



## CBT LW OPERATION GUIDE 25, 50, 100 & 200





# MENU

**i**  
 This is an interactive PDF. Click on an icon tile and navigate to a chapter of interest.



Legal & Safety



Notes



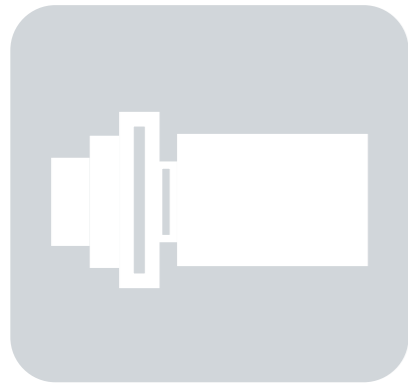
Initiate System



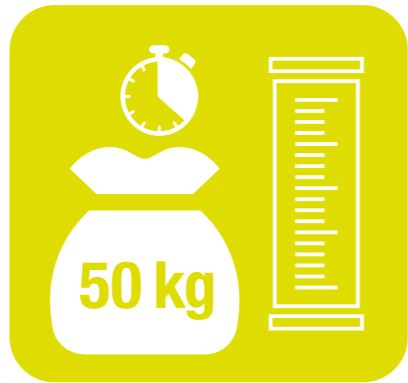
Touchscreens



Pump Stations



Devices



Calibration



Pump Priming



Recipe Creation



Run Sequence



Pictograms



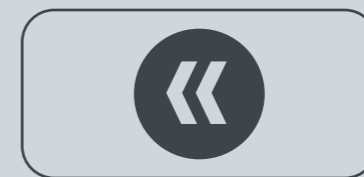
Reports



Troubleshooting

Users can advance or go back single pages by using quick navigation links shown below, right.

Users can navigate to the Menu by clicking on the Menu icon shown below, left.





# LEGAL & SAFETY

This manual contains technical information regarding Bayer SeedGrowth™ Equipment. Please read and understand these instructions completely before proceeding to install and operate the equipment. Bayer reserves the right to change specifications, models, components, or materials at any time without notice. For additional equipment information contact us at 1.800.634.6738. Please have this manual available when contacting Bayer.

Always use caution and common sense when working with any chemical. Read the product label and SDS carefully and follow their instructions exactly as described.

Optimal operating conditions for this piece of equipment requires an ambient temperature 32° F to +104° F (0° C to +40° C), relative humidity less than 90% (minimum condensation). Make necessary provisions to protect this piece of equipment against excessive dust, particles containing iron, moisture and against corrosive and explosive gases.

Our technical information is based on extensive testing and is, to the best of our current knowledge, true and accurate but given without warranty as the conditions of use and storage are beyond our control. Variables, such as humidity, temperature, change in seed size or variety and viscosity of chemical products can all affect the accuracy of the chemical application and seed coverage. To ensure the desired application rate and optimum seed coverage, check the calibration periodically throughout the day, and make adjustments as needed.

Any person who is involved in the installation or periodic maintenance of this equipment should be suitably skilled or instructed and supervised using a safe system of work. Isolate the treater before removing guards for maintenance.





# EXPOSURE CONTROL

Always use caution and common sense when working with chemicals. Read the product label and SDS carefully and follow their instructions exactly as described. The following Personal Protective Equipment (PPE) recommendations and best practices help promote safe use in seed treatment.



Note: Exposure Control signs and labels conform to the requirements of ANSI Z535.4 or ISO 3864.



### Wear protective clothing

Wear disposable or reusable coveralls with long sleeves.



### Hand protection required

Wear chemical-resistant gloves.



### Wear rubber boots

Wear chemical resistant rubber boots.



### Labels

Label recommendations and directions for handling must be followed, including treatment procedure (use of sticker) as well as the safety requirements.



### Treatment products

Keep products in a locked room that has been approved for crop protection products.



### Wear a mask

Wear respiratory protection.



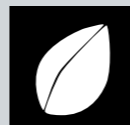
### Eye protection required

Wear protective eyewear.



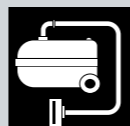
### Calibration

Seed treatment equipment must be checked and calibrated regularly to ensure accurate and safe application.



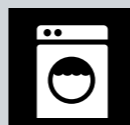
### Clean seed

Use well cleaned seed to avoid creation of polluted dust that will contaminate the machine, treating facility, workers, farmers and the environment during sowing.



### Cleaning

Use a vacuum to clean machines. Avoid using compressed air for cleaning.



### Laundry

Wash soiled reusable clothing separately. Workers must take a shower after each shift.



### Empty containers

Non-returnable empty containers must be triple rinsed before they can be disposed. For others the recommendation of the producer must be followed.



### Spillage

Spillage must be avoided; it must be thoroughly cleaned up to avoid contaminating the environment and waterways.



### Maintenance

Keep machinery clean between treating sessions.





# REFERENCE SYMBOLS

Symbols and signal words are used to identify the level of hazard and help avoid personal injury.



Note: Safety signs and labels conform to the requirements of ANSI Z535.4 or ISO 3864.



### Shock Hazard

Alerts that dangerous voltage may be present.



### Warning

Alerts that a hazard may cause serious injury or death.



### Caution

Alerts that a hazard may cause minor or moderate injury.



### Hand crush - moving parts

Alerts crushing is possible.



### Pinch point

Keep hands away from pinch points.



### Rotating shaft

Do not wear loose clothing around turning parts.



### Disconnect

Disconnect to de-energize before opening.



### Use guards

Keep guards in place. Do not remove during operation.



### Lifting

Requires two people to safely lift an item.



### Lift points

Requires the use of proper rigging and lifting techniques based on the lift plan.



### Center of gravity

Indicates the center of gravity of the machine to help assist when rigging and lifting.



### Tools

Required tools for installation and maintenance.



### Parts

Required parts for installation and maintenance.



### Tip

Calls attention to special information.



### Note

Emphasizes general information worthy of attention.



### Example

Provides a problem or exercise that illustrates a method or principle.

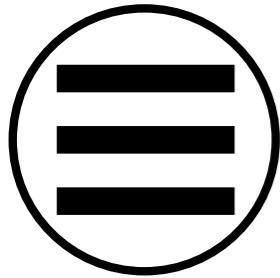




# PICTOGRAMS

i

Each Signifier displayed here is specific to this User Manual.



Menu



Previous



Advance



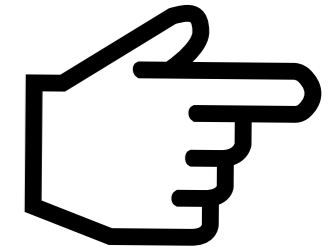
Initiate System



Products



Touchscreens



Cursor Hand



Powder Feeder



Pump Stations



Devices



Control Panel



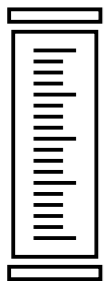
Dosing Pump



Like



Supply Pump



Calibration



Options



Time



Seed



Weigh Scale



Recipes



Troubleshooting



Reports



Run Sequence





# EXPLANATORY NOTES

The 8-Pump Loss In Weight (LW) Application Program operates one Continuous Batch Treater (CBT25, 50, 100 & 200) and up to eight (8) Pump & Weighing Stations.

Interactive program screens display on the Human Machine Interface (HMI) touch panel. Each screen provides the same message bar at the top and button icons on the task bar along the bottom.

Button icon colors (yellow and red) as shown, call attention to maintenance & alarm issues.

This guide uses the hand cursor icon (shown right) to indicate an action; such as touching a button or device icon to open/close a pop-up or navigate between screens.

## SIGNAL SYMBOL ICONS - IDENTIFY STATUS & ACTIONS

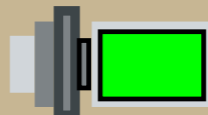
MANUAL



LOCKED



ENERGIZED



DEFAULT Main Menu LOG IN LOG OUT

Message:

Login name Message display Screen name Login button Logout button

BAYER

Main Screen Maint. Calibrate Priming Batch Recipe Edit Batch Recipe Bowl Graphics Tank Graphics 1 - 4 Tank Graphics 5 - 8 Totals Reports Alarms

When touched outlines in red





# INITIATE SYSTEM

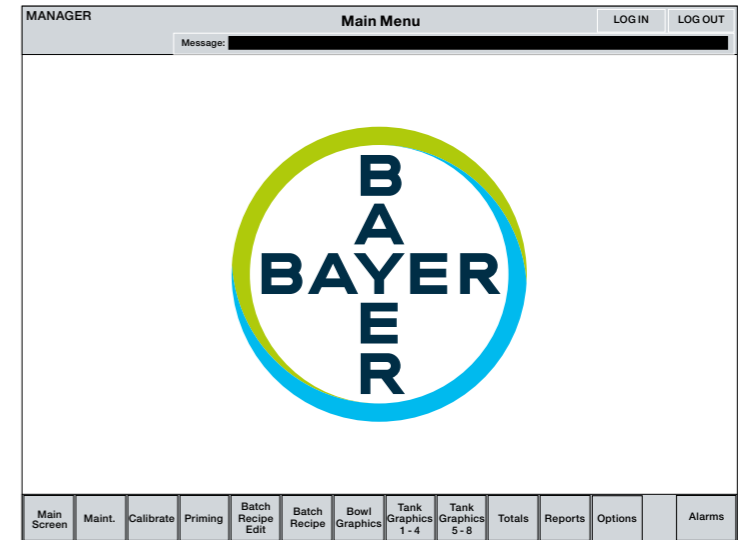


Warning! Prior to start-up procedures, ensure the following steps have been completed as part of the installation process:

1. A licensed electrician has connected power to the control panel.
2. A licensed electrician has turned on all the circuit breakers and motor switches.
3. A licensed electrician has ensured the control panel is safe to use.



Note: the system start-up sequence must be done as described! Reverse the order for system shut down.



Application Program displays on HMI

## Initiate the PLC

Ensure service (power) is connected to the Main Control Panel.

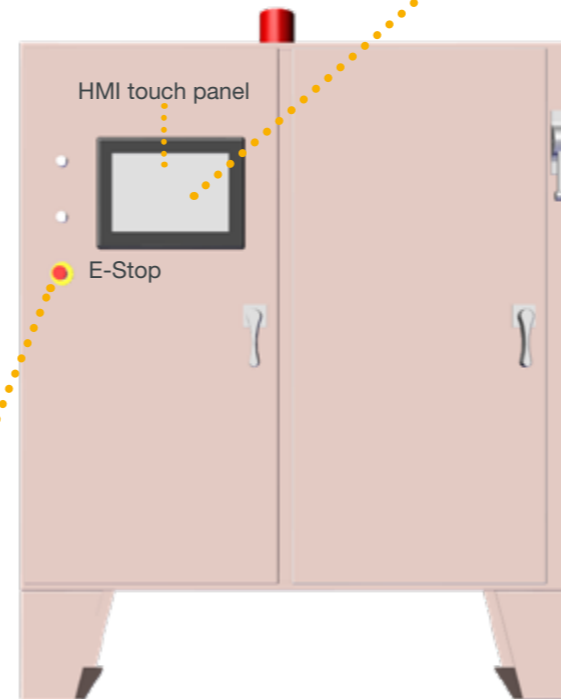
**Step 1:** Ensure the red E-Stop knob is not engaged: Twist Right and Pull Out.

**Step 2:** Flip the Control Panel Power Lever **UP**. The top Panel Power light turns on.

**Step 3:** Push the Boot Battery Backup button:

- Button light indicates that Control Power is **ON**.
- The PLC boots and displays the application program on the HMI touch panel.

This completes the Initiate System Section



Control Panel Power Lever







# TOUCHSCREENS



Note: once the 8-pump LW batching system has been installed, the application program requires users to be logged in as either...

- **DEFAULT** (user level only, no changes)
- **MANAGER** (access to make changes, create recipes, password protected)
- **TREATER** (a Bayer associate, total access, used mainly during installation, password protected).

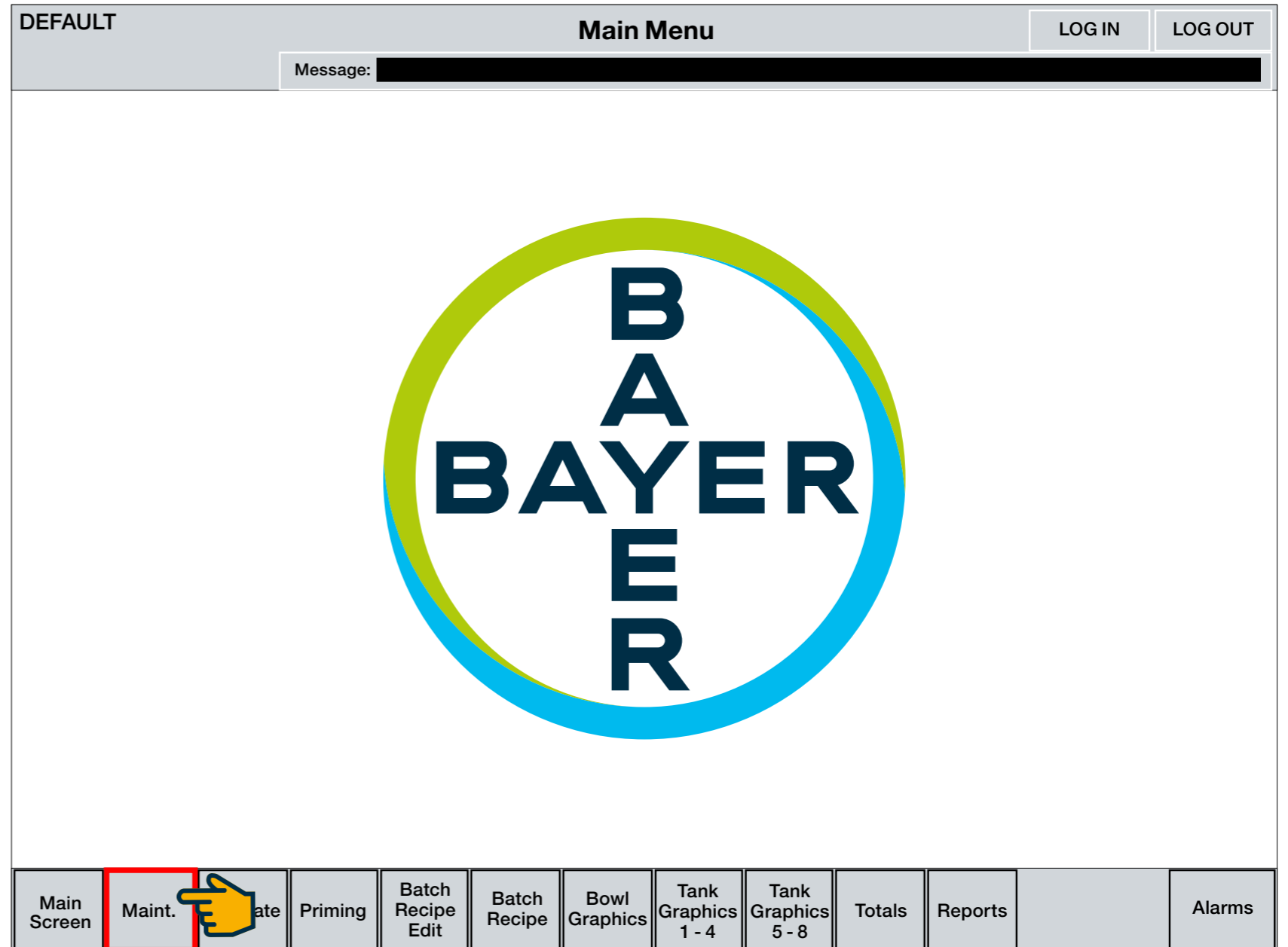
## Main Menu Screen

After the initial PLC boot (page 5), the HMI displays the **Main Menu Screen**.

- This screen allows users to log in/out of the system as well as navigate to all other touchscreens.
- Touch each button icon along the bottom task bar to browse through each touchscreen.
- By way of introduction, pages 9-36 explain the purpose and functionality of each touchscreen and devices.

**Step 1:** Touch the **Maint.** button icon: navigates to the **Maintenance Screen**

Continued ➔





Tip: The yellow color is an indicator only and will not stop or interrupt the treating process. The yellow color continues to display as a reminder until resolved and the operator touches the **Reset** button icon.

