USER MANUAL

ON DEMAND™ UPGRADE KIT #80496397

Revision History

rev. level 01_10.09.2012
rev. level 02_10.08.2013
rev. level 03_04.07.2016

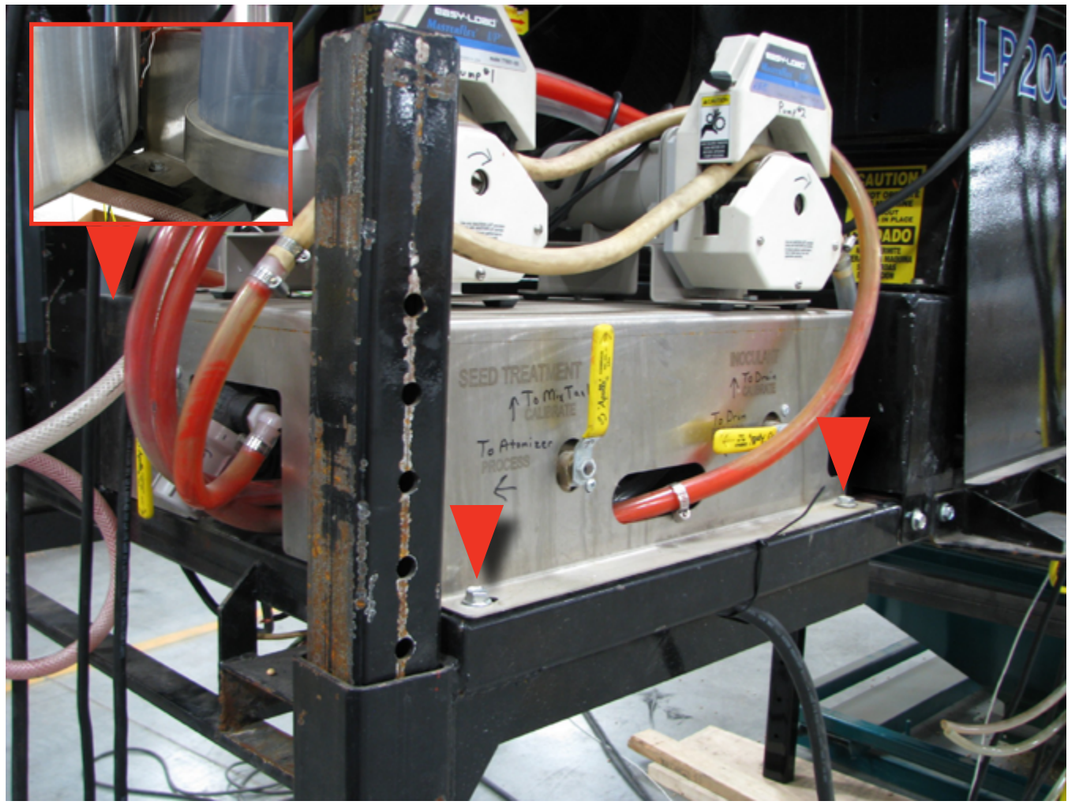
PART 1

Exchange Drum & Atomizer Motors on an existing USC Model

Required assembly tools

- RATCHET WRENCHES: 9/16 & 1/2”
- 9/16 & 1/2” STANDARD SOCKET HEAD
- SLOTTED SCREWDRIVER
- CRESCENT WRENCH
- 5/32” ALLEN WRENCH
- ANTI-SEIZE (recommend SAF-T-EZE brand)
- PERSONAL PROTECTIVE EQUIPMENT (PPE):

+CHEMICAL RESISTANT GLOVES
+PROTECTIVE EYE WEAR: GLASSES OR GOGGLES
+DISPOSABLE OR REUSABLE CHEMICAL RESISTANT COVERALLS (LONG SLEEVES)
+RESPIRATOR



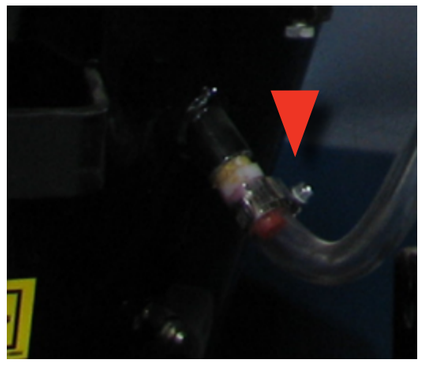
REMOVE PUMP STATION

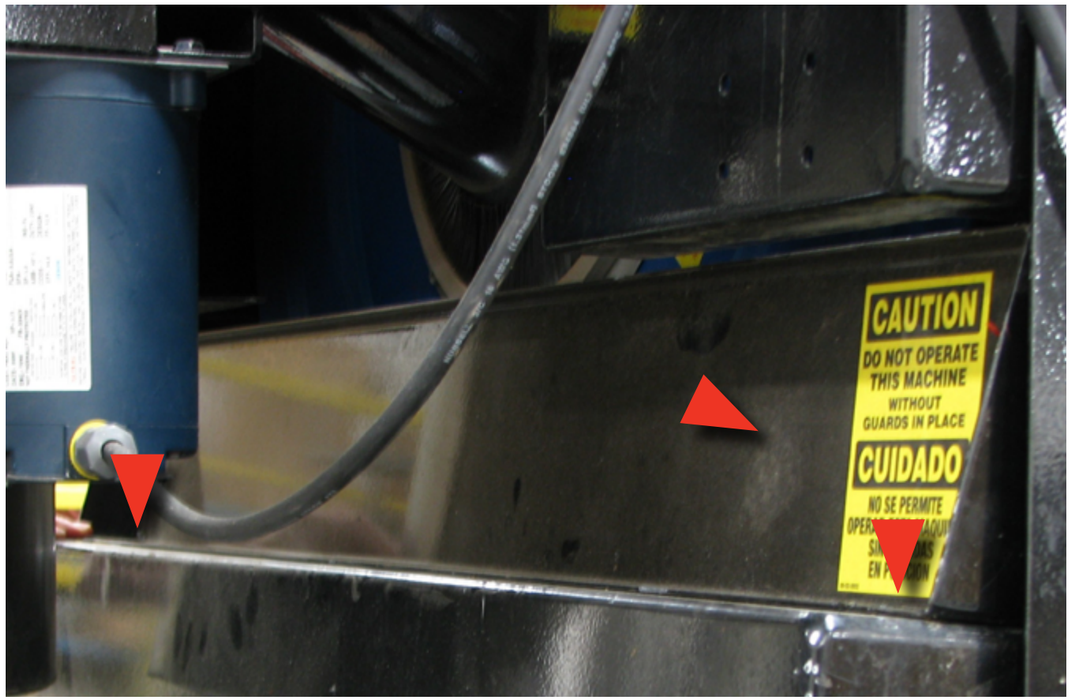
Step 1: ENSURE all power to the USC machine is OFF and DISCONNECTED!

Step 2: Remove the Pump Station from the Treater frame: use a slotted screwdriver to disconnect hoses from the Treater (image below). May want to use duct tape to plug the tubes to prevent chemical leakage. Use caution and wear proper PPE when working around chemicals!

Step 3: Use ratchet wrench and 9/16” socket head to remove three (3) 3/8 x 1” bolts. (one behind the Pump Station, not shown).

Step 4: Remove the Pump Station from the Treater frame.



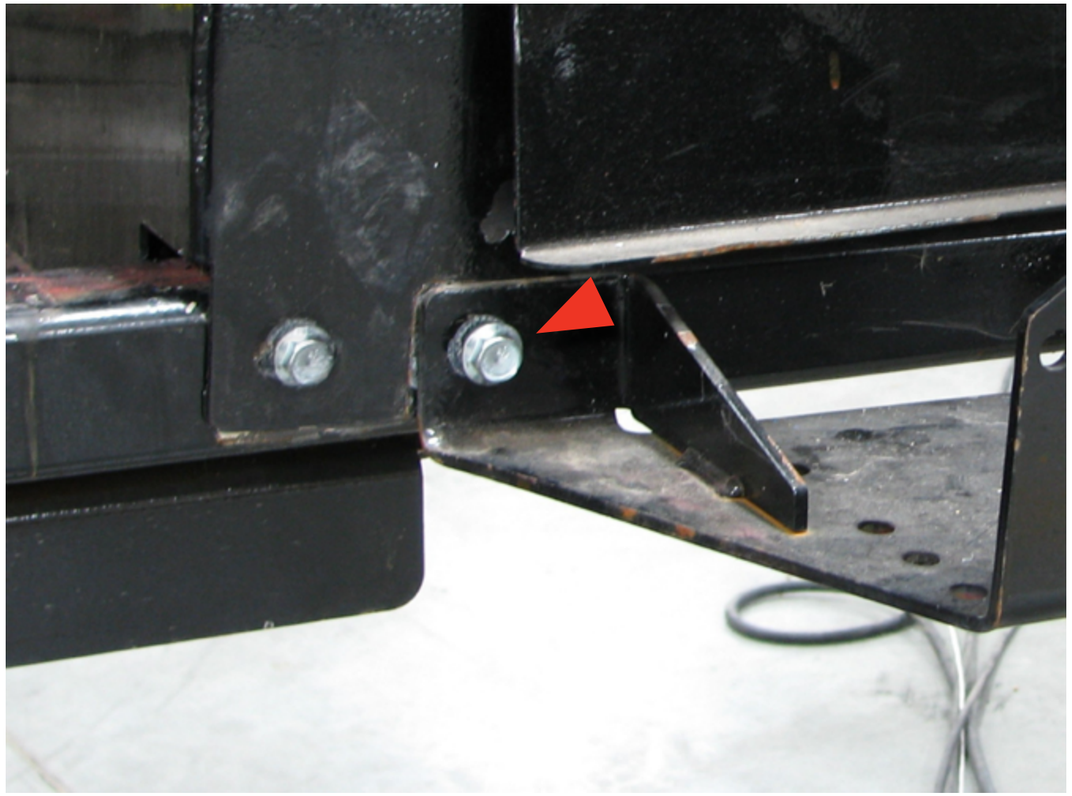


REMOVE DRUM GUARDS - TOP GUARD

Step 1: Remove the Top Drum Guard from the Treater frame.

Step 2: Use ratchet wrench and 9/16” socket head to remove two (2) 3/8 x 1” bolts (Top Guard bolted to the Bottom Guard).

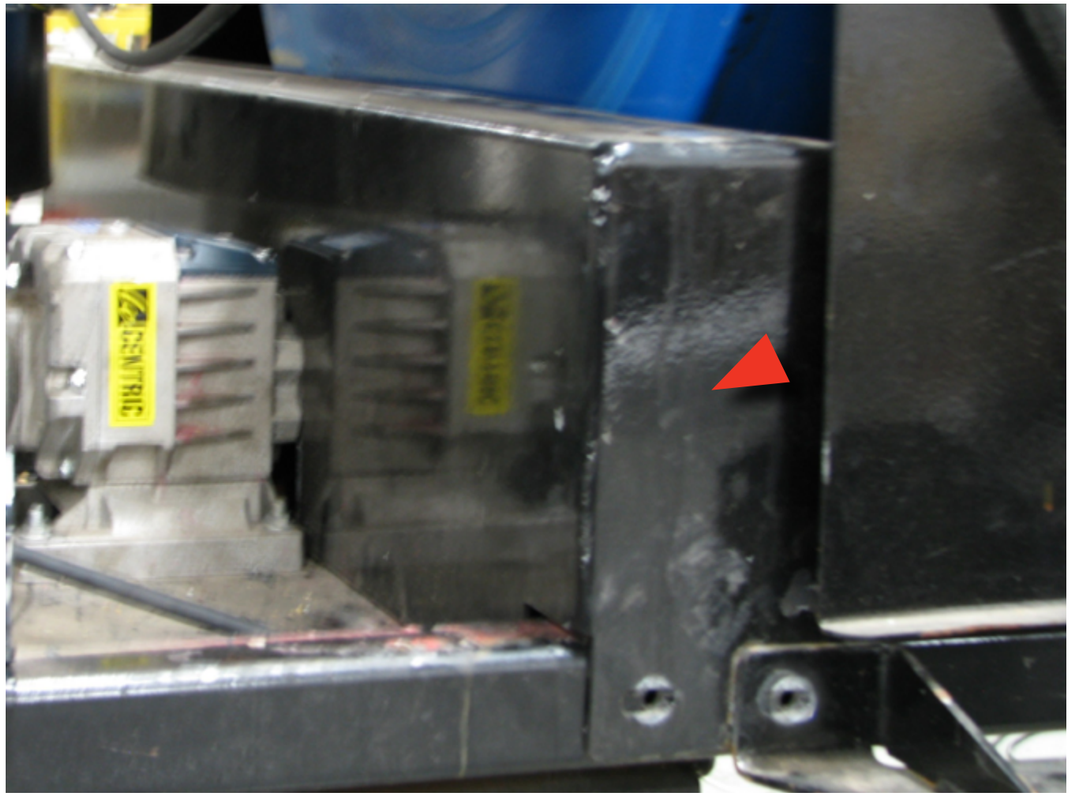
Step 3: Remove the Top Drum Guard from the Treater frame.



