U-Treat v4.2 Upgrade Installation Kit

Kit Part Number:
03-21-0025 = U-Treat Version 1 Panel
(v3.0 and Newer)

Installation Instructions

Document: TD-09-06-3034   **Revision: C**

RECEIVING YOUR UPGRADE KIT

As soon as the equipment is received, it should be carefully inspected to make certain that it has sustained no damage during shipment and that all items listed on the packing list are accounted for. If there is any damage or shortages, the purchaser must immediately notify USC, LLC. The purchaser is responsible for unloading and mounting all components of the equipment.

Write the serial number from the original door in the Existing S/N: space provided on the label in the upper right hand corner of the new door. The existing serial number is the one you will need to provide USC when calling for service or parts.
USC recommends that you also write that number down on page 3 of the U-Treat v4.2 operators manual (TD-09-06-1050) provided in this kit.

Also write down the serial number from the label on the back of the PPC2100 touch screen at the bottom of this page. This number will also be needed when calling in for help.

Existing Serial Number

PPC2100 Serial Number

SERIAL NUMBER:_____

UPGRADE KIT COMPONENTS

Please verify you have received the following parts in your kit:

- **Pre-Assembled Control Panel Door** with 03-08-0383 pre-wired break-out board and 03-04-0108 20 Amp power disconnect switch.

- 03-06-0133 = Receptacle M12 to RJ45 FKSDD RJ45SF44 (Qty = 1).

- 03-07-0161 = Ethernet Cable, Blue, 4FT (Qty = 1).

- 03-07-0162 = Ethernet Cable, Blue, 6FT (Qty = 4).

- 03-08-0234 = Connector, IEFCM-RJ45-C Pass-Thru (Qty = 3).

- 03-08-0268 = Connector, Compact, TNML BLK 2-CON (Qty = 3).

- 03-09-0001 = Wire Ties - White.

- 03-09-0002 = Wire Ties - Black.

- 03-09-0005 = Din Rail - 2.5" (Qty = 1).

- 03-11-0141 = Alternate Hoffman Control Panel Door (Qty = 1).

- 03-21-0019 = M258 firmware on USB .(Qty = 1).

- 03-21-0029 = PRG M258 Remote I/O on USB (Qty = 1).

- 06-06-0005 = Self Tapping Screw - 10-16 X .500 HH Washer ZP (Qty = 2).

- TD-09-06-1050C = MANUAL - U-TREAT V4.2 AUTOMATED (Qty = 1).

- TD-09-06-2009C = QCK REF SHT - U-TREAT V4.2 AUTOMATED (Qty = 1).

- TD-09-06-3034C = SYS UPGRD KIT - U-TREAT V4.2 V1 UT3.0 (Qty = 1).

- TD-09-06-4066A = INSTR SHT VNC VIEWER SETUP V4 MCP (Qty = 1).
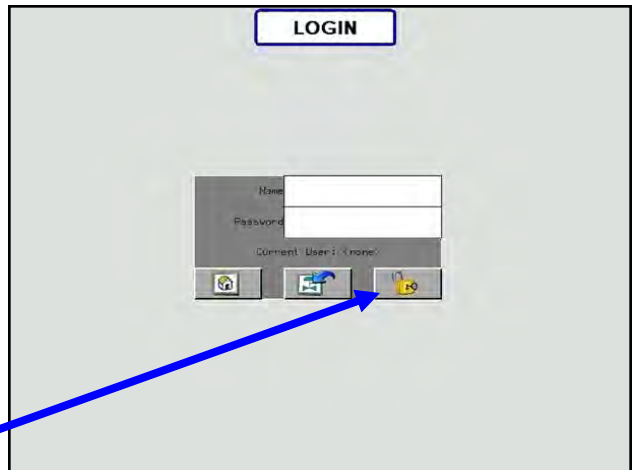
PRESERVING SYSTEM DATA

Step 1: Updating the program will erase all treater and bin site settings. Follow these instructions to record all of the settings for re-entry into the system after the installation process is complete.

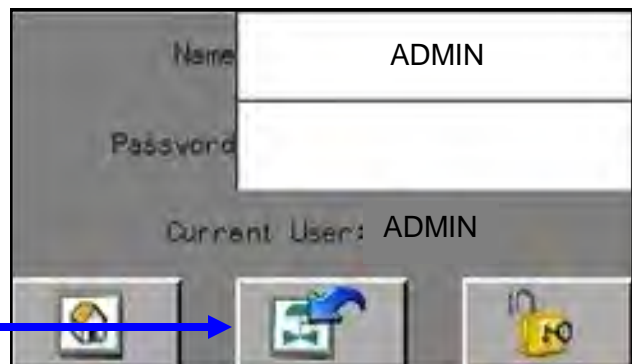1. Go to Security screen on the HMI and press the USER NAME button.
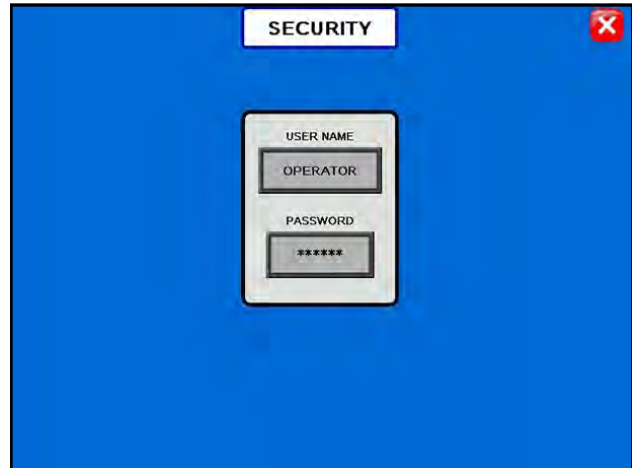
2. Press on the Name space, type in **ADMIN** and press enter. Then press on Password space, type in **SERVICE** and press enter. Press the unlock button.

Unlock Button

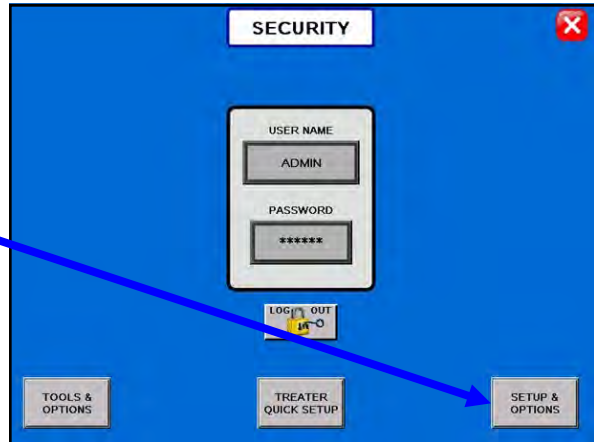3. Verify the current user is ADMIN. Then press the return button.

Return Button

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PRESERVING SYSTEM DATA

NOTICE The easiest way to record all of the system information is to take a digital picture of each screen instead of writing all of the information down.
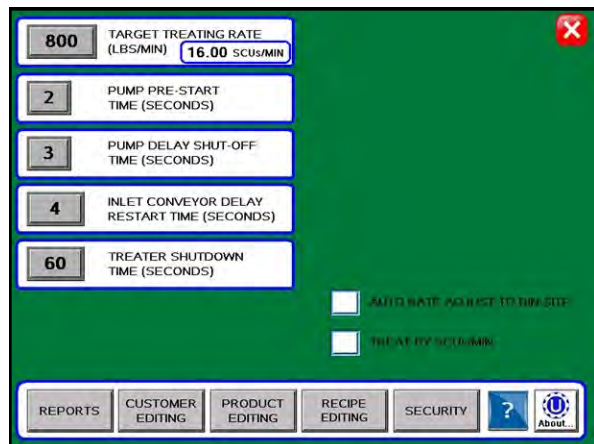
4. Press the Setup & Options button.

