

# Vision SCR Board Calibration

## Instruction Manual

PNEG-1544

Date: 12-06-07

GSI GROUP



PNEG-1544



Contents

Chapter 1 Introduction ..... 4

Chapter 2 Safety ..... 8

    Safety Guidelines ..... 8

    Safety Instructions ..... 9

Chapter 3 SCR Drive Setup ..... 10

    Manual Setup Instructions ..... 10

Chapter 4 Warranty ..... 15

## 1. Introduction

---

READ THIS MANUAL carefully to learn how to properly use and install 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 out of 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.

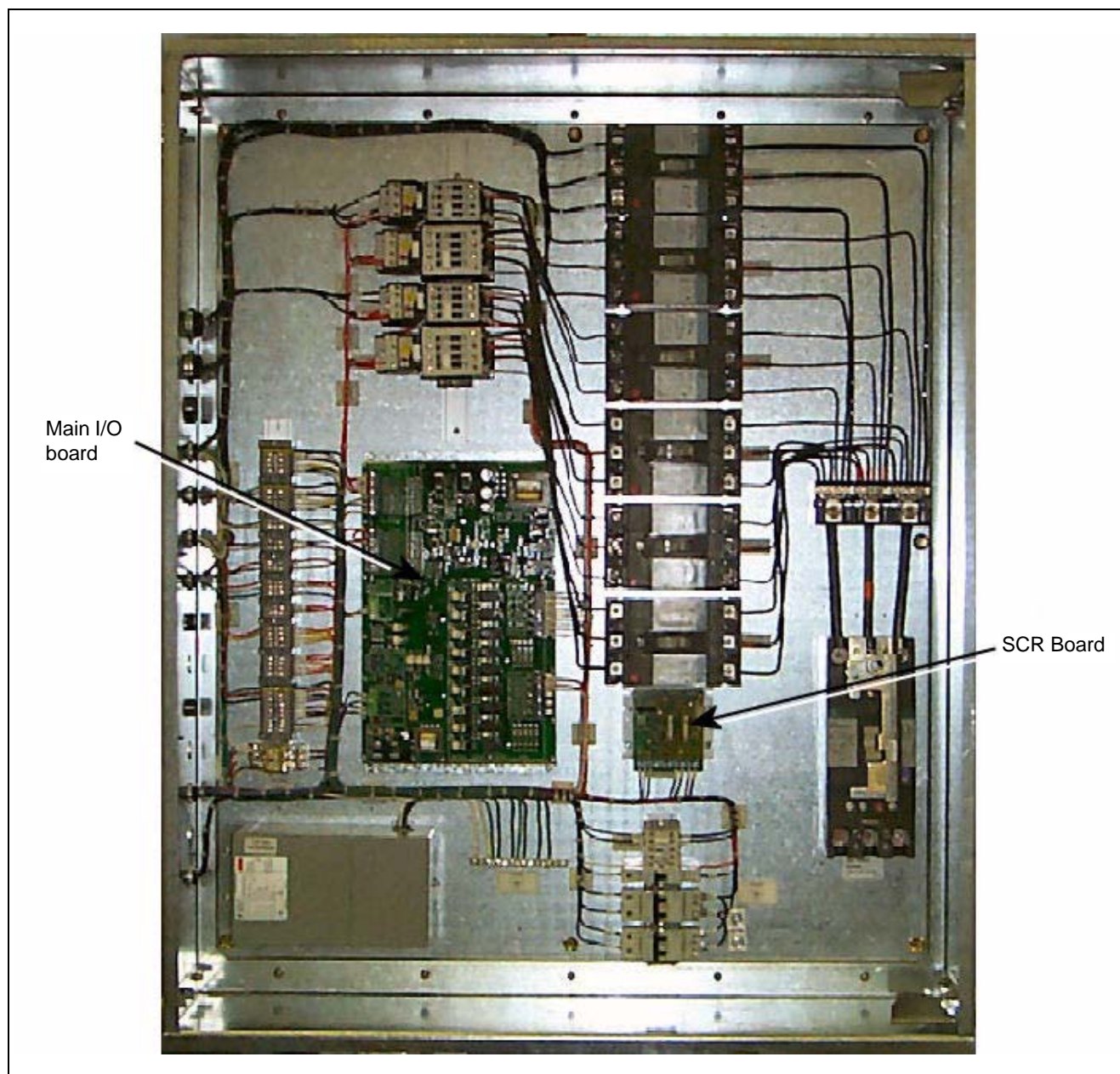
## Read these Instructions Before Installation and Operation



