



ON DEMAND™ HMI OPERATIONS GUIDE

Bayer Engineering R&D 81

ON DEMAND

System Status: **Idle**

Status PLC: ■ Status PLC
Status Comm: ■ Status Comm -78 dBm
Current User: ENGR

12/20/2017
1:51:34 PM

Station	Weight	Volume	Label
1	12.0 Lbs	1.4 Gals	Inoc
2	0.0 Lbs	5.2 Gals	Xxx
3	0.0 Lbs	5.2 Gals	Xxx
4	0.0 Lbs	5.2 Gals	Xxx
5	0.0 Lbs	5.2 Gals	Xxx
6	0.0 Lbs	5.2 Gals	Xxx
7	0.0 Lbs	5.2 Gals	Xxx
8	0.0 Lbs	5.2 Gals	Xxx
9	0.0 Lbs	5.2 Gals	Xxx
10	0.0 Lbs	5.2 Gals	Xxx
11	0.0 Lbs	5.2 Gals	Xxx
12	0.0 Lbs	5.2 Gals	Xxx

Seed Present: ■ Seed Wheel: Stopped
Drum: Stopped

Batch Setup | Reports | Setup | Inventory | Alerts | Login



MENU

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



Legal & Safety



Initiate HMI



Touchscreens



Configuration



Pump Stations



Add Inventory



Scale Calibration



Batch Setup



Batch Run



Keg Swap



Pictograms



Flex Tank Fill



Conveyors



Reports



Scanner





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.



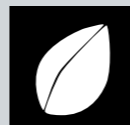
Eye protection required

Wear protective eyewear.



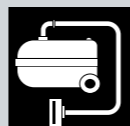
Calibration

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



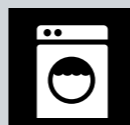
Clean seed

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.

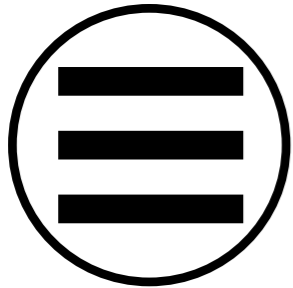




PICTOGRAMS

i

Each Signifier displayed here is specific to this User Manual.



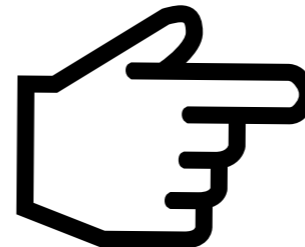
Menu



Previous



Advance



Hand Cursor



RH Treater



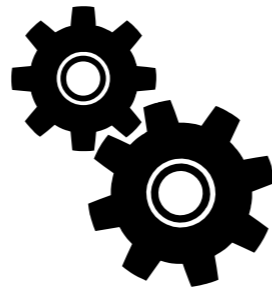
Like



Initiate HMI



Touchscreens



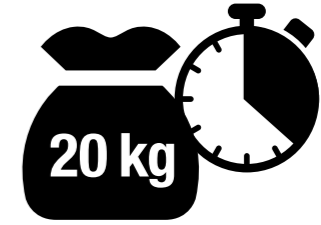
Configuration



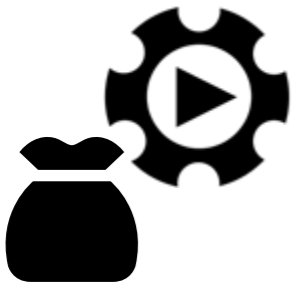
Pump Stations



Inventory



Calibration



Batch Setup



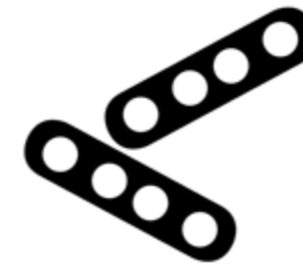
Batch Run



Keg Swap



Flex Tank



Conveyors



Reports



Barcode Scanner



Alarms



Pump





INITIATE HMI



Main Control Panel



Main Control Panel Switch in **ON** position



HMI Control Box

The HMI power source should be maintained 24/7.

Step 1: Turn **ON** the Main Control Panel Power Lever - flip the large red lever into the **UP** position, as shown left.

Step 2: Press and hold (5 seconds minimum) the HMI Boot Computer push button.

- The Windows application program will boot up (recipes, varieties, and customers must be set up on the website prior to treating per the installation guide).
- When all system checks are successful, the program displays the **Reminders Screen** ➔



HMI Controller

NOTICE
INTERNAL BATTERY
REQUIRES POWER 24/7
TO SHUTDOWN COMPUTER
FOR STORAGE GO TO SETUP
SCREEN & PRESS SHUTDOWN



Reminders

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1:51:34 PM

1. Handle and apply all the chemicals according to manufacturer recommendations.
2. Verify that all the chemical lines are primed prior to running.



REMINDERS SCREEN

Users should be mindful of the notices that are displayed on the **Reminders Screen**, as shown above.

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





TOUCHSCREENS

System Name and Status: Bayer Test Treater, Idle, Paused, Stopped.
Date, Time, Current User, Connectivity

Pump Stations (1-12) previously added on the SET-UP SCREEN by the installer.

Batch-time Indication: the blue stripe in the middle of each tank displays the current chemical level (turns black when empty). The list below the Pump Tank icon displays total Gallons, # Sds (number of seed Units Treatable - 1 Unit = 50lbs of seed), and % motor speed. These numbers display current Tank/Pump activity while the system is running.

Treater Seed Wheel and status: Idle, Paused, Stopped.

Treater Drum and status: Idle, Paused, Stopped.

MAIN SCREEN

The **MAIN SCREEN** displays a graphical representation of the operating system. Displayed right is a sample configured system. When the system first boots, none of the devices are displayed; they must first be allocated for use and then enabled to operate. After allocation and enabling, device icons will populate the screen.

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ON DEMAND System Status **Idle**

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 Status PLC
 Status Comm -78 dBm
 Current User: ENGR

Pump Station	Chemical Level	Total Gallons	# Sds	% Motor Speed
1	12.0 Lbs	1.4 Gals	Inoc	1.4 Gals
2	0.0 Lbs	5.2 Gals	Xxx	5.2 Gals
3	0.0 Lbs	5.2 Gals	Xxx	5.2 Gals
4	0.0 Lbs	5.2 Gals	Xxx	5.2 Gals
5	0.0 Lbs	5.2 Gals	Xxx	5.2 Gals
6	0.0 Lbs	5.2 Gals	Xxx	5.2 Gals
7	12.0 Lbs	1.4 Gals	Xxx	1.4 Gals
8	0.0 Lbs	5.2 Gals	Xxx	5.2 Gals
9	0.0 Lbs	5.2 Gals	Xxx	5.2 Gals
10	0.0 Lbs	5.2 Gals	Xxx	5.2 Gals
11	0.0 Lbs	5.2 Gals	Xxx	5.2 Gals
12	0.0 Lbs	5.2 Gals	Xxx	5.2 Gals

Seed Present Seed Wheel Stopped
 Drum Stopped


Batch Setup Reports Setup Inventory Alerts Login

Step 1: Touch the **Batch Setup** button icon: navigates to the **BATCH SETUP SCREEN** ➔



Operator:
*Full Access
Install:
*Full Access

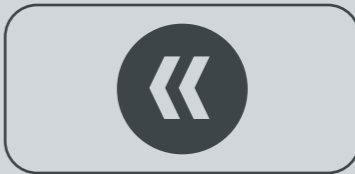
Seed Company * ▼ **Batch Setup** 12/20/2017 1:51:34 PM

Cancel **Get Previous**  Info Add/Mod Fav ▼ Delete Fav * - denotes a REQUIRED field

BATCH SETUP SCREEN*

The **Batch Setup Screen** is used to select information regarding the specific batch which is to be run. Batch Setup procedures will be covered in detail later on in the manual: **Batch Setup**.

Step 1: Touch the **Get Previous** button icon: navigates to **Get Previous Screen** ➔



Seed Company *

Crop *

Variety *

Recipe *

Batch Setup

12/21/2017
1:51:34 PM

Required* Optional Notes

Seed Size	<input type="text" value="1500"/>	Seeds/Lb	Rate: Ingredients	
Seed Feed Rate	<input type="text" value="1400"/>	Lbs/Min	<input type="text" value="0.55 FLOz/CWT Xxx"/>	<input type="button" value="Calc Rates"/>
Seeds/Unit	<input type="text" value="123000"/>			
Batch Size	<input type="text" value="1500"/>	Lbs		
Calibration Container	<input type="text" value="1080"/>	Grams	Total Application Rate	<input type="text" value="0.55"/> FLOz/CWT
Drum Speed	<input type="text" value="50"/>	%	Customer	<input type="text" value="Xxx"/>

Cancel

us

Clear Info

Add/Mod Fav

Delete Fav

Save/Exit

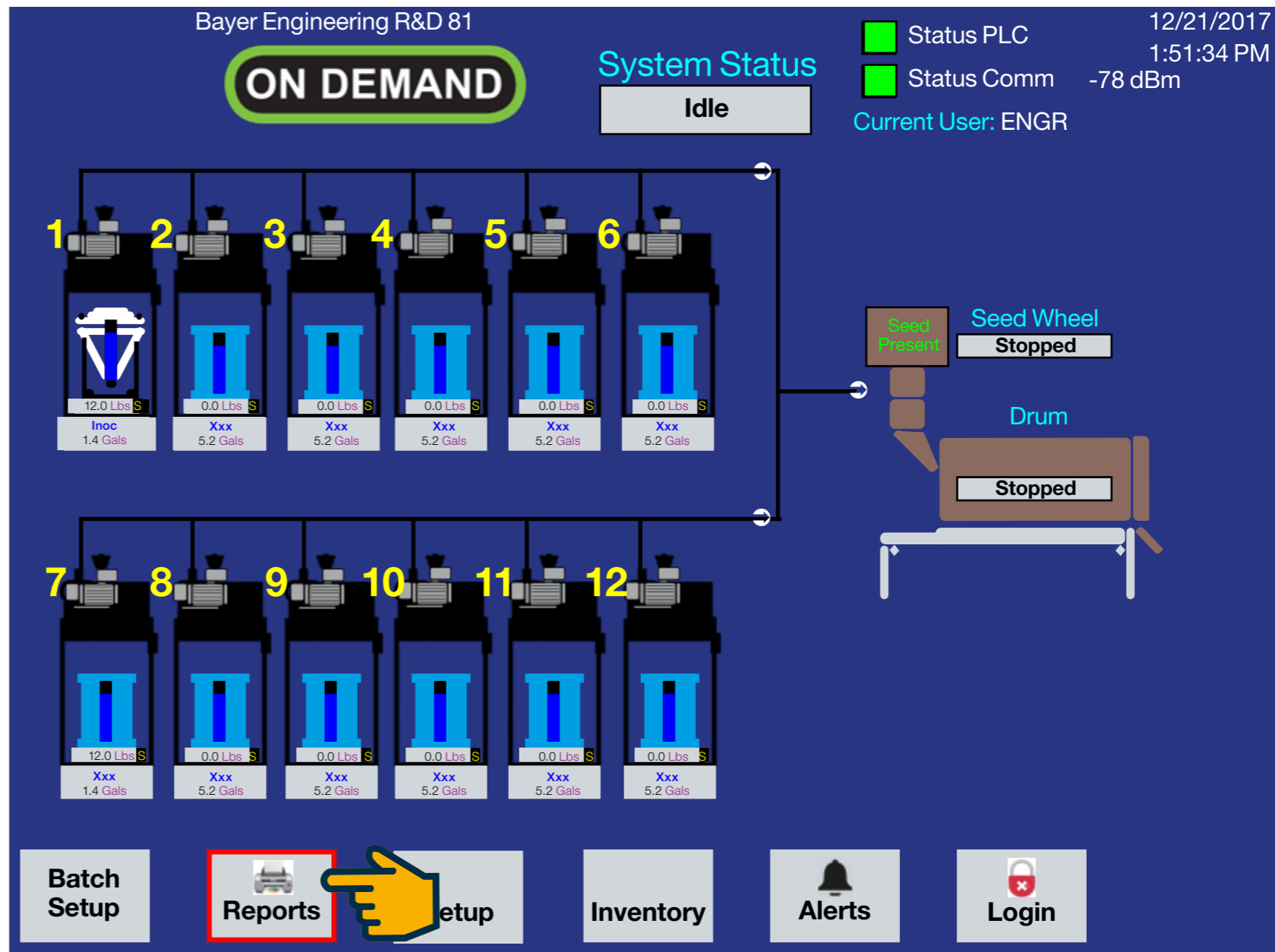
* - denotes a REQUIRED field

BATCH SETUP - GET PREVIOUS SCREEN

The **Get Previous Screen** allows users to run a batch based on a previous customer setup, as shown above. Batch Setup procedures will be covered in detail later on in the manual: **Batch Setup**.

Step 1: Touch the **Cancel** button icon: navigates back to the **Main Screen** ➡





MAIN SCREEN

Batch reports are stored on the PLC and may be retrieved later to be viewed or printed. Reports will be covered in detail later on in the manual: **Reports**.

Step 1: Touch the **Reports** button icon: navigates to the **Reports Screen** ➡



Operator:
*Full Access

Install:
*Full Access

REPORTS

12/21/2017
1:51:34 PM

Batch ID	Recipe Name
221	*****
220	*****
219	*****
218	*****
217	*****
216	*****
215	*****
214	*****
213	*****

View Batch Report

Print Batch Report

Exit

REPORTS SCREEN

Batch reports are stored on the PLC and may be retrieved later to be viewed or printed. Reports will be covered in detail later on in the manual: **Reports**.

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



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ON DEMAND

System Status
Idle

12/22/2017
1:51:34 PM
-78 dBm
Current User: ENGR

1 2 3 4 5 6

7 8 9 10 11 12

Seed Present
Seed Wheel Stopped

Drum Stopped

Batch Setup Reports Setup Inventory Alerts Login

MAIN SCREEN

System setup will be covered in detail later on in the manual: **System Config Setup**.

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



System Configuration Screen

12/22/2017
1:51:34 PM

PLC Revision 4.11.15

HMI Revision 4.11.15

Show Seed Quantity on Batch Report

Batch Report Chemical Display Units Fl. Oz. Gals.

Batch Report Seed Display Units Units Lbs.

Charts

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Screen

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Wheel

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Settings

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Stations

Treater
Config

Add-on
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Note: if the Show Seed Quantity on Batch Report box (right) is not checked, the seed quantity will not appear on the Batch report.

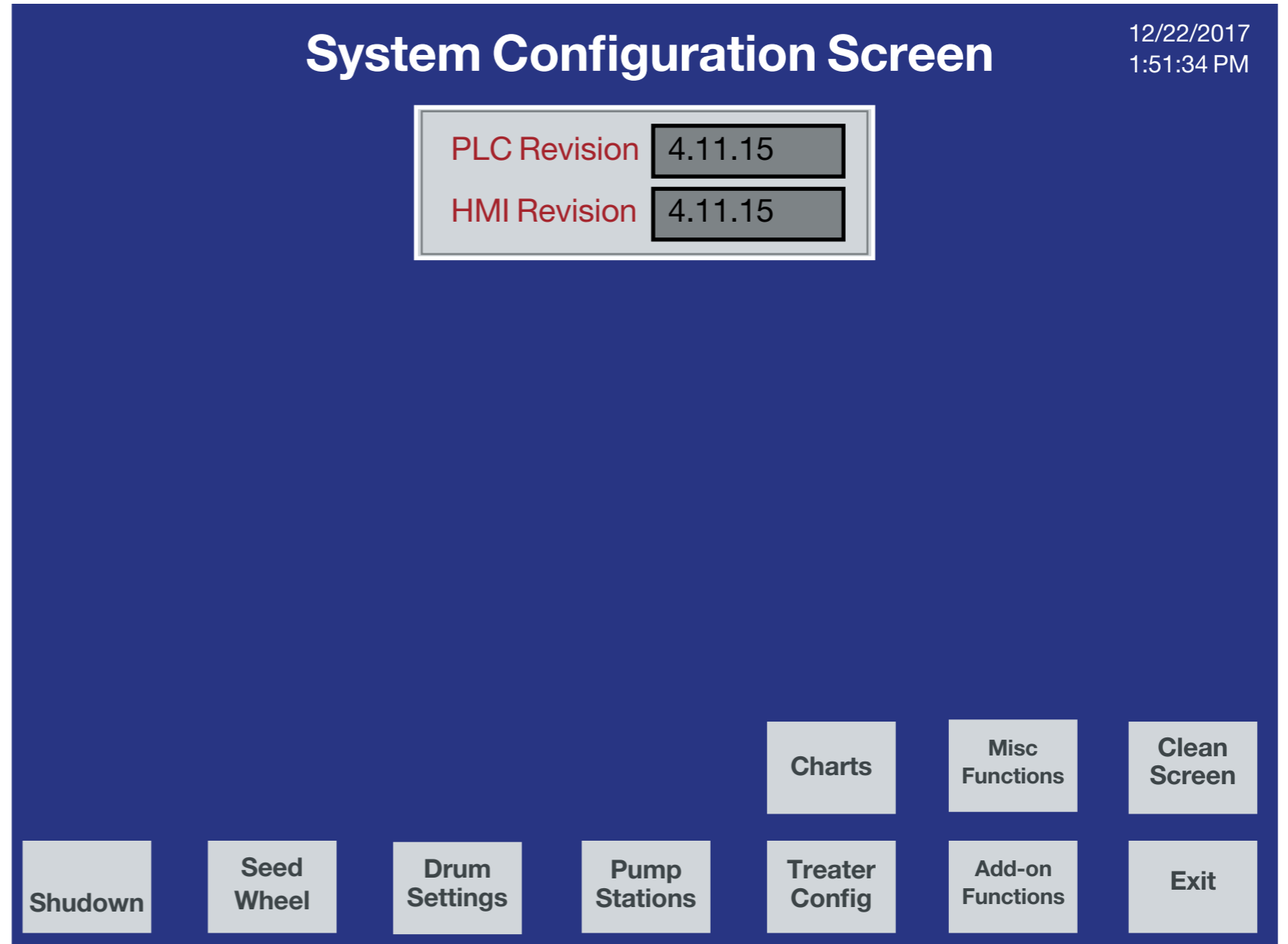
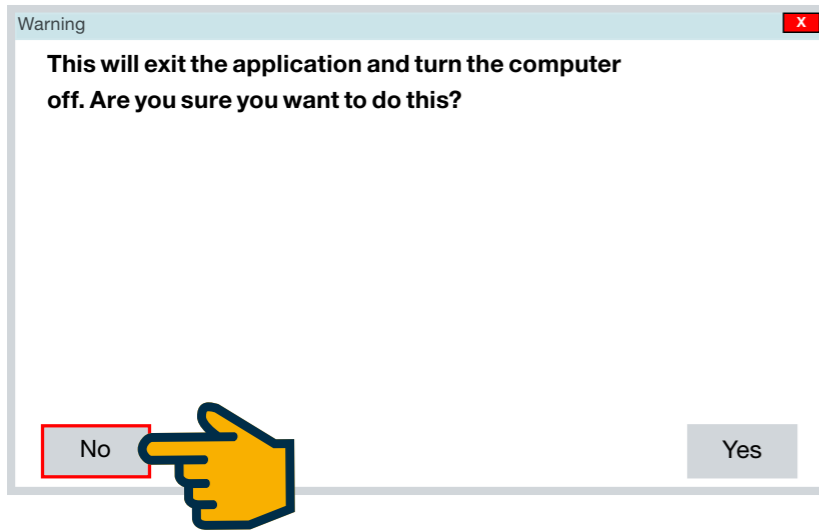
Note: the Chemical and Seed Batch reports will display Units according to which combination the users chooses on this screen. Chemical display = FL OZ or Gals.; Seed display = Units or Lbs.

SYSTEM CONFIGURATION SCREEN

The System Configuration Screen allows users to navigate to each specific part of the system without leaving the System Configuration Screen (screens within screens).

Step 1: Touch the **Shutdown** button icon: navigates to the **Shutdown Screen** ➔





SYSTEM CONFIGURATION SCREEN - SHUT DOWN WARNING POP-UP

The Warning pop-up allows users to answer **No** (changes will not turn off computer) or answer **Yes**, in which case the HMI will exit the application program and turn the computer off.

Step 1: Touch the **No** button icon: navigates to the **System Configuration Screen** ➔



System Configuration Screen

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1:51:34 PM

PLC Revision 4.11.15

HMI Revision 4.11.15

Show Seed Quantity on Batch Report

Batch Report Chemical Display Units Fl. Oz. Gals.

Batch Report Seed Display Units Units Lbs.

Shutdown

Seed Wheel

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SYSTEM CONFIGURATION SCREEN

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



Operator:
*Read Only

Install:
*Full Access

System Configuration - Seed Wheel

12/22/2017
1:51:34 PM

Gear Ratio Enable Seed Wheel High Speed/Flow

Motor RPM at 60Hz

Container Volume Cu Ft

Wheel Volume Cu Ft

Delay Off ms

Delay On ms

Maximum Rate Lbs/Min

Minimum Rate Lbs/Min

	Fall Count	Run Count	Run Hours	
	2	132	2	Reset

Tuning

Tune
See
Whe

Exit

SYSTEM CONFIGURATION SCREEN - SEED WHEEL

Users can view the parameters that have been set during the installation process (refer to **System Config Setup**).

Step 1: Touch the **Exit** button icon: navigates to the **System Configuration Screen** ↻



System Configuration Screen

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PLC Revision 4.11.15

HMI Revision 4.11.15

Show Seed Quantity on Batch Report

Batch Report Chemical Display Units Fl. Oz. Gals.

Batch Report Seed Display Units Units Lbs.

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SYSTEM CONFIGURATION SCREEN

Step 1: Touch the **Drum Settings** button icon: navigates to the **Drum Settings Screen** ➔



Operator:
*Read Only

Install:
*Full Access

If the drum clean out option is not enabled, touch the **Drum Clean out** square to enable the option.

Touch the two numerical fields and enter the **Forward** and **Revers** times value on the keypad pop-up.

System Configuration - Drum Settings

12/22/2017
1:51:34 PM

Delay Off ms

Delay On ms

Drum Cleanout

Forward sec

Reverse sec

Fall Count	Run Count	Run Hours	
4	95	4	Reset

Tuning

Tune Drum Exit

SYSTEM CONFIGURATION SCREEN - DRUM SETTINGS

Users can view the parameters that have been set during the installation process (refer to **System Config Setup**).

Step 1: Touch the **Exit** button icon: navigates to the **System Configuration Screen** ↻



System Configuration Screen

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PLC Revision 4.11.15

HMI Revision 4.11.15

Show Seed Quantity on Batch Report

Batch Report Chemical Display Units Fl. Oz. Gals.