DEFAULT Maintenance LOG IN LOG OUT

Message: [REDACTED]

Liquid Tank 1			
	Actual	Setpoint	
Supply Pump	0	40	Hours
Disch. Pump	0	40	Hours
Last Cal.	24	40	Hours <span>Reset</span>

Liquid Tank 5			
	Actual	Setpoint	
Supply Pump	0	40	Hours
Disch. Pump	0	40	Hours
Last Cal.	24	40	Hours <span>Reset</span>

POWDER FEEDER 1			
	Actual	Setpoint	
VFD	0	500	Hours <span>Reset</span>
Last Cal.	0	500	Hours <span>Reset</span>

Liquid Tank 2			
	Actual	Setpoint	
Supply Pump	0	40	Hours <span>Reset</span>
Disch. Pump	0	40	Hours <span>Reset</span>
Last Cal.	24	40	Hours <span>Reset</span>

Treater		
	Actual	Setpoint
Bowl VFD	0	700

Treater		
	Actual	Setpoint
Blower	0	400

Treater		
	Actual	Setpoint
Atomizer	0	600

Treater		
	Actual	Setpoint
Air Filter	24	500

Total Runtime Hours

Main Screen	Maint.	Calibrate		Batch Recipe Edit	Batch Recipe	Bowl Graphics	Tank Graphics 1-4	Tank Graphics 5-8	Totals	Reports	Alarms
-------------	--------	-----------	--	-------------------	--------------	---------------	-------------------	-------------------	--------	---------	--------

### Maintenance Screen

The **Maintenance Screen** allows users to view run time hours set for each Liquid Tank 1-8 (Pump Station) and Powder Feeder 1-2.

- The Treater Bowl VFD, Blower Motor, Atomizer Motor and Air Filter are indicators which display the total hours run and are all site-specific and set/changed when logged in as **MANAGER**.

**Setpoint Hours** accumulate the total hours run for each component and will appear yellow once the component has reached the hours set; e.g. 0-40.

- Yellow indicates that maintenance or calibration should be completed.
- Once resolved, touch the **Reset** button icon: yellow indicator color is removed and the timer resets to zero.
- The Maint. button icon on the task bar will turn from yellow to grey.

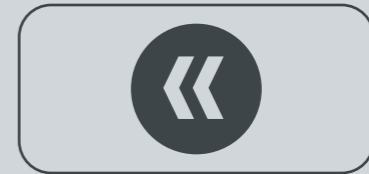
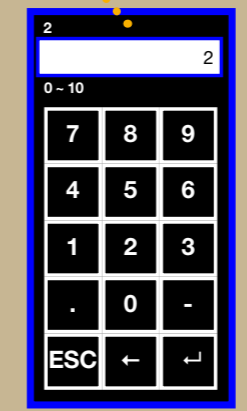
**Step 1:** Touch the **Calibrate** button icon: navigates to the **Calibration Screen**

Continued ➡

### SETPOINTS

Touch the **Setpoint** number box on **Liquid Tank 2** block to change the numerical value.

- On the pop-up touch pad, enter a numerical value
- Touch the **Enter** symbol button
- Touch the **ESC** button: closes pop-up



## Calibration Screen

The **Calibration Screen** displays the high, low and current weight values and allows users to calibrate each Pump Station [LT1-8], Powder Hopper [PT1-2] and the seed Inlet Hopper [HOPPER].

- Each component will need to be calibrated separately.
- This procedure will be covered later on in the guide.


**Step 1:** Touch the **Priming** button icon: navigates to the **Priming Screen**

Continued ➡

DEFAULT Calibration LOG IN LOG OUT

Message: [REDACTED]

	LT 1	LT 2		
High Cal Amount (grams)	0.0	0.0		
Current Weight (grams)	-1	0		
	Low Calibrate	Low Calibrate		
	High Calibrate	High Calibrate		
	LT 5			
High Cal Amount (grams)	0.0			
Current Weight (grams)	18000			
	Low Calibrate			
	High Calibrate			
	PT 1		HOPPER	
High Cal Amount (Kgs)	0.0		90.350	
Current Weight (Kgs)	18000		180.000	
	Low Calibrate		Low Calibrate	
	High Calibrate			
				LOWER CAL WT ON

Main Screen   Maint.   Calibrate   **Priming**      Batch Recipe   Bowl Graphics   Tank Graphics 1 - 4   Tank Graphics 5 - 8   Totals   Reports   Alarms



## Priming Screen

The **Priming Screen** allows users to dispense chemical from each Pump Station **[LT1-8]** to the Treater Chemical Inlet as well as powder from each Powder Feeder **[PT1-2]**.

- This procedure will be covered later on in the guide.

**Step 1:** Touch the **Batch Recipe Edit** button icon: navigates to the **Batch Recipe Edit Screen**

Continued ➞

DEFAULT **Priming** LOG IN LOG OUT

Message: \_\_\_\_\_

**LT 1** Prime Amount  grams  
Start Idle

**LT 2** Prime Amount  grams  
Start Idle

**PT 1** Prime Amount  grams  
Start Idle

Main Screen Maint. Calibrate Priming **Batch Recipe Edit** Bowling Graphics Tank Graphics 1 - 4 Tank Graphics 5 - 8 Totals Reports Alarms



**Batch Recipe Edit Screen**

The **Batch Recipe Edit Screen** displays the treater **Machine Parameters**, hopper **Seed Count**, **Powder 1 & 2** and Pump Station **[LT1-8]** set points.

- Recipes and set points can be changed or edited from this screen when logged in as **MANAGER**.
- This procedure will be covered later on in the guide.

**Step 1:** Touch the **Batch Recipe** button icon: navigates to the **Batch Recipe Screen**

Continued ↩

**DEFAULT** **Batch Recipe Edit** LOG IN LOG OUT

---

Message: [REDACTED]

---

Recipes Validate Recipe Clear Recipe Parameters

---

Comments

Machine Parameters	Seed Count	Powder 1						
<table style="width: 100%;"> <tr> <td style="width: 50%;">Batch Size <input type="text" value="0"/> Kg</td> <td style="width: 50%;">Bowl Fill Stop <input type="text" value="0"/> Sec</td> </tr> <tr> <td>Slow Fill <input type="text" value="0"/> %</td> <td>Bowl Discharge Start <input type="text" value="0"/> Sec</td> </tr> <tr> <td>Bowl Speed <input type="text" value="0"/> %</td> <td>Duration <input type="text" value="0"/> Sec</td> </tr> </table>	Batch Size <input type="text" value="0"/> Kg	Bowl Fill Stop <input type="text" value="0"/> Sec	Slow Fill <input type="text" value="0"/> %	Bowl Discharge Start <input type="text" value="0"/> Sec	Bowl Speed <input type="text" value="0"/> %	Duration <input type="text" value="0"/> Sec	Number of Seeds <input type="text" value="2500"/> Per Kilogram	Start Time <input type="text" value="0"/> sec Stop Time <input type="text" value="0"/> sec Weight <input type="text" value="0.000"/> Oz/CWT Vibrator <input type="text" value="0"/> sec Recipe Wt <input style="background-color: black; color: white;" type="text" value="0.00"/> g/Kg
Batch Size <input type="text" value="0"/> Kg	Bowl Fill Stop <input type="text" value="0"/> Sec							
Slow Fill <input type="text" value="0"/> %	Bowl Discharge Start <input type="text" value="0"/> Sec							
Bowl Speed <input type="text" value="0"/> %	Duration <input type="text" value="0"/> Sec							

	Liquid Tak1	Liquid Tak2
Start Time	<input type="text" value="0"/> sec	<input type="text" value="0"/> sec
Stop Time	<input type="text" value="0"/> sec	<input type="text" value="0"/> sec
UOM	<input type="text" value="FOz/CWT"/>	<input type="text" value="FOz/CWT"/>
Weight	<input type="text" value="0.000"/> Fl Oz CWT	<input type="text" value="0.000"/> Fl Oz CWT
Density	<input type="text" value="0.000"/> lb gal	<input type="text" value="0.000"/> lb gal
AI/L		
Recipe WT	<input style="background-color: black; color: white;" type="text" value="0.00"/> g/Kg	<input style="background-color: black; color: white;" type="text" value="0.00"/> g/Kg

Main Screen
Maint.
Calibrate
Priming
Batch Recipe Edit
Batch Recipe 
Tank Graphics 1 - 4
Tank Graphics 5 - 8
Totals
Reports

Alarms

## Batch Recipe Screen

The **Batch Recipe Screen** is the main run control screen where users can view device status: **ENABLED**, **DISABLED**, **STOPPED** or **RUNNING**.

- This procedure will be covered later on in the guide.

**Step 1:** Touch the **Bowl Graphics** button icon: navigates to the **Bowl Graphic Screen**

Continued ⇨

DEFAULT Batch Recipe LOG IN LOG OUT

Message: [REDACTED]

---

Recipe Name  Recipe Comments  Change Recipe

Commands

Stop

Start

Restart

Advance

Recapture

Batch Treater 1 Process Amt (Kg) 74420

**Stopped**

Supply Hopper 2 Batch Time 0

**Enabled**

Hopper Open  sec Bowl Speed (%) 70

Discharge Batch Size (Kg) 180

Talc Error % Hopper Weight (Kg) -0.01

-0.6449

Start  sec Total Batches 0

Duration  sec Total Seed (Kg) 2700

PT1 2

**Enabled**

Start  sec

Stop  sec

Target  g

Actual  g

Total  g

Vib  sec

	LT1 2	LT2 2
Status	<b>Enabled</b>	<b>Enabled</b>
Start (sec)	<input type="text" value="0"/>	<input type="text" value="0"/>
Stop (sec)	<input type="text" value="0"/>	<input type="text" value="0"/>
Target (grams)	0	0
Actual (grams)	0	0
Total (grams)	0	0

Main ScreenMaint.CalibratePrimingBatch Recipe EditBatch RecipeBowl Graphics Tank Graphics 5 - 8TotalsReportsAlarms



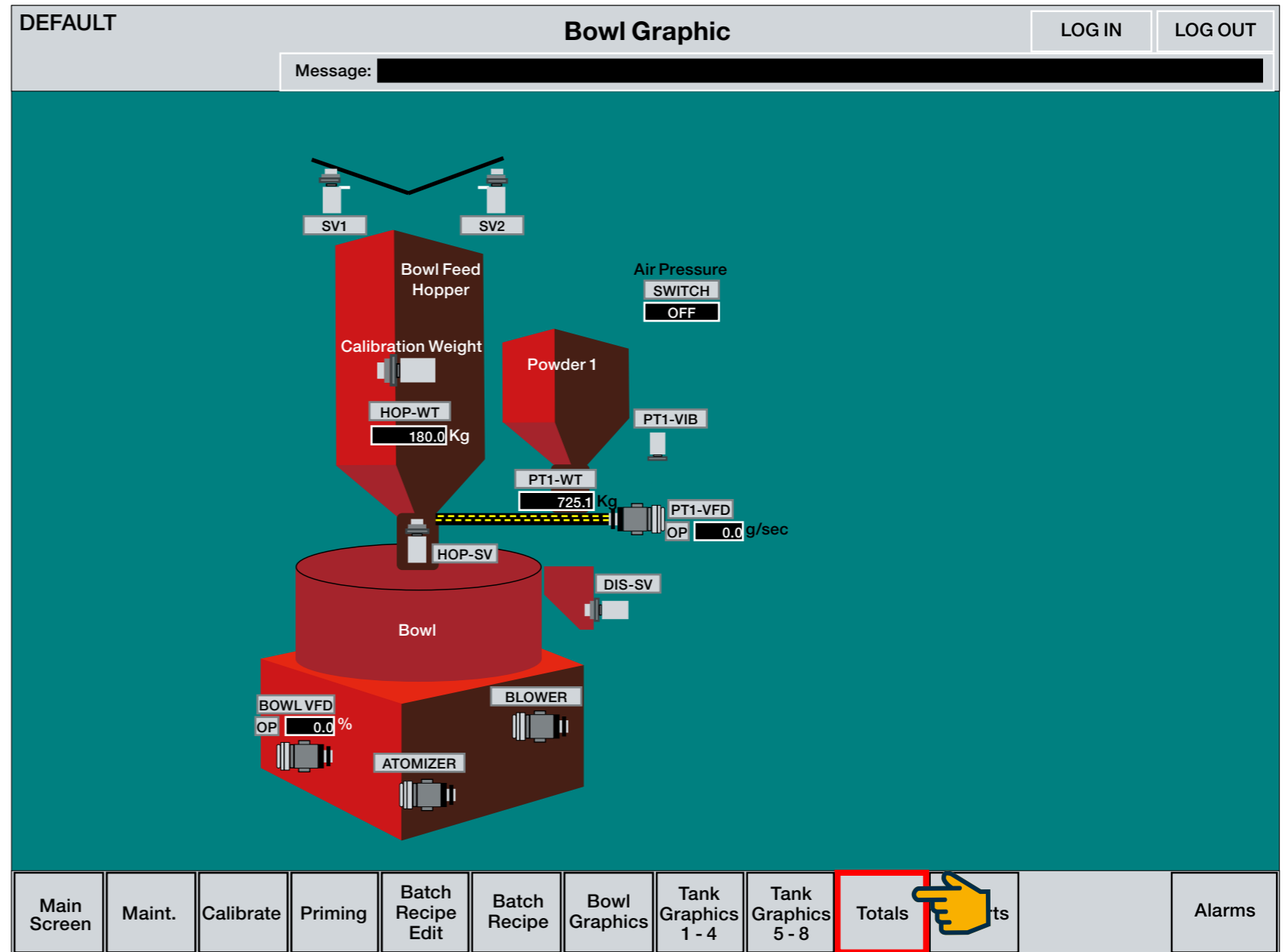
## Bowl Graphic Screen

The **Bowl Graphic Screen** allows users to view and access equipment devices, which are configured when logged in as **MANAGER**.

- Equipment device details will be covered later on in the guide.

**Step 1:** Touch the **Totals** button icon: navigates to the **Totals Screen**

Continued ➡



## Totals Screen

The **Totals Screen** allows users to view accumulated totals for each Liquid Tank (1-8), Powder Totals (1-2) and the Seed Hopper.

- Users can toggle the numerical values display between **Metric Units** or **Imperial Units** (US Units) by making the selection and then touching the **Reset Totals** button icon under the **Display Options** block (circled).

**Step 1:** Touch the **Reports** button icon: navigates to the **REPORT INFORMATION** pop-up

Continued ➡

DEFAULT **Totals** LOG IN LOG OUT

Message: [Redacted]

**Liquid Totals**

Liquid Tank 1 0 Lbs

Liquid Tank 2 0 Lbs

Liquid Tank 5 0 Lbs

**Powder Totals**

Powder Feeder 1 0 Lbs

**Seed Total**

Seed Hopper 0.0 Lbs

**Display Options**

Metric Units

Imperial Units

Reset Totals

Main Screen Maint. Calibrate Priming Batch Recipe Edit Batch Recipe Bowl Graphics Tank Graphics 1 - 4 Tank Graphics 5 - 8 Totals **Reports** Alarms





## Report Information Pop-up

The **REPORT INFORMATION pop-up** displays as a layer on top of an active screen.

- This procedure will be covered later on in the guide.

**Step 1:** Touch the **Close** button icon: the **REPORT INFORMATION** pop-up closes.

**Step 2:** Touch the **Alarms** button icon: navigates to the **Alarms Screen**

Continued ➡

DEFAULT Totals LOG IN LOG OUT

Message: \_\_\_\_\_

### Liquid Totals

Liquid Tank 1  Lbs

Liquid Tank 2  Lbs

Liquid Tank 5  Lbs

### Powder Totals

Powder Feeder 1  Lbs

### Seed Total

Seed Hopper  Lbs

### REPORT INFORMATION

Process Order Number

Reports On/Off

### Display Options

Metric Units

Imperial Units

Main Screen | Maint. | Calibrate | Priming | Batch Recipe Edit | Batch Recipe | Bowl Graphics | Tank Graphics 1 - 4 | Tank Graphics 5 - 8 | Totals | Reports | **Alarms**



## Alarms Screen

The **Alarms Screen** allows users to view and acknowledge alarms.

**Step 1:** If an alarm is displayed (as shown), touch the **Acknowledge Alarms** button icon to remove the alarm.

- The Alarms button icon on the task bar will turn from red to grey.

**Step 2:** Touch the **Tank Graphics 1-4** button icon: navigates to the **Tank Graphics 1-4 Screen**

This completes the Touchscreen Section

The screenshot shows the 'Alarms' screen with a 'DEFAULT' header and 'LOG IN' and 'LOG OUT' buttons. A message field displays 'Message:'. Below is a table with columns 'Alarm time' and 'Message'. The table contains one row: '1:23:32PM' and 'bowl discharge solenoid valve de-energized fault DIS-SV\_AFD'. At the bottom, there are two buttons: 'Acknowledge Alarms' (with a hand icon) and 'Fault Reset'. Below these are several navigation buttons: 'Main Screen', 'Maint.', 'Calibrate', 'Priming', 'Batch Recipe Edit', 'Batch Recipe', 'Gr', 'Tank Graphics 1-4' (highlighted with a red box and a hand icon), 'Tank Graphics 5-8', 'Totals', 'Reports', and 'Alarms' (highlighted with a red background).

Alarm time	Message
1:23:32PM	bowl discharge solenoid valve de-energized fault DIS-SV_AFD





# PUMP STATIONS

## Liquid Tanks 1-4 Screen

The **LIQUID TANKS 1-4 Screen** displays **LT 1-4** enabled pump station graphics (as shown).

