1 Introduction

Wheel Press Recorder Version 5

The Wheel Press Recorder program is part of the Wheel Shop Management System. It is used to record mounting graphs on a wheel press. Additional data may be collected, such as wheel serial numbers, wheel type, wheel class, wheel boresize, wheel tapesize, and axle information. The program will automatically recognize several types of misfits, however wheel shop personnel **must review each chart for correctness** per Association of American Railroad requirements. The Wheel Press Recorder saves and retrieves data from the database server via the TCP/IP protocol and works with Microsoft WIndows XP, and WIndows 7. The database server program may be located on the same computer as the Wheel Press Recorder or on any computer in the network.

The default installation folder is C:\Program Files\Wheel Shop Automation\Press.

Network connectivity to the database server is required.

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2 Login

This is the login screen for the Wheel Press Recorder. You must enter your current shift number, username and password. No screens may be accessed without a proper username and password being entered. Some screens are not available to certain authority levels.

The authority levels are:

Operator	Cannot enter calibration screen or setup screen.
Technician	Same as operator plus can access calibration screen.
Supervisor	Same as technician plus can access setup screen.
Manager	Can access all screens. Cannot edit wheel status after wheel has been reviewed.
Admininstrator	Can access all screens and has full editing capability.

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3 Logout

This is the logout screen of the Wheel Press Recorder.

Press the Log Out button to log out.

Press the Shop Manager button to start the Shop Manager application.

Press the Change Password button to change the password that was used to login.

Press the Exit button to exit the program. You must have supervisor authority or above to exit the program.

If the machine needs to go out of service. Select the reason why and then press the Start Down Time button.

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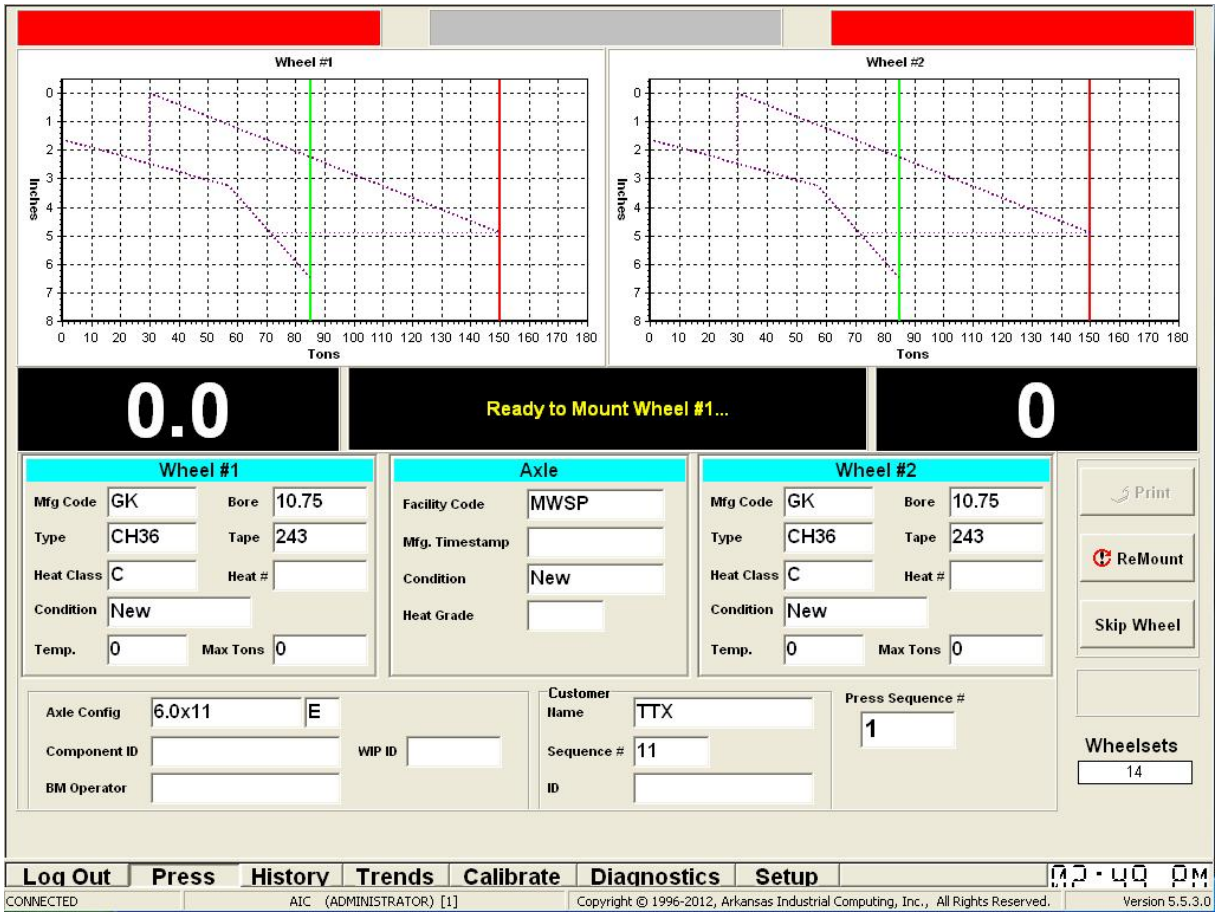
4 Press Screen

This is the press screen of the Wheel Press Recorder. The red box at the top left of the screen will display the wheel 1 serial number when it is scanned. To enter manually, touch the box onscreen and enter the serial number into the dialog box which pops up. The red box at the top right of the screen will display the wheel 2 serial number when it is scanned. The box at the top center of the screen will display the axle serial number. If the box is red the serial number is required, if it is gray, then the axle serial number is not required.

The status box in the center of the screen will display the current status of the wheelset mounting. The Wheel #1, Axle and Wheel #2 information boxes will display the information currently entered into the Config Screen or the last information scanned with a barcode scanner.

Press ReMount to open the Remount Dialog to select one wheel to remount.

Press Skip Wheel to skip the current wheel that is ready to mount.



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5 Remount Dialog

To remount a wheel you must press the Remount button on the Press Screen. Pressing the Remount buttun will display the following dialog box Enter the wheel serial number to be remounted and the wheelset information will be displayed. Press the button with the wheel serial number that is to be remounted. This will take you to the Press Screen so the wheel can be remounted. You can exit the remount option by pressing the "Do Not Remount" button.

Show the Remount button on the Press Screen by selecting the "Setup" navigation button, select the "Pressing" tab and then select the "Show Remount Button on Press Screen" option.

Note-This option is to remount one wheel on a wheelset. Do not use this option if both wheels were demounted. That is considered to be a new press.

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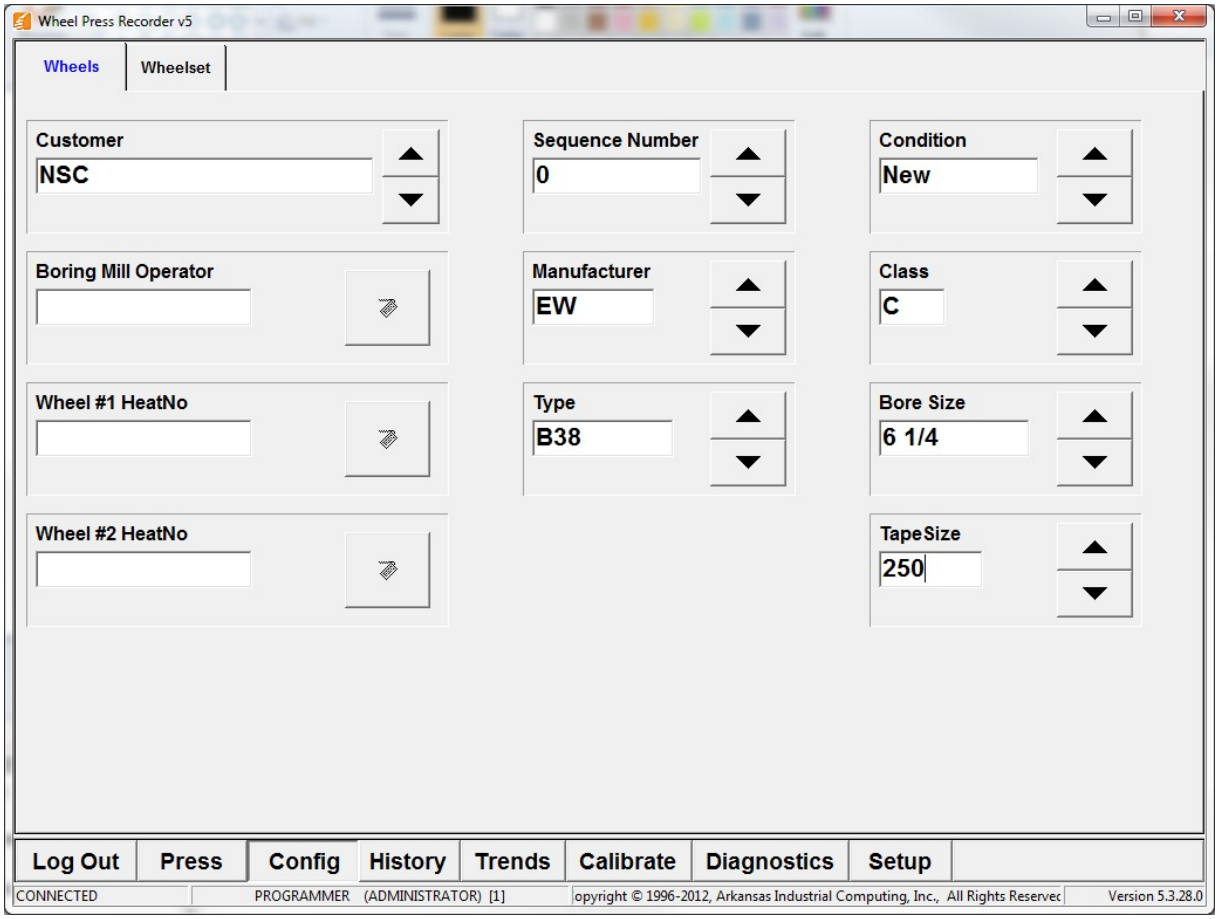
6 Config Screen - Wheels Tab

