



U-Treat v3.6 Quick Reference Sheet



Treater

TD - 09 - 06 - 2006

Revision: E

SEED WHEEL FLOW CALIBRATION

1. Use the cup, funnel, funnel stand, and scale that are supplied with the LPX series seed treater to find the cup weight for the seed you are to be treating.
2. Always make sure you put the cup on the stand and **zero out the weight of the cup** before getting the seed weight.
3. While plugging the bottom of the funnel with your hand, fill it with the desired seed. Then remove your hand and let it fill the cup. **(Always use the funnel to fill the cup. Scooping the seed by hand will give you inconsistent weights.)**
4. Strike off the excess seed with a flat edge so that it is even with the top of the cup.
5. Weigh the seed on the provided scale. **Ensure the scale is on a smooth and level surface.**
6. From the treater main screen, press the UTILITIES button. Press the TARGET TREATING RATE button and enter the desired treating rate, press enter.
7. Press the PRODUCT EDITING button, Select the product profile from the rolodex on the left side of the screen. Press the CUP WEIGHT button to enter the weight of the seed sample and press SAVE.
8. Seed flow calibration is set.

LIW FLOW CALIBRATION

1. From the treater main screen, press the UTILITIES button. Press the TARGET TREATING RATE button and enter the desired treating rate, press enter.
2. Press the PRODUCT EDITING button. Select the product profile from the rolodex on the left side of the screen. Enter the changes needed to the profile and press SAVE before leaving the profile.
3. The Max Gate Position is a global variable and will be consistent between all product profiles. The operator may choose to have the Auto Calibration Ratio Off that uses operators entry, Auto Calibrate Ratio One-Shot that does one calibration at the beginning of a run, or Auto Calibrate Ratio Continuous that updates each profile automatically throughout the running process for the active seed profile. If you Press the Set All Auto Calibration States button, a popup will appear. From this screen you may confirm your choice or toggle to one of the other modes of operation before pressing OK.
4. Setting Maximum Gate Position is important to set before running the treater so the system will not cause an alarm by asking the actuator to extend further than it physically can. To set this parameter, be sure that there is no seed open to flow through the gate as it will open for several seconds as the warning popup will indicate. Once pressed and the warning confirmed, the actuator gate will open to the maximum possible position and record the position in the program. Once set, this should not need resetting unless the hardware is moved for any reason. Again this will be the same on all product profiles.
5. Setting Minimum Gate Position is adjustable for every profile or may be set the same for every profile. If you have varying seed sizes is it suggested to set them for each profile. This setting indicates the lowest setting that seed will flow at. To set it for a certain seed, you will need to have seed available in the buffer zone above the actuator gate. With the gate completely closed, go to the H-O-A screen and set the LIW ACTUATOR's Position setting to 5% and place the actuator in HAND mode. Then open the gate in small increments until a small but steady stream of seed is flowing out of the gate. Note the Gate Position reading and place the actuator back in Auto mode of operation. Then, enter the noted gate position reading minus 200 into the Min Gate Position setting. This will allow the program to accurately calculate the seed flow through the actuator gate.



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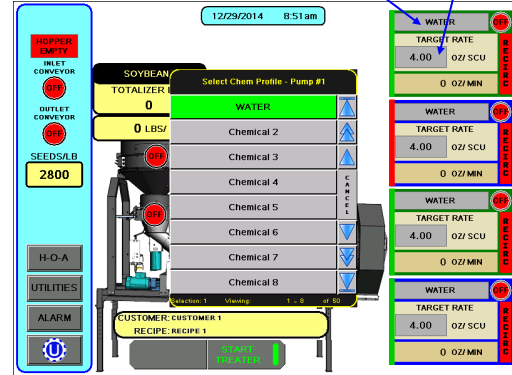
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PUMP CALIBRATION

1. Run pump tubing through peristaltic pump heads and clamp down on the tubing.
2. Premix enough liquid for the amount of seed you are treating and pour into the pump stand tank. It is always a good practice to mix a half gallon extra to help fill all the lines.
3. Press the manual start mix tank motor button on top of the pump stand to allow the liquid to mix.
4. From the treater main screen, press the chemical name to select a different chemical from the popup list. Change the target rate by selecting the target rate box which will take the operator to the chemical edit screen. Select the chemical you wish to adjust and modify the rate. Once you have modified the rate and saved it, return to the main screen and verify the correct chemicals are on the correct pumps.

Press here to choose chemical name from popup.

Press here to open chemical editing to adjust rate.



5. You have now calibrated your chemical pumps.
 - **With the LPX Series treaters the flow of the seed and chemical pump speed is automatically calibrated and adjusted throughout the day to ensure accurate rates and eliminate over or under application of chemicals. You may also adjust your rate of seed while the machine is running and the system will automatically recalibrate itself to adjust to match the new chemical flow rate needs during the run.**

PROXIMITY SWITCH ADJUSTMENT GUIDE

The proximity switches mounted in the extension ring and in the seed wheel on the seed treater detect when seed is present. The extension ring sensor is used to shut off the inlet conveyor when the surge hopper is full. The seed wheel sensors are used to automatically shut off the pump when all seed has left the hopper. Sometimes the sensitivity of these switches needs to be adjusted. To the right are instructions and a picture showing how to adjust the sensitivity of these switches when not working properly.

