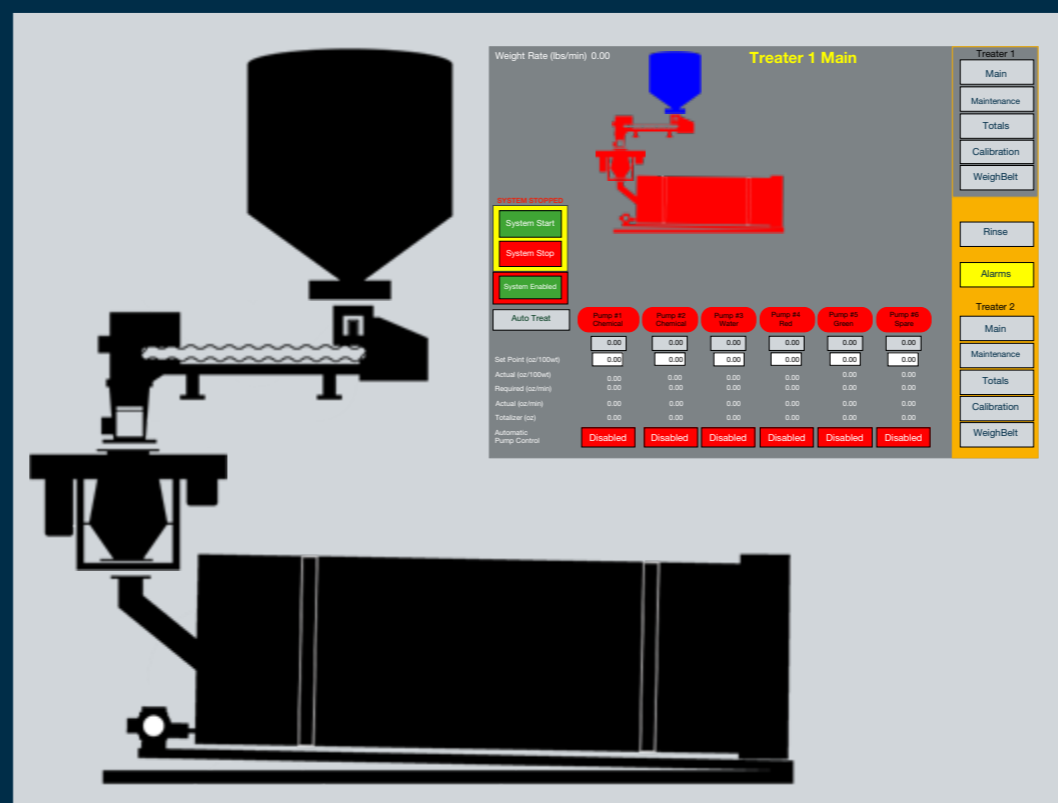


COMPUTER TREATER HMI OPERATIONS GUIDE





MENU



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



Legal & Safety



Pictograms



Notes



Operation

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.



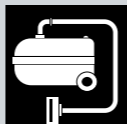
Calibration

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



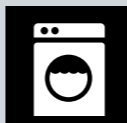
Clean seed

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



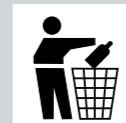
Cleaning

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



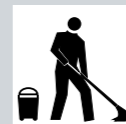
Laundry

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.

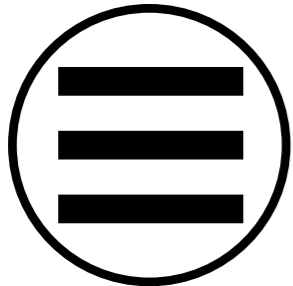




PICTOGRAMS

i

Each Signifier displayed here is specific to this User Manual.



Menu



Previous



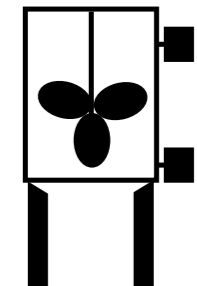
Advance



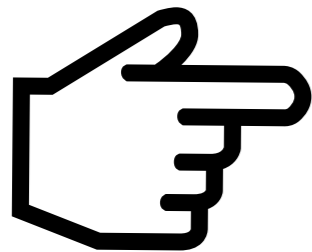
RMOM



Operation



Chemical Work Tank



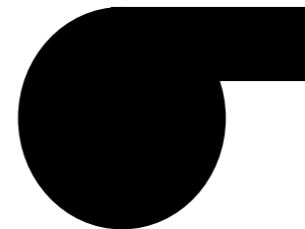
Hand Cursor



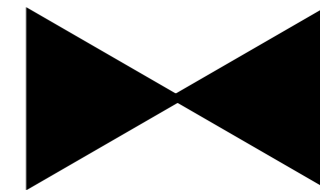
Like



Surge Bin



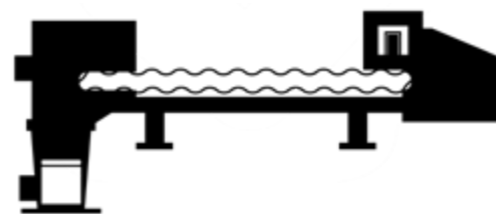
Pump



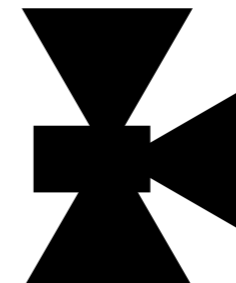
2-way Valve



Polishing Drum



Weigh Belt



3-way Valve





EXPLANATORY NOTES

Computer Treater Run Time Application Program

The LCD touch sensitive viewer panel is located on front of the Human Machine Interface (HMI) Control Box. Interactive run time application program screens display on the HMI touch panel, as shown below.

The screenshot displays the 'Treater 1 Main' HMI screen. At the top left, it shows 'Weight Rate (lbs/min) 0.00'. The central area features a red schematic of the treater machinery. To the right is a vertical menu with buttons for 'Main', 'Maintenance', 'Totals', 'Calibration', and 'WeighBelt' under the heading 'Treater 1', and 'Rinse', 'Alarms', and another set of 'Main', 'Maintenance', 'Totals', 'Calibration', and 'WeighBelt' buttons under 'Treater 2'. On the left side, there are control buttons: 'System Start' (green), 'System Stop' (red), 'System Enabled' (green), and 'Auto Treat' (grey). Below these are six pump status indicators: Pump #1 Chemical, Pump #2 Chemical, Pump #3 Water, Pump #4 Red, Pump #5 Green, and Pump #6 Spare. Each pump has a '0.00' value in a box. At the bottom left, a data table shows various metrics for each pump.

	Pump #1 Chemical	Pump #2 Chemical	Pump #3 Water	Pump #4 Red	Pump #5 Green	Pump #6 Spare
Set Point (oz/100wt)	0.00	0.00	0.00	0.00	0.00	0.00
Actual (oz/100wt)	0.00	0.00	0.00	0.00	0.00	0.00
Required (oz/min)	0.00	0.00	0.00	0.00	0.00	0.00
Actual (oz/min)	0.00	0.00	0.00	0.00	0.00	0.00
Totalizer (oz)	0.00	0.00	0.00	0.00	0.00	0.00
Automatic Pump Control	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled



A WEIGH BELT – set the “MODE” (Hand, Off, or Auto) for the Weigh Belt (RSView only).

