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Design Excellence by Choice in Material Controllers Since 1972

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March 15, 2006 Version 1.5.4

OPERATION MANUAL
For the SIERRA Material Bin Fill Controller

Main Menu

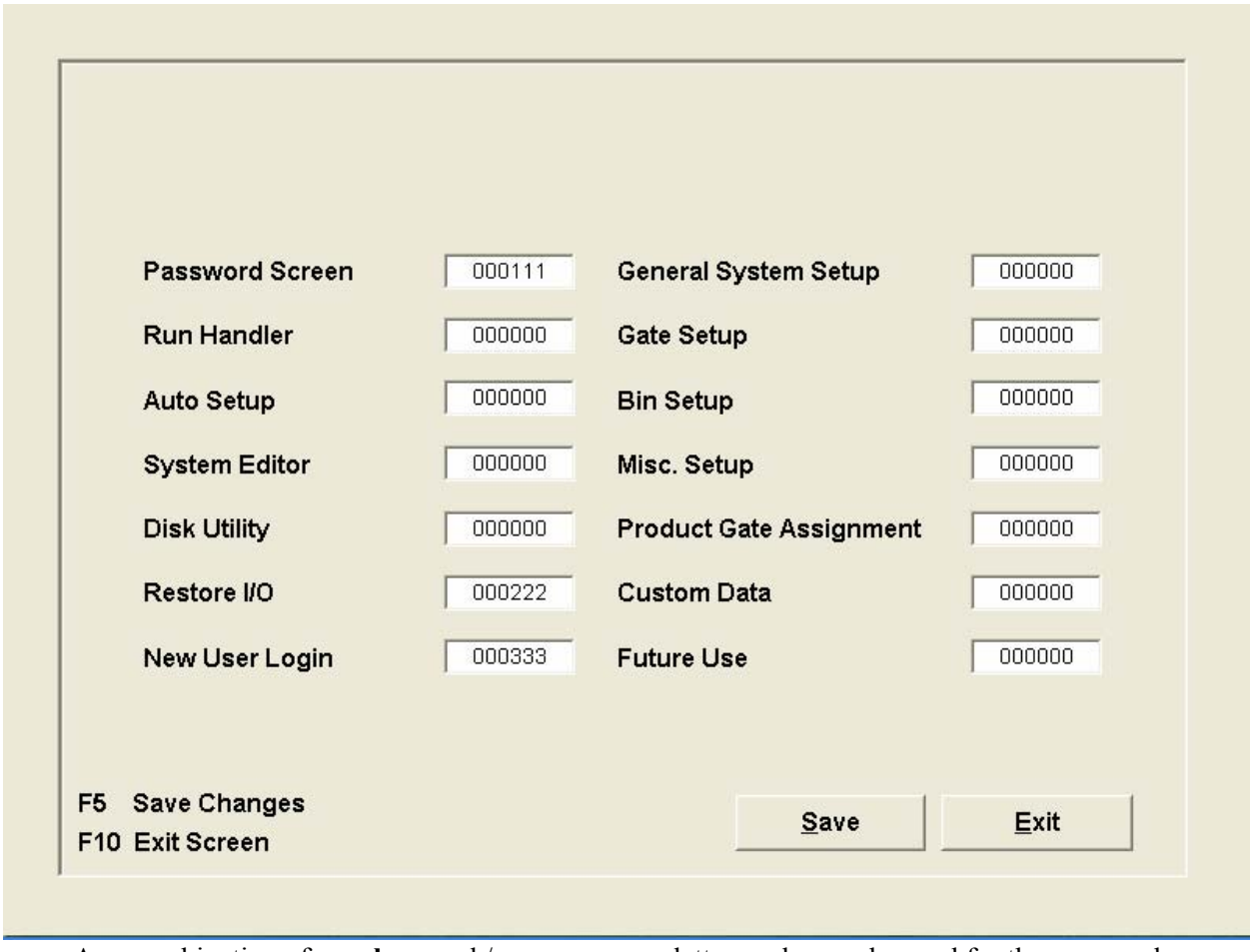
A Login User Name is now required to enter the **Password, System Editor** and the **Sierra run screens**.

When starting the Sierra, pressing the F1, F4 or F5 key in the main menu, a Login box will appear. Enter your login **User name** and press the Enter key or click on the **OK** button. If this is a new user name a **Please enter password** box will appear (the default password for entering a new User is 333). Enter the default password or the changed password if it has been changed and press the Enter key or click on the **OK** button. Next the **User License Acknowledgment** box will appear with the End-User License Agreement for you to read. If you click on the **I accept** button, the **Enter User Information** box will appear. Enter your **First** name and press the Enter Key, Enter your **Last** name and press the enter key 2 times to Finish setting up a new User name. A user name is required each time the Sierra is put in to the Run, Edit or Password screens. If more than 2 user names are in the computer, all user names that has not logged in for 60 days will be automatically deleted form the computer.

The License Agreement will be displayed by clicking on the **License Agreement**

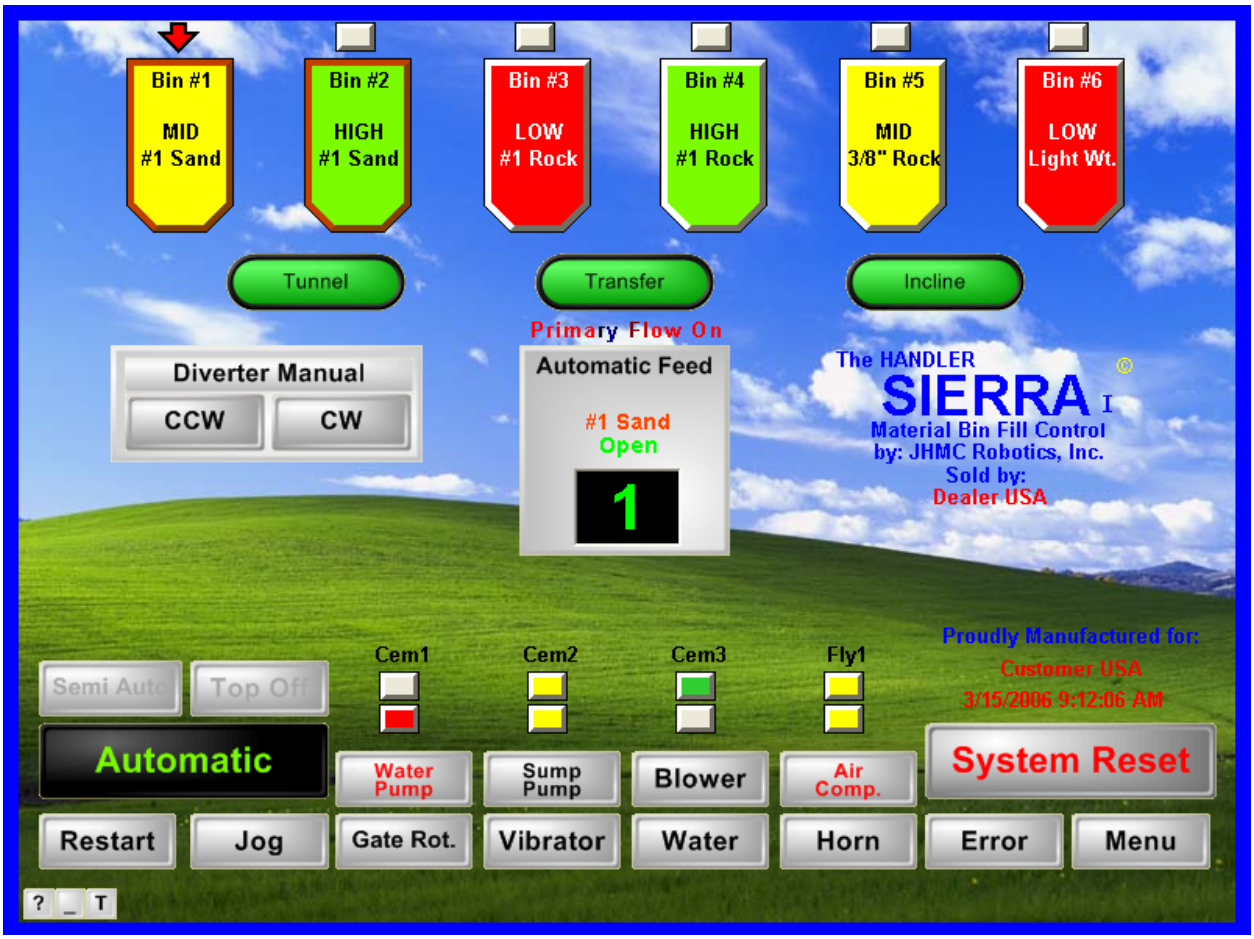
F1 = Password Editor Screen (Default # = 111) F4 = System Edit Screens
F5 = Sierra Run & Monitoring Screen F10 = Exit to Windows Desk Top for System shutdown

Password Screen



Any combination of **numbers** and / or **upper case** letters only may be used for the passwords.

Sierra Monitoring (Run) Screen.



Main Screen Error Pop up Box

A description of the items on the Sierra Monitoring Screen**.**

Rectangular Gray Buttons at Top of Screen

A **red** arrow above a bin is where the Diverter is presently located.

To move the Diverter semi-automatically from **a** bin **to** another bin. The Diverter must be **on** a bin with the **red** arrow pointing **to** a bin. By pressing **Shift + Alt + F1-F8** or when you double click the button on top of the **bin to go to**, the button will turn to a **green** down arrow and the Diverter will proceed **to** the bin with the **green** arrow.

If the Diverter is not on a bin use the **CW** or **CCW** buttons to move the Diverter to the next bin position.

Bin Boxes at Top of Screen

Across the top of the screen are boxes labeled Bin # 1 thorough number of bins on the plant. A **green** box will indicate that the bin is high and the word **HIGH** will be displayed. If the material is off of the high bin indicator, the box will turn **Yellow** and **MID** will replace the word HIGH. If the material is off of the low bin indicator, the box will turn **Red** and **LOW** will replace the word MID. If the bin is flashing **Blue** and **Black**, the material has touched the **Emergency High** probe. If the bin is **Purple** with the writing flashing silver and black, an **Emergency Low** condition has occurred in the bin.

