Do not attempt to operate or maintain this panel(s) until you have read and thoroughly understand all of the safety information contained in this manual. All such information must be taken seriously. This panel contains high voltage which can cause serious injury or death. If you do not understand any part of this manual, seek assistance from your supervisor or call KSi Conveyors, Inc. before operating this equipment.
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Table of Contents

1 - INTRODUCTION............................................................................................................. 1
   DOCUMENT SCOPE & PURPOSE ..................................................................................... 1
   OWNER RESPONSIBILITIES ......................................................................................... 1
   OPERATOR RESPONSIBILITIES .................................................................................. 3
   RECEIVING YOUR EQUIPMENT .................................................................................. 5
   HANDLING AND STORAGE OF YOUR EQUIPMENT ..................................................... 5

2 - SAFETY INFORMATION ............................................................................................... 6
   SIGNAL WORDS AND SYMBOLS .................................................................................... 6
   WARNING SIGNS ............................................................................................................ 10
   ARC FLASH SIGN .......................................................................................................... 10
   MULTIPLE POWER SOURCES ...................................................................................... 11
   UPS VOLTAGE SIGN ...................................................................................................... 11
   INCOMING POWER HAZARD ....................................................................................... 12
   PANEL CLEARANCE SIGN ............................................................................................ 12
   TERMS .............................................................................................................................. 13
   IMPORTANT CODES AND STANDARDS FOR OWNERS ........................................... 16
   OSHA 1910.147 .............................................................................................................. 16
   110.16 FLASH PROTECTION FIELD MARKING ......................................................... 16
   NFPA 79 ......................................................................................................................... 17
   EMERGENCY-STOP ......................................................................................................... 17
   CATEGORY-0 STOP ......................................................................................................... 17
   CONTROLLED STOP ..................................................................................................... 17
   HAZARD REVIEW AND SAFETY INSTRUCTIONS ..................................................... 18

3 - OPERATOR CONTROLS ............................................................................................... 20
   HARDWARE .................................................................................................................... 21
   Main Panel ..................................................................................................................... 21
   Push Buttons .................................................................................................................. 21
   Air Manifold ................................................................................................................. 22
   Air Supply ..................................................................................................................... 22
   Communication/Power Ports ......................................................................................... 22
   Solenoids ....................................................................................................................... 23
   Scale Readout ................................................................................................................. 23
   Printer ............................................................................................................................. 23
   Keyboard ....................................................................................................................... 23
   SOFTWARE ..................................................................................................................... 24
   Home Screen ................................................................................................................. 24
   Bins Page ....................................................................................................................... 25
   HOA ................................................................................................................................. 25
1 - Introduction

Document Scope and purpose, and general responsibilities.

Thank you for choosing KSi Conveyors, Inc. for your automation needs. We appreciate your business and will work diligently to ensure that you are satisfied with your choice.

Document Scope & Purpose

This document describes the logic and control functions provided by the control software. It includes sequence of operations for the PLC. It does not cover any equipment controlled by the panel. Safety and other necessary information should be included in the documentation for those specific components.

This manual is not intended to provide instruction on specific applications of the equipment nor on the safety practices common to your industry.

Owner Responsibilities

As the purchaser/owner/integrator of this equipment and control system, you have an obligation to design, install, operate and maintain the equipment in a manner that minimizes the exposure of people in your care to any potential hazards inherent in using this control system and associated equipment. This control panel(s) is a component of a process stream. It works together with other components to form a complete system. It cannot operate as a standalone component. Therefore it is critical that the owner of this equipment and control system:

- Has a clear and documented understanding of the process this panel is being used in, and of any resulting hazards or special requirements arising from this specific application.
- Allow only properly trained and instructed personnel to install, operate or service this equipment.
- Maintain a comprehensive safety program involving all who work with this panel(s) and other associated process equipment.
Establish clear areas of staff responsibility (e.g. operation, setup, sanitation, maintenance and repairs).