B ROTARY MIST-O-MATIC – set the “MODE” (Hand, Off, or Auto) for the RMOM.

C DRUM – set the “MODE” (Hand, Off, Auto) for the drum.

D AUTO TREAT BUTTON – select either “Auto Treat” or “Auto No Treat” modes. Auto Treat mode allows the operator to select which pumps will run when the system is started. Auto No Treat mode disables all pumps from running when the system is started.

E DRUM MD RESET – (not shown) resets the drum’s motion detector alarm.

MAIN – displays the MAIN screen

MAINTENANCE – displays the MAIN screen

TOTALS – displays the TOTALS screen

CALIBRATION – displays the CALIBRATION screen

WEIGH BELT – displays the WEIGH BELT screen

ALARMS – displays Unacknowledged and Acknowledged alarms (RSView only)

Weight Rate (lbs/min) 0.00

Treater 1 Main

SYSTEM STOPPED

System Start
System Stop
System Enabled

D Auto Treat

	Pump #1 Chemical	Pump #2 Chemical	Pump #3 Water	Pump #4 Red	Pump #5 Green	Pump #6 Spare
Set Point (oz/100wt)	0.00	0.00	0.00	0.00	0.00	0.00
Actual (oz/100wt)	0.00	0.00	0.00	0.00	0.00	0.00
Required (oz/min)	0.00	0.00	0.00	0.00	0.00	0.00
Actual (oz/min)	0.00	0.00	0.00	0.00	0.00	0.00
Totalizer (oz)	0.00	0.00	0.00	0.00	0.00	0.00
Automatic Pump Control	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled

Treater 1

Main
Maintenance
Totals
Calibration
WeighBelt

Rinse

Alarms

Treater 2

Main
Maintenance
Totals
Calibration
WeighBelt

HMI Screens - Treater 1 Main

The **MAIN SCREEN** (shown above) is a graphical representation of the Computer Application System. Also shown are system displays (process data) input by the operator. The following is a list of control buttons ➡



CONTROL BUTTON ICONS (when touched) allow the operator to enter data (set points) or perform an action (system start)...

F SET POINT (OZ/100WT) – set the ounces of chemical per hundred weight of product.

G PUMP CONTROL PUSH-BUTTON – determines whether a pump will run when system is in automatic mode. If a pump is enabled it will run in automatic mode, similarly if a pump is disabled it will not run in automatic mode.

H RESET CHEMICAL FEED ALARM – (not shown) reset the chemical feed alarms.

DISPLAY OBJECTS present process data to the operator in the form of color changes, actual fluid flows, alarms etc.

I ACTUAL (OZ/100MIN) – displays actual chemical flow as read by the flow meter.

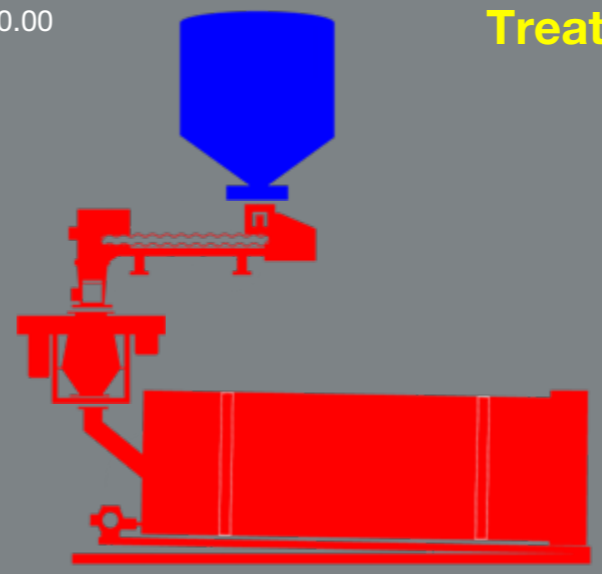
J REQUIRED (OZ/MIN) – displays current flow command to the pumps, this number is a calculated value based on set point (oz/100wt) and lbs/min product flow. This number will change automatically to ensure that the same Oz/100wt is being applied to the product. The faster the product flows through the system the more chemical needs to be applied to obtain the desired coating.

K ACTUAL (OZ/100CWT) – displays the actual flow in oz/min.

L TOTALIZER – displays total ounces of chemical pumped.

M CHEMICAL FLOW STATUS – (WinView only) displays the high flow warnings and low flow alarms.

Weight Rate (lbs/min) 0.00 **Treater 1 Main**



SYSTEM STOPPED

System Start

System Stop

System Enabled

Auto Treat

	Pump #1 Chemical	Pump #2 Chemical	Pump #3 Water	Pump #4 Red	Pump #5 Green	Pump #6 Spare
F Set Point (oz/100wt)	0.00	0.00	0.00	0.00	0.00	0.00
K Actual (oz/100wt)	0.00	0.00	0.00	0.00	0.00	0.00
J Required (oz/min)	0.00	0.00	0.00	0.00	0.00	0.00
I Actual (oz/min)	0.00	0.00	0.00	0.00	0.00	0.00
L Totalizer (oz)	0.00	0.00	0.00	0.00	0.00	0.00
G Automatic Pump Control	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled



Main Screen

SYSTEM START

Sequentially starts the system

SYSTEM STOP

Sequentially stops the system

SYSTEM ENABLE

Enables / Disables the system

SYSTEM STOPPED

Flashes red when system is stopped

SYSTEM STARTED

Solid green when system is started

HIGH FLOW WARNING

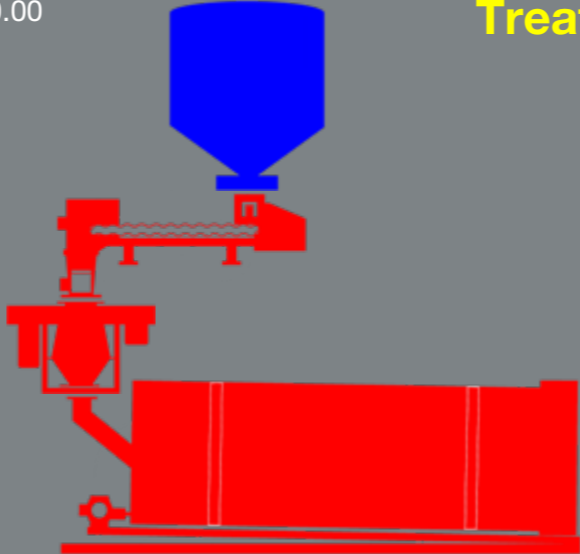
Solid red when any pump high flow warning bit is set

LOW FLOW ALARM

Flashes red when any pump low flow alarm bit is set
AND stops the system

Weight Rate (lbs/min) 0.00

Treater 1 Main



SYSTEM STOPPED

System Start

System Stop

System Enabled

Auto Treat

	Pump #1 Chemical	Pump #2 Chemical	Pump #3 Water	Pump #4 Red	Pump #5 Green	Pump #6 Spare
Set Point (oz/100wt)	0.00	0.00	0.00	0.00	0.00	0.00
Actual (oz/100wt)	0.00	0.00	0.00	0.00	0.00	0.00
Required (oz/min)	0.00	0.00	0.00	0.00	0.00	0.00
Actual (oz/min)	0.00	0.00	0.00	0.00	0.00	0.00
Totalizer (oz)	0.00	0.00	0.00	0.00	0.00	0.00
Automatic Pump Control	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled

Treater 1

Main

Maintenance

Totals

Calibration

WeighBelt

Rinse

Alarms

Treater 2

Main

Maintenance

Totals

Calibration

WeighBelt



LOW FLOW ALARM DEADBAND (%) –

determines the deviation that each pumps' actual flow is allowed to deviate from the required flow rate. If the difference between the actual is lower than the required by this amount for 30 seconds the system will shutdown. The operator will be notified as to which pump caused the system to shutdown.