If the bin is outlined in RED with a diagonal red line through it, the bin has been taken out of the automatic fill mode on edit page #3

When a bin box is clicked on, the word **Skip** will appear. This tells the system to **not** fill this bin in the **Automatic** or the **Semi Auto** mode. If clicked on again the **skip** will be canceled.

If the system **automatically skips** a bin due to no material coming out of any of the assigned feed gates for this overhead bin, the word **A-Skip** will appear and all words in the box will flash gray and black. The system will no longer look at this bin to fill in the automatic mode until you click on the bin twice to clear the **A-Skip**, this tells the system that you have material in a gate and are ready to fill the bin automatically.

Below **Skip** or **A-Skip**, is an area that displays the name of the product in the bin.

Edit page #5 is where the gates and bins are assigned to the products.

Utility Bin

If a bin is assigned as a **Utility Bin** on edit page #3, the bin will be outlined in an **orange/brown** color. If the **ctrl** key is held down and the bin is **right** clicked on with the mouse (you may also use the **Ctrl + Shift + F1–F8** instead), a box with the available product names will appear in the center of the screen. Clicking on a product name in that box will select the new product and name for that bin. During this process the bin will automatically go to **skip** mode. You may un-skip when selection is finished.

Note: Only click **1** time on the product name and **WAIT** for it to change!

Gate Linking When Gate linking is assigned on Edit page 2.

If the bin is a Utility Bin and is **ctrl + right** clicked, the products that have gates linked together will be displayed as "Linked". If you do not want the feed to this bin, gate linked, select the product without "Linked" after the product name.

If the bin is not a Utility bin, **ctrl + right** clicking on the bin will bring up a box in the center of the screen asking if you want **Linked, Both,** or **No** linking.

Belt Buttons

Right below the bin boxes, are the **belt** buttons. If there is one belt on the plant, feeding material from the storage area to the plant, there will be one of these buttons. If there are two belts, there will be two of them. Up to 3 belts are displayable in this area. The belts can be named on edit page #4.

When the button in the lower left hand corner of the screen is displaying **Manual** you can: Manually start a belt by clicking on a belt button. The horn will blow for a period of time and the button will flash red and black prior to the belt starting. When the belt has started successfully and all interlocks are working properly, the belt button will turn green indicating the belt is running. If the belt fails to start successfully the belt button will flash red and black.

Note: The belts must be started in high to low order.

Diverter or Shuttle Belt Manual Buttons

A box marked

Diverter Manual or **Shuttle Manual** on the left of the screen with **CCW** and **CW** buttons is for manual operation only. **Alt + minus** and **Alt + plus** keys on your keyboard will do the same thing as a mouse click on **CCW** or **CW** button. When the **CCW** button or **CW** button turns red, indicates that power is being sent out to turn the Diverter or move the Shuttle belt.

If a S**huttle** belt is used there will also be an **Fwd** and **Rev** Button displayed below the **CW** and **CCW** buttons. These buttons are for manually running the Shuttle belt either in forward or in reverse

There may be **Flop Gates** (2) used to direct material from the belt into a bin/s, these buttons are to the right of the CW button. When the flop gate is **on** a position the writing in the button will be **red** for that position.

Screen Back Ground color

By right clicking on the background of the run screen, a pop up box will appear to allow you to change the background color of your choice.

Manual, Semi-Auto and Automatic Feed of Overhead Bins

Manual Feed

The large square box in the center of the screen has, **Manual Feed**, in it. Below it are two buttons. One is marked **Open**. The other is marked **Close**.

First, **manually** position the **Diverter / shuttle belt** on the desired overhead bin to be filled. Start the **belts**. The assigned gate numbers for the bin that the Diverter is on will be displayed in the top of the box. When all belts are running click on the desired gate number in the top of the box with the mouse or type the **gate #** to feed from in the window. By right clicking in the window, will allow you to undo the number entered, the backspace will also erase the number entered. The **open** button will now be green if the number entered is a valid gate number.
When the **open** button is green, press the **enter** key or click on the **open** button with the mouse to open the gate. If a gate number other than one that is assigned to the bin has been entered, an error box will appear describing the problem otherwise the feeding gate number will appear in the window, when the gate opens**, open** will be displayed above it, and the gate name will appear above gate. To close the feeding gate, press the **enter** key or click on the **close** button. If the semi auto button, located above the Manual Button, is **black**, the feed gate will not close when the bin **high** comes on. If the semi auto button is **red**, the gate will close when the bin **high** comes on or **skip** is turned on.

Automatic Mode

When the system is in the automatic mode, the box changes to **Automatic Feed**. When a gate is feeding material with a **mid/yellow, low/red** or **Em Low/Purple** bin the **gate #** will be displayed in the window with **open** displayed above it, indicating that the gate limit switch is on and the gate name will appear. If the feeding gate does not close at the appropriate time, a **contamination** error will be displayed, the feeding belt will stop and the system will attempt to close all gates. Usually this will happen only if a gate hangs open due to a rock or some other object getting stuck in the gate or the gate just fails to close because of a mechanical or air supply problem.

Automatic / Manual Button

If you click on **manual**, it will go to **automatic**. If you click on **automatic**, it will go to **manual**.
Alt+A = Automatic, **Alt+M** = Manual or **F5** will toggle between auto and manual

Misc. #1 - 4 Buttons

The **Misc**. **#1 - #4** buttons are miscellaneous switches. These buttons can be used for whatever is needed and each one can be configured to be either **momentary** or **toggle**. The name can be changed on Edit page #4.

Cement Silo Indicator Buttons

Above the Miscellaneous buttons are the **Silo High** and **Low** indicator buttons. When the top button is **Green** the silo is full, when the top and bottom button is **Yellow** the product is between the High and Low probes, when the bottom button is **Red** the product is below the Low probe. There is no logging or alarms for these indicators.

System Reset Button

The long button on the lower right of the screen is the **System Reset**. While doing something manually from the CRT or in the automatic mode from the CRT, pressing the (~) key or clicking the **System Reset** button will reset the system to **manual** standby mode ready for operation. All belts will stop, all gates will close and stop the Diverter / shuttle belt if it was turning / moving.

Semi Auto Manual Mode:

The button on the lower left-hand side of your screen, just above the Automatic / Manual Button, is the **Semi Auto** button. It can be configured to start up in the **on** or **off** mode in Edit Screen #3. If the Semi Auto is **on**, the writing will be **red**. If the Semi Auto is **off**, the writing will be **black**.

If **Semi Auto** is **ON,** the gates automatically close when the filling overhead bin goes **high** or is **skipped**.

If the bin that the Diverter is on is **high** or **skipped** and you attempt to fill it in the manual feed mode, the feed gate will not be allowed to open when **Semi Auto** is on.

If a Diverter plugged sensor is installed and the **Semi Auto** button is **on** when filling a bin and the Diverter plugs the belts will stop and the gates will close.

Semi Auto can be toggled **on** and **off** by clicking on it, the **Alt + S** keys will toggle it also.

Top Off:

All Bins that are configured to start filling on a **Low** Bin signal can be filled in Automatic if you click on the **Top Off** button. This is for topping off all bins at the end of the day.

Restart Button

If one of the belts stops, **Alt + R** or clicking the **Restart** button restarts the belt/s that has stopped. If belt #2, continues to run, but belt #1 has stopped, then instead of starting all the belts over again, pressing R**estart** will only attempt to start the belt/s that have stopped.

Jog Button

Alt + J or clicking on the **Jog** button will close the gate that is feeding. The gate will stay closed as long as the button is held down when released the gate will open again.

Gate Rotate Button

In the automatic mode, if more than one gate is assigned to feed the receiving overhead bin, and you want to change to the next assigned gate, **Alt + G** or clicking on the **Gate Rot** button will open the next assigned gate for this overhead bin. You may rotate through all the gates that are assigned to that overhead bin.

Vibrator Button

If there are vibrators on the sand storage gates, the system will automatically run them as needed in the automatic mode. To vibrate the feeding gate manually, **Alt + V** or click the **Vibrator** button.

Water Button

The **Water** button will turn **red** when the system is calling for watering **rock** on the belt in the automatic mode. To manually run the water, press **Alt + W** or click the **Water** button. The Gate must be set as a Rock gate on Edit page #2 (This is a toggle button).

Horn Button

The **Horn** button will turn **red** whenever the system blows the horn outside. **Alt + H** or clicking on it will blow the horn for as long as you hold the button down.

Error Button

If an **Error** occurs in the operation of the plant, the writing in this button will flash **red** and a message will be displayed on the bottom left of the screen as well as a voice prompt of the error.

Clicking this button, (or "Pressing **Alt + E**"), will bring up an error window to view the errors that have occurred.

Lines displayed in blue are system info.
Lines displayed in green are related to the edit screens.
Lines displayed in red are system errors.
Lines displayed in light purple are system non critical errors
Lines displayed in orange are Silo errors

This window has 3 buttons on the bottom, **Exit**, **Log**, and **Clear**. You may clear this window, but the messages will not be cleared in the log file. To clear the window, click on the Clear button.

To select a **Log** to view, click the **log** button to bring up the log menu. Highlight the **day** from the menu and click on **view** to view those errors. The last 364 days of errors can be viewed.

To view another day's errors click on **log** and highlight the day you wish to look at then click **view**.

If a printer is connected to the computer and **printing** in edit screen #4 is turned on, the logs can be printed by clicking on the **print** button.

Clicking the **exit** button in the error box will take you back one window at a time until the error box disappears. This also tells the system that you have acknowledged the error's which may have occurred and cancels the flashing **red** error button.

Menu Button

The **Menu** button is at the lower right hand corner of the screen. Clicking on this button or pressing **F10** 2 times will take you back to **Main Menu.**

Time Display

Right above the System Reset button is the **Time** display. You may drag this field to another position on the screen. Pressing **F11** will place the field back to its original position. Double Right clicking on this field will change the display to different display modes.

Customer Name

Above the time is the customer name that was entered on Edit page #4.

