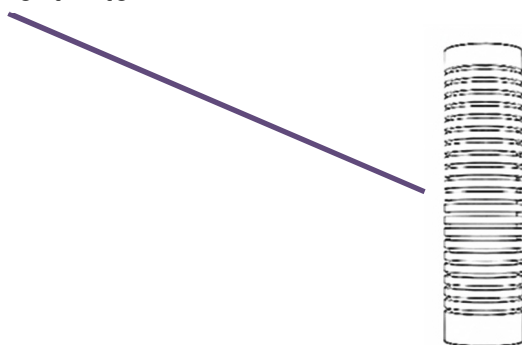
The Water Filter removes any contaminations from the water source. The filter supplied is rated at 10 microns. Replacement is recommended every 4 weeks but may differ depending upon the quality of the source water supply.

Facility Water Supply Inlet

Water Output



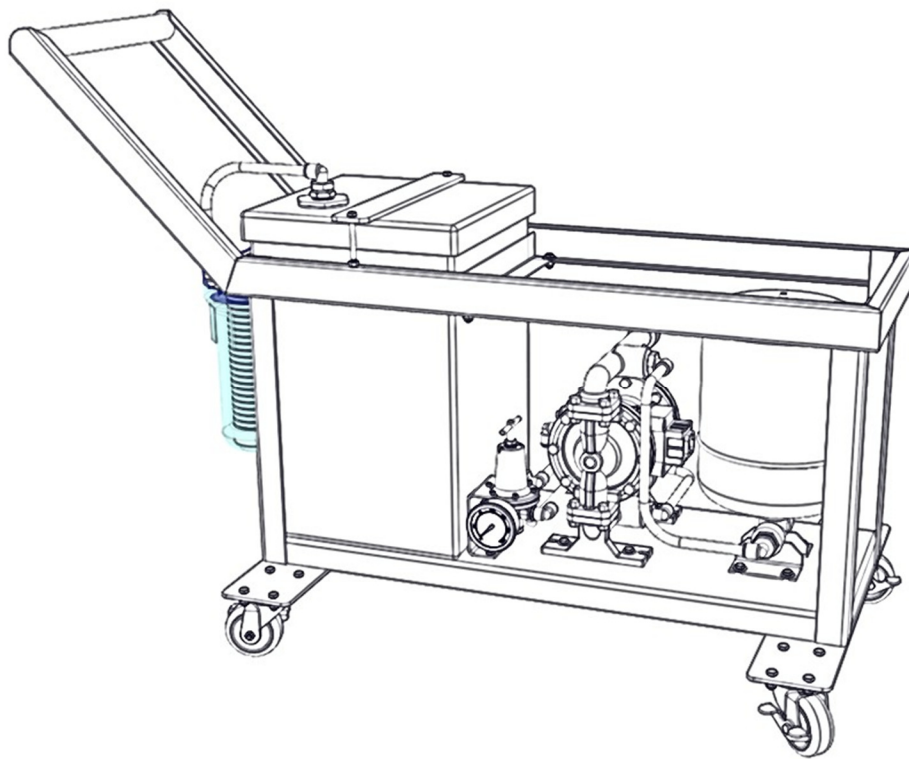
Replacement Filter



Order your replacement filters from Burford®. Call 1-877-Burford (1-877-287-3673) Today. Part Number: C00578

■ Pump Cart

The Pump Cart contains the necessary components to ensure uniform water pressure during the split sequence. It includes an air regulator, the water filter, reservoir, pump, and accumulator. All of these components work in unison to deliver consistent water pressure during the split sequence.

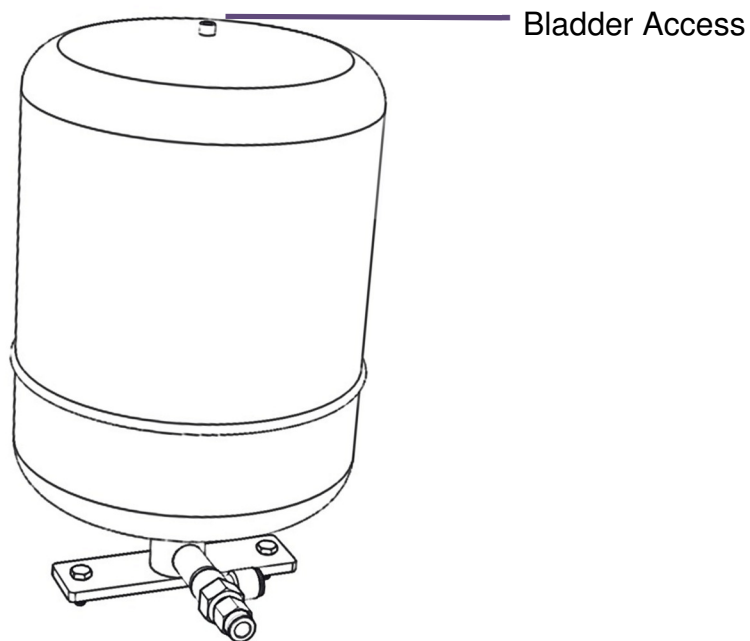


It is vital that there are not any water pressure fluctuations during the split sequence. Any variations in water pressure may cause undesirable splits in the final product.

■ Accumulator

The Accumulator is a pressure storage reservoir in which the fluid is held under pressure by an internal bladder filled with compressed gas kept at a constant pressure, also known as a hydro-pneumatic accumulator. The use of an accumulator allows the hydraulic system to respond more quickly to a temporary demand and to smooth out any pulsations that may be present in the system. The internal bladder must be kept at 80% psi of the running pressure.

Determine running pressure. Depressurize Splitter system completely. Set Accumulator to 80% of the determined running pressure. A standard Schrader valve is used to fill the bladder. Compressed air may be used to fill bladder.



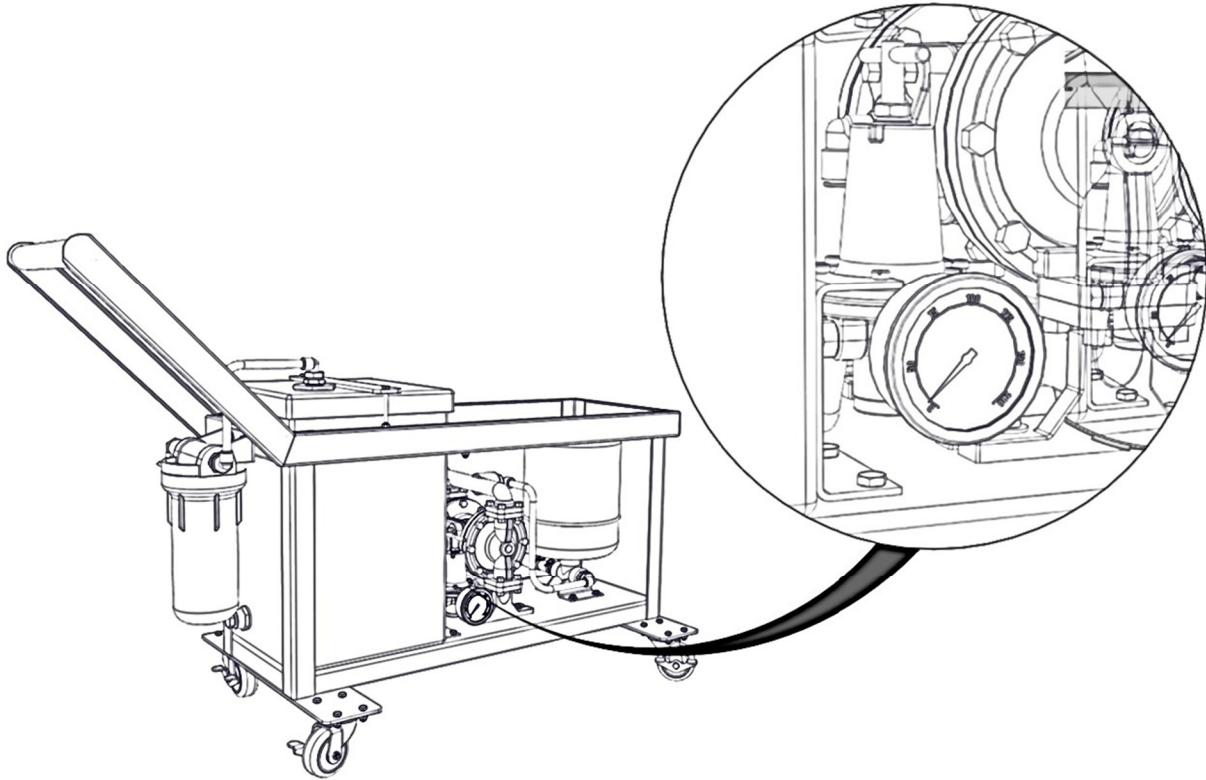
Dampener must be charged before use. Set Accumulator pressure with Unit completely depressurized. Verify proper pressure before initial operations.



Example: If running pressure is 50 psi then the accumulator should be filled to 40 psi.

■ Pump Cart Air Regulator

The Pump Cart Air Regulator controls the pressure of the air operating the diaphragm pump. The air pressure is at a 1:1 ratio of the output water pressure of the pump. The air pressure should be set at 20% above the max operating pressure of the water pressure.



Chapter 3

Installation

CHAPTER 3: INSTALLATION

The Burford® PSCS Splitter was shipped to you completely assembled. There are two ways to purchase the unit. Mounted onto a Burford® conveyor ready to roll into a given location or assembled to mount onto an existing conveyor system.

Electrical connection and hookups should be done by a qualified electrician to incorporate suitable service in compliance with all safety requirements and local codes.

A factory-trained technician may be hired for the installation of your PSCS. Arrangements can be made by calling the Service Manager at Burford® Corp. located in:

Maysville, Oklahoma, USA.

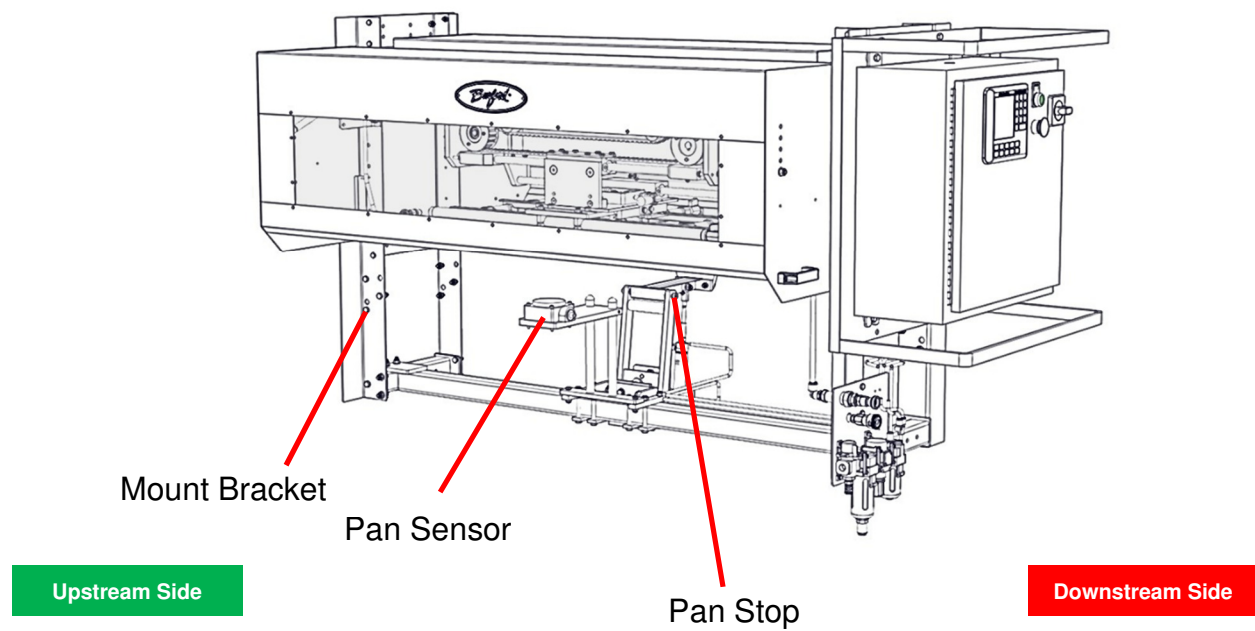
1-887-BURFORD® or (405)-867-4467

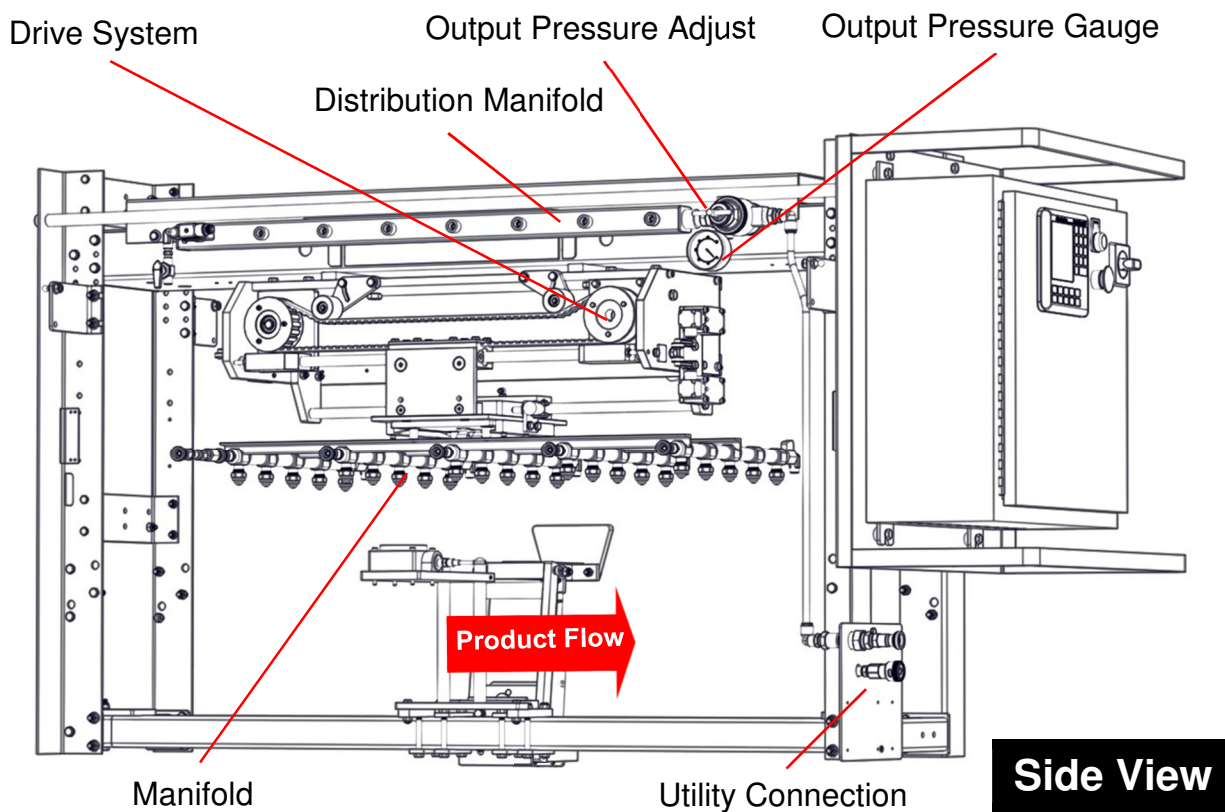
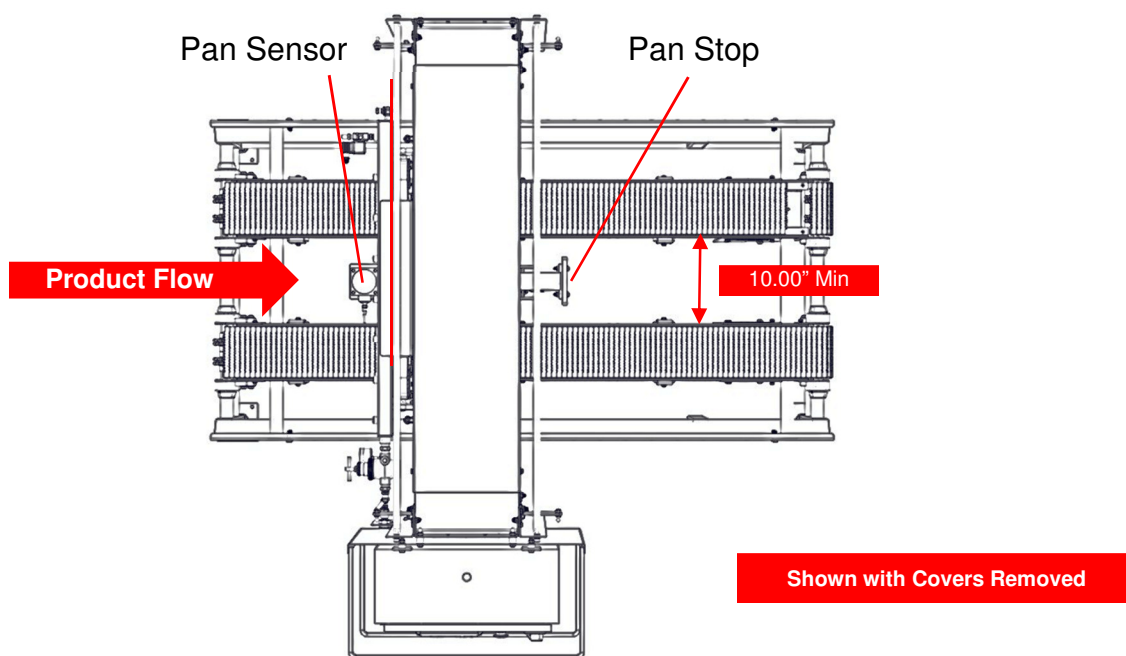
To install the unit, the following instructions are recommended:

1. After uncrating, check for damage. If there is any, notify the carrier.
2. Find the location for the unit to be installed. This will have been determined by the drawings that were sent to Burford® Corp. showing conveyor width, height, and nearby obstructions.
3. Pan guides should be provided in the area of the Splitter to keep pans straight.
4. The conveyor must not allow pans to backup, turn, or interfere with other pans entering or leaving the Splitter area.
5. The area chosen must have a minimum clearance of 10 inches between tabletop chains.
6. Area around Splitter installation site should be clear of any obstructions and Splitter shall not be installed in such a way as to create a safety hazard, or block a normal passageway. Clearance must conform to all local safety codes.
7. The conveyor used should have at least 60 inches of free length. This distance should be measured from the conveyor sides only, since some conveyor chains extend past the conveyor sides.
8. The sides and under of the conveyor must be free of any interference from bolts, conduit, motors, shafts, junction boxes, guarding, support members, etc.

■ Unit Overview

Overview



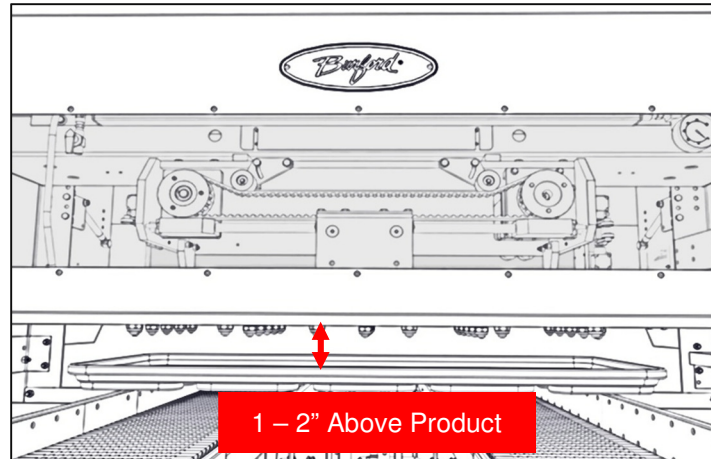
■ Unit Dimensions**Top View**

■ Installation

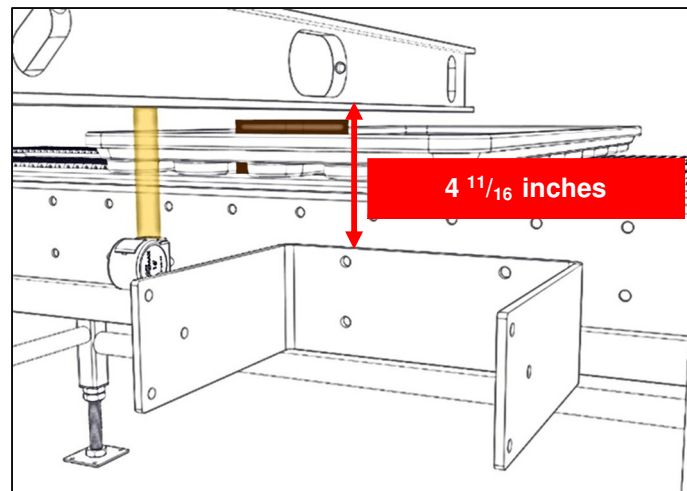
If purchased on a Burford® conveyor, then proceed to the section *Connect Electricity* in this chapter, otherwise proceed to next section.

■ Unit Height

Determine the proper height to drill the conveyor mounting holes. As a reference, the nozzle tips should be 1 to 2 inches above the product.

