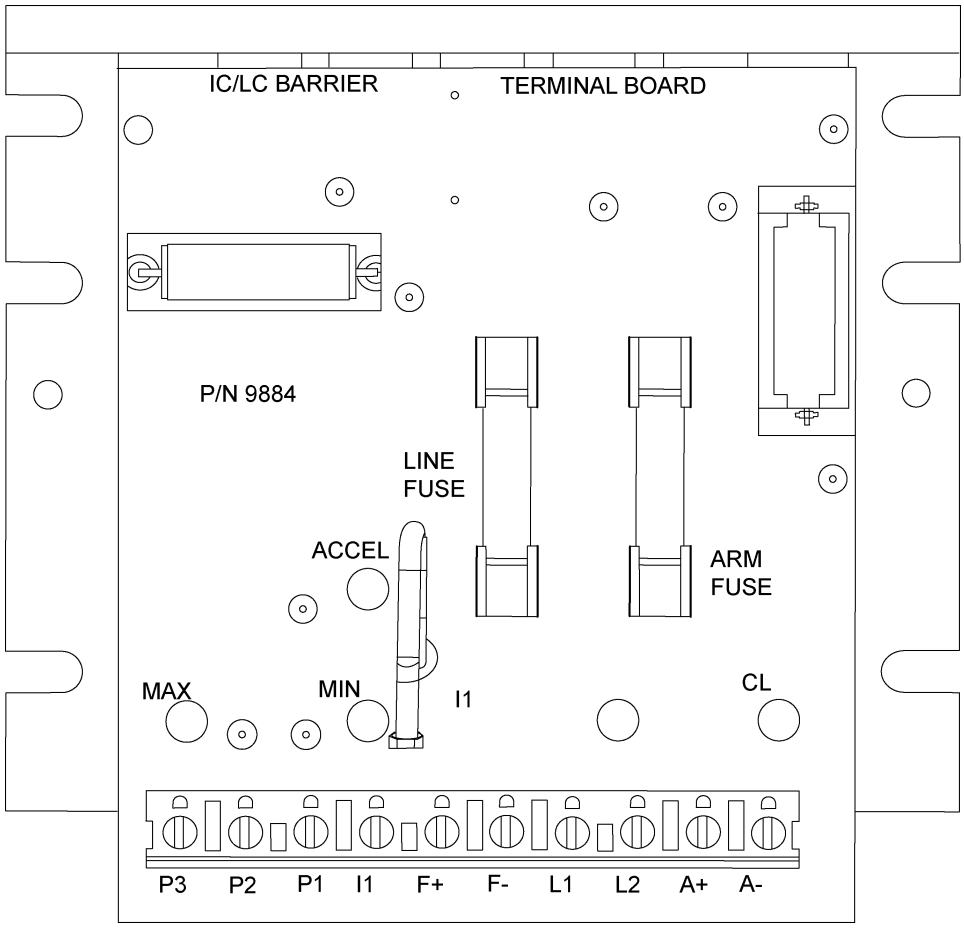

Vision SCR Board Calibration

Instruction Manual

PNEG-1544

Date: **09-24-20**

GSI GROUP

PNEG-1544

Contents

Safety Guidelines

This manual contains information that is important for you, the owner/operator, to know and understand. This information relates to protecting ***personal safety*** and ***preventing equipment problems***. It is the responsibility of the owner/operator to inform anyone operating or working in the area of this equipment of these safety guidelines. To help you recognize this information, we use the symbols that are defined below. Please read the manual and pay attention to these sections. Failure to read this manual and its safety instructions is a misuse of the equipment and may lead to serious injury or death.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

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

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

CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

NOTE indicates information about the equipment that you should pay special attention.

Safety Instructions

Our foremost concern is your safety and the safety of others associated with this equipment. We want to keep you as a customer. This manual is to help you understand safe operating procedures and some problems which may be encountered by the operator and other personnel.

As owner and/or operator, it is your responsibility to know what requirements, hazards and precautions exist, and to inform all personnel associated with the equipment or in the area. Safety precautions may be required from the personnel. Avoid any alterations to the equipment. Such alterations may produce a very dangerous situation where SERIOUS INJURY or DEATH may occur.

This equipment shall be installed in accordance with the current installation codes and applicable regulations which should be carefully followed in all cases. Authorities having jurisdiction should be consulted before installations are made.

2. Introduction

READ THIS MANUAL carefully to learn how to properly use and install the equipment. Failure to do so could result in personal injury or equipment damage.

INSPECT the shipment immediately upon arrival. The customer is responsible for ensuring that all quantities are correct. The customer should report and note any damage or shortage on the bill of lading to justify their claim to the transport company.

