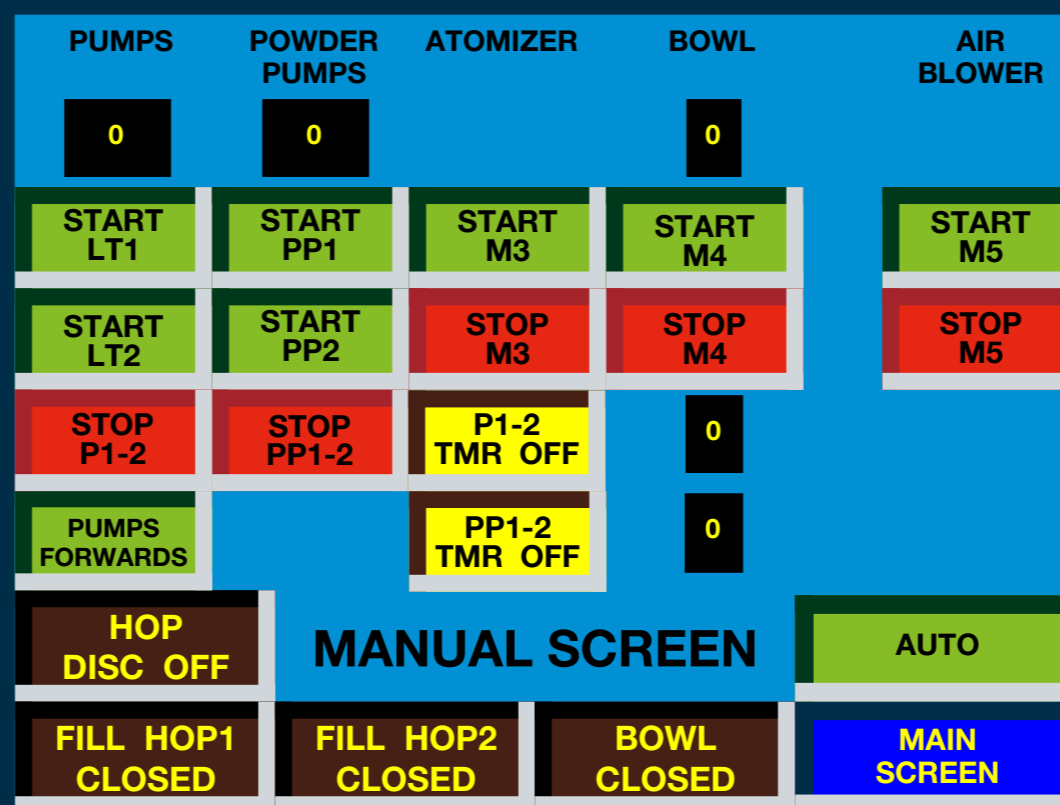




## CBT UNITIZED OPERATION GUIDE 25, 50, 100 & 200



# MENU

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



Legal & Safety



Notes



Initiate System



Touchscreens



Calibration



Recipe Creation



Run Sequence



Clean out



Troubleshooting



Pictograms

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

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





# LEGAL & SAFETY

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

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

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

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

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





# EXPOSURE CONTROL

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



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



### Wear protective clothing

Wear disposable or reusable coveralls with long sleeves.



### Hand protection required

Wear chemical-resistant gloves.



### Wear rubber boots

Wear chemical resistant rubber boots.



### Labels

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



### Treatment products

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



### Wear a mask

Wear respiratory protection.



### Eye protection required

Wear protective eyewear.



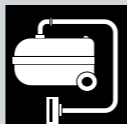
### Calibration

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



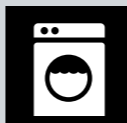
### Clean seed

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



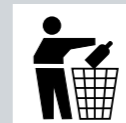
### Cleaning

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



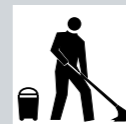
### Laundry

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



### Empty containers

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



### Spillage

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



### Maintenance

Keep machinery clean between treating sessions.





# REFERENCE SYMBOLS

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



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



### Shock Hazard

Alerts that dangerous voltage may be present.



### Warning

Alerts that a hazard may cause serious injury or death.



### Caution

Alerts that a hazard may cause minor or moderate injury.



### Hand crush - moving parts

Alerts crushing is possible.



### Pinch point

Keep hands away from pinch points.



### Rotating shaft

Do not wear loose clothing around turning parts.



### Disconnect

Disconnect to de-energize before opening.



### Use guards

Keep guards in place. Do not remove during operation.



### Lifting

Requires two people to safely lift an item.



### Lift points

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



### Center of gravity

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



### Tools

Required tools for installation and maintenance.



### Parts

Required parts for installation and maintenance.



### Tip

Calls attention to special information.



### Note

Emphasizes general information worthy of attention.



### Example

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

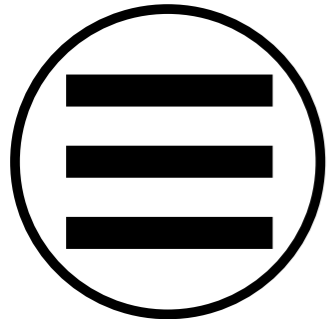




# PICTOGRAMS

i

Each Signifier displayed here is specific to this User Manual.