The configuration screen is for entering default wheel and wheelset information.



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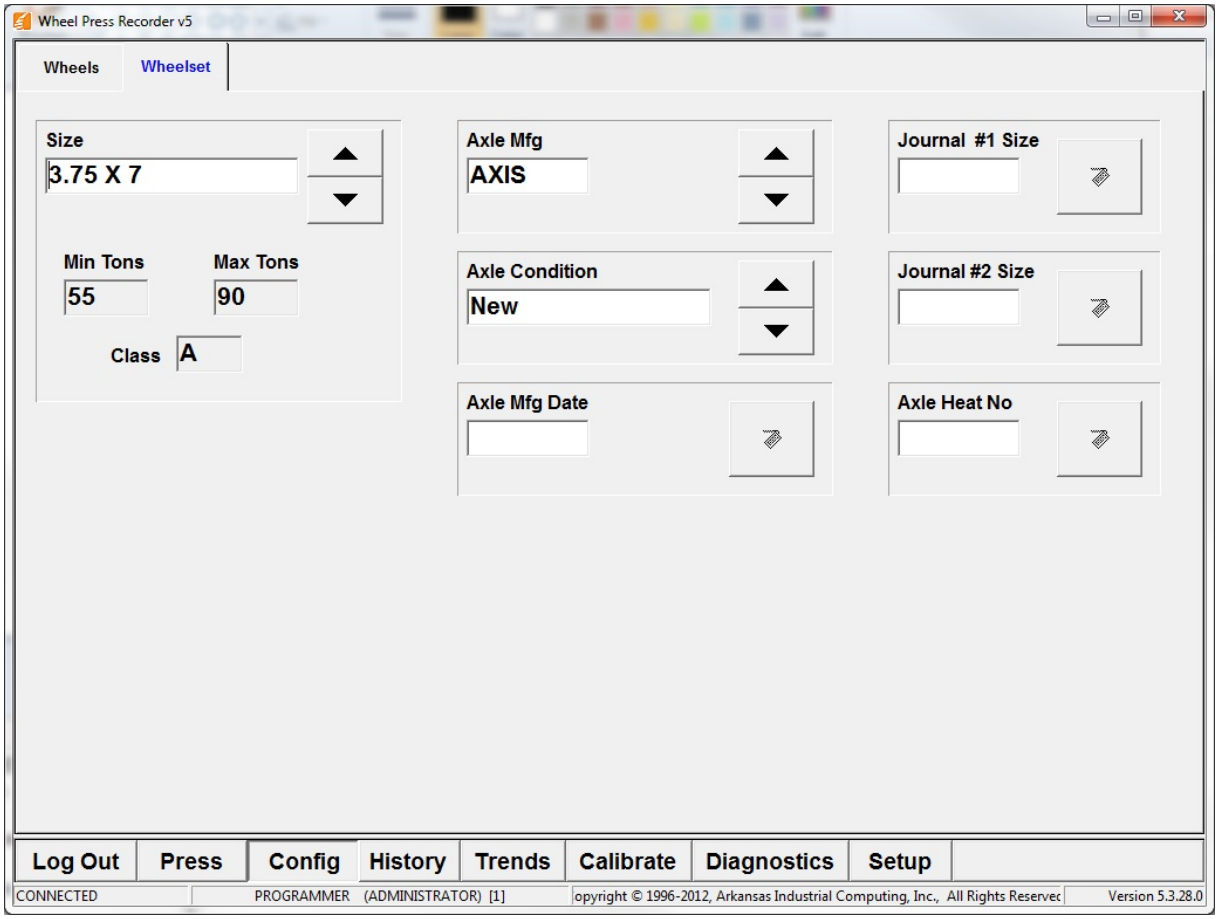
7 Config Screen - Wheelset Tab

The configuration screen is for entering default wheel and wheelset information.



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8 History Screen

The history screen allows the viewing of previously mounted wheelsets. The information with white edit boxes may be edited. The information with gray edit boxes may not be edited.

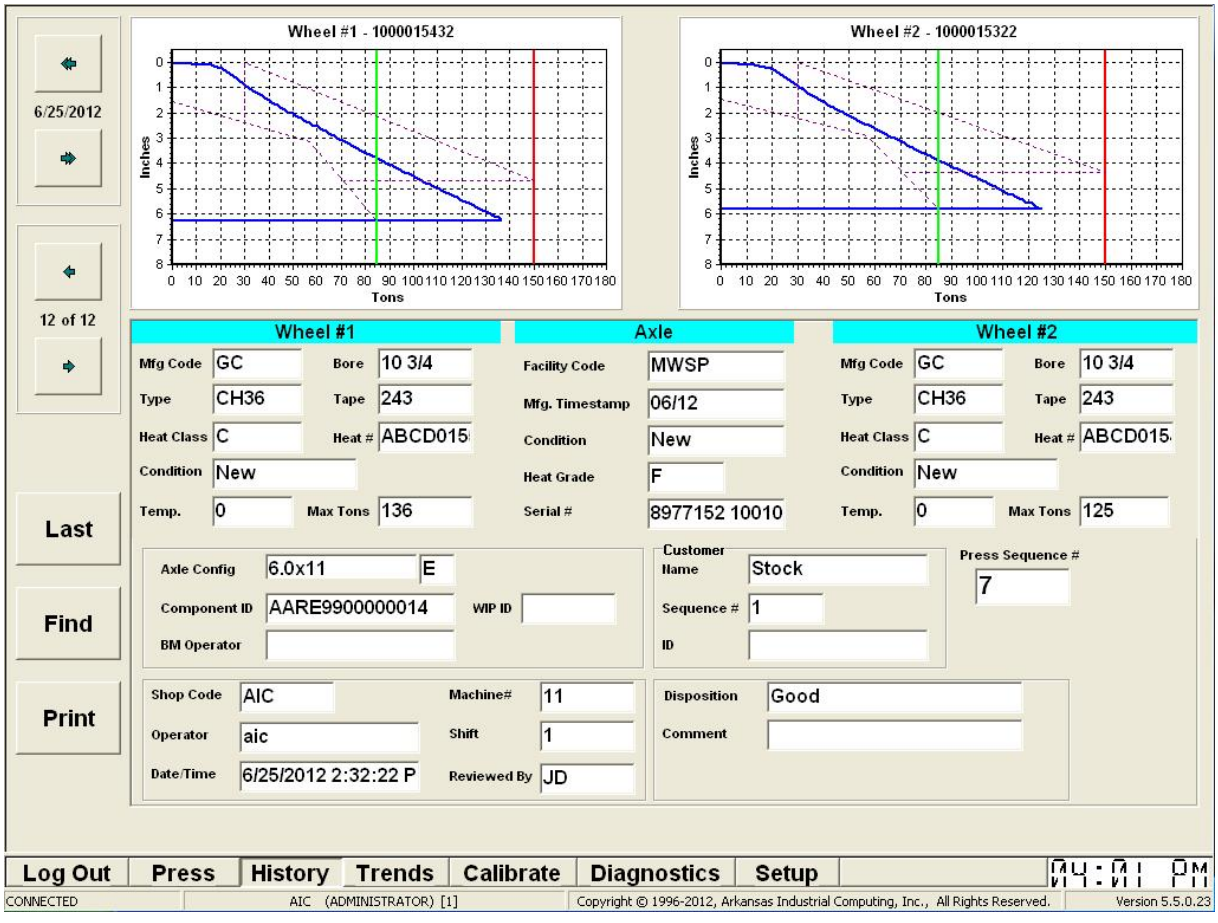
Press the Last button to go to the last wheelset mounted.