THIS MANUAL should be considered a permanent part of your equipment and should be easily accessible when needed.

This warranty provides you the assurance that the company will back its products when defects appear within the warranty period. In some circumstances, the company also provides field improvements, often without charge to the customer, even if the product is no longer under warranty. Should the equipment be abused or modified to change its performance beyond the factory specifications, the warranty will become void and field improvements may be denied.

Read these instructions before installation and operation of the equipment.

SCR Board Introduction

DANGER

To perform this procedure, the upper control box will need to be open with electrical power applied. For this reason, a qualified electrician must perform the SCR Board Calibration procedure.

Calibrating the SCR Board requires access to the upper control box where the Main I/O Board and SCR Board are located.

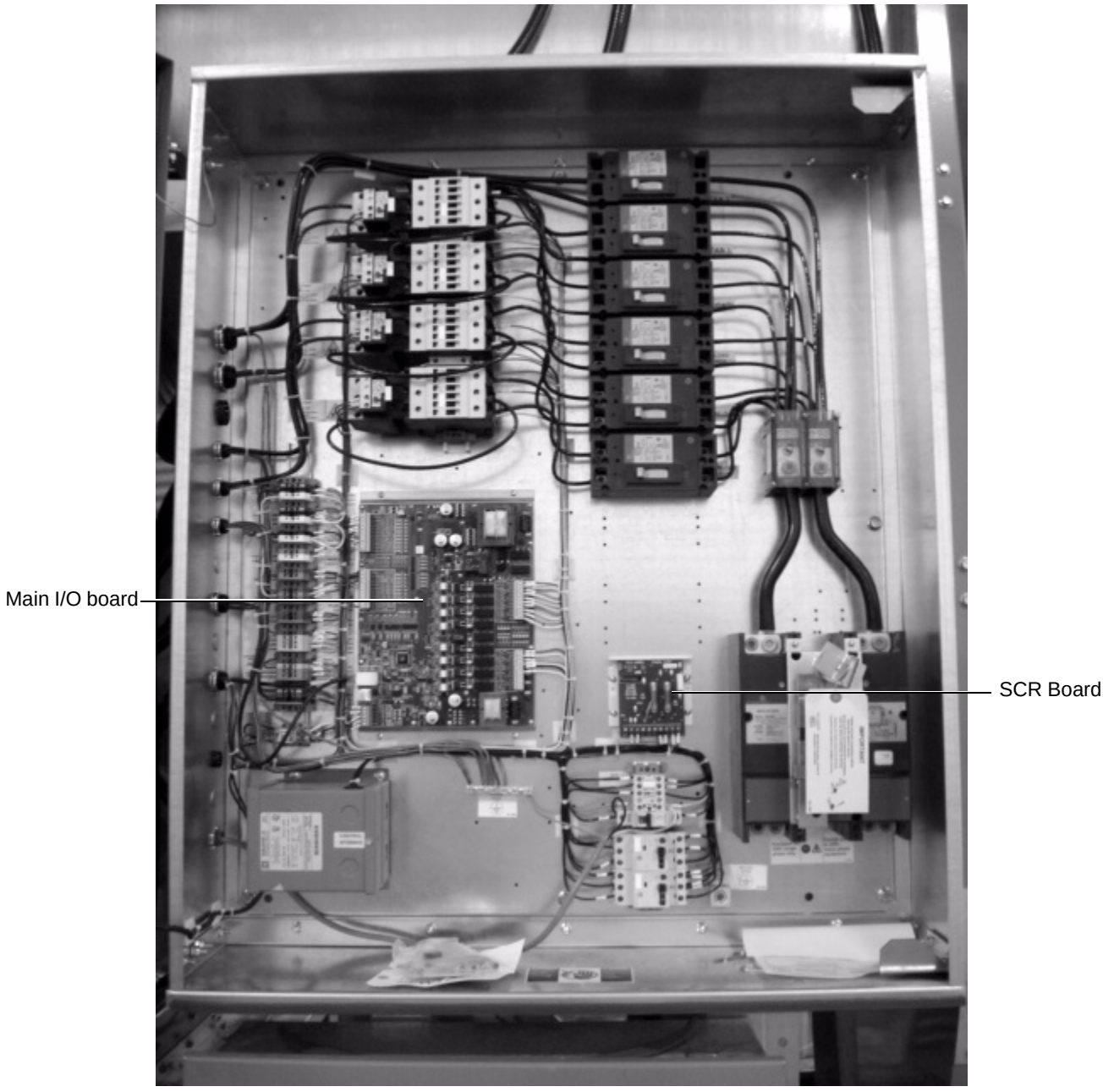

Figure 3A *Main I/O Board and SCR Board Locations*

The SCR Board should be checked before the start of each drying season and intermittently as a preventive measure.

