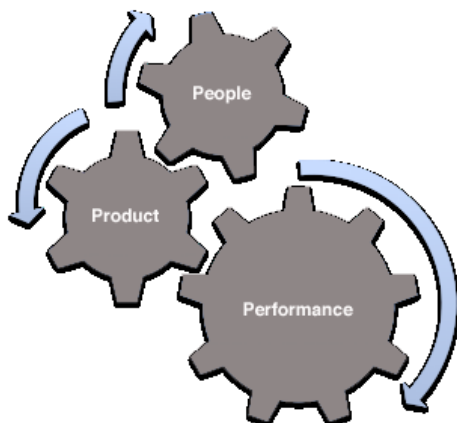




# *SERVICE MANUAL*

## 81970 Trash Tracker *Installation, Wiring, and Operation Guide*



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*We appreciate your business and hope you enjoy your  
Samuel Jackson Trash Tracker*

This manual contains information on the installation, startup, and operation of your Trash Tracker system. Included are sections on:

- Assembly and Installation
- Electrical Installation
- Startup and Adjustment
- Maintenance and Troubleshooting
- List of Suggested Spare Parts
- List of Major Components

### **IS STARTUP ASSISTANCE PROVIDED?**

Startup and inspection service is provided in most locations for your new Samuel Jackson Trash Tracker System free of charge by Samuel Jackson, Inc. Please contact us to make arrangements or for questions regarding startup services.

In the future when you require service, technical support, or parts please contact us by phone, fax, or the internet. Our engineers and service people are available to assist you in obtaining the best performance from your Samuel Jackson, Inc. products.

*Again, thanks for choosing a Samuel Jackson Trash Tracker.*

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# Warning



## **READ THIS CAREFULLY BEFORE OPERATING THIS SAMUEL JACKSON PRODUCT!**

The Samuel Jackson product line consists of sophisticated technology capable of greatly enhancing a gin's productivity and efficiency. Improper use of these products could adversely affect those very same factors and potentially cause injury to gin personnel. For this reason, we include an extensive manual with every product. These manuals outline the proper and safe operating procedure for their respective product. **Do not operate any Samuel Jackson product without first reading the entire manual and all accompanying information.**

Sometimes there are updates added at the customer's discretion to products already in the field. We always refer customers to our website, [www.samjackson.com](http://www.samjackson.com) for the latest product information. The latest manual can be downloaded or printed from the website free of charge. In addition to printed literature, the website includes training videos on several popular products. When available, these videos are highly recommended for viewing before operating a respective product. If you do not have internet access, give us a call and we will gladly send you the latest product information.

***DANGER: Please read and understand all the warnings below before operating or maintaining a Samuel Jackson product. If you do not understand, call Samuel Jackson at 806-795-5218 before proceeding. Failure to do so could result in injury or even death. (Si usted no entiende, llame a Samuel Jackson al +1-806-795-5218 antes de proceder. La falta de hacerlo podría causar lesión o muerte.)***

### **Electrical.**

Most Samuel Jackson products use supply voltage between 110 and 480 volts AC. These levels are considered high voltage and are extremely dangerous.

### **Access Doors.**

Samuel Jackson products have access doors for added convenience of product maintenance. Access doors must not be opened while the equipment is in operation. Access doors should also remain closed while any connected equipment such as a fan or conveyor is in operation.

### **Moving Parts.**

Many Samuel Jackson products have moving or rotating parts. These parts could form pinch points or grab loose clothing or jewelry. Do not reach across or into any product while in operation.

**Do not work on any Samuel Jackson product without first following OSHA Lockout/Tagout procedures. Confirmation by a licensed electrician that there is no electricity present is highly recommended. We recommend using a Samuel Jackson Authorized Technician for all work Samuel Jackson products. Additional safety information is located throughout this manual and should be read carefully before operating this Samuel Jackson product. If you have any questions about how to properly operate a Samuel Jackson product, please call +1-806-795-5218 before proceeding.**

# Trash Values Scaling

**The Trash Tracker is not intended to match 3rd party (USDA or other) leaf grades. It is intended to provide fast, repeatable trash indication and real-time control for operators who can make easy adjustments to closely follow any trash content standard they desire.**

Trash Tracker has a few different options for trash measurement and display. Those options include Trash Area, Trash Count, and Trash Average of Count and Area. This can be set in Wrench > Settings Menu.