Perform an electrical hazard analysis to determine the Incident Energy Exposure to select the level of personal protection equipment and to determine the Flash Boundary. Refer to NFPA 70E for further information.

Provide all personnel with the necessary safety equipment.

Periodically inspect the equipment to insure that the doors, covers, guards and safety devices are in place and functioning, that all safety instructions and warning labels are intact and legible and that the equipment is in good working order.

In addition to the operating instructions, observe and enforce all applicable legal and other binding regulations, national and local codes.

Install the panel(s) in the process stream in accordance with the guidelines outlined in the chapter titled “Installation”.

Operator Responsibilities

As the person with the most to gain or lose from working safely, it is important that you work responsibly and stay alert. By following a few simple rules, you can prevent an accident that could injure or kill you or a co-worker.

- Disconnect, lockout and tagout electrical and all other energy sources before inspecting, cleaning, servicing, repairing or performing any other activity that exposes you to an electrical hazard.

- Do not operate, clean or service this panel until you have read and understood the contents of this manual. If you do not understand the information in this manual, bring it to the attention of your supervisor or call KSi Conveyors, Inc. for assistance.

- Understand and follow the safety practices required by your employer and this manual.

- Do no attempt to perform electrical work if you are not an electrically qualified worker. Know you limitations and do not attempt to perform electrical work beyond what you are capable of doing safely.

- Wear the appropriate personal protection equipment and use the appropriate tools for the electrical work to be performed.

- **PAY ATTENTION** to what you and other personnel are doing and to how these activities may affect your safety.

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**WARNING**

Failure to follow these instructions may result in serious personal injury or death.
Receiving Your Equipment

As soon as the panel is received, it should be carefully inspected to make certain the unit sustained no damage during shipment and that all items listed on the packing list are accounted for. All damage or shortages should be noted on the Bill of Lading. The purchaser must take immediate steps to file reports and damage claims with the carrier. All damages incurred during transit are the responsibility of the common carrier if the equipment was shipped FOB. Ownership passes to purchaser when the unit is loaded and accepted by carrier. By law, any claims for in-transit damage or shortage must be brought against the carrier by the purchaser.

Handling and Storage of Your Equipment

If the panel is not going to be installed soon after arrival, it should be stored in a dry location to protect against rust and corrosion. The panel is shipped from the factory mounted in a heavy shipping crate to prevent foreign materials and moisture from contaminating the panel during shipping. It is recommended that the panel remain in the crate until just prior to installation. Transport the panel from the unloading site to the installation or storage site by using a forklift or hand-truck. The panel should be picked up by the crate, not by the panel itself.
2 - Safety Information

Alerts, symbols, warnings and cautions for safe operation of the equipment.

Every year, accidents in the work place injure, maim and kill people. Some of these accidents involve electrical shock or arc flash. Although it may be impossible to prevent all accidents, those involving electrocution are completely preventable with the right combination of training, operating practices, safety devices and operator vigilance. The purpose of this section is to help educate panel users about potential hazards, unsafe practices and recommend hazard avoidance techniques.

**WARNING**

Do not attempt to operate or maintain this panel(s) until you have read and thoroughly understand all of the safety information contained in this manual. All such information must be taken seriously. This panel contains high voltage which can cause serious injury or death. If you do not understand any part of this manual, seek assistance from your supervisor or call KSi Conveyors, Inc. before operating this equipment.

**Signal Words and Symbols**

It is very important that operators and maintenance personnel understand the words and symbols that are used to communicate safety information. Signal words, their meaning and format have been standardized for U.S. manufacturers and published by ANSI. The European Community (E.C.) has adopted a different format based on the International Standards Organization (I.S.O.) and applicable machinery directives. Both formats are presented below.
Graphic symbols are not standardized, but most manufacturers will use some variation of the ones seen in this manual.

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury and/or property damage.