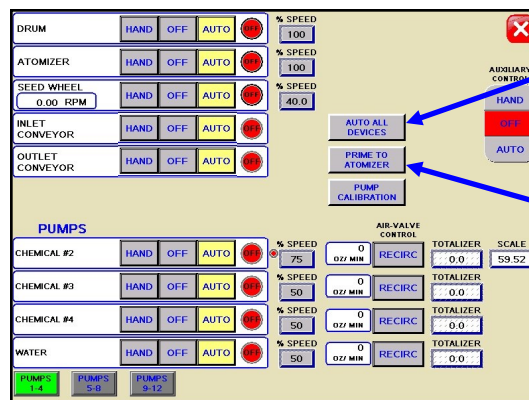
Using the small screw driver shipped inside the main control panel, you can adjust the proximity switch by turning the adjusting screw.

- Turn Clockwise for more sensitive.
- Turn Counter-clockwise for less sensitive.



TREATING SEED WITH SEED WHEEL

1. From the treater H-O-A screen, press the AUTO ALL DEVICES button to place the Drum, Atomizer, Seed Wheel, Inlet Conveyor, Outlet Conveyor and the desired pumps in AUTO.
2. Next, prime the chemical line to the atomizer. Press and hold the PRIME TO ATOMIZER button. The atomizer will turn on and liquid will begin pumping up to the atomizer. When liquid reaches the atomizer, release the PRIME TO ATOMIZER button.



Auto All Devices Button

Prime to Atomizer Button

(Continued on Back)



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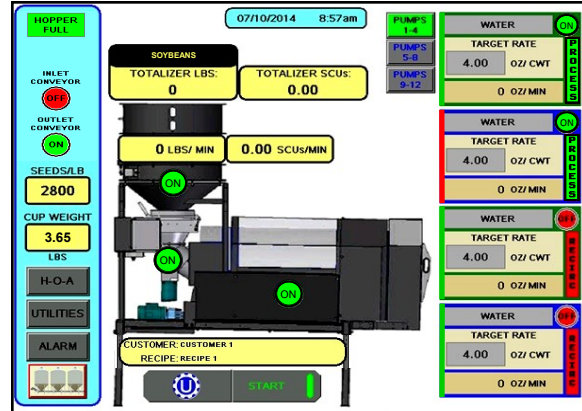
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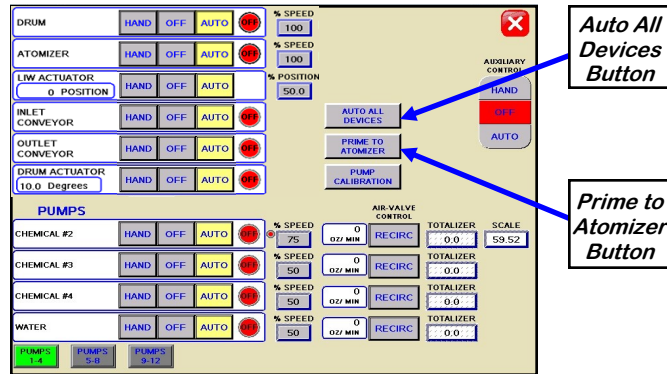
TREATING SEED WITH SEED WHEEL

- Return to the main screen and press the STARTUP button. Once all options are verified on the startup screen, press START. The drum, atomizer, inlet and outlet conveyors will activate. The pump will turn on and recirculate until it reaches the desired flow rate needed to match the target treating rate that was entered.
- When the pumps flow rate has been reached, the air actuated 3-way valve will open and allow liquid to pump up to the atomizer. A moment later, the seed wheel will turn on.
- The HOPPER EMPTY indicator light will disappear when the proximity switches in the seed wheel are covered. When the hopper is full the HOPPER FULL indicator light will come on and the inlet conveyor will shut off.
- As the seed is being treated, the main screen will display the pounds per minute, the total pounds, and the liquid flow rate. If the system needs to be stopped for a moment because of a problem, the PAUSE button can be pressed to halt the process. When ready to begin again, the CONTINUE button is pressed.
- When all seed passes through the seed wheel, the seed wheel will turn off and the pump will switch to recirculate. When more seed is fed into the treater, the treating process will continue.
- After all seed has been treated, the SHUTDOWN button may be pressed. After the button has been pressed, a window will appear notifying the operator that the system will shut down after a specified amount of time.

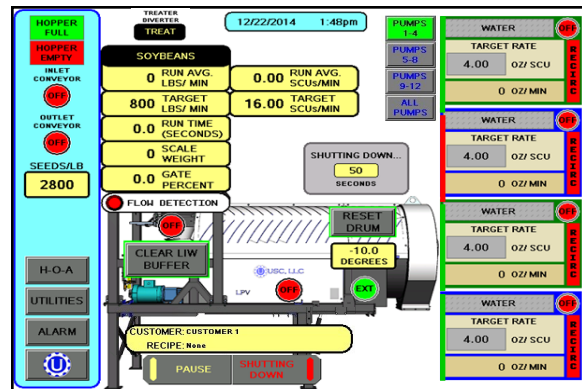


TREATING SEED WITH LOSS-IN-WEIGHT

- From the treater H-O-A screen, press the AUTO ALL DEVICES button to place the Drum, Atomizer, LIW Actuator, Inlet Conveyor, Outlet Conveyor, Drum Actuator and the desired pumps in AUTO.
- Next, prime the chemical line to the atomizer. Press and hold the PRIME TO ATOMIZER button. The atomizer will turn on and liquid will begin pumping up to the atomizer. When liquid reaches the atomizer, release the PRIME TO ATOMIZER button.