To determine the desired range of Trash Tracker values that correspond with a desired 3rd party leaf grade, it is recommended that you record the Trash Tracker values by Bale ID and make the correlation to the 3rd party leaf grades for the same Bale IDs.

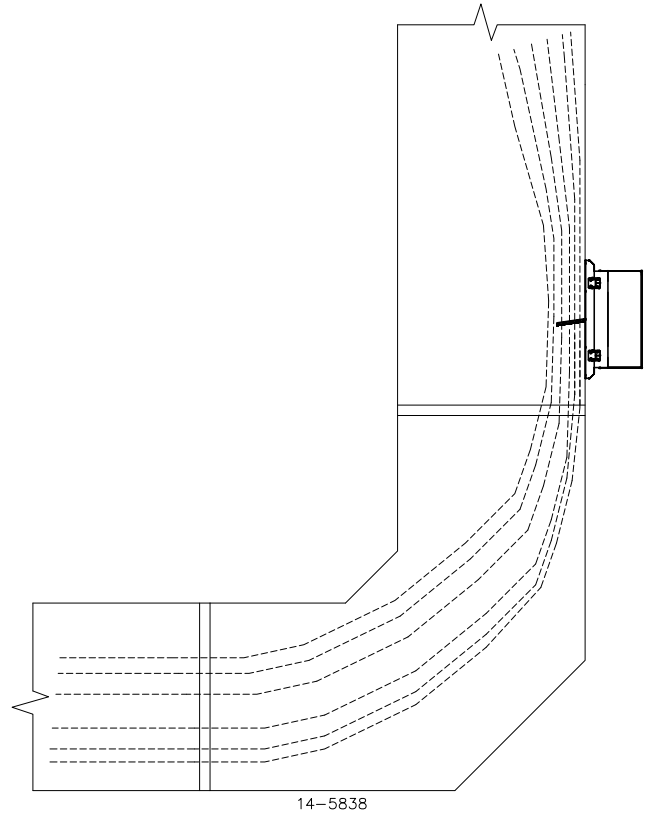
## Calibration

**It is recommended to calibrate the Trash Tracker at the beginning of each season. Other recommended events that would require calibration include software updates on the microcomputer, modification of the camera assembly, cleaning the sample glass, or moving the Trash Tracker.**

**Please see the calibration screen and procedure section below for additional details.**

# Installation Notes

- **UNIT PLACEMENT.** The Trash Tracker sampling unit should be placed in the lint flue riser following a vertical elbow with the unit placed on the outside radius of the curve as shown in the drawing below. This is to ensure proper flow of cotton for the sampler to get an adequate sample. See cutout pattern found in this manual for the cutout and bolt flange pattern.
- **120VAC SINGLE PHASE POWER.** Single phase 120 VAC – 15 amp service should be delivered to the unit and connected to the double pole breaker inside the unit enclosure.
- **120 PSI COMPRESSED AIR.** 120 PSI continuous compressed air should be delivered to the unit at the ¼" NPT connection on the filter regulator assembly.
- **ETHERNET COMMUNICATIONS.** CAT5+ or CAT6 ethernet communications cable from the network switch in the unit enclosure to the main network switch designated for the Sam Jackson Moisture Mirror network.
- **REMOTE SCREEN FOR CONSOLE.** 24VDC power source with CAT5+ or CAT6 ethernet communications cable from the network switch in the unit enclosure to the main network switch designated for the Sam Jackson Moisture Mirror network.