REMOVE DRUM GUARDS - TRAY

Step 1: Remove the Tray bolt.

Step 2: Use ratchet wrench and 9/16” socket head to remove the 3/8 x 1” bolt (Tray bolted to Treater frame).

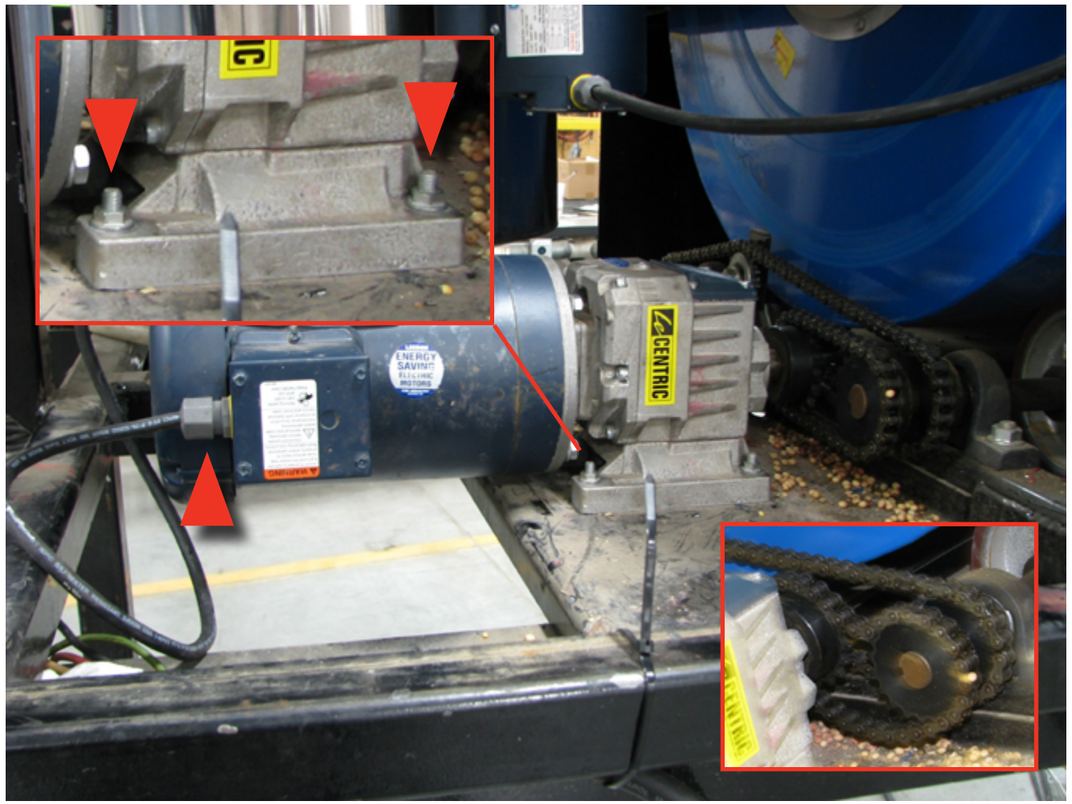


REMOVE DRUM GUARDS - BOTTOM GUARD

Step 1: Remove the Bottom Drum Guard from the Treater frame - both sides of the treater.

Step 2: Use ratchet wrench and 9/16” socket head to remove three (3) 3/8 x 1” bolts (Bottom Guard bolted to Treater frame).

Step 3: Remove the Bottom Drum Guard from the Treater frame.



MOTOR MOUNT

Step 1: Use a 1/2” wrench to Loosen the four 5/16 x 1” (4) bolts that hold the Gear Reducer on the Treater frame. Requires two people (one to hold the Motor Assembly, one to loosen the bolts).

Step 2: Ensure a licensed electrician disconnects the Motor wire from the conduit box on the Motor.

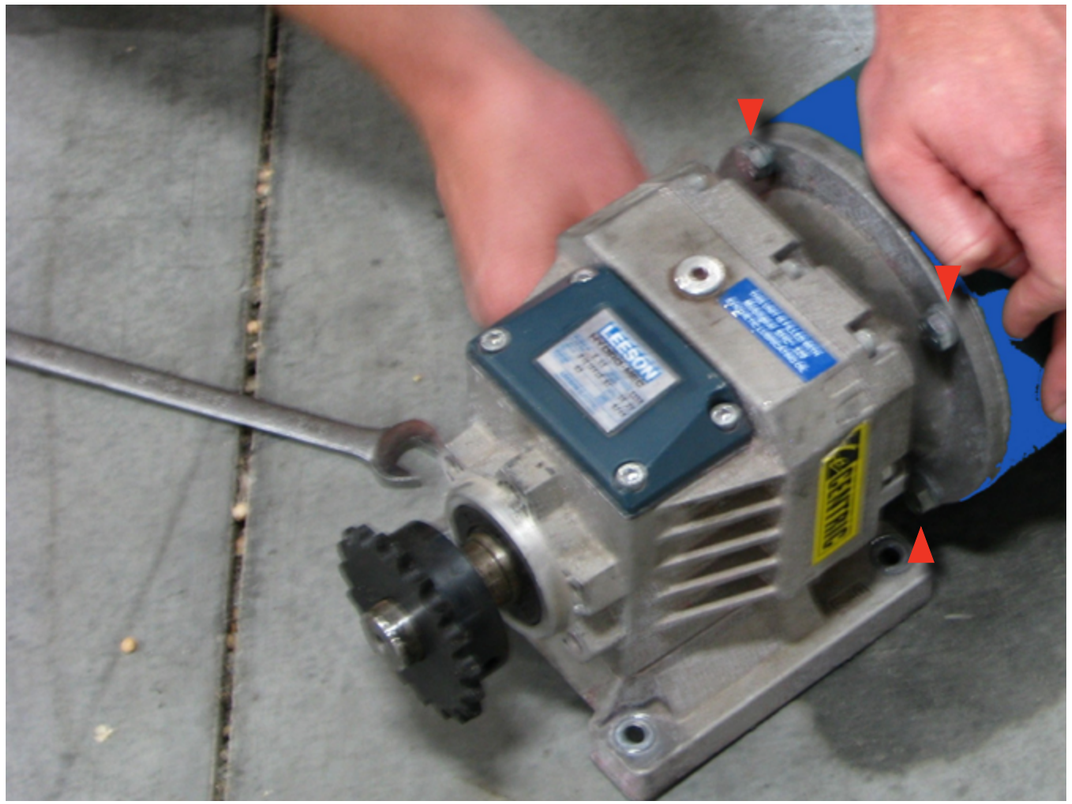
Step 3: Remove the back two nuts & bolts (away from drum) so the Motor Assembly does not fall back.

Step 4: Remove the front two nuts & bolts (closest to Drum). Ensure someone is holding the Motor Assembly. The chain on the Reducer Sprocket will loosen (inset image above, right). May need to shift the Motor Assembly from side to side until the Chain loosens.

Step 5: Remove the Chain from the Sprocket connected to the Reducer.

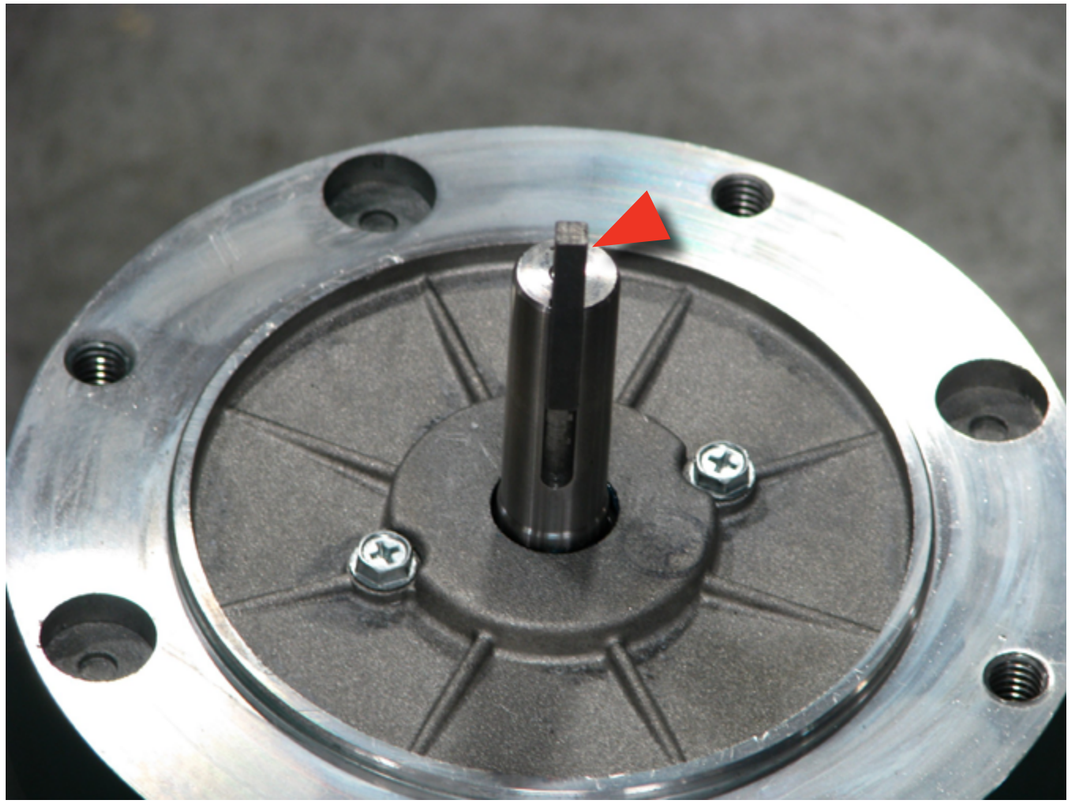
Step 6: Remove the Motor Assembly from the Treater frame.

This step requires two people.



MOTOR MOUNT

Step 1: Remove the Gear Reducer from the existing Motor: use a 9/16” wrench to loosen the four (4) 3/8 x 1-1/2” bolts on the C-face of the Gear Reducer.



MOTOR MOUNT

Step 1: Remove the Keyway (taped to the replacement Motor, photo below).