- Return to the main screen and press the STARTUP button. Once all options are verified on the startup screen, press START. The drum, atomizer, inlet and outlet conveyors will activate. The pump will turn on and recirculate until it reaches the desired flow rate needed to match the target treating rate that was entered.
- When the pumps flow rate has been reached, the air actuated 3-way valve will open and allow liquid to pump up to the atomizer. A moment later (Based on the settings on the Utilities screen), the Loss-In-Weight Actuator will turn on and the seed treating process will begin.
- As the seed is being treated, the main screen will display the pounds per minute, the total pounds, and the liquid flow rate. If the system needs to be stopped for a moment because of a problem, the PAUSE button may be pressed to halt the process. When ready to begin again, the CONTINUE button is pressed.
- When all seed passes through the hopper, the pump will switch to recirculate. When more seed is fed into the treater, the treating process will continue.
- After all seed has been treated, the 3-Way valve on the pump stand will switch to recirculate but the atomizer, drum and outlet conveyor will still be running. Press the SHUTDOWN button, a popup shutdown timer appears and begins to count down the seconds left before complete shutdown.





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Reports

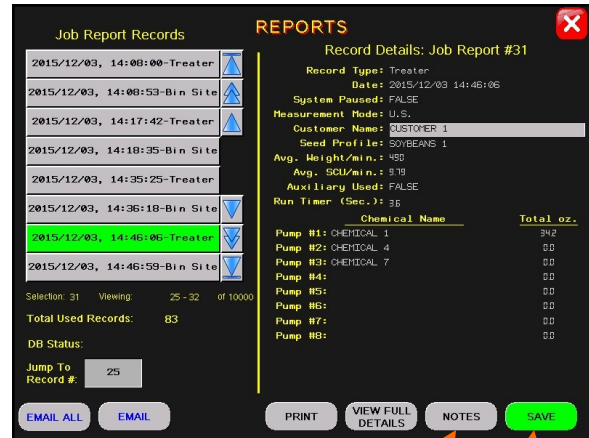
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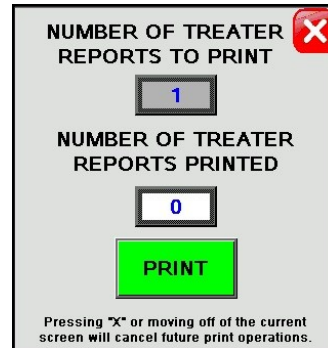
1. After the SHUTDOWN button has been pressed, a dialog box will appear (right), notifying the operator that the system is shutting down. The run data is automatically saved at this time in the reports after the run is complete.



2. To access the reports from the main screen, press the UTILITIES button, then press the REPORTS button. Under the reports screen (right), the operator may choose a record to view from the rolodex on the left side of the screen. The details of that report will display on the right side. The operator may choose to see more details of that report by pushing the View Full Record Details button.



3. Press the PRINT button and a popup window appears (middle). From this screen you may enter the number of reports to print for the customers records. Then press the X in the top right corner of the screen to return to the reports screen.



3. If you would like to export or erase the reports, press the SECURITY button at the bottom of the UTILITIES screen. Press the PASSWORD button and enter the password **USC** to go to the TOOLS & OPTIONS screen. Press the IMPORT / EXPORT LISTS button to go to the file management screen (below). On this screen you may choose to EXPORT or DELETE the Job Reports. To export the Jobs, insert a USB drive into the port on the bottom of the control panel. It must be in FAT32 format. Press the EXPORT button and to Copying to USB. Do not exit or cycle power before the reports have downloaded. When the messages disappear it is safe to remove the drive. You may then push the DELETE button to clear out all reports.





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Batch Weigh Hopper Bin Site

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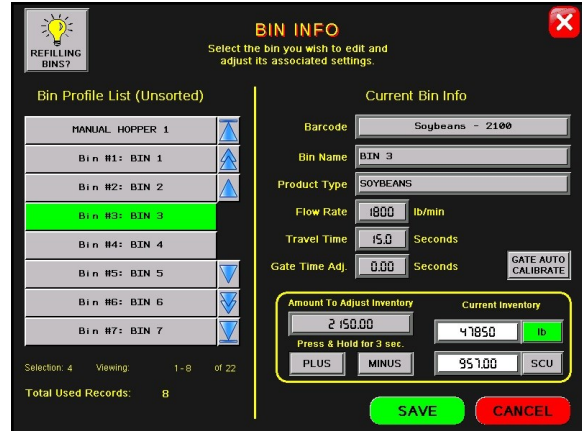
Revision: E

LOADING SEED INTO BINS

Before seed is pulled out of the bins and run through the Batch Hopper System, all the applicable information about the seed that was loaded into each individual bin must first be entered into the Batch Hopper System. If the same seed was loaded into multiple bins the same information still needs to be loaded into each bin separately.

The following is a list of steps to perform to enter the bin information for each bin once seed has been loaded into that bin:

1. Load the seed into the bin. Take a seed sample for the cup weight of each bin at this time. Also, note the seed type, seed variety, lot number, seed weight and total inventory weight of the seed that is loaded into the bin. The seed weight can be defined in either pounds, seed count units or seed weight units.
2. Press the UTILITIES button in the lower left corner of the Bin Site main screen.
3. Press the SECURITY button on the bottom of the Utilities screen.
4. Press the PASSWORD box, then from the popup keyboard enter the letters USC and press enter.
5. Press the TOOLS & OPTIONS button in the lower left hand corner of the Security screen.
6. Press the BIN INFO button on the Tools & Options screen.
7. Select the desired bin to enter information into from the select bin list..
8. Enter the seed type, seed variety, lot number, seeds per pound and cup weight of the seed in the bin into their respective box under the Current Bin Info.
9. Enter in the total weight of seed that was added to the bin into the bin inventory section on the lower portion of the screen. The system will automatically subtract inventory after each run. Press the save button when all the information has been entered.