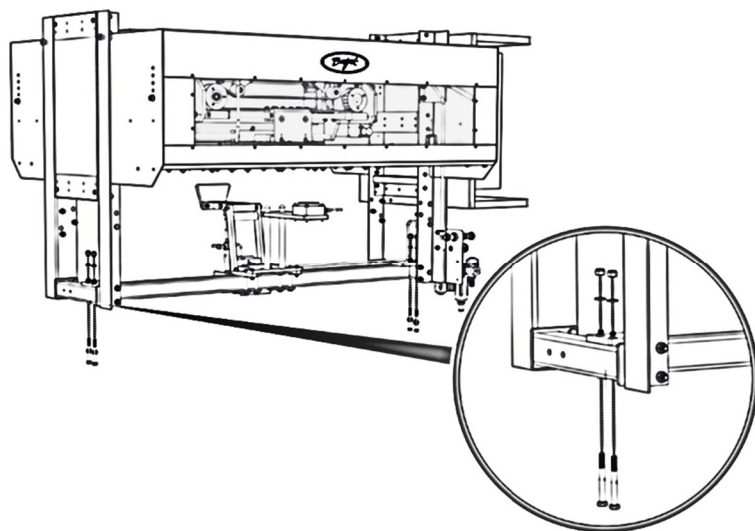


The top of the conveyor mounting bracket is $4\frac{11}{16}$ inches from the nozzle tips. Measure from 1-2" from the top of your product, or an average of your products, and place the mounting bracket so that the top of the bracket is $4\frac{11}{16}$ inches from the desired tip height. Mark and drill your holes to secure the mount to the frame.



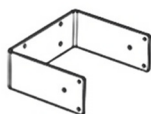
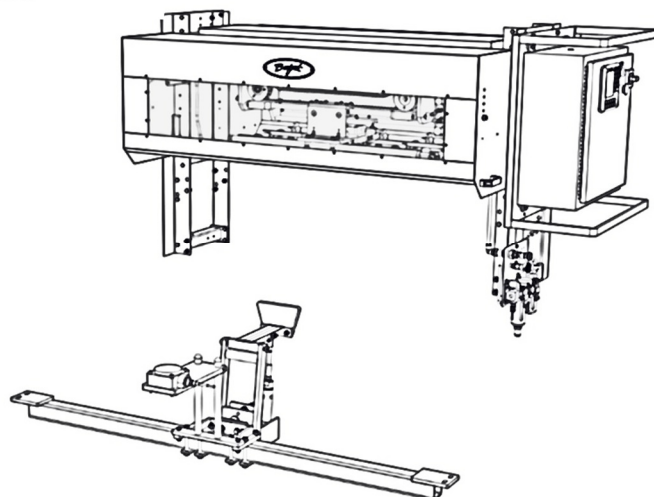
■ Remove Cross Beam

Disconnect all of the electrical and pneumatic connections going to the Pan Sensor and the Pan Stop. Remove the 4 bolts that secure the cross beam to the frame. Place the cross beam in a secure location. Locate the conveyor mount brackets.



Remove the hardware for the cross beam.

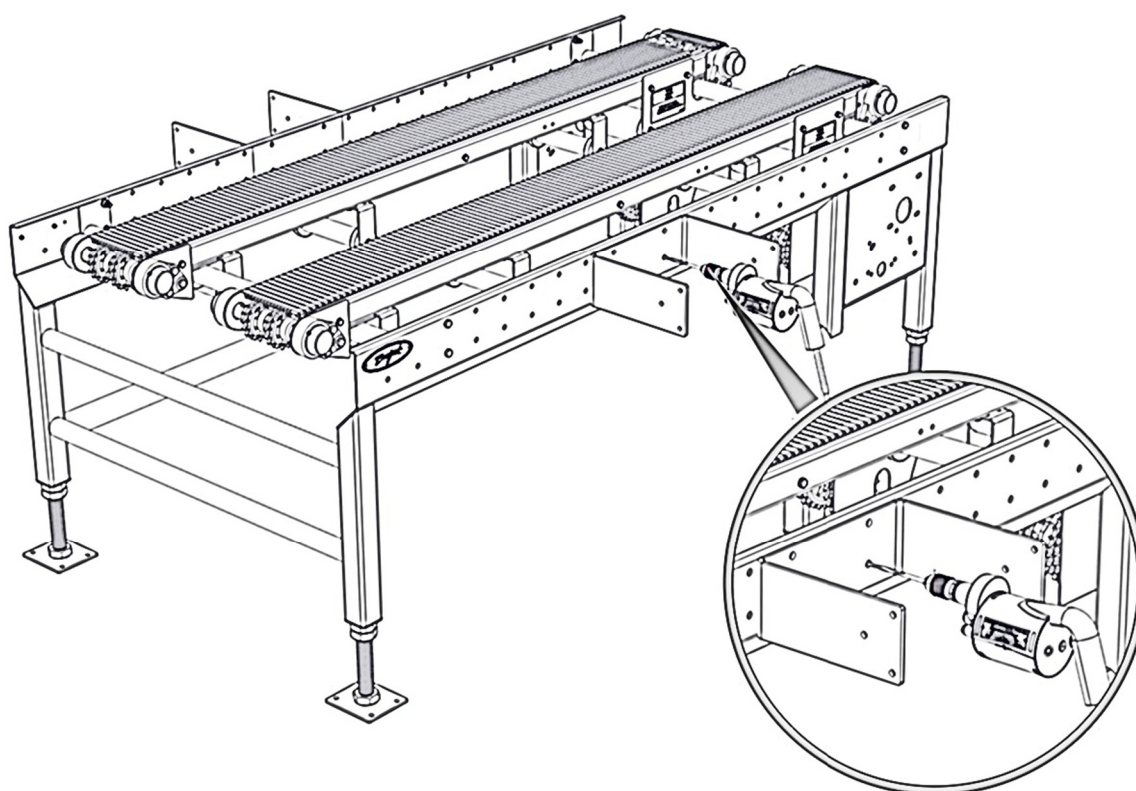
Place Pan Stop and Pan Sensor in a secure location.



Locate the Conveyor mounts. Remove from unit if attached for shipping.

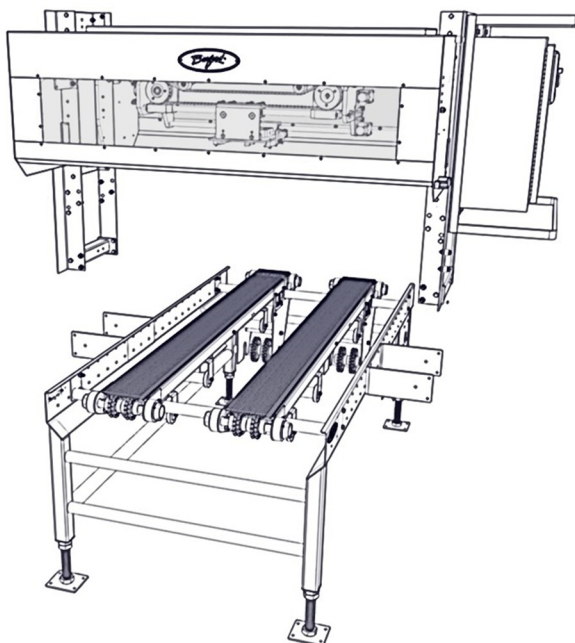
■ Mount Conveyor Brackets

Mark and Drill the holes on your conveyor for the proper height. Secure the brackets to the conveyor with the supplied hardware.

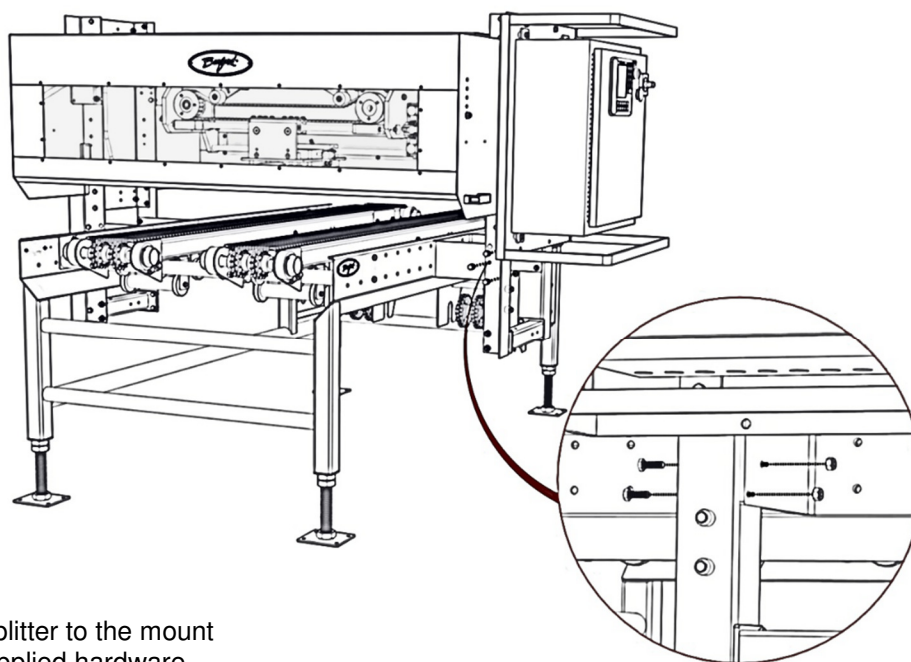


■ Mount Splitter to Conveyor

With the conveyor mounts secure to the conveyor, position the Splitter in place. Three bolts are fastened to each post. Torque the bolts securely.



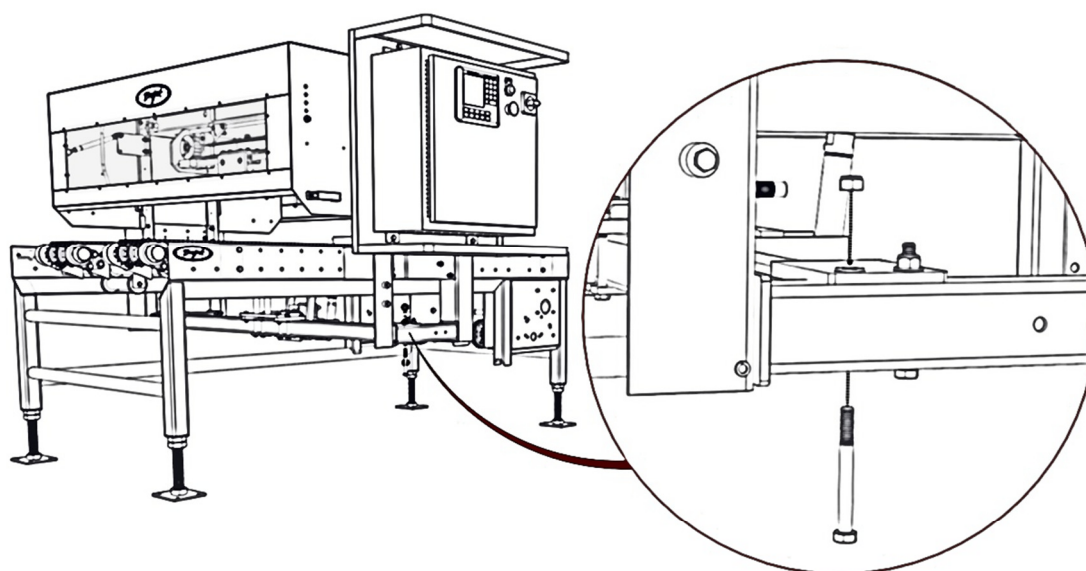
THE UNIT IS HEAVY. USE LIFTING EQUIPMENT WHEN PLACING UNIT ONTO CONVEYOR.



Attach the Splitter to the mount with the supplied hardware.

■ Mount Cross Beam

Re-attach the cross beam containing the Pan Sensor and the Pan Stop. Connect the Pneumatic lines and cable to the Pan Sensor.

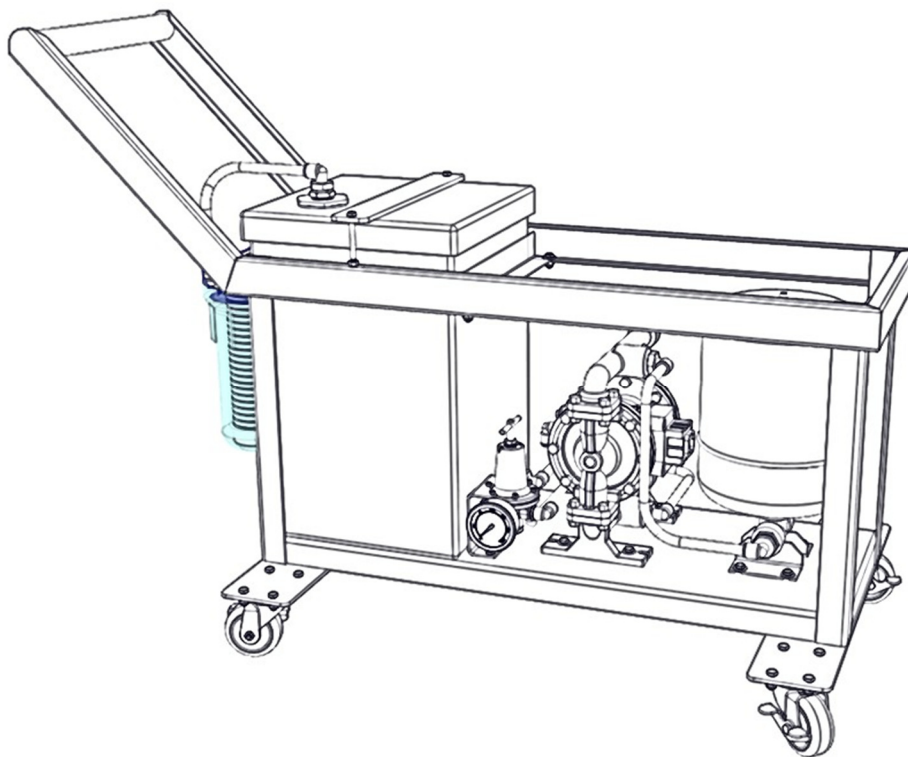


■ Place Pump Cart

Locate a suitable place for the Pump Cart. It should be out of the way, close proximity to utilities, and accessible. Fill the accumulator bladder on the Pump Cart to proper pressure.

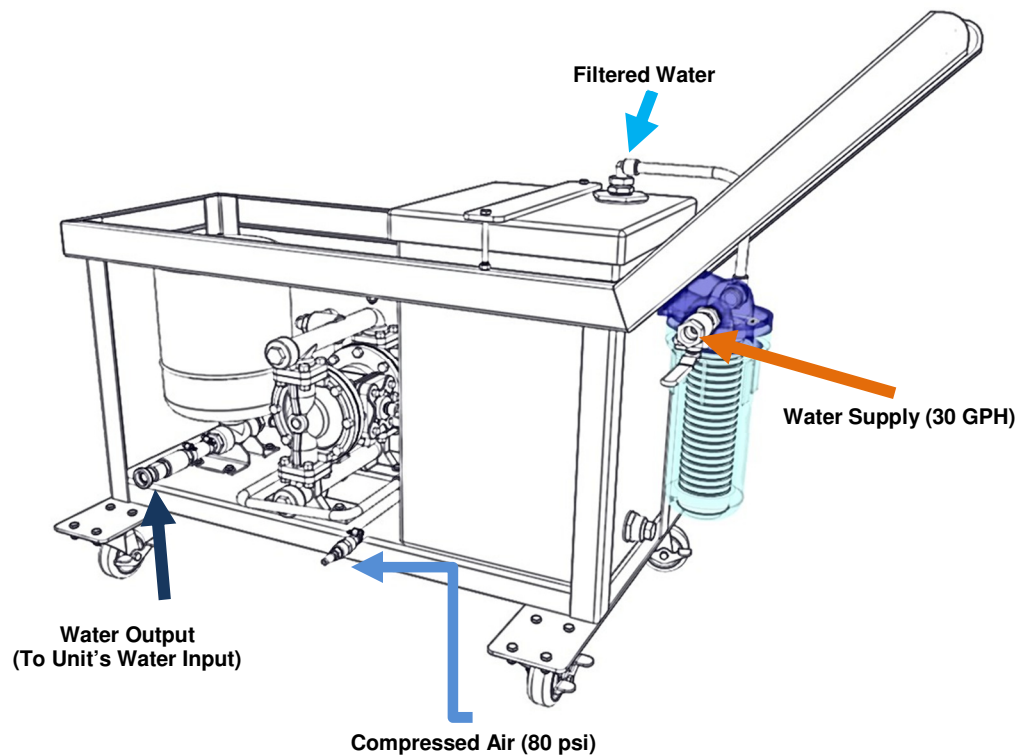
The internal bladder must be kept at 80% psi of the running pressure. Determine running pressure. Depressurize Splitter system. Set Accumulator to 80% of the determined running pressure.

The unit may need to be ran to determine the desired pressure for your splits. Run unit, determine desired split pressure. Calculate 80% of running pressure. Depressurize entire system. Fill accumulator bladder on pump cart to the calculated pressure (80% of operating pressure). Pressurize entire system and test results.



■ Connect Water

Connect the water supply line to inlet of water filter. A shut off valve is recommended at filter location. The filter must be plumbed according to the direction of flow indicated on filter. Make the connections in the illustration below.



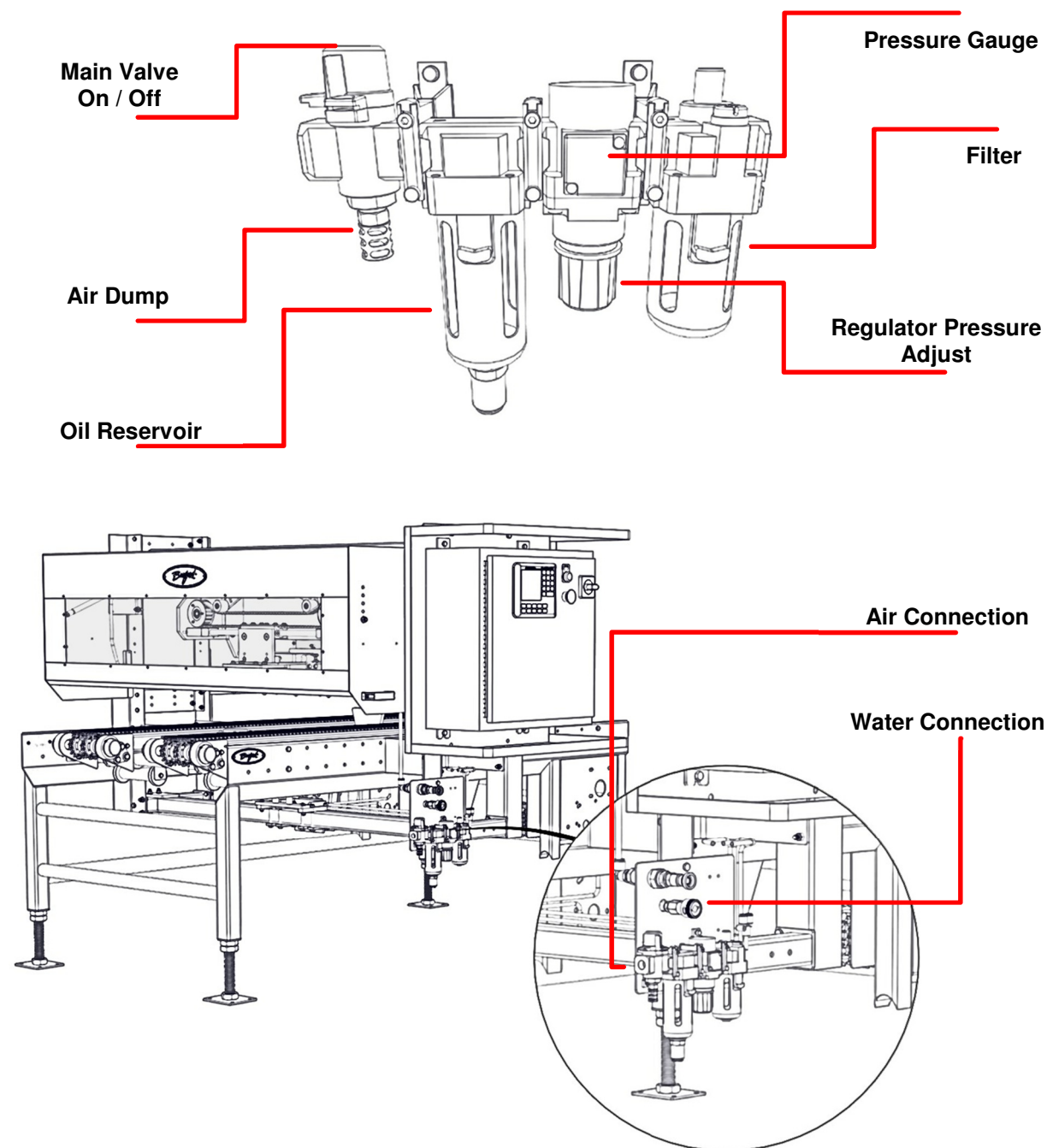
Make the appropriate connections as indicated on the illustration above.

■ Connect Electricity

Have an Electrician connect power to the unit that is specified on the Electrical Schematic supplied.

■ Connect Air

Connect the Main Air Supply to the F.R.L. The Air supply must be .370 CFM@80 psi maximum. Add lubricant to the F.R.L. Connect a filtered supply of water to the Water input connector.



■ Purge Unit

When the Splitter is initially installed, all water lines must be purged, which can take 15-20 minutes to accomplish. However, once the main lines have been purged, they will stay full of water so that subsequent purging, due to changing of Manifolds, can be done more quickly. The proper procedure is as follows.

Ensure that the mode is in the “STANDBY” and install the Manifold.

Open the bleeder valve on the distribution rail and use the purge function to “PURGE”. Allow the water to flow until a smooth continuous stream appears. Close the valve and open a bleeder valve on the manifold and use the purge function to “PURGE”. Allow the water to flow until a smooth continuous stream appears. Close the valve and then open another bleeder valve, bleeding the second bank of nozzles the same way. Repeat until all nozzle banks have been purged. All nozzles should shut the water flow off very abruptly. Close the bleeder valve and test for proper performance of spray.

The test procedure to ensure that the air is removed from the Manifold assembly is as follows.

By operating the purge function, every time the water is turned off, the stream spraying from the tips should have a clean and instant cut off. There should be no dribbling or slow stopping of water. If this occurs, you will need to repeat the steps for purging until a clean stop of water is apparent, then switch to the “RUN” mode.