Menu



Previous



Advance



Recipes



Run Sequence



Clean out



Initiate System



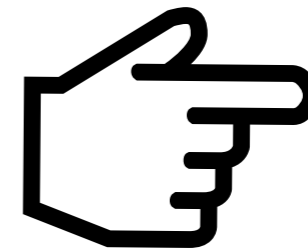
Touchscreens



Calibration



Troubleshooting



Cursor Hand





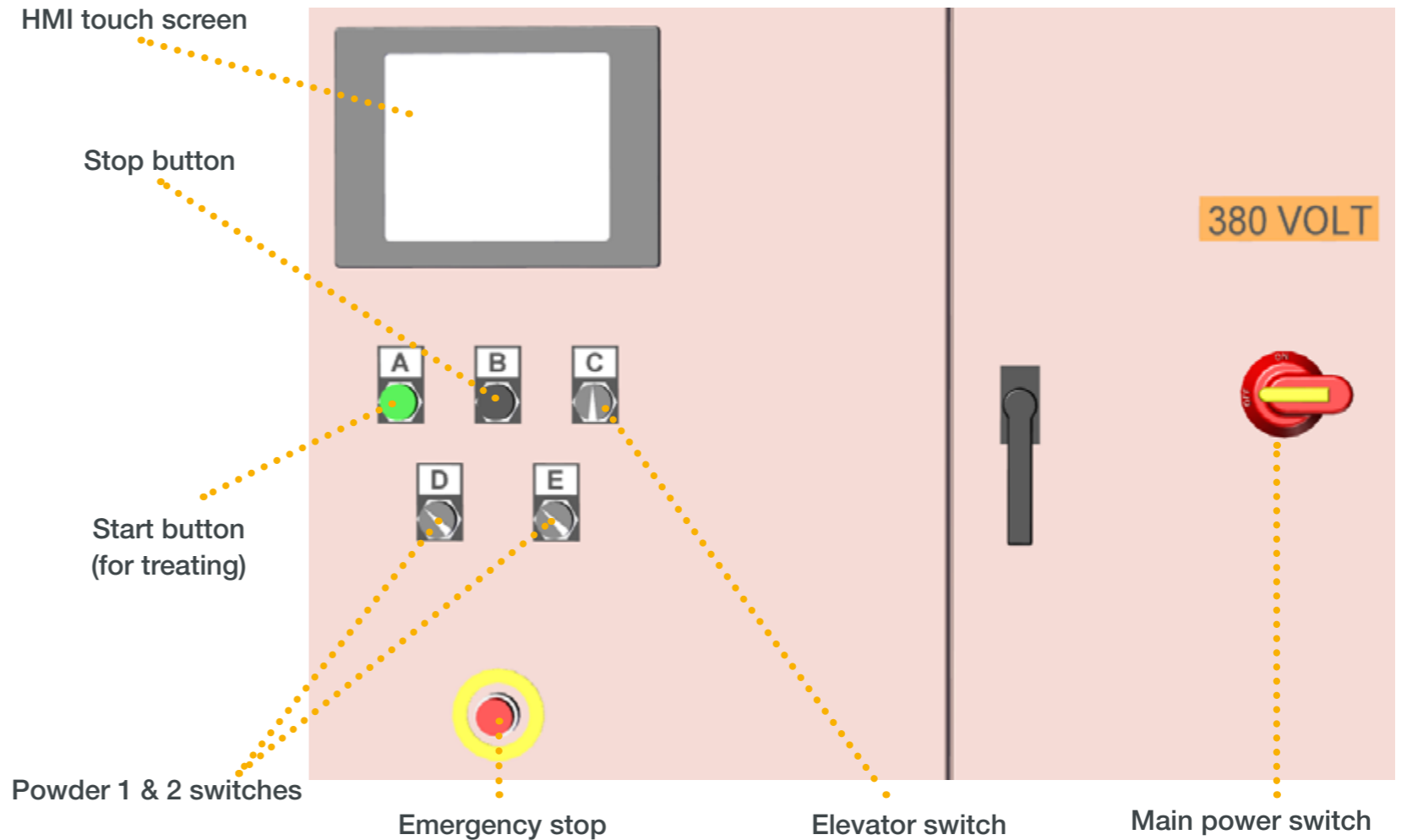
# EXPLANATORY NOTES

## SYSTEM REQUIREMENTS

- Provide adequate room for operation and maintenance
- Provide 380VAC, 3PH, 60Hz, 30a. Service for Main Control Panel.
- Optimum compressed air supply must be guaranteed. Only filtered, dry compressed air may be connected. The working pressure is 80psi and a minimum 1/2" air line. Connect a minimum 60psi air pressure to the Scale Regulator - approximately 28in<sup>3</sup> / batch.
- Connect aspiration system to dust evacuation ports - requires gates to regulate suction - approximately 500cfm with the powder attachment
- Connect all treatment hoses securely.

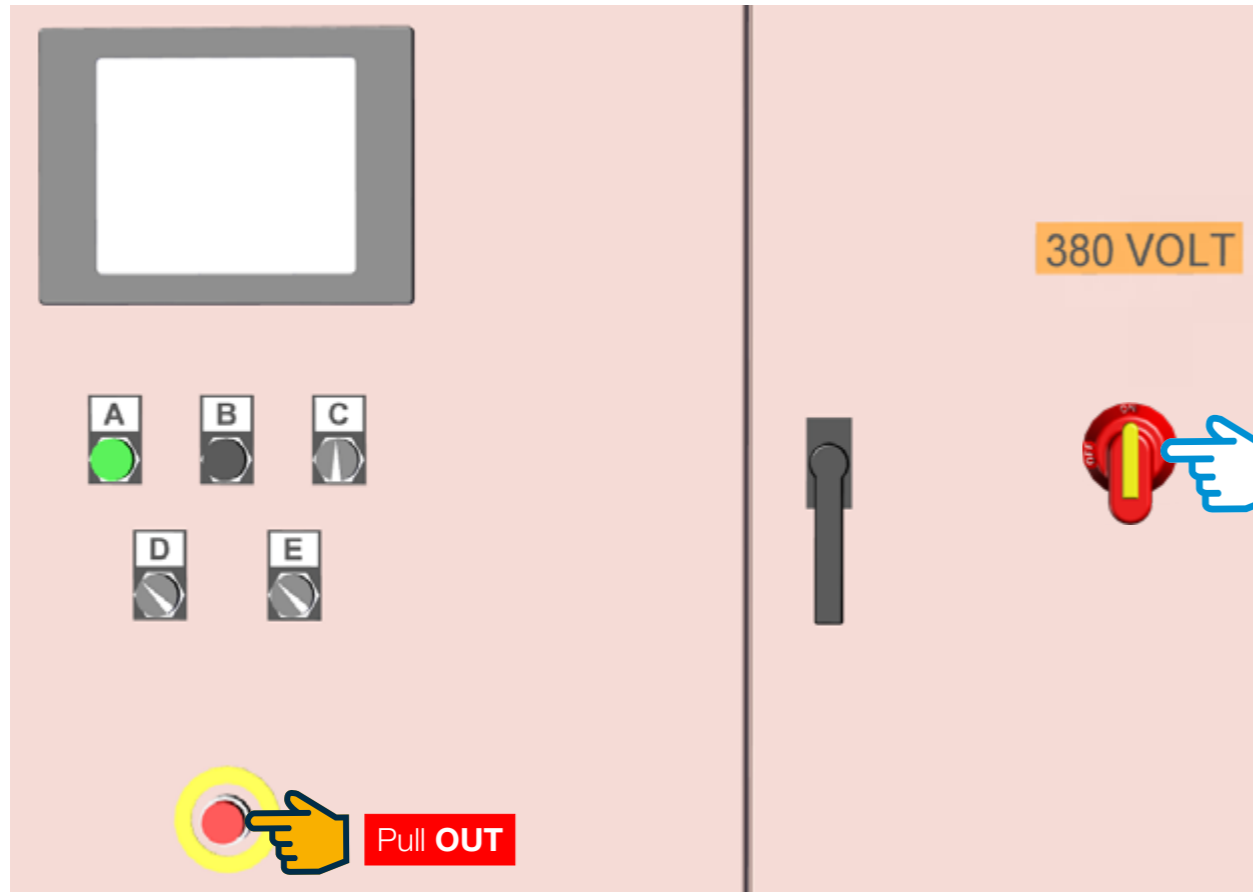
## REMOTE START / STOP

Operators can use the remote START/STOP provided with 25' power cord.