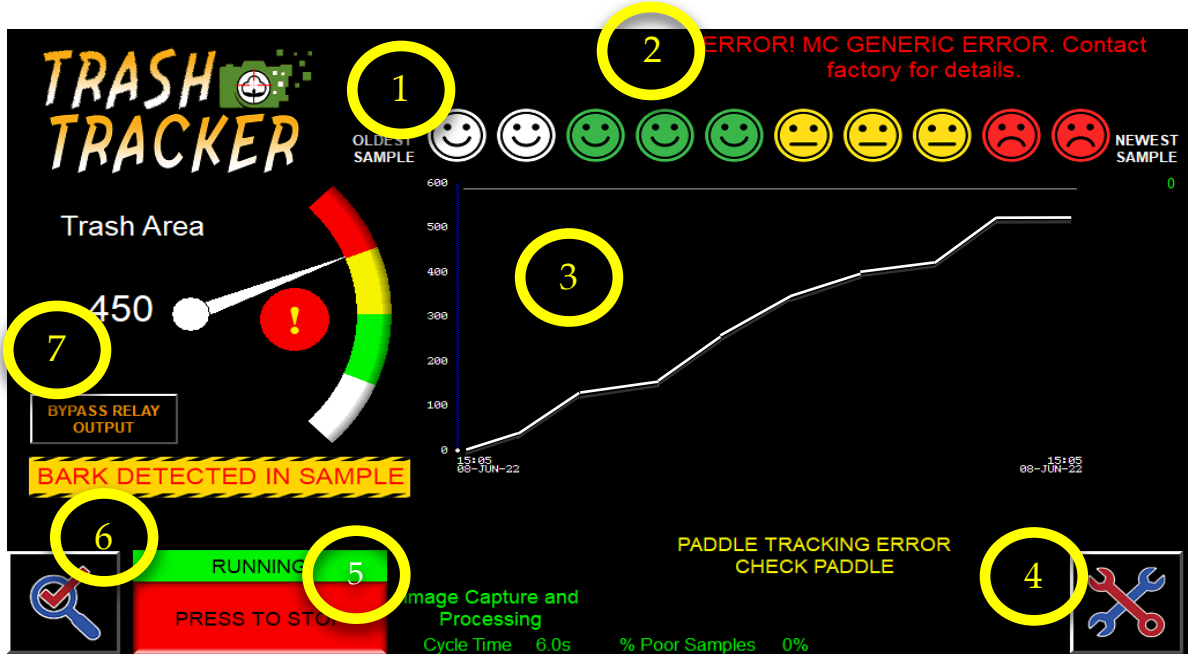


## Initial Set-Up

It is recommended that an authorized Samuel Jackson representative complete or provide assistance in the initial set-up. Set-up requires:

- Verifying paddle operation and stroke
- Setting and verifying timing of stroke
- Calibrating and verifying calibration of imaging assembly
- Verifying communications with Moisture Mirror or Spectrum

# Home Screen



1 – **Smiley Faces:** The smiley face representation based on the range of the trash value at the time that sample group was established.

2 – **Microcomputer Error Notifications:** Error notifications from the microcomputer. See Alarms and Error section below for error details.

3 – **Trash Value Graph:** This is graph of the historical trash values.

4 – **Settings Menu:** This button is used to access the settings menu. See Settings Screen section below.

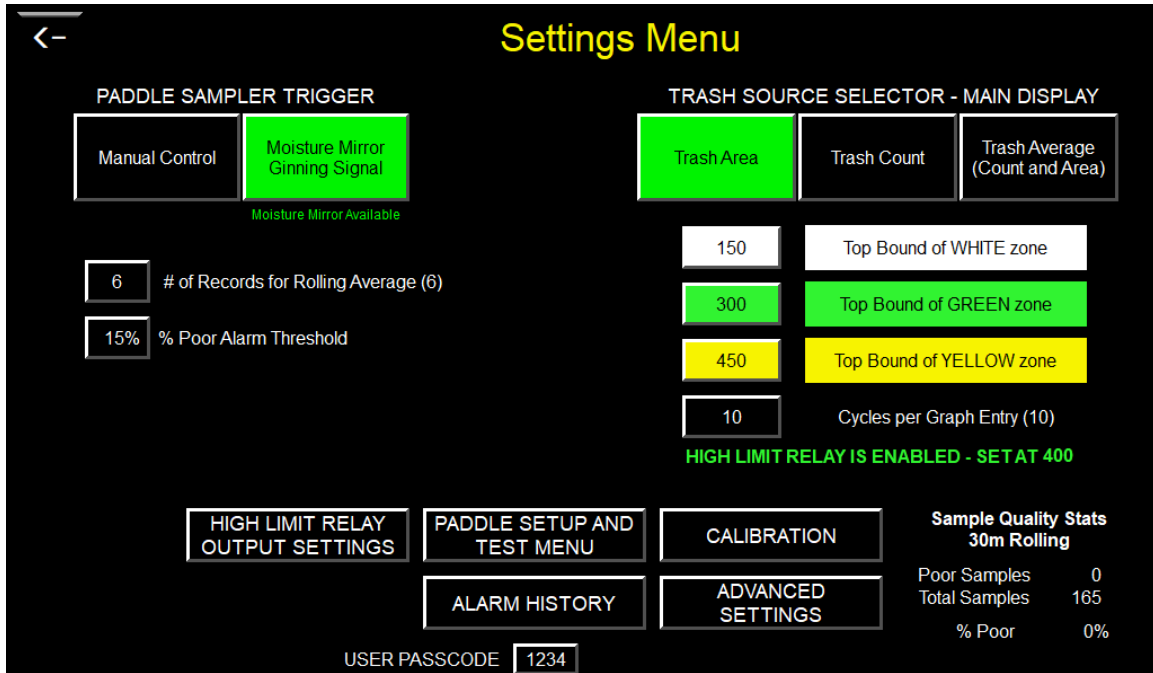
5 – **Start and Stop Button with Status Indicator:** This button is used to start and stop the paddle sampling and analyze functions. The status indicator is shown above the button.