Operators Manual

On the lower left-hand corner, is a "**?**", when clicked on will bring up a copy of this **Operators Manual** for review.

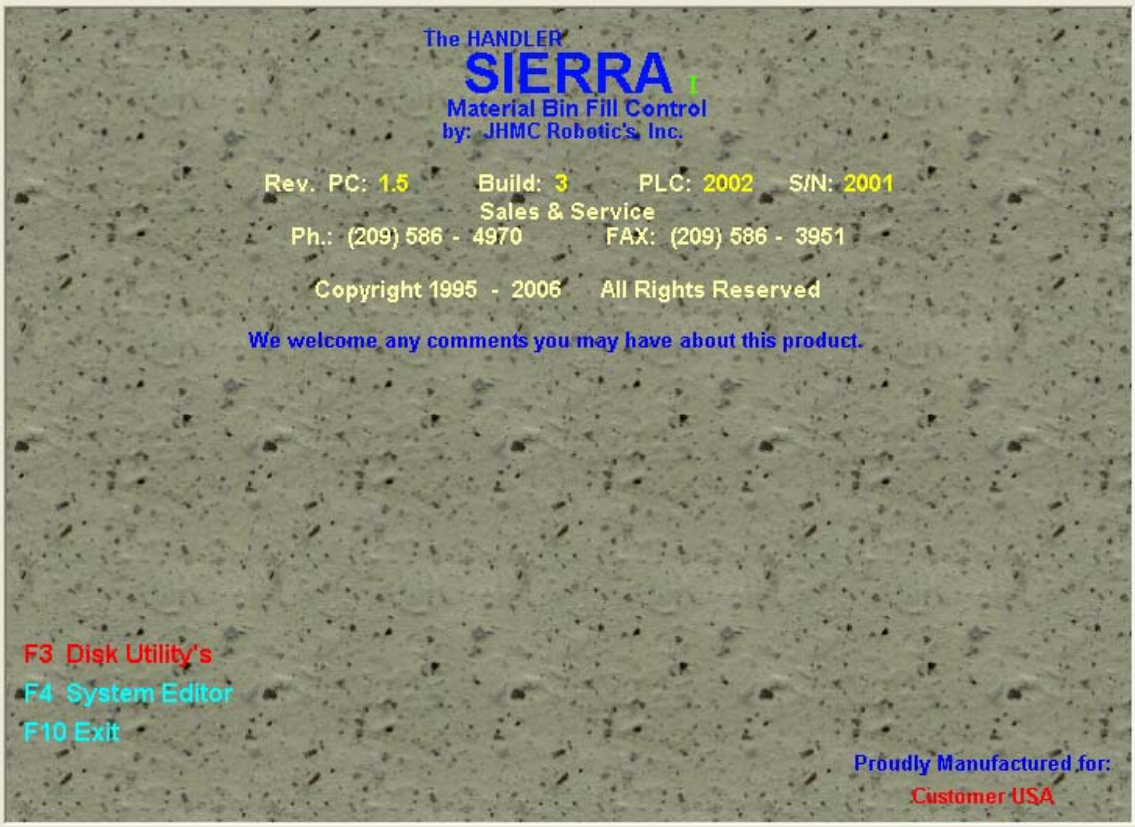
Minimize button

Clicking the (**--**) button will minimize the **Sierra** screen to the task bar. The system will continue to control and monitor the plant as usual. If an error occurs in the plant the **Sierra** screen will come forward and when the error is corrected you may again minimize the **Sierra** and continue using whatever software you were using.

"T" Button

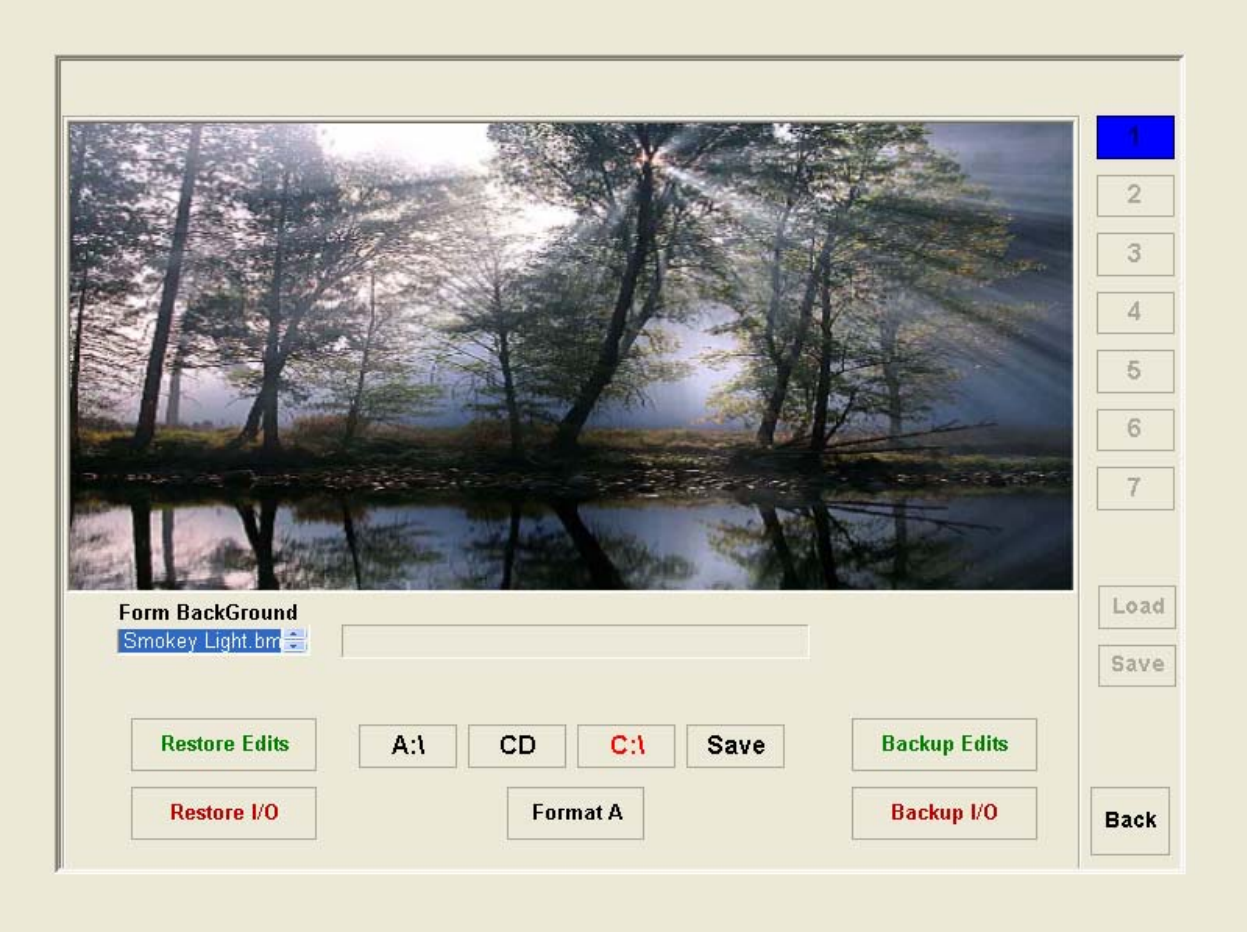
Clicking on the **"T"** button will toggle the Run screen between transparent and non transparent.

Editor Screen Select



Clicking on **Disk Utility's** or pressing **F3** will display the **Disk Utility's** screen.
Clicking on **System Editor** or pressing **F4** will display the **Editor** Screens.
F10 = Exit back to **Main Menu** Screen

Disk Utility's



The Utility screen gives the choice of either **Backing Up** or **Restoring** the plant **Setup Edits** and **I/O Assignment** data. Wait for **"Backup Completed"** before pressing any other buttons!

Backing up Data

Edits:

Click the **Backup edits** button, then the drive **"A", "CD"** or **"C"** then click "**Save"**.

"A" Will backup data to **"A"** and **"C"**
"CD" Will backup data to the **"CD"** and **"C"**
"C" Will backup data to **"C"** Only

I/O Assignments:

Click the **Backup I/O** button, then the drive **"A", "CD"** or **"C"** then click "**Save**

"A" Will backup data to **"A"** and **"C"**
"CD" Will backup data to the **"CD"** and **"C"**
"C" Will backup data to **"C"** Only

Restoring Data

Edits:

Click the **Restore Edits** button, then select the drive to **Restore** from, drive **"A", "CD"** or **"C"** then click "**Load"**. This will restore the data from the selected drive into the system.

I/O Assignments:

Click the **Restore I/O** button, then select the drive to **Restore** from, drive **"A", "CD"** or **"C"** then click "**Load"**. This will restore the data from the selected drive into the system.