# INITIATE SYSTEM



## Main Control Panel

**Step 1:** Turn **ON** the main power switch (turn the handle **DOWN**, as shown left).

**Step 2:** Pull **OUT** the Emergency Button (the HMI will not power on if the **E-Stop** button is depressed - pushed **IN**).

- The HMI will initiate the Seed Coater program (boot up): navigates to the **SPLASH SCREEN**

Continued ➞







# TOUCHSCREENS

## Splash Screen

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

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

Continued ➔



## MAIN SCREEN

**Step 1:** Touch the **MAINT SCREEN** button icon:  
navigates to the **MAINTENANCE SCREEN**

Continued ➔

The screenshot displays the MAIN SCREEN interface with the following elements:

- MAIN SCREEN** (Title)
- SYSTEM ENABLED** (Status indicator)
- SELECT RECIPE** (Label) with a red box containing **0**
- BATCH QUANTITY** (Label) with a red box containing **0**
- COMPLETE** (Label) with **0**
- BATCH KGS** (Label) with **0**
- CURRENT WEIGHT** (Label) with **0**
- BOWL HZ** (Label) with **0**
- RECIPE RUN SEC** (Label) with a blue box containing **0**
- RECIPE ACC SEC** (Label) with a cyan box containing **0**
- I/O CARDS** (Button)
- RECIPE SCREEN** (Button)
- SYSTEM RESET** (Button)
- MAINT SCREEN** (Button, highlighted with a hand icon)
- SCALE SETUP** (Button)
- MANUAL SCREEN** (Button)





Note: Do not enable the device **MASK** by touching each **MASK** button icon. Leave disabled as they are from the factory.

## MAINTENANCE SCREEN

Use the **MAINTENANCE SCREEN** to select a language and to **LOGIN** or **LOGOUT** of the system.




**Step 1:** Touch a country flag icon to select a language:

- English (US)
- Portuguese (Brazil)
- Spanish (LATAM)

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

Continued ⇨

# MAINTENANCE SCREEN

## I/O MASKS

MASK LT1 FS	MASK Wgts PX	
MASK LT2 FS	MASK DOOR PX	
MASK PP1 FS	MASK ENABLE	
MASK PP2 FS	MASK AIR FS	SUPPLY BIN MASK

## BOWL RUN HRS

0

RESET  
BOWL HRS

LOGIN

LOGOUT

MAIN  
SCREEN





# CALIBRATION



## MAIN SCREEN

**Step 1:** Touch the **SCALE SETUP** button icon: navigates to the **CALIBRATE SCALE - WEIGH HOPPER SCREEN**

Continued →

<b>MAIN SCREEN</b>		<b>SYSTEM ENABLED</b>	
<b>SELECT RECIPE</b>	0	<b>RECIPE RUN SEC</b>	
<b>BATCH QUANTITY</b>	0	0	
<b>COMPLETE</b>	0	<b>RECIPE ACC SEC</b>	
<b>BATCH KGS</b>	0	0	
<b>CURRENT WEIGHT</b>	0		
<b>BOWL HZ</b>	0	<b>I/O CARDS</b>	<b>RECIPE SCREEN</b>
<b>SYSTEM RESET</b>	<b>MAINT SCREEN</b>	<b>SCALE SETUP</b>	<b>MANUAL SCREEN</b>





Example:

**Calibration Weight Value Kg**

$(22.539789 \times 2 = 45.079578)$

This is the total weight value to enter on the pop-up keypad. The PLC will round up the number and display (50) but will track the actual value entered (45.079578).

**CALIBRATE SCALE - WEIGH HOPPER SCREEN**

Remove the Weigh Scale Panels (see pictures below).

**Step 1:** Touch the **ZERO SCALE** button icon: this will zero out the weigh scale and display a value of zero under **ZERO UNITS**.

**Step 2:** Touch the **ENERGIZE WEIGHTS** button icon: this lowers the factory installed Calibration Weights onto the weigh scale.

- The green **ENERGIZE WEIGHTS** button icon will toggle to red and display the words **DE-ENERGIZE WEIGHTS**.

**Step 3: INITIAL - SETUP**

Touch the **ENTER CALIBRATION WEIGHT** field: navigates to a pop-up window (shown right).

- Enter a value (both calibration weights added together, see example above) on the key pad: key pad closes.
- The value will then display: **50** in the calibration weight field, as shown Hereafter, this weight will automatically display in the calibration weight field, as shown.
- Replace the Weigh Scale Panels

Continued ➡

## CALIBRATION SCALE - WEIGH HOPPER

**ZERO SCALE** → ZERO UNITS 0

**50**

**CALIBRATE SCALE** → ENTER CALIBRATION WEIGHT

**WEIGHT PERCENT TO CLOSE HOPPER** 0

**ENERGIZE WEIGHTS** → I/O MASK

**MAIN SCREEN**

Number Display: 0

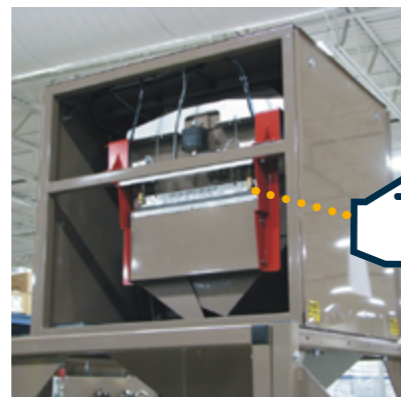
Enter Value: (0-999)

Back Space

Enter

PLC Revision = 03.05.2018

HMI Revision = 03.05.2018



Weigh Scale - Panel removed



Calibration weight sticker





Note: **WEIGHT PERCENT TO CLOSE HOPPER** closes the seed gate automatically when a set percentage of the batch seed weight is in the scale. Seed variety can differ in volume of weight.

**DO NOT ADJUST INCREASE/DECREASE!** This setting will auto-adjust +/- 2% of the total batch weight. If problems persist with fluctuations in batch size/seed gate opening, call your Bayer service technician @ 1-800-634-6738.

### CALIBRATE SCALE - WEIGH HOPPER SCREEN

**Step 1:** Touch the **CALIBRATE SCALE** button icon: this will zero out the scale and display a value of zero under **UNITS PER KG**.

**Step 2:** Touch the **DE-ENERGIZE WEIGHTS** button icon: this raises the factory installed Calibration Weights up off of the weigh scale.

- The red **DE-ENERGIZE WEIGHTS** button icon will toggle to green and display the words **ENERGIZE WEIGHTS**.