Provides additional information that the operator needs to be aware of to avoid a potentially hazardous situation.

Mandatory Lockout Power Symbol. Disconnect, lockout and tagout electrical and all other energy sources before inspecting, cleaning or performing maintenance on this panel.

International Safety Alert Symbol. The exclamation point (!) surrounded by a yellow triangle indicates that an injury hazard exists. However, it does not indicate the seriousness of the potential injury. An exclamation point (!) is used with the DANGER, WARNING and CAUTION warnings. When used in conjunction with these symbols the potential injury is indicated.

Electrocution Hazard Symbol. This symbol indicates that an electrocution hazard exists. Serious injury or death could result from contacting high voltage.

Electrocution Hazard Symbol. (ISO format) This symbol indicates that an electrocution hazard exists. Serious injury or death could result from contacting high voltage points.
Mandatory Lockout Tagout Action Symbol (I.S.O. format). This symbol instructs the operator to disconnect, lockout and tagout all electrical power and other energy sources before inspecting, servicing or cleaning a panel.

Mandatory Read Manual Action Symbol (I.S.O. format). This symbol instructs personnel to read the Operator Manual before servicing or operating this panel.

Mandatory Read Manual Action Symbol. This symbol instructs personnel to read the Operators Manual before servicing or operating this panel.

This symbol indicates that an important maintenance or installation detail is being described. Special notice should be taken to heed the instructions to prevent damage to the equipment.

This symbol indicates that there is an arc flash explosion danger. Arc flash explosions can release tremendous amounts of energy instantaneously. This can propel debris, vaporized metal and extremely hot gases at very high velocities. Serious injuries, burns or death could result from being in close proximity to or in the direct path of an arc flash explosion and the flying debris.
This symbol indicates that appropriate personal protection equipment and clothing are required before inspecting, servicing or cleaning the control panel. Employees must wear and be trained in the use of appropriate protective equipment for possible electrical hazards they may face. Examples of protective equipment could include a hard hat, face shield, flame resistant neck protection, ear protectors, Nomex™ suit, insulated rubber gloves with leather protectors, and insulated leather footwear. All protective equipment must meet the requirements as shown in the latest edition of NFPA 70E. Protective equipment, sufficient for protection against the potential electrical flash, is required for every part of the body. The selection of the required thermal rated PPE depends on the incident energy level at the point of work.

This symbol indicates that only qualified personnel should inspect or service this panel and the connected electrical components. A qualified worker is someone who has the skill, knowledge, and ability to safely perform the work to which they are assigned.
Warning Signs

Warning signs are placed on the panel(s) to serve as reminders to anyone who is working on or near the panel that they must be careful and exercise proper care to avoid serious personal injuries, death or equipment damage. The warning signs that are commonly found on the control panels are described below. These signs should be inspected periodically by the Owner to make sure that all of the warning signs are in place and legible. If any of the warning signs are damaged or become illegible, please contact KSi Conveyors, Inc. for replacement signs.

Arc Flash Sign

This sign is designed to remind personnel working on or near this control panel of the electrical shock and arc flash explosion hazards. It also indicates key hazard avoidance techniques as well as ways to reduce the severity of potential injuries through the use of proper personal protection equipment.

![Danger Sign](image-url)
Multiple Power Sources

This sign indicates that the panel may be powered from more than one source. All sources of power must be properly locked out and tagged out before the panel is fully de-energized.

UPS Voltage Sign

This sign indicates that there is an uninterruptible power supply in the panel (UPS) that will continue to provide a power source even if the primary power source to the panel is off. The UPS must be properly locked out and tagged out before the panel is fully de-energized.
**Incoming Power Hazard**

This sign informs the electrical worker that the incoming power to the panel remains energized even when the main disconnect is in the “ON or “OFF” position. It will remain energized until the panel power source is de-energized and properly locked out.

