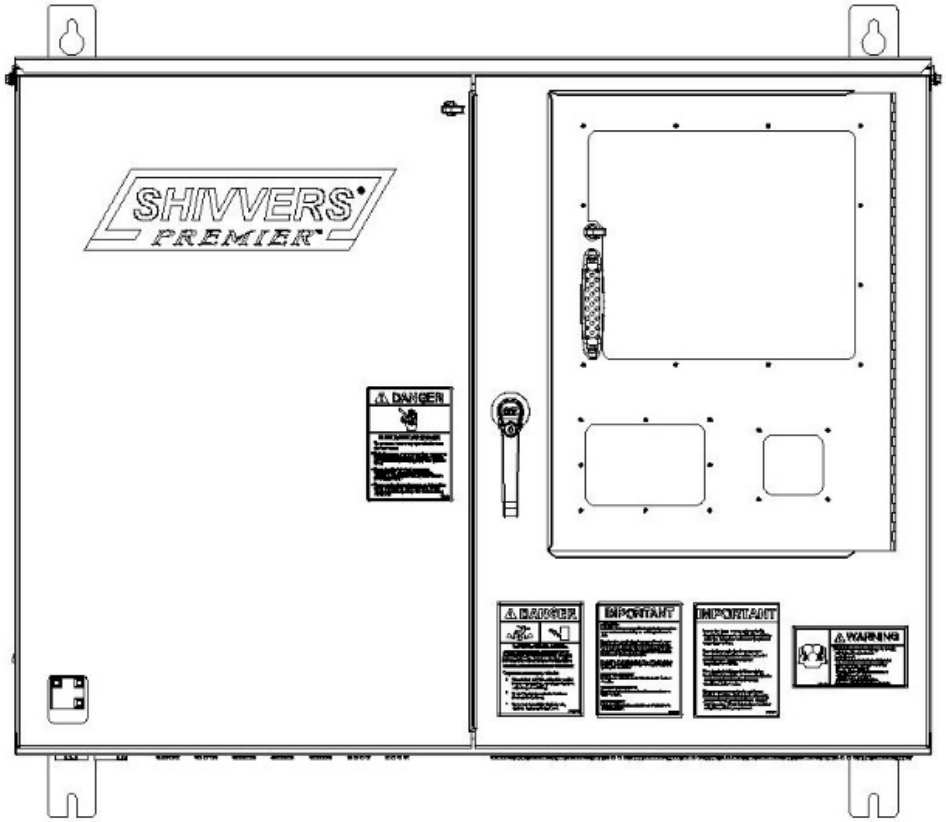
SHIVVERS PREMIER

Operating Instructions

For Model 641AG-001A



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Introduction

Read the operating instructions for all installed equipment and the operator's safety manual completely before starting the dryer.

The 641 series Premier drying system is designed as a complete, automatic in-bin dryer control with a touchscreen controller which gives the user access to their dryer data through any web interface device. The touchscreen will adjust the plenum temperature within the operator's set parameters to give the desired moisture content with limited over drying. The touchscreen has the ability to text the user when an alert condition has been reached, so downtime can be reduced.

The standard configuration comes with two motor starters which will control either the removal machine and one continuous flow auger, or two removal machine motors. It can control up to three fans and heaters, and has a low grain shut off to turn the system off when the grain depth gets too low. A static pressure sensor kit is included.

Available options include motor starters for up to a total of four transfer augers. If control of more than four transfer augers is required, an Expansion Box is available. Stepdown transformers are available for control power, but it is up to the installer to provide an enclosure. Other options include an ambient temperature and humidity weather station.

With the Premier drying system the printer has been made obsolete because the touchscreen stores the last 600 records in onboard memory. Also, all of the records are sent to a database that can be accessed from any web interface device. There is no longer a need for a sequential timer control on the transfer augers because this is now controlled by the touchscreen.

The touchscreens operating temperature is rated for -20 to 60˚C (-4 to 140˚F). The touchscreen storage temperature is rated for -30 to 70˚C (-22 to 158˚F). If temperatures cannot be maintained in this range, a climate controlled room is HIGHLY recommended. Temperatures inside the control panel can increase dramatically if exposed to direct sunlight. The touchscreen visibility will be very poor in bright sunlight. These are all reasons why it is best to mount it inside. Keep these things in mind when selecting a mounting location.

The machine (tapered sweep auger) is controlled by the touchscreen based on moisture readings to determine if the grain is dry enough to transfer. When it wants to take a sample, the touchscreen turns on the machine for 60 seconds. This purge allows time for grain to move from the floor to the moisture sensor. Once grain from the floor has reached the moisture sensor, a moisture reading is taken. If the moisture reading is higher than the operator entered set point, the touchscreen shuts the machine off. The touchscreen will then wait for the grain to dry before sampling again. If the moisture reading is less than the operator entered set point, the touchscreen will keep the machine running and turn on the transfer augers to transfer grain to the cooling bin. Once the dryer is transferring, the touchscreen will sample every five minutes to test the transferring grain. If a wet sample is encountered, the touchscreen will look at the average of the last 2-9 samples (set by operator) to determine if the average is still below the set point. Once the average is above the set point, the touchscreen will turn the machine off and clean out the transfer augers.

The touchscreen will adjust the target plenum temperature between the minimum and maximum temperature settings (set by operator) based on moisture readings. If the grain is too dry, the target temperature will go down to prevent over drying. If the grain is too wet, the target temperature will go up to maximize capacity. The touchscreen also monitors the low grain shut off, and will shut down the drying system when the bin runs low on grain.

Every attempt is made to provide up to date instructions, but some items may change without notice. If in doubt about something, contact your dealer or the factory.

SAFETY INFORMATION

The operator of this machinery must assume the responsibility for their own safety, and that of those who are working with them. They must also make sure the equipment was installed properly. Factors that contribute to the overall safety of operation are: proper use, maintenance, and frequent inspection of the equipment. All of these are the operator's responsibility.

If any items covered in this manual are not completely understood, or there is a concern with the safety of the product, contact SHIVVERS at the address shown on the front page.

SHIVVERS is genuinely interested in providing the safest practical equipment to our customers. If you have a suggestion which you believe will enhance the safety of this product, please contact us and let us know.

TAKE NOTE ANYTIME THIS SAFETY ALERT

SYMBOL APPEARS.

YOUR SAFETY, AND THAT OF PERSONS AROUND YOU IS AT STAKE.

The safety alert symbol will be accompanied by one of three signal words whose definitions are given as:

DANGER: Red and white. Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded.

WARNING: Orange and black. Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

CAUTION: Yellow and black. Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

Be sure to observe these common sense rules when working with the dryer equipment:

1). All units must be equipped with a main power disconnect switch. This disconnect switch must shut power off to the complete drying system. It must have the capability of being locked into the OFF or OUT position. Disconnect and **LOCK OUT** this main power disconnect switch before conducting any inspection, maintenance, repair, adjustment, or cleaning of the drying system. When you must have the electrical power on to troubleshoot equipment, do it from a safe distance, and always from outside the bin.

2). Keep the bin entrances locked at all times. To unlock the bin, first lower the Level-Dry (if so equipped), then shut the main power disconnect off. Take the safety lock off the bin entrance and place it on the main power disconnect before opening the bin entrance. **Never enter the drying bin unless the Level-Dry (if so equipped), is completely lowered, and all power is disconnected and locked out.**

3). Always keep all shields and guards in place. If shields or guards must be removed for inspection or maintenance, replace them before unlocking and turning the power back on.

4). Be sure everyone is clear of all the drying and transferring equipment, and outside of all bins, before unlocking and turning the power on. Some equipment may run upon re-application of power.

5). Make sure that all decals are in place and are easy to read. Do not operate the equipment with missing or illegible decals. If replacements are needed, contact SHIVVERS Incorporated or your dealer.

6). Prior to use, inspect all equipment to insure that it is in good operating condition. Do not operate with missing, damaged, or worn parts. Use only SHIVVERS MFG approved replacement parts.

7). Metal edges can be sharp. Wear protective clothing and handle equipment and parts with care.

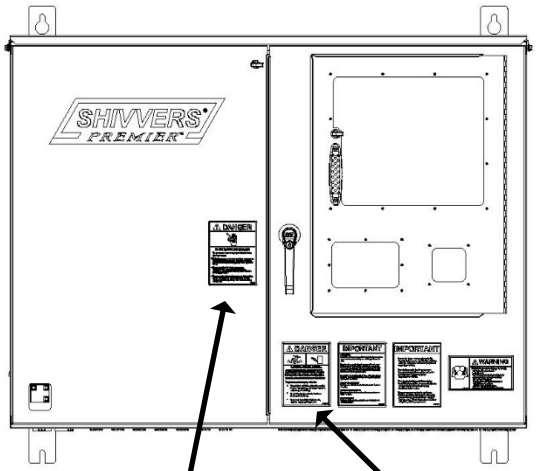
8). Keep children and bystanders away from drying and transferring equipment at all times.

9). If going up the bin ladder and/or performing maintenance on the top of the bin, take precautions to prevent accidental falls. When on top of the bin, wear a safety harness or other safety device.

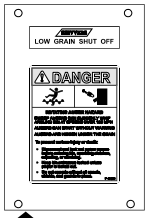
10). At least annually, review all operating and safety manuals with any personnel working with this equipment. Always train new employees before they operate the drying equipment. Insist that they read and understand the operating and safety manuals.

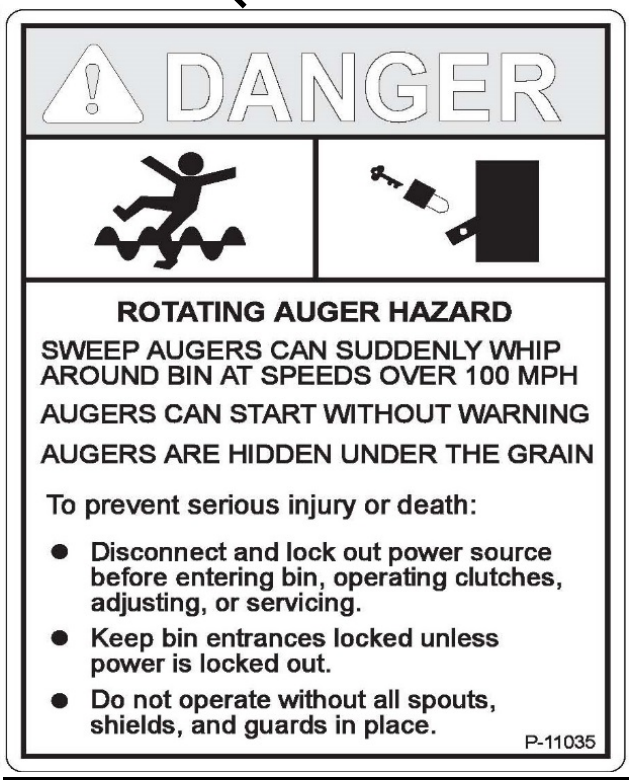
LOCATION OF SAFETY DECALS

This manual shows the location of safety decals that apply to the Premier Control. For complete instructions on where to find safety decals for other installed equipment consult your Operator's Safety Manual (P-10001).



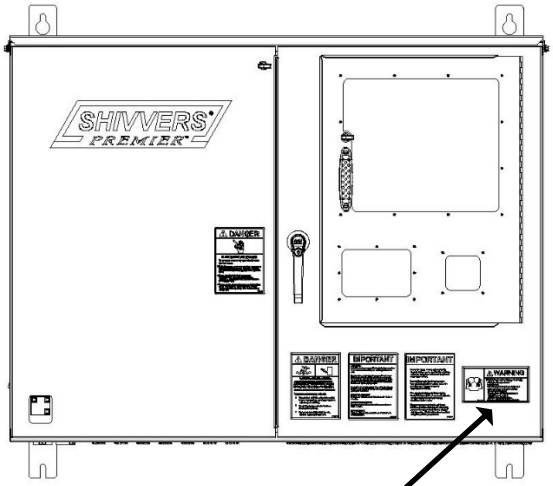
LOW GRAIN SHUT OFF





P-13273 **P-11035**

Location of safety decals, cont'd:



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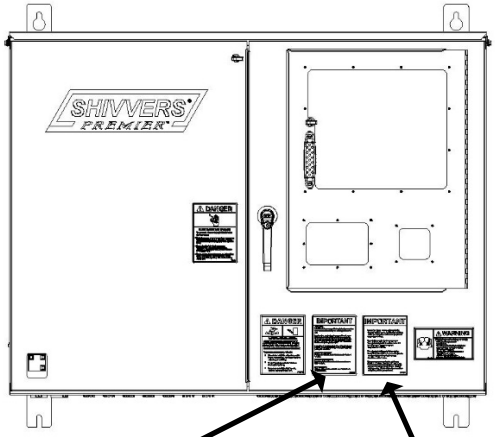
Location of safety decals, cont'd:

OTHER DECAL LOCATIONS



IMPORTANT

START-UP
Be sure to "set" the sweep(s) while filling the bin by turning them on for 3 to 4 seconds after they are covered with one foot of grain.

Keep drying bin grain depth under 2 feet until Circu-Lator or Dri-Flo has been "polished" with several hours of operation. Tapered sweep augers should not operate in grain over 20% moisture content. Pre-dry the bottom layer first with fan and heater before operating sweep augers.

Never fill Circu-Lator higher than bottom of lowest continuous flow boot. Never attempt to operate Circu-Lator or Dri-Flo in grain depths over 16 feet.

KEEP BELTS TIGHT
New belts especially will stretch during the first two weeks of operation.

BASKET SLIDE GATE
Always keep basket slide gate closed during Circu-Lator or Dri-Flo operation.

LUBRICATION
Lubricate equipment at least annually as per instructions in operating manuals.

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IMPORTANT

Before the drying season and periodically throughout the season, check for fines built up under the drying floor and around the plenum temperature sensor.

Fines built up under the floor can cause inaccurate temperature readings and could possibly cause damage from over temperature conditions.

Use a bright flashlight to look through the floor planks from above, or access the plenum area through the clean-out doors, fan transitions, or floor doors.

Monitor static pressure levels and do not exceed capabilities of fan/heater. Generally, gas pressure will need to be lower at higher static pressure. If burner flame becomes long and yellow, reduce gas pressure.

P-13118

P-13274 **P-13118**

OTHER DECAL LOCATIONS

P-13277

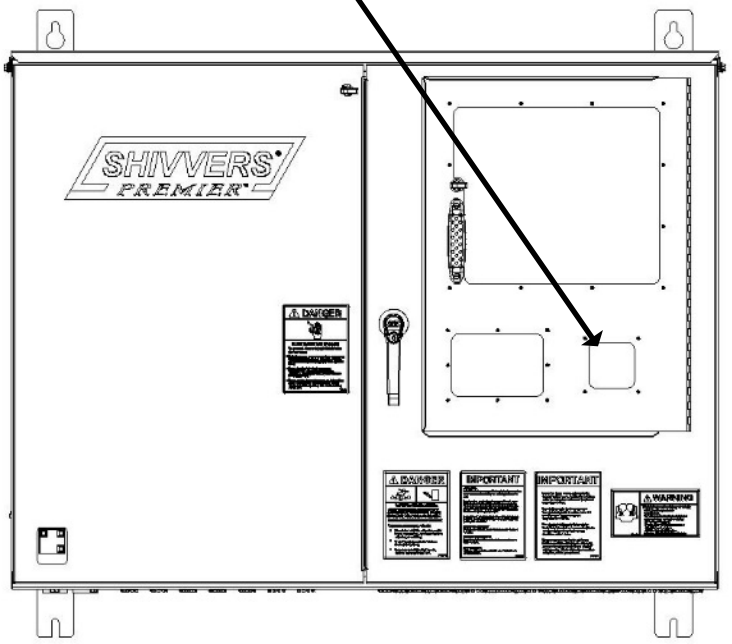
TOUCHSCREEN POWER ONLY

Turning this switch off will only shut power off to the touchscreen computer and modem.

It is best to do a Controlled Stop on the touchscreen first. If not, any auto running augers and heaters will shut off after approximately 15 seconds because of a communications error. Then any Cont. Flow/Aux. Augers that were running will need to be manually cleaned out.

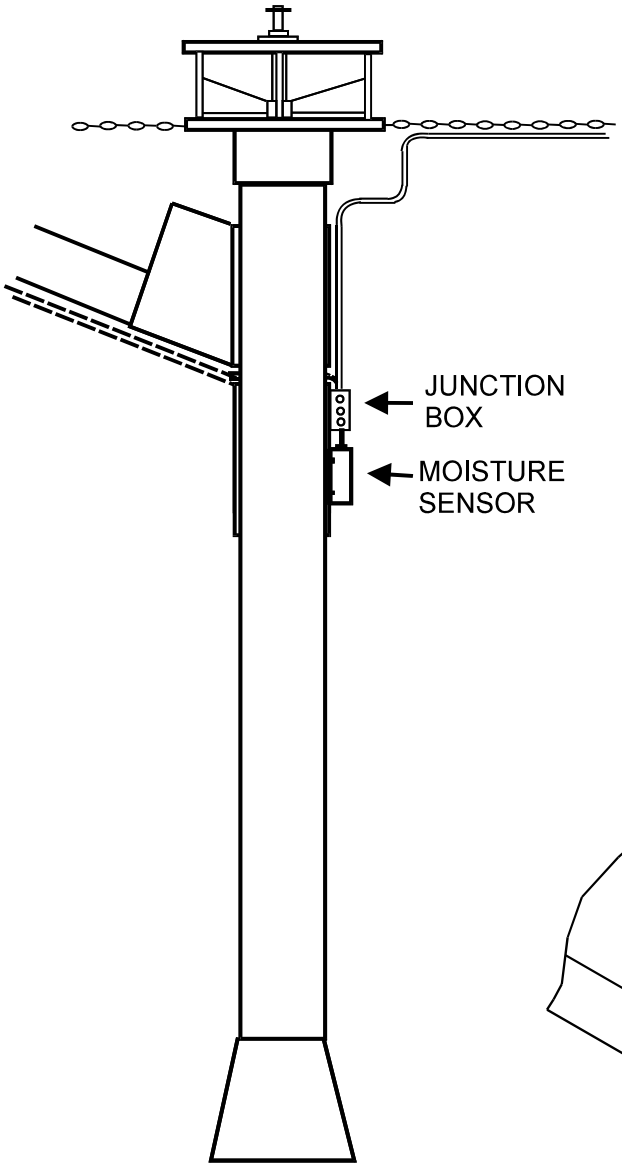
When touchscreen power is restored and the program is running, Control Panel power will need to be cycled off then back on, to re-establish communications.

P-13277

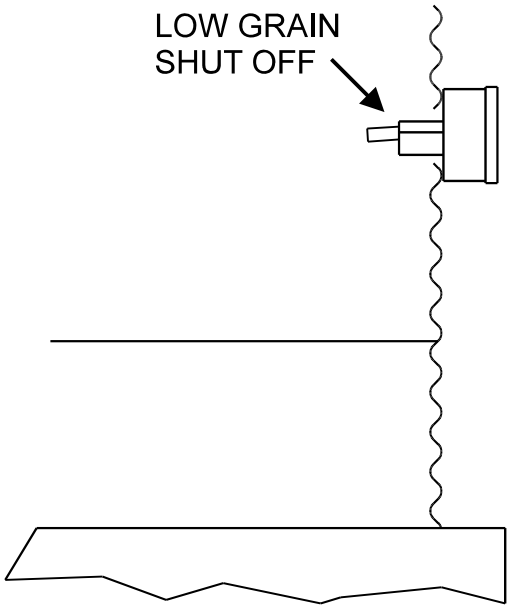


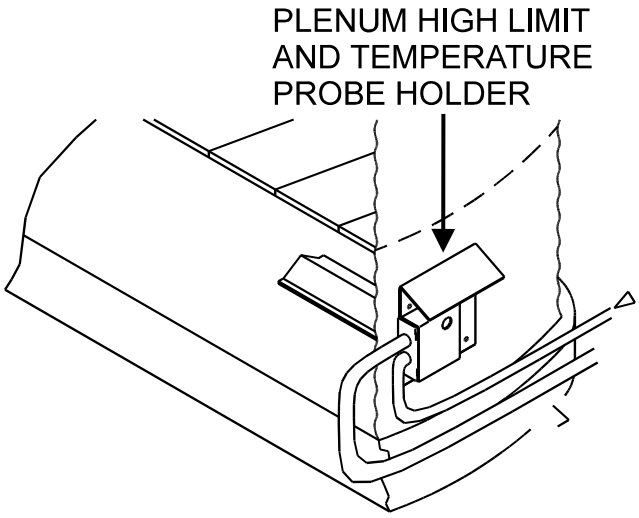
IDENTIFICATION OF PARTS

See the installation manual (P-13280) for an overview of Premier features and equipment terminology. Also see the Operator's Safety Manual (P-10001) for definitions, proper use of safety locks and disconnects, and proper bin unloading procedures. Refer to other installed equipment manuals for a complete understanding of the total drying and grain handling system. The Premier Control will usually be referred to as a Command Center or Circu-trol in other manuals, as that is the control which the Premier Control replaces.

