# PRIMO COMBI

OPERATOR'S MANUAL

WEIGHPACK SYSTEMS INC.

# PREFACE

Thank you for purchasing from WeighPack Systems Inc.

It is strongly recommended that this manual be read before use of the WeighPack machine.

This manual contains detailed descriptions of the structure, function, operation and maintenance of the WeighPack machine. Please note that due to continuous improvements, the contents of this manual may differ slightly from the machine received. In the event this document cannot provide the answers to problems arising from machine operation or other circumstances, please contact the WeighPack service department immediately.

# CONTACT US

| | |
|---|---|
| Head Office Phone Number | 1-888-WEIGHPACK |
| Tech Support Email Address | TECHSUPPORT@WEIGHPACK.COM |
| WeighPack Website | WWW.WEIGHPACK.COM |

Disclaimer: the H.M.I shown in this manual may be outdated. For any questions, please contact Weighpack Systems.

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# SAFETY

## IMPORTANT SAFETY INFORMATION
## READ ALL INSTRUCTIONS BEFORE OPERATING

Do not operate the machine when tired, ill, or under the influence of alcohol, drugs or medication.

The instructions and data in this manual are vital to the proper installation and operation of the machine. In order to avoid accidents due to faulty installation or operation of the machine, please ensure that these instructions are read by the individuals who will install, operate or maintain the machine. The instructions issued in this manual are not meant to cover all possible conditions and situations that may occur.

## INJURY PREVENTION

1. Limbs, hair, loose clothing and accessories should remain clear of moving or heated parts of the machine, as it may get caught and pull the operator into the machine.
2. Do not power on the machine if any of the machine's components have been removed or modified.
3. Do not to leave any objects near any of the machine's moving components, or on top of the machine.
4. Do not perform maintenance or cleaning on machinery while it is in operation or energized.
5. Always lock out / tag out the machine before performing any maintenance work.

## FIRE PREVENTION

1. Keep a fire extinguisher near the machine.
2. All electrical components must be kept dry, clean and in good condition.
3. Lockout / Tagout the machine before maintenance.

Electrical fires can occur if any wires are scratched, corroded, color-faded, uninsulated, or have damaged ends. Wires should be changed immediately if presenting any of the above conditions. Any exposed electrical components should never come into contact with the ground-connector or any other electrically conductive objects; such as tools.

## ELECTRICAL PRECAUTIONS

1. Only trained professionals should install, examine and maintain the electronics of the machine.
2. Do not store liquids near the machine or near the machine's electrical components. Exposing electrical components to excess moisture or direct contact with liquids risks a short-circuit.
3. Should a liquid spill onto the machine, turn off the power immediately and once having cleaned the liquid, test all the electrical components to ensure they are functioning properly.
4. To avoid short-circuiting, keep all wires and connections clean. Keep limbs, hand-held tools, and any other electrically conductive objects away from exposed electrical components.
5. Ensure the electrical cabinet is always closed, unless needed for maintenance.
6. The machine must be grounded. Ensure that the ground wire is firmly connected with the ground before starting the machine.
7. After installation check all electrical connections and test all electrical circuits before powering on.

Improper connection of the machine's grounding conductor can result in a risk of electrical shock. Check with a qualified electrician or serviceman if there is doubt as to whether or not the machine's outlets are properly grounded.

# WARNING LABELS

Warning labels serve to advise the operator of potential danger. Warning labels should be kept clearly visible at all times, and are not to be ignored or removed from the machine. Removal of warning labels from the machine could result in an increase in machine related accidents. Should the machine require a replacement label please contact the company immediately.

| Symbol | Description |
|---|---|
|  | **PHYSICAL HARM**<br>Take caution when in the presence of moving parts as they may cut, crush, dismember or otherwise injure body parts in close proximity.<br>Loose clothing or accessories around moving components may get caught and pull the operator into the machine. |
|  | **BURN HAZARD**<br>Many surfaces of the machine will become extremely hot during the course of its operation. Please avoid contacting the indicated hot surfaces to avoid burns.<br>Surfaces will remain hot for an extended period of time after powering down the machine. Ensure the machine is completely cool before contact. |
|  | **HIGH VOLTAGE**<br>While powered, the machine's electrical systems possess sufficient voltage to electrocute any who misuse it.<br>Do not attempt to tamper with the electrical systems of the machine. If damaged wiring or damaged circuits are discovered, please power the machine down and contact the company immediately. |

# MACHINE SPECIFICATIONS

| PARAMETER: | *PRIMOCOMBI 0.5L* | *PRIMOCOMBI 2.5L* | *PRIMOCOMBI 5.0L* |
|---|---|---|---|
| POWER SUPPLY | **230** V (AC) | **230** V (AC) | **230** V (AC) |
| | **60** Hz | **60** Hz | **60** Hz |
| | **20** AMPS | **20** AMPS | **20** AMPS |
| | **1** PHASE | **1** PHASE | **1** PHASE |
| AIR PRESSURE (IF WASHDOWN) | **5** PSI (**0.3** BAR) | **5** PSI (**0.3** BAR) | **5** PSI (**0.3** BAR) |
| DIMENSIONS | LENGTH: **34** IN ( **86.4** CM ) | LENGTH: **51** IN ( **129.5** CM ) | LENGTH: **63** IN ( **160** CM ) |
| | WIDTH: **36** IN ( **91.4** CM ) | WIDTH: **45** IN ( **114.3** CM ) | WIDTH: **64** IN ( **162.6** CM ) |
| | HEIGHT: **43** IN ( **109.2** CM ) | HEIGHT: **55** IN ( **139.7** CM ) | HEIGHT: **67** IN ( **170** CM ) |

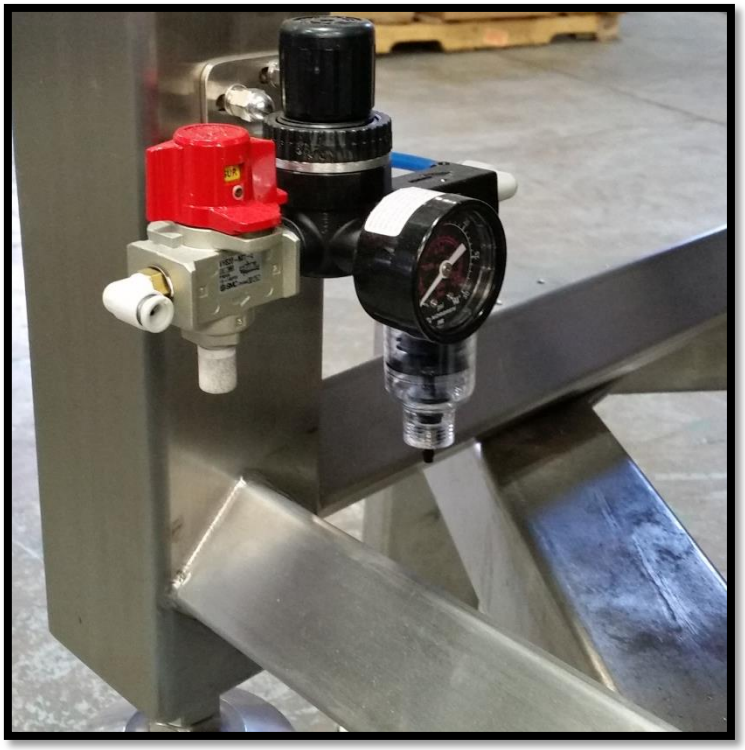
| **Buckets (liters)** | **0.5L** | | **2.5L** | | **5.0L** | |
|---|---|---|---|---|---|---|
| Weight Range (Imperial)* | 0.25 oz – 7 oz |  | 1 oz – 18 lbs |  | 8 oz – 55 lbs |  |
| Weight Range (Metric)* | 5 g – 200 g | | 28 g – 8 kg | | 225 g – 25 kg | |

# ELECTRICAL INSTALLATION

1. Static electricity can cause problems with electrical equipment and operation, ensure that the equipment is properly grounded during installation.
2. Ground the machine and test its ground resistance, if resistance is less than 5OHM then it is acceptable. Any auxiliary equipment should be grounded as well.
3. If static is present in bags, the installation of static eliminator may be required. If this feature is needed, please contact the company for additional information.

# INSTALLATION OF AIR SUPPLY **(WASHDOWN MODELS ONLY)**

If the machine is a washdown model, the machine's Filter Regulator will be located on the frame of the PRIMOCOMBI. The PRIMOCOMBI operates at **5PSI (0.3BAR)** and has an air consumption of **1CFM (0.03M$^3$/MIN.)** It is important to ensure that the air supply of the owner's facility can meet these specifications.



To Adjust Air Pressure

**1.** Pull the knob to release it and adjust the pressure.

**2.** If the knob is rotated clockwise, the inlet pressure will increase, if rotated counter clockwise it will decrease.

**3.** Press down on the knob to lock it in place again once the pressure changes have been completed.

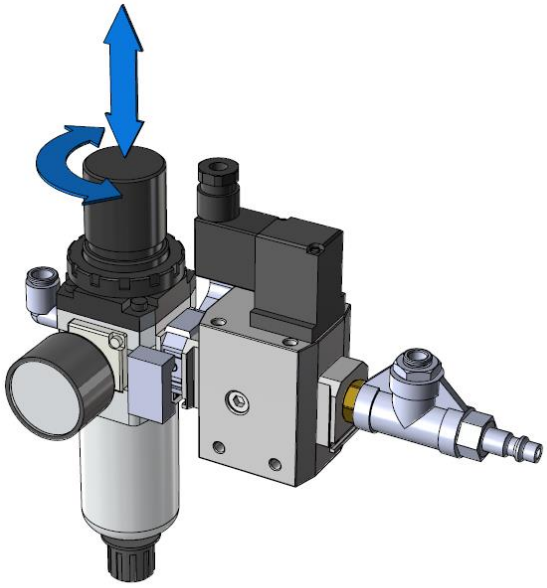
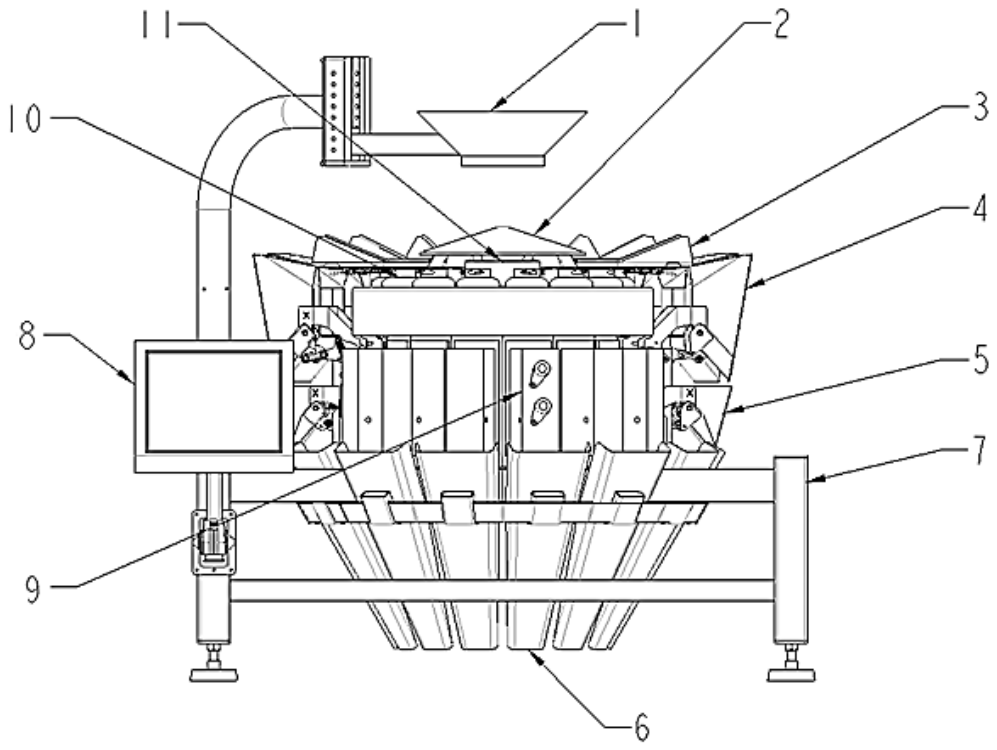
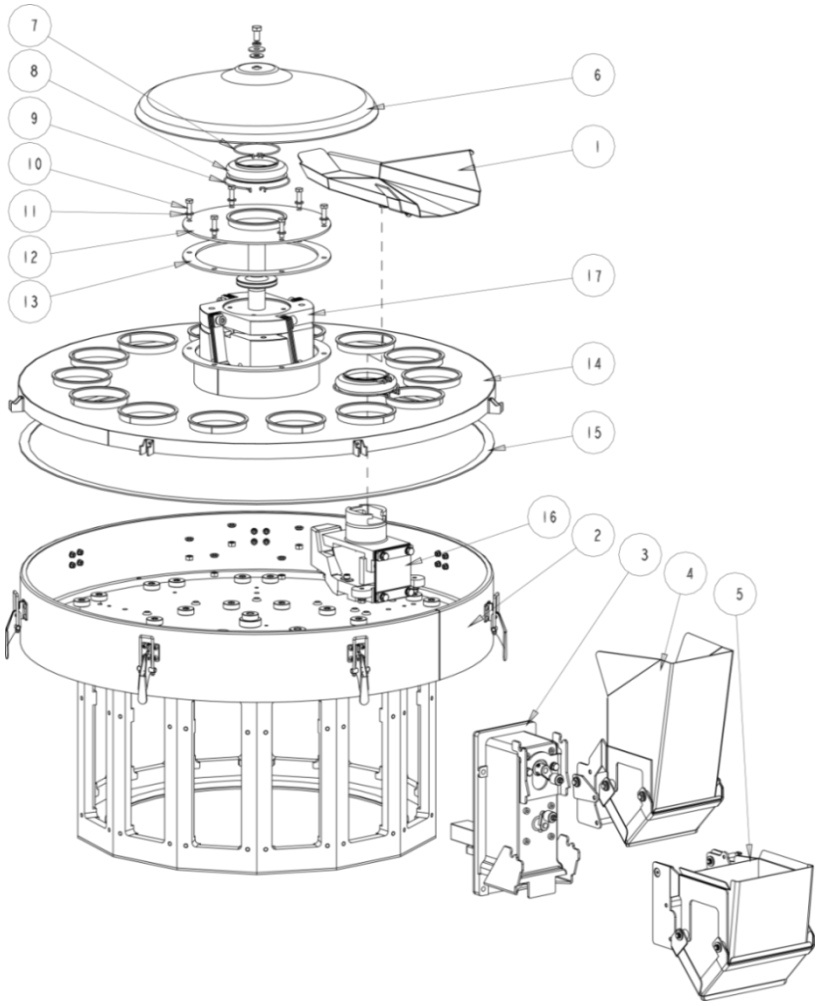


IMAGE FOR REPRESENTATION ONLY

# MACHINE OVERVIEW




| MECHANICAL ASSEMBLIES | | | |
|---|---|---|---|
| *ITEM* | *DESCRIPTION* | *ITEM* | *DESCRIPTION* |
| 1 | HOPPER | 7 | BASE FRAME |
| 2 | CENTER CONE | 8 | H.M.I. TOUCH SCREEN |
| 3 | LINEAR FEED PAN | 9 | STEP MOTOR LOAD CELL |
| 4 | FEED BUCKET | 10 | LINEAR VIBRATOR |
| 5 | WEIGH BUCKET | 11 | CENTER CONE VIBRATOR/MOTOR |
| 6 | DISCHARGE CHUTE | | |




| MECHANICAL ASSEMBLIES | | | |
|---|---|---|---|
| *ITEM* | *DESCRIPTION* | *ITEM* | *DESCRIPTION* |
| 1 | LINEAR PAN | 10 | HEX BOLT |
| 2 | TOWER | 11 | FLAT WASHER |
| 3 | STEP MOTOR & LOAD CELL ASSEMBLY | 12 | TOP COVER (FOR TOWER) |
| 4 | FEED BUCKET | 13 | GASKET |
| 5 | WEIGH BUCKET | 14 | TOWER COVER |
| 6 | CENTER CONE | 15 | GASKET |
| 7 | CLIP (SMALL) FOR DUST SEAL | 16 | LINEAR VIBRATOR ASSEMBLY |
| 8 | DUST SEAL | 17 | CENTER CONE VIBRATOR ASSEMBLY |
| 9 | CLIP (LARGE) FOR DUST SEAL | | |

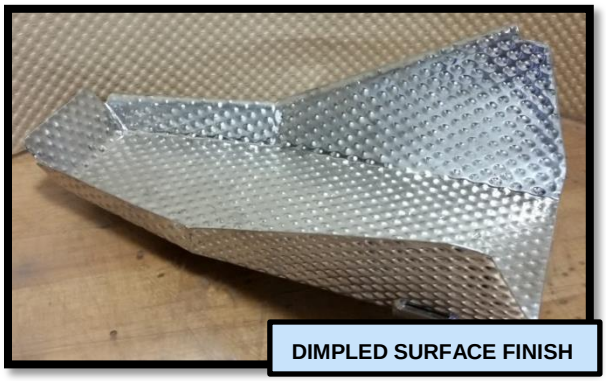
# MECHANICAL ASSEMBLIES

**WE RECOMMEND THAT THE OPERATOR HAVE THE FOLLOWING TOOLS AVAILABLE WHEN MAKING ADJUSTMENTS OR MAINTAINING THE MACHINE: METRIC ALLEN KEYS, METRIC SOCKET SET, METRIC WRENCHES, VOLTMETER, SCREW DRIVERS, TAPE MEASURE, RULER, CALIPER, ADJUSTABLE WRENCHES AND A GREASE GUN.**

**ENSURE THAT THE MACHINE HAS BEEN TURNED OFF, LOCKED OUT / TAGGED OUT BEFORE PERFORMING MECHANICAL ADJUSTMENTS.**

## FOOD CONTACT PARTS

**#4 SURFACE FINISH**



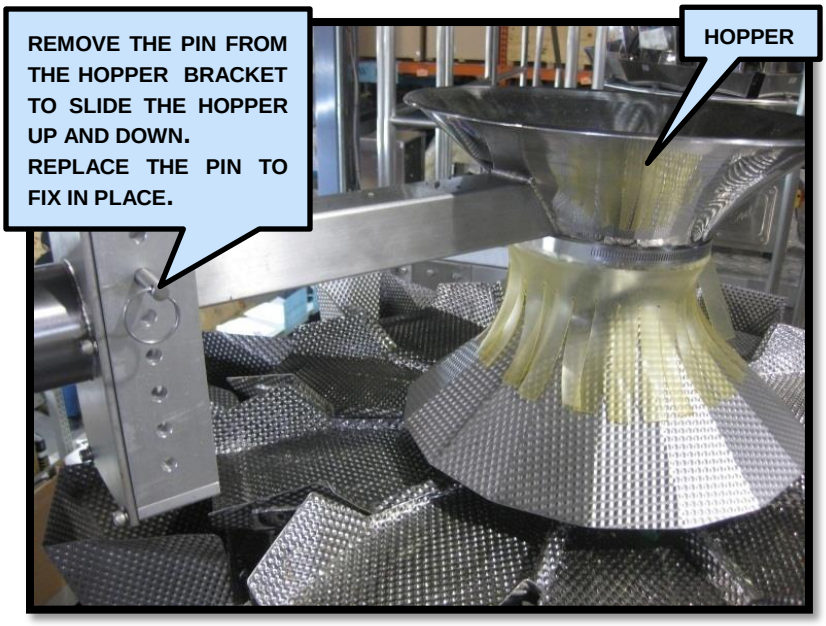
**DIMPLED SURFACE FINISH**

Stainless Steel food contact parts come in a variety of surface finish, depending on the application the machine is designed for. Throughout this document there will be examples of multiple stainless steel surface finishes.

## TYPES OF FINISHES

1. The #4 surface finish is used for non-stick granular products.
2. Dimpled surfaces are used for product that has a tendency to stick to food contact parts.
3. 7DL surfaces are used for food contact parts that handle especially sticky product.
4. Mirror surface finishes are used for loose flowing powdery product that builds up on rougher surfaces such as #4 finishes.

## HOPPER ASSEMBLY





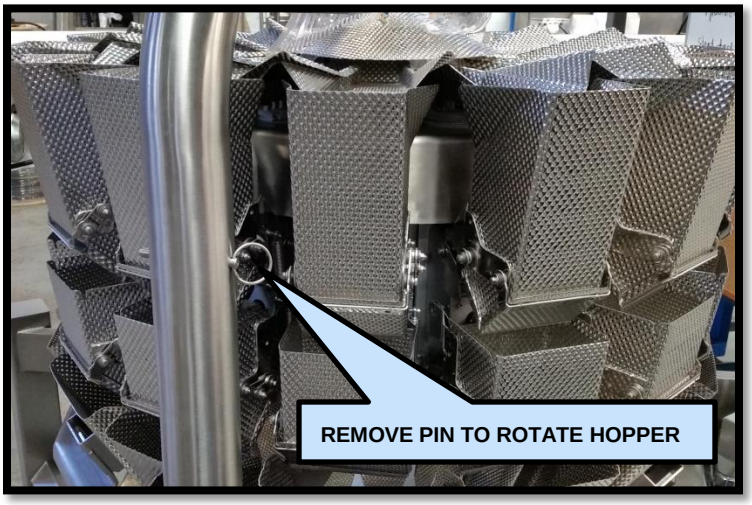
To adjust the height of the Hopper, remove the Hopper Bracket's pin (as seen in the image above) and slide the Hopper up or down before inserting the pin again. Take care not to misplace the pin.

THE HOPPER MAY BE EQUIPPED WITH A HAND CRANK FOR ADJUSTMENT, INSTEAD OF THE HOPPER BRACKET

HAND CRANK HOPPER ATTACHMENT (OPTIONAL)

The Hopper Post can be rotated out of the way to facilitate cleaning.

To do so, remove the Hopper Post Pin and rotate the post away from the machine. Take care not to misplace the pin. Rotate the Hopper Post back in place and re-insert the pin once cleaning is complete.

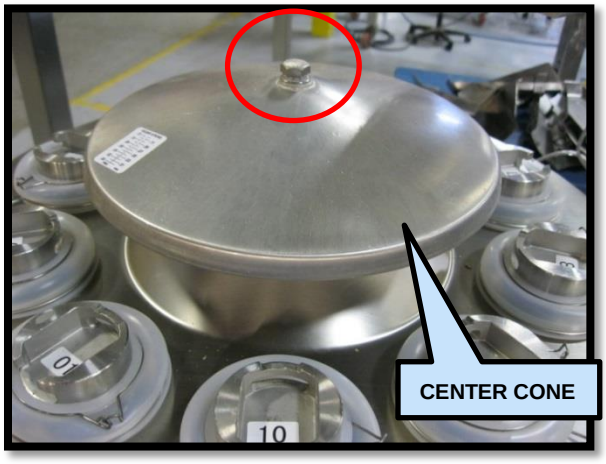


## CENTER CONE

The Center Cone of the scale is used to distribute product to the Linear Pans from the Hopper.

**SOME OF THESE MECHANICAL COMPONENTS ARE OPTIONAL, AND NOT INCLUDED IN EVERY PRIMO COMBI.**

## CENTER CONE VIBRATOR

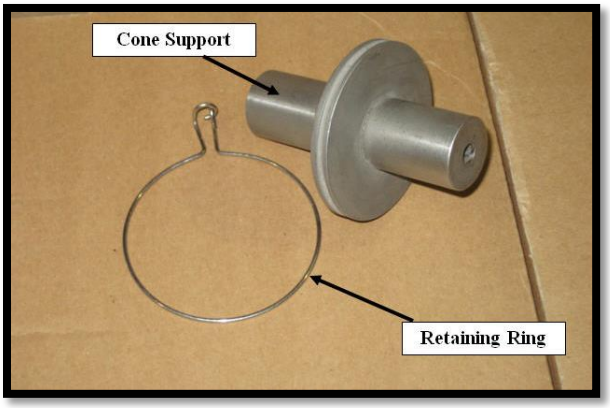


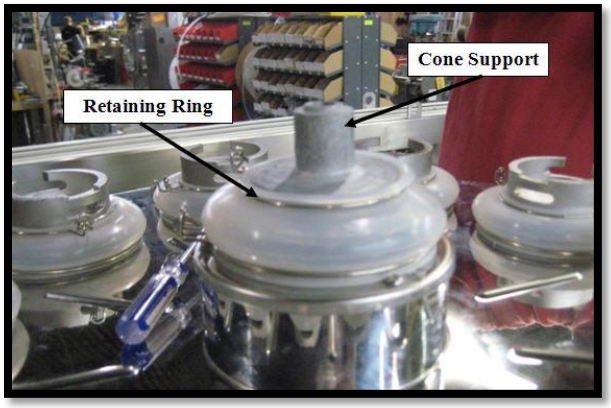


To access the center cone vibrator remove the center cone by unscrewed the nut seen in the image above, exposing the rubber cover underneath.

## CENTER CONE LOAD CELL

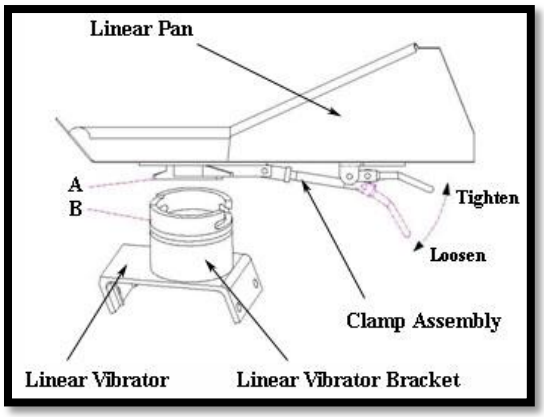
The Center Cone may be optionally equipped with a load cell, which will sense if a sufficient quantity of product is being fed from interfaced equipment to the Center Cone. If the Center Cone's load cell senses there is insufficient product on the Load Cell, it will signal for additional product to be fed to the Scale.



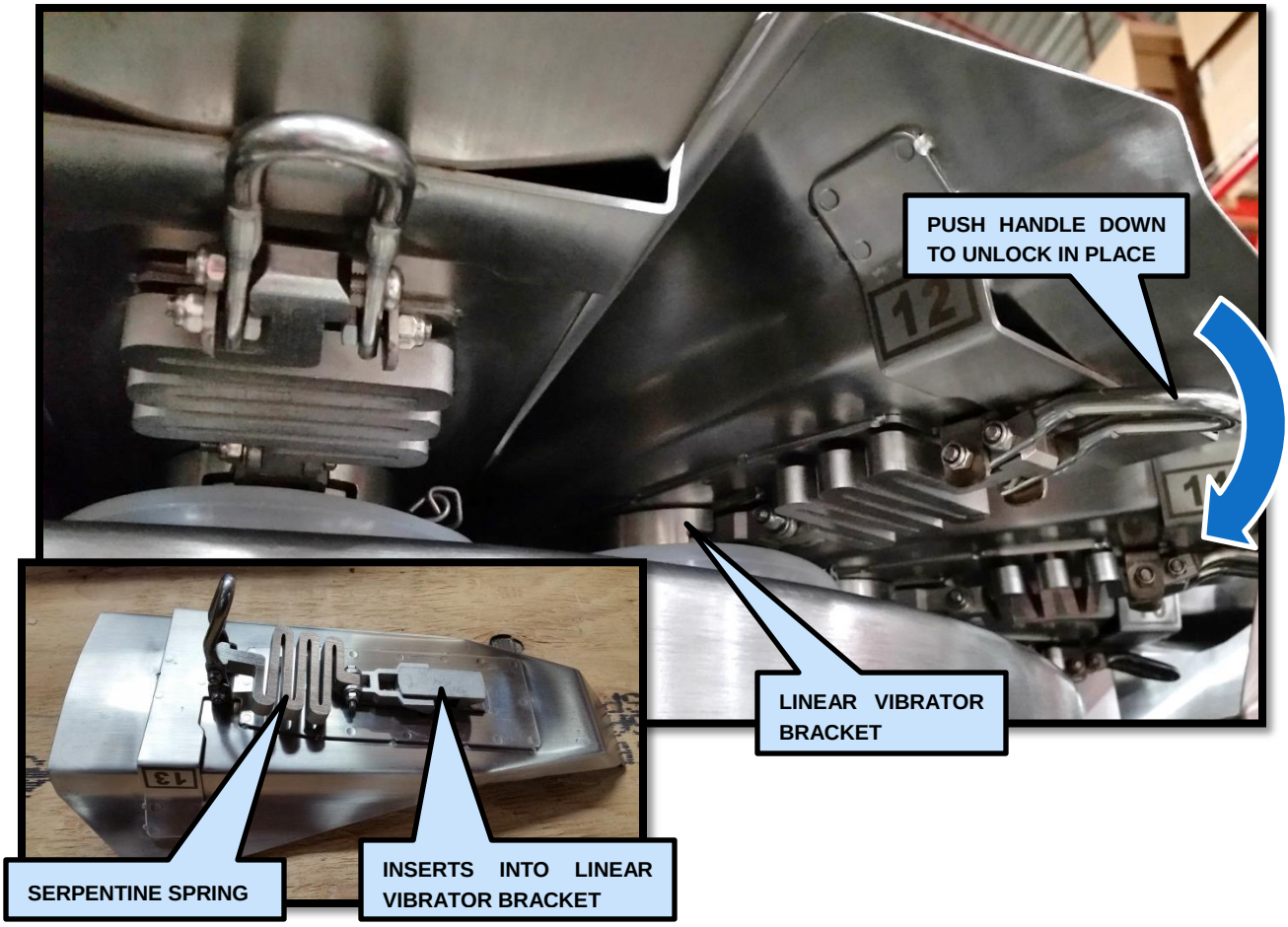

Using the Retaining Ring, fix the support as shown in the image above. Screw in the Center Cone using the provided nut and screw as shown in the image above. If a custom center cone is used, be sure to install all adapters with the Center Cone Support. The center cone may not vibrate or rotate correctly if the screw is too deep into the thread of the vibrator/motor.