**Panel Clearance Sign**

This sign informs the owner that there is an OSHA and NEC requirement that space in front of the panel be kept clear for a minimum of 36 inches. The owner should consult these standards for additional information and guidance regarding this requirement.
Terms

Unless expressly stated elsewhere, the following terms shall have the meanings indicated below.

**Alternate Method**—A deviation from established procedures or policy that includes compensatory measures that assure equivalent objectives can be achieved by establishing and maintaining effective safety.

**Approved**—The result of a process implemented by qualified electrical workers or qualified supervisor that control measures effectively mitigate the electrical hazards associated with a task.

**Approved Equipment**—(1) listed equipment, or (2) unlisted equipment that is acceptable to the qualified workers who designed or will use the equipment and that is approved by Owner.

**Authorized Work**—Electrical work that a supervisor has permitted the qualified electrical worker(s) to perform based on an approved safe work procedure and appropriate work practices.

**Barrier**—A physical obstruction that is intended to prevent contact with exposed energized electrical conductors or circuit parts. Barriers can be temporary or permanent.

**Clarify**—To make codes, standards, and regulations understandable and free from confusion through an oral or written process.

**Compelling Reason**—The reason for authorizing workers to perform work on or near hazardous energized electrical circuit parts. The reasons include two types:

- increased or additional hazards of de-energizing critical systems; and
- unfeasible due to equipment design or operational limitations (e.g., testing of electric circuits that can only be performed with the circuit energized).

**Conductive**—Any material suitable for carrying electric current.

**Contract Personnel/Worker**—Individuals whose services are obtained from subcontractors and who are supervised by the Owner’s employees. Contract personnel are not employees of the Owner.

**Critical Systems**—Any system which would result in increased or additional hazards if de-energized, e.g., life support equipment, emergency alarm systems, hazardous location ventilation equipment, area lighting.

**De-Energized**—Free from any electrical connection to a source of potential difference and from electrical charge; not having a potential different from that of the earth. A state in which the conductor or circuit part to be worked on or near has been disconnected from energized parts, locked out and tagged out in accordance with established standards, tested/verified to ensure the absence of voltage, and grounded if determined necessary.

**Electrical Hazard**—A dangerous condition such that inadvertent or unintentional contact or equipment failure can result in shock, arc flash-burn, thermal burn, or blast.

**Electrical Safety**—Recognizing hazards associated with the use of electrical energy and
taking precautions so that hazards do not cause injury or death.

**Electrical One-Line Diagram**—A record of all power sources to electrical equipment.

**Electrical Work**—(1) working on or near energized electrical parts; (2) servicing or maintenance of potentially hazardous electrical equipment.

**Electrically Qualified Worker**—A worker who has successfully passed a formal electrical training program and has been determined by his/her supervisor to have the skill, knowledge, and abilities to safely perform the work to which he/she is assigned.

**Energized**—Electrically connected to a source of potential difference, or electrically charged to have a potential significantly different from that of earth in the vicinity. NOTE: “De-energized” parts that have not been verified and locked out and tagged out in accordance with established standards are considered energized.

**Flash Hazard**—A dangerous condition associated with the release of energy caused by an arc that suddenly and violently changes material(s) into a vapor.

**Hazardous Electrical Work**—All electrical operations in which workers may be exposed to an electrical hazard.

**Insulated**—Separated from other conducting surfaces by a dielectric (including airspace) offering a high resistance to the passage of current.

**Listed Equipment**—Equipment that meets nationally recognized standards. All listed equipment is approved for use consistent with the manufacturer’s instructions.

**Live Parts**—Electric conductors, busses, terminals, or components that are uninsulated or exposed and a shock hazard exists.

**Safety Watch**—A safety watch is a more stringent hazard control measure than the two-person rule and shall be implemented when there are grave consequences from a failure to follow safe-work procedures. The safety watch shall be a qualified electrical worker who must be responsible for monitoring qualified worker(s) performing high-hazard electrical work.