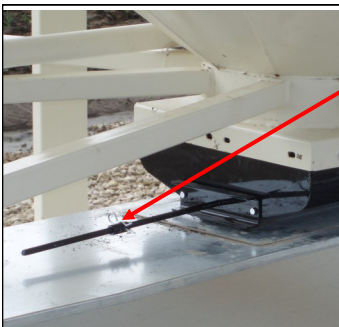
SETTING THE SEED FLOW RATE

The following is a list of steps for setting the seed flow rate. This must be completed before running the Batch Hopper system. Repeat steps 1 & 2 for each bin.

1. Set the manual gate on the bin to the fully open position. Once opened, this gate should be set in place and not moved through out the entire season. If this gate is adjusted during a run or between runs then it will effect the calibration of the system and the system will need to be re-calibrated.
2. Set the stop for the air actuated slide gate on the bin. This stop controls how far the slide gate will open and the flow rate at which seed can exit the bin. To set the stop, adjust the position of the collar on the rod that exits the slide gate opposite of the air valve (below). Placing the collar closer to the slide gate will restrict flow and farther away from the slide gate will increase seed flow for the system. Once a collar location has been selected, use the hitch pin to lock the collar in place. If the stop is adjusted between runs then it will effect the calibration of the system and the system will need to be re-calibrated.

It is recommended to initially place the collar closer to the slide gate and then move it farther away from the slide gate one hole at a time to increase the flow rate of the system. This will protect against overloading the underbin conveyor with seed.

Note: A minimum of 1500 pounds is recommended but not necessarily needed to calibrate flow rate for the first time. The system needs roughly that amount to enter it's real time calibration (depending on the distance of the bin, it may be far less) but at the end of any alarm/pause free run of seed the system will do a calibration. If the run is long enough, then no initial calibration is needed as the system will set it's calibration during the run. If running a small batch there may not be enough seed run to have the flow rate updating in real time during the run. As long as there have been no pauses or alarms the system will re-calculate and update the flow rate display at the end of the run.



Move the position of the collar along this rod to adjust the flow of seed through the bin slide





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Batch Weigh Hopper Bin Site

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SCALE FILL FROM BINS

The following is a list of steps to use when running the batch hopper system in the Scale Fill From Bin mode of operation. This allows the operator to automatically fill the scale from the bin.

- Under the H-O-A screen place all necessary conveyors into the AUTO mode of operation. (below left) Ensure that the diverter is in the appropriate position as well.
- Under the Utilities screen, ensure that all settings are appropriate. (below right)

- Press the START BIN SITE SETUP button on the Main screen.
- Press the CUSTOMER button at the top of the startup screen and enter in the current customer's name in the search box or scroll through the rolodex with the navigation buttons.
- Press the SELECTED BIN button and select the bin you want to pull seed from.
- Press the TARGET WEIGHT button and enter the amount of weight that is to be brought into the batch hopper on this run.
- Press the SEED OUTLET PATH button and then select either AUTO TREAT or MANUAL TREAT mode of operation depending upon what you plan to do with the seed once it has been pulled from the bin and weighed by the batch hopper system. There may be other names set for different outlet paths an operator may see based on different configuration settings.
- If the enable recipe controls are active on the recipe screen, the CHEMICAL RECIPE button will be active and you may select one from this screen.
- Press the START button at the bottom of the startup screen. This toggles the button to CANCEL SCALE FILL FROM BIN and activates the PAUSE button. The system will first turn on the scale fill conveyor and then the underbin conveyor. Once all needed conveyors are running, the slide gate for the selected bin will open and seed will flow through the conveyors to the batch hopper.
- As the batch hopper system is running, the main screen will display the total pounds of seed in the batch hopper, and the status of the conveyor motors.
- The slide gate on the bin will automatically close once the target weight in seed passes through the slide gate. Once the gate closes, a window will appear notifying the operator that the batch is finishing. It will then be replaced with another window indicating amount of time before the system shuts down. If operating in the Manual Treat mode the treaters will have to be turned on and off separately. The system will then shutdown the conveyors in reverse order of startup. This will ensure the conveyors have an opportunity to clean out any product from them. (bottom)



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Batch Weigh Hopper Bin Site

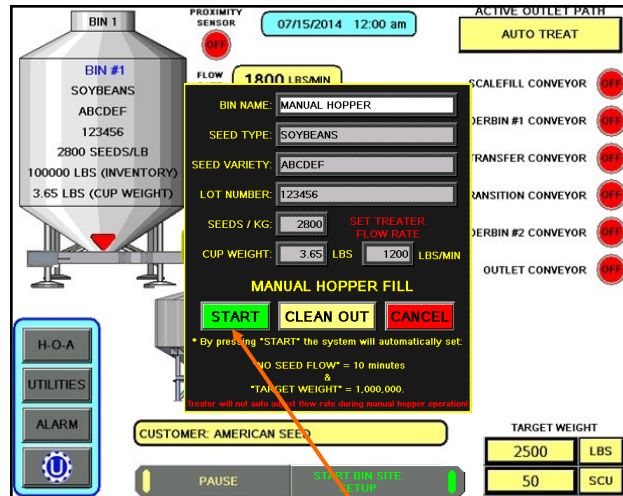
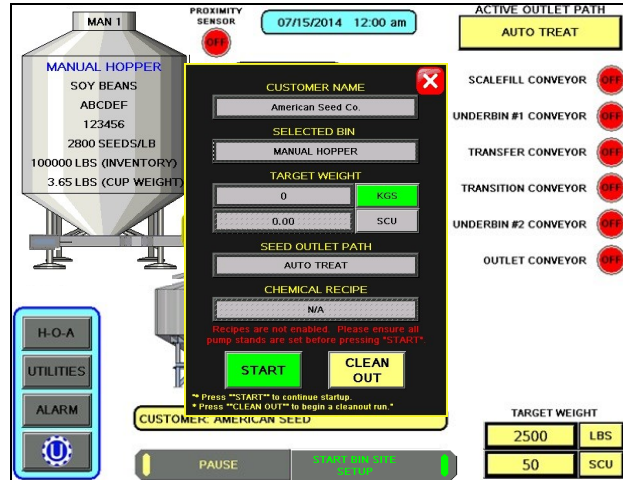
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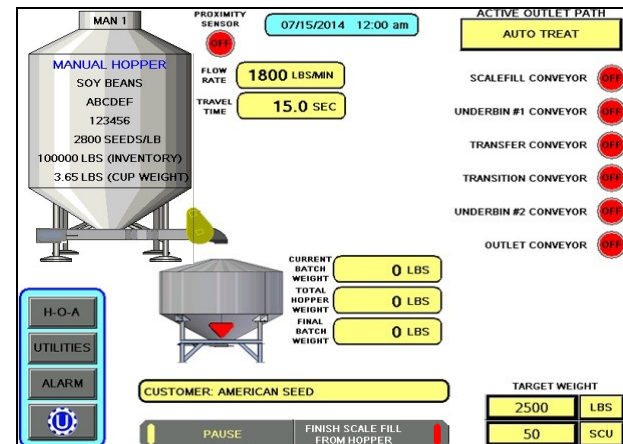
CALLING IN SEED FROM PRO BOXES