**Step 3:** Touch the **MAIN SCREEN** button icon: navigates to the **MAIN SCREEN**

Continued ➡

## CALIBRATION SCALE - WEIGH HOPPER

**ZERO SCALE**  
ZERO UNITS  
0

**50**

**ENTER CALIBRATION WEIGHT**

**CALIBRATE SCALE** → **UNITS PER KG**  
0

**WEIGHT PERCENT TO CLOSE HOPPER**

**0**

**CURRENT WEIGHT UNITS IN SCALE**  
0

**WEIGHT KGS IN SCALE**  
0

**DE-ENERGIZE WEIGHTS**

**I/O MASK**

**MAIN SCREEN**

PLC Revision = 03.05.2018  
HMI Revision = 03.05.2018



## MAIN SCREEN

**Step 1:** Touch the **MANUAL SCREEN** button icon: navigates to the **MANUAL SCREEN**

Continued →

The screenshot displays the MAIN SCREEN interface with the following elements:

- MAIN SCREEN** (Title)
- SYSTEM ENABLED** (Status indicator)
- SELECT RECIPE** (Label) with a red box containing **0**
- BATCH QUANTITY** (Label) with a red box containing **0**
- COMPLETE** (Label) with **0**
- BATCH KGS** (Label) with **0**
- CURRENT WEIGHT** (Label) with **0**
- BOWL HZ** (Label) with **0**
- RECIPE RUN SEC** (Label) with a blue box containing **0**
- RECIPE ACC SEC** (Label) with a cyan box containing **0**
- I/O CARDS** (Button)
- RECIPE SCREEN** (Button)
- SYSTEM RESET** (Button)
- MAINT SCREEN** (Button)
- SCALE SETUP** (Button)
- MANUAL SCREEN** (Button, highlighted with a hand icon)



## MANUAL SCREEN

The **MANUAL SCREEN** is used for calibration and clean out procedures and must be set in **MANUAL** mode in order to enable devices and timers.

**Step 1:** Touch the green **AUTO** button icon: toggles to display as red **MANUAL**

Continued ↻

PUMPS		POWDER PUMPS		ATOMIZER		BOWL		AIR BLOWER			
0		0				0					
START LT1	START PP1	START M3	START M4			START M5					
START LT2	START PP2	STOP M3	STOP M4			STOP M5					
STOP P1-2	STOP PP1-2	P1-2 TMR OFF				0					
PUMPS FORWARDS			PP1-2 TMR OFF				0				
HOP DISC OFF		<b>MANUAL SCREEN</b>						AUTO			
FILL HOP1 CLOSED		FILL HOP2 CLOSED		BOWL CLOSED		MAIN SCREEN					







Note: **APPLICATION GUIDELINES** values shown are approximate and based on water. They are only meant to represent actual values.

	5	10	15	20	25	30	LIQUIDS
100	13	••	••	••	••	••	
150	20	10	••	••	••	••	Seconds
200	30	13	••	••	••	••	(Application Time)
250	35	17	11	••	••	••	
300	41	20	13	10	••	••	
350	47	23	15	12	••	••	
400	55	28	18	13	11	••	
450	••	32	21	15	12	10	
500	••	35	23	17	13	11	
550	••	38	26	18	14	12	
600	••	41	28	21	16	13	
650	••	44	30	22	18	14	
700	••	47	32	24	19	16	
750	••	50	34	26	21	17	
800	••	54	36	27	22	18	
850	••	58	38	29	23	19	
900	••	••	41	31	25	21	
950	••	••	43	32	26	22	
1000	••	••	45	34	28	23	
1050	••	••	47	36	29	24	
1100	••	••	49	37	30	25	
1150	••	••	52	39	31	26	
1200	••	••	54	41	33	27	
1250	••	••	57	42	34	28	
1300	••	••	59	44	35	29	
1350	••	••	••	46	37	31	
1400	••	••	••	47	38	32	
1450	••	••	••	48	39	33	
1500	••	••	••	51	41	34	
1550	••	••	••	52	42	35	
1600	••	••	••	53	43	36	
1650	••	••	••	56	44	37	
1700	••	••	••	58	46	38	
1750	••	••	••	60	47	40	
1800	••	••	••	••	49	41	
1850	••	••	••	••	50	42	
1900	••	••	••	••	51	43	
1950	••	••	••	••	53	44	
2000	••	••	••	••	54	45	
2050	••	••	••	••	56	46	
2100	••	••	••	••	57	47	
2150	••	••	••	••	58	48	
2200	••	••	••	••	60	49	
2250	••	••	••	••	••	51	
2300	••	••	••	••	••	52	
2350	••	••	••	••	••	53	
2400	••	••	••	••	••	54	
2450	••	••	••	••	••	55	
2500	••	••	••	••	••	57	
2550	••	••	••	••	••	58	
2600	••	••	••	••	••	59	
2650	••	••	••	••	••	60	

ml  
(Application Volume)

Hz  
(Approximate Pump Speed)