Batch Report Seed Display Units Units Lbs.

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SYSTEM CONFIGURATION SCREEN

Step 1: Touch the **Pump Stations** button icon: navigates to the **Pump Stations Screen** ↻



Operator:
*Read Only

Install:
*Full Access

 Note: if checked (either Keg swap or Flex Fill box or both) the PLC will automatically reset the Adaptive Tune (pump speed starting point) after a keg swap or flex fill.

System Configuration - Pump Station Settings

12/22/2017
1:51:34 PM

Enable Water Burst

Water Fl Oz

Keg Swap Parameters

Zero Weight Lbs

Deadband for 0 weight when doing a keg swap

- Reset Adaptive Tune during Keg Swap
- Reset Adaptive Tune during Flex Fill


Pumps Delay Off ms

Delay On ms

Station

1 **Details**

2 **Details**

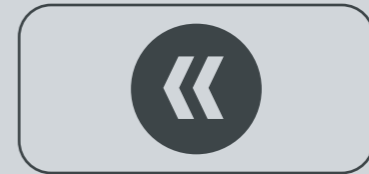


Exit

SYSTEM CONFIGURATION SCREEN - PUMP STATION SETTINGS

Users can view the parameters that have been set during the installation process (refer to **System Config Setup**).

Step 1: Touch the **Exit** button icon: navigates to the **System Configuration Screen** ↻



System Configuration Screen

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1:51:34 PM

PLC Revision 4.11.15

HMI Revision 4.11.15

Show Seed Quantity on Batch Report

Batch Report Chemical Display Units Fl. Oz. Gals.

Batch Report Seed Display Units Units Lbs.

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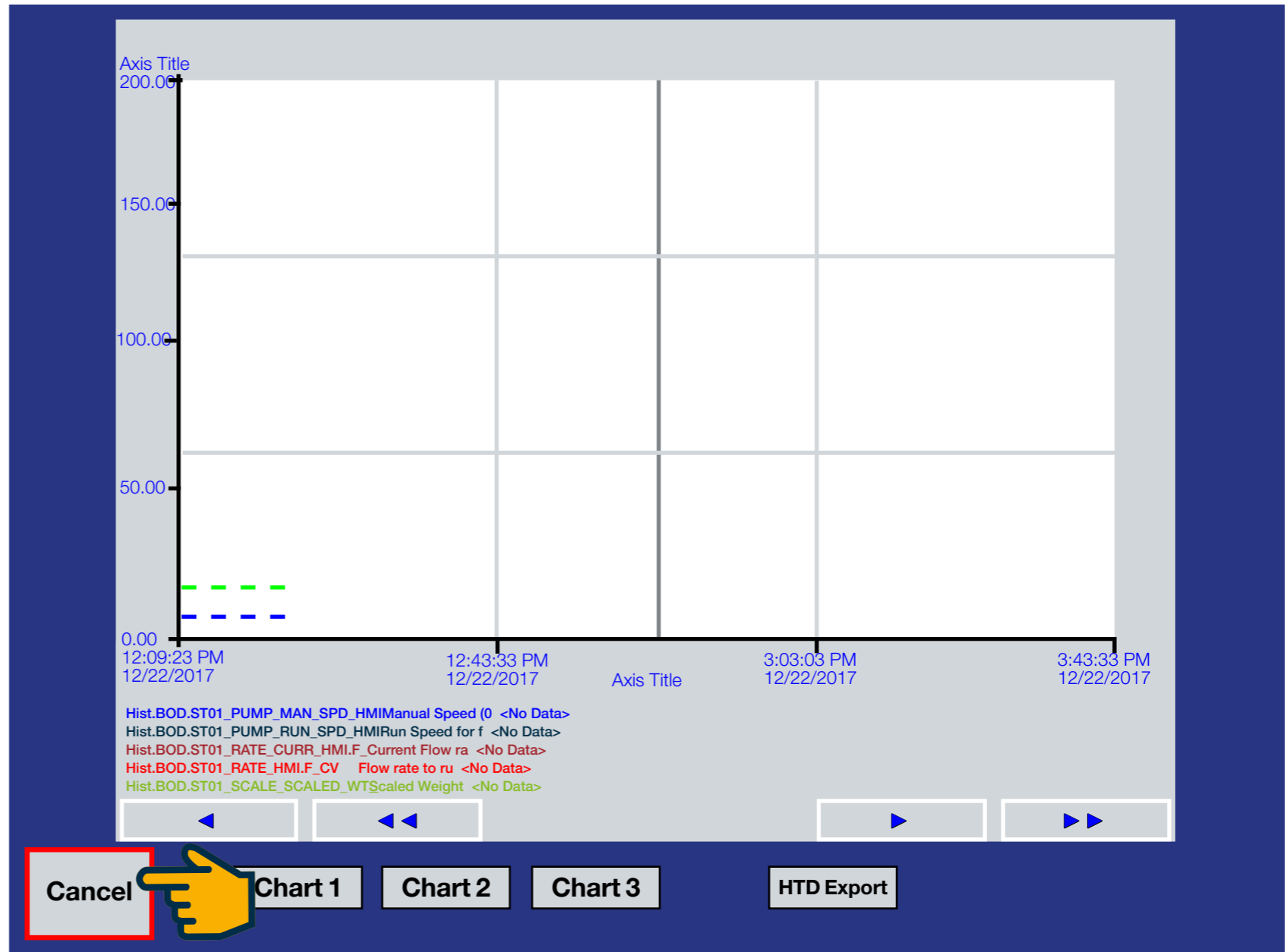
SYSTEM CONFIGURATION SCREEN

Step 1: Touch the **Charts** button icon: navigates to the **Charts Screen** ➔



Operator:
*Full Access

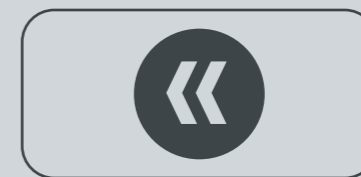
Install:
*Full Access



SYSTEM CONFIGURATION SCREEN - CHARTS

Display screen only.

Step 1: Touch the **Cancel** button icon: navigates to the **System Configuration Screen** ↻



System Configuration Screen

12/22/2017
1:51:34 PM

PLC Revision 4.11.15

HMI Revision 4.11.15

Show Seed Quantity on Batch Report

Batch Report Chemical Display Units Fl. Oz. Gals.

Batch Report Seed Display Units Units Lbs.

Shutdown

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SYSTEM CONFIGURATION SCREEN

Step 1: Touch the **Treater Config** button icon: navigates to the **Treater Config Screen** ↩



Operator:
 *Full Access to Treater Config screen
 *No Access to Treater Setup or
 Station Setup Screens

Install:
 *Full Access

System Configuration - Treater Setup

12/22/2017
1:51:34 PM

Applicator First Name

Applicator Last Name

Applicator License

Save
Applicator
Info

Restore
Applicator
Info

Treater
Setup

Station
Setup

Exit

SYSTEM CONFIGURATION SCREEN - TREATER SETUP

Users can provide their own identification that will display on the Reports to identify Users to Batches run. Touch each field to enter the information on a keyboard pop-up. Touch the Save Applicator Info button icon to save this information or touch the Restore Applicator Info button to restore previous information.

Step 1: Touch the **Exit** button icon: navigates to the **System Configuration Screen** ↻



System Configuration Screen

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PLC Revision 4.11.15

HMI Revision 4.11.15

Show Seed Quantity on Batch Report

Batch Report Chemical Display Units Fl. Oz. Gals.

Batch Report Seed Display Units Units Lbs.

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SYSTEM CONFIGURATION SCREEN

Step 1: Touch the **Clean Screen** button icon: navigates to the **Clean Screen** ↻



Operator:

*Full Access

Install:

*Full Access



SYSTEM CONFIGURATION SCREEN - CLEAN SCREEN

This screen allows users to physically wipe finger prints off of the touch screen without touching the navigation buttons displayed on the System Configuration Screen. Recommend using an anti-static/anti-fog lens wipe designed for glass, plastic and polycarbonate surfaces.

Step 1: Touch the **Exit** button icon: navigates to the **System Configuration Screen** ⇨



System Configuration Screen

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PLC Revision 4.11.15

HMI Revision 4.11.15

Show Seed Quantity on Batch Report

Batch Report Chemical Display Units Fl. Oz. Gals.

Batch Report Seed Display Units Units Lbs.

Shutdown

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SYSTEM CONFIGURATION SCREEN

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



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ON DEMAND

System Status
Idle

12/22/2017
1:51:34 PM
-78 dBm
Current User: ENGR

1 2 3 4 5 6

7 8 9 10 11 12

Seed Present
Seed Wheel Stopped

Drum Stopped

Batch Setup Reports Setup **Inventory** Alerts Login

MAIN SCREEN

Step 1: Touch the **Inventory** button icon: navigates to the **Inventory Screen** ↻



Operator:
*Full Access

Install:
*Full Access

INVENTORY

1/2/2018
8:20:17 AM

Chemicalid	chemicalname	On Hand	In Transit	Unavailable	On Order	On Request	Disputed
21	Xxxxxxxxxx	61.1	0	0	0	0	0
22	Xxxxxxxxxx	40.2	0	0	0	0	0
23	Xxxxxxxxxxxxxxxxxxxxxx	60	0	0	0	0	0
24	Xxxxxxxxxxxxxxxxxxxxxx	135	0	0	0	0	0
25	Xxxxxxxx	60	0	0	0	0	0
37	Xxxxxxxx	116.9	0	0	0	0	0
38	Xxxx	105	0	0	0	0	0

Receive
Kegs

Remove
from
Inventory

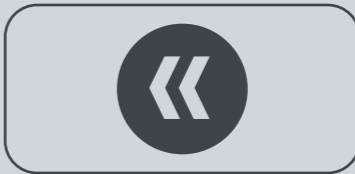
Refre

Exit

INVENTORY SCREEN

The populated Inventory detail displayed above is **READ ONLY**. Inventories take approximately 3-10 minutes to update and populate the Inventory detail screen from the website once the keg is scanned. This will be covered later on in the manual: **Add Inventory**.

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



Bayer Engineering R&D 81

ON DEMAND

System Status
Idle

12/22/2017
1:51:34 PM
-78 dBm
Current User: ENGR

1 2 3 4 5 6

7 8 9 10 11 12

Seed Present
Seed Wheel Stopped

Drum Stopped

Batch Setup Reports Setup Invent Alerts Login

MAIN SCREEN

Step 1: Touch the **Alerts** button icon: navigates to the **Alerts Screen** ↻



ALERTS SCREEN

The following machine errors will cause an **Alert** pop up message to display, as shown right; the system will stop:

- **Scale failure**
- **Seed wheel motor failure**
- **Drum motor failure**
- **Pump failure**

Step 1: Touch a **displayed alert**

Step 2: Touch the **Ack** button icon to acknowledge the alert.

- Operators can create an **Alert** ticket on the website.

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

The screenshot shows the 'ALERTS' screen with a table of alerts. The table has columns: Ack, Date In, Time Last, Tag Name, Priority, Description, Status, and Value. A blue hand icon points to the first row of the table. Below the table is a status bar with 'Total Alarms: 1', 'Filter: Off', 'Sort: Time In, Descending', and a green 'Run' button. At the bottom right, there are 'Ack' and 'Exit' buttons, with a blue hand icon pointing to 'Ack' and a yellow hand icon pointing to 'Exit'.

Ack	Date In	Time Last	Tag Name	Priority	Description	Status	Value
	1/2/2018	13:21:35.030	GB_PLC_OK	HIGH	PLC Comm Has Failed	CFN	OK

Total Alarms: 1 Filter: Off Sort: Time In, Descending Run

Ack Exit



MAIN SCREEN - LOGIN POP-UP

When the system boots up initially (refer to page 5), the HMI automatically logs into the application system at the **USER** level (or at the level it was last logged into, such as installer). To perform certain functions, users will need to log in at the installer level as follows...

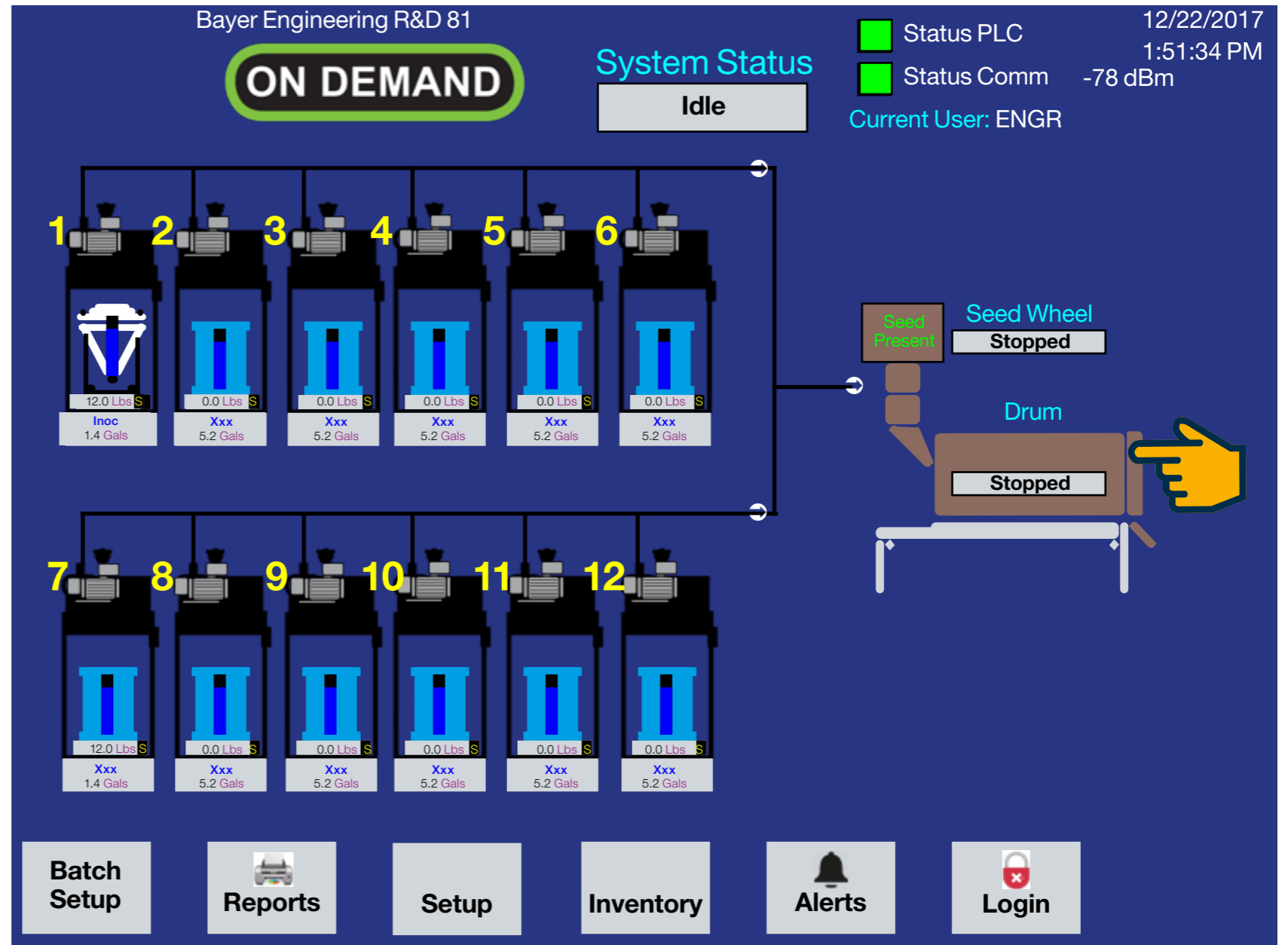
Step 1: Touch the **Login** button icon: displays the **Login** pop-up touch pad, shown above.

Step 2: Touch the **USER** & **PASSWORD** fields to enter a protected User name and Password.

Step 3: Touch the **Enter** button icon: **Login** pop-up closes.

The screenshot displays the Bayer Engineering R&D 81 HMI main screen. At the top, it shows 'Bayer Engineering R&D 81', 'System Status' (Idle), and system information including '1/2/20118', '10:28:14 AM', and '-78 dBm'. A green 'ON DEMAND' button is highlighted. The 'Current User: USER' is displayed. A 'Login' pop-up window is open, featuring a virtual keyboard with 'USER:' and 'PASSWORD:' input fields. A blue hand icon points to the 'USER' field, and another blue hand icon points to the 'Enter' key on the keyboard. The main screen has a bottom navigation bar with buttons for 'Batch Setup', 'Reports', 'Setup', 'Inventory', 'Alerts', and 'Login'. A blue hand icon points to the 'Login' button.





MAIN SCREEN

Step 1: On the **Main Screen**, touch in the area of the treater graphic icon (as shown above): navigates to the **Treater Detail Screen** ⇌



TREATER DETAIL SCREEN

This screen allows users to see treater details and functionality of the Seed Wheel and the Drum VFD. Users can enable a smaller image of the **Alerts Screen** to display as a layer on top of the **Treater Detail Screen** as follows...

Step 1: Touch the **Alerts** button icon: displays the **Alerts** pop-up screen, shown above (this is not the full **Alerts Screen**). Users can keep the **Alerts Screen** pop-up layer active.

Step 2: Touch the **Ack** button icon underneath the pop-up to acknowledge an alarm when one appears.

Step 3: To remove this pop-up, touch the **Alerts** button icon: the **Alerts** pop-up screen closes.

Step 4: Touch the **Exit** button icon: navigates to the **Main Screen** ↻

The screenshot displays the 'Treater detail' interface. At the top right, the date and time are '1/2/2018 10:37:21 AM'. The main title is 'Treater detail'. Below the title is a table with columns 'Ack', 'Date In', and 'Description'. The table is currently empty. Below the table, there are controls for 'Seed Wheel' and 'Drum'. The 'Seed Wheel' section shows 'Speed' set to '25%' and 'Stopped' status. The 'Drum' section shows 'Speed' set to '50%' and 'Stopped' status. At the bottom, there are buttons for 'System Status' (Idle), 'Alerts' (with a bell icon), and 'Exit' (with a hand icon). A large 'Ack' button is also visible. A 'Run' button is located at the bottom right of the table area. A 'Seed Present' alert box is shown in the top left, with a hand icon pointing to it. A hand icon also points to the 'Alerts' button at the bottom.

Ack	Date In	Description

Total Alarms: 0 | Filter: Off | Sort: Time In, Descend | Run

Seed Wheel
Rev Fwd
Stopped
Speed 25%
Drum
Rev Fwd
Stopped
Speed 50%

System Status: Idle | Alerts | Exit



SYSTEM CONFIG SETUP

Main Screen - System Config Setup

At the beginning of a treating season, ensure the following system checks are made to ensure proper system functionality. Users will need to be logged into the system as Installer.

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

Bayer Engineering R&D 81

ON DEMAND System Status **Idle**

1/2/2018 11:31:11 AM
Status PLC
Status Comm -78 dBm
Current User: ENGR

Tank #	Weight	Gallons	Label
1	12.0 Lbs	1.4 Gals	Inoc
2	0.0 Lbs	5.2 Gals	Xxx
3	0.0 Lbs	5.2 Gals	Xxx
4	0.0 Lbs	5.2 Gals	Xxx
5	0.0 Lbs	5.2 Gals	Xxx
6	0.0 Lbs	5.2 Gals	Xxx
7	12.0 Lbs	1.4 Gals	Xxx
8	0.0 Lbs	5.2 Gals	Xxx
9	0.0 Lbs	5.2 Gals	Xxx
10	0.0 Lbs	5.2 Gals	Xxx
11	0.0 Lbs	5.2 Gals	Xxx
12	0.0 Lbs	5.2 Gals	Xxx

Seed Present Seed Wheel Stopped
Drum Stopped

Batch Setup Report **Setup** Inventory Alerts Login



System Configuration Screen

1/2/2018
11:46:24 AM

PLC Revision 4.11.15
HMI Revision 4.11.15

Show Seed Quantity on Batch Report

Batch Report Chemical Display Units Fl. Oz. Gals.

Batch Report Seed Display Units Units Lbs.

Shutdown Seed Wheel Drum Settings Pump Stations Treater Config Charts Misc Functions Clean Screen Add-on Functions Exit

Note: if the Show Seed Quantity on Batch Report box (right) is not checked, the seed quantity will not appear on the Batch report.

SYSTEM CONFIGURATION SCREEN

The System Configuration Screen allows users to navigate to each specific part of the system without leaving the System Configuration Screen (screens within screens). Ensure the Show Seed Quantity on Batch Report box is checked (enabled, as shown above). Touch to enable/disable this function.

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



System Configuration - Seed Wheel

1/2/2018
11:47:17 PM

Gear Ratio Enable Seed Wheel High Speed/Flow

Motor RPM at 60Hz

Container Volume Cu Ft

Wheel Volume Cu Ft

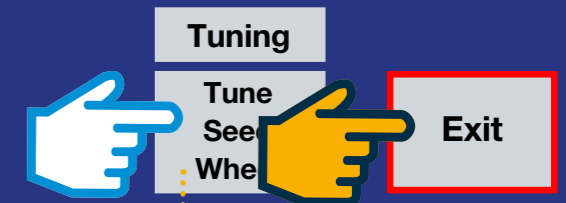
Delay Off ms

Delay On ms

Maximum Rate Lbs/Min

Minimum Rate Lbs/Min

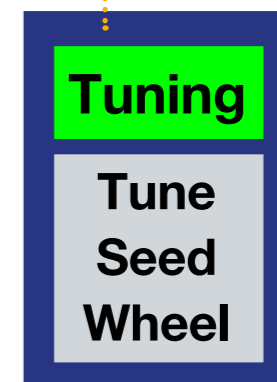
Fall Count	Run Count	Run Hours	Reset
2	132	2	Reset



SYSTEM CONFIGURATION - SEED WHEEL SCREEN

Step 1: Touch the **Tune Seed Wheel** button icon. The **Tuning** graphic above the button will turn green (as shown below) while the seed wheel tunes.

Step 2: Touch the **Exit** button icon: navigates to the **System Configuration Screen** ↻



System Configuration Screen

1/2/2018
11:46:24 AM

PLC Revision 4.11.15

HMI Revision 4.11.15

Show Seed Quantity on Batch Report

Batch Report Chemical Display Units Fl. Oz. Gals.

Batch Report Seed Display Units Units Lbs.

Shutdown

Seed
Wheel

Drum
Settings

Pump
ations

Charts

Misc
Functions

Clean
Screen

Treater
Config

Add-on
Functions

Exit

SYSTEM CONFIGURATION SCREEN

Step 1: Touch the **Drum Settings** button icon: navigates to the **Drum Settings Screen** ➔



System Configuration - Drum Settings

1/2/2018
11:55:26 AM

Delay Off ms

Delay On ms

Drum Cleanout

Forward sec

Reverse sec

Fall Count	Run Count	Run Hours	Reset
4	95	4	Reset



SYSTEM CONFIGURATION - DRUM SETTINGS SCREEN

Step 1: Touch the **Tune Drum** button icon. The **Tuning** graphic above the button will turn green (as shown below) while the drum tunes.