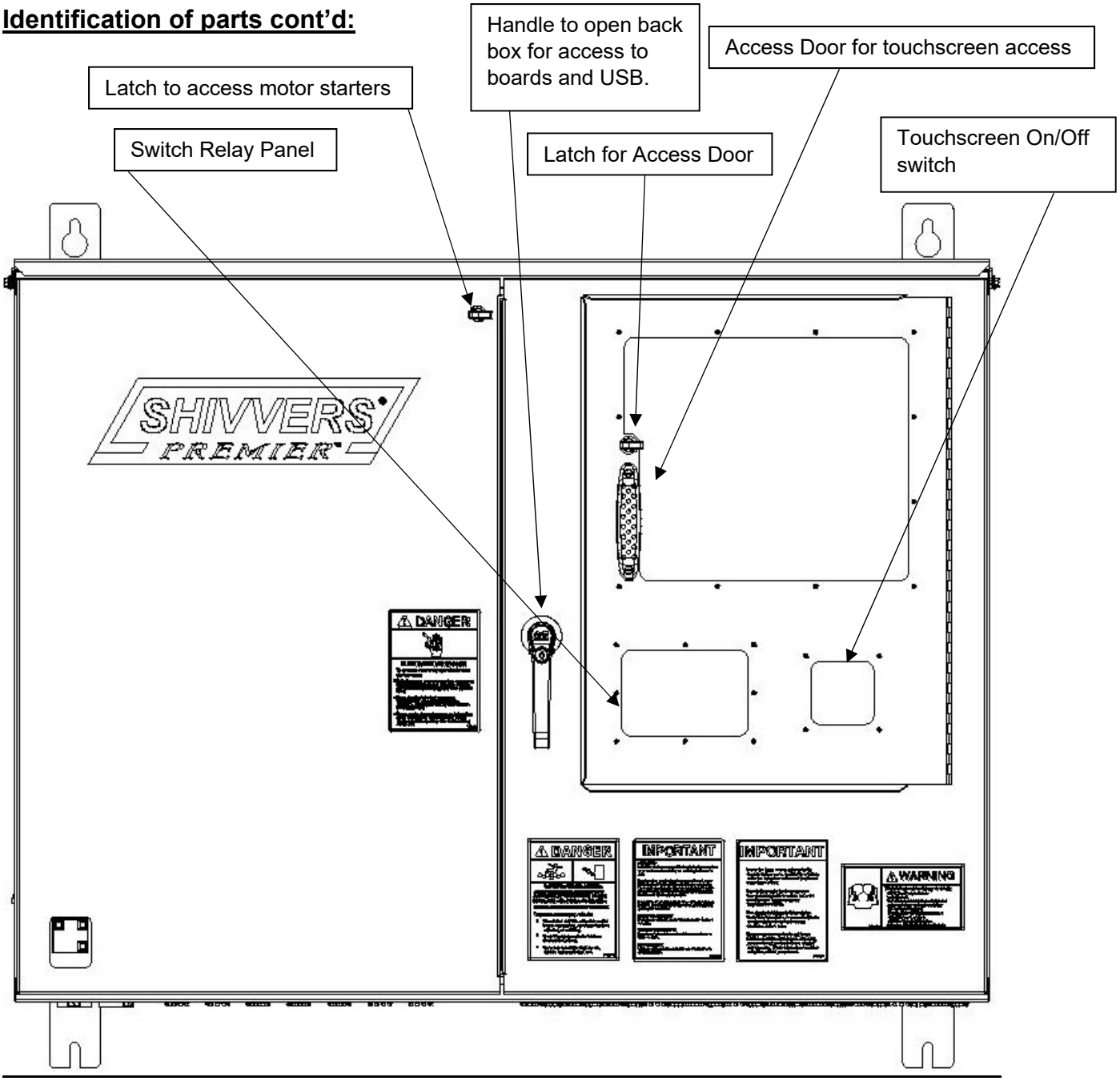


VERTICAL UNLOAD
(CIRCULATOR) MACHINE





Identification of parts cont'd:



⚠ DANGER **Disconnect and lock out all power (including fan/burner power) before opening main cover.**

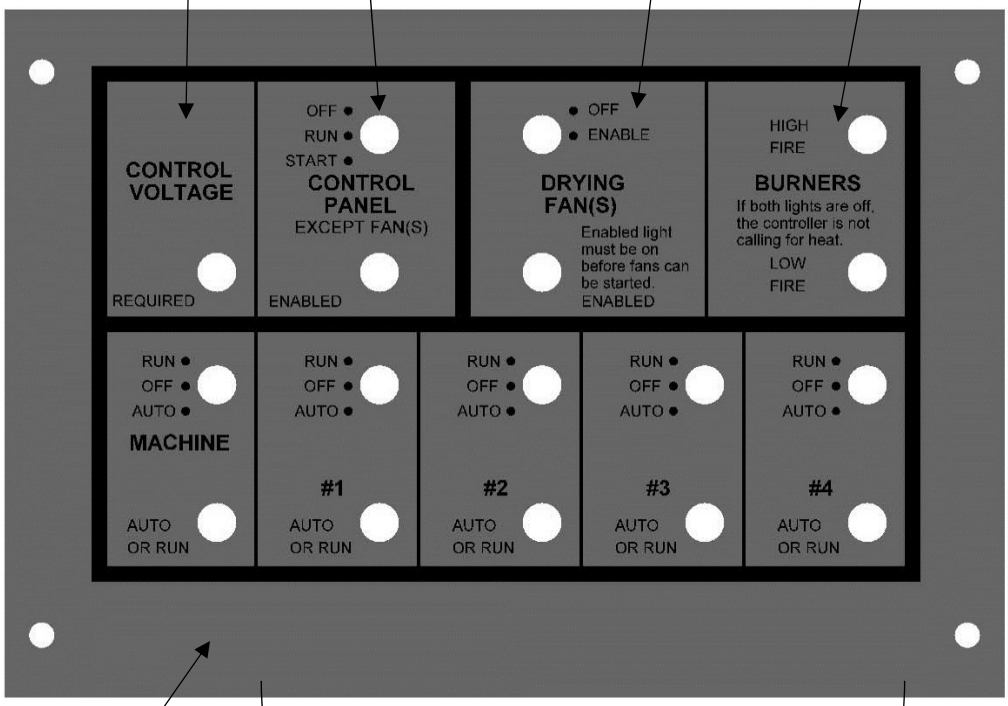
SWITCH/RELAY PANEL EXPLANATION

Light is on when the control power breaker is on. Shutting the breaker off shuts down fan(s) and control circuit.

In up position, fans cannot be started. In middle position, if all safeties are OK, light will be on and fan(s) can be started. Bottom momentary position is not used.

In up position, control panel power is off. Burners and augers are off. Center is run position. Push switch down to momentary start position to turn on panel control power.

High and low fire indicators

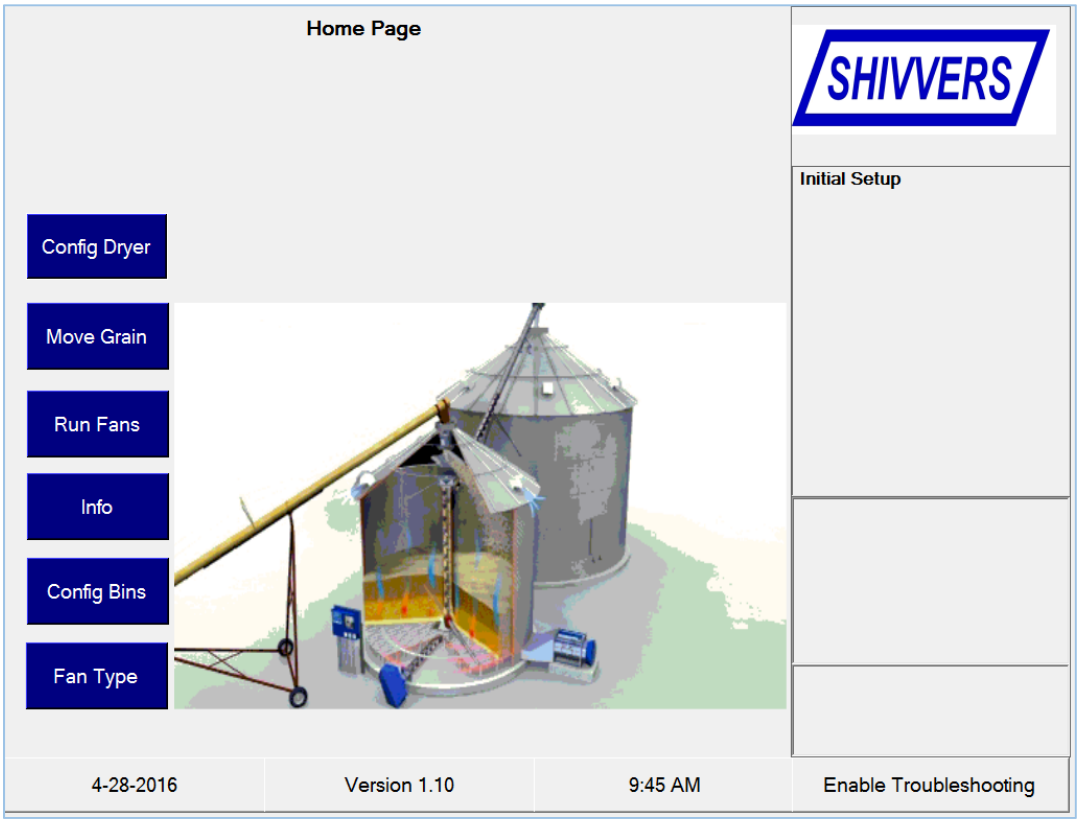


In RUN position, Machine will run. In AUTO, touchscreen will control when machine is on or off. Light is on whenever switch is in RUN or AUTO even if machine is not running.

In RUN position, auger will run. In AUTO, touchscreen will control when auger is on or off. Light is on whenever switch is in RUN or AUTO even if auger is not running.

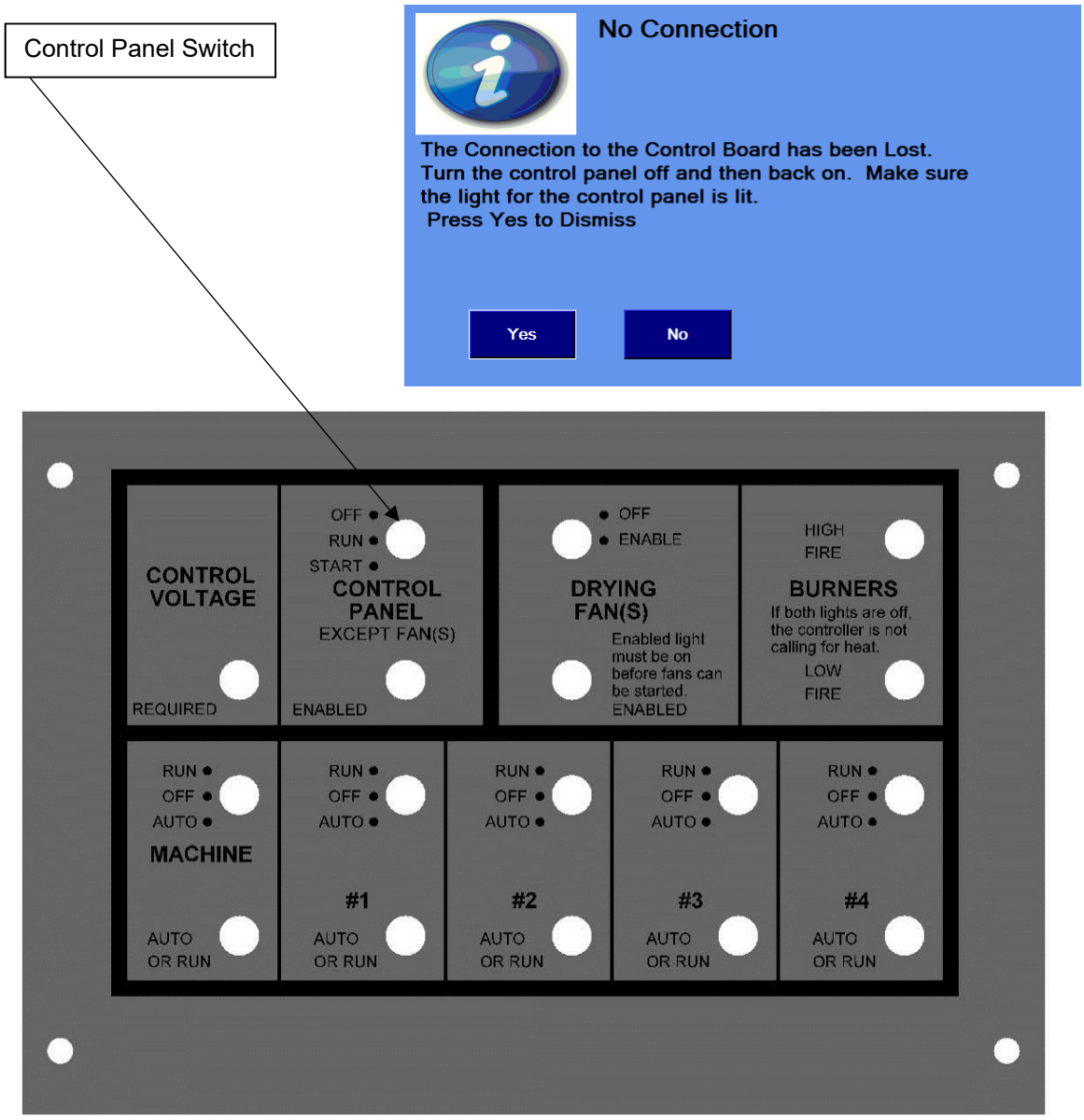
Configuration instructions for the touchscreen:

This is the first screen that you will see when you start the touchscreen. Throughout the rest of this document this page will be referred to as the Home Page.

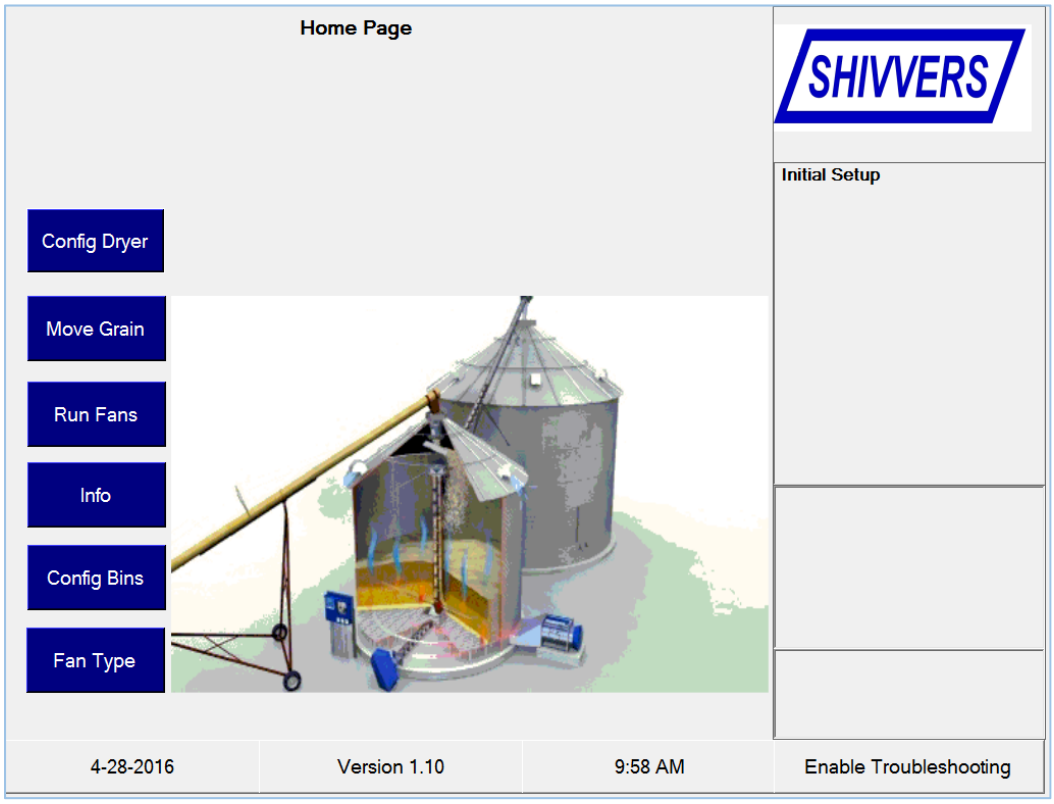


Note: Dark blue buttons are used to allow you to enter information and navigate between pages, light blue buttons are informational only. You cannot use light blue buttons to enter any information. Some labels are color coded either green or red. Pay attention to any red labels. They may not always be a critical error (such as in the case of a bypassed LGSO), but it may be something that needs corrected before you can continue. As you navigate through the pages, hints and tips will be shown in the box underneath the Shivvers logo. Take the time to read these hints while you are learning the program. Carefully read all message boxes as they pop up because they will help you learn how to use the system.

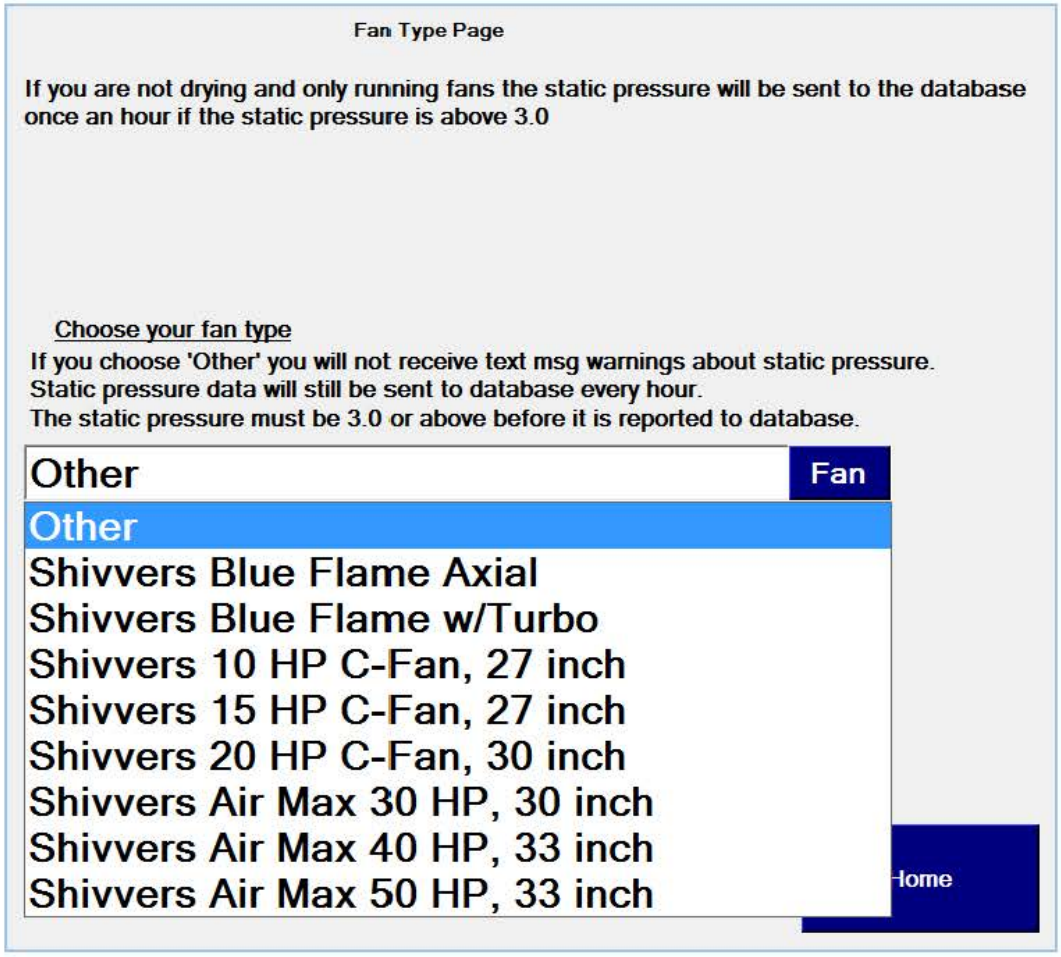
You may see this pop-up message a few seconds after the program starts. Press yes to dismiss and then turn the control power (not touchscreen power) off and then back on to reset the watchdog timer on the interface board. The watchdog timer is a safety that will shut the drying system down if there is a loss of communication between the touchscreen and the interface board.