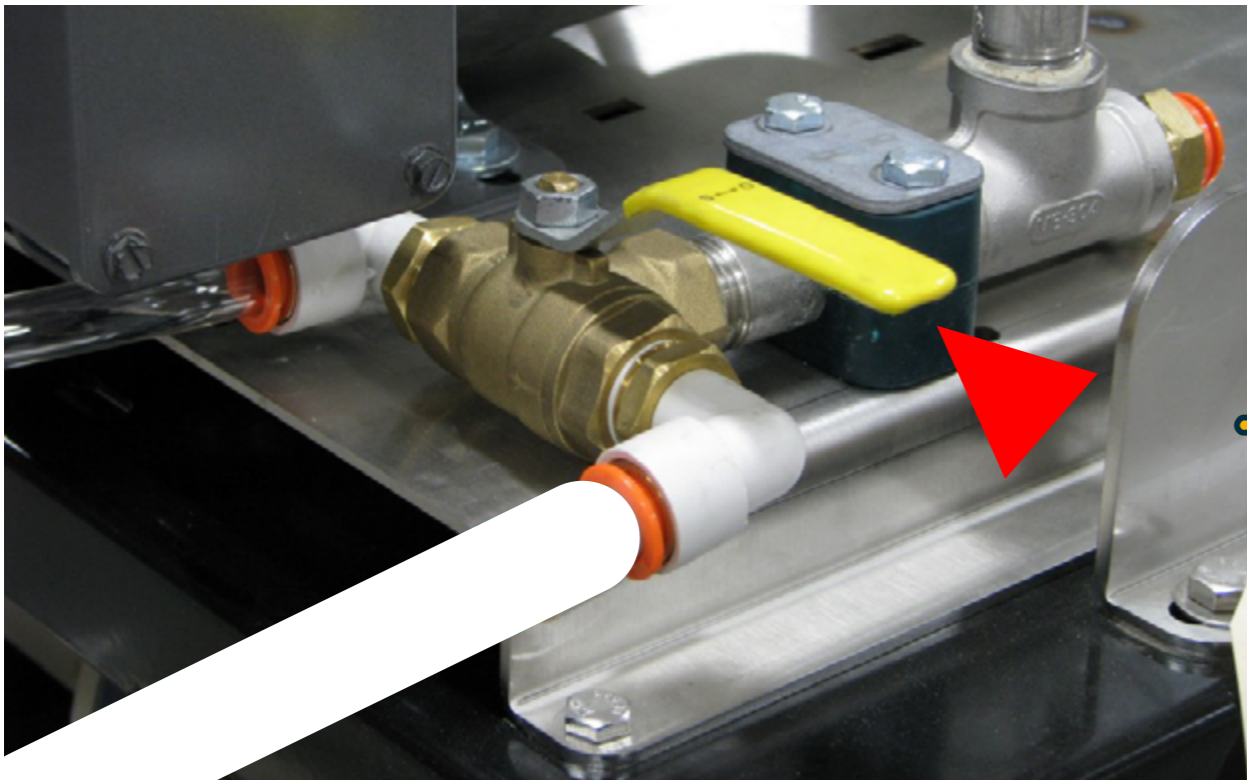


Calibration Valve in Calibration Mode

## LP 300 TANK - CALIBRATION

**Step 1:** Ensure the LP300 Tank **Calibration Valve** and **Pump Valve** are in the **CALIBRATION** mode, as shown left

Continued ➞



Pump Valve in Calibration Mode



## MANUAL SCREEN

- **P1-2 TMR OFF** = LP300 Pump #1 Timer
- **P1** = LP300 Pump #1
- **P2** = LP300 Pump #2 (optional)
- **PP1-2 TMR OFF** = Powder #1 Timer (optional)
- **PP1** = Powder Motor #1 (optional)
- **PP2** = Powder Motor #2 (optional)

**Step 1:** Touch the **P1-2 TMR OFF** button icon to enable the timer (toggles to red = enabled; **LT1-1 TMR ON**).

**Step 2:** Touch the **P1-2** timer field: pop-up keypad displays.

- Enter a value (10-15 for Calibration only...how long the Pump runs) on the key pad: key pad closes.
- The value will then display: **15** in the **P1-2** timer field.
- Refer to **APPLICATION GUIDELINES** on page 14: apply 750ml for 15 seconds = 34Hz Pump setting.

**Step 3:** Touch the **PUMPS** field: pop-up keypad displays.

- Refer to **APPLICATION GUIDELINES** chart on page 14:
- Enter a Hz value (**34**) on the key pad: key pad closes.
- The value will then display: **34** in the **PUMPS** field

Continued ➡

The screenshot shows the 'MANUAL SCREEN' interface with the following components:

- Top Row (Status Fields):**
  - PUMPS:** 34 (with a hand icon pointing to it)
  - POWDER PUMPS:** 0
  - ATOMIZER:** (empty)
  - BOWL:** 0
  - AIR BLOWER:** (empty)
- Second Row (Start Buttons):**
  - START LT1
  - START PP1
  - START M3
  - START M4
  - START M5
- Third Row (Start/Stop Buttons):**
  - START LT2
  - START PP2
  - STOP M3
  - STOP M4
  - STOP M5
- Fourth Row (Stop/Timer Buttons):**
  - STOP P1-2
  - STOP PP1-2
  - P1-2 TMR OFF (with a hand icon pointing to it)
  - 15 (with a hand icon pointing to it)
- Fifth Row (Forward/Timer Buttons):**
  - PUMPS FORWARDS
  - (empty)
  - PP1-2 TMR OFF
  - 0
- Sixth Row (HOP/BOWL/Manual Buttons):**
  - HOP DISC OFF
  - MANUAL SCREEN
  - MANUAL
- Bottom Row (Status/Navigation Buttons):**
  - FILL HOP1 CLOSED
  - FILL HOP2 CLOSED
  - BOWL CLOSED
  - MAIN SCREEN

The diagram shows a pop-up keypad with the following elements:

- Number Display:** A field showing the value '0'.
- Text:** 'Enter Value: (0-999)'
- Keypad:** A grid of buttons for digits 0-9, a decimal point, and a back space key.
- Labels:**
  - Back Space:** Points to the left arrow button.
  - Enter:** Points to the right arrow button.





**Step 4:** Touch the **START LT1** button icon: toggles to display **LT1 RUNNING** in red text.

- Pump runs for the allotted time set on the **P1-2** timer; chemical product fills the Graduated Cylinder as the Pump runs for 15 seconds.
- Pump stops and button icon displays: **LT1 STOP**.

**Step 5:** Check Graduated Cylinder fill level:

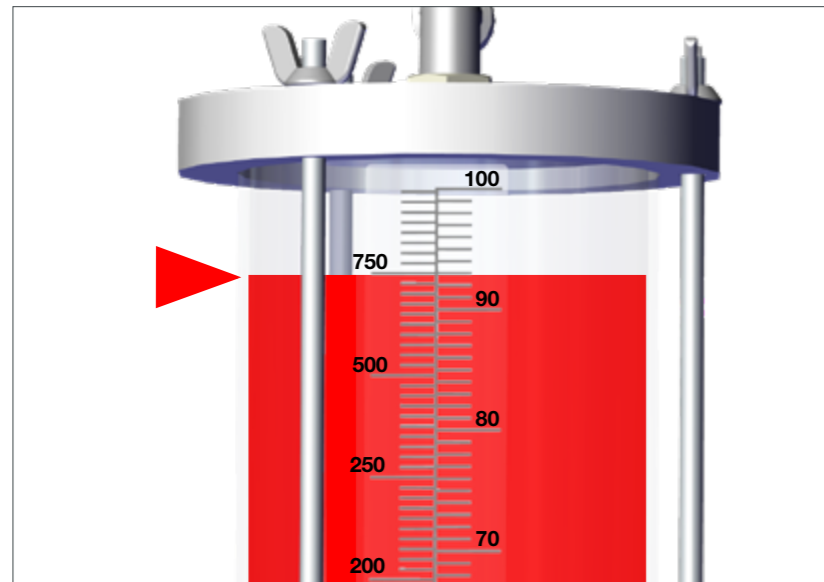
- **Too low** to satisfy the desired application rate = increase the pump speed.
- **Too high** = decrease the pump speed.
- Refer to **APPLICATION GUIDELINES** on page 14.
- Refer to **Step 3** on page 16 and adjust **PUMPS Hz**.

