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Model VF110-E Touch Screen Control Panel Users Manual



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INTRODUCTION

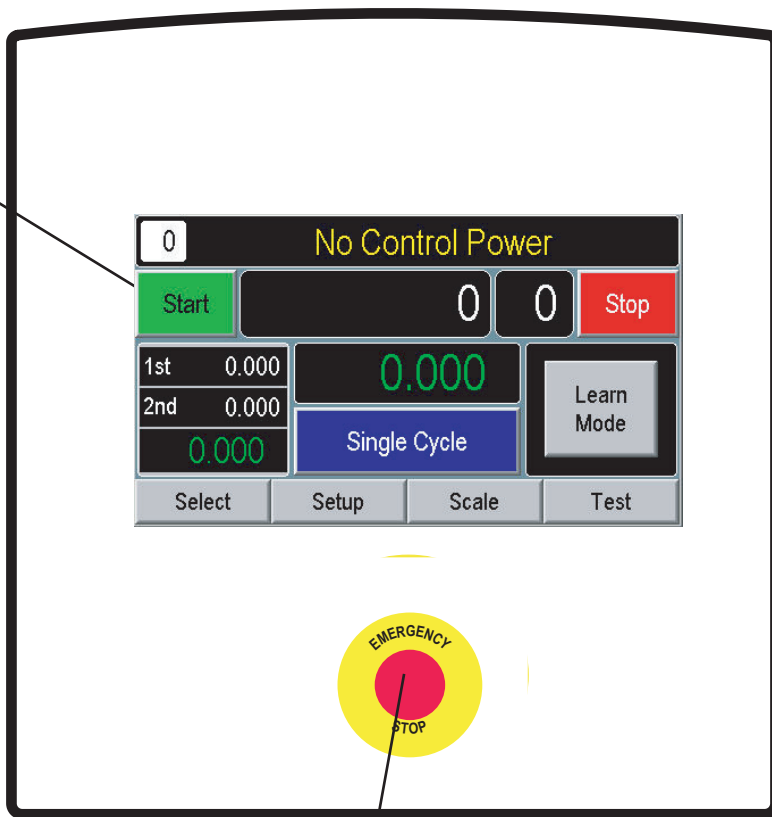
This section provides introductory information about your All-Fill Model VF100-E Vibratory Feeder. It should be read before attempting any setup or operation of the equipment. Once becoming familiar with controls, you can proceed to subsequent sections to learn how to setup and operate the machine for filling production.

Control Panel

All major functions of the filling system are performed at the Control Panel. This panel is shown in Figure 1.

Figure 1 – Control Panel

**TOUCH
SCREEN
PANEL**



**EMERGENCY
STOP
SWITCH**

Touch Screen Operation

Emergency Stop

Pressing the Emergency Stop switch will stop the machine immediately. All power will be shut down.

!!! IMPORTANT !!!

Only use the Emergency Stop switch in the event of an actual emergency, or when shutting the system down. Use the **STOP** selection on the Main screen to stop the equipment under normal circumstances.

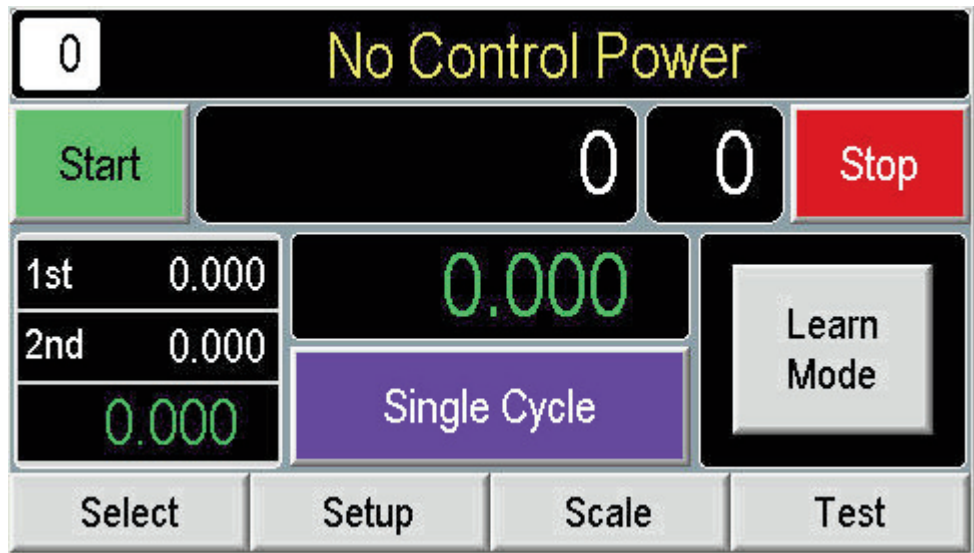
Touch Screen Panel

A custom-programmed panel that provides menus, selections, settings, and controls used to test, adjust, and operate the feeder.

All major machine setup, production, and testing are performed using the Touch Screen panel on the Machine Control Panel. This screen provides simple, direct selection of all operations, control settings, and production data display. This section provides a description of the different screens and selections available, as well as a sample exercise to practice using the controls.

Main Screen

The Main screen provides a summary of production data, selections to control the machine, and access additional menus. The Main screen appears automatically upon start-up. Descriptions of the items appearing on this screen are provided in the following.



| | |
|--------------------------|--|
| Start | Control used to start filling operations. |
| Production Count | Displays the number of filled containers since Start was used. Display can be used as an indicator of production. |
| CPM | Displays the computed Containers Per Minute as an indicator of production rate. |
| Stop | Control used to halt filling operations. |
| Bulk/Dribble Time | Displays the time required to complete bulk and dribble filling in the most recent fill cycle. These displays can be used in analysis of filling performance and where adjustment is necessary. |
| Elapsed Time | Displays the total time necessary to complete the most recent fill cycle. As with the previous (“Bulk/Dribble Time”), this display can be used in analysis of filling performance and where adjustment is necessary. |
| Single Cycle | Allows only a single container to be filled and is useful for testing purposes. |
| Learn Mode | The Learn Mode screen provides a method of allowing the controls to optimize filling production automatically without time consuming adjustment and re-adjustment of setup entries and selections. |
| Menu Selection | Allows access to the Select, Setup, Scale, Test, and Stats screens during operation. |

Status Messages

A message indicating the current operational state of the filler. The following messages may appear. Weigh Bucket messages appear on the Main screen. System Messages appear at the top of all screens.

- | | |
|---------------------------|---------------------|
| No Control Power | Wait For Initiation |
| System Ready: Press START | Open Bucket |
| Bucket Not Ready | Scale Alarm |
| Ready To Dump | Stepper Alarm |
| Drop Product | Max Fill Time Alarm |
| Release Initiation | Bucket Not Close |

Touch Screen Menus & Selections

Each of the menus available from the Touch Screen Control Panel are described, in summary, in the following. Detailed procedures and descriptions of menu selections appear in subsequent sections of this publication.

Main

- Start
- Production Count display
- CPM display
- Primary Bulk Fill Time display
- Primary Dribble Fill Time display
- Weight display
- Scale Weight display
- Single Cycle
- Learn Mode
 - Learn Time
 - Set Learn
 - Learn Mode
 - Bulk/Dribble Weight display
 - Single Cycle
 - Bulk % of Target
 - Bulk/Dribble Vibration
- Main
- Stop
- Menu Selection

Select

- Select Recipe Number
- Clear Stat
- Language

Setup

- Setup Target Weight
 - Product Name
 - Target Weight
 - Tolerance Weight
 - PreAct Weight
 - Low/High Limit Weight display
- Setup Vibration
 - Bulk % of Target
 - Bulk/Dribble Vibration
 - Minimum/Maximum Fill Time
 - Drop Time
 - Cascade Vibration
 - Cascade Vib On Delay
 - Bulk Vibration
 - Dribble Vibration
 - Primary Vib
- Setup Bucket
 - Bucket Tare Rate
 - Bucket Tare Delay
 - Bucket Open Time

- Gate Control
- Setup Level Control
 - Off Time
 - On Time

Scale

- Scale #1 Calibration
 - Raw Count display
 - Scale Weight display
 - Calibrated Weight
 - Start Cal
 - Step #1-#4

Test

- Test Vibrator
 - Vibration Rate
 - Test Vib
 - Scale Weight display
 - Tare
 - Stepper Sensor Indicator
 - Stepper Time
 - Open Bucket
 - Close Bucket
- Test Cascade Vibrator
 - Vibration Rate
 - Test Cascade Vib
 - Scale Weight display
 - Tare
 - Stepper Sensor Indicator
 - Stepper Time
 - Open Bucket
 - Close Bucket
- Test Product Request
 - Hopper Low Level Indicator
 - Test Prod. Request
- Test Aux I/O
 - Initiation Indicator
 - E-Stop Indicator
 - Test Vib. Gate #1
 - Test Vib. Gate #2
 - Ok to Dump Signal
 - End of Fill Signal

USING THE CONTROLS

When you are familiar with operation and use of the touch screen menus and selections; you can use this section to start to use the Control Panel with the filler. This section provides instructions and procedures to:

- Perform initial testing and adjustment of the filler and components
- Create Setup Recipes for different containers, products, etc.
- Calibrate the scale for desired weight tolerance
- Start and run filling production

If you are unsure about making selections from the touch screen panel, you should refer to the previous section before proceeding.