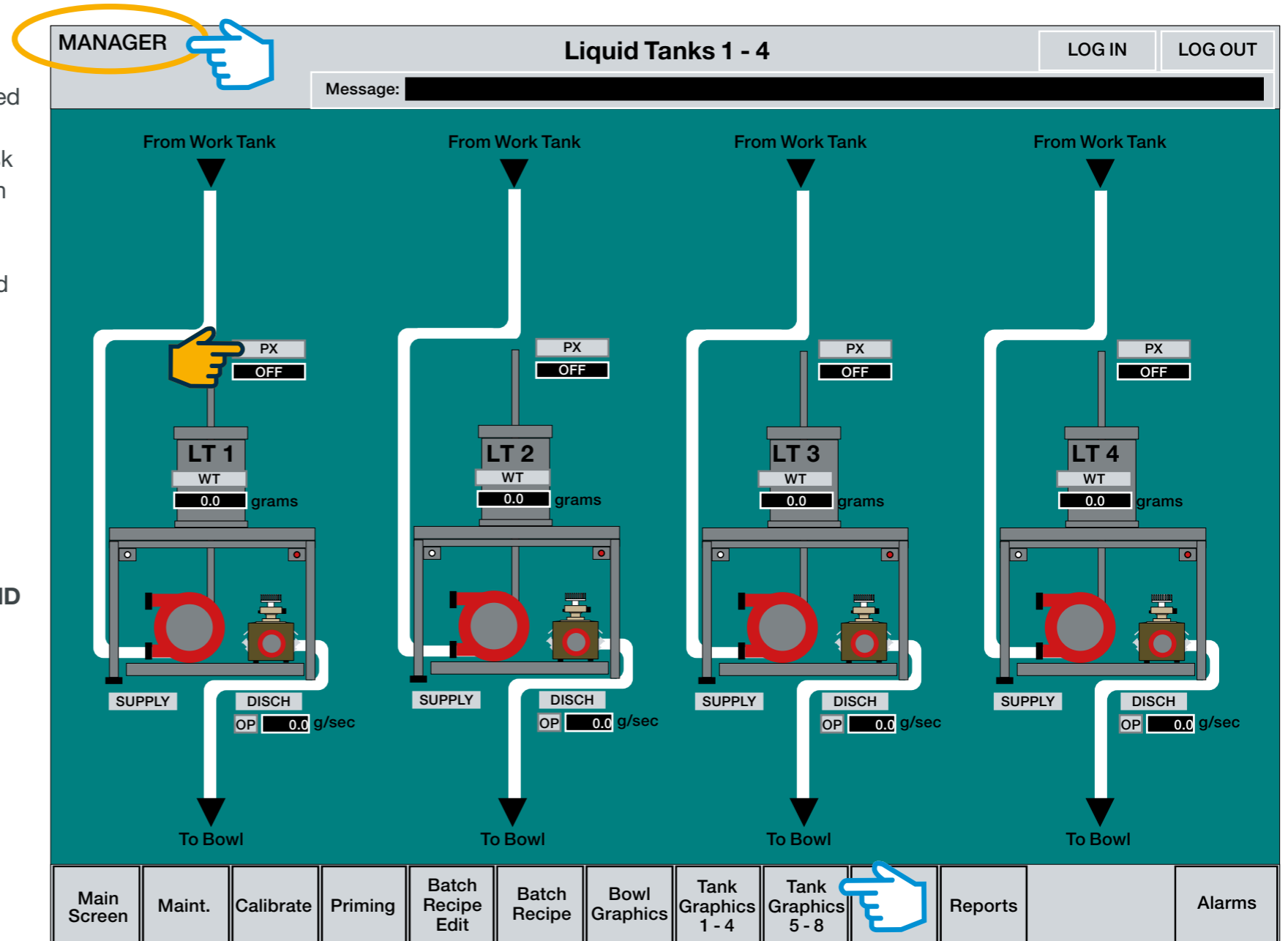
- Touch **TANK GRAPHICS 5-8** button icon on the task bar: navigates to **LIQUID TANKS 5-8 Screen**, which displays **LT 5-8** pump station graphics.
- Pump stations are only enabled and will display on the **LIQUID TANKS 1-4 & 5-8 Screens** when logged in as **MANAGER** on the **EQUIPMENT OPTIONS Screen**.

Each pump station features the following devices:

- Proximity Sensor (**PX**)
- Weight Transmitter (**WT**)
- Transfer Pump (**SUPPLY**)
- Dosing Pump (**DISCH**)

**Step 1:** Touch the **PX** device icon: displays the **LIQUID TANK 2 HIGH LEVEL PROX** device pop-up.

Continued ➡



### Liquid Tanks 1-4 Screen - High Level Prox Pop-up

The High Level Proximity Sensor device displays **OFF** when no chemical is sensed or **ON** when a high level of chemical is detected inside the 20L Supply Tank.

**Step 1:** Touch the **Close** button icon: pop-up closes: navigates to the **Tank Graphics 1-4 Screen**

Continued ➡

The screenshot shows the 'MANAGER' interface for 'Liquid Tanks 1 - 4'. At the top right are 'LOG IN' and 'LOG OUT' buttons. A 'Message:' field is present. The main area displays a schematic of a liquid tank system. A flow line labeled 'From Work Tank' enters from the top, passes through a 'PX' sensor labeled 'OFF', and goes to a 'WT' (Weight Tank) labeled 'LT 2' with a '0.0 grams' display. Below the WT is a pump assembly with 'SUPPLY' and 'DISCH' lines. The 'DISCH' line has an 'OP' display showing '0.0 g/sec'. The flow then goes 'To Bowl' at the bottom. A pop-up window titled 'LIQUID TANK 2' is overlaid on the right, showing 'HIGH LEVEL PROX' with a large 'OFF' indicator. Below this are 'Alarm' and 'Alarm Unacknowledged' sections, and an 'Acknowledge Alarm' button. At the bottom of the pop-up is a 'Close' button with a hand icon pointing to it. At the bottom of the screen is a navigation bar with buttons: 'Main Screen', 'Maint.', 'Calibrate', 'Priming', 'Batch Recipe Edit', 'Batch Recipe', 'Bowl Graphics', 'Tank Graphics 1 - 4', 'Tank Graphics 5 - 8', 'Totals', 'Reports', and 'Alarms'.



## Liquid Tanks 1-4 Screen - Weight Pop-up

**Step 1:** Touch the **LT1 WT** field: displays the **LIQUID TANK 2 WEIGHT** device pop-up.

- This device displays the current 20L Supply Tank level (High to Low) in total grams.
- The **Control Deadband 2.0 grams** delay is the recommended delay time setting for this device.

**Step 1:** Touch the **Close** button icon: pop-up closes: navigates to the **Tank Graphics 1-4 Screen**

Continued ➡

The screenshot shows the 'Liquid Tanks 1 - 4' Manager interface. At the top, there's a 'MANAGER' title and 'Liquid Tanks 1 - 4' header with 'LOG IN' and 'LOG OUT' buttons. A 'Message:' field is empty. The main area displays a schematic of a liquid tank system with a scale labeled 'LT 2 WT' showing '0.0 grams'. A hand icon points to this field. To the right, a 'LIQUID TANK 2 WEIGHT' pop-up is shown. It features a vertical scale from 0 to 25000 grams, with 'PV' (Present Value) at 0.0 grams. A hand icon points to the 'PV' field. The pop-up also displays setpoints: HH (20000.0), H (18000.0), L (1000.0), and LL (1000.0). A 'Control Deadband' is set to 2.00 grams. A 'Close' button is highlighted with a red box and a hand icon. Below the pop-up, an 'Alarm Unacknowledged' message is shown with an 'Acknowledge Alarm' button. At the bottom, a navigation bar contains buttons for 'Maint.', 'Calibrate', 'Priming', 'Batch Recipe Edit', 'Batch Recipe', 'Bowl Graphics', 'Tank Graphics 1 - 4', 'Tank Graphics 5 - 8', 'Totals', 'Reports', and 'Alarms'.

### CONTROL DEADBAND

Touch the **Control Deadband** number box on **Liquid Tank 2 Weight** block to change the numerical value.

- On the pop-up touch pad, enter a numerical value
- Touch the **↵** Enter symbol button
- Touch the **ESC** button: closes pop-up



## Liquid Tanks 1-4 Screen - Supply Pump Pop-up

**Step 1:** Touch the **SUPPLY** graphic: displays the **LIQUID TANK 2 SUPPLY PUMP** device pop-up.

- This device allows users to manually operate the Supply Pump in either **FORWARD** or **REVERSE** for priming, calibration or pre-checking for functionality.

Follow these steps to switch the device from **FORWARD** to **REVERSE**:

- Touch **Manual** > **Forward** (pump runs forward) > **Stop** > **Reverse** (pump runs in reverse) > **Stop**.
- Return the device pop-up to the **Auto: STOPPED** mode.

**Step 2:** Touch the **Close** button icon: pop-up closes: navigates to the **Tank Graphics 1-4 Screen**

Continued ➞

The screenshot displays the 'MANAGER' interface for 'Liquid Tanks 1 - 4'. At the top right, there are 'LOG IN' and 'LOG OUT' buttons. A 'Message:' field is visible below the title. The main area shows a schematic of the supply pump system. A 'From Work Tank' inlet leads to a pump labeled 'PX' with an 'OFF' indicator. The pump is connected to a weighing scale 'LT 2 WT' showing '0.0 grams'. Below the scale is the 'SUPPLY' pump, with a 'DISCH' outlet showing 'OP 0.0 g/sec' leading 'To Bowl'. A hand icon points to the 'SUPPLY' graphic. A pop-up window titled 'LIQUID TANK 2 SUPPLY PUMP' is open, showing the pump is 'STOPPED'. It has 'Auto' and 'Manual' mode buttons, and 'Forward' and 'Reverse' direction buttons. A 'Stop' button is also present. Below these are several fault status indicators: 'Running Forward Fault', 'Stopping Forward Fault', 'Running Reverse Fault', 'Stopping Reverse Fault', 'Both Direction Run Request Fault', 'Failsafe Active', and 'Alarm Unacknowledged'. At the bottom of the pop-up are 'Acknowledge Alarm' and 'Fault Reset' buttons. A 'Close' button with a hand icon is highlighted with a red box. At the bottom of the screen is a navigation bar with buttons for 'Maint.', 'Calibrate', 'Priming', 'Batch Recipe Edit', 'Batch Recipe', 'Bowl Graphics', 'Tank Graphics 1 - 4', 'Tank Graphics 5 - 8', 'Totals', 'Reports', and 'Alarms'.



## Liquid Tanks 1-4 Screen - Discharge Pump Pop-up

**Step 1:** Touch the **DISCH** graphic: displays the **LIQUID TANK 1 DISCHARGE PUMP** device pop-up.

- This device allows users to manually operate the Discharge Pump in either **FORWARD** or **REVERSE** for priming, calibration or pre-checking for functionality.
- The **Manual Setpoint** needs to be set at a value of one (1) in order for the Pump to be run manually.

Follow these steps to switch the device from **FORWARD** to **REVERSE**:

- Touch **Manual** > **Forward** (pump runs forward) > **Stop** > **Reverse** (pump runs in reverse) > **Stop**.
- Return the device pop-up to the **Auto: STOPPED** mode.

**Step 2:** Touch the **Close** button icon: pop-up closes: navigates to the **Tank Graphics 1-4 Screen**

This completes the Pump Stations Section

The screenshot shows the 'MANAGER' interface for 'Liquid Tanks 1 - 4'. At the top right are 'LOG IN' and 'LOG OUT' buttons. A 'Message:' field is present. The main area displays a schematic of the discharge pump system. A pop-up window for 'LIQUID TANK 2 DISCHARGE PUMP' is open, showing the current status as 'STOPPED' with an 'OP' value of '0.0'. It includes buttons for 'Auto', 'Manual', 'Forward', 'Reverse', and 'Stop'. A 'Manual Setpoint' input field is set to '0', with a hand icon pointing to it. Below the input field are several fault status indicators: 'Running Forward Fault', 'Stopping Forward Fault', 'Running Reverse Fault', 'Stopping Reverse Fault', 'Both Direction Run Request Fault', 'Failsafe Active', and 'Alarm Unacknowledged'. At the bottom of the pop-up are 'Acknowledge Alarm' and 'Fault Reset' buttons. A 'Close' button is highlighted with a red box and a hand icon. The background schematic shows a pump connected to a 'From Work Tank' and a 'To Bowl' outlet, with a scale labeled 'LT 2 WT 0.0 grams' and a 'DISCH OP 0.0 g/sec' label. A 'PX OFF' indicator is also visible.

### MANUAL SETPOINT

Touch the **Manual Setpoint** number box on **Liquid Tank 2 Discharge Pump** block to change the numerical value to 1.

- On the pop-up touch pad, enter a numerical value
- Touch the **↵** Enter symbol button
- Touch the **ESC** button: closes pop-up



# EQUIPMENT DEVICES

## Bowl Graphic Screen

The **Bowl Graphic Screen** displays each seed treating system component.

### Equipment devices enabled:

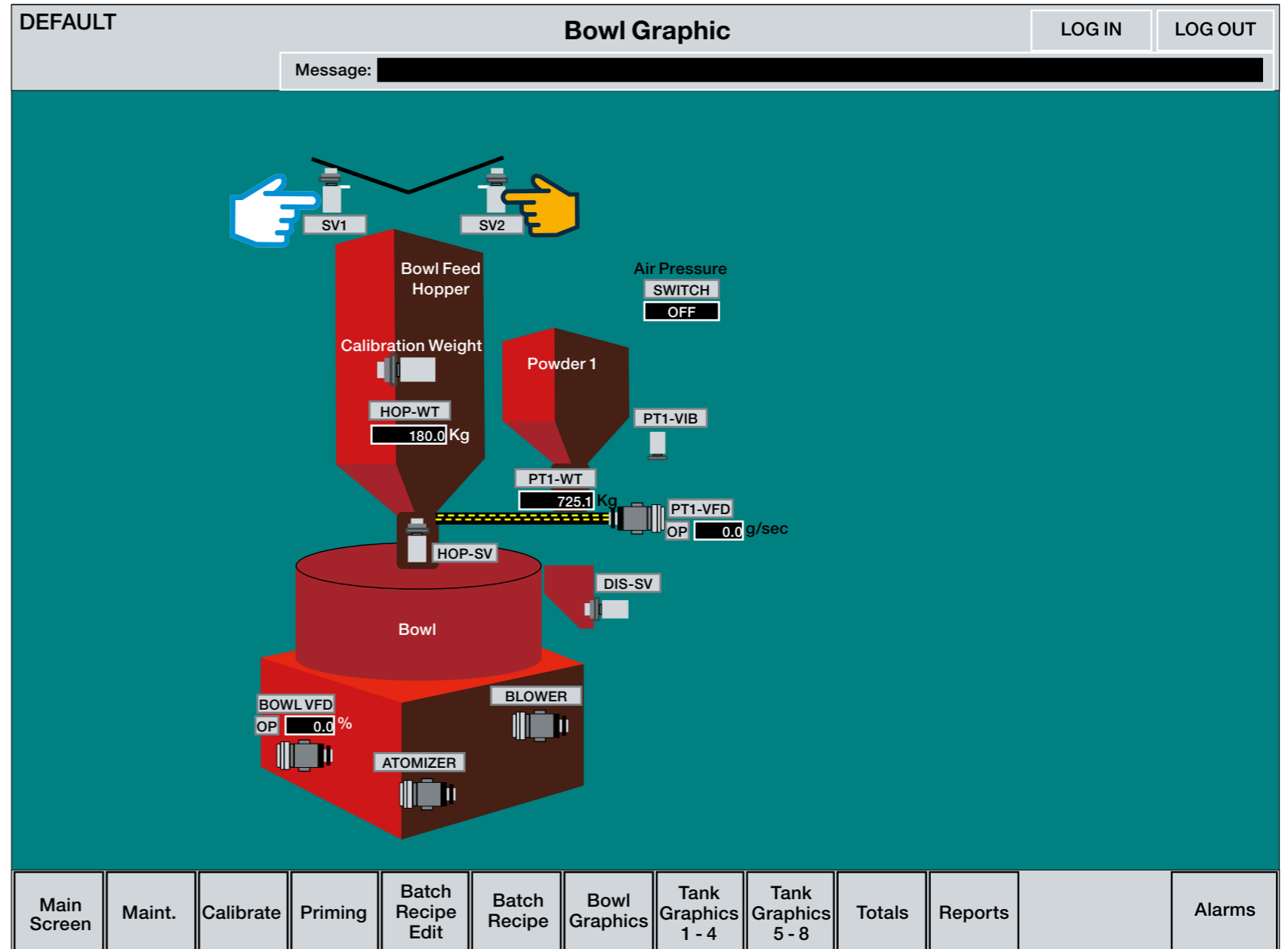
- Storage Hopper Supply Valve (**SV1**)
- Storage Hopper Supply Valve (**SV2**)
- Air Pressure (**SWITCH**)
- Calibration Weight (**SV**)
- Hopper Weight (**HOP-WT**)
- Hopper Solenoid Valve (**HOP-SV**)
- Discharge Solenoid Valve (**DIS-SV**)
- Bowl Blower Motor (**BLOWER**)
- Bowl Atomizer Motor (**ATOMIZER**)
- Bowl Motor VFD (**BOWL-VFD**)

### Optional Powder Feeder devices enabled:

- Powder Vibrator (**PT1-VIB**)
- Powder Weight (**PT1-WT**)
- Powder VFD (**PT1-VFD**)

**Step 1:** Touch the **SV2\*** device icon: displays the **STORAGE HOPPER SUPPLY VALVE 2** device pop-up (\***SV1** device icon displays the same results)

Continued ➡





## Bowl Graphic Screen - Supply Valve 2 Pop-up

**CBT200:** The Weigh Scale Hopper has two solenoid valve devices: **SV1 & SV2**

- Each supply valve device operates an independent clam shell gate, which opens and fills the Weigh Scale Hopper approximately 80% with seed.
- One gate will shut while the other slow-fills the remaining amount of seed, for better accuracy and should be left in the **Auto: DE-ENERGIZED** mode.
- The device activates automatically, according to the recipe time line set by the **MANAGER**.