Step 2: Touch the **Exit** button icon: navigates to the **System Configuration Screen** ↻



System Configuration Screen

1/2/2018
11:46:24 AM

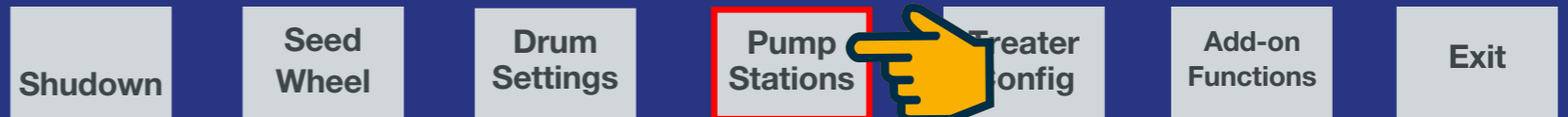
PLC Revision 4.11.15

HMI Revision 4.11.15

Show Seed Quantity on Batch Report

Batch Report Chemical Display Units Fl. Oz. Gals.

Batch Report Seed Display Units Units Lbs.



SYSTEM CONFIGURATION SCREEN

Step 1: Touch the **Pump Stations** button icon: navigates to the **Pump Station Settings Screen** ➔



System Configuration - Pump Station Settings

1/2/2018
12:00:34 PM

Enable Water Burst

Water

Keg Swap Parameters

Zero Weight Lbs

Deadband for 0 weight when doing a keg swap

- Reset Adaptive Tune during Keg Swap
- Reset Adaptive Tune during Flex Fill

Pumps

Delay Off ms

Delay On ms

Station

- 1 **Details**
- 2 **Details**

Exit



Note: if checked (either Keg swap or Flex Fill box or both) the PLC will automatically reset the Adaptive Tune (pump speed starting point) after a keg swap or flex fill.

SYSTEM CONFIGURATION - PUMP STATIONS SCREEN

To **Enable Water Burst Option**, a water Flex Tank Pump Station will need to be set up during the installation process. A water tank can also be added later, as described: **Station Setup**. Touch the square (check mark appears, as shown above). Also touch the Water numerical field. Enter the fluid ounces required to purge the chemical inlet tube at the end of a batch run on the keypad pop-up (10floz is a recommended amount, as shown above).


Step 1: Touch the Station 1 **Details** button icon: navigates to the **Station Configuration - Station 1 Screen** ➔



System Configuration - Station 1

1/2/2018
12:03:11 PM

	Maximum	Minimum
Pump Settings	160.0 FI Oz/Min	2.6 FI Oz/Min
Rate of Change Setpoints	130.0 %	70.0 %
Flow Rate	110.0 %	90.0 %
Low Keg Timer	1.0 Min	
Adaptive Tuning		Adaptive Tuning
Adaptive Tuning Enabled <input checked="" type="checkbox"/>		Post Change Duration 5.0 Sec
Deviation % Overall 40.0		Scale Filter Duration 8.0 Sec
Sample Counts 20.0		Rate Sample 2.0 Sec
Reset		

 **Maint.** **Exit**

STATION CONFIGURATION - STATION 1 SCREEN

The Low Keg Timer function defaults at 10.0 minutes warning that a keg will run out of chemical. Touch this field to change the 2.0 minute time be shorter/longer.

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



System Maintenance - Station 1

1/2/2018
1:36:31 PM

Last Scale Calibration

Totals

	Total	Lifetime	
Chemical	0.0	23.9	Gals
Prime	0.0	-31.1	Gals
Run Hours	5	5	
Run Count	301	301	
Fail Count	2	2	
	Reset		

Scale Stable

Dead Band 2.00 FI Oz/Min

Timer Preset 1000 mSec

Keg Swap Scale Stable

Dead Band 3.00 FI Oz/Min

Timer Preset 1000 mSec



STATION MAINTENANCE - STATION 1 SCREEN

Step 1: Touch the **Exit** button icon: navigates to the **Station Configuration - Station 1 Screen** ➔



System Configuration - Station 1

1/2/2018
1:41:10 PM

	Maximum		Minimum	
Pump Settings	160.0	Fl Oz/Min	2.6	Fl Oz/Min
Rate of Change Setpoints	130.0	%	70.0	%
Flow Rate	110.0	%	90.0	%
Low Keg Timer	1.0	Min		

Adaptive Tuning

Adaptive Tuning Enabled

Deviation % Overall 40.0

Sample Counts 20.0

Reset

Adaptive Tuning

Post Change Duration 5.0 Sec

Scale Filter Duration 8.0 Sec

Rate Sample 2.0 Sec

Main  Exit

STATION CONFIGURATION - STATION 1 SCREEN

Step 1: Touch the **Exit** button icon: navigates to the **System Configuration - Pump Station Settings Screen** ↻



System Configuration - Pump Station Settings

1/2/2018
1:45:14 PM

Enable Water Burst

Water

Keg Swap Parameters

Zero Weight Lbs

Deadband for 0 weight when doing a keg swap

- Reset Adaptive Tune during Keg Swap
- Reset Adaptive Tune during Flex Fill

Pumps Delay Off ms

Delay On ms

Station

1 **Details**

2 **Details**



SYSTEM CONFIGURATION - PUMP STATION SETTINGS SCREEN

Step 1: Touch the **Exit** button icon: navigates to the **System Configuration Screen** ↻



System Configuration Screen

1/2/2018
2:04:08 PM

PLC Revision 4.11.15

HMI Revision 4.11.15

Show Seed Quantity on Batch Report

Batch Report Chemical Display Units Fl. Oz. Gals.

Batch Report Seed Display Units Units Lbs.

Shutdown

Seed
Wheel

Drum
Settings

Pump
Stations

Treater
Config

Add-on
Actions

Exit

Charts

Misc
Functions

Clean
Screen

SYSTEM CONFIGURATION SCREEN

Step 1: Touch the **Treater Config** button icon: navigates to the **System Configuration - Treater Setup Screen** ↻



System Configuration - Tretater Setup

1/2/2018
2:10:10 PM

Applicator First Name

Applicator Last Name

Applicator License

Save
Applicator
Info

Restore
Applicator
Info

Treater
Setup

Station
Setup

Exit



SYSTEM CONFIGURATION - TREATER SETUP SCREEN

Step 1: Touch the **Treater Setup** button icon: navigates to the **Treater Information Screen** ➔



Tretater Information Screen


1/2/2018
2:19:13 PM

Bayer Customer #

Bayer Storage Location # Phone

Cell Modem ESN Fax

Cell Modem #


Treater Model 

Address

Address

City

Zip Code



TREATER INFORMATION SCREEN

Touch each field and enter/change treater configuration information on the keyboard pop-up.

Step 1: Touch the **Save/Exit** button icon: navigates to the **System Configuration - Treater Setup Screen** ➔



System Configuration - Tretater Setup

1/2/2018
2:10:10 PM

Applicator First Name

Applicator Last Name

Applicator License

Save
Applicator
Info

Restore
Applicator
Info

Treater
Setup

Station
Setup

 Exit

SYSTEM CONFIGURATION - TREATER SETUP SCREEN

Step 1: Touch the **Exit** button icon: navigates to the **System Configuration Screen** ↻



System Configuration Screen

1/2/2018
2:45:56 PM

PLC Revision 4.11.15

HMI Revision 4.11.15

Show Seed Quantity on Batch Report

Batch Report Chemical Display Units Fl. Oz. Gals.

Batch Report Seed Display Units Units Lbs.

The screenshot shows a dark blue background with several buttons and settings. At the top, there are two input fields for 'PLC Revision' and 'HMI Revision', both set to '4.11.15'. Below these are three settings with radio buttons: 'Show Seed Quantity on Batch Report' (checked), 'Batch Report Chemical Display Units' (Fl. Oz. selected), and 'Batch Report Seed Display Units' (Units selected). At the bottom, there is a row of buttons: 'Shutdown', 'Seed Wheel', 'Drum Settings', 'Pump Stations', 'Treater Config', 'Add-on Functions', and 'Exit'. Above this row, there are three more buttons: 'Char' (partially visible), 'Misc Functions' (highlighted with a red border and a yellow hand icon pointing to it), and 'Clean Screen'.

SYSTEM CONFIGURATION SCREEN

A series of preset functions are required prior to treater start-up.

Step 1: Touch the **Misc Functions** button icon: navigates to the **System Configuration - Misc. Functions Screen** ➔



SYSTEM CONFIGURATION - MISC. FUNCTIONS SCREEN

Preset functions as follows...

Step 1: Touch the **Save Totals from PLC** button icon: displays a pop-up window. Answer Yes, then OK. Pop-up window closes.

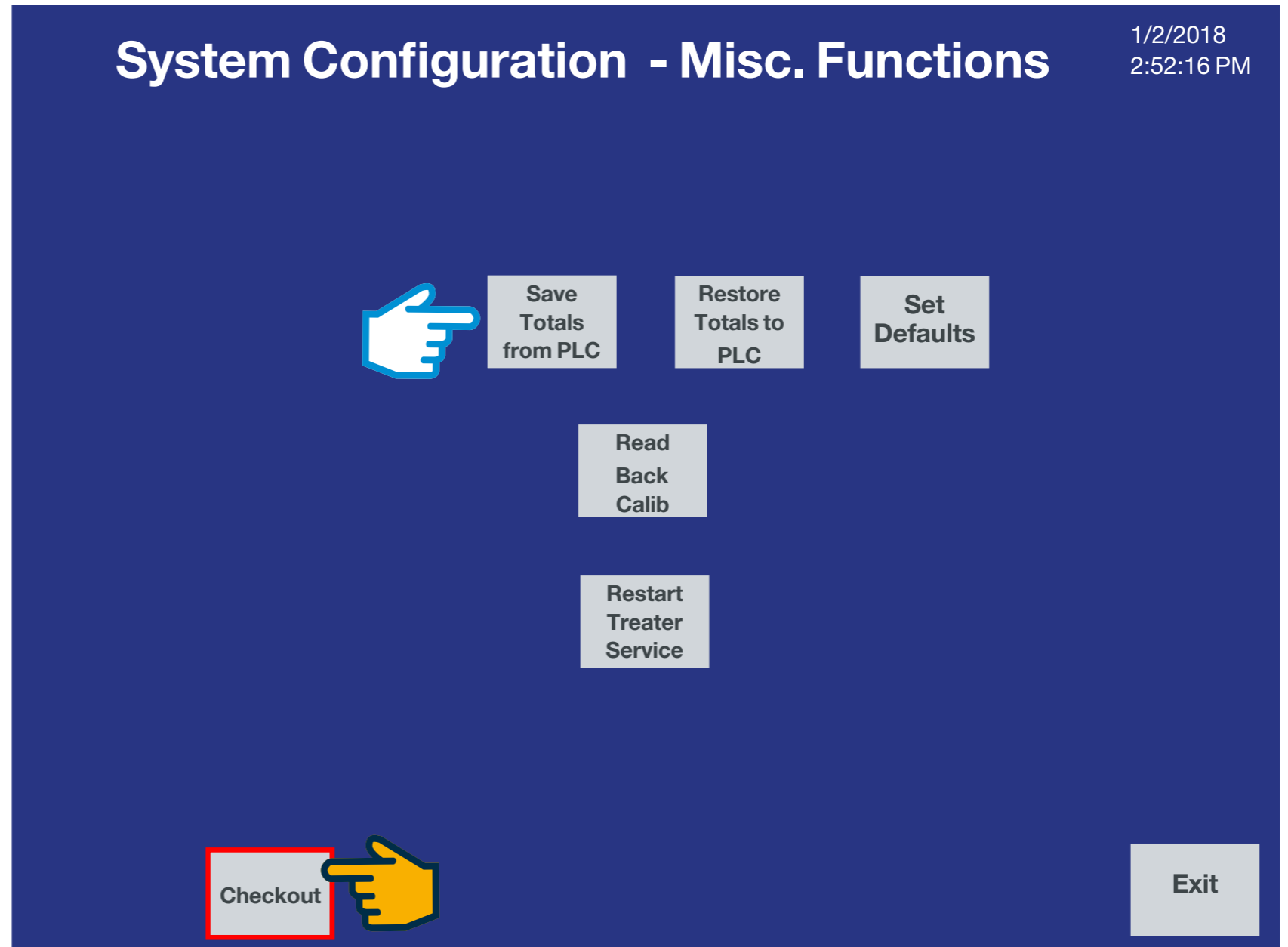
Step 2: Touch the **Restore Totals to PLC** button icon: displays a pop-up window. Answer Yes, then OK. Pop-up window closes.

Step 3: Touch the **Set Defaults** button icon: displays a pop-up window. Answer Yes, then OK. Pop-up window closes.

Step 4: Touch the **Read Back Calib.** button icon: displays a pop-up window. Answer Yes, then OK. Pop-up window closes.

Step 5: Touch the **Restart Treater Services** button icon: displays a pop-up window. Answer Yes, then OK. Pop-up window closes.

Step 6: Touch the **Checkout** button icon: navigates to the **Checkout Screen** ↻



Checkout Screen

1/2/2018
3:34:10 PM

1	Reverse	Forward	Stop	Jog	7	Reverse	Forward	Stop	Jog	
1%	Flex Tank Witho	18.8 mV	50%	None	-55.0 mV					
2	Reverse	Forward	Stop	Jog	8	Reverse	Forward	Stop	Jog	
100%	15 Gallon Keg	3.74 mV	50%	None	-55.0 mV					
3	Reverse	Forward	Stop	Jog	9	Reverse	Forward	Stop	Jog	
50%	None	-55.0 mV	50%	None	-55.0 mV					
4	Reverse	Forward	Stop	Jog	10	Reverse	Forward	Stop	Jog	
50%	None	-55.0 mV	50%	None	-55.0 mV					
5	Reverse	Forward	Stop	Jog	11	Reverse	Forward	Stop	Jog	
50%	None	-55.0 mV	50%	None	-55.0 mV					
6	Reverse	Forward	Stop	Jog	12	Reverse	Forward	Stop	Jog	
50%	None	-55.0 mV	50%	None	-55.0 mV					
Drum					Reverse	Forward	Stop	50%		
Seed Wheel					Reverse	Forward	Stop	25%	Seed Present	
									Ack	Exit

CHECKOUT SCREEN

The **Checkout Screen** is a systems overview that can be used to run each device in Forward/Reverse/Stop and Jog (Prime) chemical from each Pump Station to the Treater Chemical Inlet above the Atomizer.

Step 1: Touch the **Exit** button icon: navigates to the **System Configuration Screen** ➔



System Configuration Screen

1/2/2018
3:36:08 PM

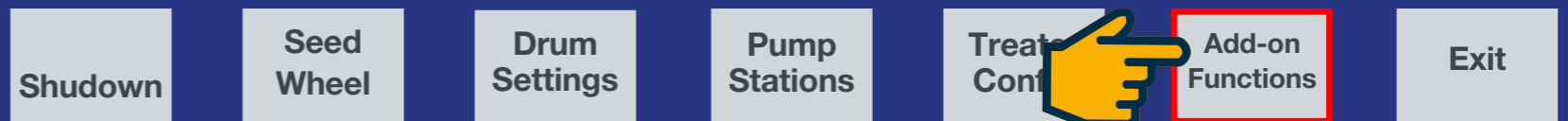
PLC Revision 4.11.15

HMI Revision 4.11.15

Show Seed Quantity on Batch Report

Batch Report Chemical Display Units Fl. Oz. Gals.

Batch Report Seed Display Units Units Lbs.



SYSTEM CONFIGURATION SCREEN

If the Optional Inlet Conveyor Control is installed, it will first need to be enabled on the application program as follows...

Step 1: Touch the **Add-On Functions** button icon: navigates to the **System Configuration - Add-On Functions Screen** ↻



SYSTEM CONFIGURATION - ADD-ON FUNCTIONS SCREEN

Touch the Conveyor Interface **Enable Interface** check box icon (as shown above, green X).

The Clean out Conveyor Timer function defaults to 5 seconds after the drum has stopped. Touch this field to change the 5 second run time be shorter/longer.

- Verify the Conveyor control is powered up and connected to the main panel.
- Touch the Conveyor Interface....
- Infeed Conveyor Manual controls
- Status Lights for Infeed Conveyor
- Discharge Conveyor Manual controls
- Status Light for Discharge Conveyor
- The Clean out conveyor....

Step 1: Touch the **Save/Exit** button icon: navigates to the **System Configuration Screen** ↻

System Configuration - Add-On Functions

1/2/2018 3:57:39 PM

Scale Interface

Enable Interface

Conveyor Interface

Enable Interface

- Communication Status

Infeed Conveyor

Start Stop

Status Stopped

- Motor Aux
- Sensor Fault
- High Level
- Low Level

Discharge Conveyor

Start Stop

Status Stopped

- Motor Aux

Clean out Conveyor Timer Sec

Cancel Save/Exit





PUMP STATION SETUP

SYSTEM CONFIGURATION - STATION SETUP

Pump Stations are physically assembled along with the treater during the installation process. Additional Pump Stations (up to twelve total) can be added. Each Pump Station Graphic Icon needs to be added on the **One-Time Setup Screen** (Station Setup) which represent each physically installed Pump Station (1-12). Once configured on the screen, their use can be enabled.

Step 1: Touch the **Treater Config** button icon: navigates to the **System Configuration** ↻

System Configuration Screen

1/3/2018
7:27:08 AM

PLC Revision	4.11.15
HMI Revision	4.11.15

Show Seed Quantity on Batch Report

Batch Report Chemical Display Units Fl. Oz. Gals.

Batch Report Seed Display Units Units Lbs.

Shutdown Seed Wheel Drum Settings Pump Station **Treater Config** Add-on Functions Exit

Charts Misc Functions Clean Screen



System Configuration - Tretater Setup

1/3/2018
7:32:23 AM

Applicator First Name

Applicator Last Name

Applicator License

Save
Applicator
Info

Restore
Applicator
Info

Treater
Setup

Station
Setup



Exit

SYSTEM CONFIGURATION - TREATER SETUP SCREEN

Step 1: Touch the **Station Setup** button icon: navigates to the **One-Time Setup Screen** ➔





Example: set up **Station 3** for a new 15 gallon keg.

Site Type *****

Treater Name *****

Bayer Storage Location # *****

One-time Setup 1/3/2018 7:35:34 AM

1 2

Station 3 Station 4

Station 5 Station 6 Station 7 Station 8

Station 9 Station 10 Station 11 Station 12

Station 3

Station Type None

Cancel Accept

Cancel Save/Exit

ONE-TIME SETUP SCREEN

Step 1: Touch the **Station 3** gray rectangle graphic icon: the gray rectangle graphic icon will form a pink outline and display the **Station 3** pop-up question box (as shown above) ➔



Site Type *****

Treater Name *****

Bayer Storage Location # *****

One-time Setup 1/3/2018 7:44:19 AM

1 2

12.0 Lbs S Inoc 1.4 Gals

0.0 Lbs S Xxx 5.2 Gals

Station 3 Station 4

Station 5 Station 6 Station 7 Station 8

Station 10 Station 11 Station 12

Station 3

Station Type

None

None

Flex Tank without Agitator

Flex Tank with Agitator

15 Gallon Keg

30 Gallon Keg

Cancel

Cancel

Save/Exit

ONE-TIME SETUP SCREEN - STATION 3 QUESTION POP-UP

Question 1: Select the **Station Type:** choose from the drop-down list, as follows...

Step 1: Touch the Station Type **Drop-down Arrow.**

Step 2: Touch **15 Gallon Keg** ⇨



Site Type *****

Treater Name *****

Bayer Storage Location # *****

One-time Setup 1/3/2018 7:57:14 AM

		Station 3	Station 4
Station 5	Station 6	Station 7	Station 8
Station 9	Station 10	Station 11	Station 12

Station 3

Station Type: 15 Gallon Keg

Chemical: None

Pump Model: None

Cancel Accept

Cancel Save/Exit

ONE-TIME SETUP SCREEN - STATION 3 QUESTION POP-UP

Station Type: now displays 15 Gallon Keg, as shown above ➡



Site Type *****

Treater Name *****

Bayer Storage Location # *****

One-time Setup 1/3/2018 8:05:25 AM

Station 3

Station 4

Station 5

Station 6

Station 7

Station 8

Station 12

Station 3 Question Pop-up:

Station Type: 15 Gallon Keg

Chemical: None

Pump Model: Xxxxx, Xxxxx, XXXXXXXX, XXXXXXX, XXXXXXX, XXXXXXX, Xxxx 15 Gal Drum, Xxx

Buttons: Cancel, Save/Exit

ONE-TIME SETUP SCREEN - STATION 3 QUESTION POP-UP

Question 2: Select the **Chemical:** choose from the drop-down list, as follows...

Step 1: Touch the Chemical **Drop-down Arrow.**

Step 2: Touch **Xxxx 15 Gallon Drum** ⇨



Site Type *****

Treater Name *****

Bayer Storage Location # *****

One-time Setup 1/3/2018 8:25:17 AM

Station 3

Station 4

Station 5

Station 6

Station 7

Station 8

Station 9

Station 10

Station 11

Station 12

12.0 Lbs S
Inoc
1.4 Gals

0.0 Lbs S
Xxx
5.2 Gals

Station 3

Station Type 15 Gallon Keg

Chemical Xxxx 15 Gal Drum

Pump Model None

Cancel Accept

Cancel Save/Exit

ONE-TIME SETUP SCREEN - STATION 3 QUESTION POP-UP

Chemical: now displays **Xxxx 15 Gallon Drum**, as shown above ↻



Site Type *****

Treater Name *****

Bayer Storage Location # *****

One-time Setup 1/3/2018 8:41:11 AM

Station 3

Station 4

Station 5

Station 6

Station 7

Station 8

Station 9

Station 10

Station 11

Station 12

Station 3 Question Pop-up:

Station Type: 15 Gallon Keg

Chemical: Xxxx 15 Gal Drum

Pump Model: None

Options:

- None
- LS Pump with #15 Element
- IP Pump with #73 Element
- IP Pump Dual #73 Element

Buttons: Cancel, Save/Exit

ONE-TIME SETUP SCREEN - STATION 3 QUESTION POP-UP

Question 3: Select the **Pump Model:** choose from the drop-down list, as follows...