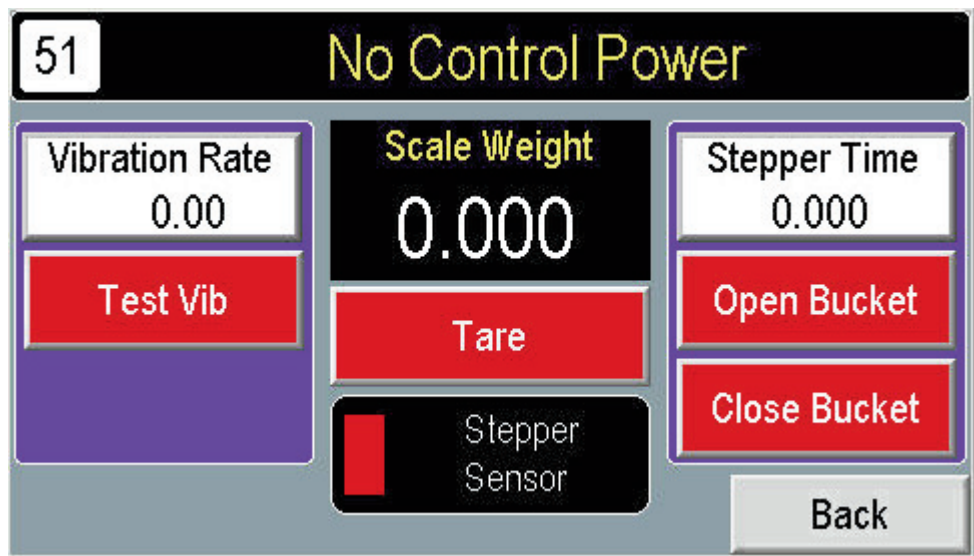
Initial Testing and Adjustment

After installing the filler and connecting the required electrical and pneumatic inputs, the machine can be started and initially operated to ensure that all components are functioning correctly. Use the Control Power switch on the panel. The Main screen should appear.

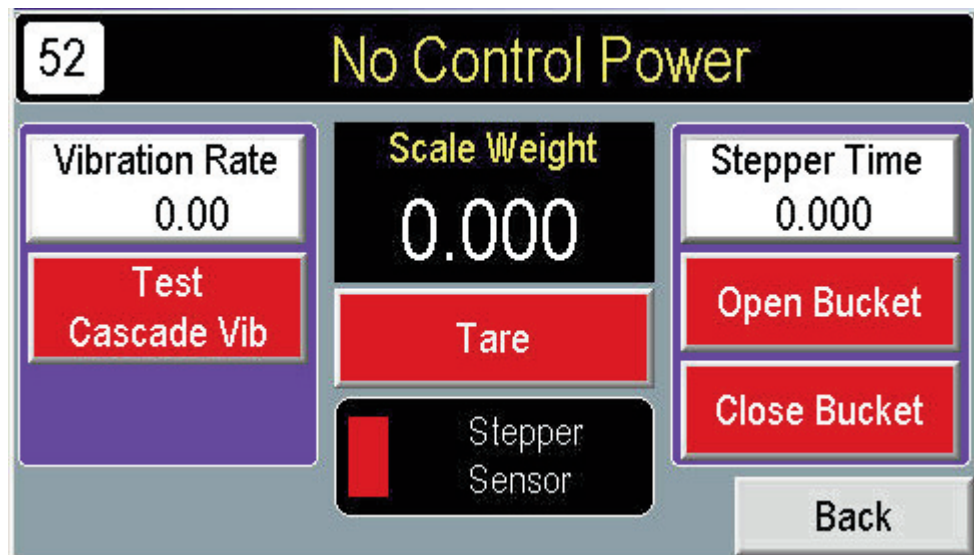
Machine Testing

Use the following for initial testing and/or adjustments.

1. From the **MAIN** screen, press **TEST**.
2. Press **TEST VIBRATOR** to operate vibrator, display weights, and operate the weigh bucket/stepper actuator.



3. Press **TEST CASCADE VIBRATOR** to operate the additional cascade vibrator that feeds the primary pan.



4. Press **BACK** and **TEST PRODUCT REQUEST** to verify operation of the Level Control and operation with (external) product re-supply equipment.



5. Press **BACK** and **TEST AUX I/O** to allow inputs and outputs of the control panel to be displayed and operated.



6. When done, press **MAIN** to return to Main screen.

Setting Up the VF110-E

Setup of the feeder consists of the following major procedures:

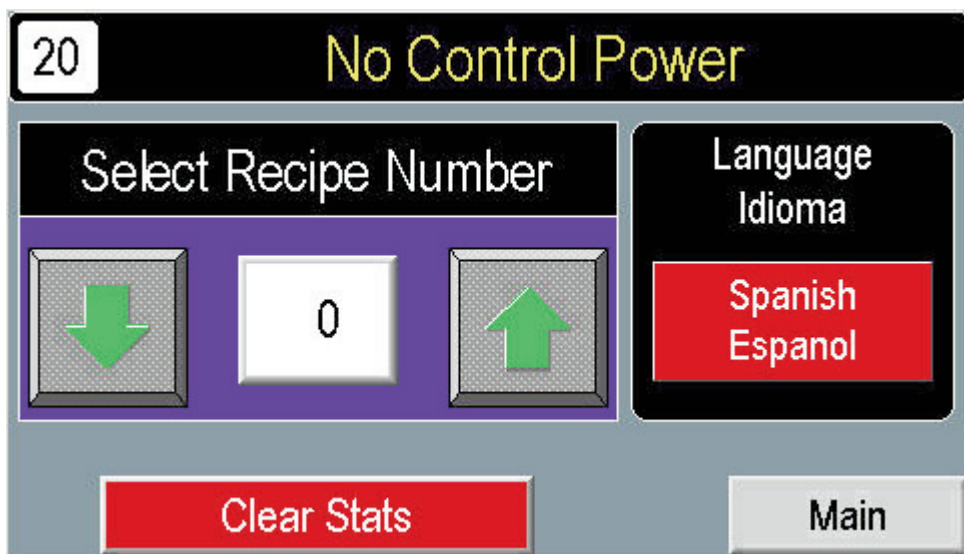
- Picking a Setup Recipe Number
- Setting up a Target Filling Weight
- Setting Up Vibration
- Setting Up the Cascade Feeder
- Setting Up the Weigh Bucket & Gate

Procedures to perform these setup operations are provided in the following. The Appendix of this manual contains a Worksheet that can be used to help you develop and record Setup selections and entries.

Picking a Recipe Number

The Touch Screen controls provide the ability to store up to 50 different setup recipes for use with different containers, products, fill amounts, etc. Use the following to initially select and set up your recipes.

- Access the Main screen. Press **SELECT**.



- Press **SELECT RECIPE NUMBER** and choose a number from the numeric keypad.
- Additionally, you can use this screen to select the language (Spanish/English) and to reset statistical totals appearing on the Main screen.

Setting Up a Target Filling Weight

After selecting the desired recipe number, proceed to the following to setup how much product is dispensed and the acceptable weight range of filled containers.

1. Press **SETUP** from the **MAIN** screen.
2. Press **SETUP TARGET WEIGHT**.

The screenshot shows a control panel interface with a black header bar. On the left of the header is a white box containing the number '31'. On the right of the header, the text 'No Control Power' is displayed in yellow. Below the header is a white input field labeled 'Product Name'. Underneath this are two columns of settings. The first column has 'Target Weight' and 'PreAct Weight', both with a value of '0.000'. The second column has 'Tolerance Weight' with a value of '0.000', and below it, 'Low Limit Weight' and 'High Limit Weight', both with a value of '0.000'. At the bottom right of the screen is a 'Back' button.

| | |
|------------------------|---|
| Product Name | |
| Target Weight 0.000 | Tolerance Weight 0.000 |
| PreAct Weight 0.000 | Low Limit Weight 0.000 High Limit Weight 0.000 |
| Back | |

3. Press **TARGET WEIGHT** to specify the final, filled weight of product in the container.
4. Press **PRACT WEIGHT** to include the amount of product in transit after vibration stops. A method to determine preact settings is to initially set it to zero, perform a few trial fills, then measure the amount of product in excess of target. Use this resulting amount as a preact weight setting.
5. Press **TOLERANCE WEIGHT** to specify the amount over and under the selected Target Weight that can be considered acceptable. For convenience, the controls calculate the high and low limits of the target and tolerance settings. This range appears on the screen below the Tolerance Weight selection.