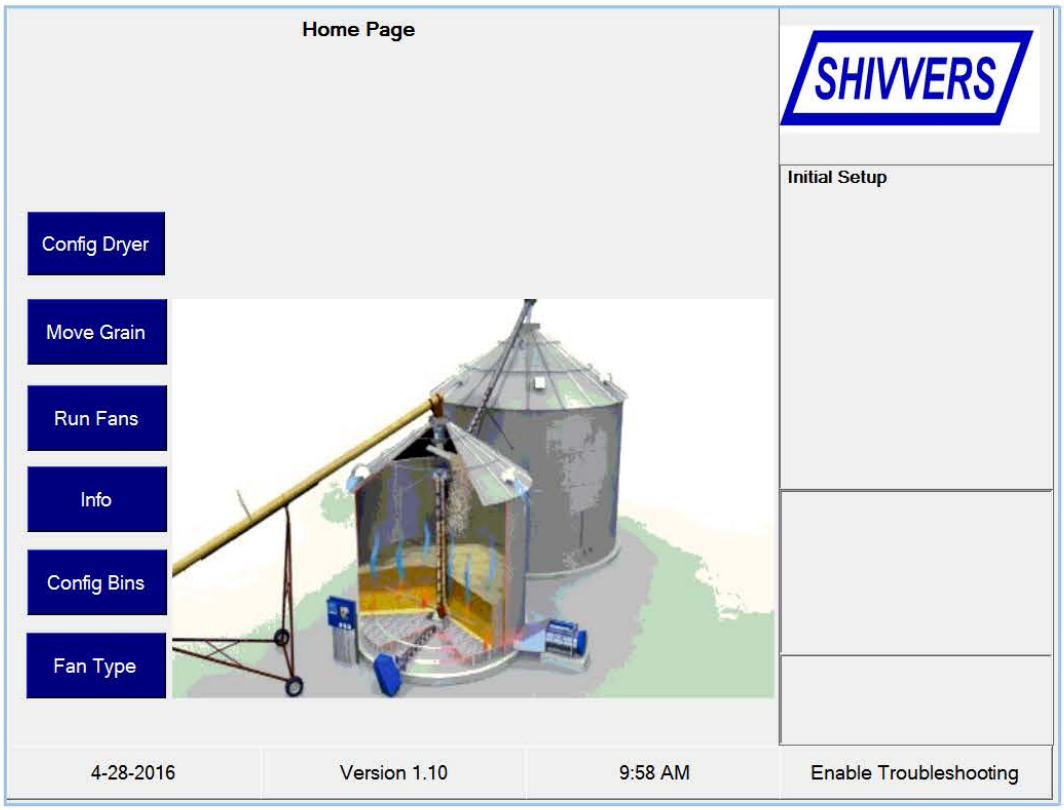
Press the Fan Type button:



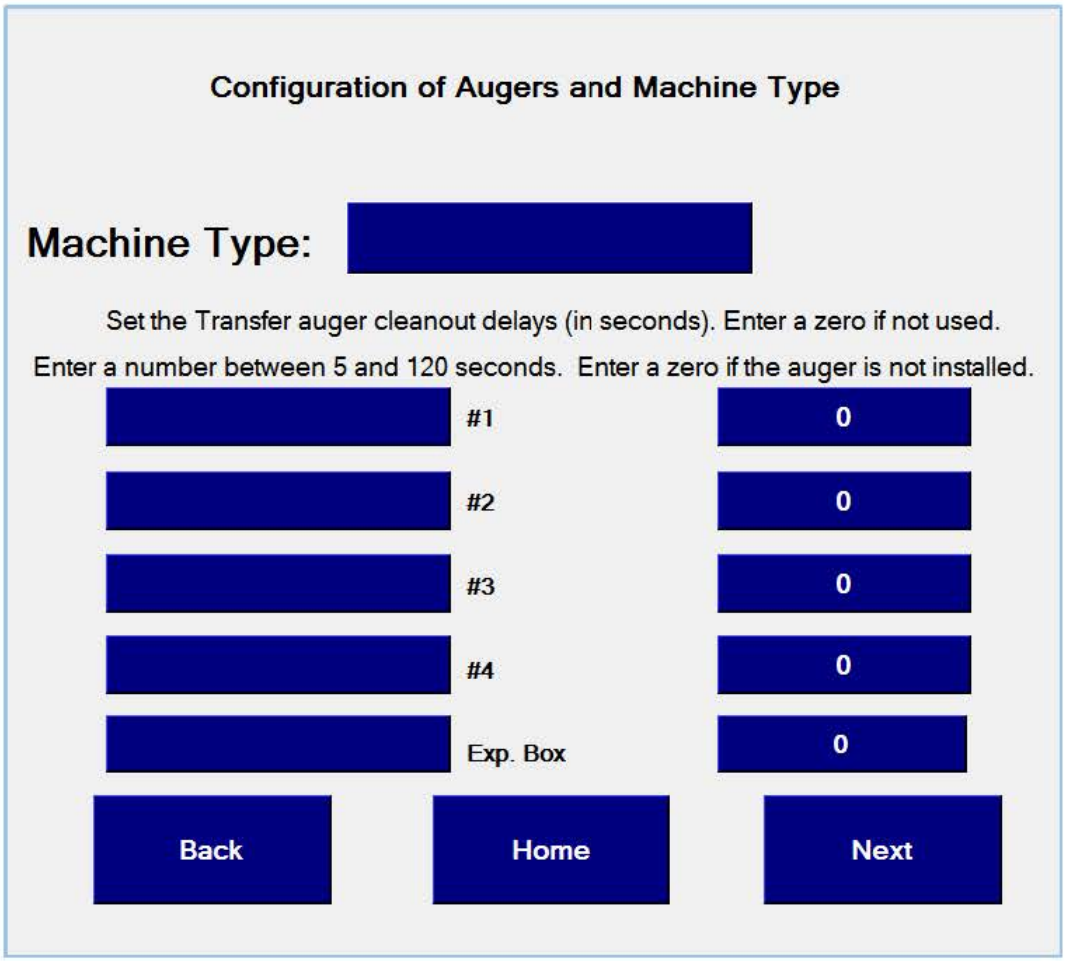
Press the Fan Type button, and a drop down box will open. Press on your fan type. Based on your fan type, static pressure alerts will be configured. Once you have chosen your fan type, press the Home button.


Fan Type Page
If you are not drying and only running fans the static pressure will be sent to the database once an hour if the static pressure is above 3.0
Choose your fan type
If you choose 'Other' you will not receive text msg warnings about static pressure.
Static pressure data will still be sent to database every hour.
The static pressure must be 3.0 or above before it is reported to database.
Other
Fan
Other
Shivvers Blue Flame Axial
Shivvers Blue Flame w/Turbo
Shivvers 10 HP C-Fan, 27 inch
Shivvers 15 HP C-Fan, 27 inch
Shivvers 20 HP C-Fan, 30 inch
Shivvers Air Max 30 HP, 30 inch
Shivvers Air Max 40 HP, 33 inch
Shivvers Air Max 50 HP, 33 inch
Home

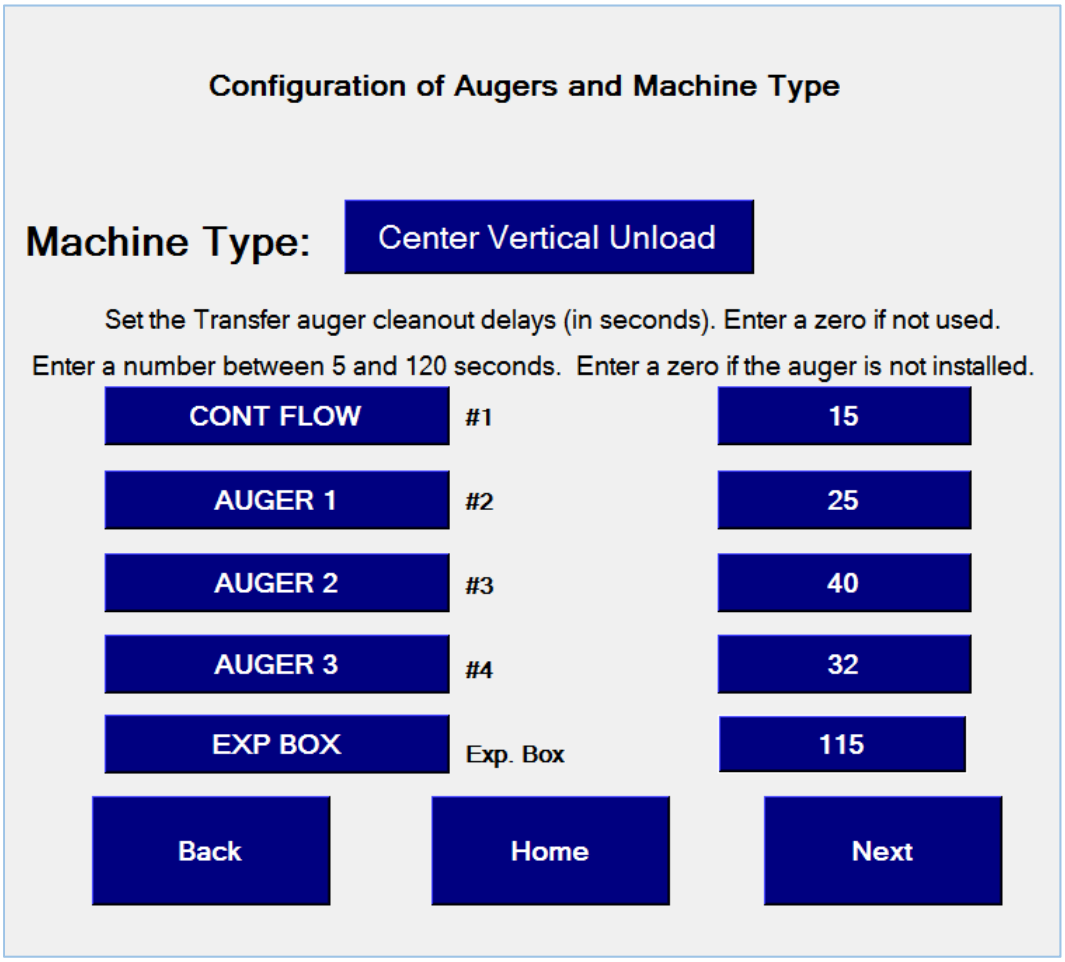
The next step is to set up the machine type, auger delays and storage bins. From the Home Page press the Config Bins button.



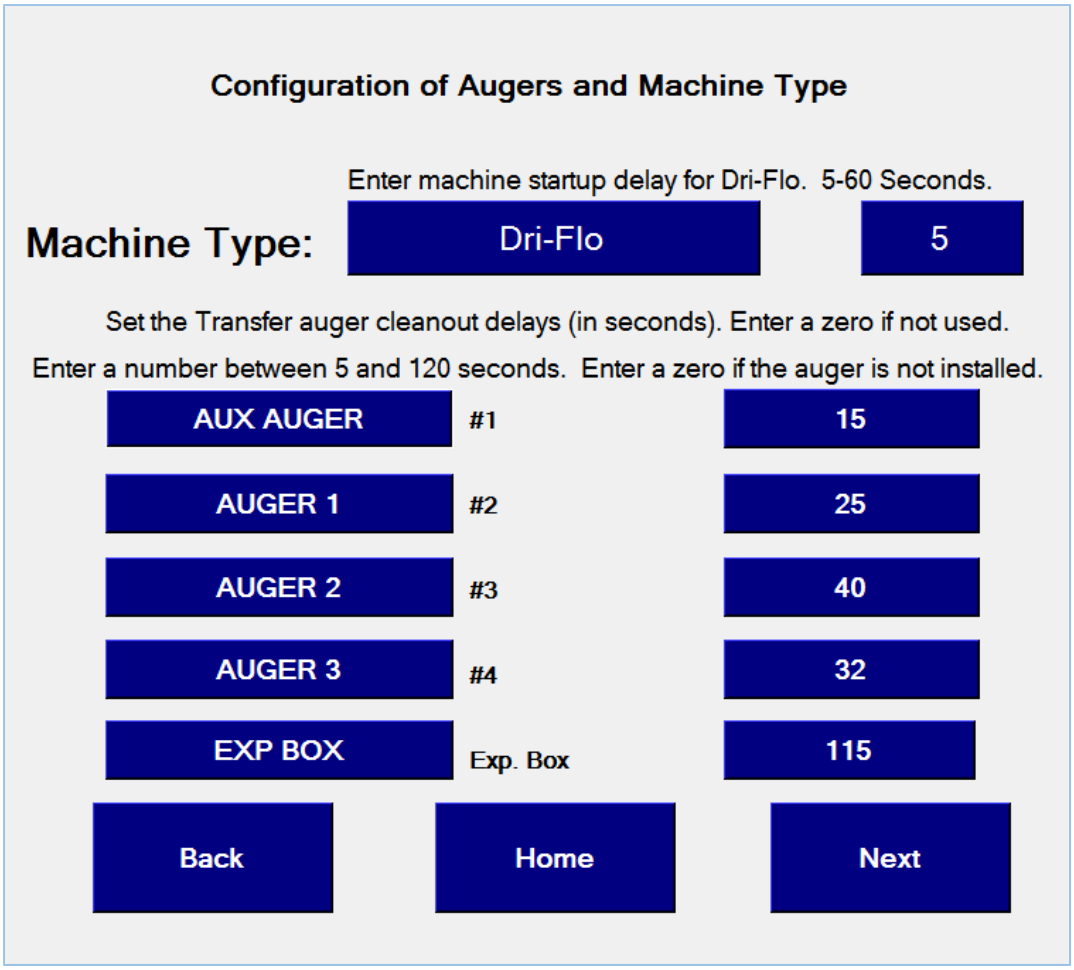
This page sets the machine type (and machine delay if it is a Dri-Flo machine), names the augers, and sets the delay for each auger. The top button is the Machine Type. This button toggles between Center Vertical Unload and Dri-Flo. Press the blue button next to Machine Type and the machine type will be set to Center Vertical Unload. If you press the button again it will be set to Dri-Flo and a machine delay button will appear. The machine delay is the time that the transfer augers will turn on before the machine turns on. This is useful if an air transfer system needs to get up to speed before grain starts coming into it.



This is an example of how the augers and machine type could be set up for a center vertical.



If you have a Dri-Flo machine, tap the machine type button and the machine type will change from Center Vertical Unload to Dri-Flo. When you do this, the machine delay button will appear. This button will allow you to set the machine delay for the Dri-Flo. The default is five seconds, but you may set a delay up to 60 seconds. When the dryer takes a sample, and the dryer was not transferring grain before the sample was called for, there will be the machine delay of 5-60 seconds where the take away augers will run before the machine turns on. The machine then turns on to start a fixed 60 second purge before reading the moisture of the grain.



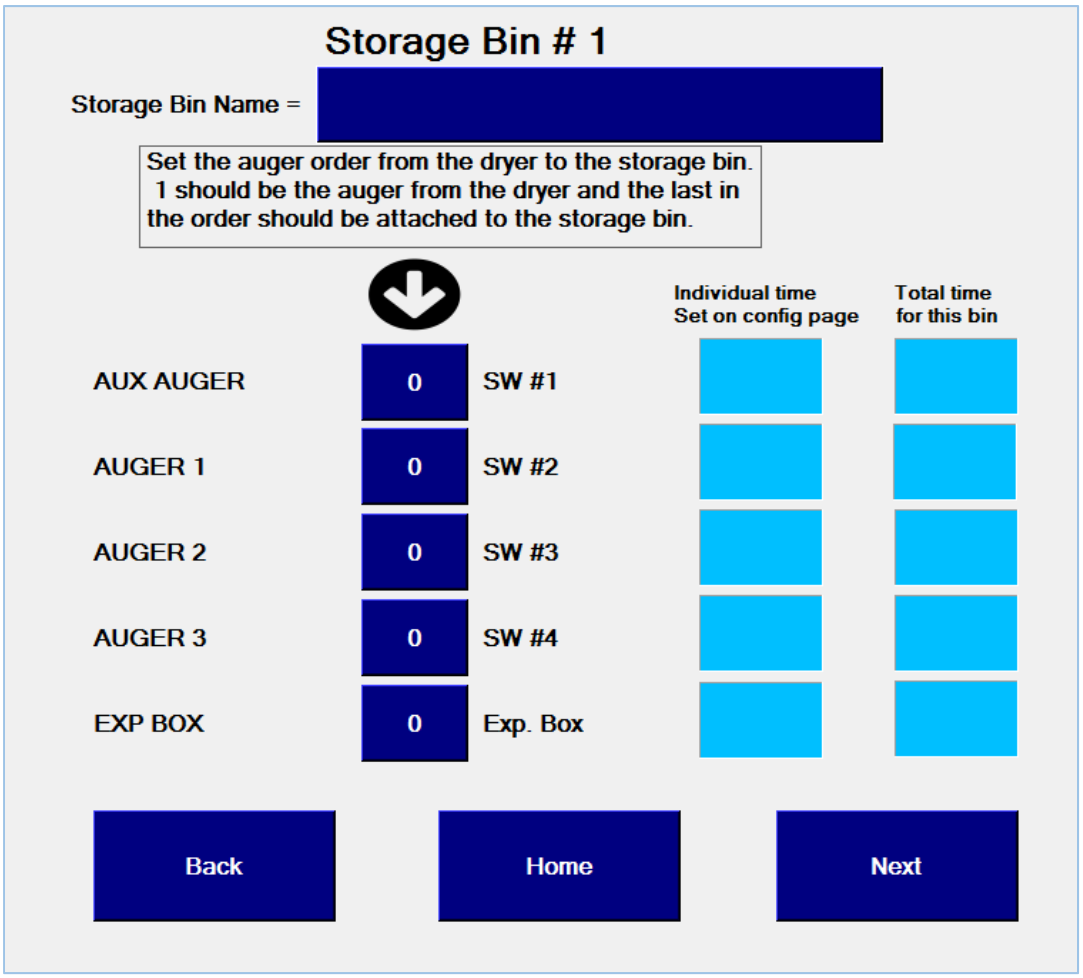
The augers are named next. This could be a grain leg, air system, drag conveyor, jumpster, or a continuous flow auger, etc. The name of the auger is on the left and the delay time is on the right. It is critical that the name and delay are set for the correct augers. #1 on the touchscreen will be the name and delay for the auger wired to the #1 switch. #2 on the touchscreen will be the name and delay for the auger wired to the #2 switch. #3 on the touchscreen will be the name and delay for the auger wired to the #3 switch. #4 on the touchscreen will be the name and delay for the auger wired to the #4 switch. If there is an expansion box it will always be in the 5th position on the touchscreen, labeled Exp. Box. There isn't a switch for the expansion box. When you set up the dryer, there will be a check box that needs to be set to use an expansion box.

Press the dark blue button (left of #1) and an onscreen keyboard will allow you to type any name desired for the auger wired to the #1 switch. Continue to name all of the augers which are wired up to switches until all augers are named.

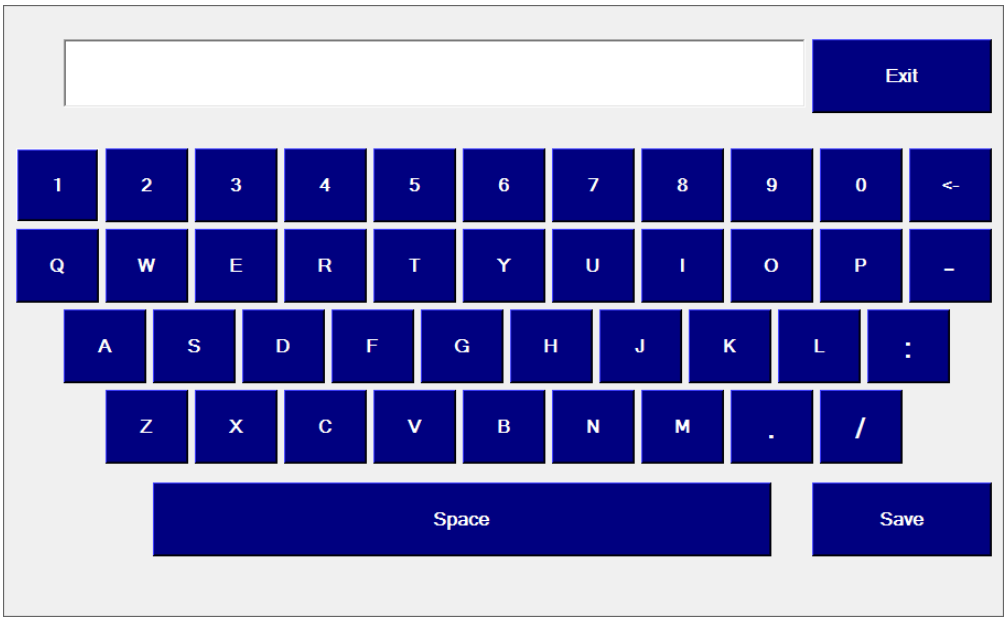
Once the augers are named, set the delay for each auger on the button to the right of it. Press the dark blue button (right of #1) and a number keypad will allow you to set the delay time. These delay times must be whole seconds. Decimals are not allowed. The auger delay you set is not the total delay for a particular storage bin, but the time it takes for the specific auger to clean out. A good rule of thumb is 0.5 seconds per foot of auger length. A 40 ft. auger would have a delay of 20 seconds. An 85 ft. auger would be 43 seconds. If you have an expansion box, it is necessary to add the delays of all of the augers attached to the expansion box. If the expansion box has 2 augers attached, one 45 ft. and one 60 ft., then the delay would be set to 53 seconds.

If the time delay ever needs to be changed, press the blue time button to the right of the auger number and re-enter the new delay. If you accidentally add a time for an auger that is not installed, just enter a zero second delay and the auger, including the name, will be cleared. Augers can have a delay from 5 seconds to 120 seconds.

Once all of the augers are set up, press next to set up the storage bins.