**CBT25, 50 & 100:** These machines have a single solenoid valve device which opens to fill the Weigh Scale Hopper with seed.

**Step 1:** Touch the **Close** button icon: pop-up closes: navigates to the **Bowl Graphic Screen**


Continued ➡

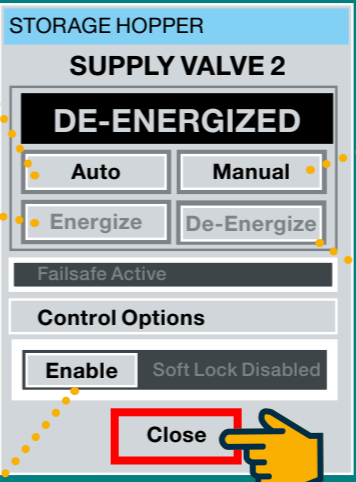
DEFAULT
**Bowl Graphic**
LOG IN
LOG OUT

Message: [REDACTED]


**AUTO**  
By touching, **Auto** is highlighted. The device cannot be energized

**ENERGIZE**  
In **MANUAL** mode, by touching, is highlighted and opens or starts the device

**ENABLE / DISABLE**  
Touch the **Enable** button. The **Enable** button toggles to display **Disable** and the message appears: **Soft Lock Enabled** This prevents the device from being energized (used) and also displays the locked mode icon next to the device... 



STORAGE HOPPER  
**SUPPLY VALVE 2**  
**DE-ENERGIZED**  
Auto Manual  
Energize De-Energize  
Failsafe Active  
Control Options  
Enable Soft Lock Disabled  
Close

**MANUAL**  
By touching, **Manual** is highlighted, the device can be energized and displays the manual mode icon next to the device... 

**DE-ENERGIZE**  
In **MANUAL** mode, by touching, is highlighted and closes or stops the device

Main Screen
Maint.
Calibrate
Priming
Batch Recipe Edit
Batch Recipe
Bowl Graphics
Tank Graphics 1 - 4
Tank Graphics 5 - 8
Totals
Reports
Alarms



## Bowl Graphic Screen - Air Pressure Switch Pop-up

**Step 1:** Touch the **SWITCH** device icon: displays the **BOWL AIR PRESSURE SWITCH** device pop-up.

- This device pop-up gives access to view and change the debounce timer (delay time) of the air pressure switch.
- The **Debouncer Timer** 2 second delay is the recommended delay time setting for this device.

**Step 2:** Touch the **Close** button icon: pop-up closes: navigates to the **Bowl Graphic Screen**

Continued ↻

### DEBOUNCE TIMER

Touch the **Debounce Timer** number box on **Bowl Air Pressure Switch** block to change the numerical value.

- On the pop-up touch pad, enter a numerical value
- Touch the **↵** Enter symbol button
- Touch the **ESC** button: closes pop-up



## Bowl Graphic Screen - Calibration SV Pop-up

**Step 1:** Touch the **Calibration Weight** device icon: displays the **HOPPER CALIBRATION SV** device pop-up.

- This device pop-up gives access to verify if the calibration weight is within spec.
- This is normally checked on the Calibration screen but can be done when the treater is not running and should be left in the **Auto: DE-ENERGIZED** mode.
- The device activates automatically, according to the recipe time line set by the **MANAGER**.
- This procedure will be covered later on in the guide.

Follow these steps to switch the device from **ENERGIZED** to **DE-ENERGIZED**:

- Touch **Manual > Energize >** (this manually lowers the calibration weights down onto the scale load cells)  
**De-energize** (this manually raises the calibration weights up off of the scale load cells).
- Return the device pop-up to the **Auto: DE-ENERGIZED** mode.

**Step 2:** Touch the **Close** button icon: pop-up closes: navigates to the **Bowl Graphic Screen**

Continued ➡

DEFAULT **Bowl Graphic** LOG IN LOG OUT

Message: \_\_\_\_\_

HOPPER

**CALIBRATION SV**

**DE-ENERGIZED**

Auto Manual

Energize De-Energize

Energize Fault

De-Energize Fault

Failsafe Active

Alarm Unacknowledged

Acknowledge Alarm

Fault Reset

Close

Main Screen Maint. Calibrate Priming Batch Recipe Edit Batch Recipe Bowl Graphics Tank Graphics 1 - 4 Tank Graphics 5 - 8 Totals Reports Alarms



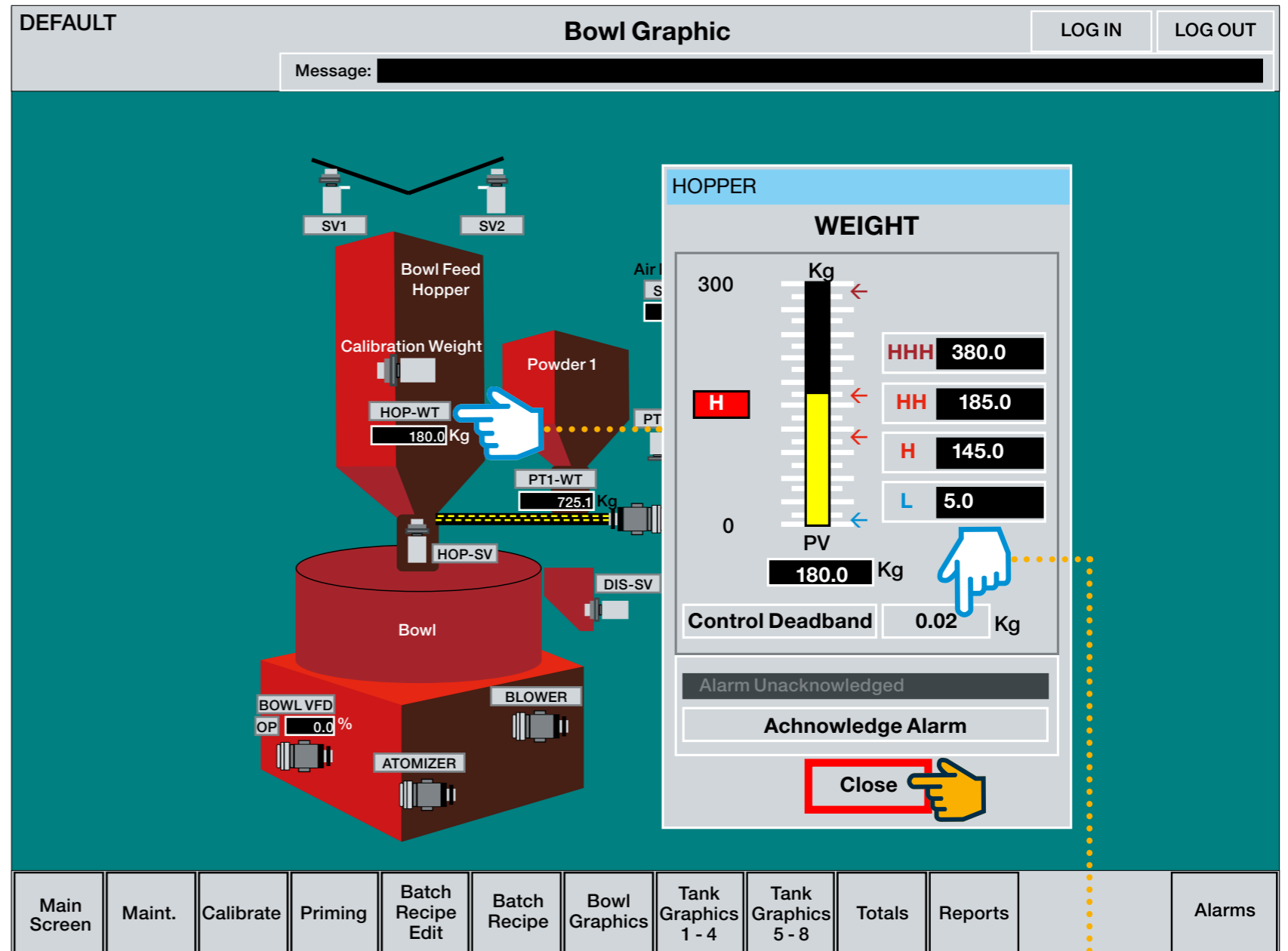
## Bowl Graphic Screen - Weight Pop-up

**Step 1:** Touch the **HOP-WT** device icon: displays the **HOPPER WEIGHT** device pop-up.

- The weigh scale **Hopper Weight** transmitter device displays the current Hopper seed level (High to Low) in total kilograms (kg).
- The **Control Deadband** 0.02 second delay is the recommended delay time setting for this device.

**Step 2:** Touch the **Close** button icon: pop-up closes: navigates to the **Bowl Graphic Screen**

Continued ➡



### CONTROL DEADBAND

Touch the **Control Deadband** number box on **Hopper Weight** block to change the numerical value.

- On the pop-up touch pad, enter a numerical value
- Touch the ↵ Enter symbol button
- Touch the **ESC** button: closes pop-up



## Bowl Graphic Screen - Discharge Valve Pop-up

**Step 1:** Touch the **HOP-SV** device icon: displays the **HOPPER SUPPLY VALVE** device pop-up.

- This device opens and fills the Mixing Bowl with seed from the Weigh Scale Hopper.

Follow these steps to switch the device from **ENERGIZED** to **DE-ENERGIZED**:

- Touch **Manual** > **Energize** > **De-energize**.
- Return the device pop-up to the **Auto: DE-ENERGIZED** mode.

**Step 2:** Touch the **Close** button icon: pop-up closes: navigates to the **Bowl Graphic Screen**

Continued ➡

The screenshot displays the 'Bowl Graphic' interface. At the top, it shows 'DEFAULT' and 'Bowl Graphic' with 'LOG IN' and 'LOG OUT' buttons. A 'Message:' field is present. The main area features a 3D diagram of the hopper and bowl system. The hopper is labeled 'Bowl Feed Hopper' and contains 'Calibration Weight' and 'Powder 1'. It is equipped with 'SV1' and 'SV2' valves. The bowl is labeled 'Bowl' and contains 'HOP-SV' (Hopper Supply Valve), 'DIS-SV' (Discharge Valve), 'ATOMIZER', and 'BLOWER'. The 'BOWL VFD' is set to 'OP 0.0%'. The 'HOP-WT' is 180.0 Kg and the 'PT1-WT' is 725.1 Kg. A hand icon points to the 'HOP-SV' valve.

The control panel on the right is titled 'HOPPER SUPPLY VALVE' and shows the status 'DE-ENERGIZED'. It includes buttons for 'Auto', 'Manual', 'Energize', and 'De-Energize'. A 'Failsafe Active' indicator is shown. Under 'Control Options', there are 'Enable' and 'Soft Lock Disabled' buttons. A 'Close' button is highlighted with a red box and a hand icon.

At the bottom, a navigation bar contains the following buttons: Main Screen, Maint., Calibrate, Priming, Batch Recipe Edit, Batch Recipe, Bowl Graphics, Tank Graphics 1-4, Tank Graphics 5-8, Totals, Reports, and Alarms.



## Bowl Graphic Screen - Vibrator Pop-up

**Step 1:** Touch the **PT1-VIB** device icon: displays the **POWDER FEEDER 1 VIBRATOR** device pop-up.

- This device operates the optional powder feeder vibrator, which helps powder flow from the hopper into the mixing bowl and should be left in the **Auto: DE-ENERGIZED** mode.
- The device activates automatically, according to the recipe time line set by the **MANAGER**.

Follow these steps to switch the device from **ENERGIZED** to **DE-ENERGIZED**:

- Touch **Manual > Energize > De-energize**.
- Return the device pop-up to the **Auto: DE-ENERGIZED** mode.

**Step 2:** Touch the **Close** button icon: pop-up closes: navigates to the **Bowl Graphic Screen**

Continued ➞

The screenshot displays the 'Bowl Graphic' interface. At the top, there is a 'DEFAULT' label, the title 'Bowl Graphic', and 'LOG IN' and 'LOG OUT' buttons. A 'Message:' field is visible below the title. The main area features a 3D diagram of the powder feeder system, including a 'Bowl Feed Hopper' with 'SV1' and 'SV2' valves, a 'Calibration Weight' (HOP-WT: 180.0 Kg), a 'Powder 1' hopper, a 'Bowl', and an 'ATOMIZER'. Various sensors and actuators are labeled: PT1-VIB (with a hand icon pointing to it), PT1-WT (725.1 Kg), PT1-VFD (OP: 0.0 g/sec), HOP-SV, DIS-SV, BLOWER, and BOWL VFD (OP: 0.0 %). An 'Air Pressure SWITCH' is shown as 'OFF'. A pop-up window titled 'POWDER FEEDER 1 VIBRATOR' is overlaid on the right. It shows the status 'DE-ENERGIZED' and buttons for 'Auto', 'Manual', 'Energize', and 'De-Energize'. Below these are 'Failsafe Active' and 'Control Options' (Enable, Soft Lock Disabled). A 'Close' button with a hand icon is highlighted with a red box. At the bottom, a navigation bar contains buttons for 'Main Screen', 'Maint.', 'Calibrate', 'Priming', 'Batch Recipe Edit', 'Batch Recipe', 'Bowl Graphics', 'Tank Graphics 1 - 4', 'Tank Graphics 5 - 8', 'Totals', 'Reports', and 'Alarms'.



## Bowl Graphic Screen - Weight Pop-up

**Step 1:** Touch the **PT1-WT** device icon: displays the **POWDER FEEDER 1 WEIGHT** device pop-up.

- This device displays the optional powder hopper level (High to Low) in total kilograms (kg).
- The **Control Deadband** 0.02 second delay is the recommended delay time setting for this device.

**Step 2:** Touch the **Close** button icon: pop-up closes: navigates to the **Bowl Graphic Screen**

Continued ➞

DEFAULT Bowl Graphic LOG IN LOG OUT

Message: \_\_\_\_\_

**POWDER FEEDER 1 WEIGHT**

50 Kg

HH 40.0

H 3.0

L 0.5

L 0.5

PV 725.1 KG

Control Deadband 0.02 Kg

Alarm Unacknowledged

Acknowledge Alarm

Close

Main Screen | Maint. | Calibrate | Priming | Batch Recipe Edit | Batch Recipe | Bowl Graphics | Tank Graphics 1 - 4 | Tank Graphics 5 - 8 | Totals | Reports | Alarms

### CONTROL DEADBAND

Touch the **Control Deadband** number box on **Powder Feeder 1 Weight** block to change the numerical value.

- On the pop-up touch pad, enter a numerical value
- Touch the **↵** Enter symbol button
- Touch the **ESC** button: closes pop-up



## Bowl Graphic Screen - VFD Pop-up

**Step 1:** Touch the **PT1-VFD** device icon: displays the **POWDER FEEDER 1 VFD** device pop-up.

- This device operates the optional powder feeder motor, which dispenses powder from the hopper into the mixing bowl and should be left in the **Auto: DE-ENERGIZED** mode.
- The device activates automatically, according to the recipe time line set by the **MANAGER**.

Follow these steps to switch the device from **FORWARD** to **REVERSE**:

- Touch **Manual > Forward > Stop > Reverse > Stop**.
- Return the device pop-up to the **Auto: STOPPED** mode.

**Step 2:** Touch the **Close** button icon: pop-up closes: navigates to the **Bowl Graphic Screen**

Continued ➡

The screenshot shows the 'Bowl Graphic' interface. At the top, there's a 'DEFAULT' status and 'Bowl Graphic' title with 'LOG IN' and 'LOG OUT' buttons. A 'Message:' field is empty. The main area features a 3D diagram of the powder feeder system. Components include: 'Bowl Feed Hopper' with 'SV1' and 'SV2' valves; 'Calibration Weight' with 'HOP-WT' (180.0 Kg); 'Powder 1' hopper with 'PT1-VIB'; 'Bowl' with 'HOP-SV' valve; 'ATOMIZER'; 'BLOWER'; and 'BOWL VFD' with 'OP' (0.0 %). A 'PT1-WT' sensor shows 725.1 Kg. An 'Air Pressure SWITCH' is currently 'OFF'. A hand icon points to the 'PT1-VFD' sensor. A 'POWDER FEEDER 1 VFD' pop-up is open on the right. It shows 'OP 0.0 g/sec' and 'STOPPED' mode. It has 'Auto' and 'Manual' mode buttons, 'Start' and 'Stop' buttons, a 'Manual Setpoint' of 0 g/sec, and a list of faults: 'Running Fault', 'Stopping Fault', 'Failsafe Active', and 'Alarm Unacknowledged'. It includes 'Acknowledge Alarm' and 'Fault Reset' buttons. A 'Close' button is highlighted with a red box and a hand icon. At the bottom, a navigation bar contains buttons for 'Main Screen', 'Maint.', 'Calibrate', 'Priming', 'Batch Recipe Edit', 'Batch Recipe', 'Bowl Graphics', 'Tank Graphics 1 - 4', 'Tank Graphics 5 - 8', 'Totals', 'Reports', and 'Alarms'.