The following is a list of steps to use when running the batch hopper system in the Scale Fill From Manual Hopper mode of operation. This allows the operator to automatically fill the scale from Pro Box.

- Under the H-O-A screen place all necessary conveyors into the AUTO mode of operation. Depending upon the setup of the equipment, some bin sites will require only the transfer conveyor or the scale fill conveyor to be in AUTO mode and some sites will require the transfer, underbin and scale fill conveyors to all be in the AUTO mode. Ensure that the diverter is in the appropriate position as well.
- Under the Utilities screen, ensure that all settings are correct.
- Press the START BIN SITE SETUP button on the Main screen.
- Press the CUSTOMER button at the top of the setup screen and enter in the current customers name in the search box or scroll through the rolodex with the navigation buttons.
- Press the SEED OUTLET PATH button, then select either AUTO TREAT or MANUAL TREAT mode of operation depending upon what you plan to do with the seed once it has been pulled from the Pro Box, and weighed by the batch hopper system. There may be other names set for different outlet paths an operator may see based on different configuration settings.
- Press the SELECTED BIN button and select the Manual Hopper.
- From the MANUAL HOPPER screen, enter the seed type, seed variety, lot number, seeds per unit of measurement and cup weight for the seed.
- Once all seed information has been entered, press START. This toggles the button to FINISH SCALE FILL FROM HOPPER and activates the PAUSE button. The system will first turn on the scale fill conveyor, the underbin conveyor, then the transfer conveyor (If applicable) and the outlet conveyor (If applicable).
- As the batch hopper system is running, the main screen will display the total pounds of seed in the three batch weigh hopper. If the system needs to be stopped for a moment because of a problem, the PAUSE button may be pressed to halt the process. When ready to begin again, press the CONTINUE button.
- Once all of the seed has passed from the manual hopper, through the conveyors and through the weigh hoppers, press the FINISH SCALE FILL FROM HOPPER button. At this point, the conveyors will shutdown in reverse order of startup.
- The system will automatically print the report for the run from the scale head printer.



Start





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Batch Weigh Hopper Bin Site

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BATCH HOPPER CALIBRATION

Once the initial calibration is established, the system continuously updates the seed flow rate. The calibration is based upon time and weight. The system first calculates the amount of time it takes for the seed to travel from the bin slide gate to the weigh hopper. This is called the travel time. Then the system calculates how long it takes to fill the weigh hopper. This allows the system to calculate the seed flow rate of pounds per minute. Finally, the system uses the travel time and seed flow rate to calculate the amount of seed in the conveyors at any given time. Once this weight is known, it will automatically close the bin gate at the appropriate time to reach the target weight of seed that the operator has entered.

Initial calibration procedure:

1. Set the bin collar in the fourth hole from the end of the rod in. This sets the Flow Rate at approximately 1200 pounds. Adjust as needed (each hole adjusts up or down by approximately 200 pounds). These figures are based on Soybeans.
2. From the main screen check the Flow Rate to verify it is at the default setting of 1800 lbs/min and the Travel Time is at it's default of 15.0 sec. Then set your Target Weight at 2000 pounds. This Target Weight is recommended but not necessary depending on the setup. After the run, check to see if the Flow Rate and Travel Time have changed from the default settings. If they have the system has been successfully calibrated. Each bin must be individually calibrated. As long as there have been no pauses or alarms the system will re-calculate and update the flow rate display after the run is complete. For the Travel Time to update, there must be seed in the hopper before the bin slide gate closes

NOTE: If you change the location of the bin collar or the bin runs out of seed before the Target Weight is reached the system will need to be re-calibrated.

BIN 1
 SOYBEANS
 ABCDEF
 123456
 2800 SEEDS/LB
 100000 LBS (INVENTORY)
 3.65 LBS (CUP WEIGHT)

PROXIMITY SENSOR: OFF
 DATE/TIME: 07/15/2014 12:00 am

ACTIVE OUTLET PATH: AUTO TREAT

SCALEFILL CONVEYOR: OFF
 UNDERBIN #1 CONVEYOR: OFF
 TRANSFER CONVEYOR: OFF
 TRANSITION CONVEYOR: OFF
 UNDERBIN #2 CONVEYOR: OFF
 OUTLET CONVEYOR: OFF

FLOW RATE: 1800 LBS/MIN
 TRAVEL TIME: 15.0 SEC

CURRENT BATCH WEIGHT: 0 LBS
 TOTAL HOPPER WEIGHT: 0 LBS
 FINAL BATCH WEIGHT: 0 LBS

TARGET WEIGHT: 2500 LBS, 50 SCU

CUSTOMER: AMERICAN SEED

Buttons: H-O-A, UTILITIES, ALARM, PAUSE, GATE AUTO CALIBRATE

BIN INFO
 Select the bin you wish to edit and adjust its associated settings.