## LINEAR PAN

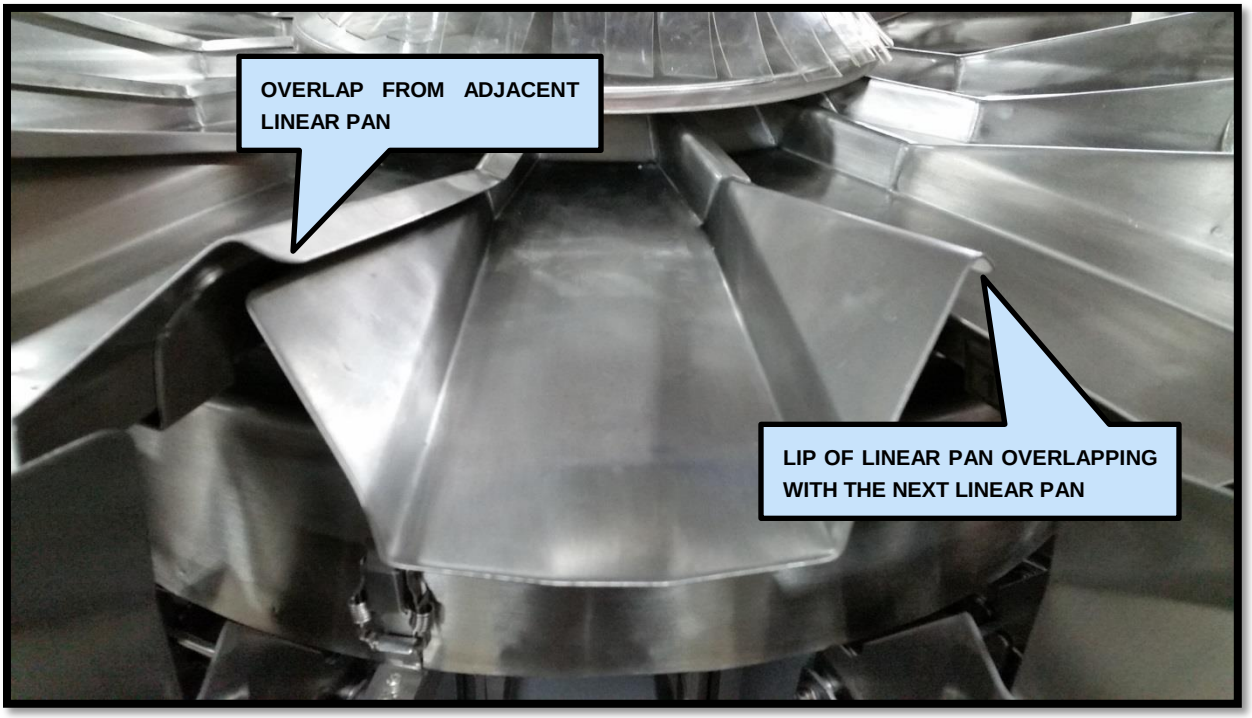



To remove the Linear Pan, push the Clamp Assembly's handle down until the Linear Pan is no longer held firmly in the Linear Vibrator Bracket. Once loose, carefully slip the Linear Pan out of its bracket.

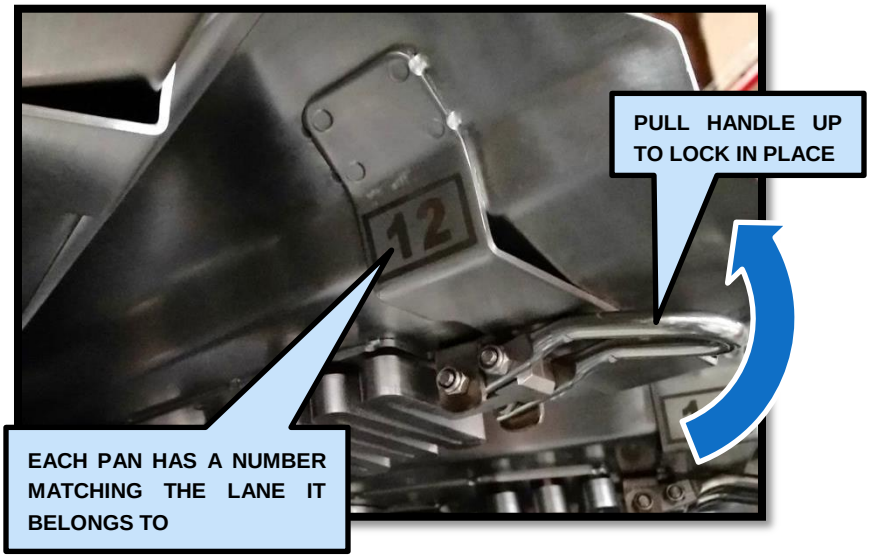
To install the Linear Pan, tilt the Linear Pan so that **A** inserts into **B** of the Linear Pan's Bracket. The Linear Pan must be level before it can then be locked in place by the Clamp Assembly.



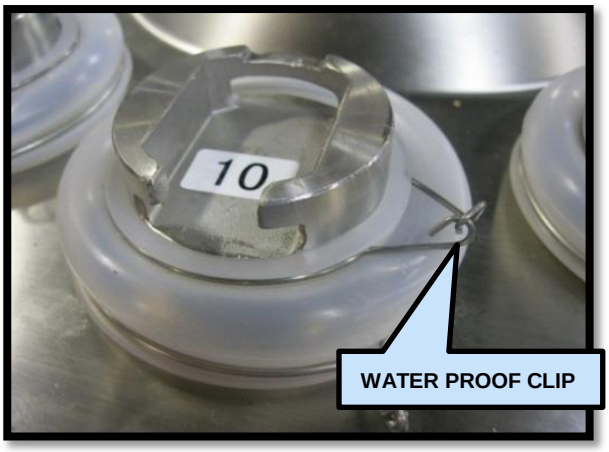
The Linear Pans should overlap each other but should never touch each other. Installed Linear Pans should sit firmly in their Linear Vibrator Brackets.




To secure the Linear Pan, pull the Clamp Assembly's handle up until the Linear Pan is held firmly in the Linear Vibrator Bracket.



## LINEAR FEED PAN VIBRATORS

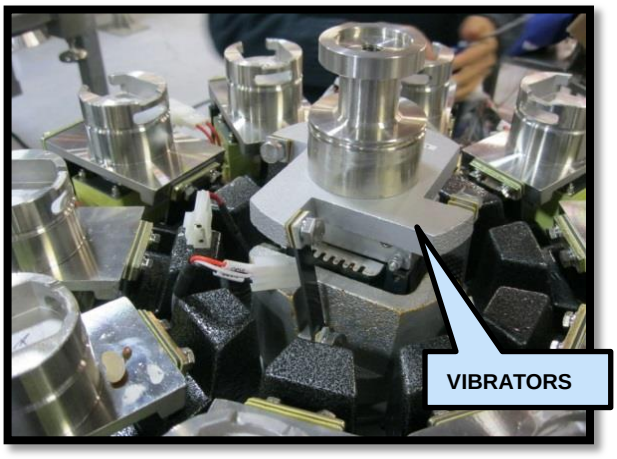


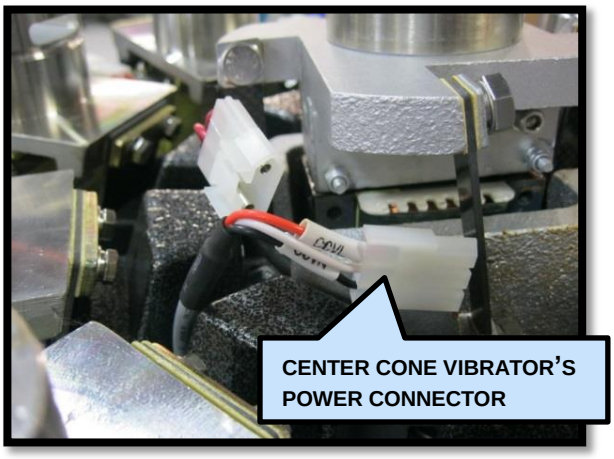


To access the linear pan vibrators located around the tower, follow the instructions below.

Remove all the water proof clips from the rubber covers. Some models do not have clips; if there are no clips then remove the rubber covers using a flat screwdriver. Careful attention should be taken not to puncture the rubber cover when removing them.

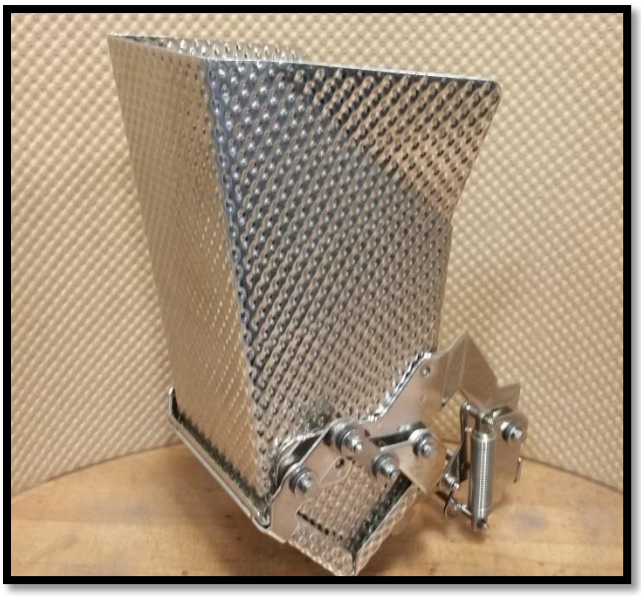

To access the vibrator assemblies, remove the tower's stainless steel cover. To remove the cover, open all the latches surrounding it.

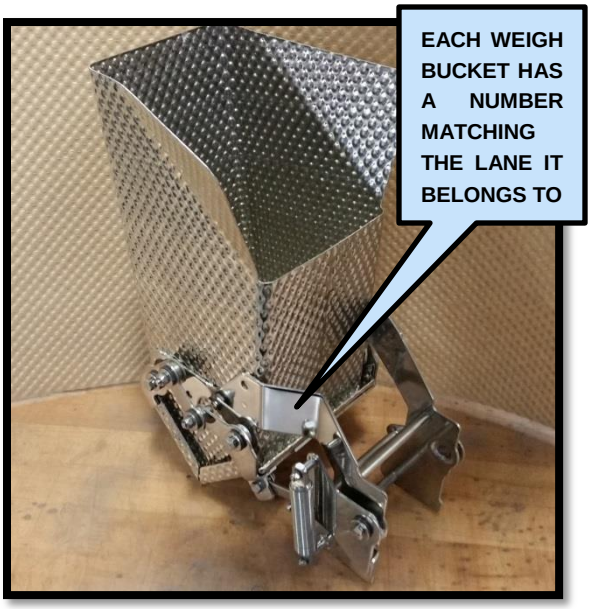


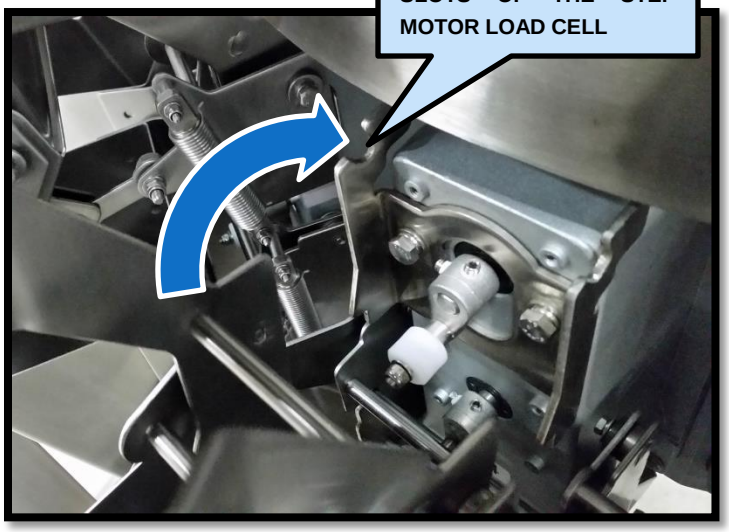

Removing the cover tower's cover exposes the PrimoCombi vibrators underneath. Disconnect the center cone vibrator's power connector before making any adjustments.

## FEED BUCKET

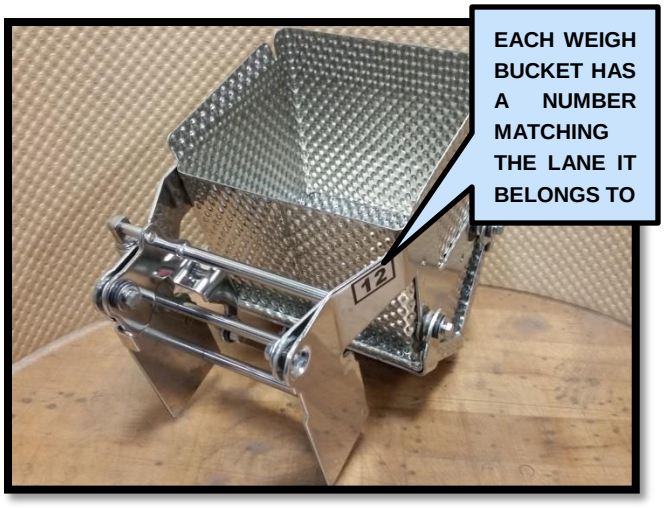





The Feed Buckets are designed to fit onto a series of matching slots on the Load Cells of the Scale.
To remove a Feed Bucket, tilt the Feed Bucket away from the Scale then slip the Feed Bucket off of the mounting slots. To install a Feed bucket, tilt the Feed Bucket at an angle and slip it down onto the mounting slots of the Tower.




## WEIGH BUCKETS



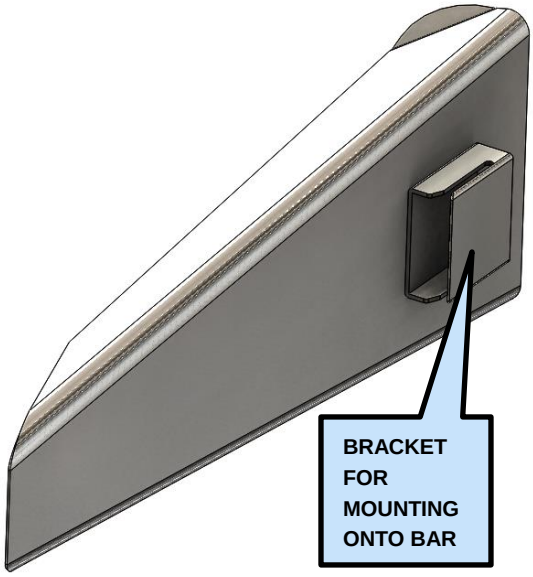

The Weigh Buckets are designed to fit onto a series of matching slots on the Tower of the Scale.
To remove a Weigh Bucket, tilt the Weigh Bucket away from the Scale then slip the Weigh Bucket off of the mounting slots. To install a Weigh bucket, tilt the Weigh Bucket at an angle and slip it down onto the mounting slots of the Tower.

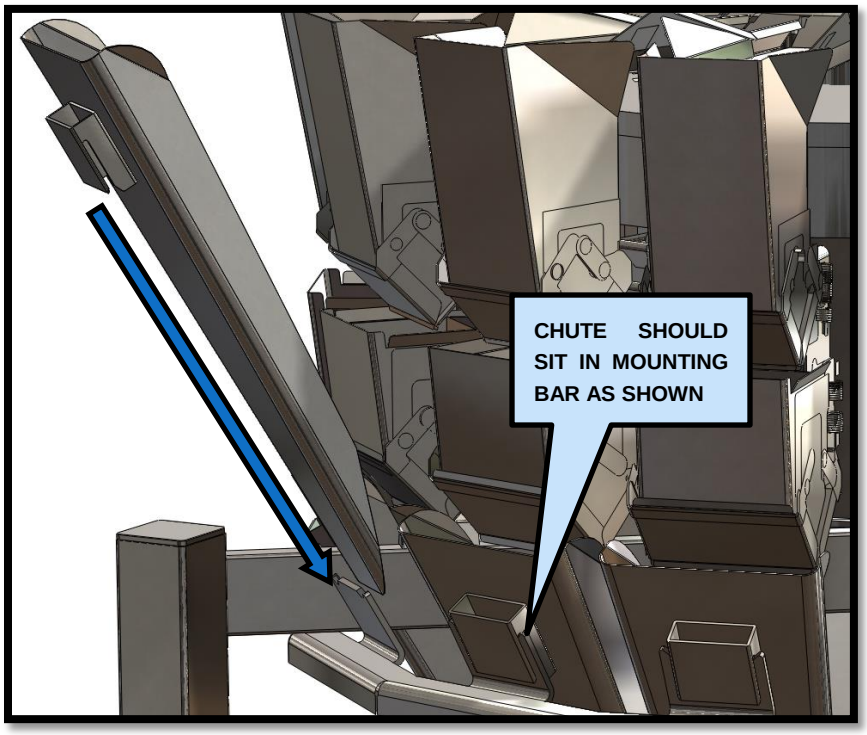
## CHUTES

The Chutes of the PrimoCombi are designed to be easily removed for cleaning. Each chute slips and locks into place on a bar under each of the Weigh Buckets.

For ease of installation, the Chutes should be mounted before any of the Weigh Buckets. Doing so leaves more room to slip the Chutes into place.

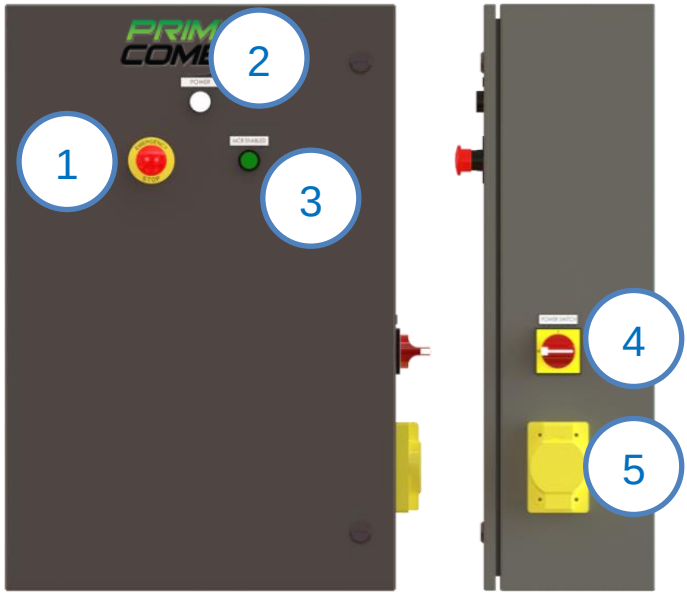
Install the chutes onto the bar that is fixed to the PrimoCombi frame. Each Chute is labelled with the number of the lane that it belongs to. Each Chute has a mounting bracket located on its underside.



# CONTROLS

| CONTROL PANEL | |
|---|---|
| *ITEM* | *DESCRIPTION* |
| 1 | EMERGENCY STOP |
| 2 | POWER INDICATOR LIGHT |
| 3 | MASTER CONTROL RELAY |
| 4 | POWER SWITCH |
| 5 | POWER SUPPLY 220V 3AMP |




## ALARMS

In the event of a machine malfunction, such as a jam, an alarm warning will display on the H.M.I. Touch Screen. After an alarm has been triggered, the machine should be inspected and the alarm must be reset. Alarms may be reset on the H.M.I. Touch Screen.

## EMERGENCY STOP

In the event of an emergency, pressing the Emergency Stop button will cut power to the machine and halt its moving parts. While the Emergency Stop remains depressed, stepper motors will stop and air will be cut off from pneumatics.

Immediately following the use of the Emergency Stop button, the operator may also need to halt the functions of any auxiliary machinery feeding the scale.

After having been pressed, the Emergency Stop button must be reset before the machine can be operated. Pull out the Emergency Stop button, it should snap back into its original position. If Emergency Stop button has been pulled out, press the “MCR Enabled” Button to reactivate the machine. The machine should now be ready to run.

## CONTROL PANEL SETUP

Before setting up the control panel, please ensure that you have the following parts:

PC Interface

Power Cable

Data Cable

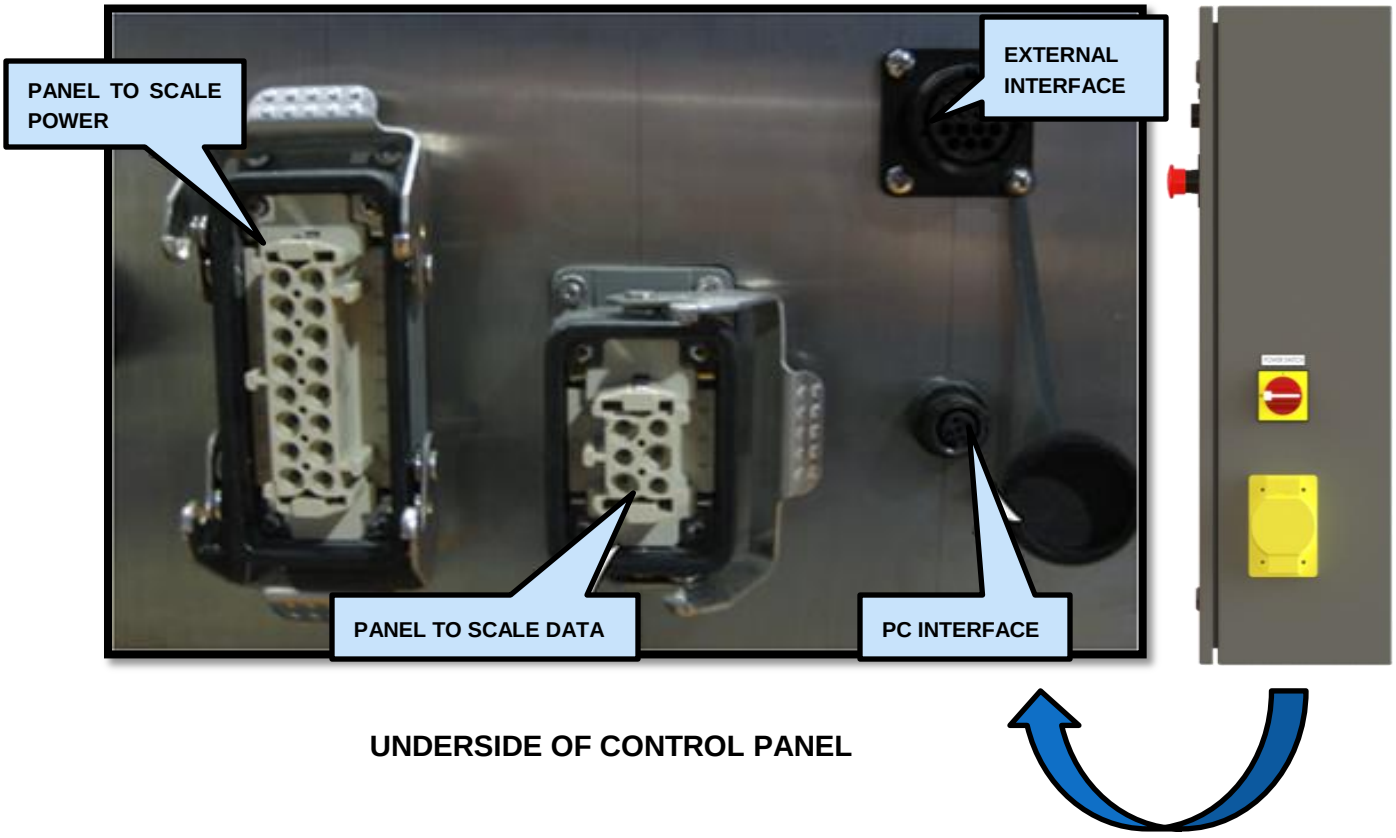
External Interface

**Power Cable:** Plug in Panel-to-Scale Power cable to the Control panel and the Scale.

**Data Cable:** Plug in the Panel-to-Scale Data cable to the Control panel and the Scale.

**PC Interface:** Plug in the PC interface cable to the Control panel and the PC.

**External Interface:** If applicable, plug the External Interface cable to any auxiliary equipment.




**UNDERSIDE OF CONTROL PANEL**

# HUMAN-MACHINE INTERFACE (H.M.I.)

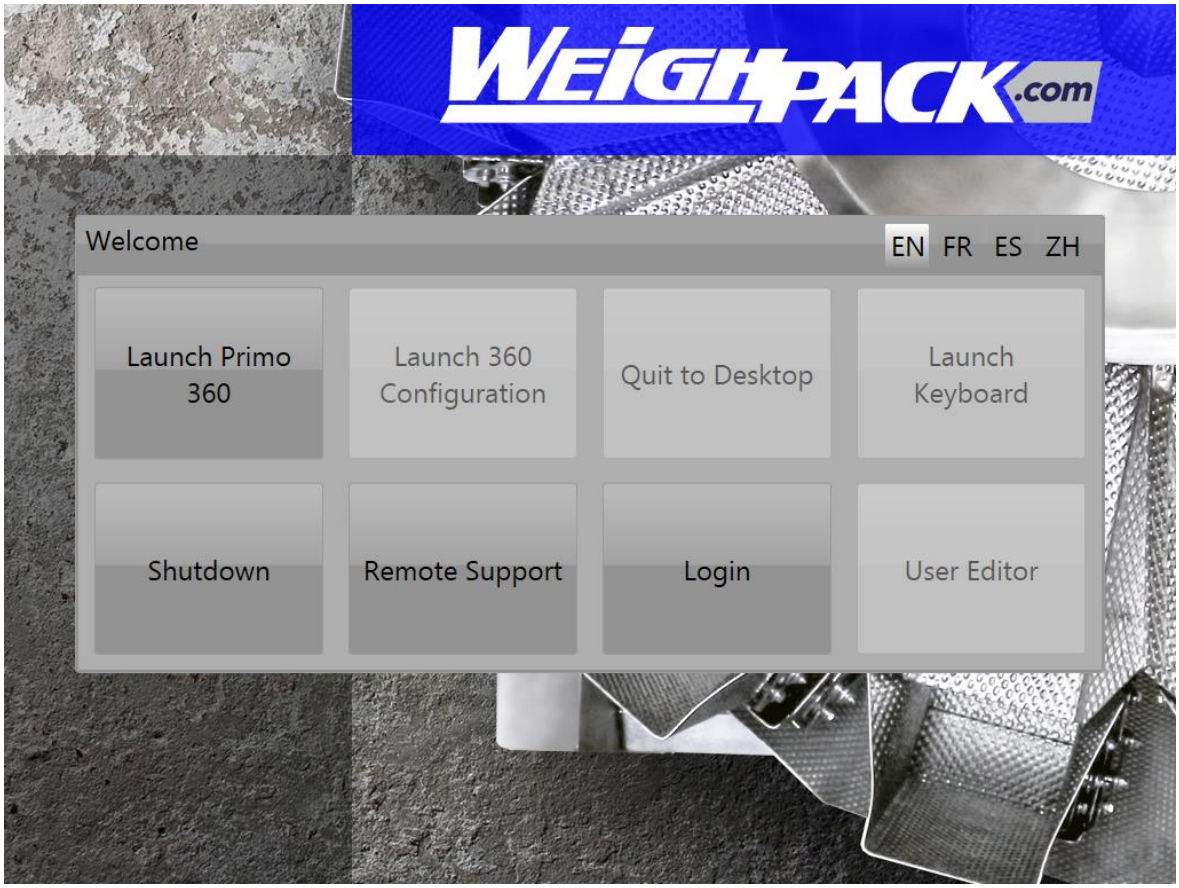
## SYSTEM REQUIREMENTS

| Item | Specifications |
|---|---|
| **Processor Speed** | Intel Atom 1.6 GHz (touch screen)<br>1.2 GHz or faster 32-bit or 64-bit processor |
| **RAM** | 512 MB (minimum)<br>4GB (recommended) |
| **Hard Drive Space** | 20 MB (for installation only)<br>Depending on historical data desired, more space will be required |
| **Video Resolution** | XGA (1024x768) or higher |
| **Operation System** | Microsoft Windows 7 |
| **Email System** | Any SMTP server if emailing is desired |
| **Database** | Microsoft SQL Server 2005/2008, or Microsoft SQL Server Express 2005/2008 |
| **Network** | For Alerts, Handheld Operations and Reports - Network required.<br>For Skype and Remote Support - Internet access required. |
| **Additional** | .NET 4 SP1 required<br>Crystal Reporting Components Required for Reporting<br>Skype required for Skype features<br>COM Port required for 360 operation |

## LAUNCHER

Upon starting up the PC panel, the launcher screen will appear. The 'Launcher' page has eight different buttons as well as the option to switch between four different languages.

1. 'Launch Primo 360' will launch the Primo 360 program and open the main navigation page.
2. 'Shutdown' will shut down the software and the PC panel.
3. 'Remote Support' gives the option of accessing the system from a remote computer.
4. 'Login' logs the user into the system and gives them access to the remaining buttons on the screen.
5. 'Launch 360 Configuration' (requires login) is for advanced operators only, and gives access to advanced configuration settings.
6. 'Quit to Desktop' (requires login) quits the program and navigates to the desktop.
7. 'Launch Keyboard' (requires login) opens an on-screen keyboard.
8. 'User Editor' (requires login) allows users and passwords to be edited.



## GETTING STARTED

When launching the 360 Operating System a prompt will appear to inform that during the start-up sequence the machine will run an initialization sequence. Before clicking on OK please ensure that all operators stay clear of the machine.


Once you click on OK the 360 Operating System will begin its initialization sequence preparing both the software and hardware for operation.

## LOADING ROUTINE

The loading routine is performed every time the 360 Operating System is launched.


**Loading Screen**

## LOAD MACHINE SETTINGS

While the “Loading Machine Settings” icon is flashing the software is retrieving its initial configuration settings from the database. This includes the COM Port, Machine Name, System Parameters, etc…

If there is an issue during this process you will receive a message indicating that you have no active PrimoCombis and will see the icon has a red **X** on it. You will not be able to proceed until this issue is resolved.

There are 4 possible reasons why this will happen:

1. The Database cannot be found.
2. The User does not have access to the database.
3. All PrimoCombis are either deactivated, or there are no PrimoCombis configured in the Database.
4. The MCR button was not pressed.

## CONNECTING WITH THE MACHINE

While the “**Creating Connection with Machine”** icon is flashing the software is trying to establish communication to the PrimoCombi through the COM port. Once the COM port is open it will try to unlock the main board’s internal security and establish bidirectional communication with the PrimoCombi.

If there is an issue during this process you will receive a message indicating that the security code has failed, or you are not connected to a PrimoCombi and the icon will appear with a red **X** on it. You will be asked if you want to open the Configuration Section of the software, or continue onwards.

There are several possible reasons for receiving this error. You should check the following in order:

1. Ensure the PrimoCombi is powered on. You will see a white light on the control panel if there is power to the scale. Also ensure that the green MCR button was pressed.
2. Ensure that the serial cable between the control panel and PC panel is connected properly.
3. Ensure that only ONE instance of the 360 Operating System is running.
4. Double check that the COM port you have configured for the scale is the COM port that the PrimoCombi is connected to.
5. Open the control panel and ensure that the serial cable is attached to the main board inside the control panel (reclose and power on the PrimoCombi after you check).
6. Double-check that the security code is correct for the main board.

This step is a non-critical step to opening the software. You may choose **No** at the prompt and create a manual connection to the scale.

## RUN MACHINE INITIALIZATION SEQUENCE

While the “Run Machine Initialization Sequence” icon is flashing the software is trying to perform its startup sequence and self-test. During this sequence all of the feed buckets and weigh buckets will be emptied and a complete zero of the machine will be performed. Any product in these buckets will be discharged from the scale.

If there is an issue during this process you will receive a message indicating that the self-test has failed and the icon will appear with a red **X** on it. You will be asked if you want to open the Configuration Section of the Software, or continue onwards.

There are two possible reasons for this error:

1. The “Creating Connection with Machine” step in the loading process has failed.
2. There is an error with one of the hardware components on the machine.

This is a non-critical step to opening the software. You may choose **No** at the prompt and diagnose/resolve the problem manually.

## STARTING COMMUNICATIONS SERVICES

While the “Start Communication Services” icon is flashing the software is trying to establish communication with any remote devices such as handheld devices, custom controls, or external networks.

If there is an issue during this process you will receive a message indicating that the communication services could not be started and the icon will appear with a red **X** on it.

There is only one reason to receive this error.

1. The port that the communication services work on could not be opened. This is caused by either conflicting software, or two versions of the 360 Operating System being opened (Contact Weighpack if you receive this message often).