Setting Up Vibration

After setting up the desired target weight, you can proceed to define how vibration dispenses product at each bucket. It may be necessary to repeat the following procedure until arriving at settings that best suit your product, desired accuracy levels, and final production rates.

1. Press **SETUP** from the **MAIN** screen, if necessary.
2. Press **SETUP VIBRATION** from the Setup screen.

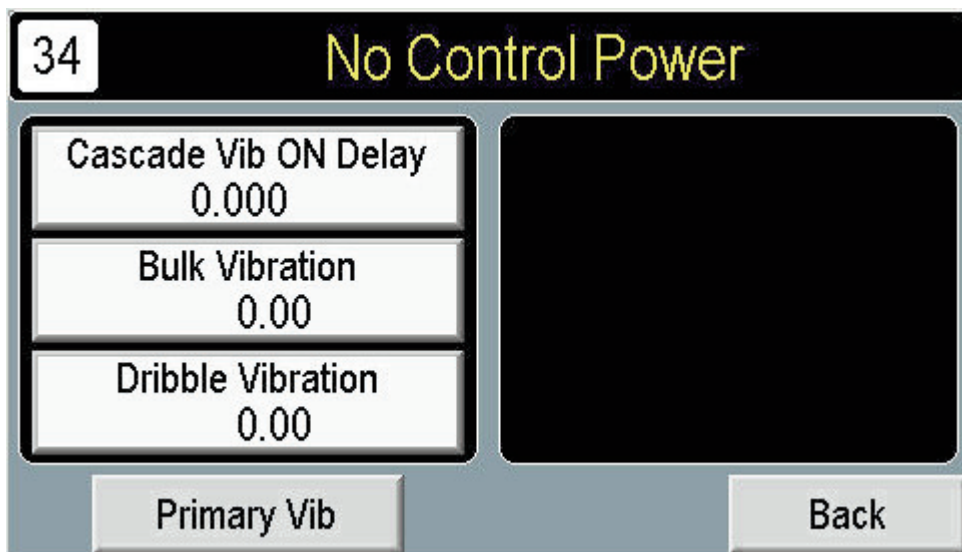
| 32 No Control Power | |
|---------------------------|----------------------------|
| Bulk % Of Target 0.00 | Minimum Fill Time 0.000 |
| Bulk Vibration 0.00 | Maximum fill Time 0.000 |
| Dribble Vibration 0.00 | Drop Time 0.000 |
| Cascade Vib | Back |

3. Press **BULK % OF TARGET WT.** to define how much product is dispensed in the first stage fill as a percentage of final target weight. Up to 60% should be specified for most effective use and optimum production speeds.
4. The **BULK VIBRATION** selects the rate of vibration during the first, bulk stage fill. Generally, greater speeds will result in more product, however greater speeds may yield less accuracy and greater preact (in-flight) amounts.
5. Press **DRIBBLE VIBRATION** to select the rate of vibration during the second, dribble stage fill. Greater speeds (higher entries) will result in more product.
6. Press **MINIMUM FILL TIME** to specify the minimum time for a fill cycle used to identify problems or faults. If the fill time does not attain this minimum value, an error message is generated indicating a possible problem. The Minimum Fill Time should be set at a point where unacceptable weight (underweight) containers occur.
7. Press **MAXIMUM FILL TIME** for the time allowable for a fill cycle used to identify problems or faults. If the fill time exceeds this value, an error message is generated indicating a possible problem.
8. The **DROP TIME** specifies the time required for product to drop into the discharge nozzle. The entry will vary according to the type of product, overall accuracy levels, and desired production rates.

Setting Up the Cascade Feeder

The Cascade Vibration selection of the Setup Vibration screen (see previous) provides access to selections that define how the cascade pan feeds product to the primary pan. You can use the following to define how the cascade feeder distributes product to the primary vibrating pan.

1. If necessary, press **SETUP** from the **MAIN** screen.
2. Press **SETUP VIBRATION**, then **CASCADE VIBRATION**.

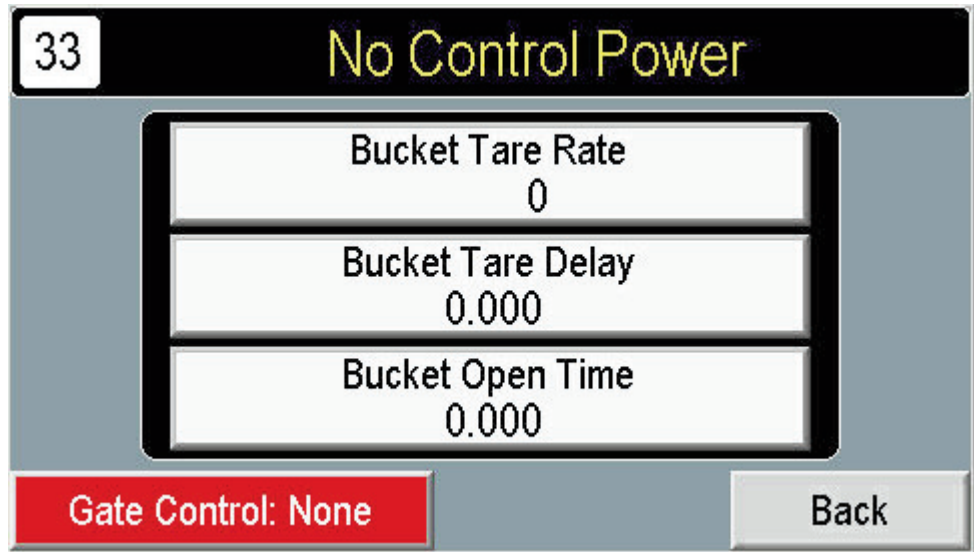


3. Press **CASCADE VIB ON DELAY** to prevent the cascade feeder from dispensing product at the secondary vibrator for the entered selection. This entry can be used to allow the pan to become evenly distributed with product at the start of filling.
4. The **BULK VIBRATION** setting selects the rate of vibration during the first, bulk stage fill of the cascade feeder. Use the **DRIBBLE VIBRATION** setting for the subsequent stage of cascade operation.
5. When done, press **PRIMARY VIB** to return to the primary Setup Vibration screen.

Setting up Weigh Bucket

The Setup Weigh Bucket screen provides access to selections that define operation of the weigh bucket components. Use the following for your setup recipe.

1. If necessary, press **SETUP** from the **MAIN** screen.
2. Press **SETUP BUCKET**.



3. Press **BUCKET TARE RATE** to select how often the scale attached to the Weigh Bucket is re-zeroed to account for build-up of product, debris, etc. Higher entries may result in longer weighing times and slower production rates. Lower entries may not yield desired accuracy levels.
4. The **BUCKET TARE DELAY** provides a delay before the scale is re-zeroed.
5. The **BUCKET OPEN TIME** determines how long the bucket stays open to allow product to drop into the funnel. When this period elapses, the bucket closes.
6. Press **GATE CONTROL** to setup operation of a product gate control that is actuated to inhibit product flow during filling. The following types of control can be selected:

None – Gate does not operate.

With Fill – Gate closes during filling to inhibit product flow to achieve greater accuracy.

Dribble Fill – Gate closes during dribble stage to inhibit product flow to achieve greater accuracy.

Completing Setup and Testing

After completing Setup menu selections, it is recommended that all selections and entries be recorded on the Setup Worksheet. This Worksheet is included in the Appendix. It can be removed, copied, and completed to serve as a hard-copy record of each setup program.

Scale Calibration

To ensure consistent accuracy, the scale of the Weigh Bucket should be calibrated before starting production. Calibration involves examining the weighing characteristics at the scale and completing a 4-step calibration sequence. Instructions to perform calibration are presented in the following.

A verified, known weight (i.e., "Standard Mass") should be available to perform Calibration.

1. Access the **MAIN** screen and press **SCALE**.



2. Verify the **RAW COUNTS** display. This value is input from the loadcell to verify that the loadcell is responding. If a weight is present on the scale and Raw Counts doesn't register, failure of the loadcell may be suspected.
3. Press **CALIBRATED WEIGHT** for entry of a standard mass value used during the calibration process.
4. Press **START CAL.** to initiate the calibration process.
5. Use **STEP #1-#4** to complete the calibration sequence for each scale. Instructions appear on the screen to complete each step.

Filling Production

Use the following as guidelines running filling production with the Model VF110-E feeder.