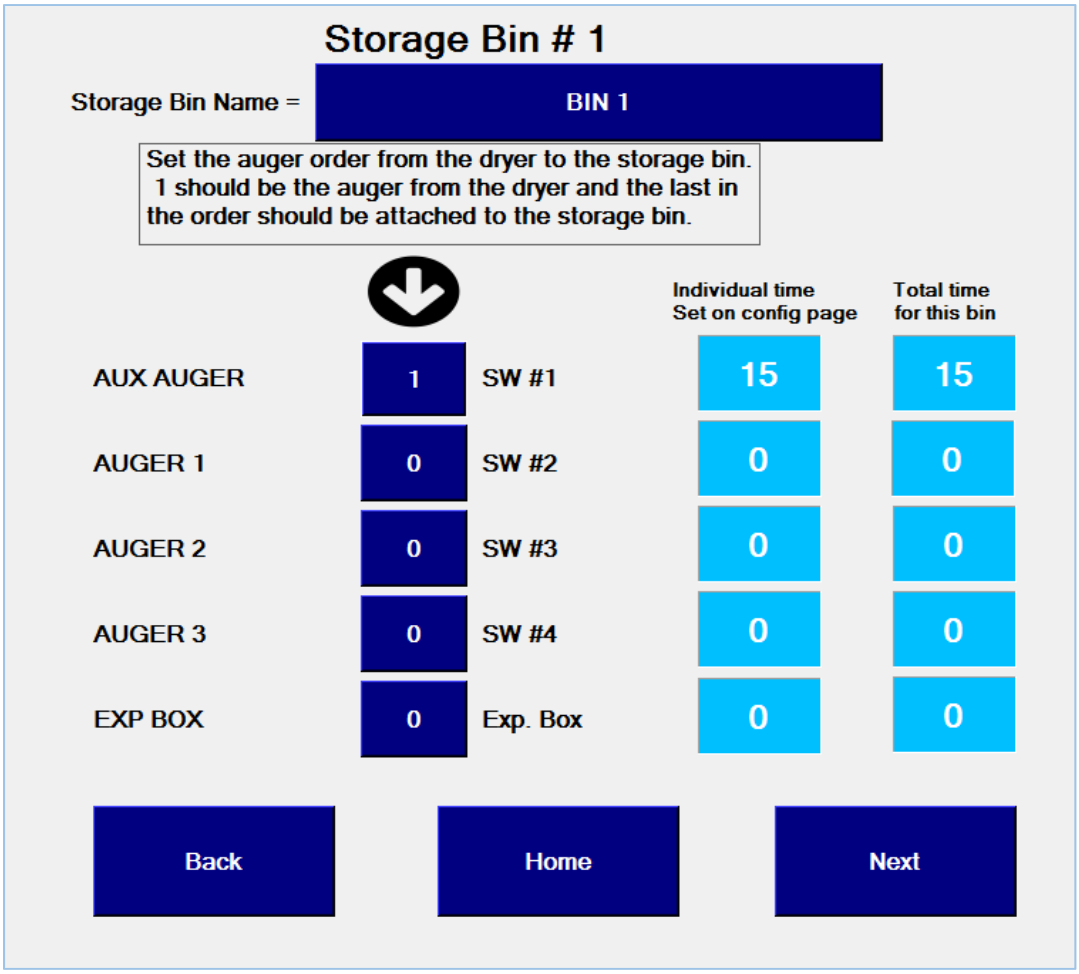
At the top of the page for storage bin 1 press the dark blue button. A letter keypad will appear on the screen.



This will allow you to name the storage bin (ex. Bin 1). Type in the name you want for the bin and press Save. The name you set here will be used on the drying page to show which storage bin you are transferring grain into, so each bin should have a unique name.

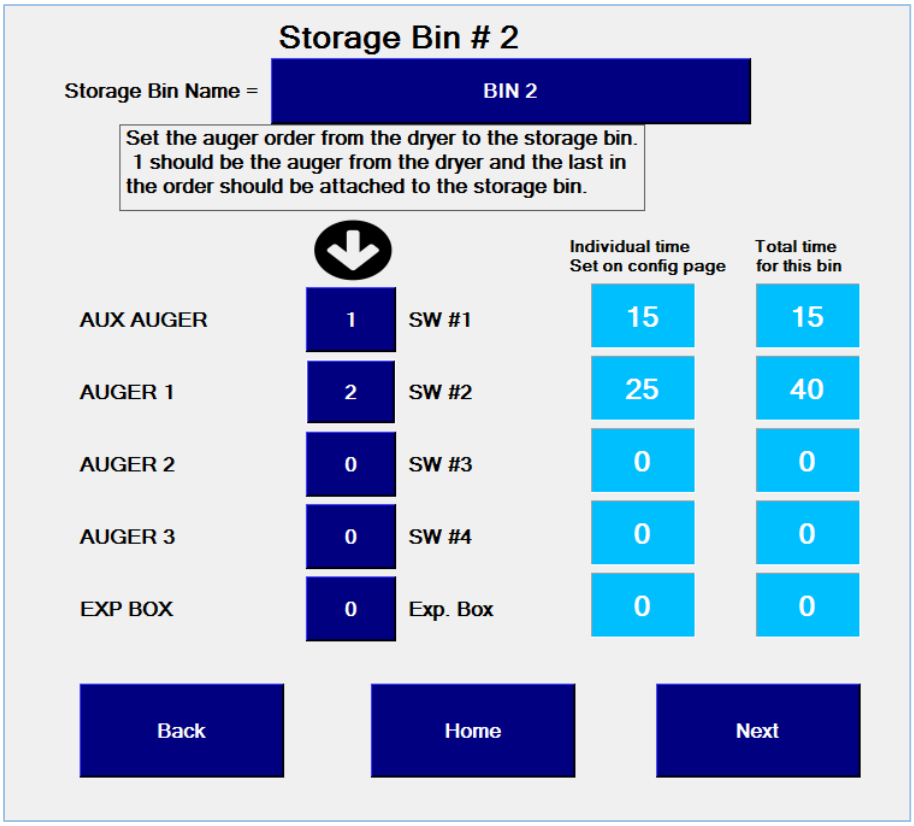
Next, choose the augers that need to be turned on for grain to move from the dryer to the storage bin by setting the auger order. When you set the auger order, it is from the dryer to the storage bin. The first auger is the auger attached to the dryer the last is the auger attached to the storage bin. You may only need 1 auger, but there may be cases where multiple augers are needed get grain to a particular storage bin. This auger order is critical for timing the cleanout of augers when the dryer is stopped or when the transfer is stopped because the grain is too wet.

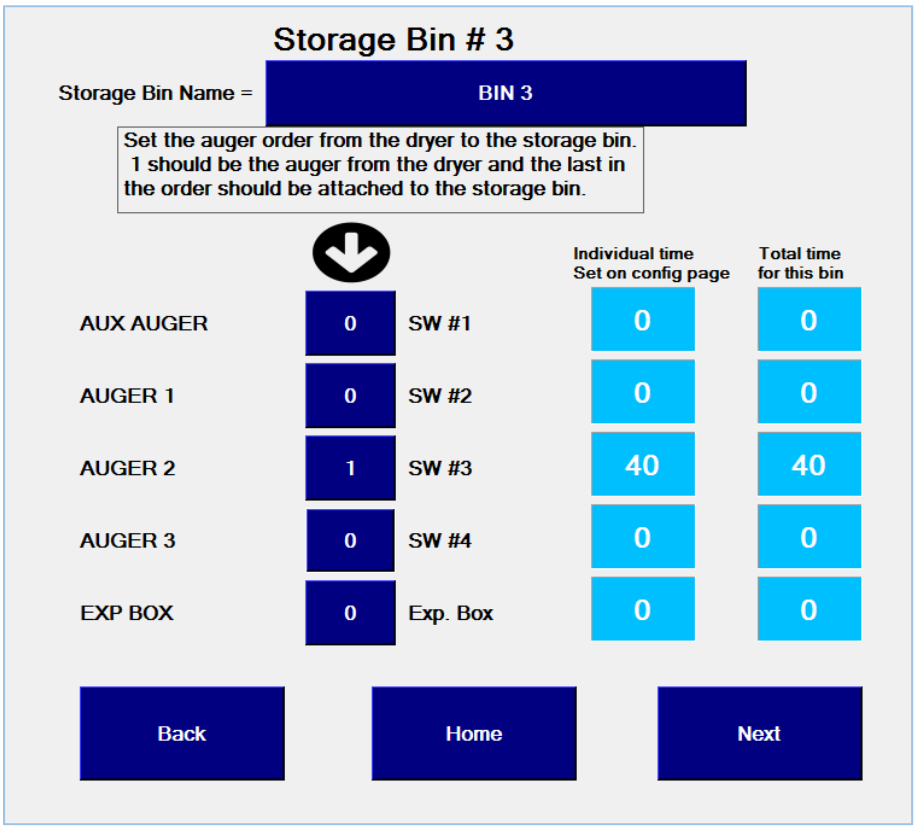
Press the dark blue button next to the first auger (the auger attached to the dryer) for this storage bin and enter a 1. Press the dark blue button next to the second auger and enter a 2. Continue this process until you have all of the augers set up for the bin. You will notice that the light blue buttons will show the individual auger delay as well as the total time the auger will be on for this particular bin. You cannot have 2 storage bins with the same auger order. The program will not let you set an auger out of order. This means you cannot set a “2” (make an auger 2nd in the auger order) until you have set a “1” (make an auger 1st in the auger order), etc.

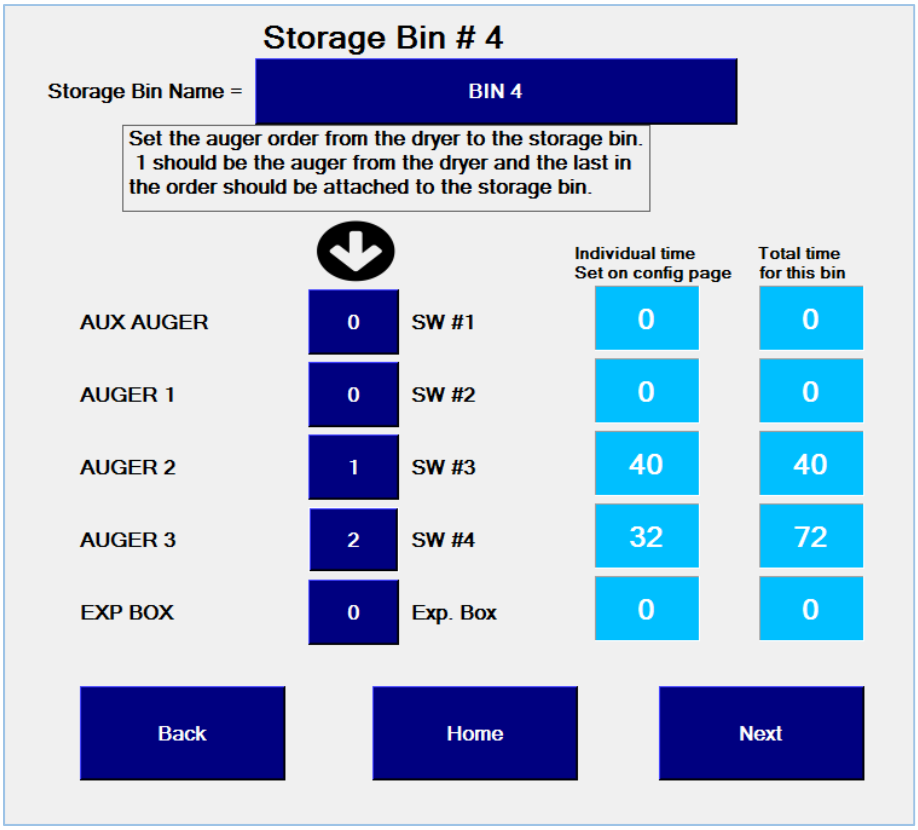


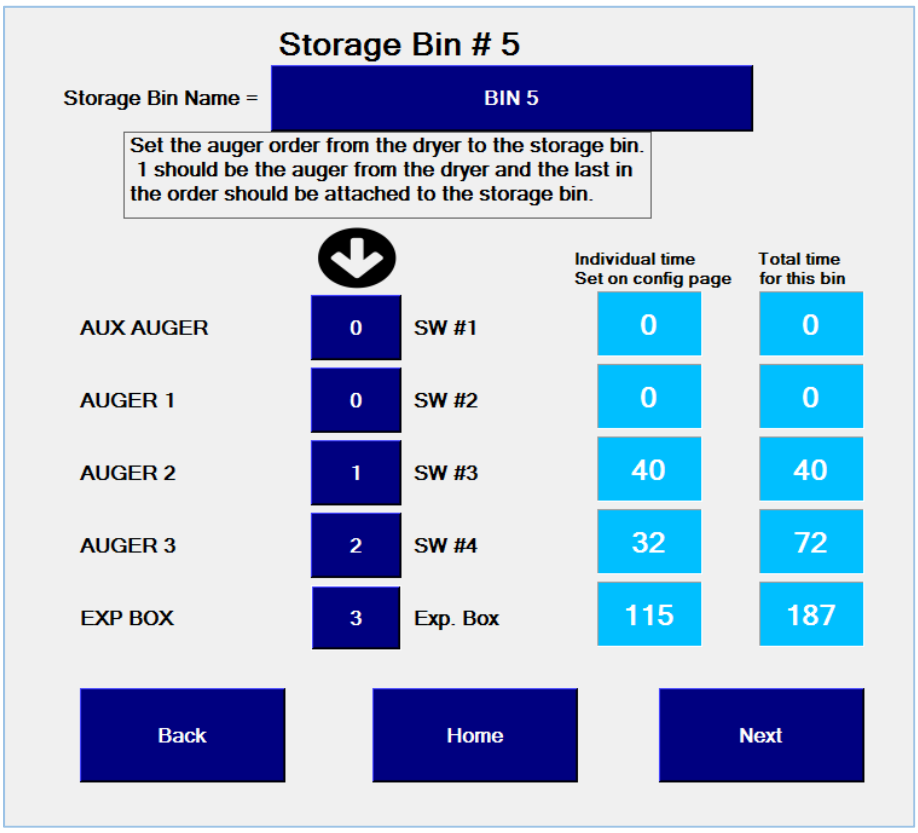
Once the first storage bin is set-up, press Next and do the same thing for the rest of the storage bins.

Some examples are given on the next few pages.


Storage Bin # 2
Storage Bin Name =
BIN 2
Set the auger order from the dryer to the storage bin.
1 should be the auger from the dryer and the last in
the order should be attached to the storage bin.
Individual time
Set on config page
Total time
for this bin
AUX AUGER
1
SW #1
15
15
AUGER 1
2
SW #2
25
40
AUGER 2
0
SW #3
0
0
AUGER 3
0
SW #4
0
0
EXP BOX
0
Exp. Box
0
0
Back
Home
Next


Storage Bin # 3
Storage Bin Name =
BIN 3
Set the auger order from the dryer to the storage bin.
1 should be the auger from the dryer and the last in
the order should be attached to the storage bin.
Individual time
Set on config page
Total time
for this bin
AUX AUGER
0
SW #1
0
0
AUGER 1
0
SW #2
0
0
AUGER 2
1
SW #3
40
40
AUGER 3
0
SW #4
0
0
EXP BOX
0
Exp. Box
0
0
Back
Home
Next

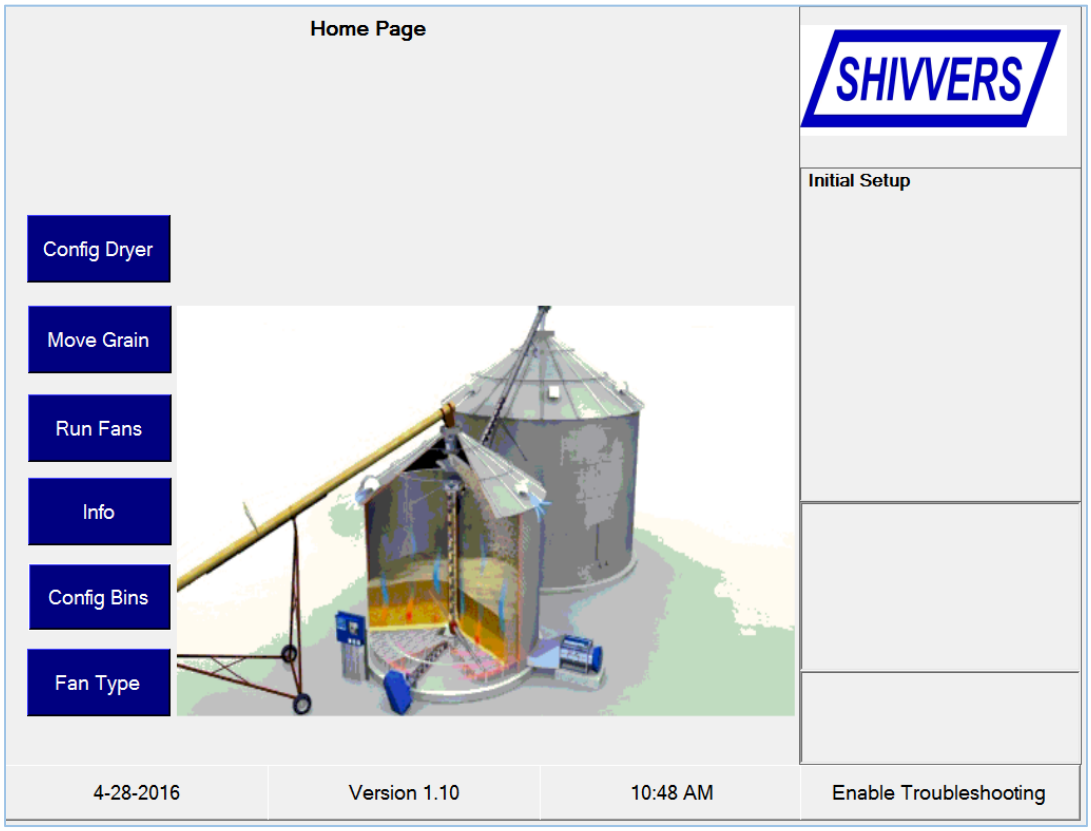




Once all the storage bins are set-up, press the Home button.

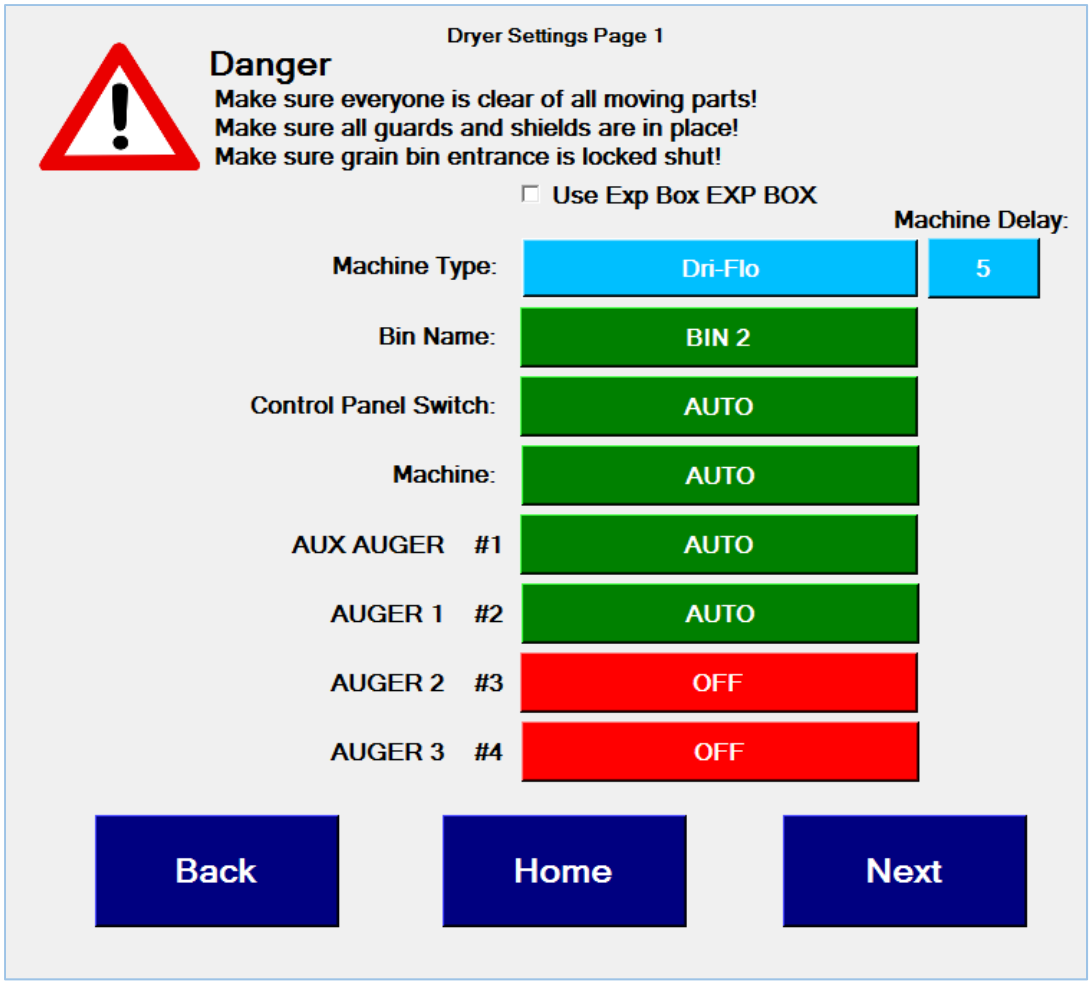
Follow the steps below to configure the dryer.