HIGH FLOW WARNING DEADBAND (%) –

allow the operator to set the high deviation set point. If the actual flow is greater than the required for 30 seconds the system will notify the operator via an alarm but will not shutdown the system.

PRIME TIME SET POINT –

Allows the operator to adjust each pumps prime time in seconds. The system will initiate a prime mode each time that the operator presses the SYSTEM START button or when the PRIME button for that pump is pressed.

CHEMICAL FLOW STATUS – (WinView only)

displays the high flow warnings and low flow alarms.

Treater 1 Maintenance

	Pump #1 Chemical	Pump #2 Chemical	Pump #3 Water	Pump #4 Red	Pump #5 Green	Pump #6 Spare
Low Flow Alarms Deadband %	0.00	0.00	0.00	0.00	0.00	0.00
High Flow Alarms Deadband %	0.00	0.00	0.00	0.00	0.00	0.00
Prime Time (sec)	0	0	0	0	0	0
	PRIME	PRIME	PRIME	PRIME	PRIME	PRIME

Treater 1

Main

Maintenance

Totals

Calibration

WeighBelt

Rinse

Alarms

Treater 2

Main

Maintenance

Totals

Calibration

WeighBelt

Maintenance Screen

The **MAINTENANCE SCREEN** is a graphical representation of the system. Also shown are system displays (process data) input by the operator.



RESET – Resets the respective chemical's total.

OUNCES – displays totalized ounces.

GALLONS – displays totalized ounces value converted to gallons.

Treater 1 Totalizer Reset

	Ounces	Gallons	
Pump #1 Chemical	0.00	0.00	Reset
Pump #2 Chemical	0.00	0.00	Reset
Pump #3 Water	0.00	0.00	Reset
Pump #4 Red	0.00	0.00	Reset
Pump #5 Green	0.00	0.00	Reset
Pump #6 Spare	0.00	0.00	Reset
Totalized Weight		0.00	Reset

Treater 1

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Treater 2

Main

Maintenance

Totals

Calibration

WeighBelt

Totalizer Screen

The **TOTALIZER SCREEN** is a graphical representation of the system. Also shown are system displays (process data) input by the operator.

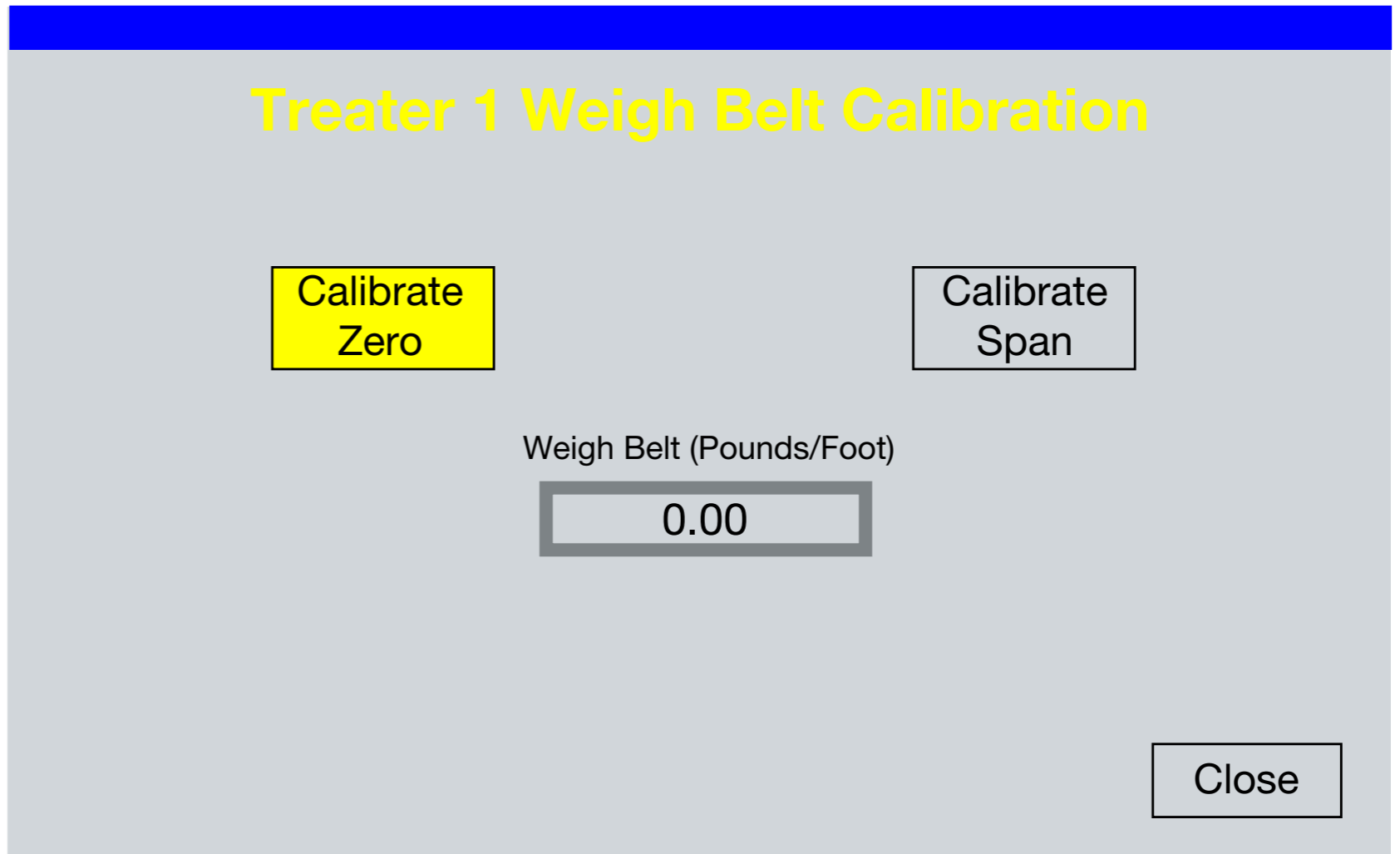


CALIBRATE ZERO – when pressed captures the zero value of the load cell with weigh belt empty.

CALIBRATE SPAN – when pressed captures the span value of the load cell with 50lb*. weight on weigh belt.