5. Installing the new software will reset all the treater settings back to factory defaults. Record of all settings on the Setup & Options screen. Press the Treater Settings button and record all settings there as well. If the site is a bin site system, then press the Bin Site Settings button to record the bin site configuration data.
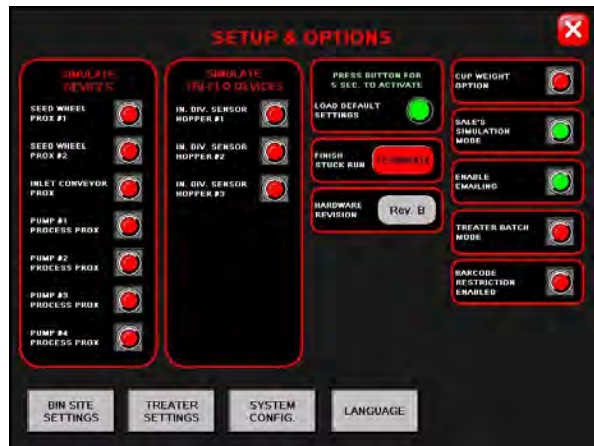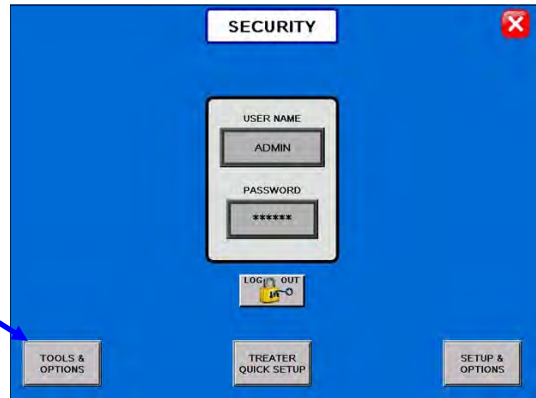

6. From the UTILITIES screen, record all treater data such as target rates, timer settings and if Auto Rate or Treat By SCU are active. If the emailing function is setup, go to the TOOLS & OPTIONS screen and press the Email Setup button. Record all of the information on this screen.
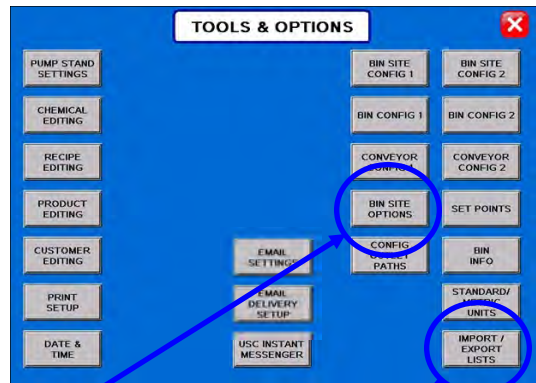
PRESERVING SYSTEM DATA

7. Press the Tools & Options button.

8. Press the Import / Export Lists button.
Insert a blank USB flash device into the USB port on the bottom of the panel. The Flash device must be in Fat 32 format. Export all job reports, customer, seed, chemical, pump, bin, conveyor and outlet path profiles as well as chemical recipes one at a time. Then delete the job reports once finished.

(If you don't do this, all profiles and recipes will need to be re-entered manually.)

**NOTICE** If a bin site is present, note all Bin Site Options settings.

LOADING FIRMWARE TO PLC

NOTICE **Loading the M258 firmware is IMPORTANT to ensure proper program loading. Ignore any alarms or errors that may appear on the HMI while loading the PLC.**

1. Turn off the power and open door of Main Control panel.

2. Insert USB memory stick (03-21-0019) that contains the **firmware** files into the USB port on M258 PLC.

3. Turn power on, **wait until USB Host light turns solid green**, then turn the power back off.

4. Turn power on, **wait until USB Host light turns solid green**, then remove the firmware memory stick.

5. Wait one minute. Turn the power off.

6. Turn power back on for another minute then turn back off.

This light will turn solid green when download finished.

USB memory stick inserts in PLC here.
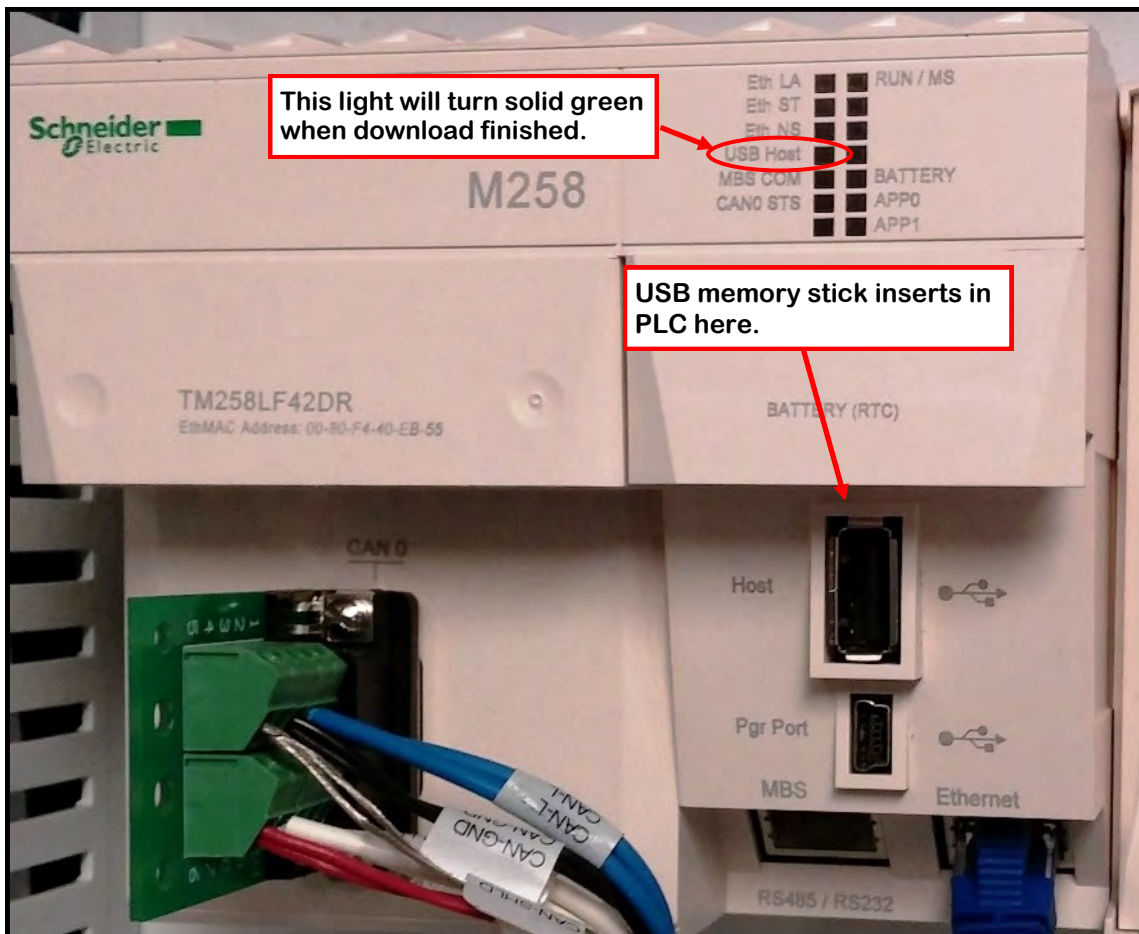
LOADING PROGRAM TO PLC

NOTICE **Ignore any alarms or errors that may appear on the HMI while loading the PLC.**