NOTE: The augers and storage bins must be setup before the dryer is configured!



Note: After the dryer is initially configured, the Config Dryer button will change to Start Dryer. When Start Dryer is pressed, a pop up screen will appear asking if you want to skip settings or not. If you do not want to skip settings, the following pages are the same. The pop up screen does not appear when the button says Config Dryer.

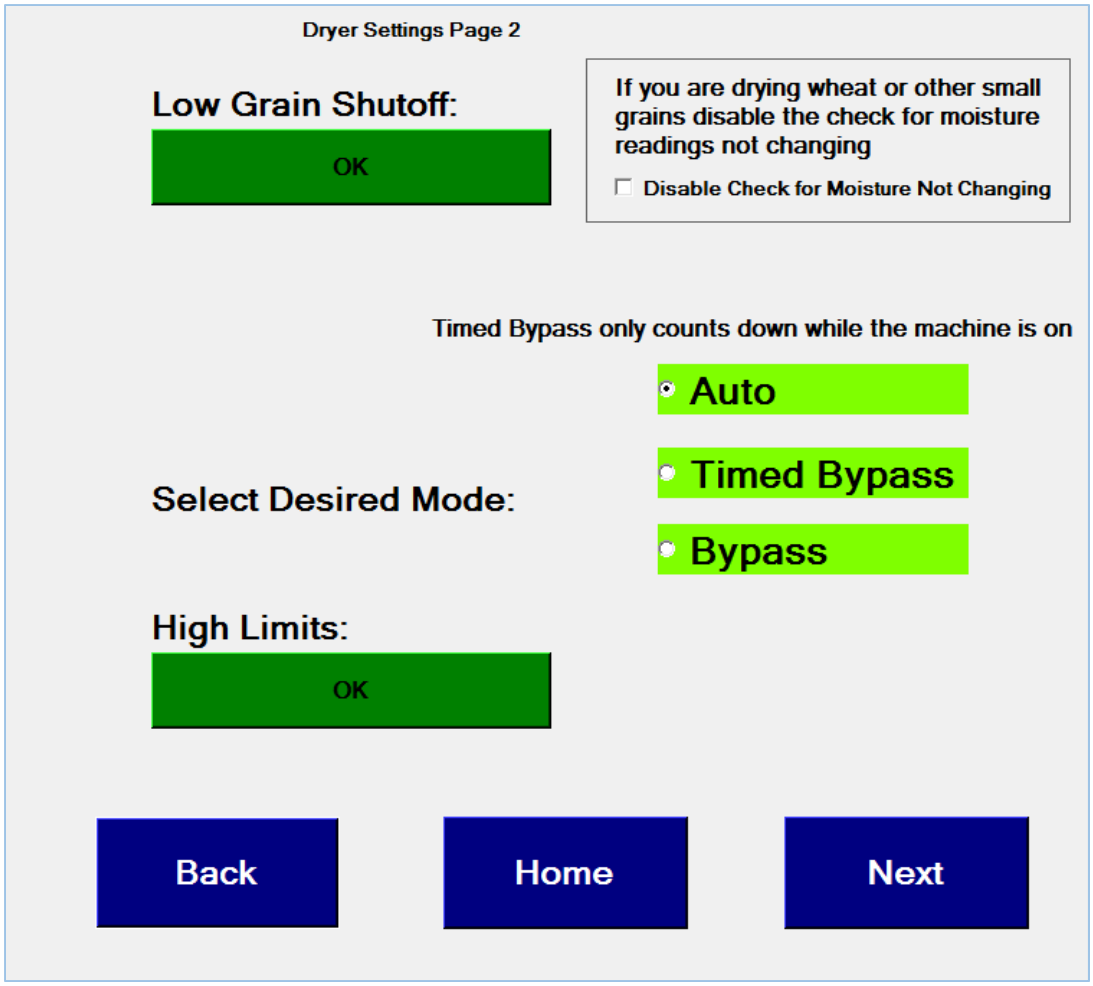
Press the Config Dryer button.



The Dryer Settings Page 1 page shows which storage bin you are currently set to transfer into. If you want to change the bin that you are transferring into, change the switches and the bin name will update. You must select a switch configuration that has been set up on one of the storage bin pages. If you set a switch configuration that has not been set up, the bin name will be unknown, and you will not be able to continue. If you are trying to move grain to a bin that uses the expansion box, press the check box (or the text to the right of the check box) so a check mark appears in the square. You can see that the machine type is shown in light blue. You cannot change the machine type on this page. This is only to confirm that you have the correct machine type. If all the auger switches are off, and a Center Vertical Unload is configured, the Bin Name will show as RECIRCULATE. If all the auger switches are off, and a Dri-Flo is configured, the Bin Name will show as Unknown and you will not be able to continue. This is because at least one switch must be in Auto to take away the grain from a bottom unloading system.

It is recommended to go through and set the appropriate switches to auto and make sure all the storage bins are properly configured.

Once you have the correct storage bin selected, press the Next button.



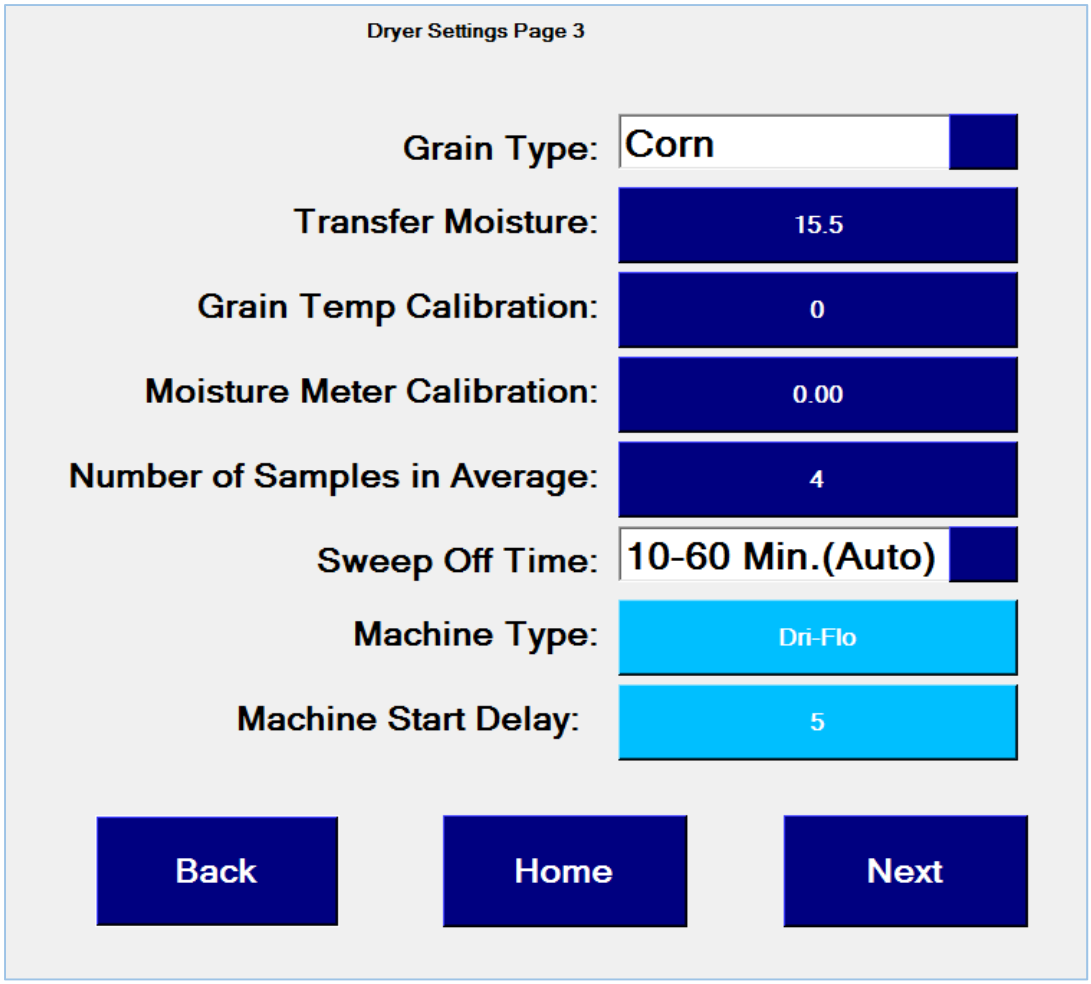
The Dryer Settings Page 2 page shows the status of the low grain shutoff and high limits. It also allows you to disable the check for moisture readings changing.

If the low grain shutoff shows “No Grain” you must select either bypass or timed bypass to continue. If you choose timed bypass, the bypass timer will be set to 60 minutes. This is 60 minutes of the sweeps running. This should ensure enough time for the sweeps to pull down the low grain shutoff arm. After the 60 minutes, the low grain shutoff mode is automatically changed to auto. If bypass is selected, the program will ignore the low grain shut off switch and could run the bin completely empty. In order to choose a low grain shut off mode, press one of the options in light green, and the circle next to your choice will fill with a black dot.

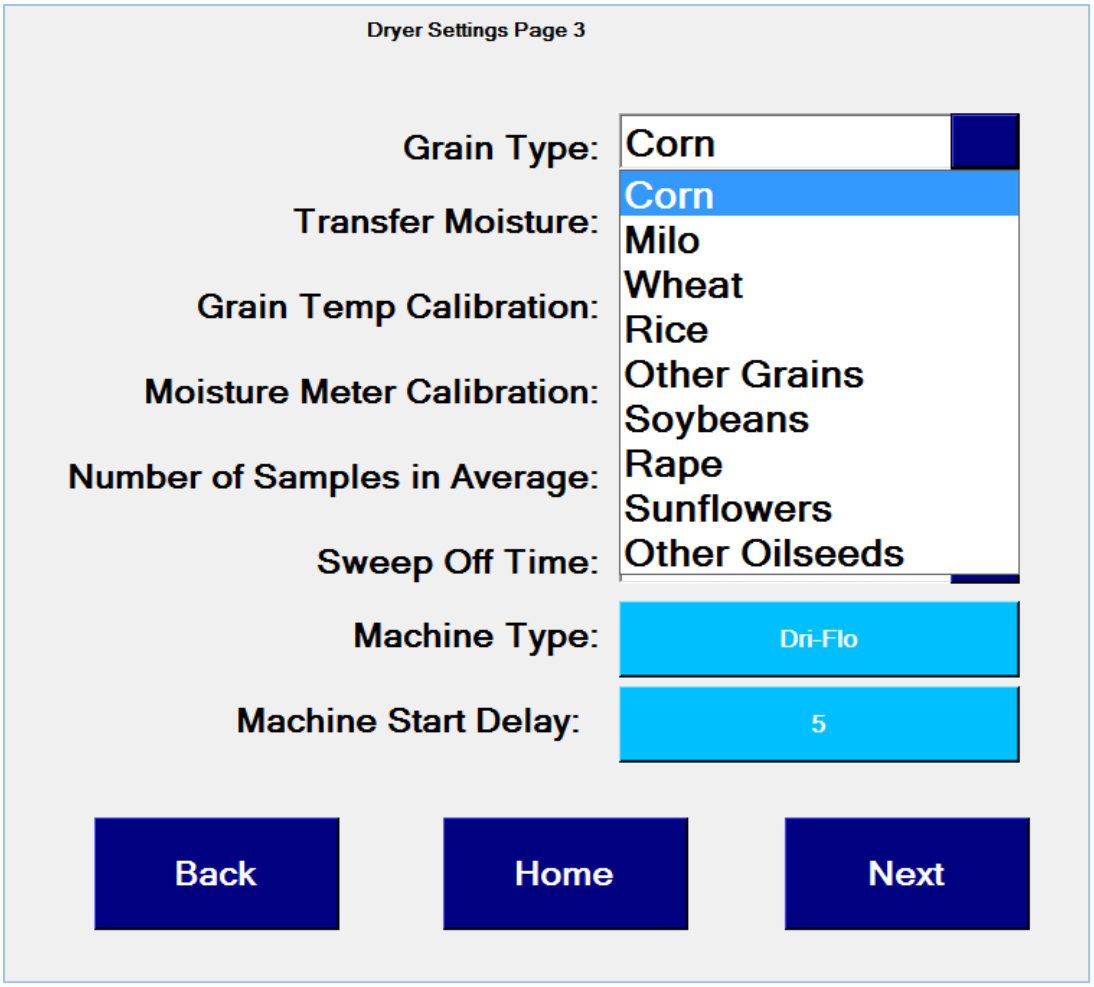
If you are drying wheat or other small grains you may need to disable the check for moisture readings changing to prevent a moisture error. If you would like to disable the check, press the check box (or the text to the right of the check box) and a check will appear in the box. For drying corn, especially high temperature corn drying, make sure the check box is cleared.

If there is a high limits error you must correct it before you can continue. Make sure that the fan enable light is on because this could lead to a high limit error. The Drying Fan(s) switch must be in the “Enabled” position.

Once the LGSO mode is set and the High Limits are OK, press Next.

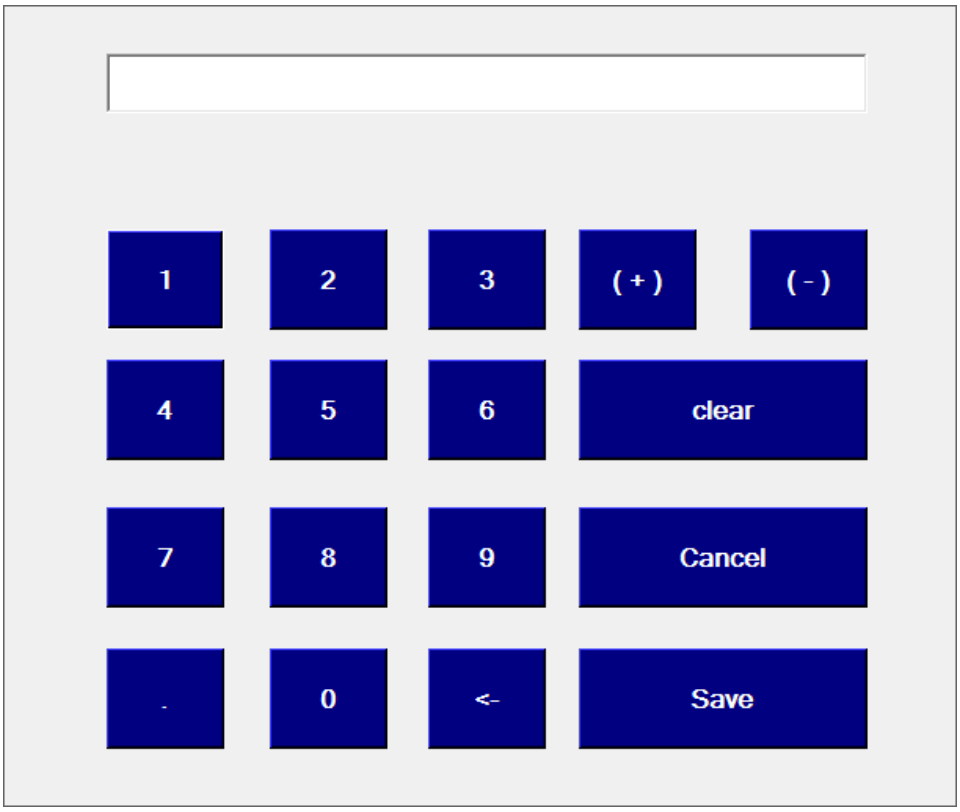


The Dryer Settings Page 3 page allows you to set the grain type, transfer moisture, grain temperature calibration, moisture meter calibration, number of samples in average and the sweep off time. Set your initial settings and then press next. You can always adjust these settings later once you have started drying. Each grain type has its own transfer moisture and moisture meter calibrations so that you don't have to remember the settings as you switch grain types. There is only 1 setting for grain temp calibration as it should not change with different grain types. You may need to adjust the sweep off time setting for different grains and/or different grain input moistures.



To choose a grain type, press the drop down box next to grain type and you will see all of the options available for grain type. Press the grain type that you are going to dry. If a grain type is not shown, then select either Other Grains or Other Oilseeds depending on which matches most closely to the crop being dried.

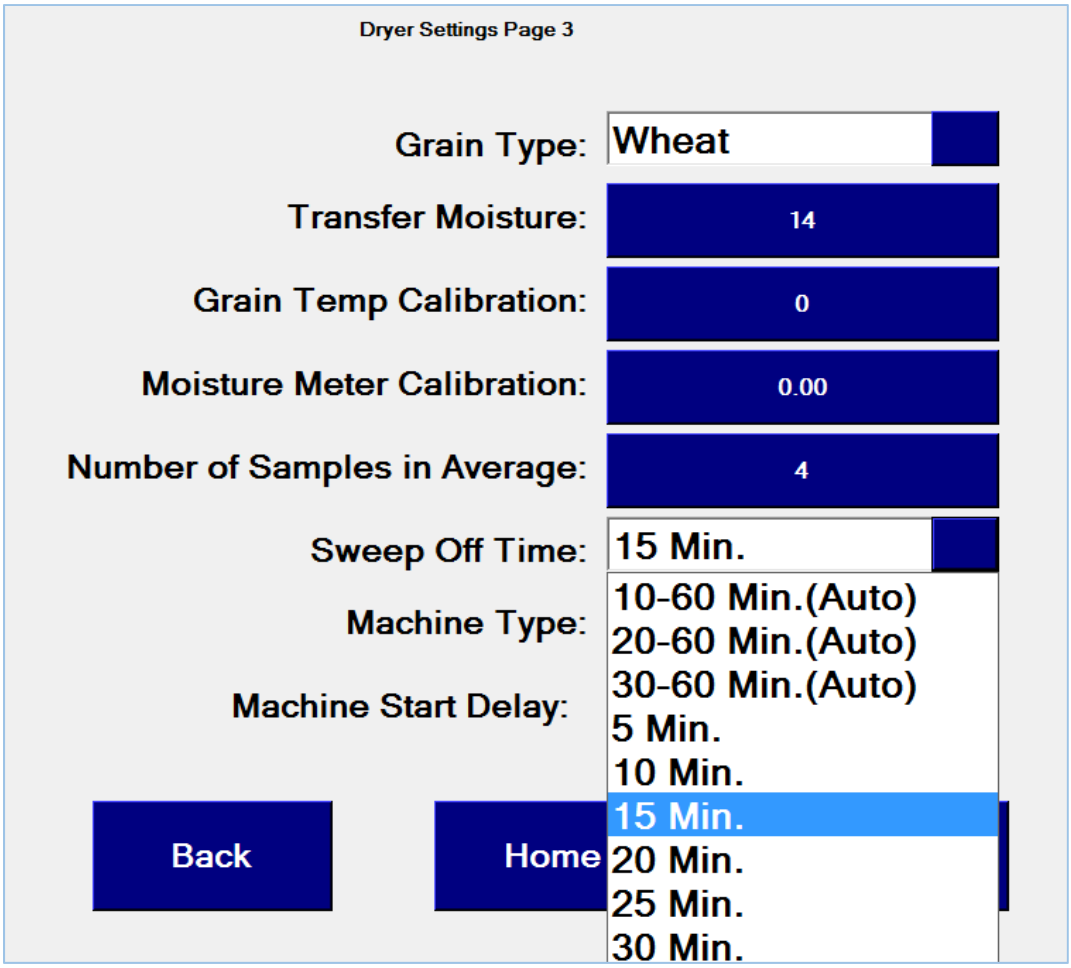
Set your transfer moisture from 5 to 30% by pressing the blue button to the right of the Transfer Moisture. A number keypad will appear and you can enter your desired transfer moisture. You can add decimals to transfer moisture. All entries will be rounded to 2 decimal places.



Set your grain temperature calibration by pressing the blue button to the right of Grain Temp Calibration. The number keypad will appear, and you can enter the desired grain temperature calibration from -20 to +20. You cannot enter decimals for grain temperature calibration. You must enter whole numbers. For initial startup keep the calibration at zero.

Set your moisture calibration by pressing the button to the right of Moisture Meter Calibration. The number keypad will appear and you can add a moisture meter calibration from -7.9 to 7.9. You can use decimals for the moisture calibration.