*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.*

### **SAVE FOR FUTURE REFERENCE**

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



**Figure 1A** Main I/O Board and SCR Board Locations

## 1. Introduction

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

Ideally, calibration should be performed with the dryer 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 minimum can be checked (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. "I" represents the current (amps) and "R" represents the amount of resistance (Ohms). This setting fine tunes the "curve" of voltage output across the 0 to 100% range of settings.

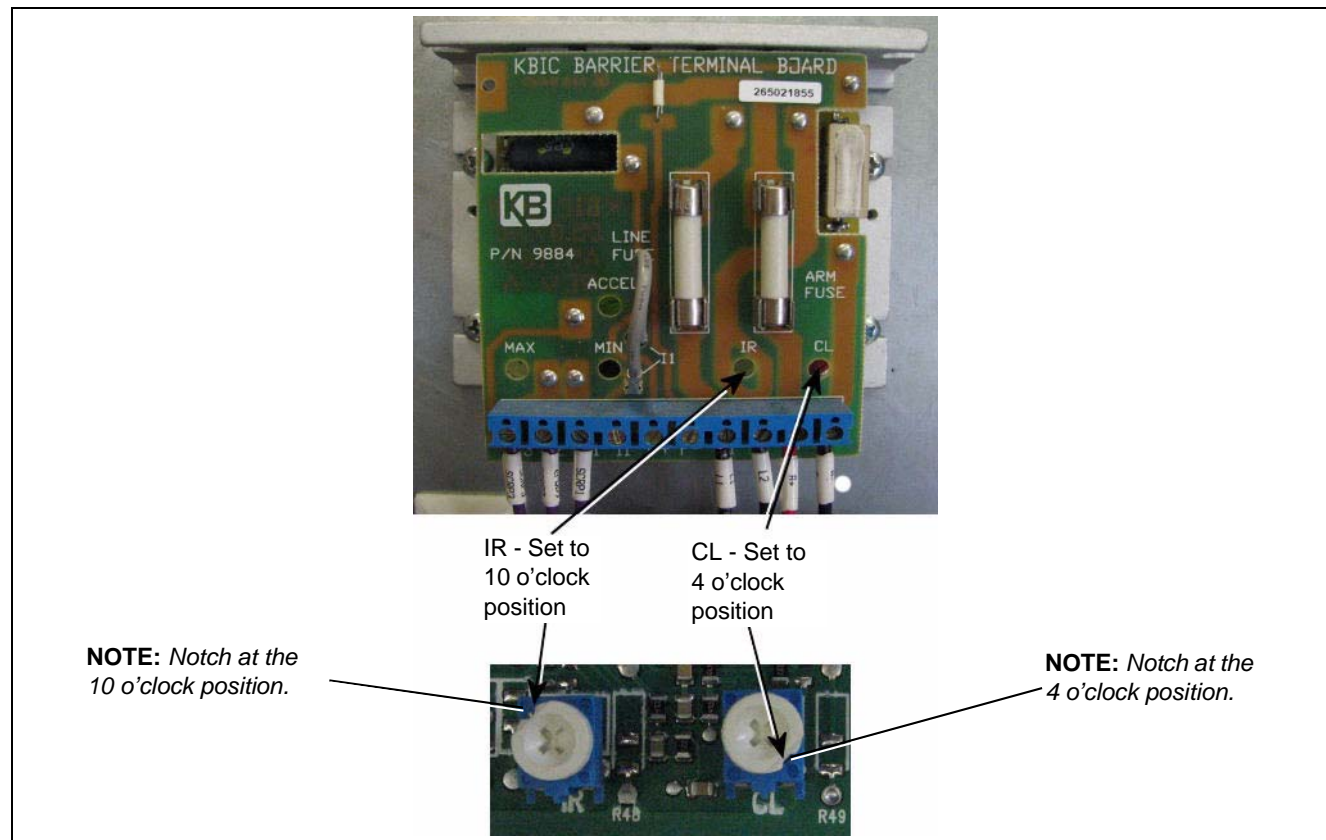
- The indentation on the adjustment knob should be set at the 10 o'clock position. (See Figure 1B.) If it is not set at the 10 o'clock position, adjust as necessary by using a small screwdriver.