CLOSE – closes the weigh belt calibration screen.

WEIGH BELT (POUNDS/FOOT) – displays current weigh belt weight in pounds per foot units.



Weigh Belt Calibration Screen

The **WEIGH BELT CALIBRATION SCREEN** is a graphical representation of the system. Also shown are system displays (process data) input by the operator.





Note: buttons that are RED will display NO, GREEN will display YES on them.

START TEST – will start a 5 minute pump test of the respective pump

USE CORRECTION FACTOR – determines whether the correction factor is applied to the respective raw input signal. A value of YES signifies that the correction factor will be applied, similarly a value of NO signifies that the correction factor will not be applied.

MEASURED FLOW (OUNCES) – allows the operator to enter the measured pump flow

CALIBRATE – calculates a new correction factor based on the totaled and measured flows.

CURRENT CORRECTION FACTOR – displays the current correction factor

Treater 1 Calibration

	Pump #1 Chemical	Pump #2 Chemical	Pump #3 Water	Pump #4 Red	Pump #5 Green	Pump #6 Spare
5 Minute Time Test	Start Test	Start Test	Start Test	Start Test	Start Test	Start Test
Use Correction Factor	NO	NO	NO	NO	NO	NO
Current Correction Factor	1.00	1.00	1.00	1.00	1.00	1.00
Measured Flow (Ounces)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Calibrate	Calibrate	Calibrate	Calibrate	Calibrate	Calibrate

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Treater 2

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Maintenance

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WeighBelt

Pump Calibration Screen

The **PUMP CALIBRATION SCREEN** is a graphical representation of the system. Also shown are system displays (process data) input by the operator.





Caution! Hand mode will immediately turn on the selected device with no interlocks. Ensure that all personnel are clear of selected device prior to enabling HAND mode.

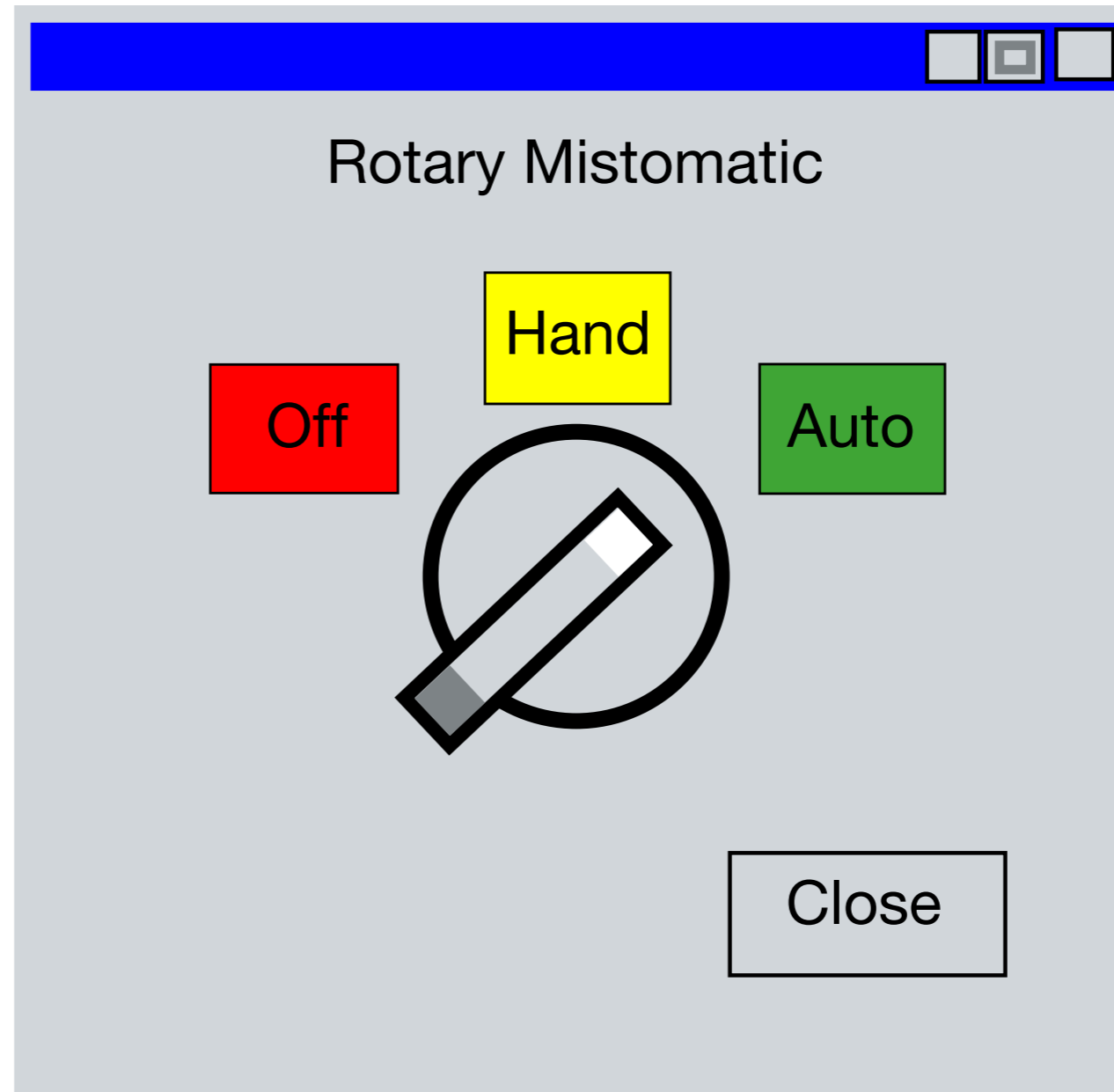
OFF – places the selected device in off mode, device will turn OFF!

HAND – places the selected device in HAND mode, device will turn ON!

AUTO – place the selected device in Auto mode, device will turn ON! And OFF! As determined by the PLC program.

CLOSE – close the Hand – Off – Auto screen

HAND – OFF – AUTO screen object (RSView uses a separate pop-up window)



RMOM (Rotary Mist-O-Matic) Device Screen

The **ROTARY MIST-O-MATIC DEVICE** is a graphical representation of the applicator. The operator can enable/disable the device.



STARTUP SPEED (FT/MIN) – allows the operator to enter a set point that the weigh belt will automatically increase its' speed to once the system start button has been pressed.

COMMAND SPEED (FT/MIN) – allows the operator to control the weigh belt's command speed. The buttons with two triangles will make 1.00 ft/min adjustments to the command speed every time the button is pressed. The buttons with one triangle will make 0.10 adjustments to the command speed every time the button is pressed.

CALIBRATION – displays the weigh belt calibration screen.

WEIGH BELT, (HAND – OFF – AUTO) – allow the operator to select the weigh belts current mode of operation.

COMMAND SPEED – displays the weigh belt's current command speed.

ACTUAL SPEED – displays the weigh belt's actual speed. This most likely will not equal the command speed since the weigh belt's speed control loop is of an open loop design.

WEIGHT – displays the current weight as seen by the load cell in pounds per foot units.

WEIGHT RATE – displays the current weigh belt rate in pounds per minute.

