# U-Treat v4.2 Upgrade Installation Kit

## Kit Part Number:
## 03-21-0028 = U-Treat Version 3 Panel with 4 Pump Controller

## Installation Instructions

**Document: TD-09-06-3037**                                        **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 IPC2100 touch screen at the bottom of this page.  This number will also be needed when calling in for help.



*Existing Serial Number*



*IPC2100 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 bd).

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

- 03-07-0162 = Ethernet Cable, Blue, 6FT (Qty = 2).

- 03-08-0234 = Connector, IEFCM-RJ45-C Pass-Thru (Qty = 1).

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

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

- 03-09-0005 = Din Rail - 2.5" (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-09-06-3037C = SYS UPGRD KIT - U-TREAT V4.2 V3 4PC (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.

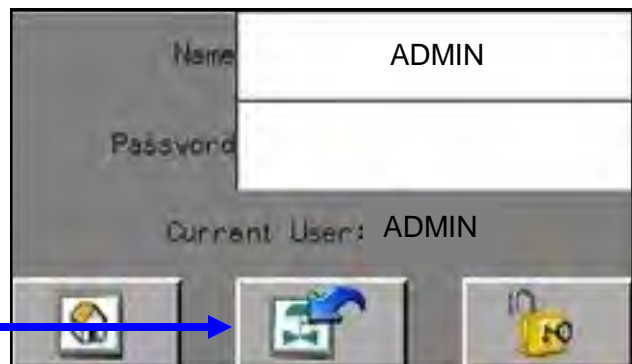1.  Go to Security screen on the HMI and press the USER NAME button.
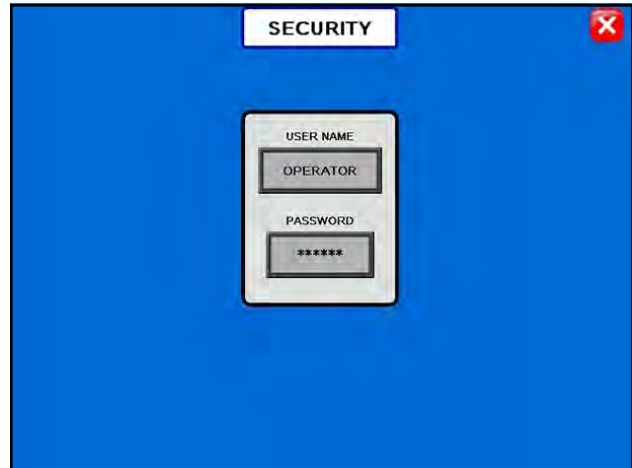


2.  Press on the Name space, type in **ADMIN** and press enter.  Then press on Password space, type in **SERVICE** and press enter. Press the unlock button.
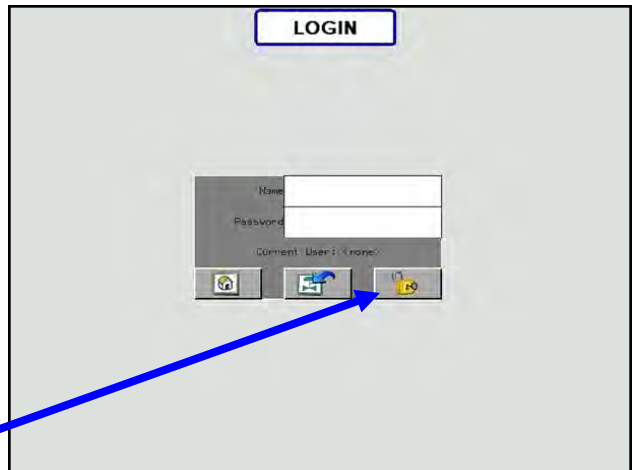
**Unlock Button**



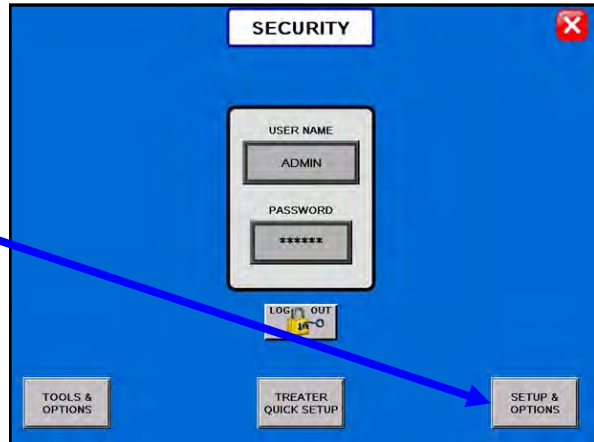3.  Verify the current user is ADMIN. Then press the return button.

**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.
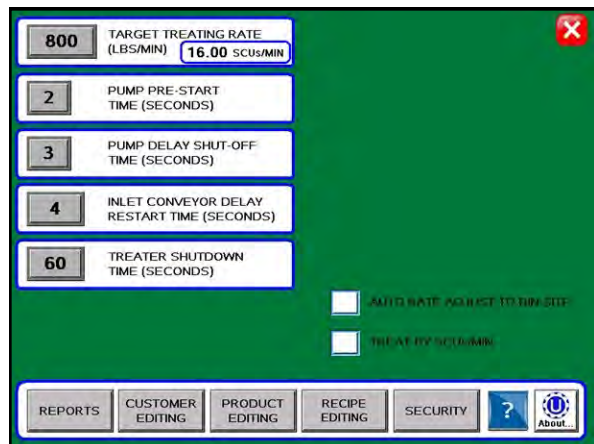
4. Press the Setup & Options button.



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.
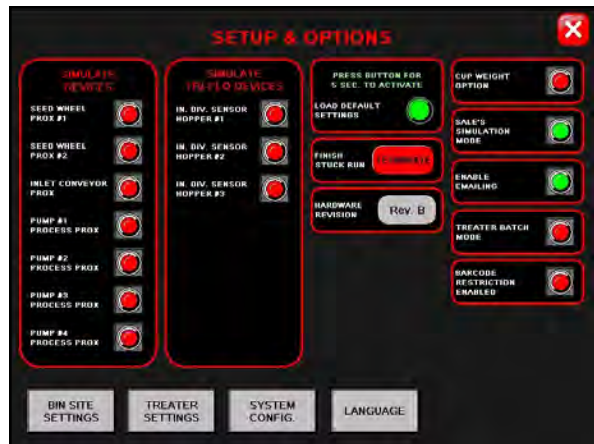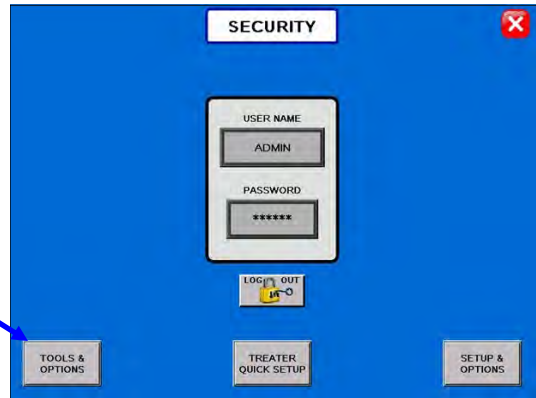