**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. (See Figure 1B.) If it is not set at the 4 o'clock position, adjust it accordingly by using a small screwdriver.

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

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



**Figure 1B** 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 1C.)

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 1C) from the old board and install it in the new board. To do this, simply pull the resistor out from the 2 pin socket of the old board and install in the same socket on the new board.



Figure 1C SCR Board Terminals

### 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.

## Manual Setup Instructions

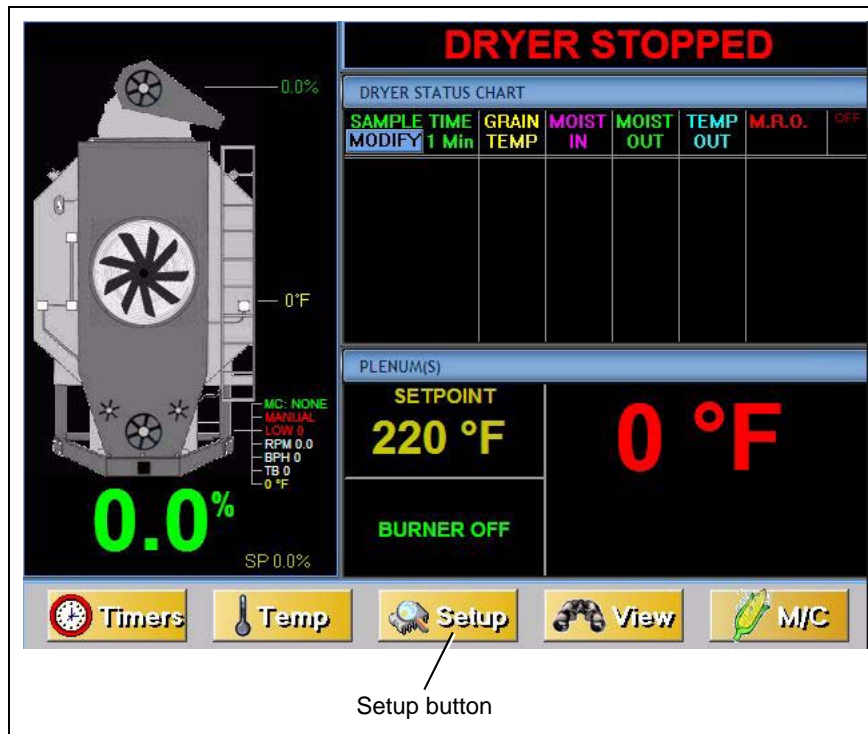
**IMPORTANT:** All of the speed controls on the SCR Drive are now set in the Vision software using the touch screen on the dryer control panel. Do not try to setup the SCR drive using the minimum and maximum potentiometers on the SCR Board. Make sure the CL potentiometer is set at the 4 o'clock position and the IR potentiometer is set to the 10 o'clock position. (See Figure 1B on Page 6.)

1. Locate the Main I/O board in the upper control box. (See Figure 1A on Page 5.) Near the bottom of the Main I/O board are two potentiometers labeled SET MINIMUM and SET MAXIMUM. (See Figure 3A.) Turn both of these potentiometers as far to the right (clockwise) as they will go. **NOTE:** Be careful not to turn these potentiometers too far or with too much force. They only turn approximately one full revolution and too much force or attempting to turn them too far, could break them.