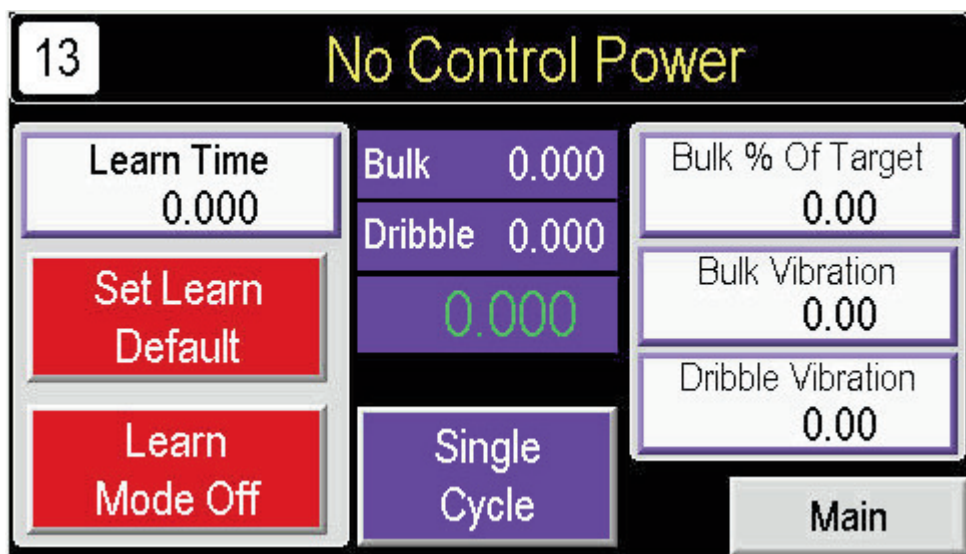
1. Verify that hopper contains sufficient product and that a supply of empty containers are available.
2. Clear any accumulated product or debris from the weigh bucket area.
3. Turn power on at the Control Panel.
4. Press **MAIN** and **SELECT** to choose which Recipe number to use.
5. Reset any accumulated production count statistical totals using the **CLEAR STATS** selection.
6. Press **MAIN** and **SETUP**. Review relevant setup settings and selections. Correct as required.
7. From the **MAIN** screen, press **START** to select container filling.
8. Verify system operation from the Status Messages appearing at the top of the Main screen. Status messages are described elsewhere in this manual.

Using the Learn Mode

The Model VF110-E includes a method to automatically optimize your filling application and setup entries through use of a *Learn Mode*. After starting production, you can use this Learn Mode to improve overall production rates. Use the following to use the Learn Mode with your Model VF110-e.

The Learn Mode can also be useful when a new product is to be used or existing product's density changes.

1. Complete your setup recipe selections and entries, including the Target Weight desired, Bulk % of Target, and Bulk/Dribble Vibration rates.
2. Determine your desired production rate in terms of fill cycles per minute.
3. Access the Main screen and press **LEARN MODE**.



4. Press **LEARN TIME** and enter value determined in Step 2.
5. Ensure an adequate supply of product and containers are available. Press **LEARN MODE** as "On" (Green).
6. Use the **SINGLE CYCLE** on the Learn Mode screen or use footswitch to perform several trial fills. Note that the Bulk % of Target, and Bulk/Dribble Vibration rates update on the screen. Turn **LEARN MODE** "Off" (Red) when complete.

!!! IMPORTANT !!!

The Bulk % of Target, and Bulk/Dribble Vibration rates resulting from the Learn Mode will replace any existing Bulk % of Target, and Bulk/Dribble Vibration rate settings of the current Setup Recipe. If necessary, you can record your existing settings using the Setup Recipe worksheet provided in the Appendix.

Troubleshooting and Service

Several methods are available to perform periodic servicing or diagnosing problems and faults of the machine.

The Test selections provide selections to operate selected components of the equipment for testing and/or adjustment. Test Menu selections are also provided to display the on/off status of the switches and conditions of the machine. Test Menu selections are only available when the machine is not currently filling (STOP used).

During production, the touch screen panel indicates machine activity through display of Status Messages that appear at the top of the panel. These messages can be used to indicate possible faults or failures of the machine or equipment. Status Messages are described in the following.

Status Messages

The current operation being performed by the system and controls are displayed via Status Messages appearing at the top of the panel. These messages can be used by the operator to ensure that the machine is functioning correctly, or to detect possible problems or errors with the equipment. Messages are described in the Table 1.

Table 1 — Status Message Troubleshooting

| Message | Meaning/Action |
|---------------------------|----------------------------|
| No Control Power | Pull Emergency Stop “out” |
| System Ready: Press START | Press START on Main screen |
| Bucket Not Ready | Check bucket |
| Ready To Dump | Verify product/container |
| Drop Product | Verify product dispensed |
| Release Initiation | Release footswitch |
| Wait For Initiation | Check footswitch |
| Open Bucket | Verify opening |
| Scale Alarm | Check scale |
| Stepper Alarm | Check stepper |
| Max Fill Time Alarm | Check setup entry/loadcell |
| Bucket Not Close | Check linkage/air cylinder |

REFERENCE

For reference, all major touch screen selections are described in the following. Selections and entries are listed according to the following.

- Main
- Select
- Setup
- Scale
- Test

Each selection is described with its typical application, along with the corresponding valid range of entries, and a factory pre-programmed default value.

Main

The Main screen provides a summary of filling performance and operational control of the Model VF110-E. It includes the following displays and selections.

Start

Control used to start filling operations.

This selection is accessed from the Main screen.

Production Count

Displays the number of filled containers since Start was used. Display can be used as an indicator of production.

This display is accessed from the Main screen.

CPM

Displays the computed Containers Per Minute as an indicator of production rate.

This display is accessed from the Main screen.

Stop

Control used to halt filling operations.

This selection is accessed from the Main screen.

Learn Mode

Bulk/Dribble Time

Displays the time required to complete bulk and dribble filling in the most recent fill cycle. These displays can be used in analysis of filling performance and where adjustment is necessary.

These selections are accessed from the Main screen.

Elapsed Time

Displays the total time necessary to complete the most recent fill cycle. As with the previous ("Bulk/Dribble Time"), this display can be used in analysis of filling performance and where adjustment is necessary.

This selection is accessed from the Main screen.

Single Cycle

Allows only a single container to be filled and is useful for testing purposes.

This selection is accessed from the Main screen.

The Learn Mode screen provides a method of allowing the controls to optimize filling production automatically without time consuming adjustment and re-adjustment of setup entries and selections.

A recommended procedure for using the Learn Mode with the Model VF110-E appears elsewhere in this publication.

The Learn Mode screen is accessed from the Main screen and includes the following.

Learn Time

Specifies the number of fills per minute when using the Learn Mode to adjust the Bulk % of Target, Bulk, and Dribble Vibration settings.

This selection is available from the Learn Mode screen.

Factory Setting: 0.000

Valid Entries: 5.000-30.000

Learn Mode

Selects the Learn Mode of the VF110-E feeder to be on or off. When on, the Bulk % of Target, Bulk, and Dribble Vibration settings are adjusted according to target weight and Learn Time (see previous).

Selection is color-coded to a quick, visual indication of the current setting. Selection appears Red when Off or Green when On.

This selection is available from the Learn Mode screen.

Factory Setting: Off (Red)
Valid Entries: On (Green), Off (Red)

Bulk/Dribble and Elapsed Time

Displays time required for each stage of the fill cycle when using the Learn Mode. These displays are for reference.

These selections are available from the Learn Mode screen.

Single Cycle

Initiates fill cycle one cycle at a time. This selection is for convenience. Fill cycles can also be initiated using the footswitch of the Model VF110-E.

This selection is available from the Learn Mode screen.

Bulk % of Target, Bulk & Dribble Vibration

Settings of the Setup Recipe that are adjusted during Learn Mode. These settings will initially reflect entries of the current Setup Recipe in use, however, they will be changed during Learn Mode filling.

These selections are available from the Learn Mode screen.

Main

Returns to the Main screen.

Menu Selection

Allows access to the Select, Setup, Scale, Test, and Stats screens during operation.

These selections are accessed from the Main screen.

Select

The Select Menu functions provide display and access to various operating modes of the Control Panel and Model VF110-E.

The Select screen is accessed from the Main screen.

Select Recipe Number

Selecting particular setup recipes for different operations can be made using this selection. Programs can only be selected when the machine is off (STOP used); however, this function can be used for display only of the current Setup Recipe while the machine is in use.

When a program number is selected, all selections defined for that program will be operational.

This selection is accessed from the Select screen.

Factory Setting: 0
Valid Entries: 1-50

Clear Stats

Statistical and counting information appearing on the Main screen can be reset to zero using this selection of the Select screen. This selection can be used at start of production, batch, and/or product so that the Main screen reflects actual filling performance.

This selection is accessed from the Select screen.

Language

The control panel includes the capability of displaying selections, messages, and settings in either English or Spanish. Press this selection to select desired language.

This selection is accessed from the Select screen.

Factory Setting: English
Valid Entries: Spanish, English

Setup

The Setup menus and screens provide access to selections and settings used to define operation of the feeder. When selected, the following menus can be accessed and used:

- Setup Target Weight
- Setup Vibration
- Setup Bucket
- Setup Level Control

These menus, as well as selections available on each screen, are described in the following. Setup screens are accessed from the Setup selection of the Main screen.

Setup Target Weight

Provides access to setup selections that define a product name identification, target fill weight and acceptable weight limits. Screen includes the following selections.

This selection is accessed from the Setup selection on the Main screen.