6. From the UTILITIES screen, record all treater data such as target rates, timer settings and if Auto Rate or Treat By SCU are active. If the emailing function is setup, go to the TOOLS & OPTIONS screen and press the Email Setup button. Record all of the information on this screen.
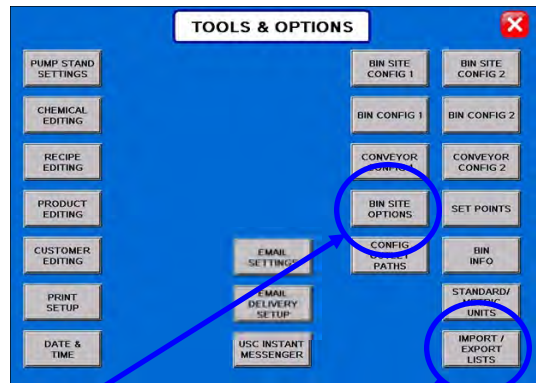
# PRESERVING SYSTEM DATA



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.

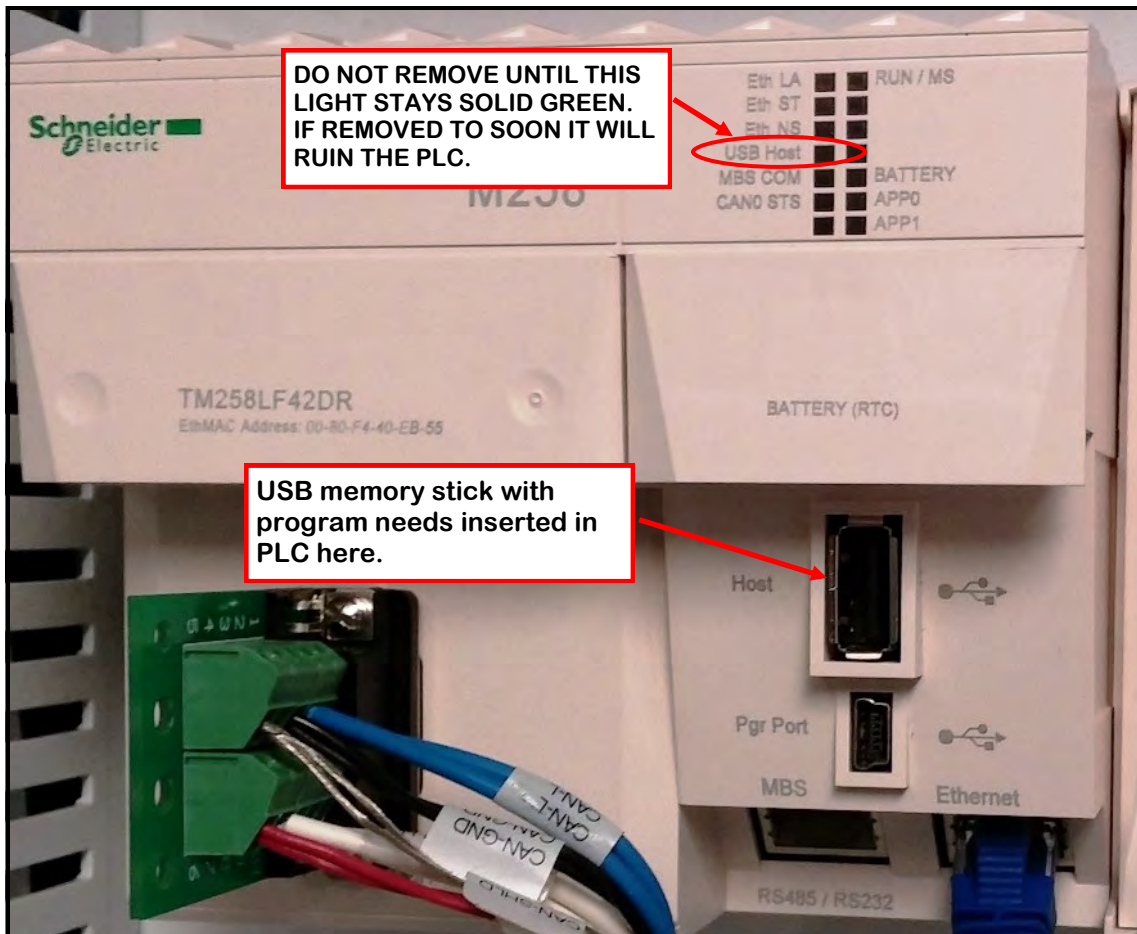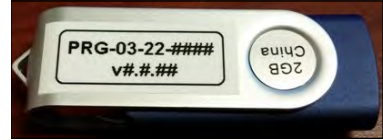6. Turn power back on for another minute then turn back off.



This light will turn solid green when download finished.