REFILLING BINS?

Bin Profile List (Unsorted):
 MANUAL HOPPER 1
 Bin #1: BIN 1
 Bin #2: BIN 2
 Bin #3: BIN 3 (Selected)
 Bin #4: BIN 4
 Bin #5: BIN 5
 Bin #6: BIN 6
 Bin #7: BIN 7

Current Bin Info:
 Barcode: Soybeans - 2100
 Bin Name: BIN 3
 Product Type: SOYBEANS
 Flow Rate: 1800 lb/min
 Travel Time: 15.0 Seconds
 Gate Time Adj.: 0.00 Seconds
 GATE AUTO CALIBRATE

Amount To Adjust Inventory: 2150.00
 Current Inventory: 47850 lb
 Press & Hold for 3 sec.
 PLUS MINUS 957.00 SCU

Buttons: SAVE, CANCEL





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Tri - Flo ® Bin Site

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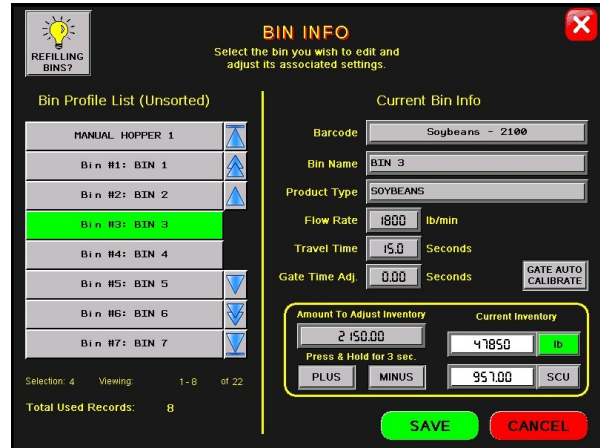
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LOADING SEED INTO BINS

Before seed is pulled out of the bins and run through the Tri - Flo ® System, all the applicable information about the seed that was loaded into each individual bin must first be entered into the Tri - Flo ® System. If the same seed was loaded into multiple bins the same information still needs to be loaded into each bin separately.

The following is a list of steps to perform to enter the bin information for each bin once seed has been loaded into that bin:

1. Load the seed into the bin. Take a seed sample for the cup weight of each bin at this time. Also, note the seed type, seed variety, lot number, seed weight and total inventory weight of the seed that is loaded into the bin. The seed weight can be defined in either pounds, seed count units or seed weight units.
2. Press the UTILITIES button in the lower left corner of the Bin Site main screen.
3. Press the SECURITY button on the bottom of the Utilities screen.
4. Press the PASSWORD box, then from the popup keyboard enter the letters **USC** and press enter.
5. Press the TOOLS & OPTIONS button on the Security screen.
6. Press the BIN EDITING button on the Tools & Options screen.
7. Select the desired bin to enter information into from the Bin Profile List.
8. Press the Product Type button and select one from the Rolodex (All of the information: Variety, Lot Number, Seeds per unit of measurement and cup weight will have been entered on the Product Editing page). Enter the Product Type and Flow Rate and press SAVE.
9. Enter in the total weight of seed that was added to the bin into the Amount To Adjust Inventory box. Press and hold the Plus button for 3 seconds and the current inventory will be updated. The system will automatically subtract inventory after each run.
10. When finished, exit back to the Main screen.



SETTING THE SEED FLOW RATE

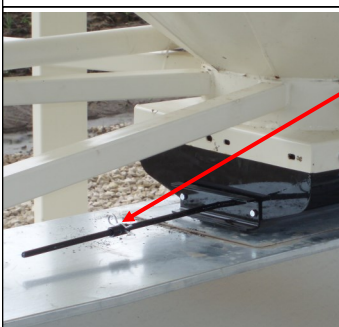
The following is a list of steps for setting the seed flow rate. This must be completed before running the Tri - Flo ® system. Repeat steps 1 & 2 for each bin.

1. Set the manual gate on the bin to the fully open position. Once opened, this gate should be set in place and not moved through out the entire season. If this gate is adjusted during a run or between runs then it will effect the calibration of the system and the system will need to be re-calibrated.
2. Set the stop for the air actuated slide gate on the bin. This stop controls how far the slide gate will open and the flow rate at which seed can exit the bin. To set the stop, adjust the position of the collar on the rod that exits the slide gate opposite of the air valve (below). Placing the collar closer to the slide gate will restrict flow and farther away from the slide gate will increase seed flow for the system. Once a collar location has been selected, use the hitch pin to lock the collar in place. If the stop is adjusted between runs then it will effect the calibration of the system and the system will need to be re-calibrated.

It is recommended to initially place the collar closer to the slide gate and then move it farther away from the slide gate one hole at a time to increase the flow rate of the system. This will protect against overloading the underbin conveyor with seed.

Note: A minimum of 2000 pounds is recommended but not necessarily needed to calibrate flow rate for the first time.

The system needs roughly that amount to enter it's real time calibration (depending on the distance of the bin, it may be far less) but at the end of any alarm/pause free run of seed the system will do a calibration. If the run is long enough, then no initial calibration is needed as the system will set it's calibration during the run. If running a small batch there may not be enough seed run to have the flow rate updating in real time during the run. As long as there have been no pauses or alarms the system will re-



Move the position of the collar along this rod to adjust the flow of seed through the bin slide

calculate and update the flow rate display at the end of the run.