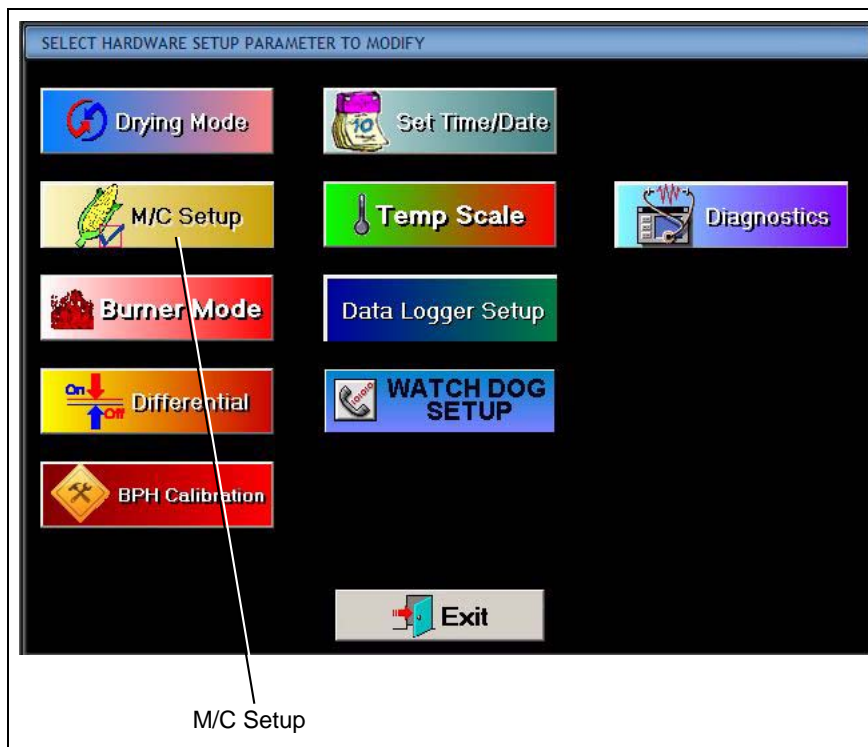
**Figure 3A** Main I/O Board with a Close Up View of the Set Minimum and Set Maximum Potentiometers

- Go to the Main Operation Screen on the vision touch control and touch the SETUP button.  
(See Figure 3B.)



**Figure 3B** Main Operation Screen Setup Button

- When the Setup Screen appears, touch the M/C SETUP button. (See Figure 3C.)



**Figure 3C** Setup Screen M/C Setup Button

### 3. SCR Drive Setup

4. On the Moisture Control Selection screen, touch the EXTENDED SETUP button. (See Figure 3D.)

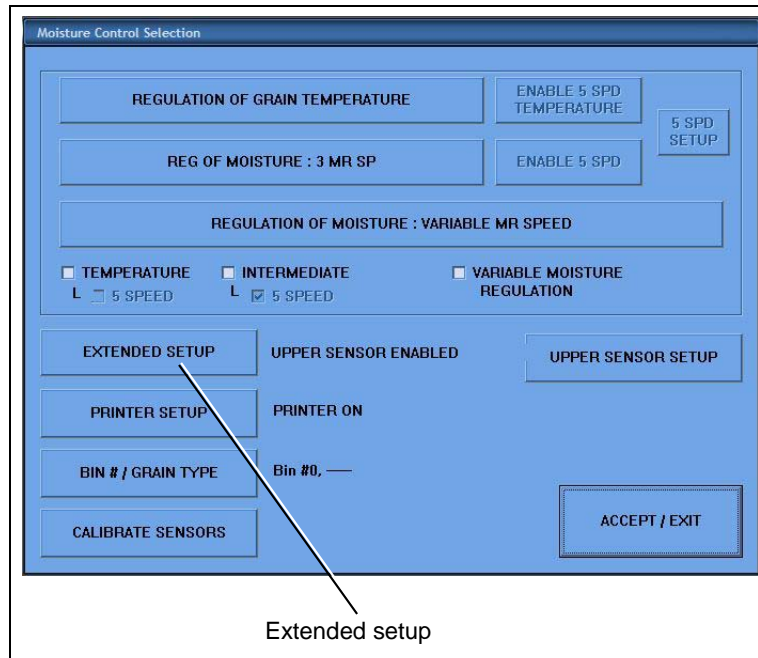


Figure 3D Moisture Control Selection Screen Extended Setup Button

5. On the Set Unload Rate Limits screen, set the maximum unloading rate to 100% and the minimum unloading rate to 0% by using the Increase or Decrease buttons. (See Figure 3E.) Touch the ACCEPT button to enter or “lock” these values into the Vision computer.