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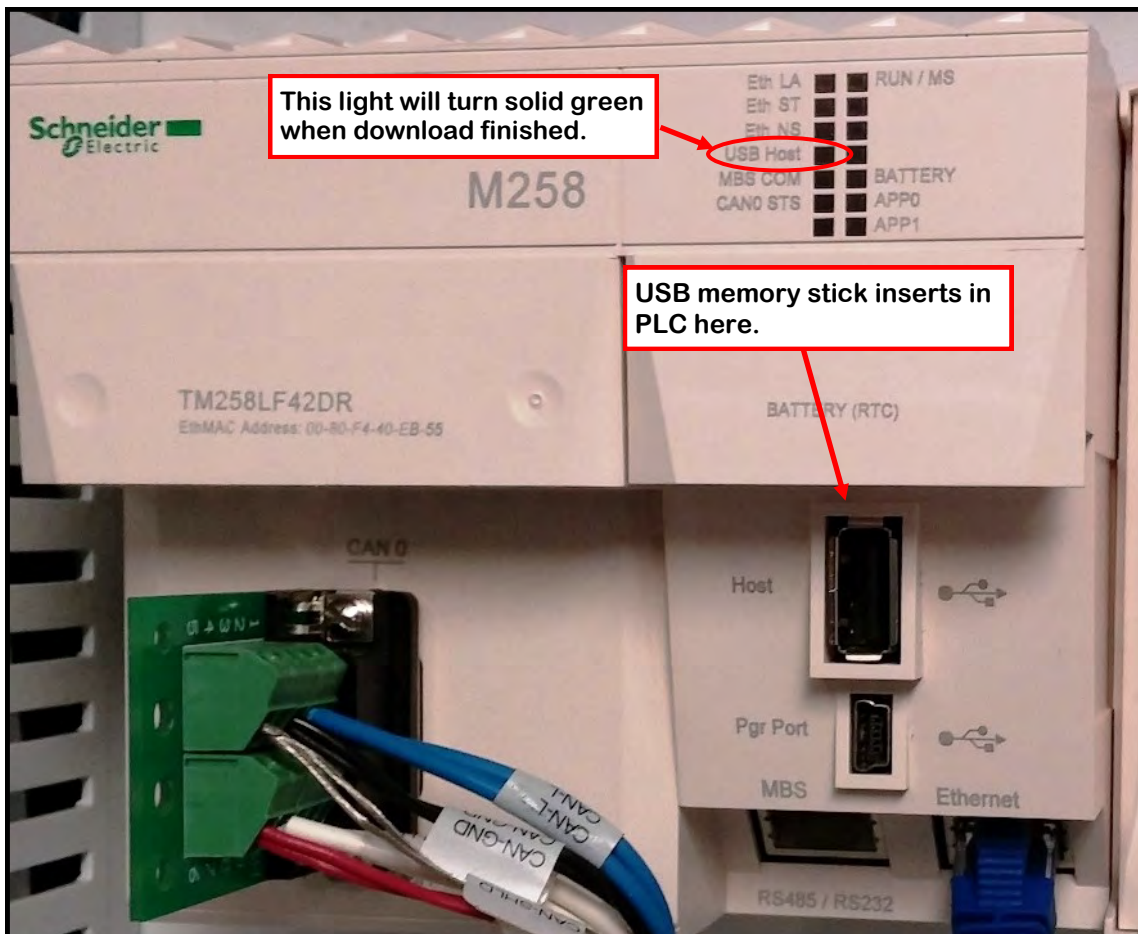
# LOADING PROGRAM TO PLC

**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 for U-Treat 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.



DO NOT REMOVE UNTIL THIS LIGHT STAYS SOLID GREEN. IF REMOVED TO SOON IT WILL RUIN THE PLC.

USB memory stick with program needs inserted in PLC here.
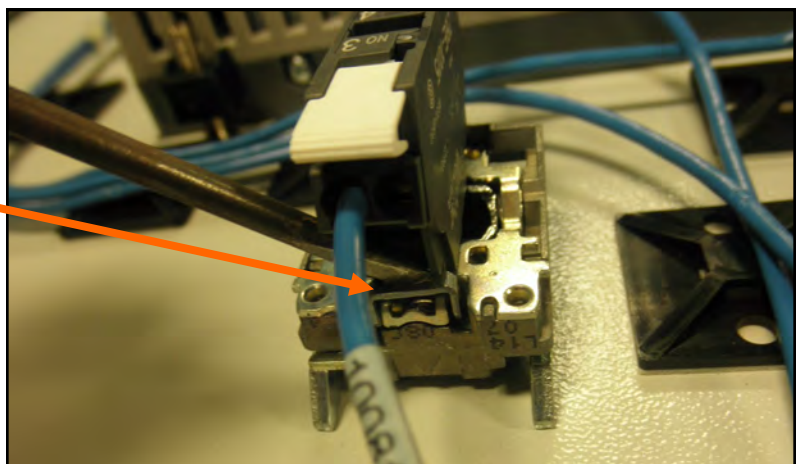
# CONTROL PANEL DOOR INSTALLATION

 **DANGER**

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.
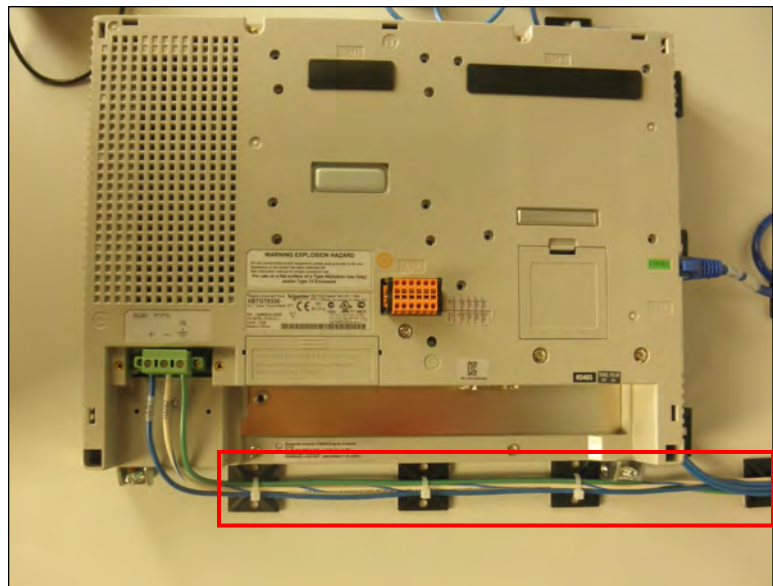


**STEP 3:** Remove the E-Stop and E-Stop Reset wire contact blocks. Use a small flat blade screwdriver to pull up on the metal tab on the top center of the block. Lay the contact blocks with the wires still connected inside the control panel. They will both be reinstalled on the new control panel door.

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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.
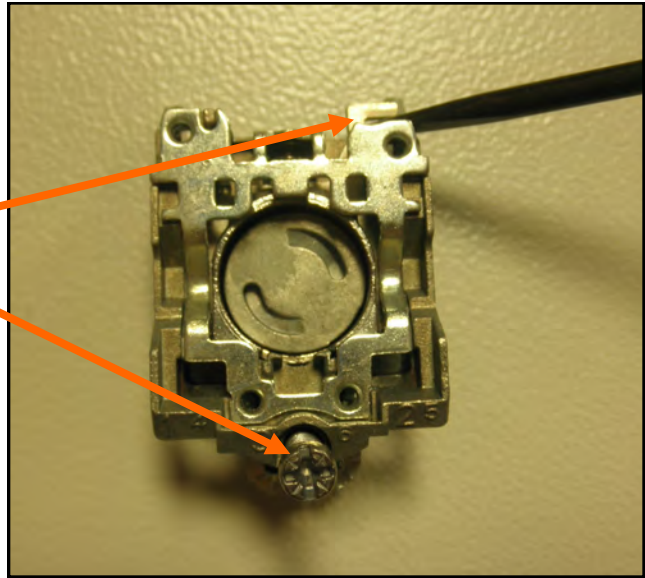


**STEP 5:** Remove the Power Disconnect switch. Remove the red handle by loosing the set screw, then remove the yellow label to uncover the four mounting screws. Once the mounting screws are removed the back contact block will come off. Place the contact block, handle, label and screws in the container.