Some Splitters are supplied with more than one Manifold. Every time a Manifold is changed, the bleeder valves should be closed upon installing. Then follow the purge procedures. When removing the Manifold, leave the bleeder valves closed. This will help make the purge procedure quicker the next time Manifold is used.

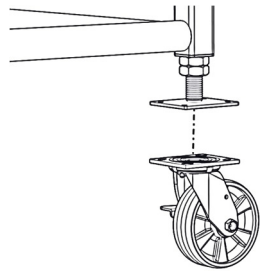
NOTE: If a particular tip cannot be purged a problem may exist with the check screen. Change check screen and repeat purging procedure.

NOTE: It is very important to purge all the air from the manifold and nozzles for proper operation of the Splitter. Air in the system will cause inconsistent nozzle operation.

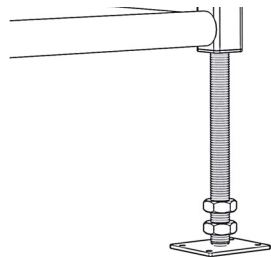
■ Castors

The Unit may have been shipped with temporary castors for easy portability. The temporary castors must be removed prior to operation. Damage to the unit, or injury to personnel may occur.

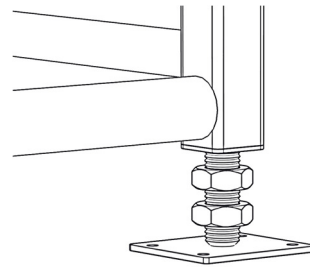
The unit must be permanently secured to the floor.



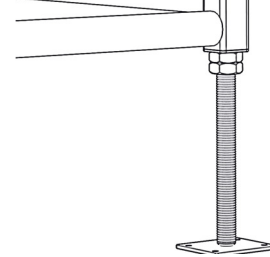
Remove all of the temporary castors.



Rotate shaft to adjust height.



Loosen the jam nuts.



When level with existing conveyor system tighten the jam nuts.

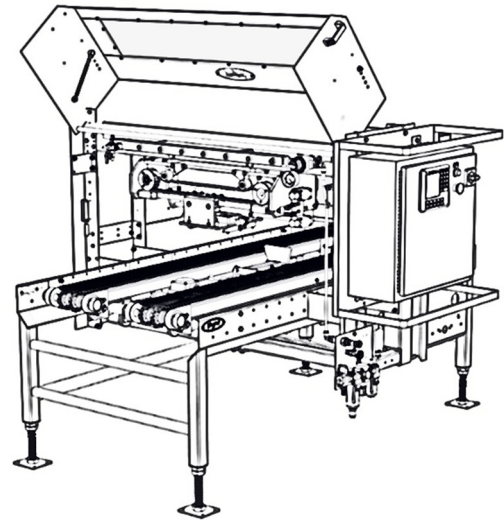
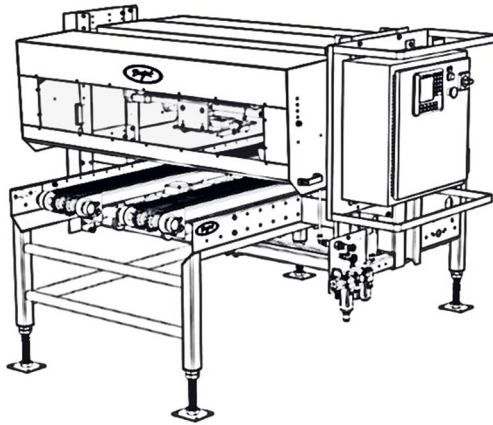
Drill holes matching the bolt pattern of the castor mount and secure with concrete anchors.

■ Level Conveyor

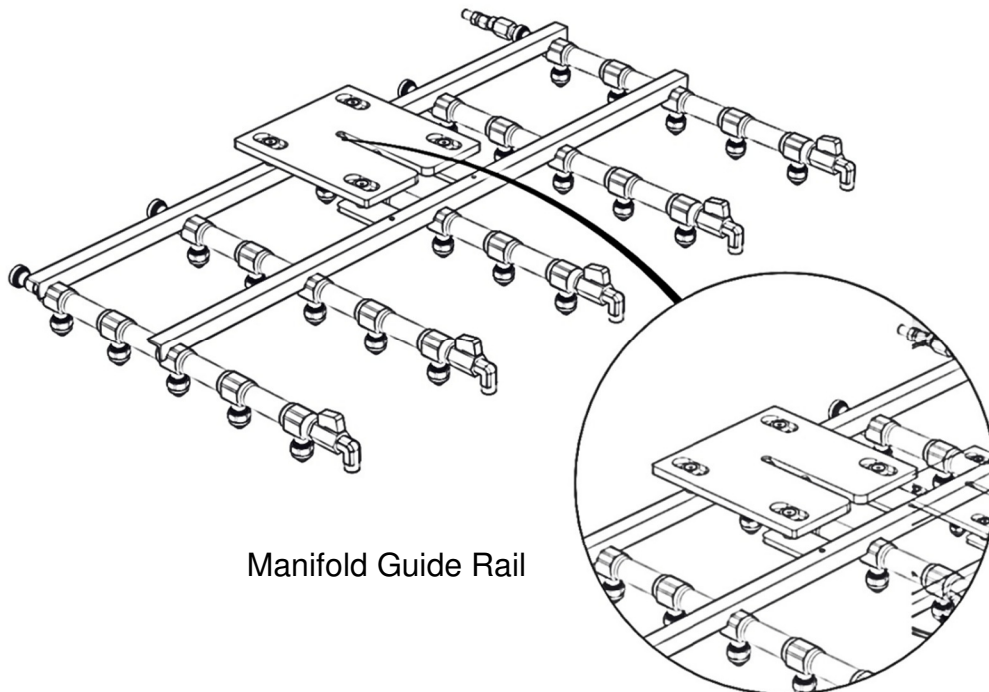
The unit will need to be level during operations to function properly. The support legs are adjustable. Match the height of your existing conveyor system to that of the Burford® conveyor. There are four leg supports with foot pads. The foot pads are mounted to a threaded shaft rod. The threaded shaft rod is able to extend and retract approximately 6" of travel within the leg support.

■ Manifold Installation

The Burford® PSCS-3R Splitter is equipped with a single mounting location for each Manifold. Press the E-Stop before attempting to insert a Manifold.



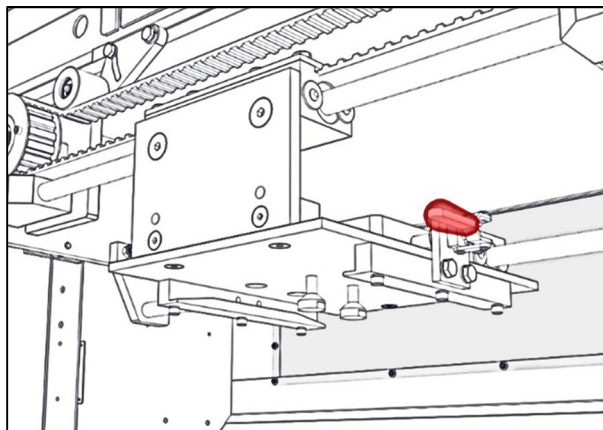
Open the upstream cover.



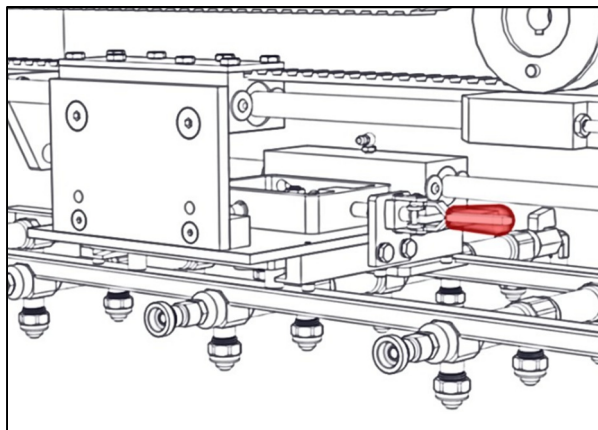
Manifold Guide Rail

■ Manifold Installation, continued

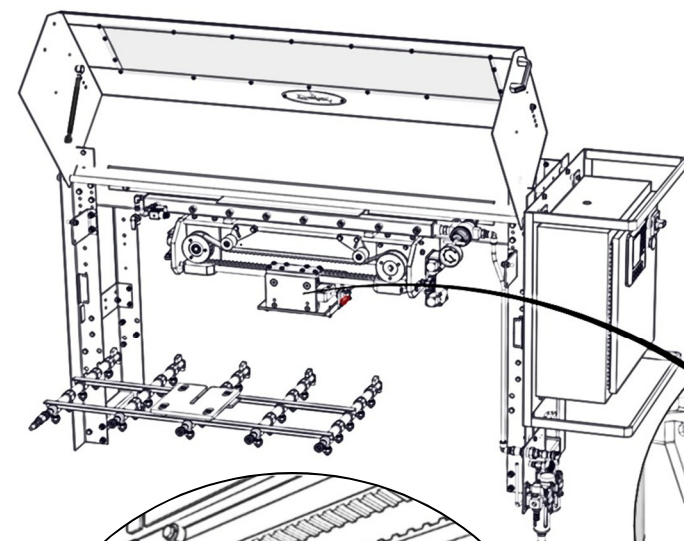
Locate the Manifold locking plate on the drive carriage. Pull the handle to unlock the holder and allow a Manifold to be inserted.



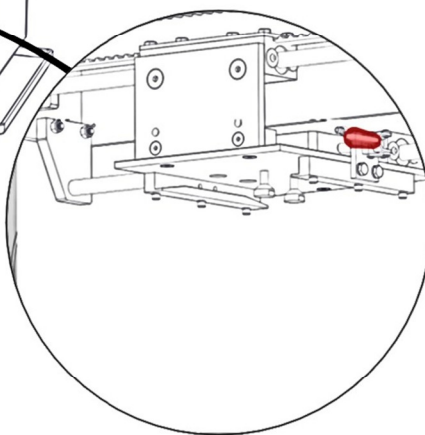
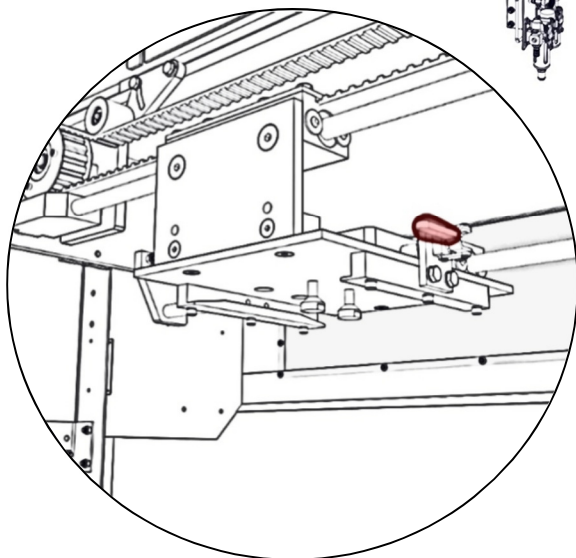
Handle in locked position.



Handle in unlocked position.



Align the slot on the manifold with the two protruding bolts on the manifold locking plate.



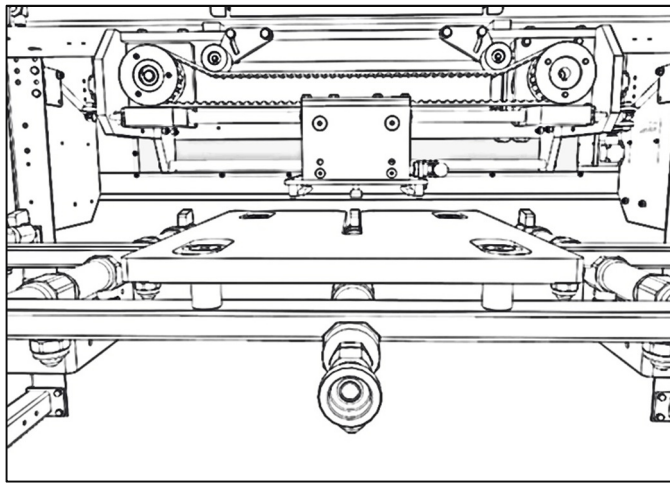
Manifold Locking Plate

■ Manifold Installation, continued

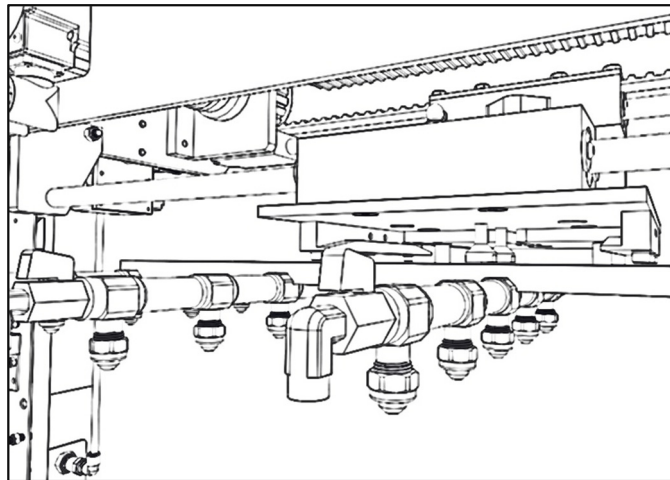
Insert the Manifold into the Manifold locking plate on the drive carriage. The Manifold will slide into the rails on the locking plate as shown in the illustrations below. Guide the Manifold forward until the two protruding bolts on the locking plate are fully inserted into the slot on the Manifold.

When the Manifold is fully inserted, pull the locking handle to lock the Manifold securely in place.

Connect the stainless hoses to the rows of the manifold.



Align the slot on the manifold with the bolts on the locking plate.



Insert the manifold until the bolt is fully situated in the slot on the manifold.

Chapter 4

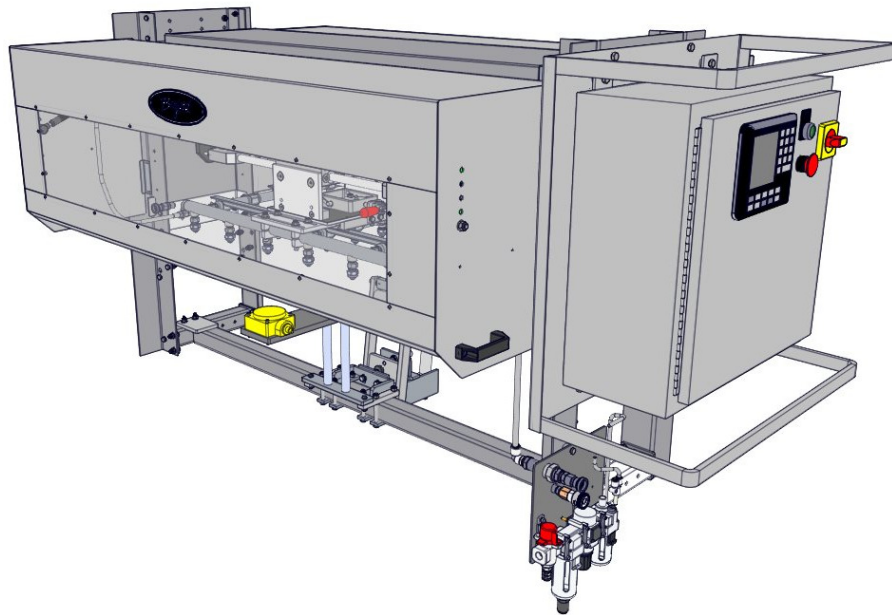
Operation

CHAPTER 4: OPERATION

■ Theory of Operation

The Burford® PSCS Splitter creates one of three different types of split patterns (straight, cross or pattern) on the top of the dough piece. The location and type of the split is determined by the data entered by the user when setting up individual varieties (this function is password protected). Individual varieties are selected by using the display located on the control panel.

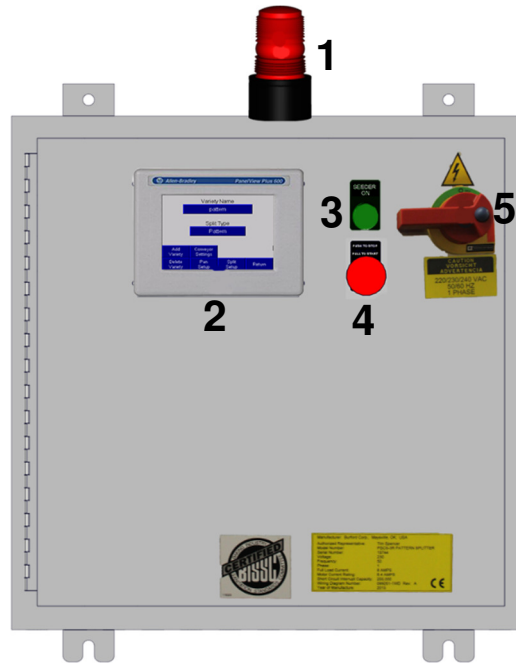
The pattern split sequence is performed while the pan is moving through the unit. The cross split sequence utilizes the pan stop to control the position of the pan while completing the split cycle. As the pan travels toward the Splitter, the leading edge of the pan triggers a Pan Sensor. The Pan Sensor tells the PLC that a pan is present and that a splitting cycle may begin. The PLC constantly monitors the output of the motion program controller to obtain the exact location of the Manifold. Utilizing the selected variety's settings from the operator interface, the unit then completes the split type on the pan. The carriage holds an array of nozzles that are arranged in a pattern, which matches the pattern of the cups in the pan. After completion of the split sequence the carriage goes to the home position and awaits a new signal from the Pan Sensor.



NOTE: Verify a 2" space between pans and a constant conveyor speed is maintained.

■ Control Panel

Below is the Control Panel. The control panel houses the electronic controllers for the unit. The HMI, E-Stops, Alarm indicators are also located here.



REF	FUNCTION	DESCRIPTION
1	"ALARM BEACON"	Signals the operator there is an issue with the Manifold carriage.
2	"OPERATOR DISPLAY"	This is the primary operator interface with the unit. Allows access to screens required for setup and operation of the unit.
3	"POWER ON LIGHT"	When illuminated, indicates the unit is energized and ready to operate.
4	"OFF/ON BUTTON"	Removes electrical power from the PLC, disabling all machine functions. (Push – Off / Pull – On)
5	"MAIN ELECTRICAL DISCONNECT"	Removes electrical power from all components within the main electrical enclosure.

■ Operator Interface

The touch screen operator interface is where variety setups and parameters will be adjusted, and any error messages will be displayed.



Operator Interface

■ Main Screen



Main Screen

FUNCTION	DESCRIPTION
“VARIETY NAME”	Displays the current variety selected.
“ALARMS”	This button signals the screen to display recent Alarms.
“SELECT VARIETY”	This button instructs the display to advance to the variety selection screen.
“SETUP”	This button signals the display to advance to the variety setup screens. NOTE: THESE SCREENS ARE PASSWORD PROTECTED.
“MODE”	This button toggles the unit between “RUN” and “STANDBY” modes. When in the “STANDBY” mode the Pan Sensor is disabled, allowing pans to travel through the unit without the unit actuating.
“PURGE”	This button instructs the unit to actuate the Splitter nozzles for 10 minutes. Purge is used to remove air from the fluid lines.
“CONVEYOR “	This button toggles the conveyor on and off.
MESSAGE BANNER	The message banner at the top of the screen displays machine status.

■ Main Setup Screen



Main Setup Screen

FUNCTION	DESCRIPTION
“VARIETY NAME”	Touch this box to change the variety name.
“SPLIT TYPE”	Touch this box to Toggle Pattern, Cross, and Straight.
“ADD VARIETY”	This button adds a new variety to be setup.
“DELETE VARIETY”	This button deletes the current variety displayed under Variety Name.
“CONVEYOR SETTINGS”	This button advances the display to the Conveyor Settings” screen.
“PAN SETUP”	This button advances the display to the Pan Setup Screen for the selected split type. This is not available for Straight split mode.
“SPLIT SETUP”	This button advances the display to the Split Setup Screen for the selected split type.
“HOME UNIT”	This button homes the Manifold.
“RETURN”	Returns the operator display to the previous screen.

■ Straight Split Setup Screen



Straight Split Setup Screen

FUNCTION	DESCRIPTION
“HOME OFFSET”	This button advances to the Home Offset Screen.
“SPLIT DELAY”	This value is the amount of distance (millimeter) the pan travels before the Splitter Manifold starts to split dough pieces after the pan has cleared the Pan Sensor.
“SPLIT LENGTH”	This value is the amount of distance (millimeter) the pan travels before the Splitter Manifold stops splitting dough pieces after the pan has cleared the Pan Sensor. This is used to allow the entire dough piece to be split.
“RETURN”	Returns the operator display to the “SETUP” screen.

■ Cross Split Setup Screen



Cross Split Setup Screen

FUNCTION	DESCRIPTION
“HOME OFFSET”	This button advances to the Home Offset Screen.
“SPLIT SPEED”	This value is the speed in which the Manifold travels as it splits the dough.
“PAN STOP DELAY”	This value is the distance the pan travels once the front edge breaks the sensor before the pan stop engages. This will allow you to control the pans stopping point for the perfect split.
“PAN SETTLE”	This value determines the length the pan travels before the pan stop is disengaged. The distance is when the front edge of the pan breaks the sensor until the pan release the pan.
“RETURN”	Returns the operator display to the previous screen.

■ Pattern Split Setup Screen



Pattern Split Setup Screen

FUNCTION	DESCRIPTION
“HOME OFFSET”	This button advances to the Home Offset Screen.
“SPILT ANGLE”	This value is the angle in which the split is made on the dough piece. Range: 0 – 90.05°.
“SENSOR DELAY”	This value is the amount of distance (millimeter) the pan travels before the Splitter Manifold starts to split dough pieces after the pan has cleared the Pan Sensor.
“RETURN”	Returns the operator display to the previous screen.