Step 1: Touch the Pump Model **Drop-down Arrow.**

Step 2: Touch **IP Pump with #73 Element** ↻



Site Type *****

Treater Name *****

Bayer Storage Location # *****

One-time Setup 1/3/2018 8:51:14 AM

1 12.0 Lbs Inoc 1.4 Gals	2 0.0 Lbs Xxx 5.2 Gals	Station 3	Station 4
Station 5	Station 6	Station 7	Station 8
Station 9	Station 10	Station 11	Station 12

Station 3

Station Type 15 Gallon Keg

Chemical Xxxx 15 Gal Drum

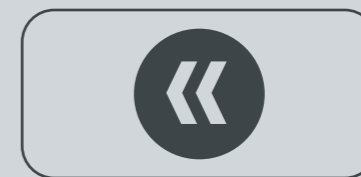
Pump Model IP Pump with #73

Cancel Accept

Cancel Save/Exit

ONE-TIME SETUP SCREEN - STATION 3 QUESTION POP-UP

Pump Model: now displays IP Pump with #73 Element, as shown above ↻



Site Type *****

Treater Name *****

Bayer Storage Location # *****

One-time Setup 1/3/2018 8:51:14 AM

1 12.0 Lbs Inoc 1.4 Gals	2 0.0 Lbs Xxx 5.2 Gals	Station 3	Station 4
Station 5	Station 6	Station 7	Station 8
Station 9	Station 10	Station 11	Station 12

Station 3

Station Type: 15 Gallon Keg

Chemical: Xxxx 15 Gal Drum

Pump Model: IP Pump with #73

Cancel Accept

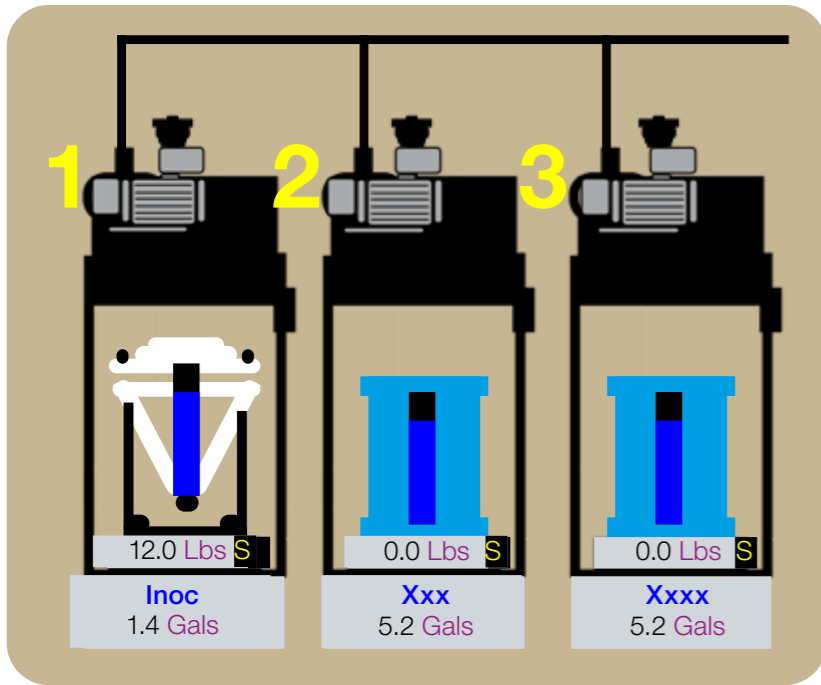
Cancel Save/Exit

ONE-TIME SETUP SCREEN - STATION 3 QUESTION POP-UP

All fields need to be filled out.

Step 1: Touch the **Accept** button icon: Questions pop-up closes ➡





Site Type *****

Treater Name *****

Bayer Storage *****

Location # *****

One-time Setup 1/3/2018 8:57:03 AM

1 12.0 Lbs S Inoc 1.4 Gals	2 0.0 Lbs S Xxx 5.2 Gals	Station 3	Station 4
Station 5	Station 6	Station 7	Station 8
Station 9	Station 10	Station 11	Station 12

Cancel

Save/Exit

ONE-TIME SETUP SCREEN

Station 3 has been successfully set up for a new 15 gallon keg of Xxxx, as shown above. The Main Screen will then display Station 3 added after One-time Setup (shown left).

>>Repeat this One-time Setup procedure when adding additional Stations.

Step 1: Touch the Save/Exit button icon: navigates to the System Configuration - Treater Setup Screen ➔



System Configuration - Tretater Setup

1/3/2018
9:01:44 AM

Applicator First Name

Applicator Last Name

Applicator License

Save
Applicator
Info

Restore
Applicator
Info

Treater
Setup

Station
Setup

 Exit

SYSTEM CONFIGURATION - TREATER SETUP SCREEN

Step 1: Touch the **Exit** button icon: navigates to the **System Configuration Screen** ➔



System Configuration Screen

1/3/2018
9:03:08 AM

PLC Revision 4.11.15

HMI Revision 4.11.15

Show Seed Quantity on Batch Report

Batch Report Chemical Display Units Fl. Oz. Gals.

Batch Report Seed Display Units Units Lbs.

Shutdown

Seed
Wheel

Drum
Settings

Pump
Stations

Charts

Misc
Functions

Clean
Screen

Treater
Config

Add-on
Function

Exit

SYSTEM CONFIGURATION SCREEN

This completes **Station 3** Setup.

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





ADD INVENTORY

MAIN SCREEN - ADD INVENTORY

Chemical (keg) inventory will need to be added into inventory prior to setting up a batch run. Best practice to ensure that all inventory is added, scan your kegs immediately upon arrival. This ensures each keg is added into inventory prior to switching a keg or running a batch.

Step 1: Touch the **Inventory** button icon: navigates to the **Inventory Screen** ➔

Bayer Engineering R&D 81

ON DEMAND

System Status
Idle

1/3/2018
9:19:23 AM
-78 dBm
Current User: ENGR

12.0 Lbs S
Inoc
1.4 Gals

0.0 Lbs S
Xxx
5.2 Gals

0.0 Lbs S
Xxx
5.2 Gals

0.0 Lbs S
Xxx
5.2 Gals

0.0 Lbs S
Xxx
5.2 Gals

0.0 Lbs S
Xxx
5.2 Gals

0.0 Lbs S
Xxx
5.2 Gals

Seed Present
Seed Wheel Stopped

Drum Stopped

Batch Setup

Reports

Setup

Inventory

Alerts

Login



INVENTORY

1/3/2018
9:26:05 AM

Chemicalid	chemicalname	On Hand	In Transit	Unavailable	On Order	On Request	Disputed
21	Xxxxxxxxxx	61.1	0	0	0	0	0
22	Xxxxxxxxxx	40.2	0	0	0	0	0
23	Xxxxxxxxxxxxxxxxxxxxxx	60	0	0	0	0	0
24	Xxxxxxxxxxxxxxxxxxxxxx	135	0	0	0	0	0
25	Xxxxxxxx	60	0	0	0	0	0
37	Xxxxxxxx	116.9	0	0	0	0	0



Receive Kegs

Remove from Inventory

Refresh

Exit

INVENTORY SCREEN

The inventory screen displays the current keg inventory that was set up during installation.

>>To Add additional inventory to the existing list...

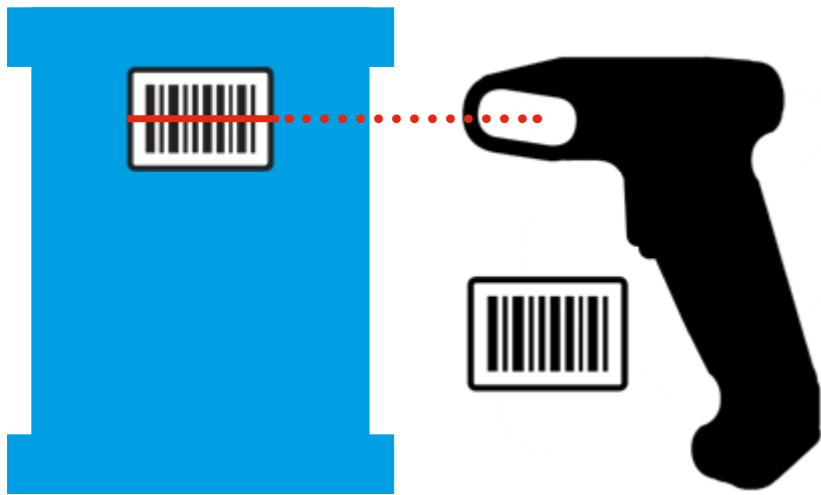
Step 1: Touch the **Receive Kegs** button icon: navigates to the **Receive Inventory Screen** ↻



RECEIVE INVENTORY SCREEN

Step 1: Remove the scanner from the base. Pull the trigger to wake up the scanner (will beep, meaning it woke up). The second beep indicates communication link to the base.

Step 2: Bring the scanner over to a new keg and scan the keg barcode label, as shown below. The scanner will beep, indicating the barcode has been scanned. Wait approximately 5 minutes for the barcode information to go to the cloud for verification, and return to the HMI. The keg information from the barcode then populates on the Receive Inventory screen, as shown right.



Step 3: If scanning multiple Kegs, scan one keg, then touch the **ACCEPT SCAN NEXT** button icon: the current scan will be accepted and a new blank screen will appear. Repeat the scan process to add additional Kegs to inventory.

Step 4: When finished scanning kegs, touch the **Accept/Exit** button icon: navigates to the **Inventory Screen** ↻

A screenshot of the 'Receive Inventory' HMI screen. The title 'Receive Inventory' is at the top center, with the date '1/3/2018' and time '9:54:16 AM' in the top right. Below the title is a cyan instruction 'Scan the barcode'. A white input field contains a long string of asterisks. A 'Use Keyboard' button is to the left of this field. Below are five data entry fields: 'Manufacturer' (*****), 'Chemical' (*** Xxxxx), 'Batch Number' (*****), 'Run ID' (*****), and 'Density' (***** g/ml). At the bottom, there are four buttons: 'Exit', 'Clear Form', 'Accept, Scan Next' (with a blue hand icon pointing to it), and 'Accept, Exit' (with a yellow hand icon pointing to it). A green status indicator 'Comm: Cell Modem' is located above the 'Accept, Scan Next' button.

INVENTORY

1/3/2018
10:03:11 AM

	Chemicalid	chemicalname	On Hand	In Transit	Unavailable	On Order	On Request	Disputed
▶	21	Xxxxxxxx	61.1	0	0	0	0	0
	22	Xxxxxxxxxx	40.2	0	0	0	0	0
	23	Xxxxxxxxxxxxxxxxxxxxx	60	0	0	0	0	0
	24	Xxxxxxxxxxxxxxxxxxxxx	135	0	0	0	0	0
	25	Xxxxxxxx	60	0	0	0	0	0
	37	Xxxxxxxx	116.9	0	0	0	0	0
	38	Xxxxx	105	0	0	0	0	0

Receive Kegs Remove from Inventory Refresh  Exit

INVENTORY SCREEN

The inventory information is transferring to the cloud and will display on the inventory screen via the cell signal to the treater and to your desktop. You have successfully added **Xxxxx** to the OnDemand inventory.

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





SCALE CALIBRATION



Example: start of season: **Pump Station 2**



Tip: do not calibrate scale after each keg swap or flex tank fill!

MAIN SCREEN - CALIBRATE PUMP STATION SCALES

Each Pump Station Scale requires annual calibration, at the start of each treating season, or if an alarm indicates a negative value reading. This must be done when logged into the system as Install.

Step 1: Touch the **Pump Station 2** graphic icon on the Main Screen: navigates to the **STATION 2 PUMP DETAIL SCREEN** ↻

Bayer Engineering R&D 81

ON DEMAND System Status **Idle**

1/3/2018 10:42:03 AM
Status PLC
Status Comm -78 dBm
Current User: ENGR

Station	Weight	Volume
1	12.0 Lbs	1.4 Gals
2	0.0 Lbs	5.2 Gals
3	Xxx lbs	5.2 Gals
4	0.0 Lbs	5.2 Gals
5	0.0 Lbs	5.2 Gals
6	0.0 Lbs	5.2 Gals
7	12.0 Lbs	1.4 Gals
8	0.0 Lbs	5.2 Gals
9	0.0 Lbs	5.2 Gals
10	0.0 Lbs	5.2 Gals
11	0.0 Lbs	5.2 Gals
12	0.0 Lbs	5.2 Gals

Seed Present Seed Wheel Stopped
Drum Stopped

Batch Setup Reports Setup Inventory Alerts Login





Station 2 Details

1/3/2018
10:53:24 AM

Chemical Name	Xxxx 15 Gal Drum	
Keg BarCode Data	*****	
Chemical Density	8.37	Lbs/Gal
Est. Chemical Remaining	11.1	Gal
Chemical Rate	19.78	Oz/Min
# Seeds Units Treatable	1436.5	
Total Chemical (Lifetime)	50.2	Gal
Weight	0.0	Lbs S

Pump Status

Stopped

Last Scale Calibration

Date 07/26/2012

Time 15:32:21

Calibrate
Kegswap
Prime Line
Recover Line
Exit

STATION 2 DETAILS SCREEN

< The Scale must be empty without a Keg or Flex Tank on the Scale, as shown left.

The **Weight** field should display a value of **0.0**, as shown above.

Step 1: Touch the **Calibrate** button icon: navigates to the **CALIBRATE SCALE #2 SCREEN** ↻



Calibrate Scale #2

1/3/2018
11:29:01 AM

Step 1 Zero the scale



Current Scale Reading 0.0 Lbs S

Exit

CALIBRATE SCALE 2 SCREEN

Step 1: Touch the **Zero Scale** button icon.

>> Wait for the PLC to zero out the scale: **Current Scale Reading 0.0** ↻





Calibrate Scale #2

1/3/2018
11:39:28 AM

Step 1 Zero the scale

Step 2 Put on the weight

0.0 Lbs

Current Scale Reading 0.0 Lbs

DRUM DETAIL SCREEN - SYSTEM PAUSED

Step 2: Place two 50 pound weights on the Scale, as shown left.




New Value High
 Current Low

1	2	3	Back Space
4	5	6	OK
7	8	9	Clear
0	.		Cancel

Calibrate Scale #2

1/3/2018
11:39:28 AM

Step 1 Zero the scale

Step 2 Put on the weight  0.0 Lbs

Current Scale Reading Lbs

CALIBRATE SCALE 2 SCREEN

Step 1: Touch the **Weight** field: displays a key pad pop-up).

Step 2: Enter **New Weight** value (100.0 lbs) on key pad pop-up, then touch **OK**: key pad pop-up closes ➔



Calibrate Scale #2

1/3/2018
12:11:13 PM

Step 1 Zero the scale

Step 2 Put on the weight

100.0 Lbs

Step 3 Click the Calibrate

Calibrate 

Current Scale Reading 100.0 Lbs

 Exit

CALIBRATE SCALE 2 SCREEN

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

>Verify the **Current Scale Reading** now displays **100.0** value, as shown above.

Step 2: Touch the **Exit** button icon: navigates to the **STATION 2 PUMP DETAIL SCREEN** ➔



Station 2 Details

1/3/2018
12:13:44 PM

Chemical Name	Xxxx 15 Gal Drum	
Keg BarCode Data	*****	
Chemical Density	8.37	Lbs/Gal
Est. Chemical Remaining	11.1	Gal
Chemical Rate	19.78	Oz/Min
# Seeds Units Treatable	1436.5	
Total Chemical (Lifetime)	50.2	Gal
Weight	93.0	Lbs S

Pump Status
Stopped

Last Scale Calibration

Date 1/3/2018

Time 12:13:44

- Calibrate
- Kegswap
- Prime Line
- Recover Line
- Exit



STATION 2 DETAILS SCREEN

Repeat **Scale Calibration** procedure for each Pump Station used with the system.

Step 1: Touch the **Exit** button icon: navigates to the **MAIN SCREEN** ➡





BATCH SETUP



Note: Prior to Batch Setup, recipes submitted through the website and either self approved or approved by a chemist. Please allow 10 days for recipe approval!

MAIN SCREEN - BATCH SETUP

Step 1: Touch the **Batch Setup** button icon: navigates to the **BATCH SETUP SCREEN** ➔

Bayer Engineering R&D 81

ON DEMAND

System Status
Idle

1/3/2018
10:42:03 AM
-78 dBm
Current User: ENGR

12.0 Lbs S
Inoc
1.4 Gals

0.0 Lbs S
Xxx
5.2 Gals

0.0 Lbs S
Xxx
5.2 Gals

0.0 Lbs S
Xxx
5.2 Gals

0.0 Lbs S
Xxx
5.2 Gals

0.0 Lbs S
Xxx
5.2 Gals

0.0 Lbs S
Xxx
5.2 Gals

Seed Present
Seed Wheel Stopped

Drum Stopped

Batch Setup Reports Setup Inventory Alerts Login



Seed*
Company None

Batch Setup

1/3/2018
1:40:22 PM

Cancel Get Previous Info Add/Mod Fav Delete Fav

* - denotes a REQUIRED field

BATCH SETUP SCREEN

When the **Get Previous** button icon is touched, the **Batch Setup Screen** populates with the last used batch information. If no other batch information was previously used, the **Batch Setup Screen** will not populate with data if the **Get Previous** button icon is touched. Users will need to create a new batch (see page 88).

Step 1: Touch the **Get Previous** button icon: navigates to the **Batch Setup Screen** ➔



Seed Company *

Crop *

Variety *

Recipe *

Batch Setup

12/21/2017
1:51:34 PM

Required*

Optional

Notes

Seed Size Seeds/Lb

Seed Feed Rate Lbs/Min

Seeds/Unit

Batch Size Lbs

Calibration Container Grams

Drum Speed %

Rate: Ingredients

0.55 FLOz/CWT Xxxxxxx

Total Application Rate FLOz/CWT

Customer

Calc Rates

Cancel

Get Previous

Clear Info

Add/Mod Fav

Delete Fav

Save/Exit

BATCH SETUP SCREEN - CREATE A FAVORITE RECIPE

To create a new or modify an existing favorite batch information...

Step 1: Touch the **Add/Mod Fav** button icon: navigates to display the **Enter a Name for the Favorite pop-up window** ↻



Seed Company * Xxx

Crop * Soybean

Batch Setup

1/3/2018
1:52:14 PM

Enter a Name for the Favorite x

Favorite 1 Allowed: 25
Current: 10

1	2	3	4	5	6	7	8	9	0	-	=	Backspace
q	w	e	r	t	y	u	i	o	p	[]	\
a	s	d	f	g	h	j	k	l	:	:	Enter	
z	x	c	v	b	n	m	,	.	?			

Cancel Clear Space Cap Lock

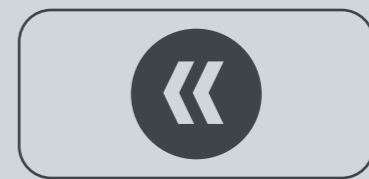
Cancel Get Previous Clear Info Add/Mod Fav Delete Fav Save/Exit

* - denotes a REQUIRED field

BATCH SETUP SCREEN - CREATE A FAVORITE RECIPE

Use the keyboard pop-up to create the name of a new favorite batch.

Step 1: Touch the **Enter** button icon: keyboard pop-up window closes ➡



1/3/2018
1:53:06 PM

Batch Setup

Seed Company * ▼

Crop * ▼

Variety * ▼

Recipe * ▼

Required*

Seed Size Seeds/Lb

Seed Feed Rate Lbs/Min

Seeds/Unit

Batch Size Lbs

Calibration Container Grams

Drum Speed %

Optional

Notes

Rate: Ingredients

0.49 FLOz/CWT Xxxx

Calc Rates

Total

App None

Fav1

Fav 2

Fav 5

Fav 6

Favorite 1

Cancel

Get Previous

Clear Info

Add/Mod Fav

Delete Fav

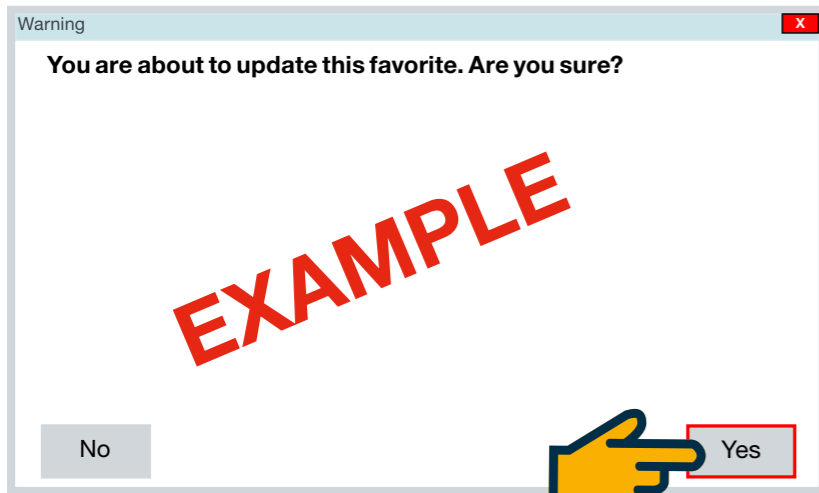
* - denotes a REQUIRED field

Exit

BATCH SETUP SCREEN - MODIFY A FAVORITE RECIPE

Step 1: Touch the **Favorites** drop down arrow: select from previous favorites; select **favorite 1** ➔





Batch Setup

1/3/2018
1:58:31 PM

Seed Company * Xxx
Crop * Soybean
Variety * Soybean Variety
Recipe * Xxx

Required*	Optional	Notes
Seed Size	1500 Seeds/Lb	Rate: Ingredients 0.55 FLOz/CWT Xxxxxx Total Application Rate 0.55 FLOz/CWT Customer Xxx
Seed Feed Rate	1400 Lbs/Min	
Seeds/Unit	123000	
Batch Size	1500 Lbs	
Calibration Container	1080 Grams	
Drum Speed	50 %	

Calc Rates

Cancel Get Previous Clear Info Add/Mod Fav Favorite 1 Save/Exit
Delete Fav * - denotes a REQUIRED field

BATCH SETUP SCREEN - MODIFY A FAVORITE RECIPE

Once **favorite 1** has been selected, the **WARNING** pop-up will appear, as shown left.

Step 1: Touch the **Yes** button icon: the **WARNING** pop-up closes ➡



Seed Company *

Crop *

Variety *

Recipe *

Batch Setup

1/3/2018
2:03:06 PM

Required*

Optional

Notes

Seed Size Seeds/Lb

Seed Feed Rate Lbs/Min

Seeds/Unit

Batch Size Lbs

Calibration Container Grams

Drum Speed %

Rate: Ingredients

0.49 FLOz/CWT Xxxxxx

Calc Rates

Total Application Rate FLOz/CWT

Customer

Cancel

Get Previous

Clear Info

Add/Mod Fav

Delete Fav

Save

BATCH SETUP SCREEN - DELETE A FAVORITE RECIPE

To delete a favorite from the list...