Press the Find button to enter a wheel serial number to search for.

Press the Print button to print the currently displayed wheelset.

Press the Back and Forward buttons located at the top left to jump back and forth between days. The date desired will be displayed between buttons.

Press the Back and Forward buttons located just above the Last button to cycle through wheelsets for the current day that was selected. The wheelset desired will be displayed between buttons.



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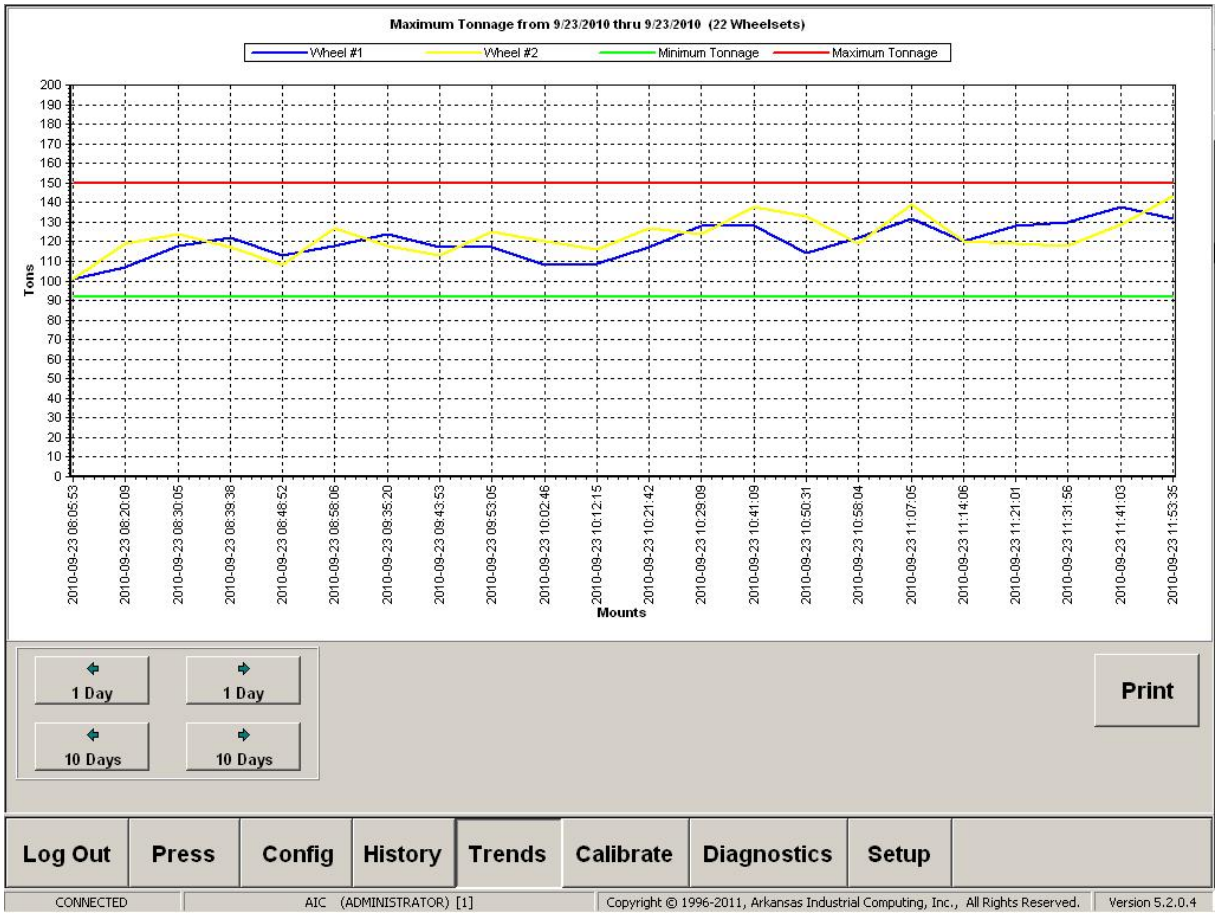
9 Trends Screen

The trends screen displays a graph showing the maximum mounting pressure of both wheels.



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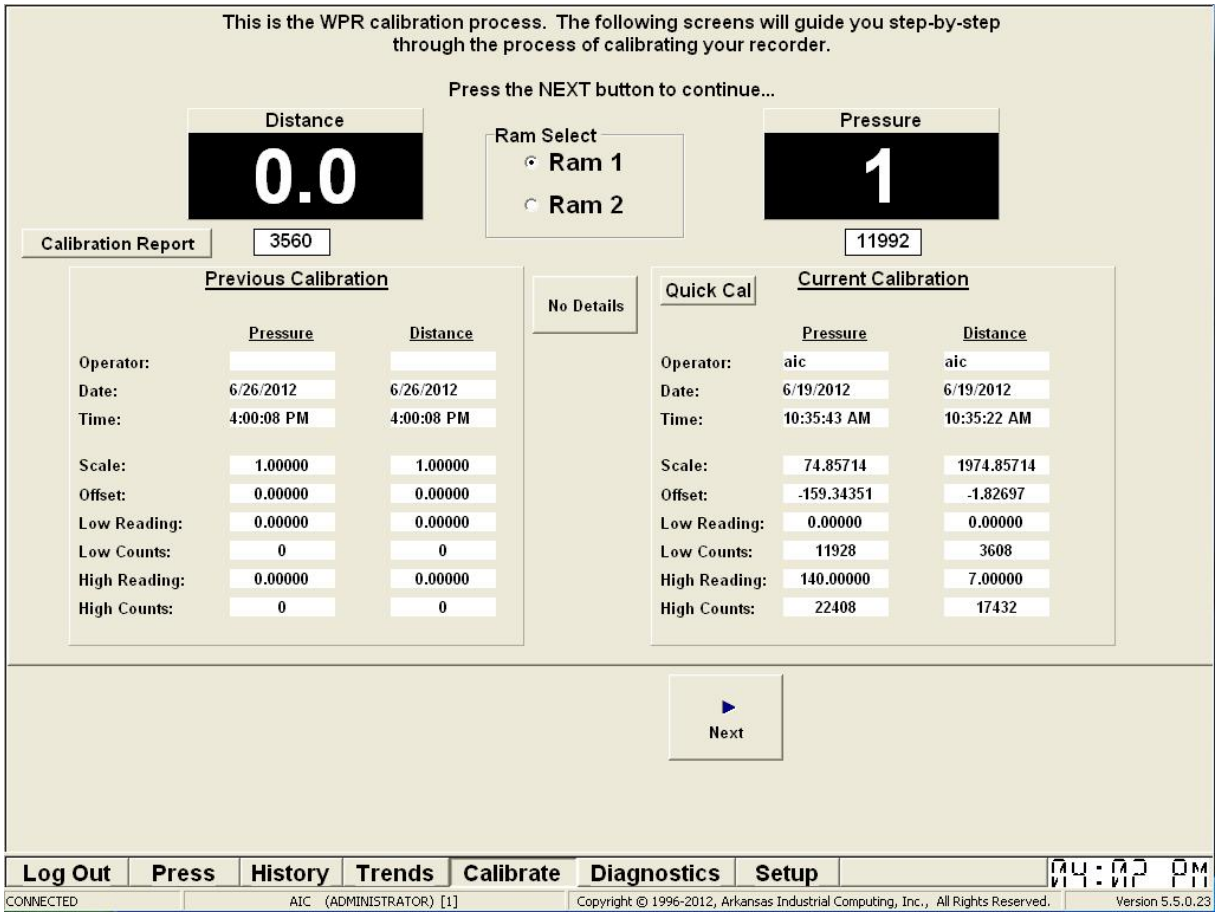
10 Calibration Main Screen

This is the main screen for calibration. It shows the details of the current and previous calibration.

Press the radio button next to Ram 1 or Ram 2 to select which ram to calibrate.

Press the Calibration Report button to print the current calibration settings.

Press the Next button to proceed to the Calibration Distance Screen.