6 – **Graphs Menu:** The button is used to navigate to the detail graphs and error log.

7 – **Trash Display and Gauge:** This is the display of the rolling average trash value along with the colored gauge.

# Settings Screen

Home > Wrench Icon



**Paddle Sample Trigger:** This is to determine if a Moisture Mirror or Mirror Spectrum idle signal is used to trigger the paddle sampler. If “Manual Control” is selected, the sampler will start sampling when the start button is pressed.

**# of Records for Rolling Average:** Number of samples used in the rolling average for the displayed trash value on home screen and used in the graphs.

**% Poor Alarm Threshold:** This is the threshold for percent of poor samples to notify the operator to check the paddle sampler for operation and tagging.

**Trash Source Selector:** This is the measurement of the trash that will be used for the display and graphs on the home screen.

**White, Green, Yellow Bounds:** These are the upper bounds of the color designations for the gauge and smiley faces that are shown on the home screen.

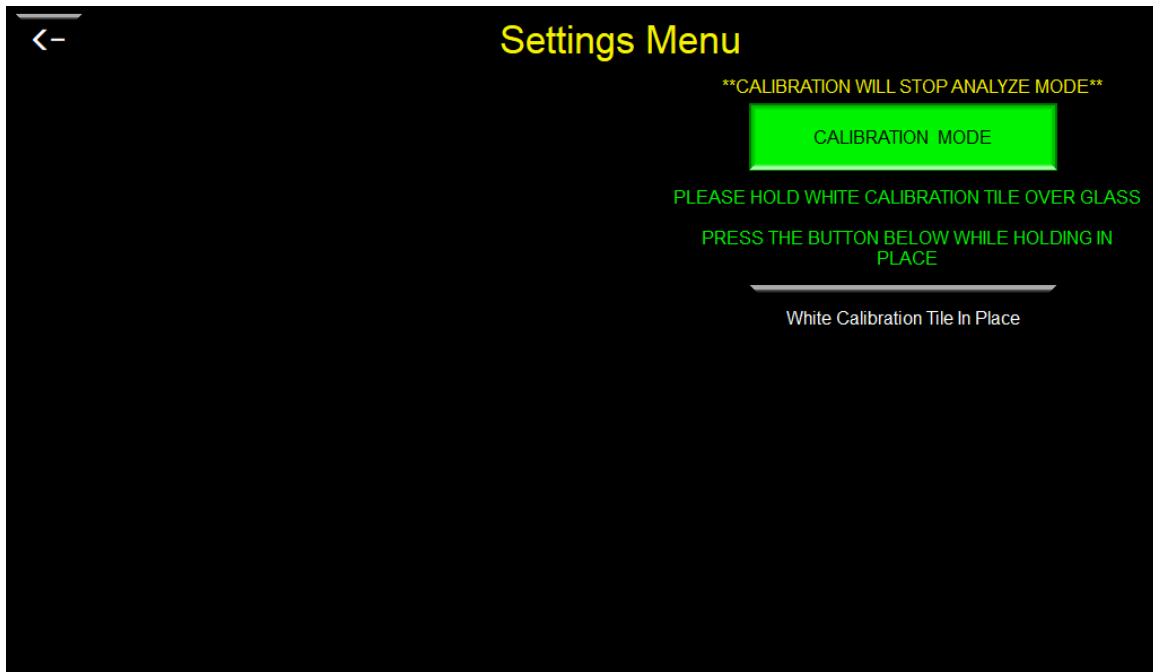
**Cycles Per Graph Entry:** The number of samples per Smiley Face and graph point on the home screen. The cycle time per sample is roughly 7-10 seconds.