Step 1: Touch the **Favorite** down arrow and select the favorite you would like to delete.


Step 2: Touch the **Delete Fav** button icon: navigates to display the **WARNING** pop-up window ↻



Warning
You are about to delete this favorite. Are you sure?

EXAMPLE

No Yes



Batch Setup

1/3/2018
2:13:19 PM

Seed Company * Xxx

Crop * Soybean

Variety * Soybean Variety

Recipe * Xxx

Required*

Seed Size 1500 Seeds/Lb

Seed Feed Rate 1400 Lbs/Min

Seeds/Unit 123000

Batch Size 1500 Lbs

Calibration Container 1080 Grams

Drum Speed 50 %

Optional

Notes

Rate: Ingredients
0.55 FLOz/CWT Xxxxxx

Calc Rates

Total Application Rate 0.55 FLOz/CWT

Customer Xxx

Cancel
Get Previous
Clear Info

Add/Mod Fav
Delete Fav

Favorite 1

Save/Exit

* - denotes a REQUIRED field

BATCH SETUP SCREEN - DELETE A FAVORITE RECIPE

Step 1: Touch the **Yes** button icon: the **WARNING** pop-up closes ➡



1/3/2018
2:15:132PM

Batch Setup

Seed Company * ▼

Crop * ▼

Variety * ▼

Recipe * ▼

Required*

Seed Size Seeds/Lb

Seed Feed Rate Lbs/Min

Seeds/Unit

Batch Size Lbs

Calibration Container Grams

Drum Speed %

Optional

Notes

Rate: Ingredients

0.49 FLOz/CWT Xxxxxx

Calc Rates

Total Application Rate FLOz/CWT

Customer ▼

Cancel

Get Previous

Clear Info

Add/Mod Fav

Delete Fav

* - denotes a REQUIRED field

Save/Exit

BATCH SETUP SCREEN - DELETE A FAVORITE RECIPE

Step 1: Touch the **Save/Exit** button icon: navigates to display the **Batch Setup Screen** ↻





Note: a seed company must be set up on the website first and selected from the drop-down list on the Batch Setup Screen.

Seed Company* None None Bayer Seed

Batch Setup

1/3/2018 2:17:48PM

Cancel Get Previous Clear Info

* - denotes a REQUIRED field

BATCH SETUP SCREEN - CREATE A NEW RECIPE

The **BATCH SETUP SCREEN** is used to select information regarding the specific batch which is to be run.

Step 1: Touch the **Seed Company** drop down arrow: select from a predefined list: **Bayer Seed** ➔



Create a New Recipe

Batch Setup 1/3/2018 2:44:12 PM

Seed Company* Bayer Seed

Crop* None
None
Soybean

Cancel Get Previous Clear Info

* - denotes a REQUIRED field

BATCH SETUP SCREEN

Step 1: Touch the **Crop** drop down arrow: select from a predefined list: **Soybean** ↻





Note: additional varieties can be added via the website. Users will need to allow 5-10 minutes for the information to replicate, before the new variety can be selected from the predefined list on the HMI.

Create a New Recipe

Batch Setup

1/3/2018
2:49:12 PM

Seed Company* Bayer Seed

Crop* Soybean

Variety* None

None

Bin 1

Cancel Get Previous Clear Info

* - denotes a REQUIRED field

BATCH SETUP SCREEN

Step 1: Touch the **Variety** drop down arrow: select from a predefined list of seeds: **Bin 1** ➔





Note: additional recipes can be added via the website. Users will need to allow 5-10 minutes for the information to replicate, before the new recipe can be selected from the predefined list on the HMI. Please allow 10 days for recipe approval!

Create a New Recipe

Batch Setup

1/3/2018
2:58:11 PM

Seed Company* Bayer Seed

Crop* Soybean

Variety* Bin 1

Recipe* None

Xxxxx

Water Only

Cancel Get Previous Clear Info

* - denotes a REQUIRED field

BATCH SETUP SCREEN

Step 1: Touch the **Recipe** drop down arrow: select from a predefined recipe list: **Xxxxx** ↻



Create a New Recipe

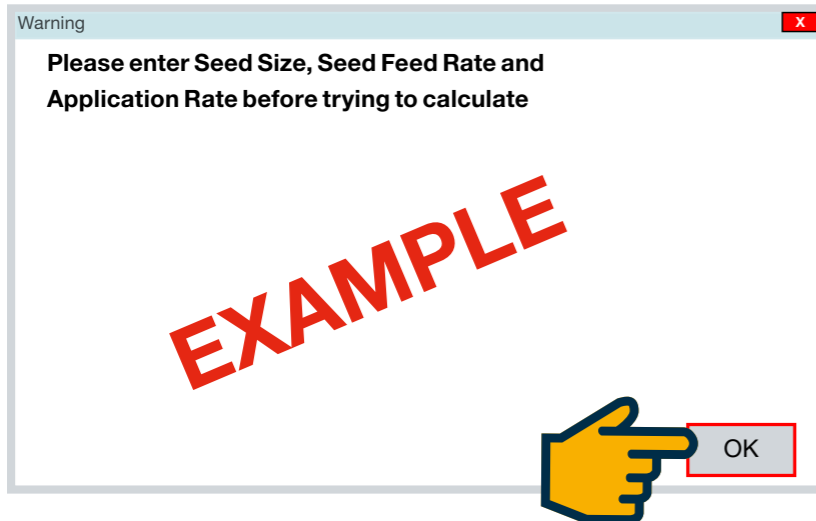
BATCH SETUP SCREEN

A new batch has been set up. Three tabs now display under the **Recipe** touch field:

- **Required**
- **Optional**
- **Notes**

The system defaults to display the **Required** tab first, as shown right.

Step 1: Step 1: Read the warning pop-up note, then touch the **OK** button icon: warning pop up closes ➡



Batch Setup

1/3/2018 3:01:52 PM

Seed Company* Bayer Seed

Crop* Soybean

Variety* Bin 1

Recipe* Xxxxx

Required* Optional Notes

Seed Size 1500 Seeds/Lb

Seed Feed Rate 1400 Lbs/Min

Seeds/Unit 123000

Batch Size 1500 Lbs

Calibration Container 1080 Grams

Drum Speed 50 %

Rate: Ingredients

0.49 FLOz/CWT Xxxxxx

Calc Rates

Total Application Rate 0.49 FLOz/CWT

Customer Xxx

Cancel Get Previous Clear Info Add/Mod Fav Delete Fav Save/Exit

* - denotes a REQUIRED field



Note: The seed wheel requires calibration each time a new batch of seed (as either seed size and or seed variety) is introduced into the treating system!

BATCH SETUP SCREEN - REQUIRED TAB

Step 1: Touch the following fields and enter customer information. A pop-up window will appear for each field, where values can be entered. Enter values, then touch the **OK** button: pop-up window closes.

- **Seed Size (Seeds/Lb)** - amount is printed on the seed bin tag
- **Seed Feed Rate (Lbs/Min)** - how many lbs/min the seed wheel delivers seed to the treater drum (output)*
- **Batch Size (Lbs)** - determined by user
- **Drum Speed (%)**, preset from the factory, change only if necessary)

Customer (touch drop down arrow and select from a predefined list).

Additional customers can be added via the website.

Users will need to allow 5-10 minutes for the information to replicate, before the new customer can be selected from the predefined list.



*To determine the correct **Seed Feed Rate (Lbs/Min)** of the seed wheel, consult the chart below...

Calibration Container Weight (g)	Seed Feed Rate (lbs/min) expected low - high output range
600g	500 - 1200g
800g	800 - 1500g
1000g	1000 - 2100g
1200g	1200 - 2400g



Create a New Recipe

Batch Setup

1/3/2018
3:49:01 PM

Seed Company * Xxx
Crop * Soybean
Variety * Soybean Variety
Recipe * Xxx

Test Batch

Seed Size	1500	Seeds/Lb	Rate: Ingredients 2.05 FI Oz/CWT Xxxx 0.00 FI Oz/CWT Water Total Application Rate 2.05 FLOz/CWT	<input type="button" value="Calc Rates"/>
Seed Feed Rate	1400	Lbs/Min		
Seeds/Unit	123000			
Batch Size	1500	Lbs		
Calibration Container	1080	Grams		
Drum Speed	50	%		
Customer	*****			

Cancel Get Previous Clear Info Add/Mod Fav Delete Fav Save/Exit

* - denotes a REQUIRED field

BATCH SETUP REQUIRED TAB (changes from previous page now displayed above)

Rate Ingredients: in text

Customer: name displayed

Total Application Rate (TAR): not available if user does not have a water tank.

Step 1: To change the **Total Application Rate**, touch the **Total Application Rate** field ↗



Create a New Recipe

ERROR

The Application Rate (5 FI Oz/CWT) is less than the sum of the chemicals (20 FI Oz/CWT). Please enter a valid Application Rate.

EXAMPLE

OK



Batch Setup

1/4/2018
7:00:52 AM

Seed Company* Bayer Seed

Crop* Soybean

Variety* Bin 1

Recipe* Xxxxx

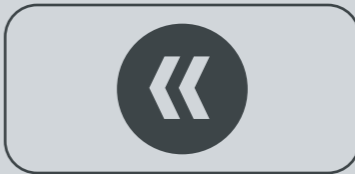
Required*	Optional	Notes
Seed Size 1500 Seeds/Lb		Rate: Ingredients 2.05 FI Oz/CWT Xxxxx 0.00 FI Oz/CWT Water Calc Rates
Seed Feed Rate 1400 Lbs/Min		
Seeds/Unit 123000		
Batch Size 1500 Lbs		
Calibration Container 1080 Grams		
Drum Speed 50 %		
		Customer Xxx

Cancel Get Previous Clear Info Add/Mod Fav Delete Fav Save/Exit

* - denotes a REQUIRED field

BATCH SETUP SCREEN - REQUIRED TAB

Step 1: If an **Error** message appears, read the note, then touch the **OK** button icon to close the **Error** pop up



Create a New Recipe

Enter Seed Feed Rate (Lbs/Min) x

New Value	2.05	High	2100
Current	0	Low	400

1

2

3

Back Space

4

5

6

OK

7

8

9

Clear

-

0

.

Cancel

Seed Company* Bayer Seed ▼

Crop* Soybean ▼

Variety* Bin 1 ▼

Recipe* Xxxxxx ▼

1/4/2018
7:12:11 AM

Batch Setup

Required*
Optional
Notes

Seed Size	2800	Seeds/Lb	
Seed Feed Rate	1500	Lbs/Min	
Seeds/Unit	140000		
Batch Size	10000	Lbs	
Calibration Container	1072	Grams	
Drum Speed	100	%	

Rate: Ingredients

2.05 FI Oz/CWT Xxxxxx

0.00 FI Oz/CWT Water

Total Application Rate 2.05 FLOz/CWT

Customer ***** ▼

Cancel
Get Previous
Clear Info

Add/Mod Fav

Delete Fav

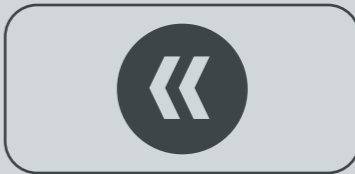
Save/Exit

*- denotes a REQUIRED field

BATCH SETUP SCREEN

Step 1: Enter a new value for **Total Application Rate (TAR)** on the pop up keypad, then touch the **OK** button, pop-up window closes.

Step 2: Touch the **Calc Rates** button icon to totalize the new **Rate: Ingredients** displayed in the box ➡

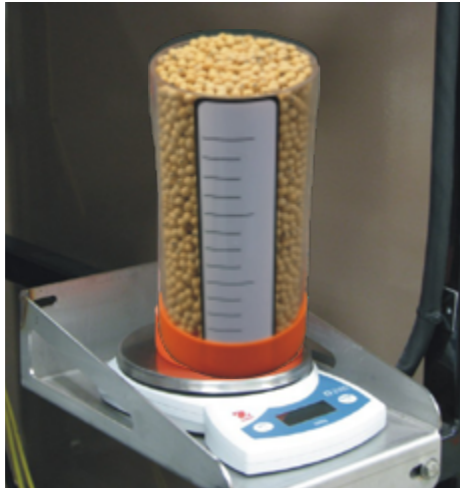


BATCH SETUP SCREEN - SEED WHEEL CALIBRATION

Note the **Total Application Rate** field displays **2.05** Fl Oz/CWT value on the Batch Setup Screen (circled, right).

Step 1: Fill the Calibration Container with seed (e.g. soybeans). Screenshot off excess with a straight edge.

Step 2: Weigh the filled container on the grams scale e.g. soybeans = **1072 grams**.



Step 3: On the Batch Setup Screen touch the **Calibration Container** field: navigates to **Enter Calibration Container (Grams)** pop-up window. Enter a seed weight value (e.g. **1072**), then touch **OK**. Window closes.

Step 4: Touch the **Seeds/Unit*** field: navigates to **Enter Seeds per Unit** pop-up window. Enter a value (e.g. **140,000** seeds/unit), then touch **OK**, pop-up window closes →

***Seeds/Unit** - the website uses this value for unit calculations that are generated on web reports.

The screenshot shows the 'Batch Setup Screen' with two pop-up windows for calibration. The left pop-up is titled 'Enter Seed Feed Rate (Lbs/Min)' and shows a 'New Value' of 1072, 'Current' of 0, 'High' of 2100, and 'Low' of 400. The right pop-up is titled 'Enter Seed Size (Kernels/Lb)' and shows a 'New Value' of 140000, 'Current' of 2800, 'High' of 6000, and 'Low' of 200. Both pop-ups have numeric keypad and 'OK' buttons. A yellow hand icon points to the 'OK' button in the right pop-up. The main screen has fields for 'Seeds/Unit*' (140000), 'Batch Size' (10000 Lbs), 'Calibration Container' (1072), and 'Drum Speed' (100 %). A yellow oval highlights the 'Total Application Rate' field, which displays 2.05 FLOz/CWT. At the bottom, there are buttons for 'Cancel', 'Get Previous', 'Clear Info', 'Add/Mod Fav', 'Delete Fav', and 'Save/Exit'. A note at the bottom right states '* - denotes a REQUIRED field'.



BATCH SETUP SCREEN

Displayed on the **BATCH SETUP SCREEN** right...

- The **Calibration Container** field now displays a total of **1072** Grams.
- The **Seeds/Unit** displays a value of **140000** (reflecting steps 3 & 4 on the previous page).

Batch Setup

1/4/2018 7:35:22 AM

Seed Company * Xxx
Crop * Soybean
Variety * Soybean Variety
Recipe * Xxx

Required* Optional Notes Test Batch

Seed Size	2800	Seeds/Lb	Rate: Ingredients 2.05 FI Oz/CWT Xxxxx 0.00 FI Oz/CWT Water Total Application Rate 2.05 FLOz/CWT Customer *****	Calc Rates
Seed Feed Rate	1500	Lbs/Min		
Seeds/Unit	140000			
Batch Size	10000	Lbs		
Calibration Container	1072	Grams		
Drum Speed	100	%		

Cancel Get Previous Clear Info Add/Mod Fav Delete Fav Save/Exit

* - denotes a REQUIRED field

The Calibration Container (left) represents the total volume of one pocket of the Seed Wheel (right). The Seed Wheel calibration process must be completed each and every time a new seed size and or seed variety is introduced into the treating system.

Failure to calibrate the Seed Wheel can result in over/under treatment of seed.



Create a New Recipe

Warning

Cannot run seed wheel below 10%. Please check calibration container weight.

EXAMPLE

OK



Batch Setup

1/4/2018
7:39:02 AM

Seed Company* Bayer Seed

Crop* Soybean

Variety* Bin 1

Recipe* Xxxxx

Required*	Optional	Notes
Seed Size 1500 Seeds/Lb		Rate: Ingredients 2.05 FI Oz/CWT Xxxxx 0.00 FI Oz/CWT Water Calc Rates
Seed Feed Rate 1400 Lbs/Min		
Seeds/Unit 123000		
Batch Size 1500 Lbs		
Calibration Container 1080 Grams		
Drum Speed 50 %		
Total Application Rate 2.05 FLOz/CWT		
Customer Xxx		

Cancel Get Previous Clear Info Add/Mod Fav Delete Fav Save/Exit

* - denotes a REQUIRED field

BATCH SETUP SCREEN - EXAMPLE - WARNING MESSAGE

A **WARNING** pop-up displays any errors the system encounters, e.g., **BELOW 10% SEED WHEEL SPEED**

>>Refer to **Seed Wheel Calibration** page 93 and /or increase the **Seed Feed Rate**.

Step 1: Acknowledge the message, then touch the **OK** button icon: pop-up closes ➡



Create a New Recipe

Warning

Cannot run seed wheel past 100%. Please check calibration container weight.

EXAMPLE

OK

Batch Setup

1/4/2018
7:41:33 AM

Seed Company* Bayer Seed

Crop* Soybean

Variety* Bin 1

Recipe* Xxxxx

Required*	Optional	Notes
Seed Size 1500 Seeds/Lb		Rate: Ingredients 2.05 FI Oz/CWT Xxxxx 0.00 FI Oz/CWT Water Calc Rates
Seed Feed Rate 1400 Lbs/Min		
Seeds/Unit 123000		
Batch Size 1500 Lbs		
Calibration Container 1080 Grams		
Drum Speed 50 %		
Total Application Rate 2.05 FLOz/CWT		
Customer Xxx		

Cancel Get Previous Clear Info Add/Mod Fav Delete Fav Save/Exit

* - denotes a REQUIRED field

BATCH SETUP SCREEN - EXAMPLE - WARNING MESSAGE

A **WARNING** pop-up displays any errors the system encounters, e.g., **ABOVE 100% SEED WHEEL SPEED**

>>Refer to **Seed Wheel Calibration** page 93 and /or decrease the **Seed Feed Rate**.

Step 1: Acknowledge the message, then touch the **OK** button icon: pop-up closes ↻




Create a New Recipe

Warning x

Cannot run seed wheel past 125% (high flow is enabled).
Please check calibration container weight.

EXAMPLE

 OK

1/4/2018
7:44:36 AM

Batch Setup

Seed Company* ▼

Crop* ▼

Variety* ▼

Recipe* ▼

Required*	Optional	Notes
Seed Size <input type="text" value="1500"/> Seeds/Lb		Rate: Ingredients 2.05 FI Oz/CWT Xxxxx 0.00 FI Oz/CWT Water <div style="text-align: right; margin-top: 10px;"> Calc Rates </div>
Seed Feed Rate <input type="text" value="1400"/> Lbs/Min		
Seeds/Unit <input type="text" value="123000"/>		
Batch Size <input type="text" value="1500"/> Lbs		
Calibration Container <input type="text" value="1080"/> Grams		
Drum Speed <input type="text" value="50"/> %		
		Total Application Rate <input type="text" value="2.05"/> FLOz/CWT
		Customer <input type="text" value="Xxx"/> ▼

Cancel
Get Previous
Clear Info

Add/Mod Fav ▼
 Delete Fav

Save/Exit

*- denotes a REQUIRED field

BATCH SETUP SCREEN - EXAMPLE - WARNING MESSAGE

A **WARNING** pop-up displays any errors the system encounters, e.g., **PAST 125% SEED WHEEL SPEED**

>>Refer to **Seed Wheel Calibration** page 93.

Step 1: Acknowledge the message, then touch the **OK** button icon: pop-up closes ➔



Create a New Recipe

ERROR

The following errors were found:
Chemical Xxx is not loaded at any station.

EXAMPLE

OK

Batch Setup

1/4/2018
7:51:52 AM

Seed Company* Bayer Seed

Crop* Soybean

Variety* Bin 1

Recipe* Xxxxx

Required*	Optional	Notes
Seed Size 1500 Seeds/Lb		Rate: Ingredients 2.05 FI Oz/CWT Xxxxx 0.00 FI Oz/CWT Water
Seed Feed Rate 1400 Lbs/Min		
Seeds/Unit 123000		
Batch Size 1500 Lbs		
Calibration Container 1080 Grams		Total Application Rate 2.05 FLOz/CWT
Drum Speed 50 %		Customer Xxx

* - denotes a REQUIRED field

BATCH SETUP SCREEN - EXAMPLE - WARNING MESSAGE

An **ERROR** pop-up displays any errors the system encounters, e.g., **CHEMICAL NOT ON STATION**

>>A Keg must be loaded on the Pump Station Scale in order to treat.

Step 1: Acknowledge the message, then touch the **OK** button icon: pop-up closes ➔



**BATCH SETUP SCREEN - EXAMPLE
- WARNING MESSAGE**

An **ERROR** pop-up displays any errors the system encounters, e.g., **WATER RATE OUTSIDE PUMP RANGE***

Acknowledge the message, then touch the **OK** button icon: pop-up closes.

*Lower **TAR** to complete recipe or change pumps as follows...

Low Rate Pump = 3-20 oz/min. High Rate Pump = 20-150 oz/min.

Step 1: To change the **Total Application Rate**, touch the **Total Application Rate** field.

Step 2: Enter a new value for **Total Application Rate (TAR)** on the pop up keypad, then touch the **OK** button, pop-up window closes.

Step 3: Touch the **Calc Rates** button icon for new totalized **Rate**: Ingredients displayed in the box ➔

The screenshot shows a software interface for batch setup. An error message box is overlaid on the screen, stating: "The following errors were found: The rate for water is outside the pump range." A large red "EXAMPLE" watermark is placed over the error message. Below the error message is an "OK" button. The main screen displays several input fields: "Seed Size" (1500), "Seed Feed Rate" (1500 Lbs/Min), "Seeds/Unit" (140000), "Batch Size" (10000 Lbs), "Calibration Container" (1072 Grams), and "Drum Speed" (100 %). To the right, there is a "Total Application Rate" field set to 2.05 oz/CWT and a "Customer" dropdown menu set to "Xxx". A numeric keypad is open, showing "New Value" 2.05, "Current" 0, and "High" and "Low" fields. The keypad has buttons for digits 1-9, 0, a decimal point, a minus sign, "Back Space", "OK", "Clear", and "Cancel". A red box highlights the "Calc Rates" button on the right side of the keypad. At the bottom of the screen, there are buttons for "Cancel", "Get Previous", "Clear Info", "Add/Mod Fav", "Delete Fav", a dropdown menu, and "Save/Exit". A note at the bottom right states "* - denotes a REQUIRED field".



Create a New Recipe

New Value High

Current Low

Batch Setup

1/4/2018
7:46:55 AM

Seed Company*

Crop*

Variety*

Recipe*

Required* Optional Notes

Seed Lot

Wind Speed MPH

Temp °F

Seed Batch ID

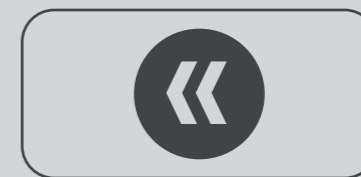
* - denotes a REQUIRED field

BATCH SETUP SCREEN - OPTIONAL TAB

Step 1: Touch the **Optional** tab. Data can be entered (not required). Touch each field and enter data on the pop up...