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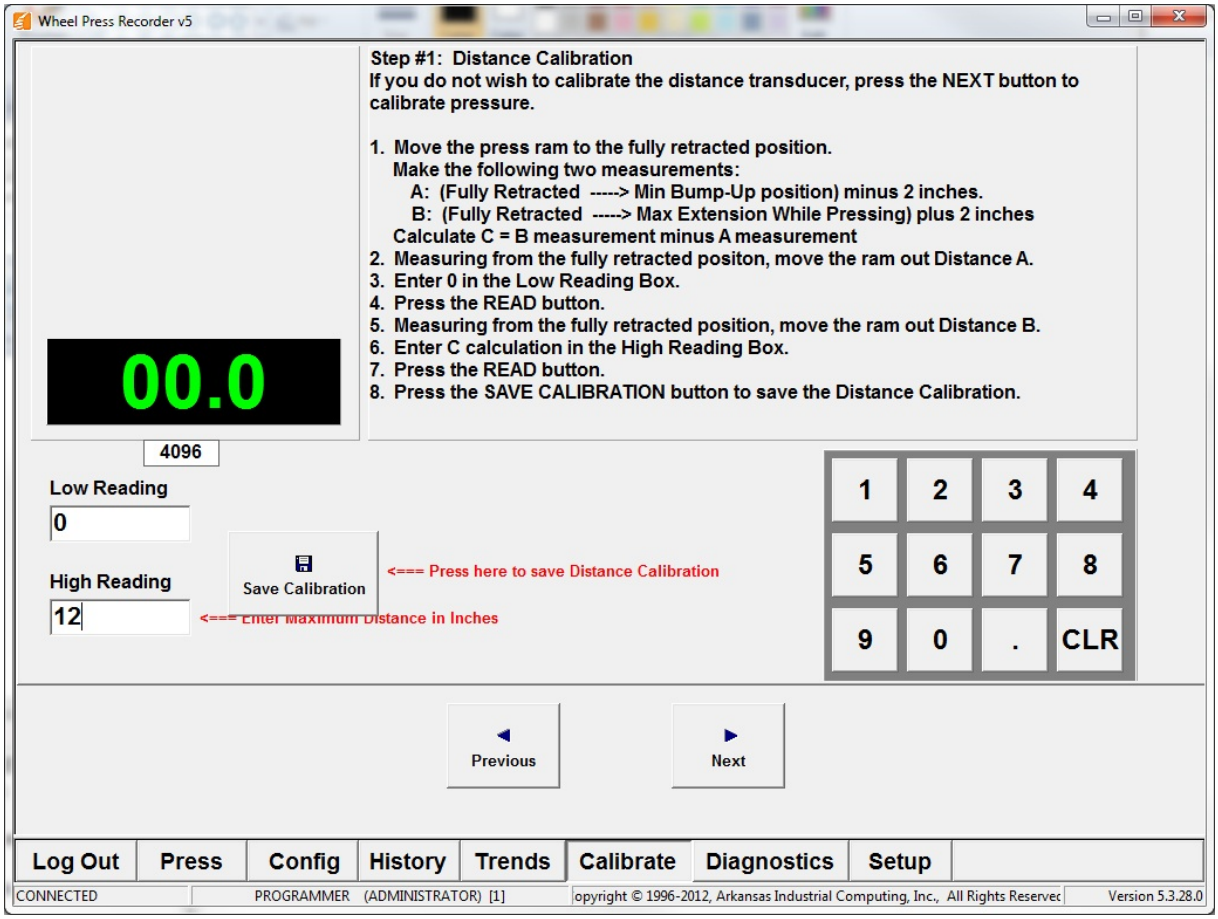
11 Calibration Distance Screen

Follow the directions to calibrate the distance transducer.

Press the Previous button to return to the Calibration Main Screen.

Press the Next button to proceed to the Calibration Pressure Screen.



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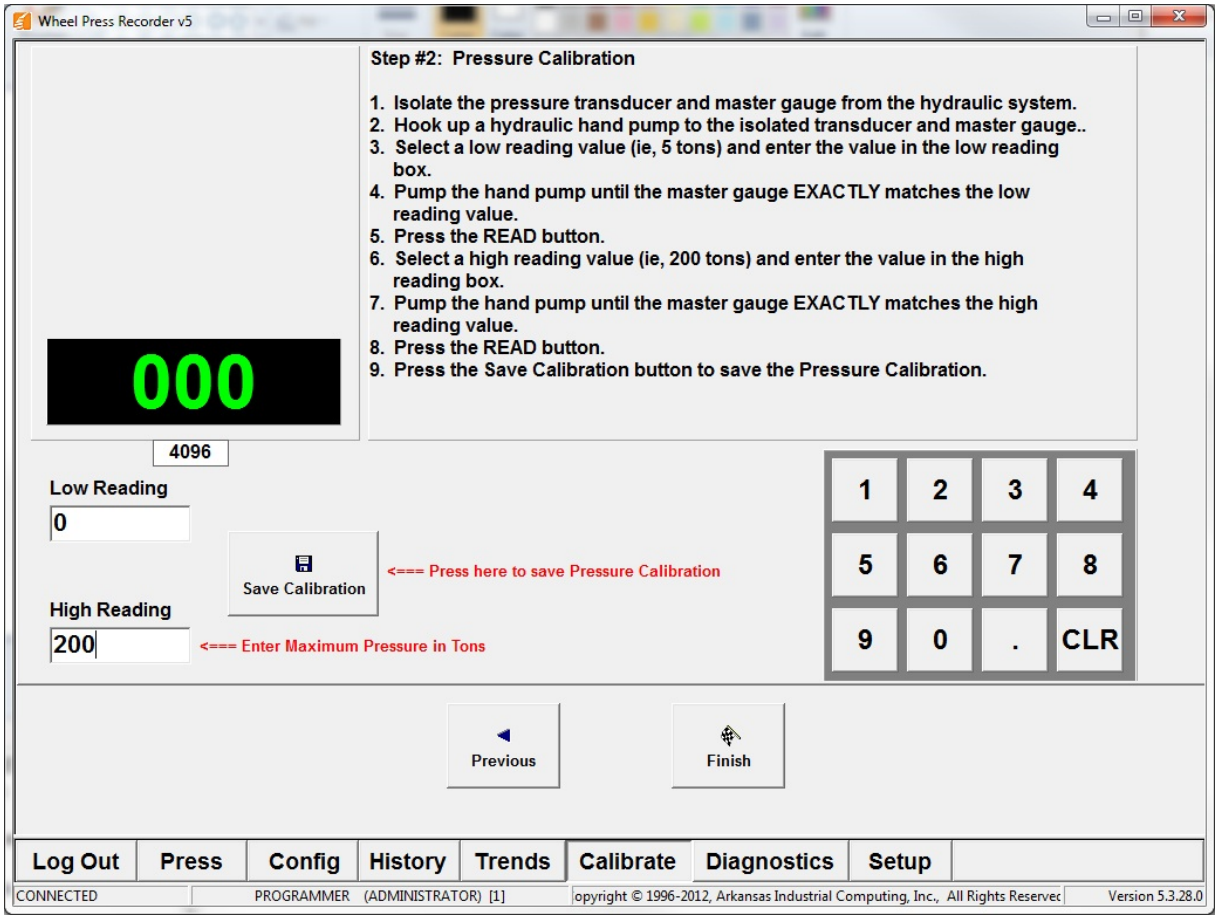
12 Calibration Pressure Screen

Follow the directions to calibrate the pressure transducer.

Press the Previous button to return to the Calibration Distance Screen.



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13 Diagnostics Screen

The diagnostics screen displays the various logging files generated by the program.

The Digital I/O status is also displayed in the top center of the screen.