Product Name

This selection allows you to assign a alphanumeric code to the filling details of that particular program. Product Names can be used to associate Programs with specific product types, containers, etc. Up to 20 characters (0-9 & A/a-Z/z) can be used.

This selection is available from the Setup Target Weight screen.

Factory Setting: (blank)
Valid Entries: 20 characters

Target Weight

Specifies the final, filled weight of product in the container.

This selection is available from the Setup Target Weight screen.

Factory Setting: 0.000
Valid Entries: 0.000-999.999

PreAct Weight

PreAct is the amount of product in-transit from the vibrating pan to the container. This setting can be used to compensate for in-flight product into calculations of the target weight.

This selection is accessed from each of the Setup Target Weight screen.

Factory Setting: 0.000
Valid Entries: 0.000-9.999

Setup Vibration

Tolerance Weight

Defines the amount over and under the selected Target Weight that will be considered as accept or reject.

For convenience, the controls calculate the corresponding high and low limit weight range based on the target and tolerance settings.

This selection is available from the Setup Target Weight screen.

Factory Setting: 0.000
Valid Entries: 0.000-999.999

Setup screen used to determine weight, vibration, and minimum/maximum fill time settings, as well as operation of a cascade vibrator (if included).

This selection is accessed from the Setup selection on the Main screen.

Bulk % of Target

Defines how much product is dispensed in the first stage fill as a percentage of final target weight.

The entry will vary according to product type, bulk vibration rate, desired accuracy levels, and production speeds. Greater percentages may result in faster production speeds but may result in less accuracy.

This selection is accessed from the Setup Vibration screen.

Factory Setting: 0.000
Valid Entries: 50.00-100.00

Bulk Vibration

Selects the rate of vibration during the first, bulk stage fill. Generally, greater speeds will result in more product, however greater speeds may yield less accuracy and greater preact (in-flight) amounts.

This selection is accessed from the Setup Vibration screen.

Factory Setting: 0.00
Valid Entries: 5.00-100.00

Dribble Vibration

Selects the rate of vibration during the second, dribble stage fill. Greater speeds (higher entries) will result in more product.

This selection is accessed from the Setup Vibration screen.

Factory Setting: 0.00
Valid Entries: 5.00-100.00

Minimum Fill Time

Specifies the minimum time for a fill cycle used to identify problems or faults. If the fill time does not attain this minimum value, an error message is generated indicating a possible problem.

The Minimum Fill Time should be set at a point where unacceptable weight containers occur (below minimum allowable tolerance).

This selection is accessed from the Setup Vibration screen.

Factory Setting: 0.000
Valid Entries: 0.000-9.999

Maximum Fill Time

Specifies a maximum time allowable for a fill cycle used to identify problems or faults. If the fill time exceeds this value, an error message is generated indicating a possible problem.

The Maximum Fill Time should be set where undue product spillage occurs by overfilling.

This selection is accessed from the Setup Vibration screen.

Factory Setting: 0.000
Valid Entries: 0.000-30.000

Drop Time

Specifies the time required for product to drop into the discharge nozzle. The entry will vary according to the type of product, overall accuracy levels, and desired production rates.

This selection is accessed from the Setup Vibration screen.

Factory Setting: 0.000
Valid Entries: 0.000-9.999

Cascade Vibration

If the Model VF110-E includes an additional, cascade vibrating pan, this selection provides access to selections and settings to control the cascade vibrator.

This selection is accessed from the Setup Vibration screen.

Cascade Vib On Delay

The On Delay prevents the cascade feeder from dispensing product at the secondary vibrator for the entered selection. This entry can be used to allow the pan to become evenly distributed with product at the start of filling.

This selection is accessed from the Cascade Vibration screen.

Factory Setting: 0.000
Valid Entries: 0.000-9.999

Bulk Vibration

Selects the rate of vibration during the first, bulk stage fill of the cascade feeder. Generally, greater speeds will result in more product, however greater speeds may yield less accuracy and greater preact (in-flight) amounts.

This selection is accessed from the Cascade Vibration screen.

Factory Setting: 0.00
Valid Entries: 5.000-100.000

Dribble Vibration

Selects the rate of vibration during the second, dribble stage fill of the cascade feeder. Greater speeds (higher entries) will result in more product.

This selection is accessed from the Cascade Vibration screen.

Factory Setting: 0.00
Valid Entries: 5.000-100.000

Primary Vib

Selection that returns to the primary Setup Vibration screen.

This selection is accessed from the Cascade Vibration screen.

Setup Bucket

Screen includes selections to select how weight signals are accepted from the loadcell of the Weigh Bucket.

This selection is accessed from the Setup selection on the Main screen.

Bucket Tare Rate

This selection specifies how often the weigh bucket is re-zeroed before weight accepted to accommodate the build-up of product. Entry is the number of fill cycles occurring between taring, such as, an entry of 1 will tare the bucket for each cycle, 2, every other cycle, etc.

The entry will vary according to the type of product, overall accuracy levels, and desired production rates.

This selection is available from the Setup Bucket screen.

Factory Setting: 0
Valid Entries: 1-30,000

Bucket Tare Delay

Provides a delay before the scale is re-zeroed. This delay can be used to allow the bucket to stabilize before a tare occurs.

This selection is available from the Setup Bucket screen.

Factory Setting: 0.000
Valid Entries: 1.000-9.999

Bucket Open Time

Determines how long the bucket stays open to allow product to drop into the funnel. When this period elapses, the bucket closes.

This selection is available from the Setup Bucket screen.

Factory Setting: 0.000
Valid Entries: 0.200-9.999

Gate Control

Selects operation of a product gate control that is actuated to inhibit product flow during filling. The following types of control can be selected:

None – Gate does not operate.

With Fill – Gate closes during filling to inhibit product flow to achieve greater accuracy.

Dribble Fill – Gate closes during dribble stage to inhibit product flow to achieve greater accuracy.

Selection is color-coded for a quick, visual indication of current setting. Selection appears Green when selected as With Fill or Dribble Fill. Selection appears Red when selected as None.

This selection is available from the Setup Bucket screen.

Factory Setting: None (Red)

Valid Entries: With Fill (Green), Dribble Fill (Green), None (Red)

Setup Level Control

Setup screen used to adjust how product resupply equipment operates with a Level Control instrument.

This screen is accessed from the Setup selection on the Main screen.

On/Off Time

Provides a variable delay when the Level Control detects low product level and product resupply equipment is actuated. Delay can be used to prevent over-filling of the hopper or to keep infeed lines charged with product.

These selections are accessed from the Setup Level Control screen.

Factory Settings: 0.000

Valid Entries: 0.000-9.999

Scale

The Scale screen provides access to selections and displays of the loadcell scale of the Weigh Bucket.

The scale can be individually adjusted for specific operating conditions using these selections. Additionally, the scale can be re-calibrated to ensure accurate weighing.

The Scale screen is accessed from the Scale selection of the Main screen.

Raw Counts

Displays the input from the loadcell to verify that the loadcell is responding. If a weight is present on the scale and Raw Counts doesn't register, failure of the loadcell may be suspected.

This selection is available from the Scale screen.

Scale Weight

Indicates weight present on the scale. This display can be used to verify correct scale operation or to indicate if calibration required.

This selection is available from the Scale screen.

Calibrated Weight

Provides entry of a standard mass value used during the calibration process.

Entry should correspond to the heaviest weight package of your application.

This selection is available from the Scale screen.

Factory Setting: 0.000
Valid Entries: 0.000-999.999

Start Cal.

Initiates the calibration process. A procedure to perform calibration is provided elsewhere in this manual (see "Using the Controls").

This selection is available from the Scale screen.

Step #1-#4

Completes the calibration sequence for each scale. Instructions appear on the screen to complete each step.

This selection is available from the Scale screen.

Test

Test screens provide entries and displays useful in initial setup, testing, troubleshooting/servicing, and adjusting the feeder. These selections are described in the following.

Test screens and selections are accessed from the Test selection of the Main screen.

Test Vibrator

Screen that includes selections to operate vibrators, display weights, and operate the weigh bucket. Selections are described in the following.

This screen is available from the Test selection of the Main screen.

Vibration Rate

Selects speed rate for testing the vibrator. This selection can be used to verify correct vibration operation as well as test different vibration rates affect on product flow.

This selection is available from the Test Vibrator screen.

Factory Setting: 0.00
Valid Entries: 0.000-100.000

Test Vib

Operates the vibrator for testing, adjustment, etc. Pressing the selection turns the vibrator on and off. Vibration operates at the rate selected from the Vibration Rate selection (see previous).

This selection is available from the Test Vibrator screen.

Scale Weight

Displays the present value from the loadcell at the weigh bucket to identify and diagnose problems, faults, or verify correct operation.

This selection is available from the Test Vibrator screen.

Tare

Re-zeroes the weigh bucket scale for testing, adjustment, etc.

This selection is available from the Test Vibrator screen.

Stepper Sensor Indicator

Displays when the Stepper Motor actuator is in the designated “Home” position. Indicator appears Green when at “Home” and Red when not in home.

This selection is available from the Test Vibrator screen.