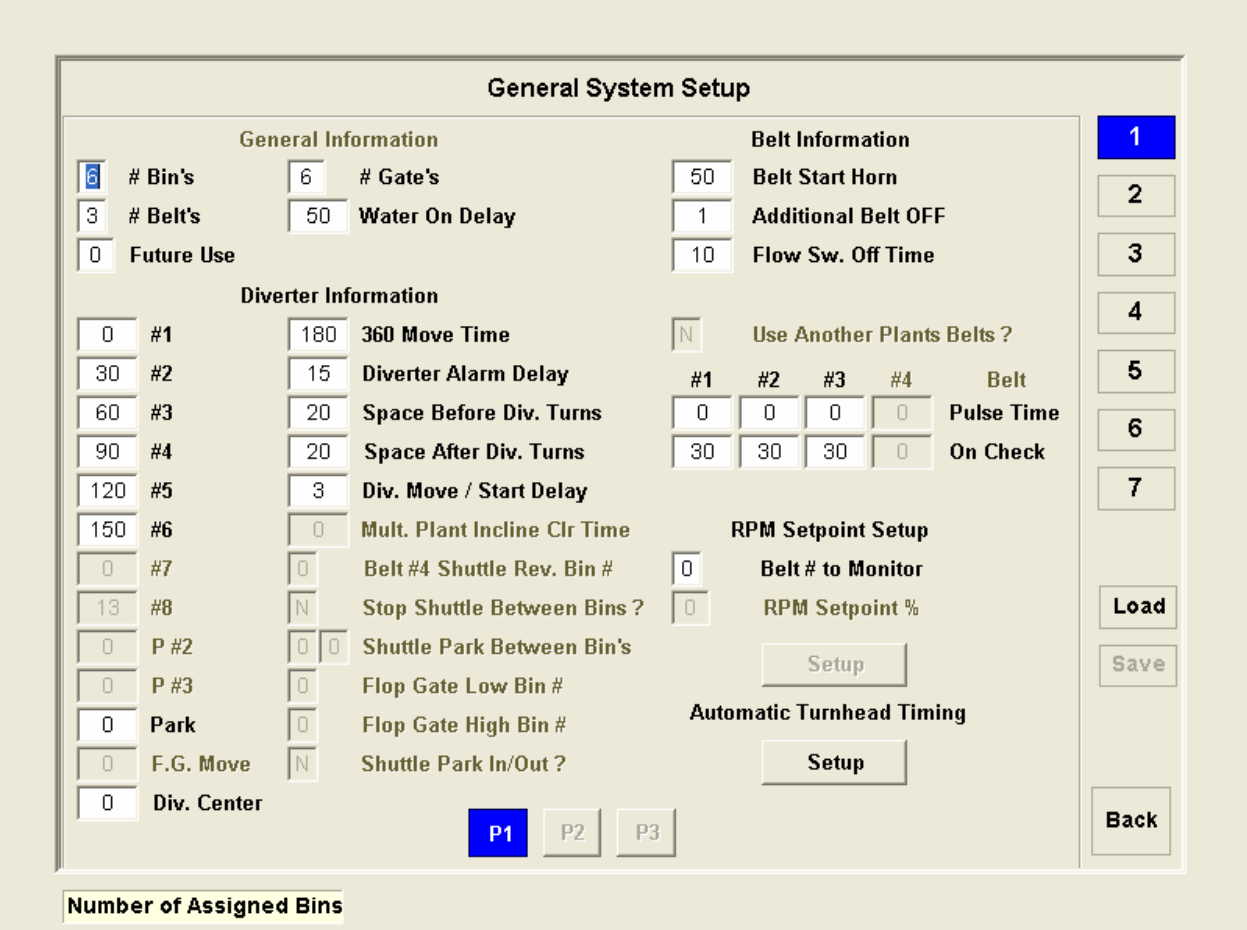
Format A button will format Drive **"A"** if needed.

Form BackGround Box

Using the Home, End, up arrow, down arrow, page up or page down keys will move through the picture options to be displayed on this screen

Clicking the **Back** button or **F10** will go back one screen.

Edit Page #1



 # Bin's

Enter the total number of **Overhead Bins** that are on plant.

 # Belt's

If there are **Two**, enter a **"2".**
If there are **Three**, enter a **"3"**, and so on, maximum 3 belts.

 # Gate's

Enter the number of **Gates** that are available to feed material to the plant/s.

Water on Delay

Enter a **Time** to turn on the watering or spray bar.

Diverter Information

There are 8 boxes in the left part of this heading. If the time was set automatically, those times will be entered here.

Or times can be manually entered and/or changed here.

The time to enter here is the time it takes to turn from bin 1 to 2; from bin 1 to 3; from bin 1 to 4; bin 1 to 5 and so on.

P #2 & P #3

Diverter positions on plant for belts to plant #2 and plant #3 if used.

Enter a time from Bin #1 on plant to P#2 and/or P#3 Belt position.

Park (Diverter / Shuttle Park position time)

Enter a time from bin #1 on plant to the Diverter / Shuttle Park position.

F.G. Move

If a **Flop Gate** is enabled, enter a time for it to move from one position to another.

Div. Center

For a Radial stacker, enter a time to center on a Bin after it sees the position switch.

360 Move Time

For a **360** degree **Diverter**, enter the **time** that it takes to go from **Bin #1** around to **Bin #1** here.
A **"0"** tells the system there is a **reversible Diverter**.

Diverter Alarm Delay

Caution with this one! If "Diverter not in position" alarm keeps going off just before the Diverter gets to the new position, enter only enough time here to stop alarm sounding.

Space before Div Turns

Time desired **after** the material clears the Diverter and **before** the Diverter starts to turn to the next bin. A space on the belt clear of material.

Space after Div Turns

Time desired **after** the Diverter turns and **before** the material arrives at the Diverter. A space on the belt clear of material.

Diverter Move / Start Delay

A time may be entered to delay the run (turn/move) of the Diverter by the system. This applies in the automatic and the manual modes. If the Diverter is reversed it will keep it from snapping in the opposite direction.

Multi. Plant Incline Clr Time

For Plant #1 belt clear time when there are 2 or 3 plants using the same storage bins and belting that feeds plant #1

Belt #4 Shuttle Rev. Bin #

Bin # that the Shuttle will reverse its running of material direction.

Stop Shuttle between Bins

A **"Y"** will stop the shuttle running while traveling from bin to bin.

Shuttle Park between Bins's

Enter the plant bin numbers that the shuttle will go to the park position when filling those bins.

Flop Gate Low Bin #

Enter the low bin number to operate the flop gate when filling that bin.

Flop Gate High Bin #

Enter the High bin number to operate the flop gate when filling that bin.

Shuttle Park In/Out ?

Some Shuttles move OUT to park, this is a Y/N field.

Belts

Belt Start Horn Time

Enter a time for the **horn** to blow before a **belt** and/or **Diverter/s** starts.

Additional Belt off Time

"0" entered = The belts will continue to run until manually stopped.
"1" entered = When all overhead bins are full, the system will clear all belts before stopping.
">2" entered = If the belts need to run longer, up to fifteen minutes maximum may be added here. After that time, the belts will shut down if all bins are full.

Flow Sw. off time

A time delay **off** of the **Primary flow** switch if it's not consistent.

Use Another Plants Belts ?

When Plants #2 and/or #3 are enabled and the use of Plant #1 storage and belts are needed to feed these plants, enter a **"Y"** in this field.

Belt #n

Pulse Time

If an **electronic limit switch** is used to sense movement or running of a belt, then enter a **time** between the pulses.

Leaving a **zero** here tells the system that it's looking for a contact closure (a solid contact) when the belt is running.

On Check

This is the belt start time before a **Belt Not On** error is generated.

RPM Set point Setup

Belt # to Monitor

Enter the belt number for the speed control to monitor.

RPM Set point %

Enter the % number that the speed control is to stop the belt monitored. If 80 is entered and the belt slows to 80% of the rated speed, the belt or belts will stop and close the feed gate.

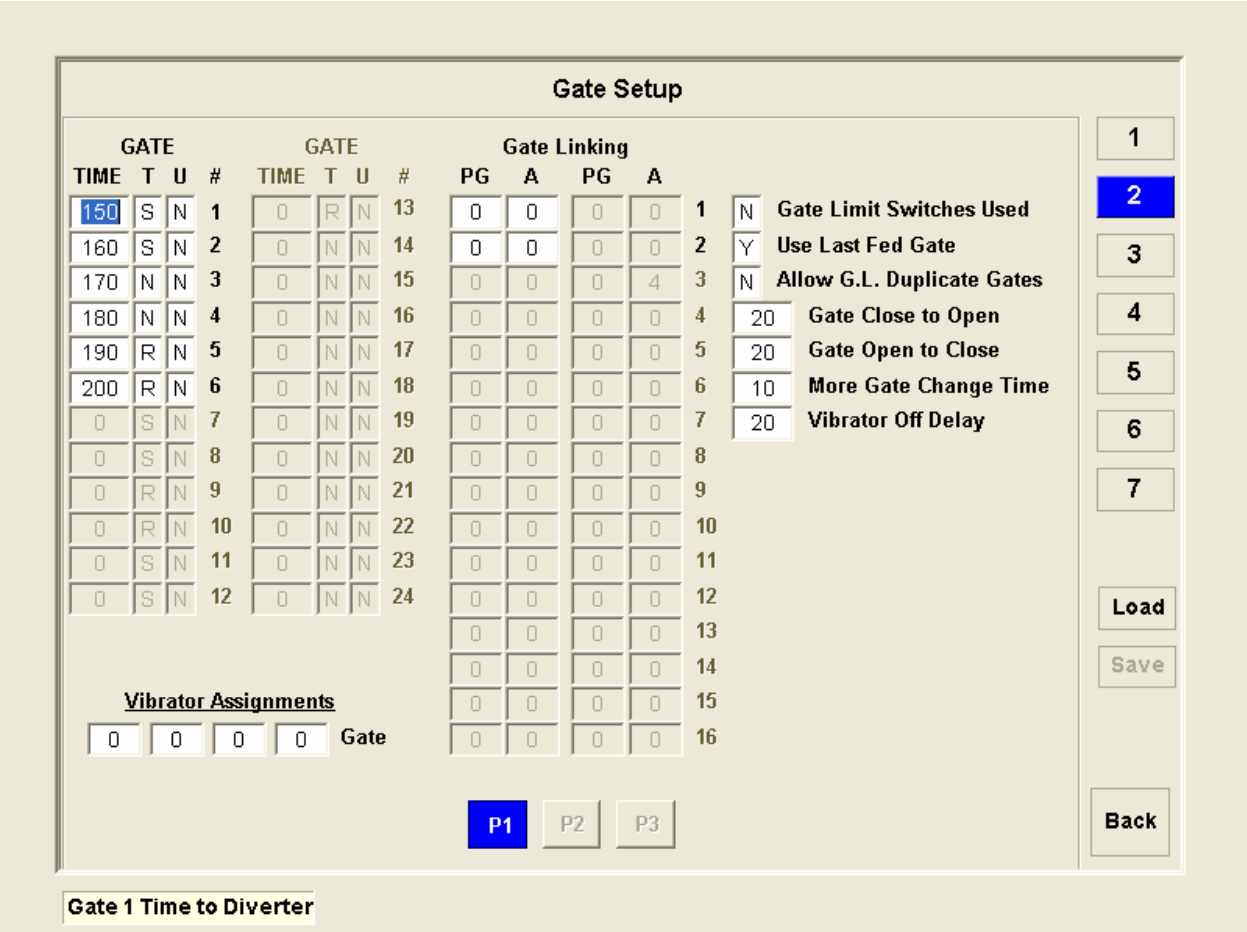
Setup for RPM Setpoint

Manually start belt from the manual panel before pressing this button.

