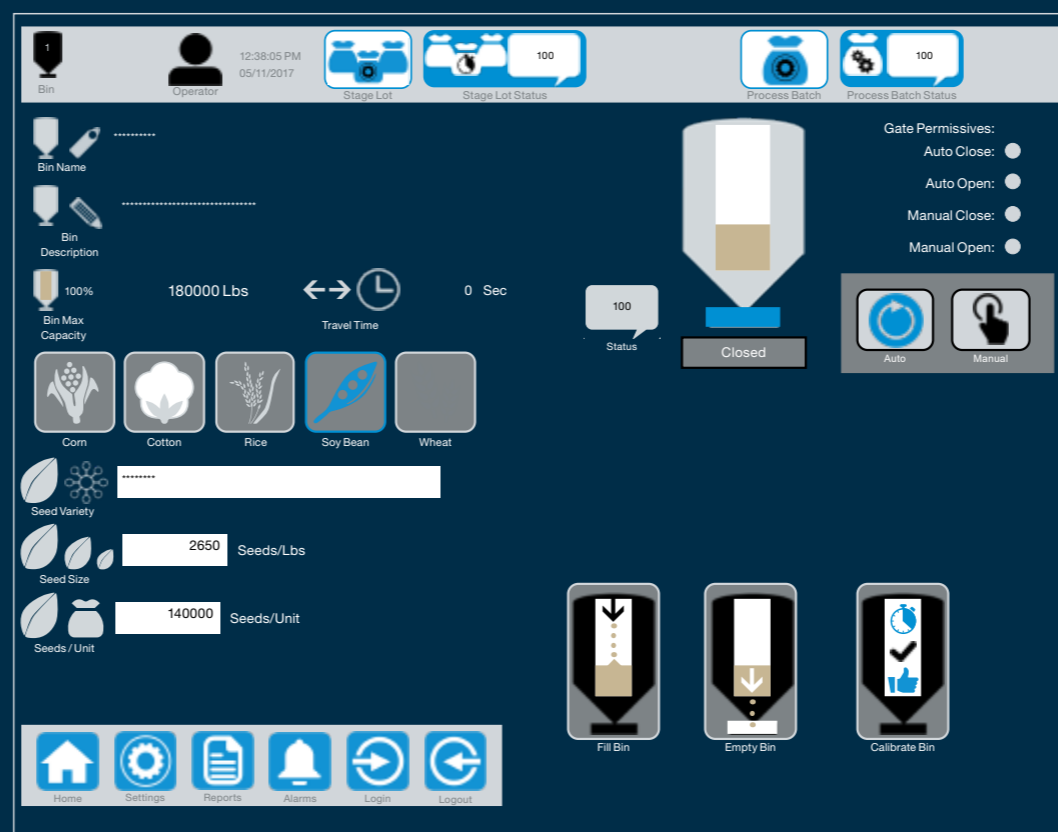




BULK SITE TOUCHSCREENS REFERENCE GUIDE





MENU

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



Legal & Safety



Main Screen



Settings



Bin Functions



Staged Lot



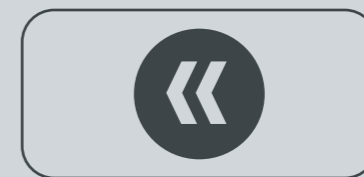
Process Batch



Pictograms

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.



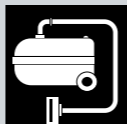
Calibration

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



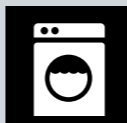
Clean seed

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



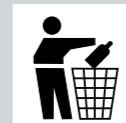
Cleaning

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



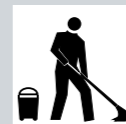
Laundry

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.

Hand	User	Status	Setup	Staging Bin	Outfeed	Seed	Check	Source	USB Thumbdrive	Seed Lot	Number	Running
Back	Control Valve	Start	Reports	Diverter	Corn	Variety	Touchscreens	Summary	File Transfer	Like	Overload	Save
Forward	Total	Pause	Alarms	Inlet Hopper	Cotton	Accept	Direct Dump	Customers	OKAY	Stage Lot	Pulse	Weight
Login	Maintenance	Clock	RH Treater	Conveyor	Rice	Auto Mode	Slidegate Open	Customer New	Home	Process Batch	Reset	Note
Logout	Contactor	Settings	Bulk Bin	Transfer	Soybeans	Cancel	Slidegate closed	Account #	Diagnostics	Name	Reset Time	Tip
Layers	Batch	Configuration	Weigh Scale	Infeed	Wheat	Manual Mode	Control	Files - multiple	Time	Pen	Ramp	Example
VFD	Cleanout	Close Round	Delete	Energise	File Open	Limit	Locate	Locked	Greater Than	Nav Arrow Dbl	Nav Arrow Sgl	Menu





MAIN SCREEN

Home Screen

When the treater control panel is turned on, the PLC will boot up the application programme and initially display the **Home** Touchscreen (shown right) on the HMI touch panel user interface.

The **Home** screen is the main run screen from which all enabled devices will be viewed during bulk site operation. When the system first boots, none of the devices are displayed on the **Home** screen (shown right). They must first be allocated (selected for use) on the **Settings** screen and then enabled (made ready to operate) on the **Configuration** screen. After devices have been allocated and enabled, their icons will populate on the **Home** screen.

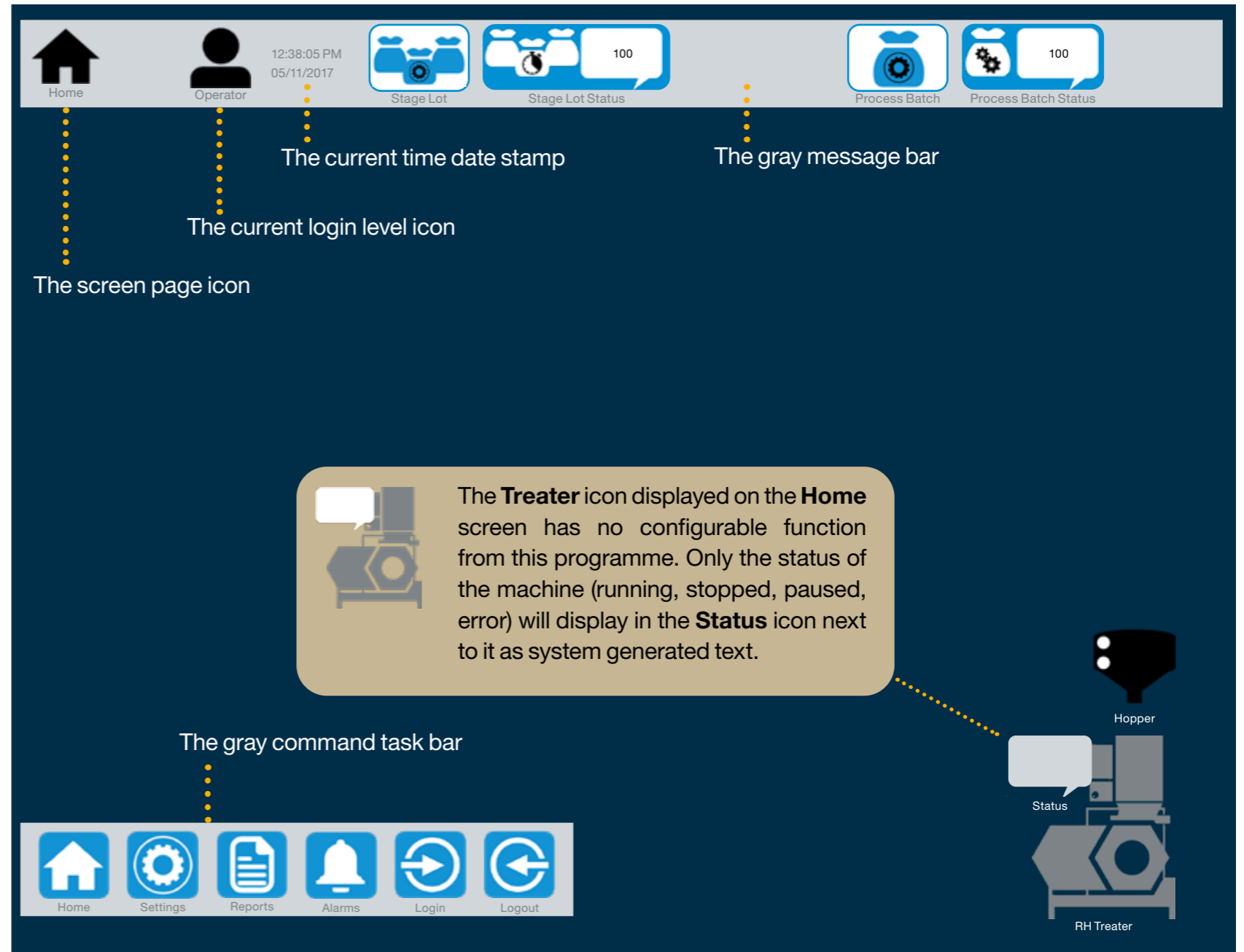
Once the system has been configured, upon subsequent start-ups, the **Home** screen will display the last system configuration (which then can be changed, if needed).