**User Passcode:** User settable passcode to access settings screen. Default passcode is 1234.



# Calibration Screen and Procedure

Home > Wrench Icon > Calibration



**This screen is used to calibrate the optical components for proper operation. This step is completed from the factory but can be completed in the field as well. Please clean the glass prior to calibration. Verify both side of the glass are clean.**

**Enable Calibration:** This will enable the calibration mode and stop analyze mode. After this is enabled, place the white calibration tile (provided with the Trash Tracker) over the glass where the sample is taken.

**White Calibration Tile in Place:** Once you have the white calibration tile in place, press this button "White Calibration Tile in Place" for it to begin turning on the light and going through a series of pictures and camera adjustments.

Once the calibration is complete, there will be a notification below that says "Calibration Complete". This will only appear for a short time before it will clear all the buttons and you can navigate back to the home screen.

Upon a successful calibration, you will see a notification at the bottom of the Settings Menu that will say "Last Completed" followed by the Date and Time.

If there is a failure in the calibration process, please note the error for troubleshooting purposes. From there, try addressing the error or power cycling the Trash Tracker and try the calibration process again. See Error and Alarms section below for details.

# High Limit Relay Output Screen

Home > Wrench Icon > High Limit Relay Output Settings



**Enable High Limit Relay Output:** This enable the high limit settings for the output relay Y1. When the trash value exceeds the user settable settings below, the relay Y1 will actuate.

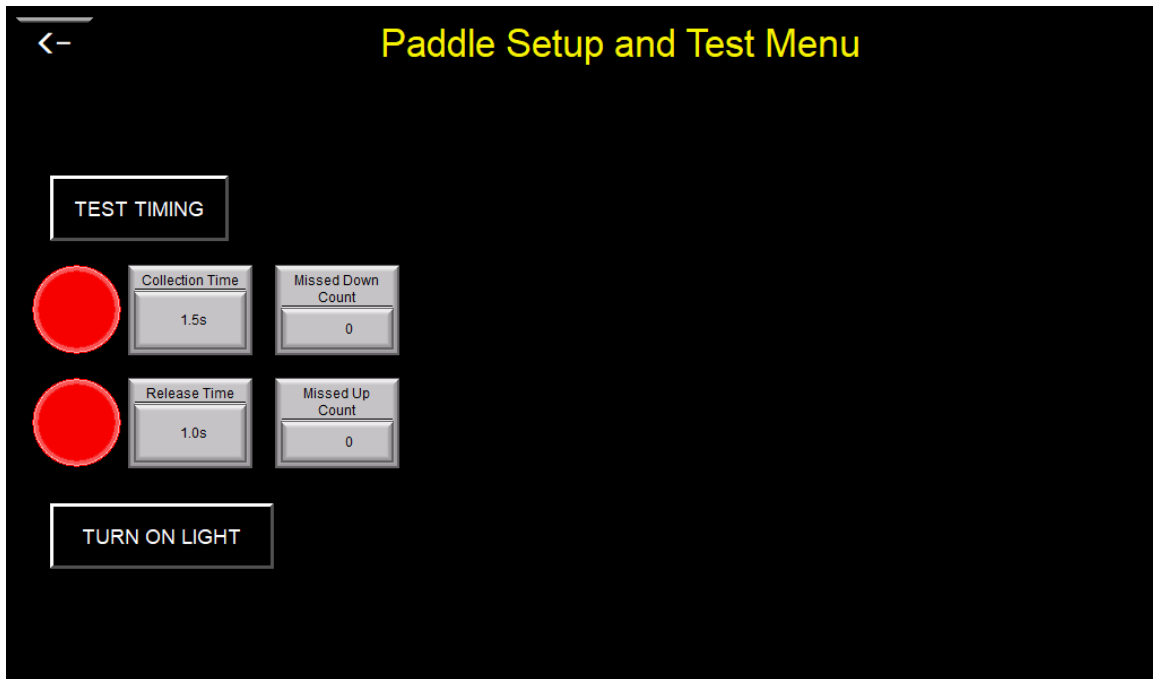
**Display Value High Limit Threshold:** User settable trash threshold that the displayed trash value has to exceed before the relay will actuate.