This is a non-critical step to opening the software. If you receive this message and control the PrimoCombi via the handheld software, or have the PrimoCombi integrated into a 3rd party application, contact a service technician for assistance.

## LOADING APPLICATION PREFERENCES

While the “Load Application Preferences” icon is flashing, the software is trying to retrieve all preferences from the database. This includes Users, Themes, Languages, Securities, and Schedules. If there is an issue during this process you will receive a fatal error and the icon will appear with a red **X** on it.

There is only one reason to receive this error.

1. The database has been corrupted, either by Windows or by manual tampering.

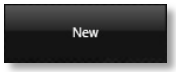
This is a critical step in the software. Should you even rarely receive this error, contact your support provider.

## HOME SCREEN

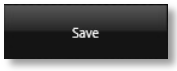

The PrimoCombi's Home Screen will display after the H.M.I. has loaded. From the Home Screen the operator can navigate the controls of the H.M.I. Software. Some screens may only be accessed after Logging on with the correct ID and Password, please refer to the Login Screen for more details.

## GENERAL CONTROLS FOUND THROUGHOUT THE H.M.I…

**NEW** – Pressing a button labeled **New** will create a record for the screen that you are in.

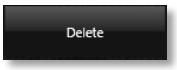



**SAVE** – Pressing a button labeled **Save** will save any settings that you have made to the database. If the button is located on a screen that allows for multiple configurations it will save the settings to the currently selected items. If the button is located on a screen with only one configuration, it will save the information on the screen. The only exception to this is on the ***Hardware Configuration*** screen - on this screen the information you enter is saved to the database and immediately uploaded to the PrimoCombi.

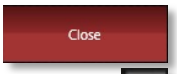



**SAVE AS NEW** – Pressing a button labeled **Save as New** will create a new record with the information that is currently loaded. If you did not modify the description of the selected record, the new record will have a description which reads as: 'Copy of *name of record*'. If you have settings that are very similar, this can be a time saver.

**DELETE** – Pressing a button labeled **Delete** will mark an item as no longer active. If you delete a record by accident, contact us for instructions on restoring the record.




**CLOSE** – Pressing a button labeled **Close** will bring you back to the previous screen.




**SCREEN SHOT** – At the bottom right corner of every screen you will see a button labeled **SS**. Pressing this button will save an image of the current screen to the *SupportScreenShots* folder (typically located in *C:\Program Files\CombiScale\Primo360OS*). The screen shot will be named with a timestamp.


**PICTURE TAKER** – Pressing a button labeled **Camera** will open the Picture Taker window. If you have a webcam installed on the PC Panel, the picture taker opens (click on the **Take Picture** button as many times as required to get the desired image) and images will begin to appear on the right hand side of the window. Once you have taken an appropriate image, select the image from the right hand side, give it a name, then click on the **Save** button. The location the image will be saved to depends on where you launched the Picture Taker window from.


**LOGO** – You can always return to the Main Navigation window by clicking on either the **Close** button in each of the open sub-sections you are in, or by clicking on the Logo located in the top-left corner of every screen.

## LOGIN SCREEN

Depending on the configuration of your software, you may or may not need to log into the system prior to operating the machine. If you enable users and securities you will be required to log into the system before you can operate the PrimoCombi.

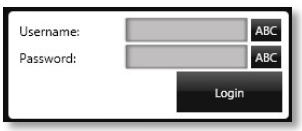

**Login Screen**

### *BASIC LOGIN*


On the Login screen a list of all users that are display-enabled will be shown on the main screen. To log in simply click on the user you wish to log in as.

Doing this will bring up the password and login box. If you have assigned the user a password he/she will need to enter it in the textbox located below the username. Clicking the Login button will log the operator on as the selected user.

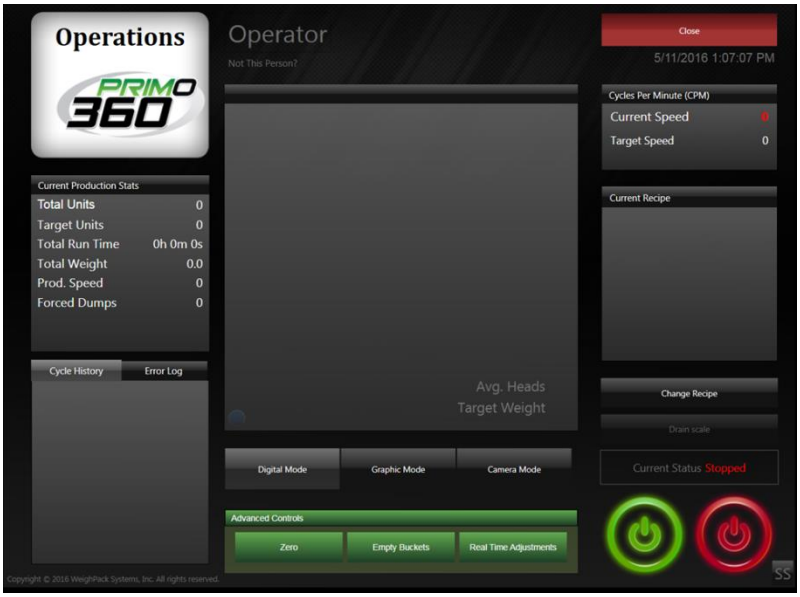
### *ADVANCED LOGIN*




To access the advanced login page click the **Advanced Login** button located in the bottom right corner of the basic login page. If you have users not configured to be displayed on the basic login screen you can login as those users here. Type the User name and Password for the user you wish to log in as. This is useful for Administrator accounts that must be protected from regular users on the basic login page.

## OPERATE

The Operations Screen is the center of the PrimoCombi's H.M.I. software. To begin running the machine, simply load a recipe and press on the 'Green' start button.


***CURRENT PRODUCTION STATS:***

**TOTAL UNITS:** Displays the total number of combinations made in a production run (stopping the machine will complete a production run).

**TARGET UNITS:** Displays the total number of units for a single production run.

**Total Run Time:** Displays the number of minutes for a production run.

**Total Weight:** Displays the total amount of weight the machine has dumped in a production run.

**Prod. Speed:** Displays the number of bags per minute that the machine has produced over the span of a production run.

**Avg. Heads:** Displays the average number of heads used in combinations to achieve the target weight. If this value is greater than the average number of heads needed to achieve a combination weight, then the machine is not running at optimal performance.

**Forced Dumps:** Displays the total number of forced dumps (dumps that are not valid combinations) that a machine has produced for a production run.

***CYCLE HISTORY:*** The cycle history section displays the weights of the last 20 combinations found in descending chronological order.

***ERROR LOG:*** The error log stores all errors and alarms that occur during the operation of the machine. These include motor and vibrator malfunctions, forced dumps, empty buckets, etc. If your PrimoCombi is displaying odd behavior it is advised to search the error log for likely causes.

***CURRENT DUMP:***


The current dump section is where you will be able to view the real-time operation of the PrimoCombi. There are three different modes in which you can monitor the performance of the PrimoCombi.

***DIGITAL MODE:***

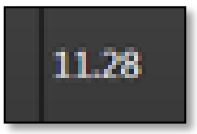
Digital mode displays a large numeric value for the weight combination that was just made. If the combination found is under the specified target weight range the weight will be displayed in **Yellow**. If the combination found was within the acceptable target weight the weight will be displayed in **White**. If the combination found is over the specified target weight range the weight will be displayed in **Red**.


The target weight will be displayed at the bottom along with the average number of heads used.

***GRAPHIC MODE:***

Graphic mode displays a visual representation of the scale seen from above. There are several different configurations for the graphics mode.

**HEAD NUMBERS**: When this is enabled, a number indicating the head ID will be displayed on the graphical representation of the head.



**HEAD WEIGHTS**: When this is enabled, you will see the current weight in the head outside the respective head. When a head weight is displayed in a light gray number it means that it was the LAST weight in the head and has not been reweighed. If the head weight is displayed in white it means that the weight being displayed is the current weight in the bucket.

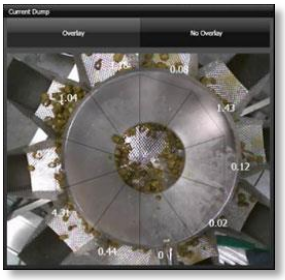
**TRIGGERED HEADS**: When this is enabled, the moment a combination is dumped, the heads used to make the combination will turn white.

**WEIGHT GRAPH**: When this is enabled, the heads will change colors once weighed. The colors represent how the weight in the head relates to the ideal weight. Ideal weight is the target weight divided by the target number of heads. The color code is as follows:

**PURPLE** – when a head turns purple it indicates that the amount of product is less than ideal.
**GREEN** – when a head turns green it indicates that the amount of product is ideal.
**RED** – when a head turns red it indicates that the amount of product is more than ideal.
**LIGHT RED** – when a head turns light red it indicates that the amount of product in the head is more than the target weight.

***CAMERA MODE:***

**OVERHEAD WEBCAM**: This field indicates if there is an overhead webcam mounted to the scale. As the 360 Operating System supports multiple cameras and multiple machines, this is where you indicate which webcam will display on the operating screen.




**OVERLAY**: When this is enabled you will be able to see a diagram of the machine and which heads are triggered. This will be displayed on top of the camera.

**NO OVERLAY**: This option removes all items on top of the camera.


***ADVANCED CONTROLS:***

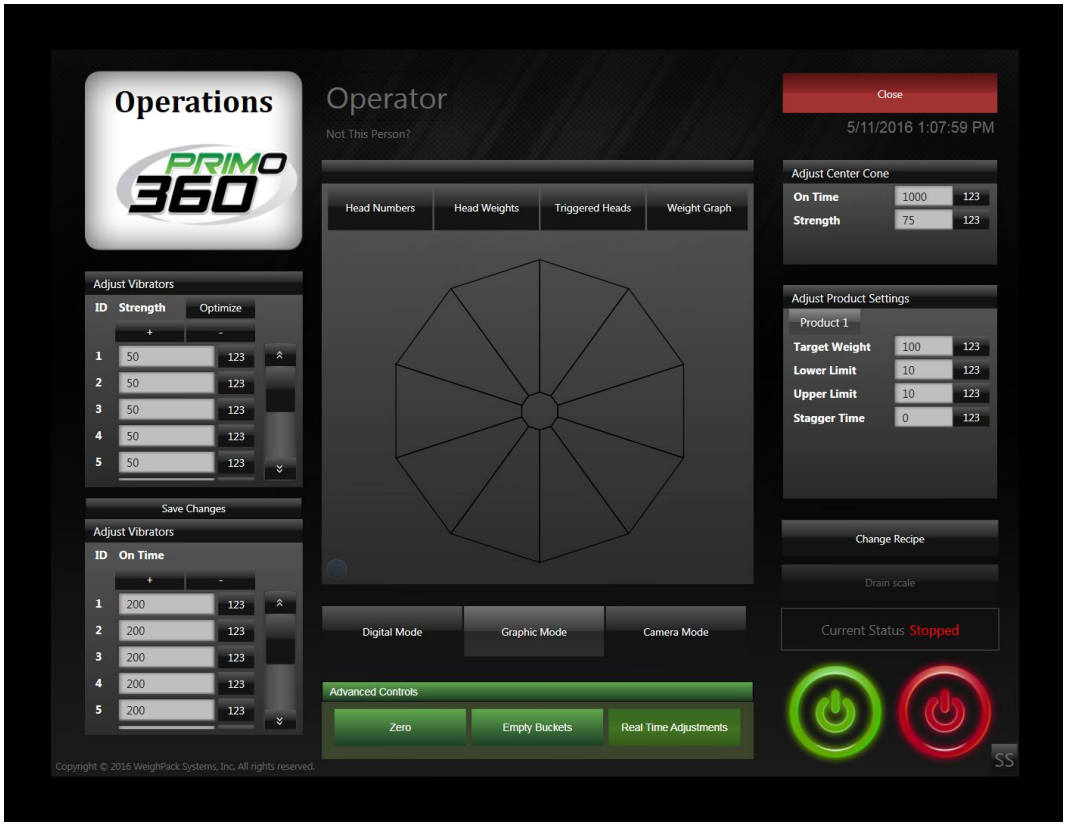
**ZERO**: If the machine is in Stop mode, this will perform an instant zeroing of all buckets.

**EMPTY BUCKETS:** This will empty all of the PrimoCombi's buckets.

**REAL TIME ADJUSTMENTS:** This will transform the Operate screen into the real-time adjustments screen.

***REAL-TIME ADJUSTMENTS:***

The real-time adjustments area of the Operate screen is where you can tune the operations of the system while the system is running.




**Operator Screen (Real-Time Adjustments)**

***ADJUST VIBRATOR STRENGTH:***

**OPTIMIZE**: This allows you to turn On or Off the machine's ability to self-adjust its strength settings.


**PLUS SIGN**: Clicking the "**+**" button will increase all vibrator strengths by 5%.

**MINUS SIGN**: Clicking the "**-**" button will decrease all vibrator strengths by 5%.

**VALUE FIELDS**: Clicking on a value field will bring up the number pad where you can enter the strength value you desire.

***ADJUST VIBRATOR ON TIME:***


**PLUS SIGN**: Clicking the "**+**" button will increase all vibrator On times by 5%.

**MINUS SIGN**: Clicking the "**-**" button will decrease all vibrator On times by 5%.

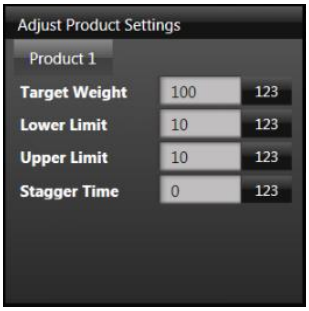
**VALUE FIELDS**: Clicking on a value field will bring up the number pad where you can enter the On time value you desire.

***ADJUST CENTER CONE:***


**ON TIME:** Adjust the On time of the center cone.

**STRENGTH**: Adjust the strength of the center cone.

***ADJUST PRODUCT SETTINGS:***




**TARGET WEIGHT**: Adjust the target weight for the PrimoCombi.

**LOWER LIMIT**: Adjust the lower limit for the PrimoCombi.

**UPPER LIMIT**: Adjust the upper limit for the PrimoCombi.

**STAGGER TIME**: The total time delay from the first head opening in a combination to the last head opening in a combination.

***CYCLES PER MINUTE:***

**CURRENT SPEED**: The current speed is the calculated speed from one dump to another.

**TARGET SPEED**: The target speed is the speed at which you wish to run the PrimoCombi at. You can modify the speed in real-time by clicking on the numerical speed value. This will open a speed adjustment control where you can modify the speed. Clicking on the numerical speed value will close this window.

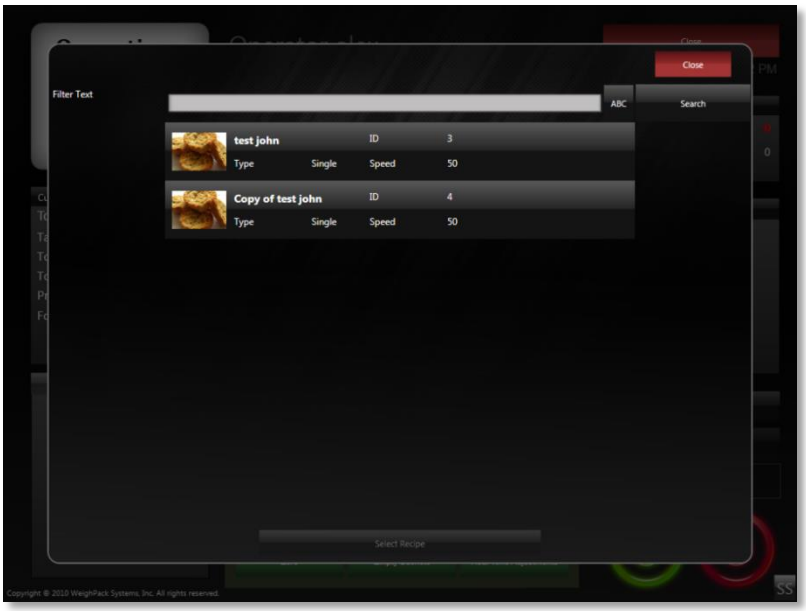
***CURRENT RECIPE:***


The current recipe indicates the recipe that is currently loaded into the PrimoCombi

***CHANGE RECIPE:***


The change recipe button is where you will be able to load a new, preconfigured recipe for the machine to run.

By clicking on **Change Recipe**, the recipe selection window will appear. Select the index card of the recipe you wish to run and click on it. Next, press the **Select Recipe** button to confirm the selected recipe. You can cancel this operation by selecting the **Close** button.




**Recipe Selection Screen**

***CURRENT STATUS AND MACHINE CONTROLS:***


The current status is where you can view the mode of operation the PrimoCombi is currently in.

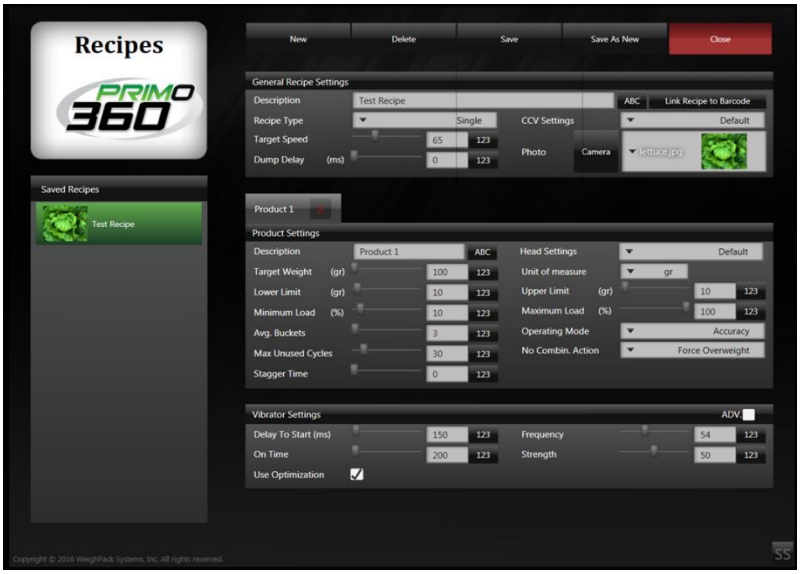
**Start** the Scale (Green Button)

**Stop** the Scale (Red Button)

**Pause** the Scale (Yellow Button)

## RECIPES

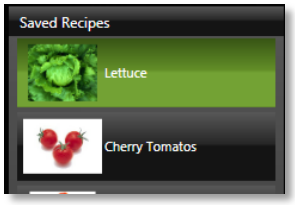
The recipes section of the 360 Operating System is where you create the configurations for the products that you are going to be running.


**Recipe Screen**

***SAVED RECIPES:***

The saved configuration section is where all your different recipes will be saved. You can create as many different recipes as you wish, limited only by the disk space of the computer hosting the Database. Up to 1000 recipes can be stored at one time.



***GENERAL RECIPE SETTINGS:***


**DESCRIPTION:** This is the description of the configuration. It is recommended that you give the configuration a description that allows easy recognition of the settings.

**RECIPE TYPE:** Allows selection between the four available Recipe Types.

> **SINGLE:** This recipe type is for weighing a single type of product (undivided scale) and delivering the target weight in a single dump.
>
> **MULTIDUMP:** This recipe type is for weighing a single type of product (undivided scale) and delivering the target weight in multiple dumps.

**TARGET SPEED**: The cycles per minute you want the machine to run at.

**DUMP DELAYS**: Is the amount of time between the dump request and the moment the PrimoCombi will perform a dump.

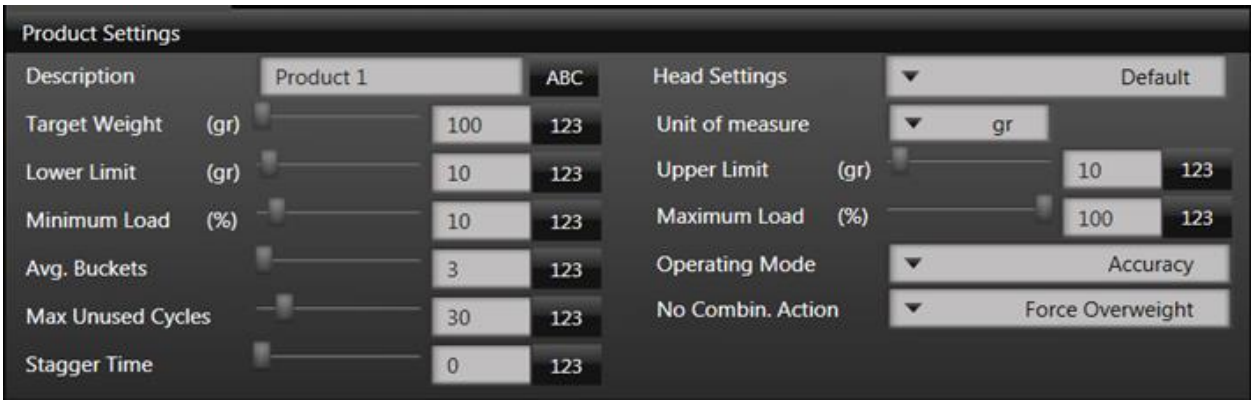
**CCV/CCM SETTINGS**: Depending on the center cone that is installed on your PrimoCombi you will be required to choose either a center cone vibrator or a center cone motor configuration that you defined in: **Settings -> Hardware Settings -> Center Cone Configurations**.

**DUMP TIMES**: If using Multiple Dumps, this setting will control the number of dumps performed to achieve the desired target weight.

***IMAGE SELECTION***

> **PHOTO**: This field is a drop-down list of all available images that a user can choose from. These are located in the *Product Images* folder.
>
> **CAMERA**: If there is a webcam attached to the 360 Operating System, this button will be enabled. Clicking this button will open the *Picture Taker* screen.

***PRODUCT SETTINGS***




**TARGET WEIGHT**: This is the weight that the Weigh Buckets will try to achieve before each product dump. The Target Weight represents how much product will be deposited into each bag.

**LOWER LIMIT**: This is the allowable number of grams under the target weight.

**MINIMUM LOAD**: If you require a minimum load this is the minimum percentage of the target weight a head should contain. (10% by default for a 10H scale, 13% by default for a 14H.)

**AVG. BUCKETS**: This is the target number of buckets to use for a combination. Ideally, set to 3.

**MAX UNUSED CYCLES**: This is the number of combinations that can be made without using a specific weighing head (up to 200 combinations.) While using this function, certain Weigh Buckets will retain product for a longer time. If you are weighing perishable products, you should use a low value. If you are weighing non-perishable products, a higher value will increase the performance of the machine.

**STAGGER TIME**: The total time delay from the first head opening in a combination to the last head opening in a combination.

**HEAD SETTINGS**: These are the settings to use for the head that was defined in Configuring Your Hardware > Head Configuration.

**UNITS OF MEASURE**: This is the unit of measure that you are going to be running in. If you select **pc** (pieces) you will be required to enter the piece weight in grams, also, unlike the other units of measure, the Lower Limit and Upper Limit will be measured by piece in addition to Target Weight.

**UPPER LIMIT**: This is the allowable number of grams over the target weight.

**MAXIMUM LOAD**: This is the maximum percentage of the target weight a head should contain, this value is 100 by default.

**OPERATING MODE**: The operating mode defines what is more important to you - Speed or Accuracy. In most cases the Accuracy mode will be the mode of choice. However, if the PrimoCombi is integrated with a continuous motion system, the Speed mode may be more preferable.

**ACCURACY**: In this mode the scale will not dump any product without it satisfying the target weight (plus/minus the limits). If no combination is found in the time allotted the scale will slow down to find a proper combination.

**SPEED**: In this mode, as soon as the allotted time is up or a dump request is received, the best combination found up to that point will be dumped, regardless of whether the target weight is satisfied or not.

**FORCE DUMP**: When enabling this mode you will have the ability to choose what dump criteria to satisfy.

**ALLOW OVER WEIGHTS**: When this option is chosen, the scale will only force an overweight to be dumped.

**ALLOW UNDER WEIGHTS**: When this option is chosen, the scale will only force an underweight to be dumped.

**ALLOW BOTH**: When this option is chosen, the scale will allow both under- and over-weights will be dumped.

**NO COMBINATION ACTION**: In the event that there is no combination solution, this drop down menu allows the selection of a course of action that will prevent the machine from stopping operation.

### *VIBRATOR SETTINGS*


**DELAY TO START (MS)**: Indicates how many milliseconds to wait until the vibrator begins to activate (150 by default.)

**ON TIME**: Indicates the amount of time, in milliseconds, for the vibrator to stay on.

**FREQUENCY**: The frequency at which the vibrator should vibrate at. Typically, this should be set between 50Hz and 60Hz. For specialty applications this value might require changing. Consult your service provider for optimal frequency settings (54Hz by default.)

**STRENGTH**: Increasing this value will increase the strength of the vibrator. Decreasing it will reduce the strength. Typically, a value between 60% and 75% is acceptable for most applications. Specialty applications might require different settings, at which point you should contact a service technician for additional details.

**USE OPTIMIZATION**: Enabling this will tell the PrimoCombi to manage the Strength values to ensure that the weights in the buckets are always ideal. This feature is used with consistent and free-flowing product.

(This feature is still under development.)

## REPORTS

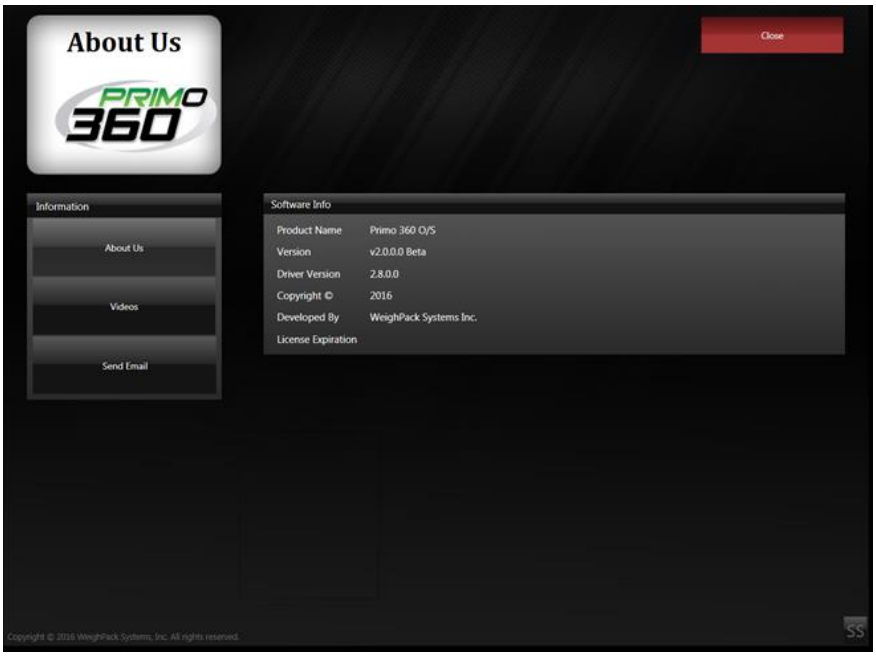
Reports is where you can run predefined Crystal Reports that were distributed with your software, or custom Crystal Reports that you have designed yourself.


## HELP

The 360 Operating System employs several different methods to make getting help as effortless as possible. Clicking the Help button in the **Main Navigation** window will bring up the Help submenu. From here simply choose the method of help that best suits your needs.

## ABOUT US

The About Us screen displays information about the operating system, contact information and, if applicable, the reseller who sold the machine.



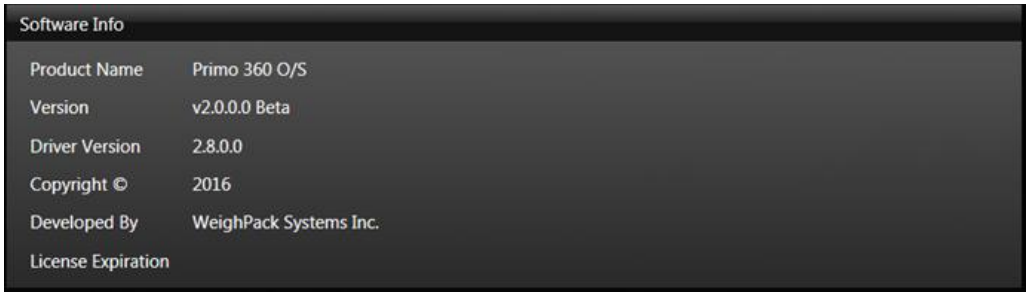


The information section of the About page is where the operator will be able to choose between viewing the About Us information, which includes Software, Contact, and Reseller information, as well as the Terms of Use that governs the 360 Operating System.

***ABOUT US***

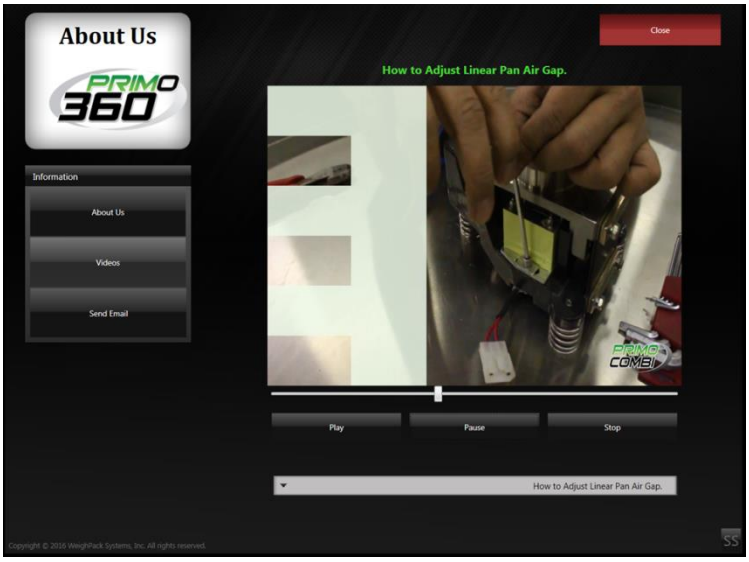
The ‘About Us’ button displays the following information on screen:

**PRODUCT NAME** – The name of the software being used.
**VERSION** – The current version of the software being used. This information is important when contacting a service technician.
**COPYRIGHT** – The year in which the software was copyrighted.
**DEVELOPED BY** – The company that developed the software.



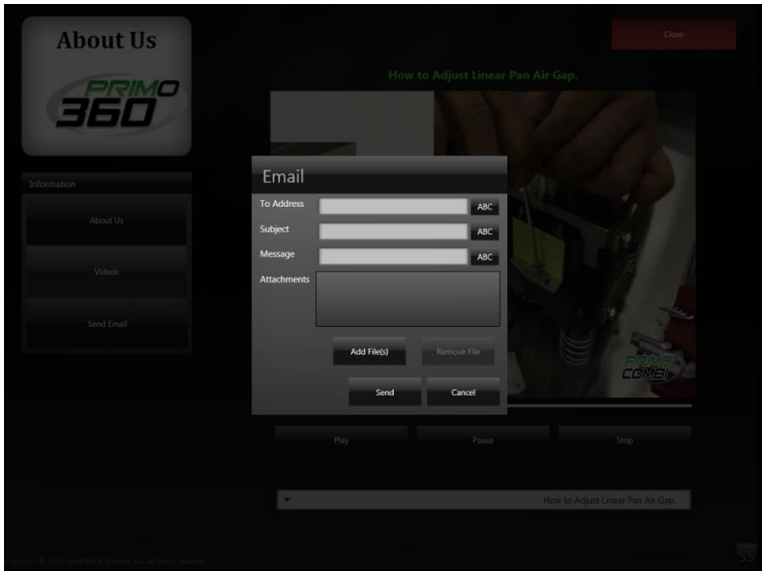

***VIDEOS***

The ‘Videos’ button allows access to a library of videos which demonstrate various maintenance procedures for the PrimoCombi.