Ideally, calibration should be performed when the dryer is full of grain. However, if the auxiliary unloading equipment cannot handle a dryer discharge of 100%, the calibration process should be completed with the dryer empty. If this is the case, the calibration can be checked at minimum capacity (9 VDC at 5%) and recalibrated if necessary once the dryer is full.

Before beginning the SCR Board Calibration procedure, it is necessary to check the settings on the IR compensation potentiometer and the CL (Current Limiter) potentiometer.

IR - IR Compensation

The “I” represents the current (amps) and the “R” represents the amount of resistance (ohms). This setting fine tunes the “curve” of voltage output across the 0-100% range of settings.

- The indentation of the adjustment knob should be set at the 10 o’clock position. If it is not set at the 10 o’clock position, adjust as necessary by using a small screwdriver. *(See Figure 3B.)*

CL - Current Limiter

This potentiometer sets the maximum current in amps allowed.

- The indentation on the adjustment knob should be set at the 4 o’clock position. If it is not set at the 4 o’clock position, adjust as necessary using a small screwdriver. *(See Figure 3B.)*

IMPORTANT: *Before starting the calibration procedure, it is important to check the position of the adjustment knobs on these two (2) potentiometers for the correct position. These settings will always be the same.*

NOTE: *If these two (2) potentiometer settings are not correct, the SCR motor may stall before it should, blow fuses, or make it impossible to correctly calibrate the SCR Board. For example, if the 5% setting is correct but the 100% setting is incorrect, adjusting the 100% setting will throw off the 5% setting and so on.*

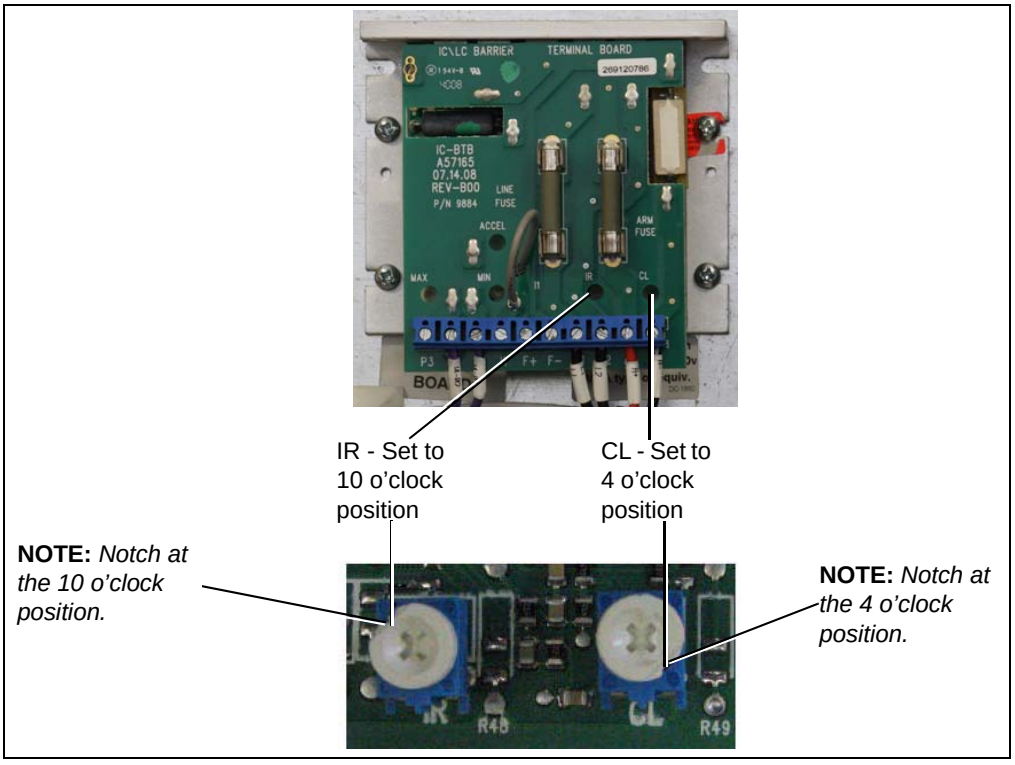

Figure 3B *SCR Board IR and CL Adjustment Locations*

SCR Board Terminal Locations

Terminals L1 and L2 are the input terminals. When the unload system is turned ON, there should be 220 VAC across these terminals. *(See Figure 3C.)*

Terminals A+ and A- are the output terminals. The voltage across these terminals is DC and will vary depending on the setting on the speed control dial.