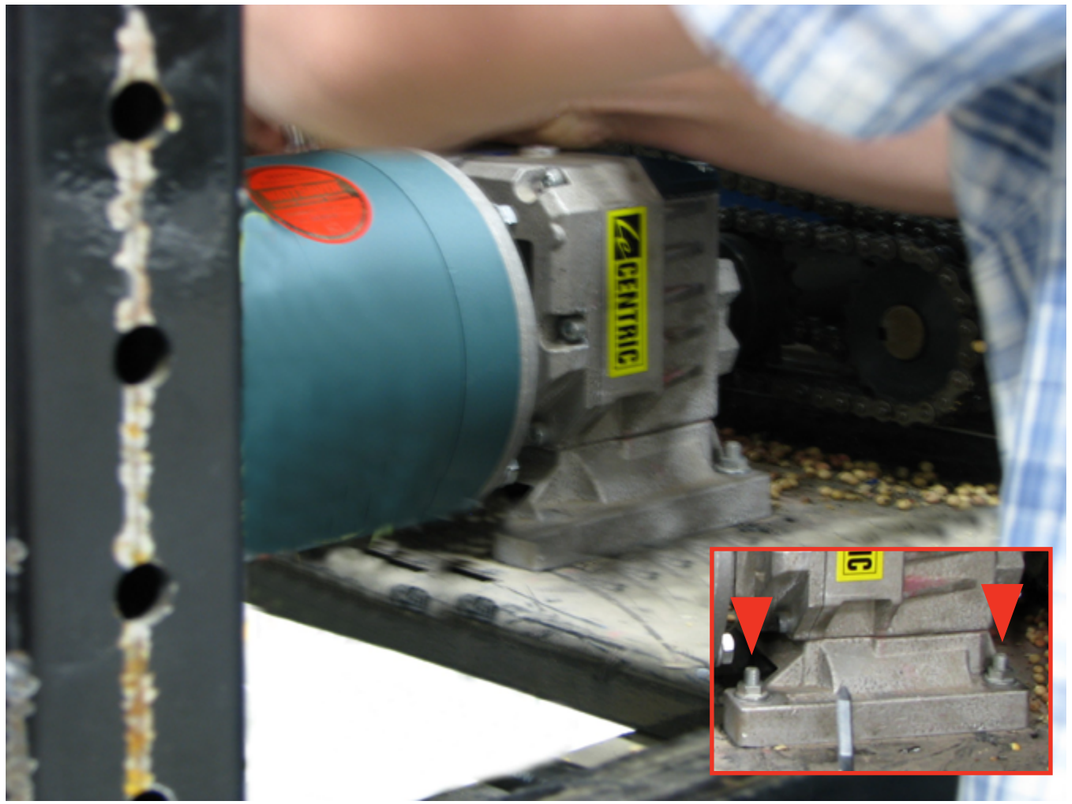
Step 2: Place Keyway in the slot on the replacement Motor shaft, as shown above. Slide all the way down.

MOTOR MOUNT

Step 1: Connect the Gear Reducer to the replacement Motor.

Step 2: Use a 9/16” wrench to tighten the four (4) bolts* on the C-face of the Gear Reducer.

Note: *recommended applying an anti-seize on the bolts and shaft first (SAF-T-EZE brand)



MOTOR MOUNT

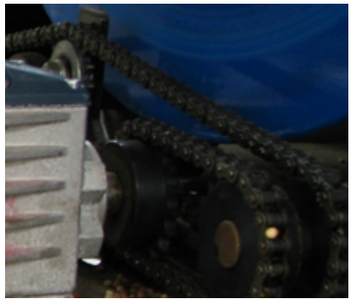
Step 1: Clean the surface of the Motor Mount Plate on the Treater frame where the Motor Assembly will mount (bottom photo, left).

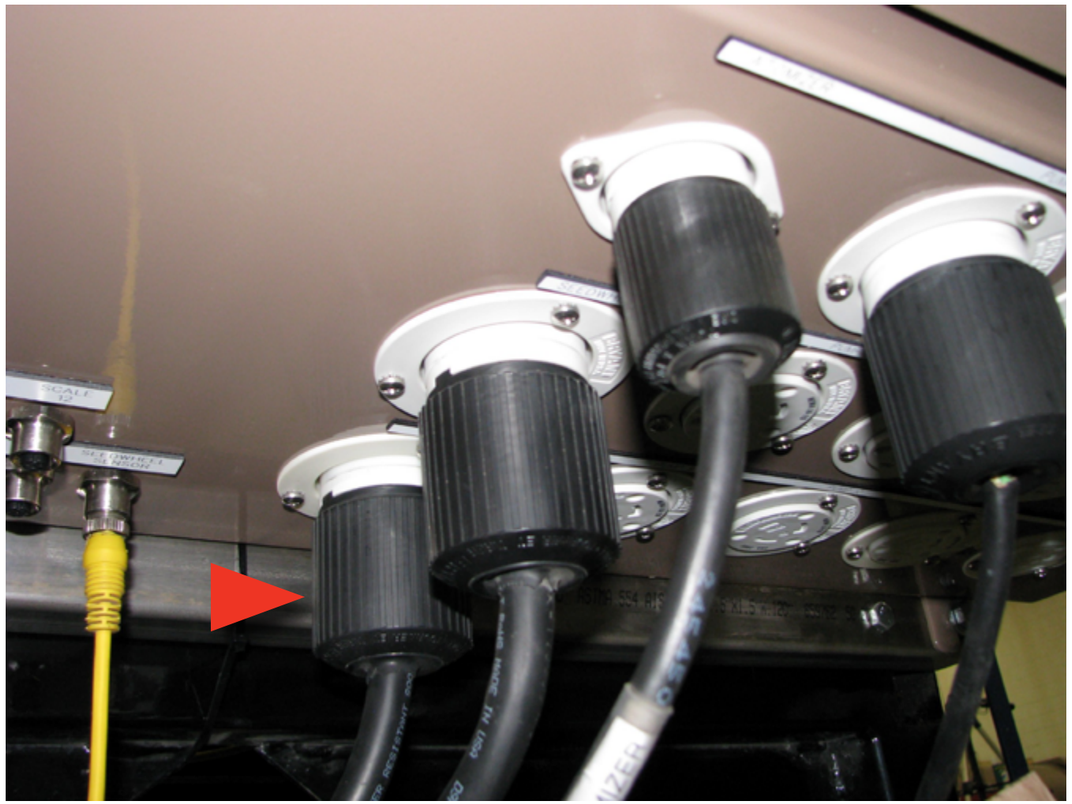
Step 2: Set the replacement Motor Assembly onto the Motor Mount Plate on the Treater frame and connect the Drum Chain to the Sprocket on the end of the Reducer (bottom photo, right).

Step 3: Align the four (4) 5/16” bolt holes of the Gear Reducer with the four pre-drilled holes on the Motor Mount Plate on the Treater frame (refer to insert photo, top).

Step 4: Insert the four (4) bolts up through the bottom of the Motor Mount Plate on the Treater frame and the Reducer and connect the four (4) nuts to the bolts.

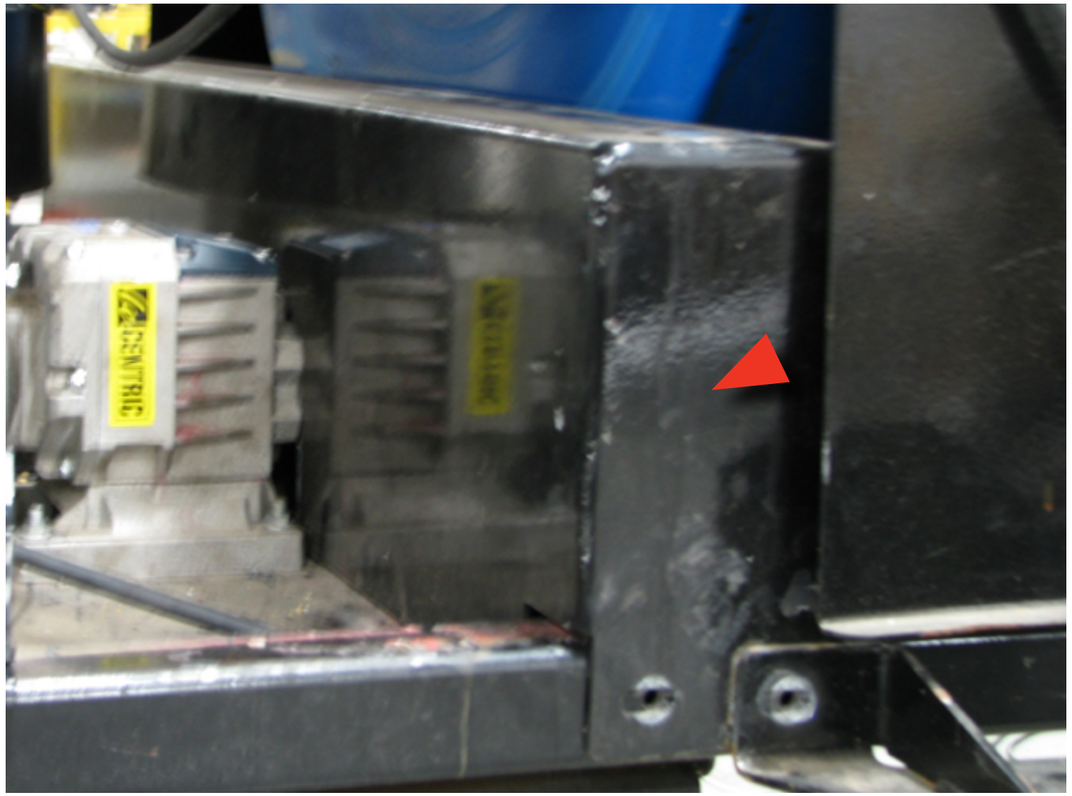
Step 5: Use a 1/2” ratchet wrench to tighten in place.





MOTOR

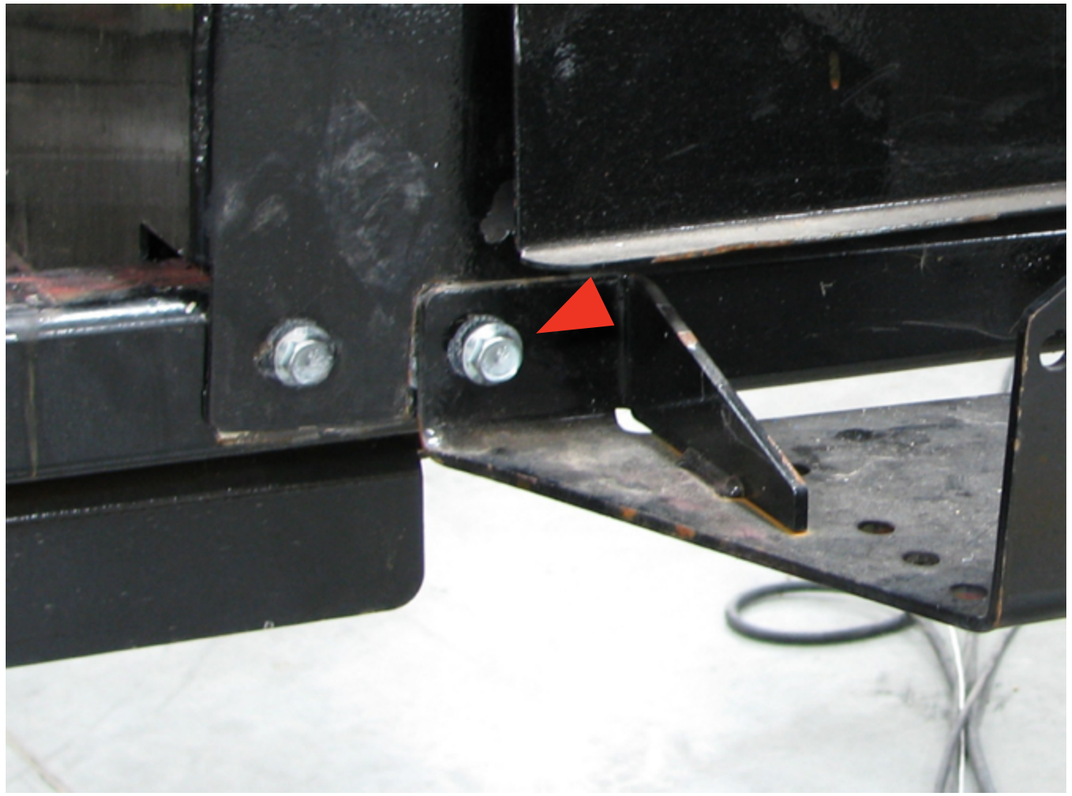
Step 1: Plug the replacement Motor Power Cord CBL:30FT L15-20 TWIST LOCK X 4 WIRE (attached to replacement motor) to the bottom of the On Demand Main Control Panel (receptacle marked Drum Motor).



REPLACE DRUM GUARDS - BOTTOM GUARD

Step 1: Replace the Bottom Drum Guard on the Treater frame - align bolt holes.