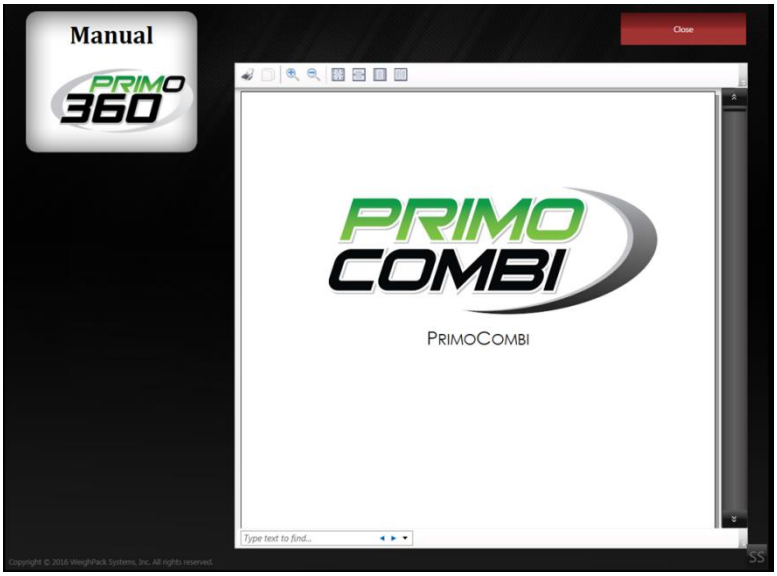
***SEND EMAIL***

The 360 Operating System has an integrated e-mail application. In order to send or receive any e-mail, an internet connection is required.




## MANUAL

The Manual section is a copy of the current document.





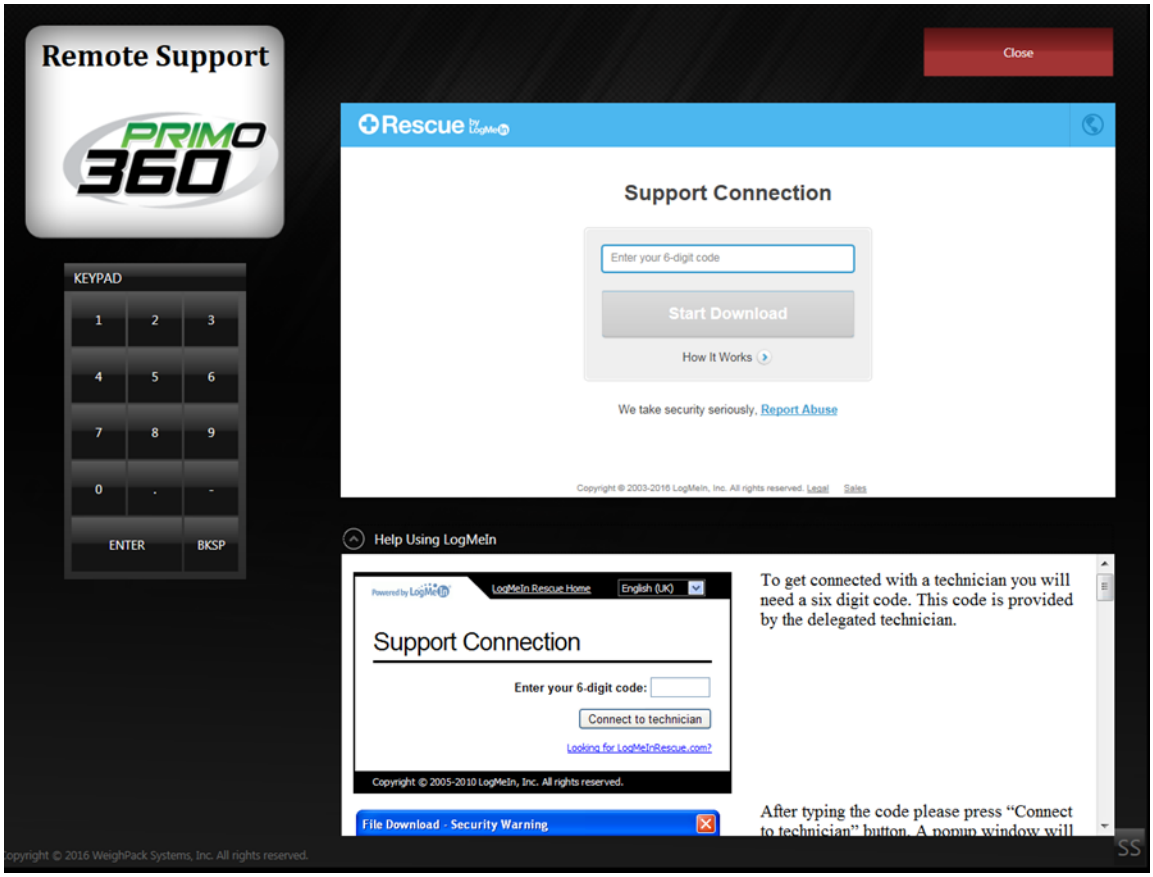
## SKYPE

Skype functionality will be integrated in future versions of the Primo 360 software.

## REMOTE SUPPORT

The 360 Operating System gives quick access to remote support using LogMeIn to host the service. LogMeIn is a well-trusted name in remote connectivity and the reason why we have chosen it as our connectivity provider. This approach hands our customers complete control of the system while allowing their service provider to furnish them the required support, all while knowing that all communications are completely secure.


In order to use the remote feature, an internet connection is required.




**Remote Support**

## SETTINGS

The Settings menu contains both the Hardware and Software settings for the machine and should only be accessed by a certified technician well versed in the machine's operation.


**Settings**

## HARDWARE

The hardware screen provides general information about the PrimoCombi and access to many different component configurations such as the head, center cone and catch box configurations. The hardware screen also allows the operator to customize alarm configurations and dump configurations to allow the PrimoCombi to communicate with various devices.


From the main navigation window, the operator can access the Hardware Configuration screen by clicking on the Settings icon. This will bring up a sub-menu with Hardware and Software icons.

Clicking on the Hardware icon will bring the operator to the Hardware Configuration Screen.


**Hardware Configuration Screen**

***ALARM CONFIGURATIONS***

The alarm configuration section allows the operator to choose which notifications the operator will receive from the scale and how that information should be presented.


***ALARM TYPES***

- **Force Dump** – Will inform the operator each time the scale needed to reject the weight in a weigh bucket. This can be caused by a weight being above the ***Maximum Load***, or if the operator is running in ***Speed mode***. The action taken when a forced dump occurs is based on the operator's choice.

- **No Combination** – Will inform the operator each time the scale is unable to find a combination within the specified range. This alarm will only occur if the operator is running in **Accuracy** mode. An alarm of this nature will put the PrimoCombi in **Pause** mode and requires manual intervention to resolve.

- **Empty Bucket** – Will inform the operator each time a bucket is filled and does not meet the **Minimum Load** requirements. The empty bucket alarm is for informational purposes only and does not affect the operation of the scale. Multiple Empty Bucket alarms in a row might indicate poor product feeding, a clog in the weigh bucket, or a malfunctioning vibrator.

***METHODS OF NOTIFICATION***

- **HMI** – Enabling alarms on the HMI will send alarms to the HMI.

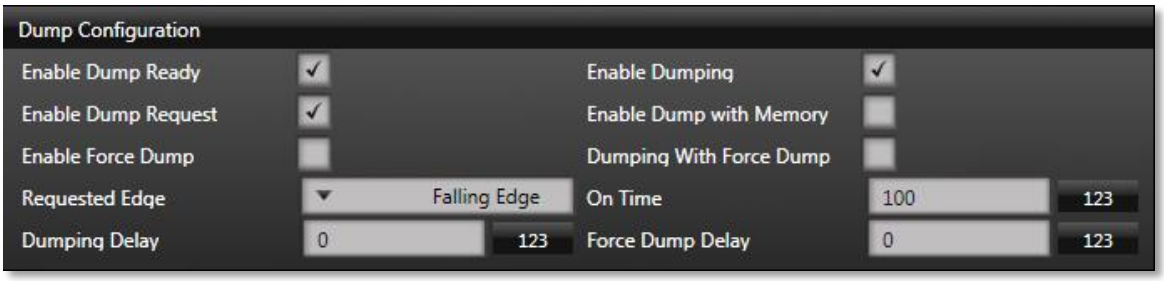
- **Visual** – A visual alarm is any light emitting device that is connected to the main board. Enabling Visual alarms will activate the device connected to the main board.

- **Audible** – An audible alarm is any sound-producing device connected to the main board. Enabling Audible alarms will activate the device connected to the main board.

***DUMP CONFIGURATIONS***

The Dump Configuration section allows operators to interface their ancillary devices to the PrimoCombi. The PrimoCombi supports Master, Slave, or Co-operative configurations depending on the type of ancillary device being connected. Unless the operator is an experienced PrimoCombi user, you should consult your service provider for help on configuring ancillary devices.

Input and Output specifications can be found on the main board schematics.




***CONFIGURATION OPTIONS***

- **Enable Dump Ready** – Enabling this ***output*** will signal to the ancillary device, indicating that the scale is ready to dump. This should be used in a Co-operative manner with the ancillary device.

- **Enable Dumping** – Enabling this ***output*** will signal to the ancillary device indicating that the scale is dumping a combination. This should be used in a Master or Co-operative manner with the ancillary device.

- **Enable Dump Request** – Enabling this ***input*** will tell the PrimoCombi to wait until the ancillary device requests the combination to be dumped. This should be used in a Co-operative or Slave manner with the ancillary device.

- **Enable Dump with Memory** – Enabling this ***input*** will tell the PrimoCombi to remember if a dump request has been made. If this is disabled and an ancillary device requests a dump while the PrimoCombi is not ready to dump, the PrimoCombi will disregard the request and wait for a new request. This is useful for a very specific Co-operative setup with an ancillary device.

- **Enable Force Dump** – Enabling this ***output*** will signal that a force dump has occurred. This is useful if you have a reject/recycle mechanism between the PrimoCombi and the ancillary device.

- **Dumping with Force Dump** – Enabling this ***output*** will indicate that a force dump occurred. It will send a signal indicating it is force dumping *and* dumping. This is useful if the ancillary device has a method to handle forced dumps inherently (i.e. create a double bag on forced dumps; label the dump as bad, etc.).

- **Requested Edge** – This field indicates to the PrimoCombi if a dump request should be executed when the signal goes to a high signal or drops to a low signal. Please refer to the manufacturer of the ancillary device for the proper configuration of this setting.

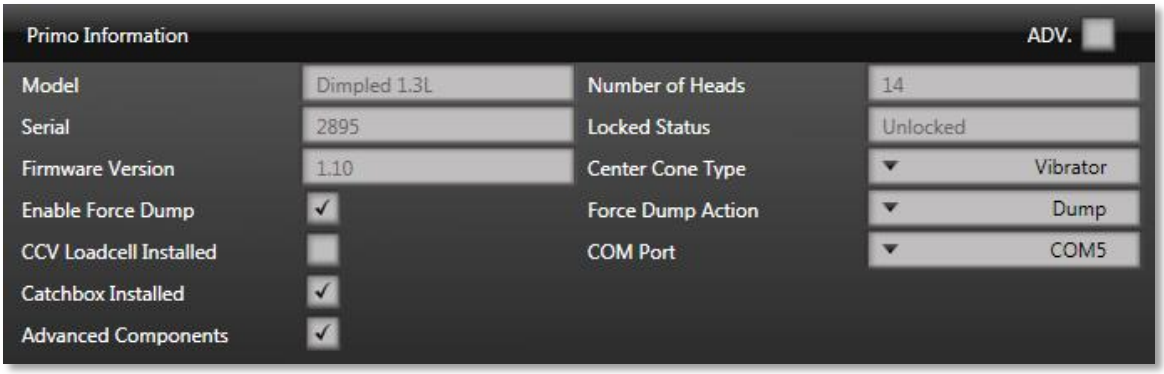
- **On Time** – This field indicates how many milliseconds the Dumping and Forced Dump signals should stay on for (100 by default.) Please refer to the manufacturer of the ancillary device for the proper configuration of this setting.

- **Dumping Delay** – Is the amount of time between the dump request and the signal that will initiate the PrimoCombi to dump product (0 by default.)

- **Force Dump Delay** – Is the amount of time between the dump request and the signal that will trigger a programmed reaction from the ancillary device for handling forced dumps (0 by default.)

***GENERAL PRIMO INFORMATION***

The General Primo Information section allows operators to view certain information about their PrimoCombi, as well as allow operators to configure certain settings on their scale.




***PRIMO INFORMATION FIELDS***

- **Model** – This field indicates the type of PrimoCombi you have. This includes the type of material used, as well as the volume of the weigh buckets. **Read-Only**

- **Number of Heads** – This field indicates the number of heads your PrimoCombi has. **Read-Only**

- **Serial** – This field indicates the serial number of the PrimoCombi. This will be required when requesting service for your machine. **Read-Only**

- **Locked Status** – This indicates the current status of the main board. If the value of the PrimoCombi is locked you will only be able to read values from the PrimoCombi. If the status is unlocked you will be able to control the PrimoCombi. ***Read-Only***

- **Firmware Version** – This field indicates the current version of the software running on the PrimoCombi. This will be required when requesting service for your machine. **Read-Only**

- **Center Cone Type** – This field indicates the type of center cone your PrimoCombi is using. This can be either None, Vibrator, or Motor. **Read-Write**

- **CCV Load Cell Installed** – This field indicates if the PrimoCombi is equipped with a center cone load cell to control the product flow into the machine. **Read-Write**

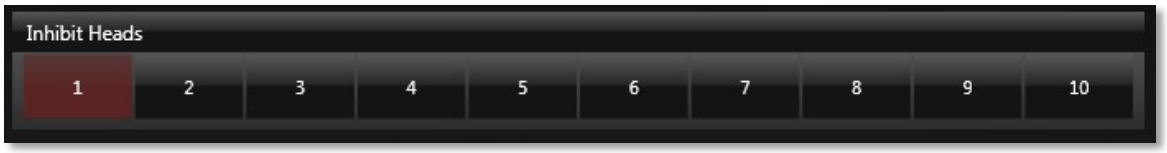
- **COM Port** – This field indicates what COM port the scale is communicating on. If this field is blank it might indicate that there is a problem with the communications to the scale. If you change COM ports you can update the port here. Changing this field does not require an application restart. **Read-Write**

- **Catch Box Installed** – This field indicates if there is a catch box (a.k.a. Timing Bucket) attached to the PrimoCombi. **Read-Write**

- **Unlock Main board** – This button will only be visible if the status of the main board is locked. During normal operations the main board is unlocked when starting the PrimoCombi. However, there are times when you will need to manually unlock the main board – to do that, click the **Unlock** main board button.

### *ADVANCED COMPONENTS*

The Advanced Components checkbox on the Primo Information section will allow the operator to manually inhibit heads, thereby removing them from operation. Checking the checkbox will display the Inhibit head section.



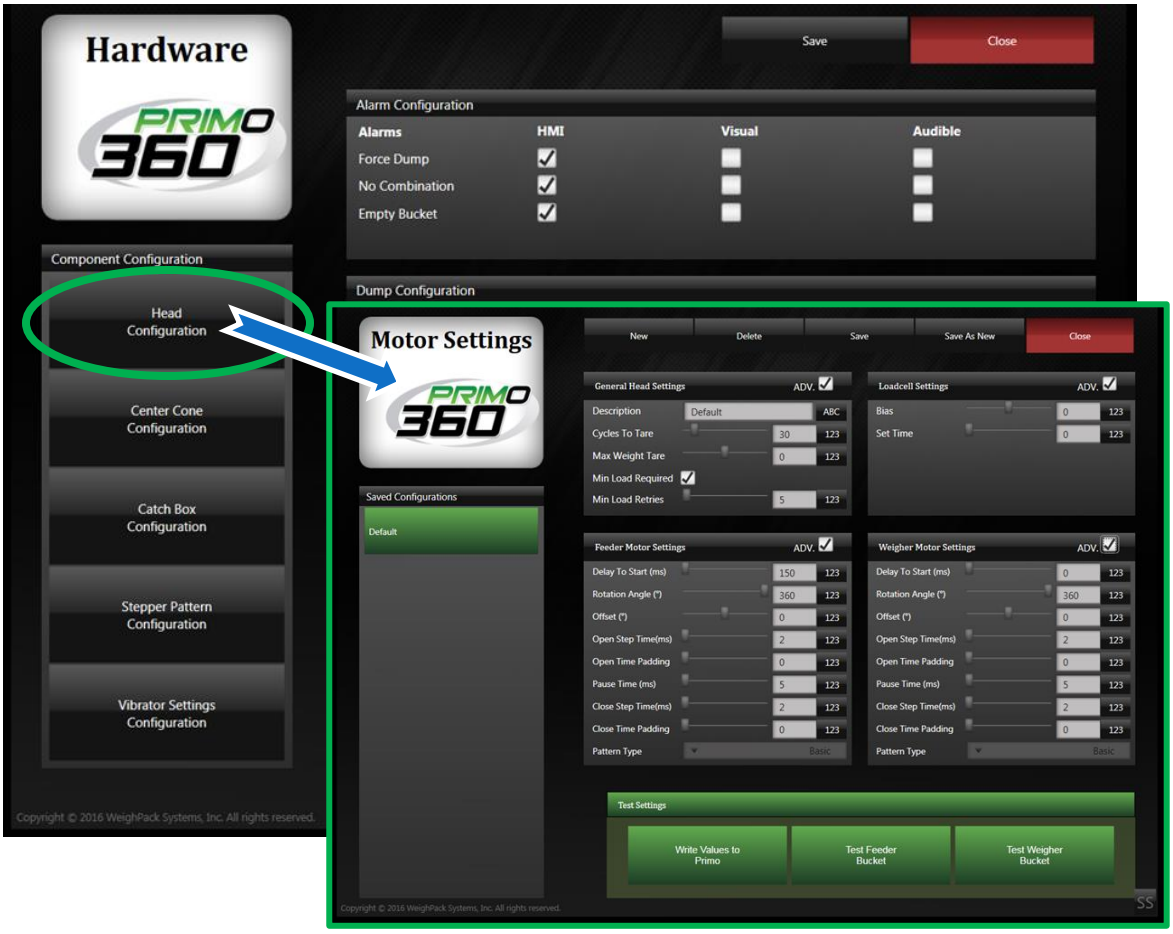

If a head is inhibited the advanced checkbox will be already checked. Inhibited heads will be indicated in Red.

### *COMPONENT CONFIGURATIONS*

The component configurations section is where you will configure how your heads, center cone, catch box, Stepper motors and vibrators will function.

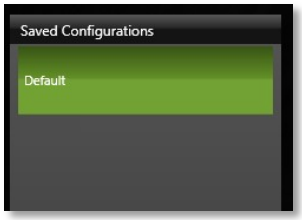
### *HEAD CONFIGURATIONS*

The head configuration window is where the operator can define how the stepper motors will operate, how a load cell will respond, and the general characteristics of a head. The 360 Operating System allows for a near limitless amount of configurations to suit every imaginable application.



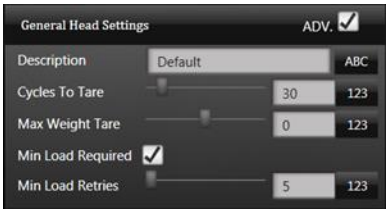

**Motor Settings Screen**

### *SAVED CONFIGURATIONS*




The saved configuration section is where all your different configurations will be saved. You can create as many different head settings as you wish, limited only by the disk space of the computer hosting the Database.

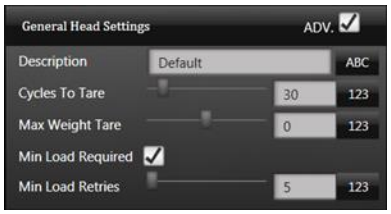
### *GENERAL HEAD SETTINGS*




- **<u>Description</u>** – This is the description of the configuration. It is recommended that you give the configuration a description that allows easy recognition of the settings.

- **<u>Cycles to Tare</u>** – This indicates how many times a head can be used in a combination before requiring a self-tare (a.k.a. zero). For example, if you are running a durable plastic product, you can set this to 0, which would never have the head self-tare. If you are running a product that accumulates in a bucket, you might want to set this to 15 so that it will self-tare often to compensate for product build up in the bucket. **(This is an Advanced Setting)**

- **Max Weight Tare** – This indicates whether the PrimoCombi should self-tare if the weight of the bucket is over a certain weight. If you are running sticky products you should use this field. Otherwise you should leave this field "**0**". **(This is an Advanced Setting)**

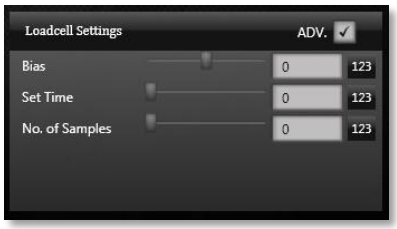



- **Min Load Required** – This field indicates if the weight bucket should be filled to a certain level before being used for a combination. Depending on the application this will allow the PrimoCombi to run faster by using fewer heads in a combination - however, in other applications it might slow down the PrimoCombi while it tries to satisfy the minimum load requirements. Ask your service provider if you are unsure of the proper setting for your application. The inability to fulfill minimum load requirements will result in an Empty Bucket alarm.
  **(This option is check by default.)**

- **Min Load Retries** – This field indicates how many times a head should attempt to refill itself before sending an Empty Bucket alarm. **(This is an Advanced Setting)**

***LOAD CELL SETTINGS***

- **Bias** – When a bias is set to anything but zero it will offset the weight in the weigh bucket by the specified amount. For example, if you use a +10 bias on your heads and there are 100 grams of product in the weigh bucket, it will read as 110 grams. If you have a -10 bias and there are 100 grams of product in the weigh bucket, it will read as 90 grams. This is useful if you are dumping low-cost product and you absolutely cannot have any under weights, or if you have an aging load cell that displays symptoms of fatigue and you are waiting for a replacement. **(This is an Advanced Setting)**




- **Set Time** – This is the duration to allow the product to settle before reading the weights. The value here will vary based on the application, but a good starter value is 100. If you require high-speed applications you should consult your service provider for optimal values.

***FEEDER MOTOR SETTINGS***


- **Delay to Start (ms)** – The delay to start value indicates how many milliseconds to wait until the feeder motor begins to activate. (100 by default.)

- **Rotation Angle (°)** – This is the total number of degrees (default = 360°) that the stepper motor will rotate. This should only be used if high speed is required. Contact your support provider for the proper settings. **(This is an Advanced Setting)**

- **Offset (°)** – The offset will modify the home position of the stepper motor. This should only be used in specialty applications. Contact your support provider for the proper settings. **(This is an Advanced Setting)**

- **Open Step Time (ms)** – This is the number of milliseconds the stepper motor will take to rotate one step during the opening process

- **Open Time Padding**– This is a percentage of the Open Step Time that will be applied to the stepper to slow the motor down during critical parts of the rotation. This will only become critical in high-speed applications. Contact a service technician for optimal settings. **(This is an Advanced Setting)**

- **Pause Time (ms)** – This is the duration, in milliseconds, that the bucket will stay open before closing and is product-dependent. If you are unsure of what to set here please contact a service technician.

- **Close Step Time (ms)** – This is the number of milliseconds the stepper motor will take to rotate one step during the closing process.

- **Close Time Padding** – This is a percentage of the Close Step Time that will be applied to the stepper to slow the motor down during critical parts of the rotation. This will only become critical in high-speed applications. Contact a service technician for optimal settings. **(This is an Advanced Setting)**

***WEIGHER MOTOR SETTINGS***


- **Delay to Start (ms)** – The delay to start value indicates how many milliseconds to wait until the weigher motor begins to activate.

- **Rotation Angle (°)** – This is the total number of degrees (default = 360°) that the stepper motor will rotate. This should only be used if high speed is required. Contact your support provider for the proper settings. **(This is an Advanced Setting)**

- **Offset (°)** – The offset will modify the home position of the stepper motor. This should only be used in specialty applications. Contact your support provider for the proper settings. **(This is an Advanced Setting)**

- **Open Step Time (ms)** – This is the number of milliseconds the stepper motor will take to rotate one step during the opening process.

- **Open Time Padding** – This is a percentage of the Open Step Time that will be applied to the stepper to slow the motor down during critical parts of the rotation. This will only become critical in high-speed applications. Contact a service technician for optimal settings. **(This is an Advanced Setting)**

- **Pause Time (ms)** – This is the duration, in milliseconds, that the bucket will stay open before closing and is product-dependent. If you are unsure of what to set here please contact a service technician.

- **Close Step Time (ms)** – This is the number of milliseconds the stepper motor will take to rotate one step during the closing process.

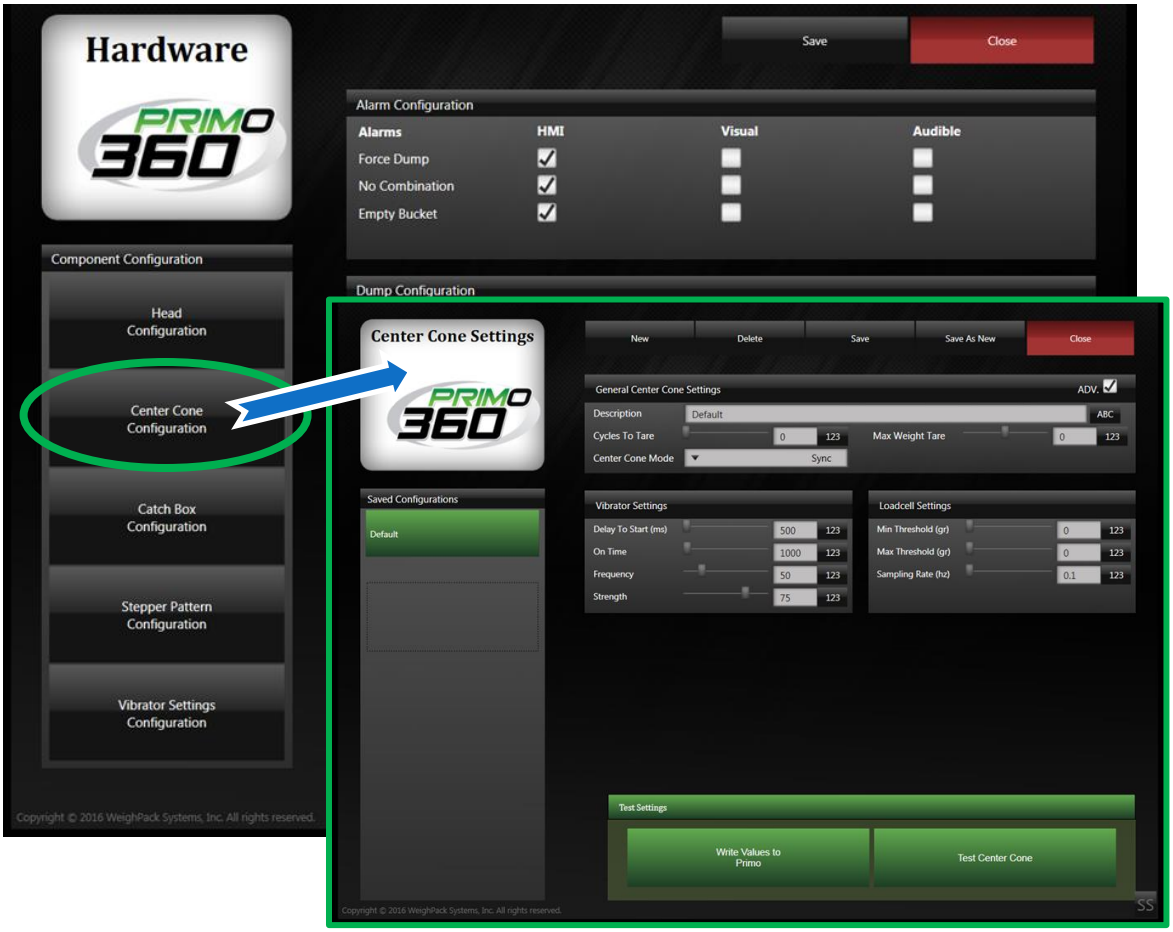
- **Close Time Padding**– This is a percentage of the Close Step Time that will be applied to the stepper to slow the motor down during critical parts of the rotation. This will only become critical in high-speed applications. Contact a service technician for optimal settings. **(This is an Advanced Setting)**

***TEST SETTINGS***

The test settings section allows you to view your settings in operation before saving them to the database. This will allow you to view the effect that each setting will have on the head sequence. Take note that you will not be able to use these buttons if the PrimoCombi is in RUN or PAUSE mode.


- **Write Values to Primo** – Clicking this button will send the current values for the General, Feeder, Weigher, and Load cell settings to the PrimoCombi
- **Test Feeder Bucket** – This will activate the Feeder Bucket.
- **Test Weigher Bucket** – This will activate the Weigher Bucket.

Unless you are an advanced operator it is suggested that you test your settings prior to saving them.

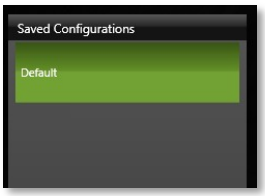



**Center Cone Settings Screen**

The center cone vibrator configuration screen will appear if you select ***Vibrator*** as your center cone type on the Hardware Screen. Press the **Center Cone Configuration** button on the Hardware screen to access the **Center Cone Settings Screen.**

### *SAVED CONFIGURATIONS*

The Saved Configuration section is where all your different configurations will be saved. You can create as many different head settings as you wish, limited only by the disk space of the computer hosting the Database.

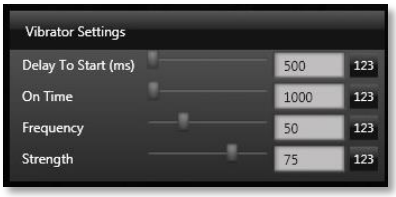


***GENERAL CENTER CONE SETTINGS***


- **Description** – This is the description of the configuration. It is recommended that you give the configuration a description allowing easy recognition of the settings.
- **Cycles to Tare**– This indicates how many cycles the load cell on the center cone can be used before requiring a self-tare (a.k.a. zero). **(This is an Advanced Setting)**
- **Max Weight Tare**– This indicates whether the PrimoCombi should self-tare if the weight on the center cone is over a certain weight. Load cells are sensitive devices and occasionally a heavy weight may decrease accuracy. **(This is an Advanced Setting)**
- **Center Cone Mode** – This indicates how the center cone should operate with regards to the whole system.
    - **Sync** – Most applications should use Sync mode. This will activate the center cone when a combination is dumped and heads refilling is required.
    - **On** – This will enable to center cone to be running at all times.
    - **Off** – This will disable the center cone from running at all times.