Stepper Time

Specifies a time for the bucket to be opened by the Stepper actuator. This selection can be used to test different time values to increase production rates.

This selection is available from the Test Vibrator screen.

Factory Setting: 0.000
Valid Entries: 0.050-9.999

Open Bucket

Selection to individually operate the weigh bucket. The bucket can be operated to verify proper movement, adjustment, and/or testing of weigh bucket air cylinder, linkage, etc.

!!! WARNING !!!

Operation of the Bucket may present a safety hazard. Take appropriate precautions to protect operating personnel and other equipment when testing this equipment.

Pressing the Bucket Open opens the bucket.

This selection is available from the Test Vibrator screen.

Close Bucket

Selection to individually operate the weigh bucket. The bucket can be operated to verify proper movement, adjustment, and/or testing of weigh bucket air cylinder, linkage, etc.

!!! WARNING !!!

Operation of the Bucket may present a safety hazard. Take appropriate precautions to protect operating personnel and other equipment when testing this equipment.

Pressing the Bucket Close closes the bucket.

This selection is available from the Test Vibrator screen.

Test Cascade Vibrator

Screen that includes selections to operate the cascade vibrator, display weights, and operate the weigh bucket. Selections are described in the following.

This screen is available from the Test selection of the Main screen.

Vibration Rate

Selects speed rate for testing the cascade vibrator. This selection can be used to verify correct vibration operation as well as test different vibration rates affect on product flow.

This selection is available from the Test Cascade Vibrator screen.

Factory Setting: 0.00

Valid Entries: 0.000-100.000

Test Cascade Vib

Operates the cascade vibrator for testing, adjustment, etc. Pressing the selection turns the vibrator on and off. Vibration operates at the rate selected from the Vibration Rate selection (see previous).

This selection is available from the Test Cascade Vibrator screen.

Scale Weight

Displays the present value from the loadcell at the weigh bucket to identify and diagnose problems, faults, or verify correct operation.

This selection is available from the Test Cascade Vibrator screen.

Tare

Re-zeroes the weigh bucket scale for testing, adjustment, etc.

This selection is available from the Test Cascade Vibrator screen.

Stepper Sensor Indicator

Displays when the Stepper Motor actuator is in the designated "Home" position. Indicator appears Green when at "Home" and Red when not in home.

This selection is available from the Test Cascade Vibrator screen.

Stepper Time

Specifies a time for the bucket to be opened by the Stepper actuator. This selection can be used to test different time values to increase production rates.

This selection is available from the Test Cascade Vibrator screen.

Factory Setting: 0.000
Valid Entries: 0.050-9.999

Open Bucket

Selection to individually operate the weigh bucket. The bucket can be operated to verify proper movement, adjustment, and/or testing of weigh bucket air cylinder, linkage, etc.

!!! WARNING !!!

Operation of the Bucket may present a safety hazard. Take appropriate precautions to protect operating personnel and other equipment when testing this equipment.

Pressing the Bucket Open opens the bucket.

This selection is available from the Test Cascade Vibrator screen.

Close Bucket

Selection to individually operate the weigh bucket. The bucket can be operated to verify proper movement, adjustment, and/or testing of weigh bucket air cylinder, linkage, etc.

!!! WARNING !!!

Operation of the Bucket may present a safety hazard. Take appropriate precautions to protect operating personnel and other equipment when testing this equipment.

Pressing the Bucket Close closes the bucket.

This selection is available from the Test Cascade Vibrator screen.

Test Product Request

Test screen used to display signal from the Level Control instrument and test operation of product request signal to product re-supply equipment.

This screen is available from the Test selection of the Main screen.

Hopper Low Level Indicator

Displays status from the Level Control detecting product level. Indicator appears Green when sufficient product detected in the hopper or Red when at low level.

This selection is available on the Test Product Request screen.

Test Prod. Request

If the feeder is used with other equipment for product re-supply, this selection can be used to turn the equipment on or off for testing, adjustment, etc.

!!! WARNING !!!

Operation of Product Infeed equipment may present a safety hazard. Take appropriate precautions to protect operating personnel and other equipment when testing this equipment.

Pressing the TEST PROD. REQUEST switch icon turns equipment on & off, accordingly.

This selection is available on the Test Product Request screen.

Factory Setting: Off
Valid Entries: On, Off

Test Aux I/O

Test screen that allows inputs (I) and outputs (O) of the control panel to be displayed and operated.

This screen is available from the Test selection of the Main screen.

Initiation Indicator

Displays the status of the actuated initiation signal (footswitch) to the VF110-E. Indicator appears Green when signal is on or Red when off.

This selection is available from the Test Aux I/O screen.

E-Stop Indicator

Displays the signal from the Emergency Stop (E-Stop) switch on the control enclosure. Indicator appears green when switched off and red when on.

This selection is available from the Test Aux I/O screen.

Test Vib Gate #1/#2

Selections used to operate (optional) gate cutoff components for testing, adjustment, etc. Pressing the corresponding switch icon operates each Vib Gate, accordingly.

!!! WARNING !!!

Operation of a Vib Gate may present a safety hazard. Take appropriate precautions to protect operating personnel and other equipment when testing this equipment.

This selection is available from the Test Aux I/O screen.

Factory Setting: Off
Valid Entries: On, Off

Ok to Dump Signal

Operates the Ok to Dump signal to external equipment for testing. Pressing the switch icon turns the signal on and off.

!!! IMPORTANT !!!

It may be necessary to refer to the wiring diagram accompanying this manual to locate and identify the ok to Dump signal and/or connections

This selection is available from the Test Aux I/O screen.

Factory Setting: Off
Valid Entries: On, Off

End of Fill Signal

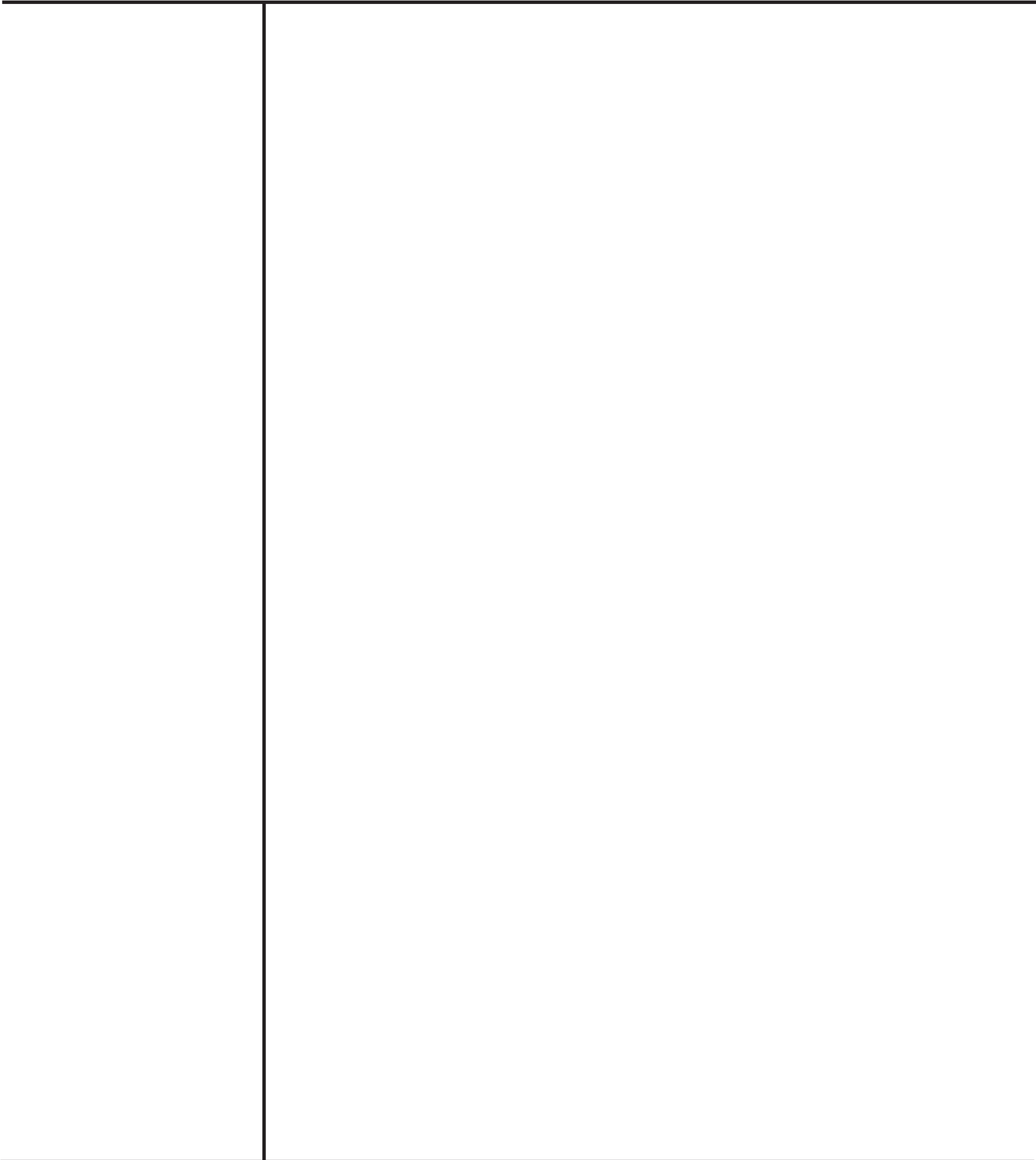
Operates the End Of Fill signal to external equipment for testing. Pressing the switch icon turns the signal on and off.