Message Bar

The message bar, located at the top of all screens as shown above, visually indicates the following functions (left to right): the screen icon, current login level icon, time date stamp, stage lot icon, stage lot status indicator icon, process batch icon, process batch status indicator icon, staged lot setup button icon, staged lot start button icon (toggles to pause), process batch setup button icon and the process batch start button icon (toggles to pause).

Command Task Bar

The gray command task bar, located at the bottom of every screen as shown left, allows users to navigate between screens by touching the icon buttons.



Settings Screen

Site information can be entered

General Navigation to different setting screens

Turn Off the icon helper text

The screenshot displays a user interface for a settings screen. At the top, there is a header bar with several icons and labels: 'Settings' (gear icon), 'Operator' (person icon), the time '12:38:05 PM' and date '05/11/2017', 'Stage Lot' (two people icon), 'Stage Lot Status' (two people icon with '100'), 'Process Batch' (gear icon), and 'Process Batch Status' (gear icon with '100').

The main area contains a grid of settings icons, each with a gear icon and a label: 'Bin Settings' (bin icon), 'Weigh Bin Settings' (scales icon), 'Customer Import/Export' (person with plus icon), 'Conveyor Settings' (conveyor icon), 'Staging Bin Settings' (staging bin icon), 'Customer File Edit' (person with plus icon and document), 'General Settings' (gears icon), 'Diverter Gate Settings' (diverter gate icon), 'Diagnostics' (magnifying glass icon), and 'Direct Dump Settings' (dump icon).

On the right side, there are four text input fields for site information: 'Site Name', 'Address Line 1', 'Address Line 2', and 'City, State, Zip'.

At the bottom, there is a navigation bar with icons for 'Home' (house icon), 'Settings' (gear icon), 'Reports' (document icon), 'Alarms' (bell icon), 'Login' (right arrow icon), 'Logout' (left arrow icon), and 'Layers' (stack of layers icon).



Reports Screen

Exporting Reports to USB

The interface features a top navigation bar with icons for Reports, Operator (12:38:05 PM 05/11/2017), Stage Lot, Stage Lot Status (100), Process Batch, and Process Batch Status (100). A central 'Report Files' section displays two tables of report data. A 'USB' icon is visible in the top right, and a 'Transfer' arrow points from the report files to a large empty window on the right. A bottom navigation bar includes Home, Settings, Reports, Alarms, Login, and Logout.

Name	Size	Type
csv 2018_06_08_14_02_000...	1.06KB	CSV File
csv 2018_06_08_14_52_000...	1.07KB	CSV File

Name	Size	Type
csv 2018_06_08_14_26_000...	1.13KB	CSV File



Alarms Screen

Displays Alarms

Allows user to acknowledge alarms

The screenshot displays the Alarms Screen interface. At the top, there is a header bar with several icons: a bell for 'Alarms', a person icon for 'Operator', a clock showing '12:38:05 PM' and '05/11/2017', a 'Stage Lot' icon, a 'Stage Lot Status' icon with a value of '100', a 'Process Batch' icon, and a 'Process Batch Status' icon with a value of '100'. Below the header is a table of active alarms:

Alarm time	Acknowledge time	Message
*6/16/2018 1 1:36.38 PM		Weigh Bin Scale Warning - Lost Communication
* *6/16/2018 1 1:31.04 PM	6/16/2018 1 1:36.28 PM	Manifold - Fault - Com Loss
* *6/16/2018 1 1:31.04 PM	6/16/2018 1 1:36.28 PM	PLC I/O Warning

At the bottom of the screen, there is a navigation bar with icons for 'Home', 'Settings', 'Reports', 'Alarms', 'Login', and 'Logout'. To the right of these icons is a 'Status' icon featuring a checkmark and a yellow bell.



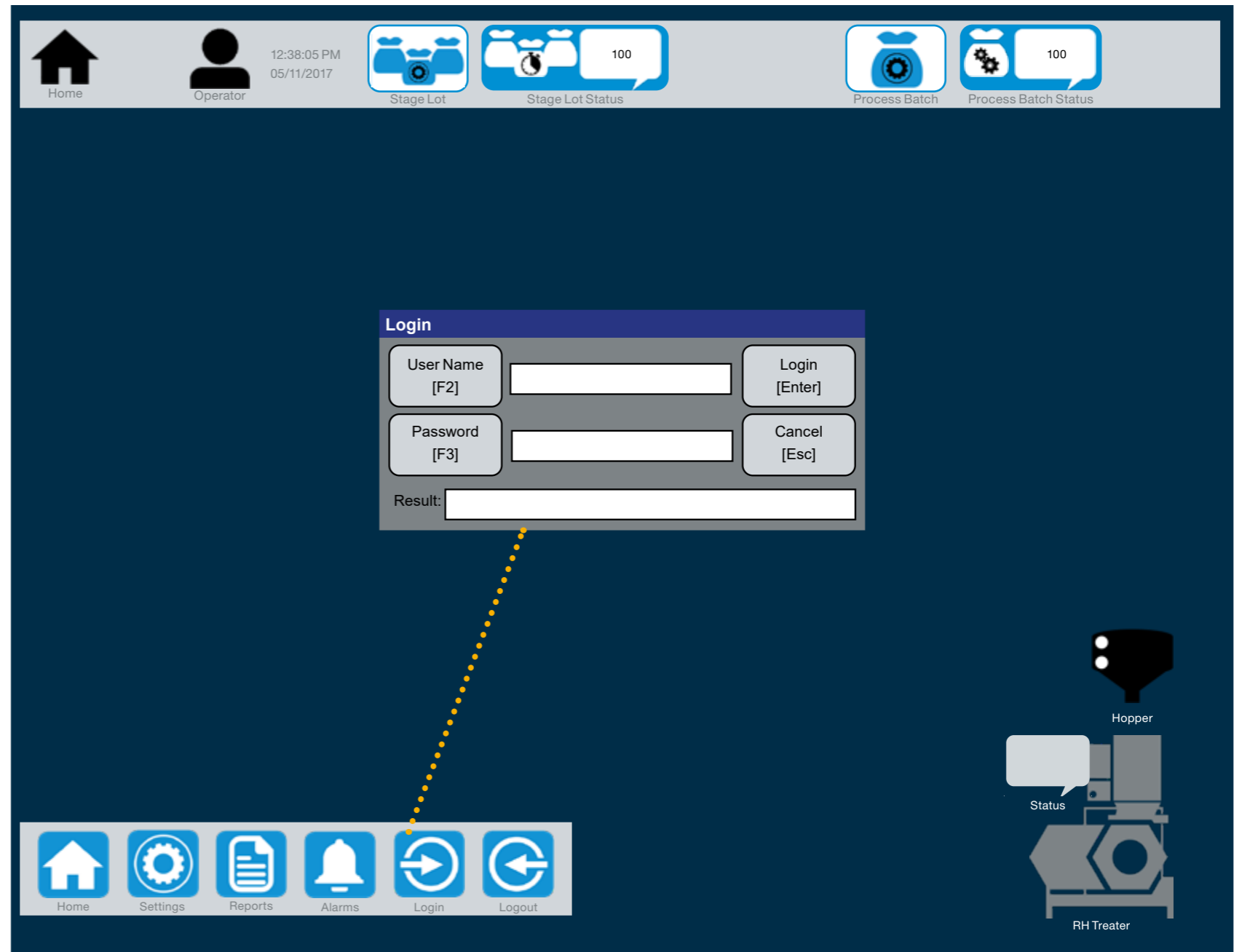
Login Pop-up

When the treater control panel is turned on, the PLC will boot up the application programme and Users are automatically logged into the system at the default level: **Operator**.