## Bowl Graphic Screen - Discharge Door SV Pop-up

**Step 1:** Touch the **DIS-SV** device icon: displays the **BOWL DISCHARGE DOOR SV** device pop-up.

- This device operates the mixing bowl discharge door and allows treated seed to exit the mixing bowl and should be left in the **Auto: DE-ENERGIZED** mode.
- The device activates automatically, according to the recipe time line set by the **MANAGER**.

Follow these steps to switch the device from **ENERGIZED** to **DE-ENERGIZED**:

- Touch **Manual > Energize > De-energize**.
- Return the device pop-up to the **Auto: DE-ENERGIZED** mode.

**Step 2:** Touch the **Close** button icon: pop-up closes: navigates to the **Bowl Graphic Screen**

Continued ➡

DEFAULT **Bowl Graphic** LOG IN LOG OUT

Message: \_\_\_\_\_

**BOWL**

**DISCHARGE DOOR SV**

**DE-ENERGIZED**

Auto Manual

Energize De-Energize

Energize Fault

De-Energize Fault

Failsafe Active

Alarm Unacknowledged

Acknowledge Alarm

Fault Reset

Close

Main Screen Maint. Calibrate Priming Batch Recipe Edit Batch Recipe Bowl Graphics Tank Graphics 1 - 4 Tank Graphics 5 - 8 Totals Reports Alarms



## Bowl Graphic Screen - Air Blower Motor Pop-up

**Step 1:** Touch the **BLOWER** device icon: displays the **BOWL AIR BLOWER MOTOR** device pop-up.

- This device operates the bowl air blower motor, which dispenses air into the mixing bowl and should be left in the **Auto: STOPPED** mode (as shown right).
- The device activates automatically, according to the recipe time line set by the **MANAGER**.

Follow these steps to switch the device from **FORWARD** to **REVERSE**:

- Touch **Manual > Forward > Stop > Reverse > Stop**.
- Return the device pop-up to the **Auto: STOPPED** mode.

**Step 2:** Touch the **Close** button icon: pop-up closes: navigates to the **Bowl Graphic Screen**

Continued ➡

DEFAULT **Bowl Graphic** LOG IN LOG OUT

Message: \_\_\_\_\_

**BOWL**

**AIR BLOWER MOTOR**

**STOPPED**

Auto Manual

Start Stop

Running Fault

Stopping Fault

Failsafe Active

Alarm Unacknowledged

Acknowledge Alarm

Fault Reset

Close

Main Screen Maint. Calibrate Priming Batch Recipe Edit Batch Recipe Bowl Graphics Tank Graphics 1 - 4 Tank Graphics 5 - 8 Totals Reports Alarms

## Bowl Graphic Screen - Atomizer Motor Pop-up

**Step 1:** Touch the **ATOMIZER** device icon: displays the **BOWL ATOMIZER MOTOR** device pop-up.

- This device operates the atomizer motor, which dispenses chemical into the mixing bowl and should be left in the **Auto: STOPPED** mode.
- The device activates automatically, according to the recipe time line set by the **MANAGER**.

Follow these steps to switch the device from **FORWARD** to **REVERSE**:

- Touch **Manual > Forward > Stop > Reverse > Stop**.
- Return the device pop-up to the **Auto: STOPPED** mode.

**Step 2:** Touch the **Close** button icon: pop-up closes: navigates to the **Bowl Graphic Screen**

Continued ↻

DEFAULT **Bowl Graphic** LOG IN LOG OUT

Message: \_\_\_\_\_

**BOWL**

**ATOMIZER MOTOR**

**STOPPED**

Auto Manual

Start Stop

Running Fault

Stopping Fault

Failsafe Active

Alarm Unacknowledged

Acknowledge Alarm

Fault Reset

Close

Main Screen Maint. Calibrate Priming Batch Recipe Edit Batch Recipe Bowl Graphics Tank Graphics 1 - 4 Tank Graphics 5 - 8 Totals Reports Alarms



## Bowl Graphic Screen - VFD Pop-up

**Step 1:** Touch the **BOWL VFD** device icon: displays the **BOWL VFD** device pop-up.

- This device operates the bowl motor, which turns the mixing bowl and should be left in the **Auto: STOPPED** mode.
- The device activates automatically, according to the recipe time line set by the **MANAGER**.

Follow these steps to switch the device from **FORWARD** to **REVERSE**:

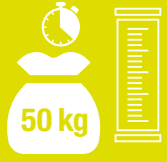
- Touch **Manual > Forward > Stop > Reverse > Stop**.
- Return the device pop-up to the **Auto: STOPPED** mode.

**Step 2:** Touch the **Close** button icon: pop-up closes: navigates to the **Bowl Graphic Screen**

Continued ➡

The screenshot displays the 'Bowl Graphic' interface. At the top, there's a 'DEFAULT' label and a 'Message:' field. The main area shows a 3D diagram of a bowl system with components like 'Bowl Feed Hopper', 'Calibration Weight', 'Powder 1', 'Bowl', 'BLOWER', and 'MIZER'. A 'BOWL VFD' device is highlighted with a blue hand icon. A pop-up window titled 'BOWL VFD' is open, showing 'OP 0.0%' and 'STOPPED' status. It includes buttons for 'Auto', 'Manual', 'Start', 'Stop', 'Manual Setpoint 0%', 'Acknowledge Alarm', and 'Fault Reset'. A 'Close' button is highlighted with a red box and a yellow hand icon. The bottom navigation bar contains buttons for 'Main Screen', 'Maint.', 'Calibrate', 'Priming', 'Batch Recipe Edit', 'Batch Recipe', 'Bowl Graphics', 'Tank Graphics 1-4', 'Tank Graphics 5-8', 'Totals', 'Reports', and 'Alarms'.





# CALIBRATION

## Calibration Screen - Hopper

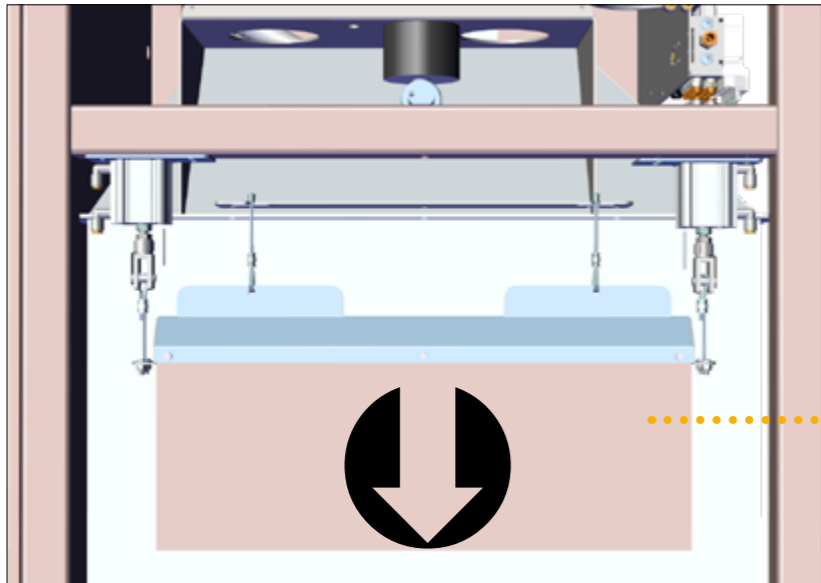
**ENSURE THE WEIGH SCALE DOES NOT HAVE ANY SEED IN THE HOPPER!**

**Step 1:** Touch the **HOPPER Low Calibrate** button icon:

- Verify the **HOPPER current Weight (Kg)** value displayed is zero.

**Step 2:** Touch the **LOWER CAL WT ON** button icon: both calibration weights lower down onto the load cells

Continued ➡



Weigh Scale Hopper Calibration Weight Lowered, ref.

DEFAULT Calibration LOG IN LOG OUT

Message: \_\_\_\_\_

	LT 1	LT 2		
High Cal Amount (grams)	0.0	0.0		
Current Weight (grams)	0	0		
	Low Calibrate	Low Calibrate		
	High Calibrate	High Calibrate		
	LT 5			
High Cal Amount (grams)	0.0			
Current Weight (grams)	0.0			
	Low Calibrate			
	High Calibrate			
	PT 1			
High Cal Amount (Kgs)	0.0			
Current Weight (Kgs)	0.0			
	Low Calibrate			
	High Calibrate			
			HOPPER	
			0.0	
			0.0	
			Low Calibrate	
			LOWER CAL WT ON	

Main Screen | Maint. | Calibrate | Priming | Batch Recipe Edit | Batch Recipe | Bowl Graphics | Tank Graphics 1 - 4 | Tank Graphics 5 - 8 | Totals | Reports | Alarms



## Calibration Screen - Hopper

The **High Calibrate & LIFT CAL WT OFF** buttons appear when the **Low Calibrate & LOWER CAL WT ON** buttons are touched (previously page, 37).

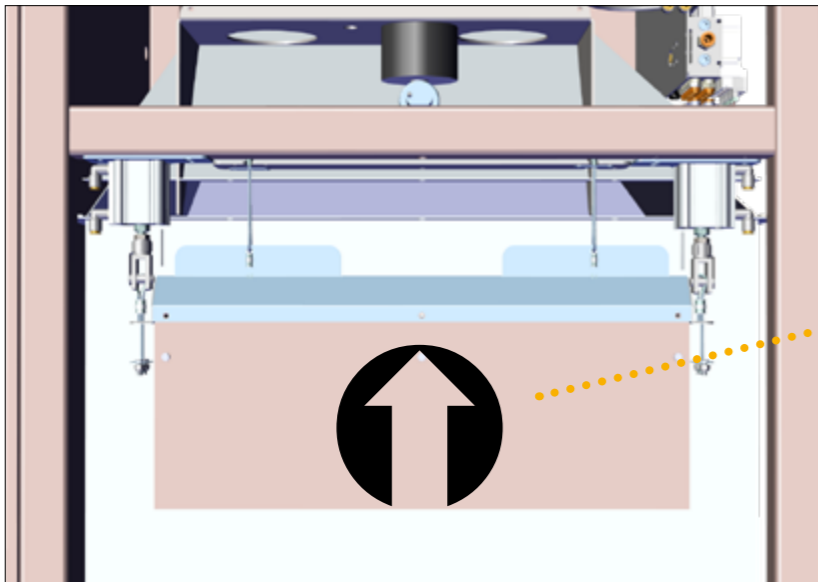
**Step 1:** Touch the **High Calibrate** button icon.

Each Scale has two certified calibration weights, both displaying a different numerical weight value, such as 22.702 + 22.704. Add the values together = **45.406**.

**Step 2:** Touch the **High Cal Amount (Kg)** numeric field and enter the combined **45.406** numerical weight value on the pop-up key pad: key pad closes.

- The **High Cal Amount (Kg)** numeric field value then displays: **45.406**, as shown.
- The **High Cal Amount (Kg)** weight value remains unchanged once entered in the numeric field.

**Step 3:** Touch the **LIFT CAL WT OFF** button icon: Both calibration weights lift up off of the load cells.

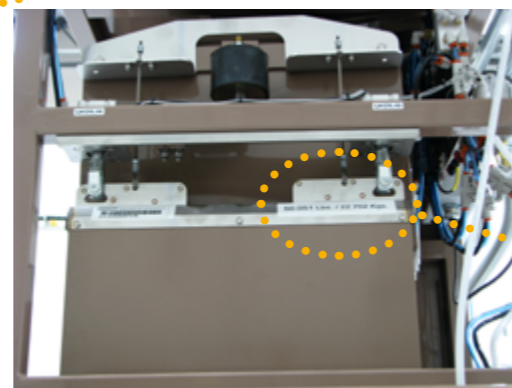


Weigh Scale Hopper Calibration Weight Raised, ref.

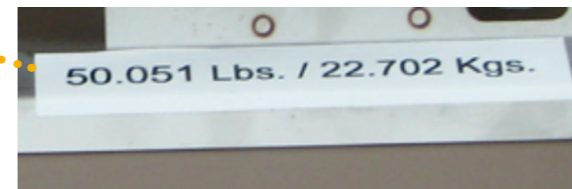
**Calibration** LOG IN LOG OUT

Message: [REDACTED]

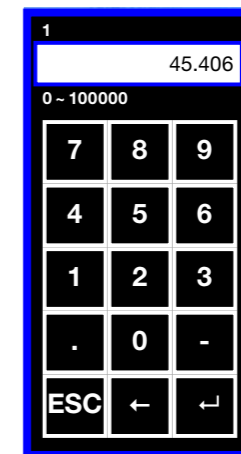
	<b>LT 1</b>	<b>LT 2</b>	
High Cal Amount (grams)	0.0	0.0	
Current Weight (grams)	0	0	
	Low Calibrate	Low Calibrate	
	High Calibrate	High Calibrate	
	<b>LT 5</b>		
High Cal Amount (grams)	0.0		
Current Weight (grams)	0.0		
	Low Calibrate		
	High Calibrate		
	<b>PT 1</b>		
High Cal Amount (Kgs)	0.0		
Current Weight (Kgs)	0.0		
	Low Calibrate		
	High Calibrate		
		<b>HOPPER</b>	
		45.406	
		0.0	
		High Calibrate	
			LIFT CAL WT OFF



Calibration weight sticker



Calibration weight sticker detail



Pop-up Key Pad





Note: determine calibration schedules for each pump station and powder device on the **Maintenance Screen** when logged in as **MANAGER**

### Calibration Screen - LT1 Pump Scale

**Step 1:** Turn the operation switch **UP** to raise the cover off of the 20L supply tank.

**Step 2: Completely empty the supply tank.**

- Remove the 20L supply tank from the scale.
- Wipe clean any residual chemical product and replace the tank on the scale.
- Discard rags responsibly.

**Step 3: Touch the Low Calibrate button icon.**

- Verify the **Current Weight (grams)** displays a value of zero grams: navigates to the **Calibration Screen**

Continued ➞

**Calibration**

LOG IN   LOG OUT

Message: [REDACTED]

	LT 1	LT 2
High Cal Amount (grams)	0.0	0.0
Current Weight (grams)	0	0
	Low Calibrate	Low Calibrate
	High Calibrate	High Calibrate

	LT 5
High Cal Amount (grams)	0.0
Current Weight (grams)	18000
	Low Calibrate
	High Calibrate

	PT 1	HOPPER
High Cal Amount (Kgs)	0.0	90.350
Current Weight (Kgs)	18000	180.000
	Low Calibrate	Low Calibrate
	High Calibrate	

LOWER CAL WT ON

Main Screen

Maint.

Calibrate

Priming

Batch Recipe Edit

Batch Recipe

Bowl Graphics

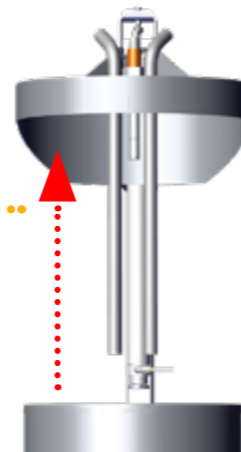
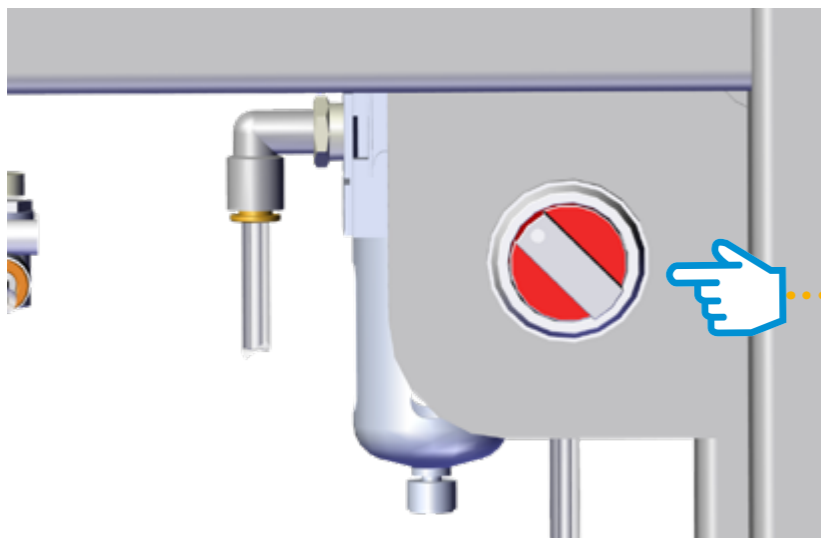
Tank Graphics 1 - 4

Tank Graphics 5 - 8

Totals

Reports

Alarms



**Step 4:** Place a 10,000gram weight in the 20L Tank, as shown below (20L tank=10,000grams=10kg weight).

- Verify the **Current Weight (grams)** now displays a value of 10,000 grams, as shown circled above.