1. Turn off the power and open door of Main Control panel.

2. Insert the USB memory stick (03-21-0029) that contains the **Program** files into USB port on the M258 PLC.

3. Turn power on, **wait until USB Host light turns solid green,** then turn the power back off and remove memory stick.

4. Turn power back on for 1 minute, then turn it off.

5. Turn power back on for another minute, then turn it off.
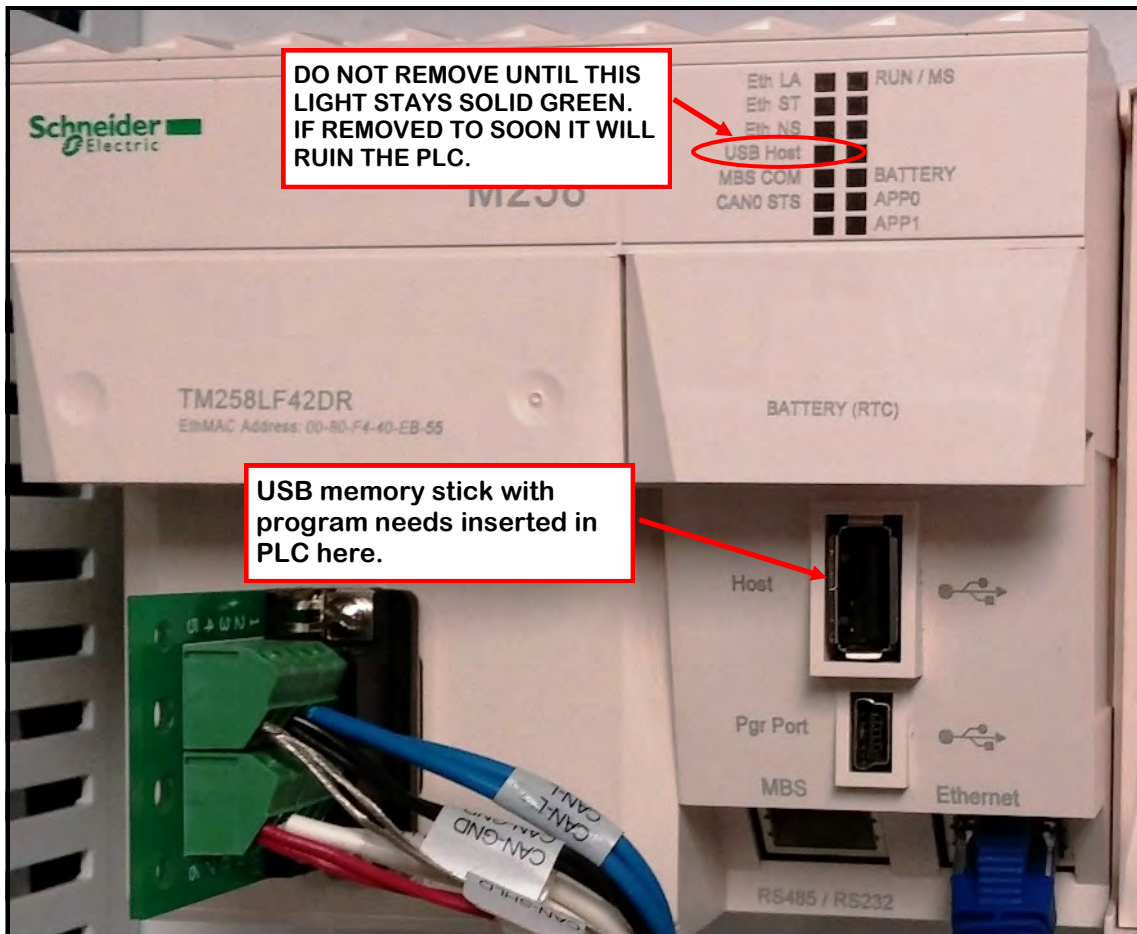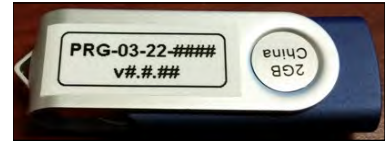
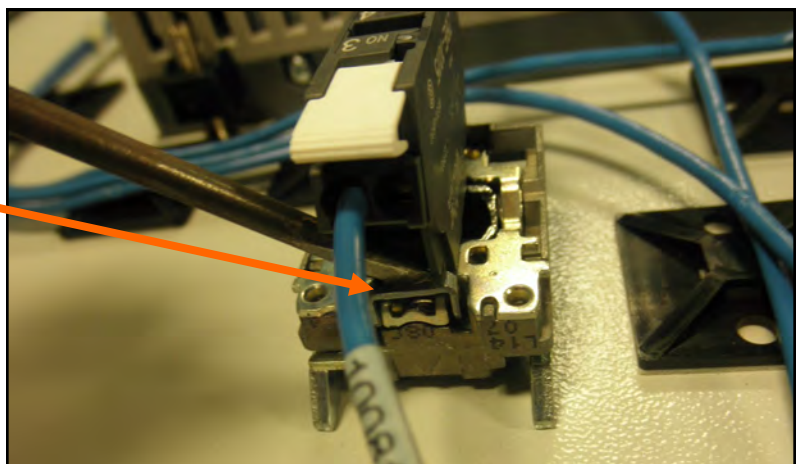# CONTROL PANEL DOOR INSTALLATION

Under no circumstance attempt to install this upgrade kit while the power cord is plugged into the power source. DO NOT rely on the main power switch alone to ensure that the control panel is de-energized.

STEP 1: Rotate the power handle counter clock-wise to turn off power to the panel. Then, unplug the power cord from the power source. Use a small container to place the E-Stop, E-Stop Reset and Power Disconnect switches, labels and hardware into to prevent loosing any items as they will be reinstalled on the new control panel door.

STEP 2: Using a flathead screwdriver, turn the door latches counter-clockwise. Open the control panel door. Remove all of the wire ties holding the control panel door wiring.
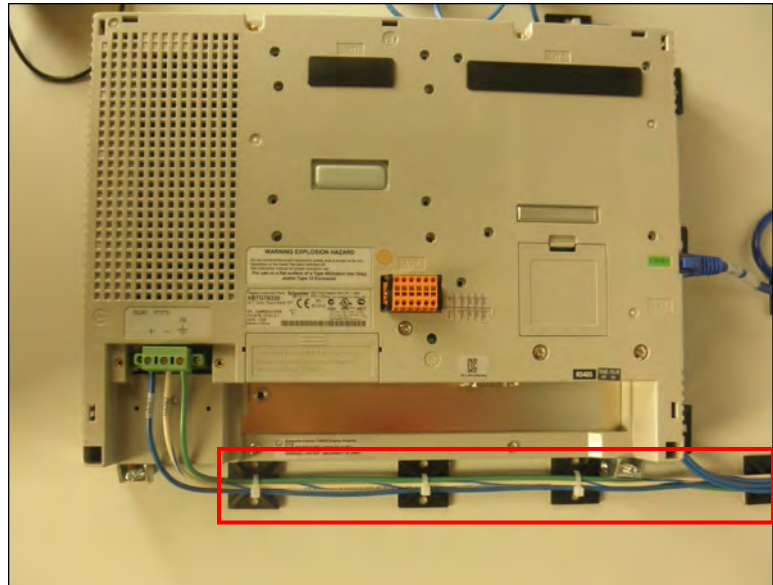

STEP 3: Remove the E-Stop and E-Stop Reset wire contact blocks. Use a small flat blade screwdriver to pull up on the metal tab on the top center of the block. Lay the contact blocks with the wires still connected inside the control panel. They will both be reinstalled on the new control panel door.

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CONTROL PANEL DOOR INSTALLATION

STEP 4: Remove the E-Stop and E-Stop Reset switches. Loosen the screw on the bottom. Then, using a small flat blade screw driver pull up on the small metal clip at the top and remove the switches. Place the switches, labels and mounting clips in the container.
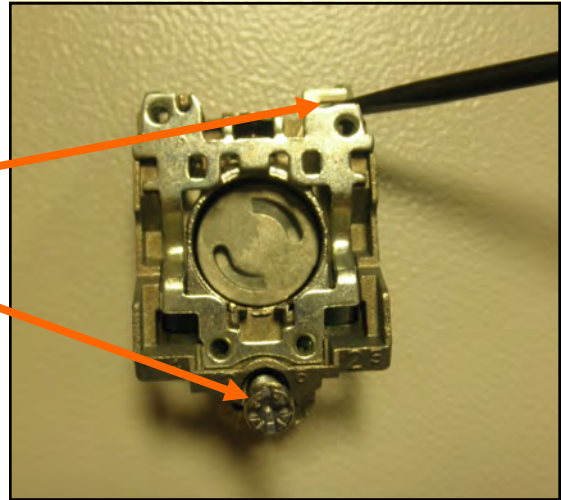

STEP 5: Remove the Ethernet connection and the three power wires from the green connector from the old HMI. DC Positive is blue, DC negative is white / blue and ground is green (see page 13). Set them inside the control panel. The wiring will all be reattached to the new B&R HMI
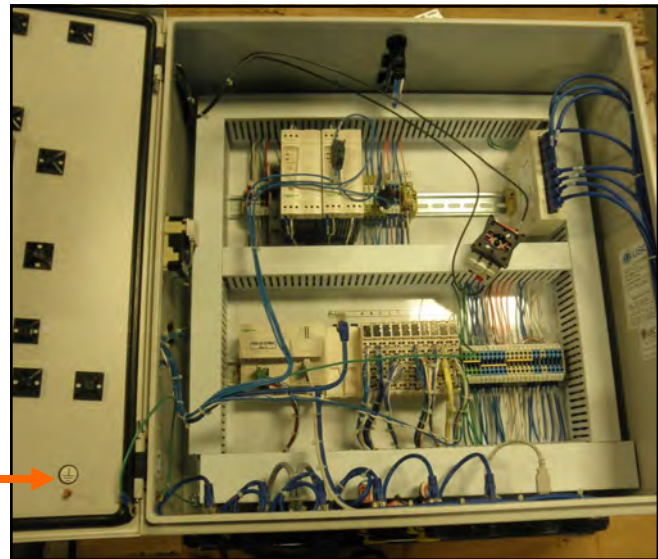
Do not forget to remove the ground wires.

STEP 6: Remove the control panel door. Holding the door open at a 90 degree angle, use a small screwdriver to carefully remove the two hinge pins.
Take care not to drop the door to avoid damaging the HMI.