**Shock Hazard**—A dangerous condition associated with the release of energy caused by contact or approach to exposed electrical conductors or circuit parts nearer than the minimum air insulation distance.

**Standard Operating Procedure (SOP)**—A document which records the review of an operation to (1) identify the equipment, hazards, and operating limits that are present in the operation; (2) develop control measures that eliminate unacceptable risks; and (3) describe how an operation is to be safely performed.

**Subcontractors**—A party entering into a subcontract with the Owner.

**Two-Person Rule**—The requirement for two qualified electrical workers to be present in the workplace and to be aware of the other worker’s task while performing electrically hazardous work.

**Working Near**—Any activity inside the limited approach boundary or the flash protection boundary (see NFPA 70E) of exposed energized electrical conductors or circuit parts that are not put into an electrically safe work condition.
SAFETY

Working On—Coming in contact with exposed energized electrical conductors or circuit parts with the hands, feet, or other body parts, with tools, probes, or with test equipment, regardless of the personal protective equipment a person is wearing.

100% Rule—Work on or near energized parts must be performed only after all participating qualified electrical workers are in 100% agreement on the work to be completed, on the sequence in which it should be performed, and that the hazards are fully controlled or mitigated.
Important Codes and Standards for Owners

There are many codes and standards that apply to the owner of this panel. These include both national and local standards and codes. It is the Owner's responsibility to identify and follow all applicable codes and standards. Listed below are several of the key national standards. This list is not a complete list of all applicable standards.

OSHA 1910.147

Control of this equipment must be in accordance with OSHA Standard 1910.147 "The control of hazardous energy (lockout-tagout)". This standard "requires employers to establish a program and utilize procedures for affixing appropriate lockout devices or tagout devices to energy isolating devices and to otherwise disable machines or equipment to prevent unexpected energizing, start-up or release of stored energy in order to prevent injury to employees". For further information on Lockout-Tagout requirements, see your company's Safety Director or refer to OSHA Standard 1910.147.

110.16 Flash Protection Field Marking

110.16 Flash Protection. Switchboards, panel boards, industrial control panels, and motor control centers in other than dwelling occupancies that are likely to require examination, adjustment, servicing or maintenance while energized, shall be field marked to warn qualified persons of potential electric arc flash hazards. The marking shall be located so as to be clearly visible to qualified persons before examination, adjustment, servicing, or maintenance of the equipment.

FPN No. 1: NFPA 70E-2000, Electrical Safety Requirements for Employee Workplace, provides assistance in determining severity of potential exposure, planning safe work practices, and selecting personal protective equipment.

FPN No. 2: ANSI Z535.4-2002, Product Safety Signs and Labels, provides guidelines for the design of safety signs and labels for application to products.
NFPA 79

NFPA 79 provides guidance for industrial control panels. The following Emergency Stop definitions come from this standard.

Emergency-Stop

Actuators of emergency stop devices shall be colored RED. The background immediately around the device actuator shall be colored YELLOW. The actuator of a push-button-operated device shall be of the palm or mushroom-head type.

Category-0 Stop

Where a Category 0 stop is used for the emergency stop function, it shall have only hardwired electromechanical components. In addition, its operation shall not depend on electronic logic (hardware or software) or the transmission of commands over a communications network or link.

Controlled Stop

The stopping of machine motion by reducing the electrical command signal to 0 once the stop signal has been recognized by the control but retaining power to the machine actuators during the stopping process. (IEC 204-1 and NFPA 79).
Hazard Review and Safety Instructions

**ARC FLASH HAZARD**

⚠️ **DANGER**

Serious injuries, burns or death could result from being in close proximity to or in the direct path of an arc flash explosion and the flying debris.

Arc flash accidents are most likely to occur during maintenance of the electrical system or when working on or near energized high voltage sources. This hazard does not exist when all electrical power sources have been disconnected, properly locked and tagged out. Serious injuries, burns or death could result from being in close proximity to or in the direct path of an arc flash explosion and the flying debris.