!!! IMPORTANT !!!

It may be necessary to refer to the wiring diagram accompanying this manual to locate and identify the End Of Fill signal and/or connections

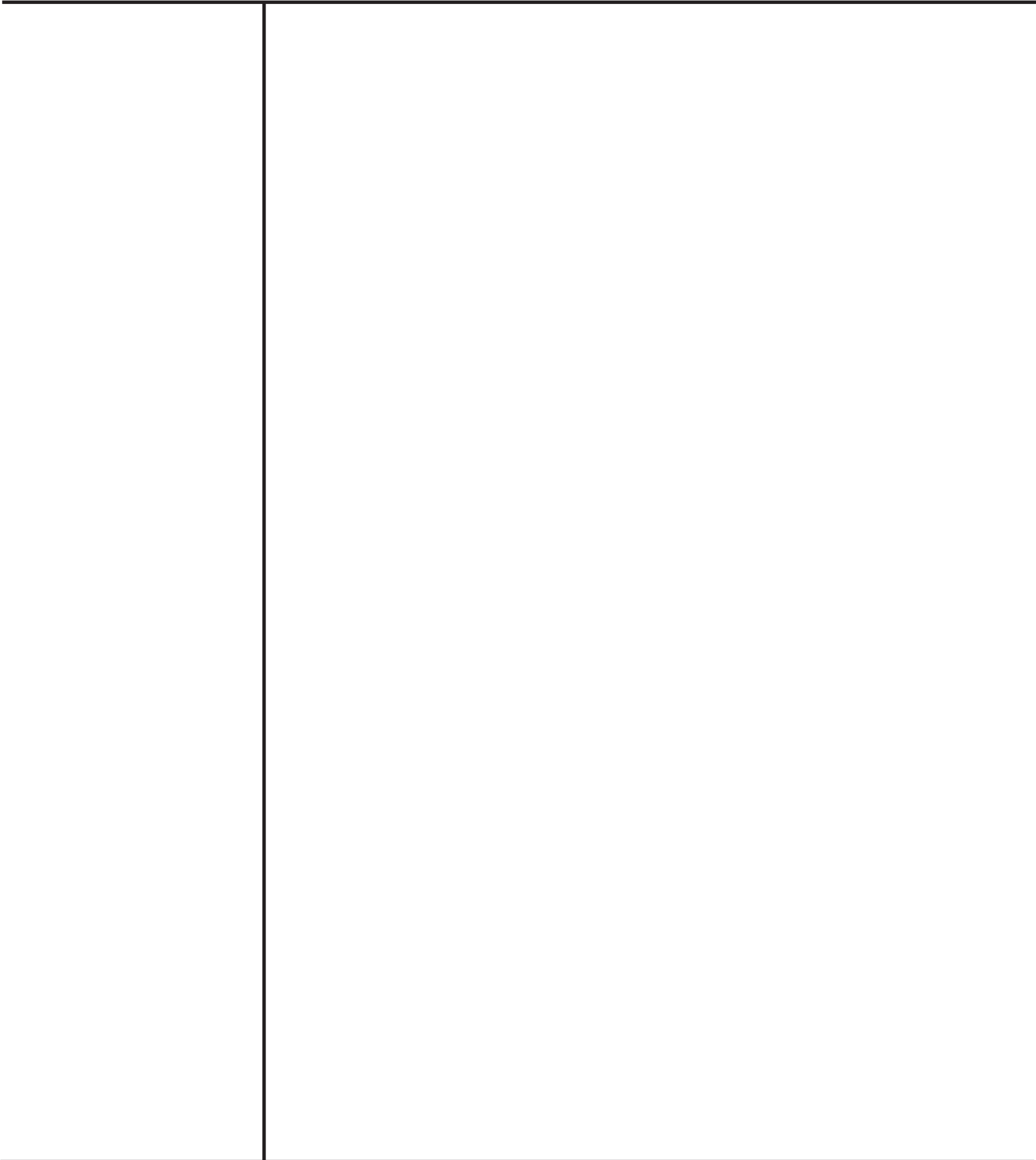
This selection is available from the Test Aux I/O screen.

Factory Setting: Off
Valid Entries: On, Off



APPENDIX

Setup Recipe Worksheet
Menu and Selection Reference



Setup Recipe Worksheet

Product: _____

Container: _____

Setup Recipe Number -- --

Setup Target Weight

Product Name -----
 Target Weight -- . -- --
 Tolerance Weight -- . -- --
 PreAct Weight - . -- --

Setup Vibration

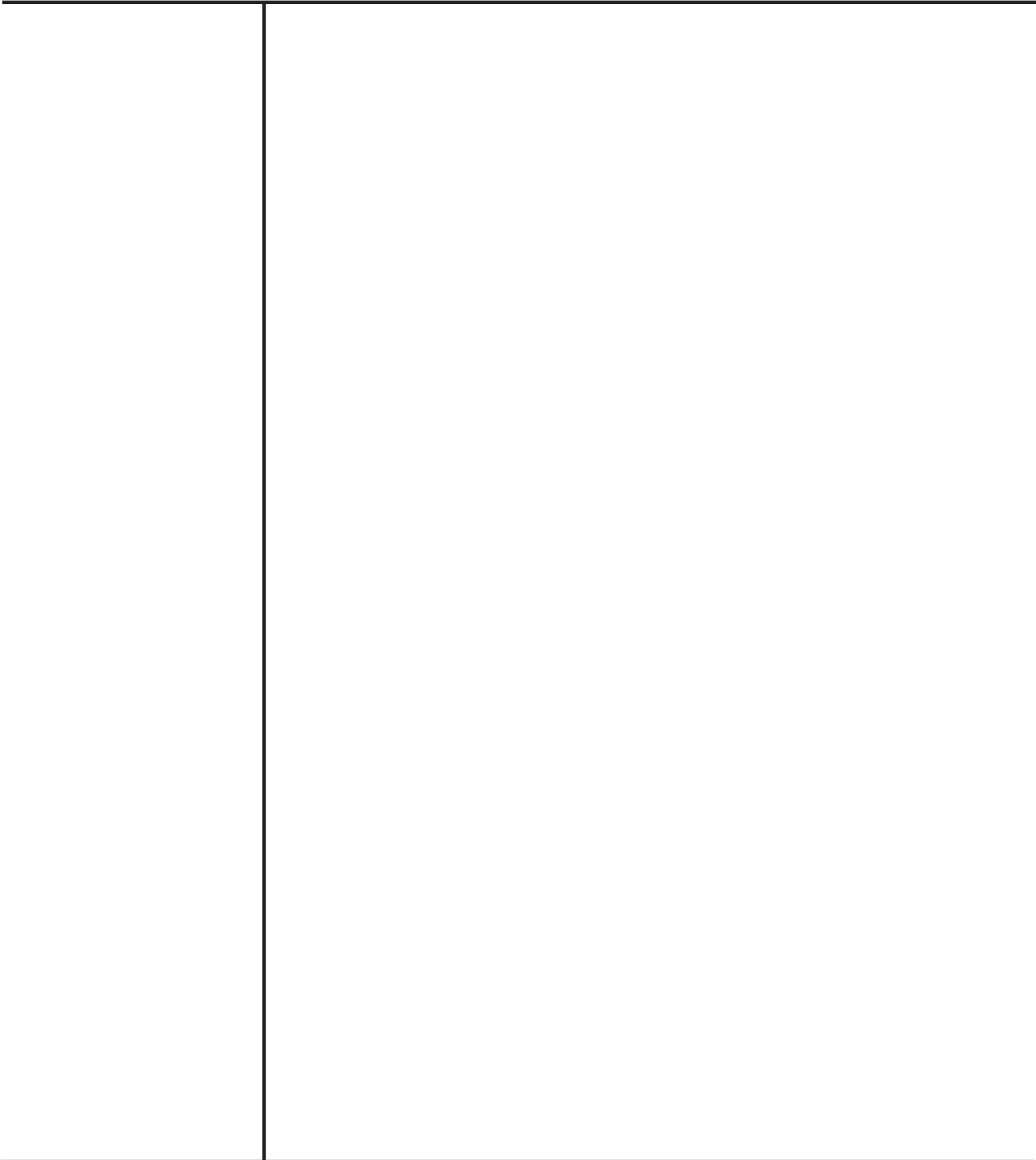
Bulk % of Target -- . -- --
 Bulk Vibration -- . -- --
 Dribble Vibration -- . -- --
 Minimum Fill Time - . -- --
 Maximum Fill Time -- . -- --
 Drop Time - . -- --
Cascade Vibration
 Cascade Vib On Delay - . -- --
 Bulk Vibration -- . -- --
 Dribble Vibration -- . -- --