NOTE: *For this calibration procedure, disregard the minimum and maximum potentiometers on the SCR Board.*

IMPORTANT: *If installing a new SCR Board, be sure to remove the resistor (shown in Figure 3C below) from the old board and install it in the new board. To do this, pull the resistor out from the 2 pin socket of the old board and install in the same socket on the new board. Pictured below are horsepower resistors. The original components that came with the dryer should remain.*

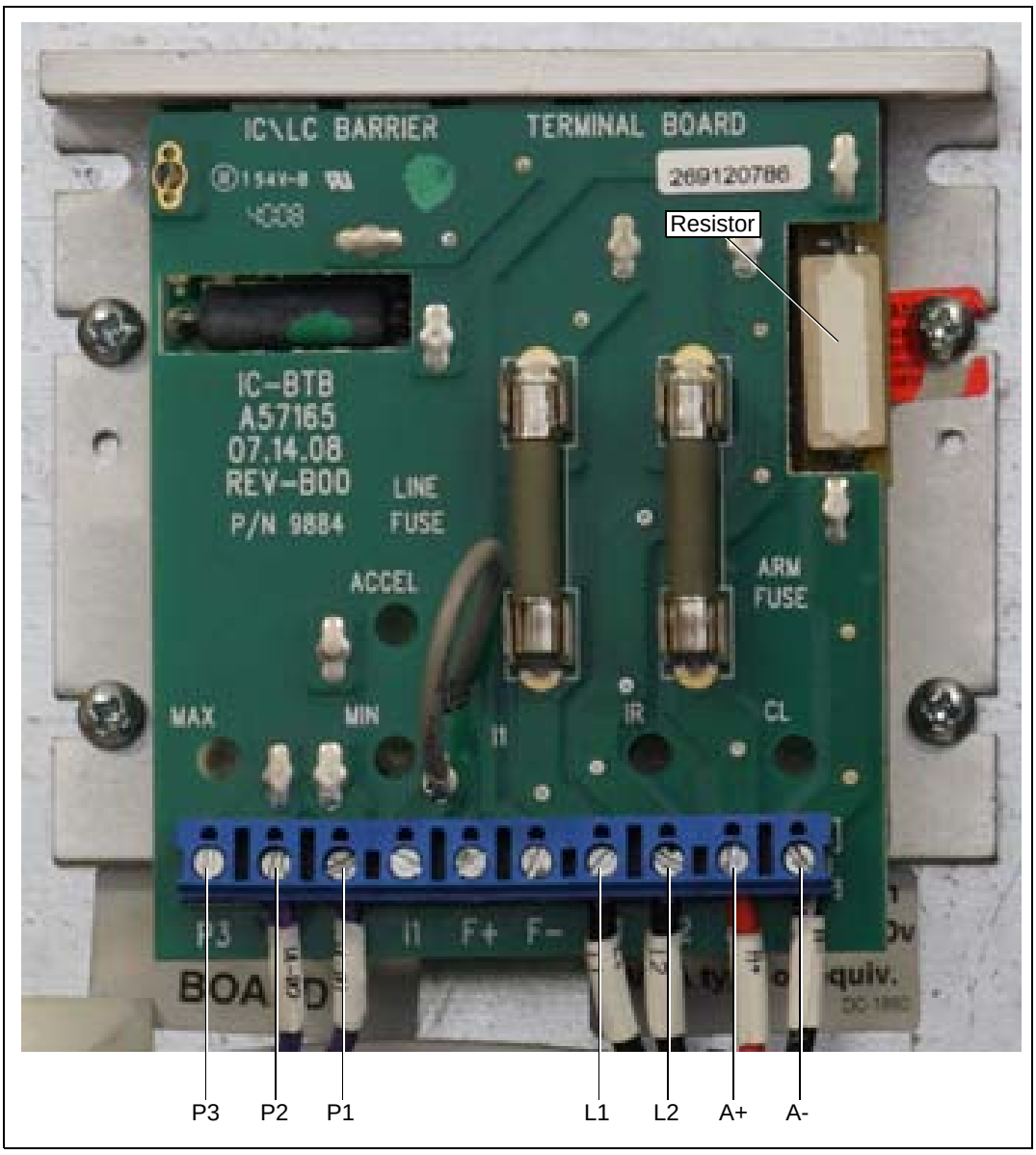

Figure 3C *SCR Board Terminals*

Manual Setup Instructions

IMPORTANT: *All of the speed controls on the SCR Drive are now set in the Vision Software using the touch screen on the dryer control panel. Do not try to setup the SCR drive using the minimum and maximum potentiometers on the SCR Board. Make sure the CL potentiometer is set at the 4 o'clock position and the IR potentiometer is set to the 10 o'clock position.*

1. Locate the Main I/O Board in the upper control box. For a reference, *See Figure 3A on Page 7*. Near the bottom of the Main I/O board are two (2) potentiometers labeled **SET MINIMUM** and **SET MAXIMUM**. *(See Figure 3D.)* Turn both of these potentiometers as far to the right (clockwise) as they will go.