***VIBRATOR SETTINGS***

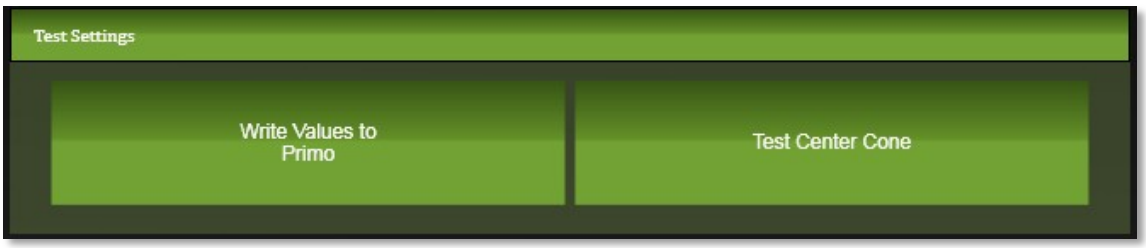
- **Delay to Start (ms)** – This value indicates how many milliseconds to wait until the vibrator begins to activate.
- **On Time** – The amount of time, in milliseconds, for the center cone to stay on.
- **Frequency** – The frequency at which the center cone should vibrate at. Typically this should be set between 50Hz and 60Hz. For specialty applications this value might require changing. Consult your service provider for optimal frequency settings.
- **Strength** – Increasing this value will increase the strength of the vibrator; decreasing it will reduce its strength. Typically, a value between 60% and 75% is acceptable for most applications. Specialty applications might require different settings at which point you should contact a service technician for optimal settings.




The Vibrator design of the PrimoCombi is unique in the world of multi-head weighers. They are DC-driven using a square wave, providing a more flexible and more powerful vibration.

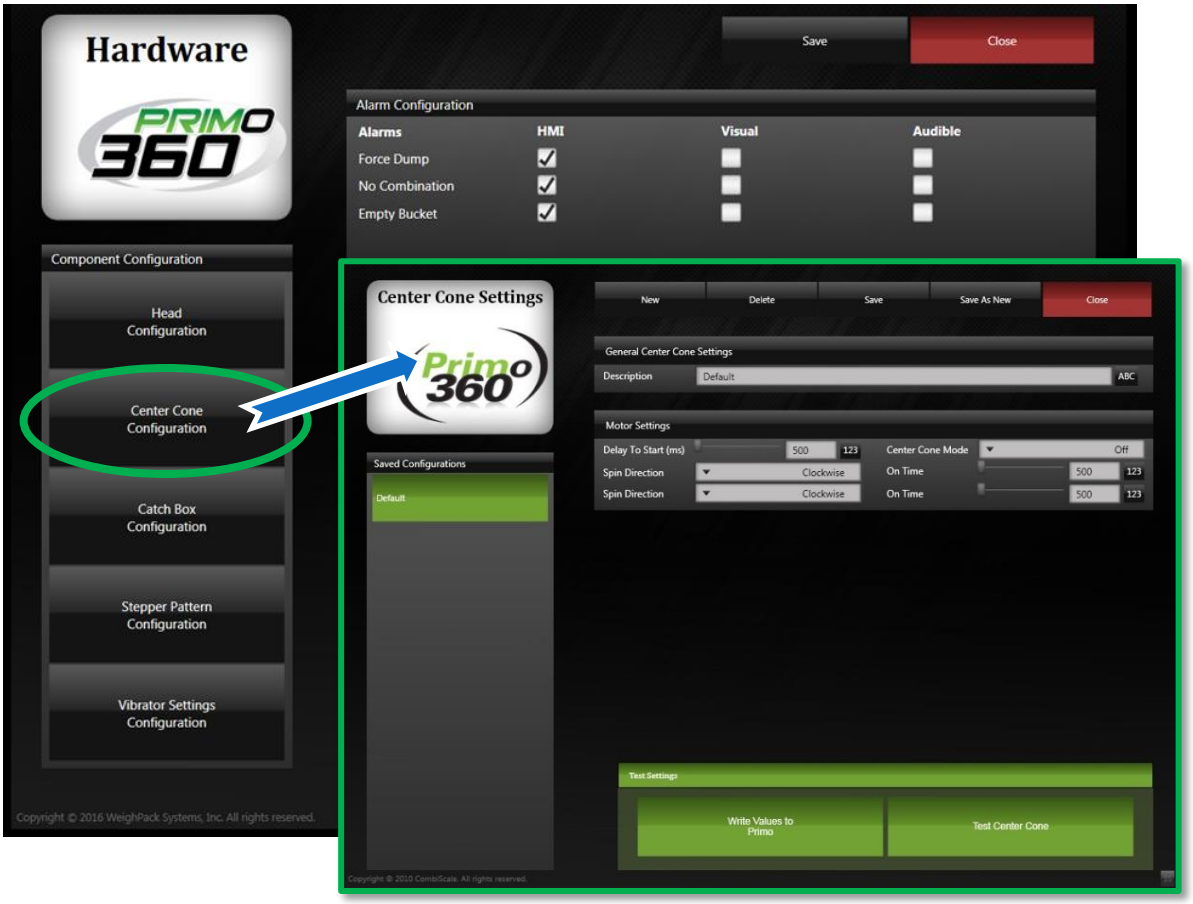
***TEST SETTINGS***

The test settings section allows you to view your settings in operations before saving them to the database. This will allow you to view the effect each setting will have on the head sequence. Take note that you will not be able to use these buttons if the PrimoCombi is in RUN or PAUSE mode.




- **Write Values to Primo** – Clicking this button will send the current values for the center cone vibrator settings to the PrimoCombi.
- **Test Center Cone** – This will activate the center cone vibrator.

Unless you are an advanced operator it is suggested that you test your settings prior to saving them.

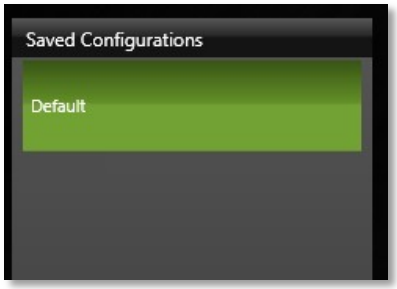



**Center Cone Settings (Center Cone Motor) Screen**

The center cone motor configuration screen will appear if you select **Motor** as your center cone type and click the **Center Cone Configuration** button from the Hardware screen.

***SAVED CONFIGURATIONS***

The Saved Configurations section is where all your different configurations will be saved. You can create as many different head settings as you wish, limited only by the disk space of the computer hosting the Database.



***GENERAL CENTER CONE SETTINGS***

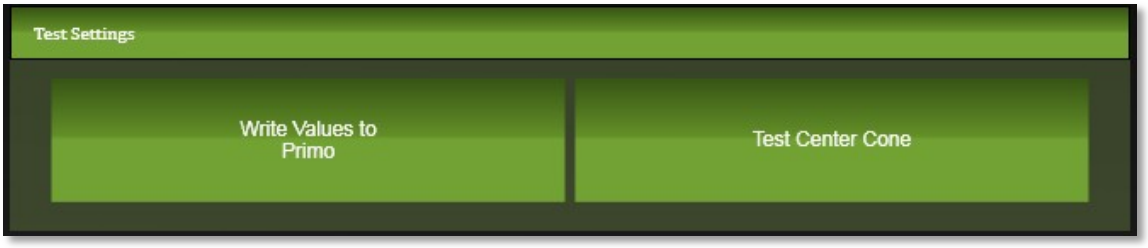

- **Description** – This is the description of the configuration. It is recommended that you give the configuration a description allowing easy recognition of the settings.

***MOTOR SETTINGS***


- **Delay to Start (ms)** – This value indicates how many milliseconds to wait until the motor begins to activate.
- **Center Cone Mode** – This indicates how the center cone should operate with regards to the whole system.
    - **Sync** – Most applications should use Sync mode. This will activate the center cone when a combination is dumped and refilling of heads is required.
    - **On** – This will enable the center cone to be running at all times.
    - **Off** – This will disable the center cone from running at all times.
- **Spin Direction** – This is the first direction in which the center cone motor will spin.
    - **Clockwise** – Rotate clockwise.
    - **Counter Clockwise** – Rotate counter-clockwise.
- **On Time** – This is how long the center cone motor will spin in the first direction.

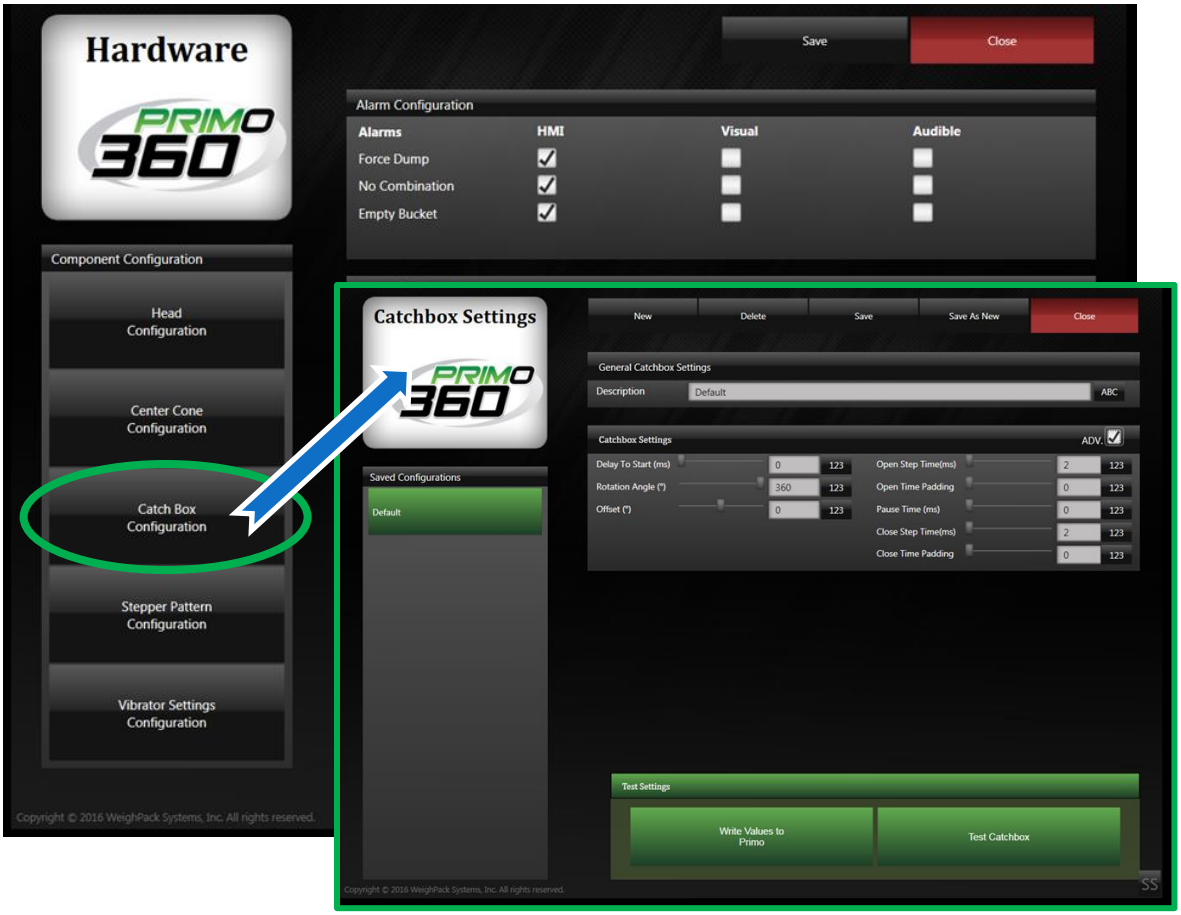
***TEST SETTINGS***

The Test Settings section allows you to view your settings in operation before saving them to the database. This allows you to view the effect each setting will have on the head sequence. Take note that you will not be able to use these buttons if the PrimoCombi is in RUN or PAUSE mode.




- **Write Values to Primo** – Clicking this button will send the current values for the center cone motor settings to the PrimoCombi.
- **Test Center Cone** – This will activate the center cone motor.

**Note:** It is suggested that you test your settings prior to saving them.



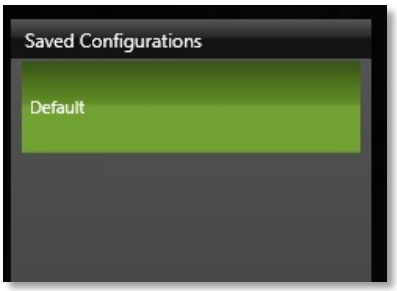

**Catchbox Settings Screen**

### *CATCH BOX CONFIGURATIONS*

The Catch Box configuration screen (a.k.a. Timing Bucket) will appear if you enable the **Catch Box** field from the Hardware screen and click on **Catch Box Configurations**.

### *SAVED CONFIGURATIONS*

The saved configuration section is where all your different configurations will be saved. You can create as many different head settings as you wish, limited only by the disk space of the computer hosting the Database.



***GENERAL CATCH BOX SETTINGS***


- **Description** – This is the description of the configuration. It is recommended that you give the configuration a description allowing easy recognition of the settings.

***CATCH BOX SETTINGS***


- **Delay to Start (ms)** – This indicates how many milliseconds to wait until the catch box begins to activate.

- **Rotation Angle (°)** – This is the total number of degrees (default = 360°) that the stepper motor will rotate and should only be used if high speed is required. Contact your support provider for the proper settings. **(This is an Advanced Setting)**

- **Offset (°)** – The offset will modify the home position of the stepper motor. This should only be used in specialty applications. Contact your support provider for the proper settings. **(This is an Advanced Setting)**

- **Open Step Time (ms)** – This is the number of milliseconds the stepper motor will take to rotate one step during the opening process.

- **Open Time Padding** – This is a percentage of the Open Step Time that will be applied to the stepper to slow the motor down during critical parts of the rotation. This will only become critical in high-speed applications. Contact a service technician for optimal settings. **(This is an Advanced Setting)**

- **Pause Time (ms)** – This is the duration, in milliseconds, that the bucket will stay open before closing and is product-dependent. If you are unsure of what to set here please contact a service technician.

- **Close Step Time (ms)** – This is the number of milliseconds the stepper motor will take to rotate one step during the closing process.

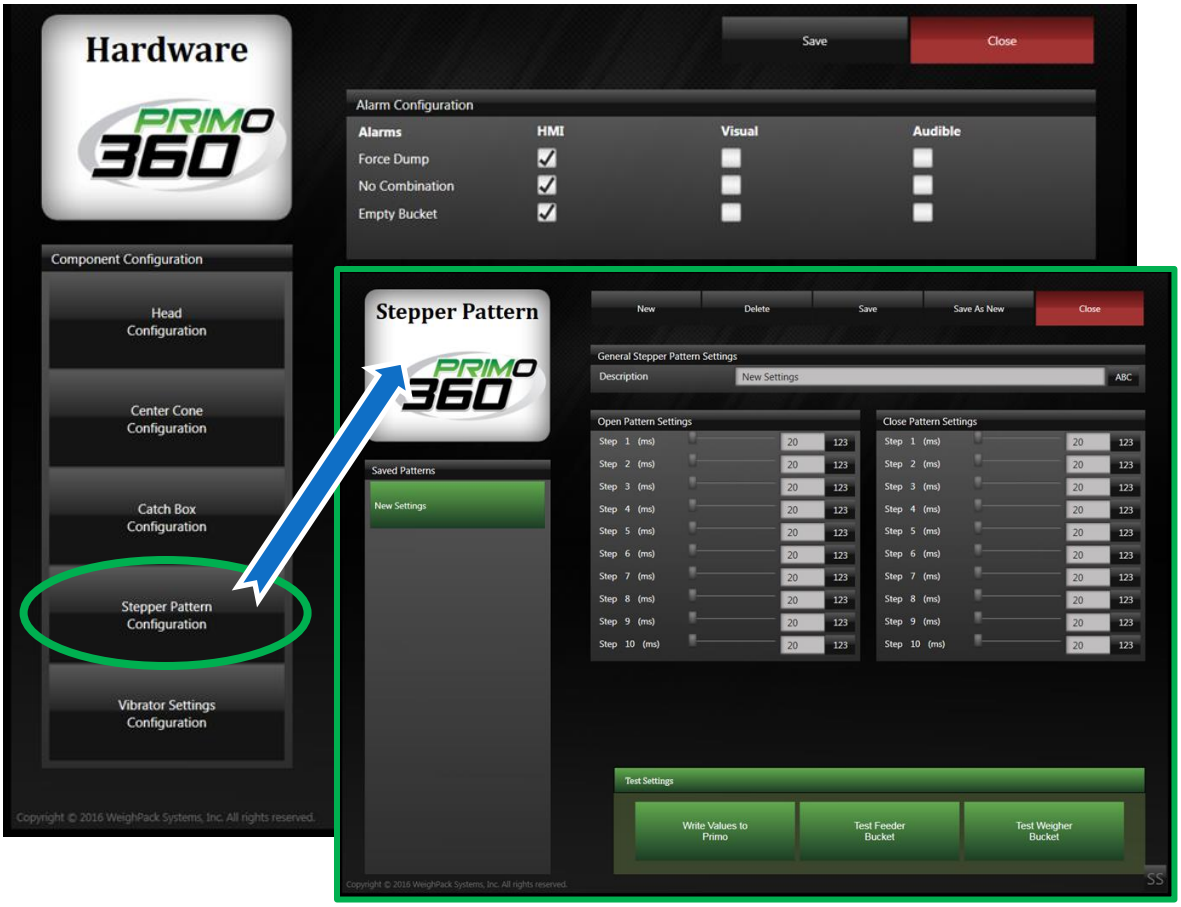
- **Close Time Padding**– This is a percentage of the Close Step Time that will be applied to the stepper to slow the motor down during critical parts of the rotation. This will only become critical in high-speed applications. Contact a service technician for optimal settings. **(This is an Advanced Setting).**

***TEST SETTINGS***

The Test Settings section allows you to view your settings in operation before saving them to the database. This will allow you to view the effect each setting will have on the head sequence. Take note that you will not be able to use these buttons if the PrimoCombi is in RUN or PAUSE mode.


- **Write Values to Primo** – Clicking this button will send the current values for the catch box settings to the PrimoCombi.
- **Test Catch Box**– This will activate the catch box.

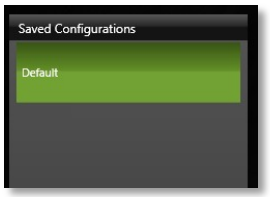
Unless you are an advanced operator it is suggested that you test your settings prior to saving them.




**Stepper Pattern Screen**

The Stepper pattern Configuration screen allows the advanced configuration of the opening and closing pattern for the Weigh and Feed bucket stepper motors. All PrimoCombi stepper motors perform a series of 20 steps per 360 degree rotation. These are clustered into two groups of 10, one for the opening of the bucket and one for the closing of the bucket. This screen can only be accessed if the Advanced Components box is checked from the Hardware screen.

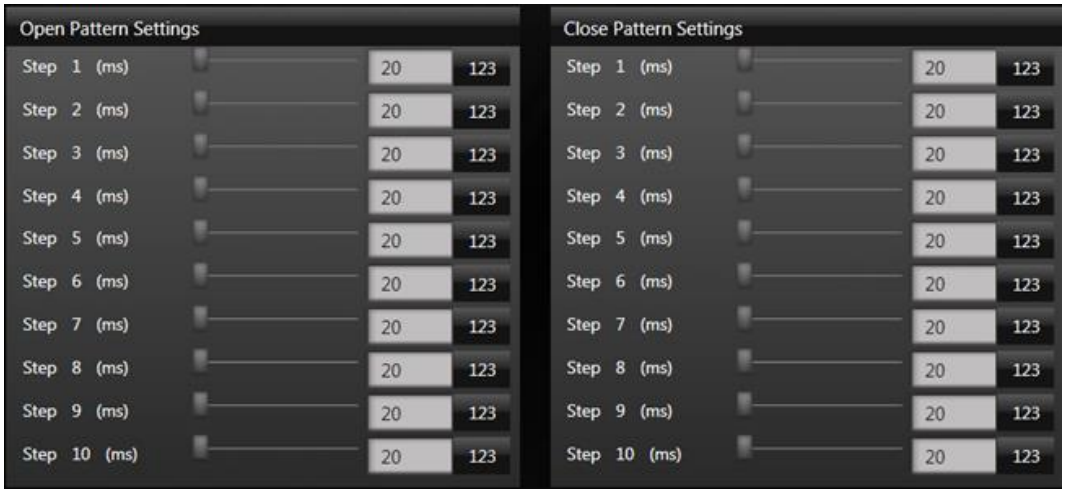
***SAVED CONFIGURATIONS***




The saved configuration section is where all your different configurations will be saved. You can create as many different head settings as you wish, limited only by the disk space of the computer hosting the Database.

### *GENERAL STEPPER PATTERN SETTINGS*


- **Description** – This is the description of the configuration. It is recommended that you give the configuration a description allowing easy recognition of the settings.

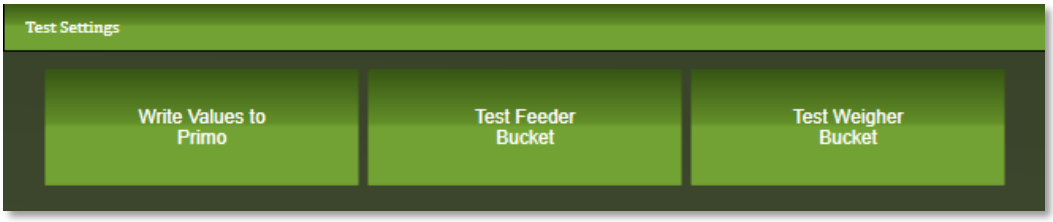



### *OPEN/CLOSING PATTERN SETTINGS*

Is where the timing settings for the steppers patterns are configured.

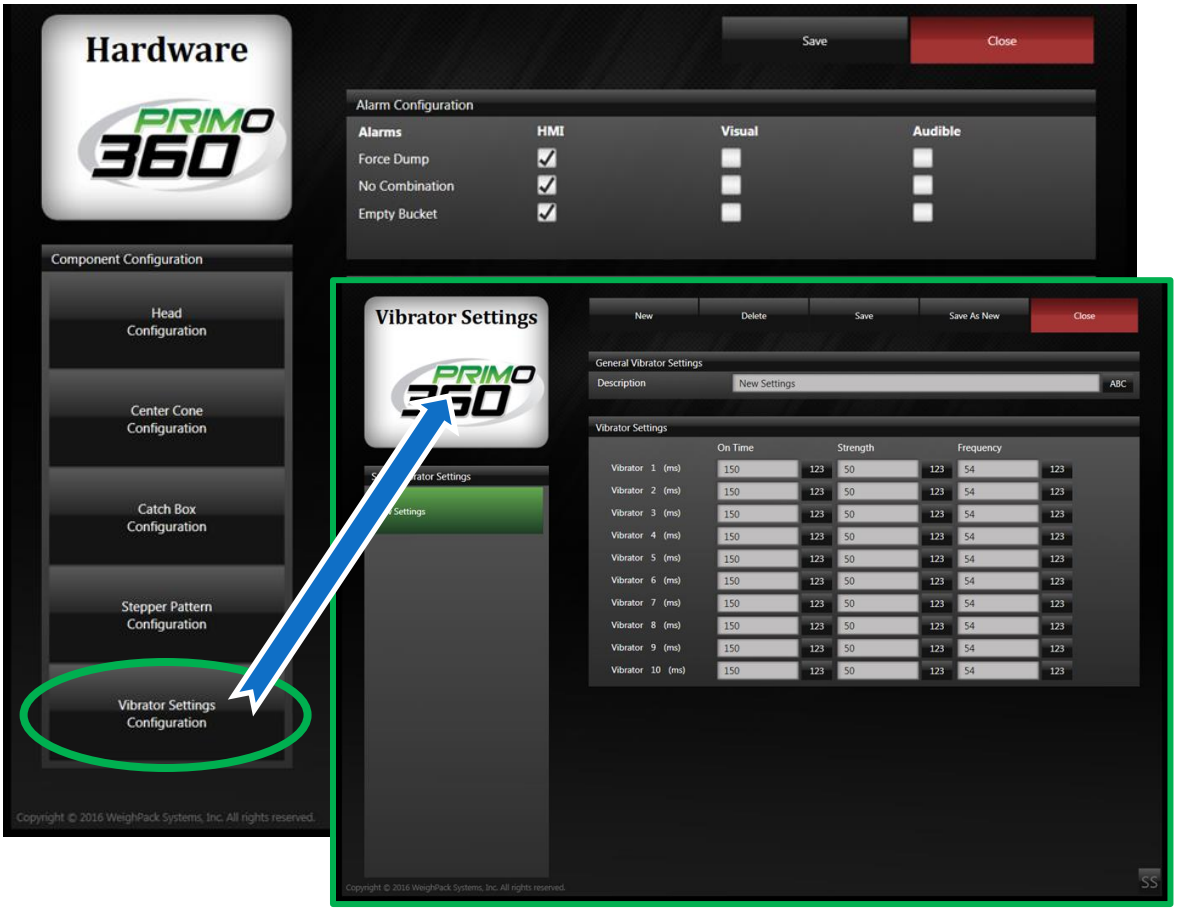
### *TEST SETTINGS*

The Test Settings section allows you to view your settings in operation before saving them to the database. This will allow you to view the effect each setting will have on the head sequence. Take note that you will not be able to use these buttons if the PrimoCombi is in RUN or PAUSE mode.




- **Write Values to Primo** – Clicking this button will send the current values for the catch box settings to the PrimoCombi.
- **Test Feeder/Weigher Bucket**– This will activate the catch box.

Unless you are an advanced operator it is suggested that you test your settings prior to saving them.

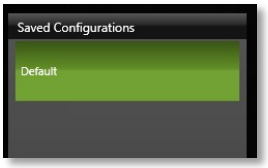



**Vibrator Setting Screen**

The Vibrator Settings Configuration screen allows offsetting of the individual vibrator settings. This screen can only be accessed if the Advanced Components box is checked from the Hardware screen.

***SAVED CONFIGURATIONS***

The saved configuration section is where all your different configurations will be saved. You can create as many different head settings as you wish, limited only by the disk space of the computer hosting the Database.




***GENERAL VIBRATOR SETTINGS***


- **Description** – This is the description of the configuration. It is recommended that you give the configuration a description allowing easy recognition of the settings.

**Vibrator Settings**

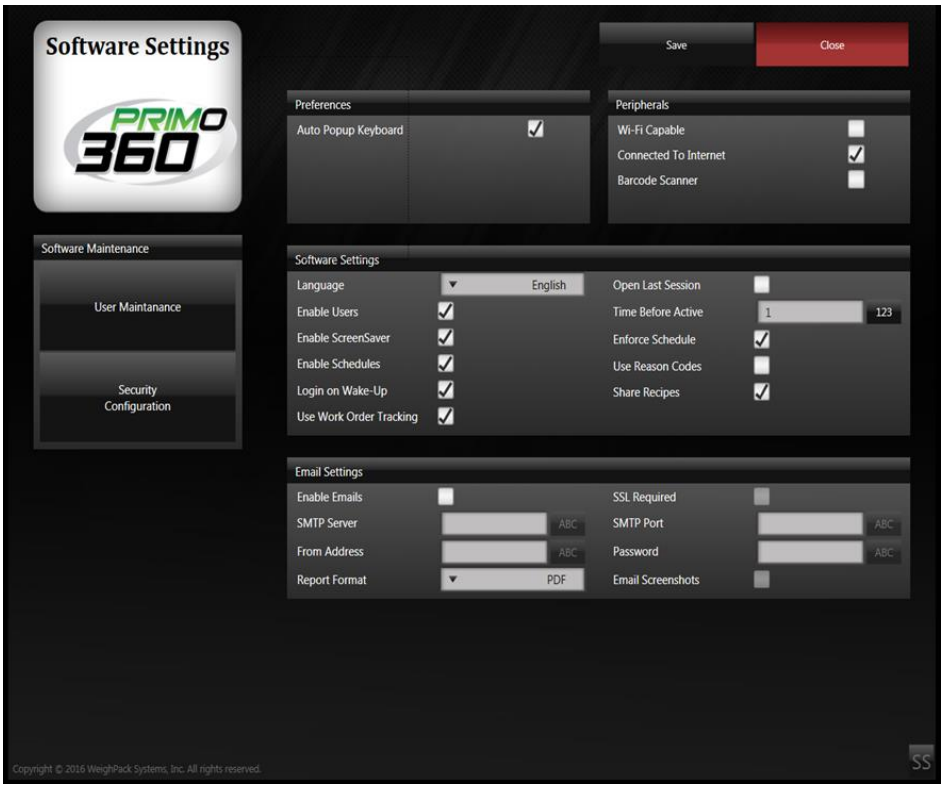
- **On Time** – Indicates how long the vibrator will be active for.
- **Strength** – Indicates how strong the vibrator will be.
- **Frequency** – Indicates what the frequency of the vibrator will operate at.

## SOFTWARE


The software screen provides general information about the 360 Operating System and allows an administrator to create special users and groups, as well as allow the selection of languages, themes, and other software-related items.

From the main navigation window you can access the Software Configuration screen by clicking the Settings icon. This will bring up a sub-menu with Hardware and Software icons.

Clicking on the Software icon will bring you to the Hardware Configuration Screen.




**Software Settings Screen**

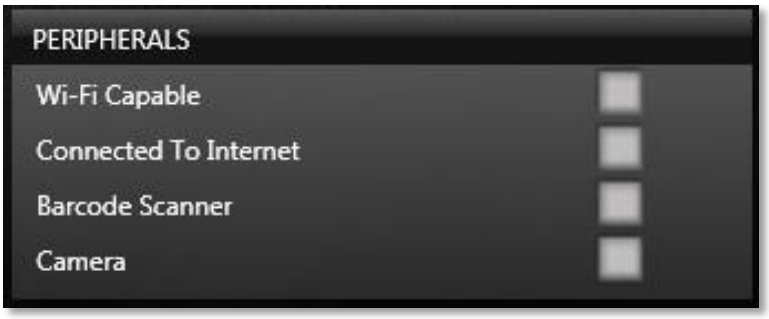
***PREFERENCES***

The Preferences section is where you can determine the general settings for your 360 Operating System.


- **Auto Popup Keyboard** – Checking this box will enable the popup keyboard.

***PERIPHERALS***

Peripherals are 360 Operating System add-ins that you can choose and enable.




- **Wi-Fi Capable** – By default, all PrimoCombi PC panels include Wi-Fi. If Wi-Fi is not available, this checkbox will not be checked. If a Wi-Fi network is available, this checkbox will be checked.
- **Connected To Internet** – This checkbox indicates if the PC panel is connected to the internet.
- **Barcode Scanner** – This checkbox indicates if the 360 Operating System has been configured to use a barcode scanner for loading recipes.
- **Camera** – This checkbox indicates if the 360 Operating System has detected a camera attached to the PC panel.

***SOFTWARE SETTINGS***

The Software Settings section is for general software settings. This will allow you to customize your 360 Operating System software to your needs.