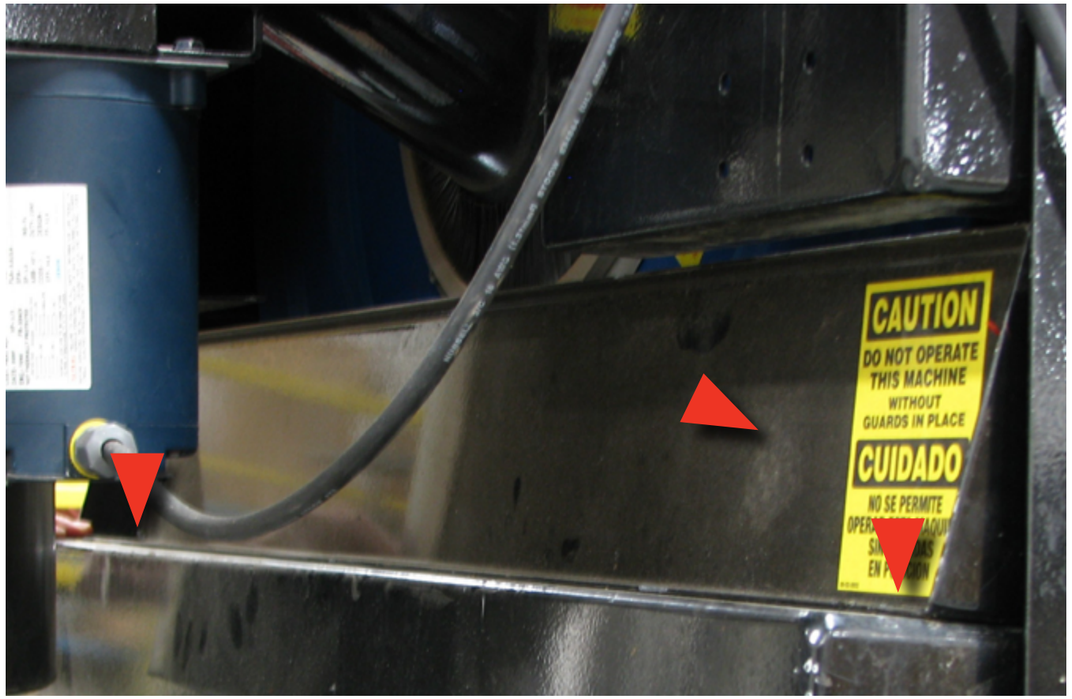
Step 2: Use ratchet wrench and 9/16” socket head to replace three (3) 3/8 x 1” bolts (Bottom Guard bolted to Treater frame).



REPLACE DRUM GUARDS - TRAY

Step 1: Replace the Tray bolt.

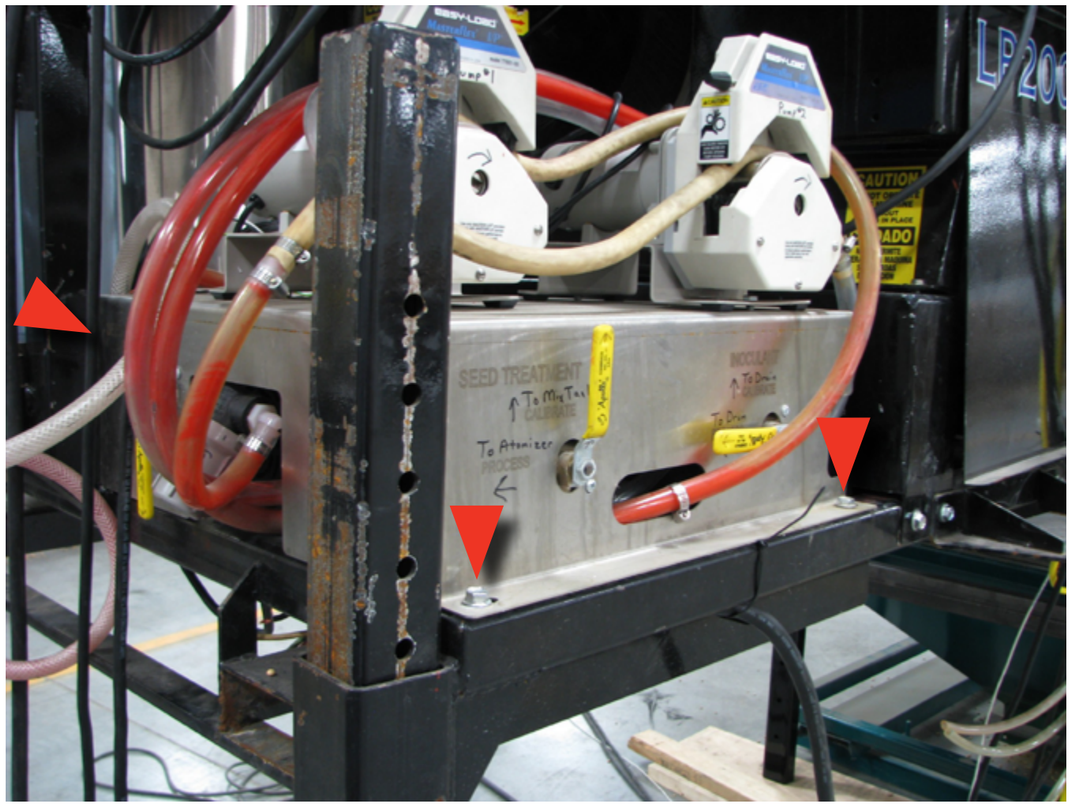
Step 2: Use ratchet wrench and 9/16” socket head to replace the 3/8 x 1” bolt (Tray bolted to Treater frame).



REPLACE DRUM GUARDS - TOP GUARD

Step 1: Replace the Top Drum Guard on the Treater frame.

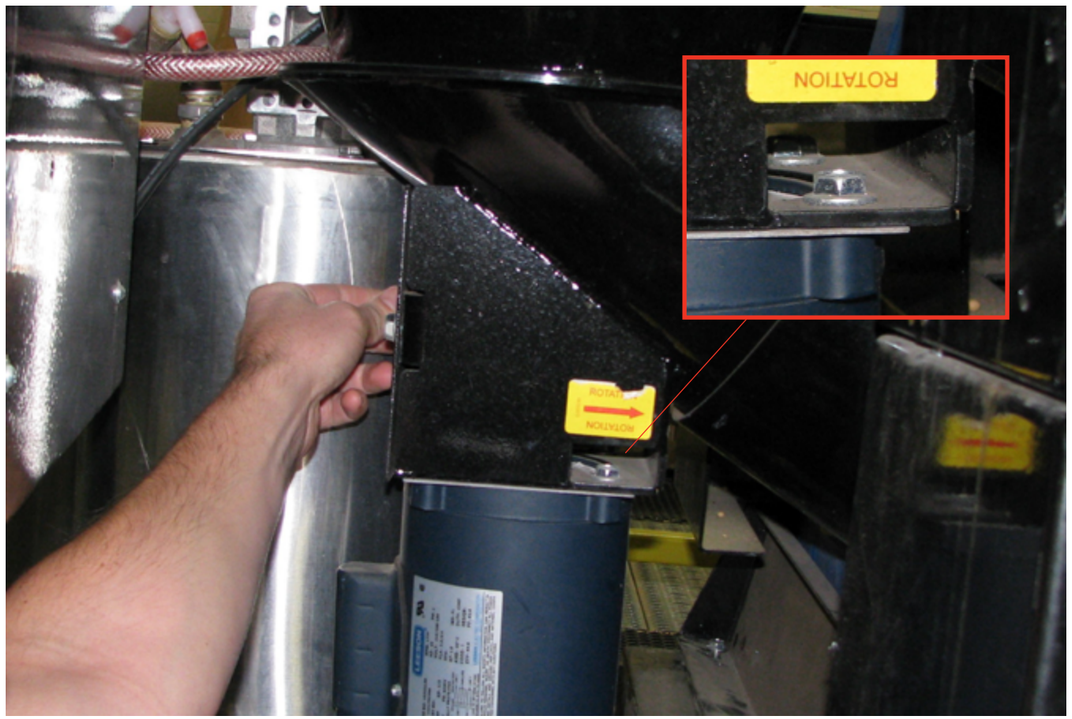
Step 2: Use ratchet wrench and 9/16” socket head to replace two (2) 3/8 x 1” bolts (Top Guard bolted to the Bottom Guard).



REPLACE PUMP STATION

Step 1: Replace the Pump Station on the Treater frame. Use a slotted screwdriver to connect hoses to the Treater.

Step 2: Use ratchet wrench and 9/16” socket head to replace three (3) 3/8 x 1” bolts. One is hidden in the picture above behind the Pump Station.



REPLACE ATOMIZER MOTOR (only if not a 1ph/115V/60Hz/1/3Hp motor)

Step 1: Disconnect the USC Atomizer Power Cable from under the USC Pump Control panel (image, bottom left).

Step 2: Remove the Atomizer Motor Guard.

Step 3: Use 5/32” Allen Wrench to loosen remove the Atomizer Motor compression coupler (image, bottom right). Remove the Atomizer Motor from the shaft.

Step 4: Remove the Atomizer Motor from the machine: use a 9/16” wrench to loosen the four (4) 3/8 x 1-1/2” bolts (refer to insert photo, top) - CAREFULIY - MOTOR WILL FAll OFF SHAFT!

Step 5: Replace the new Atomizer Motor on the machine.

Step 6: Connect the Atomizer Power Cable (refer to page 29).

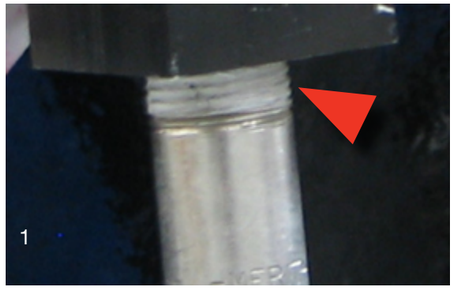
PART 2

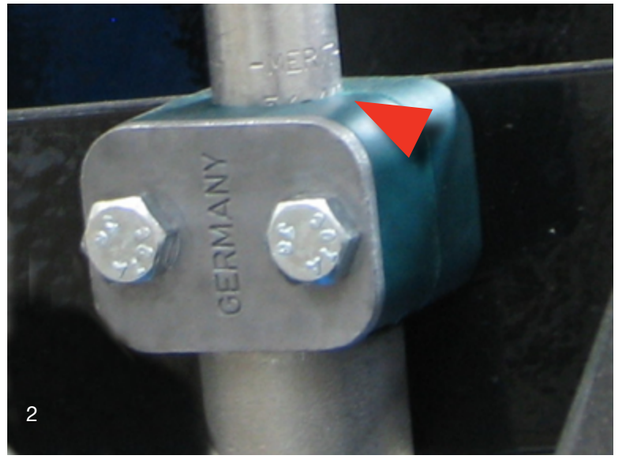
THE UPGRADE KIT CONVERTING TO ON DEMAND

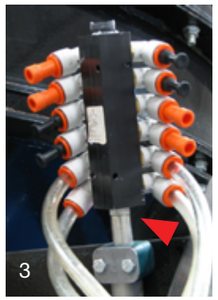
Required assembly tools

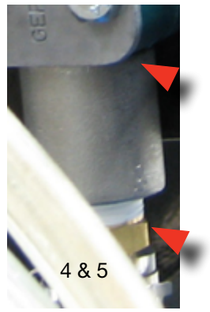
- RATCHET WRENCH
- 9/16, 1/2 & 7/16” STANDARD SOCKET HEADS
- SLOTTED SCREWDRIVER
- CRESCENT WRENCH
- POWER DRILL
- 5/16 & 1/4” DRILL BITS
- ANTI-SEIZE (recommend SAF-T-EZE brand)
- TEFLON TAPE
- PERSONAL PROTECTIVE EQUIPMENT (PPE):

+CHEMICAL RESISTANT GLOVES
+PROTECTIVE EYE WEAR: GLASSES OR GOGGLES
+DISPOSABLE OR REUSABLE CHEMICAL RESISTANT COVERALLS (LONG SLEEVES)
+RESPIRATOR









CHEMICAL INLET MANIFOLD

Refer to drawing A455900 and use the 25140500 / 04067391 3/8” NPT x 3” Pipe Nipple. Apply Teflon tape to the 3/8” NPT x 3” Pipe Nipple threads.

Refer to drawing A455000 PKB and use the A455150B / 79969163 12 PORT MANIFOLD W/1/2” PL 90 DEG.

Step 1: Thread the 3/8” NPT x 3” Pipe Nipple into the bottom of the 12 PORT MANIFOLD W/1/2” PL 90 DEG.

Refer to drawing A455900 and use the P001254 / 79009658 Vibration mount.

Step 2: Insert the 3/8” NPT x 3” Pipe Nipple into the top of the Vibration Mount.

Refer to drawing A455900 and use the 24700600 / 04065496 3/8” NPT Pipe Coupler.