TOTALIZED WEIGHT – displays the current totalized weight.

Treater 1 Weigh Belt Control

Startup Speed (ft/min)

Command Speed (ft/min) ◀◀ ◀ 0.00 ▶ ▶▶

Actual Speed (ft/min) 0.00

Weight (lbs/ft) 0.00

Weight Rate (lbs/min) 0.00

Totalized Weight (lbs) 0.00

Weigh Belt Mode Selector

Off
Hand
Auto

Treater 1

Alarms

Treater 2

0	TreaterWeighBeltRate
0	TreaterWeighBeltActSpd
0	TreaterWeighBeltWeight
10:10:10 AM 101599	

Weigh Belt Control Screen

The **WEIGH BELT CONTROL SCREEN** is a graphical representation of the applicator. The operator can enable/disable the device.



START/HOLD/STOP RINSE – allows operator to start a rinse sequence, hold in the current step indefinitely, or stop sequence completely.

OPEN/CLOSE/AUTO – allows the operator to control each valve's position. Open to the work tank, Close to the work tank, or Auto control.

RINSE 1/RINSE 2 ENABLE – allows the operator to select which treater system to rinse.

RINSE 1/RINSE 2 TIME (SECONDS) – allow the operator to enter the rinse time in seconds.

SEQUENCER STATUS – displays the started and running status of the sequencer.

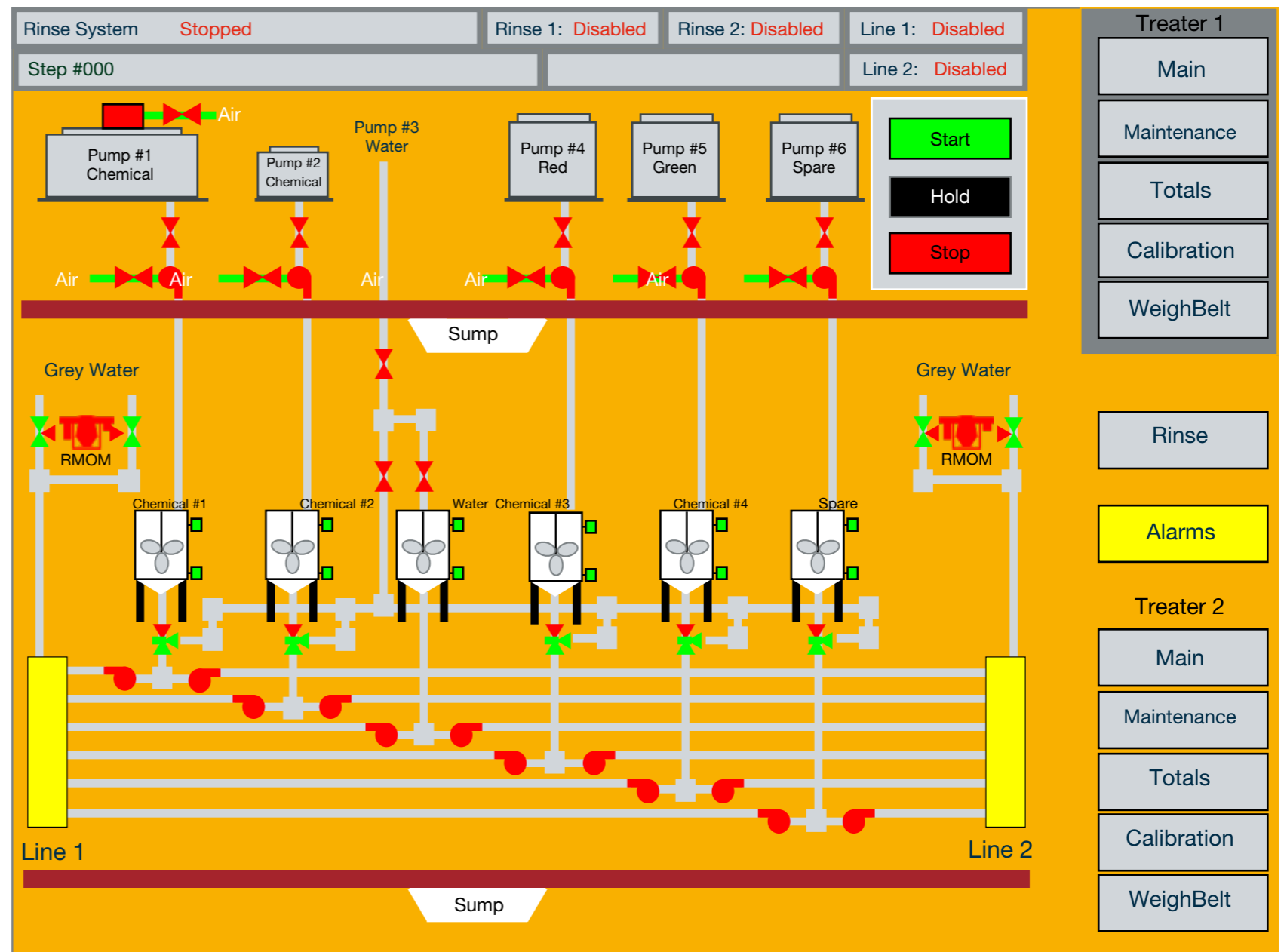
STEP POSITION – displays the sequencer step position and step description.

VALVE POSITION – when a valve is touched on the Rinse Control System Screen, the Valve pop-up appears and displays the current valve position. Solid colors indicate auto mode and flashing colors indicate manual mode.

WORK TANK HI/LOW LEVEL – displays the current work tank high/low level status.

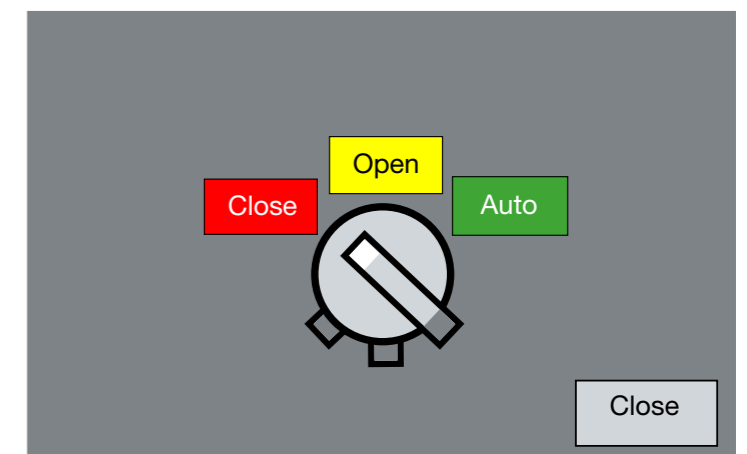
PUMP STATUS – displays the current pump on/off status for the rinse mode.

UPPER/LOW SUMPS – displays the current status for the sump areas on each level. Flashing red indicated a high level in the sump area and solid white indicates normal condition.



Rinse Control System Screen

The **RINSE CONTROL SYSTEM SCREEN** is a graphical representation of the applicator. The operator can enable/disable the device.





OPERATION



Note: *newer weigh belts use an alternative hanging weight (one for each load cell).