**Step 5:** Touch the **High Calibrate** button icon.

**Step 6:** Remove the calibration weight from out of the supply tank.

**Step 7:** Turn the operation switch **DOWN** to lower the cover onto the tank, as shown right.

- Repeat the scale calibration (steps 1-7) for each pump station enabled on the **Calibration Screen (LT1-8)**.

**Step 8:** Touch the **Tank Graphics 1-4** button icon: navigates to the **Tank Graphics 1-4 Screen**

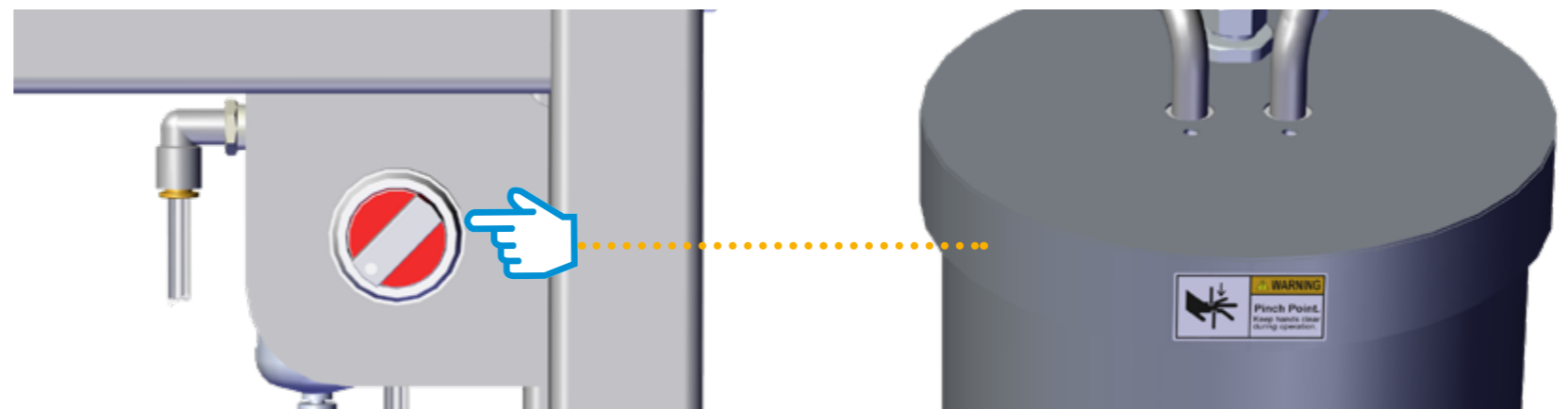
Continued ➡

DEFAULT Calibration LOG IN LOG OUT

Message: [REDACTED]

	LT 1	LT 2		
High Cal Amount (grams)	10000.0	0.0		
Current Weight (grams)	10000	0		
	Low Calibrate	Low Calibrate		
	High Calibrate	High Calibrate		
	LT 5			
High Cal Amount (grams)	0.0			
Current Weight (grams)	18000			
	Low Calibrate			
	High Calibrate			
	PT 1		HOPPER	
High Cal Amount (Kgs)	0.0		90.350	
Current Weight (Kgs)	18000		180.000	
	Low Calibrate		Low Calibrate	
	High Calibrate			
				LOWER CAL WT ON

Main Screen
Maint.
Calibrate
Priming
Batch Recipe Edit
Batch Recipe
Bowl Graphics
Tank Graphics 1-4
Tank Graphics 5-8
Totals
Reports
Alarms





## Liquid Tanks 1-4 Screen - Discharge Pump Pop-up

For pump calibration, users must be logged into the system as **MANAGER** in order for the expanded **LIQUID TANK 1 DISCHARGE PUMP** device pop-up version to display, as shown right.

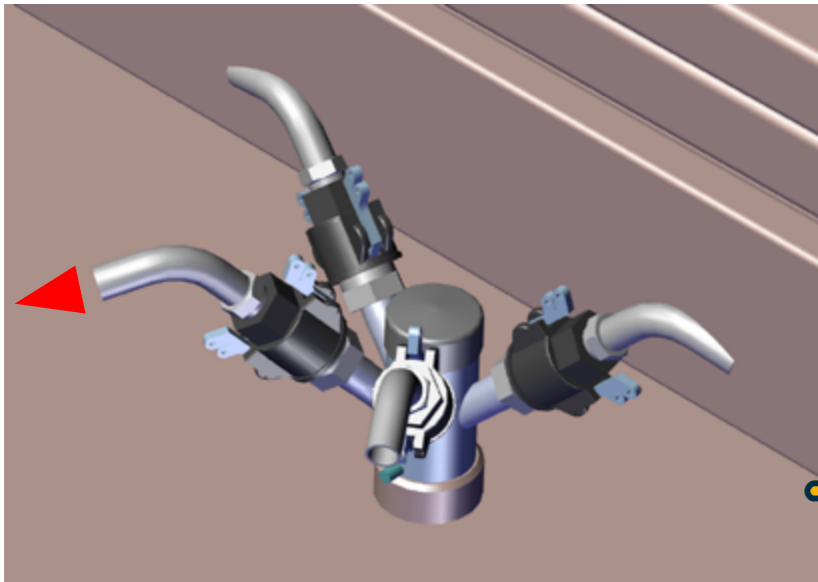
### Example: LT1 PUMP STATION Calibration

**Step 1:** Touch the **DISCH** graphic: displays the **LIQUID TANK 1 DISCHARGE PUMP** device pop-up.

- The **Max Grams Per Second** section of the screen displays the **Auto Calculate** and **Duration Timer** buttons.

**Step 2:** Disconnect the treatment line tube from the Chemical Inlet Assembly on the Mixing Bowl Cover (determine which one is connected to **LT1** pump station) and place tube end in a bucket: navigates to the **Tank Graphics 1-4 Screen**

Continued ➡



MANAGER 
Liquid Tanks 1 - 4

LOG IN LOG OUT

Message:

LIQUID TANK 1

**DISCHARGE PUMP**

**OP** 0.0 g/sec

STOPPED

Feedback Timer

Start/Stop Time  sec

Auto Manual

Forward Reverse

Stop

Manual Setpoint  g/sec

Running Forward Fault

Stopping Forward Fault

Running Reverse Fault

Stopping Reverse Fault

Both Direction Run Request Fault

Failsafe Active

Alarm Unacknowledged

Acknowledge Alarm

Fault Reset

Close Reset Overshoot

**Control Options**

Enable Soft Lock Disabled

Enable Fault Mask Disabled

**Max Grams Per Second**

Auto Calculate  g/sec

Duration Timer  sec

Main Screen
Maint.
Calibrate
Priming
Batch Recipe Edit
Batch Recipe
Bowl Graphics
Tank Graphics 1 - 4
Tank Graphics 5 - 8
Totals
Reports
Alarms



**Step 3:** Touch the **Auto Calculate** button icon: the pump will run and output product (106g/sec) for a duration of 15 seconds (as determined by the time set on the **Duration Timer** button icon).

- If this is correct touch the **Auto Calculate** button icon again: the pump will stop running.

**Step 4:** Touch the **Close** button icon: pop-up closes.

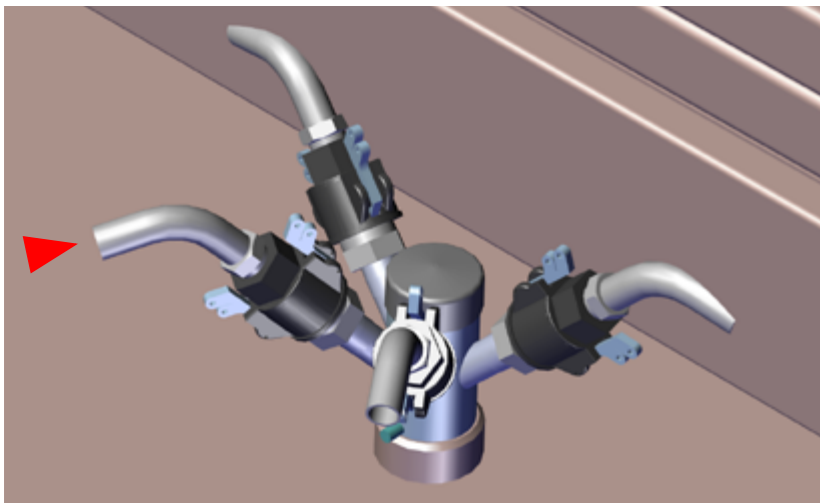
- If not correct, then touch the **Auto Calculate** numerical icon: a touch pad pop-up displays, where users can change the maximum grams per second pump output rate.
- Repeat step three and four above.

**Step 5:** Connect the treatment line tube to the Chemical Inlet Assembly on the Mixing Bowl Cover.

- Pour the spent product back into the product work tank. **DO NOT DISCARD CHEMICAL DOWN FLOOR DRAIN!**
- Repeat the pump calibration process (steps 1-5) for each pump station enabled\* on the **Tank Graphics 1-4 Screen** and **Tank Graphics 5-8 Screen**.

**Step 6:** Touch the **Priming** button icon: navigates to the Priming Screen

This completes the Calibration Section



MANAGER Liquid Tanks 1 - 4 [LOG IN] [LOG OUT]

Message: [ ]

From Work Tank

LT 1 WT 0.0 grams

PX OFF

SUPPLY DISCH OP 0.0 g/sec

To Bowl

LIQUID TANK 1

**DISCHARGE PUMP**

OP 0.0 g/sec

**STOPPED**

Auto Manual

Forward Reverse

Stop

Manual Setpoint 1 g/sec

Running Forward Fault

Stopping Forward Fault

Running Reverse Fault

Stopping Reverse Fault

Both Direction Run Request Fault

Failsafe Active

Alarm Unacknowledged

Acknowledge Alarm

Fault Reset

Close Reset Overshoot

Feedback Timer

Start/Stop Time 2 sec

Control Options

Enable Soft Lock Disabled

Enable Fault Mask Disabled

Max Grams Per Second

Auto Calculate 150 g/sec

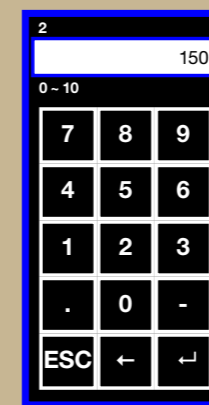
Duration Timer sec

Main Screen Maint. Cal Priming Batch Recipe Edit Batch Recipe Bowl Graphics Tank Graphics 1 - 4 Tank Graphics 5 - 8 Totals Reports Alarms

### AUTO CALCULATE

Touch the **Auto Calculate** number box on **Liquid Tank 1 Discharge Pump** block to change the numerical value.

- On the pop-up touch pad, enter a numerical value
- Touch the  $\leftarrow$  Enter symbol button
- Touch the **ESC** button: closes pop-up





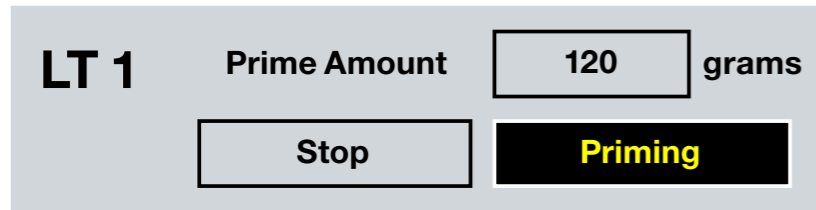
# PUMP PRIMING

## Priming Screen

The **Priming Screen** allows users to send (prime) chemical through the treatment line from each pump station to the chemical inlet and powder into the mixing bowl.

**Step 1:** Touch the **LT1 Start** button icon.

- The word **Idle** displays as **Priming**.
- The **Start** button icon toggles to **Stop**.
- Once chemical product reaches the chemical inlet...

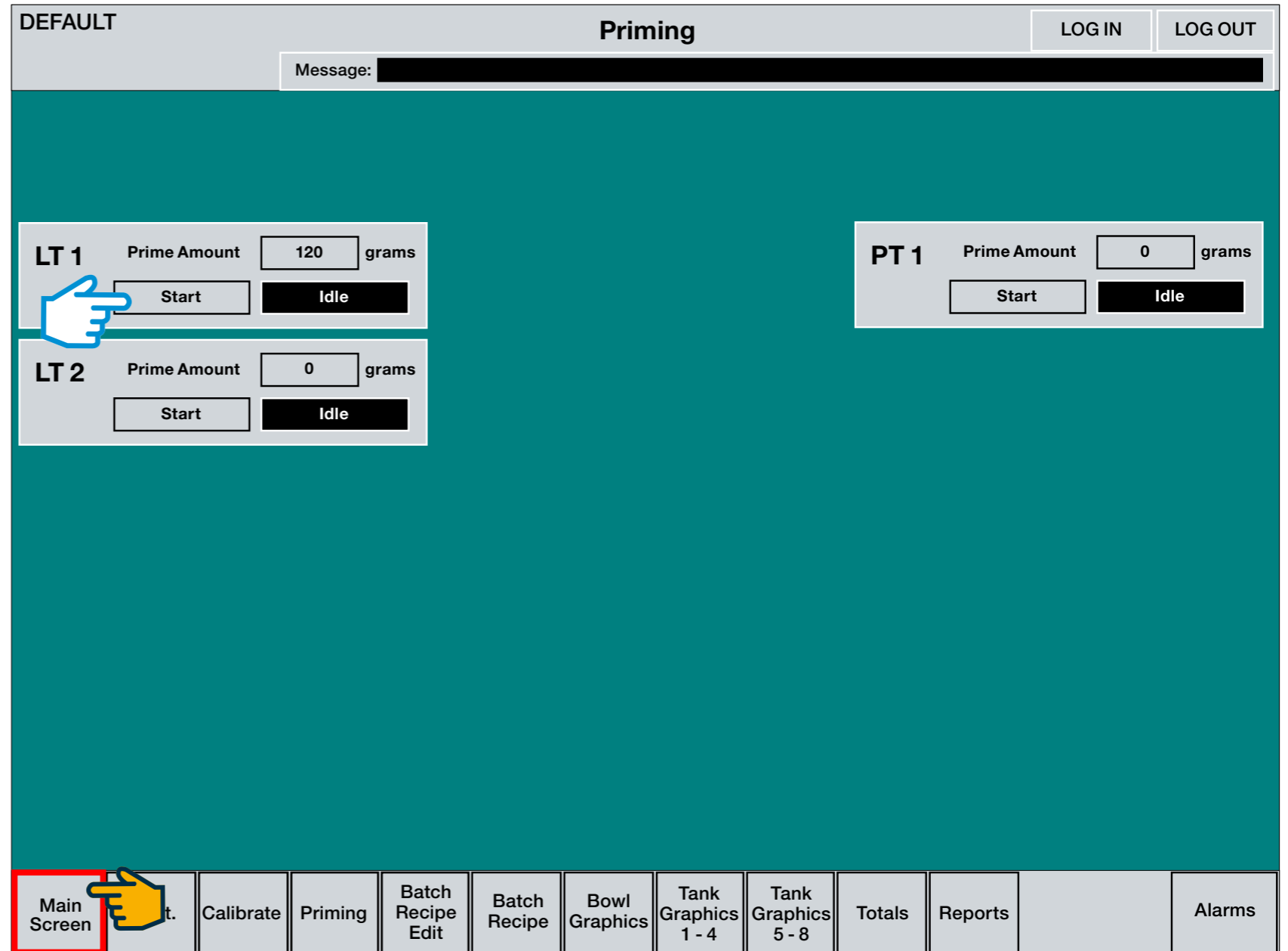


**Step 2:** Touch the **LT1 Stop** button icon: priming stops.

- The word **Priming** displays **Idle**.
- The **Stop** button icon toggles to **Start**.
- Repeat the process for each pump station and powder feeder enabled on this screen.

**Step 3:** Touch the **Main Screen** button icon: navigates to the **Main Screen**

This completes the Priming Section





# RECIPE CREATION

## Main Menu Screen - Authentication - log-on procedures

Log into the system as **Manager** to create or make changes to a recipe and enable/disable options.

**Step 1:** Touch the **LOGIN** button icon: displays the **Login** pop-up touch pad.

**Step 2:** Touch **User Name [F2]** button icon and enter a user name on the keyboard pop-up.

**Step 3:** Then touch the ↵ **ENTER** button icon: keyboard pop-up closes.

**Step 4:** Touch **Password [F3]** button icon and enter a password on the keyboard pop-up.

**Step 5:** Then touch the ↵ **ENTER** button icon: keyboard pop-up closes.

**Step 6:** Then touch the **Login [Enter]** button icon: Login pop-up closes.

Authenticity verified >>**MANAGER** login name replaces **DEFAULT** on the message bar (circled, top left hand corner of the screen) and the **Options** button icon will appear on the task bar next to the **Reports** button icon (bottom right hand corner of the screen).