**Step 6:** Turn the LP300 Calibration Valve to the Treat Mode (**UP**) to drain chemical product back into the tank.

**Step 7:** Turn the LP300 Calibration Valve to the Calibrate Mode (**DOWN**) to repeat calibration process.

- Repeat Steps 4-7 above until the desired application volume is achieved:  
**apply 750ml for 15 seconds = 34Hz Pump speed**

Continued ➡



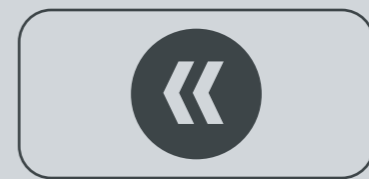
PUMPS	POWDER PUMPS	ATOMIZER	BOWL	AIR BLOWER
34	0		10	
LT1 RUNNING	START PP1	START M3	START M4	START M5
START LT2	START PP2	STOP M3	STOP M4	STOP M5
STOP P1-2	STOP PP1-2	LT1-2 TMR ON	15	
PUMPS FORWARDS		PP1-2 TMR OFF	0	
HOP DISC OFF		MANUAL SCREEN		MANUAL
FILL HOP1 CLOSED	FILL HOP2 CLOSED			BOWL CLOSED



Calibration Valve in Treat Mode drains Graduated Cylinder



Calibration Valve in Calibration Mode fills Graduated Cylinder



Repeat Steps 4-7 on page 17 for **PP1-2** Timer and **LT2** Pump (if a second LP300 Tank Assembly is used).



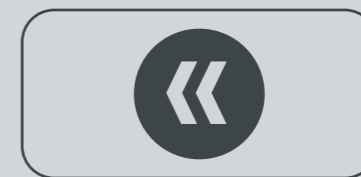
**Step 8:** When calibration is complete, reconnect the Powder Hopper Tube.

**Step 9:** When calibration is complete, touch the red **MANUAL** button icon: toggles to display green **AUTO**.

**Step 10:** Touch the **MAIN SCREEN** button icon: navigates to the **MAIN SCREEN**

This completes the Calibration section.

PUMPS		POWDER PUMPS		ATOMIZER		BOWL		AIR BLOWER	
34		0				10			
START LT1	START PP1	START M3	START M4					START M5	
START LT2	START PP2	STOP M3	STOP M4					STOP M5	
STOP P1-2	STOP PP1-2	LT1-2 TMR ON			15				
PUMPS FORWARDS			PP1-2 TMR ON			15			
HOP DISC OFF	<b>MANUAL SCREEN</b>						MANUAL		
FILL HOP1 CLOSED	FILL HOP2 CLOSED	BOWL CLOSED		MAIN SCREEN					



# RECIPE CREATION

BATCH SIZES IN KG FOR REFERENCE

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

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



## MAIN SCREEN

**Step 1:** Touch the **RECIPE SCREEN** button icon:  
navigates to the **RECIPE SETUP SCREEN**

Continued ➔

The screenshot displays the MAIN SCREEN interface with the following elements:

- SYSTEM ENABLED:** A green status indicator at the top right.
- SELECT RECIPE:** A red box containing the number 0.
- BATCH QUANTITY:** A red box containing the number 0.
- COMPLETE:** A black box containing the number 0.
- BATCH KGS:** A black box containing the number 0.
- CURRENT WEIGHT:** A black box containing the number 0.
- BOWL HZ:** A black box containing the number 0.
- RECIPE RUN SEC:** A blue box containing the number 0.
- RECIPE ACC SEC:** A cyan box containing the number 0.
- Navigation Buttons:** A grid of buttons at the bottom:
  - SYSTEM RESET:** Yellow button.
  - MAINT SCREEN:** Blue button.
  - I/O CARDS:** Blue button.
  - RECIPE SCREEN:** Blue button, highlighted with a hand icon pointing to it.
  - SCALE SETUP:** Blue button.
  - MANUAL SCREEN:** Blue button.



## RECIPE SETUP SCREEN

Each value entered on the **RECIPE SETUP SCREEN** needs to match the values entered on the **MANUAL SCREEN**, page 16.

### CREATE RECIPES:

**Step 1:** Touch the **EDIT RECIPE** field: pop-up keypad opens. Enter a value (1-20) on the key pad: key pad closes. Selected value displays: **1** in the field (as shown).

**Step 2:** Touch the **BATCH SIZE KGS** field: pop-up keypad opens. Enter the corresponding CBT batch size value (25, 50, 100 or 200Kg) on the key pad: key pad closes. Selected value displays: **25** in the field (as shown).

**Step 3:** Touch the **HOPPER DISC SEC** field: pop-up keypad opens. Enter a value (5 seconds) on the key pad: key pad closes. Selected value displays: **5** in the field (as shown).

**Step 4:** Touch the **BOWL HZ** field: pop-up keypad opens. Enter a value (80% Hz speed) on the key pad: key pad closes. Selected value displays: **80** in the field (as shown).

**Step 5:** Touch the **MIXING TIME** field: pop-up keypad opens. Enter a value (5) on the key pad: key pad closes. Selected value displays: **5** in the field (as shown).

**Step 6:** Touch the **BOWL DISC SEC** field: pop-up keypad opens. Enter a value (7-10 seconds) on the key pad: key pad closes. Selected value displays: **8** in the field (as shown)

Continued ➞

The screenshot shows the **RECIPE SETUP** screen with the following fields and values:

	START TIME	DURATION TIME	RUN HZ
LT1	2	12	34.0
LT2	0	0	0
PP1		2	34.0
PP2		2	34.0

On the right side, there are five fields with values and hand icons pointing to them:

- EDIT RECIPE**: 1
- BATCH SIZE KGS**: 25
- HOPPER DISC SEC**: 5
- BOWL HZ**: 75
- MIXING TIME**: 10
- BOWL DISC SEC**: 5

At the bottom right, there are two buttons: **SAVE EDIT** (pink) and **MAIN SCREEN** (blue).

The close-up shows a pop-up keypad with a text input field at the top containing the number '0'. Below the field is the text "Enter Value: (0-999)". The keypad has two rows of buttons:

- Row 1: 0, 1, 2, 3, 4, -, ← (Back Space)
- Row 2: 5, 6, 7, 8, 9, ., ↵ (Enter)

Red dotted lines point from the labels "Number Display", "Back Space", and "Enter" to their respective elements in the keypad.





**Step 7:** Touch the **LT1 START TIME** field: pop-up key-pad opens. Enter a value (**2**) on the key pad: key pad closes. Selected value displays: **2** in the field (as shown).

- Enter **1** second for already treated seed when doing seed percent build-up.
- Repeat for **LT2** Pump if a second LP300 Tank is used.