- **Language** – Indicates the language of the software. New languages are being added all the time, so if there is a language that you require and it is not installed on the 360 Operating System call your service provider to see if the language is available. You can also create custom languages that will appear on this list.
- **Enable Users** – Use this if you want to track which users are logged in or enforce security settings on the 360 Operating System. This will allow you to create users and groups.
- **Open Last Session** - By enabling this option, when you open the 360 Operating System, it will automatically load the Recipe and settings from the last time the PrimoCombi was used.
- **Enable Screen Saver** – The screen saver will create an overlay on the touch screen, preventing any of the buttons on screen from being used. You will still be able to monitor the operations of the scale but you will need to unlock the screen before using the touch screen.
- **Time Before Active** – The number of minutes of inactivity to wait before the screen saver becomes active.
- **Enable Schedules** – This enables the scheduling section of the software – it allows managers to tell the scale what product should be running when, by whom, and for how long.
- **Enforce Schedules** – When a schedule is slated to begin the operator is asked whether to load the schedule, but has the option to snooze the schedule. When Enforce Schedules is enabled the schedule cannot be snoozed, the operator scheduled to run must be logged, and the 360 Operating System will load all settings required.
- **Login on Wake-up** – Checking this option will bring up the Login Screen during wake up.
- **Use reason Codes** – If enabled, this will prompt a Reason Code window forcing the operator to describe why a certain action has been performed.
- **Use Work Order Tracking** – If this option is checked, the system will request an order number on start up, and if the current order is completed when stopped.
- **Share Recipes** – When using multiple PrimoCombi scales, ‘Share Recipes’ will allow all machines with this activated feature to share recipes.

***EMAIL SETTINGS***

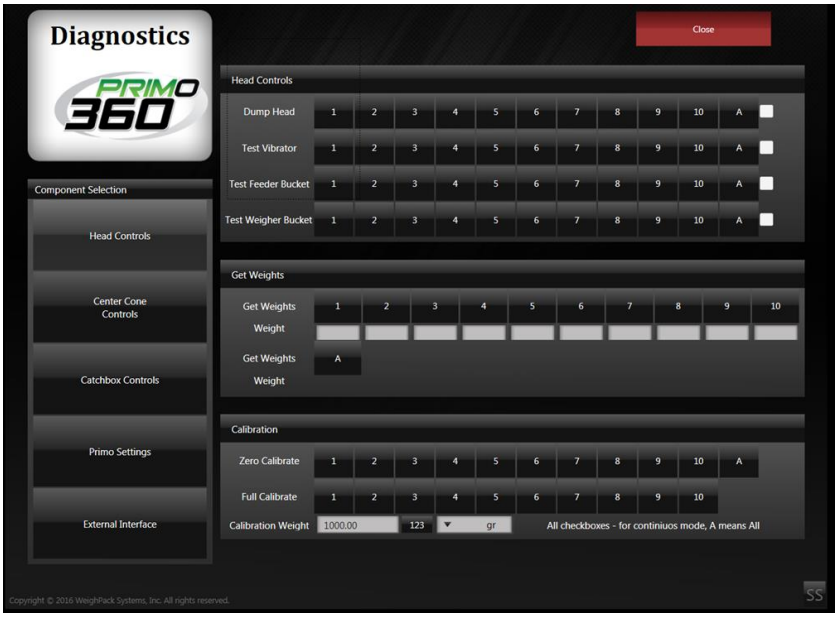

- **ENABLE EMAILS**– Activates Email
- **SSL REQUIRED** – Consult with IT Specialist
- **SMTP SERVER** – Consult with IT Specialist
- **SMTP PORT** – Consult with IT Specialist
- **FROM ADDRESS**– Consult with IT Specialist
- **PASSWORD** – Consult with IT Specialist
- **REPORT FORMAT** – Allows the selection of format used when emailing reports.
- **EMAIL SCREENSHOTS** – If enabled, the Email screen will be brought up when the Screen Shot button is used

## TOOLS

The Tools section contains software designed to Diagnose and calibrate components of the Primo Combi.


## DIAGNOSTICS

This section allows you to diagnose and troubleshoot various issues that may arise with your PrimoCombi.

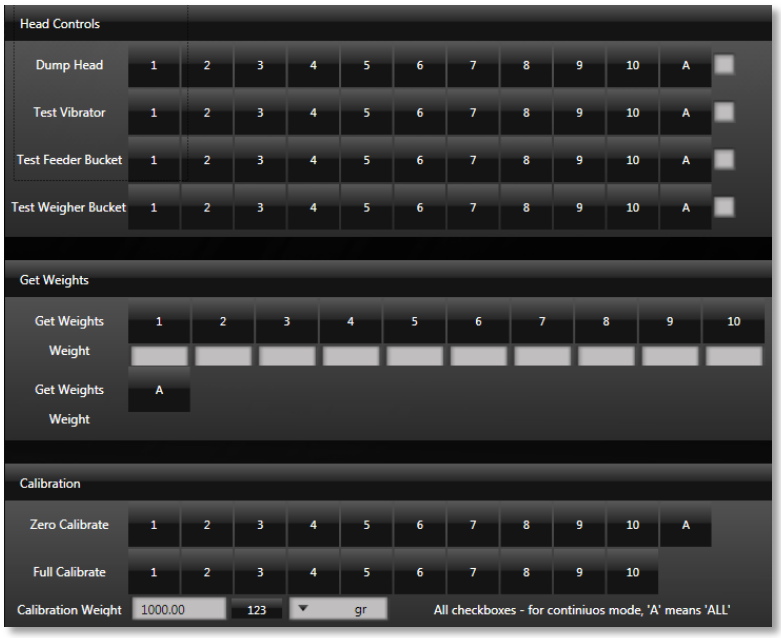

**Diagnostics Screen**

### *COMPONENT SELECTION*

The Component Selection allows you to choose what component you wish to diagnose.

### *HEAD CONTROLS*

Head Controls give the operator the ability to control each function of the head and diagnose any problem with the PrimoCombi. This is also where you can perform full calibrations.




- **DUMP HEAD** – Pressing a button will activate the full head sequence for the corresponding head. The sequence is Weigher Bucket → Feeder Bucket → Vibrator → Get Weight.
- **TEST VIBRATOR** – Pressing a button will activate the Vibrator for the corresponding head.
- **TEST FEEDER BUCKET** – Pressing a button will activate the Feeder Bucket for the corresponding head.
- **TEST WEIGHER BUCKET** – Pressing a button will activate the Weigher Bucket for the corresponding head.
- **ALL** – Pressing this button will activate all specified components once.
- **CONTINUOUS RUN BOX** – On the far right of the Head Controls window is a column of check boxes. Checking them will allow you to turn on all components repeatedly until the box is unchecked.

***GET WEIGHT***


- **GET WEIGHTS** – Pressing a button will get the weight of the corresponding head (the scale must be stopped in order to perform this action.
- **WEIGHTS** – Once the weight is received from the scale, it will be displayed in the field corresponding to the head.

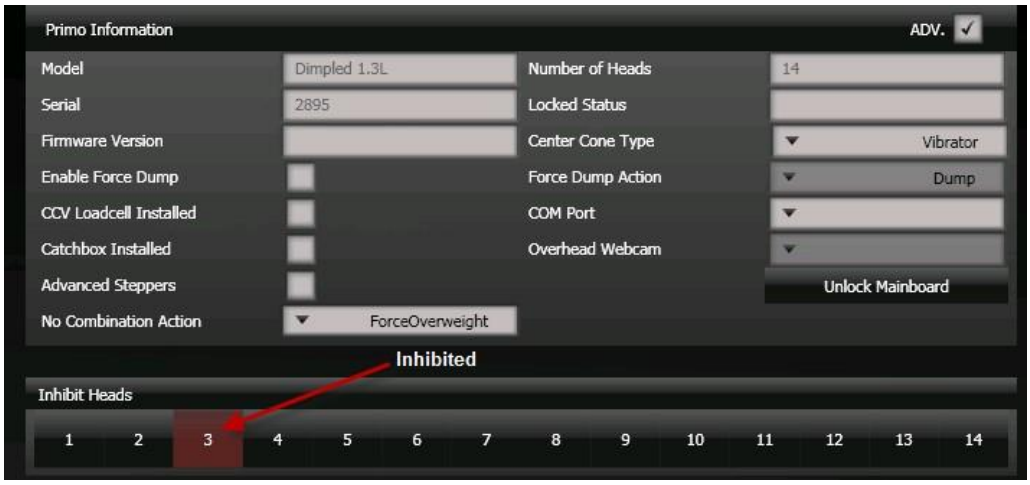
***CALIBRATION***


- **ZERO CALIBRATE** – Pressing this button will do a zero calibrate (tare operation) on the corresponding head.
- **FULL CALIBRATE** – Pressing this button will begin the Full Calibration process for the corresponding head. Once the button is pressed, the operator will be prompted to ensure that the calibration weight is properly placed on the head the operator wishes to calibrate.
- **CALIBRATION WEIGHT** – This is where you tell the PrimoCombi what your calibration (a.k.a. point of reference) weight is for a full calibration.

After performing a Zero or Full calibration you will receive a confirmation that the calibration was performed successfully.

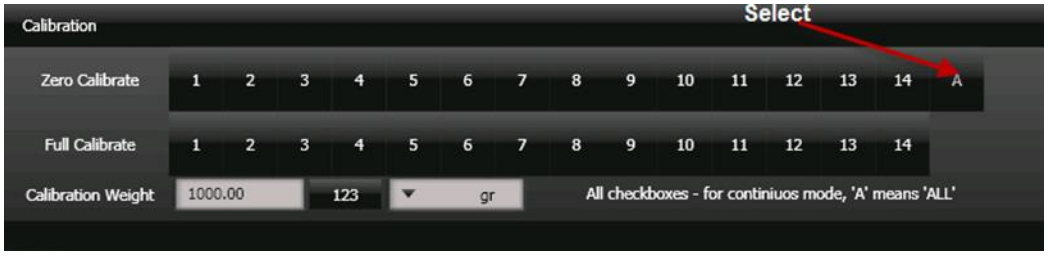
***SCALE SET-UP / CALIBRATION***

- With the scale off (powered down) install the weigh buckets, feed buckets, vibratory pans, and center cone back to the appropriate scale respecting proper lane position.
- Power up the scale.
- Ensure there are no heads inhibited by going to the “Settings, Hardware settings” page (head will be highlighted in red).

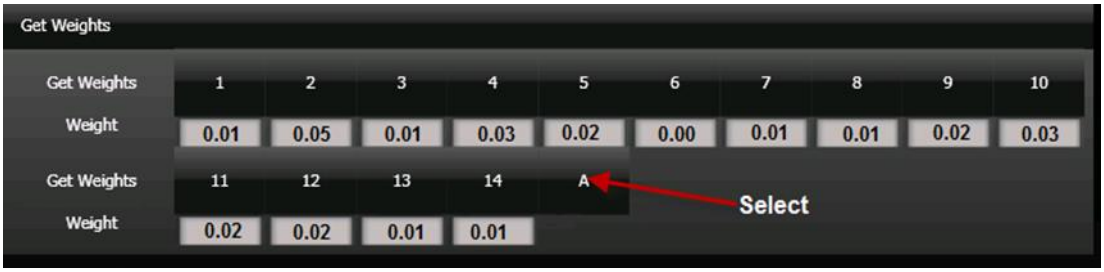



- Un-inhibit the head if inhibited and “Save” the change.
- Load a recipe under the “Operate“ page.
- Under the “Tools / Diagnostic” screen cycle the feed buckets, weigh bucket and vibrators (check the box at the end and select “A” for all under the appropriate item).


- Physically examine scale to ensure there is no obstruction / interference while the scale is cycling in the diagnostic mode.
- Stop the cycling of the scale and ZERO ALL BUCKETS from the calibration screen.

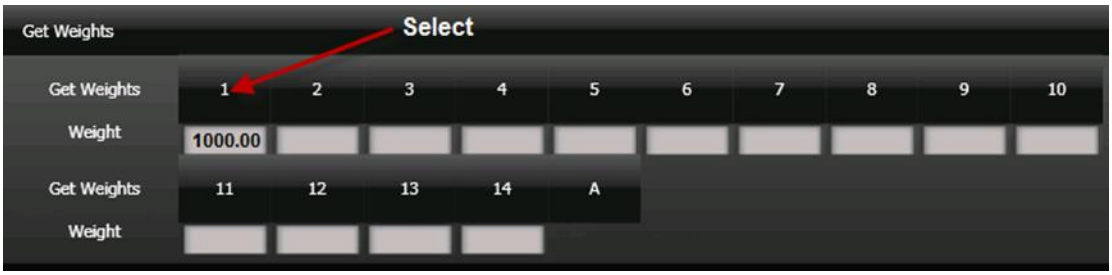


- Preform a GET WEIGHT from the diagnostic screen to ensure all reading are 0.00 grams +/- 1 gram.

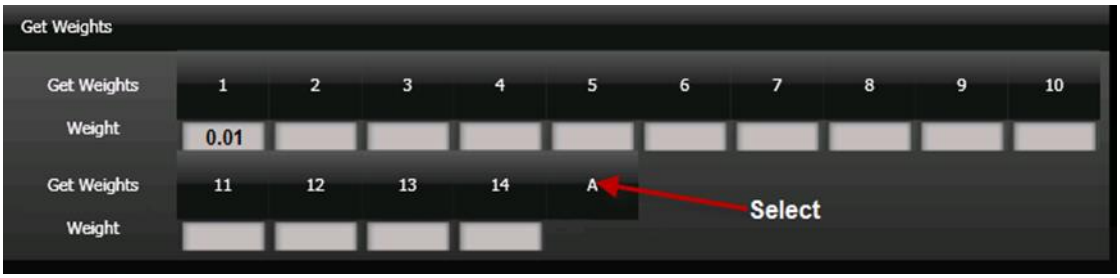



- Have someone place a 1KG weight in weigh bucket number 1 and preform a full calibration on lane 1.


- Go get the reading by preforming a get weigh on lane 1 and ensure it reads 1000.00 +/- 1 gram.




- Remove the weight from the weigh bucket
- Go get the reading by preforming a get weigh on lane 1 and ensure it reads 0.00 +/- 1 gram.




- If it is not, redo calibration (zero and full calibration) for the specific lane.
- Continue to the next lane and repeat process till all lanes have been successfully calibrated. Once finished, cycle all the weigh buckets under the diagnostic menu for 30 seconds.
- Preform a GET WEIGHT from the diagnostic screen to ensure all reading are 0.00 grams +/- 1 gram.
- If any lane is out of tolerance, redo the calibration for that lane.

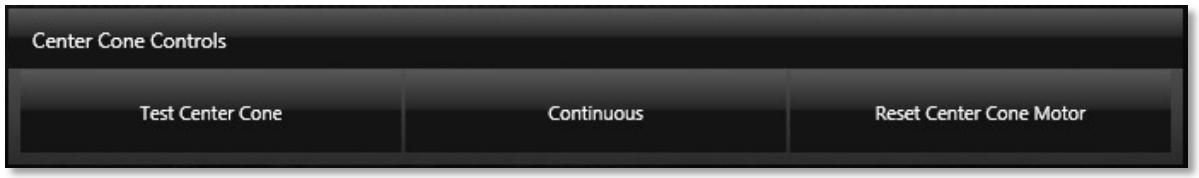
***CENTER CONE CONTROLS***

Center Cone Controls give the operator the ability to control each function of the center cone and the ability to diagnose any problem with the PrimoCombi. This is also where you can perform full calibrations.

***VIBRATOR***


- **TEST CENTER CONE** – Pressing this button will activate the center cone vibrator.
- **ZERO CALIBRATE** – Used to tare the weight of the Center Cone's load cell, if equipped with a load cell.
- **FULL CALIBRATE** – Used to perform a full calibration of the Center Cone's load cell. Once you click on the button you will be prompted begin the calibration. The calibration must be performed with a 1kg weight being placed on the Center Cone. The load cell will be calibrated to measure 1kg, using the weight placed on top of the Center Cone as a reference.
- **CONTINUOUS** – Continuous is a toggle-able button that allows you to turn on the center cone repeatedly until the button is pressed again.
- **RESET CENTER CONE** – If the center cone yields an error you can reset it here and bring it back online.
- **GET WEIGHTS** – If you have a load cell on the center cone, this is where you can get the weight of the product on the center cone.

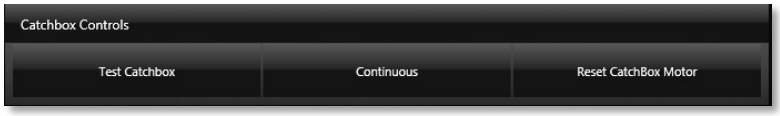
***MOTOR***




- **TEST CENTER CONE** – Pressing this button will activate the center cone motor.
- **CONTINUOUS** – Continuous is a toggle-able button that allows you to turn on the center cone repeatedly until the button is pressed again.
- **RESET CENTER CONE MOTOR** – If the center cone yields an error you can reset it here and bring it back online.

### *CATCH BOX CONTROLS*

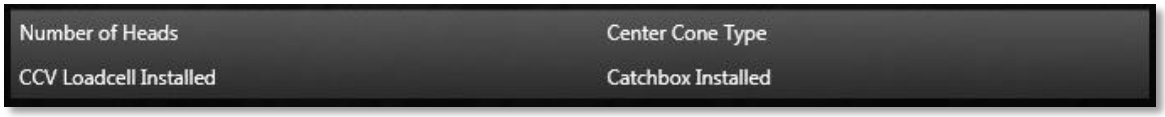
Catch Box Controls give the operator the ability to control each function of the catch box and the ability to diagnose any problem with the PrimoCombi.




- **TEST CATCH BOX** – Pressing this button will activate the catch box.
- **CONTINUOUS** – Continuous is a toggle-able button that allows you to turn on the catch box repeatedly until the button is pressed again.
- **RESET CATCH BOX MOTOR** – If the catch box yields an error you can reset it here and bring it back online.

### *SYSTEM PARAMETERS*

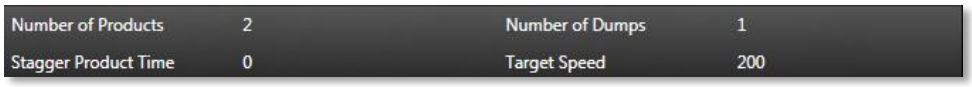
Displays the system parameters loaded into the PrimoCombi.




- **NUMBER OF HEADS** – This field indicates the number of heads your PrimoCombi has.
- **CENTER CONE TYPE** – This field indicates the type of center cone your PrimoCombi is using. This can be either None, Vibrator, or Motor.
- **CCV LOAD CELL INSTALLED** – This field indicates if the PrimoCombi is equipped with a center cone load cell to control the product flow into the machine.
- **CATCH BOX INSTALLED** – This field indicates if there is a catch box (a.k.a. Timing Bucket) attached to the PrimoCombi.

### *RECIPE PARAMETERS*

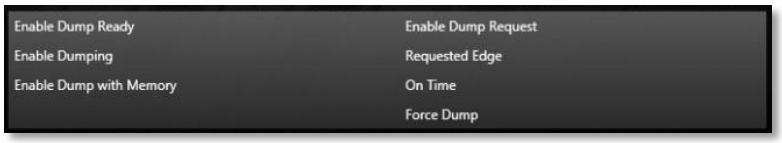
Displays the recipe parameters loaded into the PrimoCombi.




- **NUMBER OF PRODUCTS** – Indicates the number of different products you are running with a single recipe.
- **NUMBER OF DUMPS** – Indicates the number of dumps required to reach target weight.
- **STAGGER TIME**– Indicates the total time off all bucket openings during a single dump.
- **TARGET SPEED**– The speed at which you wish to run the scale at.

### *EXTERNAL DEVICE PARAMETERS*

Displays the external device parameters (a.k.a. ancillary device) loaded into the PrimoCombi. For details on each field please refer to Configuring Your Hardware.



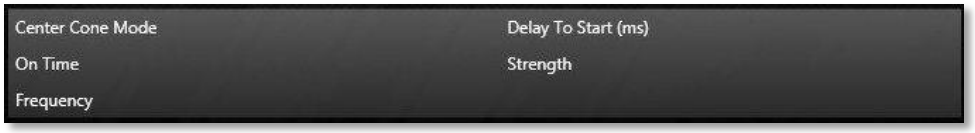

- **ENABLE DUMP READY** – Indicates if the Dump Ready signal is enabled.
- **ENABLE DUMP REQUEST** – Indicates if the Dump Request signal is enabled.
- **ENABLE DUMPING** – Indicates if the Dumping signal is enabled.
- **REQUESTED EDGE** – Indicates which type of edge to trigger the dump.
- **ENABLE DUMP WITH MEMORY** – Indicates if the PrimoCombi remembers a dump request is enabled.
- **ON TIME** – Indicates how long the PrimoCombi will enable its signals for.
- **FORCE DUMP** – Indicates if Force Dumping is enabled.

***CENTER CONE PARAMETERS***

Displays the center cone parameters loaded into the PrimoCombi.

***VIBRATOR***

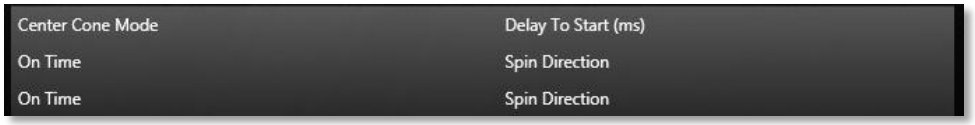
Displays the center cone vibrator Parameters loaded into the PrimoCombi. For details on each field please refer to Center Cone Configurations.




- **CENTER CONE MODE** – Indicates the mode that the center cone is currently using.
- **DELAY TO START (MS)** – Indicates how much time the center cone will wait before starting.
- **ON TIME** – Indicates how long the center cone will be active for.
- **STRENGTH** – Indicates how strong the center cone will be.
- **FREQUENCY** – Indicates what the frequency of the center cone will be.

***MOTOR***

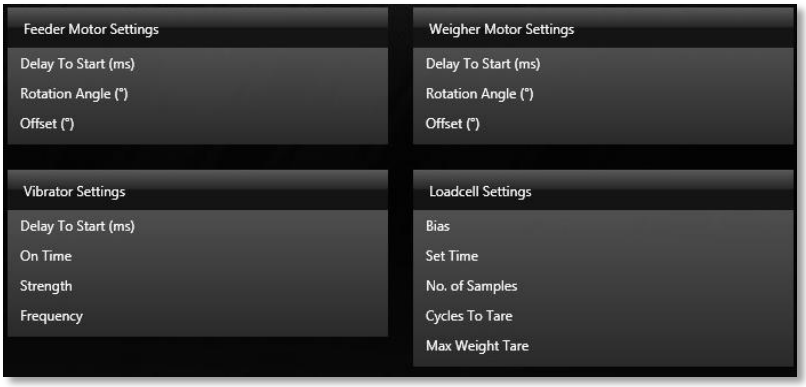
Displays the center cone motor Parameters loaded into the PrimoCombi. For details on each field please refer to Center Cone Configurations.




- **CENTER CONE MODE** – Indicates the mode that the center cone is currently using.
- **DELAY TO START (MS)** – Indicates how much time the center cone will wait before starting.
- **ON TIME** – Indicates how long the center cone will be active for in the first direction.
- **SPIN DIRECTION** – Indicates in which direction the center cone will spin first.
- **ON TIME** – Indicates how long the center cone will be active for in the second direction.
- **SPIN DIRECTION** – Indicates in which direction the center cone will spin second.

### *HEAD PARAMETERS*

Displays the head parameters loaded into the PrimoCombi. For more information please refer to Head Configurations and Recipe Configurations.

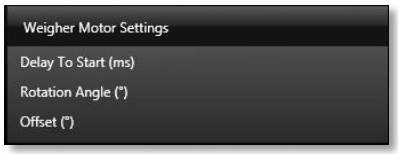



### *FEEDER MOTOR SETTINGS*

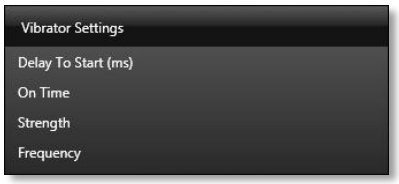
- **DELAY TO START (MS)** – Indicates how much time the feeder motor will wait before starting.
- **ROTATION ANGLE (°)** – Indicates how many degrees the feeder motor will rotate before starting the pause time.
- **OFFSET (°)** – Indicates the number of degrees to offset the home position of the stepper motor.


### *WEIGHER MOTOR SETTINGS*

- **DELAY TO START (MS)** – Indicates how much time the weigher motor will wait before starting.
- **ROTATION ANGLE (°)** – Indicates how many degrees the weigher motor will rotate before starting the pause time.
- **OFFSET (°)** – Indicates the number of degrees to offset the home position of the stepper motor.

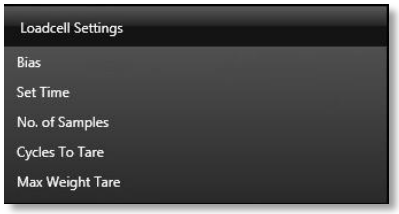


### *VIBRATOR SETTINGS*




- **DELAY TO START (MS)** – Indicates how much time the vibrator will wait before starting.
- **ON TIME**– Indicates how long the vibrator will be active for.
- **STRENGTH**– Indicates how strong the vibrator will be.
- **FREQUENCY**– Indicates what the frequency of the vibrator will be.

### *LOAD CELL SETTINGS*




- **BIAS** – Indicates the weight offset of the load cell.
- **SET TIME** – Indicates how long to wait before trying to weigh the weigher bucket.
- **NO. OF SAMPLES** – Indicates the number of acquisitions to take from the load cell before sending the weight
- **CYCLES TO TARE** – Indicates the number of times the weigher bucket will be used before zeroing.
- **MAX WEIGHT TARE** – This field indicates how much weight can accumulate in a weigh bucket before a zeroing is performed.

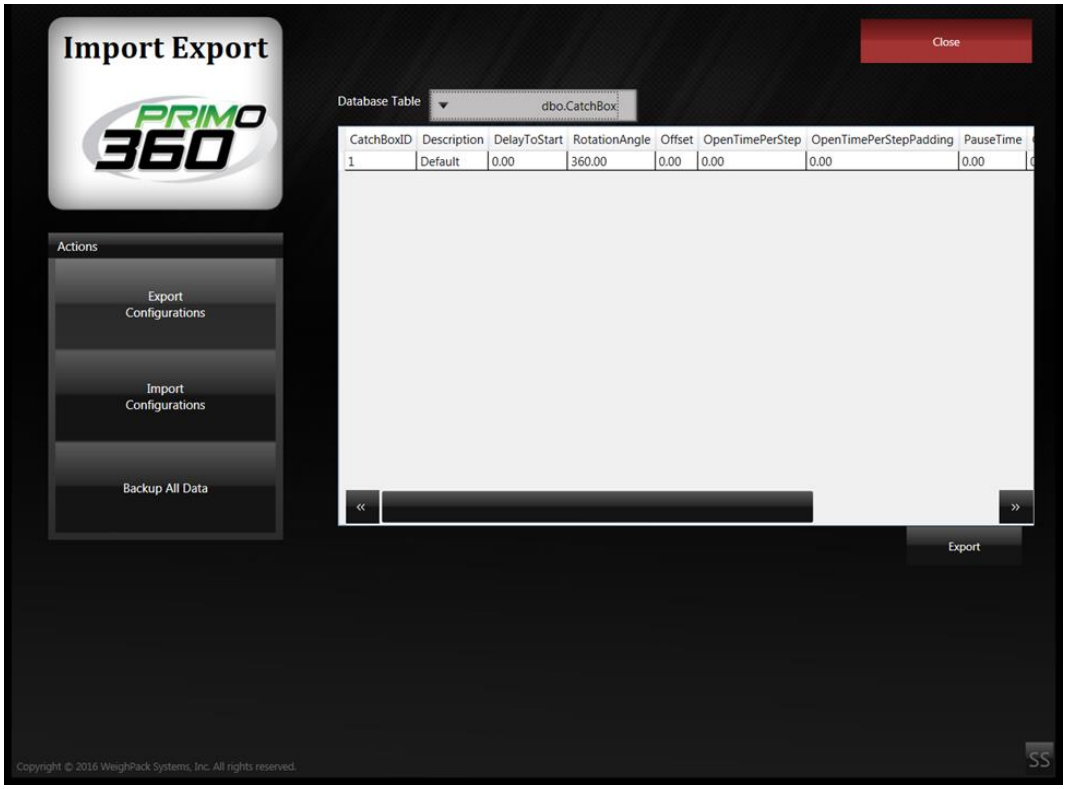
### *EXTERNAL INTERFACE*

The external interface section is useful when trying to integrate an ancillary device to the PrimoCombi.


- **TRIGGER DUMPING**– Pressing this button will simulate a dump signal.
- **TRIGGER DUMP READY**– Pressing this button will simulate the dump ready signal.
- **TRIGGER FORCE DUMP**– Pressing this button will simulate a forced dump signal.
- **DUMP REQUEST STATUS** – This field will change from On to Off depending on the signal coming in from the ancillary device.

## IMPORT/EXPORT

The Import/Export section of the 360 Operating System is where you will be able to transfer information from the database. Import/Export is mainly for data transfer and is not meant for backup purposes. The 360 Operating System runs on an SQL database that has its own internal backup system. If you want to back up your data, it is recommended to use the SQL services backup. For more information contact your service provider.

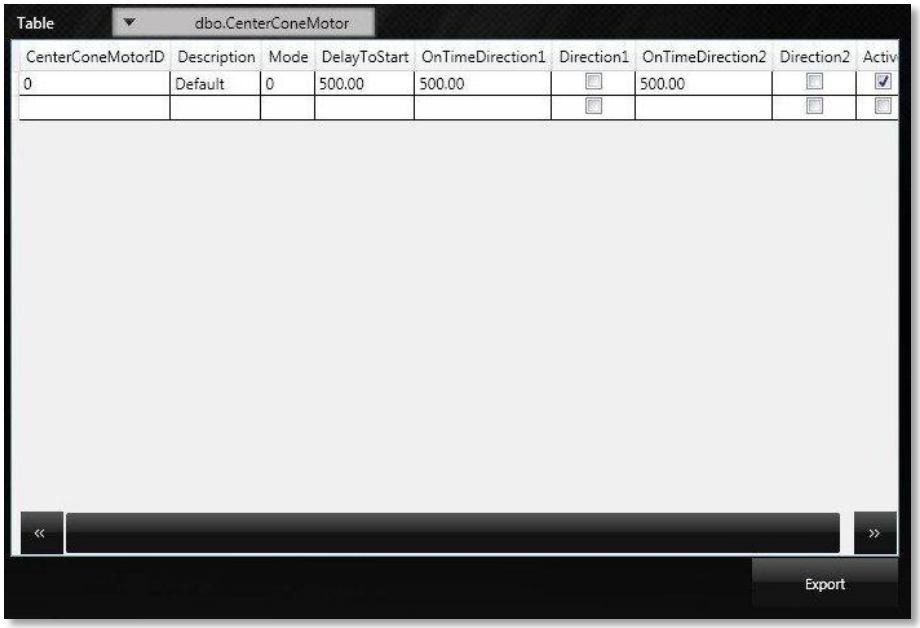

**Import/Export Screen**

***ACTIONS***

The Actions tab is where you choose whether you want to import or export information from the database.