■ Creating A New Straight Split Variety

From the “MAIN” screen, touch “SETUP” and enter password to access the Setup screens.



Toggle the “SPLIT TYPE” until “STRAIGHT” appears.



Touch “SPLIT SETUP”.



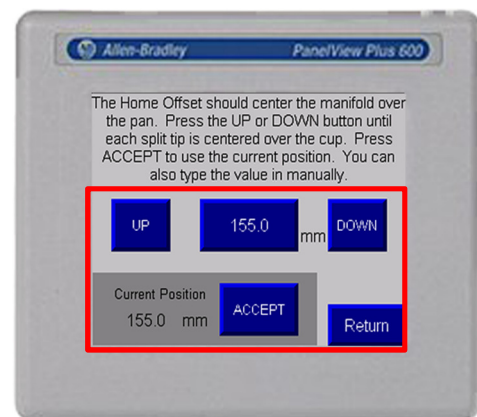
NOTE: The following screens are password protected to prevent inadvertent and/or unauthorized changes to variety set-up information.

■ Creating A New Straight Split Variety, continued

Push the “HOME OFFSET” button.



The HOME OFFSET should center the manifold over the pan. Press the “UP” and “DOWN” buttons until each split tip is centered over the cup. Press “ACCEPT” to use the current position. You can also type in the value manually. Hit “RETURN” once you’ve achieved the correct position



Push the “SPLIT DELAY” button. Put in a length that will allow the split to start at your desired point.



■ Creating A New Straight Split Variety, continued

Push the “SPLIT LENGTH” button. Put in a length that will allow the split to stop at your desired point. Touch “RETURN” to advance to the previous screen.



Push “VARIETY NAME” to name the variety that you just setup.



Touch “RETURN” to complete the Straight Split setup and return to the “MAIN” screen.



■ Creating a New Cross Split Variety

From the “MAIN” screen, touch “SETUP” and enter password to access the Setup Screen.



Toggle the “SPLIT TYPE” until “CROSS” appears.



Touch “SPLIT SETUP” to access the Split setup screens.

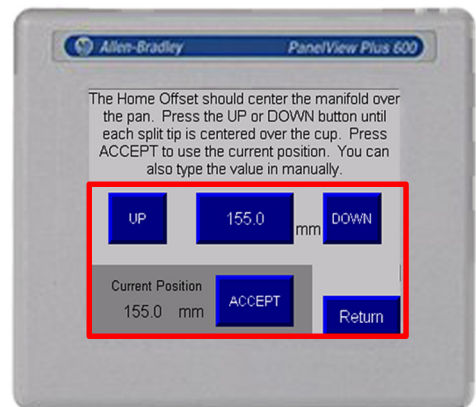


■ Creating a New Cross Split Variety, continued

Push the “HOME OFFSET” button.



HOME OFFSET should center the manifold over the pan. Press the “UP” and “DOWN” buttons until each split tip is centered over the cup. Press “ACCEPT” to use the current position. You can also type in the value manually. Hit “RETURN” once you’ve achieved the correct position.



Touch “SPLIT SPEED” and input a value that will control the speed in which the manifold splits the dough.



■ Creating a New Cross Split Variety, continued

Touch “PAN STOP DELAY” and input a value that will control the distance the pan travels once the front edge breaks the sensor and the pan stop engages. This will allow you to control the pans stopping point for the perfect split.



Press the “PAN SETTLE” button and input a length that allows pan to settle against the pan stop before the pan stop is disengaged. This allows time for the manifold to complete a split. Once values are entered touch “RETURN”.



Press the “PAN SETUP” button to advance to the Cross Pan Setup Screen.



■ Creating a New Cross Split Variety, continued

Enter the dimensions as displayed on the screen. The distance from the side of the pan to the center of the cup and the total width of the cup. Once values are entered touch “RETURN”.



Push “VARIETY NAME” to name the variety that you just setup.



Push “RETURN” to complete the Cross Split setup and return to the “MAIN” screen.



■ Creating A New Pattern Split Variety

From the “MAIN” screen, touch “SETUP” and enter password to access the Setup screens.



Toggle the “SPLIT TYPE” until Pattern appears.



Touch “SPLIT SETUP.”



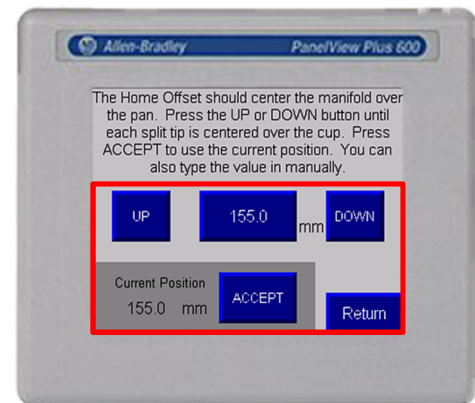
NOTE: The following screens are password protected to prevent inadvertent and/or unauthorized changes to variety set-up information.

■ Creating A New Pattern Split Variety, continued

Push the “HOME OFFSET” button.



HOME OFFSET should center the manifold over the pan. Press the “UP” and “DOWN” buttons until each split tip is centered over the cup. Press “ACCEPT” to use the current position. You can also type in the value manually. Hit “RETURN” once you’ve achieved the correct position.



Push the “SPLIT ANGLE” button and enter an angle. The angle parameters are determined by your cup size. This value is the angle in which the split is made on the dough piece.

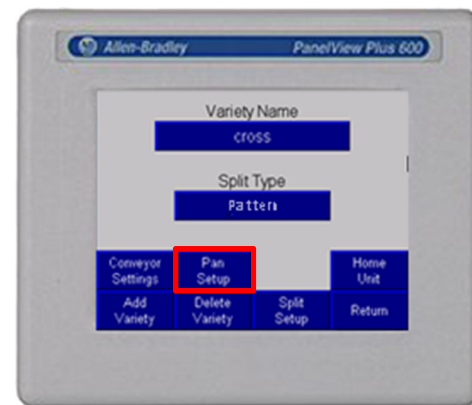


■ Creating A New Pattern Split Variety, continued

Push the “SENSOR DELAY” button and enter a distance in millimeters. This is the value that will determine how far the pan travels before the Splitter manifold starts to split dough pieces after the front edge of the pan breaks the sensor. Once values are entered touch “RETURN”.



Press the “PAN SETUP” button to advance to the Pattern Pan Setup Screen.



Enter the dimensions as displayed on the screen. (1) The distance from center of cup to center of cup in the same column. (2) The number of cups from leading edge to trail edge of the pan. (3) The distance from center of cup to center of cup on the same row. (4) The distance of the leading edge to the center of the cup. (5) The length of the cup. (6) The distance from the side of the pan to the center of the cup. (7) The width of the cup. (8) The number of cups from 1 side of the pan to the other. Once values are entered touch “RETURN”.



■ Creating A New Pattern Split Variety, continued

Push “VARIETY NAME” to name the variety that you just setup.



Push “RETURN” to complete the Pattern Split setup and return to the “MAIN” screen.

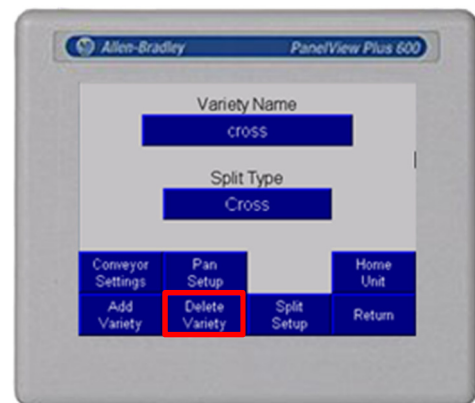


■ Deleting an Existing Variety

To delete an existing variety from the Main Screen press “SETUP” and enter the password. This will advance to the Setup Screen.



To delete a variety from the Setup Screen, simply press the “DELETE VARIETY” button. This will advance to the screen shown below,

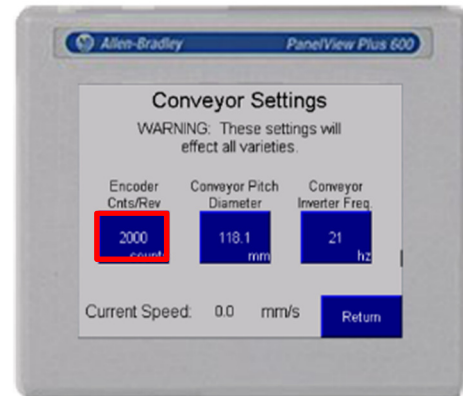


Select the variety you wish to delete by pressing the “UP or DOWN” buttons. Once the variety is highlighted, push the “DELETE” button. The “DELETE” button will blink red, push the “DELETE” button once more to delete the highlighted variety. Push “RETURN” to go back to the Setup Screen.

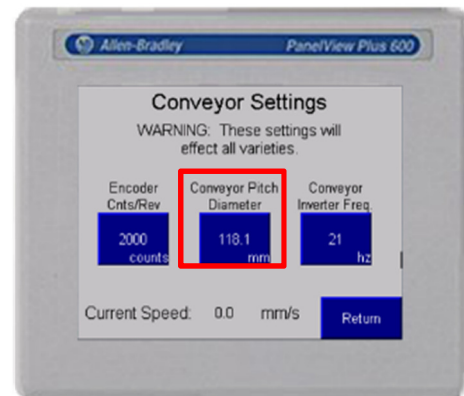


■ Conveyor Settings

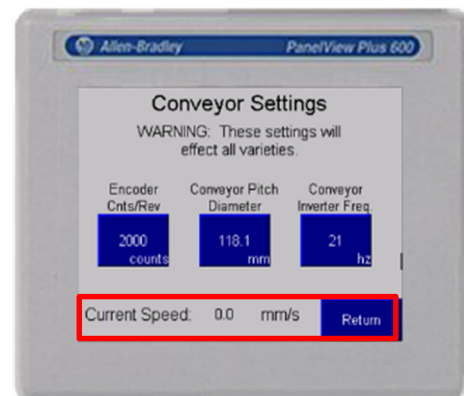
The value in the “ENCODER CNTS/REV” box is determined by the encoder that is connected to the Conveyor Drive. The encoder that was supplied with this machine measures at 2000Cnts/Rev. If at any time the encoder is changed update the “ENCODER CNTS/REV” button with the updated value.



The “CONVEYOR PITCH DIAMETER” value is determined by the Conveyor Drive Sprocket. A sprocket’s pitch is the distance between adjacent tooth centers. This value multiplied by pi gives the distance the conveyor travels in one revolution of the drive sprocket.



The “CONVEYOR INVERTOR FREQ” button allows you to control the speed of the conveyor. It sends a direct signal to the conveyor drive determining the amount of HZ output. You will “CURRENT SPEED” change at the bottom of the screen.



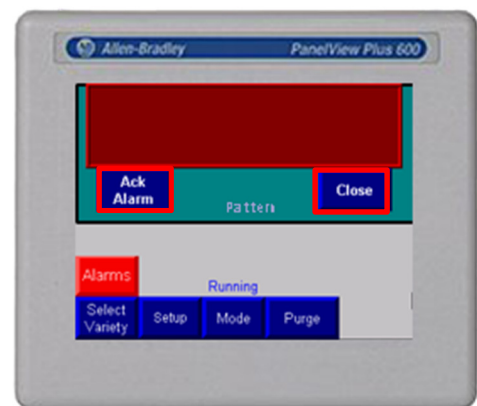
Once these values are set press “RETURN” to go the previous screen. These values will be the same on all varieties. Your conveyor was shipped with the correct values stored. WARNING: These settings will effect all varieties.

■ Alarms Screen

To see faults that have not been acknowledged, press the “ALARMS” button.



The Alarm Dialog Box will appear. Press “ACK ALARM” to clear the fault. Press “CLOSE” to close the Alarm Dialog Box.



■ Purging the Unit

To free any air from the fluid lines the operator must press the “PURGE” button. This button instructs the unit to actuate the Splitter nozzles for 10 minutes. You can stop the purge sooner by pressing the “PURGE” while it’s purging.

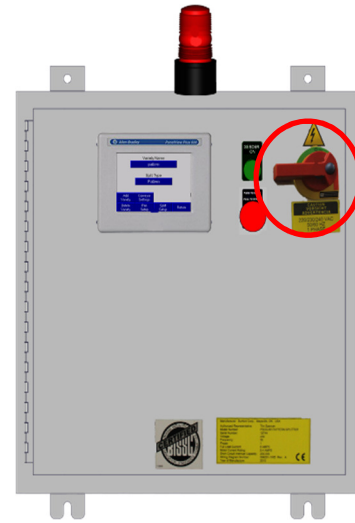


The Purge button performs the same function when pressed from any screen.



■ Daily Startup Procedure

Turn “ON” the main disconnect and allow the display to boot up. This may take several minutes. Pull the “STOP” button to the “START” position.



Touch “PRESS TO START” on the operator display.



Verify the unit is in “RUNNING” mode. Touch “SELECT VARIETY” to advance to screen shown in the next step.



■ Daily Startup Procedure, continued

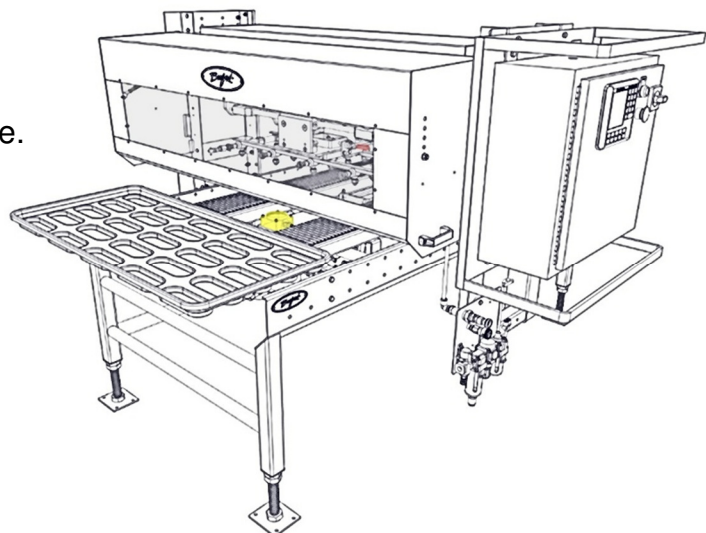
Highlight the desired variety and touch “RETURN”.



This button instructs the unit to actuate the Splitter nozzles for 10 minutes. Purge unit, using the “PURGE” button, until a clean stop/start of water spray is established.

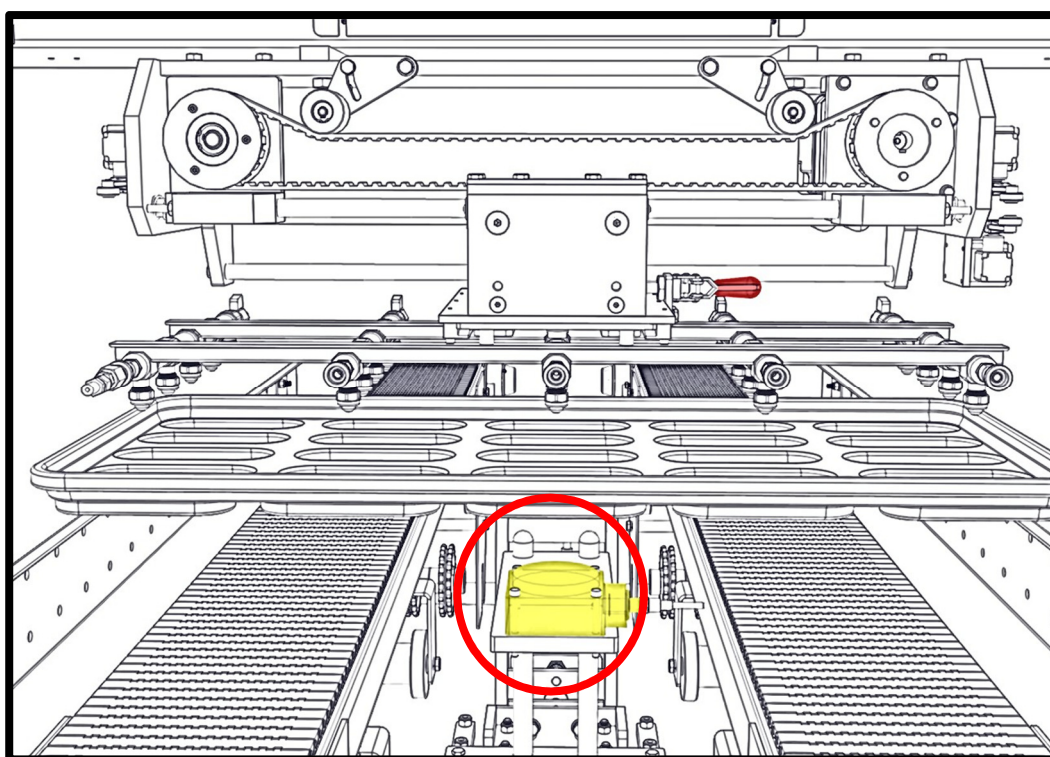


Run a test pan to ensure proper coverage.
Begin production.



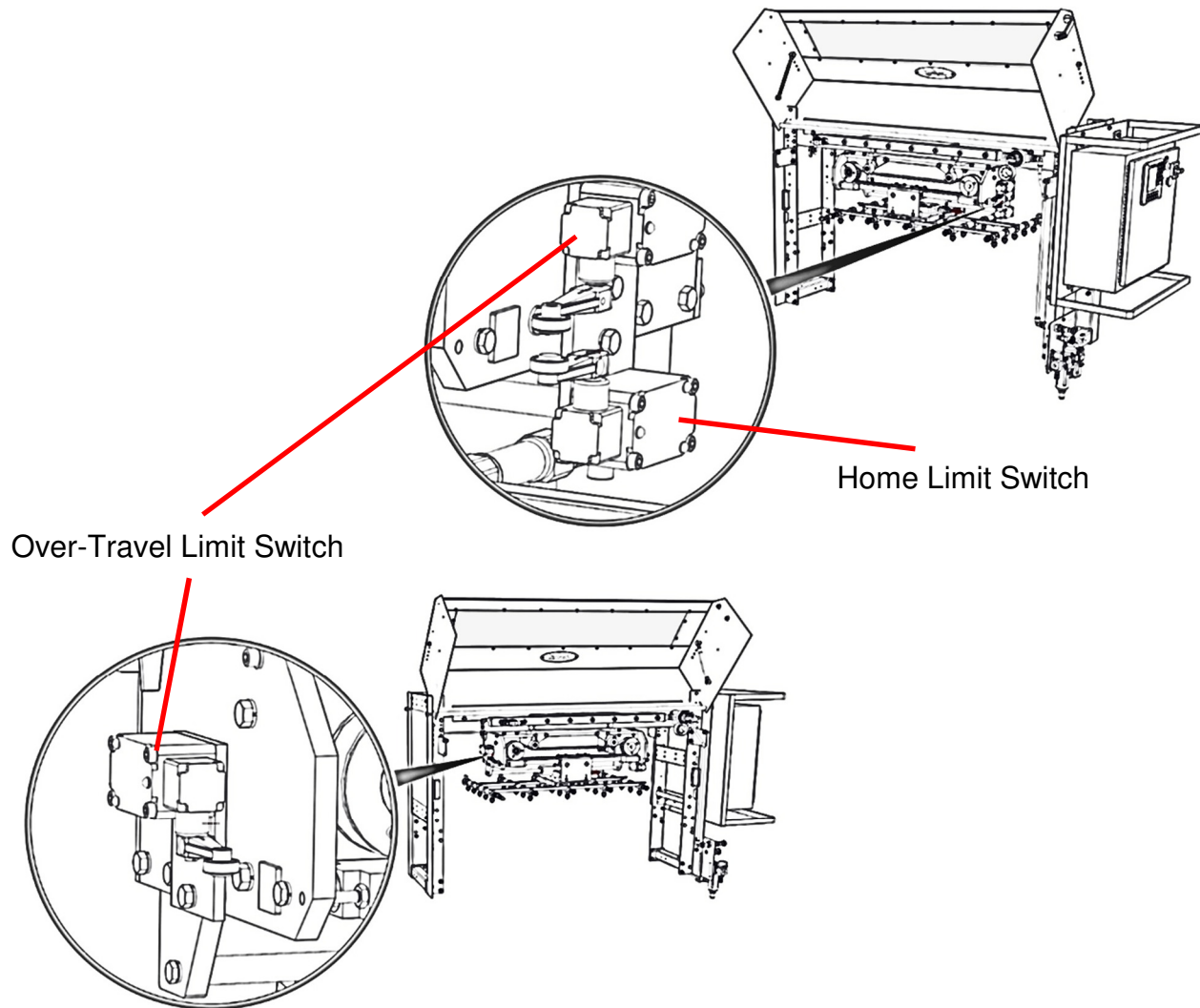
■ Pan Sensor

The Pan Sensor is used to signal when a pan has entered the Splitter area. Once a pan is sensed, the PLC initiates the split sequence specified on the control panel. The sensor is mounted beneath the conveyor chain.



■ Home and Over-Travel Switches

The limit switches are responsible for signaling the unit of an Over-Travel condition and identify the “HOME” position of the carriage. The Over-Travel switches are located directly opposite of one another. They are responsible for signaling the unit when the carriage has exceeded its range of travel. The remaining switch is the home switch. This switch signals the unit to stop once the “homing” cycle is complete.