No matter which screen is displayed, users can touch the **Login** button icon on the gray command task bar, located at the bottom of every screen: the **Login** pop-up displays as a layer on top of the current touchscreen, as shown right.

Enter a protected User Name and Password for Administrator, Supervisor, Engineer or Technician levels. Touch the **Login [Enter]** button: **Login** pop-up closes and the new login level icon will display at the top of every screen in the gray message bar.

To log out from the current login level, touch the **Logout** button icon on the gray command task bar: System then defaults back to the **Operator** level and the Operator level icon displays at the top of every screen in the gray message bar. Login/Logout function can be executed from any touch screen.





SETTINGS

Bin #1 Detail Screen

Displays Bin Details

Setup Seed Information

Allows manual operation of bin gate

Bin Processes:

- Fill Bin
- Empty Bin
- Calibrate Bin

Allow Bin Functions:

- **Fill Bin:**
Allows to enter in current bin seed level or fill seed amount
- **Empty Bin:**
Allow the bin amount to be zeroed
Runs the under bin conveyor in reverse
- **Calibrate Bin:**
Calibrates the seed flow rate

The screenshot displays the Bin #1 Detail Screen interface. At the top, there is a header bar with a bin icon (1), an operator profile, the time (12:38:05 PM) and date (05/11/2017), and icons for Stage Lot, Stage Lot Status (100), Process Batch, and Process Batch Status (100). Below the header, the main area is divided into several sections:

- Bin Information:** Bin Name (????????), Bin Description (????????????????), Bin Max Capacity (100%), and Travel Time (0 Sec).
- Seed Selection:** Five icons representing different crops: Corn, Cotton, Rice, Soy Bean, and Wheat.
- Seed Variety:** A text input field containing "????????".
- Seed Size:** A numeric input field set to "2650" with the unit "Seeds/Lbs".
- Seeds / Unit:** A numeric input field set to "140000" with the unit "Seeds/Unit".
- Gate Control:** A large bin icon with a "Closed" label and a "Status" indicator showing "100". Below it are "Auto" and "Manual" operation buttons.
- Gate Permissives:** Four radio buttons for "Auto Close", "Auto Open", "Manual Close", and "Manual Open", all currently unselected.
- Bin Functions:** Three large icons at the bottom right labeled "Fill Bin", "Empty Bin", and "Calibrate Bin".
- Navigation Bar:** A bottom bar with icons for Home, Settings, Reports, Alarms, Login, and Logout.



Conveyor #1 Detail Under Bin Screen

Displays Conveyor Details

Allows manual operation of the conveyor

The screenshot displays a control interface for Conveyor #1. At the top, a header bar shows the conveyor name, operator, time (12:38:05 PM), date (05/11/2017), and status indicators for Stage Lot, Stage Lot Status (100), Process Batch, and Process Batch Status (100). The main area features a central conveyor diagram with a status indicator showing '100' and 'IDLE'. To the right, there are 'Auto' and 'Manual' control buttons. Below the diagram, a 'Permissives' section includes radio buttons for 'Auto Start', 'Manual Start', and 'Manual Stop'. On the left, a list of details includes: 'Out_UL' (Conveyor Name), 'Outside Unload' (Conveyor Description), 'Next Device' (5), 'Conveyor Type' (Under Bin), 'Motor Control Type', and 'Reversing Starter'. At the bottom left, there are two run hour indicators: 'Lifetime Run Hours' (3 Hours) and 'Maintenance Run Hours' (3 Hours). A bottom navigation bar contains icons for Home, Settings, Reports, Alarms, Login, and Logout.



Transfer Conveyor #5 Detail Screen

Displays Conveyor Details

Allows manual operation of the conveyor

The screenshot displays the 'Transfer 5' conveyor detail screen. At the top, it shows the conveyor name 'Transfer 5', the operator's name 'Operator', and the current time '12:38:05 PM' on '05/11/2017'. Navigation icons for 'Stage Lot' and 'Process Batch' are also present, with 'Stage Lot Status' and 'Process Batch Status' showing a value of '100'. On the left, there are three main sections: 'Out_Intake' with a 'Conveyor Name' field, 'OutSide Intake' with a 'Conveyor Description' field, and 'Next Device' with a scale icon and a value of '0'. Below these are two run hour metrics: 'Lifetime Run Hours' and 'Maintenance Run Hours', both showing '3 Hours'. The central area features a conveyor diagram, a 'Status' indicator showing '100', and a large 'IDLE' button. Below the 'IDLE' button are 'Auto' and 'Manual' operation buttons. On the right, there are three permission checkboxes: 'Auto Start', 'Manual Start', and 'Manual Stop', all currently unchecked. At the bottom, a navigation bar includes icons for 'Home', 'Settings', 'Reports', 'Alarms', 'Login', and 'Logout'.



Conveyor Infeed Detail Screen

Displays Conveyor Details

Allows manual operation of the conveyor

The screenshot displays the 'Conveyor Infeed Detail Screen' with the following elements:

- Header:** Includes 'Infeed' icon, 'Operator' profile, timestamp '12:38:05 PM 05/11/2017', 'Stage Lot' icon, 'Stage Lot Status' (100), 'Process Batch' icon, and 'Process Batch Status' (100).
- Left Panel:** Contains 'Out_Intake' and 'OutSide Intake' sections, each with a 'Conveyor Name' and 'Conveyor Description' field.
- Center:** Features a large conveyor icon, a 'Status' indicator showing '100', and a grey 'IDLE' button.
- Right Panel:** Labeled 'Permissives', it includes three radio buttons for 'Auto Start', 'Manual Start', and 'Manual Stop', all currently unselected.
- Bottom Left:** Shows 'Lifetime Run Hours' and 'Maintenance Run Hours', both set to '3 Hours'.
- Bottom Bar:** Contains navigation icons for Home, Settings, Reports, Alarms, Login, and Logout.
- Bottom Right:** Includes navigation buttons for back and forward.



Conveyor Outfeed Detail Screen

Displays Conveyor Details

Allows manual operation of the conveyor

The screenshot displays the 'Conveyor Outfeed Detail Screen' with the following components:

- Header:** Includes a back arrow, 'Outfeed' label, 'Operator' profile, time '12:38:05 PM' and date '05/11/2017', 'Stage Lot' icon, 'Stage Lot Status' (100), 'Process Batch' icon, and 'Process Batch Status' (100).
- Left Panel:** Contains 'Out_Intake' and 'OutSide Intake' sections, each with a 'Conveyor Name' and 'Conveyor Description' field.
- Center:** Features a conveyor diagram with a left-pointing arrow, a 'Status' callout showing '100', and an 'IDLE' status bar.
- Right Panel:** Labeled 'Permissives', it includes three radio buttons for 'Auto Start', 'Manual Start', and 'Manual Stop'.
- Bottom Center:** Two buttons labeled 'Auto' and 'Manual' for operation mode selection.
- Bottom Left:** Two summary cards: 'Lifetime Run Hours' (3 Hours) and 'Maintenance Run Hours' (3 Hours).
- Bottom Bar:** A navigation bar with icons for Home, Settings, Reports, Alarms, Login, and Logout.



Weigh Bin Screen

Displays Conveyor Details

Allows manual operation of the lide gate

The screenshot displays the Weigh Bin Screen interface. At the top, there is a header bar with icons for Weigh Bin, Operator, Stage Lot, Stage Lot Status, Process Batch, and Process Batch Status. The main area features a central scale icon with a weight display showing '0'. To the left, there are indicators for Bin Max Capacity (100%) and Travel Time (0 Sec). Below the scale, there are control buttons for 'Auto' and 'Manual'. On the right, there are 'Gate Permissives' for Auto Close, Auto Open, Manual Close, and Manual Open. A bottom navigation bar includes icons for Home, Settings, Reports, Alarms, Login, and Logout.