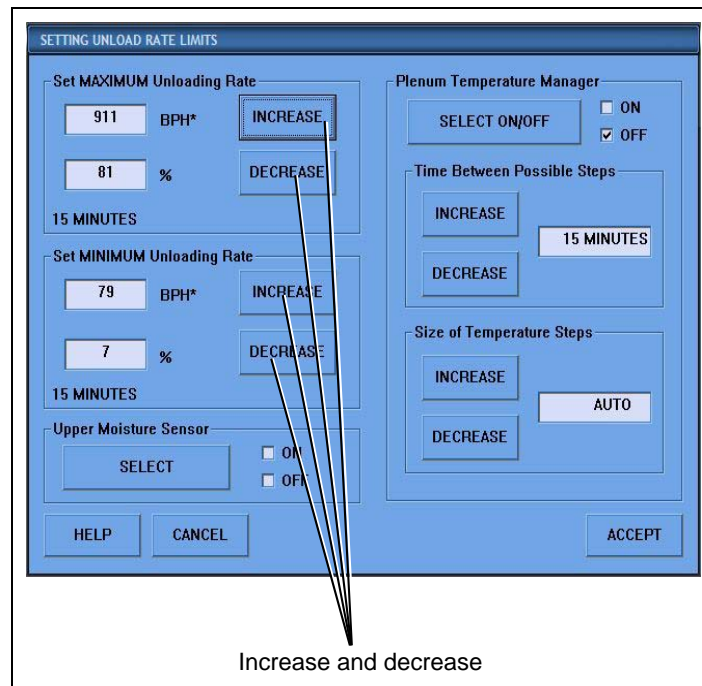
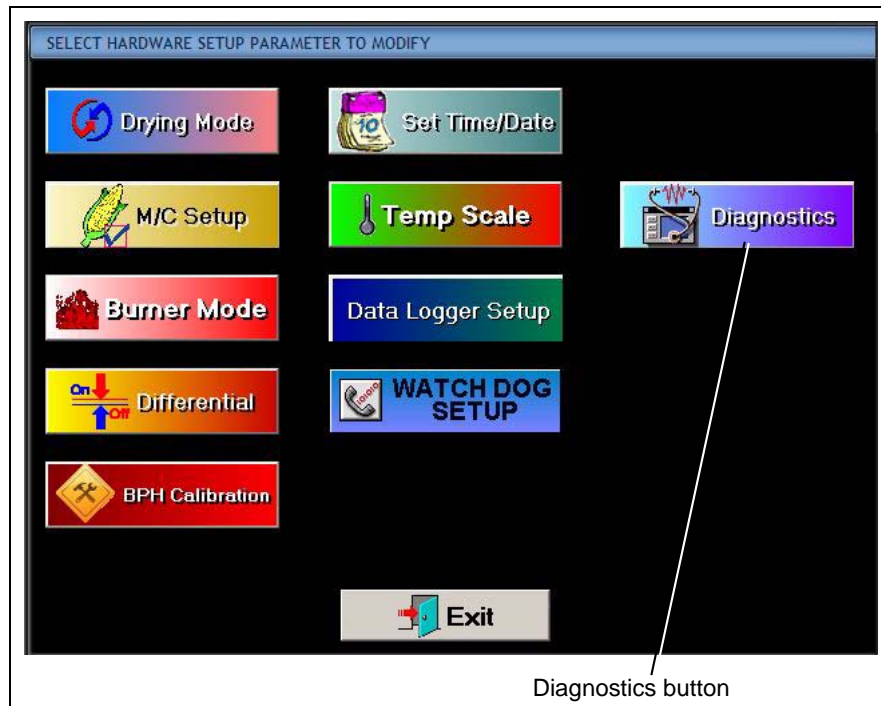