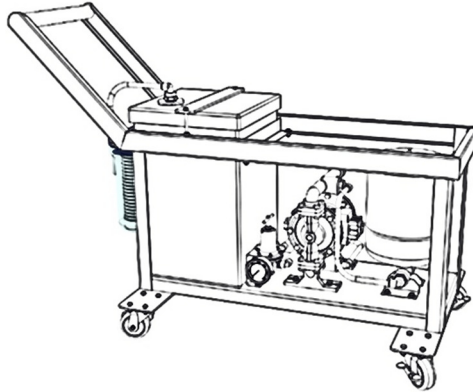
NOTE: Guard raised for clarity.

■ Pump Cart and Manifold Pressure

Pressure settings for the pump cart air pressure and the Manifold fluid pressure are outlined below. Different dough will require changes in pressure settings to achieve the desired split depth. These settings are general and may differ from application to application.

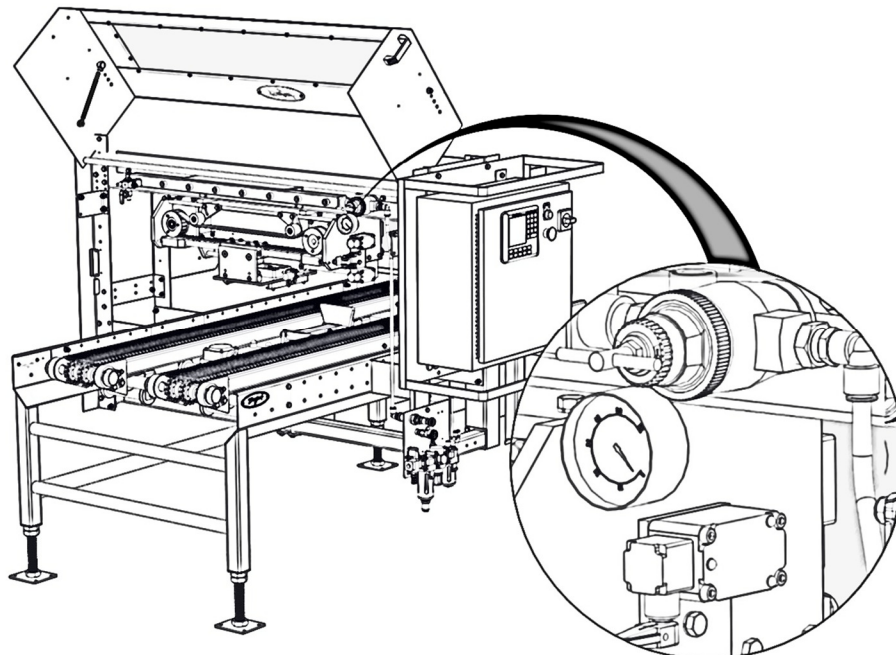
Pump Cart Air Pressure: 80 psi max.

Pump Cart Accumulator Pressure: 80% of Operating psi.



Manifold Liquid Pressure: 30-40 psi for standard (1-23 nozzles).

Manifold Liquid Pressure: 40-50 psi for high volume (24-60 nozzles).



Chapter 5

Maintenance

CHAPTER 5: MAINTENANCE

We strongly recommend the following be done periodically to ensure proper performance of your Burford® Splitter.

■ Recommended Weekly Maintenance

- ✓ Clean catch pans, empty catch tray (located beneath conveyor).
- ✓ Clean conveyor chain.
- ✓ Wipe off and clean Pan Sensor.
- ✓ Wipe off frame and conveyor.

■ Recommended Monthly Maintenance

- ✓ Replace pump cart water filter.
- ✓ Fill air lubricator reservoir.
- ✓ Remove all catch pans and catch trays from unit and thoroughly clean at a site away from the Splitter.
- ✓ Separate the conveyor chain and clean at a site away from the Splitter.
- ✓ Use compressed air to remove dust and debris from the Splitter.
- ✓ Use a soft cloth to clean observation windows on main covers.
- ✓ Wipe off frame and covers.



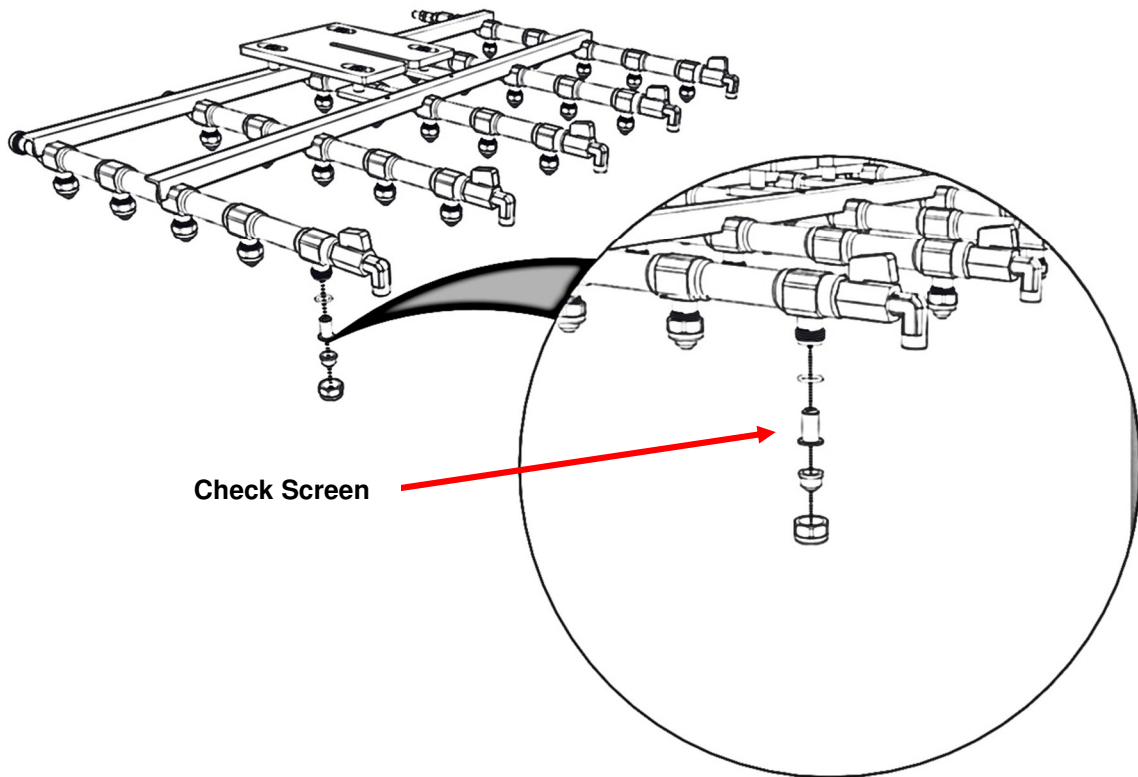
**Do not use pressurized water near the unit.
Damage or shock may occur.**



**Follow your facilities Lockout/Tagout
procedures before beginning any maintenance
or cleaning procedures.**

■ Check Screen Replacement

To change check screen, loosen and remove nozzle tip. Inspect screen for defects and blockages, replace as necessary.

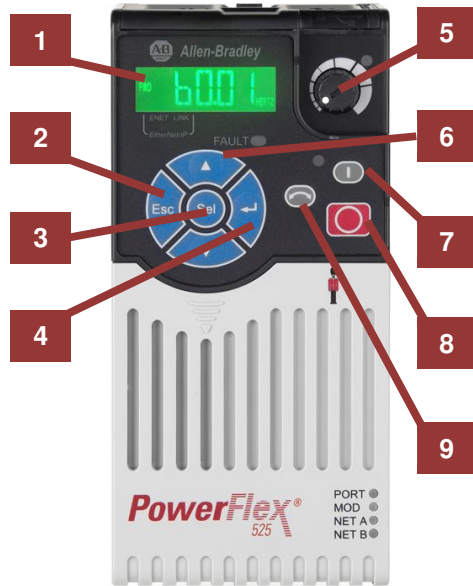


Chapter 6

Settings and Adjustments

CHAPTER 6: SETTINGS AND ADJUSTMENTS

■ Drive Descriptions



This Burford® Unit is equipped with a Kinetix single axis EtherNet/IP servo drive to control the automation of the unit. The programmable motor controller is an example of the drives used. The unit may be equipped with a driver for an optional conveyor. The table below provides a brief description of the function keys for the Allen Bradley Driver. See supplied motor drive manual for information on the Kinetix.

REF	FUNCTION	DESCRIPTION
1	Display	Displays parameter groups and values. Also contains status LEDs. See accompanying owner manual for more information.
2	Escape	Back one step in programming menu. Cancels a change and exit programming mode.
3	Select	Advance one step in programming menu. Selects a digit when viewing parameter values.
4	Enter	Advance one step in programming menu. Save a change to a parameter value.
5	Speed Dial	Used to control speed of drive.
6	Scroll	Used to scroll through parameters or to increase/decrease parameter values.
7	Start	Used to start the drive.
8	Stop	Used to stop the drive or clear a fault.
9	Reverse	Used to reverse direction of drive.

■ Drive Settings

The motor controllers have been preset at Burford® Corp. for your particular application. The digital input function is used to configure the controllers for remote operation via the programmable logic controller and touch screen interface. Parameters not listed below should remain at the manufacturer's default values. Verify the Inverter that is installed in your unit before checking the settings below.

PARAMETER	CONVEYOR (Optional)
P41	.1
P42	.1
P46	5
P47	15
C129	192
C130	168
C131	16
C132	201
C133	255
C134	255

KINETIX SINGLE AXIS ETHERNET/IP SERVO DRIVE	
STATUS	DESCRIPTION
Hx.xx	Hardware revision. For example, H2.00.
Fx.xx	Firmware revision. For example, F2.06.
dHCP	Ethernet DHCP Configuration: 0='dhcp' is disabled; 1='dhcp' is enabled. = 0
IP_1	Modify the first octet of the IP address. = 192
IP_2	Modify the second octet of the IP address. = 168
IP_3	Modify the third octet of the IP address. = 16
IP_4	Modify the fourth octet of the IP address. = 200
nEt1	Modify the first octet of the netmask. = 255
nEt2	Modify the second octet of the netmask. = 255
nEt3	Modify the third octet of the netmask. = 0
nEt4	Modify the fourth octet of the netmask. = 0
gat1	Modify the first octet of the gateway.
gat2	Modify the second octet of the gateway.
gat3	Modify the third octet of the gateway.
gat4	Modify the fourth octet of the gateway.



POWER MUST BE CYCLED ON THE INVERTER BEFORE ANY CHANGES ARE APPLIED.

■ Water Pressure Settings

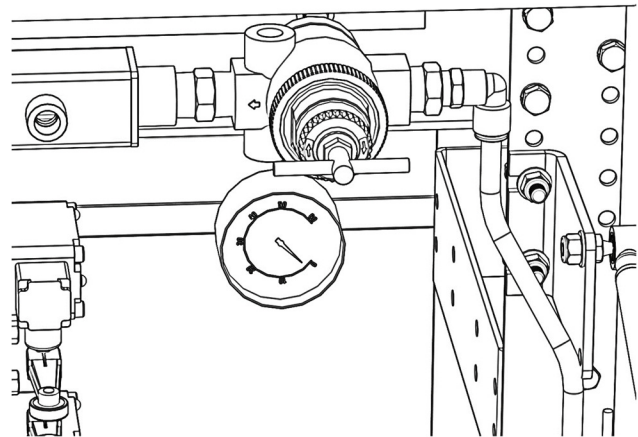
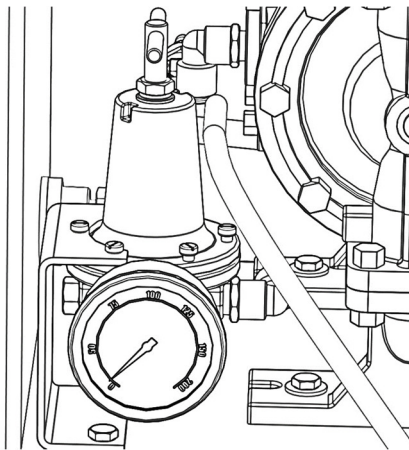
Pressure settings for the pump cart air pressure and the Manifold fluid pressure are outlined below. Different dough will require changes in pressure settings to achieve the desired split depth. These settings are general and may differ from application to application.

Pump Cart Air Pressure: 80 psi max

Pump Cart Accumulator Pressure: 30 psi

Manifold Liquid Pressure: 30-40 psi for standard (1-23 nozzles) Manifold.

Manifold Liquid Pressure: 40-50 psi for high volume (24-60 nozzles) Manifold.



Chapter 7

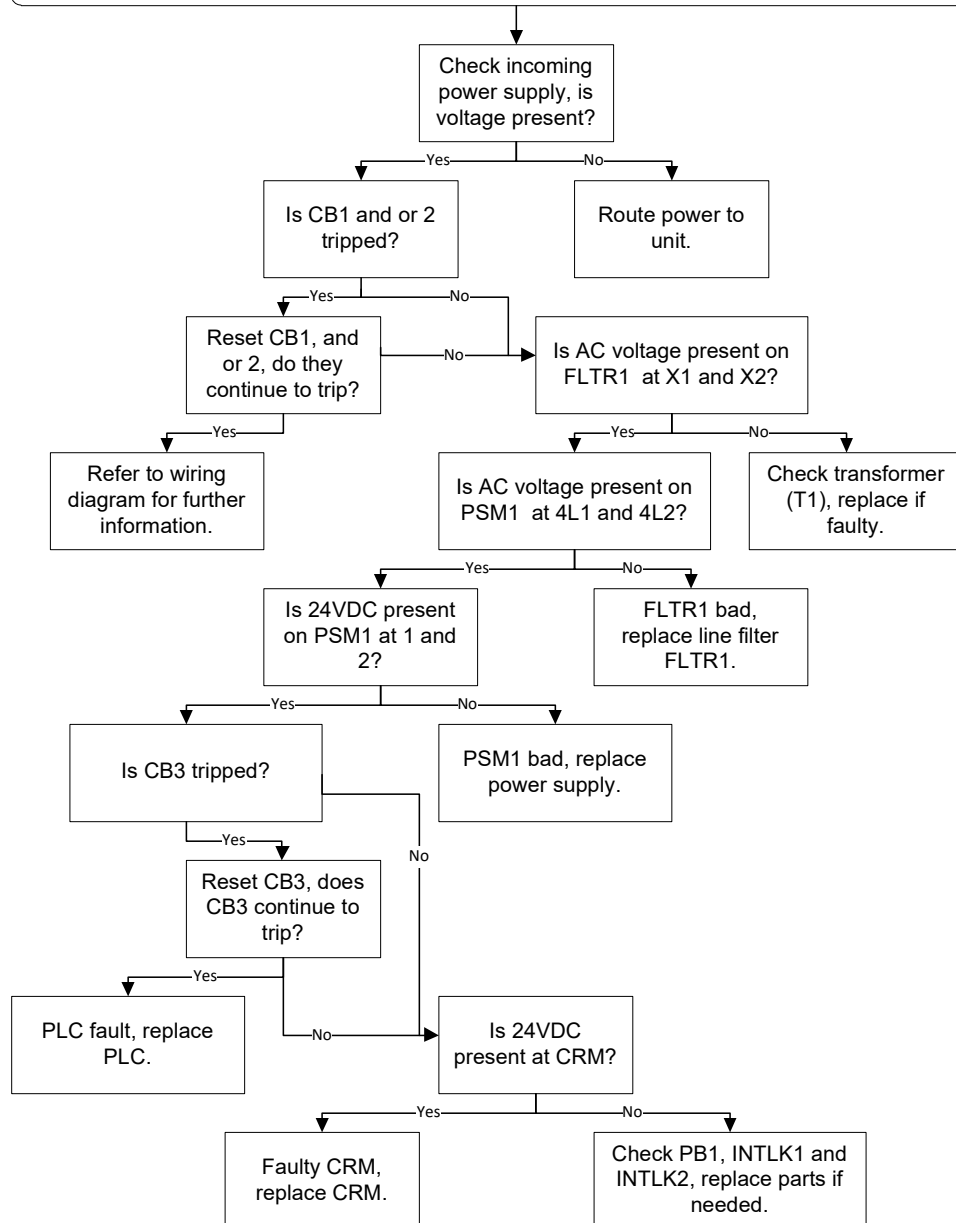
Troubleshooting

CHAPTER 7: TROUBLESHOOTING

Unit will not power up

SAFETY WARNING:

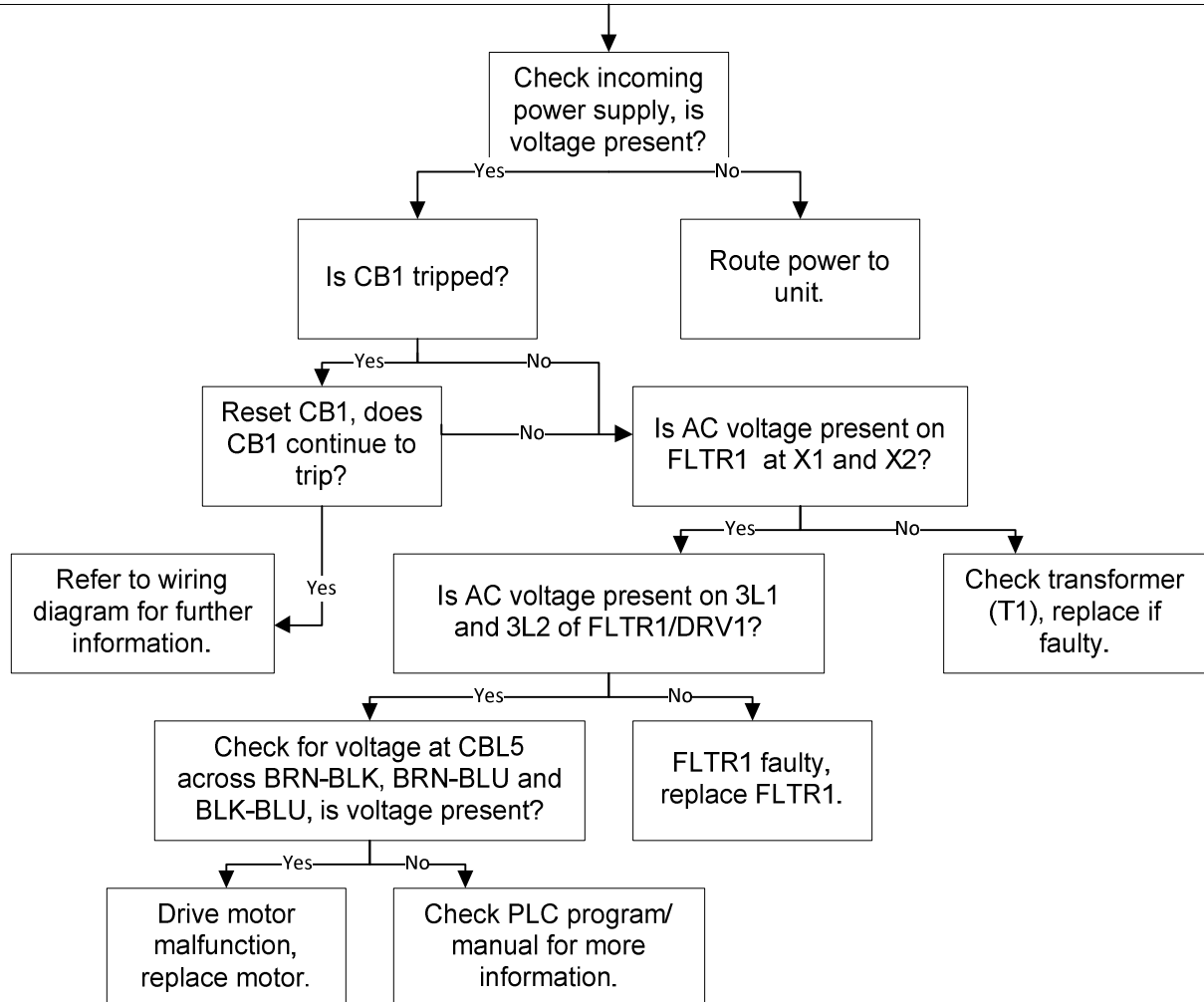
The following troubleshooting procedure may require that tests be made with the electrical enclosures open and power turned ON. These tests should only be conducted by authorized personnel who are aware of the electrical and mechanical hazards present.



Drive motor not running

SAFETY WARNING:

The following troubleshooting procedure may require that tests be made with the electrical enclosures open and power turned ON. These tests should only be conducted by authorized personnel who are aware of the electrical and mechanical hazards present.