**Time for Relay On:** The time in seconds that the displayed trash value has to exceed the "Display Value High Limit Threshold" before the relay will actuate.

**Time for Relay Off:** Once the relay is actuated, this is the time in seconds that the that the displayed trash value has to be below the "Display Value High Limit Threshold" before the relay will turn off.

# Paddle Setup and Test Menu Screen

Home > Wrench Icon > Paddle Setup and Test Menu



**This screen is typically used when first commissioning the Trash Tracker to properly set the air solenoid valve to reach the desired down and up stroke times.**

**Test Timing:** This will cause the paddle to actuate and it will record the collection (down stroke) time and the release (up stroke) time.

**Turn On Light:** Used to manually turn on the photo light to test operation.

# Error and Alarms

## Home > Magnifying Glass > Alarm History

This screen displays the error history log. There will be some alarms that are displayed on the home screen that are not logged as they are alarms or notifications rather than errors. Those will be discussed below as well.

**MC Generic Error:** This is a microcomputer error with an undefined error code. Attempt to power cycle the unit and retry operation. If issue persists, please contact the factory for further assistance.

**MC Camera Error:** This is a microcomputer error with an issue on the camera connection. Verify USB cable connection from camera to microcomputer, power cycle the unit, and retry operation. If issue persists, please contact the factory for further assistance.

**No Light on Calibration:** This is a microcomputer error during the calibration mode where the dome light may not be illuminating. Verify light is on, power cycle the unit, and retry operation.

**No Light on Analyze Mode:** This is a microcomputer error during the analyze mode where the dome light may not be illuminating. Verify light is on, power cycle the unit, and retry operation.

**Exceeded Black Area on Calibration:** This is a microcomputer error during the calibration mode where camera is seeing black area on the white calibration tile. Verify light is on, the glass is clean on both sides, and retry operation.

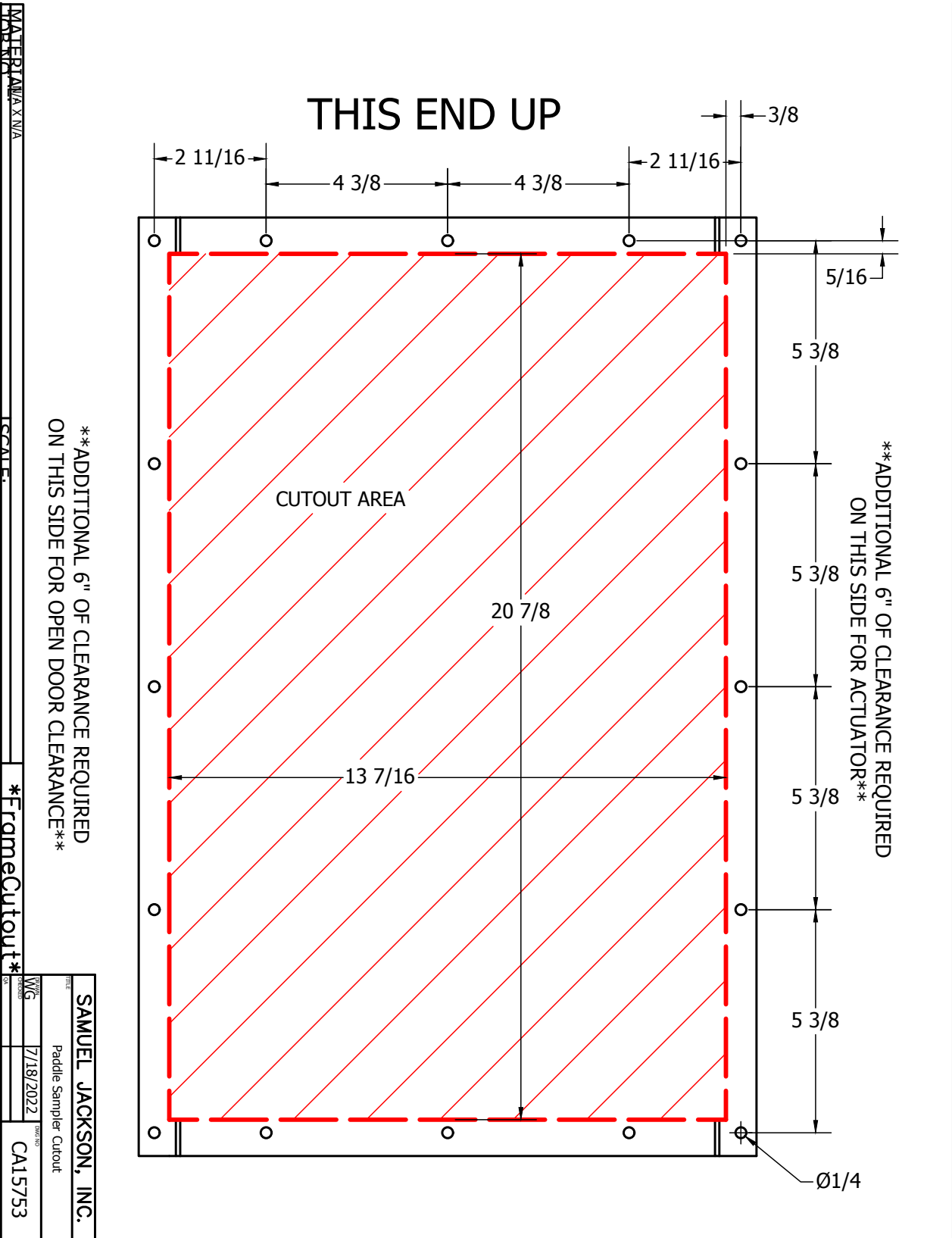
**Failure on Remote Screen Transfer:** This is a microcomputer error where the remote screen microcomputer connection has failed. Verify remote sample screen is operational, verify connections, power cycle the unit, and retry operation.