Figure 3E Set Unload Rate Limits Screen

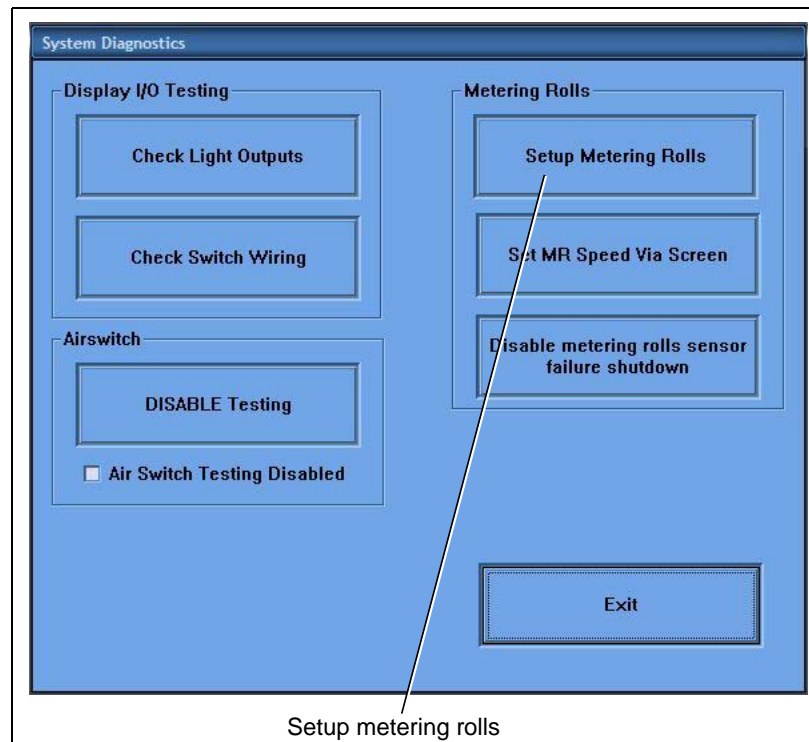
**NOTE:** These settings must be changed in order to properly calibrate the SCR drive. The settings can be returned to another desired setting after the calibration process is complete.

6. Return to the Main Operation screen. Turn the unload switch to manual and set the meter roll speed dial to 5% (50).
7. Press the Setup button at the bottom of the Main Operation screen to return to the Setup screen. Touch the DIAGNOSTICS button. (See Figure 3F.)



**Figure 3F** *Diagnostics Button on Setup Screen*

8. Now touch the SETUP METERING ROLLS button. (See Figure 3G.)



**Figure 3G** *System Diagnostics Screen Setup Metering Rolls Button*



### 3. SCR Drive Setup

9. 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 1C on Page 7 for the location of these terminals and Figure 1A on Page 5 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 display reads as close to 9 VDC as possible, touch the ACCEPT button. (See Figure 3H.)

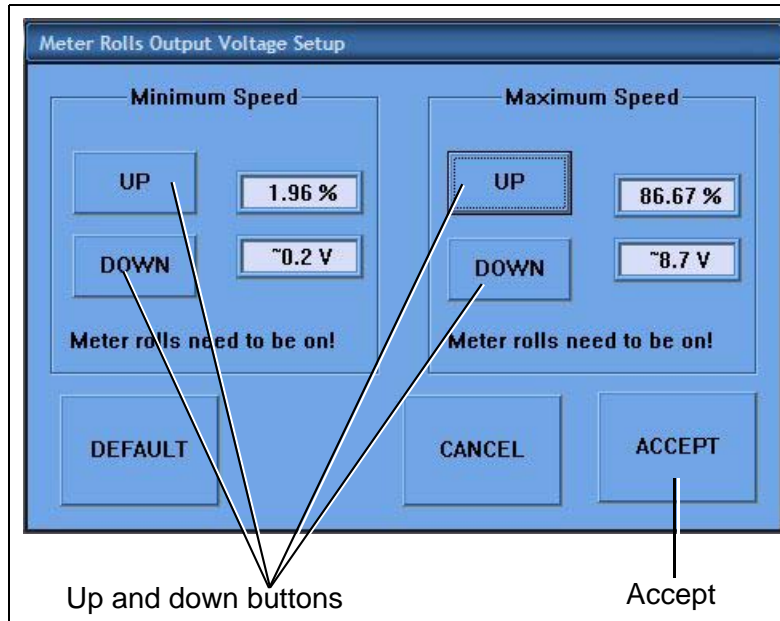


Figure 3H Meter Roll Output Voltage Setup

10. Now touch the EXIT button and return to the Setup screen. Set the meter roll speed dial to 100% (1000) and then touch the ACCEPT/EXIT button and return to the Setup screen.
11. Touch the DIAGNOSTICS button and then touch the SETUP METERING ROLLS button.
12. 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 the A+ and A- terminals of the SCR board as possible, touch the ACCEPT button to enter or "lock" in the value for maximum Speed.
13. Recheck both the minimum and maximum voltage to ensure both settings were accepted as desired.
14. The SCR drive is now calibrated. **NOTE:** Remember to go to the Moisture Control Setup and put the Minimum Speed setting back to 5% and the Maximum Speed setting to a speed best suited for the unload equipment.