**Step 8:** Touch the **SAVE EDIT** button icon.

**Step 9:** Touch the **MAIN SCREEN** button icon: navigates to the **MAIN SCREEN**

Continued ➔

## RECIPE SETUP

	START TIME	DURATION TIME	RUN HZ		
LT1	2	12	34.0	EDIT RECIPE	1
LT2	0	0	0	BATCH SIZE KGS	25
PP1		2	34.0	HOPPER DISC SEC	5
PP2		2	34.0	BOWL HZ	75
				MIXING TIME	10
				BOWL DISC SEC	5

**SAVE EDIT**

**MAIN SCREEN**

0

Enter Value:  
(0-999)

0	1	2	3	4	-	←
5	6	7	8	9	.	↵

Number Display

Back Space

Enter



## MAIN SCREEN

**Step 1:** Touch the **SELECT RECIPE** button icon: pop-up keypad opens. Enter a value (1-20) on the key pad: key pad closes. Selected value displays: **1** in the field (as shown).

**Step 2:** Touch the **RECIPE SETUP** button icon: navigates to the **RECIPE SETUP SCREEN**

Continued ↻

**MAIN SCREEN** **SYSTEM ENABLED**

**SELECT RECIPE** **1** **RECIPE RUN SEC**

**BATCH QUANTITY** **0** **0**

**COMPLETE** **0** **RECIPE ACC SEC**

**BATCH KGS** **0** **0**

**CURRENT WEIGHT** **0**

**BOWL HZ** **0**

**I/O CARDS** **RECIPE SCREEN**

**SYSTEM RESET** **MAINT SCREEN** **SCALE SETUP** **MANUAL SCREEN**

Number Display

Enter Value:  
(0-999)

Back Space

Enter



## RECIPE SETUP SCREEN

**Step 1:** Verify that all settings are correct for recipe 1. If not, make changes where needed, then touch the **SAVE EDIT** button icon.


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

Continued ➔

# RECIPE SETUP

	START TIME	DURATION TIME	RUN HZ	
LT1	2	12	34.0	EDIT RECIPE 1
LT2	0	0	0	BATCH SIZE KGS 25
PP1		2	34.0	HOPPER DISC SEC 5
PP2		2	34.0	BOWL HZ 75
				MIXING TIME 10
				BOWL DISC SEC 5

SAVE EDIT      MAIN SCREEN





## MAIN SCREEN

**Step 1:** Touch the **BATCH QUANTITY** button icon: pop-up keypad opens. Enter the value number of batches intended to run on the key pad: key pad closes. Selected value displays: **3** in the field (as shown).

**Step 2:** **TOUCH AND HOLD** the **SYSTEM RESET** button icon (approximately 3 seconds).

- The red **SYSTEM RESET** button icon displays (as shown).
- This zeros all values on the **MAIN SCREEN**.
- The system checks for any faults and will display them on a pop-up, as shown below (which need to be acknowledged and cleared prior to treating seed).

This completes the Recipe Creation section.

The MAIN SCREEN interface displays the following data and controls:

- SYSTEM ENABLED** (Green status bar)
- SELECT RECIPE**: 1
- BATCH QUANTITY**: 3 (indicated by a hand icon)
- COMPLETE**: 0
- BATCH KGS**: 0
- CURRENT WEIGHT**: 0
- BOWL HZ**: 0
- RECIPE RUN SEC**: 0
- RECIPE ACC SEC**: 0
- SYSTEM RESET** (Red button)
- I/O CARDS** (Blue button)
- RECIPE SCREEN** (Blue button)
- SYSTEM RESET** (Yellow button, highlighted with a hand icon)
- MAINT SCREEN** (Blue button)
- SCALE SETUP** (Blue button)
- MANUAL SCREEN** (Blue button)

**TOUCH AND HOLD** (approximately 3 seconds)

The fault screen pop-up displays the following information:

- P1 LOW FLOW FAULT** (Red background)
- Ack** (Red button)
- Clear** (Red button)

Fault Screen pop-up sample, ref.





# RUN SEQUENCE

## RUN SEQUENCE

**Step 1:** Ensure the LP300 Tank **Calibration Valve** and the **Pump Valve** are in the **TREAT** mode as shown below (both if two are used).

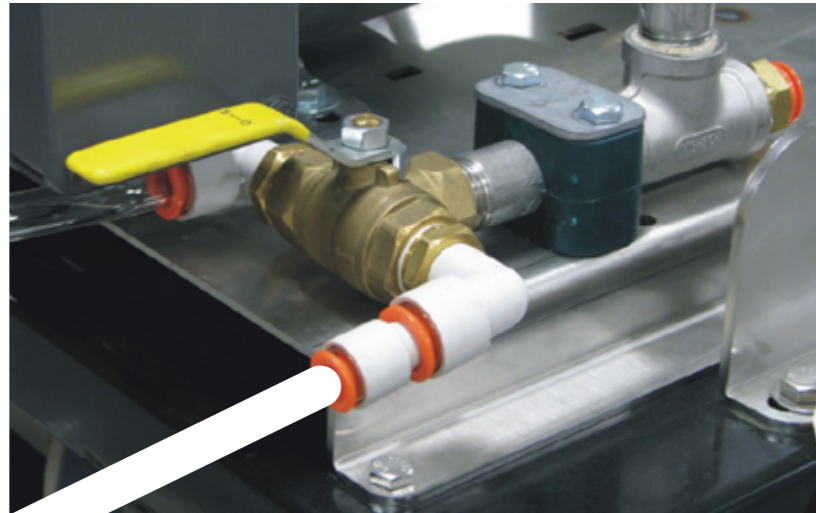
**Step 2:** Push the green **START** button on the Control Panel or on the Remote Start/Stop.

- The system will begin treating seed according to the recipe selected and the number of batches selected (batch quantity) as shown on the **MAIN SCREEN** page 25

Continued ➔



Calibration Valve in Treat Mode



Pump Valve in Treat Mode



Control Panel START button



Remote Start/Stop START button





Note: when the operator touches the **Start** button (page 26) the surge hopper fills with seed. The timer **Bowl Fill** starts counting from zero when the surge hopper gate opens to fill the weigh scale with seed and then empties into the mixing bowl.