   NOTE: *Be careful not to turn the potentiometers too far or with too much force. They only turn approximately one revolution and too much force or attempting to turn them too far could result in broken parts.*

Figure 3D *Main I/O Board with a Close Up View of the Set Minimum and Set Maximum Potentiometers*

2. Go to the “Default Operation Screen” on the Vision touch control and select the Setup button. *(See Figure 3E.)*

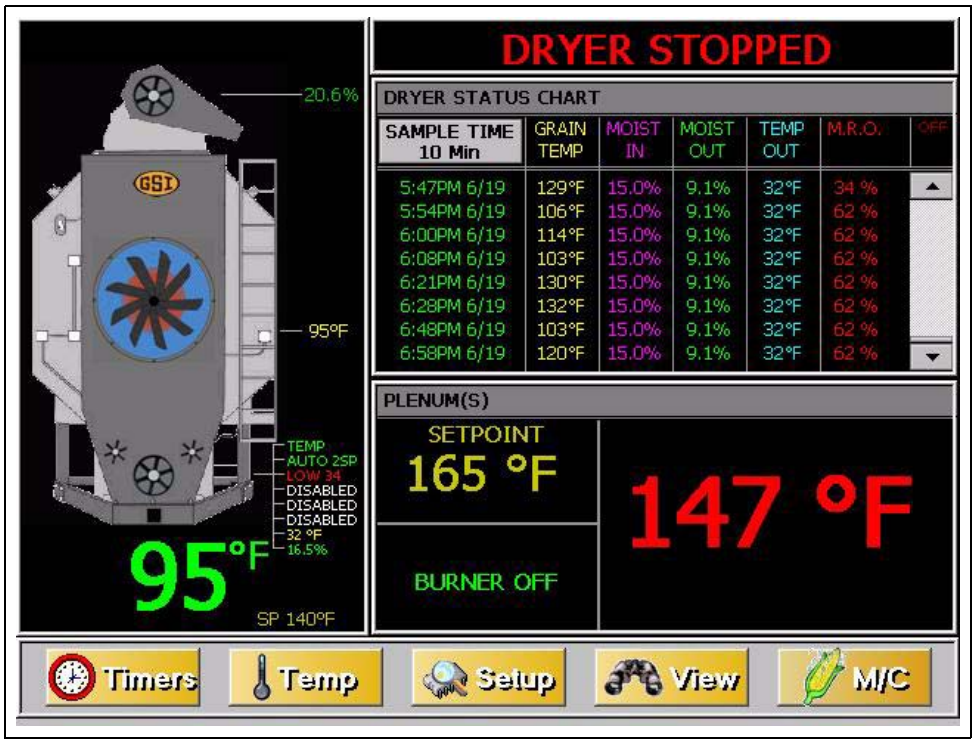

Figure 3E

3. When the “Select Hardware Setup Parameter To Modify” screen appears (which will be referred to as the “Setup Screen” for the remainder of this manual), press the Unload Parameters button. *(See Figure 3F.)*

Figure 3F

4. On the “Unload Parameters” screen, set the maximum unloading rate to 100% and the minimum unloading rate to 0% by using the “INCREASE” and “DECREASE” buttons. Touch the “ACCEPT” button to store these values. *(See Figure 3G.)*

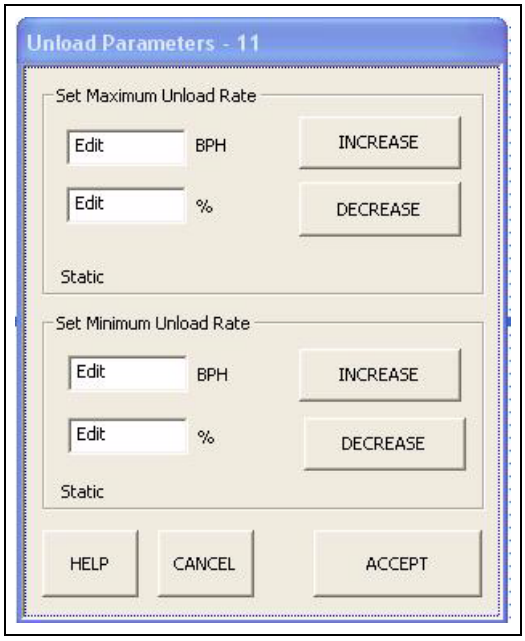

Figure 3G

NOTE: *These settings must be changed in order to properly calibrate the SCR drive. The settings can be returned to another desired setting after the calibration process is complete.*