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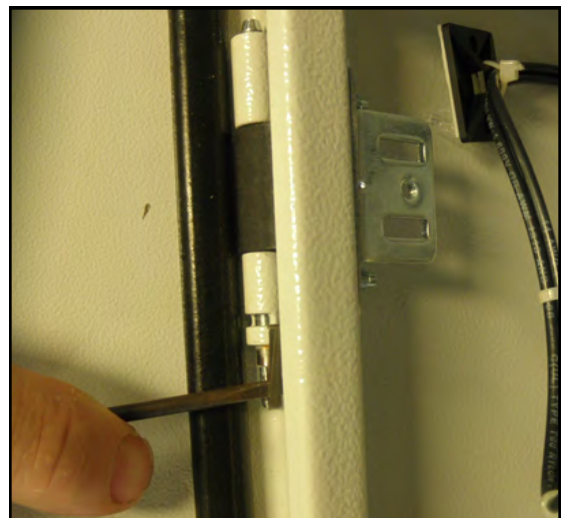
CONTROL PANEL DOOR INSTALLATION

Some of the version 1 control panels were built with Schaefer enclosures and some with Hoffman enclosures.

NOTICE

**The door assembly for this kit was built with a Schaefer door. Hold the new panel door assembly up to the enclosure.**

If you have a Schaefer enclosure and the door hinges are the correct spacing, skip step 7 and proceed to step 8. If they do not fit, proceed to step 7.

STEP 7: You will need to move the touch screen from the Schaefer door to the Hoffman door. Remove the protective sheet covering the touch screen from the door. Do not discard. Fold the tape over and lay it on a level work surface as large as the door assembly. Lay the door face down so that the touch screen is being protected by the plastic sheet.

Cut the three cable ties securing the breakout board cable and green ground lead. Disconnect both from the touch screen and set aside.
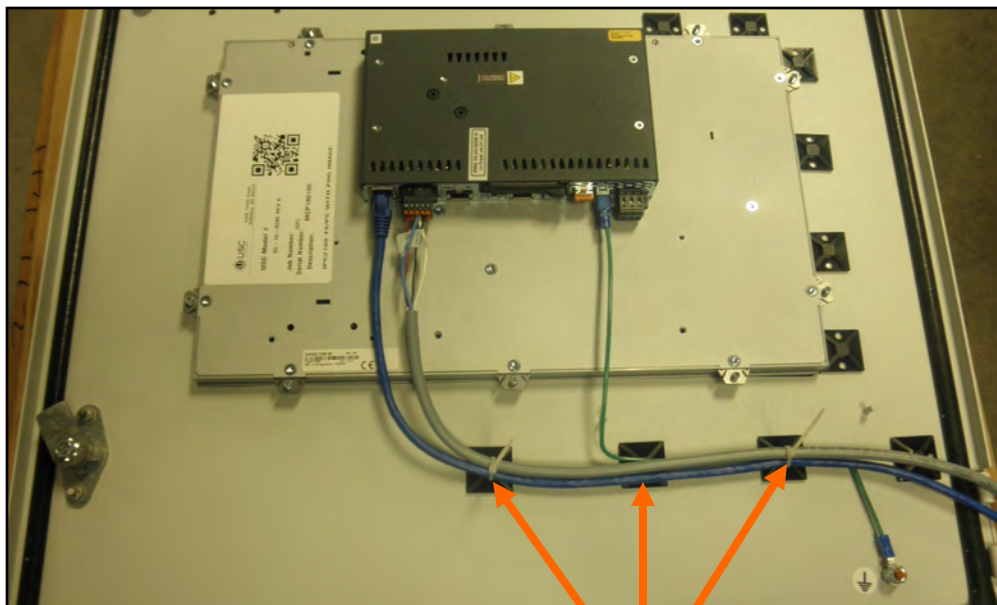

Cable Ties

CONTROL PANEL DOOR INSTALLATION

STEP 7 (Continued):

Using a #10 Allen wrench, back off the ten set screws holding the touch screen in place far enough to be able to slide out the mounting tabs. After all of the tabs are removed, lift the door straight up and discard.

Place the Hoffman door in the same location. Re-insert the mounting tabs until they are all the way in. You will feel a slight click when they are home. Tighten the set screws and plug the breakout board cable and ground back in.

Set Screws

Mounting Tabs
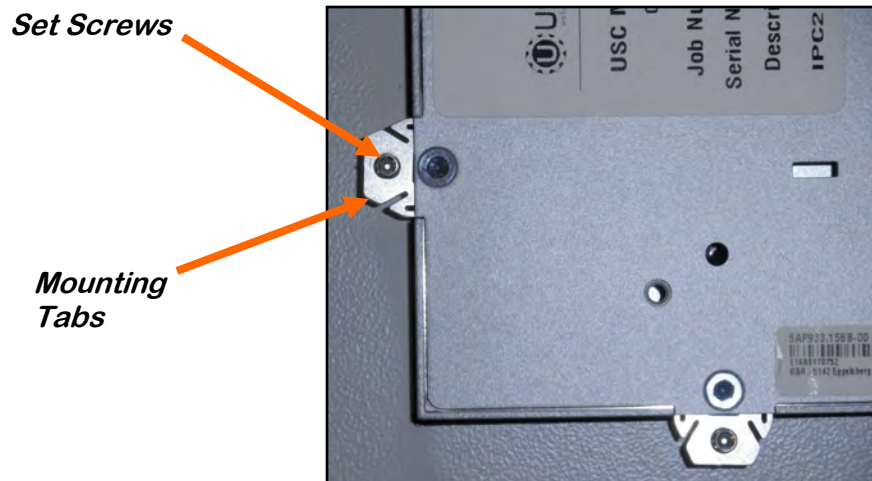
STEP 8: You are now ready to install the new door. Carefully place door so the mating hinges are together and reinstall hinge pins.

STEP 9: Reinstall the E-Stop and E-Stop Reset buttons. You will notice that there is an arrow on the top, back of each button. This indicates the top of the switch so you will need to ensure that the labels are facing up to correspond with the switch. Insert them together into the door. The mounting clips will snap onto the switches with the screw down. Tighten this screw until just snug. If the screw is tightened too much, the outside of the label will start to bend outward and not sit flush on the panel door.

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CONTROL PANEL DOOR INSTALLATION

STEP 10: Reinstall the contact blocks for the E-Stop and E-Stop Reset switches. The NC block (1 and 2, red), installs on the E-Stop button. There is a tab on the bottom side that you will need to insert first, then push up and it will click onto the mounting clip. The NO block (3 and 4, green), installs the same way onto the E-Stop Reset button.

**STEP 11:** Connect the power wires to the new HMI.

DC Positive	Blue
DC Negative	White
Ground	Green
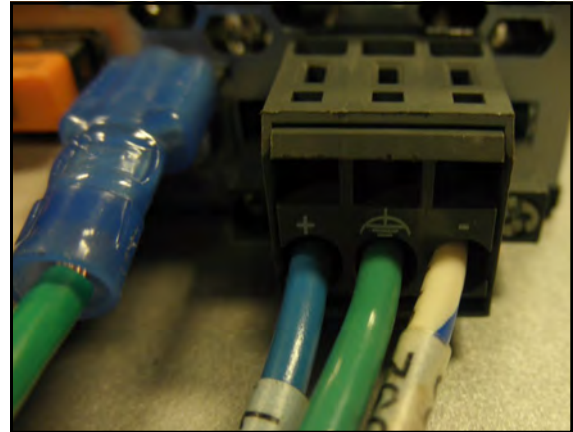
STEP 12: Reroute the blue Ethernet cable (P4) inside the panel so it will reach Ethernet port ETH2 on the new HMI.

STEP 13: Reroute the white USB cable that is currently plugged into the PLC and plug it into the USB 1 port on the new HMI.
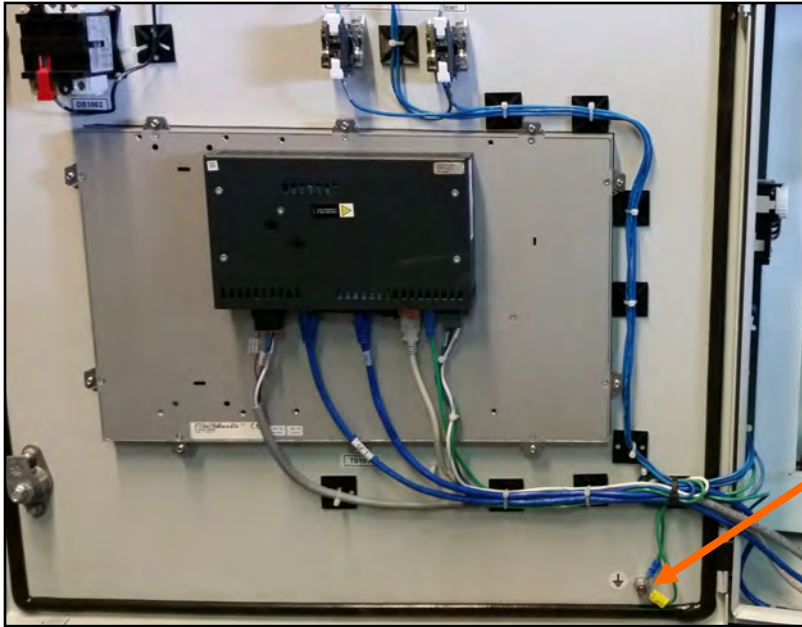
⚠ **WARNING**