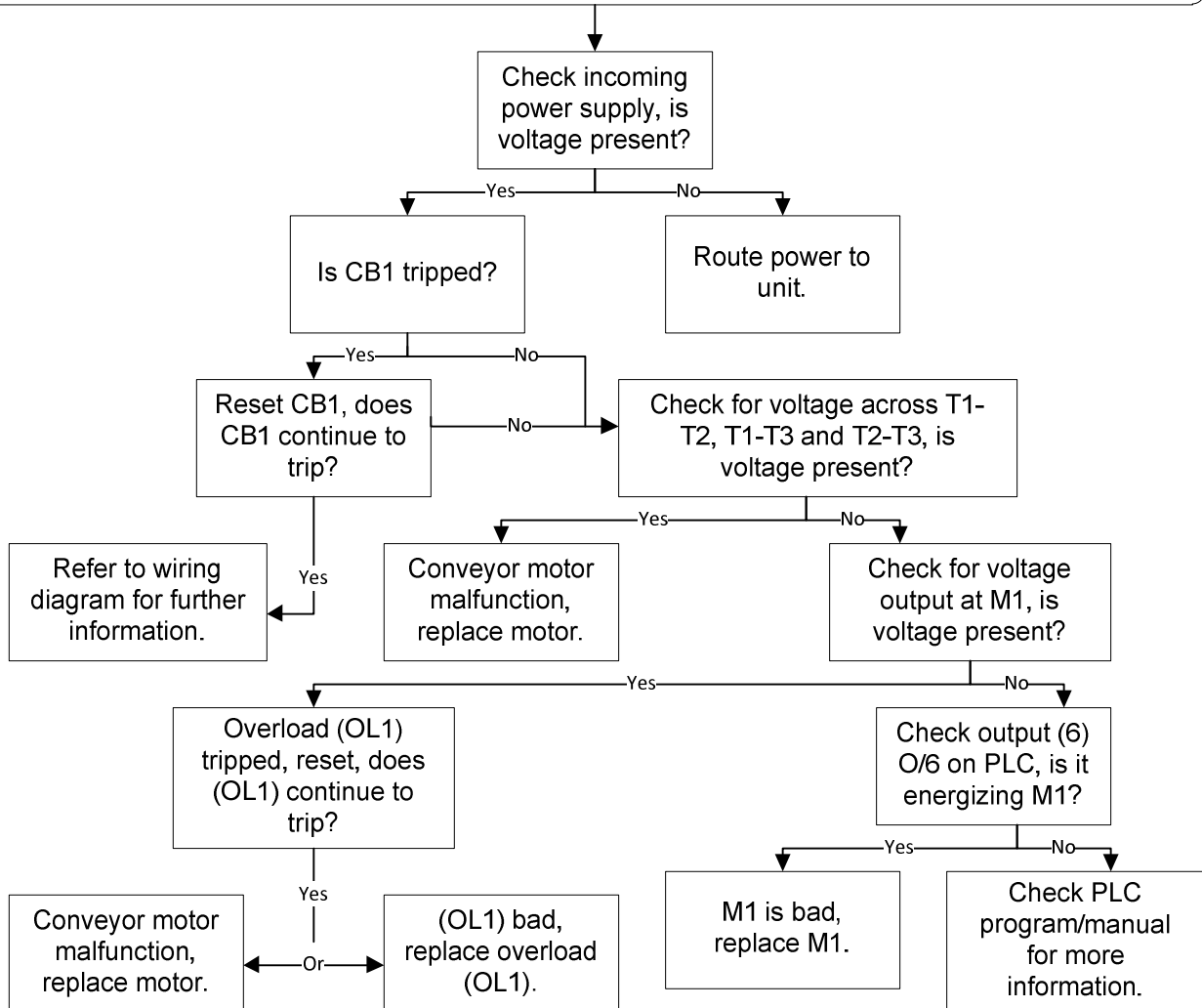


Note: Voltage will only appear across MTR1 when triggered, spray manifold will be moving.

Conveyor motor not running

SAFETY WARNING:

The following troubleshooting procedure may require that tests be made with the electrical enclosures open and power turned ON. These tests should only be conducted by authorized personnel who are aware of the electrical and mechanical hazards present.



Valid variety selected and carriage travels full distance of travel in both directions and stops

SAFETY WARNING:

The following troubleshooting procedure may require that tests be made with the electrical enclosures open and power turned ON. These tests should only be conducted by authorized personnel who are aware of the electrical and mechanical hazards present.

Check that the home switch is not loose and that it is making proper connection.

Diagonal cuts being made at improper angle

SAFETY WARNING:

The following troubleshooting procedure may require that tests be made with the electrical enclosures open and power turned ON. These tests should only be conducted by authorized personnel who are aware of the electrical and mechanical hazards present.

Check that the conveyor speed has not changed, or the "VELOCITY OF MOVE" value may be set improperly.

Water split not deep enough

SAFETY WARNING:

The following troubleshooting procedure may require that tests be made with the electrical enclosures open and power turned ON. These tests should only be conducted by authorized personnel who are aware of the electrical and mechanical hazards present.

Pressure of
regulator
inadequate.

System not
purged properly.

Tight skin on
proofed dough.

Unit cycles continuously

SAFETY WARNING:

The following troubleshooting procedure may require that tests be made with the electrical enclosures open and power turned ON. These tests should only be conducted by authorized personnel who are aware of the electrical and mechanical hazards present.

Wipe off pan
sensor.

■ Fault Light

The fault light is located on top of the control cabinet. It will flash when the processor detects a fatal motor drive fault. See the supplied motor drive owner manual for additional error code information.

Chapter 8

Drawings & Assemblies

CHAPTER 8: DRAWINGS & ASSEMBLIES

■ Recommended Spare Parts List

In the drawings is a list of parts that are recommended that you have available for your unit. If components are marked with an asterisk (*), then it indicates that the item is voltage specific.

Please have the following machine information on hand before calling Burford®.

Machine Voltage
Model Number
Serial Number

Contents

Recommended Spare Parts	1
Carrier Frame Assembly	2
PSCS Frame & Covers Assembly	4
PSCS Pneumatics	6
Nozzle Assembly	8
Pan Stop Assembly	10
Pump Cart Assembly	12
PSCS Support Leg	14
Electrical BOM	16
Electrical Ladder	18
Electrical Layout	20

Call 1-877-BURFORD or fax
405-867-4219 to order your parts.

Proprietary

The following information is the exclusive property of Burford Corp., Maysville, Oklahoma and is confidential, provided only for reference. Do not copy or reproduce.

Drawings & Parts

Carrier Frame Assembly 211300 Rev B

Recommended Spare Parts

Please have the following machine information on hand before calling Burford®.

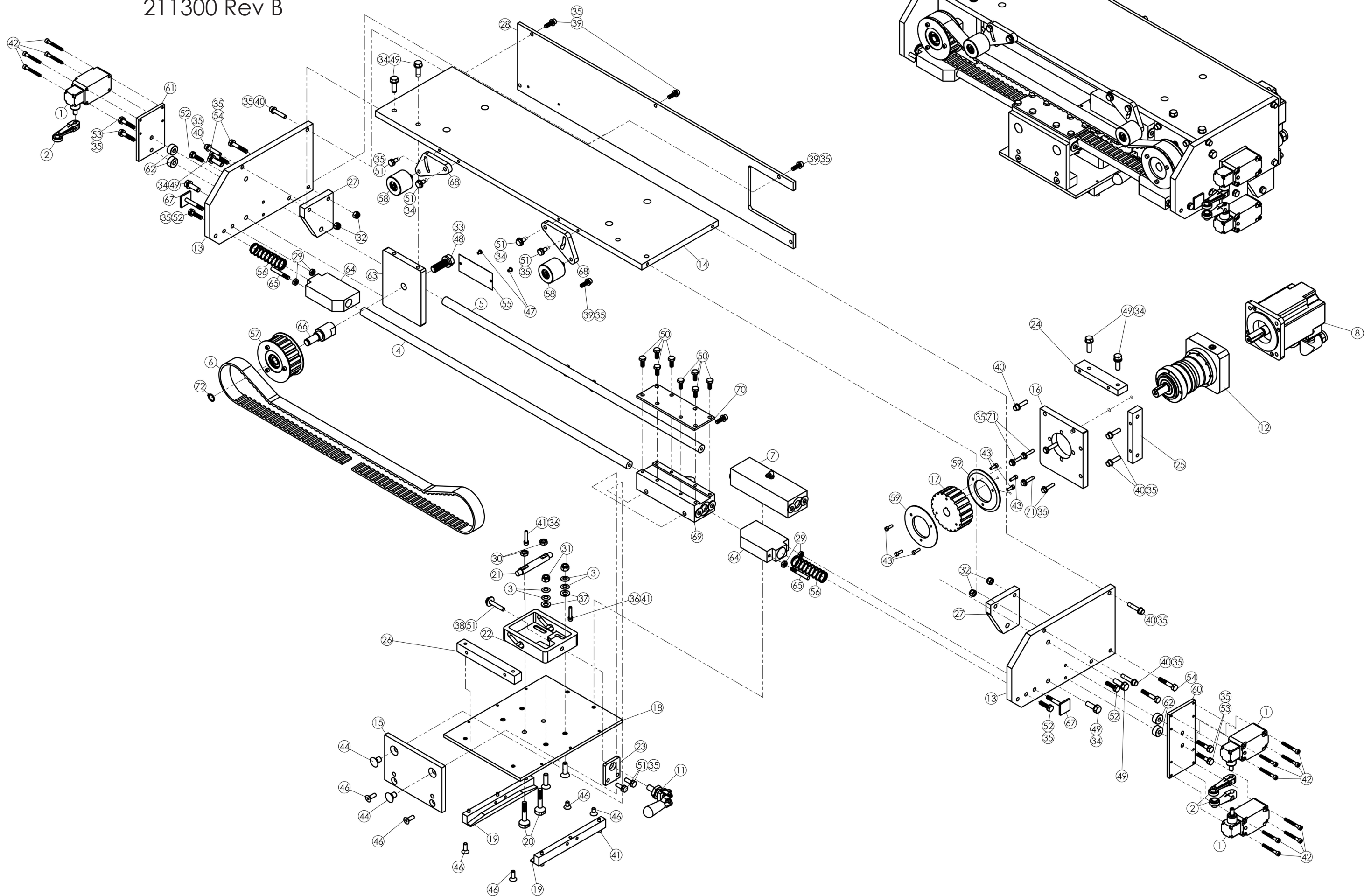
- Machine Voltage
- Model Number
- Serial Number

QTY.	PART #	DESCRIPTION
1	103972	Sensor, Micro Switch
1	111043	Sensor, Actuator
1	303889	Belt Drive, RWK, 56.5", PSCS-12
2	610421	Relay, Term, MTG, 24VDC, 2A, SSR PHX
10	611459	Check Valve, Strainer, 20 PSI
10	612221	O-Ring, .566 OD X .426 ID X .070 Thick
2	611944	Valve, Solenoid, SS 1/4" NPT 2-Way 24VDC
1	612054	Motor,Servo,480v,3PH,5000RPM,.73 kW
1	612056	Reducer In-Line 20:1 070 Frame
2	A06949	Assy, Hose, 1/4" MPT X 7/16 SW X 24"
2	C00506	Retainer Cap CP1325-NP
4	C00543	Tip, Splitter .019
1	C00579	Filter, Water, Replacement #AP110
1	612061	Sensor,Keyence Laser Distance, 2M
1	C07219	Sensor, Interlock, Magnet, Keyed
1	612437-003	Encl,Door,Electrical Interlock,460V
1	612065	Driver,Servo,Kinetix350,480V-3PH
1	610929	Power Supply,480VAC-24VDC,5A,3P

ITEM #	QTY.	PART#	DESCRIPTION	ITEM #	QTY.	PART#	DESCRIPTION
1	3	103972	SENSOR,MICRO SWITCH	37	2	955976	WASHER FLAT 5/16 SST
2	3	111043	SENSOR,ACTUATOR ROLLER	38	1	955977	WASHER FLAT 1/4" SST
3	4	113646	WASHER BELLEVILLE SPRING	39	5	978312	SCREW SOC HD CAP 1/4-20 X 3/4 SST
4	1	303885	ROD, SLIDE 60 CASE, PSCS-12	40	8	978316	SCREW SOC HD CAP 1/4-20 X 1 SST
5	1	303886	ROD, SLIDE INNER, PSCS-12	41	6	978916	SCREW SOC HD CAP #10-24 UNC X 1 SST
6	1	303889	BELT DRIVE, RWK 56.5", PSCS-12	42	12	978924	SCREW SOC HD CAP #10-24 UNC X 1 1/2
7	1	303890	ASSY, BEARING INNER, PSCS-12	43	6	979508	SCREW SOC HD CAP #8-32 UNC X 1/2
8	1	612022	MOTOR AB MP-A310P 5000 RPM .73 KW	44	2	980612	SCREW FLT HD SOC 3/8-16 UNC X 5/8 SS
9	1	612025	CABLE, MOTOR POWER/BRAKE, 16G, 3M,	45	2	981618	SCREW FLT HD SOC 5/16-18 UNC X 1 1/8
10	1	612027	CABLE, MOTOR, FEEDBACK, 3M, EXT	46	8	981712	SCREW FLT HD SOC 1/4-20 X 3/4 SST
11	1	612055	CLAMP STRAIGHT PULL 3/4 STR.	47	2	986904	SCREW BUTT HD SOC #8-32 X 1/4 SST
12	1	612056	REDUCER IN-LINE 20:1 070 FRAME	48	1	988324	SCREW FIN HEX 1/2-13 X 1 1/2 SST
13	2	716550	PLATE, SIDE CARRIER	49	8	989716	SCREW FIN HEX 5/16-18 X 1 SST
14	1	716551	PLATE, TOP CARRIER, PSCS-3	50	8	989910	SCREW FIN HEX 1/4-20 X 5/8" SST
15	1	716552	PLATE, MANIFOLD MT, FRONT, PSCS3	51	7	989912	SCREW FIN HEX 1/4-20 X 3/4 SST
16	1	716553	PLATE, MOTOR PSCS3	52	4	989916	SCREW FIN HEX 1/4-20 X 1 SST
17	1	716554	PULLEY 16 mm BORE 20T 1/2" P	53	4	989920	SCREW FIN HEX 1/4-20 X 1 1/4 SST
18	1	716555	PLATE, MANIFOLD MT, PSCS-3 QR	54	4	989924	SCREW FIN HEX 1/4-20 X 1 1/2 SST
19	2	716556	BAR GUIDE MANIFOLD SLIDE	55	1	A05584	PLATE-SERIAL NUMBER
20	2	716557	STUD MANIFOLD CLAMP SCREW	56	2	C00803	SPRING #C-14
21	1	716558	SHAFT CLAMP LIFT PSCS3 CS3	57	1	C06035	ASSY, IDLER PULLEY
22	1	716559	BLOCK TEMPLATE LATCH PIN	58	2	C06038	ASSY, BELT TENSIONER
23	1	716560	CLAMP MOUNT MANIFOLD	59	2	C06039	FLANGE, PULLEY GEARBELT
24	1	716561	BAR MOTOR PLATE MOUNT TOP	60	1	C06091	PLATE, SWITCH MOUNT
25	1	716562	BAR MOTOR PLATE SIDE	61	1	C06092	PLATE, SWITCH MOUNT
26	1	716563	PLATE CARRIER BEARING	62	4	C06093	SPACER,SWITCH MOUNT
27	2	716564	PLATE SHAFT CARRIER SHAFT PSCS3	63	1	C06097	IDLER, MOUNT
28	1	716566	PLATE, BACK CARRIER, PSCS-3	64	2	C06111	STOP BLOCK,SLIDE
29	4	955379	NUT HEX 1/4-20 UNC SST	65	2	C06112	ROD, GUIDE PIN, STOP BLOCK, PS-2
30	2	955407	NUT HEX JAM 5/16-18 UNC SST	66	1	C06116	SHAFT, IDLER PULLEY
31	2	955619	NUT HEX NYLOC 5/16-18 UNC SST	67	2	C06117	A/W, GUIDE PIN, STOP BLOCK, PS-2
32	4	955661	NUT HEX NYLOC 1/4-20 UNC SST	68	2	C06120	ARM, BELT TENSIONER
33	1	955937	WASHER LOCK 1/2" SST	69	1	C06122	ASSY, SLIDER, PS2R&L
34	10	955939	WASHER, LOCK 5/16" SST	70	1	C06124	PLATE, BELT CLAMP SLIDER
35	32	955940	WASHER LOCK 1/4" SST	71	4	MA0525	SCREW, FIN HEX, 5 X 25 MM
36	6	955941	WASHER LOCK #10 SST	72	1	C01120	SNAP RING, EXTERNAL, 1/2"

Carrier Frame Assembly

211300 Rev B



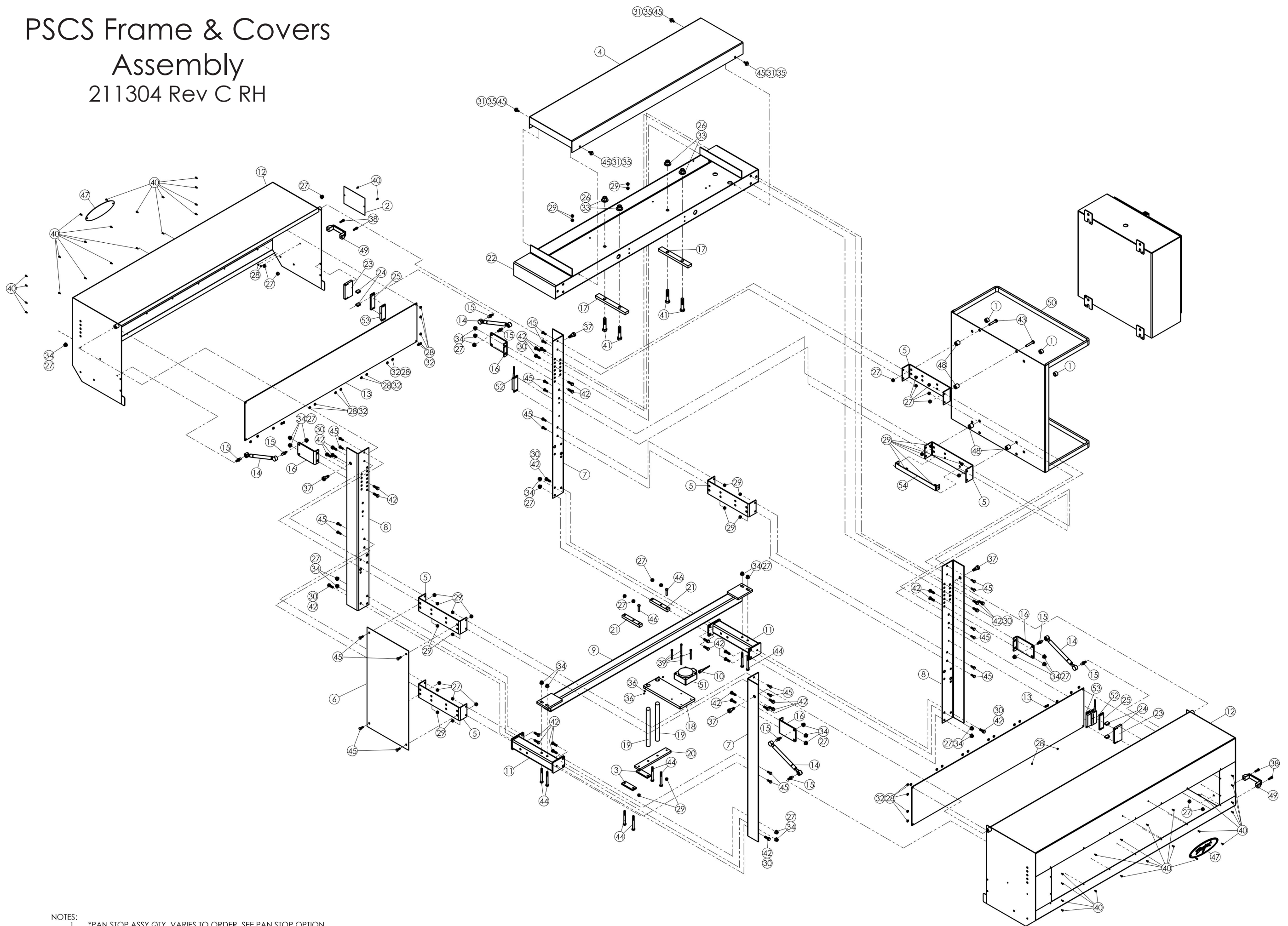
PSCS Frame & Covers Assembly
211304 Rev C RH
211305 Rev C LH

FOLD OUT TO VIEW DRAWING

ITEM #	QTY.	PART#	DESCRIPTION	ITEM #	QTY.	PART#	DESCRIPTION
1	6	101136	SPACER, .75 OD x .38 ID x .50 L	29	26	955661	NUT HEX NYLOC 1/4-20 UNC SST
2	1	112643	SERIAL PLATE	30	16	955939	WASHER, LOCK 5/16" SST
3	2	300463	BAR, BACK-UP CLAMP, PAN STOP	31	4	955940	WASHER LOCK 1/4" SST
4	1	303846	A/W, COVER, PSCS-12	32	36	955972	WASHER FLAT #6 SST
5	5	303892	CHANNEL, ELEC BOX, MTG PSCS-12	33	4	955974	WASHER FLAT 1/2 SST
6	1	303893	PLATE, COVER END, PSCS-12	34	28	955976	WASHER FLAT 5/16 SST
7	2	303894	UPRIGHT, ANGLE, PSCS-12	35	4	955977	WASHER FLAT 1/4" SST
8	2	303895	UPRIGHT, ANGLE, PSCS-12	36	4	971804	SCREW SET SOC #10-24 UNC X 1/4 SST
9	1	303897	A/W, PAN STOP MOUNT, PSCS-12	37	4	975208	SCREW, SHLDR 5/16 X 1 1/2, 1/4-20
10	1	304153	SENSOR,CABLE,M12,4 WIRE,F,QC,STR	38	4	978312	SCREW SOC HD CAP 1/4-20 X 3/4 SST
11	2	304415	A/W, END SUPPORT, LWR, PSCS	39	4	978932	SCREW SOC HD CAP #10-24 UNC X 2
12	2	305420	A/W COVER PSCS	40	42	987506	SCREW BUTT HD SOC #6-32 X 3/8 SST
13	2	305421	COVER DOOR MAKROLON PSCS-12	41	4	988340	SCREW FIN HEX 1/2-13 X 2 1/2 SST
14	4	305422	GAS SPRING 12" EXT.	42	44	989716	SCREW FIN HEX 5/16-18 X 1 SST
15	8	305423	BALL STUD GAS SPRING 3/8	43	4	989728	SCREW FIN HEX 5/16-18 X 1 3/4 SST
16	4	305425	PLATE GAS SPRING MT PSCS-12	44	8	989748	SCREW FIN HEX 5/16-18 X 3 SST
17	2	716565	SPACER CARRIER FRAME PSCS-3	45	28	989912	SCREW FIN HEX 1/4-20 X 3/4" SST
18	1	716570	PLATE, PROXIMITY BRACKET	46	4	989920	SCREW FIN HEX 1/4-20 X 1 1/4 SST
19	2	716571	POST PROXIMITY BRACKET	47	2	A08049	NAMEPLATE,BURFORD LOGO,LARGE
20	1	716572	PLATE SPACER PROX POST	48	4	C03845	SPACER. .34 ID, .75 OD .75 L, SST
21	2	716573	BAR PROX MOUNT POST	49	2	C04663	HANDLE
22	1	716580	A/W, MAIN CHANNEL, PSCS-3R	50	REF.	C06570	A/W, GUARD, CS1 ENCLOSURE
23	2	716881	MAGNET MOUNT	51	1	C06752-001	SENSOR, PROX, 80MM, 10-55VDC,PNP
24	4	716882	BLOCK, INTERLOCK SPACER	52	2	C07219	SENSOR,INTERLOCK,MAGNETIC,KEYED
25	2	716883	BLOCK, INTERLOCK MNT. PS3	53	2	C07220	ACTUATOR, MAGNET
26	4	955618	NUT HEX NYLOC 1/2-13 UNC SST	54	1	C07620	RESTRAINT-CONDUIT CSI
27	56	955619	NUT HEX NYLOC 5/16-18 UNC SST	*55	2	305377	CHANNEL, MT 46" BURFORD, PSCS-12
28	42	955624	NUT HEX NYLOC #6-32 UNC SST				