12:38:05 PM
05/11/2017

100
Status

100
Status

0

100
Status

100%
Bin Max Capacity

15000 Lbs

0 Sec
Travel Time

Center of Zero
Scale Stable
Error: Scale Error

Gate Permissives:
Auto Close:
Auto Open:
Manual Close:
Manual Open:

Auto Manual

Home Settings Reports Alarms Login Logout



Stage Bin Screen

Displays Bin Details

Display Current Seed in the Bin

Allows manual operation of the Bin Gate

The screenshot displays the Stage Bin Screen interface. At the top, there is a header bar with several icons and labels: Stage Bin, Operator, 12:38:05 PM 05/11/2017, Stage Lot, Stage Lot Status (100), Process Batch, and Process Batch Status (100). The main area features a large icon of a bin with a gate. Below this icon, there is a status indicator showing '100' and 'Status', and a 'Closed' button. To the right of the bin icon, there are 'Auto' and 'Manual' operation buttons. Further right, there is a 'Gate Permissives' section with four radio buttons: Auto Close, Auto Open, Manual Close, and Manual Open. Below the bin icon, there is a 'Travel Time' indicator showing '0 Sec'. On the right side, there is a 'Stage Batch Summary' icon and a list of fields with placeholder text '?????????'. At the bottom, there is a navigation bar with icons for Home, Settings, Reports, Alarms, Login, and Logout. A 'Customer' field with a plus sign and 'Account #' field are also visible on the right side.



Diverter Detail Screen

Displays Diverter Details

Allows manual operation of diverter gate

The screenshot displays the Diverter Detail Screen with the following components:

- Top Header:** Includes icons for Diverter, Operator, Stage Lot, Stage Lot Status (100), Process Batch, and Process Batch Status (100). The time and date are 12:38:05 PM 05/11/2017.
- Control Elements:**
 - Diverter Control Type:** Represented by a gear and switch icon.
 - PLC Operated:** Represented by a diverter gate icon.
 - Travel Time:** Represented by a clock icon, currently showing 0 Sec.
 - Status:** A speech bubble icon containing the number 100.
 - De-energize:** A button with a lightning bolt icon.
 - Mode Selection:** Two buttons labeled "Auto" and "Manual" with corresponding icons.
- Gate Permissives:** A list of four permissives, each with a radio button:
 - Auto Close:
 - Auto Open:
 - Manual Close:
 - Manual Open:
- Bottom Navigation:** A row of six icons: Home, Settings, Reports, Alarms, Login, and Logout.



Bin Settings Screen

Bin Configuration Navigation

Displays following information:

- Active Bin
- Bin Name
- What Under Bin Conveyor is used
- What pneumatic valve is used

Choose a bin for more information

The screenshot displays the Bin Settings Screen interface. At the top, there is a navigation bar with icons for Bin Settings, Operator (12:38:05 PM 05/11/2017), Stage Lot, Stage Lot Status (100), Process Batch, and Process Batch Status (100). Below the navigation bar, there are 16 bin icons arranged in two rows of eight. The first five bins (Bin 1 to Bin 5) are highlighted in blue and show a diagram of the bin with a conveyor and pneumatic valve. The remaining bins (Bin 6 to Bin 16) are greyed out. At the bottom, there is a navigation bar with icons for Home, Settings, Reports, Alarms, Login, and Logout.



Bin Settings Screen

Enable Bin

Name the Bin:

- Is displayed on the Bin on Main screen

Bin Description

Set Max Capacity

Gate Travel Time:

- How long it takes for gate to close

Conveyor Clean out time

Calibration Flow Rate

Choose the next device in the seed flow

Set gate valve output

12:38:05 PM
05/11/2017

100

100

Bin Settings

Operator

Stage Lot

Stage Lot Status

Process Batch

Process Batch Status

Enable Bin

Bin Name: Bean Bin

Bin Description: This is a long name

Bin Max Capacity: 15000 Lbs

Travel Time: 1.0 Sec

Cleanout Time: 15 Sec

Calibration: 10000 Lbs/min

Downstream Conveyor: CONV1, Underb*

Weigh Bin: 5, 7, 8

Gate Valve: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19

Home Settings Reports Alarms Login Logout Back Set Defaults



Conveyor Settings Screen

Conveyor Configuration Navigation

Displays following information:

- Active Conveyor
- Conveyor Name
- Which Device is used next

The screenshot displays the Conveyor Settings Screen interface. At the top, there is a navigation bar with icons for Conveyor Settings, Operator, Stage Lot, Stage Lot Status (showing 100), Process Batch, and Process Batch Status (showing 100). The main area shows a grid of conveyor icons, each with a name and a status indicator (blue for active, grey for inactive). The active conveyors are Out_UL (Conveyor 1), Out_Intake (Conveyor 5), Scale_Dis (InFeed Conveyor), and Load_Out (Out Feed Conveyor). The bottom navigation bar includes icons for Home, Settings, Reports, Alarms, Login, and Logout.



Conveyor Configuration - Under Bin Screen

Enable Conveyor

Name the Conveyor:

- Is displayed on the Conveyor on Main screen

Conveyor Description

Set Conveyor Type:

- If Under Bin is selected operator has the following options:

Motor Starter:

- > Forward Only
- > Forward and Reversing

Ethernet VFD

Choose the next device in the seed flow

Mask out Feedback:

- Will ignore feedback from the starter or VFD

Run Lockout enable:

- Creates a software lockout for the conveyor

Maintenance Interval:

- Operator determines the amount of time before the system will prompt the operator to do maintenance
- The message only occurs during PLC start-up

Conveyor Settings Operator 12:38:05 PM 05/11/2017 Stage Lot Stage Lot Status 100 Process Batch Process Batch Status 100

Enable Conveyor

Conveyor Name Out_UL

Conveyor Description Outside Unload

Conveyor Type Under Bin

Motor Control Type Reversing Starter

Next Device

Out_UL 1 Weigh Bin

Out_Int* 5 Inside_* 8

Run, Overload Feedback Mask Enable

Run Lockout Enable

Maintenance Interval 1000 Hours

Reset Maintenance Hours

Home Settings Reports Alarms Login Logout Back



Conveyor Configuration - Transfer #5 Screen

Enable Conveyor

Name the Conveyor:

- Is displayed on the Conveyor on Main screen

Conveyor Description

Choose the next device in the seed flow

Mask out Feedback:

- Will ignore feedback from the starter or VFD

Run Lockout enable:

- Creates a software lockout for the conveyor

Maintenance Interval:

- Operator determines the amount of time before the system will prompt the operator to do maintenance
- The message only occurs during PLC start-up

The screenshot shows the 'Conveyor Configuration - Transfer #5 Screen' interface. The top navigation bar includes icons for 'Conveyor Settings', 'Operator', 'Stage Lot', 'Stage Lot Status', 'Process Batch', and 'Process Batch Status'. The main content area is organized into several functional sections:

- Enable Conveyor:** A toggle switch with a checkmark and an 'X' icon.
- Name the Conveyor:** A text input field containing 'Out_Intake'.
- Conveyor Description:** A text input field containing 'Outside Intake'.
- Next Device:** A selection menu with an arrow icon, showing 'Out_UL' and 'Weigh Bin' as options.
- Mask out Feedback:** A toggle switch with a checkmark and an 'X' icon.
- Run, Overload Feedback Mask Enable:** A toggle switch with a checkmark and an 'X' icon.
- Run Lockout Enable:** A toggle switch with a checkmark and an 'X' icon.
- Maintenance Interval:** A numeric input field set to '1000' with the unit 'Hours', and a 'Reset Maintenance Hours' button.

The bottom navigation bar contains icons for 'Home', 'Settings', 'Reports', 'Alarms', 'Login', 'Logout', and 'Back'.



Conveyor Configuration - Infeed Screen

Enable Conveyor

Name the Conveyor:

- Is displayed on the Conveyor on Main screen

Conveyor Description

Mask out Feedback:

- Will ignore feedback from the starter or VFD

Run Lockout enable:

- Creates a software lockout for the conveyor

Maintenance Interval:

- Operator determines the amount of time before the system will prompt the operator to do maintenance
- The message only occurs during PLC start-up

The screenshot shows the 'Conveyor Configuration - Infeed Screen' interface. At the top, there is a navigation bar with icons for 'Conveyor Settings', 'Operator' (with a profile icon and time/date: 12:38:05 PM 05/11/2017), 'Stage Lot', 'Stage Lot Status' (with a value of 100), 'Process Batch', and 'Process Batch Status' (with a value of 100). Below the navigation bar, the main configuration area includes:

- Enable Conveyor:** A toggle switch that is currently turned on (indicated by a blue checkmark).
- Conveyor Name:** A text input field containing 'Scale_Dis'.
- Conveyor Description:** A text input field containing 'Scale Discharge'.
- Run, Overload Feedback Mask Enable:** A toggle switch that is currently turned on.
- Run Lockout Enable:** A toggle switch that is currently turned on.
- Maintenance Interval:** A text input field containing '1000' followed by the unit 'Hours'.
- Reset Maintenance Hours:** A button with a circular arrow icon.