WEIGH BELT CALIBRATION PROCEDURE

Step 1: Ensure that there is no material on the weigh belt surface.

Step 2: Using the mouse click the calibrate zero button on the Weigh Belt Calibration screen. Ensure that the button is held down for approximately 1 second.

Step 3: Place a calibrated 50 pound weight* on the weigh belt.

Step 4: Using the mouse click the calibrate span button on the Weigh Belt Calibration screen. Ensure that the button is held down for approximately 1 second.

Step 5: Run a load of corn through the system (the larger the load the more accurate results this calibration procedure will produce).

Treater 1 Weigh Belt Calibration

Calibrate Zero

Calibrate Span

Weigh Belt (Pounds/Foot)

0.00

Close

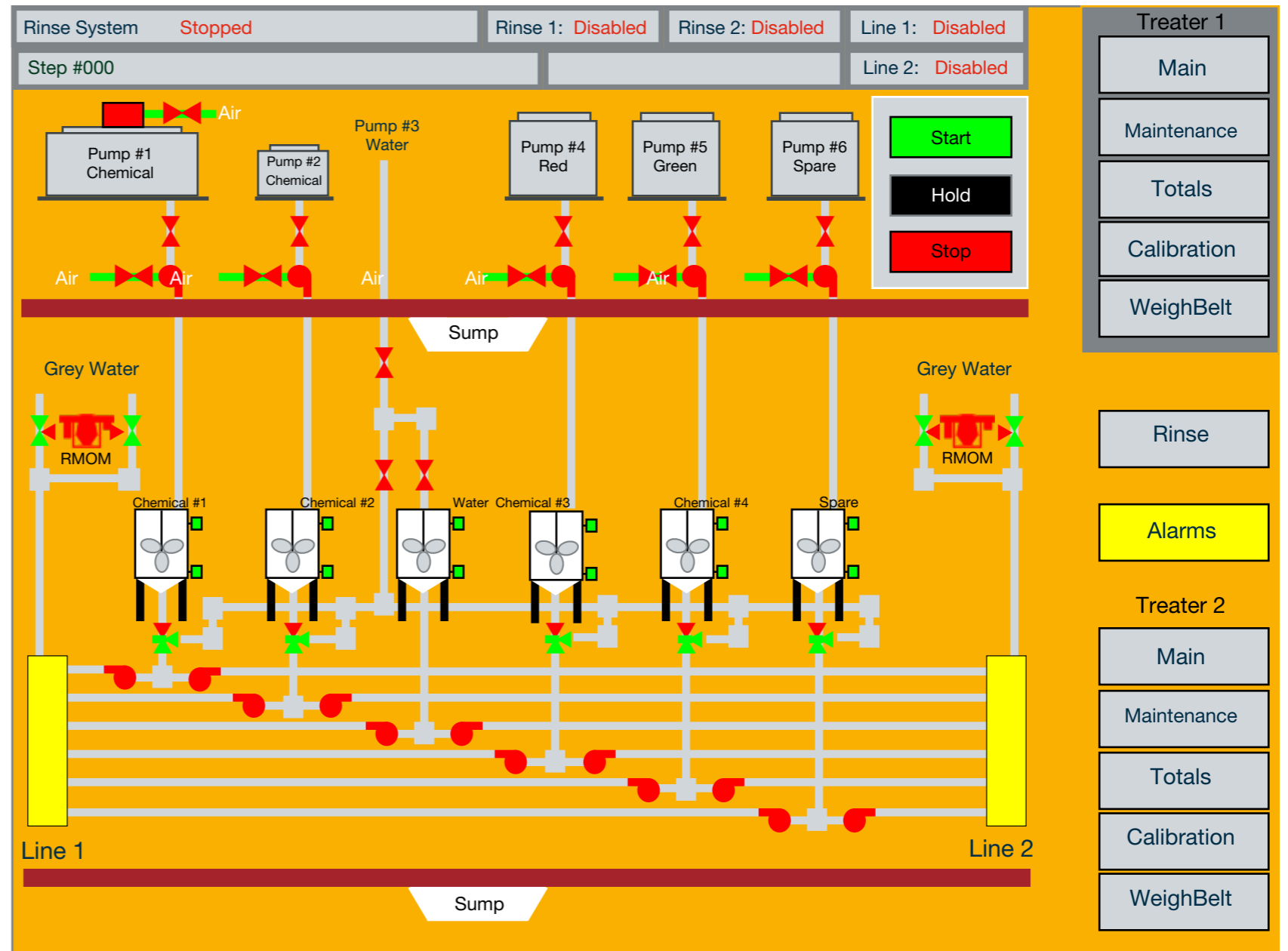


Rinse Control System Screen

The rinse control option is designed to automatically rinse chemical in the lines from the work tanks, through the pumps and flow meters back to a grey water tank or the water work tank. The operation is a sequence of steps that is initiated by the operator and controlled automatically by the programmable controller. A rinse sequence can be performed on one treater system or on two treater systems, one after the other.

This system also controls the bulk transfer of chemicals to the work tanks when they get low. The operation begins by the operator enabling the rinse sequence and entering a rinse time in seconds on one or both treaters. If a treater is in use or if there is a high level alarm in either sump, then rinsing will not occur. If enabled and no stop conditions, then the operator can push the Start button to initiate the rinse sequence.

Messages at the top of the rinse screen indicates several things: rinse has begun, running, which step the sequencer is in at the time and a description of the step. The programmable controller will automatically step through the sequence to completion. Refer to the Pin Chart section of this manual for details on the sequence, the devices being controlled in each step, and the events needed to complete each step ↻



Once the rinse sequence reaches the Rinse step, it will remain there for the duration of the rinse time before stepping forward to complete the rinse cycle. The other steps in the sequence involve opening and closing valves with indication that the operation has completed successfully (the valve has opened or closed).