**Poor Sample Threshold Error:** The number of poor samples have exceeded the set poor sample threshold. Clean any cotton that may be tagging on the sample paddle, check the paddle linkage for operation, check air system for paddle operation, increase ginning speed.

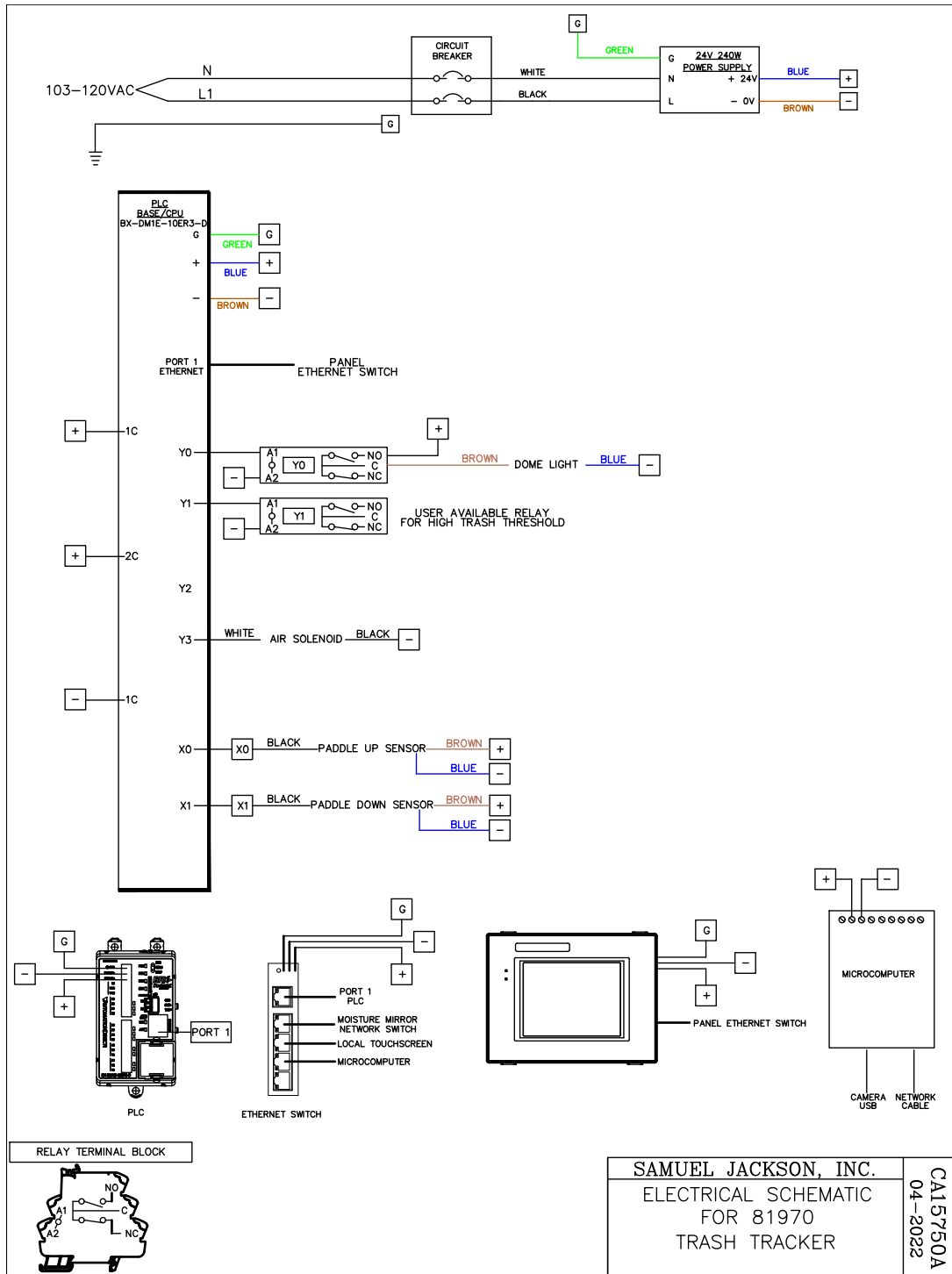
**Paddle Tracking Error:** The paddle may not be going full stroke on either the up stroke or the down stroke. Clean any cotton that may be tagging on the sample paddle, check the paddle linkage for operation, check air system for paddle operation. Lastly, check that the paddle proximity sensors are working properly.