At the bottom of the screen, there is a navigation bar with icons for 'Home', 'Settings', 'Reports', 'Alarms', 'Login', 'Logout', and a large 'Back' button.



Conveyor Configuration - Outfeed Screen

Enable Conveyor

Name the Conveyor:

- Is displayed on the Conveyor on Main screen

Conveyor Description

Mask out Feedback:

- Will ignore feedback from the starter or VFD

Run Lockout enable:

- Creates a software lockout for the conveyor

Maintenance Interval:

- Operator determines the amount of time before the system will prompt the operator to do maintenance
- The message only occurs during PLC start-up

The screenshot displays the 'Conveyor Configuration - Outfeed Screen' interface. At the top, there is a navigation bar with icons for 'Conveyor Settings', 'Operator' (with a profile icon and timestamp '12:38:05 PM 05/11/2017'), 'Stage Lot', 'Stage Lot Status' (with a '100' indicator), 'Process Batch', and 'Process Batch Status' (with a '100' indicator). The main area contains several settings:

- Enable Conveyor:** A toggle switch that is currently turned on (indicated by a blue checkmark).
- Conveyor Name:** A text input field containing 'Load_Out'.
- Conveyor Description:** A text input field containing 'Load Out'.
- Run, Overload Feedback Mask Enable:** A toggle switch that is currently turned on.
- Run Lockout Enable:** A toggle switch that is currently turned on.
- Maintenance Interval:** A text input field containing '1000' followed by the unit 'Hours'.
- Reset Maintenance Hours:** A button with a circular arrow icon.

At the bottom of the screen, there is a navigation bar with icons for 'Home', 'Settings', 'Reports', 'Alarms', 'Login', 'Logout', and a large 'Back' button.



General Screen

Calibration Change Limit

- If the new calibration is greater than the limit then the operator has an option to accept or reject.
- If the new calibration is below then the change is made automatic

Seed Units

Sets system display units:

- Lbs
- Units

Lot Acceptable Range

- If the Lot amount is less than the limit then the batch will continue
- If the Lot amount is greater than the limit then the operator has the option to accept or reject

Batch Cleanout Time

- Once the treater drum stops, this is the cleanout time for the outfeed conveyor

Minimum Batch Size

- Minimum batch size before the system will split the remain seed in the scale
- $(\text{Min Batch Size} \times 2) \geq \text{normal batch size}$
- $(\text{Min Batch Size} \times 2) \leq \text{Scale Weight}/2$

The screenshot displays the 'General Screen' interface. At the top, there is a header bar with icons for 'General Settings', 'Operator' (with a profile icon), 'Stage Lot', 'Stage Lot Status' (showing '100'), 'Process Batch', and 'Process Batch Status' (showing '100'). The main area contains several settings: 'Calibration Change Limit' set to 10%, 'Seed Units' set to 'Pounds', 'Lot Acceptable Range' set to 0 Lbs, 'Batch Cleanout Time' set to 15 Sec, and 'Minimum Batch Size' set to 200 Lbs. On the right side, there are three time settings: 'High Prox De-Bounce Time' (1 Sec), 'Low Prox De-Bounce Time' (1 Sec), and 'Lot Conv Ramp Time' (5 Sec). Below these is 'Batch Conv Ramp Time' (5 Sec) and a 'Treater Heartbeat Enable' toggle switch which is currently turned on. At the bottom, there is a navigation bar with icons for 'Home', 'Settings', 'Reports', 'Alarms', 'Login', and 'Logout'.

High Prox. De-Bounce Time

- Amount of time after the sensor changes state before it is sent to the PLC

Low Prox. De-Bounce Time

- Amount of time after the sensor changes state before it is sent to the PLC

Lot Conv Ramp Time

- Ramp Time for each conveyor in the Stage Lot Process

Batch Conv Ramp Time

- Ramp Time for each conveyor in the Process Batch Process

Treater Heartbeat Enable

- Bulk Site PLC is check the presents of the OnDemand Treater



Weigh Bin Configuration Screen

Enable Bin

Bin Max Capacity

- Should match the scale name plate

Travel Time:

- Amount of time for the pneumatic gate to close or open

Gate Valve

- Valve selection on the pneumatic manifold

The screenshot displays the Weigh Bin Configuration interface. At the top, there is a navigation bar with icons for Weigh Bin Settings, Operator (12:38:05 PM 05/11/2017), Stage Lot, Stage Lot Status (100), Process Batch, and Process Batch Status (100). Below the navigation bar, the 'Enable Bin' section features a bin icon and a toggle switch currently set to 'On'. The 'Bin Max Capacity' section shows a bin icon, a '100%' indicator, and a text input field containing '10000 Lbs'. The 'Travel Time' section includes a clock icon, a double-headed arrow, and a text input field containing '0.0 Sec'. A 'Gate Valve' section on the left shows a valve icon and a 'Gate Valve' label. To the right is a 3x7 grid of 19 valve icons, numbered 1 through 19. Valve 6 is highlighted in blue. At the bottom, a navigation bar contains icons for Home, Settings, Reports, Alarms, Login, and Logout.



Stage Bin & Conveyor Configuration Screen

Enable Bin

Enable Conveyor

Travel Time:

- Amount of time for the pneumatic gate to close or open

Run Lockout enable

- Creates a software lockout for the conveyor

Gate Valve

- Valve selection on the pneumatic manifold

The screenshot displays the Stage Bin & Conveyor Configuration Screen. At the top, there is a header bar with icons for Staging Bin Settings, Operator (with a clock showing 12:38:05 PM on 05/11/2017), Stage Lot, Stage Lot Status (with a value of 100), Process Batch, and Process Batch Status (with a value of 100). Below the header, there are several control elements: 'Stage Bin Enable' with a checked status, 'Source Conveyor Enable' with a checked status, 'Travel Time' set to 0.0 Sec, and 'Run Lockout Enable' with a checked status. A 'Gate Valve' section shows a grid of 19 valve selection options, with valve 17 highlighted in blue. At the bottom, there is a navigation bar with icons for Home, Settings, Reports, Alarms, Login, and Logout.



Diverter Configuration Screen

Diverter Enable

Diverter Control Type:

- Manual Operated
- PLC Controlled

Travel Time

- Amount of time for the pneumatic gate to close or open

Run Lockout enable

- Creates a software lockout for the conveyor

Energize Position

- Choose what position the diverter when the valve is energized

Gate Valve

- Valve selection on the pneumatic manifold

The screenshot displays the Diverter Configuration Screen with the following elements:

- Header:** Includes navigation icons for Diverter Settings, Operator (with name and date: 12:38:05 PM 05/11/2017), Stage Lot, Stage Lot Status (100), Process Batch, and Process Batch Status (100).
- Control Type:** A toggle switch for Diverter Enable (checked) and a radio button for Diverter Control Type (set to PLC Operated).
- Travel Time:** A clock icon and a numeric input field showing 0.0 Sec.
- Run Lockout:** A lock icon and a toggle switch for Run Lockout Enable (checked).
- Energize Position:** Radio buttons for Energize Position (selected) and Recycle Bin.
- Gate Valve:** A radio button for Gate Valve selection.
- Valve Selection Grid:** A 3x7 grid of 21 valve icons numbered 1 to 19. Valve 7 is highlighted in blue.
- Footer:** A row of navigation icons for Home, Settings, Reports, Alarms, Login, and Logout.



Diverter Configuration Screen

Enable Conveyor Dump

- Process is dump seed into a conveyor and then into the scale

Enable Direct Dump

- Process is dump seed into the scale

Conveyor

- Choose the conveyor to use in the Conveyor Dump process

Cleanout Time

- Amount of time to clean out the conveyor

The screenshot displays the Diverter Configuration Screen with the following elements:

- Header:** Includes icons for Direct Dump Settings, Operator, Stage Lot, Stage Lot Status (100), Process Batch, and Process Batch Status (100). The time and date are 12:38:05 PM, 05/11/2017.
- Enable Conv Dump:** A toggle switch with a blue checkmark, indicating it is enabled.
- Enable Direct Dump:** A toggle switch with a grey 'X', indicating it is disabled.
- Conveyor:** A dropdown menu showing three options: 1 CONV1, 2 Underb*, and 3 Inside_*.
- Cleanout Time:** A numeric input field set to 30 Sec.
- Bottom Navigation:** A row of icons for Home, Settings, Reports, Alarms, Login, and Logout.