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# CONTROL PANEL DOOR INSTALLATION



**STEP 6:** 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.
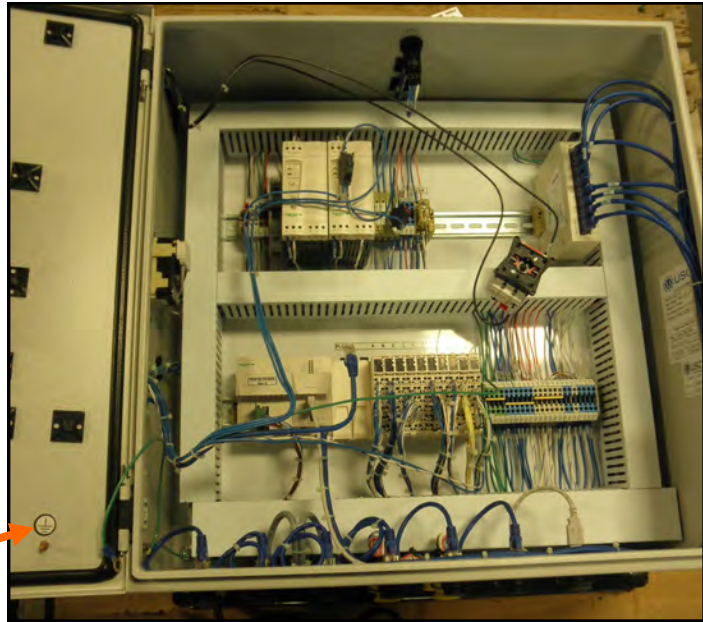
**STEP 7:** Remove the control panel door.  Holding the door open at a 90 degree angle, use a small screwdriver to carefully remove the two hinge pins.  Take care not to drop the door to avoid damaging the HMI.
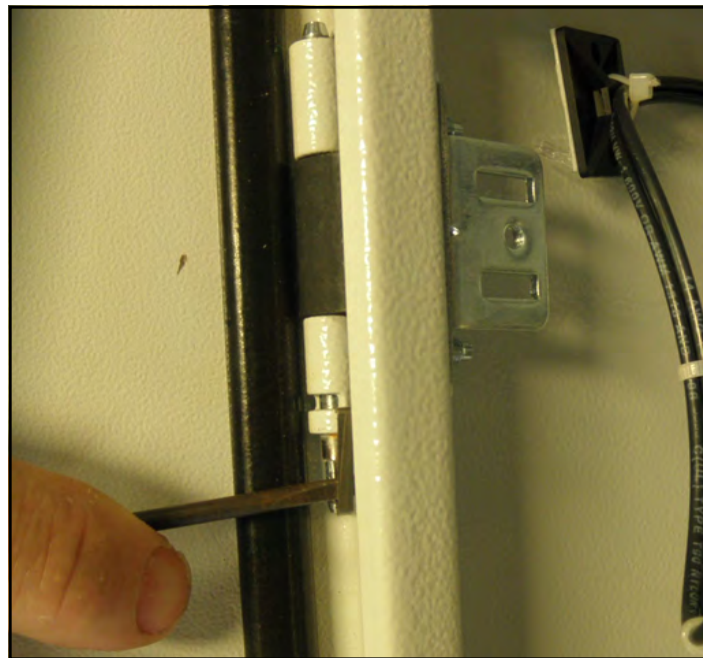


**STEP 8:** You are now ready to install the new door.  Carefully place door so the mating hinges are together and reinstall hinge pins.
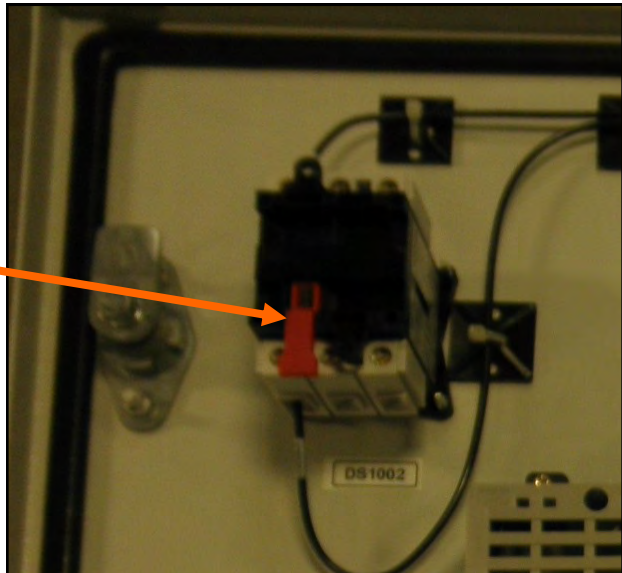
# CONTROL PANEL DOOR INSTALLATION

**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.



**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:** Reinstall the Power Disconnect contact block inside the door, with the L1 to the top and the red tab facing down. The outside base with gasket should be held with the protruding curved piece to the upper left (see page 10).

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# CONTROL PANEL DOOR INSTALLATION



**STEP 11 (continued):** Holding the contact block on the inside, insert the shaft from the outside base and reinstall the four mounting screws.   Once tightened and secure, snap on the yellow label.  Install the red handle and tighten the set screw.

**STEP 12:** Connect the power wires to the new HMI.

| DC Positive | Blue |
|-------------|-------|
| DC Negative | White |
| Ground | Green |
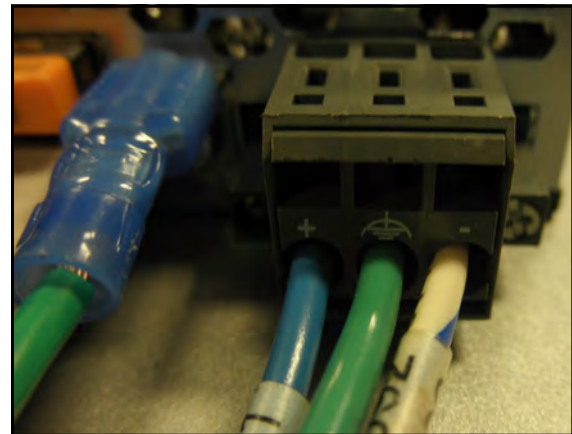