**EXPORT**

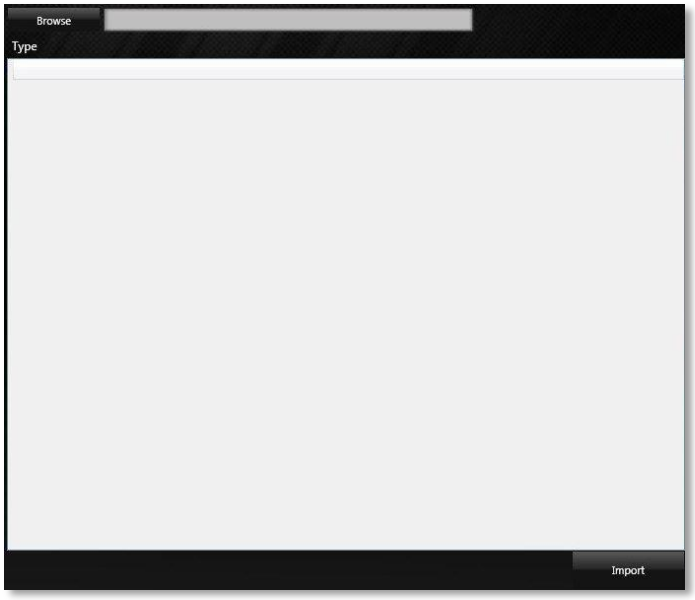
Pressing the Export button under the Actions tab will open the Export Screen, where the operator can save database information to an XML file for easy data transfer from one system to another.




- **TABLE** – The Table drop-down menu allows you to choose which table you wish to export the data from.
- **CENTRAL GRID** – This is where the data in the selected table will be displayed. Here you can select the rows that you want to export. You can select multiple rows for export.
- **EXPORT** – Pressing this button will export the selected data from the Central Grid. The data will be exported to the Exported Data folder (by default located in the C:\Program Files\CombiScale\Primo360OS\ folder).

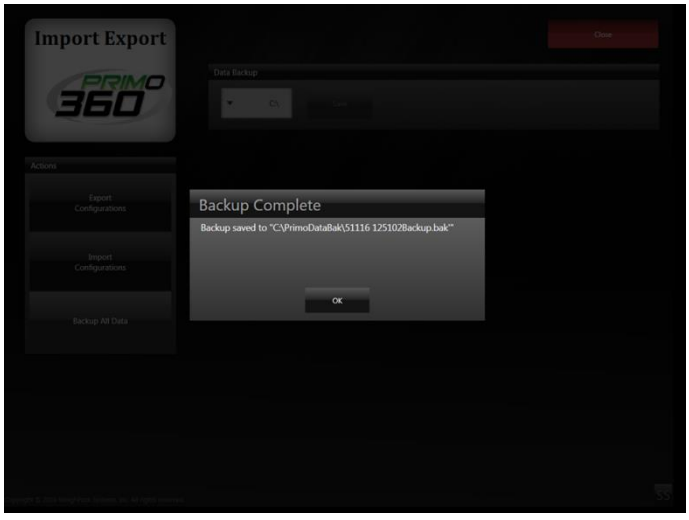
## IMPORT

Pressing the Import button under the Actions tab will open the Import Screen, where the operator can browse files to import database information from an XML file.




- **BROWSE** – Clicking on the Browse button will open the file explorer. From here browse to the XML file that you wish to import.
- **TYPE** – Once you select an XML file the Type field will display the database table that your data will be imported into.
- **CENTRAL GRID** – Central Grid will display the data contained in the XML file. Select the data that you wish to import.
- **IMPORT** – Clicking on the Import button will import the data that you selected in the Central Grid.

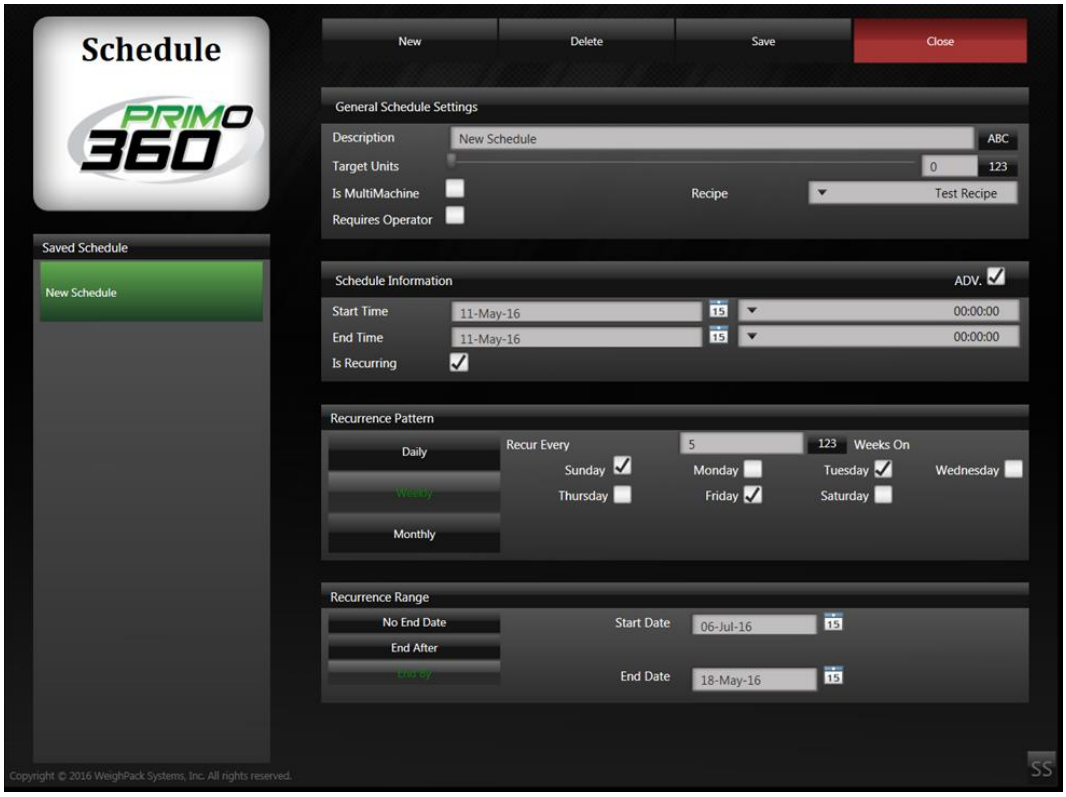
## BACKUP ALL DATA




- **DOWNLOAD DATA** – This window allows the operator to select a drive and start the backup process.

## SCHEDULE

The schedule section of the software is where you can enter in the different recipes, operators, and the target number of units that you wish to produce. In order to run a schedule it must be enabled.


**Schedule Screen**

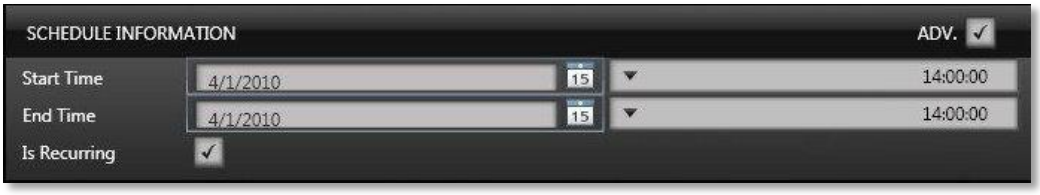
***SCHEDULE***

The Schedule section is where all your different schedules will be saved. You can create as many different schedules as you wish, limited only by the disk space of the computer hosting the Database. Once a schedule has been completed it will be removed from the list.

***GENERAL SETTINGS***

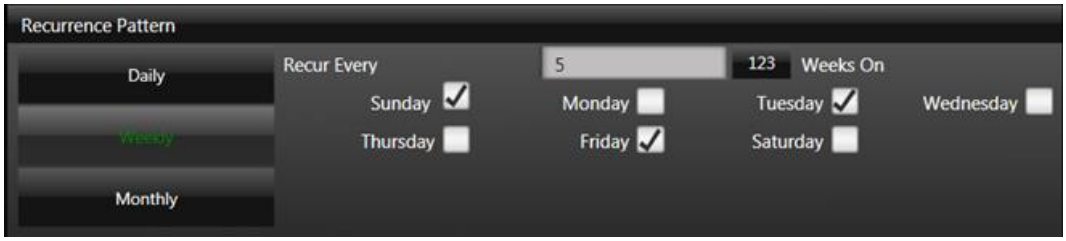

- **DESCRIPTION** – This is the description of the schedule. It is recommended that you give the schedule a description that allows easy recognition of the settings.
- **TARGET UNITS** – This is the number of units that you wish to produce during the scheduled run.
- **IS MULTIMACHINE** – If you are running several different machines that work together, select this option and you will be able to choose from a list of MultiMachine recipes. Otherwise you choose from the normal recipes.
- **RECIPE** – If you are *not* running a MultiMachine this is where you select which recipe you wish to load when the schedule elapses. If you are running MultiMachine this is where you choose the MultiMachine recipe you wish to load on all machines when the schedule elapses.
- **REQUIRES OPERATORS** – If you have users enabled you may choose whether a specific operator needs to be logged in to run the schedule.
- **OPERATOR** – This is where you choose which operator is able to run the selected schedule.

***SCHEDULE INFORMATION***




- **START TIME** – Here you select the date and time when you wish to start this schedule.
- **END TIME** – Here you select the date and time when you wish to end this schedule.
- **IS RECURRING** – Selecting this option will bring up the recurrence options, which lets you select the frequency and occurrences of the schedule. **(This is an Advanced Setting)**

***RECURRENCE PATTERN***



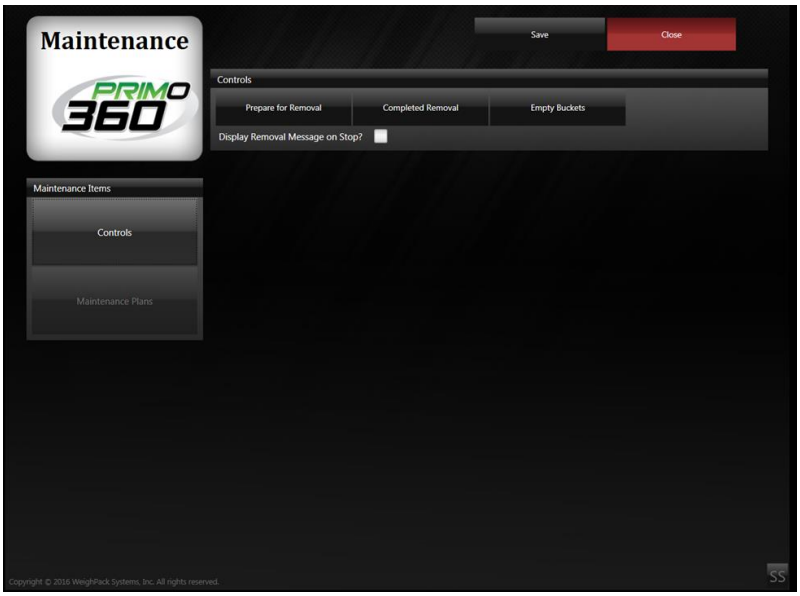

Recurrence patterns allow you to have a schedule repeat itself on a daily, weekly or monthly basis.

***RECURRENCE RANGE***


- **START** – The start date when you wish to begin the recurring schedule.
- **NO END DATE** – Specifies that the schedule is to occur indefinitely until the operator specifies that the schedule should stop.
- **END AFTER** – Selecting this option requires entering the number of times the schedule should run before completion.
- **END BY** – Selecting this option requires entering the date by which to end the recurring schedule.

## MAINTENANCE

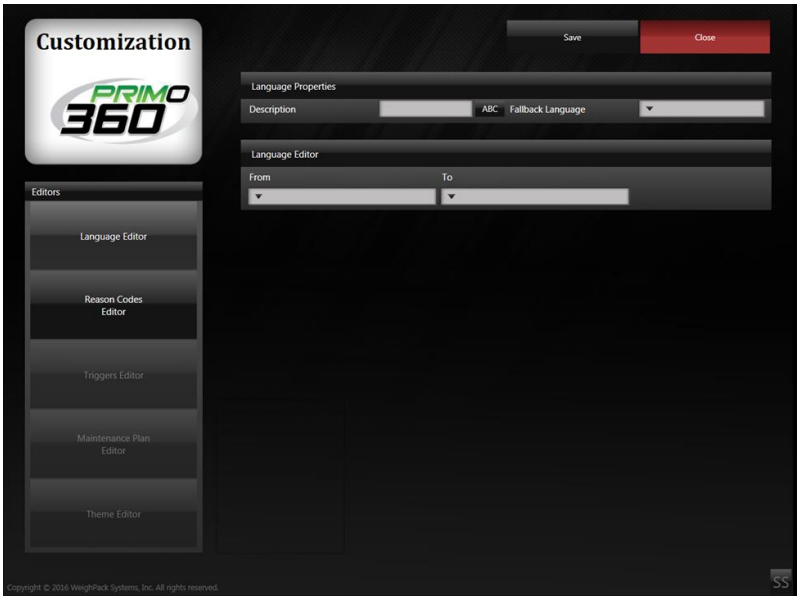
This section of the software allows the maintenance staff to log the maintenance work performed on the machine. The format of the maintenance section will be a checklist with the steps required for each maintenance task.


**Maintenance Screen**

## CUSTOMIZATION

The Administration section is where you will be able to customize elements of the Primo software.


**Customization Screen**

### *LANGUAGE EDITOR*

The Language Editor allows you to customize the language of the 360 Operating System. You can either edit an existing language, or create your own language.

### *LANGUAGE PROPERTIES*


- **DESCRIPTION** – This is the description of the language. Typically you will want to give the proper name of the language.
- **FALLBACK LANGUAGE** – The 360 Operating System allows for partially complete dictionaries. If there is a language that is incomplete, you can set the fallback language to fill in the blanks. This is best used when your company has its own internal language; you will be able to replace selected words without having to create an entire language pack. For more information please contact your service provider.
- **FROM** – The language that you wish to create or edit.
- **TO** – The language that you wish to use as a basis for your translation.

### *REASON CODES*


This is where the Reason Codes are defined and stored.

### *MAINTENANCE PLAN EDITOR*

The Maintenance Plan Editor is where operators are able to design their own procedures for machine maintenance. This includes wash-down, calibration, change-over procedures, etc. You can also specify the frequency intervals of maintenance plans required.

### *THEME EDITOR*

The theme editor is where you can create your own custom themes. This allows you to change the background, fonts, and colors used by the 360 Operating System. If you have your own corporate colors you will be able to easily adapt the 360 Operating System to match your corporate identity.

# MULTI MACHINE CONTROLS (OPTIONAL)

The out-of-the-box version of the 360 Operating System is set up to manage 5 scales simultaneously. The 360 Operating System is capable of managing more, contact us for additional details.

New options become available when you are running in a multi-machine configuration.

### *GENERAL NAVIGATION*

When running in a multi-machine configuration there will be two main methods of navigating your multiple machines.

### *QUICK NAVIGATION*


When zoomed in on a scale a blue button with the word **NAV** on it will appear at the top of every screen.

Clicking this button will open the quick navigation bar that allows you to swap between PrimoCombis. Clicking this button again will minimize the quick navigation bar.


There are 3 sections on the quick navigation bar.

- Machines – On the left will be a list of machines the 360 Operating System is currently controlling. Clicking on the name of a PrimoCombi will zoom onto that PrimoCombi.
- Title – In the center of the quick navigation bar is the name of the machine you are currently zoomed onto.
- Minimize – On the right is a red button with an **M** on it. Clicking this button will zoom out to the **Overview Navigation** screen.

### *OVERVIEW NAVIGATION*

The Overview Navigation allows you to view all machines simultaneously. To zoom in on a PrimoCombi simply touch the PrimoCombi that you wish to zoom in on. This will maximize the PrimoCombi screen and allow you to control a single PrimoCombi.

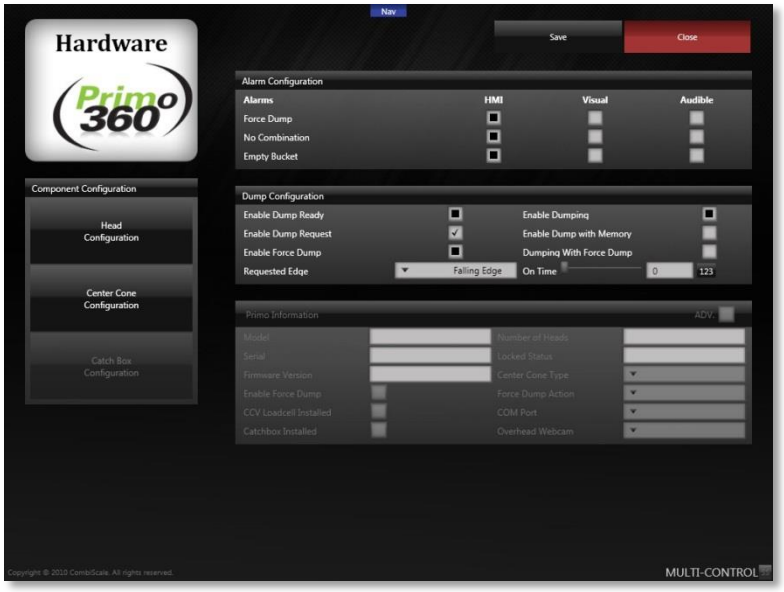

**MULTIMACHINE OVERVIEW SCREEN**

### *MULTI-CTRL SCREEN*

When running in multi-machine mode a new screen will appear. This is the Multi-Control screen. From this screen you can configure and run all your scales simultaneously. There are a couple of key differences between a PrimoCombi screen and a multi-machine screen. These are outlined below.

### *HARDWARE SETTINGS*

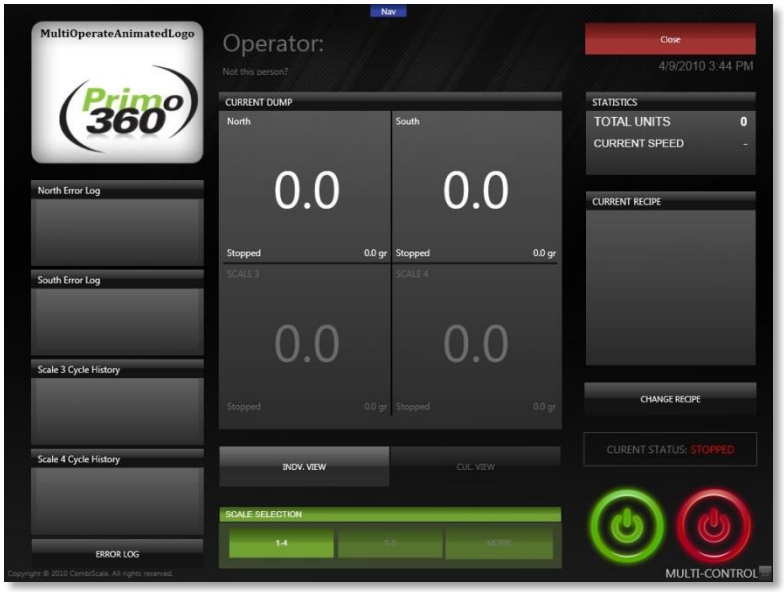
When opening the Hardware Settings on a Multi-Machine configuration you can edit the hardware settings for all your PrimoCombis from the same place. If a setting has a black square (using the PrimoCombi theme, refer to Configuring Your Software) it indicates that your scales do not all have the same value. Making a change on this page and clicking **Save** will alter the settings for all PrimoCombis currently being controlled.




**Hardware Screen**

***OPERATE***

The Operate screen on the Multi-Control section allows you to operate all your machines simultaneously.




**MultiMachine Operate Screen**

***WEIGHT AND ERROR LOGS***

On the left-hand side of the Multi-Operate screen are the weight and error logs. When a combination or an error on a PrimoCombi occurs, it will be recorded in this window. Clicking the Error Log button will toggle between Weights and Errors.

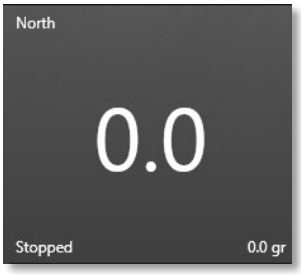
***CURRENT DUMP***

There are two different views to choose from on the Multi-Operate screen for viewing the current dump.

***INDV. VIEW***

The Individual View mode allows you to view the dumps of each scale from a single screen. The screen is broken down into several sections.

- **TOP-RIGHT** – This is the description of the PrimoCombi that is being displayed.
- **CENTER** – This displays the current dump and functions similarly to the Digital Mode for a single machine.
- **BOTTOM-LEFT** – This is the current state of the PrimoCombi. It can be either Stopped, Paused, or Running.
- **BOTTOM-RIGHT** – This is the target weight of the current recipe loaded for the machine.




***CUL. VIEW***

If the multi-machine recipe you are using keeps a record of weights (the dumps from all scales go to a single bag or pouch), you can see the cumulative total for the dumps in this view.

***SCALE SELECTION***

You can only view 4 machines at a time on the Multi-Operate screen. If you are running more than 4 machines using a single 360 Operating System, you can switch between your scales here.

***STATISTICS***

- **TOTAL UNITS** – This displays the number of units you have produced for a single production run. If you are running a cumulative recipe, every time *all* machines make a combination this value is incremented by one. If you are *not* running a cumulative recipe, this value will be incremented by one every time a PrimoCombi makes a combination.
- **CURRENT SPEED** – This is the current speed at which your system as a whole is running.

***CURRENT RECIPE***

This is the multi-machine recipe currently loaded.

***CHANGE RECIPE***

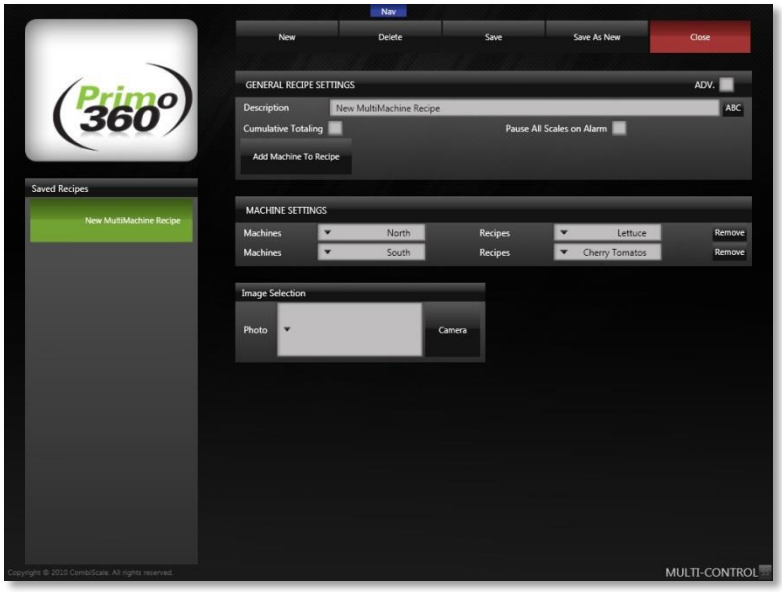
Clicking the Change Recipe button will bring up the Multi-Recipe selection screen. This operates similarly to a single machine recipe selection screen. Choosing a multi-recipe will load all recipes that are configured to the respective scales.

***START/STOP/PAUSE***

These buttons control all PrimoCombis. You can Start, Pause and Stop all scales from a single location.

***RECIPES***

The multi-machine recipe screen is where you configure your PrimoCombi is to run specific products for multi-machine operations.




**Multi Machine Recipe Screen**

### *GENERAL RECIPES SETTINGS*

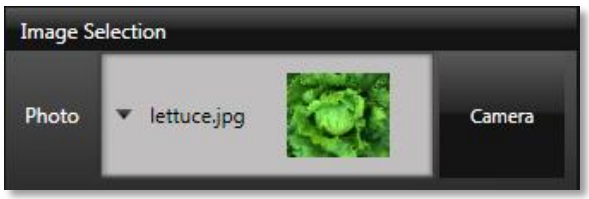
- **DESCRIPTION** – This is the description of the multi-machine recipe. It is recommended that you give the configuration a description allowing easy recognition of the settings.
- **CUMULATIVE TOTALING** – This indicates if the combinations from each PrimoCombi will be combined into a total weight. This is useful if you have multiple machines dumping into a single ancillary machine.
- **PAUSE ALL SCALES ON ALARM** – Selecting this option will cause all machines to enter the paused state should one or more PrimoCombis yield an error or alarm. This is useful if you are using cumulative totaling.
- **ADD MACHINE TO RECIPE** – Clicking this button will add a machine.

### *MACHINE SETTINGS*

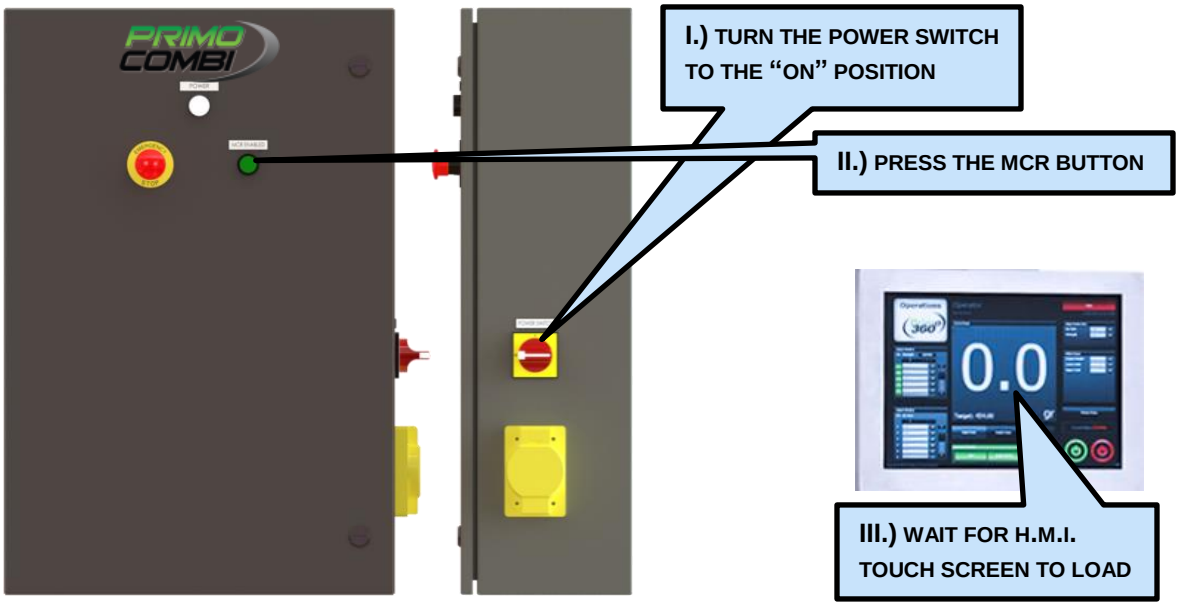
- **MACHINES** – Select a machine to use in the multi-machine recipe from the drop-down list.
- **RECIPES** – Select a recipe to run on the respective machine.
- **REMOVE** – If you added too many machine settings, click Remove to remove an item from the list.

### *IMAGE SELECTION*

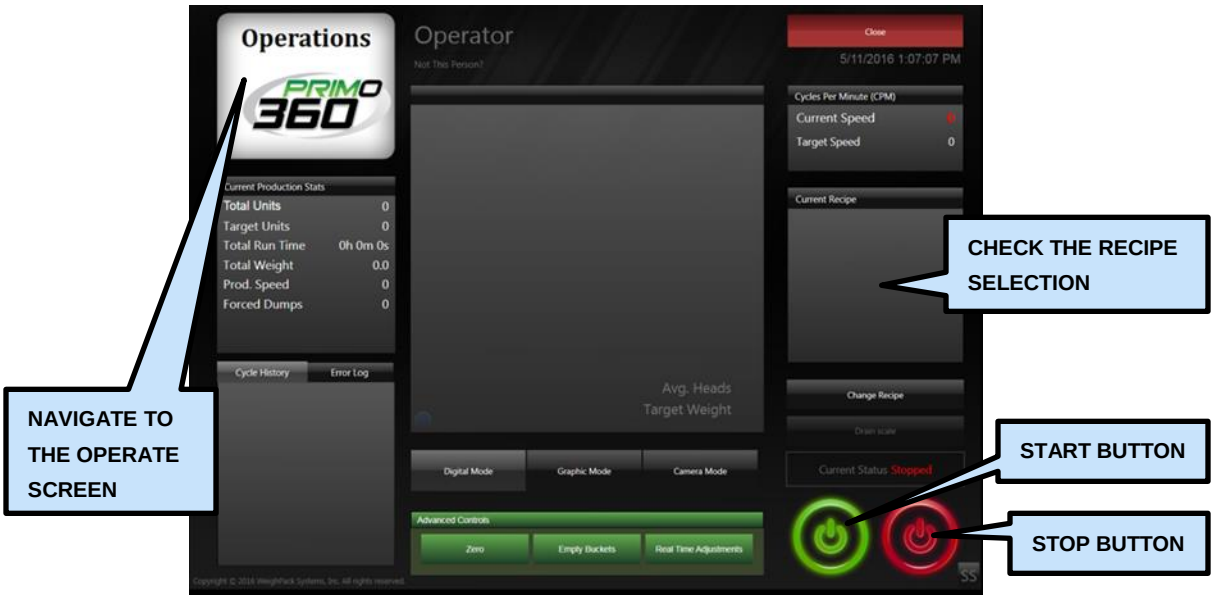
- **PHOTO** – This field is a drop-down list of all available images that a user can choose from. These are located in the Product Images folder.
- **CAMERA** – If there is a webcam attached to the 360 Operating System this button will be enabled. Clicking this button will open the **Picture Taker** screen.



# MACHINE OPERATION




1. Locate the Power Switch on the Control Box. Turn the Power Switch to the "ON" position. Press the green M.C.R. button. It will take a few minutes for the H.M.I. Touch Screen to boot up.
2. Navigate to the H.M.I.'s Operate Screen. Ensuring that the machine is loaded with the correct Recipe.

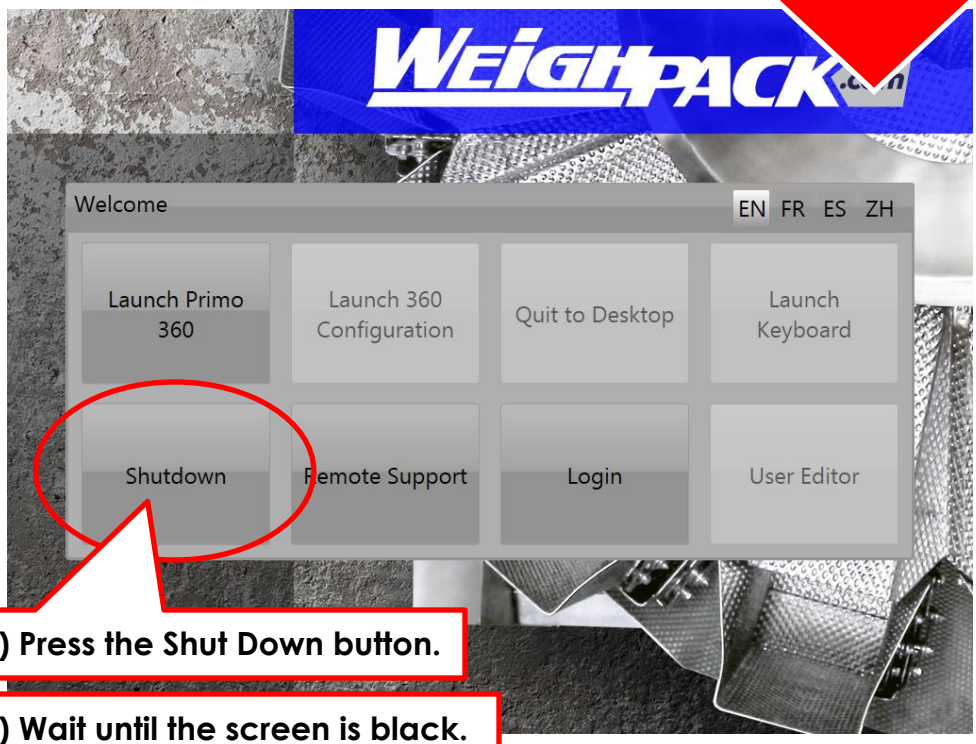



3. **If not interfaced with a Bagger**, then the Operator must press the green "Start" button to begin the product dumping cycle. The operator should ensure that the "enable dump request" option under hardware settings is not selected.