Automatic Turn Head Timing

The Turn Head must be on bin position #1 (and if the Turn Head is a 360 unit then a 1 must be entered in the **"360 Move Time"** field) then press the **"Setup"** button. This will run the Turn Head around the bins and enter the time into the Turn Head turn time fields. When the turn head stops, click the "Load" button on the right hand side of the screen to load the timing into the fields.

Edit Page #2



Gate Time

The time it takes for the material to flow from **each** gate to the **Diverter** must be entered.

Type

"N"	= **N**either.	No **Spray Bar** or **Vibrating** for this product
"S"	= **S**and.	A **Vibrator** will run automatically for this product
"R"	= **R**ock.	A **Spray Bar**, over belt, will run automatically for this product

Utility Gate for Special Products:

N = This gate is a **normal** gate, not a utility gate.

Y = This gate **is** a **utility** gate.

Gate Linking

PG (Prime Gate) and **A** (Linked Gate) Column

Enter the gate numbers to be opened together when gate linking in desired. The gate with the longest time will automatically go to the **PG** column, this is normal. 2 sets of gates can be linked together here.

Are there Gate Open L.S.?

"Y" = Gate Limit switches are used on All Gates. Signal **ON** when gate just opens.

"R" = Gate Limit switches are used on All Gates. Signal **ON** when gate just closed.

"N" = No Gate switches are used.

Gate limit switches must be used for the gate **not closed,** gate **not open** and belt **contamination** features to work.

Use Last Fed Gate

A **"Y"** will feed the last gate fed in the next feed cycle for a bin in the automatic mode. An **"N"** will feed the first gate assigned to the bins on edit page #5

Gate Close to Open Time

Enter a time to **open** the feed gates. Time before gate not open alarms.

Gate Open to Close Time

Enter a time to **close** the feed gates. Time before gate not closed alarms.

More Gate Change Time

Additional time the system will wait in an attempt to feed material out of **a** gate with no material flow before it changes to the **next** assigned gate, if any, of the same product to the receiving overhead bin.

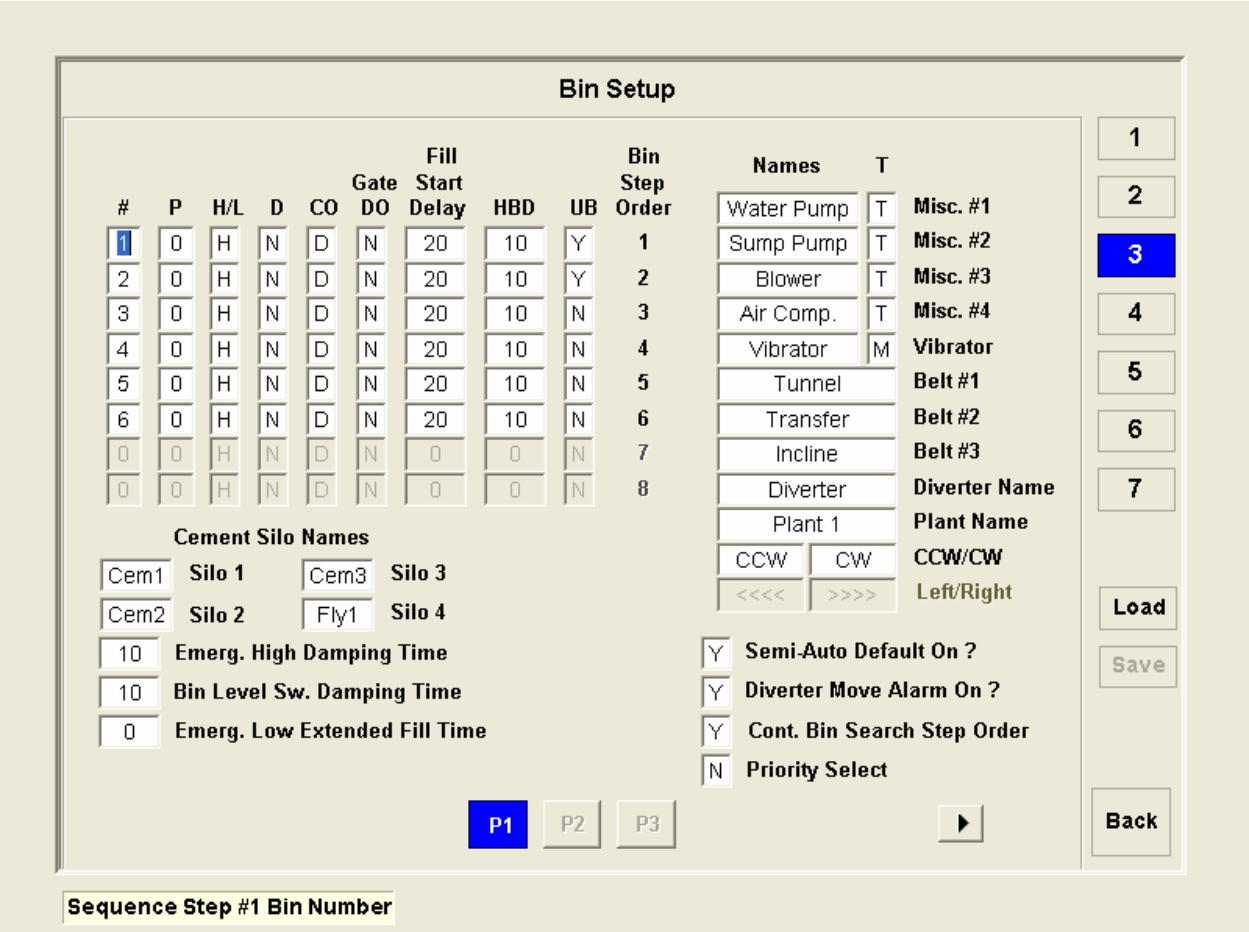
Vibrator off Delay

Vibrator off delay, time the vibrator will run **after** material is flowing in the automatic mode.

Vibrator Assignments

Gate >>>>>Enter a Gate # for each Vibrator enabled.

Edit Page #3



Bin Step Order

The **1-8** is the order the system looks at the bins to fill

#

Put **any** valid Bin number, in any order for the **priority search order.** 3,4,1,2,6,5,8,7

For instance: If Step order # 1 has a **"3"** entered, the first bin to be checked to fill is bin #3.

If Step order # 2 has a **"2"** entered, the second bin to be checked to fill is bin # 2.

If Step order # 3 has a **"6"** entered, the third bin to be checked to fill is bin # 6.

P Number

Bin fill Priority # (0 to 99). **Note:** Cannot be used with Bin Linking #1 & #2

When a number is assigned to a bin/s those bins will fill before bins that do not have a number assigned. If a bin without a number is filling and a bin with a number calls for filling the filling will stop and start filling the bin/s with a number assigned. If a bin with a number is filling and another bin with the same number calls for filling with an "**N**" in the "**Pri. Select**" Box (lower right side of this screen) the filling will continue. If a "**Y**" is in the "**Pri. Select**" Box the filling will stop and go to the other bin with the same number as the one filling **IF** the other bin is in a lower fill order in the "**#**" column. When a numbered bin is filling and a bin with a higher number calls for filling the filling will stop and fill the higher numbered bin. All bins without a number will fill in the "#" column assigned order. Bins using the Emergency Low feature will abort all other filling and fill them in the "#" assigned order.

H/L **H**igh / **L**ow Start.
H = Start filling when bin is **NOT** high
E = Start filling when bin is **NOT** high and using the low bin signal for emergency **LOW** start
L = Start filling on a **LOW** signal. (Not as an emergency low)

D **D**isable Automatic filling
To **disable** this **bin** from the automatic fill cycle, enter a **"Y"**.

CO **C**hange **O**ptions**:**
Entering a **"D" = Gate** change on no material flow (default)
"C" = **Gate** change on bin fill start + no material flow

DO Gate **D**elay **O**pen.
A **"Y"** keeps the gate from opening until the Diverter gets **to** the bin to fill.
An **"N"** will open the next feed gate **before** the Diverter turns and at the appropriate time so when the Diverter stops on the **next** bin to fill, the material will be there shortly.

Fill Start Delay

A time the system will wait before it accepts a **not high** bin input from a bin indicator. This will prevent a false fill start

HBD High Bin Delay Gate close time

On a high bin, the feeding gate will wait for this amount of time to close. This will adjust the fill level of the bin after a high signal.

UB Utility Bin enable

A **"Y"** designates this bin as a utility bin. This will allow the bin name to be changed if you want a different product in this bin on the Sierra run monitoring screen.
An **"N"** will not allow you to change the bin name from the monitoring screen.

Names		**T**
Misc. #1	Name the Switch button on the run screen.	**T** = Toggle **M** = Momentary
Misc. #2	Name the Switch button on the run screen.	**T** = Toggle **M** = Momentary
Misc. #3	Name the Switch button on the run screen.	**T** = Toggle **M** = Momentary
Misc. #4	Name the Switch button on the run screen.	**T** = Toggle **M** = Momentary
Vibrator	Name the Switch button on the run screen.	**T** = Toggle **M** = Momentary
Belt #1	Name the Switch button on the run screen.	
Belt #2	Name the Switch button on the run screen.	
Belt #3	Name the Switch button on the run screen.	

Diverter Name Name the Diverter box on the run screen.
Plant Name For a 2 or 3 plant controller
CCW/CW Name the Move buttons for the Diverter
Left/Right Name the Run buttons for a Shuttle Belt

Cement Silo Names

When enabled, the name of the cement silo's may be entered here

Emerg. High Damping Time A damping time for all Emergency High level switches

Bin Level Sw. Damping Time A damping time for all bin high level switches

Emerg. Low Extended Fill Time

When a bin is emergency filling and another bin is calling for emergency fill also then:

When the bin fills above the emergency low level "Bin is yellow" it will continue to fill for the time entered, then abort this filling cycle and start filling the next emergency low bin. If no other bins are calling for emergency low, the bin will not use this time and continue filling the bin in a normal manor.