**STEP 13:** Reroute the blue Ethernet cable (P4) inside the panel so it will reach Ethernet port ETH2 on the new HMI.

# CONTROL PANEL DOOR INSTALLATION

**STEP 14:** 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
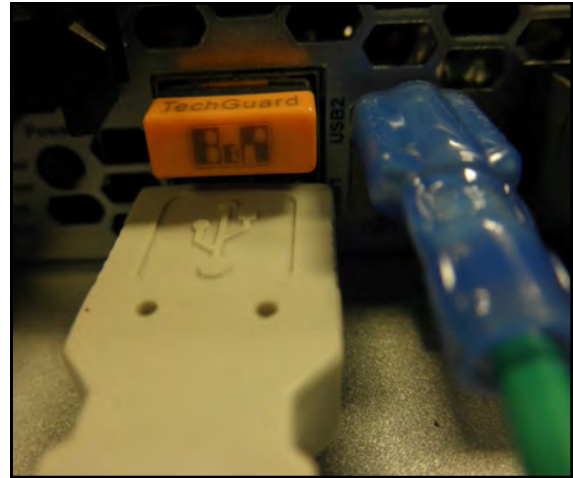
**STEP 15:** Ensure that the enclosure ground and the HMI are reconnected to the door ground lug.  Then, reinstall all of the wire ties to keep wires neat and in place.  The door installation is now complete.
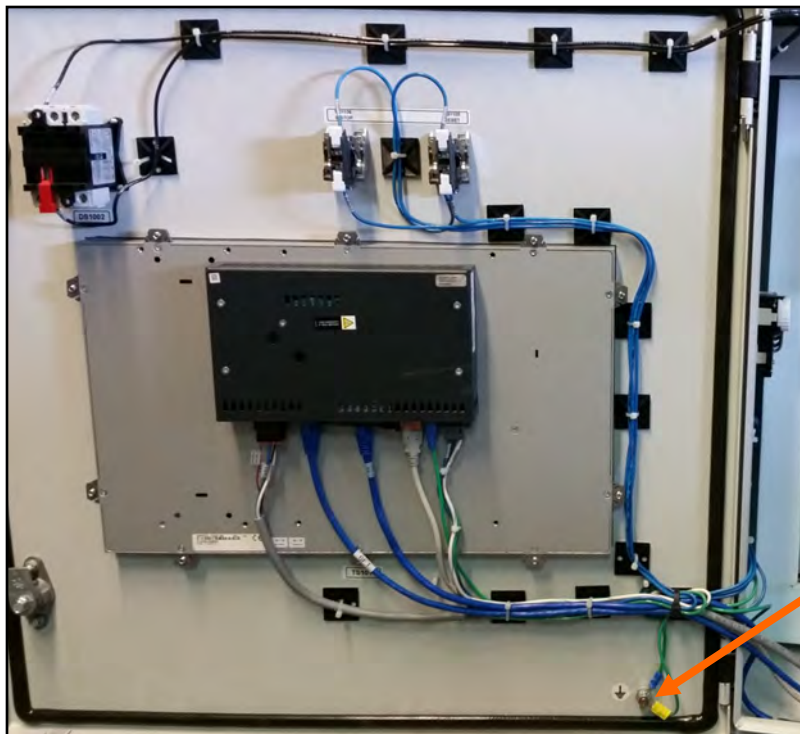
Door Ground Lug

# CONTROL PANEL DOOR INSTALLATION

**STEP 16:** Install the 2.5 inch long DIN rail (03-09-0005) inside the control panel below the PLC.  Secure it with the two self tapping screws (06-06-0005) that were provided.  The left side of the rail should be approximately 3.5 inches from the left side of the wire way.
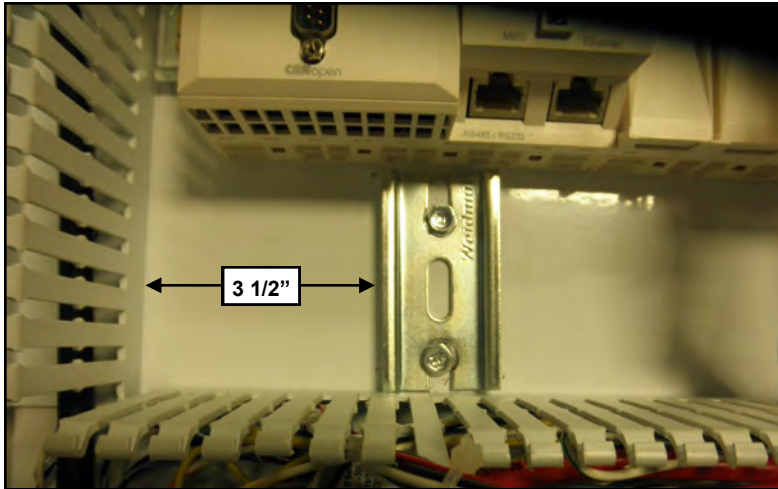


**STEP 17:** The grey cable and CAN breakout board coming from the door will need to be installed onto the small DIN Rail that was just installed.  Orientate it as shown in the picture  The board will snap onto the DIN rail

Plug the existing CAN breakout board from the PLC into the new breakout board.

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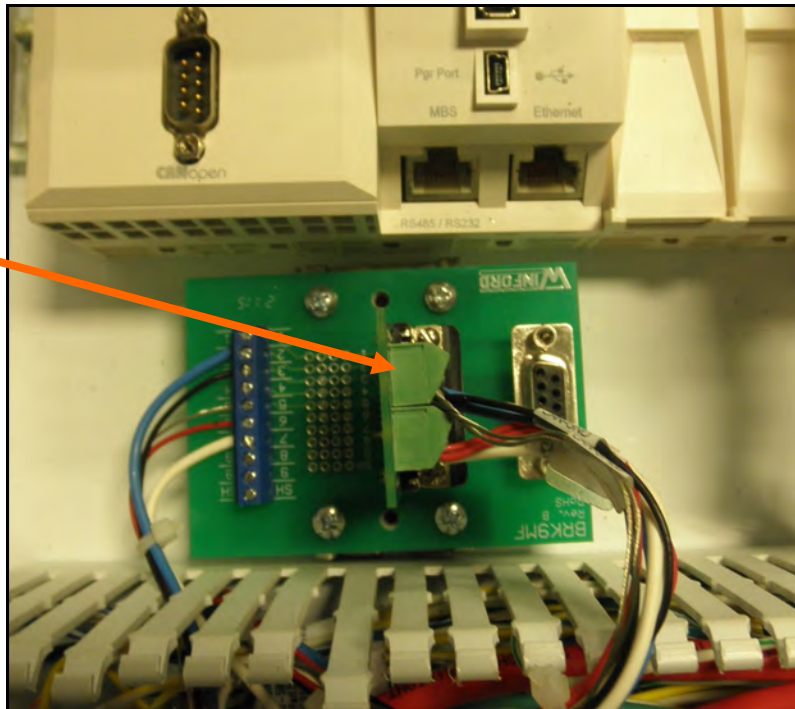
# CONTROL PANEL DOOR INSTALLATION