- Seed Lot
- Wind Speed
- Temp
- Seed Batch ID

Step 2: Touch the **OK** button icon: pop-up closes ➡



Create a New Recipe

Batch Setup 1/4/2018 7:46:55 AM

Seed Company* Bayer Seed
Crop* Soybean
Variety* Bin 1
Recipe* Xxxxx

Required* Optional **Notes**

batch to split

Enter Notes
batch to split Allowed: 25 Current: 10

1 2 3 4 5 6 7 8 9 0 - = Backspace
q w e r t y u i o p [] \
a s d f g h j k l ; : ' " ~ Enter
z x c v b n m , . / ?

Cancel Clear Space Cap Lock

Cancel Get Previous Clear Info Save/Exit

* - denotes a REQUIRED field

BATCH SETUP SCREEN - NOTES TAB

Step 1: Touch the **Notes** tab. Specific notes for reference can be entered: navigates to pop-up key board (not required). Use the **Enter Notes** pop-up keyboard to enter notes or use barcode scanner to scan any keg info...batch to split or **000078574012938810NK44BX0123210001901110**.

Notes can be added at anytime during the batch. When finished entering notes, touch the key board **Enter** button icon: pop-up keyboard closes. Notes will appear on the **Notes** screen, as shown above (batch to split).

Step 2: The batch has been created. Touch the **Save/Exit** button icon: navigates to the **MAIN SCREEN** ↻





BATCH RUN

Messages and colors indicate what is happening with the system, as follows...

Green indicates which devices are enabled and ready to use or are running.

Red indicates which devices are disabled and have stopped.

Yellow indicates which devices are disabled and are paused.

MAIN SCREEN - BEGIN BATCH RUN

Once the recipe is accepted without errors, the **System Status** field displays the message: **Recipe Accepted** at the top of the **MAIN SCREEN**.

Cancel, **Start** and **Auto Start** button icons now display.

The **Batch Setup** button icon changes to **Batch Info**.

The **Start** button icon will not appear until seed is sensed in the Inlet Hopper (indicated by the green '**Seed Present**' message inside the inlet hopper, as shown above).

Only **Auto Start** will appear if there is no seed detected.

If **Auto Start** is touched, as a delay, the treater will not begin running until seed is sensed in the Inlet Hopper.

If seed is sensed in the Inlet Hopper (indicated by the green '**Seed Present**' message inside the inlet hopper, the **Start** button will appear on the screen (as shown right).

Also displayed on the **MAIN SCREEN** are the Batch parameters (**Batch Size**, **Seed Rate** and **Batch Total**).

Bayer Engineering R&D 81

ON DEMAND

System Status
Recipe Accepted

1/4/2018
9:43:03 AM
Status PLC
Status Comm -78 dBm
Current User: ENGR

1	2	3	4	5	6
12.0 Lbs S Inoc 1.4 Gals	0.0 Lbs S Xxx 5.2 Gals	0.0 Lbs S Xxx 5.2 Gals	0.0 Lbs S Xxx 5.2 Gals	0.0 Lbs S Xxx 5.2 Gals	0.0 Lbs S Xxx 5.2 Gals
7	8	9	10	11	12
12.0 Lbs S Xxx 1.4 Gals	0.0 Lbs S Xxx 5.2 Gals	0.0 Lbs S Xxx 5.2 Gals	0.0 Lbs S Xxx 5.2 Gals	0.0 Lbs S Xxx 5.2 Gals	0.0 Lbs S Xxx 5.2 Gals

Seed Present

Seed Wheel Stopped

Drum Stopped

Batch Size 1500 Lbs
Seed Rate 1100 Lbs/Min
Batch Total 202 Lbs

Cancel Start Auto Start

Batch Info Reports Setup Inventory Alerts Login

Step 1: Ready to start treating seed? Touch the **Start** button icon ↻



MAIN SCREEN - SYSTEM RUNNING

The system will begin treating seed after first verifying seed presence in the hopper (indicated by the green 'Seed Present' message inside the inlet hopper, as shown above).

Pump Station Pumps turn green when activated (as shown). Drum & Seed Wheel indicate: **Running Auto** in a green field (as shown). The **System Status** field displays the message: **Running** at the top of the **MAIN SCREEN** (as shown).

The **Setup**, **Cancel**, **Start** and **Auto Start** button icons will not display on the **MAIN SCREEN** when the system is running (as shown). The **Start** button icon toggles to display **Pause** (as shown).

Events, such as **Alerts**, **Low Chemical**, **Stopped** or **Pause** will pause/stop the system.

Step 1: Touch the **Pause** button icon; treating process pauses: navigates to the **TREATER DETAIL SCREEN** ➔

Bayer Engineering R&D 81

ON DEMAND System Status **Running**

Status PLC
Status Comm -78 dBm
Current User: ENGR
1/4/2018 10:05:44 AM

1 2 3 4 5 6 7 8 9 10 11 12

Seed Present
Seed Wheel **Running Auto**
Drum **Running Auto**

Batch Size	1500	Lbs
Seed Rate	1100	Lbs/Min
Batch Total	981	Lbs

Pause

Batch Info Reports Inventory Alerts Login

12.0 Lbs S
Inoc 1.4 Gals

0.0 Lbs S
Xxx 5.2 Gals

0.0 Lbs S
Xxx 5.2 Gals

0.0 Lbs S
Xxx 5.2 Gals

0.0 Lbs S
Xxx 5.2 Gals

0.0 Lbs S
Xxx 5.2 Gals

0.0 Lbs S
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Xxx 5.2 Gals

0.0 Lbs S
Xxx 5.2 Gals

0.0 Lbs S
Xxx 5.2 Gals

0.0 Lbs S
Xxx 5.2 Gals



TREATER DETAIL SCREEN - SYSTEM PAUSED

Drum clean out runs automatically every time the system is paused. This is a pre-set option if it is enabled (refer to **Drum Clean out Option** on page 18). This option must be enabled prior to running a batch, in order for it to run automatically when the system is paused.

> **System Status** displays: **Paused**.

> **Drum Status** displays: **Running Auto**.

> **Seed Wheel** displays: **Stopped**.

RESUME TREATING

Step 1: Touch the **Resume** button icon: the **TREATER DETAIL SCREEN** closes: the batch resumes the treating session where it left off: navigates to the **MAIN SCREEN** ➔

The screenshot displays the 'Treater detail' interface. At the top right, the date and time are '1/4/20118 10:15:30 AM'. The main title is 'Treater detail'. The interface is divided into several sections:

- Seed Wheel:** Located at the top left, it shows 'Seed Present' in green text. Below it is a vertical stack of three brown rectangular components. To the right of this stack is the label 'Seed Wheel'.
- Drum:** A large brown horizontal rectangle in the center is labeled 'Drum'.
- Batch Information:** A table at the bottom center shows:

Batch Size	1500	Lbs
Seed Rate	1100	Lbs/Min
Batch Total	1018	Lbs
- System Status:** A green button at the bottom left labeled 'Paused'.
- Alerts:** A bell icon in a grey button at the bottom center.
- Resume:** A grey button at the bottom right with a yellow hand icon pointing to it, highlighted with a red border.
- End Batch:** A grey button at the bottom right.
- Exit:** A grey button at the bottom right.

On the right side, there are two control panels:

- Seed Wheel Control:** A grey panel with 'Rev' and 'Fwd' buttons, a 'Stopped' status indicator, and a speed control section showing 'Speed' at '25%' with up/down arrows.
- Drum Control:** A grey panel with 'Drum' status, a green 'Running Auto' indicator, and a speed control section showing 'Speed' at '50%' with up/down arrows.



Bayer Engineering R&D 81

ON DEMAND

System Status
Running

Status PLC
Status Comm -78 dBm
Current User: ENGR

1/4/2018
10:19:23 AM

The main screen displays 12 treater units arranged in two rows of six. The top row units are numbered 1 through 6, and the bottom row units are numbered 8 through 13. Each unit shows a weight and volume measurement. Unit 1 is labeled 'Inoc' with 12.0 Lbs and 1.4 Gals. Units 2 through 13 are labeled 'Xxx' with 0.0 Lbs and 5.2 Gals. To the right of the treater units is a 'Seed Wheel' and a 'Drum', both labeled 'Running Auto'. A hand icon points to the Drum. Below the treater units is a table with the following data:

Batch Size	1500	Lbs
Seed Rate	1100	Lbs/Min
Batch Total	981	Lbs

At the bottom of the screen are several buttons: 'Batch Info', 'Reports', 'Inventory', 'Alerts', and 'Login'. A 'Pause' button is also visible near the drum area.

MAIN SCREEN - SYSTEM RUNNING

The system will resume treating seed where it left off after being paused. Events, such as **Alerts**, **Low Chemical**, **Stopped** or manually touching **Pause** will pause the system and navigate to the **TREATER DETAIL SCREEN**.

> At the end of the batch run, the system will automatically pause and navigate to the **TREATER DETAIL SCREEN**.

Step 1: Touch in the area of the treater graphic icon: navigates to the **Treater Detail Screen** ⇨



TREATER DETAIL SCREEN - SYSTEM PAUSED - END OF BATCH RUN

> **System Status** displays: **Paused**.

> **Drum** displays: **Clean out** in green box, as shown above. Drum clean out runs automatically. When drum clean out is finished...

> **Drum** displays: **Stopped**.

Step 1: Touch the **End Batch** button icon: navigates to the **TREATER DETAIL SCREEN** ↻

The screenshot displays the 'Treater detail' interface. At the top right, the date and time are '1/4/20118 10:28:54 AM'. The main title is 'Treater detail'. The interface is divided into several sections:

- Seed Wheel:** A box labeled 'Seed Present' in green text is connected to a 'Seed Wheel' component. Below it are 'Rev' and 'Fwd' buttons.
- Drum:** A large horizontal drum is shown. Below it is a 'Stop' button and a green 'Cleanout' button.
- Speed Controls:** Two speed control panels are visible. The top one is for the 'Seed Wheel' with a 'Speed' display at '25%'. The bottom one is for the 'Drum' with a 'Speed' display at '50%'. Both have up/down arrows and a central display.
- Batch Data:** A table showing:

Batch Size	1500	Lbs
Seed Rate	1100	Lbs/Min
Batch Total	220	Lbs
- System Status:** A green box labeled 'Paused'.
- Alerts:** A bell icon labeled 'Alerts'.
- Navigation:** Buttons for 'Resum', 'End Batch' (highlighted with a red border and a hand icon), and 'Exit'.



Treated Seed Weight Confirmation x

Enter Known Seed Weight Lbs. Skip



Treater detail

1/4/2018 10:40:03 AM

Batch Size	1500	Lbs
Seed Rate	1100	Lbs/Min
Batch Total	1018	Lbs

System Status

Stopping Alerts

Seed Wheel

Rev Fwd

Stopped

Speed

25%

Drum

Stop

Running Auto

Speed

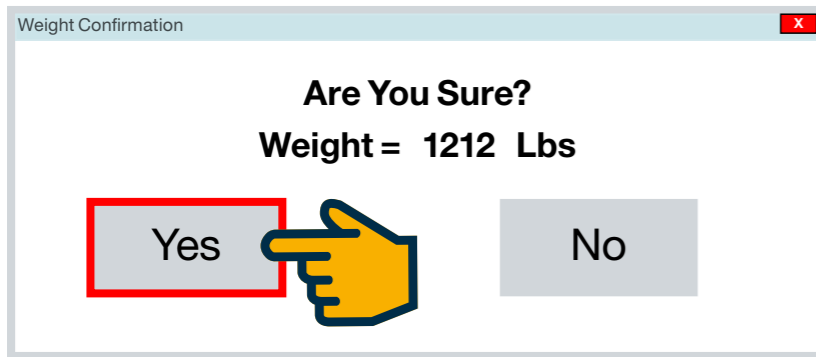
50%

TREATER DETAIL SCREEN - SYSTEM STOPPING - END BATCH

The **Treated Seed Weight Confirmation** pop-up window displays as a layer on top of the **TREATER DETAIL SCREEN**, as shown left.

Step 1: Touch the **Enter Known Seed Weight** numerical field. Enter the known weight of seed value on the keypad pop-up ↻





Treater detail

1/4/2018 10:46:54 AM

Seed Present Seed Wheel

Drum

Batch Size	1500	Lbs
Seed Rate	1100	Lbs/Min
Batch Total	1018	Lbs

System Status
Stopping

Alerts

Seed Wheel

Rev Fwd

Stopped

Speed 25%

Drum

Stop

Running Auto

Speed 50%

TREATER DETAIL SCREEN - SYSTEM PAUSED - END BATCH

The **Weight Confirmation** pop-up window displays. Answer **Yes** or **No** to the question: **Are you sure?** Is the weight value entered on the keypad pop-up (refer to previous page) correct?

Step 1: Touch the **Yes** button icon: pop-up closes: navigates to the **MAIN SCREEN** ➔





KEG SWAP

MAIN SCREEN - KEG SWAP

The system, running at the current seed rate, will alert operators (according to the low keg timer, which can be adjusted from 1 min to 10 min see page 42 for instructions) before a keg runs empty and needs to be swapped (the **Alerts** button icon turns red, as shown right).

The operator can pause the system (touch the **Pause** button icon) at any time if it appears that during the treating session a keg may run out even prior to the system alert.

Operators can also swap a keg if they prefer to leave a partial quantity in the keg before it gets completely empty in the middle of a treating session.

When the keg runs completely empty, the system will stop the treating session: navigates to the **TREATER DETAIL SCREEN** ↻

Bayer Engineering R&D 81

ON DEMAND

System Status: Idle

1/4/2018 11:04:26 AM
Status PLC
Status Comm -78 dBm
Current User: ENGR

Empty

1 2 3 4 5 6

7 8 9 10 11 12

Seed Present
Seed Wheel Stopped
Drum Stopped

Batch Size 1500 Lbs
Seed Rate 1100 Lbs/Min
Batch Total 981 Lbs

Alerts! Chemical low, swap keg now...

Pause

Batch Setup Reports Setup Inventory Alerts Login





Example: For **Option 1**, select the **Continue using chemical** option

TREATER DETAIL SCREEN - SYSTEM PAUSED - KEG SWAP PAUSE

An **Empty Station Detected** event pop-up window will appear. Warning message: **Low flow detected at chemical station 2**

Events, such as **Alerts, Low Chemical, Stopped** or **Pause** will pause/stop the system. The low keg timer may trip the alert as low as 2-3 gallons because the system senses the Keg is empty if the lines have not been properly primed first thing in the morning or due to heavy chemical viscosity issues.

Option 1 below enables the operator to run the Keg completely empty before the actual Keg Swap is necessary.

Option 1: Continue using keg...

The **Empty Station Detected** pop-up window will appear if the system alerts the Keg is empty, as shown above. Two options appear on the pop-up window: **Continue using chemical** or **Swap keg or flex fill**.

Step 1: Touch the **Continue using keg** button icon: the **Empty Station Detected** pop-up window closes.

Step 2: Touch the **Resume** button icon: the batch resumes the treating session where it left off: navigates back to the **MAIN SCREEN** ⇌

Treater detail 1/4/20118 11:36:12 AM

Seed Wheel
Rev Fwd

Stopped

Speed
25%

Drum

Stopped

Speed
50%

System Status
Keg Swap-Pause

Alerts

Resume

End Batch

Exit

Empty Station Detected
Warning: Low flow detected at chemical station 2
Check if the station is empty or needs agitation. Then select on of the following:
Continue using chemical
Swap keg or flex fill

Batch Size 1500 Lbs
Seed Rate 1100 Lbs/Min
Batch Total 1018 Lbs

One or more Kegs need to be swapped
Waiting for Scale to Settle



Bayer Engineering R&D 81

ON DEMAND

System Status
Idle

Status PLC
Status Comm -78 dBm
Current User: ENGR

1/4/2018
11:44:07 AM

Seed Present	Seed Wheel	Stopped
Drum	Stopped	
Batch Size	1500	Lbs
Seed Rate	1100	Lbs/Min
Batch Total	981	Lbs

ALERT! Chemical low, swap keg now...

Batch Setup Reports Setup Inventory Alerts Login

TREATER DETAIL SCREEN - SYSTEM IDLE - KEG SWAP

When the Keg runs completely empty using up the extra 2-3 gallons, the system will automatically stop the treating session: navigates to the **TREATER DETAIL SCREEN**, Option 2 Swap keg or flex fill ↻





Example: For **Option 2**, select the **Swap keg or flex fill** option

TREATER DETAIL SCREEN - SYSTEM PAUSED - SWAP KEG

An **Empty Station Detected** event pop-up window will appear. Warning message: **Low flow detected at chemical station 2**

Option 2: Swap keg or flex fill

Step 1: Touch the **Swap keg or flex fill** button icon: navigates to the **DRUM DETAIL STOP SCREEN**

Flashing message: **One or more Kegs need to be swapped**

Step 1: Touch the **Exit** button icon: navigates to the **MAIN SCREEN** ↻

Treater detail 1/4/2018 11:48:11 AM

Seed Wheel
Rev Fwd

Stopped

Speed 25%

Drum

Stopped

Speed 50%

System Status
Keg Swap-Pause

Alerts

Resume

End Batch

Exit

Empty Station Detected
Warning: Low flow detected at chemical station 2
Check if the station is empty or needs agitation. Then select on of the following:
Continue using chemical
Swap keg or flex fill

Batch Size 1500 Lbs
Seed Rate 1100 Lbs/Min
Batch Total 1018 Lbs

One or more Kegs need to be swapped
Waiting for Scale to Settle

Seed Present



Bayer Engineering R&D 81

ON DEMAND

System Status: Idle

Status PLC: ■ Status Comm: ■ -78 dBm
 1/4/2018 11:51:012AM
 Current User: ENGR

Keg	Weight	Volume	Status
1	12.0 Lbs	1.4 Gals	Inoc
2	0.0 Lbs	5.2 Gals	Empty
3	0.0 Lbs	5.2 Gals	Xxx
4	0.0 Lbs	5.2 Gals	Xxx
5	0.0 Lbs	5.2 Gals	Xxx
6	0.0 Lbs	5.2 Gals	Xxx
7	12.0 Lbs	1.4 Gals	Xxx
8	0.0 Lbs	5.2 Gals	Xxx
9	0.0 Lbs	5.2 Gals	Xxx
10	0.0 Lbs	5.2 Gals	Xxx
11	0.0 Lbs	5.2 Gals	Xxx
12	0.0 Lbs	5.2 Gals	Xxx

Seed Present: ■ Seed Wheel: Stopped

Drum: Stopped

Batch Size	1500	Lbs
Seed Rate	1100	Lbs/Min
Batch Total	981	Lbs

ALERT! Chemical low, swap keg now...

Buttons: Batch Setup, Reports, Setup, Inventory, Alerts, Login, Pause

TREATER DETAIL SCREEN - SYSTEM IDLE - KEG SWAP

Step 1: Touch the **Alerts** button icon to acknowledge the alert ➡



ALERTS

1/4/2018
11:54:10 AM

Ack	Date In	Time Last	Tag Name	Priority	Description	Status	Value	
	1/2/2018	13:21:35.030	GB_FLC_OK	HIGH	PLC Comm Has Failed	CFN	OK	▲
								▼

◀
▶

Total Alarms: 1
Filter: Off
Sort: Time In, Descending
Run

Ack

Exit

ALERTS SCREEN

- Step 1:** Touch a **displayed alert**
- Step 2:** Touch the **Ack** button icon to acknowledge the alert.
- Step 3:** Touch the **Exit** button icon: navigates to the **Main Screen** ↻

Bayer Engineering R&D 81

ON DEMAND

System Status
Keg Swap-Pause

Status PLC
Status Comm -78 dBm
Current User: ENGR

1/4/2018
11:57:13 AM

12.0 Lbs S
Inoc
1.4 Gals

0.0 Lbs S
Xxx
5.2 Gals

0.0 Lbs S
Xxx
5.2 Gals

0.0 Lbs S
Xxx
5.2 Gals

0.0 Lbs S
Xxx
5.2 Gals

0.0 Lbs S
Xxx
5.2 Gals

0.0 Lbs S
Xxx
5.2 Gals

0.0 Lbs S
Xxx
5.2 Gals

0.0 Lbs S
Xxx
5.2 Gals

0.0 Lbs S
Xxx
5.2 Gals

0.0 Lbs S
Xxx
5.2 Gals

0.0 Lbs S
Xxx
5.2 Gals

0.0 Lbs S
Xxx
5.2 Gals

0.0 Lbs S
Xxx
5.2 Gals

Seed Present
Seed Wheel Stopped

Drum
Stopped

Batch Size 1500 Lbs
Seed Rate 1100 Lbs/Min
Batch Total 981 Lbs

Pause

Batch Setup Reports Setup Inventory Alerts Login

TREATER DETAIL SCREEN - SYSTEM IDLE - KEG SWAP

Step 1: Touch the **Pump Station 2** graphic icon that is flashing: navigates to the **STATION 2 PUMP DETAILS SCREEN** ↻



Station 2 Details

1/4/2018
12:03:14 PM

Chemical Name	Xxxx 15 Gal Drum	
Keg BarCode Data	*****	
Chemical Density	8.37	Lbs/Gal
Est. Chemical Remaining	11.1	Gal
Chemical Rate	19.78	Oz/Min
# Seeds Units Treatable	1436.5	
Total Chemical (Lifetime)	50.2	Gal
Weight	93.0	Lbs S

Pump Status

Stopped

Last Scale Calibration

Date 1/3/2018

Time 12:13:44

Calibra  Kegswap Prime Line Recover Line Exit

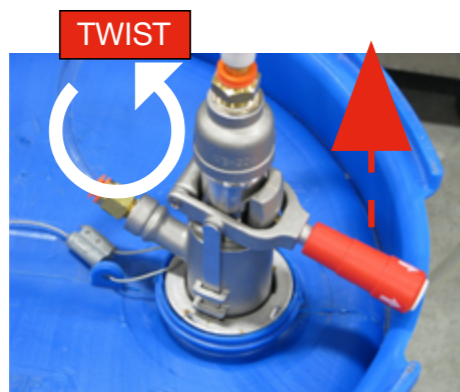
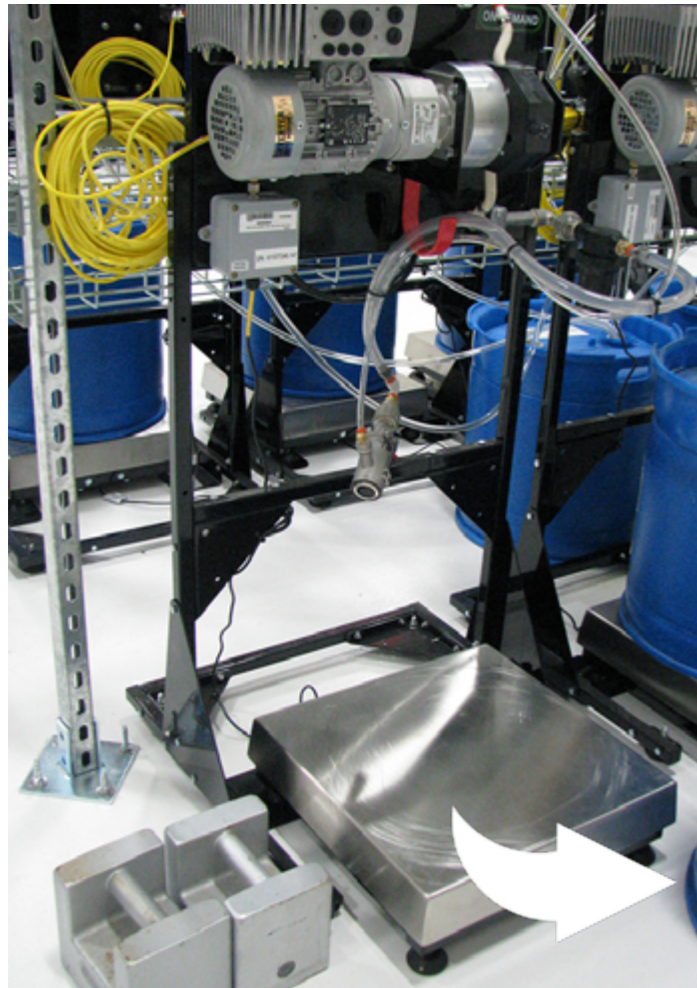
STATION 2 PUMP DETAILS SCREEN - KEG SWAP

Step 1: Touch the **Keg Swap** button icon: navigates to the **KEG SWAP - STATION 2 SCREEN** ↻





Note: if the keg is removed from the scale before the screen indicates, the pop-up message box will appear (as shown middle of screen right). Follow each step prompt to resume to keg swap.