**Step 7:** Touch the **Options** button icon: navigates to the **Options Screen**

Continued ➡

The screenshot displays the 'Main Menu' interface. At the top left, the user role 'MANAGER' is shown in a grey box, circled in orange. To its right is the 'Main Menu' title. Further right are 'LOG IN' and 'LOG OUT' buttons. Below the title is a 'Message:' bar. The center of the screen features the Bayer logo. A 'Login' pop-up window is overlaid, containing two input fields: 'User Name [F2]' and 'Password [F3]', both filled with asterisks. To the right of these fields are 'Login [Enter]' and 'Cancel [Esc]' buttons. A hand icon points to the 'Login [Enter]' button. Below the login pop-up is a keyboard pop-up window with a blue border. The 'ENTER' key is highlighted with a hand icon. At the bottom of the screen is a task bar with buttons for 'Main Screen', 'Maint.', 'Calibrate', 'Priming', 'Batch Recipe Edit', 'Batch Recipe', 'Bowl Graphics', 'Tank Graphics 1-4', 'Tank Graphics 5-8', 'Totals', 'Reports', 'Options', and 'Alarms'. The 'Options' button is highlighted with a red box and a hand icon.





## Equipment Options Screen

Under **Enable Options**: touch each button field to use with the system. The button field will fill with a black dot, which enables the device.

- **Liquid Tanks [1-8]** the Liquid Tank icons will display on the Tank Graphics 1-4 & 5-8 Screens.
- **Powder Hopper [1 & 2]** Powder Hopper icons will appear on the Bowl Graphics Screen.
- All of the options selected on this screen will appear on the Calibration Screen.

Under **Liquid Tank 1 & 2** (up to eight): the options selected will display on the Tank Graphics 1-4 & 5-8 Screens.

**Step 1:** Touch the **Options** button icon: navigates to the **Options Screen**

Continued ↻

MANAGER **Equipment Options** LOG IN LOG OUT

Message: \_\_\_\_\_

**Enable Options**

- Liquid Tank 1
- Liquid Tank 2
- Liquid Tank 3
- Liquid Tank 4
- Liquid Tank 5
- Liquid Tank 6
- Liquid Tank 7
- Liquid Tank 8
- Powder Hopper 1
- Powder Hopper 2
- AWDS Control Enabled
- Immediate Refill Enable

**Liquid Tank 1**

- Supply Valve
- Discharge Valve
- Rinse Valve

**Liquid Tank 2**

- Supply Valve
- Discharge Valve
- Rinse Valve

PLC Revision = \*\*\*\*\*  
HMI Revision = \*\*\*\*\*

Main Screen Maint. Calibrate Priming Batch Recipe Edit Batch Recipe Bowl Graphics Tank Graphics 1 - 4 Tank Graphics 5 - 8 Totals Reports **Options** Alarms



## Options Screen

**Step 1:** Touch the **Liquid Tank Options** button icon: navigates to the **Liquid Tank Options Screen**

Continued ➡

MANAGER
Options

LOG IN
LOG OUT

Message: [REDACTED]

Batch Parameters

Min Batch Weight  Kg

Max Batch Weight  Kg

Liquid OK Low  % / 100

Liquid OK High  % / 100

Power OK Low  % / 100

Powder OK High  % / 100

Powder Hopper 1

Slow Addition  g

Slow Speed  g/Sec

Max Grams Per Sec  g/Sec

Reset Overshoot  g

Start-Up Questions

Skip Start-Up Questions

---

Recapture Timers

Initial Draw Down on Liquid Tank  Sec

Time To Recapture Discharge Hoses  Sec

Time To Recapture Supply Hoses  Sec

Seed Hopper

Reset Overshoot  Kg

Hopper Waiting For Seed Timer  Sec

Estimated Surge Bin Weight at Low Level  Kg

Sequence Reset

Liquid Tank Options

☞

PLC Revision = \*\*\*\*\*

HMI Revision = \*\*\*\*\*

Equipment Options

Main Screen

Maint.

Calibrate

Priming

Batch Recipe Edit

Batch Recipe

Bowl Graphics

Tank Graphics 1 - 4

Tank Graphics 5 - 8

Totals

Reports

Options

Alarms



## Liquid Tank Options Screen

Liquid Tank 1 & 2 (up to eight) options can all be changed by touching the numerical button icon: a key pad pop-up displays where changes can be made.

- Touching either **Options** button icon to navigate to the **Options Screen**.

**Step 1:** Touch the **Options** button icon: navigates to the **Options Screen**

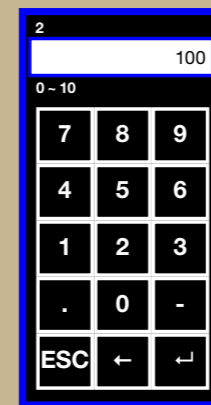
Continued ➞

The screenshot shows the 'Liquid Tank Options' screen. At the top, it says 'MANAGER' and 'Liquid Tank Options'. There are 'LOG IN' and 'LOG OUT' buttons. Below that is a 'Message:' field. The main area has two columns for 'Liquid Tank 1' and 'Liquid Tank 2'. Each column has four rows of settings: 'Slow Addition' (0 g), 'Slow Speed' (0 g/Sec), 'Max Grams Per Sec' (150 g/Sec), and 'Recapture Speed' (100 g/Sec). Below these is a 'Reset Overshoot' button (0 g). A blue hand icon points to the 'Recapture Speed' value in the Liquid Tank 2 column. Below the tanks, there are two buttons: 'Options' and 'Equipment Options'. A yellow hand icon points to the 'Options' button. Below these buttons, it says 'PLC Revision = \*\*\*\*\*' and 'HMI Revision = \*\*\*\*\*'. At the bottom, there is a navigation menu with buttons: 'Main Screen', 'Maint.', 'Calibrate', 'Priming', 'Batch Recipe Edit', 'Batch Recipe', 'Bowl Graphics', 'Tank Graphics 1 - 4', 'Tank Graphics 5 - 8', 'Totals', 'Reports', 'Options', and 'Alarms'. A blue hand icon points to the 'Options' button in the menu.

### RECAPTURE SPEED

Touch the **Recapture Speed** number box on **Liquid Tank 2** block to change the numerical value.

- On the pop-up touch pad, enter a numerical value
- Touch the **↵** Enter symbol button
- Touch the **ESC** button: closes pop-up





## Options Screen

The **Start-Up Questions** box at the top of the Options Screen displays the **Skip Start-Up Questions** option as enabled.

- This means, when the **Start** button icon on the **Batch Recipe Screen** is touched, the application program skips the start-up questions and the machine begins treating batches of seed automatically.

To enable the **Skip Start-Up Questions** option (as shown right), ensure the following are configured on the **Batch Recipe Screen** PRIOR to touching the **Start** button icon...

- Is the Process Amount correct?
- Is the correct recipe selected?
- Are all pump lines primed?
- Is the Reporting option selected?

If users want the **Skip Start-Up Questions** option disabled, touch the option and the circle will not be filled.

- This means, when the **Start** button icon on the **Batch Recipe Screen** (page 62) is touched, users will need to answer several questions before the machine begins treating batches of seed.

The questions listed will display in the message bar at the top of the screen and will require a responsive action (yes, no, OK).

**Step 1:** Touch the **Batch Recipe Edit** button icon: navigates to the **Batch Recipe Edit Screen**

Continued ➡





## Batch Recipe Edit Screen

**Step 9:** Liquid Tank 2: Start Time set to 5 seconds.

**Step 10:** Liquid Tank 2: Stop Time set to 20 seconds.

**Step 11:** Liquid Tank 2: UOM can be set to g/kg.

**Step 12:** Liquid Tank 2: Weight can be set to 4.5 grams per kilo.

**Step 13:** Machine Parameters: Bowl Discharge Start Time can be set to 30 seconds.

**Step 14:** Machine Parameters: Bowl Discharge Duration Time can be set to 10 seconds.

**Step 15:** Touch the **Validate Recipe** button icon: displays the **Validation** results pop-up

Continued ➡

MANAGER
Batch Recipe Edit

LOG IN
LOG OUT

Message: [REDACTED]

Recipe Name

Comments

Recipe 15

**Validate Recipe**

Clear Recipe Parameters

Machine Parameters

Batch Size  Kg

Slow Fill  %

Bowl Speed  %

Bowl Fill

Stop  Sec

Bowl Discharge

Start  Sec 13

Duration  Sec 14

Seed Count

Number of Seeds

Per Kilogram

Powder 1

Start Time  sec

Stop Time  sec

Weight  Oz/CWT

Vibrator  sec

Recipe Wt  g/Kg

	Liquid Tak1	Liquid Tak2	
Start Time	<input type="text" value="0"/> sec	<input type="text" value="0"/> sec	<span style="background-color: red; color: white; border-radius: 50%; padding: 2px 5px;">9</span>
Stop Time	<input type="text" value="0"/> sec	<input type="text" value="0"/> sec	<span style="background-color: red; color: white; border-radius: 50%; padding: 2px 5px;">10</span>
UOM	<input type="text" value="FIOz/CWT"/>	<input type="text" value="FIOz/CWT"/>	<span style="background-color: red; color: white; border-radius: 50%; padding: 2px 5px;">11</span>
Weight	<input type="text" value="0.000"/> <small>FIOz CWT</small>	<input type="text" value="0.000"/> <small>FIOz CWT</small>	<span style="background-color: red; color: white; border-radius: 50%; padding: 2px 5px;">12</span>
Density	<input type="text" value="0.000"/> <small>lb gal</small>	<input type="text" value="0.000"/> <small>lb gal</small>	
AI/L			
Recipe WT	<input style="background-color: black; color: white;" type="text" value="0.00"/> g/Kg	<input style="background-color: black; color: white;" type="text" value="0.00"/> g/Kg	

Main Screen
Maint.
Calibrate
Priming
Batch Recipe Edit
Batch Recipe
Bowl Graphics
Tank Graphics 1 - 4
Tank Graphics 5 - 8
Totals
Reports
Options
Alarms



### Batch Recipe Edit Screen - Validation Results Pop-up

- If a box displays **RED** the pump speed, for example, needs to be changed.
- If all of the boxes display **GREEN**...

**Step 1:** Touch the **Close** button icon: Validation results pop-up closes

Continued ➡

MANAGER
Batch Recipe Edit

LOG IN
LOG OUT

Message: [REDACTED]

Recipe Name

Comments

Recipes
Validate Recipe
Clear Recipe Parameters

Batch Size

Slow Fill

Bowl Speed

#### Validation Results

PT1 Pump Speed within MGPS

PT1 Recipe On & Off Times OK

LT1 Pump Speed within MGPS

LT1 Recipe On & Off Times OK

LT2 Pump Speed within MGPS

LT2 Recipe On & Off Times OK

Start Time

Stop Time

UOM

Weight

Close

Density  lb/gal  lb/gal

AI/L

Recipe WT  g/Kg  g/Kg

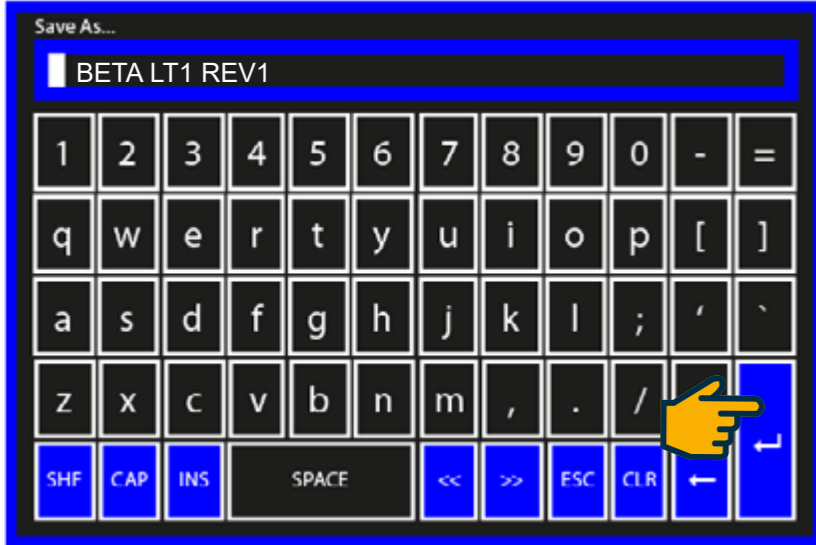
Main Screen
Maint.
Calibrate
Priming
Batch Recipe Edit
Batch Recipe
Bowl Graphics
Tank Graphics 1 - 4
Tank Graphics 5 - 8
Totals
Reports
Options
Alarms



## Batch Recipe Edit Screen

**Step 1:** Touch the **Recipes** button icon: displays the Recipes pop-up.

**Step 2:** Touch the **Save As...** button icon: navigates to the keyboard pop-up...



**Step 3:** Enter a recipe name **BETA LT1 REV1** on the keyboard pop-up.

**Step 4:** Then touch the **ENTER** button icon: keyboard pop-up closes

Continued ➞

The screenshot shows the 'Batch Recipe Edit' screen. At the top, there are 'LOG IN' and 'LOG OUT' buttons. Below them is a 'Message:' field. The main area contains a 'Recipe Name' field, a 'Comments' field, and a 'Machine Parameters' section with fields for 'Batch Size', 'Slow Fill', 'Bowl Speed', 'Bowl Fill', 'Bowl Discharge', 'Start', and 'Duration'. Below this is a table with columns for 'Liquid Tak1' and 'Liquid Tak2', containing fields for 'Start Time', 'Stop Time', 'UOM', 'Weight', 'Density', and 'AI/L'. At the bottom, there are 'Recipe WT' fields. A 'RECIPES' pop-up is overlaid on the right, showing a list of recipes with 'Save As...' selected. A hand icon points to the 'Save As...' button. At the bottom of the screen, there is a navigation bar with buttons for 'Main Screen', 'Maint.', 'Calibrate', 'Priming', 'Batch Recipe Edit', 'Batch Recipe', 'Bowl Graphics', 'Tank Graphics 1-4', 'Tank Graphics 5-8', 'Totals', 'Reports', 'Options', and 'Alarms'.

	Liquid Tak1	Liquid Tak2
Start Time	0 sec	0 sec
Stop Time	0 sec	0 sec
UOM	FIOz/CWT	FIOz/CWT
Weight	0.000 FIOz CWT	0.000 FIOz CWT
Density	0.000 lb gal	0.000 lb gal
AI/L		
Recipe WT	0.00 g/Kg	0.00 g/Kg



## Batch Recipe Edit Screen

**BETA LT1 REV1** recipe name now displays on the **RECIPES** pop-up, as shown right.

**Step 1:** Touch the **Close** button icon: **RECIPES** pop-up closes.

**Step 2:** Touch the **Batch Recipe** button icon: navigates to the **Batch Recipe Screen**

Continued ➡

The screenshot shows the 'Batch Recipe Edit' screen. At the top, there is a 'MANAGER' header and a 'Batch Recipe Edit' title. A 'Message:' field is visible. Below the title, there are buttons for 'Recipes', 'Validate Recipe', and 'Clear Recipe Parameters'. A 'Recipe Name' field and a 'Comments' field are also present. The main area is divided into 'Machine Parameters' and a 'RECIPES' pop-up. The 'Machine Parameters' section includes fields for Batch Size (0 Kg), Bowl Fill (0), Slow Fill (0 %), Bowl Discharge Start (0), Bowl Speed (0 %), and Duration (0). Below this is a table with columns for 'Liquid Tak1' and 'Liquid Tak2', containing fields for Start Time, Stop Time, UOM, Weight, Density, and Recipe WT. The 'RECIPES' pop-up shows a list of recipes, with 'BETA LT1 REV1' selected. It has buttons for 'Open', 'Save', 'Save As...', 'Delete', and 'Close'. A hand icon is pointing to the 'Close' button. At the bottom, there is a navigation bar with buttons for 'Main Screen', 'Maint.', 'Calibrate', 'Priming', 'Batch Recipe' (highlighted with a red box and a hand icon), 'Bowl Graphics', 'Tank Graphics 1-4', 'Tank Graphics 5-8', 'Totals', 'Reports', 'Options', and 'Alarms'.