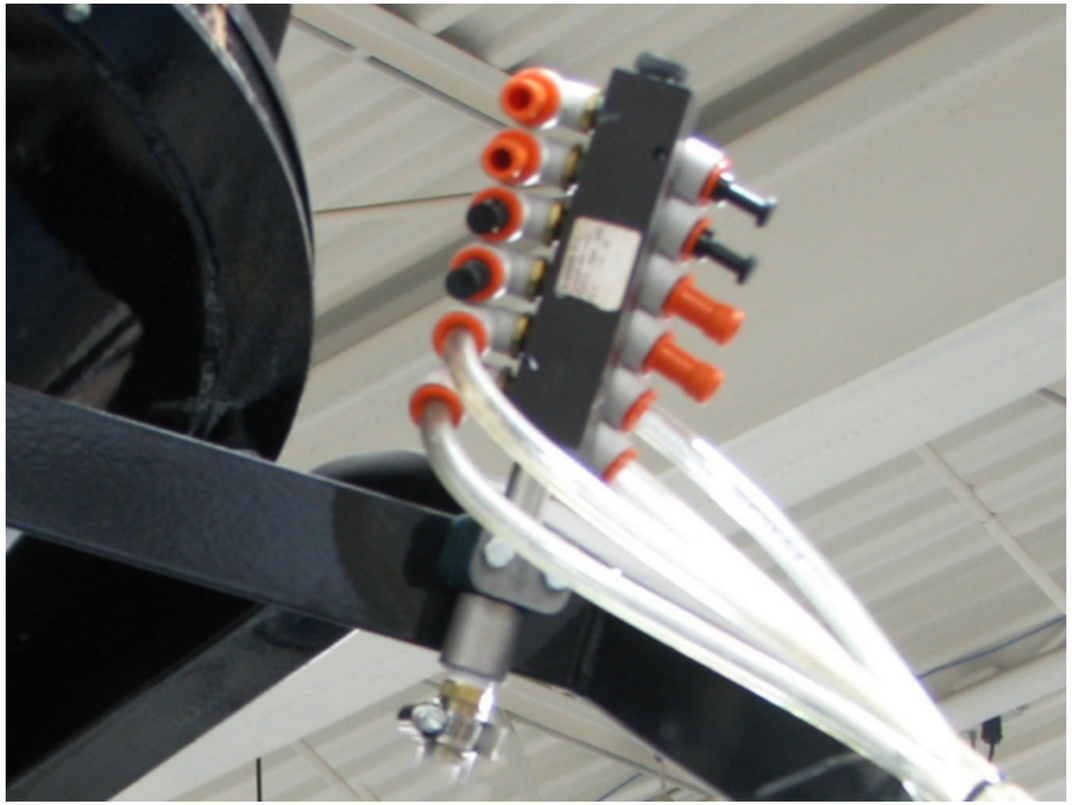
Step 3: Insert the 3/8” NPT Pipe Coupler into the bottom of the Vibration Mount.

Refer to drawing A455900 and use the P001254 / 79009658 3/8” NPT x 1/2” Brass Hose Barb.

Step 4: Apply Teflon tape to the 3/8” NPT x 1/2” Brass Hose Barb threads

Step 5: Insert the 3/8” NPT x 1/2” Brass Hose Barb into the 3/8” NPT Pipe Coupler.

Note: connecting all these pieces together should all be done as a sub-assembly on a work bench prior to mounting on the treater frame. Use a clamp to sandwich the components between the Vibration Mount to hold in place.



CHEMICAL INLET MANIFOLD

Refer to drawing A455900 and use the P001254 / 79009658 Vibration mount - metal plate as the guide when drilling holes on the Treater frame (image, bottom left).

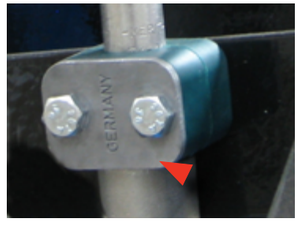
Step 1: Orient the 12 PORT MANIFOLD W/1/2” PL 90 DEG on the same side of the Treater as the chemical inlet barb hose fitting on the side of the Atomizer (bottom right image).

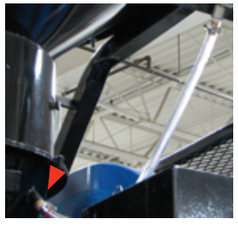
Step 2: Drill two 1/4” holes into the frame. Mount the 12 PORT MANIFOLD W/1/2” PL 90 DEG to the Treater frame as shown above.

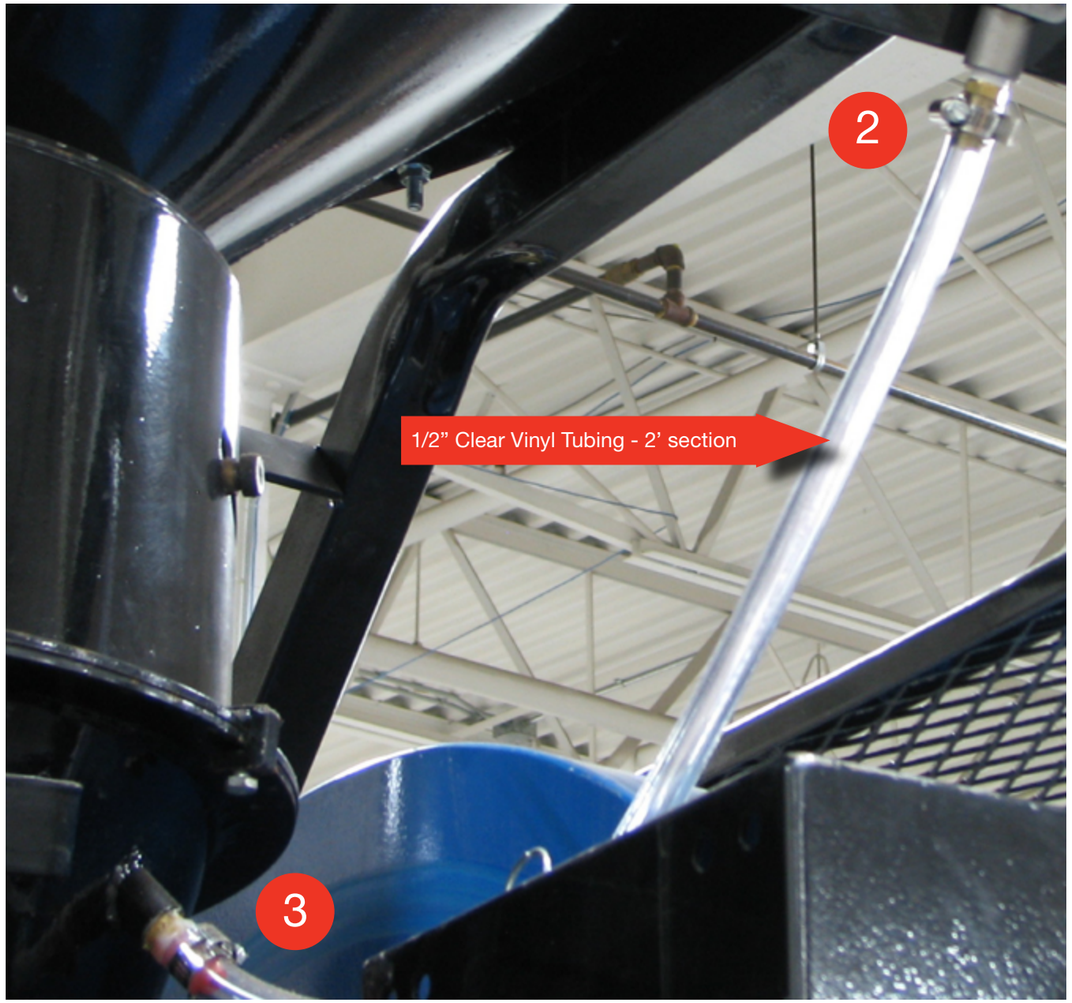
Step 3: Place the metal plate in front of the Vibration Mount.

Step 4: Thread the two 1/4” bolts through the Vibration Mount.

Step 5: Use ratchet wrench and 7/16” socket head to connect two (2) 1/4” bolts that hold the 12 PORT MANIFOLD W/1/2” PL 90 DEG to the Treater frame.







CHEMICAL INLET MANIFOLD

Refer to drawing A455900 and use the P001254 / 79009658 1/2” Clear Vinyl Tubing - 2’ section and two (2) #10 Hose Clamps.

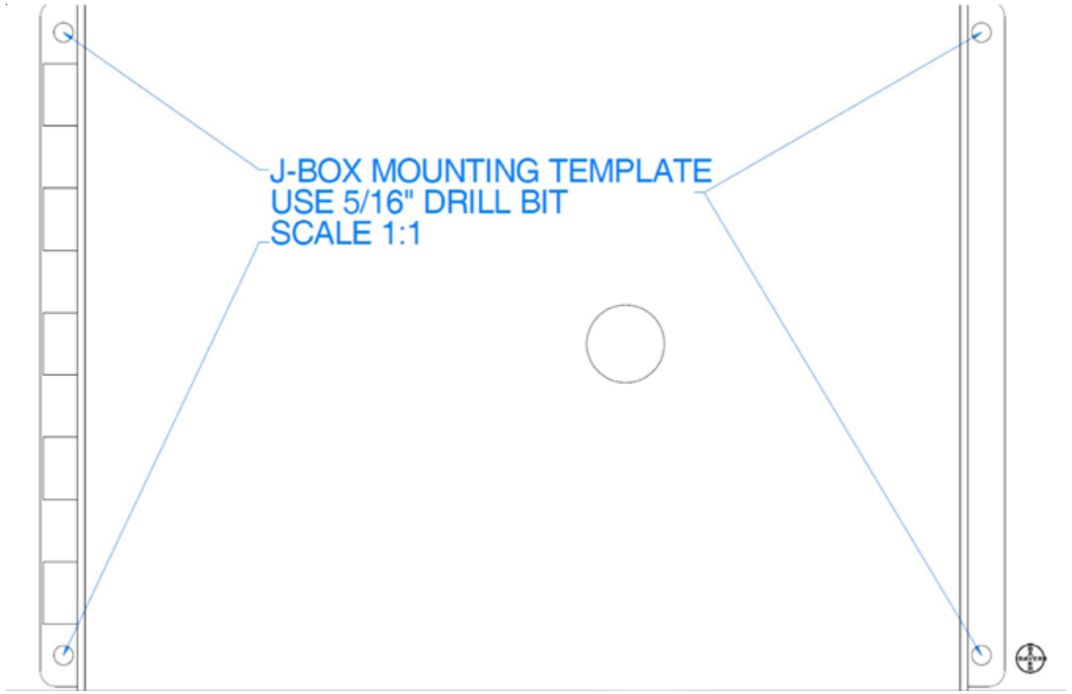
Step 1: Slide the two (2) #10 Hose Clamps over each end of the 1/2” Clear Vinyl Tubing - 2’ section.

Step 2: Insert one end of the 1/2” Clear Vinyl Tubing - 2’ section onto the 3/8” NPT x 1/2” Brass Hose Barb into the bottom of the Vibration Mount.

Step 3: Insert the other end of the 1/2” Clear Vinyl Tubing - 2’ section onto the 3/8” NPT x 1/2” Brass Hose Barb* on the Atomizer of the Treater.

Step 4: Use a slotted screwdriver to tighten the two (2) #10 Hose Clamps over each end of the 1/2” Clear Vinyl Tubing - 2’ section.

*For MX models, use the 1/2” NPT x 1/2” Brass Hose Barb provided in the kit.