**STEP 18:** Drill one 5/8" at the location marked **"A"** and one 7/8" hole at the location 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.
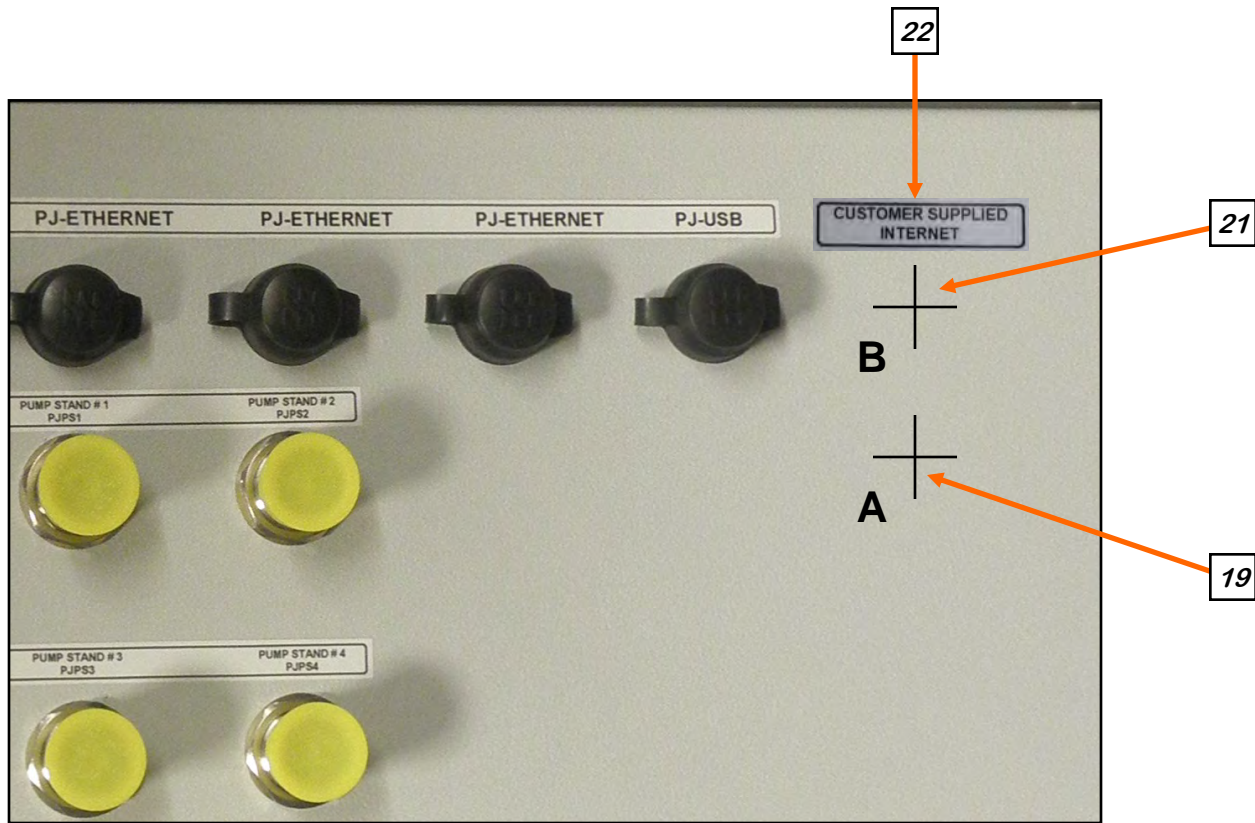


**STEP 19:** Install the M12 to RJ45 pass-thru (03-06-0133) in the 5/8" hole at the **"A"** location. Slide the O-ring seal over the threads until it seats. Install it from the inside of the panel and secure with the nut. Attach the ethernet cable assembled on the new door that is connected to the HMI / IF1 port.
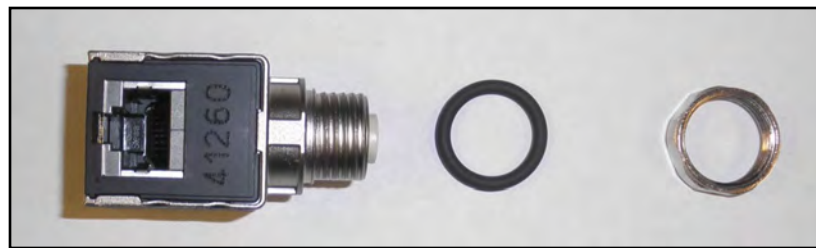
# CONTROL PANEL DOOR INSTALLATION



**STEP 20:** Disassemble the RJ45 pass through (03-08-0234). Remove the black tab. Re-attach the boot and insert from the outside of the panel in the hole at the **"B"** location. Secure with the nut.



**STEP 21:** Run a CAT 5 cable (03-07-0162) from this connector to the HMI / ETH1 port. This is the incoming internet connection.
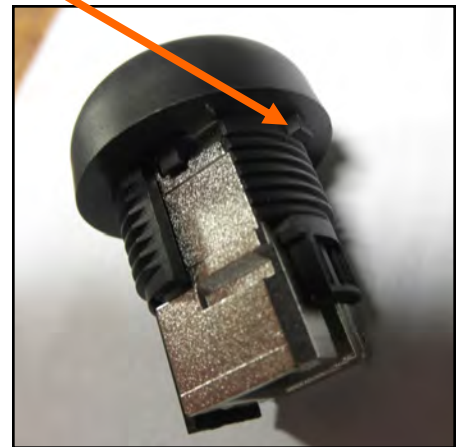
**STEP 22:** Place the CUSTOMER SUPPLIED INTERNET sticker above the newly installed pass-thru.