**Microcomputer Communications Error:** This is a microcomputer error where the PLC to microcomputer connection has failed. Verify microcomputer is operational, verify connections, power cycle the unit, and retry operation.

# Cutout Dimensions



# Electrical Schematic



**LIMITED WARRANTY**

**SAMUEL JACKSON, INCORPORATED**

For Commercial and Industrial Customers of Samuel Jackson Moisture Control Products

**SAMUEL JACKSON, INCORPORATED ("Sam Jackson") warrants to its customers who purchase Sam Jackson products that its equipment is free from defects in material and workmanship under normal use and service for 12 months from the date of shipment from its Lubbock, Texas factory.**

**THIS WARRANTY DOES NOT EXTEND TO EQUIPMENT SUBJECTED TO MISUSE, NEGLIGENCE, OR ACCIDENT; NOR DOES THIS WARRANTY APPLY UNLESS THE PRODUCT COVERED BY IT IS PROPERLY INSTALLED BY A QUALIFIED, COMPETENT TECHNICIAN, WHO IS LICENSED WHERE STATE AND LOCAL CODES REQUIRE, AND WHO IS EXPERIENCED IN MAKING SUCH INSTALLATIONS.**

Equipment, which is defective in material or workmanship and within the warranty period, will be repaired or replaced, at Sam Jackson's option, in order to facilitate proper operation.

**THIS WARRANTY IS LIMITED TO THE PRECISE TERMS SET FORTH ABOVE, AND PROVIDES EXCLUSIVE REMEDIES EXPRESSLY IN LIEU OF ALL OTHER REMEDIES, AND IN PARTICULAR THERE SHALL BE EXCLUDED THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT WILL SAM JACKSON BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGE OF ANY NATURE.**

Sam Jackson neither assumes nor authorizes any person to assume for Sam Jackson any other liability or obligation in connection with the sale of this equipment. Sam Jackson's liability and Customer's exclusive remedy being limited to repair or replacement as set forth above.

**SAMUEL JACKSON, INCORPORATED**  
3900 Upland Avenue Lubbock, Texas 79407

## **IMPORTANT!**

**The following notice affects your warranty.**

### **Electrical Controls and Your Safety**

Your new Sam Jackson product may be equipped with electrical controls, or designed to interact with controls on a related Sam Jackson product.

In the event that local, state, federal or other specified safety compliance is required, we will consider modifications to meet the particular requirements. Implementation of alternative safety devices may incur additional charges. No warranty of compliance with a particular standard is made in the absence of specific reference to it in our quotation.

If you modify, or permit others to modify, these controls without specific written permission from Sam Jackson, Inc. the warranty on your product will be void and there is a possibility of serious damage to machinery, damage to product, serious injury to personnel, or death. The modifier of the controls assumes all liability for these consequences.

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