DO NOT remove the orange plug that is in USB 2 port

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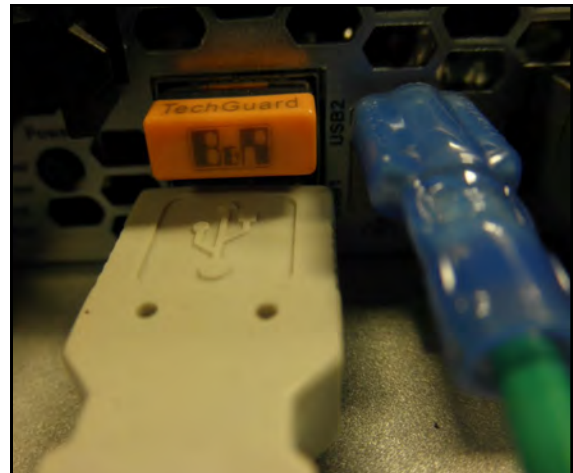
CONTROL PANEL DOOR INSTALLATION

STEP 14: Ensure that the enclosure ground and the HMI ground are reconnected to the door ground lug. Then, reinstall all of the wire ties to keep wires neat and in place.

Door Ground Lug

STEP 15: Inside the panel in the upper right hand corner, locate the existing power contactor. Loosen the set screw to the left of the disconnect shaft and remove shaft from the middle of the contactor. Remove the top, middle and right side wireway covers. Run the two wires from the new door power contactor inside the top wireway and down the right side.

CONTROL PANEL DOOR INSTALLATION

STEP 16: Using the splices supplied in the kit, connect the following wires:

DS1002 - L3 to DS1002 - T3.
DS1002 - L1 to new door lead (L1).
DS1002 - T1 (10031) to new door lead (10021).

Tuck the spliced wires into one of the wireways.

**STEP 17:** Remove the two mounting screws and the old contactor (DS1002).
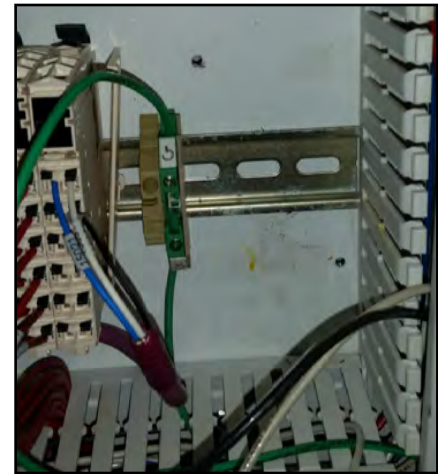
STEP 18: Loosen the screw on the retaining clip next to the green ground terminal, then release the lockdown clips for the PLC. Slide the wires out of the wireway slots and then slide the ground terminal and PLC all the way to the right.
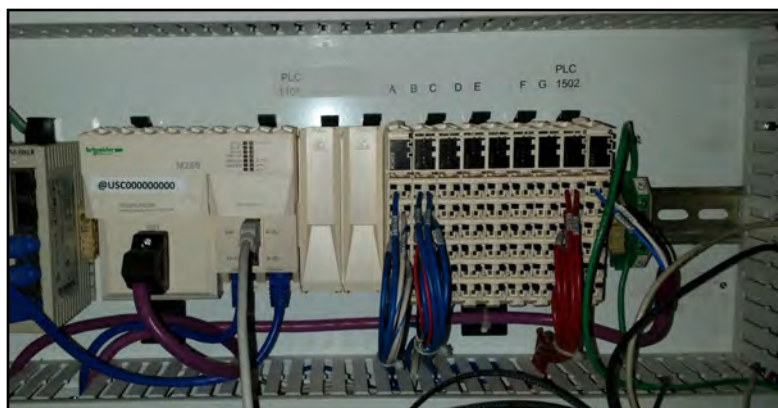
CONTROL PANEL DOOR INSTALLATION

STEP 19: Tighten the ground terminal set screw and lock the PLC back down. Tuck the wires back into the nearest available wireway slots.
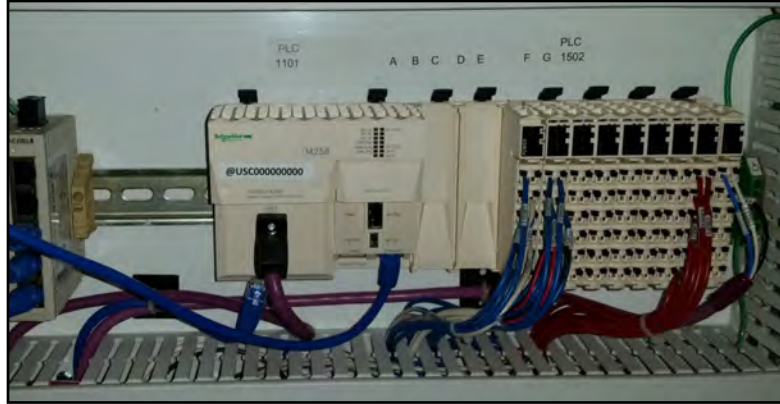
STEP 20: Route the breakout board cable through the middle wireway and snap the breakout board onto the DIN rail to the left of the PLC.

STEP 21: Disconnect the CAN Open cable from the PLC and connect it to the connector in the middle of the breakout board. Replace all of the covers for the wireways

CONTROL PANEL DOOR INSTALLATION

NOTICE

If there is not enough room available on one of the existing din rails, locate an open area as close to the PLC as possible to install the 2.5 inch long DIN rail (03-09-0005) provided in the kit. Before you mount it ensure there is enough space to attach the breakout board to it. Also, ensure that both the cable for the breakout board and the cable that needs to be relocated from the PLC will reach the location chosen. Secure it with the two self tapping screws (06-06-0005) provided.

The grey cable and CAN breakout board coming from the door will need to be installed onto the small DIN Rail that was just installed. The board will snap onto the DIN rail. Disconnect the purple cable from the PLC and connect it to the connector in the middle of the breakout board.

CONTROL PANEL DOOR INSTALLATION

STEP 22: Drill one 5/8" at the location marked **"A"** and three 7/8" holes at the locations marked **"B"** in the bottom of the enclosure. The center of these holes should be in line with the top two rows of connectors and approximately 2 1/2" right to left of the center of the far right connectors. **DO NOT** drill below the centerline of the center row of connectors or you will drill into the bottom wire way inside the panel. Remove burrs and clean out all metal shavings.
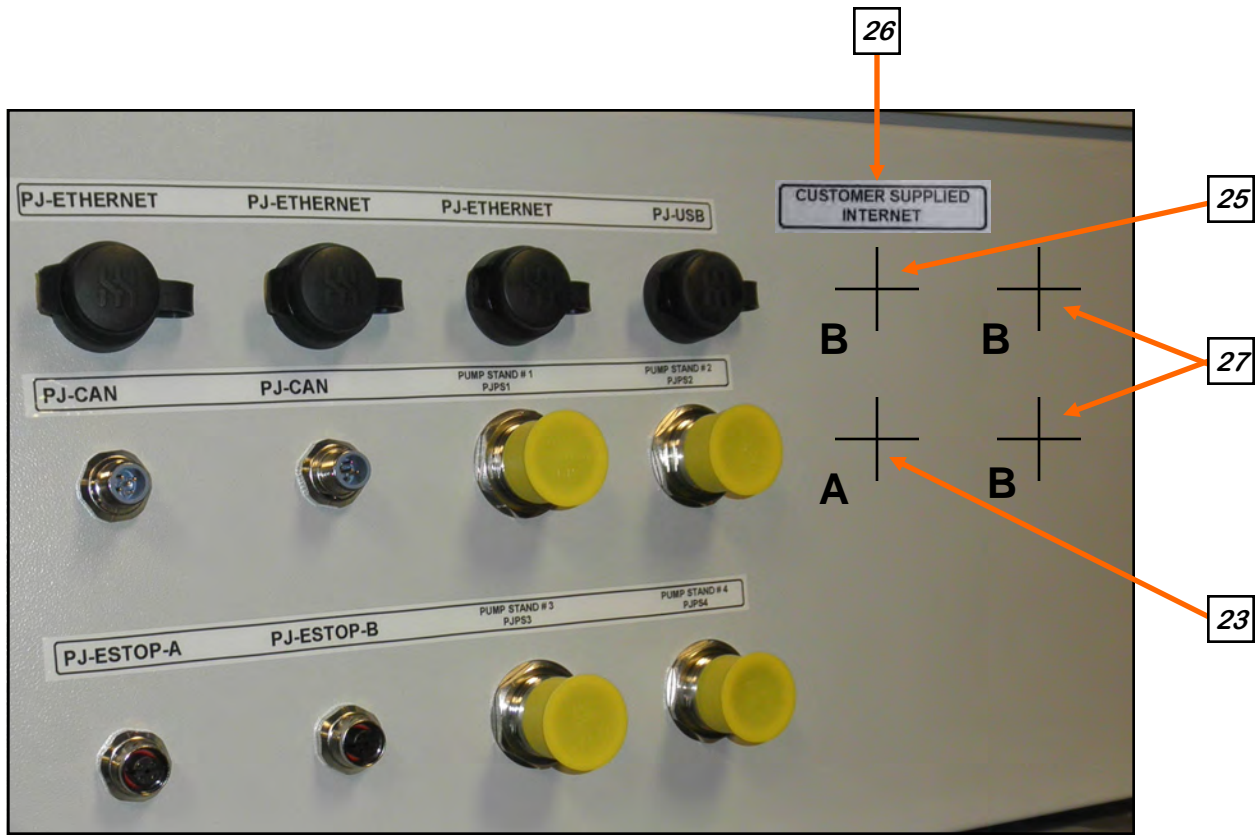
STEP 23: Install the M12 to RJ45 pass-thru (03-06-0133) in the 5/8" hole at the **"A"** location. Slide the O-ring seal over the threads until it seats. Install it from the inside of the panel and secure with the nut. Attach the ethernet cable assembled on the new door that is connected to the HMI / IF1 port.