CUSTOMER SUPPLIED
INTERNET
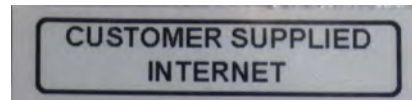
# ESTABLISHING THE SYSTEM PARAMETERS

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.
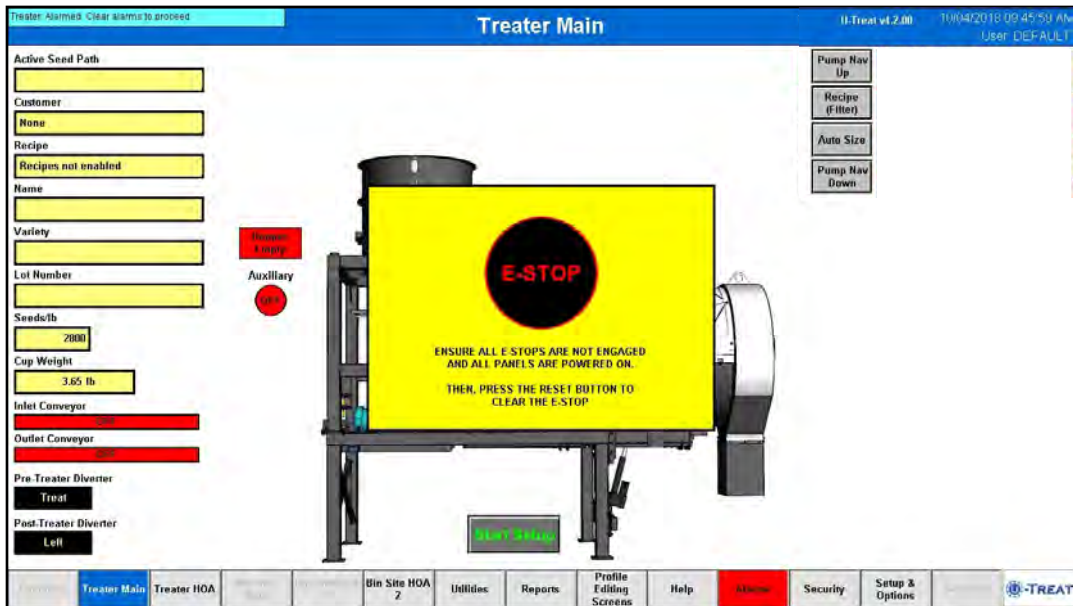


**Step 1:** Press the Security button at the bottom of the screen

# 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.
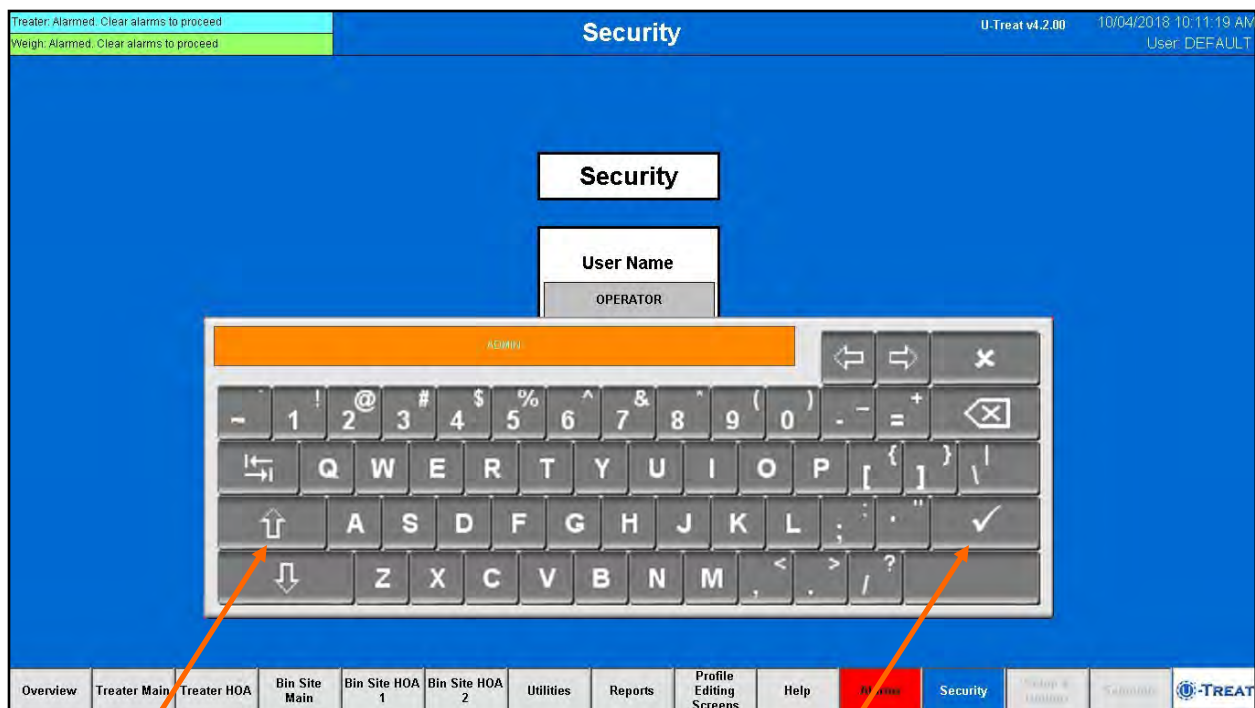


**Shift Key**

**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 22 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.
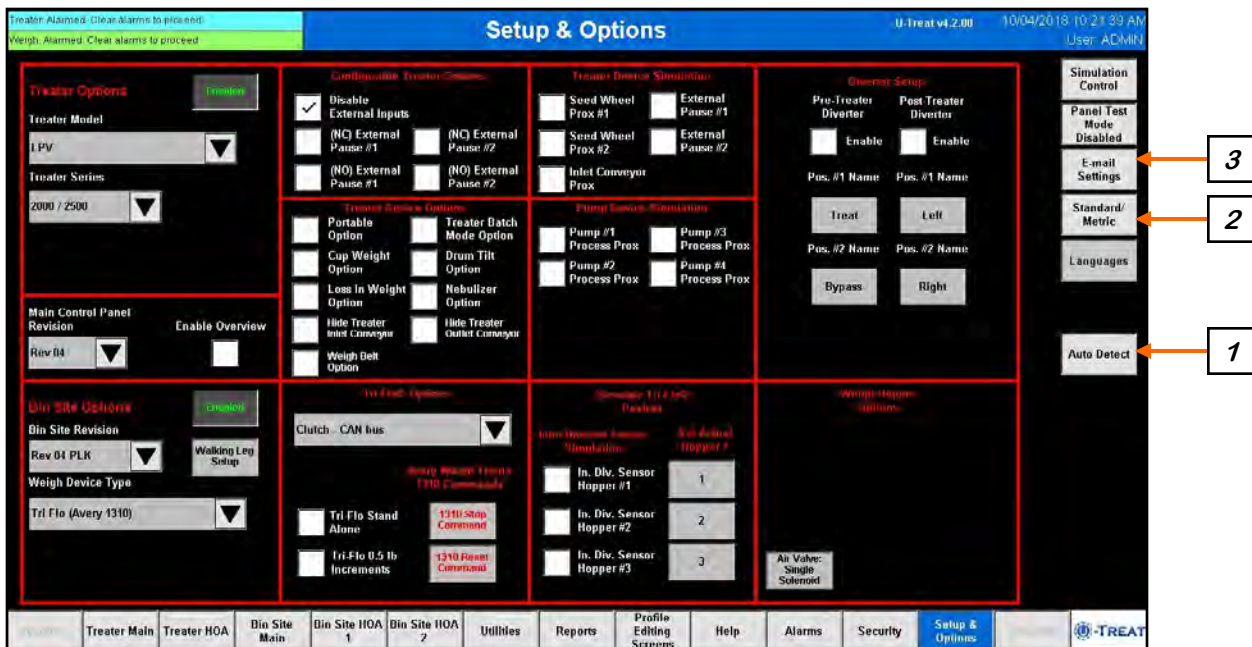
# ESTABLISHING THE SYSTEM PARAMETERS