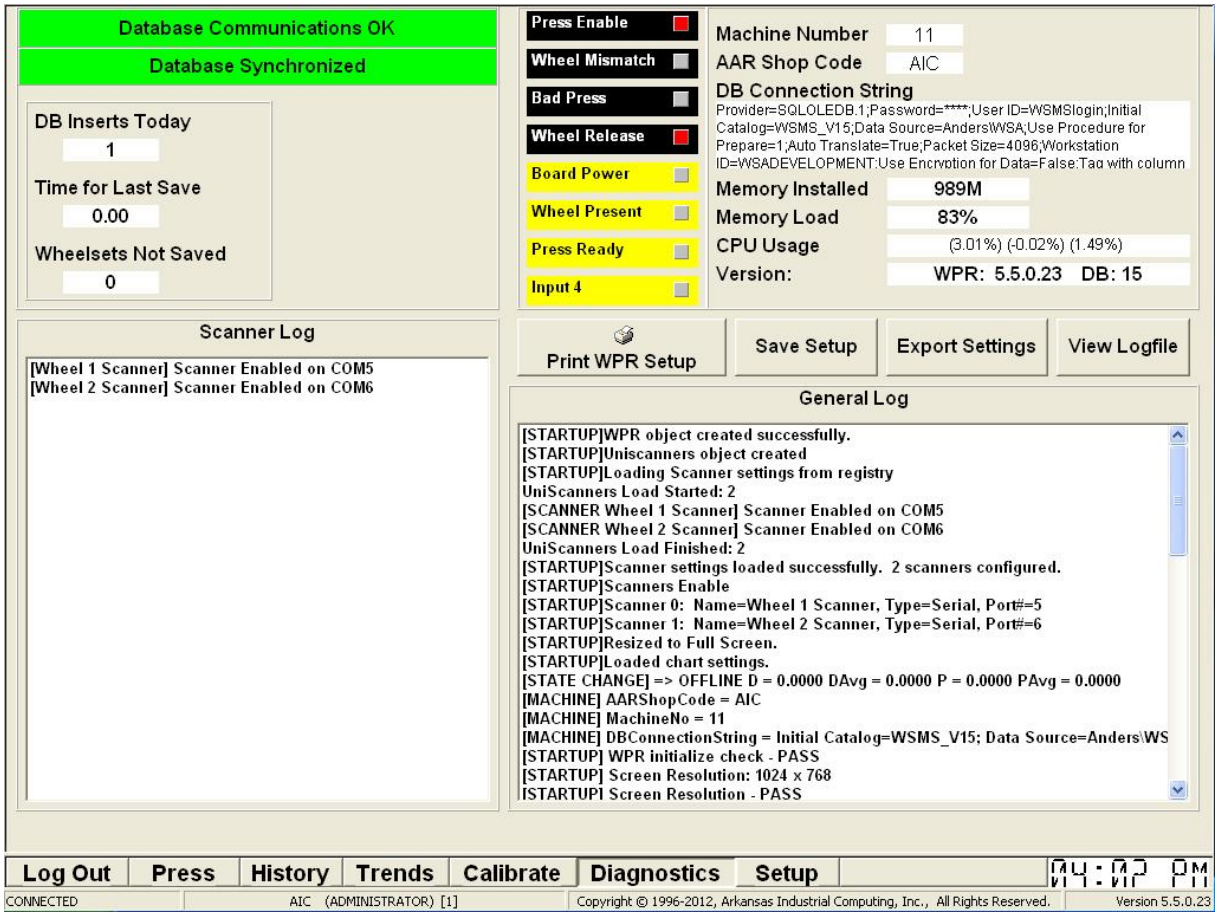
Status information is displayed in the upper left corner of the screen. The 2 boxes should be green when the program is operating properly.

Press the Print WPR Setup button to print the current program setup information.

Press the Save Setup button to save system settings a text file

Press the Export Settings save system settings to an xml file.

Press the View Logfile opens the Log in notepad.



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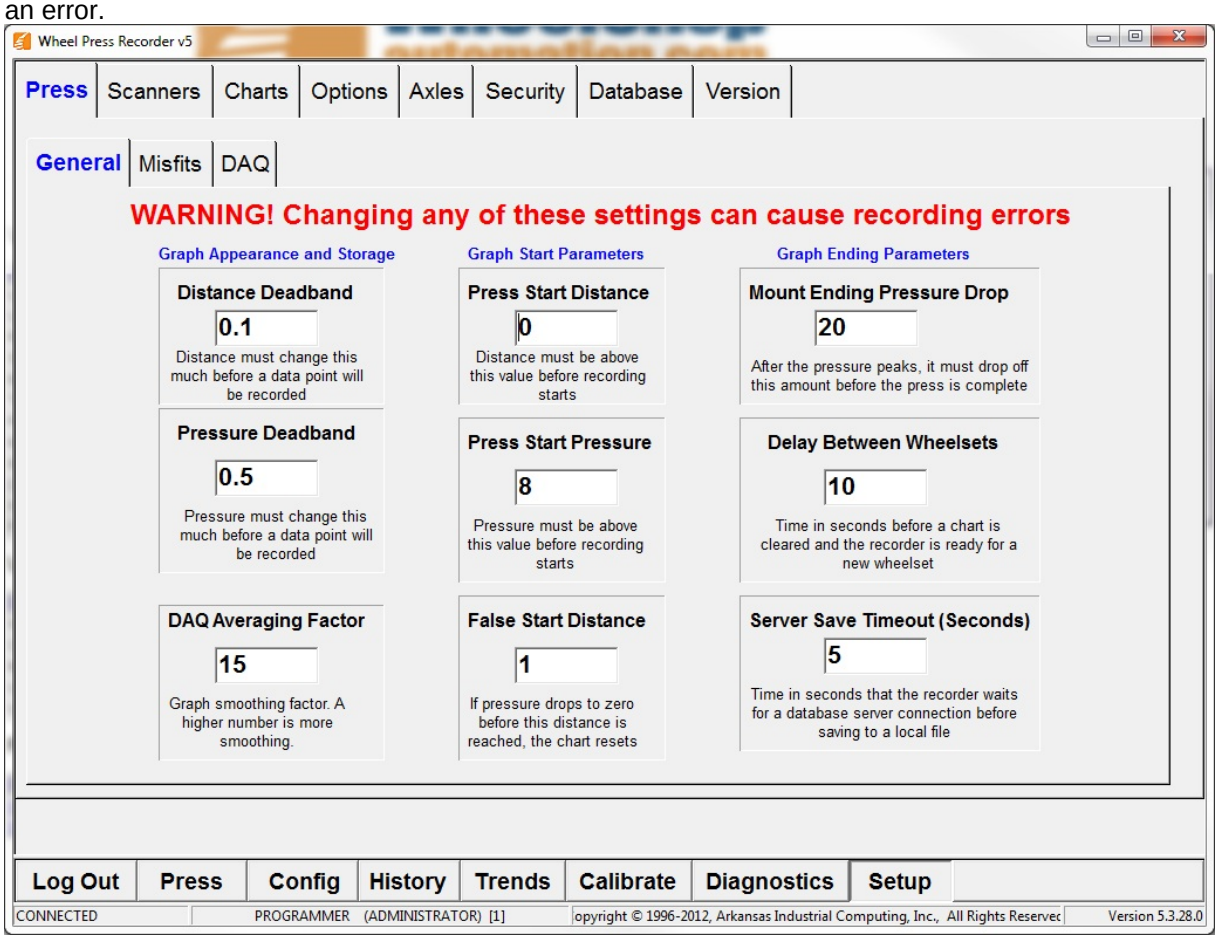
14 Press Tab - General

Graph Appearance and Storage:
Distance Deadband - Distance in inches which the ram has to travel for a graph point to be recorded.
Pressure Deadband - Pressure in tons which has to occur for a graph point to be recorded.
DAQ Averaging Factor - Smoothing factor applied to incoming data points.

Graph Start Parameters:
Press Start Distance - Distance at which recording starts (along with Press Start Pressure).
Press Start Pressure - Pressure at which recording starts (along with Press Start Pressure).
False Start Distance - If distance is below False Start Distance and pressure falls below Press Start Pressure, graph will be cleared and press returns to ready state.

Graph Ending Parameters:
Mount Ending Pressure Drop - When Current Pressure equals Peak Pressure minus Mount Ending Pressure Drop the press is complete.
Delay Between Wheelsets - Seconds to wait after a wheelset is completed before clearing the graphs for the next wheelset.
Server Save Timeout - Seconds to wait for the data to be save to the Database Server before declaring an error.