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Tri - Flo ® Bin Site

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SCALE FILL FROM BINS

The following is a list of steps to use when running the Tri - Flo ® system in the Scale Fill From Bin mode of operation. This allows the operator to automatically fill the scale from the bin.

- Under the H-O-A screen place all necessary conveyors into the AUTO mode of operation. (below left) Ensure that the diverter is in the appropriate position as well.
- Under the Utilities screen, ensure that all settings are appropriate. (below right)

- Press the START BIN SITE SETUP button on the Main screen.
- Press the CUSTOMER button at the top of the startup screen and enter in the current customer's name in the search box or scroll through the rolodex with the navigation buttons.
- Press the SELECTED BIN button and select the bin you want to pull seed from.
- Press the TARGET WEIGHT button and enter the amount of weight that is to be brought into the Tri - Flo ® on this run.
- Press the SEED OUTLET PATH button and then select either AUTO TREAT or MANUAL TREAT mode of operation depending upon what you plan to do with the seed once it has been pulled from the bin and weighed by the Tri-Flo® system. There may be other names set for different outlet paths an operator may see based on different configuration settings.
- If the enable recipe controls are active on the recipe screen, the CHEMICAL RECIPE button will be active and you may select one from this screen.
- Press the START button at the bottom of the startup screen. This toggles the button to CANCEL SCALE FILL FROM BIN and activates the PAUSE button. The system will first turn on the scale fill conveyor and then the underbin conveyor. Once all needed conveyors are running, the slide gate for the selected bin will open and seed will flow through the conveyors to the Tri - Flo ® hoppers.
- As the Tri - Flo ® system is running, the main screen will display the total pounds of seed in each of the three weight hoppers, and the status of the conveyor motors.
- The slide gate on the bin will automatically close once the target weight in seed passes through the slide gate. Once the gate closes, a window will appear notifying the operator that the batch is finishing. It will then be replaced with another window indicating amount of time before the system shuts down. If operating in the Manual Treat mode the treater will have to be turned on and off separately. The system will then shutdown the conveyors in reverse order of startup. This will ensure the conveyors have an opportunity to clean out any product from them. (bottom)



U-Treat v3.6 Quick Reference Sheet



Tri - Flo ® Bin Site

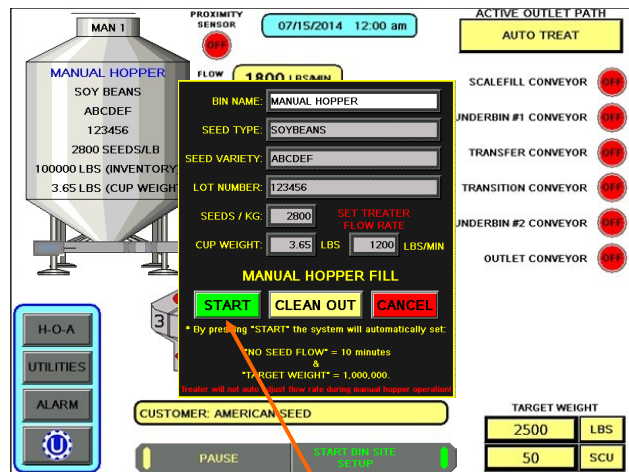
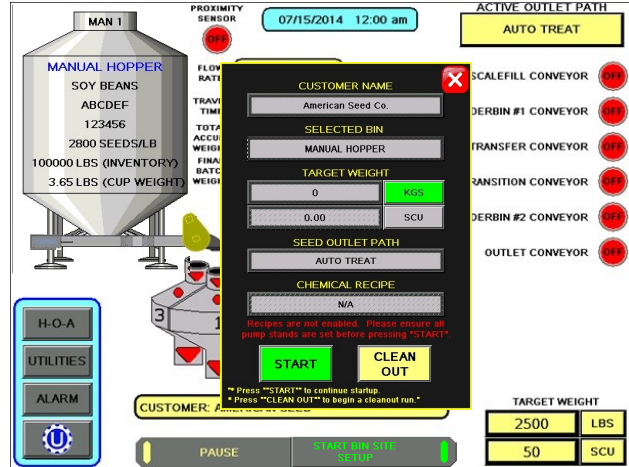
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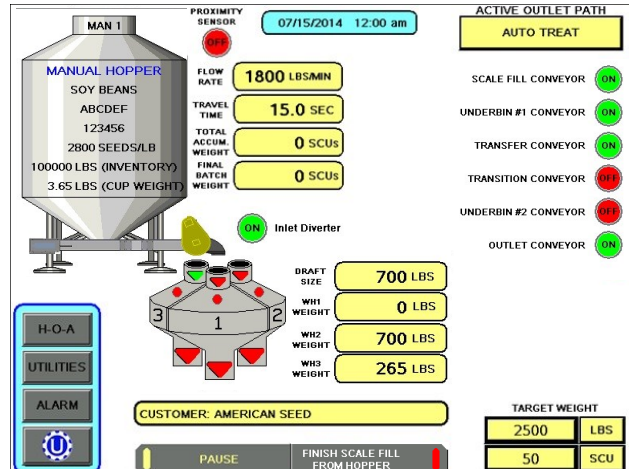
CALLING IN SEED FROM PRO BOXES

The following is a list of steps to use when running the Tri - Flo ® system in the Scale Fill From Manual Hopper mode of operation. This allows the operator to automatically fill the scale from Pro Box.