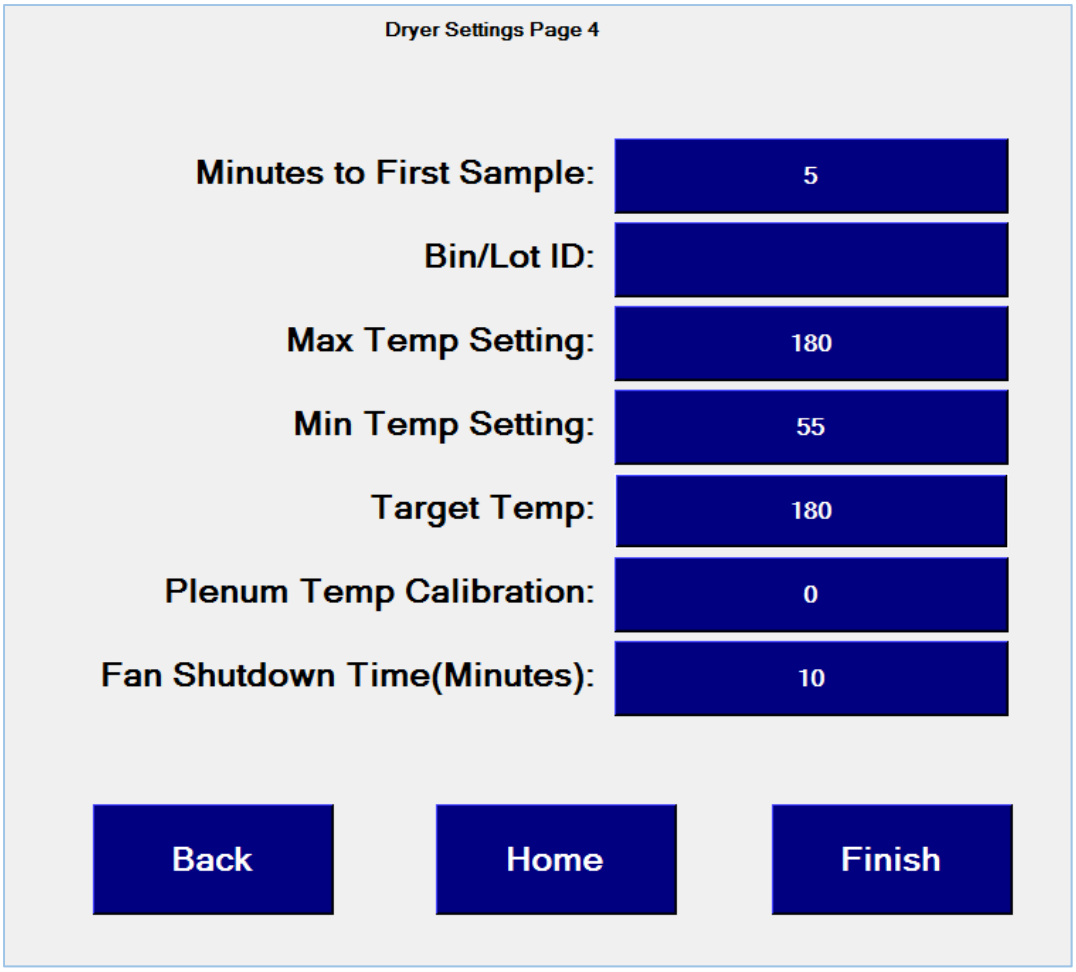
The number of samples in the average of moisture samples can be set by pressing the button to the right of Number of Samples in Average. The number keypad will appear and you can set the samples in the average from 2 to 9. You cannot enter decimals for number of samples in the average. You must use whole numbers. Four samples in the average is a good starting point for all dryers with more than one sweep auger. If the dryer only has one sweep auger, start out with seven samples in the average.



To choose a sweep off time, press the drop down box next to sweep off time and you will see all of the options available. Press your choice for sweep off time. 10-60 minutes is usually a good starting point, but if the incoming grain is over 25% moisture, then 20-60 minutes may be a better choice.

You can see the machine type in light blue. You cannot change the machine type on this page, this is only to confirm that you have the correct machine type.

After completing the settings for Dryer Settings Page 3, press Next.



The Dryer Settings Page 4 page is where the minutes to first sample, bin/lot ID, max and min plenum temps, target plenum temperature, plenum temperature calibration, and the fan shutdown time, are set.

To set the minutes to first sample, press the blue button to the right of Minutes to First Sample and a number keypad will appear. Enter a number from 1 to 180 and then press save. You must enter whole numbers for minutes to first sample. This is also sometimes known as the “Pre-Dry” time. Once the dryer is started, it will wait this long before taking the first sample.

If you set the minutes to first sample from 30 to 180 minutes the touchscreen may automatically lower the target temperature. If you are going to pre-dry, set a lower target temperature because the computer will not adjust the target temperature until after the first sample is taken. See the next page for more details.

If a sample time of more than 30 minutes is set while the grain type is set to corn, milo, wheat, or other grains and the target temp is above 120, the target temp will be automatically lowered to 120. If a sample time of more than 30 minutes is set while the grain type is set to soybeans, rape, or other oilseeds and the target temp is above 100, then the target temp will be lowered to 100. If a sample time of more than 30 minutes is set while the grain type is set to rice and the target temp is above 85, then the target temp will be lowered to 85. If a sample time of more than 30 minutes is set while the grain type is set to sunflowers and the target temp is above 110 then the target temp will be lowered to 110.

You can override these values by changing the target temp after you have closed the pop-up message.

Bin/Lot ID is not used at this time.

The highest max temp setting is 180 degrees, unless you have a Shivvers Blue Flame, then the max temp can be set up to 200 degrees. The lowest min temp setting is 55 degrees. The target temperature is like a thermostat setting. The controller will control the heaters to maintain this temperature in the plenum. The target temperature that you set on this page will automatically change after each sample based on the moisture reading, but cannot go above the maximum or below the minimum.

To set the maximum plenum temp press the blue button to the right of max temp setting, and a number keypad will appear. The max temp must be between the minimum temp and 180 or 200 degrees depending on what system you have. You must enter whole numbers for the max temp setting.

To set the minimum plenum temp press the blue button to the right of max temp setting, and a number keypad will appear. The min temp must be between the 55 degrees and the max temp. You must enter whole numbers for the min temp setting.

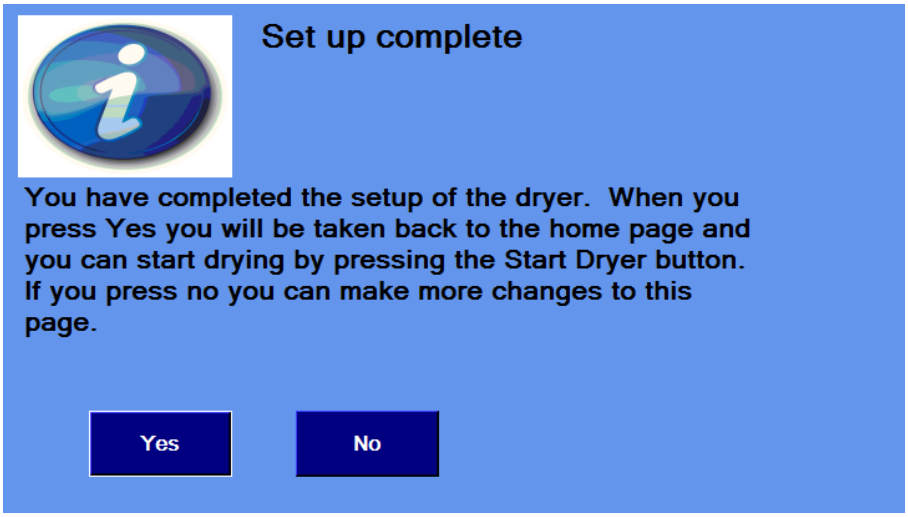
To set the target temp press the blue button to the right of target temp, and a number keypad will appear. The target temperature must be between minimum temp and maximum temp. If the grain is known to be wet, start with a high target temperature. This is just a starting temperature. The controller will adjust it later based on moisture readings. You must enter whole numbers for the target temperature.

To set the plenum temp calibration, press the blue button to the right of plenum temp calibration, and a number keypad will appear. Enter a number from -20 to 20 and press save. For initial startup, keep the calibration at zero. You must enter whole numbers for plenum temp calibration.

Fan shutdown time is the length of time that the drying bin fan(s) will run after the drying system is shut down due to a low grain shut off. This is the only time that the fan shut down time is used. If you manually stop the dryer and want to have the fans run for a period of time, you must go to the Run Fans page, on the home page, and set a time for the fans to turn off. If you manually stop drying (without a low grain shut off) the fans will continue to run until you turn them off.

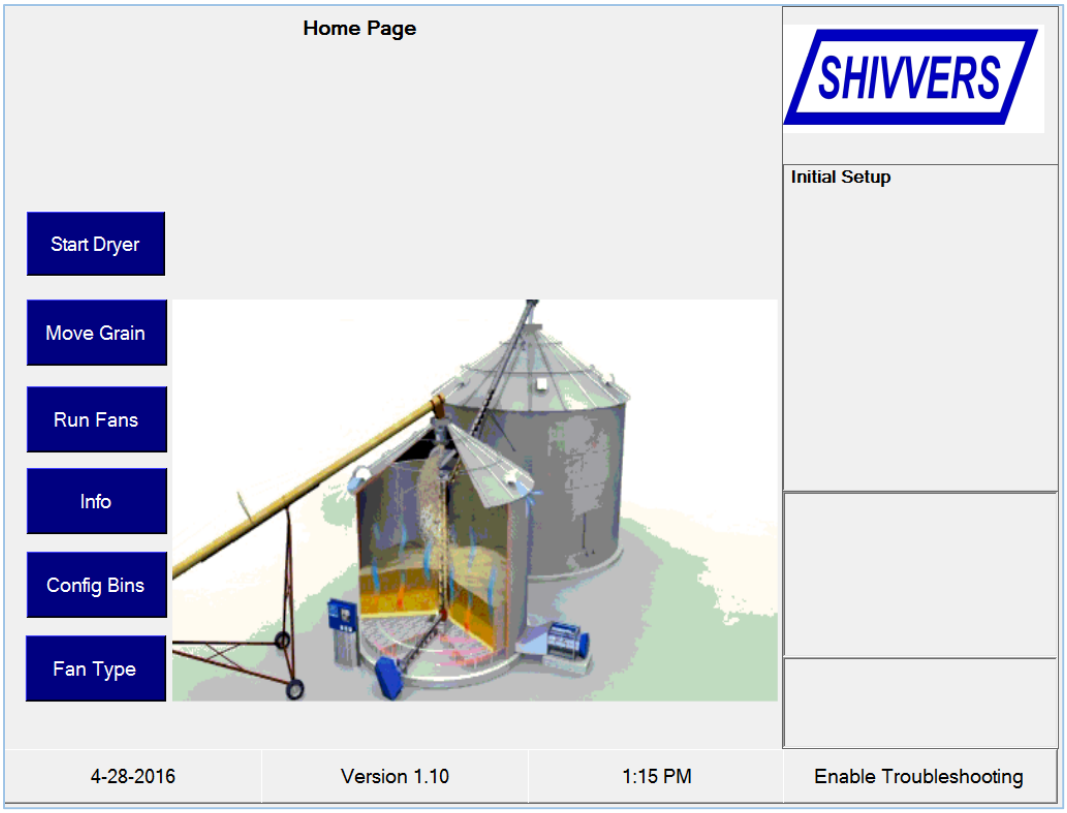
To set fan shutdown time, press the blue button to the right of fan shutdown time, and a number keypad will appear. Enter a whole number from 0 to 120

When you have finished entering in your settings click Finish.

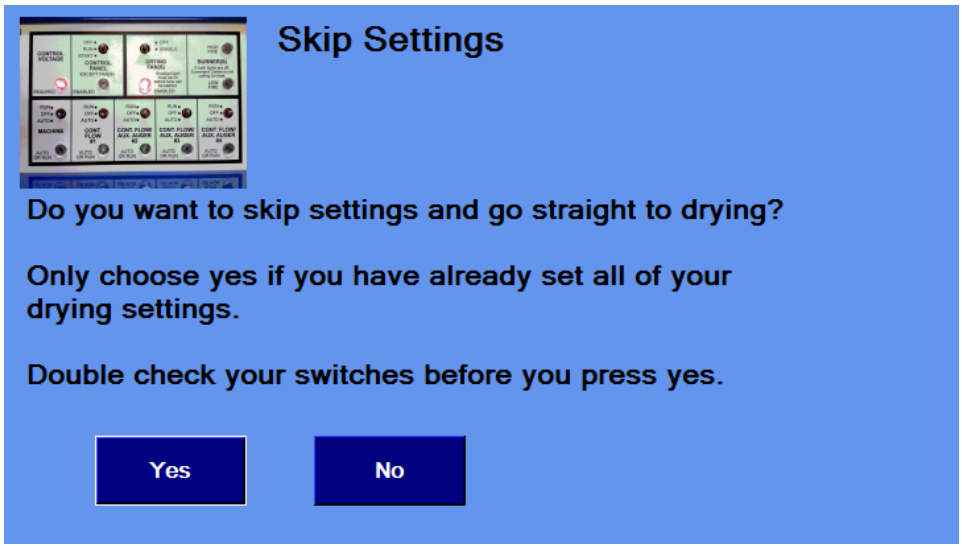


You will see this pop-up message to let you know you have completed the dryer configuration and set up.

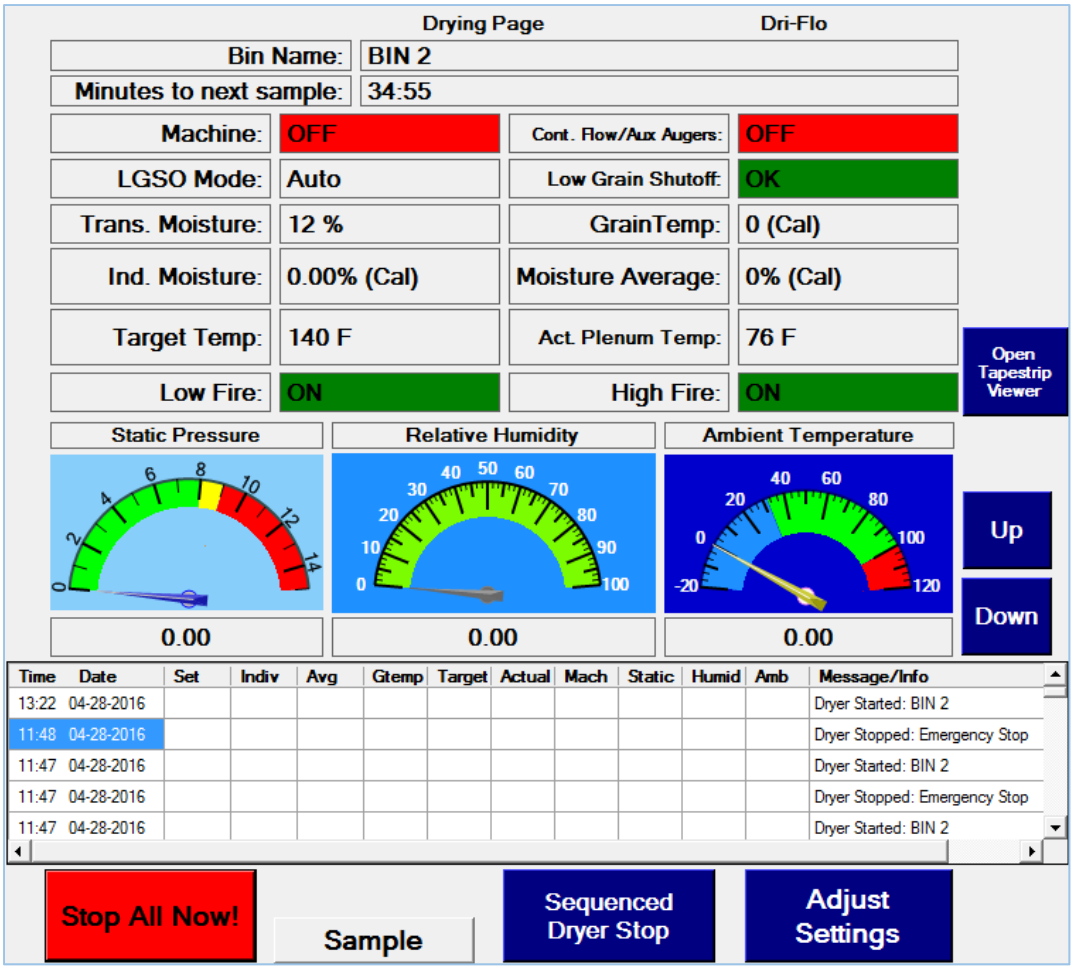
When you press yes, you will be re-directed to the home page.



You will notice that the text of the top button has now changed from Config Dryer to Start Dryer. To start drying press the Start Dryer button.



You will see a pop-up message that asks if you want skip settings and go straight to drying or return to the settings pages that you just completed. If you press yes, the drying process will start immediately.



This is the drying page. This is what you will normally see while drying.

The bin name shows the bin that dry grain will be transferred to.

Minutes to next sample shows the time left until the next sample is taken. You may force a sample at any time by pressing the sample button. If the machine is already on, the sample will begin immediately, but if the machine was off, a 60 second purge is needed to get grain from the floor to the moisture sensor.

Machine shows whether or not the machine is on and the sweeps are turning. This will only be on while taking a sample or transferring dry grain.

Cont. Flow/Aux shows if the transfer augers are on or off. This will only be on if transferring dry grain, or, with a Dri-Flo machine, when purging and taking a sample.

LGSO (Low Grain Shut Off) Mode shows if it is set to Auto, Timed Bypass, or Bypass.

Low Grain Shutoff shows the status of the low grain shutoff sensor.

Trans. Moisture shows the set transfer moisture.

Grain Temp shows the grain temperature during the last sample. It will show the grain temp calibration until the first sample is taken.

Ind. Moisture shows the last individual moisture sample. Use this reading, not the moisture average, to adjust the meter calibration. It will show the meter calibration until the first sample is taken.

Moisture Average shows average of the last 2-9 samples, depending on your setting. This average is only of samples where the average is less than the transfer moisture (ON samples). Once the average is more than the transfer, the average will be reset until there is an individual sample that is less than or equal to the transfer moisture. Then the 2-9 sample average will start over.

Target temp shows the current plenum target temp. The computer will set the target temperature based on the moisture readings, but cannot go above the max temp setting or below the min temp setting.

Act. Plenum Temp shows the actual calibrated plenum temperature.

Low Fire shows if low fire is off or on.

High Fire shows if high fire is off or on.

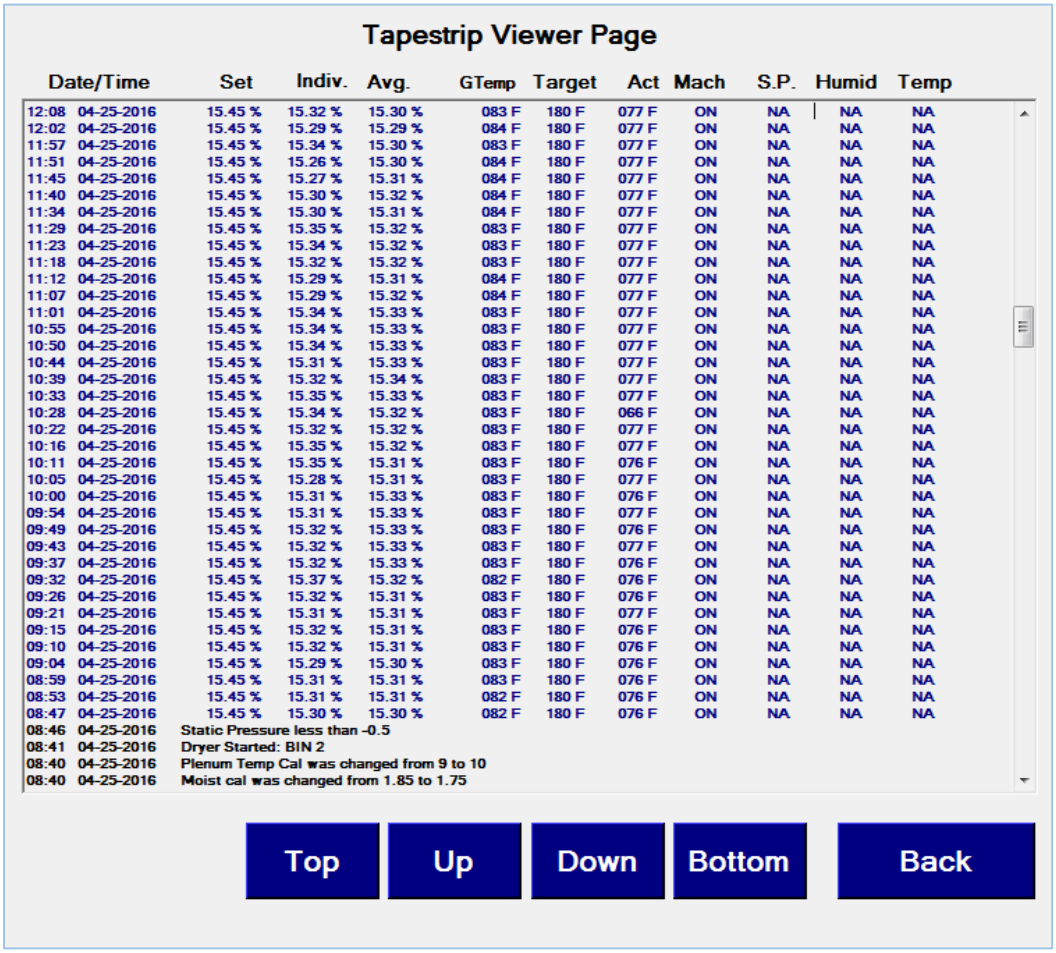
Static pressure shows the static pressure in inches of water for the plenum.