Semi-Auto Default On?

A **"Y"** will turn the **Semi-Auto** button on the main screen on = **Red**. When entering the run screen

An **"N"** will turn the **Semi-Auto** button on the main screen off = **Black** mode. When entering the run screen

Diverter Move Alarm On?

A **"Y"** will pulse a horn outside before the Diverter turns in the automatic mode only.

Cont. Bin Search Step Order When a Bin fills?

Enter a **"Y"** if the **bin search step order** should continue from the last bin filled instead of starting the search over on a high bin.

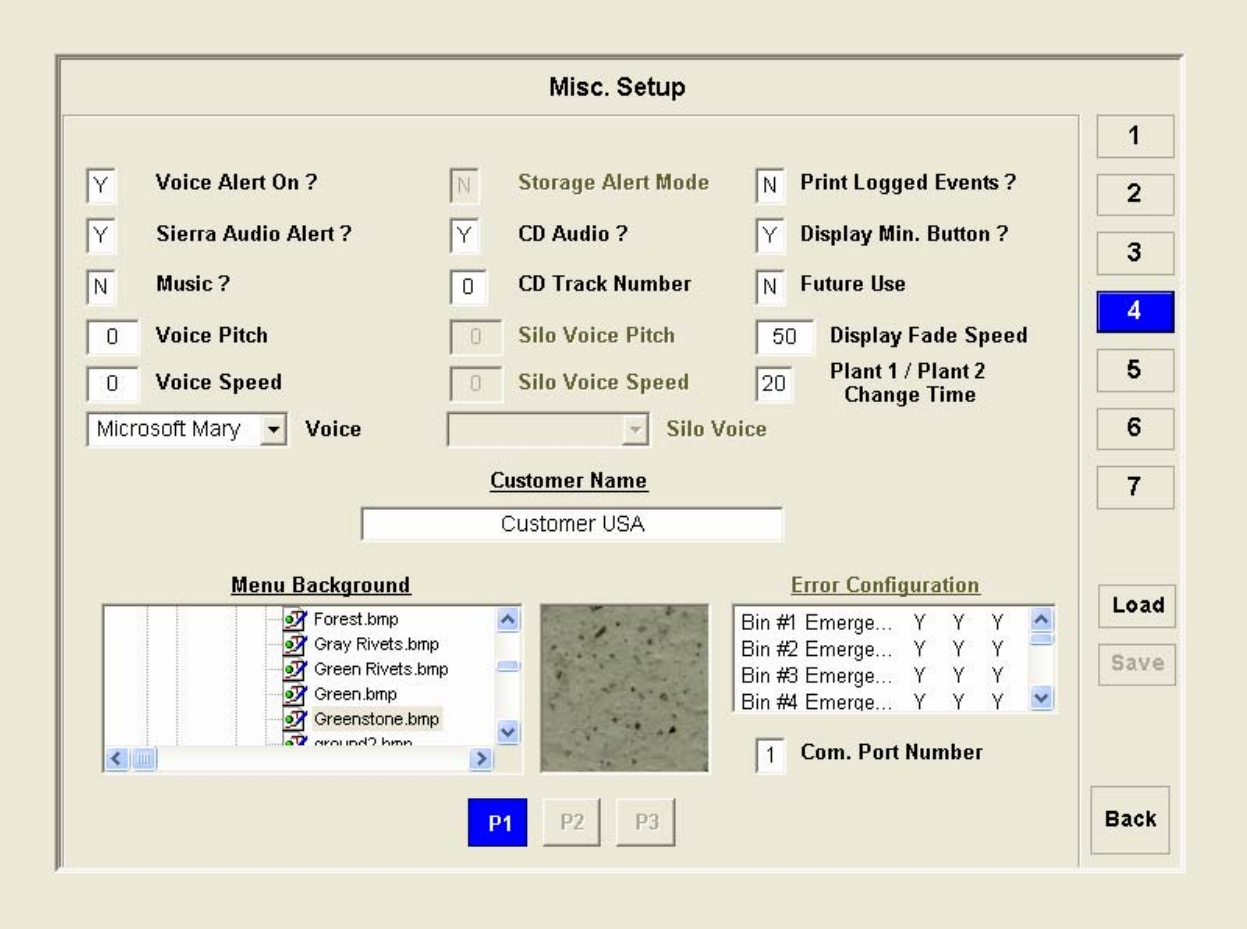
For instance, if bin # 2 is filling in step order # 2, and step order #1 bin goes low, it will look at step order 3, 4, 5, 6, 7and 8 before it looks at step order # 1 again.

An **"N"** will start the **bin search step order** over every time a bin is filled.

Priority Select

If 2 or more Bins have the same Number in the "P" column and a bin of a lower step order calls for material, then:
"Y" will abort feeding the current bin and go to the lower step order bin.
"N" will continue to fill the current Bin before going to the other Bin

Edit Page #4



Voice Alert On?

A **"Y"** will turn on the voice prompting feature for the error messages.
An **"N"** will turn off the voice prompting feature.

Sierra Audio Alert?

A **"Y"** will sound an audio alert prior to a voice message.

Music?

A **"Y"** will play music after a voice message has been announced.

Voice Pitch

Increasing or decreasing this number will raise or lower the synthesized voice.

Voice Speed

Increasing or decreasing this number will speed or slow up the synthesized voice

Voice (synthesized)

Clicking on the down arrow on the right side of this window will display the available synthesized

voices to select from.

Storage Alert Mode

Turns Voice Alert On for the Silo Option

CD Audio?

A **"Y"** will play music from a CD after an error voice message.

CD Track Number

Enter a track number for the CD to play after an error. Entering **"0"** will rotate to the next track /song for each error.

Silo Voice Pitch

Increasing or decreasing this number will raise or lower the synthesized voice.

Silo Voice Speed

Increasing or decreasing this number will speed or slow up the synthesized voice

Silo Voice (synthesized)

Clicking on the down arrow on the right side of this window will display the available synthesized

voices to select from.

Print Logged Events?

A **"Y"** turns the printer port on.

This will allow printing of the error log. A printer must be hooked to the computer and turned on with paper in it; otherwise a printer error will keep appearing on the screen.

Display Minimize **Button?**

A **"Y"** entered will display the minimize button on the Sierra run screen.

An **"N"** will not display the minimize button on the Sierra run screen.

Future Use Not used

Display Fade Speed

This is the Fade speed color change for the Headings on the **Edit menu** and the **Main menu** screens. A 10 is the fastest setting allowed and 9999 is the slowest allowed. Recommended 200. Entering a zero will turn off the color change of the 2 screens.

Plant 1 / Plant 2 Change Time. To change back to the active monitoring screen in a 2 or 3 plant system.

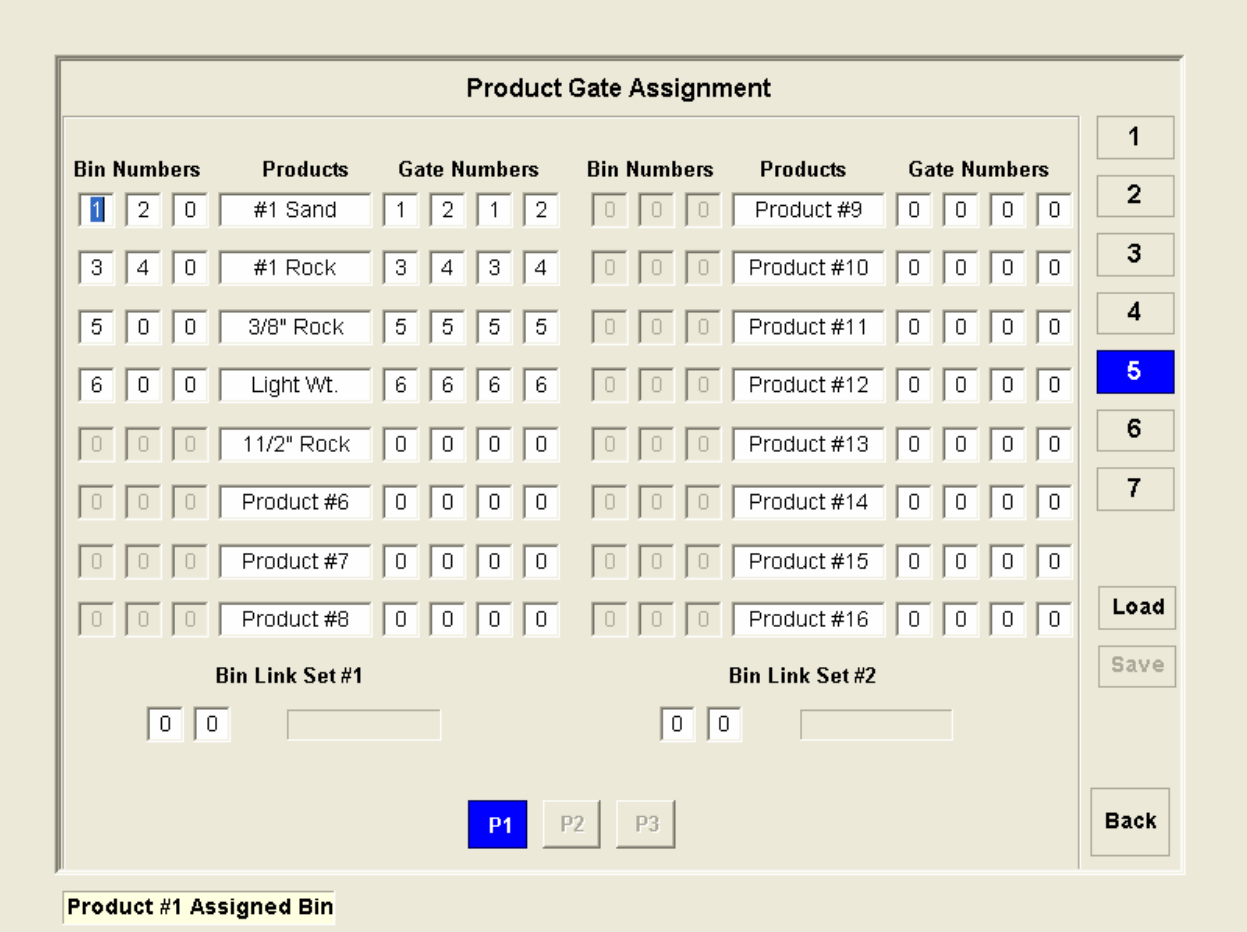
Customer Name The data here will display on the Sierra run screen.