JUNCTION BOX

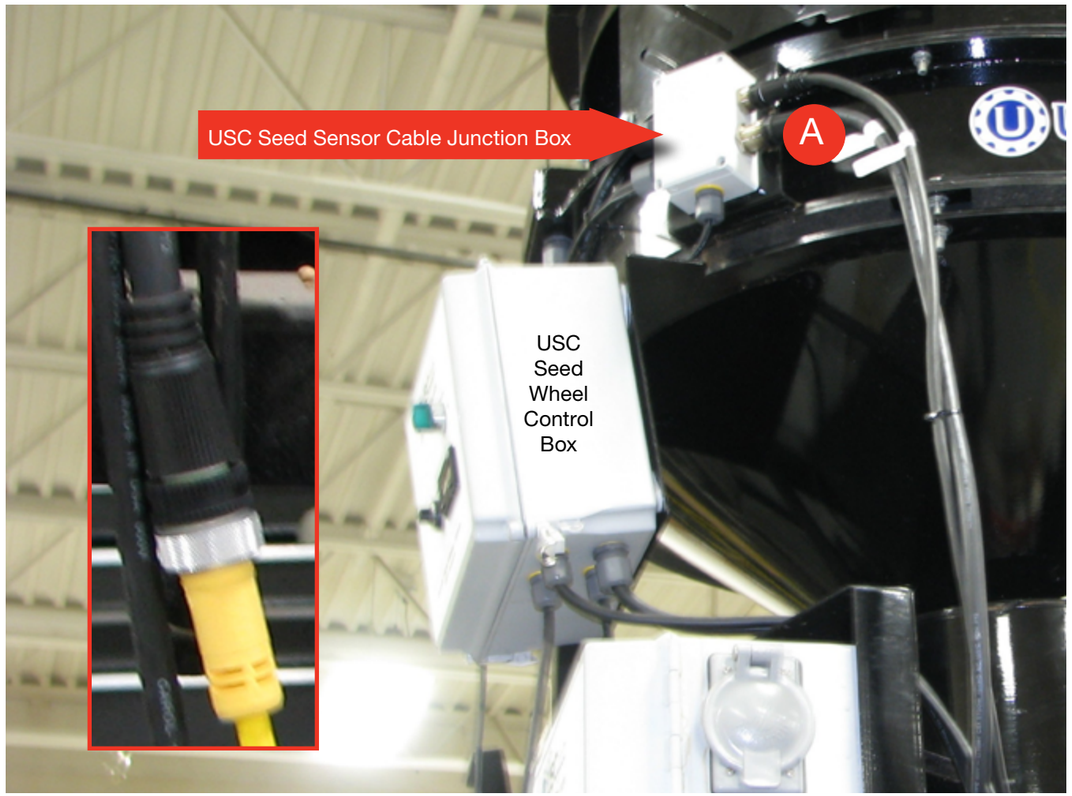
Refer to drawing A455900 and use the P001254 / 79009658 1/2” J-Box Mounting template drawing.

Step 1: Use the template to score holes used to mount the Junction Box (bottom image).

Step 2: USE 5/16” DRILL BIT and drill four (4) holes into the treater frame.

JUNCTION BOX

Step 1: Use factory-supplied hardware and fasten the Junction Box to the Treater Frame, as shown above.

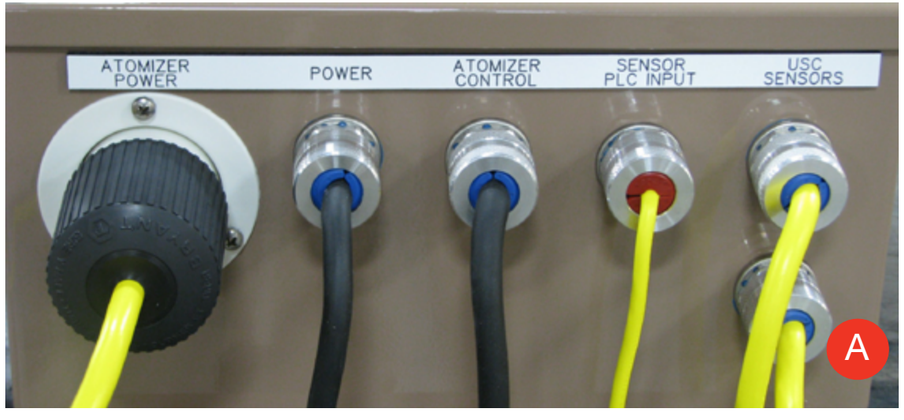


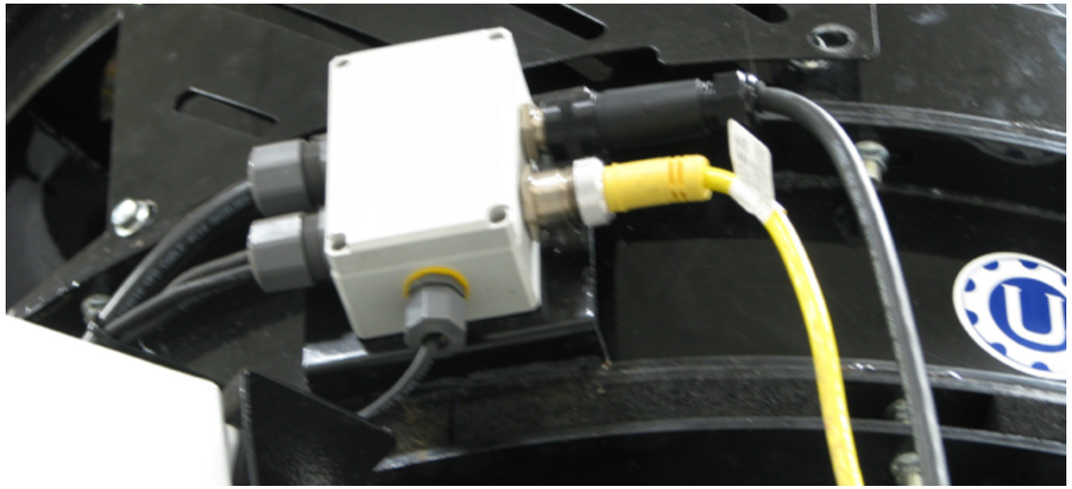
JUNCTION BOX CONNECTIONS - USC SENSORS

The USC Seed Sensor Cable is connected to the USC Seed Wheel Control box, as shown above.

Step 1: Disconnect the BOTTOM USC Seed Sensor Cable A from the small junction box.

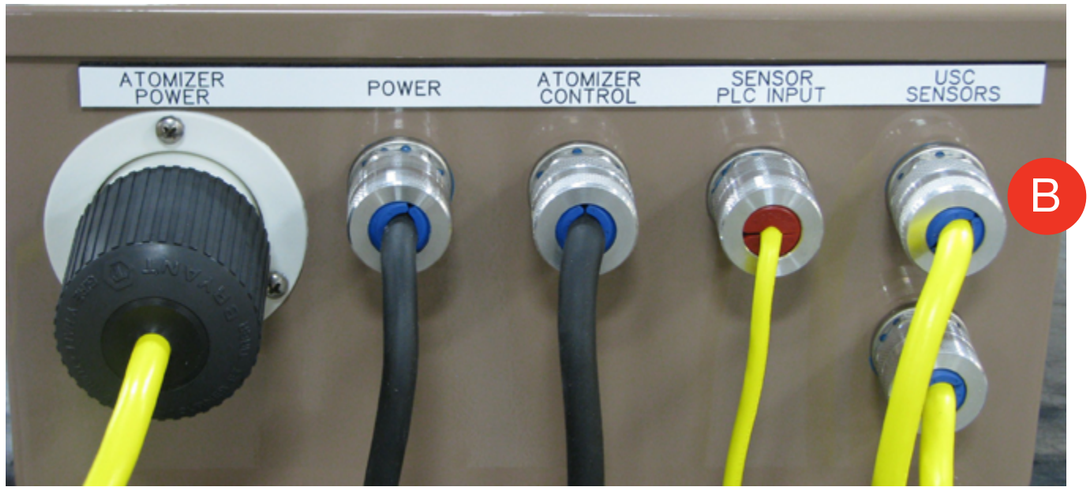
Step 2: Connect yellow Seed Sensor Cable A from under the OD Junction box to the USC Seed Sensor Cable A (insert photo).

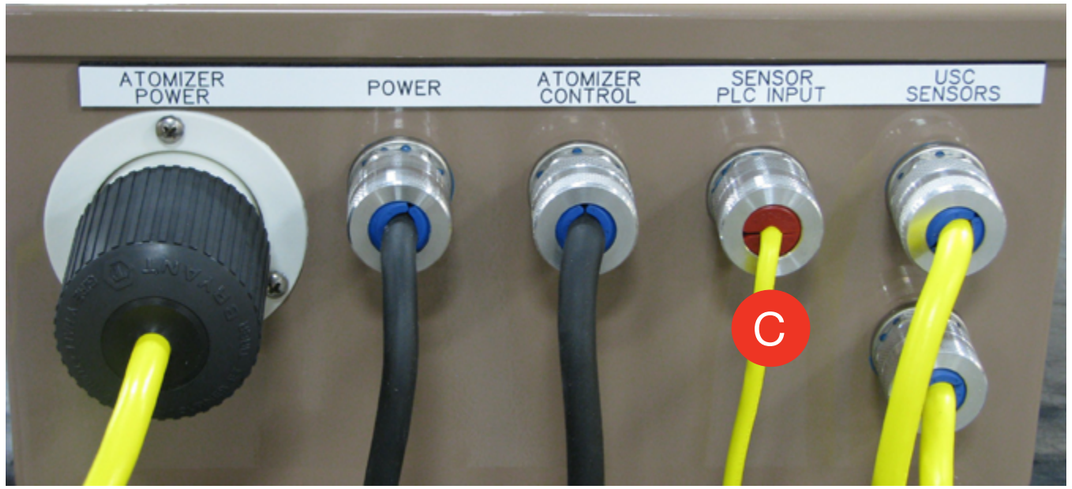




JUNCTION BOX CONNECTIONS - USC SENSORS

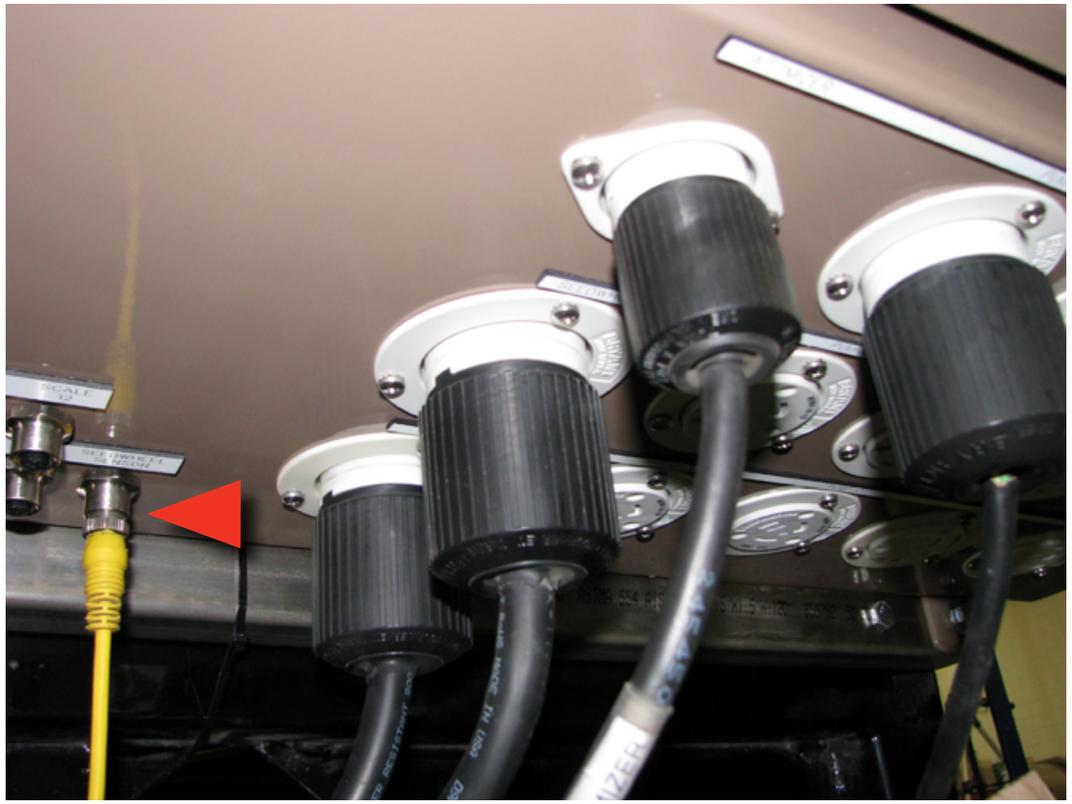
Step 1: Connect the yellow On Demand Seed Wheel Sensor cable B to the small junction box, as shown above.