**ELECTROCUTION HAZARD**

⚠️ **DANGER**

Severe burns or death may result from contact with exposed high voltage sources.

Electrocution accidents are most likely to occur during maintenance of the electrical system or when working on or near energized high voltage sources. This hazard does not exist when the electrical power has been disconnected, properly locked and tagged out.

**AUTOMATIC START HAZARD**

⚠️ **WARNING**

Equipment controlled by this panel may start without warning, causing serious injury. **STAY CLEAR.**
Process equipment is usually controlled by an automated system and may start without warning. However, automatic startup by itself is not a hazard. Failure to properly disconnect, lockout and tagout all energy sources while inspecting, servicing or maintaining remotely controlled equipment creates a very hazardous situation. Serious personal injury may result. Always lockout and tagout all process equipment before while inspecting, servicing or maintaining remotely controlled equipment.
3 - Operator Controls

*General Description of the system Equipment and Operation.*

This control system is designed to automatically control the Bulk Seed Site, air gate devices. This control system controls the air gates automatically and allows the operator the ability to accurately deliver the correct amount of seed into the scale by entering an order size in lbs, units by lbs, or units by seed count. There are no motor controls but there is provided an interlock so that a motor auxiliary can be tied into the control system so that the system will know when the conveyor is running and then respond accordingly. If the interlock is tied into a conveyor, the system will not let the bin gates open automatically if the conveyor is not on and will close the bin gates automatically if the conveyor is turned off. See the provided electrical schematics for more details on how to wire in this conveyor interlock. The system is designed as a plug and play system so no wiring is needed to begin using your system.
Hardware

The hardware included in your Seed Count Controller Package is as follows.

**Main Panel**

This control panel, as shown to the right, houses the Schneider Electric main controller and touch screen. The touch screen is the way that the operator interfaces and controls the system. This panel includes a 10' 120VAC power cable and a 10' control cable to plug into the air manifold. Power can be turned on to this panel by plugging it in to 120V and turning on both mini breakers inside panel (see provided electrical schematics for more details).

*Push Buttons*

ESTOP - Category 0 controls the power to the PLC outputs including the motor starters. Control Power is maintained on the PLC CPU even when the ESTOP is engaged. Push the button to engage and pull the button to release. The button is not illuminated while depressed.
**AIR MANIFOLD**

The air manifold, as shown to the right, is controlled by the Schneider Electric touch screen. The air manifold should be mounted within 8-9’ of the left side of the control panel in order for the supplied cables to be long enough.

**Air Supply**

Air will need to be supplied into the left side of the manifold where there is a quick connect fitting. The air manifold also includes a regulator which can be set by turning the blue dial above the air pressure gauges. The air pressure should be set to 90 psi.

**Communication/Power Ports**

The air manifold communicates to the main panel via Ethernet. Plug the provided 10’ long Cat5e cable into the Ethernet port, as shown on the right, as well as plug the cable attached to the bottom of your control panel into the female receptacle directly underneath the Ethernet port. The Cat5e cable will then need to be plugged into one of the Ethernet ports in the graceport on the left side of the control panel. Once both of these cables are connected to the main panel, the manifold can now be controlled from the touch screen.
Solenoids
The air manifold will be installed with the appropriate number of solenoids for your system. The 1st solenoid will be used to control the scale gate and then each consecutive solenoid will be used for the related bin gate. For example, the 2nd solenoid will need to be plumbed into the air gate on tank # 1. If you happen to have an extra solenoid that is not being used, you will need to plug the front air valve to keep it from leaking air.

Scale Readout
A Cardinal 205 Indicator w/ Modbus is provided with the Seed Count Controller package. This indicator is setup with a provided Cat5e cable that needs to be plugged into the graceport on the left side of the control panel. The power cable can also be plugged into the graceport on the panel. This indicator needs to be mounted close enough to the main panel so that both of these cables can reach the graceport. You will need to wire your existing load cell(s) into this provided indicator in order for the Seed Count Controller to be able to communicate with your scale.