Relative humidity shows the humidity outside (if equipped with this option).

Ambient Temperature shows the outside air temperature (if equipped with this option).

The up/down button allows you to scroll up and down the tape strip data table (the last 5 samples, or lines, are shown in the table on this page). After each sample, the view will go back to showing the top (most recent) entry.

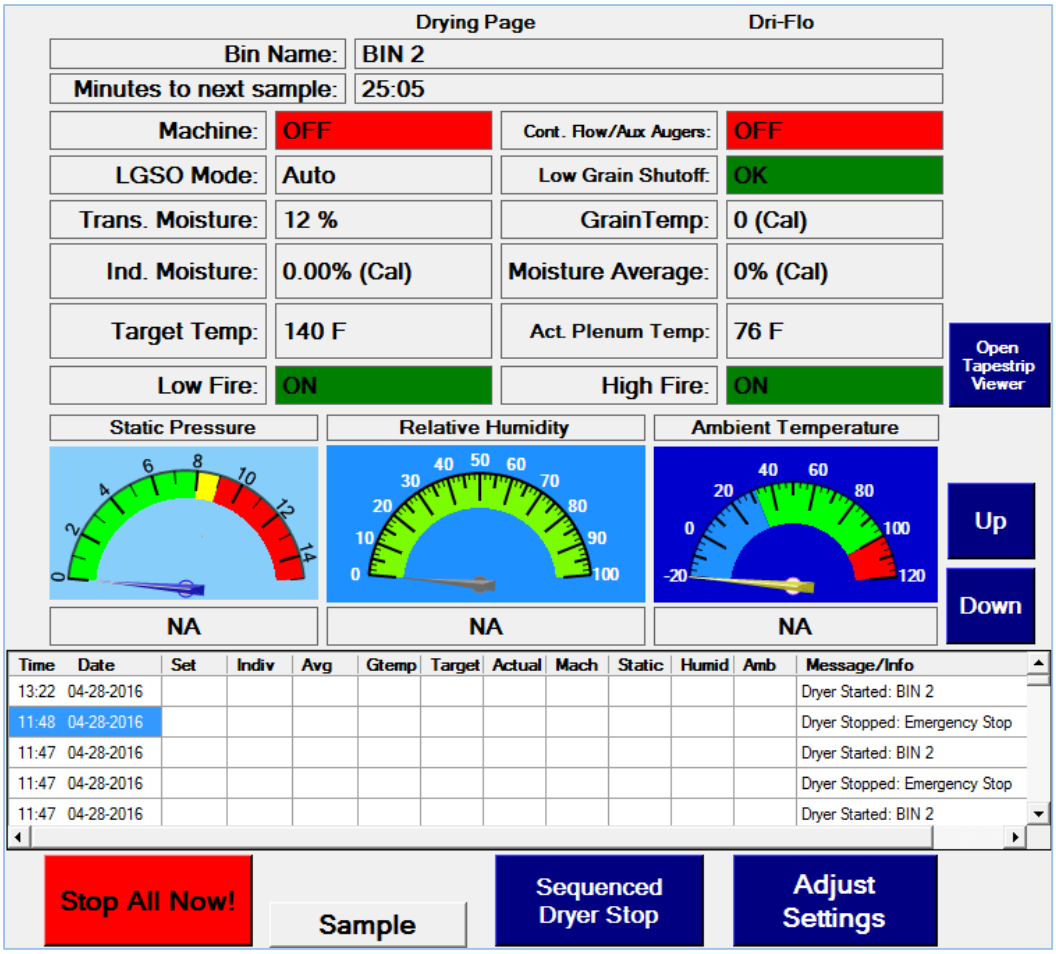
The Open Tapestrip Viewer button opens up a viewer for the last 600 tapestrip entries. This will not stop the dryer. Press the Open Tapestrip Viewer button and the following page appears.



Date/Time	Set	Indiv.	Avg.	GTemp	Target	Act	Mach	S.P.	Humid	Temp
12:08 04-25-2016	15.45 %	15.32 %	15.30 %	083 F	180 F	077 F	ON	NA	NA	NA
12:02 04-25-2016	15.45 %	15.29 %	15.29 %	084 F	180 F	077 F	ON	NA	NA	NA
11:57 04-25-2016	15.45 %	15.34 %	15.30 %	083 F	180 F	077 F	ON	NA	NA	NA
11:51 04-25-2016	15.45 %	15.26 %	15.30 %	084 F	180 F	077 F	ON	NA	NA	NA
11:45 04-25-2016	15.45 %	15.27 %	15.31 %	084 F	180 F	077 F	ON	NA	NA	NA
11:40 04-25-2016	15.45 %	15.30 %	15.32 %	084 F	180 F	077 F	ON	NA	NA	NA
11:34 04-25-2016	15.45 %	15.30 %	15.31 %	084 F	180 F	077 F	ON	NA	NA	NA
11:29 04-25-2016	15.45 %	15.35 %	15.32 %	083 F	180 F	077 F	ON	NA	NA	NA
11:23 04-25-2016	15.45 %	15.34 %	15.32 %	083 F	180 F	077 F	ON	NA	NA	NA
11:18 04-25-2016	15.45 %	15.32 %	15.32 %	083 F	180 F	077 F	ON	NA	NA	NA
11:12 04-25-2016	15.45 %	15.29 %	15.31 %	084 F	180 F	077 F	ON	NA	NA	NA
11:07 04-25-2016	15.45 %	15.29 %	15.32 %	084 F	180 F	077 F	ON	NA	NA	NA
11:01 04-25-2016	15.45 %	15.34 %	15.33 %	083 F	180 F	077 F	ON	NA	NA	NA
10:55 04-25-2016	15.45 %	15.34 %	15.33 %	083 F	180 F	077 F	ON	NA	NA	NA
10:50 04-25-2016	15.45 %	15.34 %	15.33 %	083 F	180 F	077 F	ON	NA	NA	NA
10:44 04-25-2016	15.45 %	15.31 %	15.33 %	083 F	180 F	077 F	ON	NA	NA	NA
10:39 04-25-2016	15.45 %	15.32 %	15.34 %	083 F	180 F	077 F	ON	NA	NA	NA
10:33 04-25-2016	15.45 %	15.35 %	15.33 %	083 F	180 F	077 F	ON	NA	NA	NA
10:28 04-25-2016	15.45 %	15.34 %	15.32 %	083 F	180 F	066 F	ON	NA	NA	NA
10:22 04-25-2016	15.45 %	15.32 %	15.32 %	083 F	180 F	077 F	ON	NA	NA	NA
10:16 04-25-2016	15.45 %	15.35 %	15.32 %	083 F	180 F	077 F	ON	NA	NA	NA
10:11 04-25-2016	15.45 %	15.35 %	15.31 %	083 F	180 F	076 F	ON	NA	NA	NA
10:05 04-25-2016	15.45 %	15.28 %	15.31 %	083 F	180 F	077 F	ON	NA	NA	NA
10:00 04-25-2016	15.45 %	15.31 %	15.33 %	083 F	180 F	076 F	ON	NA	NA	NA
09:54 04-25-2016	15.45 %	15.31 %	15.33 %	083 F	180 F	077 F	ON	NA	NA	NA
09:49 04-25-2016	15.45 %	15.32 %	15.33 %	083 F	180 F	076 F	ON	NA	NA	NA
09:43 04-25-2016	15.45 %	15.32 %	15.33 %	083 F	180 F	077 F	ON	NA	NA	NA
09:37 04-25-2016	15.45 %	15.32 %	15.33 %	083 F	180 F	076 F	ON	NA	NA	NA
09:32 04-25-2016	15.45 %	15.37 %	15.32 %	082 F	180 F	076 F	ON	NA	NA	NA
09:26 04-25-2016	15.45 %	15.32 %	15.31 %	083 F	180 F	076 F	ON	NA	NA	NA
09:21 04-25-2016	15.45 %	15.31 %	15.31 %	083 F	180 F	077 F	ON	NA	NA	NA
09:15 04-25-2016	15.45 %	15.32 %	15.31 %	083 F	180 F	076 F	ON	NA	NA	NA
09:10 04-25-2016	15.45 %	15.32 %	15.31 %	083 F	180 F	076 F	ON	NA	NA	NA
09:04 04-25-2016	15.45 %	15.29 %	15.30 %	083 F	180 F	076 F	ON	NA	NA	NA
08:59 04-25-2016	15.45 %	15.31 %	15.31 %	083 F	180 F	076 F	ON	NA	NA	NA
08:53 04-25-2016	15.45 %	15.31 %	15.31 %	082 F	180 F	076 F	ON	NA	NA	NA
08:47 04-25-2016	15.45 %	15.30 %	15.30 %	082 F	180 F	076 F	ON	NA	NA	NA
08:46 04-25-2016	Static Pressure less than -0.5									
08:41 04-25-2016	Dryer Started: BIN 2									
08:40 04-25-2016	Plenum Temp Cal was changed from 9 to 10									
08:40 04-25-2016	Moist cal was changed from 1.85 to 1.75									

You can press the buttons to navigate through the data.

Press the Back button to go back to the drying page.

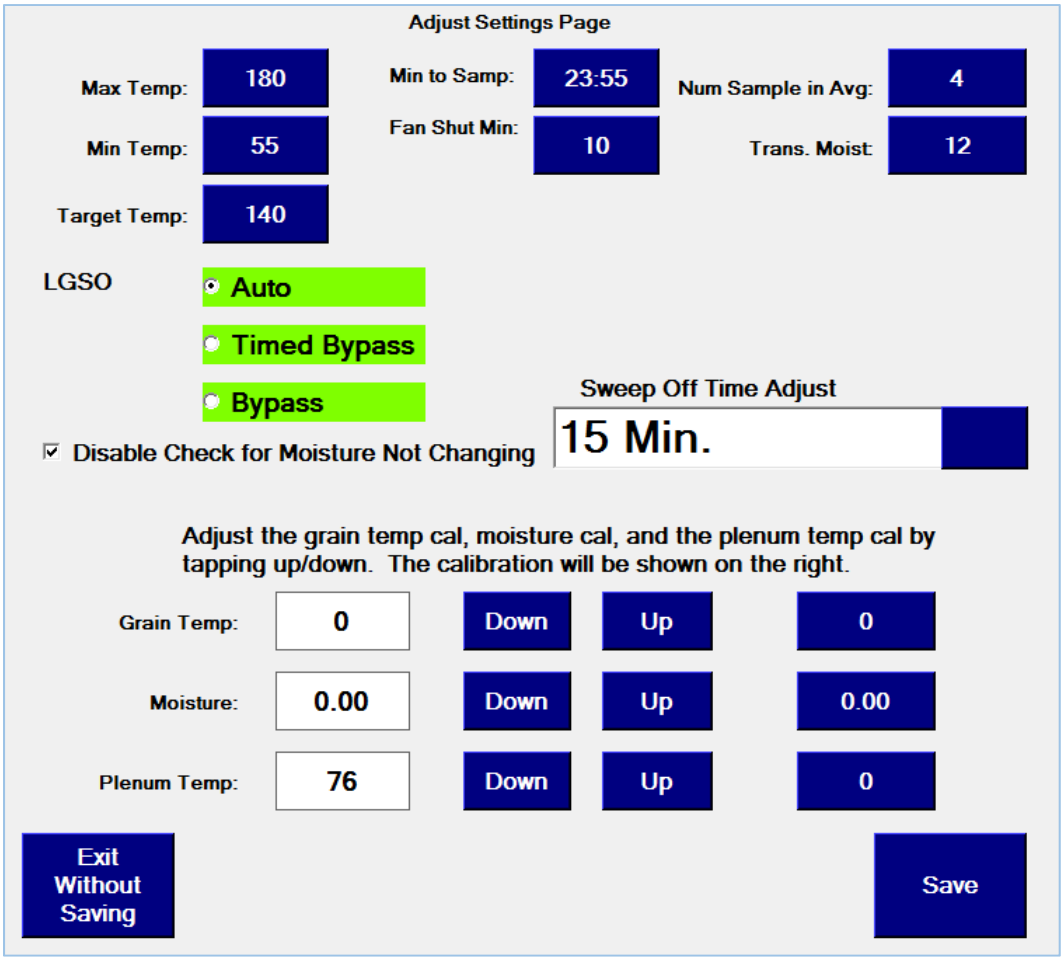


You can force a sample at any time by pressing the Sample button. If the machine was off, it will turn on and the area above the Sample button will start flashing “Purging”. After 60 seconds, the Sample button will start flashing while the controller is reading the moisture content of the grain. If the machine was on, the Sample button will just start flashing right away. This is when a manual sample should be taken from the transfer auger to check moisture and grain temperature calibration.

You cannot change the bin you are transferring to without leaving the drying page first. Press the Sequenced Dryer Stop button and let the augers clean out and then change your switches once you are back on the home page. Until you are comfortable with your system it would be best to press the Start Dryer button and then press no when you see the skip settings message box. From the Dryer Settings Page 1, you can see the bin name that you are transferring grain to. Then press Home, Start Dryer, and Yes, when the skip settings pop up shows.

Sequenced Dryer Stop will stop drying and allow the augers to clean out. A pop up box will appear asking if you really want to stop. If yes, the machine and burners will shut off, if they were running. If the transfer augers were running, they will sequentially be shut off. The touchscreen will go to the Home Page. The fan(s) will not shut off.

The Stop All Now! button will stop the dryer immediately and if the transfer augers were running, they will not clean out. You must manually run the augers to clean them out by using the transfer auger switches.



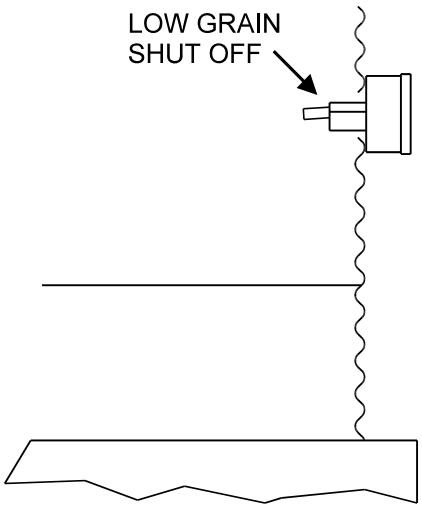
In order to adjust settings while drying, press the Adjust Settings button. Make your adjustments and press Save to accept changes. If you do not want to keep your changes, press Exit Without Saving, and none of the changes that you have made will be kept. For grain temperature calibration, moisture calibration and plenum temperature calibration, press either up or down to adjust the calibration. The new value will be shown on the left and the calibration will be shown on the right.

Changing the minutes to sample will only change the time until the next sample. After a sample is taken, the new time will be based on the moisture reading and sweep off time (if the machine is off).

CALIBRATING THE SENSOR

When calibrating the moisture sensor be sure to take a manual grain sample when the Premier is sampling. Look at the minutes to next sample to find out how long before the next sample. You can press the sample button to start the sample process immediately. If the Machine was off, it will start a 60 second purge cycle (to get fresh grain to the sensor). If the Machine was on, there will not be a purge cycle. When the sample button flashes is when the manual sample should be captured. For Center Vertical type systems, the appropriate Cont. Flow/Aux. Auger switch(es) can be set to the RUN position to get grain to discharge from the dryer. Place them back to AUTO after the manual sample has been taken. Let them clean out first if the Machine has shut off.

LOW GRAIN SHUT OFF OPERATION



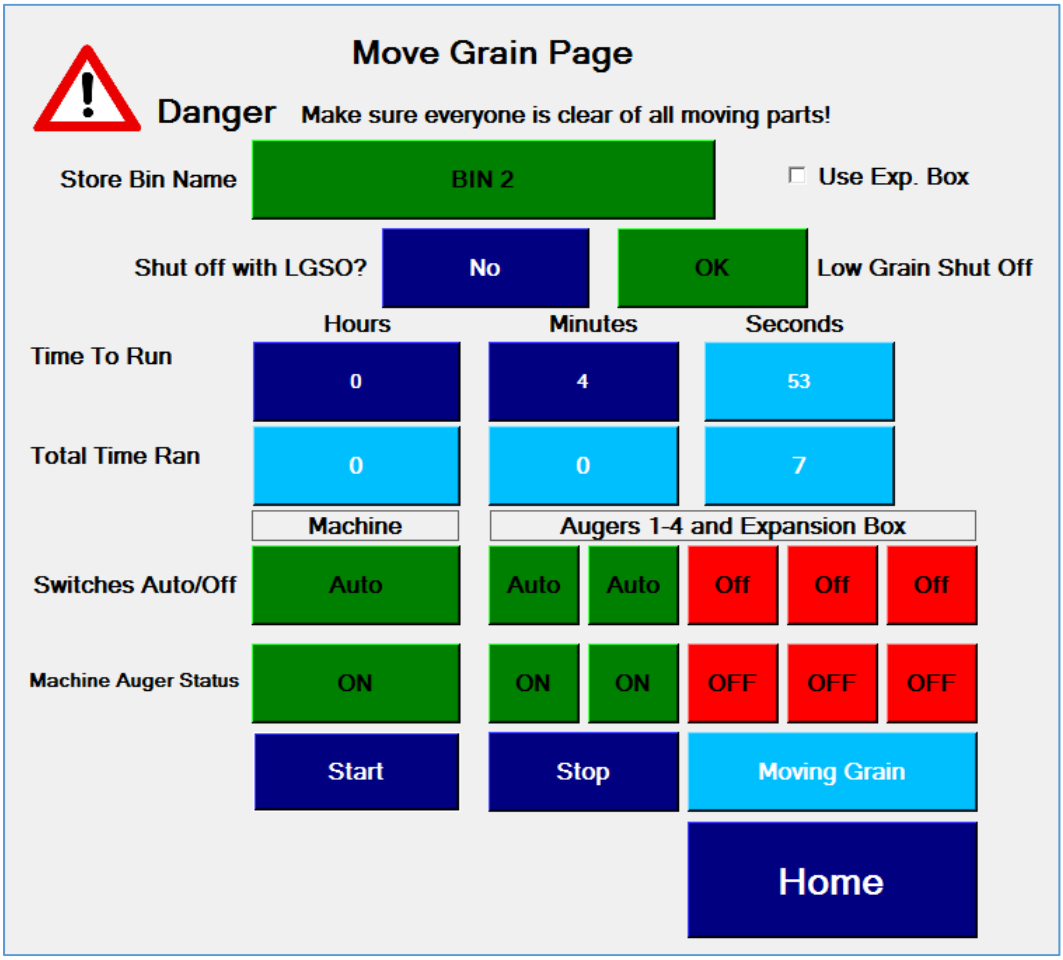
The Low Grain Shut Off (LGSO) mounts on the drying bin sidewall above the perforated floor. It is designed to shut off the burner(s) and the Moisture Control when the grain level in the bin gets below it. It can only do this if the **LOW GRAIN SHUT OFF** on the touchscreen is set to AUTO. When the bin is first filled, the arm on the LGSO will normally stay in the horizontal (empty bin) position, even after the grain level gets above it. The **LOW GRAIN SHUT OFF** will need to be put in BYPASS or TIMED BYPASS until the sweep auger(s) have made at least one or two passes under the arm (approximately 1 hour of "ON" time). Removal of grain from under the arm will allow it to be pulled down into the run position. If you have placed the **LOW GRAIN SHUT OFF** in timed bypass, the touchscreen will automatically switch to AUTO after 1 hour of machine "ON" time. If you have placed the **LOW GRAIN SHUT OFF** in BYPASS, you can changed it to AUTO from the ADJUST SETTINGS page once you see that the **LOW GRAIN SHUT OFF** is sensing grain.

If the low grain shut off trips while the LGSO Mode is in auto, the dryer will stop and the augers will clean out. You will receive a text message letting you know that the dryer has shut down due to low grain.