Menu Background Use the mouse to highlight the bottom left window and the up or down arrows to select the wallpaper for the main menu screen.

Error Configuration Configure the way the Errors are handled on the Run screen.

Com. Port Number Assign the communication port to the PC.

Edit Page #5



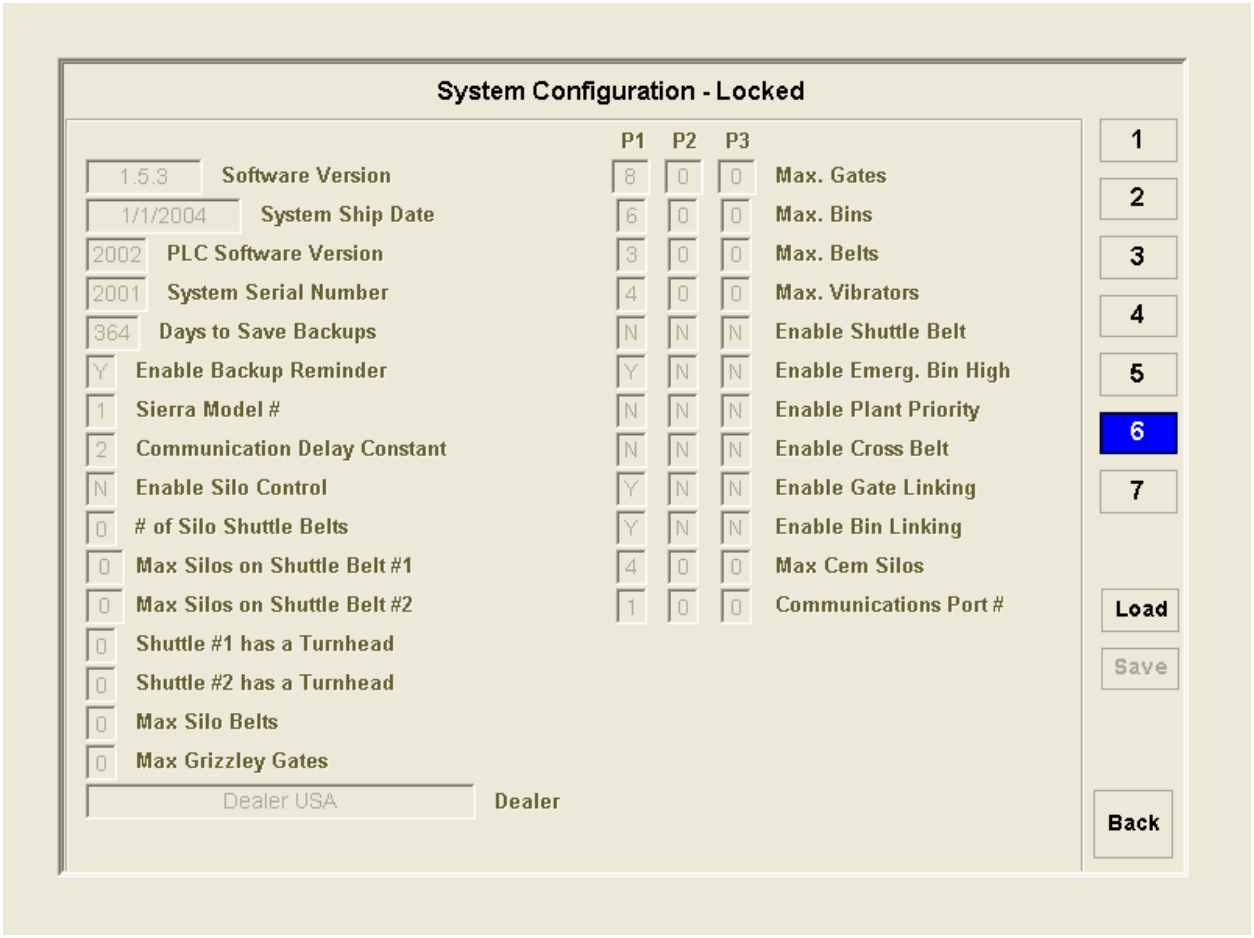
You can enter up to:
3 = Bins to each product.
16 = **Product** Names. Product names **can not** be the same.
4 = **Gates** can be assigned to **a** product. **All** assigned gates to a product **MUST** be of the same material.

Bin Link Set #1 and **Bin Link Set #2**

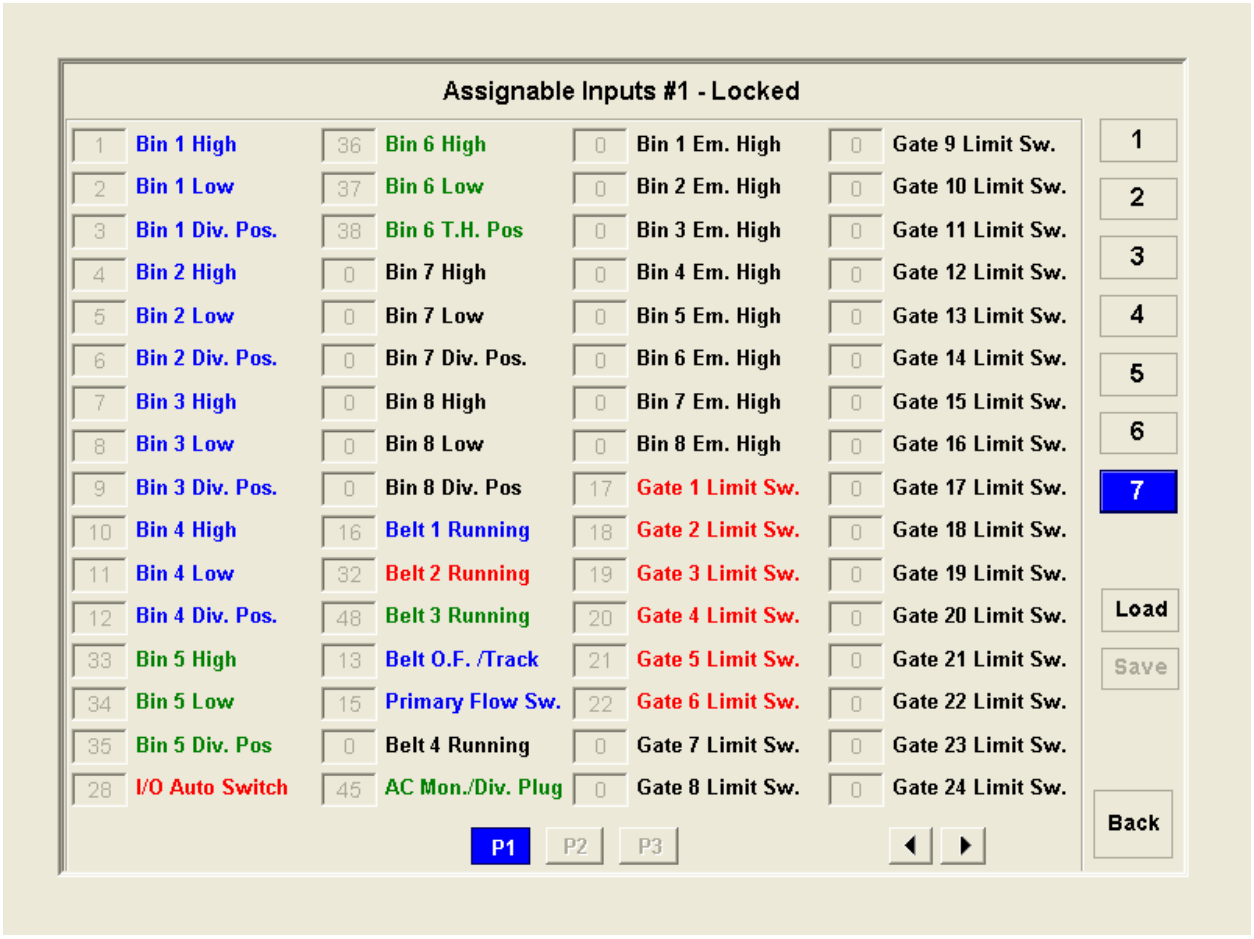
Enter the Bin numbers to Link. This will not close the feed gates and will spread the product between the bins. Will increase the belt production some between the selected bins. Note: They **MUST** be next to each other on the plant.