Printer
An Epson Slip Ticket Printer is also provided with your system so that you can print legal for trade tickets at the end of each batch. The printer will also be plugged into the graceport on the left side of the panel. Don’t power on your printer until your touch screen is powered completely on. If the touch screen is powered on with the printer already powered on, the printer will begin printing characters and will need to be reset by pressing “Print Ticket” from the home screen and then saying “YES” the ticket printed okay.

Keyboard
For easier data entry, a USB keyboard is provided with your system. This keyboard can be plugged into the graceport on the main panel and then used to enter data onto the touch screen as opposed to typing on the HMI keyboard.
Software

Following are different pages and functions within the Seed Count Controller touch screen.

HOME SCREEN

When the main panel is powered on, the first screen that appears is the home screen, which is shown to the right. From this screen, you can navigate to other screens, such as the Bins, Scale or Setup page, or you can begin setting up an order by entering a customer name, selecting a seed source, and entering a seed amount. You will also notice text that says either “CONVEYOR NOT ON!” or “CONVEYORS ARE RUNNING”. This text correlates to the conveyor(s) that you choose to interlock the Seed Count Controller system with. See the provided electrical schematics for more details on how to wire in a conveyor interlock.

If this text reads “CONVEYOR NOT ON!” than you will not be able to start a job and the air gates under your tanks will not open automatically. The bottom picture shows an example where the conveyors are not running. You can see that the master start button has disappeared and cannot be pressed. Once the interlocked conveyor turns on, the master start button will appear again and you will be able to start a job.

This home screen is also where you will return once your seed is in the scale to print your ticket. Before you start an order for seed from any of your seed sources, you need to first go that bin and setup the information in that bin as well as run the auto set. If you start an order from a bin before the run auto set has been completed, the system will not accurately be able to deliver the correct amount of seed.
**BINS PAGE**

There are 4 different bins pages with each page showing a set of 4 bins. The image to the right shows the Bins 1-4 page. From this page, you can navigate to other pages or edit the bin details for any of the bins shown on the current page. To edit the bin details, press the Bin # Setup button, which will open up a setup window for that particular bin. From this page, you can also select the bin to run an order from by pressing the appropriate button along the bottom of the screen. There is also “HOA” controls for each bin gate so that you can manually operate each bin gate. Between bins 1 and 2 and between bins 3 and 4 in the image above and to the right you can see the text “HOA”. When that text is pressed, an HOA window is opened that allows you to manually operate the bin gates, see below.

**HOA**

The HOA page for bins 1-8 is shown to the right. From this page, you can open/close any of the gates shown by simply pressing on the button. In this example, bin 1 gate is open and the rest of the gates are closed. To close this page, press the “EXIT” button.

**BIN SETUP**

Within the bin setup for each device you can enter a Seed ID, Seeds per lbs and a bin fill amount for that particular bin. Any of these fields can be changed by pressing on the field and typing in the value that you want. The Seed ID will print off on the ticket to record which seed was ran. The Seeds Per Lb field is important when running orders in units defined by seed count as the system uses this value to determine how many lbs to deliver to the scale based on the number of units selected on the order screen.
**RUN AUTOSET (SET PREACT)**