Keg Swap - Station 2

1/4/2018
12:17:25 PM

Waiting for Scale to settle - DO NOT REMOVE KEG

Step 1 Remove the empty keg



Cancel
Waiting for scale to settle
Current Chemical

Current Barcode

KEG SWAP SCREEN - KEG SWAP

Step 1: Remove empty Keg from the Pump Station Scale, as shown left.

Step 2: Touch the **Keg Removed** button icon.

Step 3: Lift the handle **UP**, twist **LEFT** and remove the Coupler Assembly from the top of the Keg and hang it on the Pump Station Hook. Continued, next page ➡



Keg Swap - Station 2

1/4/2018
1:18:29 PM

Step 1 Remove the empty keg

Keg Removed

Step 2 Wait for PLC to Zero the scale...



0.0

Lbs

Cancel

Current Chemical

Current Barcode

KEG SWAP SCREEN - KEG SWAP

Step 2: Wait for the PLC to zero the scale: displays 0.0 (as shown above).

Continued ↻





Step 1: Use a large slot screwdriver or T-handle, as shown below, to remove the white insert plug from the new Keg and set aside.



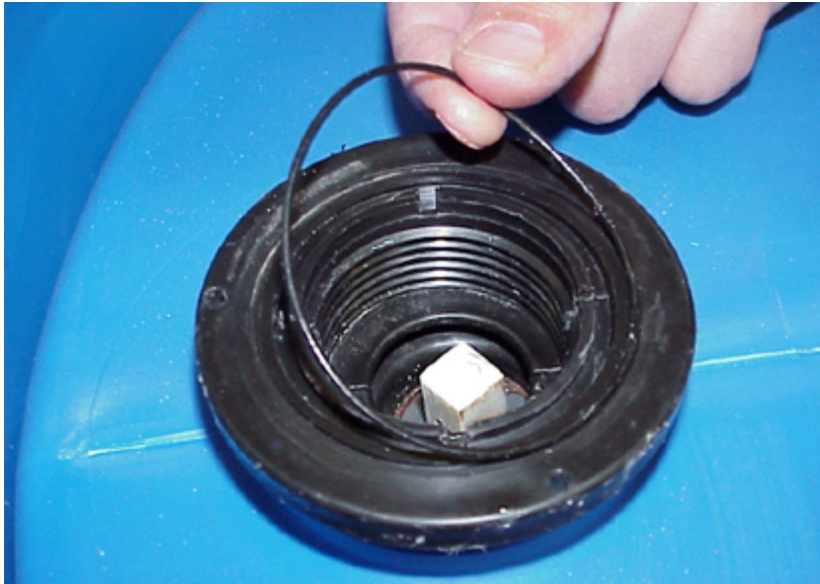
Step 2: Insert the stir rod handle as shown. Manually mix the chemical before connecting and using the electric Mixer Assembly. Remove the stir rod handle. Replace the white insert plug (previously removed).



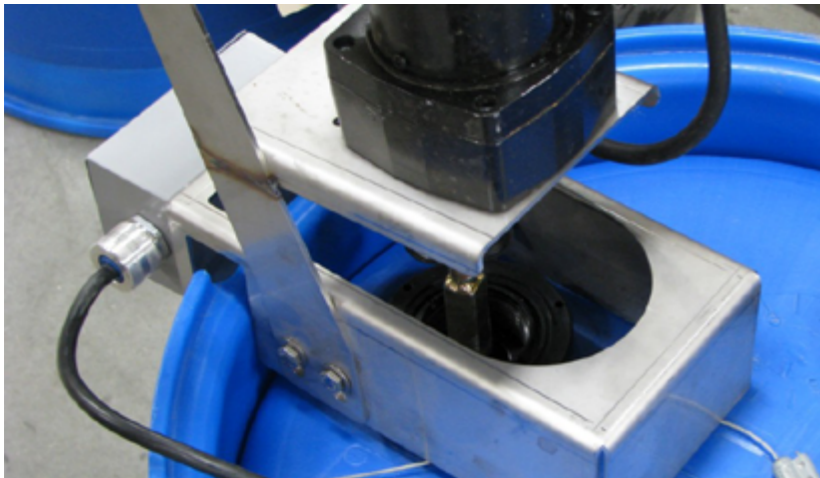
Step 3: Use a crescent wrench to first loosen, then unscrew by hand and remove the top half of the black Keg stir cap (the White insert plug stays in the cap).

Continued ➔





Step 4: Set the black Keg stir cap aside (previously removed). **DO NOT LOOSE THE O-RING!**



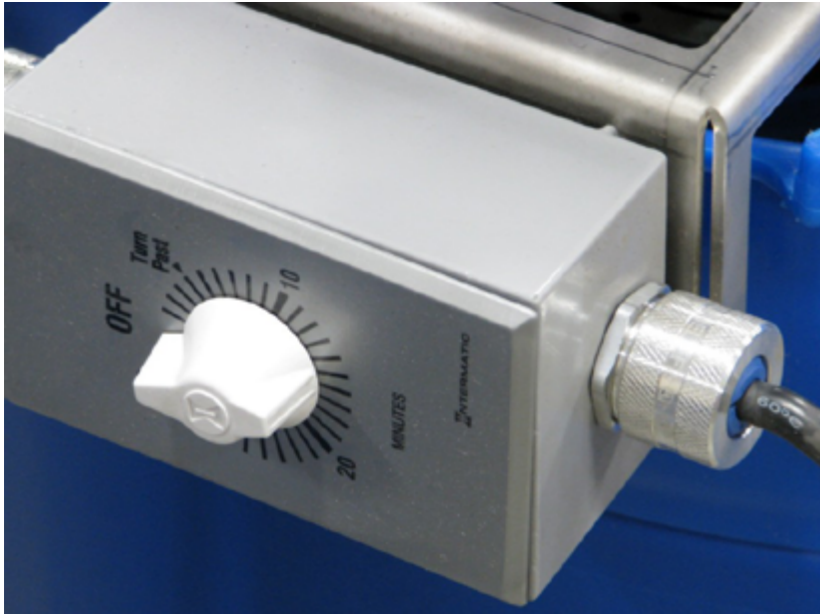
Step 5: Set the electric Mixer Assembly onto the stir rod inside the Keg bung, as shown.



Step 6: Adjustments can be made so the Mixer is properly attached to the stir rod. Use Allen wrench to loosen the set collar and move the mixer up or down for proper fit adjustment. Tighten set collar in place. Place Mixer on stir rod. Plug in 120V AC power cord to external power source. Use Mixer Timer to operate (ON/OFF) the Mixer.

Continued ➔





Step 7: Adjust the Mixer Timer for proper agitation. Consult chemical label for optimal mixing duration times.



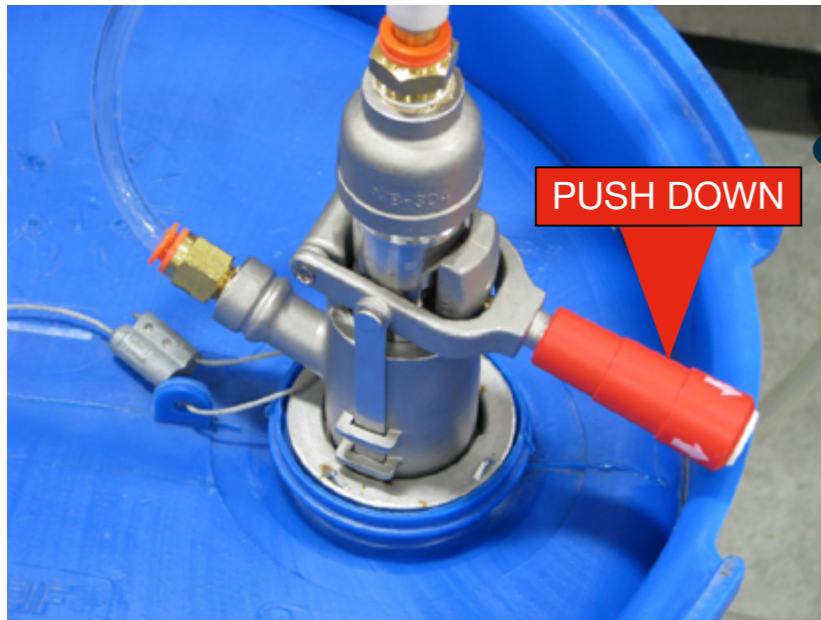
Step 8: Remove the yellow keg bung cap.

Continued ➔





Step 9: Insert the Plumbing Assembly into the Keg tank bung. Hold the Assembly with both hands, apply slight pressure, twist **RIGHT**.



Step 10: Then lock the Assembly in place by pushing the Red Handle **DOWN**, as shown. The new Keg is now ready to use.

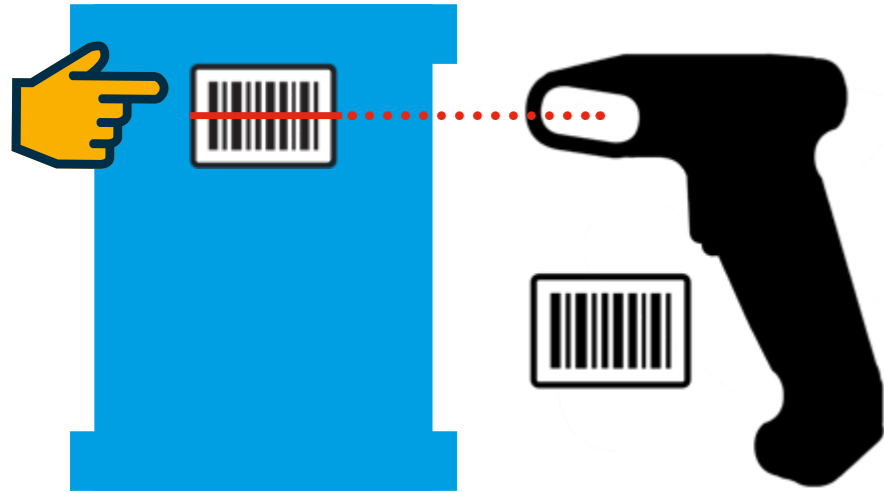
Continued ➔



RECEIVE INVENTORY SCREEN

Step 1: Remove the scanner from the base. Pull the trigger to wake up the scanner (will beep, meaning it woke up). The second beep indicates communication link to the base.

Step 2: Bring the scanner over to a new keg and scan the keg barcode label, as shown below. The scanner will beep, indicating the barcode has been scanned. Wait approximately 5 minutes for the barcode information to go to the cloud for verification, and return to the HMI.



Keg Swap - Station 2

1/4/2018

1:40:03 PM

Step 1 Remove the empty keg

Step 2 Wait for PLC to 0 the scale...

0.0

S

Step 3 Scan the barcode

Keyboard





Warning! Requires two people to lift a full keg of chemical onto the scale!



Keg Swap - Station 2

1/4/2018
1:48:45 PM

Step 1 Remove the empty keg

Step 2 Wait for PLC to 0 the scale...

0.0 S

Step 3 Scan the barcode

Step 4 Place new keg in position and connect coupler

Keg in Position

KEG SWAP - STATION 2 - SCREEN - KEG SWAP

New Keg information is verified and accepted in the system. The keg information from the barcode then populates on the Receive Inventory screen, as shown above.

Step 1: Place new Keg on the Pump Station Scale (two people required).

Step 2: Touch the **Keg in Position** button icon ➡



Keg Swap - Station 2

1/4/2018
1:57:33 PM

Step 1 Remove the empty keg

Step 2 Wait for PLC to 0 the scale...

100.00 S

Step 3 Scan the barcode

Step 4 Place new keg in position and connect coupler

Step 5 Wait for PLC to check weight...

Verify there is nothing on the keg and the weight is correct

Accept Weight 

Cancel

Current Chemical Xxxx 15 Gal Drum
Current Barcode *****

Keg Swap Complete

KEG SWAP - STATION 2 - SCREEN - KEG SWAP

Wait for the PLC to check new Keg weight on the Pump Station Scale. Displays Keg weight **100.0**

Step 1: Touch the **Accept Weight** button icon ↻



KEG SWAP - STATION 2 - SCREEN - KEG SWAP

Step 1: Touch and hold the **Jog** button icon. This primes chemical from the Keg, through the pump head and up to the treater chemical inlet.

Release the **Jog** button icon once chemical reaches the treater chemical inlet. This removes air pockets in the chemical lines.

>>Run the LS Pump at 50% pump speed for 10 seconds. Adjust speed as needed.

>>Run the I/P Pump at 10% pump speed for 10 seconds. Adjust speed as needed.

>>When swapping partial kegs, the chemical lines must be completely primed!

Step 2: Touch the **Keg Swap Complete** button icon: navigates to the **STATION 2 PUMP DETAIL SCREEN** ➔

Keg Swap - Station 2

1/4/2018
2:04:17 PM

Step 1 Remove the empty keg

Step 2 Wait for PLC to 0 the scale... **100.00** **S**

Step 3 Scan the barcode

Step 4 Place new keg in position and connect coupler

Step 5 Wait for PLC to check weight...

Verify there is nothing on the keg and the weight is correct

Step 6 **Jog** Prime the line

Station Pump Speed: **98%**

Current Chemical: Xxxx 15 Gal Drum

Current Barcode: *****

Waiting for scale to settle

Keg Swap Complete



Station 2 Details

1/4/2018
2:07:14 PM

Chemical Name	Xxxxx 15 Gal Drum	
Keg BarCode Data	*****	
Chemical Density	8.37	Lbs/Gal
Est. Chemical Remaining	11.1	Gal
Chemical Rate	19.78	Oz/Min
# Seeds Units Treatable	1436.5	
Total Chemical (Lifetime)	50.2	Gal
Weight	100.0	Lbs S

Pump Status

Stopped

Last Scale Calibration

Date 1/3/2018

Time 12:13:44

- Calibrate
- Kegswap
- Prime Line
- Recover Line
- Exit**

STATION 2 DETAILS - SCREEN - KEG SWAP

Step 1: Touch the **Exit** button icon: navigates to the **DRUM DETAIL SCREEN** ➔



Treater detail

1/4/2018 11:48:11 AM

Batch Size	1500	Lbs
Seed Rate	1100	Lbs/Min
Batch Total	1018	Lbs

Seed Wheel

Rev Fwd

Stopped

Speed

25%

Drum

Stopped

Speed

50%

System Status

Keg Swap-Pause

Alerts

Resume

End Batch

Exit

DRUM DETAIL SCREEN - KEG SWAP - PAUSE

Step 1: Touch the **Resume** button icon: navigates to the **MAIN SCREEN** ↻



Bayer Engineering R&D 81

ON DEMAND

System Status
Running

Status PLC
Status Comm -78 dBm
Current User: OPER

1/4/2018
2:14:23 PM

The main screen displays 12 kegs arranged in two rows of six. The top row kegs are numbered 1 through 6, and the bottom row kegs are numbered 8 through 12. Each keg has a weight and volume display. Keg 1 is labeled 'Inoc' with 12.0 Lbs and 1.4 Gals. Kegs 2 through 12 are labeled 'Xxx' with 0.0 Lbs and 5.2 Gals. To the right of the kegs is a 'Seed Wheel' and a 'Drum', both with 'Running Auto' status. A hand icon points to the Drum. Below the kegs is a table with batch information:

Batch Size	2000	Lbs
Seed Rate	1500	Lbs/Min
Batch Total	164	Lbs

At the bottom of the screen are several buttons: 'Batch Info', 'Reports', 'Inventory', 'Alerts', 'Pause', and 'Login'.

MAIN SCREEN - SYSTEM RUNNING

All devices displayed on the **MAIN SCREEN** above indicate **GREEN**; the system is running and the batch has resumed the treating session where it left off prior to Keg swap.

Step 1: Touch the Treater icon to advance to Flex Fill: navigates to the **MAIN SCREEN** ↻





FLEX TANK FILL

MAIN SCREEN - FLEX TANK FILL

The low keg timer may trip the alert as low as 2-3 gallons approximately ten minutes (which can be adjusted from 1 min to 10 min see page 42 for instructions) before the Flex Tank runs empty, at the current seed rate (**Alert** button icon turns red, as shown above).

The operator can pause the system (touch the Start/Pause button icon) at any time if it appears that during the treating session a Flex Tank may run out prior to the system alert. Operators can also swap a Flex Tank if they prefer to leave a partial quantity in the Tank before it gets completely empty, in the middle of a treating session.

When the Flex Tank runs completely empty, the system will automatically stop the treating session and display the message: **ALERT! Chemical low, fill tank now...** (Tank Station displays: **Empty**, Seed Wheel: **Stopped**, Drum: **Stopped** and the System Status displays: **Idle**) and navigates: to the **TREATER DETAIL SCREEN**.

Bayer Engineering R&D 81

ON DEMAND

System Status: **Idle**

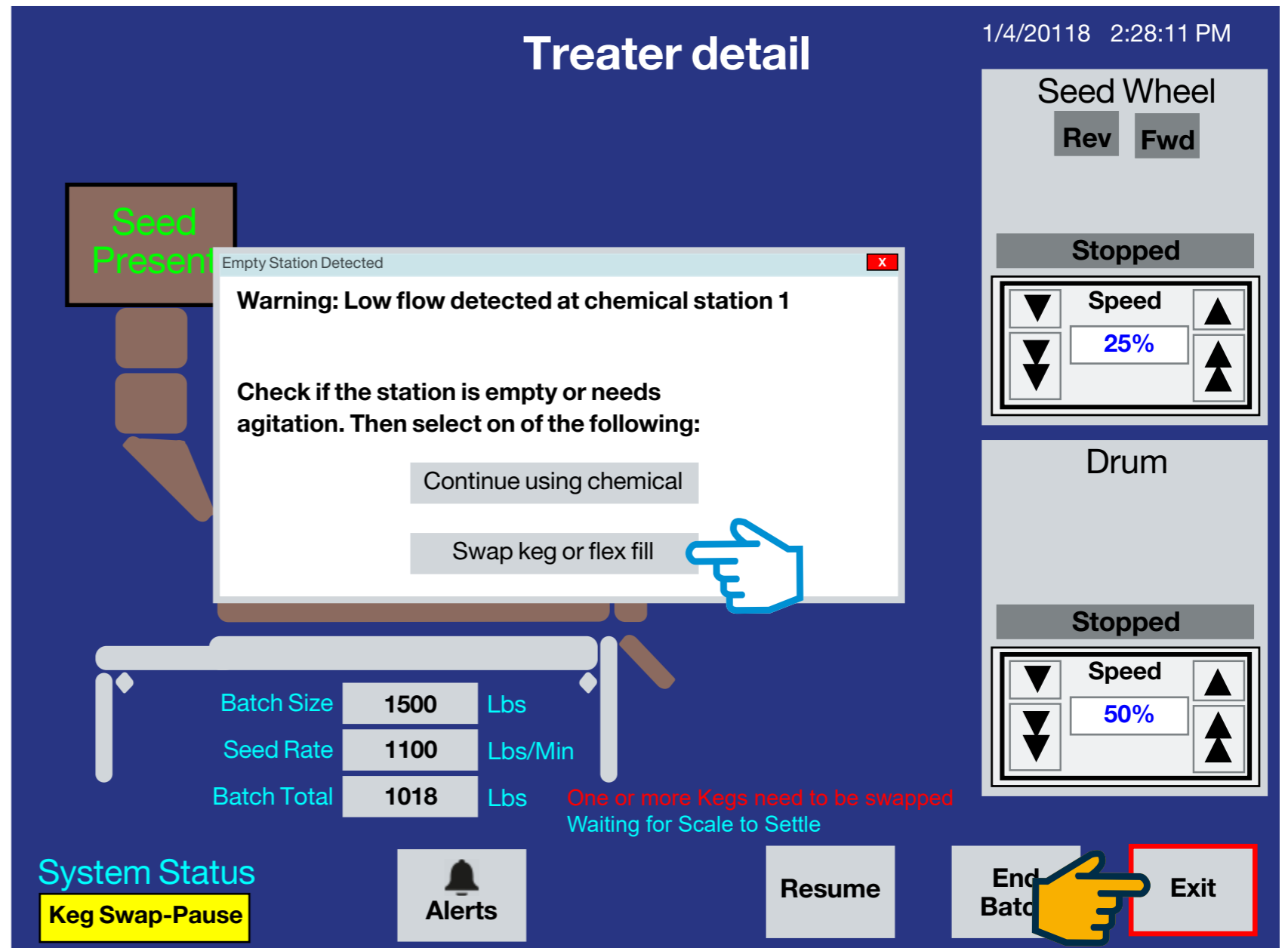
1/4/2018 2:25:26 PM
Status PLC
Status Comm -78 dBm
Current User: ENGR

Batch Size	1500	Lbs
Seed Rate	1100	Lbs/Min
Batch Total	981	Lbs

ALERT! Chemical low, swap keg now...