5. Return to the “Default Operation Screen”. Turn the Unload switch to “Manual” and set the meter roll speed setpoint to 5% (50).

6. Press the “Setup” button at the bottom of the “Default Operation Screen” to return to the “Setup Screen”. Touch the “Extended Setup” button. *(See Figure 3H.)*

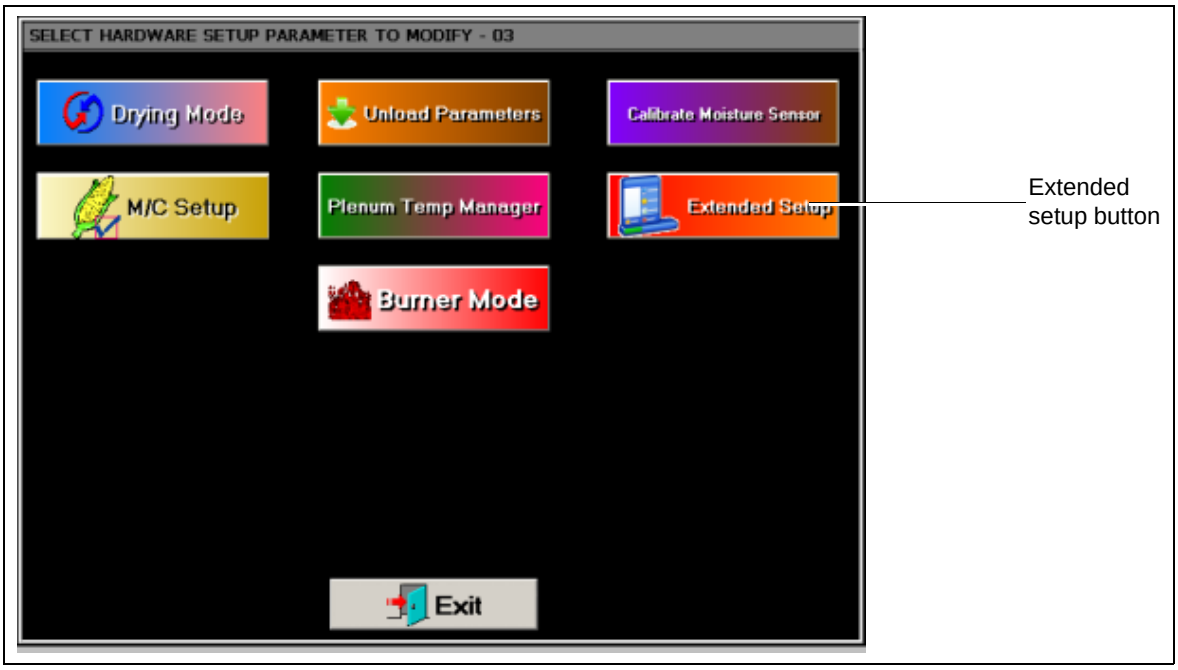

Figure 3H

7. Press the “Diagnostics” button to display the “Systems Diagnostics” screen, then press the “Setup Metering Rolls” button. *(See Figure 3I.)*