Customer Import/Export Screen

Importing Customer into the PLC

- Select the customer files on the USB
- Select files and drag across screen to copy

Export Customer into the USB

- Back and Forward arrows are for navigation of file structure on USB drive.
- Then select the forward arrow to move the files to the USB

The screenshot displays the 'Customer Import/Export' interface. At the top, there is a header bar with icons for 'Customer Import/Export', 'Operator', 'Stage Lot', 'Stage Lot Status', 'Process Batch', and 'Process Batch Status'. The main area is divided into two panes: 'Customer Files' on the left and 'USB' on the right. The 'Customer Files' pane contains a table with the following data:

Name	Size	Type
csv 2018_06_08_14_02_000...	1.06KB	CSV File
csv 2018_06_08_14_52_000...	1.07KB	CSV File

A 'Transfer' icon is positioned between the two panes. At the bottom right, there are 'Back' and 'Forward' navigation buttons. The bottom of the screen features a navigation bar with icons for 'Home', 'Settings', 'Reports', 'Alarms', 'Login', and 'Logout'.



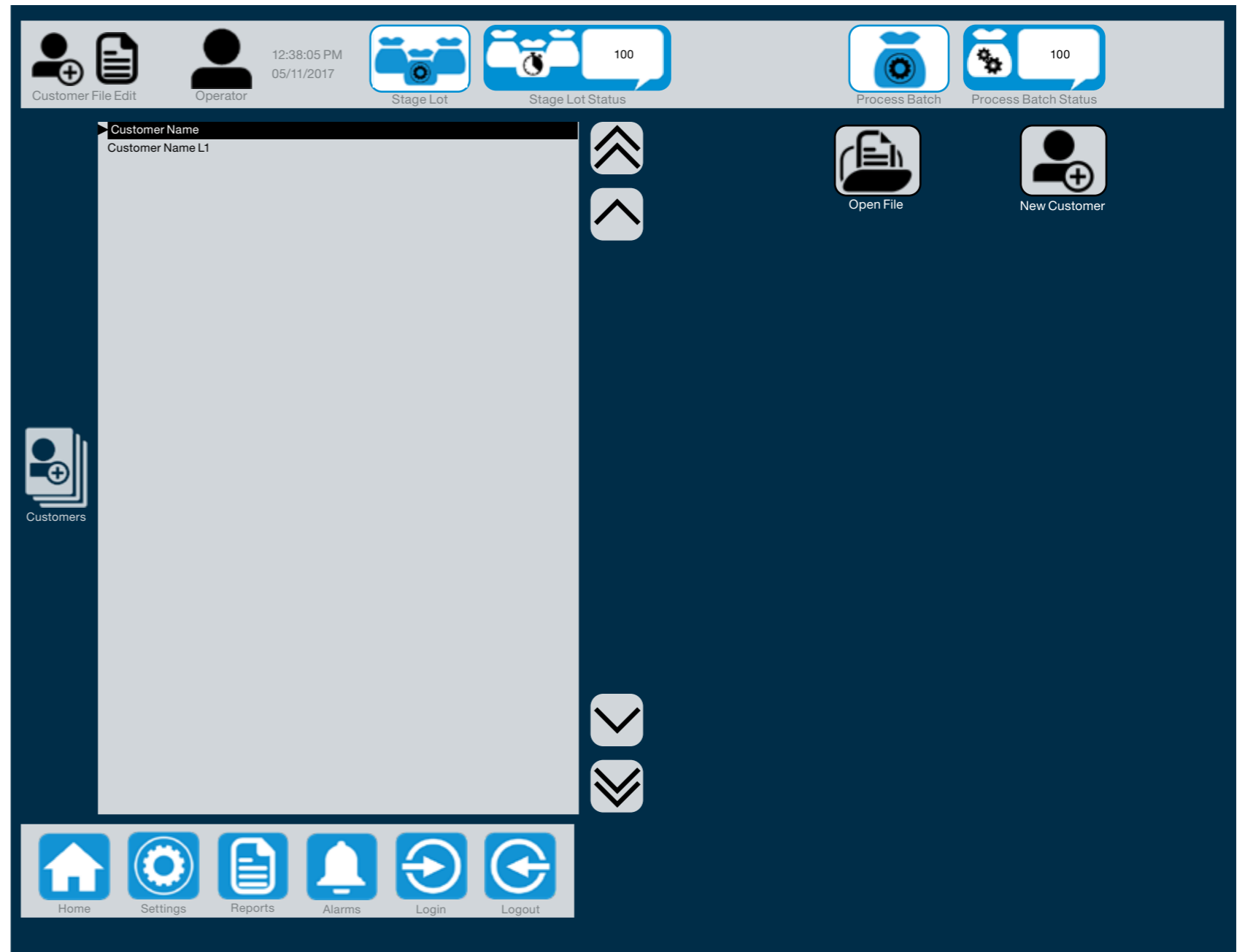
Customer Manage Screen

Edit customer information

- Select Customer name using the scrolling arrows
- Select Open File:
 - >You must select open file in order to edit the file
- Once edit is complete select save file
- Then close file

New Customer

- Enter in the customer information
- Select save file
- Then close file



Customer Manage Opened Screen

Shows the information when you select:

- Open a customer file
- New customer

The screenshot displays the 'Customer Manage Opened Screen' interface. At the top, a status bar shows 'Customer File Edit', 'Operator', the time '12:38:05 PM' and date '05/11/2017', and icons for 'Stage Lot', 'Stage Lot Status' (with a '100' notification), 'Process Batch', and 'Process Batch Status' (with a '100' notification). Below this is a large central area with a header 'Customer Name' and a sub-header 'Customer Name L1'. To the right of this area is a form with fields for 'Name Line 1', 'Name Line 2', 'Address Line 1', 'Address Line 2', 'City, State Zip', and 'Account Number'. A 'Close File' button is located above the form. Below the form are 'Save File' and 'Delete File' buttons. A '*Required Field' label is positioned to the left of the 'Account Number' field. On the left side of the screen, there is a 'Customers' icon. At the bottom, a navigation bar contains icons for 'Home', 'Settings', 'Reports', 'Alarms', 'Login', and 'Logout'.



Diagnostics Screen

Current HMI and PLC Revisions

Displace current states of PLC

- Inputs
- Outputs

Displays HMI information

- Press poll terminal button to populate information in terminal diagnostics

The screenshot shows the Diagnostics Screen HMI interface. At the top, there is a navigation bar with icons for Diagnostics, Operator, Stage Lot, Stage Lot Status (100), Process Batch, and Process Batch Status (100). The main content area displays HMI Revision 1712.31 and PLC Revision 01.00.00. Below this, there are two columns of discrete inputs and outputs. The discrete inputs are labeled Slot 1, Slot 2, and Slot 3, with values 10: through 15: and I10: through I15:. The discrete outputs are labeled Slot 4 and Slot 5, with values 00: through 05: and 010: through 015:. To the right, there is a section for HMI Terminal Diagnostics, which includes CPU Temp: 0, CPU Load: 0, Display Temp: 0, Memory Load: 0, Logic Board Temp: 0, IP Address, Subnet Mask, Gateway, and MAC Address. A blue button labeled 'Poll Terminal' is located below the HMI Terminal Diagnostics section. At the bottom, there is a navigation bar with icons for Home, Settings, Reports, Alarms, Login, and Logout.