*NOT SHOWN

PSCS Frame & Covers Assembly 211304 Rev C RH

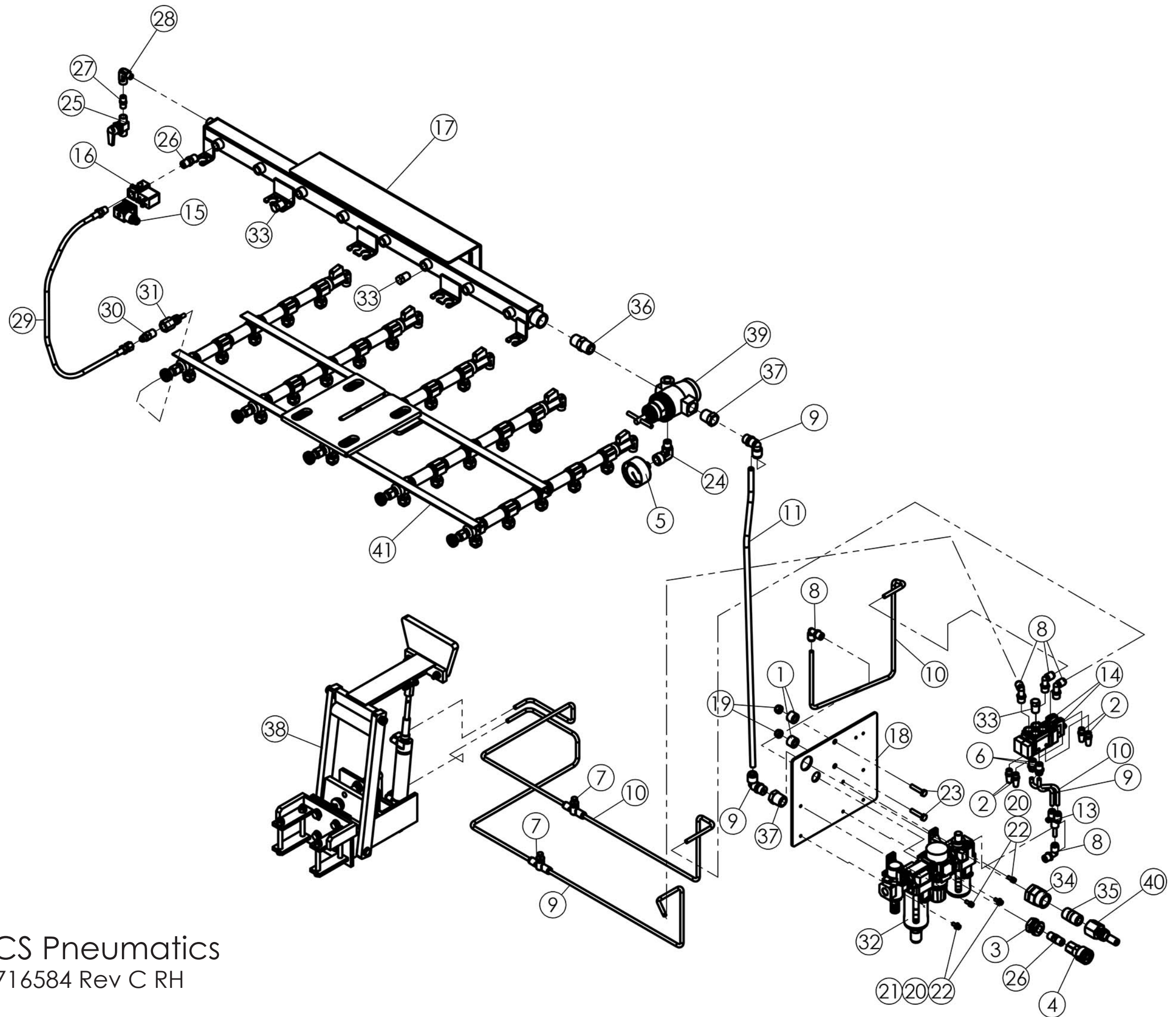


NOTES:
1. *PAN STOP ASSY QTY. VARIES TO ORDER. SEE PAN STOP OPTION
SINGLE PAN STOP REQUIRED ON BURFORD CONVEYOR.
DUAL PAN STOP USED ON CUSTOMER CONVEYORS
DEPENDENT ON CONVEYOR CONFIGURATION.

FOLD OUT TO VIEW DRAWING

PSCS Pneumatics
716583 Rev C LH
716584 Rev C RH

ITEM #	QTY.	PART#	DESCRIPTION
1	2	101136	SPACER, .75 OD x .38 ID x .50 L
2	4	111497	MUFFLER, 1/8" NPT
3	1	111619	FITTING, 1/4" BULKHEAD
4	1	118872	FITTING,QC,BODY,AIR,1/4 NPTF,BRS
5	1	118873	GAUGE,0-60 PSI,1/4 NPT,BACK MT,BRS
6	2	401152	FITTING,CONN,1/4MPT X 1/4T,ENP,Q.R.
7	2	401302	VALVE, REG, FLOW CONTROL, ENP, Q.R.
8	5	610602	FITTING, ELL, 1/4NPT X 1/4T,ENP,Q.R
9	2	610826	FITTING, ELL, 3/8NPT X 3/8T, ENP, Q.R
10	2	610885-04	HOSE PSCS-3 PAN STOP EXT
11	8'	610885-05	HOSE PSCS-3 RETRACT
12	3'	610886-02	HOSE PSCS3 CONNECT TO MANIFOLD
13	1	610957	FITTING,PLUG IN "Y" 1/4 TUBE,Q.R.
14	2	611117	VALVE,SOL,24V,2 WAY,1/4P
15	REF	611943	CONNECTOR, 24V VALVE DINCON M12
16	REF	611944	VALVE, SOL SS 1/4 NPT 2 WAY 6.9VDC
17	1	716574	MANIFOLD A/W 8 PORT RH
18	1	716582	PLATE, MOUNTING F.R.L. PSCS-3
19	2	955619	NUT HEX NYLOC 5/16-18 UNC SST
20	4	955941	WASHER LOCK #10 SST
21	2	955978	WASHER FLAT #10 SST
22	4	978908	SCREW SOC HD CAP #10-24 UNC X 1/2 SST
23	2	989920	SCREW FIN HEX 1/4-20 X 1 1/4 SST
24	1	A06857	FITTING,STREET ELL,1/4M X 1/4F,SST
25	1	A06866	VALVE PURGE ON/OFF SERVICE
26	2	A06878	FITTING,NIPPLE,HEX,1/4 NPTM,SST
27	1	A06905	FITTING,NIPPLE,HEX,1/8 NPTM,SST
28	1	A06942	FITTING,STREET ELL,1/8M X 1/8F,SST
29	REF	A06949	ASSY, HOSE, 1/4MPT X 7/16 SW X 24"
30	REF	A06953	FITTING,CONN,1/4MPT X 7/16-20F,SST
31	REF	A06955	FITTING 1/4 QC STEM SST
32	1	C00404	FRL COMBO w/ SHUTOFF VALVE & GAUGE
33	3	C00917	FITTING,PLUG,1/4 NPT HEX HD,SST
34	1	C00970	BULKHEAD FITTING 1/2"
35	1	C01011	FITTING, NIPPLE, CLOSE, 1/2 NPTM, SST
36	1	C01018	FITTING,NIPPLE,HEX,1/2 NPTM,SST
37	2	C05926	FITTING,REDUCER,1/2MPT X 3/8FPT,SST
38	REF	C06236	ASSY, PAN STOP CS1 STOP POSITION
39	1	C07621	VALVE, WATER REGULATOR, 1/2NPT
40	1	C07622	FITTING,QC,STEM,LIQ,1/2 NPTF,SST
41	REF	QRM-100000	ASSY,MANIF,5@7.63x5@3.50



PSCS Pneumatics
716584 Rev C RH

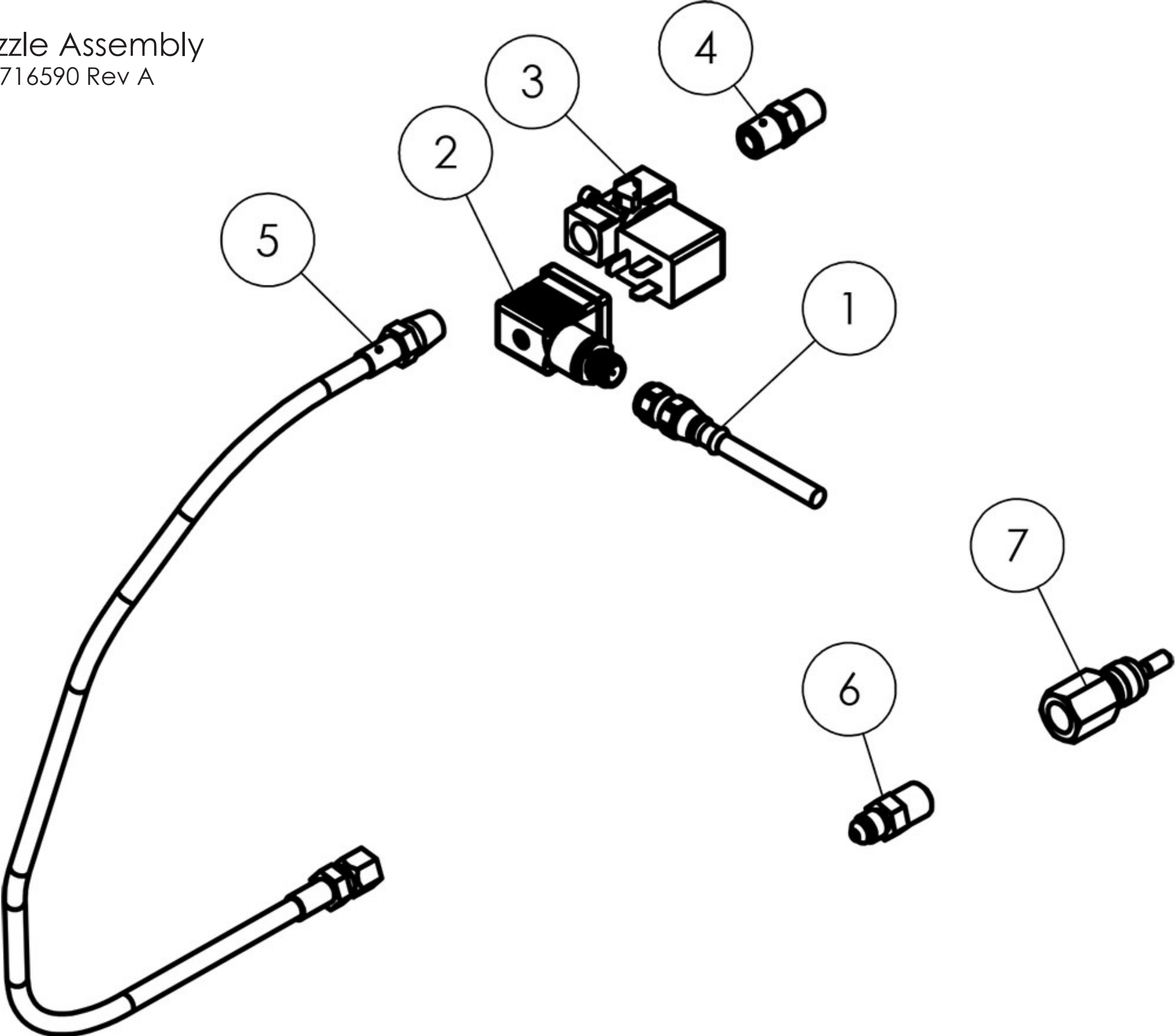
Nozzle Assembly

716590 Rev A

ITEM #	QTY.	PART#	DESCRIPTION
1	1	304430	CABLE,SENSOR,M12,5WIRE,F,QC,STR
2	1	611943	CONNECTOR, 24V VALVE DINCON M12
3	1	611944	VALVE, SOL SS 1/4 NPT 2 WAY 6.9VDC
4	1	A06878	FITTING,NIPPLE,HEX,1/4 NPTM,SST
5	1	A06949	ASSY, HOSE, 1/4MPT X 7/16 SW X 24"
6	1	A06953	FITTING,CONN,1/4MPT X 7/16-20F,SST
7	1	A06955	FITTING 1/4 QC STEM SST

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Nozzle Assembly
716590 Rev A

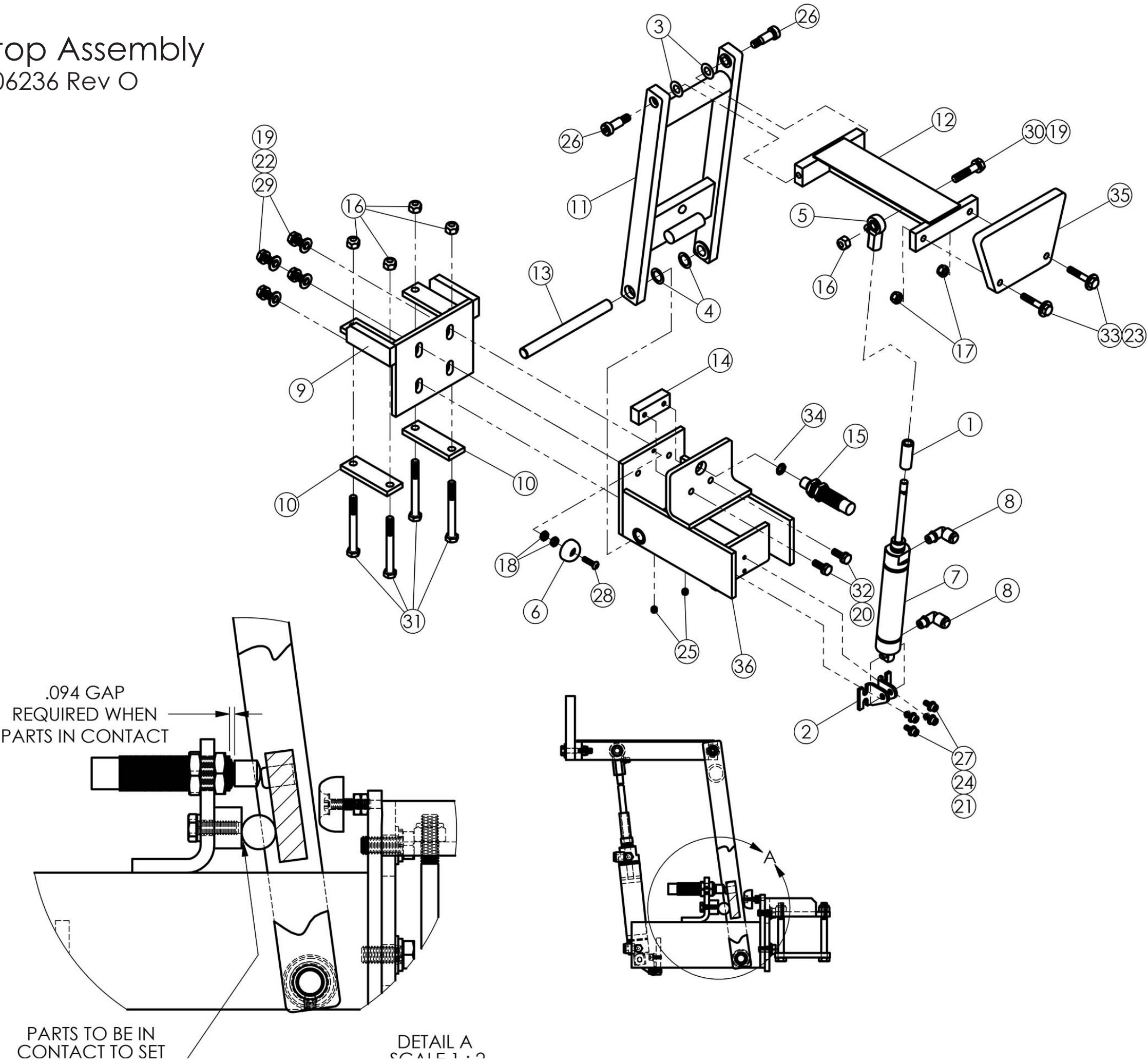


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Pan Stop Assembly
C06236 Rev O

ITEM #	QTY.	PART#	DESCRIPTION
1	1	111706	SPACER, 1/2 OD x .313 ID x 1.38 L
2	1 Pair	111937	BRACKET, CYLINDER PIVOT
3	2	112121	BUSHING, 3/8 X 3/4 X .010 MACH.
4	2	122232	BUSHING 1/2 X 3/4 X .010 MACH
5	1	152075	ROD END, 5/16" BEARING
6	1	152148	MOLDED RECESS BUMPER
7	1	174047	CYLINDER, AIR 1 1/8 BORE 3" STROKE 1/8 NPT
8	2	174049	FITTING,ELL,1/8MPT X 1/4T,Q.R.SHORT
9	1	300460	A/W, PAN STOP MOUNT, CS-1
10	2	300463	BAR, BACK-UP CLAMP, PAN STOP, CS-1
11	1	302770	ASSY, PAN STOP PIVOT
12	1	302776	PANSTOP A/W, SST
13	1	302784	SHAFT, PIVOT, PAN STOP
14	1	305398	STOP PLATE
15	1	305399	Shock Absorber
16	5	955619	NUT HEX NYLOC 5/16-18 UNC SST
17	2	955661	NUT HEX NYLOC 1/4-20 UNC SST
18	2	955823	NUT HEX MACH #10-24 NC SST
19	5	955939	WASHER, LOCK 5/16" SST
20	2	955940	WASHER LOCK 1/4" SST
21	4	955941	WASHER LOCK #10 SST
22	4	955976	WASHER FLAT 5/16 SST
23	2	955977	WASHER FLAT 1/4" SST
24	4	955978	WASHER FLAT #10 SST
25	2	971204	SCREW SET SOC 1/4-20 X 1/4 SST
26	2	975112	SCREW SHLDR 3/8 X 3/4, 5/16-18 SST
27	4	978808	SCREW SOC HD CAP #10-32 UNF X 1/2 SST
28	1	986312	SCREW BUTT HD SOC #10-24 X 3/4 SST
29	4	989712	SCREW FIN HEX 5/16-18 X 3/4 SST
30	1	989724	SCREW FIN HEX 5/16-18 X 1 1/2 SST
31	4	989748	SCREW FIN HEX 5/16-18 X 3 SST
32	2	989912	SCREW FIN HEX 1/4-20 X 3/4" SST
33	2	989924	SCREW FIN HEX 1/4-20 X 1 1/2 SST
34	1	A02332	SPRING, BAG CLAMP
35	1	C06242	PLATE, PAN STOP
36	1	C06300	A/W, BASE PAN STOP