Edit Page #6

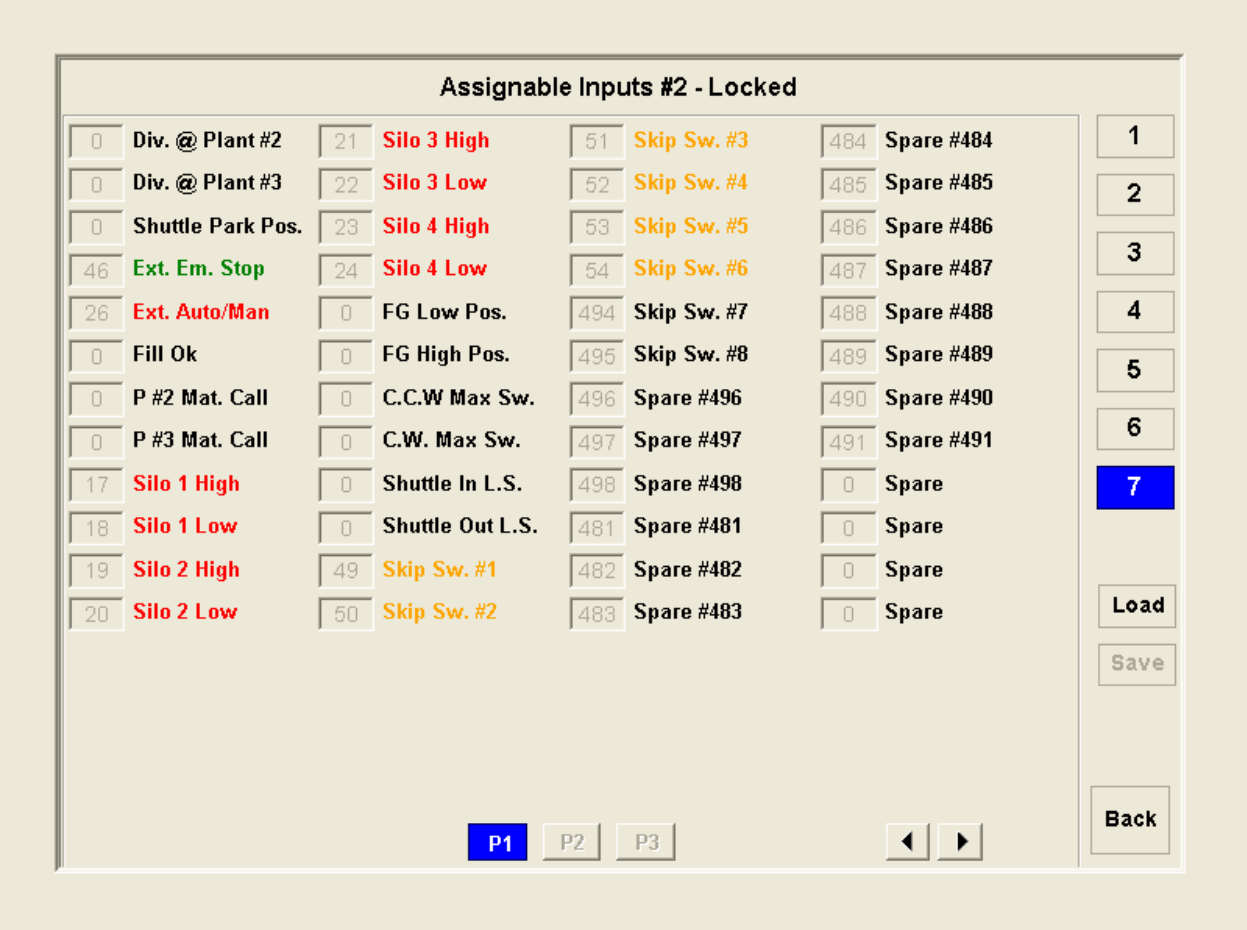
This screen is for factory use only.



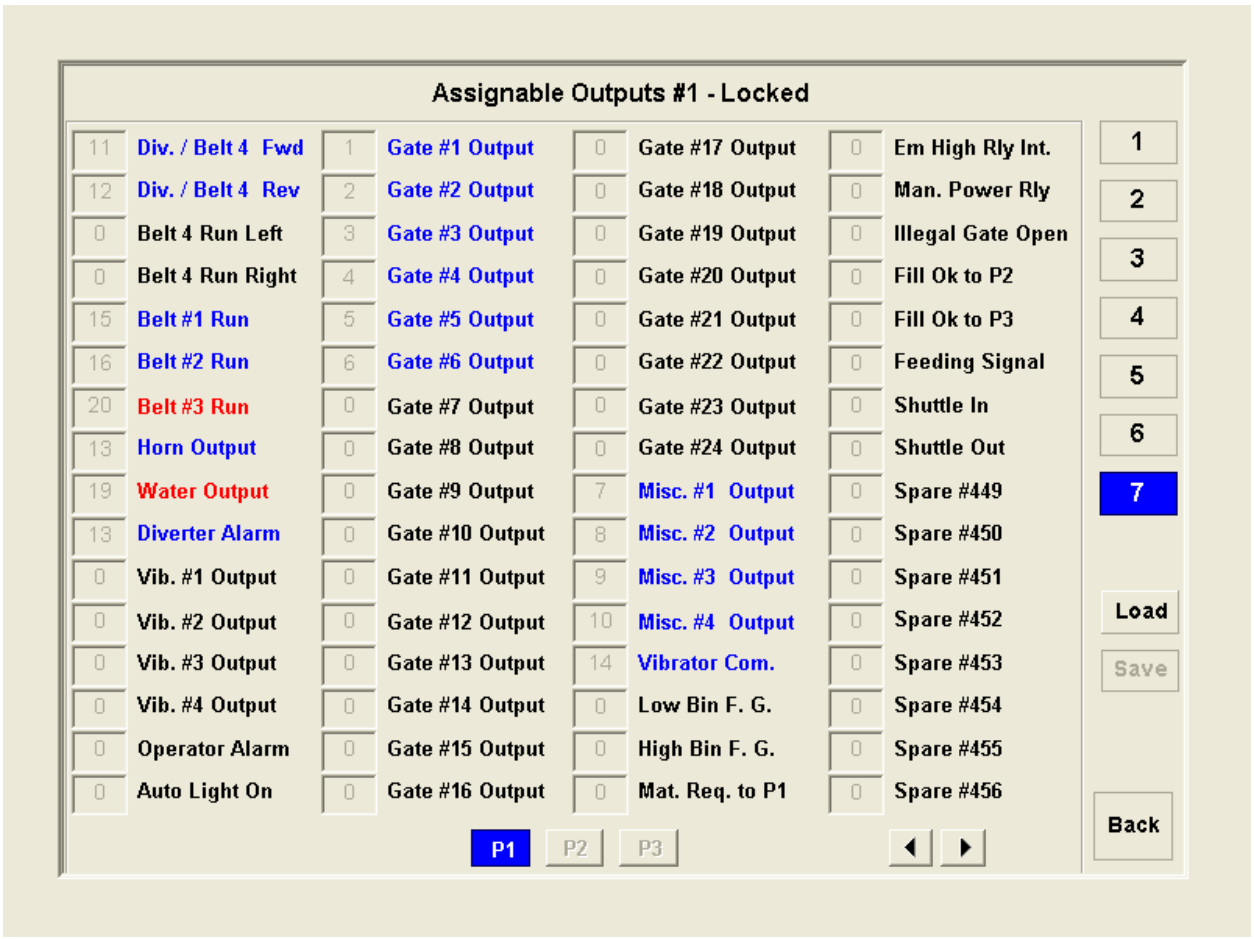
Edit Page #7 Button
Input #1 Page
for factory use only



Edit Page #7 Button
Input #2 Page
for factory use only



Edit Page #7 Button
Output #1Page
for factory use only



Manual Operation from the PLC I/O Box
Manual Switches

The Auto / Manual Switch

This switch must be in the Auto position before the computer can be put into the automatic mode from the CRT monitoring screen.

To operate the plant with the manual switches on the I/O Box, this switch must be in the Manual position.

The Belt switches

The belt switches are interlocked so the incline belt switch must be ON before the other belt switches will operate. When a belt switch is turned on an alarm signal is sent out to blow a horn before the belt will start.

Emergency Stop Button on the I/O Box with the manual switches

Pressing this button will stop all power sent to the plant from this box. To reset the button, gentle twist the button in the direction of the arrow displayed on the button.

External Auto / Manual Switch The light next to the switch will light when in the Auto mode.

Toggling this switch 1 time for 1 second will put the PLC into **automatic** fill mode for 1 plant fill cycle.

If in auto mode, Toggling it 1 time for 1 second will place the PLC into **Manual** mode all skipped bins will stay skipped. If you want to un-skip or skip bins, from the manual mode, set the skip toggle switches in the I/O box **On** to skip, **Off** to un-skip, then, toggle the EA/M switch 5 times and hold for 1 second, this puts the PLC in auto mode and changes the skip configuration to the toggle settings.

Manual Feed Gate Select Rotary Switch

The Diverter should be on the bin to fill and the Belts should be running.

Turn the selector switch to the desired gate number then place the toggle switch to the gate open position for the rotary switch used.

Bin full Alarm

When the Diverter is on a Bin and the High light lights, an alarm signal will sound for 15 seconds.

If the bin is not full and the skip or auto skip is turned on or an emergency high is on for that bin the alarm will sound as if the bin is full.

SIERRA SETUP/STARTUP CHECK LIST.

Note: A material flow switch mounted over Belt #1 just before the first Gate is needed for the automatic vibrator and auto gate change feature.

Gate closed limit switches (set to make contact as gate just opens) are needed if the material contamination on Belt & Gate Not Open or Gate Not Closed features are to be used.

Belt zero speed or electronic limit (prox.) switches on all Belt/s tail pulleys are needed for Belt running inputs.

Belt tracking and Belt Over Flow switches are needed if these 2 features are to be used.

#1 Test all plant functions manually to make sure all devises work properly.

#2 Diverter turn time: Edit page #1
Set Diverter turn time from Bin to Bin

#3 Horn Blow time. Edit page #1
Set a time the Horn blows before the Belts start.

#4 Number of belts. Edit page #1
Enter the number of Belts to plant

#5 Number of Bins on plant. Edit page #1
Enter the number of over head Bins on plant.

#6 Belt zero speed switch. Edit page #1
If you are using an electronic limit switch for Belt running, you will need to give a time for sensing pulses from the limit switch.
The System defaults to a normal contact closure for a Belt run signal.

#7 Number of storage Gates. Edit page #1
Enter the number of storage Gates for plant.

#8 Storage Gate assignments. Edit page #5
Assign storage Gates to All Products used.

#9 The time from each Feed Gate to the Diverter must be entered. Edit page #2

#10 Vibrator Off delay. Edit page #2
If Vibrators are used, set the running time after flow has began.

#11 Assign Bins to Products on Edit page #5

#12 Make sure that NO 2 Diverter position switches are on at the same time.

#13 All Feed Gate open & closed response times should be consistent

#14 Total Diverter Move time is more than 20 seconds