   **If interfaced with a Bagger** the operator must press the green "start" button, then the PrimoCombi Scale will begin product dumps as soon as it is signaled by the interfaced Bagger.

# PC PANEL SHUT DOWN PROCEDURE

**The PrimoCombi PC Panel must be shut down properly to avoid damage. <u>Do not pull the plug until it is shut down</u>. To shut down the PrimoCombi's PC Panel please follow these steps:**


5.) Wait until the screen is black.

6.) Shutdown the Main Switch on the Control Box.

7.) Shutdown is complete.

# MAINTENANCE INFORMATION

**WE RECOMMEND HAVING THE FOLLOWING TOOLS AVAILABLE WHEN PERFORMING MAINTENANCE ON THE MACHINE: METRIC ALLEN KEYS, METRIC SOCKET SET, METRIC WRENCHES, VOLTMETER, SCREW DRIVERS, TAPE MEASURE, RULER, CALIPER AND ADJUSTABLE WRENCHES.**

Maintenance depends on the machine's operating conditions. The machine may require more frequent maintenance, depending on the environment in which it operates. All damaged components must be replaced; failure to do so will affect the machine's performance and result in further damage.

## STORAGE

When storing the machine for a long period of time, disconnect the air, power off and clean the machine thoroughly. After periods of inactivity, it is recommended the machine is tested and adjusted. All the electrical components and connections should be thoroughly checked before powering the machine on.

**Do not store the machine in a corrosive environment.**

## CLEANING

During the course of a normal operation the machine can build-up particles and debris in various components. It is recommended to clean the machine after each operation cycle has ended.

1. Please contact us if there is any doubt as to what cleaning products can and cannot be used on the machine, providing the company with detailed information about the cleaning products in question.
2. Unless otherwise noted the exteriors and interiors of the machine are not to be exposed to water.
3. Always use clean materials when wiping the machine in order to avoid cross contamination.
4. Cleaners with synthetic ingredients, acids, chlorine, bleach and other caustic substances can lead to surface rust and discoloration and eventual failure of the stainless steel. Halogen salts such as fluorine, chlorine, bromine, iodine and astatine are highly corrosive.
5. Remaining residue on the stainless steel from cleaning products can cause corrosion due to any salt or chlorine content. Please keep the machine surface dry and clean between each use. Unlike other materials, it is not possible to wear out stainless steel by excessive cleaning.
6. Be sure to wipe stainless steel in the direction of its grain finish lines for the best cleaning result. The metal's grain is visible.
7. Do not use scouring pads/mesh cloths or metal tools such as scrapers or steel wool, as this can damage and contaminate the stainless steel surface of the machine and cause rust.

**Failure to comply with the above criteria may result in voiding the machine's warranty.**

## CLEANING STEPS

1. **USE OF CLEANING SOLUTIONS:** It is important to be aware of the effects certain cleaning products have on stainless steel and aluminum components.

   *Cleaners with excessive chlorine can damage the outer layer of stainless steel and corrode it thus allowing it to rust.*

2. **RECOMENDATIONS:** Do not pressure wash or run liquids over the machine. The machine is designed to withstand indirect contact with water and liquids, such as splashing and damp cleaning clothes. Avoid exposing the machine to water. If cleaning other equipment near the machine, ensure that the machine is covered with an industrial water proof cover.

3. **START:** Begin by turning off the machine. Turn the Main Power Switch located on the Control Box to the off position. Ensure that all components are cool to the touch before continuing.

   *When unplugging the machine, ensure that the power plug is carefully covered in order to avoid exposure to moisture.*

4. **DISLODGE DEBRIS:** Use compressed air to dislodge debris from components and clean the electrical panel.

5. **REMOVE AND CLEAN FOOD CONTACT COMPONENTS:** Remove food contact components including pans, buckets, chutes, funnel, center cone and the hopper so they may be cleaned individually and away from the body of the machine.

   *Do not apply excessive force on components attached to the load cell as this may cause damage to the load cell.*

6. **BODY OF THE MACHINE:** Clean the machine with a damp cloth, this machine is not designed to be washed down with a low or high pressure water hose; do not expose the machine to large quantities water such as pouring water on the machine. Clean all metal surfaces thoroughly to remove any contaminants. Use non-corrosive cleaning products.

7. **TOUCH SCREEN:** The machine comes equipped with an IP-64 rated Touch Screen by default, although an upgrade may be purchased to equip an IP-67 Touch Screen in its place.

8. **DRY COMPONENTS:** Dry all components with a clean, dry cloth. No water spots should remain on the machine. Leftover cleaning solution can cause damage to stainless steel surfaces.

9. **REINSTALL COMPONENTS:** Once cleaning is completed, reinstall all components.

10. **END:** Reconnect machine's power plug if necessary. The machine is now ready to be powered and run.

## CLEANING STEPS: WASH DOWN MODEL SCALES

1. **USE OF CLEANING SOLUTIONS:** It is important to be aware of the effects certain cleaning products have on stainless steel and aluminum components.

   *Cleaners with excessive chlorine can damage the outer layer of stainless steel and corrode it thus allowing it to rust.*

2. **RECOMENDATIONS:** Do not pressure wash the machine. Washdown model scales are designed to withstand contact with water and liquids but the seals protecting the interior of the machine may be compromised by high pressure water jets.

3. **START:** Begin by turning off the machine. Turn the Main Power Switch on the Control Box to the off position but leave the machine and the Control Box plugged in. Ensure that all components are cool to the touch before continuing.

   *The machine must remain plugged in to supply power to its heater during cleaning.*

4. **TURN HEATER ON:** Turn on the machine's heater, this will regulate temperature and circulate airflow to reduce the buildup of condensation.

   *In order to minimize condensation and the buildup of atmospheric contaminants, it is strongly recommended that a compressed air dryer also be used to supply dry air to the interior of the machine. The colder the environment, the more this is needed.*

5. **CONNECT REGULATOR:** Connect a ¼ inch airline to the ¼ air inlet, located on the right side of the Low Pressure Regulator.

6. **TURN ON AIR SUPPLY:** Once connected, turn on the machine's air supply and set the Low Pressure Regulator to 5 psi. This will provide a positive pressure within the machine in order to reduce the chance of water infiltration should a seal be compromised. Ensure seals are not leaking air.

   *If air bubbles appear during washing it is likely an indication of a failed seal. Seals should be inspected immediately and repaired if necessary. Pay particular attention to the seals on the central tower. This area should remain dry at all times to prevent any moisture from penetrating the machine and rusting its interior.*

7. **REMOVE AND CLEAN FOOD CONTACT COMPONENTS:** Remove food contact components including pans, buckets, chutes, funnel, center cone and the hopper so they may be cleaned individually and away from the body of the machine.

   *Do not apply excessive force on components attached to the load cell as this may cause damage to the load cell.*

8. **BODY OF THE MACHINE:** Rinse all surfaces with gentle flowing water, or wipe down with a clean wet cloth.

   *Do not use a power hose, nozzle or pressure washer to wash the machine.*

9. **ELECTRICAL ENCLOSURE:** The NEMA-4 control panel is not a food contact area and the use of direct water washing (even low-pressure) is prohibited as it is not required and can be easily cleaned by wiping down the enclosure with a damp cloth. It is advised to clean the exterior of the Electrical Enclosure prior to examining the interior. Dislodge any particles or debris from the electrical panel with compressed air, taking care not to damage any contacts.

   *The electrical enclosure includes 10 foot lead cables, meaning it can be mounted away from the scale itself and away from water during cleaning. If this is not possible, always cover the electrical enclosure during washing.*

10. **TOUCH SCREEN:** The machine's Touch Screen is IP-64 rated.

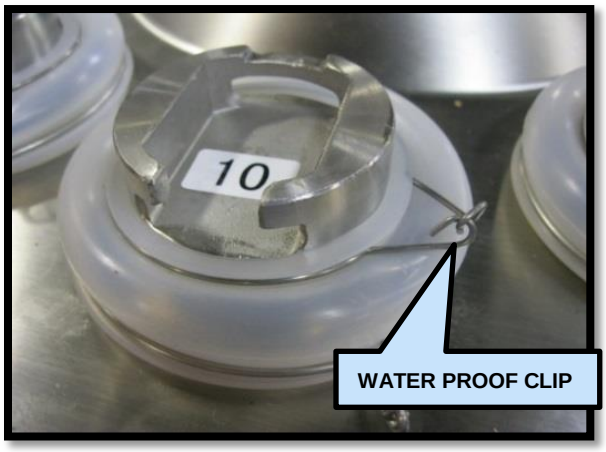
11. **DRY COMPONENTS:** Dry all components with a clean, dry cloth. No water spots should remain on the machine. Leftover cleaning solution can cause damage to stainless steel surfaces.

12. **REINSTALL COMPONENTS:** Once cleaning is completed, reinstall all components.

13. **TURN OFF AIR SUPPLY:** All airflow to the machine should be shut off before normal operation. Any air pressure within the machine will throw off the weights measured by the Load Cells.

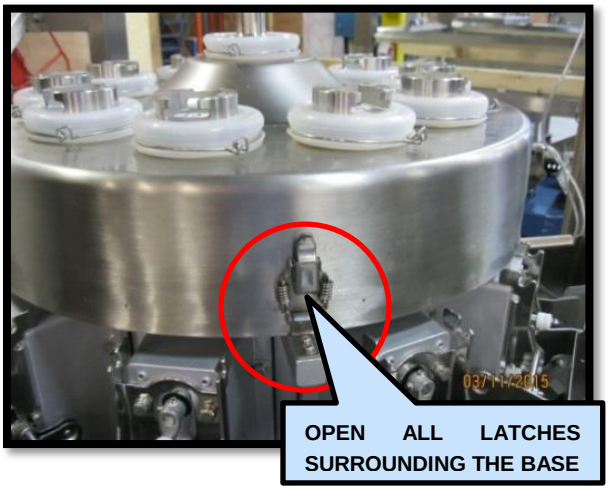
14. **END:** The machine is now ready to be powered and run.

## VIBRATOR ADJUSTMENT FOR CENTER CONE AND LINEAR PANS

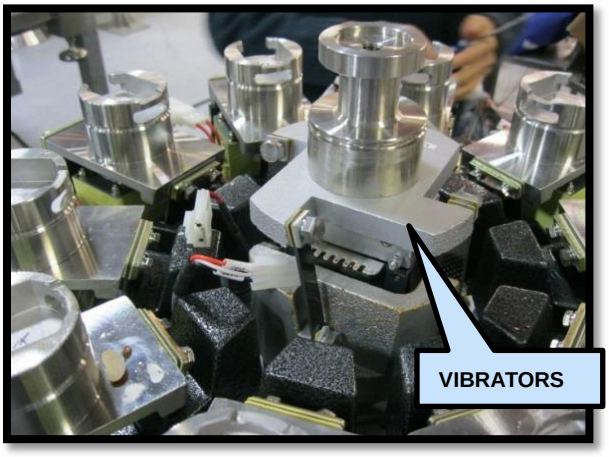


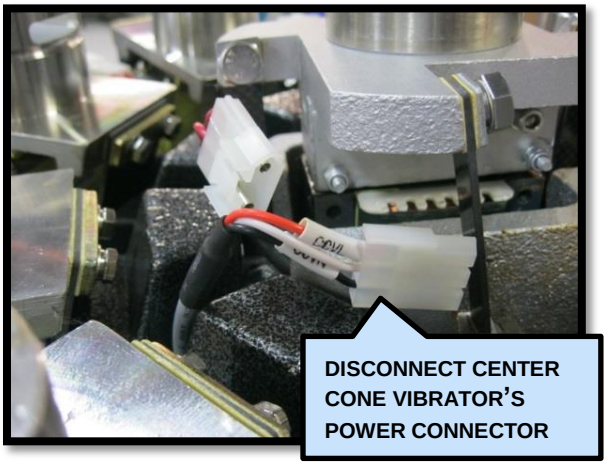


Remove all the water proof clips from the rubber covers. Some models do not have clips; if there are no clips then remove the rubber covers using a flat screwdriver. Careful attention should be taken not to puncture the rubber cover when removing them.

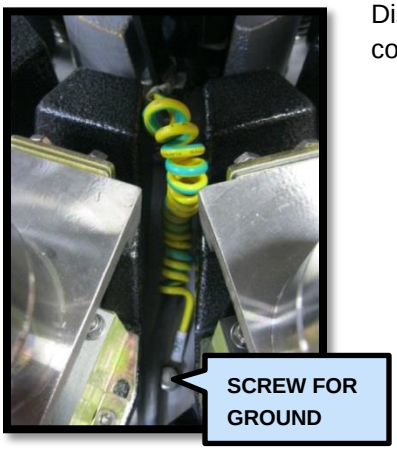



To access the vibrator assemblies, remove the tower's stainless steel cover. To remove the cover, open all the latches surrounding it.

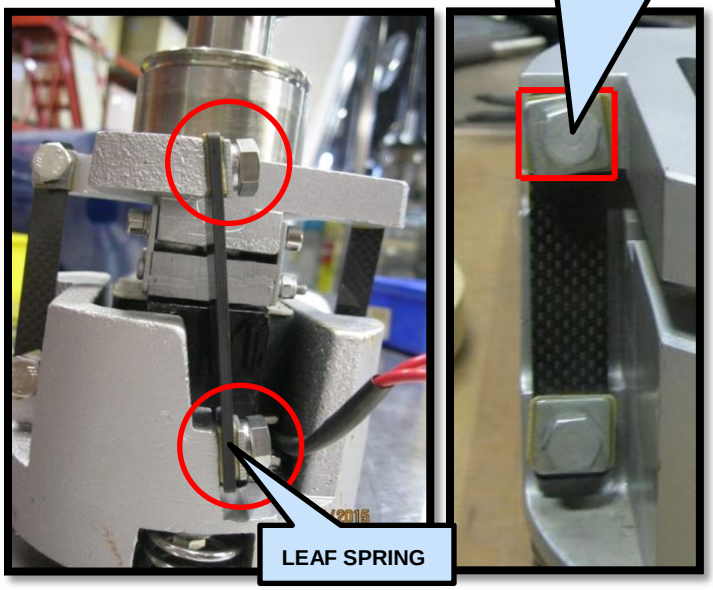



Removing the tower's cover exposes the PrimoCombi vibrators underneath. Disconnect the center cone vibrator's power connector before making any adjustments.




Disconnect the center cone vibrator's ground wire. Remove the center cone vibrator and place on a workbench.

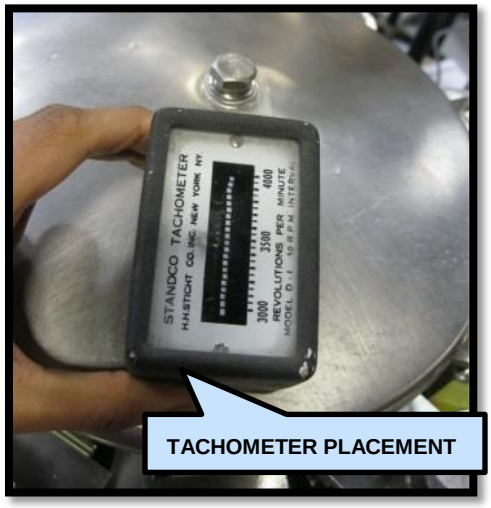


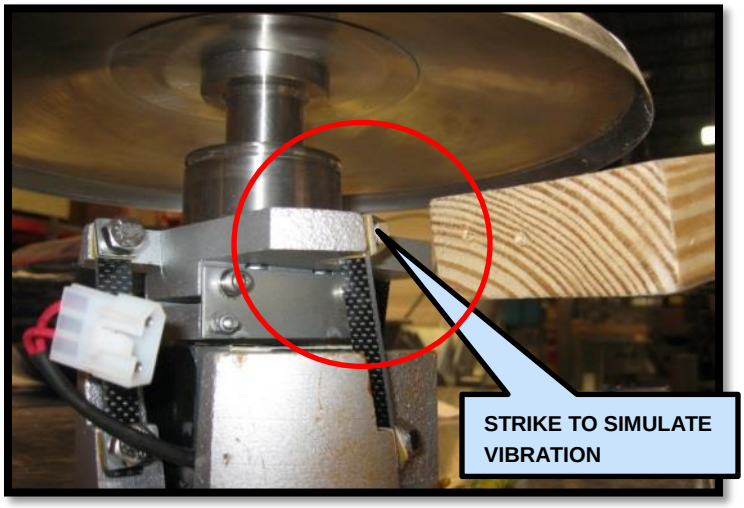

The leaf springs are to be adjusted so that the center cone vibrator yields a <u>natural frequency of 60 Hertz.</u>

To do this, different configurations of leaf springs should be tested to achieve 60 Hertz; however, symmetry should always be conserved and spacers should always be placed with sides parallel to the sides of the leaf spring.

*The first configuration tried should be 2 smaller leaf springs and 2 larger leaf springs that are opposite each other.*

Using a torque wrench, tighten bolts to 210 in·lbs (23.4 N·m).

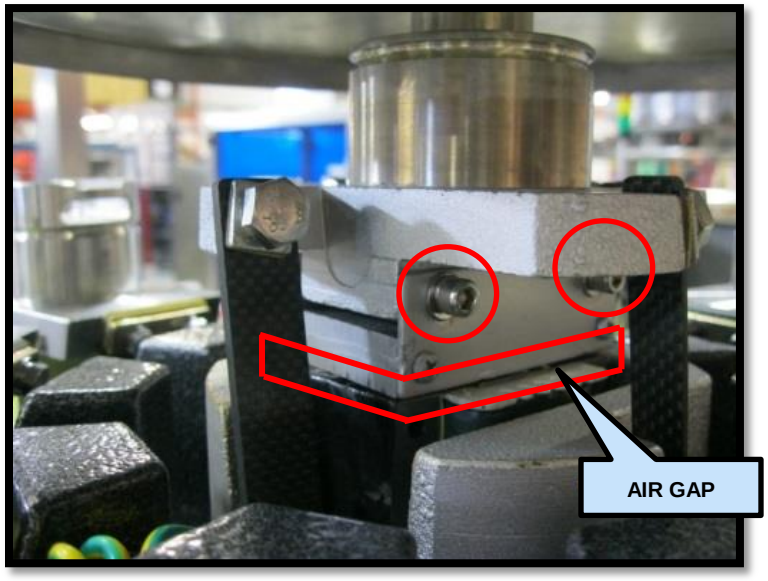


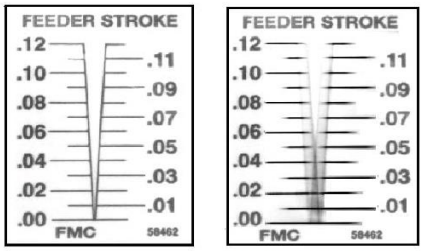




To test the effectiveness of the center cone, begin by reinstalling the center cone. While holding a tachometer on the center cone (as shown in the above left picture.), strike the top screw of the leaf spring with a rubber hammer or wooden block (as shown in the above right picture), and observe the reading from the tachometer. If the tachometer reads between 3550rpm and 3650rpm (59-61Hz), proceed directly to the Air Gap Adjustment on the following page. If the tachometer's readings fall outside this range, please proceed with the following adjustments:

Adjust the leaf spring using different combinations of leaf spring thicknesses (2mm, 2.5mm or 3mm), or cut the leaf spring to a smaller width (minimum allowable width of 12mm) to achieve a tachometer reading between 3550rpm and 3650rpm (59-61Hz.)

## ADJUSTMENT OF THE AIR GAP



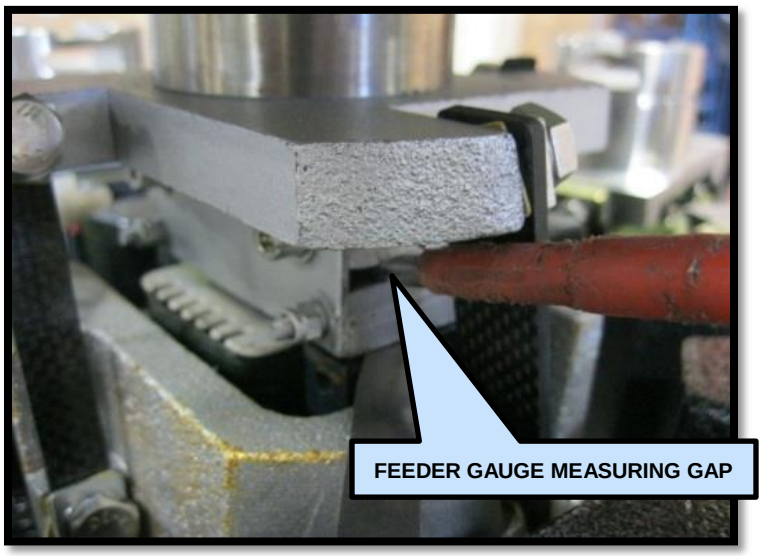

Stroke gauge at rest

Stroke gauge measuring .05 amplitude

FEEDER STROKE EXAMPLE

Reinstall the center cone and center cone vibrator; reconnect the ground wire and the power connector. Set the operation frequency to 55Hz (5Hz smaller than the vibrator natural frequency), set strength to 100% and test the vibrator by starting it in the "continuous" mode from the HMI; read the amplitude on the feeder stroke sticker. *If the amplitude is less than 0.09", an air gap adjustment is necessary; proceed with the following step.*

The air gap under the armature should be adjusted without it touching the coil core below it during operation; if it does touch it will produce a knocking noise during operation and risks causing severe mechanical damage (broken spring, cracked base, cracked armature or cracked core). *Smaller air gaps provide larger amplitudes but increase the risk of collision.*




To increase or decrease the air gap, first, loosen the 4 socket bolts shown in figure on the right on the previous page.

Push the armature up or down by wedging a flat screwdriver under or above the armature as shown in the figure above. The air gap should be even on all sides; a feeler gauge should be used to check this, this is also shown above. Tighten the 4 socket bolts to 50 in·lbs (6.6 N·m).

Adjust the air gap until an amplitude of 0.09" or higher is achieved without any knocking. *The air gap is usually between 0.9mm (.035") and 1.5mm (0.059"). If the air gap is already at the minimum (0.9mm) but the amplitude is still below 0.09", you may increase the operation frequency by 1Hz or 2Hz at most (3Hz or more will shorten the life of the leaf spring significantly).*

| | MON. | TUES. | WEDS. | THURS. | FRI. |
|---|---|---|---|---|---|
| **LOAD CELL CALIBRATION (THE MACHINE MUST BE POWERED WHEN PERFORMING THIS STEP)** | | | | | |
| Power the machine, then perform a Load Cell Calibration (see “Calibration” on page 74). | ☐ | ☐ | ☐ | ☐ | ☐ |

**ENSURE THAT THE MACHINE HAS BEEN TURNED OFF, LOCKED OUT / TAGGED OUT BEFORE PERFORMING MAINTENANCE ON PARTS. SOME CALIBRATIONS REQUIRE THE MACHINE TO BE POWERED, USE ALL DUE CAUTION WHEN CALIBRATING THE MACHINE WHILE IT IS POWERED.**

| | MON. | TUES. | WEDS. | THURS. | FRI. |
|---|---|---|---|---|---|
| **WEIGH & FEED BUCKETS** | | | | | |
| Ensure all Feed and Weigh Buckets are mounted correctly within their mounting brackets. | ☐ | ☐ | ☐ | ☐ | ☐ |
| **VIBRATORS** | | | | | |
| Ensure all Linear Vibrator Pans are installed correctly and latched. | ☐ | ☐ | ☐ | ☐ | ☐ |
| **CENTER CONE** | | | | | |
| Ensure Center Cone is installed correctly and tight, with a lock washer on the mounting bolt. | ☐ | ☐ | ☐ | ☐ | ☐ |
| **PNEUMATICS (IF EQUIPPED)** | | | | | |
| Drain the Filter Regulator completely. | ☐ | ☐ | ☐ | ☐ | ☐ |
| **ELECTRONICS** | | | | | |
| **Machine must be powered on for this test, power it off and Lock Out when the test is complete:** | | | | | |
| Test the Emergency Stop button. | ☐ | ☐ | ☐ | ☐ | ☐ |

# WEEKLY CHECKLIST

(or after 48 hours of continuous operation)

| | MON. | TUES. | WEDS. | THURS. | FRI. |
|---|---|---|---|---|---|
| **WEIGH BUCKETS (THE MACHINE MUST BE POWERED WHEN PERFORMING THIS STEP)** | | | | | |
| Calibrate all of the Weigh Bucket Load Cells using the H.M.I. | ☐ | ☐ | ☐ | ☐ | ☐ |

**ENSURE THAT THE MACHINE HAS BEEN TURNED OFF, LOCKED OUT / TAGGED OUT BEFORE PERFORMING MAINTENANCE ON PARTS. SOME CALIBRATIONS REQUIRE THE MACHINE TO BE POWERED, USE ALL DUE CAUTION WHEN CALIBRATING THE MACHINE WHILE IT IS POWERED.**

| | 1ST WEEK | 2ND WEEK | 3RD WEEK | 4TH WEEK |
|---|---|---|---|---|
| **CENTER CONE LOAD CELL** | | | | |
| Calibrate the Center Cone Load Cell (If the Center Cone is equipped with a Load Cell.) | ☐ | ☐ | ☐ | ☐ |
| **VIBRATORS** | | | | |
| Inspect all rubber seals on Linear and Center Cone vibrators for tears and holes, replace if needed. | ☐ | ☐ | ☐ | ☐ |
| Check the tension on serpentine springs of the Vibrators. If necessary, adjust tension. | ☐ | ☐ | ☐ | ☐ |
| **PC PANEL** | | | | |
| Properly shut down and reboot the PC panel. (see PC Panel Shut Down Procedure on page 96) | ☐ | ☐ | ☐ | ☐ |
| **ELECTRONICS** | | | | |
| Ensure all connections to the PC panel are firmly secured. | ☐ | ☐ | ☐ | ☐ |
| **ELECTRONICS** | | | | |
| Check the interior of the Control Box and clean all electrical contacts | ☐ | ☐ | ☐ | ☐ |
| **PNEUMATICS (IF EQUIPPED)** | | | | |
| Test if the Filter Regulator is functioning properly and check for air leaks in the machine. Ensure air lines are free of moisture. | ☐ | ☐ | ☐ | ☐ |

# MONTHLY CHECKLIST

## VIBRATORS (THE MACHINE MUST BE POWERED WHEN PERFORMING THIS STEP)

Check the strength of the Linear Vibrators, all should be equal in strength. Report any abnormalities to your service provider if the machine's performance is affected. ☐

**ENSURE THAT THE MACHINE HAS BEEN TURNED OFF, LOCKED OUT / TAGGED OUT BEFORE PERFORMING MAINTENANCE ON PARTS. SOME CALIBRATIONS REQUIRE THE MACHINE TO BE POWERED, USE ALL DUE CAUTION WHEN CALIBRATING THE MACHINE WHILE IT IS POWERED.**

## VIBRATORS

Remove the Vibrator Cover (exposing all the linear vibrator and center cone vibrator) and clean out. ☐

Inspect all welds on the Linear Vibrators and Linear Feed Pans for cracks, discoloration or wear. ☐

## WEIGH & FEED BUCKETS

Inspect all Weigh and Feed Bucket springs for correct tension, doors should close by the tension of the spring, adjust as needed. ☐

## WEIGH & FEED BUCKETS

Inspect all Weigh and Feed Bucket bushings for wear, replace as needed. ☐

## STEPPER MOTORS

Inspect all Stepper Motor actuator arm wheels for wear, replace as needed.
Ensure all Stepper Motor arms are secure and tight. ☐

## LINEAR PANS

Inspect all Linear Pan Clamp Assemblies to ensure none of the threads are stripped or damaged and that all are properly adjusted for optimal fastening. ☐

## LEAF SPRINGS

Inspect all leaf springs and coils on the linear and Center Cone vibrator for any wear or discoloration. ☐

## ELECTRICAL

Inspect all electrical connectors for any loose connections or damaged wires.

Reinstall the cover and vibrator seals. ☐

Power off, lock out and tag out the electrical panel, open and inspect for any loose wires or any abnormality.

# LIABILITY DISCLAIMER

All statements, technical information and recommendations contained in this manual or any other information supplied by WeighPack in connection with the use, features and qualifications of the WeighPack machine are based on tests believed to be reliable, but the accuracy or completeness thereof is not guaranteed. Before using the WeighPack machine, the owner should determine the machine's suitability for its intended use based on the owner's knowledge and the characteristics of materials intended to be used with the machine. The Buyer bears all risk in connection with the use of the WeighPack machine.

Since the use of this manual and the conditions or methods of installation, operation, use and maintenance of the WeighPack machine is beyond the control of WeighPack, WeighPack does not assume responsibility and expressly disclaims liability for loss, damage or expense, whether direct, indirect, consequential or incidental, arising out of or anyway connected with such installation, operation, use, or maintenance. Damage caused by neglect, misuse or failure to comply with this manual will invalidate the warranty of the WeighPack equipment.

## REVISION TABLE

| DATE | REV. | DESCRIPTION |
|---|---|---|
| November 25, 2011 | 2.0 | General Revision |
| December 15, 2011 | 2.1 | Maintenance Revision |
| January, 01, 2012 | 2.2 | Maintenance Revision |
| March, 19, 2012 | 2.3 | Cleaning Procedure |
| April 11, 2012 | 2.4 | Multiproduct Revision |
| May 07, 2012 | 2.5 | Cleaning Procedure |
| May 31, 2012 | 2.6 | General Revision |
| June 06, 2012 | 2.7 | Cleaning Procedure |
| August 09, 2013 | 2.8 | Air Regulator and Shut Off Valve, Name Changed to "PrimoCombi", Updated Format |
| April 10, 2014 | 3.0 | Separated Manual into Mech and H.M.I. Manuals, Changed Washdown Procedure |
| September 21, 2015 | 4.0 | General Revision |
| January 16, 2017 | 5.0 | Updated Mechanical Section, updated Maintenance Section, integrated H.M.I back into Manual and updated H.M.I. section with new information. H.M.I. Version 1.9.0.0. |
| March 15, 2017 | 5.1 | Added Vibrator Adjustment to Maintenance Section |