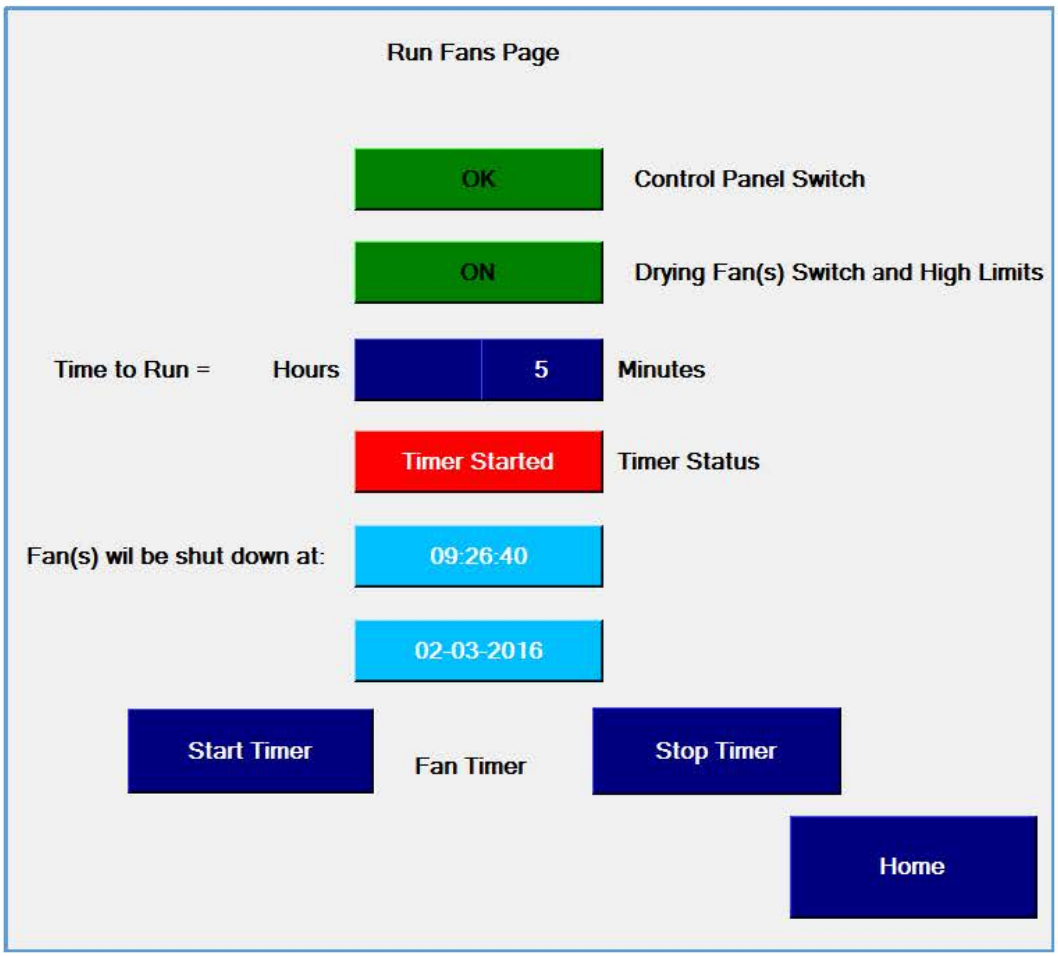
If you skip settings and the low grain shutoff is not sensing grain, you will have to choose either bypass or timed bypass before you can continue.

There are 2 additional features that are on the home page.

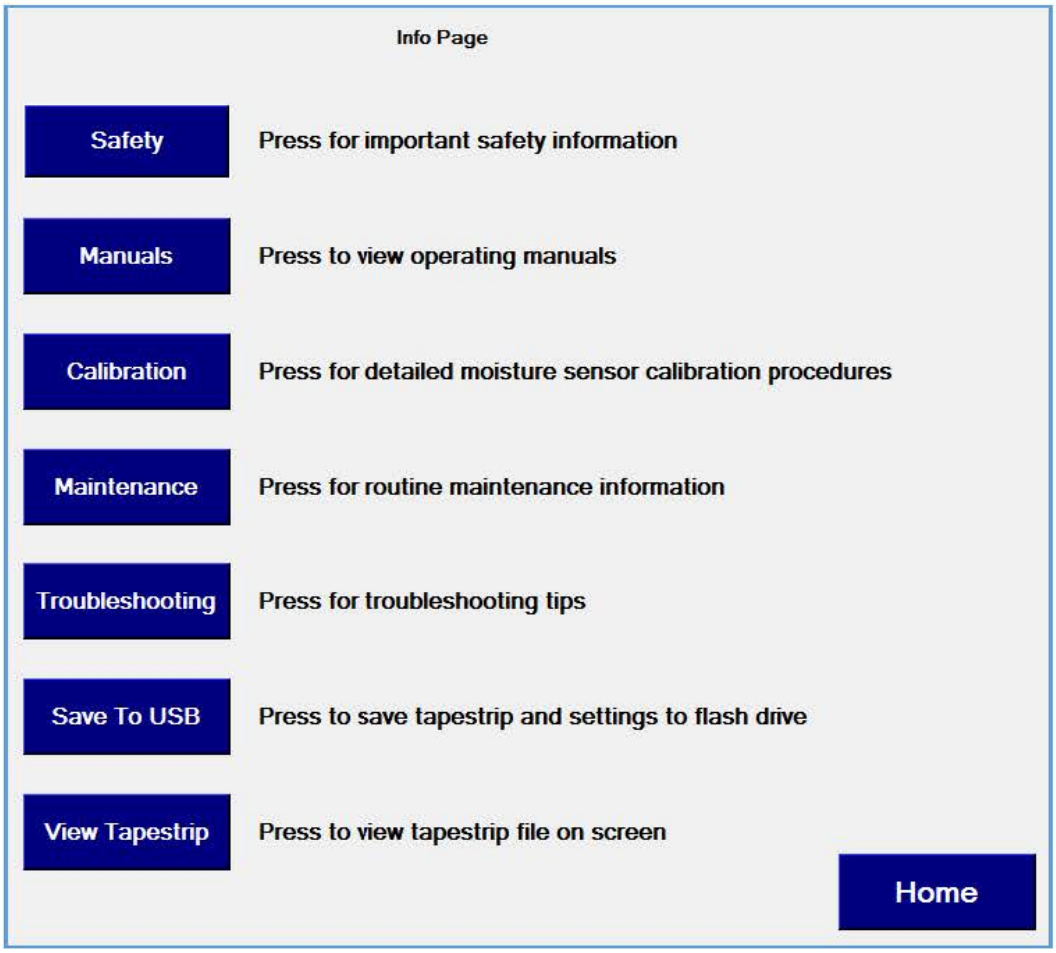
Move Grain: Enter the hours and minutes that you want to transfer grain, press start, and the dryer will transfer grain to the storage bin that has been selected until the timer completes. Once the timer completes, the augers will clean out. You may choose to stop with a low grain shut off or continue to transfer even if it is tripped. No moisture samples will be taken, this is simply a transfer for a period of time. If you leave the move grain page, the transfer will stop without the augers cleaning out and you will have to manually clean out the augers using the switches.



Run Fans: Enter the hours and minutes that you want to run the fans. The time and date that the fans will be shut down is shown on the screen. Press Start Timer and when the timer completes, the fans will automatically be shut off. If you leave the run fans page, the fans will not shut off and the timer will be cleared. You must always start the fans manually. This feature only stops the fans. If there is more than one dryer fan, it isn't necessary to run all of them at once.



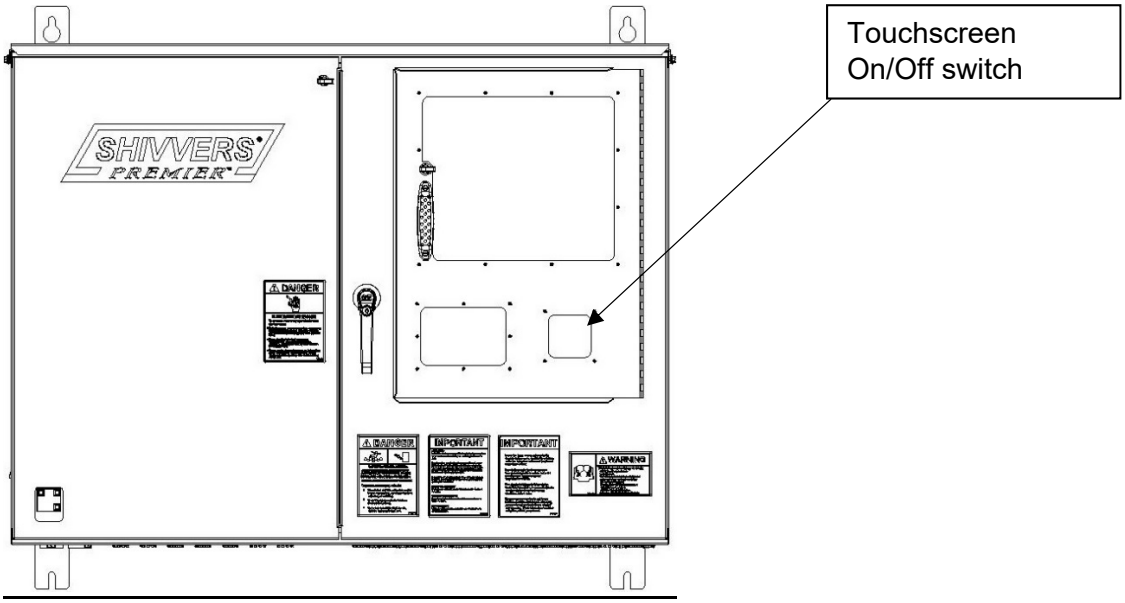
The Info button gives you access to manuals and tips as well as a place to let you save the last 600 tape strip entries and settings to a USB drive and view the last 600 tape strip entries.



PREMIER SHUT-DOWN

If the Premier needs to be shut down quickly, because of a plugged auger or whatever, simply move the **CONTROL PANEL** switch to the OFF position. This will shut off all augers and the burners. The touchscreen will be taken back to the HOME page. The drying fan(s) will not shut off. If the burners have been running, allow them to cool for a minute or two. Move the **DRYING FAN(S)** switch to the OFF position to shut the fan(s) off. If the Cont. Flow/Aux. Augers were running, remember to manually run them to clean them out.

To shut the Premier off, press the **SEQUENCED DRYER STOP** button and if the machine was on, the augers will clean out. Once the augers have been cleaned out the touchscreen will return to the **HOME** page. Once you are back at the **HOME** page move the **MACHINE** switch to the OFF position. Then move all of the **CONT. FLOW/AUX. AUGER** switches to the OFF position. They should already be cleaned out (if the proper delay is programmed into the touchscreen). To shut the fan(s) off (after the burners have cooled), move the **DRYING FAN(S)** switch to the OFF position. Press the Shivvers logo to exit the Premier program and then press the **SHUTDOWN** button. Turn the touchscreen switch to the **OFF** position. Put the Control Panel switch into the Off position.



END OF SEASON SHUT-DOWN

To shut the Premier down for the season, shut the fuel supply off at its source, start the fan(s) and burners, and allow all fuel to burn from the lines. The drying program will need to be started to get a call for heat.

It is recommended to take a load of grain from the center of the bin (through the slide gate and horizontal auger with sweeps disengaged). This helps remove a lot of the fines that accumulate in the center of the bin. It also helps remove grain from the center vertical auger, if used, so it doesn't spoil and lock up the auger. See the system operator's manual for proper procedures.

Make sure all Cont. Flow/Aux. Augers are completely empty by manually running all of them. Make sure there is a place for grain to go.

The touchscreen's operating temperature is rated for -20 to 60°C {-4 to 140°F). The touchscreen storage temperature is rated for -30 to 70°C {-22 to 158°F). If the storage temperature cannot be maintained during the off season, it is recommended that the touchscreen be removed and stored in a climate controlled environment. Put all Premier switches in the off position. Shut off all power to the complete drying system.

MAINTENANCE

Never work on equipment or enter the drying bin unless main power is disconnected and locked off.

INDICATOR LIGHTS AND DISPLAYS: Make sure the window in the Access Door remains clear so the indicator lights and displays are visible through it. Replace it if it becomes damaged. Make sure all indicator lights and displays are functioning properly. Replace them if they are not working properly.

LOW GRAIN SHUT OFF: There is a rubber seal that allows the arm on the Low Grain Shut Off (LGSO) to move freely up and down while keeping grain from getting inside the box. Before the drying season, check the LGSO seal and make sure the arm moves freely. It should go to the "up" position when there isn't any grain.

PLENUM HIGH LIMIT AND TEMPERATURE PROBE HOLDER: It is important that there is air flow past the plenum temperature probe to insure accurate readings. Before the drying season, check to make sure the holder is not clogged up. Clean it out as required. Be sure all power is disconnected and locked off before removing the cover.

CHECKING SETTINGS: Once calibration and settings are entered, unless they are automatically adjusted by the control, they will stay in memory even when power is lost. It is good practice to write the settings down in case they accidentally get changed, or in case of malfunction. Also recheck the settings periodically throughout the drying season.

CHECKING FOR EVEN HEAT: Temperatures around the bin can vary by 50 degrees or more. The more even that the temperatures are, the better the system will operate. Even heat will help the moisture consistency, the levelness in the bin, and the efficiency and capacity of the system. Four to six thermometers placed around the bin can be used to check the temperatures. Consult the burner manufacturer or dealer for adjustments which will help even the temperatures.

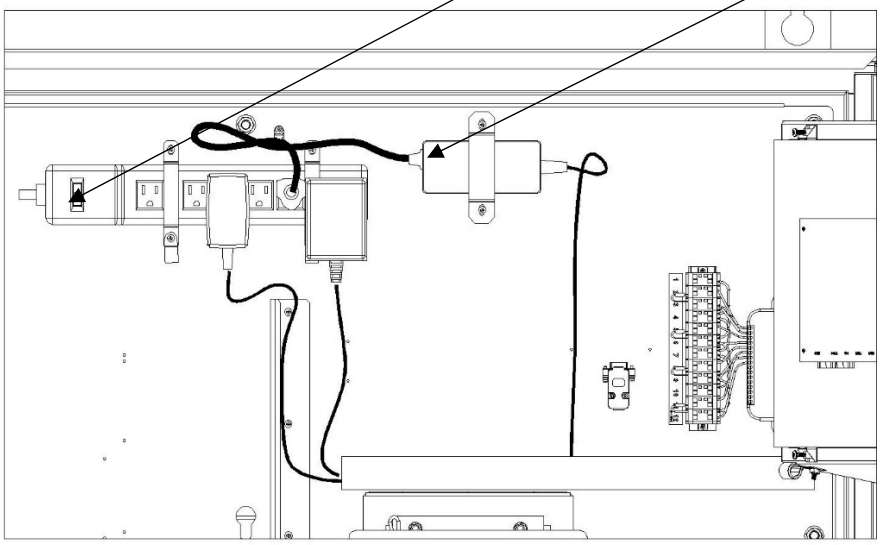
TROUBLE SHOOTING TIPS

Trouble shooting should be done by trained personnel only. Never work on equipment unless main power is disconnected and locked off.

Symptom	Possible Cause	Remedy
Control Voltage indicator light is not on.	Breaker not on. Blown Control Power fuse.	Make sure that the proper breakers are on. Lock out all the power and replace the Control Power fuse located on the switch/relay board.
Drying Fan(s) Enabled indicator will not come on.	Grain High Limit(s) or Gear Box High Limit may be tripped. They auto-reset upon cooling.	Allow High Limits to cool. Observe closely for indications of a fire.
Control Panel Enabled light comes on in the Start position, but will not stay on in the Run position.	Machine and/or Cont. Flow/Aux auger motor starter overload(s) may be tripped.	Lock out the power, open the left door of the Premier Control box, and press resets on the overloads for the motor starters. Have electrician check motor running current and proper heater size/overload setting.
High Limit Error when start dryer is pressed, even though the fan enable light is lit.	Plenum High Limit may be open. It is a manual reset device.	Use non-conductive stick to reset Plenum High Limit. Lock out power and replace Plenum High Limit.

TROUBLE SHOOTING TIPS Cont'd:

Symptom	Possible Cause	Remedy
Fan(s) will not run even though DRYING FAN(S) Enabled indicator is on.	No power to the fan motor circuit. Blown fuse in fan. Blown fuse on switch relay panel.	Make sure proper breakers are on. Lock out power and replace control fuse in fan. Replace Fan #X fuse on switch/relay panel.
Burner will not burn even though high and low fire indicators are on.	Burner malfunction or blown fuse. Blown burner fuse on switch/relay panel	Lock out power and troubleshoot burner. Replace burner #X fuse on switch/relay panel.
Machine or Cont. Flow/Aux. Auger will not run in RUN position even though AUTO/RUN indicator is on.	No power to the motor circuit.	Make sure that the proper breakers are on. Motor may have a thermal overload switch built in that needs to be reset.
Touchscreen will not power up even with the touchscreen switch in the ON position	No power to the touchscreen.	Check the reset switch on the power strip mounted on the back plate inside the Premier enclosure. Make sure that the power cord has not become loose from the power supply.



FAQ's

Selecting correct fan type is important. Why?

Determines parameters for static pressure.
Limits max temp setting.

What is the default machine delay on a Dri-Flo? Is there a machine delay on a CV (Center Vertical) machine?

5 seconds. 5 – 60 seconds is the range.
There is not a machine delay on a CV (Only on the move grain page, there is a 2 second delay for the machine so that all motor starters are not turned on at the same time).

Can you have an auger cleanout delay of 0 seconds? What is the minimum?

No. A zero second time delay means no auger is used on that switch.
5 seconds is the minimum auger cleanout delay.

What is the significance of the augers being labeled 1 thru 5?

They match manual switches 1 thru 4 and the 5th is the expansion box. The expansion box is controlled with the check box that is found on Dryer Settings page 1.

Can you enter 10.5 seconds for an auger delay?

No. Whole numbers only.

What happens if you setup two storage bins with the same auger order?

You will get an invalid configuration message and will need to correct the setup.

What causes the bin name "Unknown" to appear when attempting to start dryer?

The manual auger switches are set to an unknown bin. Manual switches must match touch screen setup.

What disables the "Check for moisture not changing" when drying small grain?

Check box on either Dryer Settings Page 2 or the Adjust Settings Page.

Timed bypass for LGSO will run for how long? What happens at the end of this time?

60 minutes of sweep on time (machine is transferring or taking a sample). At the end of 60 minutes, it switches automatically to auto.

Once you have selected grain type in configuration, are you allowed to change the settings? If so where?

Yes. But you have to stop drying and go back to Dryer Settings page 3.

If after sampling, you get the error, "Moisture not changing for last 1 sample", what needs to be done if you are drying wheat or other small grains?

Check the box disabling "check for moisture not changing" on Dryer Settings Page 2 or the Adjust Settings Page.

Is max temp setting limited by any factor? What is highest max temp allowed?

Yes, by fan type. 200 F if you have a Blue Flame. 180 F for all other fan types. Grain type????

If your dryer configuration is complete and you return to the home page, what change is visible?

The text on the "Config Dryer" button changes to "Start Dryer".

What is the difference between "Stop All Now" and "Sequenced Stop"?

Stop All Now, immediately stops everything but the fans.
Sequenced Stop, will stop drying and clean out the transfer augers, if they were running.

Are you allowed to change storage bins while drying?

No. You have to leave the dryer page. We do this to ensure the augers get cleaned out.

What happens if LGSO is tripped while in auto mode?

Stop drying.
Clean out the augers.
Post message on the touch screen and send a text if configured to send texts.

If you skip settings and the dryer is stopped due to LGSO being tripped, what do you have to do?

Must select either timed bypass or manual bypass.

If you move grain manually from the touch screen, and do not trip with LGSO, what will happen when a LGSO is encountered?

The Machine will run until the timer completes, even if the bin is completely empty.

How can you have the fans automatically shut off?

The touchscreen will only shut off the fans after a LGSO trip while drying, or you can set a timer by pressing the Run Fans button on the Home Page.

How do you reset the touch screen drying parameters to factory defaults?

Select "Info" from the main page.
Select "Troubleshooting".
Click on "Reset to Factory Defaults".

Premier/Connect Quick Start Guide

Initial Check

- Make sure that there is no communication error in the upper right hand corner of the screen. This occurs when the touchscreen loses communication with the interface board. You will see this on power up of the drying system, when the interface board has power but there is no communication from the touchscreen while it boots up. **To correct, turn control power off and then back on.**

Select Fan Type

- This is important as we use fan types as the guide for static pressure and max temperature.

Click on Config Bins

- Identify the augers. Name them something descriptive and set the cleanout delay in seconds.
- Setup Storage Bins.
- Identify the order of augers used to get grain to each storage bin. Number the auger order from the dryer to the storage bin. For each storage bin, auger 1 will be from the dryer, and the last auger in the order will be discharging into the storage bin. It is possible that a bin will only need one auger but that auger could be switch #3 on the augers set up page. If so, you will put a 1 next to SW #3. If an auger is not used insert a “0” (zero).
- Repeat these steps for each storage bin.
- When finished you will return to the home page.

Click on Config Dryer.

Dryer Settings Page 1

- Machine Type – Dri-Flo or Center Vertical.
- Storage Bin shows where grain will be transferred to (determined by switch position). If “Unknown bin” is shown, the switches are in a position not identified with a storage bin. Correct the switch positions or re-configure the storage bins.

Dryer Settings Page 2

- LGSO can be set in either manual, auto, or timed bypass.
- Grain high limit is green (if not, Drying Fan(s) switch is off or a high limit is tripped).
- LGSO is green if it is detecting grain.

Dryer Settings Page 3

- Select grain type. Defaults will be entered for all settings on this page. You can change everything except grain type from the adjust settings page.

Dryer Settings Page 4

- Set Minutes to **First** sample (The computer will adjust the minutes to next sample after the first sample is taken).
- Set Max and Min plenum temperature
- Set initial target temperature (The computer will adjust the target temperature, if necessary, after the each sample is taken).
- Set Plenum temperature calibration.
- Set fan shutdown time (This is the length of time that the fan will run after a low grain shutoff).

Return to Main Page

- Config Dryer has now changed to Start Dryer.
- Click on “Start Dryer”, then click “Yes” to use existing settings.
- Main Dryer page will appear.