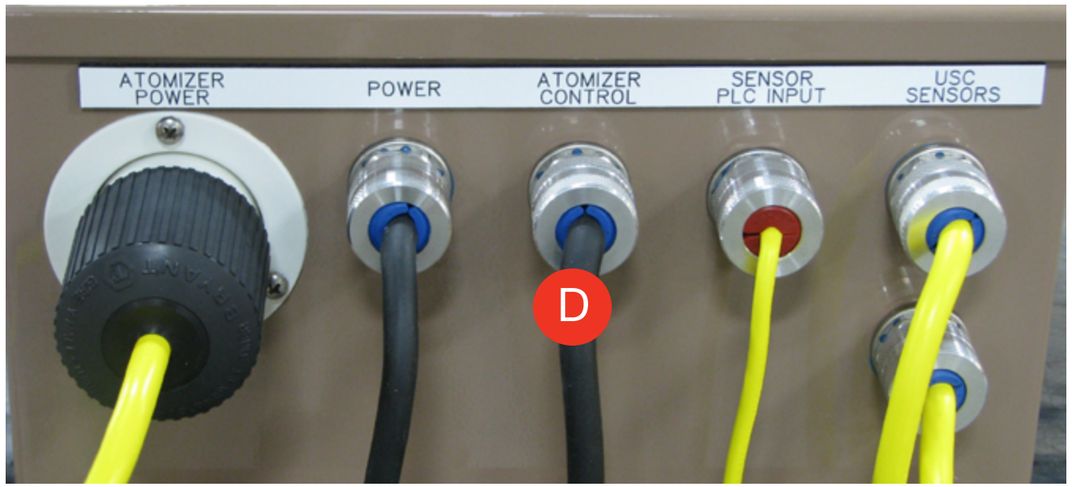




JUNCTION BOX CONNECTIONS - SENSOR PLC INPUT

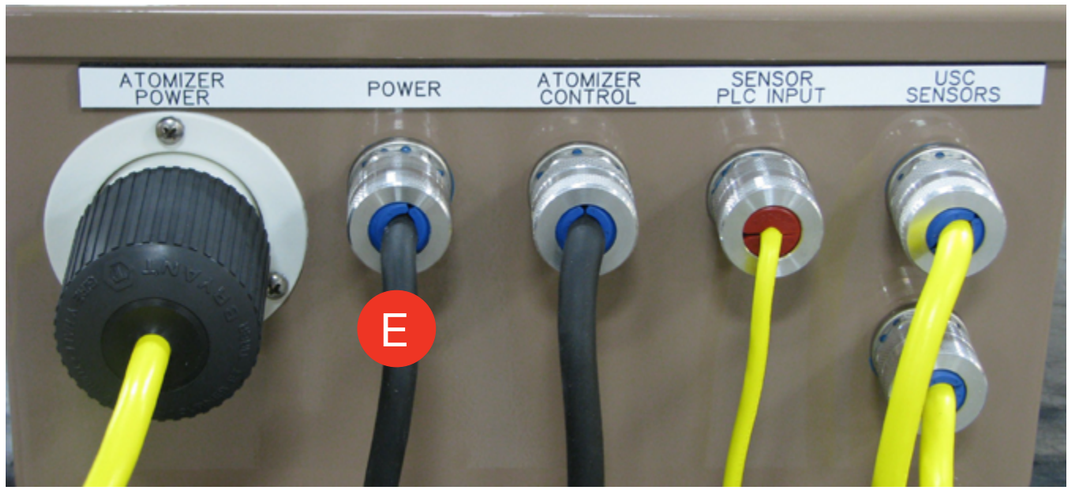
Step 1: Connect the yellow On Demand Seed Sensor Cable C to the bottom of the Main OD Control Panel marked Seed Wheel Sensor, shown below.





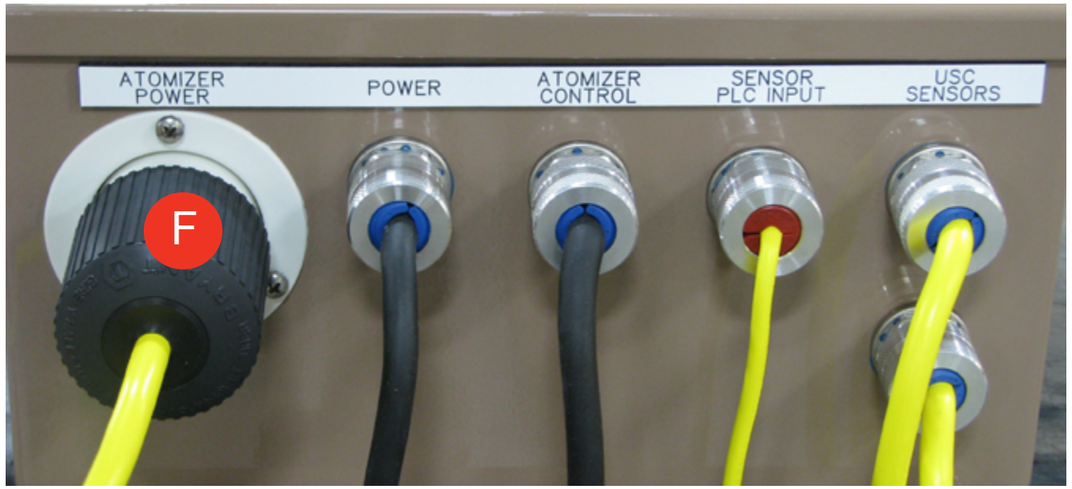
JUNCTION BOX CONNECTIONS - ATMOIZER CONTROL

Step 1: Connect the On Demand Atomizer Control cable D to the bottom of the Main OD Control Panel marked Atomizer, shown below.



JUNCTION BOX CONNECTIONS - POWER CORD

Step 1: Connect the Junction Box Power Cord E to an external 115V power source (power light illuminates green).

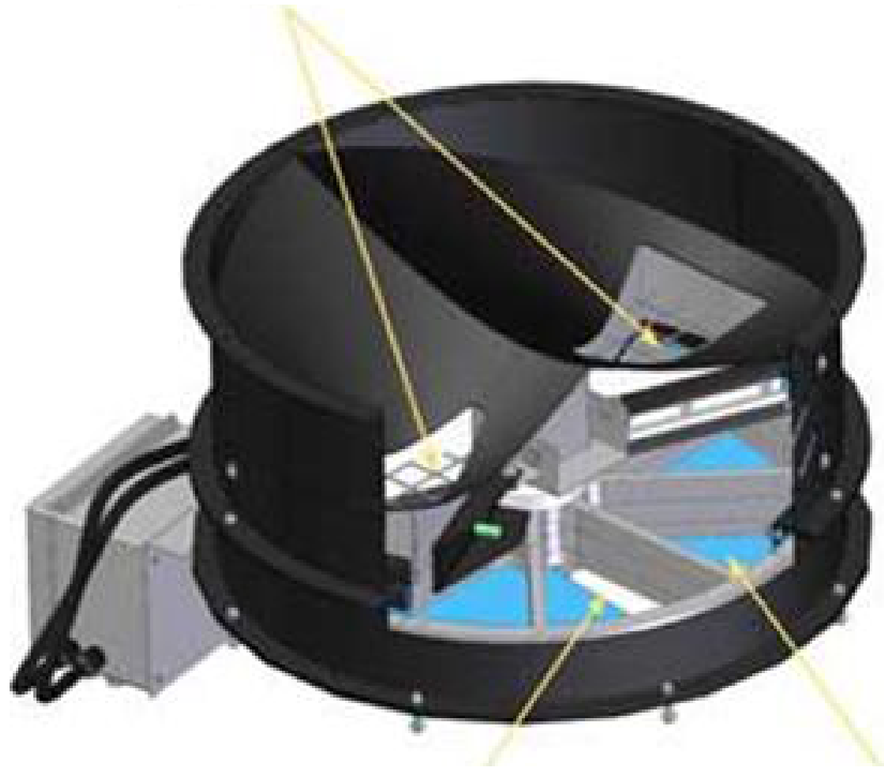


JUNCTION BOX CONNECTIONS - ATOMIZER POWER

Step 1: Connect the On Demand Atomizer Power cable F to the Atomizer Motor (new install, refer to page 18) Power cable.

Step 2: Make the remainder connections required for the OD Main Control Panel, OD Control Panel, Seed Wheel and Pump Stations.

ENSURE USC SEED WHEEL DIRECTION - CLOCKWISE ONLY!



SEED WHEEL - REVERSAL SIGNAL

USC Seed Wheel should NEVER be run in reverse, not even for testing at startup!

The USC seed wheel is designed to run in one direction only. The correct direction (clockwise) should be verified during start up.

You should run the seed wheel manually at the slowest speed possible and look into seed hopper to confirm its running in clockwise direction. This is when you are looking into the seed hopper from the top down...

It would be best to have someone man the HMI and start and stop the seedwheel as fast as possible while you are looking into the hopper to verify the correct rotation.

Do not allow it to run for any length of time if its running in reverse (Counter clockwise), damage to seed wheel assembly may occur!

It is recommended you disable the reverse direction of the seed wheel by removing the REV signal wire. This is wire **2312** on terminal **2302** pin 5 in the main panel. Just remove the wire from the terminal, inform the operator manually trying to run the seed wheel in reverse will now generate an alert/error.

FINAL CHECKLIST

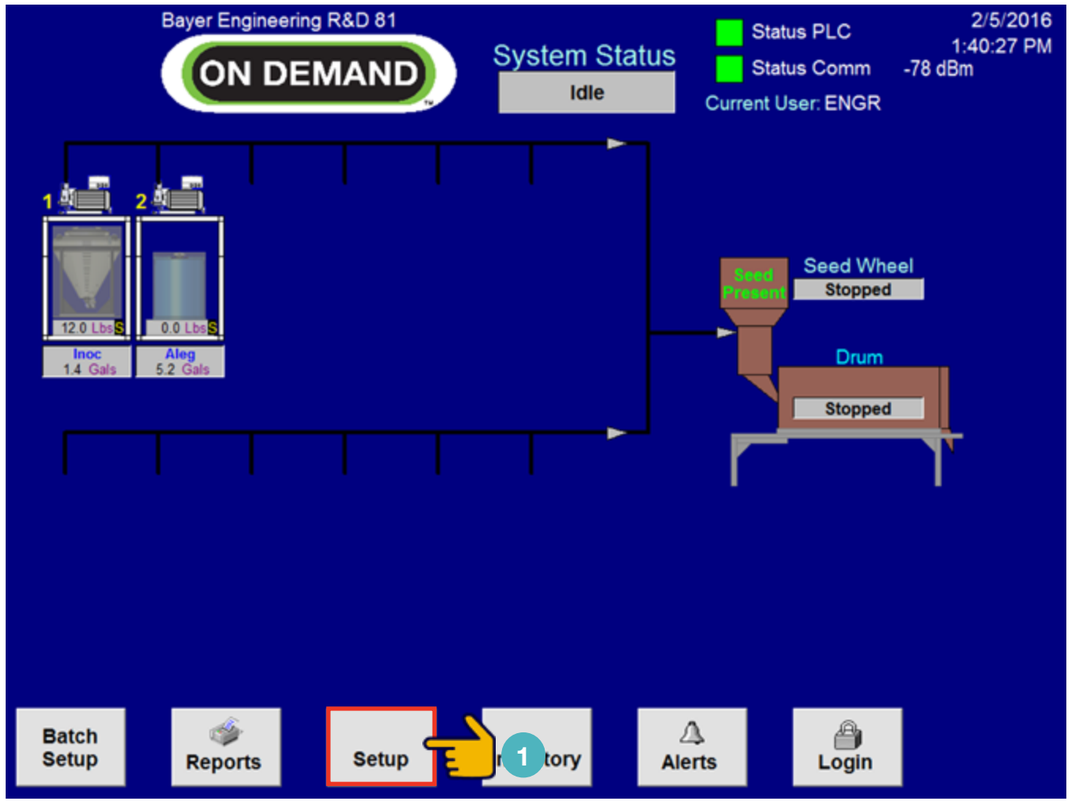
✓ Check operation of Drum

✓ Check operation of Seed Sensors

✓ Check Seed Wheel operation (only run seed wheel clockwise - refer to page 31)