## Step 2: (Continued).
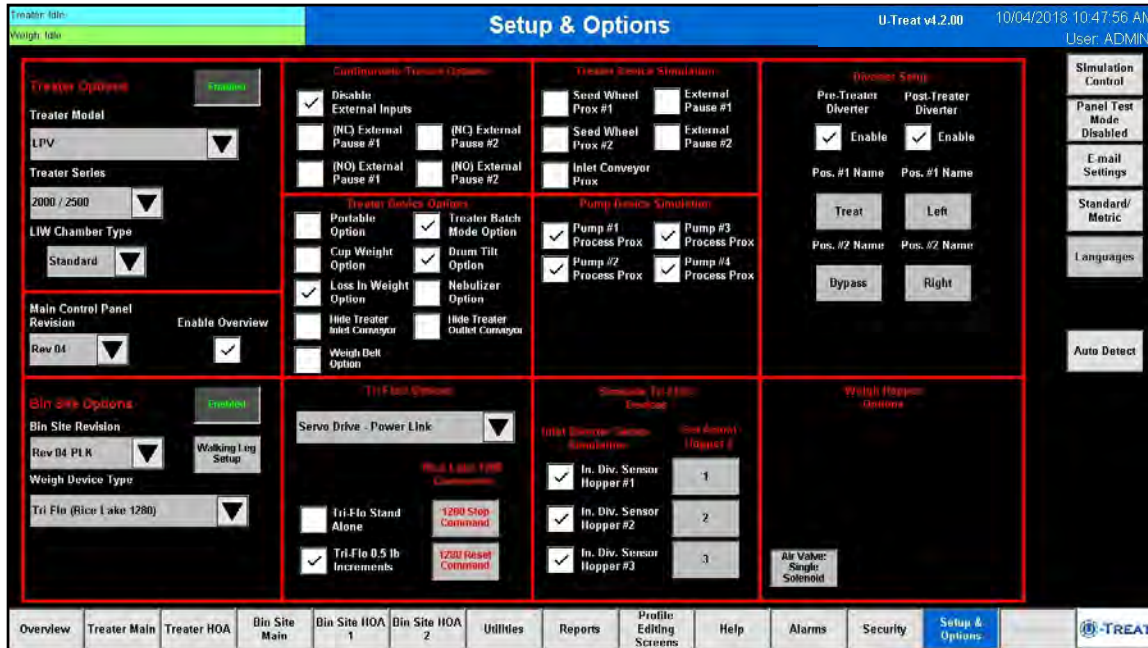


2.  Pressing this button allows the operator to switch between Standard or Metric units of measurement.  When this button is pressed a popup window will appear. The box in the center indicates the active unit of measurement.
    The default is standard unit. Pressing the metric button to change to metric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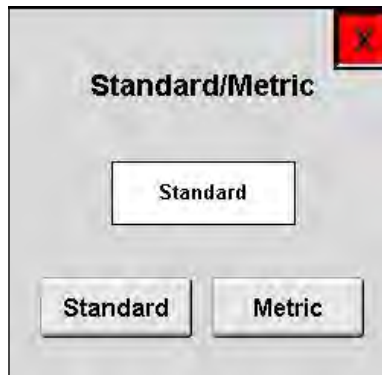
# ESTABLISHING THE SYSTEM PARAMETERS

3. If you want to use the e-mail feature define the following e-mail settings.
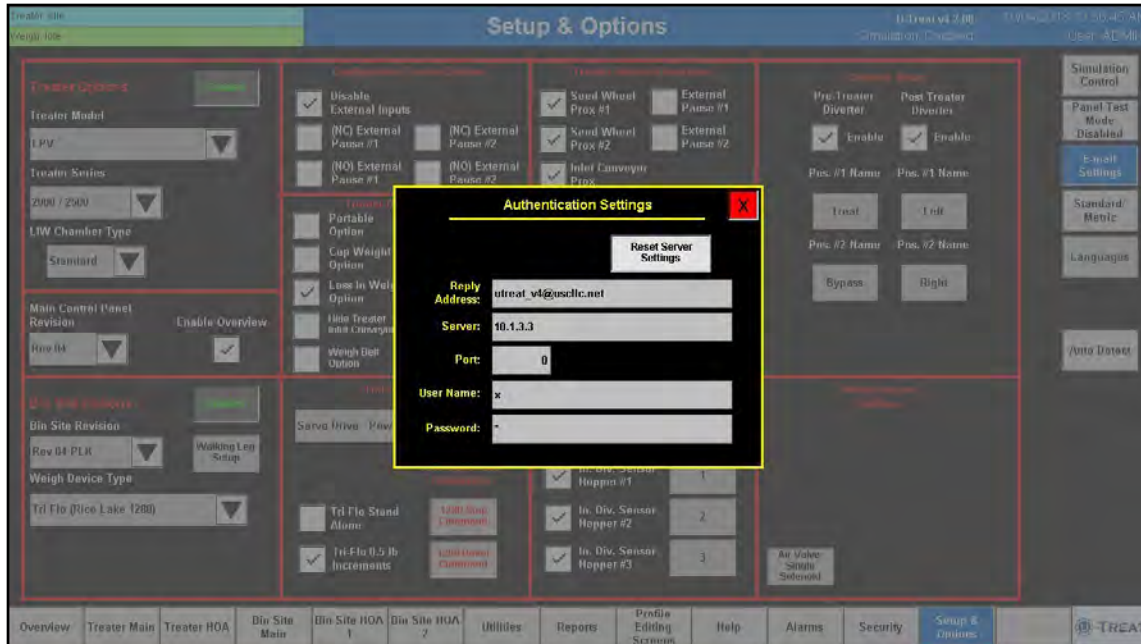


**RESET SERVER SETTINGS**: This button will reset the settings for the e-mail client.

**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.

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

### Version 4.1

| 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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# LOADING PRESERVED SYSTEM DATA (v3.0 AND NEWER)

**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