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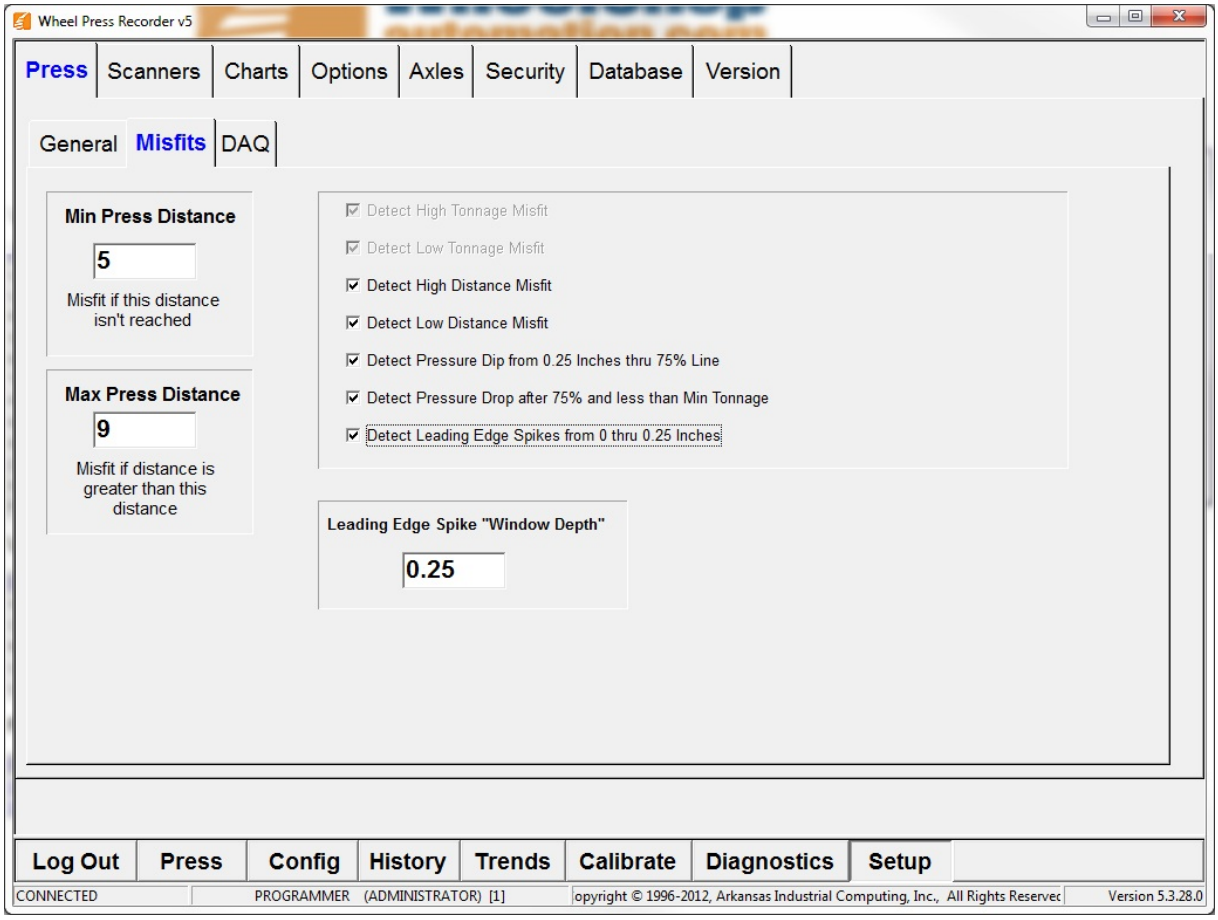
15 Press Tab - Misfits

Min Press Distance - If mount distance is less than this value and Detect Low Distance Misfit is checked, the mount will be a misfit.
Max Press Distance - If mount distance is greater than this value and Detect High Distance Misfit is checked, the mount will be a misfit.
Detect High Tonnage Misfit - If checked, will mark a mount as a misfit if maximum tonnage is greater than the allowed max tonnage for the axle size.
Detect Low Tonnage Misfit - If checked, will mark a mount as a misfit if minimum tonnage is less than the allowed min tonnage for the axle size.
Detect High Distance Misfit - If checked, will mark a mount as a misfit if maximum distance is greater than Max Press Distance.
Detect Low Distance Misfit - If checked, will mark a mount as a misfit if minimum distance is less than Min Press Distance.
Detect Pressure Dip - detects a drop in force greater than 2 tons between the leading edge spike "Window Depth" and the 75% Line.
Detect Pressure Drop - detects drop in force below the minimum tonnage after the 75% Line.
Detect Leading Edge Spikes - Detects entry spikes per AAR rules.
Leading Edge Spike "Window Depth" - The distance from the start of the press to look for leading edge spikes.



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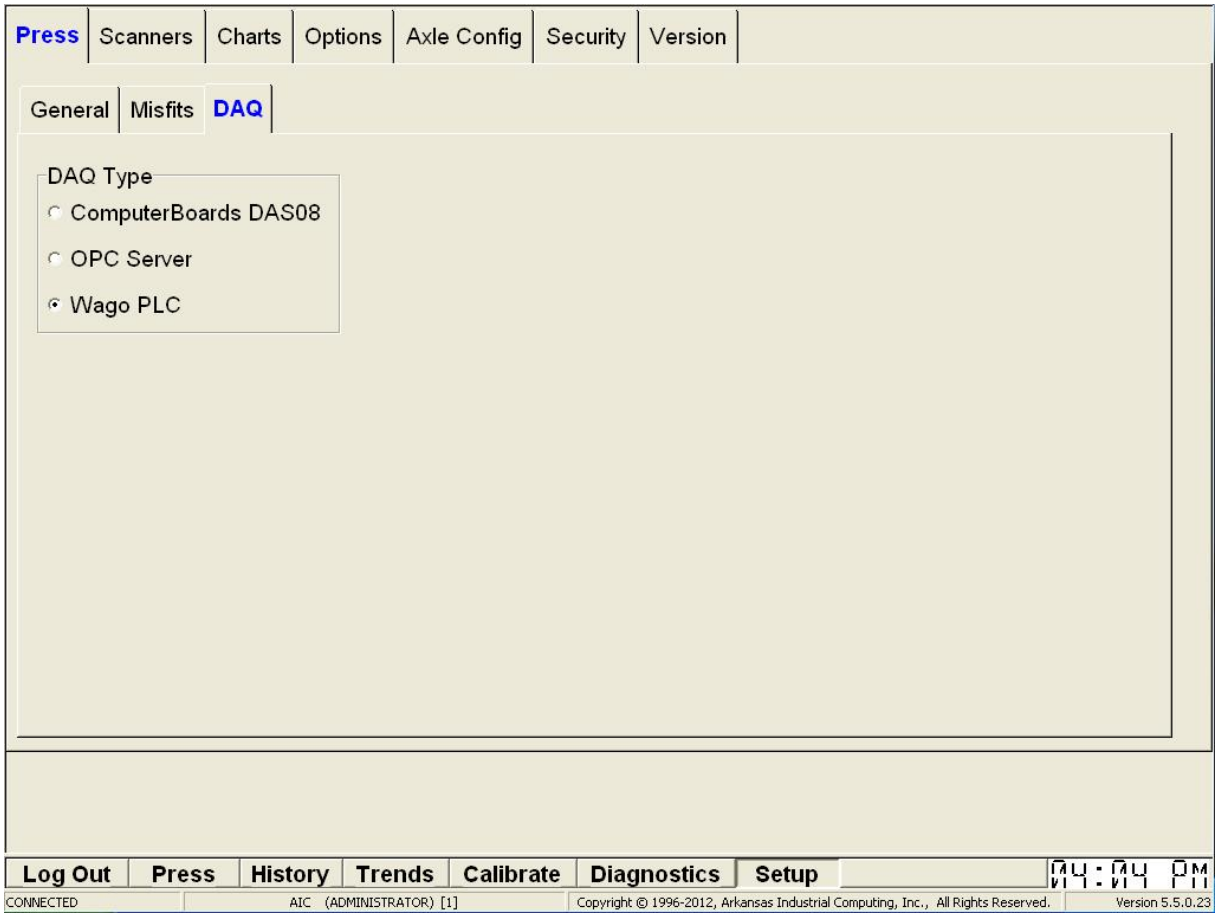
16 Press Tab - DAQ

Use the DAQ tab to select which type of Data Acquistion System will be used.

-Computer Boards DAS08
-OPC Server
-Wago PLC



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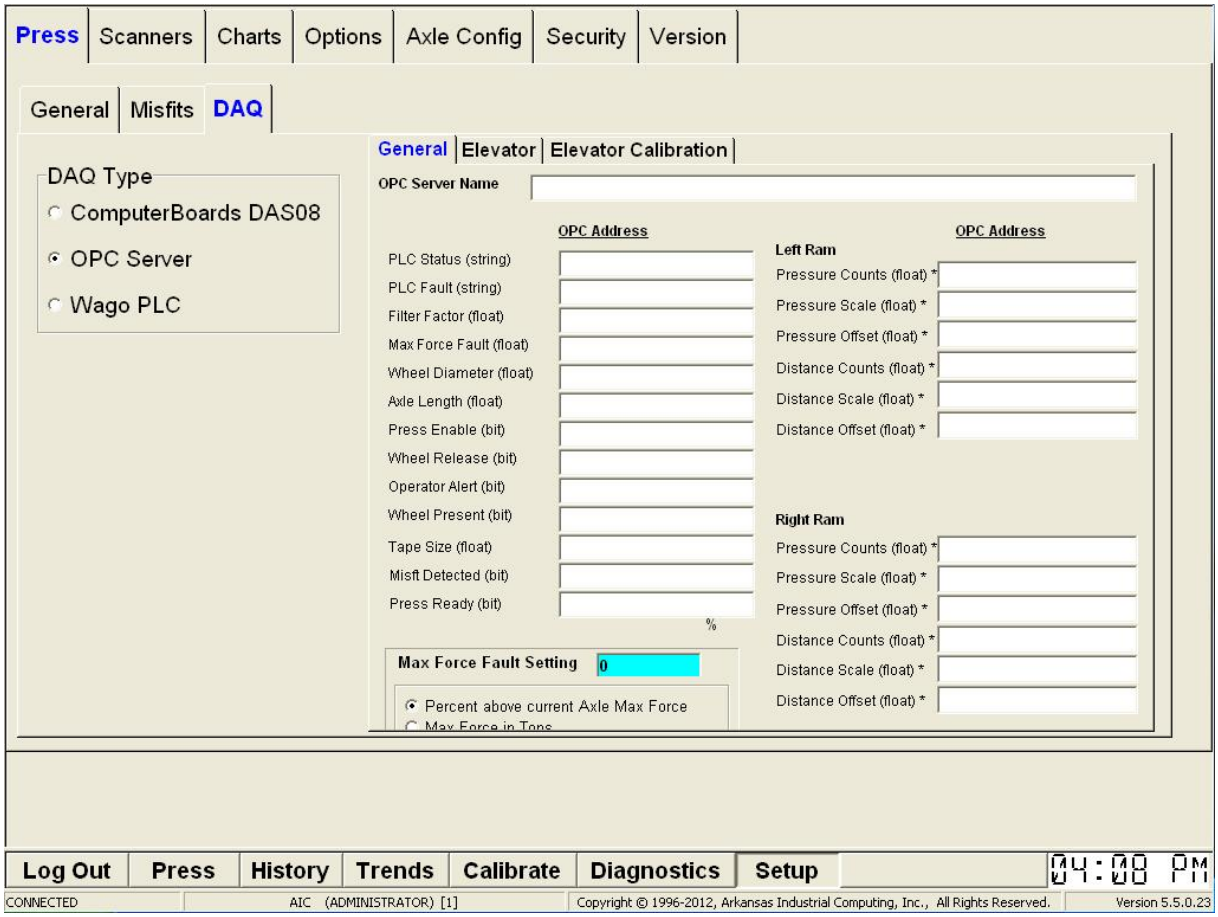
17 Press Tab - DAQ - OPC Server