✓ Check Atomizer operation

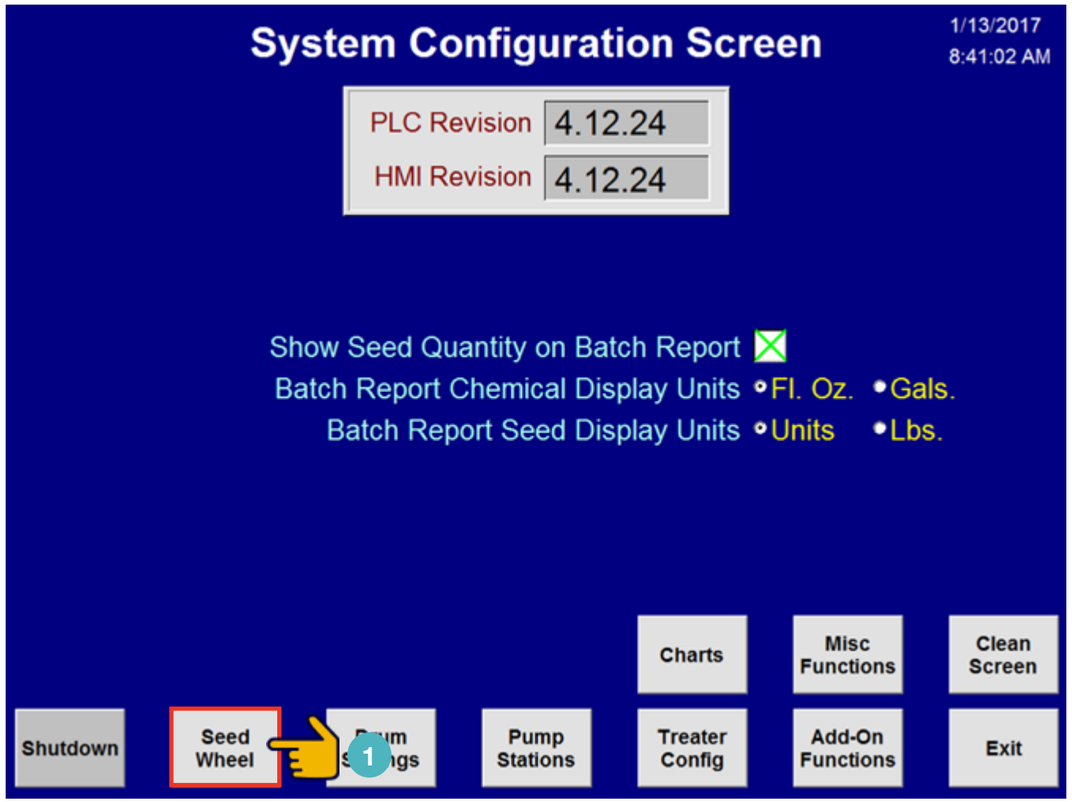
✓ Check USC Panel functions (Inlet & Outlet Conveyor functions, if used)



MAIN SCREEN

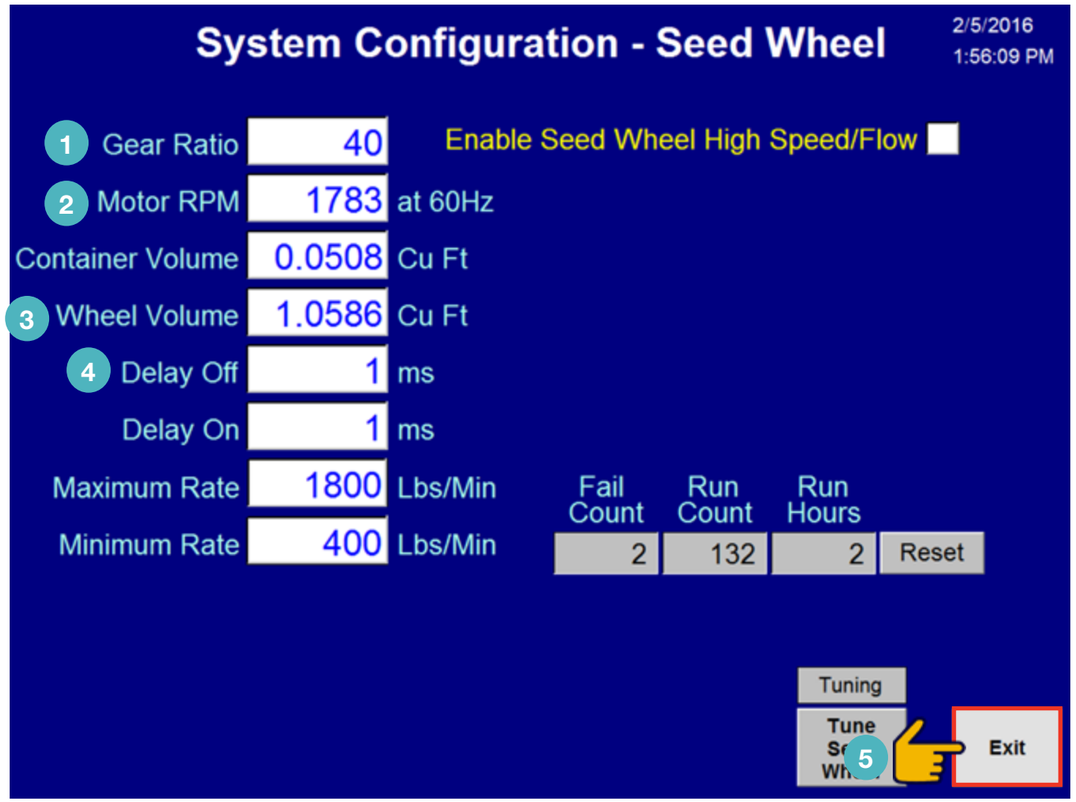
Once the initial setup is complete, go to the **Main Screen** on the HMI.

Step 1: Touch the **Setup** button icon: navigates to the **System Configuration Screen** ➲



SYSTEM CONFIGURATION SCREEN

Step 1: Touch the **Seed Wheel** button icon: navigates to the **Seed Wheel Screen** ➲



SYSTEM CONFIGURATION - SEED WHEEL SCREEN

Configure the following to accommodate the USC with the OD...

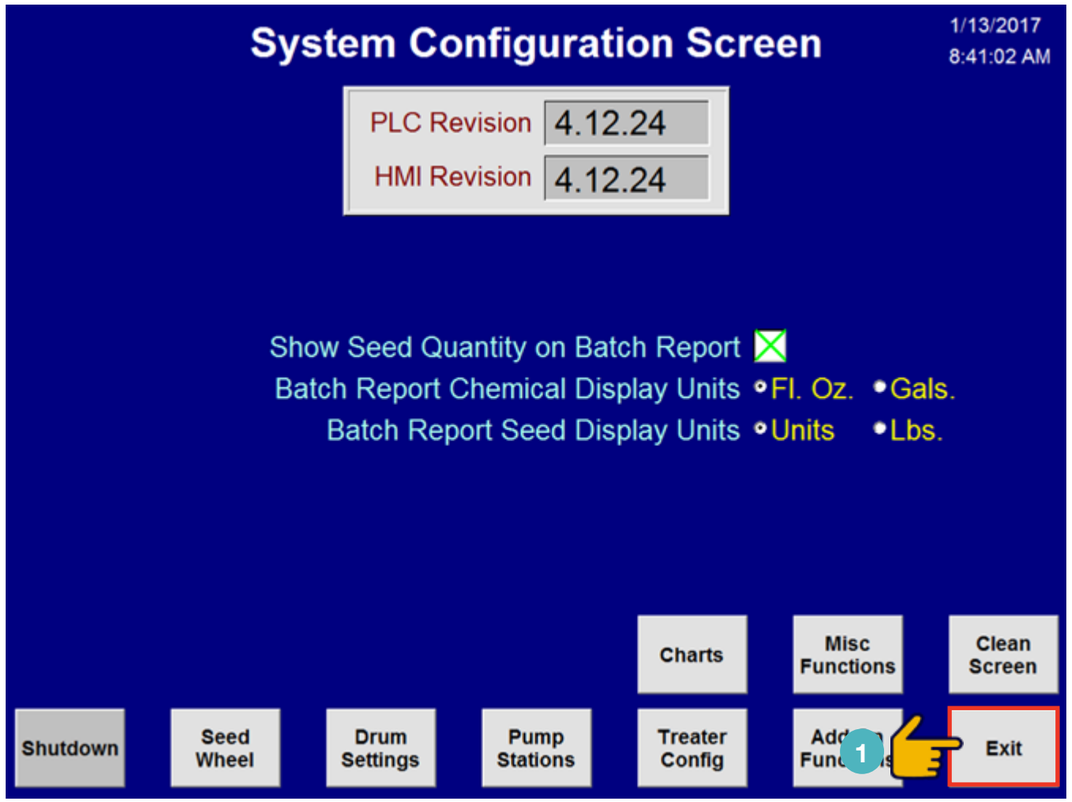
Step 1: Gear ratio: change to 1

Step 2: Motor RPM: no change; verify 1783 (as shown above)

Step 3: Wheel Volume: change to .0209

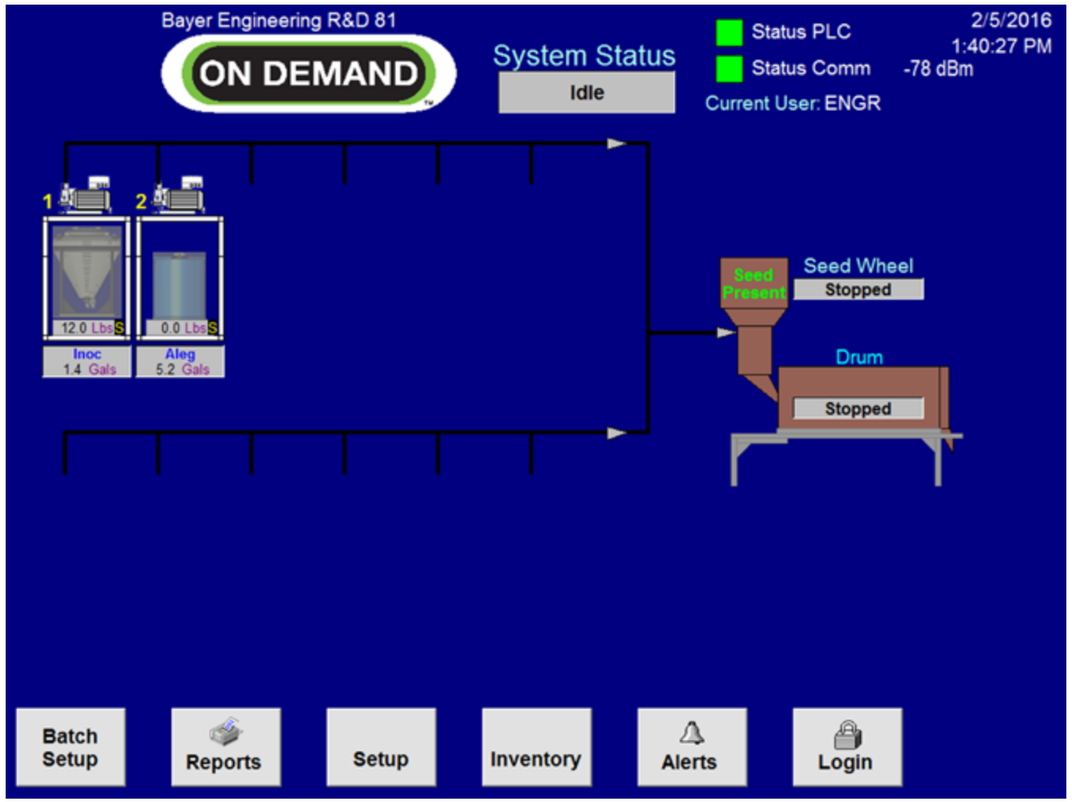
Step 4: Delay Off: change to 4000

Step 5: Touch the **Exit** button icon: navigates back to the **Main Screen** ➲



SYSTEM CONFIGURATION SCREEN

Step 1: Touch the **Exit** button icon: navigates to the **Main Screen**



MAIN SCREEN

Step 1: Run three test batches to confirm Seed Wheel Calibration changes previously made on page 35.

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For fast and easy access to our website scan the code with your smartphone and an appropriate app.

www.seedgrowth.bayer.com