Pan Stop Assembly
C06236 Rev O

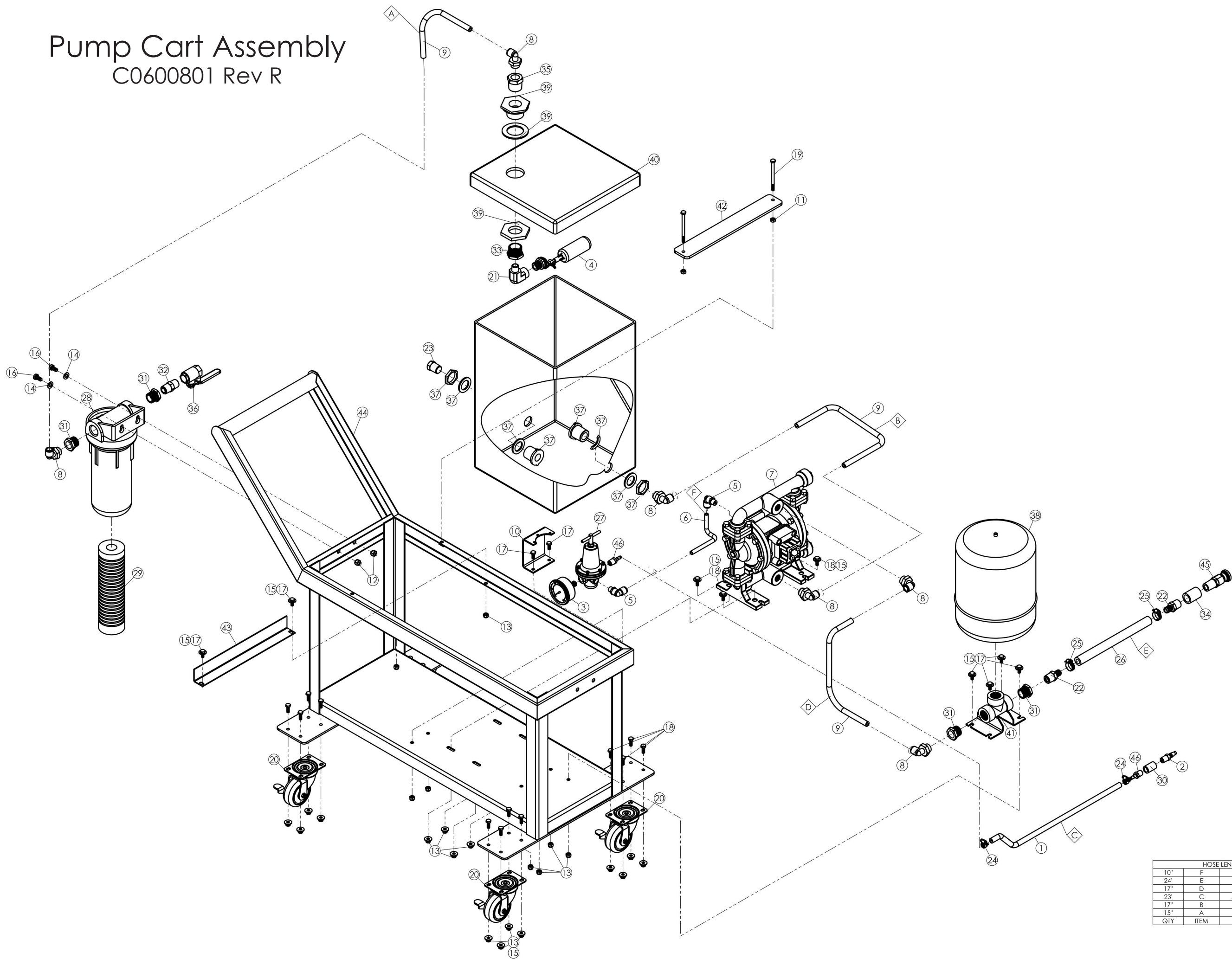


Pump Cart Assembly
C0600801 Rev R

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ITEM #	QTY	PART#	DESCRIPTION	ITEM #	QTY	PART#	DESCRIPTION
1	23'	103878	HOSE, AIR 1/4" DIA NEOPRENE	24	2	C00414	CLAMP 1/4" TO 5/8" SST
2	1	118871	FITTING,QC,STEM,AIR,1/4 NPTM	25	2	C00415	CLAMP #6 STAINLESS HOSE
3	1	303674	GAUGE 0-200 PSI 1/4 NPT BACK MT SST	26	24'	C00435	HOSE, 1/2" VINYL W/ POLYESTER
4	1	305716	FLOAT VALVE MINI ADJ 1/2"	27	1	C00537	REGULATOR, AIR, 1/4 NPT PORTS
5	2	610505	FITTING,ELL,1/4NPT X 3/8T, ENP, Q.R	28	1	C00578	FILTER, WATER, 3/4" NPTF
6	3'	610886-07	TUBING, 3/8" POLYURETHANE, CLEAR	29	1	C00579	FILTER REPLACEMENT # AP110
7	1	611121	PUMP, AIR POWERED DBL DIAPHRAGM	30	1	C00900	FITTING,COUPLING,1/4 NPTF,SST
8	6	611343	FITTING,ELL,1/2NPT X 1/2,ENP,Q.R.	31	4	C01013	FITTING, REDUCER, 3/4MPT X 1/2FPT, SST
9	5'	611350-05	TUBING,1/2" POLYURETHANE,YELLOW	32	1	C01018	FITTING,NIPPLE,HEX,1/2 NPTM,SST
10	1	713714	REGULATOR BRACKET, PUMP CART	33	1	C01958	FITTING,REDUCER,1" MPT X 3/8FPT,SST
11	2	955409	NUT HEX JAM 1/4-20 UNC SST	34	1	C03613	FITTING,COUPLING,1/2 NPTF,SST
12	2	955619	NUT HEX NYLOC 5/16-18 UNC SST	35	1	C05339	FITTING, REDUCER, 1" x 1/2" PVC
13	28	955661	NUT HEX NYLOC 1/4-20 UNC SST	36	1	C05431	VALVE, 1/2 NPT 2-WAY, BALL, SST
14	2	955976	WASHER FLAT 5/16 SST	37	2	C05576	FITTING, 1/2 NPT BULKHEAD, PL.
15	30	955977	WASHER FLAT 1/4" SST	38	1	C06171	TANK, WATER RECHARGER
16	2	989710	SCREW FIN HEX 5/16-18 X 5/8 SST	39	1	C06174	FITTING, BULKHEAD 1" POLY
17	8	989910	SCREW FIN HEX 1/4-20 X 5/8" SST	40	1	C06176	RWK, TANK & COVER
18	20	989912	SCREW FIN HEX 1/4-20 X 3/4" SST	41	1	C06183	TEE MOUNT A/W
19	2	989956	SCREW FIN HEX 1/4-20 X 3 1/2 SST	42	1	C06195	PLATE, COVER CLAMP
20	4	A04225	CASTER, 3" LOCKING/SWIVEL, 145#	43	1	C06196	BRACKET, UPPER TANK
21	1	A06856	FITTING, REDUCING ELL 1/2F X 3/8M SS	44	1	C06200	A/W, TANK BASE
22	2	A06859	FITTING, 1/2MPT X 1/2 TUBE	45	1	C07623	QUICK CONNECT BODY, 1/2 MPT
23	1	A07726	FITTING, PLUG 1/2" PVC	46	2	c01953	FITTING,HOSE BARB,1/4MPT X 1/4H,SST

Pump Cart Assembly
C0600801 Rev R



HOSE LENGTH SCHEDULE		
10"	F	PUMP TO REGULATOR
24"	E	ACCUMULATOR TO SYSTEM
17"	D	PUMP TO ACCUMULATOR
23"	C	AIR LINE - SOURCE TO PUMP
17"	B	TANK TO PUMP
15"	A	FILTER TO TANK
QTY	ITEM	DESCRIPTION

PSCS Support Leg
210729 Rev A

ITEM #	QTY.	PART#	DESCRIPTION
1	1	715514	A/W, SUPPORT LEG, PSCS-12/CS-1
2	1	715516	SHAFT, SUPPORT LEG, PSCS-12/CS-1
3	1	715517	LEG, BASE, PSCS-12/CS-1
4	2	955407	NUT HEX JAM 5/16-18 UNC SST
5	2	955939	WASHER, LOCK 5/16" SST
6	2	955976	WASHER FLAT 5/16 SST
7	2	971206	SCREW SET SOC 1/4-20 UNC X 3/8 SST
8	2	989712	SCREW FIN HEX 5/16-18 X 3/4 SST
9	2	989744	SCREW FIN HEX 5/16-18 X 2 3/4 SST

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PSCS Support Leg
210729 Rev A



Electrical Schematics

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Electrical BOM
112385-WD

Electrical BOM

112385-WD

ED1093 ED PSCS3,380/460-50/60-3

REF	SYMBOL	PART #	QUAN	DESCRIPTION
1	CB2	C07650-305	1	CIRCUIT BREAKER 600V.5 AMP
2	CB4	C07650-303	1	CIRCUIT BREAKER 600V.3 AMP
3	D-INTLK1	612437-003	1	ENCLOSURE,DOOR,ELECTRIAL INTERLOCK,460V
4	DRV1	612065	1	DRIVER,SERVO,KINETIX350,480-3PH.
5	FB4,FB5,FB6	C07076	3	FUSE,HOLDER,600V,13/32x1-1/2
6	FU4-FU6	C06543	3	FUSE,FNQ-R,10A,600V,13/32x1-1/2
7	PSM1	610929	1	POWER SUPPLY,380/480-24 VDC,5AMP

ENCLOSURE ASSEMBLY PATTERN-SPLITTER

REF	SYMBOL	PART #	QUAN	DESCRIPTION
1	CB5	C07649-004	1	CIRCUIT BREAKER 250V.5 AMP
2	CBL1	304502	1	CABLE,YELLOW PATCH,2' SNAGLESS
3	CBL2,CBL6	304502-003	2	CABLE,YELLOW PATCH,3' SNAGLESS
4	CBL3	304502-005	1	CABLE,YELLOW PATCH,5' SNAGLESS
5	CBL4	612026	1	CABLE,MOTOR,FEEDBACK
6	CBL5	612024	1	CABLE,MOTOR,POWER
7	CBL4,CBL5 P/O	612023	2	BULKHEAD,ADAPTER,POWER/FEEDBACK
8	CRM,CR1	610404-001	3	RELAY,TERM MTG,24VDC,SPDT
9	CRE1-9	610421-001	9	RELAY,TERM MTG,24VDC,SSR
10	CRM,CRE9 P/O	610387-001	3	RELAY,TERM MTG,SEPARATION PLATE
11	CRE1-9 P/O	610443-011	1	RELAY,TERM JUMPER,32A,RED
12	CRE1-9 P/O	610443-012	1	RELAY,TERM JUMPER,32A,BLUE
13	CRE1-9 P/O	610443-013	1	RELAY,TERM JUMPER,32A,GRAY
14	DISC1	C07631	1	DISCONNECT
15	DISC1 P/O	C07632	1	HANDLE,DISCONNECT
16	DISC1 P/O	C07632	1	SHAFT,DISCONNECT
17	DISP1	304465-003	1	DISPLAY,PV+(6)600,COLOR,TOUCH,ETHERNET
18	DRV1	612066	1	DRIVER,SERVO,KINETIX350,TERMINAL BLOCK
19	ENC1	716415	1	ENCLOSURE,REWORK,MAIN (C06075)
20	ENC1 P/O	300400	1	GUARD,A/W,ENCLOSURE
21	ENC1 P/O	C03845	4	SPACER,9/32 x 3/4 x 3/4 SST
22	GND	C06488	1	GROUND LUG
23	GND STRAP	C07156	1	GROUND STRAP 24"
24	LT1	C01301	1	SWITCH,LIGHT ASSY,24VDC
25	LT1 P/O	C01218	1	SWITCH,LENS CAP/W LATCH,GREEN
26	LT1 P/O	C01263	1	NAMEPLATE: POWER ON
27	LT2	C07087	1	LIGHT STROBE,24VDC (RED)
28	PB1	C07213	1	SWITCH,PUSH-PULL,RED,MUSHROOM HEAD
29	PB1 P/O	C07101	1	CONTACT CARTRIDGE N.C.
30	PB1 P/O	C05395	1	NAMEPLATE: PUSH OFF/PULL ON
31	PLC1	612057	1	PLC,COMPACTLOGIX,PROCESSOR.
32	PLC1 P/O	610494	1	PLC,COMPACTLOGIX,END CAP,RIGHT
33	PLC1 P/O	304500	1	PLC,ETHERNET MODULE,N-TRON
34	PLC1 P/O	611228	1	PLC,ETHERNET PASS-THRU
35	PLC1 P/O	611229	1	PLC,ETHERNET PASS-THRU COVER
36	PNL1	716416	1	PANEL REWORKED,MAIN (C06533)
37	TB1 P/O	C05843	60	MARKER STRIP
38	TB1 P/O	610300	10	TERMINAL BLOCK TRIPLE LEVEL
39	TB1 P/O	610301	1	END COVER TRIPLE LEVEL
40	TB1 P/O	C06369	2	JUMPER 2-POS.
41	TB1 P/O	C06463	2	JUMPER 10-POS.
42	TB1,2,3,4 P/O	C06464	32"	RAIL,DIN
43	TB1,2,3,4 P/O	C06465	8	CLAMP,END ANCHOR
44	TB1 P/O	C06525	5	GROUNDING TERMINAL
45	TB1 P/O	C07117	12	TERMINAL BLOCK,DUAL
46	TB1 P/O	C07118	2	END COVER,DUAL
47	TB4 P/O	C06461	2	TERMINAL BLOCK
48	TB4 P/O	C06462	1	END COVER
49				
50				

ASSEMBLY PATTERN SPLITTER FRAME

REF	SYMBOL	PART #	QUAN	DESCRIPTION
1	CBL4 P/O	612027	1	CABLE,MOTOR,FEEDBACK,EXT
2	CBL5 P/O	612025	1	CABLE,MOTOR,POWER,EXT
3	INTLK1,2	C07219	2	SWITCH,INTERLOCK,NO/NC,KEYED
4	INTLK1,2 P/O	C07220	2	SWITCH,INTERLOCK,MAGNET
5	LS1,2,3	103972	3	SENSOR,LIMIT,0-230V,NO/NC
6	LS1,2,3 P/O	111043	3	SENSOR,LIMIT,ACTUATOR ROLLER
7	MTR1	612054	1	MOTOR,AB MPL-B310P,5000 RPM,.77KW
8	PRS1	C06752-001	1	SENSOR,PROX,80MM,10-55VDC,P.NP,EDDY
9	PRS1 P/O	304430	1	SENSOR,CABLE,M12,5WIRE,F.QC,STR

WATER SPRAY CIRCUIT

REF	SYMBOL	PART #	QUAN	DESCRIPTION
1	SOL1-8	612008	8	VALVE,APPLICATOR HEAD,24VDC.
2	SOL1-8 P/O	610187-002	8	SENSOR,MICRO-CHANGER,M12,5WIRE
3	SOL1-8 P/O	610169	8	SENSOR,BULKHEAD,M12,5WIRE,F.QC
4	SOL1-8 P/O	610174	8	SENSOR,CAP,BULKHEAD,M12,F,QC
5	TB5	610967	1	TERMINAL,BREAK-A-PART,12TERM,MINI

OPTIONAL PAN CLAMP CIRCUIT

REF	SYMBOL	PART #	QUAN	DESCRIPTION
1	PRS2	C06752-001	1	SENSOR,PROX,80MM,10-55VDC,P.NP,EDDY
2	PRS2 P/O	304430	1	SENSOR,CABLE,M12,5WIRE,F.QC,STR
3	SOL10	611117	1	VALVE,SOLENIOD,24VDC,2WAY,1/4P
4	SOL10 P/O	C07626	1	SENSOR,CABLE,M8,3WIRE,F.QC

PAN STOP CIRCUIT

REF	SYMBOL	PART #	QUAN	DESCRIPTION
1	SOL9	611117	1	VALVE,SOLENIOD,24VDC,2WAY,1/4P
2	SOL9 P/O	C07626	1	SENSOR,CABLE,M8,3WIRE,F.QC

CONVEYOR ENCODER

REF	SYMBOL	PART #	QUAN	DESCRIPTION
1	ENC01	612108	1	ENCODER,4CHANNEL,8PIN,M,QC
2	ENC01 P/O	610024-001	1	CABLE,M12,8WIRE,F.QC,STR

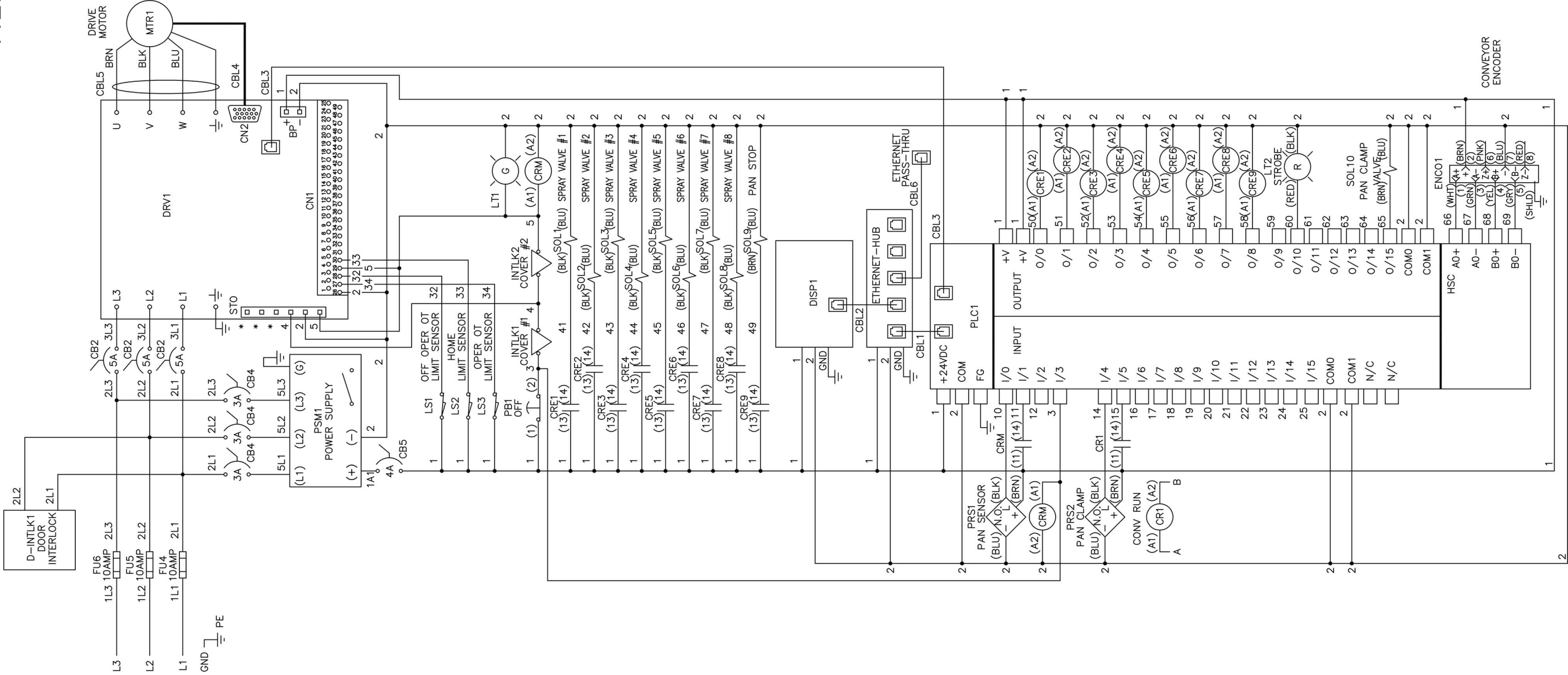
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Electrical Ladder
112385-WD

SERVICE +/- 10%
380/480 VOLTS
50/60 HERTZ
3 PHASE
10 AMPS

Electrical Ladder

112385-WD

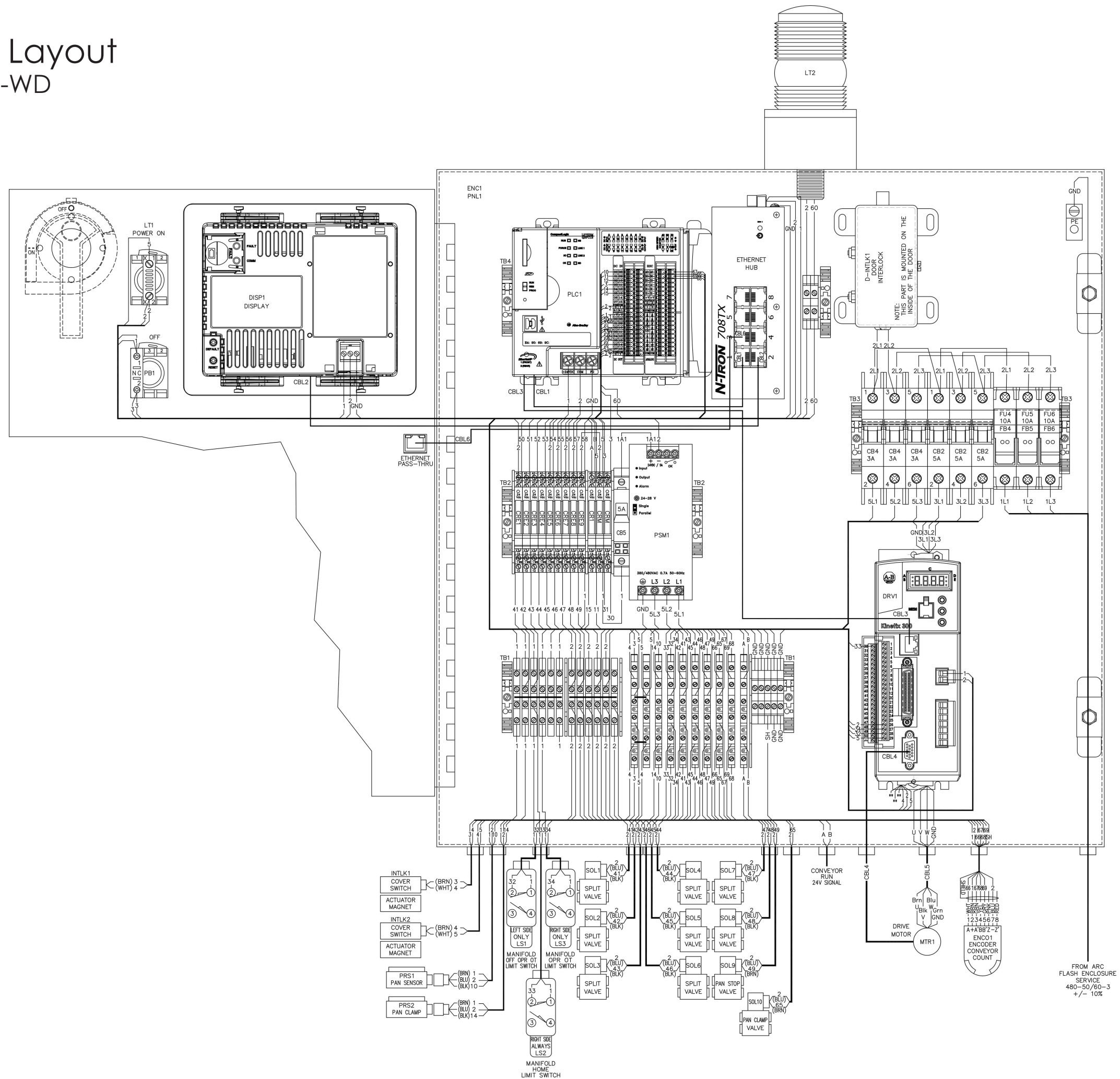


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Electrical Layout
112385-WD

Electrical Layout

112385-WD



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