If an OPC Server is selected use the tabs below:

General Tab - use this tab to enter the sever name, general variable addresses, and set Max Force Fault setting (percentage or tons).



Elevator Tab - use this tab to set the Elevator variable addresses, Elevator Height scale, and Elevator Height Offset.

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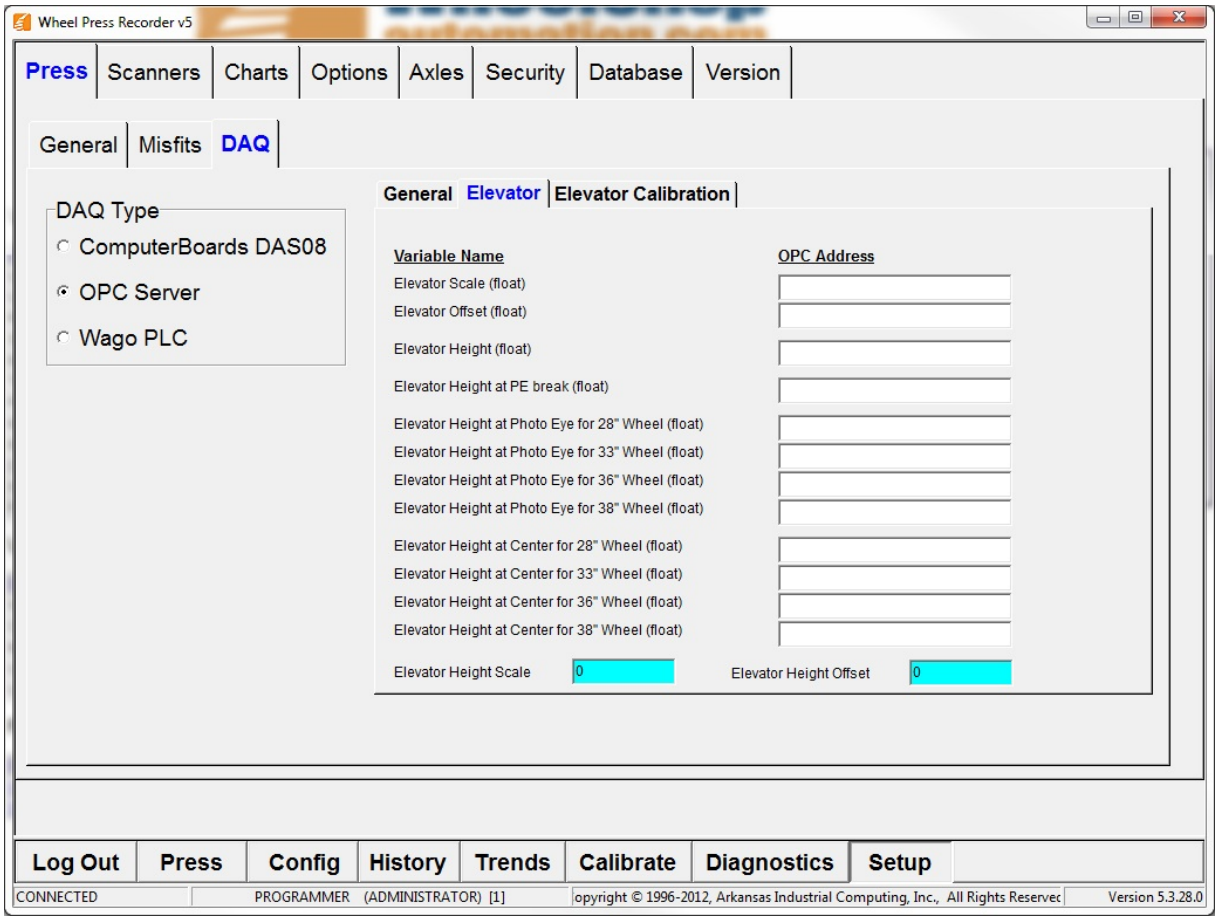

Elevator Calibration Tab - use this tab to Set the Elevator Height at the Photo Eyes and Set the Elevator Heigh at Cente of Mounting Press. Follow instructions listed below to calibrate each height.

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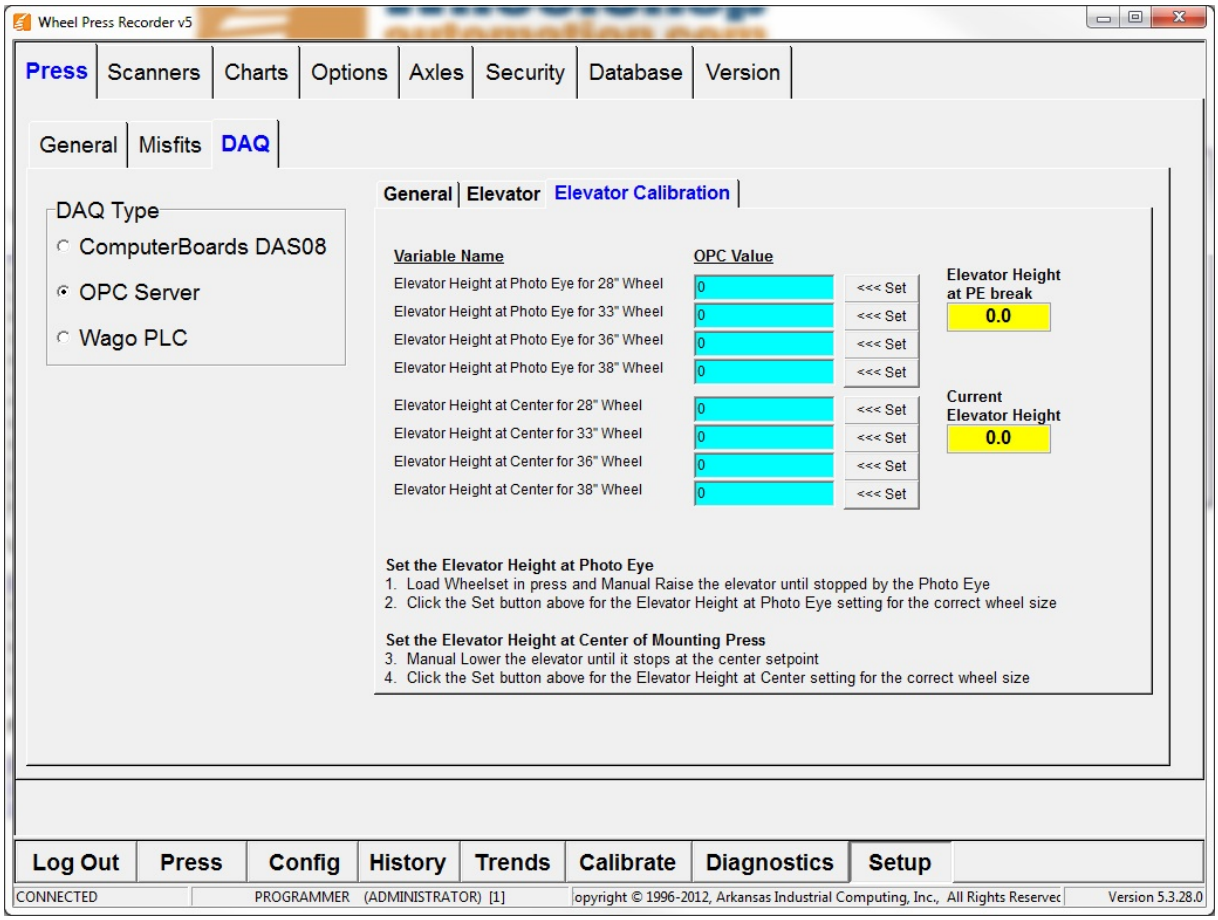