	Liquid Tak1	Liquid Tak2
Start Time	0 sec	0 sec
Stop Time	0 sec	0 sec
UOM	FIOz/CWT	FIOz/CWT
Weight	0.000 FIOz CWT	0.000 FIOz CWT
Density	0.000 lb gal	0.000 lb gal
AI/L		
Recipe WT	0.00 g/Kg	0.00 g/Kg



## Batch Recipe Screen

**Step 1:** Touch the **Change Recipe** button icon: displays the Recipes pop-up.

**Step 2:** Touch the **UP/DOWN** arrow to select the recipe to use: select **BETA LT1 REV1**.

**Step 3:** Touch the **Load** button icon: Recipes pop-up closes.

**Step 4:** Touch the **Batch Recipe** button icon: navigates to the **Batch Recipe Screen**

This completes the Recipe Creation Section

MANAGER Batch Recipe

LOG IN LOG OUT

Message: \_\_\_\_\_

Recipe Name \_\_\_\_\_ Recipe Comments \_\_\_\_\_ Change Recipe

Commands

Stop

Start

Restart

Advance

Recapture

RECIPIES

BETA LT1

BETA LT1 REV1

Load

Delete

Close

PT1 2

Enabled

Start 10 sec

Stop 17 sec

Target 45 g

Actual 45 g

Total 674 g

Vib 1 sec

	LT1	2	LT2
Status	Enabled		
Start (sec)	0		
Stop (sec)	0		
Target (grams)	0	0	
Actual (grams)	0	0	
Total (grams)	0	0	

Main Screen Maint. Calibrate Priming Batch Recipe Edit Batch Recipe Tank Graphics 1-4 Tank Graphics 5-8 Totals Reports Options Alarms





# RUN SEQUENCE

## Batch Recipe Screen - Batch Run Sequence

Batch recipe selected **BETA LT1 REV1** displays in the **Recipe Name** field.

**Step 1:** Touch the **START** button icon: the button icon will turn yellow, indicating the treater is running\*\*

- \*If the **Skip Start-Up Questions** option is disabled (**OPTIONS SCREEN**), users will first need to answer some questions before the program actually begins treating seed.
- Questions will appear in the message bar (top of screen).
- \*\*If the **Skip Start-Up Questions** option is enabled, the program will skip the start-up questions and begin treating seed automatically.

**>>STOP:** Touch the **STOP** button icon: the button icon will turn yellow, indicating the treater has stopped running.

**>>RESTART:** Touch the **RESTART** button icon: the button icon will turn yellow, indicating the treater has resumed running where it left off.

**>>RECAPTURE:** At the end of a run touch the **RECAPTURE** button icon: the button icon will turn yellow, indicating the Liquid Tank Station Pumps are both running in reverse, returning chemical to the Pump Station and Work Tank.

**>>ADVANCE:** Touch the **ADVANCE** button icon: the button icon will turn yellow, indicating the treater is running to treat a partial batch amount of seed left over at the end of a run

MANAGER Batch Recipe LOG IN LOG OUT

Message:  

---

Recipe Name: **BETA LT1 REV1** Recipe Comments:   Change Recipe

Commands

Stop

Start

Restart

Advance

Recapture

Batch Treater 1 1

**Stopped**

Supply Hopper 2 2

**Enabled**

Hopper Open 2 sec

Discharge Start 20 sec

Duration 25 sec

Talc Error % -0.6449

Process Amt (Kg) 74420

Batch Time 0

Bowl Speed (%) 70

Batch Size (Kg) 180

Hopper Weight (Kg) -0.01

Total Batches 0

Total Seed (Kg) 2700

PT1 2

**Enabled**

Start 10 sec

Stop 17 sec

Target 45 g

Actual 45 g

Total 674 g

Vib 1 sec

	LT1 2	LT2 2
Status	<b>Enabled</b>	<b>Enabled</b>
Start (sec)	0	0
Stop (sec)	0	0
Target (grams)	0	0
Actual (grams)	0	0
Total (grams)	0	0

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Bowl Graphics
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Continued ➔







Note: when the operator touches the **Start** button (page 59) the weigh scale hopper fills with seed. The timer (shown below) starts counting (0-40) when the hopper gates open and begin filling the mixing bowl with seed.

### Batch Run Timeline

This diagram graphically represents a batch run, which is made up of a sequence of events, based on time and established on the **Batch Recipe Edit Screen...**

- **Bowl Fill - seed in from Weigh Scale**
- **Liquid Addition - and Mixing**
- **Powder Addition - and Mixing**
- **Discharge - of seed from Bowl**
- Consult a Bayer representative for exact recipes.

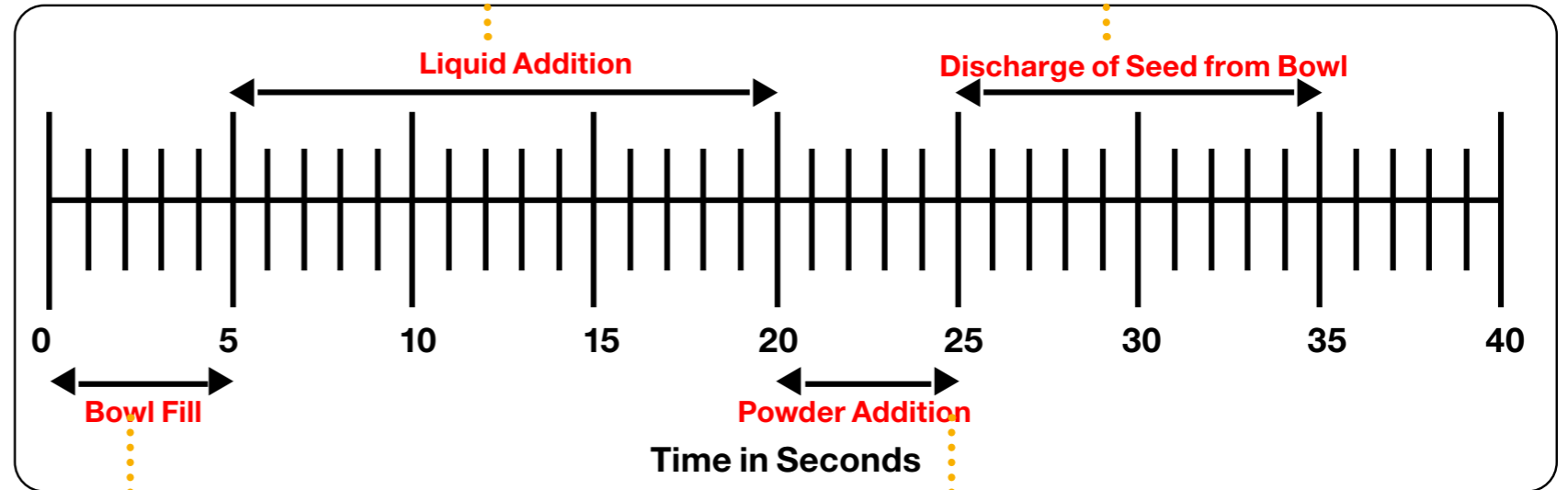
Continued ➔

### LIQUID ADDITION

Amount of time allotted for chemical product to enter the mixing bowl.

### DISCHARGE OF SEED FROM BOWL

Amount of time allotted for treated seed to exit from the mixing bowl.



### BOWL FILL

Amount of time allotted for the mixing bowl to fill with seed from the weigh scale (hopper).

### POWDER ADDITION

Amount of time allotted for powder to enter the mixing bowl.



**BATCH SIZES IN kg FOR REFERENCE**

<b>SEED TYPE</b>	<b>CBT25</b>	<b>CBT50</b>
Wheat	25	50
Barley	20	40
Corn	18-20	37-40
Cotton	15-20	30-40
Soybean	15-20	30-40
Rice	15-20	30-40

<b>SEED TYPE</b>	<b>CBT100</b>	<b>CBT200</b>
Wheat	100	200
Barley	80	160
Corn	75-80	150-160
Cotton	60-80	120-160
Soybean	70-80	140-160
Rice	70-80	140-160

This completes the Batch Run Sequence Section





# REPORTS

## Reports

An executable flash drive can be secured from Bayer, that, when connected, will automatically retrieve and store each batch report from the program, without enabling the Reports option as described on the following pages.

- Check with a Bayer representative for the executable flash drive option.

**Step 1:** Connect a USB storage device into the port on the side of the HMI control

Continued ➞



## Reports - Information Pop-up

The **REPORT INFORMATION** pop-up allows **Managers** to access batch reporting data and transfer it to a USB storage device (flash/thumb drive) when logged into the system.

**Step 1:** Touch the **Reports** button icon: the **REPORT INFORMATION** pop-up displays as a layer on top of the active screen (as shown right).

- Ensure the **Reports On / Off** button is enabled (touch to fill in, as shown right).

**Step 2:** Touch the **File Transfer** button icon

Continued ➡

**MANAGER** Batch Recipe LOG IN LOG OUT

Message: \_\_\_\_\_

Recipe Name: **BETA LT1 REV1** Change Recipe

**REPORT INFORMATION**

Process Order Number: **testp1**

Reports On / Off

Close File Transfer

Batch Treatment: **Stopped**

Supply Hopper: **Enabled**

Commands: Stop, Start, Restart, Advance, Recapture

Discharge: Start **20** sec, Duration **25** sec

Hopper Weight (Kg): **-0.01**

Talc Error %: **-0.6449**

Total Batches: **0**

Total Seed (Kg): **2700**

Target: **45** g

Actual: **45** g

Total: **674** g

Vib: **1** sec

	LT1	2	LT2	2
Status	<b>Enabled</b>		<b>Enabled</b>	
Start (sec)	<b>0</b>		<b>0</b>	
Stop (sec)	<b>0</b>		<b>0</b>	
Target (grams)	<b>0</b>		<b>0</b>	
Actual (grams)	<b>0</b>		<b>0</b>	
Total (grams)	<b>0</b>		<b>0</b>	

Main Screen | Maint. | Calibrate | Priming | Batch Recipe Edit | Batch Recipe | Bowl Graphics | Tank Graphics 1-4 | Tank Graphics 5-8 | **Reports** | Options | Alarms



## Reports - Information Pop-up

The **FILE TRANSFER** pop-up appears.

**Step 1:** Touch each file to save on the USB storage device (drag over to the USB Storage pane).

**Step 2:** Touch the Close button icon: the **FILE TRANSFER** and **REPORT INFORMATION** pop-up closes.

**Step 3:** Remove the USB storage device from the HMI port.

This completes the Reports Section

MANAGER **Batch Recipe** LOG IN LOG OUT

Message: [Redacted]

Recipe Name: **BETA LT1 REV1** REPORT INFORMATION Change Recipe

Process Order Number: **testp1** 2

Commands: Stop Start Restart Advance Recapture

**FILE TRANSFER**  
To transfer files: Drag from one storage location to the other.

PanelView Storage: \*\*\*\*\*

USB Storage:

Close

Main Screen Maint. Calibrate Priming Batch Recipe Edit Batch Recipe Bowl Graphics Tank Graphics 1-4 Tank Graphics 5-8 Totals Reports Options Alarms





# TROUBLESHOOTING

**ALARMING:**

Batch alarm liquid addition error

**CAUSE:**

Liquid target / liquid actual is greater than the liquid tolerance

**SOLUTION:**

Check calibration of scale. Check that the tolerance is not too close (not to exceed +/- 5%). Clean the lines by rinsing with hot water.

**ALARMING:**

Discharge route switch state alarm

**CAUSE:**

No OK to discharge signal from the tower PLC

**SOLUTION:**

Contact a Bayer service technician 1-800-634-6738

**ALARMING:**

E-stop OK state alarm

**CAUSE:**

E-stop has been pressed

**SOLUTION:**

Pull out E-stop

**ALARMING:**

Liquid tank 1-18 supply pump running forward fault

**CAUSE:**

Supply pump motor has stopped running forward

**SOLUTION:**

Contact a Bayer service technician 1-800-634-6738

**ALARMING:**

Liquid tank 1-18 supply pump running reverse fault

**CAUSE:**

Supply pump motor has stopped running reverse

**SOLUTION:**

Contact a Bayer service technician 1-800-634-6738



**ALARMING:**

Liquid tank 1-18 supply pump stopping forward fault

**CAUSE:**

Supply pump motor has continued to run forward after stopping command

**SOLUTION:**

Contact a Bayer service technician 1-800-634-6738

**ALARMING:**

Liquid tank 1-18 supply pump stopping reverse fault

**CAUSE:**

Supply pump motor has continued to run reverse after stopping command

**SOLUTION:**

Contact a Bayer service technician 1-800-634-6738

**ALARMING:**

Air blower motor running fault

**CAUSE:**

Air blower has stopped running

**SOLUTION:**

Is the blower intake filter clean and not damaged? Is control panel contractor MMP-415 tripped? Reset. If this does not fix the issue, Contact a Bayer service technician 1-800-634-6738

**ALARMING:**

Air blower motor stopping fault

**CAUSE:**

Air blower continues to run after stop command

**SOLUTION:**

Remove power from all treating equipment and contact a Bayer service technician 1-800-634-6738

**ALARMING:**

Atomizer motor running fault

**CAUSE:**

Atomizer has stopped running

**SOLUTION:**

Remove power from treater. Remove atomizer belt under machine. Spin atomizer by hand. If it does not spin. Contact a Bayer service technician 1-800-634-6738. If it does spin check contractor MMP-419 and reset.

**ALARMING:**

Atomizer motor running fault

**CAUSE:**

Atomizer has stopped running

**SOLUTION:**

Remove power from treater. Remove atomizer belt under machine. Spin atomizer by hand. If it does not spin. Contact a Bayer service technician 1-800-634-6738. If it does spin check contractor MMP-419 and reset.



**ALARMING:**

Atomizer motor stopping fault

**CAUSE:**

Atomizer continues to run after stop command

**SOLUTION:**

Contact a Bayer service technician 1-800-634-6738

**ALARMING:**

Air pressure switch state alarm

**CAUSE:**

Air pressure has been lost

**SOLUTION:**

Check facility air pressure

**ALARMING:**

Liquid tank 1-18 full prox switch state alarm

**CAUSE:**

Liquid tank has reached a high level

**SOLUTION:**

Recapture the treatment back into the source and wipe off the prox switch

**ALARMING:**

Powder hopper 1-2 low prox switch state alarm

**CAUSE:**

Powder feeder hopper has reached a low level

**SOLUTION:**

Refill powder hopper above the low level prox switch

**ALARMING:**

Storage hopper low prox switch state alarm

**CAUSE:**

Seed storage hopper has reached a low level

**SOLUTION:**

Add more seed to the storage hopper or answer questions on the batch recipe screen message board to finish current seed lot

**ALARMING:**

Calibration hopper prox switch state alarm

**CAUSE:**

Calibration weights have dropped without a energize command

**SOLUTION:**

Check air pressure. Check input number I:6.0/10 is on. If input is not on contact a Bayer service technician 1-800-634-6738





**ALARMING:**

Calibration solenoid valve de-energized fault

**CAUSE:**

Calibration solenoid has failed to de-energize

**SOLUTION:**

Check air pressure. If air pressure is ok contact a Bayer service technician 1-800-634-6738

**ALARMING:**

Calibration solenoid valve energized fault

**CAUSE:**

Calibration solenoid has failed to energize

**SOLUTION:**

Check air pressure. If air pressure is ok contact a Bayer service technician 1-800-634-6738

**ALARMING:**

Powder hopper 1-2 discharge motor running fault

**CAUSE:**

Powder hopper has failed to run

**SOLUTION:**

Contact a Bayer service technician 1-800-634-6738

**ALARMING:**

Powder hopper 1-2 discharge motor stopping fault

**CAUSE:**

Powder hopper has failed to stop running after stop command

**SOLUTION:**

Contact a Bayer service technician 1-800-634-6738

**ALARMING:**

Bowl discharge solenoid valve de-energized fault

**CAUSE:**

Bowl discharge door has failed to de-energize

**SOLUTION:**

Check air pressure. Remove discharge shroud. Check door for seed or misalignment. If door appears closed loosen sensor. Slide up/down shaft of solenoid. If sensor light is on hold &amp; tighten. If no light replace sensor.

**ALARMING:**

Bowl discharge solenoid valve energized fault

**CAUSE:**

Bowl discharge door has failed to energize

**SOLUTION:**

Check air pressure. Remove discharge shroud. Check door for seed or misalignment. If door appears closed loosen sensor. Slide up/down shaft of solenoid. If sensor light is on hold &amp; tighten. If no light replace sensor.



**ALARMING:**

Liquid tank 1-18 discharge pump running forward fault

**CAUSE:**

Liquid tank discharge pump has failed to run forward

**SOLUTION:**

Contact a Bayer service technician 1-800-634-6738

**ALARMING:**

Liquid tank 1-18 discharge pump running reverse fault

**CAUSE:**

Liquid tank discharge pump has failed to run reverse

**SOLUTION:**

Contact a Bayer service technician 1-800-634-6738

**ALARMING:**

Liquid tank 1-18 discharge pump stopping forward fault

**CAUSE:**

Liquid tank discharge pump has failed to stop running forward after stop command

**SOLUTION:**

Contact a Bayer service technician 1-800-634-6738

**ALARMING:**

Liquid tank 1-18 discharge pump stopping reverse fault

**CAUSE:**

Liquid tank discharge pump has failed to stop running reverse after stop command

**SOLUTION:**

Contact a Bayer service technician 1-800-634-6738





**Bayer**

Crop Science Division  
1451 Dean Lakes Trail  
Shakopee, MN 5379  
USA

**Telephone**

+1-952-445-6868

**Toll free:**

+1-855-363-3152

**Visit us on:**

[www.seedgrowth.bayer.com](http://www.seedgrowth.bayer.com)

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