CONTROL PANEL DOOR INSTALLATION

STEP 24: Disassemble the three RJ45 pass throughs (03-08-0234). Remove the black tabs. Re-attach the boots and insert from the outside of the panel in the holes at the **"B"** locations. Secure with the nuts.

STEP 25: Run one CAT 5 cable (03-07-0162) from this connector to the HMI / ETH1 port. This is the incoming internet connection.
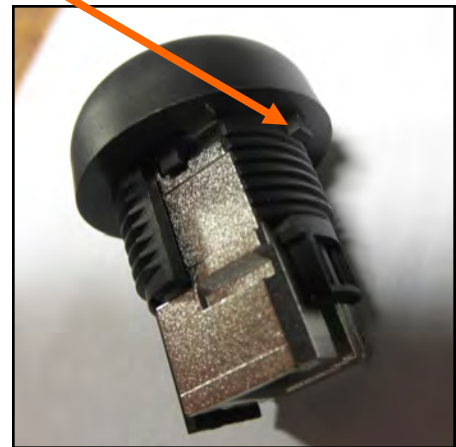
**STEP 26:** Place the CUSTOMER SUPPLIED INTERNET sticker above the newly installed pass-thru.

CUSTOMER SUPPLIED INTERNET
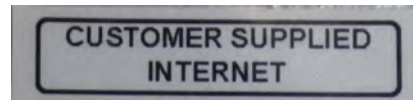
STEP 27: Run the last two CAT 5 cables (03-07-0162) from these connectors to the two available locations on the ethernet switch that is mounted to the top Din rail. Reinstall the wire way caps.

ESTABLISHING THE SYSTEM PARAMETERS

After the installation is complete, power up the system. The first screen the operator will see is the USC Startup screen with the User Acknowledgement popup.
After reading the User Acknowledgement statement, press the Acknowledge button at the bottom of the popup window to close the screen. While the system is booting up, the touch screen will display a timer bar at the bottom of the Start Up Screen. Once the timer bar reaches the end it will disappear and be replaced with a line of text that reads Press Screen to Continue. Select any where on the screen and it will advance to the Main screen
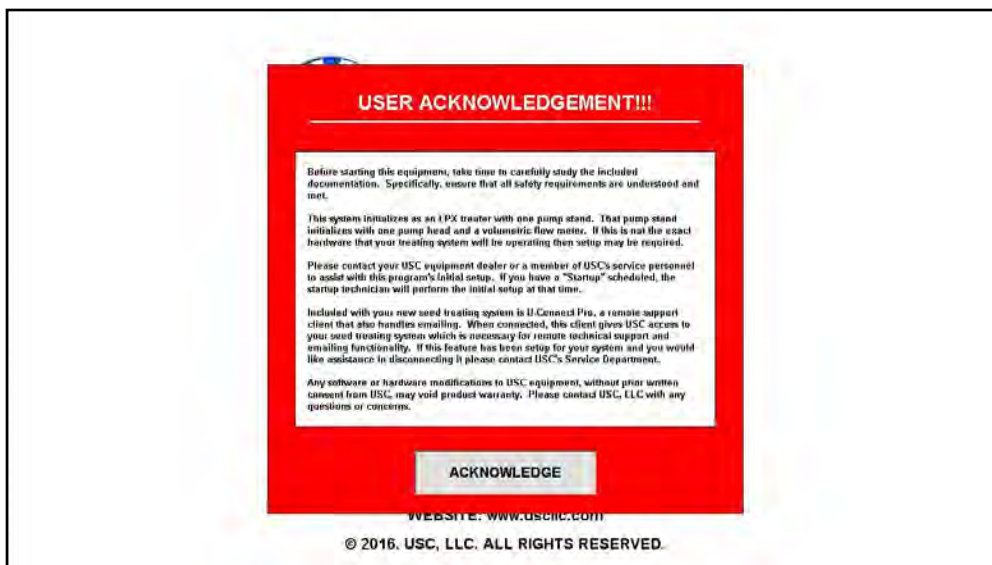
ESTABLISHING THE SYSTEM PARAMETERS

The first screen will be the main treater screen with a flashing emergency stop popup. The user name will also be set to DEFAULT. The system is alarming because none of the system parameters have been established. The following steps will take you through the process to set up the system to accommodate your treater and or bin site.
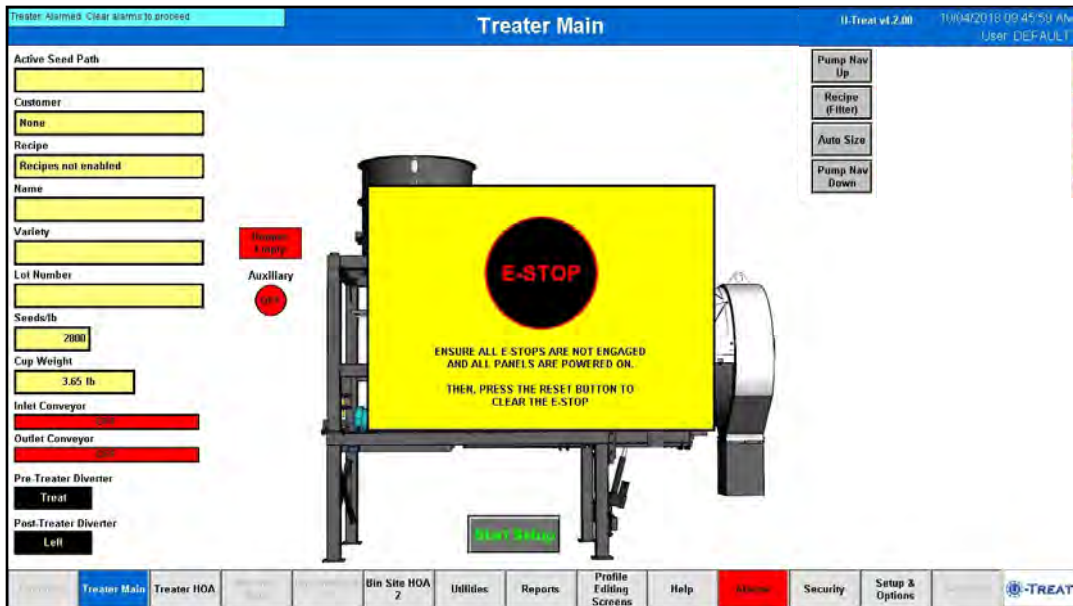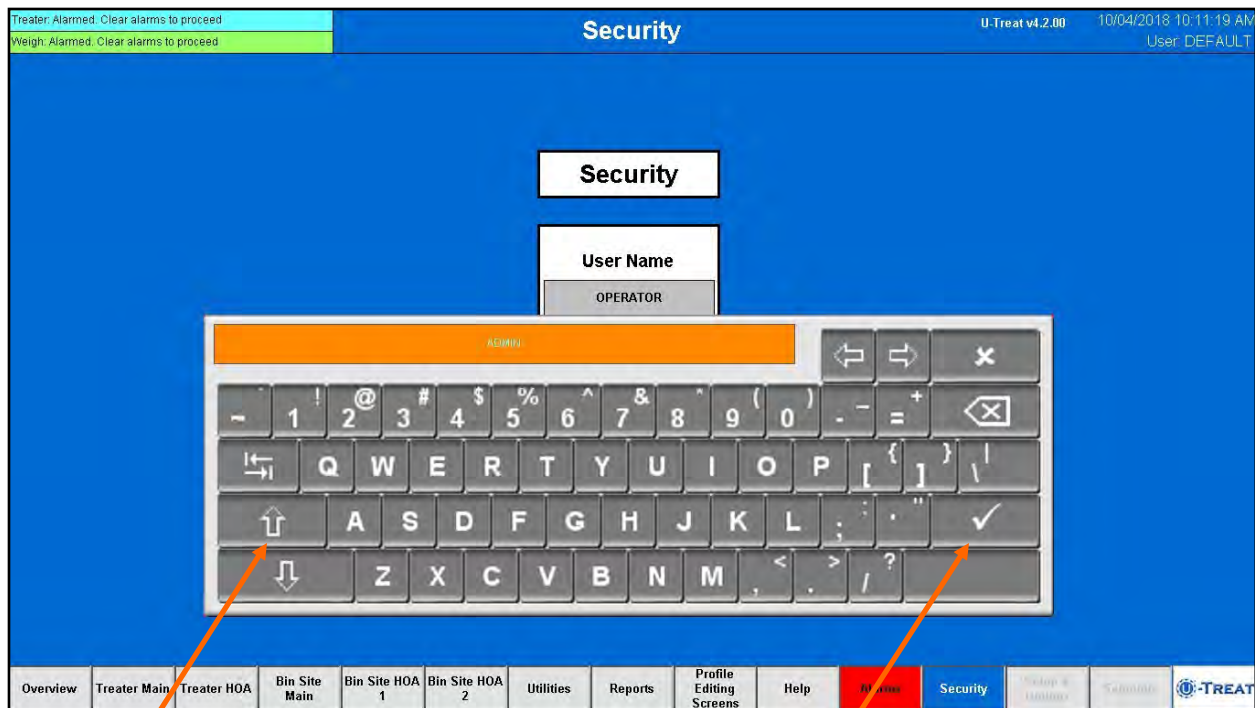