- Under the H-O-A screen place all necessary conveyors into the AUTO mode of operation. Depending upon the setup of the equipment, some bin sites will require only the transfer conveyor or the scale fill conveyor to be in AUTO mode and some sites will require the transfer, underbin and scale fill conveyors to all be in the AUTO mode. Ensure that the diverter is in the appropriate position as well.
- Under the Utilities screen, ensure that all settings are correct.
- Press the START BIN SITE SETUP button on the Main screen.
- Press the CUSTOMER button at the top of the setup screen and enter in the current customers name in the search box or scroll through the rolodex with the navigation buttons.
- Press the SEED OUTLET PATH button, then select either AUTO TREAT or MANUAL TREAT mode of operation depending upon what you plan to do with the seed once it has been pulled from the Pro Box, and weighed by the Tri - Flo ® system. There may be other names set for different outlet paths an operator may see based on different configuration settings.
- Press the SELECTED BIN button and select the Manual Hopper.
- From the MANUAL HOPPER screen, enter the seed type, seed variety, lot number, seeds per unit of measurement and cup weight for the seed.
- Once all seed information has been entered, press START. This toggles the button to FINISH SCALE FILL FROM HOPPER and activates the PAUSE button. The system will first turn on the scale fill conveyor, the underbin conveyor, then the transfer conveyor (If applicable) and the outlet conveyor (If applicable).
- As the Tri - Flo ® system is running, the main screen will display the total pounds of seed in each of the three Tri - Flo ® weigh hoppers. If the system needs to be stopped for a moment because of a problem, the PAUSE button may be pressed to halt the process. When ready to begin again, press the CONTINUE button.
- Once all of the seed has passed from the manual hopper, through the conveyors and through the weigh hoppers, press the FINISH SCALE FILL FROM HOPPER button. At this point, the conveyors will shutdown in reverse order of startup.
- The system will automatically print the report for the run from the scale head printer.



Start





U-Treat v3.6 Quick Reference Sheet



Tri - Flo ® Bin Site

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TRI - FLO ® CALIBRATION

Once the initial calibration is established, the system continuously updates the seed flow rate. The calibration is based upon time and weight. The system first calculates the amount of time it takes for the seed to travel from the bin slide gate to the first Tri - Flo ® weigh hopper. This is called the travel time. Then the system calculates how long it takes to fill the first weigh hopper. This allows the system to calculate the seed flow rate of pounds per minute. Finally, the system uses the travel time and seed flow rate to calculate the amount of seed in the conveyors at any given time. Once this weight is known, it will automatically close the bin gate at the appropriate time to reach the target weight of seed that the operator has entered.

Initial calibration procedure:

1. Set the bin collar in the fourth hole from the end of the rod in. This sets the Flow Rate at approximately 1200 pounds. Adjust as needed (each hole adjusts up or down by approximately 200 pounds). These figures are based on Soybeans.
2. From the main screen check the Flow Rate to verify it is at the default setting of 1800 lbs/min and the Travel Time is at it's default of 15.0 sec. Then set your Target Weight at 2000 pounds. At the end of the run the Final Batch Weight must be 1500 pounds. These values are recommended but not necessary depending on the setup. For the system to be able to record the calibration the first two Tri - Flo ® hoppers must be weighed full and the third is in the process of filling with no alarm faults. After the run, check to see if the Flow Rate and Travel Time have changed from the default settings. If they have the system has been successfully calibrated. Each bin must be individually calibrated. If running a small batch there may not be enough seed run to have the flow rate updating in real time during the run. As long as there have been no pauses or alarms the system will re-calculate and update the flow rate display after the run is complete.

NOTE: If you change the location of the bin collar or the bin runs out of seed before the Target Weight is reached the system will need to be re-calibrated.

The screenshot displays the U-Treat control interface. On the left, a diagram of a bin is shown with various sensors and conveyors. The main display area is divided into several sections:

- Bin #1 Information:**
 - SOYBEANS
 - ABCDEF
 - 123456
 - 2800 SEEDS/LB
 - 100000 LBS (INVENTORY)
 - 3.65 LBS (CUP WEIGHT)
- Flow Rate and Travel Time:**
 - FLOW RATE: 1800 LBS/MIN
 - TRAVEL TIME: 15.0 SEC
- Weight Accumulation:**
 - TOTAL ACCUM. WEIGHT: 0 SCUs
 - FINAL BATCH WEIGHT: 0 SCUs
- Conveyor Status:**
 - SCALEFILL CONVEYOR: OFF
 - UNDERBIN #1 CONVEYOR: OFF
 - TRANSFER CONVEYOR: OFF
 - TRANSITION CONVEYOR: OFF
 - UNDERBIN #2 CONVEYOR: OFF
 - OUTLET CONVEYOR: OFF
- Target Weight:**
 - TARGET WEIGHT: 2500 LBS
 - 50 SCU
- Bin Info Section:**
 - REFILLING BINS?:** Lightbulb icon
 - Bin Profile List (Unsorted):**
 - MANUAL HOPPER 1
 - Bin #1: BIN 1
 - Bin #2: BIN 2
 - Bin #3: BIN 3 (highlighted in green)
 - Bin #4: BIN 4
 - Bin #5: BIN 5
 - Bin #6: BIN 6
 - Bin #7: BIN 7
 - Current Bin Info:**
 - Barcode: Soybeans - 2100
 - Bin Name: BIN 3
 - Product Type: SOYBEANS
 - Flow Rate: 1800 lb/min
 - Travel Time: 15.0 Seconds
 - Gate Time Adj.: 0.00 Seconds
 - GATE AUTO CALIBRATE: ON
 - Amount To Adjust Inventory:**
 - Amount To Adjust Inventory: 2150.00
 - Current Inventory: 47850 lb
 - PLUS / MINUS buttons
 - 957.00 SCU