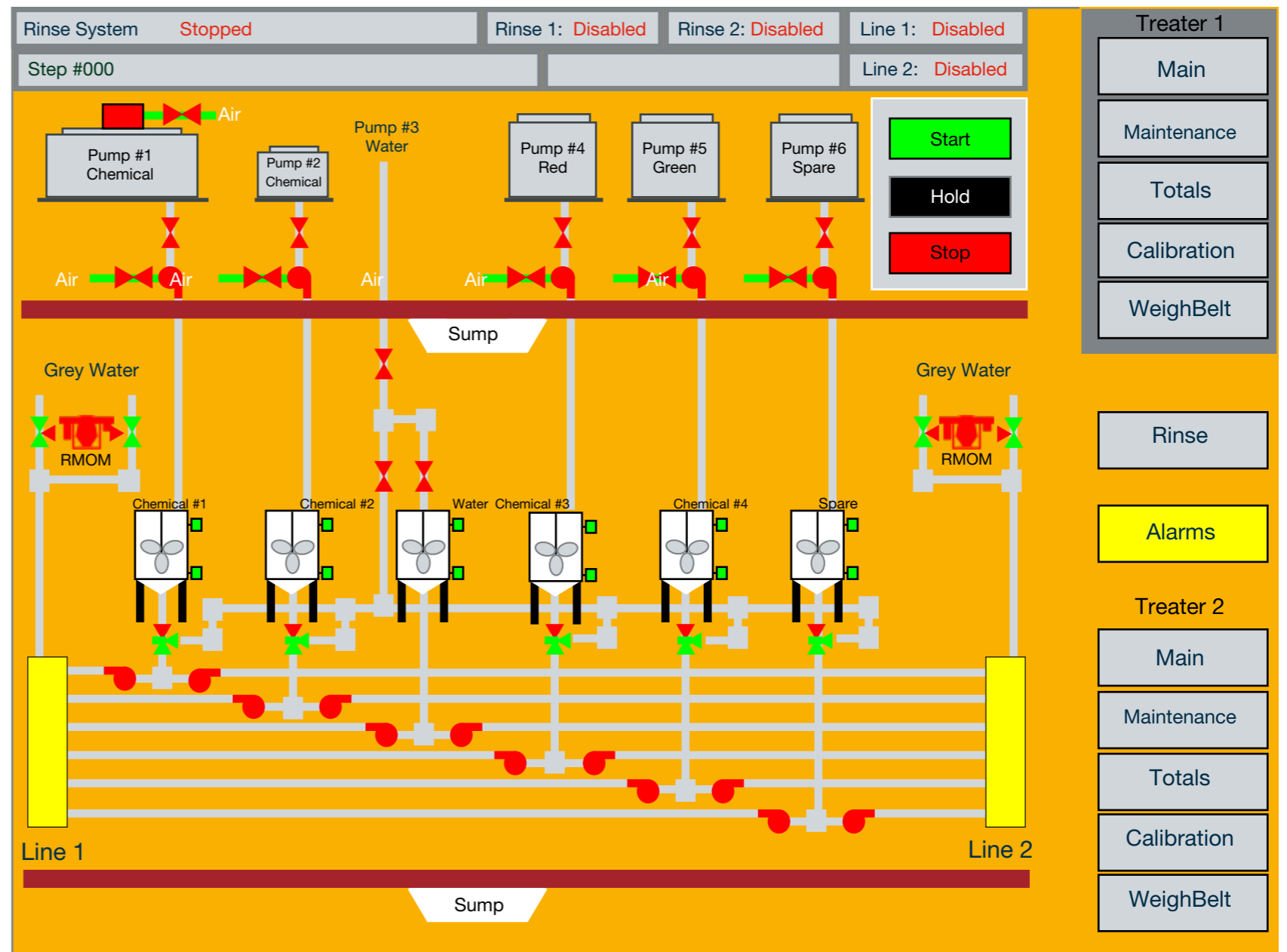
If the sequencer does not step forward, then a valve may not have opened or closed properly or there is a problem with the open or close limit switches in the valve.

Alarm conditions exist to notify the operator which valve has a problem. Open failure, close failure, and valve in two position alarms are reported to the Alarm screen.

When a work tank gets low, indicated by the low sensor, a message will flash on the Main screen: Bulk Transfer Needed and the work tank will turn red. The operator can then click on the bulk tank associated with the low work tank which brings up a Bulk Transfer Start/Stop screen.

Pressing Start will initiate an automatic bulk transfer that stops when the tank level reaches the high level sensor. The operator can also stop the bulk transfer manually by clicking Stop on the Bulk Transfer Start/Stop screen.

Bulk transfer will not occur or will stop immediately if a high level in sump alarm exists. The water work tank fill operation occurs automatically, with no operator intervention.



Main Screen

Calibration of the pumps can be done on two levels...

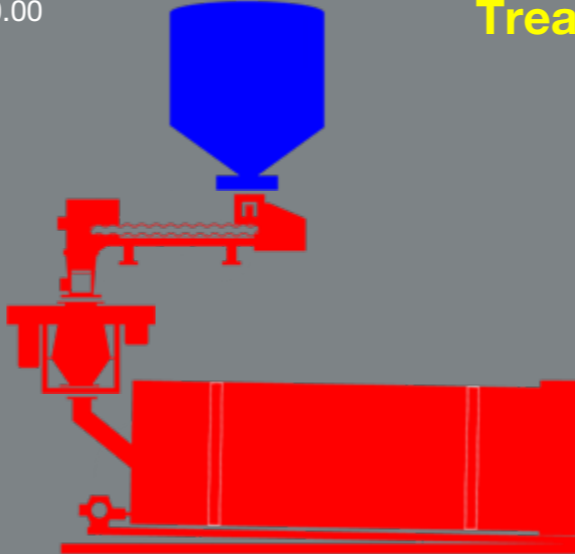
A. Tuning the Turbo flow meters. This will be done by the start up crew during start up. It should not have to be done again unless a problem develops, but could be implemented as part of an annual or semi annual calibration procedure.

B. Generating a correction factor for temporary correction of an inaccuracy. If a consistent error is found in totaling any chemical, it may be necessary to generate and apply a correction factor for that pump. The following sequence explains this procedure. (Warning: if this error applies to more than one pump, do not apply this procedure. Contact Bayer @ 1-800-634-6738)

Step 1: Touch the Calibration button icon: navigates to the **CALIBRATION SCREEN** ➡

Weight Rate (lbs/min) 0.00

Treater 1 Main



SYSTEM STOPPED

System Start

System Stop

System Enabled

Auto Treat

	Pump #1 Chemical	Pump #2 Chemical	Pump #3 Water	Pump #4 Red	Pump #5 Green	Pump #6 Spare
Set Point (oz/100wt)	0.00	0.00	0.00	0.00	0.00	0.00
Actual (oz/100wt)	0.00	0.00	0.00	0.00	0.00	0.00
Required (oz/min)	0.00	0.00	0.00	0.00	0.00	0.00
Actual (oz/min)	0.00	0.00	0.00	0.00	0.00	0.00
Totalizer (oz)	0.00	0.00	0.00	0.00	0.00	0.00
Automatic Pump Control	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled

Treater 1

Main

Maintenance

Totals

Calibration

WeighBelt

Rinse

Alarms

Treater 2


Main

Maintenance

Totals

Calibration

WeighBelt





Note: Buttons that are RED will display NO, GREEN will display YES on them.

Step 2: Verify that the “use correction factor” switch is set to ‘no’ on the required pump.

Step 3: Reset the accumulated total for the pump under test.

Step 4: Position a collection container to collect the chemical, ensuring it is large enough for the volume being collected. Use a calibrated beaker or scale, if possible [remove the treatment line and place in beaker].

Step 5: Switch the calibration valve to the calibration position.

Step 6: Press the **START TEST** button icon for the pump under test.

Step 7: Wait for the test to complete. Dependent on pump volume the test time may vary.

Step 8: When the test is complete, measure the volume of the collected chemical. The more accurate the measurement, the more accurate the calibration.

Step 9: Enter the measured volume into the **MEASURED FLOW (OUNCES)** field, in the same units of measure as used in the total block.

Step 10: Press the **CALIBRATE** button icon for the required pump. The correction factor may change.

Step 11: Change the “use correction factor” switch to ‘ON’.

Step 12: With correction factor “on”, repeat steps 3 through 8, to ensure that the correction factor is effective.