Batch Setup | Reports | Setup | Inventory | Alerts | Login





TREATER DETAIL SCREEN - FLEX TANK FILL - KEG SWAP - PAUSE

An **Empty Station Detected** event pop-up window will appear. **Warning: Low flow detected at chemical station 1**

Step 1: Touch the **Swap keg or flex fill** button icon: navigates to the **TREATER DETAIL STOP SCREEN**

Flashing message: **One or more Kegs need to be swapped**

Step 2: Touch the **Exit** button icon: navigates to the **MAIN SCREEN** ↻



Bayer Engineering R&D 81

ON DEMAND

System Status: Idle

Status PLC: ■ Status Comm: ■ -78 dBm
 Current User: ENGR

1/4/2018 2:31:01 PM

Empty

12.0 Lbs
1.4 Gals
Inoc

0.0 Lbs
5.2 Gals
Xxx

0.0 Lbs
5.2 Gals
Xxx

0.0 Lbs
5.2 Gals
Xxx

0.0 Lbs
5.2 Gals
Xxx

0.0 Lbs
5.2 Gals
Xxx

0.0 Lbs
5.2 Gals
Xxx

Seed Present
Seed Wheel Stopped

Drum Stopped

Batch Size: 1500 Lbs
 Seed Rate: 1100 Lbs/Min
 Batch Total: 981 Lbs

Pause

ALERT! Chemical low, swap keg now...

Batch Setup Reports Setup Inventory Alerts Login

MAIN SCREEN - FLEX TANK FILL

Step 1: Touch the **Alerts** button icon: navigates to the **ALERTS SCREEN** ➔



Bayer Engineering R&D 81

ON DEMAND

System Status: Idle

Status PLC: ■ Status Comm: ■ -78 dBm
Current User: ENGR

1/4/2018 2:38:42 PM

12 Stations (1-12):

- Station 1: 12.0 Lbs S, 1.4 Gals, Inoc
- Station 2: 0.0 Lbs S, 5.2 Gals, Xxx
- Station 3: 0.0 Lbs S, 5.2 Gals, Xxx
- Station 4: 0.0 Lbs S, 5.2 Gals, Xxx
- Station 5: 0.0 Lbs S, 5.2 Gals, Xxx
- Station 6: 0.0 Lbs S, 5.2 Gals, Xxx
- Station 7: 12.0 Lbs S, 1.4 Gals, Xxx
- Station 8: 0.0 Lbs S, 5.2 Gals, Xxx
- Station 9: 0.0 Lbs S, 5.2 Gals, Xxx
- Station 10: 0.0 Lbs S, 5.2 Gals, Xxx
- Station 11: 0.0 Lbs S, 5.2 Gals, Xxx
- Station 12: 0.0 Lbs S, 5.2 Gals, Xxx

Seed Wheel: Stopped (Seed Present)

Drum: Stopped

Batch Size: 1500 Lbs
Seed Rate: 1100 Lbs/Min
Batch Total: 981 Lbs

Buttons: Batch Setup, Reports, Setup, Inventory, Alerts, Login, Pause

TREATER DETAIL SCREEN - SYSTEM IDLE - KEG SWAP

Step 1: Touch the **Pump Station 1** graphic icon that is flashing: navigates to the **STATION 1 PUMP DETAILS SCREEN** ↻



Station 1 Details

1/4/2018
2:59:14 PM

Chemical Name	Water	
Keg BarCode Data		
Chemical Density	8.34	Lbs/Gal
Est. Chemical Remaining	0.0	Gal
Chemical Rate	0.00	Oz/Min
# Seeds Units Treatable	0.0	
Total Chemical (Lifetime)	27.9	Gal
Weight	0.2	Lbs S
Instantaneous Flow	0.0	FI Oz/Min

Pumps

Manual Control

Reverse Forward

Jog

Pump Status

Stopped

Last Scale Calibration


Date: 1/3/2018

Time: 12:13:44

Station Pump Speed

▼ ▼ 50% ▲ ▲

Calibrate **Flex Fill** Exit



STATION 1 DETAILS SCREEN - FLEX TANK FILL - KEG SWAP - PAUSE

Step 1: Touch the **Flex Fill** button icon ➡





Note: if the flex tank is removed from the scale before the screen indicates, the pop-up message box will appear for a keg swap. Follow the steps to resume to flex fill swap.

Flex Fill - Station 1

1/4/2018
3:08:25 PM

Waiting for Scale to settle - Do not Fill Flex tank

Step 1 Select Chemical

Water

8.340 Lbs/Gal

Accept Chemical

Exit

Waiting for scale to settle

FLEX FILL STATION 1 SCREEN - FLEX TANK FILL

Step 1: Flex Tanks can be used for Water, Inoculant or Nutritions. To change Tank contents, touch the drop down arrow to select from a list of options.

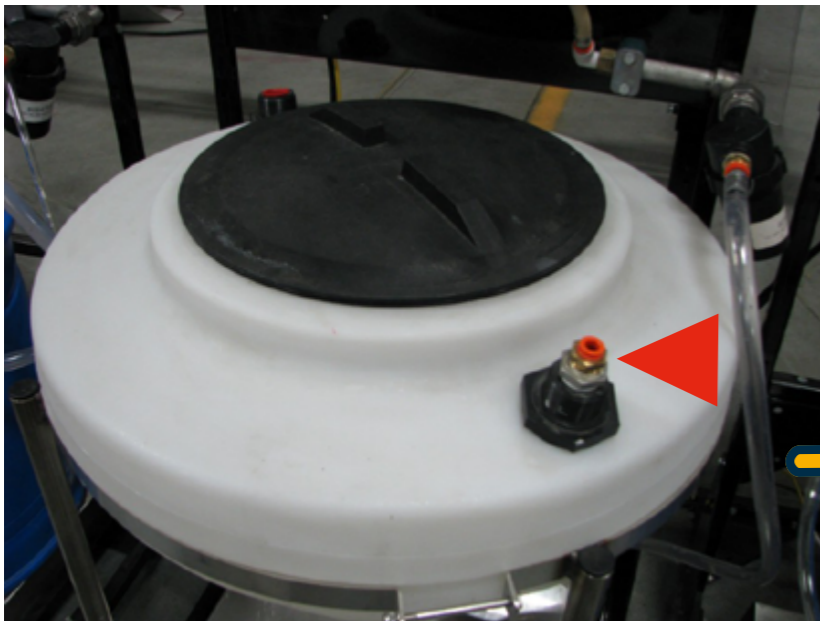
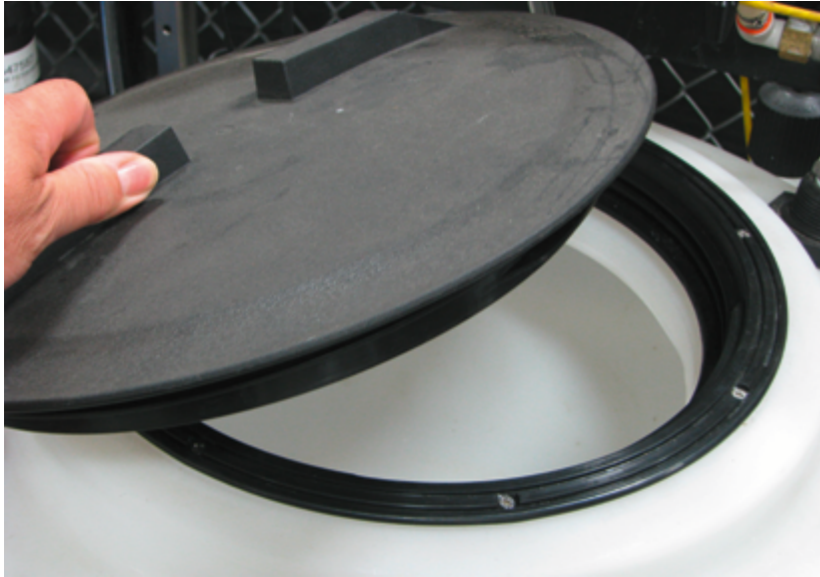
>For this demonstration, as before, **Water** will remain as the working contents of the Flex Tank.

Step 2: Touch the **Accept Chemical** button icon ➡



FLEX FILL STATION 1 SCREEN - FLEX TANK FILL

Step 1: Remove the Flex Tank lid or connect tubing to the press-lock fitting to fill the Tank. The scale will read the Tank content weight as it is added, indicated by the digital value displayed and the message at the bottom of the screen, as shown right.



Flex Fill - Station 1

1/4/2018
3:13:45 PM

Step 1 Select Chemical

Water

8.340 Lbs/Gal

Step 2 Fill the Flex Tank

Flex Filled

25.4

Exit

Waiting for scale
to settle



Flex Fill - Station 1

1/4/2018
3:21:33 PM

Step 1 Select Chemical

Water

8.340 Lbs/Gal

Step 2 Fill the Flex Tank

Filled 50.5 S

Step 3 Wait for PLC to check weight...

50.5

Step 4 Jog Prime the line



Jog

Station Pump Speed

50%



Flex Fill Complete

FLEX FILL STATION 1 SCREEN - FLEX TANK FILL

Step 1: Touch and hold the **Jog** button icon until water/chemical fills the tubing leading up to the Pump.

>>Optional - Operators can increase/decrease the Pump speed by touching the **Station Pump Speed** field.

Step 2: When complete, touch the **Flex Fill Complete** button icon: navigates to the **DRUM DETAIL SCREEN** ↻



Treater detail

1/4/2018 3:23:11 PM

Batch Size	1500	Lbs
Seed Rate	1100	Lbs/Min
Batch Total	1018	Lbs

Seed Wheel

Rev Fwd

Stopped

Speed

25%

Drum

Stopped

Speed

50%

System Status

Keg Swap-Pause

Alerts

Resume

End Batch

Exit

DRUM DETAIL SCREEN - KEG SWAP - PAUSE

Step 1: Touch the **Resume** button icon: navigates to the **MAIN SCREEN** ↻



Bayer Engineering R&D 81

ON DEMAND

System Status
Running

Status PLC
Status Comm -78 dBm
Current User: OPER

1/4/2018
3:26:23 PM

The main screen displays 12 kegs arranged in two rows of six. Each keg has a status indicator (green or grey) and a weight display. Keg 1 is labeled 'Inoc' with 1.4 Gals. Kegs 2-6 and 8-12 are labeled 'Xxx' with 5.2 Gals. Kegs 7 and 11 are labeled 'Xxx' with 1.4 Gals. A 'Seed Wheel' is shown with 'Seed Present' and 'Running Auto' status. A 'Drum' is also shown with 'Running Auto' status and a hand icon pointing to it. On the right, there are three data fields: 'Batch Size 2000 Lbs', 'Seed Rate 1500 Lbs/Min', and 'Batch Total 164 Lbs'. Below these are 'Pause' and 'Login' buttons. At the bottom, there are five menu buttons: 'Batch Info', 'Reports', 'Inventory', 'Alerts', and 'Login'.

Batch Size	2000	Lbs
Seed Rate	1500	Lbs/Min
Batch Total	164	Lbs

MAIN SCREEN - SYSTEM RUNNING

All devices displayed on the **Main Screen** above indicate **GREEN**; the system is running and the batch has resumed the treating session where it left off prior to Keg swap.

Step 1: Touch the Treater icon to advance to Conveyors: navigates to the **MAIN SCREEN** ➔





CONVEYORS

MAIN SCREEN - CONVEYORS

The Inlet Conveyor and Discharge Conveyor graphics will not appear on the Main Screen (as shown right) until the Conveyor Option is enabled (refer to **Conveyor Option** page 54 on how to enable the system with Optional Conveyors).

Step 1: On the **Main Screen**, touch in the area of the treater graphic icon (as shown above): navigates to the **Treater Detail Screen** ➔

Bayer Engineering R&D 81

ON DEMAND

System Status
Idle

1/4/2018
3:26:23 PM
-78 dBm
Current User: OPER

■ Status PLC
■ Status Comm

Treater	Weight	Volume
1	12.0 Lbs	1.4 Gals
2	0.0 Lbs	5.2 Gals
3	0.0 Lbs	5.2 Gals
4	0.0 Lbs	5.2 Gals
5	0.0 Lbs	5.2 Gals
6	0.0 Lbs	5.2 Gals
7	12.0 Lbs	1.4 Gals
8	0.0 Lbs	5.2 Gals
9	0.0 Lbs	5.2 Gals
10	0.0 Lbs	5.2 Gals
11	0.0 Lbs	5.2 Gals
12	0.0 Lbs	5.2 Gals

Infeed Conv Stopped
 Seed Present
 Seed Wheel Stopped
 Drum Stopped
 Disch Conv Stopped

Batch Info Reports Setup Inventory Alerts Login



TREATER DETAIL SCREEN

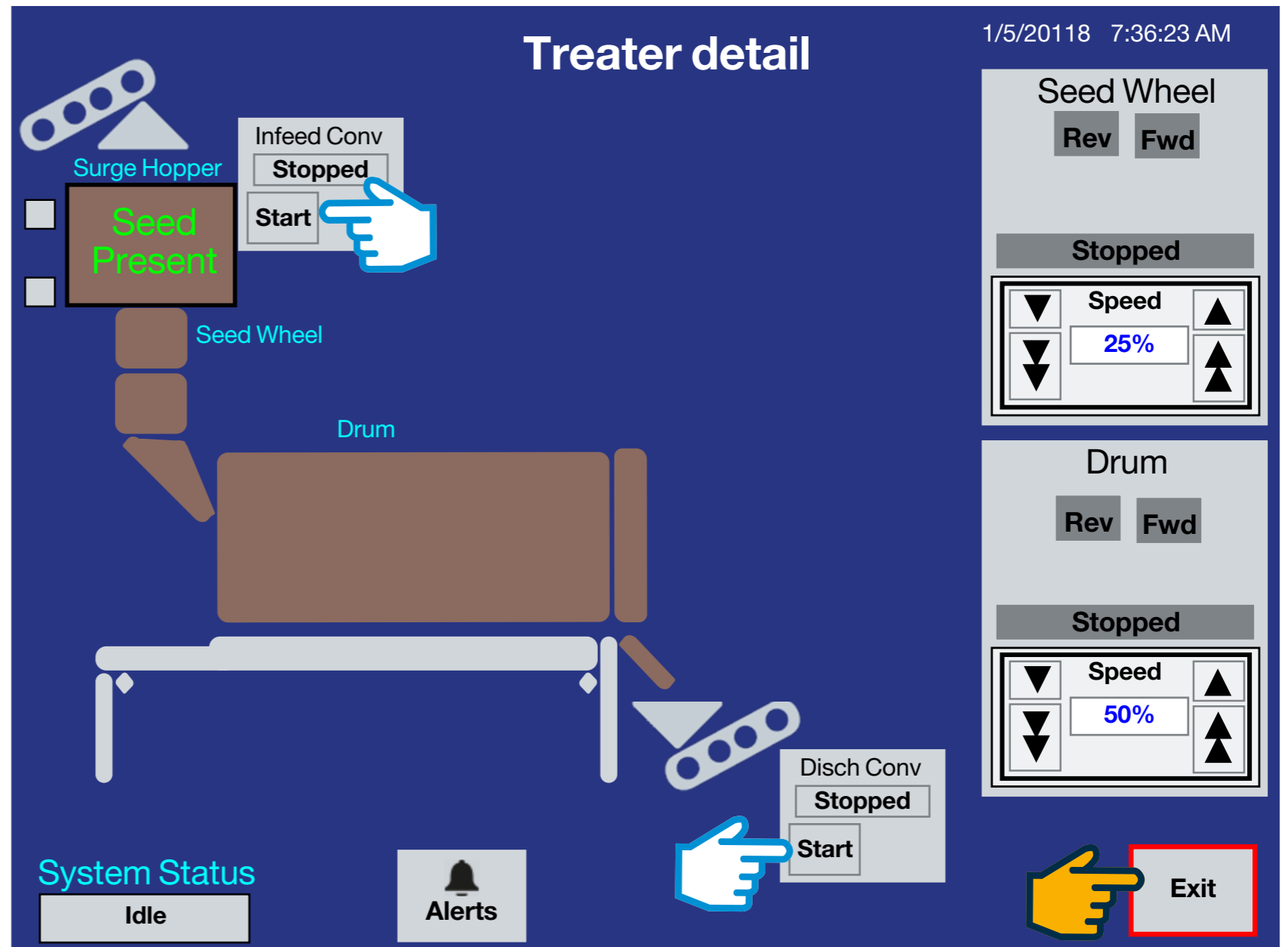
The Conveyor Control Option allows users to view when the conveyors are running or stopped on the **TREATER DETAIL SCREEN** shown right. The conveyors will turn on at the start of the batch.

Users will need to manually touch the **Start** button icon on both the **Inlet** and **Discharge Conveyors**. When started, the conveyor icons turn green, the message changes from Stopped to Running (green) and the Start button icon will be removed and the Stop button icon will display.

Once started, the Inlet Conveyor runs and fills the Surge Hopper. The Seed Wheel moves seed along into the Drum and taken away from the machine with the Discharge Conveyor. The Inlet Conveyor stops only when seed is detected by the Surge Hopper High Level Sensor (too much seed, avoids over filling) or if the user touches the Inlet Conveyor **Stop** button icon.

Restart of the Inlet Conveyor requires users to manually touch the **Start** button icon. The Discharge Conveyor continues to run as long as the drum is running. To stop the discharge conveyor, the drum must come to a complete stop, then the user can either use the manual stop or the delay timer.

Step 1: Touch the **Exit** button icon: navigates to the **MAIN SCREEN** ↻





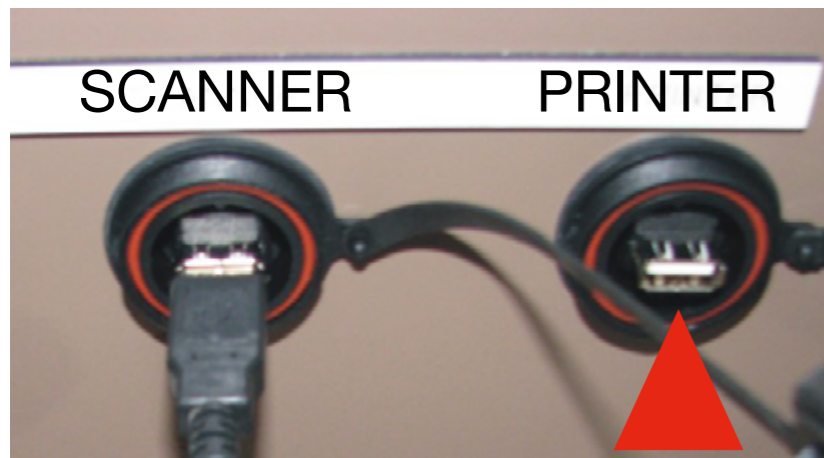
REPORTS

MAIN SCREEN - REPORTS

Additional Screens: **REPORT, SEED WHEEL DETAIL, DRUM DETAIL, INVENTORY, ALERTS, HELP** and **SUPPORT** screens are all support functions of the PLC program, which allow users to view, print and make changes to the system.

USB Receptacles provided underneath the HMI Control Box for connecting a printer (as labeled).

Step 1: Touch the **Reports** button icon: navigates to the **REPORTS SCREEN** ➔



Bayer Engineering R&D 81

ON DEMAND

System Status
Idle

1/5/2018
7:42:34 AM
-78 dBm
Current User: ENGR

1	2	3	4	5	6
12.0 Lbs Inoc 1.4 Gals	0.0 Lbs Xxx 5.2 Gals	0.0 Lbs Xxx 5.2 Gals	0.0 Lbs Xxx 5.2 Gals	0.0 Lbs Xxx 5.2 Gals	0.0 Lbs Xxx 5.2 Gals
7	8	9	10	11	12
12.0 Lbs Xxx 1.4 Gals	0.0 Lbs Xxx 5.2 Gals	0.0 Lbs Xxx 5.2 Gals	0.0 Lbs Xxx 5.2 Gals	0.0 Lbs Xxx 5.2 Gals	0.0 Lbs Xxx 5.2 Gals

Seed Present
Seed Wheel Stopped

Drum Stopped

Batch Setup | **Reports** | Setup | Inventory | Alerts | Login



REPORTS SCREEN

Batch reports are stored on the PLC and may be retrieved later to be viewed or printed.

OPTION 1

Use the **UP/DOWN** arrows to scroll through the stored reports. Touch the report listed, then...

Step 1: Touch the **View Batch Report** button icon: displays the selected report.

Step 2: Touch the **Exit** button icon: navigates to the **MAIN SCREEN** ↻

OPTION 2

Use the **UP/DOWN** arrows to scroll through the stored reports. Touch the report listed, then...

Step 3: Touch the **Print Batch Report** button icon: displays the selected report. Ensure a printer is connected to the HMI Control Panel (see previous page). Select to print. Call for printer set up.

Step 4: Touch the **Exit** button icon: navigates to the **MAIN SCREEN**.

The screenshot shows the 'REPORTS' screen with a date and time display (1/5/2018, 7:49:04 AM) in the top right corner. The main area contains a table with two columns: 'Batch ID' and 'Recipe Name'. The 'Recipe Name' column contains asterisks. The row for Batch ID 216 is highlighted with a red border, and a blue hand icon points to it. Below the table, there are three buttons: 'View Batch Report', 'Print Batch Report', and 'Exit'. A blue hand icon points to the 'View Batch Report' button, a blue hand icon points to the 'Print Batch Report' button, and a yellow hand icon points to the 'Exit' button. The 'Exit' button is also highlighted with a red border. Navigation arrows are visible on the left and right sides of the table.

Batch ID	Recipe Name
221	*****
220	*****
219	*****
218	*****
217	*****
216	*****
215	*****
214	*****
213	*****





SCANNER SETTINGS



<< GS1-128 AIM ID - RESET DEFAULT SETTINGS RECOMMENDED FOR BARCODE SCANNER (#80224745) UPDATE



IF GLOBAL AIM ID IS DISABLED AND DISPLAYS THIS SYMBOLOGY:]C1,]C2 OR]C3

- The user needs to connect the scanner to the On Demand control.
- With the scanner active, scan the enter/Exit barcode >>>and wait 3 seconds.



- Scan the Program barcode >>> and wait 3 seconds.

Continued ➡





- Then scan the enter/exit barcode again. >>>The scanner will make a series of beeps.



- Then the user/installer needs to test the scanner barcode >>>to make sure the fix worked. The easiest way is to go into the batch setup notes and scan a barcode with this issue.



Standard Product Default Settings

- If the scanner will not connect after re-programing, reset the factory default setting. Factory settings can be restored by scanning the “Standard Product Default Settings” barcode (refer to Scanner Operations Manual, page 12).





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