Step 1: Press the Security button at the bottom of the screen

ESTABLISHING THE SYSTEM PARAMETERS

Step 1 (continued): Press the User Name button and a keyboard will popup with white background and grey text. This means it is set for lower case text. Press the shift key and it will change to dark grey background with white text for upper case. Type ADMIN in upper case text and press the key with the check mark to enter. Press the Password button and type SERVICE in upper case text and press the enter key.

Press the Login button and the User in the upper right hand corner will change from DEFAULT to ADMIN. The Setup & Options button in the lower right corner of the screen is now active.

Shift Key

Enter Key

ESTABLISHING THE SYSTEM PARAMETERS

Step 2: Press the Setup & Options button at the bottom of the screen. This is were all of hardware parameters are established.

1. Press the Auto Detect button. This will establish communication from the new main control panel to the existing control panels in the system. Some of the boxes will become checked and some of the other parameters will be set. You will still need to add some of the more detailed information. Select the items on this screen to activate the parameters that apply to your existing hardware configuration. The treater options are on the top half and the bin site options at the bottom.

    The example on page 24 shows an LPV2000 loss in weight treater with version 4 main control panel. Also, the drum tilt and treater batch mode are active as well as a pre-treater and post treater diverters. The bin site is also enabled with a Tri-Flo® weighing device, Rice Lake 1280 scale head and power link interconnectivity.
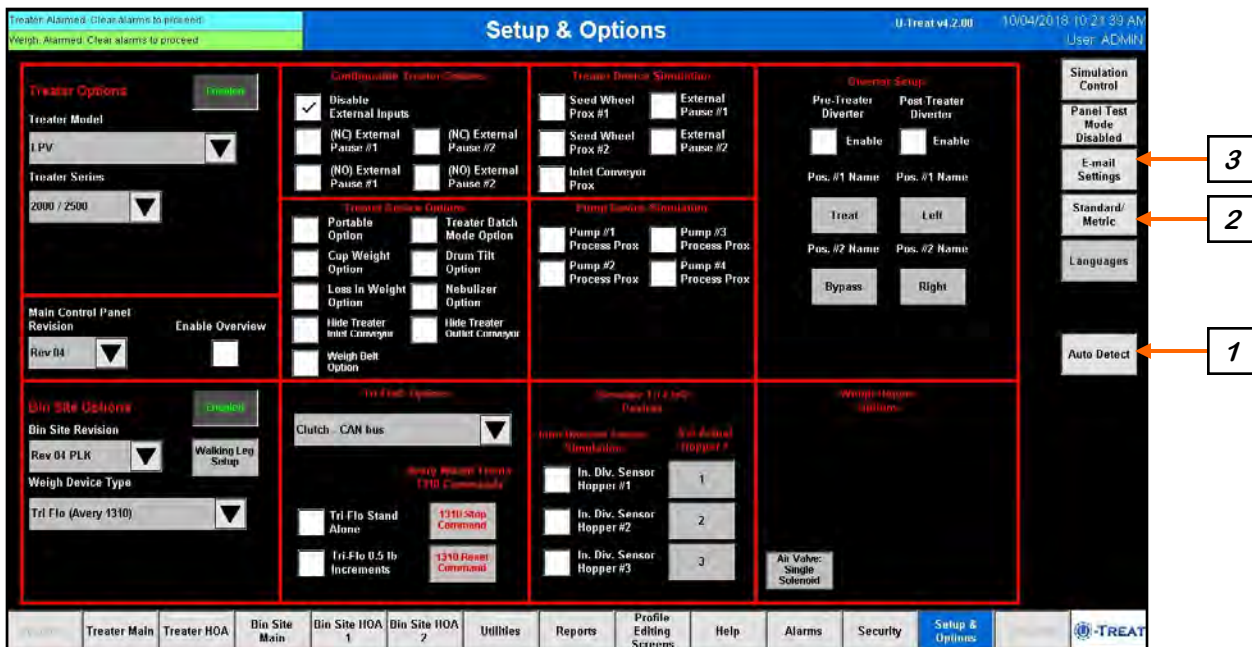
# ESTABLISHING THE SYSTEM PARAMETERS

Step 2: (Continued).
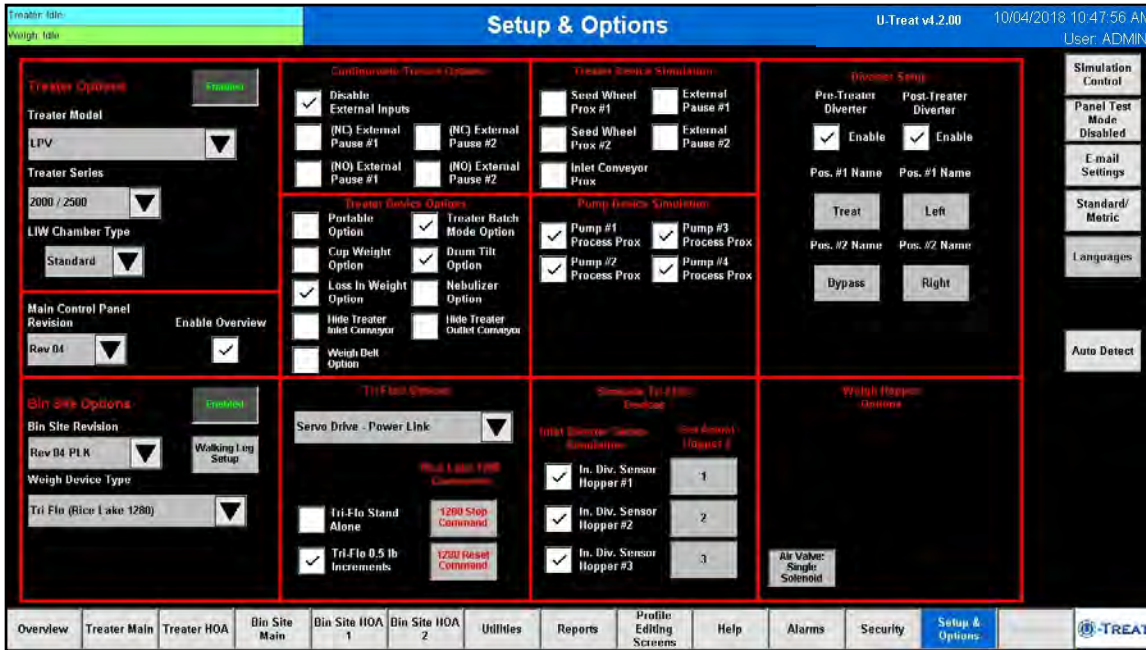
2. Pressing this button allows the operator to switch between Standard or Metric units of measurement. When this button is pressed a popup window will appear. The box in the center indicates the active unit of measurement.
   The default is standard unit. Pressing the metric button to change to metric measurement.
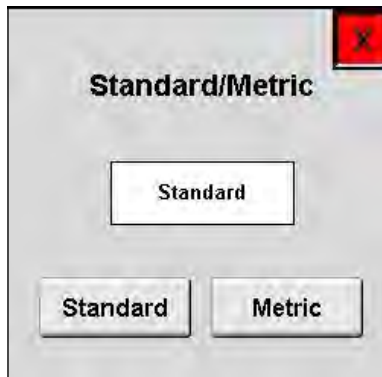
ESTABLISHING THE SYSTEM PARAMETERS