Step 13: For further assistance, contact Bayer @ 1-800-634-6738).

Treater 1 Calibration

	Pump #1 Chemical	Pump #2 Chemical	Pump #3 Water	Pump #4 Red	Pump #5 Green	Pump #6 Spare
5 Minute Time Test	Start Test	Start Test	Start Test	Start Test	Start Test	Start Test
Use Correction Factor	NO	NO	NO	NO	NO	NO
Current Correction Factor	1.00	1.00	1.00	1.00	1.00	1.00
Measured Flow (Ounces)						
	Calibrate	Calibrate	Calibrate	Calibrate	Calibrate	Calibrate

Treater 1

- Main
- Maintenance
- Totals
- Calibration
- WeighBelt

Treater 2

- Main
- Maintenance
- Totals
- Calibration
- WeighBelt

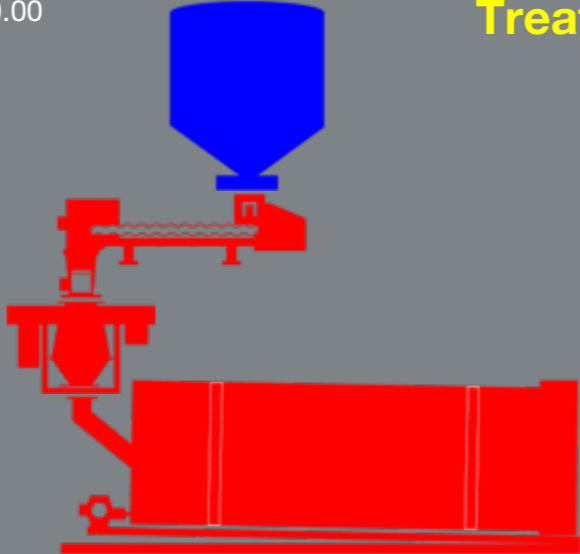
Rinse

Alarms



Weight Rate (lbs/min) 0.00

Treater 1 Main



SYSTEM STOPPED

System Start

System Stop

System Enabled

Auto Treat

	Pump #1 Chemical	Pump #2 Chemical	Pump #3 Water	Pump #4 Red	Pump #5 Green	Pump #6 Spare
Set Point (oz/100wt)	0.00	0.00	0.00	0.00	0.00	0.00
Actual (oz/100wt)	0.00	0.00	0.00	0.00	0.00	0.00
Required (oz/min)	0.00	0.00	0.00	0.00	0.00	0.00
Actual (oz/min)	0.00	0.00	0.00	0.00	0.00	0.00
Totalizer (oz)	0.00	0.00	0.00	0.00	0.00	0.00
Automatic Pump Control	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled

Treater 1

Main

Maintenance

Totals

Calibration

WeighBelt

Rinse

Alarms

Treater 2

Main

Maintenance

Totals

Calibration

WeighBelt

Main Screen

Tuning the Turbo flow meters is a little more time consuming and should not be required as a general rule. However, if it is necessary proceed as follows:

Step 1: Touch the Calibration button icon: navigates to the Calibration Screen ➡





Example: (Step 11)
 $\text{measured volume} \div \text{totalized volume} = \text{ratio}$

Step 2: Verify that the “use correction factor” switch is set to ‘no’ on the required pump.

Step 3: Reset the accumulated total for the pump under test.

Step 4: Position a collection container to collect the chemical, ensuring it is large enough for the volume being collected. Use a calibrated beaker or scale, if possible [remove the treatment line and place in beaker].

Step 5: Switch the calibration valve to the calibration position.

Step 6: Press the START TEST button icon for the pump under test.

Step 7: Wait for the test to complete. Dependent on pump volume the test time may vary.

Step 8: When the test is complete, measure the volume of the collected chemical. The more accurate the measurement, the more accurate the calibration.

Step 9: Record both the measured volume and the totalized volume on a sheet of paper.

Step 10: Repeat steps 3 through 9, two more times.

Step 11: Calculate the ratio of measured to totalized volumes for all three runs.

Step 12: Compare these three ratios for consistency, they should not vary by more than 10% (+ or - 0.10). If the ratios meet this spec. Calculate and record the average of the three ratios.(if not, contact Bayer)

Step 13: If the average ratio deviates from 1.000 by an unacceptable amount, proceed with steps 14 through 17 otherwise skip to 18 ➡

Treater 1 Calibration

	Pump #1 Chemical	Pump #2 Chemical	Pump #3 Water	Pump #4 Red	Pump #5 Green	Pump #6 Spare
5 Minute Time Test	Start Test	Start Test	Start Test	Start Test	Start Test	Start Test
Use Correction Factor	NO	NO	NO	NO	NO	NO
Current Correction Factor	1.00	1.00	1.00	1.00	1.00	1.00
Measured Flow (Ounces)						
	Calibrate	Calibrate	Calibrate	Calibrate	Calibrate	Calibrate

Start Test

NO

Alarms

Treater 1
 Main
 Maintenance
 Totals
 Calibration
 WeighBelt
 Rinse
 Alarms
 Treater 2
 Main
 Maintenance
 Totals
 Calibration
 WeighBelt





Note: To learn more about **calibrating the MAG 5000 flow meter** and how to make these changes, refer to the manufacturer's manual provided with the unit or contact Bayer.

Pump Calibration Screen

Step 14: To calibrate the MAG 5000 flow meter, set the "Q max" parameter in Basic settings to the maximum volume of the element being used in the pump.

Step 15: Select the "correction factor" in the Sensor characteristics menu and set it to the ratio previously calculated (if it will not accept the value, contact Bayer).

Step 16: Repeat steps 3 through 9.

Step 17: Repeat step 11, if the ratio is acceptable, proceed to step 18.

Step 18: Note the totalizer value and enter that same value into the MEASURED FLOW field.

Step 19: Press the CALIBRATE button icon for the required pump. The correction factor should read 1.0

Step 20: Change the USER CORRECTION FACTOR switch to 'ON'.

Step 21: To check your calibration, perform steps 3 through 8.

Treater 1 Calibration

	Pump #1 Chemical	Pump #2 Chemical	Pump #3 Water	Pump #4 Red	Pump #5 Green	Pump #6 Spare
5 Minute Time Test	<input type="button" value="Start Test"/>	<input type="button" value="Start Test"/>	<input type="button" value="Start Test"/>	<input type="button" value="Start Test"/>	<input type="button" value="Start Test"/>	<input type="button" value="Start Test"/>
Use Correction Factor	<input type="button" value="NO"/>	<input type="button" value="NO"/>	<input type="button" value="NO"/>	<input type="button" value="NO"/>	<input type="button" value="NO"/>	<input type="button" value="NO"/>
Current Correction Factor	1.00	1.00	1.00	1.00	1.00	1.00
Measured Flow (Ounces)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="button" value="Calibrate"/>	<input type="button" value="Calibrate"/>	<input type="button" value="Calibrate"/>	<input type="button" value="Calibrate"/>	<input type="button" value="Calibrate"/>	<input type="button" value="Calibrate"/>

Treater 1

Treater 2





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