12:38:05 PM
05/11/2017

HMI Revision 1712.31
PLC Revision 01.00.00

DISCRETE INPUTS

Slot 1	Slot 2	Slot 3
10: ●	10: ●	10: ●
11: ●	11: ●	11: ●
12: ●	12: ●	12: ●
13: ●	13: ●	13: ●
14: ●	14: ●	14: ●
15: ●	15: ●	15: ●
16: ●	16: ●	16: ●
17: ●	17: ●	17: ●
18: ●	18: ●	18: ●
19: ●	19: ●	19: ●
I10: ●	I10: ●	I10: ●
I11: ●	I11: ●	I11: ●
I12: ●	I12: ●	I12: ●
I13: ●	I13: ●	I13: ●
I14: ●	I14: ●	I14: ●
I15: ●	I15: ●	I15: ●

DISCRETE OUTPUTS

Slot 4	Slot 5
00: ●	00: ●
01: ●	01: ●
02: ●	02: ●
03: ●	03: ●
04: ●	04: ●
05: ●	05: ●
06: ●	06: ●
07: ●	07: ●
08: ●	08: ●
09: ●	09: ●
010: ●	010: ●
011: ●	011: ●
012: ●	012: ●
013: ●	013: ●
014: ●	014: ●
015: ●	015: ●

HMI Terminal Diagnostics

CPU Temp: 0 CPU Load: 0
Display Temp: 0 Memory Load: 0
Logic Board Temp: 0
IP Address:
Subnet Mask:
Gateway:
MAC Address:

Poll Terminal

Home Settings Reports Alarms Login Logout





BIN FUNCTIONS

Bin #1 Detail Screen

Displays the Bin Name

- Is displayed on the Bin on Main screen

Displays Bin Description

Displays Max Capacity

Displays Gate Travel Time

- How long it takes for gate to close

Set Crop Type

Set Seed Variety

Set Seed Size

Set Seed/Unit

Displays Bin Status

Allows manual operation of the pneumatic gate

Run Following Processes

- Fill Bin
- Empty Bin
- Calibrate Bin



Fill Bin Pop-up

Fill Bin Process

Bin Level

- Sets the absolute seed level

Fill Amount


- Add entered amount of seed to total seed amount
- Every time the Accept button is pressed




Fill Bin

 100% 180000 Lbs
Bin Max Capacity

 Units
Bin Level

 Units
Fill Amount


Accept







Empty Bin Pop-up

Empty Bin Process

- User Presses the Start Button
 - The conveyor associated to the bin will start in reverse
- >If the conveyor is configured to be reversing or VFD
- The pneumatic valve will open
 - The System will continue to run until the user presses the stop button
 - Once stop is pressed, the gate will close and the conveyor will enter into a clean out process
 - When clean out is completed the conveyor will stop
 - The system will zero out the seed fill level


Empty Bin




Current State: 100

State Action: IDLE

State Transition: READY TO START

Elapsed Time: 0:00:03


Start

Permissives:

Start:

Stop:

Running:



Calibrate Bin Pop-up

Calibration Size

- Amount of seed for the calibration

Calibration Runs


- Number of Calibration runs

Runs Completed


Current Flow Rate for the bin





Process:

- System Performs a conveyor clean out
 - >If there is no weight in the scale the system will continue automatically
 - > If there is weight in the scale the user as option of continue the calibration or cancel the calibration process



Calibrate Bin



		<input type="text" value="500"/>	Lbs	Runs Completed:	<input type="text" value="0"/>	Permissives:
Calibration Size				Current Flow Rate:	<input type="text" value="2643"/>	Accept: <input type="radio"/>
		<input type="text" value="4"/>				Next Run: <input type="radio"/>
Calibration Runs						Reject: <input type="radio"/>
						Start: <input type="radio"/>
						Stop: <input type="radio"/>
						Running: <input type="radio"/>

Current State: 100

State Action: IDLE

State Transition: START NOT POSSIBLE, LOST COMMUNICATION WITH WEIGH BIN SCALE





STAGE LOT

Stage Lot Screen

Set-up Stage Lot

Require information

- Seed Source
- Lot Size
- Customer

If seed source is not from Bulk Bin:

- Then seed information is required

The screenshot displays the Stage Lot configuration interface. At the top, a navigation bar shows icons for Stage Lot, Operator (12:38:05 PM 05/11/2017), Stage Lot Status, and Process Batch (100). The main area features a 'Lot Setup' gear icon and a 'Seed Source' section with five bins (1-5). Below this are 'Weigh Bin' and 'Aux Conv' options. A 'Lot Size' field is set to 45 Units. On the right, crop selection buttons (Corn, Cotton, Rice, Soy Bean, Wheat) are visible, along with fields for Seed Variety (?????????), Seed Size (2650 Seeds/Lbs), and Seeds / Unit (140000 Seeds/Unit). Customer information fields include Name Line 1, Name Line 2, Address Line 1, Address Line 2, City, State Zip, and Account Number. A bottom navigation bar contains Home, Settings, Reports, Alarms, Login, and Logout buttons.



Stage Lot - Direct Dump Selected Screen

Set-up Stage Lot

Require information

- Seed Source
- Lot Size
- Customer

Seed information is required

12:38:05 PM
05/11/2017

100

100

Stage Lot Operator Stage Lot Status Process Batch Process Batch Status

Lot Setup

Seed Source

1 2 3 4 5
????? ?????? ?????? ?????? Bin^s

Weigh Bin Aux Conv

Select Customer

Corn Cotton Rice Soy Bean Wheat

Seed Variety

Seed Size 0 Seeds/Lbs

Seeds / Unit 0 Seeds/Unit

Customer

Name Line 1

Name Line 2

Address Line 1

Address Line 2

City, State Zip

Account Number

Home Settings Reports Alarms Login Logout

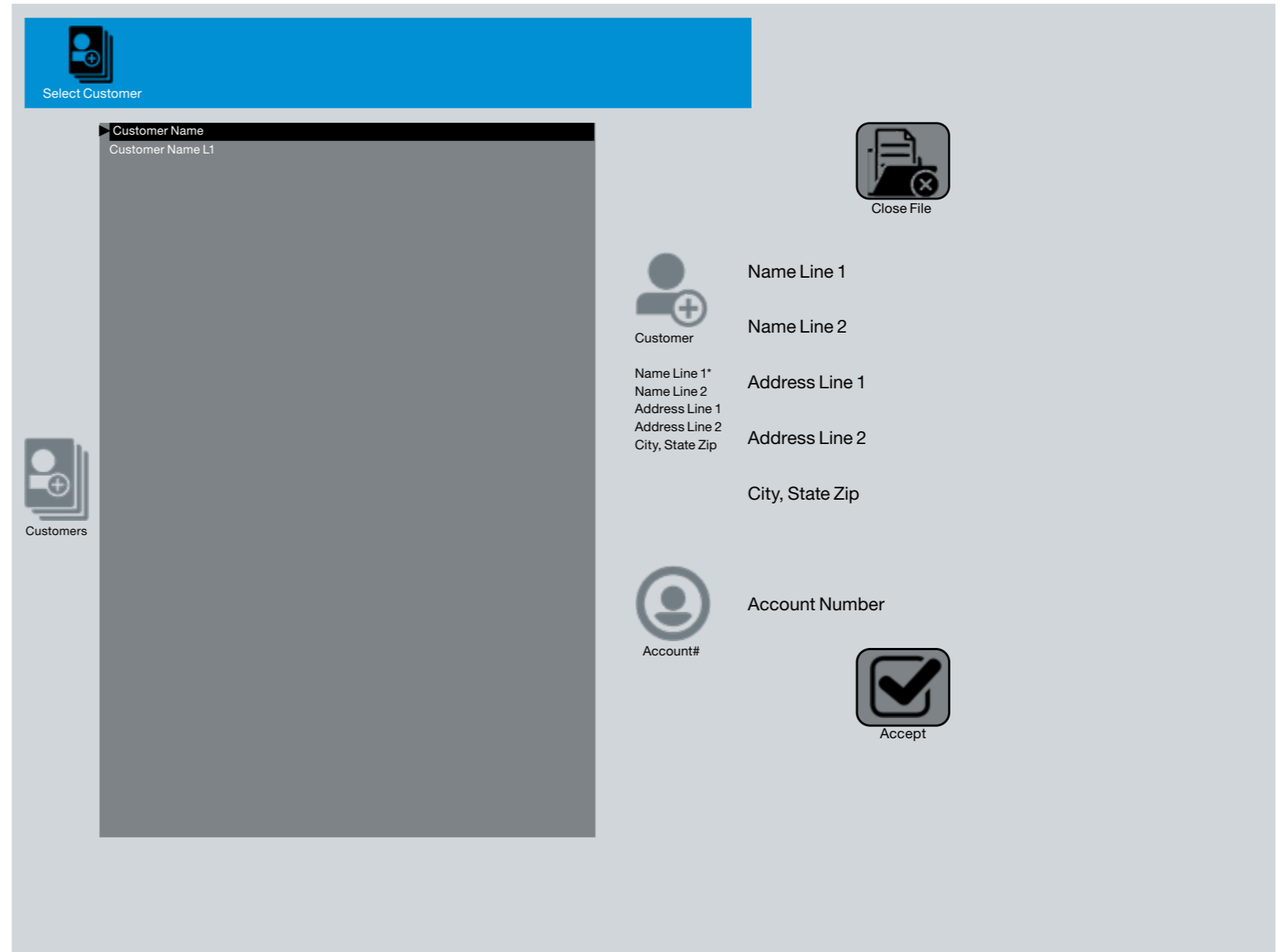


Stage Lot - Customer Selection Pop-up

Select Customer

Process:

- Select Customer
- Open File
- Accept



Stage Lot - Customer No Selection Pop-up

Select Customer

Process:

- Select Customer
- Open File
- Accept

The screenshot shows a 'Select Customer' pop-up window. At the top left, there is a blue header bar containing a 'Select Customer' icon and the text 'Select Customer'. Below this is a list area with a dark header 'Customer Name' and a single item 'Customer Name L1'. To the right of the list are two sets of navigation arrows: one set pointing up and one set pointing down. On the left side of the window, there is a 'Customers' icon. On the right side, there are two buttons: 'Close File' (with a document and 'X' icon) and 'Accept' (with a checkmark icon).



Stage Lot - Status Pop-up

Stage Lot Status Pop-up

- Different buttons will be displayed depending on what step the operator is on

Stage Lot Status

Current State: 100

State Action: IDLE

State Transition: START NOT POSSIBLE, LOST COMMUNICATION
WITH WEIGH BIN SCALE

Permissives:

- Complete:
- Continue:
- Restart:
- Setup:
- Start:
- Stop:
- Cleanout:





PROCESS BATCH

Process Batch Screen

Set-up Process Batch

Seed information is transferred from Stage Lot

Process:

- Choose Diverter Direction
 - >Treat Batch
 - >Bypass
- Choose Batch Mode
- Set Batch Size

The screenshot shows a mobile application interface for 'Process Batch'. At the top, there is a header bar with icons for 'Process Batch', 'Operator', a clock showing '12:38:05 PM 05/11/2017', 'Stage Lot', 'Stage Lot Status' (with a '100' notification), 'Process Batch', and 'Process Batch Status' (with a '100' notification). Below the header, the main screen is divided into several sections:

- Batch Setup:** A large gear icon with a play button inside.
- Diverter:** A diagram showing a blue arrow pointing left, labeled 'Diverter', and a grey arrow pointing right, labeled 'Treat Batch'. Below this is an icon of an 'RH Treater'.
- Batch Mode:** Two options: 'Batch Mode' (represented by a single bag icon) and 'Multiple Batches' (represented by three bags).
- Batch Size:** A field showing '1 Units'.
- Seed Information:**
 - Seed Variety:** Five crop icons: Corn, Cotton, Rice, Soy Bean, and Wheat.
 - Seed Size:** An icon of three seeds, with the value '2650 Seeds/Lbs'.
 - Seeds / Unit:** An icon of a seed and a bag, with the value '140000 Seeds/Unit'.
- Customer Information:**
 - Customer Name:** A field with a person icon and a plus sign.
 - Address Line 1:** A text input field.
 - City, State Zip:** A text input field.
 - Account#:** A field with a person icon.

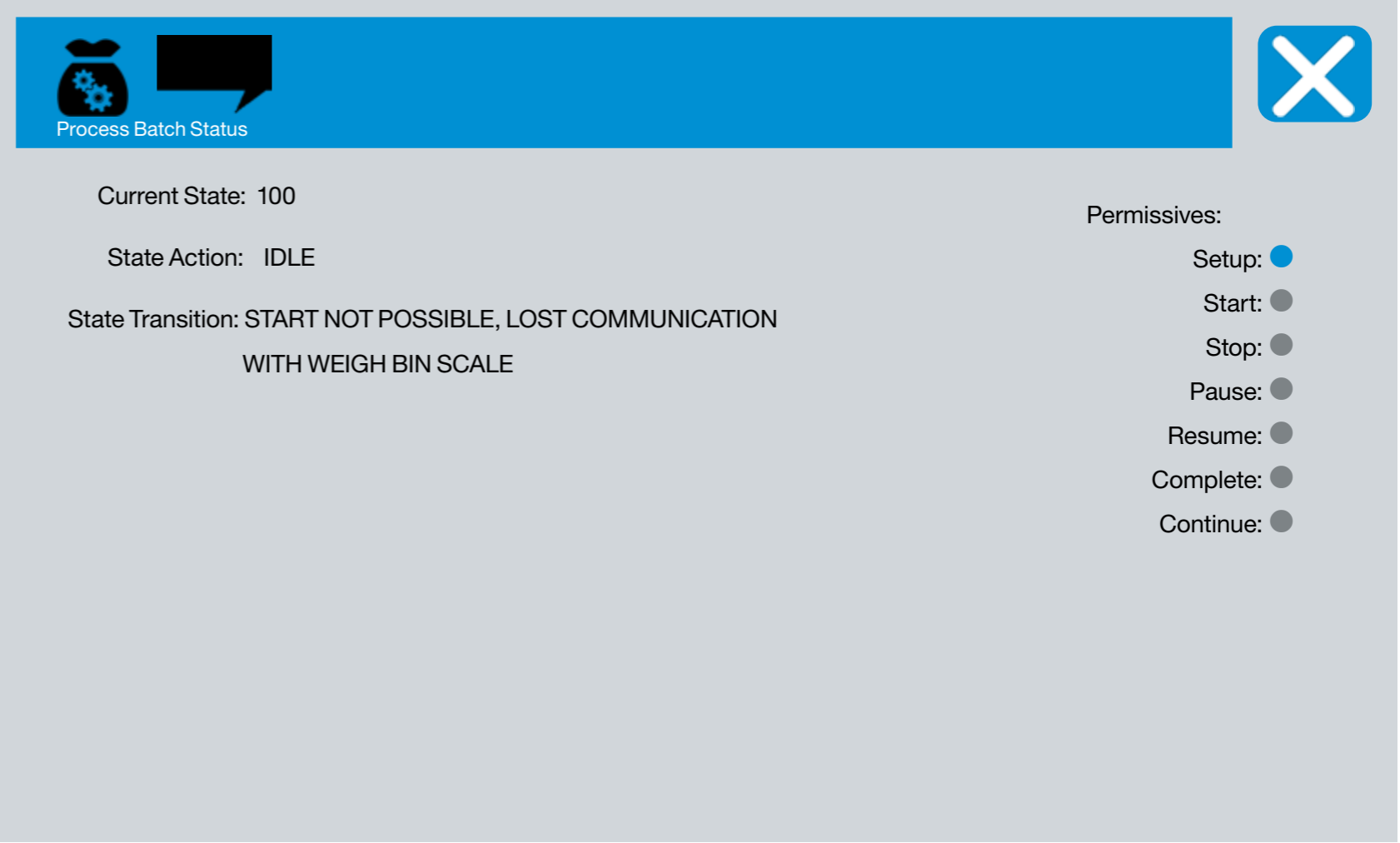
At the bottom, there is a navigation bar with icons for 'Home', 'Settings', 'Reports', 'Alarms', 'Login', and 'Logout'. A large 'Account#' icon is also present in the bottom right corner.



Process Batch - Status Pop-up

Process Status Pop-up

- Different buttons will be displayed depending on what step the operator is on



The image shows a screenshot of a 'Process Batch Status' pop-up window. At the top left, there is a blue header bar containing a gear icon and a speech bubble icon, with the text 'Process Batch Status' below them. At the top right of the header bar is a blue square button with a white 'X' icon. The main content area is light gray and contains the following text: 'Current State: 100', 'State Action: IDLE', and 'State Transition: START NOT POSSIBLE, LOST COMMUNICATION WITH WEIGH BIN SCALE'. On the right side of the main content area, there is a section titled 'Permissives:' followed by a list of actions with corresponding radio buttons: 'Setup: ●', 'Start: ●', 'Stop: ●', 'Pause: ●', 'Resume: ●', 'Complete: ●', and 'Continue: ●'. The 'Setup' radio button is filled with blue, while the others are empty gray circles.





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

Bayer™ and the Bayer Cross™ are registered trademarks of Bayer.

BULKSITEREFERENCEGUIDE20211027