## The GSI Group Warranty

THE GSI GROUP (GSI) WARRANTS ALL PRODUCTS WHICH IT MANUFACTURES TO BE FREE OF DEFECTS IN MATERIAL AND WORKMANSHIP UNDER NORMAL USAGE AND CONDITIONS FOR A PERIOD OF 12 MONTHS AFTER RETAIL SALE TO THE ORIGINAL END USER. THE PURCHASER'S SOLE REMEDY AND GSI'S ONLY OBLIGATION SHALL BE TO REPAIR OR REPLACE, AT GSI'S OPTION AND EXPENSE, PRODUCTS THAT, IN GSI'S SOLE JUDGMENT, CONTAIN A MATERIAL DEFECT DUE TO MATERIALS OR WORKMANSHIP. ALL DELIVERY AND SHIPMENT CHARGES TO AND FROM GSI'S FACTORY WILL BE PURCHASER'S RESPONSIBILITY. EXPENSES INCURRED BY OR ON BEHALF OF THE PURCHASER WITHOUT PRIOR WRITTEN AUTHORIZATION FROM AN AUTHORIZED EMPLOYEE OF GSI SHALL BE THE SOLE RESPONSIBILITY OF THE PURCHASER.

EXCEPT FOR THE LIMITED WARRANTY EXPRESSED ABOVE, GSI MAKES NO FURTHER WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE IN CONNECTION WITH (I) 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.

GSI SHALL NOT BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOSS OF ANTICIPATED PROFITS OR BENEFITS. PURCHASER'S SOLE AND EXCLUSIVE REMEDY IS AS SET FORTH IN THE LIMITED WARRANTY EXPRESSED ABOVE, WHICH SHALL NOT EXCEED THE AMOUNT PAID FOR THE PRODUCT PURCHASED. THIS WARRANTY IS NOT TRANSFERABLE AND APPLIES ONLY TO THE ORIGINAL PURCHASER. GSI SHALL HAVE NO OBLIGATION OR RESPONSIBILITY FOR ANY REPRESENTATIONS OR WARRANTIES MADE BY OR ON BEHALF OF ANY DEALER, AGENT OR DISTRIBUTOR OF GSI.

GSI ASSUMES NO RESPONSIBILITY FOR CLAIMS RESULTING FROM ERECTION DEFECTS OR UNAUTHORIZED MODIFICATIONS TO PRODUCTS WHICH IT MANUFACTURED. MODIFICATIONS TO PRODUCTS NOT SPECIFICALLY DELINEATED IN THE MANUAL ACCOMPANYING THE EQUIPMENT AT INITIAL SALE WILL NULLIFY THE PRODUCT WARRANTY THAT MIGHT HAVE BEEN OTHERWISE AVAILABLE.

THE FOREGOING WARRANTY SHALL NOT EXTEND TO PRODUCTS OR PARTS WHICH HAVE BEEN DAMAGED BY NEGLIGENT USE, MISUSE, ALTERATION OR ACCIDENT. THIS WARRANTY EXTENDS SOLELY TO ONLY PRODUCTS MANUFACTURED BY GSI. THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED. GSI RESERVES THE RIGHT TO MAKE DESIGN OR SPECIFICATION CHANGES AT ANY TIME.

PRIOR TO INSTALLATION, PURCHASER HAS THE RESPONSIBILITY TO COMPLY WITH ALL FEDERAL, STATE AND LOCAL CODES WHICH MAY APPLY TO THE LOCATION AND INSTALLATION OF PRODUCTS MANUFACTURED OR SOLD BY GSI.

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.

G S I G R O U P



**GSI Group**  
**1004 E. Illinois St.**  
**Assumption, IL 62510-0020**  
**Phone: 1-217-226-4421**  
**Fax: 1-217-226-4420**  
**[www.gsiag.com](http://www.gsiag.com)**