Setup Bucket

Bucket Tare Rate -- . -- --
 Bucket Tare Delay - . -- --
 Bucket Open Time - . -- --
 Gate Control _ With Fill (Green) _ Dribble Fill (Green) _ None (Red)

Setup Level Control

Off Time - . -- --
 On Time - . -- --

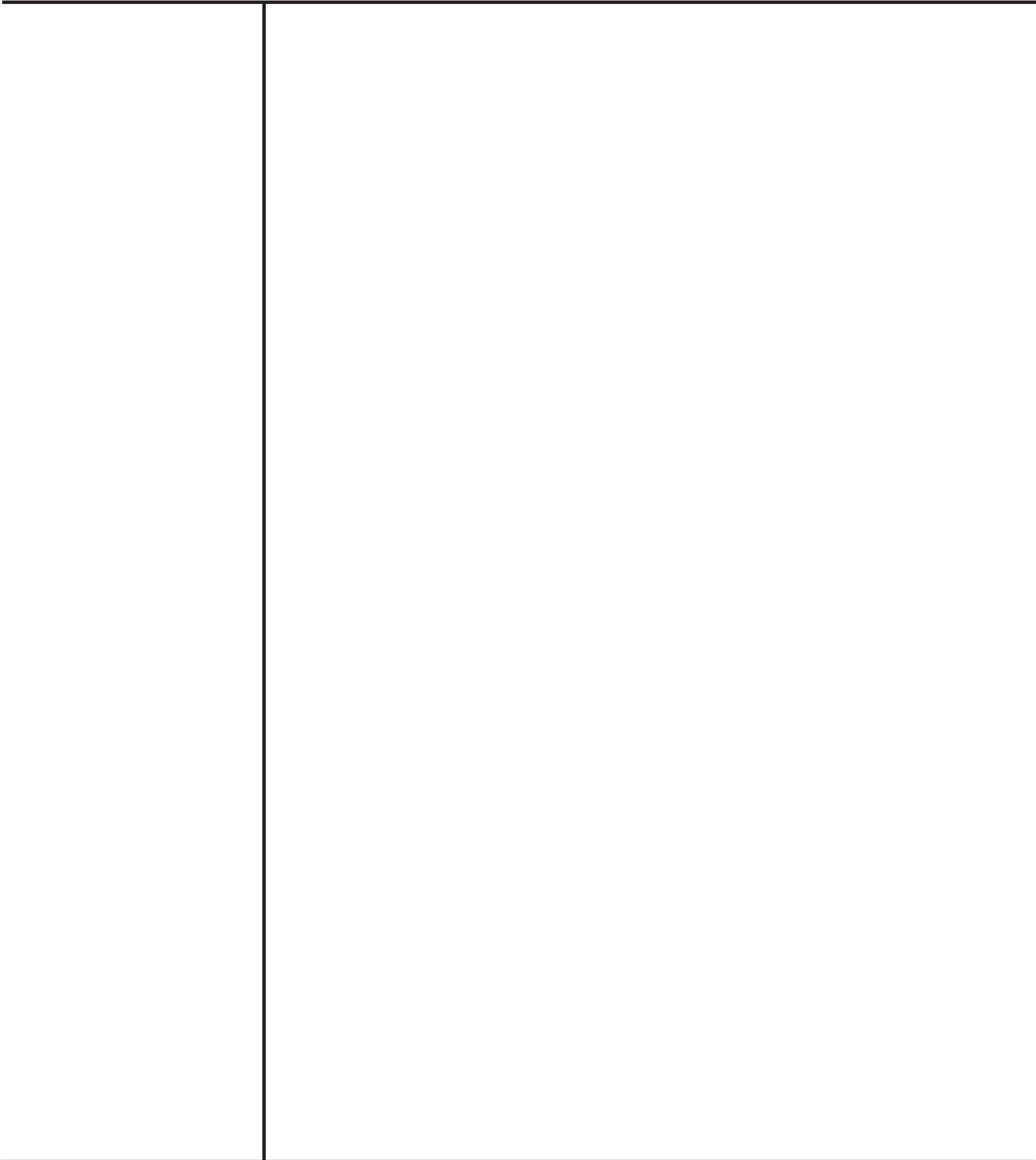


Menu and Selection Reference

| <i>Menu Selection</i> | <i>Factory Setting</i> | <i>Valid Entries</i> |
|-----------------------------------|------------------------|----------------------------|
| Main | | |
| Start | | (press to start) |
| Production Count display | @ | @ |
| CPM display | @ | @ |
| Primary Bulk Fill Time display | @ | @ |
| Primary Dribble Fill Time display | @ | @ |
| Weight display | @ | @ |
| Scale Weight display | @ | @ |
| Single Cycle | | (press for 1 fill) |
| Learn Mode | | (press for access) |
| Learn Time | 0.000 | 5.000-30.000 |
| Set Learn | | (press to set) |
| Learn Mode | Off (Red) | On (Green), Off (Red) |
| Bulk Weight display | @ | @ |
| Dribble Weight display | @ | @ |
| Single Cycle | | (press to cycle) |
| Bulk % of Target | 0.00 | 50.000-100.000 |
| Bulk Vibration | 0.00 | 5.000-100.000 |
| Dribble Vibration | 0.00 | 5.000-100.000 |
| Main | | (press to return) |
| Stop | | (press to stop) |
| Menu Selection | | Select, Setup, Scale, Test |
| Select | | |
| Select Recipe Number | 0 | 1-50 |
| Clear Stats | | (press to clear) |
| Language | English | Spanish,English |
| Setup | | |
| Setup Target Weight | | |
| Product Name | (blank) | 20-chars. |
| Target Weight | 0.000 | 0.000-999.999 |
| Tolerance Weight | 0.000 | 0.000-999.999 |
| PreAct Weight | 0.000 | 0.000-9.999 |
| Low/High Limit Weight display | @ | @ |
| Setup Vibration | | |
| Bulk % of Target | 0.00 | 50.000-100.000 |
| Bulk Vibration | 0.00 | 5.000-100.000 |
| Dribble Vibration | 0.00 | 5.000-100.000 |
| Minimum Fill Time | 0.000 | 0.000-9.999 |
| Maximum Fill Time | 0.000 | 0.000-32.000 |
| Drop Time | 0.000 | 0.000-9.999 |
| Cascade Vibration | | (press to access) |
| Cascade Vib On Delay | 0.000 | 0.000-9.999 |
| Bulk Vibration | 0.00 | 5.000-100.000 |
| Dribble Vibration | 0.00 | 5.000-100.000 |
| Primary Vib | | (press to return) |

| | | |
|------------------------------|------------|--|
| Setup Bucket | | |
| Bucket Tare Rate | 0 | 1-30,000 |
| Bucket Tare Delay | 0.000 | 1.000-9.999 |
| Bucket Open Time | 0.000 | 0.200-9.999 |
| Gate Control | None (Red) | With Fill (Green), Dribble Fill (Green), None (Red) |
| Setup Level Control | | |
| Off Time | 0.000 | 0.000-9.999 |
| On Time | 0.000 | 0.000-9.999 |
| Scale | | |
| Scale #1 Calibration | | |
| Raw Count display | @ | @ |
| Scale Weight display | @ | @ |
| Calibrated Weight | 0.000 | 0.000-999.999 |
| Start Cal | | (press to start) |
| Step #1-#4 | | (press to calibrate) |
| Test | | |
| Test Vibrator | | |
| Vibration Rate | 0.00 | 0.000-100.000 |
| Test Vib | | (press to test) |
| Scale Weight display | @ | @ |
| Tare | | (press to tare) |
| Stepper Sensor Indicator | @ | @ |
| Stepper Time | 0.000 | 0.050-9.999 |
| Open Bucket | | (press to test) |
| Close Bucket | | (press to test) |
| Test Cascade Vibrator | | |
| Vibration Rate | 0.00 | 0.000-100.000 |
| Test Cascade Vib | | (press to test) |
| Scale Weight display | @ | @ |
| Tare | | (press to tare) |
| Stepper Sensor Indicator | @ | @ |
| Stepper Time | 0.000 | 0.050-9.999 |
| Open Bucket | | (press to test) |
| Close Bucket | | (press to test) |
| Test Product Request | | |
| Hopper Low Level Indicator | @ | @ |
| Test Prod. Request | Off | On, Off |
| Test Aux I/O | | |
| Initiation Indicator | @ | @ |
| E-Stop Indicator | @ | @ |
| Test Vib. Gate #1 | Off | On, Off |
| Test Vib. Gate #2 | Off | On, Off |
| Ok to Dump Signal | Off | On, Off |
| End of Fill Signal | Off | On, Off |

@ Display only



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