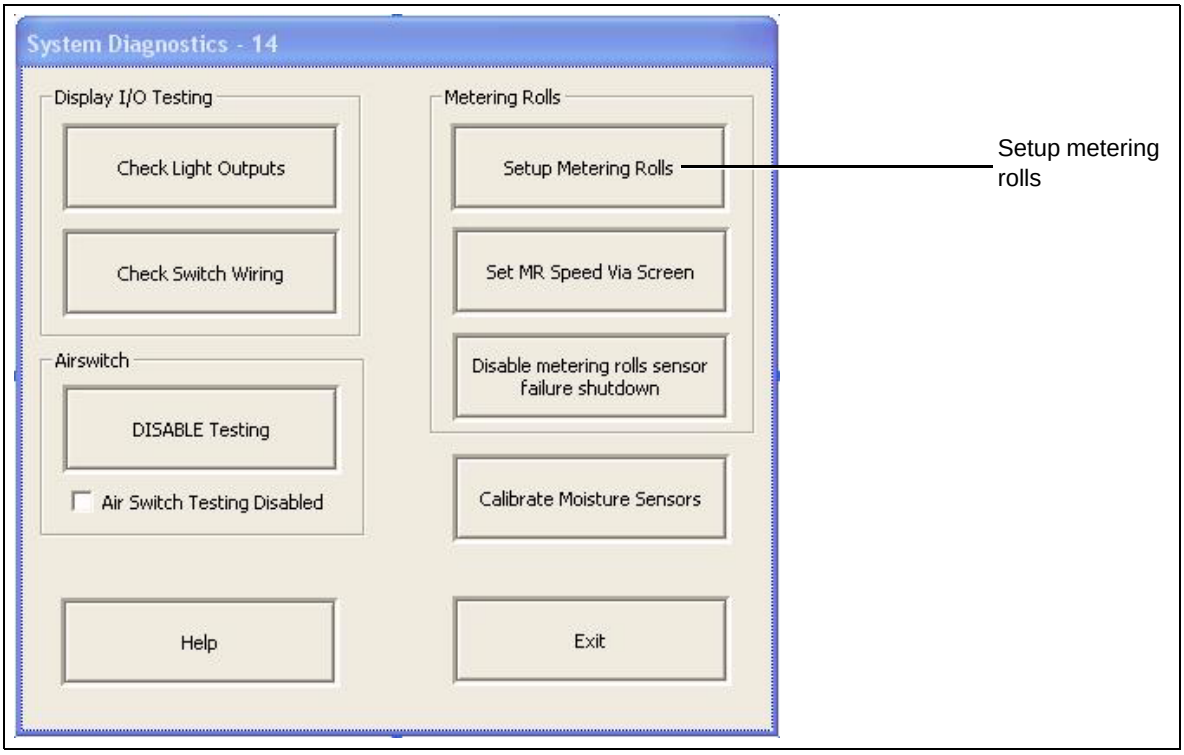

Figure 3I

8. Use a voltmeter to read DC voltage. Place the red lead on the A+ terminal of the SCR Board and the black lead on the A- terminal. (*See Figure 3C on Page 9* for the location of these terminals and *Figure 3A on Page 7* for the location of the SCR Board. Touch the Minimum Speed “Up” and “Down” buttons and watch the display on the voltmeter. The voltage reading on the voltmeter should be as close to 9 VDC as possible. Once the voltmeter displays this, touch the “ACCEPT” button. *(See Figure 3J.)*

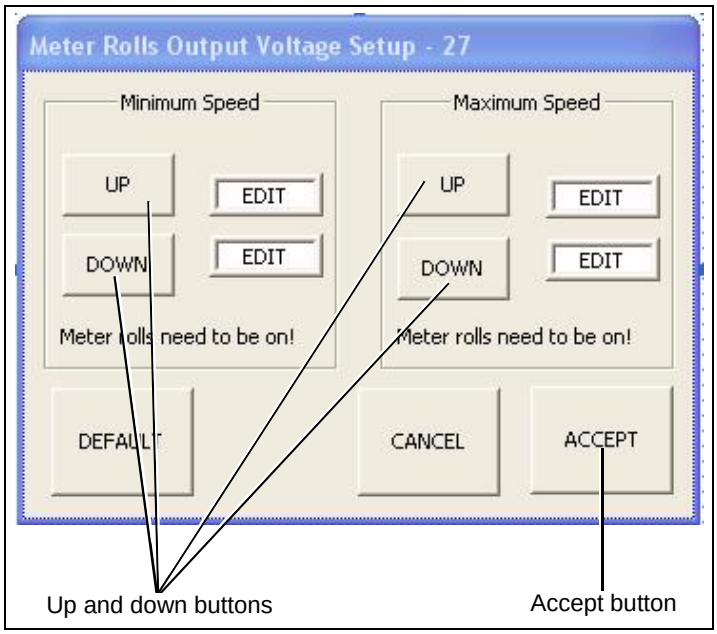

Figure 3J

9. After pressing the “ACCEPT” button, return to the “Default Operation Screen”.
10. Press the Meter Roll Adjustment knob to change the meter roll setpoint to 100% (1000) and then touch “ACCEPT/EXIT” and return to the “Meter Roll Output Voltage Setup” screen.
11. Place the voltmeter leads on the A+ and A- terminals of the SCR Board as described previously and touch the Maximum Speed “Up” and “Down” buttons to get a DC voltage reading of 180 VDC on the voltmeter. Once the voltmeter reads as close to 180 VDC across both terminals, touch the “ACCEPT” button.
12. Re-check both the minimum and maximum voltage to ensure both settings were accepted as desired.