### Batch Run Timeline

This diagram represents a batch run, which is made up of a sequence of events, based on time and determined device outputs from the **Recipe Setup Screen...**

- **Bowl Fill - seed in from Weigh Scale**
- **Liquid Addition - and Mixing**
- **Powder Addition - and Mixing**
- **Discharge - of treated seed from Bowl**

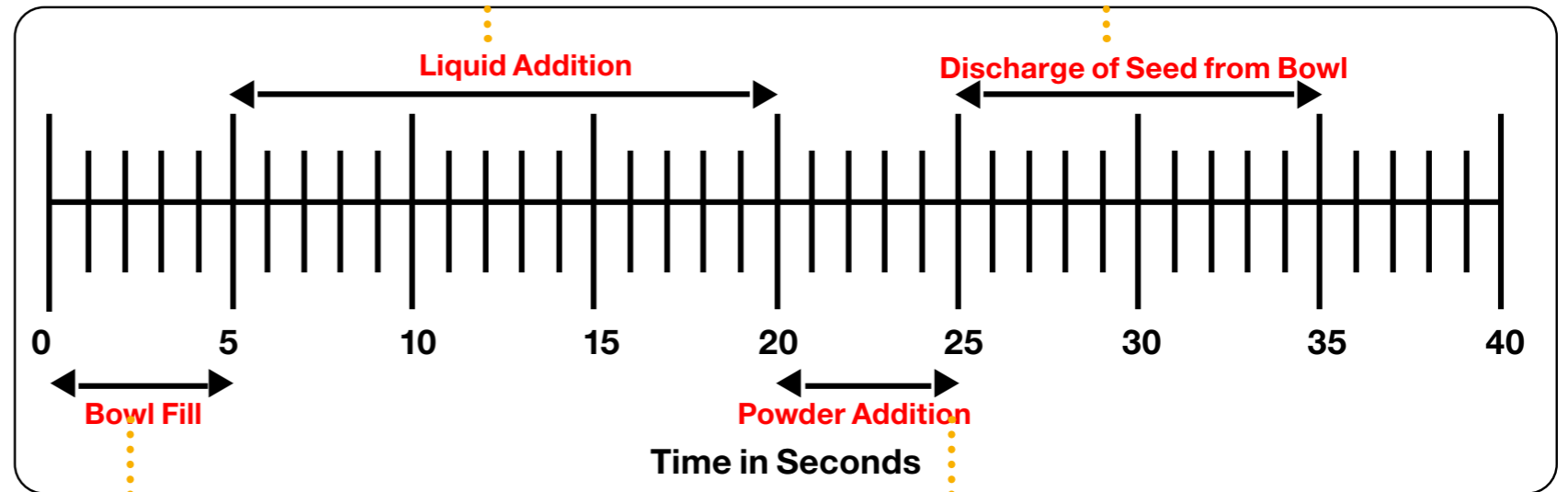
This completes the Run Sequence section.

### LIQUID ADDITION

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

### DISCHARGE OF SEED FROM BOWL

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



### BOWL FILL

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

### POWDER ADDITION (OPTIONAL)

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





# CLEAN OUT


## MAIN SCREEN

After running a batch, clean out the scales and bowl of any residual seed.

**Step 1:** Touch the **MANUAL SCREEN** button icon: navigates to the **MANUAL SCREEN**

Continued ➡

<b>MAIN SCREEN</b>		<b>SYSTEM ENABLED</b>	
<b>SELECT RECIPE</b>	<b>1</b>	<b>RECIPE RUN SEC</b>	
<b>BATCH QUANTITY</b>	<b>3</b>	<b>31</b>	
<b>COMPLETE</b>	<b>1</b>	<b>RECIPE ACC SEC</b>	
<b>BATCH KGS</b>	<b>95</b>	<b>0</b>	
<b>CURRENT WEIGHT</b>	<b>90.4</b>		
<b>BOWL HZ</b>	<b>75</b>	<b>I/O CARDS</b>	<b>RECIPE SCREEN</b>
<b>SYSTEM RESET</b>	<b>MAINT SCREEN</b>	<b>SCALE SETUP</b>	<b>MANUAL SCREEN</b>




## MANUAL SCREEN

**Step 1:** Touch the green **AUTO** button icon: toggles to display as red **MANUAL**.

**Step 2:** Touch the **BOWL START M4** button icon: displays as red text **BOWL RUNNING**.

**Step 3:** Touch the following button icons in order of sequence to open each device (button icons toggle to display yellow text on a red background):

- HOP DISC OFF
- FILL HOP1 CLOSED
- FILL HOP2 CLOSED (CBT200 only)
- BOWL CLOSED

**Step 4:** After clean out, touch each button icon to close each device.

**Step 5:** Touch the **BOWL STOP M4** button icon: toggles back to display black text **START M4**.

**Step 6:** Touch the red **MANUAL** button icon: toggles to display as green **AUTO**.

This completes the Clean out section.

The screenshot displays the 'MANUAL SCREEN' interface with the following components:

- Top Header:** PUMPS, POWDER PUMPS, ATOMIZER, BOWL, AIR BLOWER.
- Counters:**
  - PUMPS: 34
  - POWDER PUMPS: 34
  - BOWL: 75
  - Below BOWL: 15, 0
- Control Buttons (Green):** START LT1, START PP1, START M3, START M4, START M5, PUMPS FORWARDS, HOP DISC OFF, FILL HOP1 CLOSED, FILL HOP2 CLOSED, BOWL CLOSED, AUTO, MAIN SCREEN.
- Control Buttons (Red):** STOP M3, STOP M4, STOP M5, STOP P1-2, STOP PP1-2.
- Control Buttons (Yellow):** P1-2 TMR OFF, PP1-2 TMR OFF.
- Navigation:** Hand icons indicate touchable elements.

Displays for CBT200 only







# TROUBLESHOOTING

## **ALARMING: L1, L2, L3, LOW**

...displays fault in pump system

### **CAUSE:**

- a) Out of treatment
- b) Obstructions in treatment supply line
- c) Incorrect calibration in flow sensors
- d) Pump failure

### **SOLUTION:**

- a) add treatment
- b) routine flush of system
- c) see calibration of flow sensors
- d) replace pump

## **ALARMING: P1, P2, LOW**

...displays fault in powder feeder system

### **CAUSE:**

- a) insignificant powder in hopper

### **SOLUTION:**

- a) fill the hopper with powder

## **ALARMING: LOW AIR DISPLAYS FAULT IN AIR SUPPLY SYSTEM**

### **CAUSE:**

- a) insignificant air

### **SOLUTION:**

- a) check for leaks in all supply lines
- b) check pressure relief valve
- c) check supply valves

## **ALARMING: VFD1, VFD2, VFD3, VFD4**

...displays an electrical fault

### **CAUSE:**

- a) internal electrical problem

### **SOLUTION:**

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

## **ALARMING: BAD SEQUENCE**

...displays fault in recipe program

### **CAUSE:**

- a) error in recipe

### **SOLUTION:**

- a) check recipe

## **ALARMING: EM STOP**

...displays the emergency stop is activated

### **CAUSE:**

- a) emergency stop button has been activated

### **SOLUTION:**

- a) deactivate emergency stop button

## **ALARMING: SYS MAN**

...displays the system is in manual mode

### **CAUSE:**

- a) system has been put in manual mode

### **SOLUTION:**

- a) activate system manual/stop mode button





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