Within the bin setup page there is a “Run Auto Set” button in the lower right hand corner of the screen. This is used to calibrate the Preact (accuracy) of the bin. The Preact is the amount (lbs) of seed that is between the bin and the scale at any given time while the gate is open). This value is used to determine when to close the gate on the bin so that your system can accurately deliver the correct amount of seed. For example, if your Preact is 250 lbs and your target is 2500 lbs, the gate on the bin would close at 2250 lbs and once the conveyors would clean out you would end up with the correct target weight of 2500 lbs. To run an AutoSet, you first need to select the bin that you want to run an AutoSet from. This is an important step as the AutoSet will run from the bin you have selected, regardless of the bin setup page that you have open. Once you have selected the bin from the bin page, navigate back to the bin setup page that you selected and press the “Run AutoSet” button. When this button is pressed, your system will automatically bring in 1000 lbs into the scale, close the gate and then continue to clean out the conveyors for 60 seconds. At the end of the run auto set, the Bin Preact and the Discharge Rate values will be automatically populated. You will notice that while the run auto set is running, the back button goes away. You cannot navigate to a different page while the auto set is running. To end an auto set early, press the red "End" button while it is running and the bin gate will close. If you have chosen to interlock your system with a conveyor, that conveyor will need to be on before the “Run Auto Set” button will appear.
**Scale Page**

The image to the right shows the scale gate. This screen will show you the current weight that is in the scale as well as allow you to open/close the air gate under the scale. The scale gate does not open/close automatically so you will need to navigate to the scale page and press the “Scale Open” button when you are ready to discharge the seed from your scale. Once your scale is empty, remember to close the air gate by pressing “Scale Close”. Please note that you do not want to empty your scale before you print your ticket at the end of the job. Before you start another job, make sure that you have closed this scale gate.

**Setup Page**

The setup page is accessed by pressing the “Setup” button from the home screen. Within the setup window you can navigate to the System Setup or back to the home screen. The system setup allows you to set the current date and time for your system.

On this setup page, you can change the scale capacity by selecting the text box and then entering your scale capacity in lbs. This will be the maximum order size that you can enter. For example, if your scale capacity is 10,000 lbs, you cannot enter an order for more than 10,000 lbs. The setup page is also where you set how you want your order amounts to be entered. Select the appropriate yellow box that fits your need. If seed count is selected, there also needs to be a seeds/lb amount entered on your bins within your bin setup page.
**RUNNING AN ORDER**

To set up an order, return to the home screen and enter a customer name. To enter a customer name, click on the customer name text field and enter a name in either by typing on the keyboard or the touch screen. This will navigate you to the bins page where you will press the select the appropriate bin (press the Bin X Select button under the bin you want to run seed from). When you select the bin, the system will navigate you back to the home page. The next step is to enter the seed amount. The seed amount will be entered by pressing the amount text field and type in the amount. This amount will be entered in the way that you have chosen to enter orders in the setup screen. For example, if lbs/unit is selected in the setup screen, and you want 50 units, then you will enter 50 in this text box. This will fill the scale to 2500 lbs (50 lbs X 50 units).

Once you have entered an amount, the total lbs desired will appear in the Total Target field. If you enter an order amount in units, the calculated target weight will show up here in lbs. In the example on the right, an order is setup for 2500 and the Total Target weight is 2500 lbs.

![BIN 1 SELECT](image)

Once you have selected a seed, entered an amount and turned on your interlocked conveyor, press the "MASTER START" button. This will open the bin gate and begin filling your scale. As you can see in the example above, the text reads that the conveyors are running and the bin gate is open. As soon as seed reaches the scale, the Scale Weight will begin to change (this will match the same thing that your Cardinal 205 Indicator reads).
**Printing a Ticket**

Once your scale has settled and reached the desired weight, you are able to print a ticket from the home page. **It is important to note that you will want to print your ticket before you empty your scale.** To print a ticket, press the “PRINT” button on the home screen.

A pop up will appear on the touch screen asking, “Did ticket print okay? If the ticket printed okay and you do not need a second copy, press “YES”. At this point, you are ready to empty the scale and start a new job. If the ticket did not print correctly, or if you want to print a second copy, press “NO”. This will allow you to press “PRINT” a second time to print the same ticket again. Pressing print a second time will not remove the weight from the bin inventory again. However, every time the print button is pressed after the second time, the bin will deduct the weight for each time the print button is pressed.