3. If you want to use the e-mail feature define the following e-mail settings.
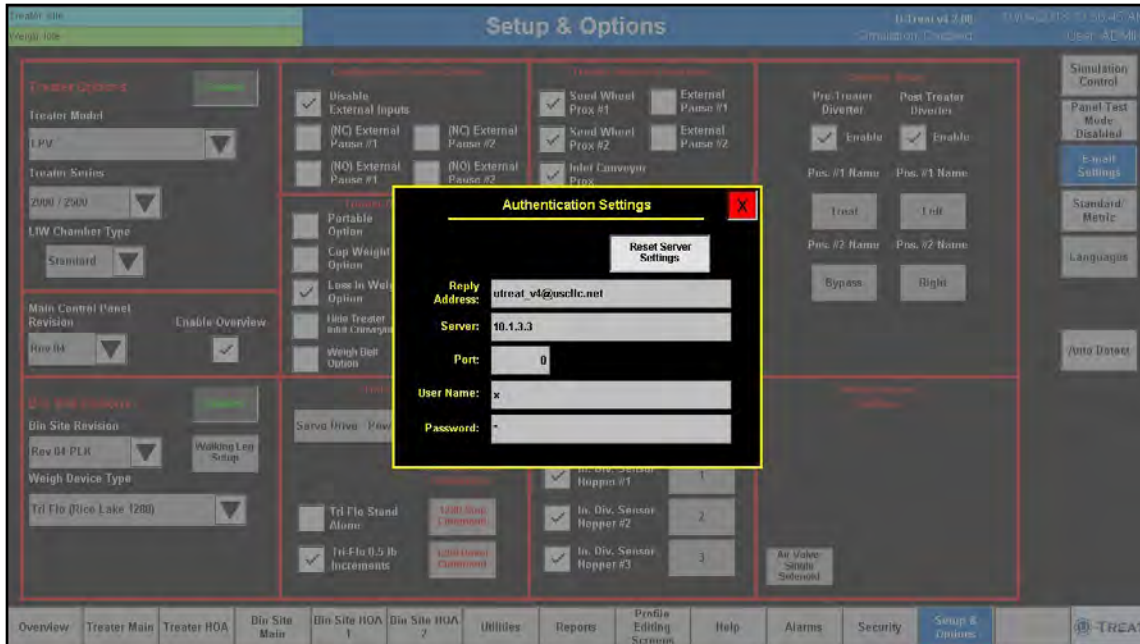
RESET SERVER SETTINGS: This button will reset the settings for the e-mail client.

Reply Address: This will be what e-mail address the e-mail is coming from. If there is a failure to deliver message, this e-mail will receive notification of the failure. EXAMPLE: A misspelled e-mail destination.

Server: This will be the server that we will use to authenticate the e-mail delivery.

Port: This is the port number for the authentication server.

User Name: This is the username for the authentication server. This will be used to confirm that we have rights to use the authentication server.

Password: This is the password for the authentication server.

ESTABLISHING THE SYSTEM PARAMETERS

Step 3: Set the date and time. Press the Utilities button at the bottom of the screen, then the Date & Time button in the upper right corner. Select the top three boxes to set the year, month and day. Select the bottom three boxes to set the time. The system is based on a 24 hour clock. When keying in the hour, 2:00 P.M. is 14 hours as in the example below. If you wish to view the time on the screens in 12 hour display, check the box below the time setting. The display in the upper right hand corner will now show a 12 hour clock indicating A.M. or P.M.

Press the Set Date & Time button in the center of the screen to save your entries.

LOADING PRESERVED SYSTEM DATA (v3.0 AND NEWER)

NOTICE	**If you are upgrading from a program prior to v3.0, all of the system profiles for customers, chemicals, seed etc. will have to be manually entered into the v4.2 system.**

Step 4: Copy the version 3 profile data to the version 4 format.

1. Copy the files that were exported from the version 3 program prior to installing the new program (see page 12) onto the hard drive of your computer. Change the name of the folder from **usc** to **usc v3**. Delete the **usc** folder from the flash drive.

2. Remove the drive from the computer and insert it into one of the usb ports on the updated control panel. Press the Import & Export button. Export each of the seven profiles shown in the v4.2 folders on the right.

3. Insert the drive back into the computer and copy the **usc** folder with the **usc v3** folder.

Version 3

	Name	Date
	alarms	12/4/
1	binprofile	12/4/
2	chemprofile	12/4/
3	conveyorprofile	12/4/
	eiopumpprofile	12/4/
	jobreports	12/4/
	outletpathprofile	12/4/
	pidprofile	12/4/
4	pumpprofile	12/4/
5	recipeprofile	12/4/
6	rolodex	12/4/
7	seedprofile	12/4/

Version 4.2

	Name	Date mo
	alarms	12/12/20
1	bins	12/12/20
2	chem	12/12/20
3	conveyor	12/12/20
6	cust	12/12/20
	diverter	12/12/20
	events	12/12/20
	messages	12/12/20
	path	12/12/20
4	PumpConfig	12/12/20
5	recipe	12/12/20
	report	12/12/20
7	seed	12/12/20
	VFD	12/12/20

4. The .csv files in the version 3 folders will need to be manually copied into a blank v4 folders. The examples are numbered 1 through 7 to show which version 3 file needs to be copied into the correct version 4 file.

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LOADING PRESERVED SYSTEM DATA (v3.0 AND NEWER)

5. Open a pair of matching files in Excel side by side on the computer. Changing all column widths on both spreadsheets to 15 will make it easier to read the headers. Copy the data below the header from each column of a version 3 to the corresponding column in the version 4 spreadsheet until all of them have been copied. There are more columns in the version 4 program so you will not be filling all of them in. Continue this process until all of the information has been copied. File the version 4 sheet.

6. Copy the usc folder back onto the flash drive.

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Step 5: Load the preserved data from the version 3 program into the v4.2 program.
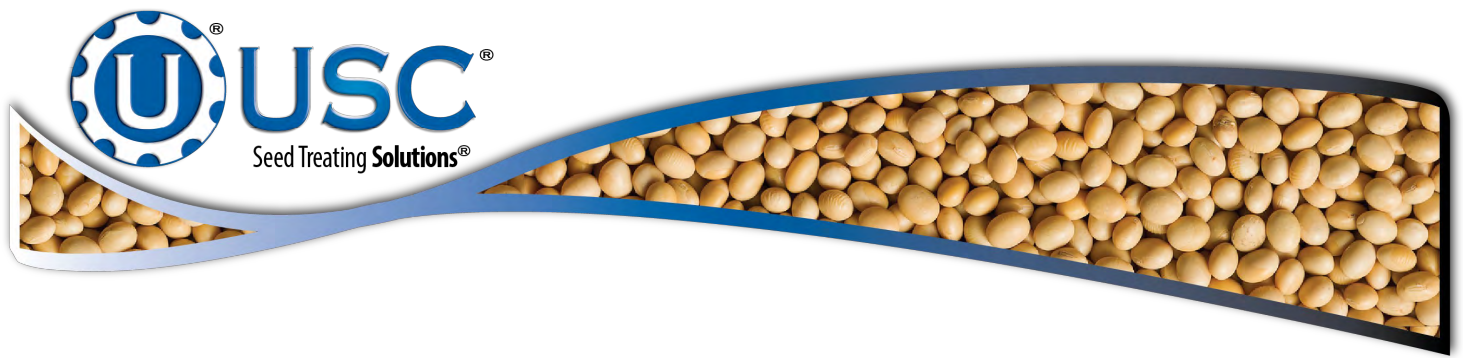
1. Insert the flash drive into the panel. The USB Status in the upper left corner should read Connected. Import each one of the nine profiles and any recipes back into the version 4 program.

2. As you begin to load the files back into the system a pair of buttons will appear underneath the Actions buttons (top). Importing the profiles copies them into the system. After all of the profiles have been imported, press the flashing green Align Data Tables button. This will place the files in the correct location. A popup timer will appear with two timer bars showing the alignment progress (bottom). Wait until it disappears before leaving the screen. This will synchronize the imported data with the updated system.

USC, LLC

2320 124th road

Sabetha, KS 66534

PHONE: (785) 431-7900

FAX: (785) 431-7950

EMAIL: sales-team@uscllc.com

WEB: www.uscllc.com