NOTE: *Remember to go to the “Moisture Control Setup” screen and put the Minimum Speed setting back to at least 5% and the Maximum Speed setting to a speed best suited for the unload equipment.*

Limited Warranty — N.A. Grain Products

The GSI Group, LLC. (“GSI”) warrants products which it manufactures, to be free of defects in materials and workmanship under normal usage and conditions for a period of 12 months from the date of shipment (or, if shipped by vessel, 14 months from the date of arrival at the port of discharge). If, in GSI’s sole judgment, a product is found to have a defect in materials and/or workmanship, GSI will, at its own option and expense, repair or replace the product or refund the purchase price. This Limited Warranty is subject to extension and other terms as set forth below.

Warranty Enhancements: The warranty period for the following products is enhanced as shown below and is in lieu of (and not in addition to) the above stated warranty period. (Warranty Period is from date of shipment.)

	Product	Warranty Period
Storage	Grain Bin Structural Design ▪ Sidewall, roof, doors, platforms and walkarounds ▪ Flooring (when installed using GSI specified floor support system for that floor) ▪ Hopper tanks (BFT, GHT, NCHT, and FCHT)	5 Years
Conditioning	Dryer Structural Design – (Tower, Portable and TopDry) ▪ Includes (frame, portable dryer screens, ladders, access doors and platforms)	5 Years
	All other Dryer parts including: ▪ Electrical (controls, sensors, switches and internal wiring)	2 Years
	All Non-PTO Driven Centrifugal and Axial Fans	3 Years
	Bullseye Controllers	2 Years
Material Handling	Bucket Elevators Structural Design	5 Years
	Towers Structural Design	5 Years
	Catwalks Structural Design	5 Years
	Accessories (stairs, ladders and platforms) Structural Design	5 Years

Conditions and Limitations:

THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE LIMITED WARRANTY DESCRIPTION SET FORTH HEREIN; SPECIFICALLY, GSI DISCLAIMS ANY AND ALL OTHER WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE IN CONNECTION WITH: (I) ANY PRODUCT MANUFACTURED OR SOLD BY GSI, OR (II) ANY ADVICE, INSTRUCTION, RECOMMENDATION OR SUGGESTION PROVIDED BY AN AGENT, REPRESENTATIVE OR EMPLOYEE OF GSI REGARDING OR RELATED TO THE CONFIGURATION, INSTALLATION, LAYOUT, SUITABILITY FOR A PARTICULAR PURPOSE, OR DESIGN OF SUCH PRODUCTS.

The sole and exclusive remedy for any claimant is set forth in this Limited Warranty and shall not exceed the amount paid for the product purchased. This Warranty only covers the value of the warranted parts and equipment, and does not cover labor charges for removing or installing defective parts, shipping charges with respect to such parts, any applicable sales or other taxes, or any other charges or expenses not specified in this Warranty. GSI shall not be liable for any other direct, indirect, incidental or consequential damages, including, without limitation, loss of anticipated profits or benefits. Expenses incurred by or on behalf of a claimant without prior written authorization from the GSI warranty department shall not be reimbursed. This warranty is not transferable and applies only to the original end-user. GSI shall have no obligation or responsibility for any representations or warranties made by or on behalf of any dealer, agent or distributor. Prior to installation, the end-user bears all responsibility to comply with federal, state and local codes which apply to the location and installation of the products.

This Limited Warranty extends solely to products sold by GSI and does not cover any parts, components or materials used in conjunction with the product, that are not sold by GSI. GSI assumes no responsibility for claims resulting from construction defects, unauthorized modifications, corrosion or other cosmetic issues caused by storage, application or environmental conditions. Modifications to products not specifically delineated in the manual accompanying the product at initial sale will void all warranties. This Limited Warranty shall not extend to products or parts which have been damaged by negligent use, misuse, alteration, accident or which have been improperly/inadequately maintained.

Notice Procedure:
In order to make a valid warranty claim a written notice of the claim must be submitted, using the RMA form, within 60 days of discovery of a warrantable nonconformance. The RMA form is found on the OneGSI portal.

Service Parts:
GSI warrants, subject to all other conditions described in this Warranty, Service Parts which it manufactures for a period of 12 months from the date of purchase unless specified in Enhancements above.

(Limited Warranty - N.A. Grain Products_ revised 01 October 2020)

This equipment shall be installed in accordance with the current installation codes and applicable regulations which should be carefully followed in all cases. Authorities having jurisdiction should be consulted before installations are made.

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