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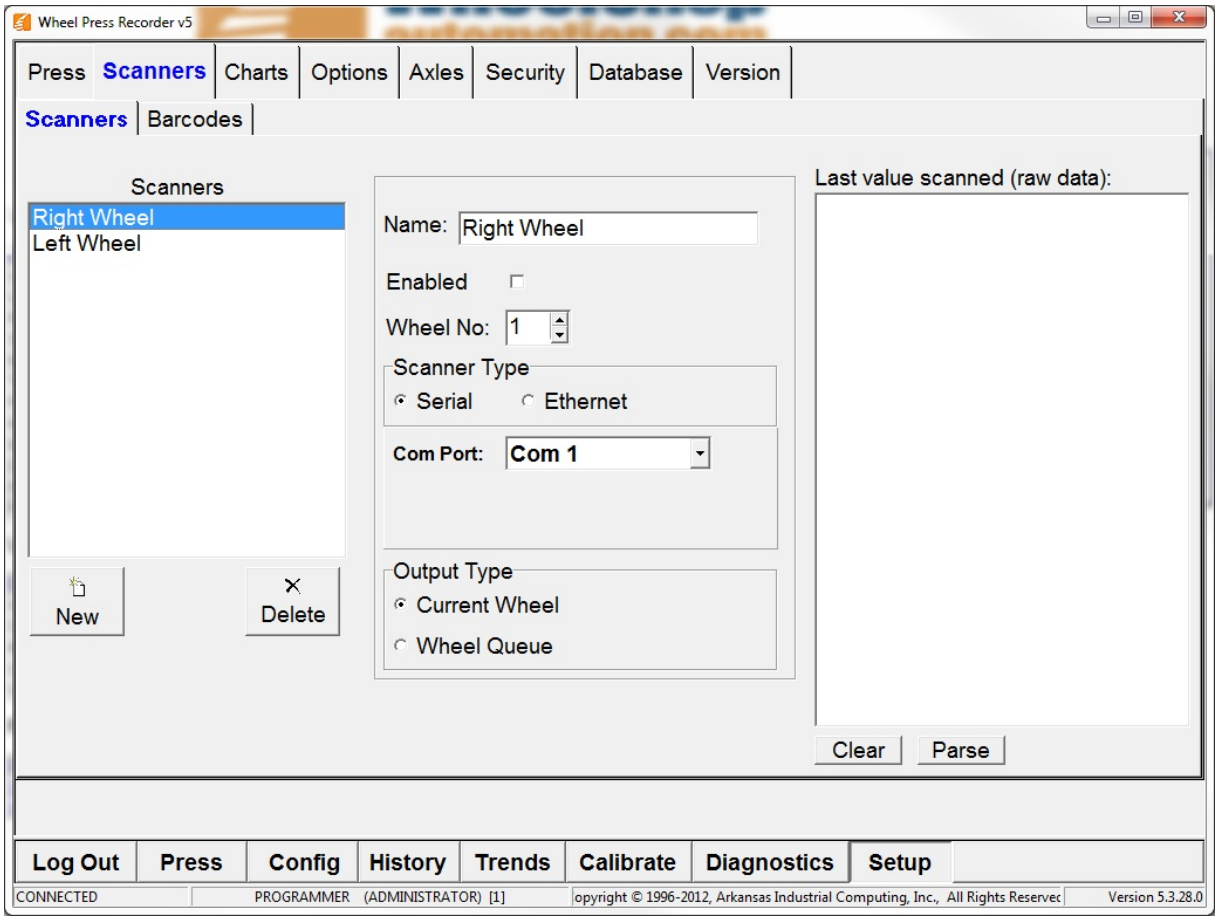
18 Scanners Tab - Scanners

To add a New Scanner:
- Click New
- Enter name
- Check Enabled
- Select Wheel Number
- Select Scanner Type
- For Serial Scanner:
  - -Select Com Port
- For Ethernet Scanner:
  - -Enter IP Address
  - -Enter TCP Port
- For USB Scanner: (Note-USB Scanners and currently not supported)
  - -Select the Associate button, the button will then turn Green.
  - -Scan a barcode with the USB scanner.
  - -The Scanner Serial Number will be displayed in the Scanner Serial Number feild.
- Select Output Type - Current Wheel

Last Value Scanned - insures the scanner is workly properly by allowing the user the view what has been scanned.



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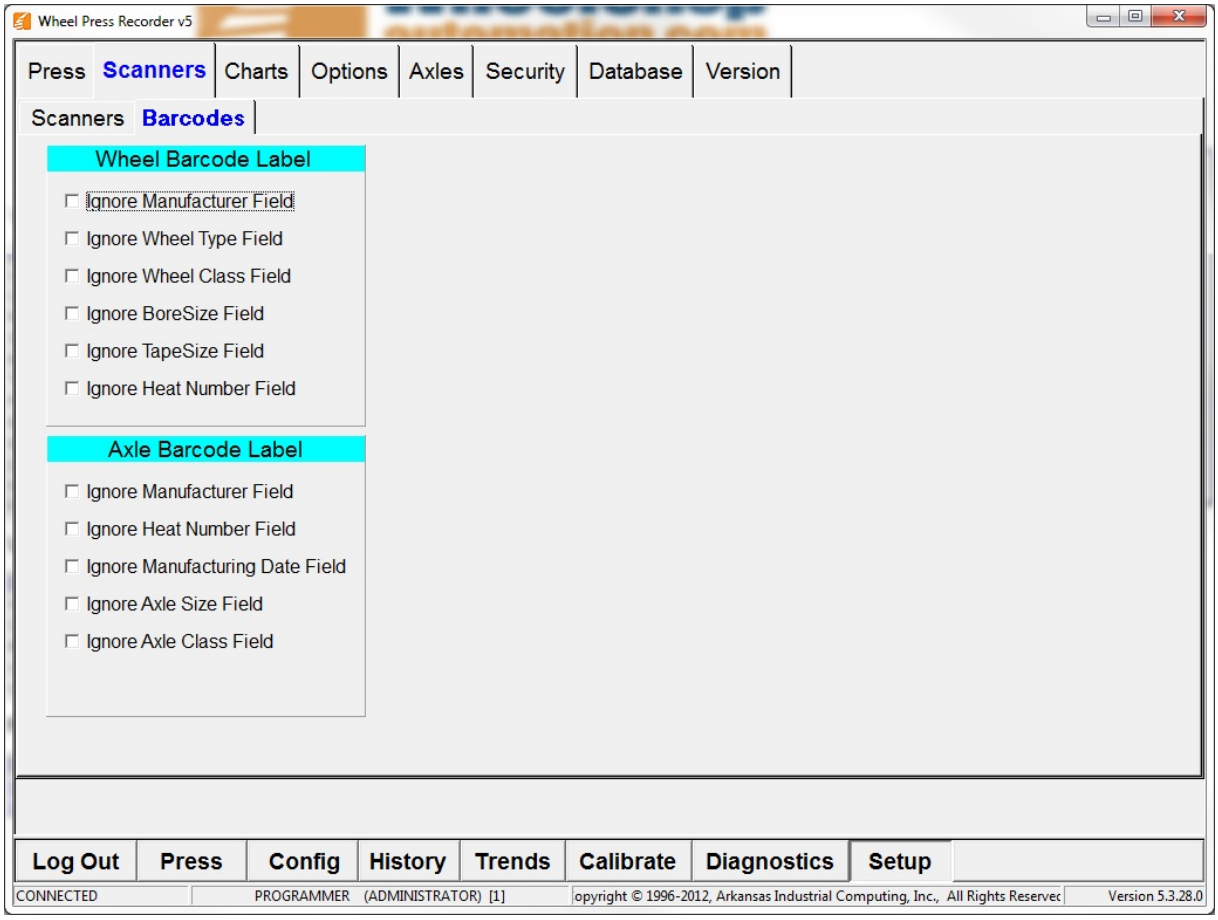
19 Scanners Tab - Barcodes

Wheel Barcode Label Processing:Check the boxes for any fields from the Wheel Barcode Label which should be ignored.
Axle Barcode Label Processing: Check the boxes for any fields from the Axle Barcode Label which should be ignored.



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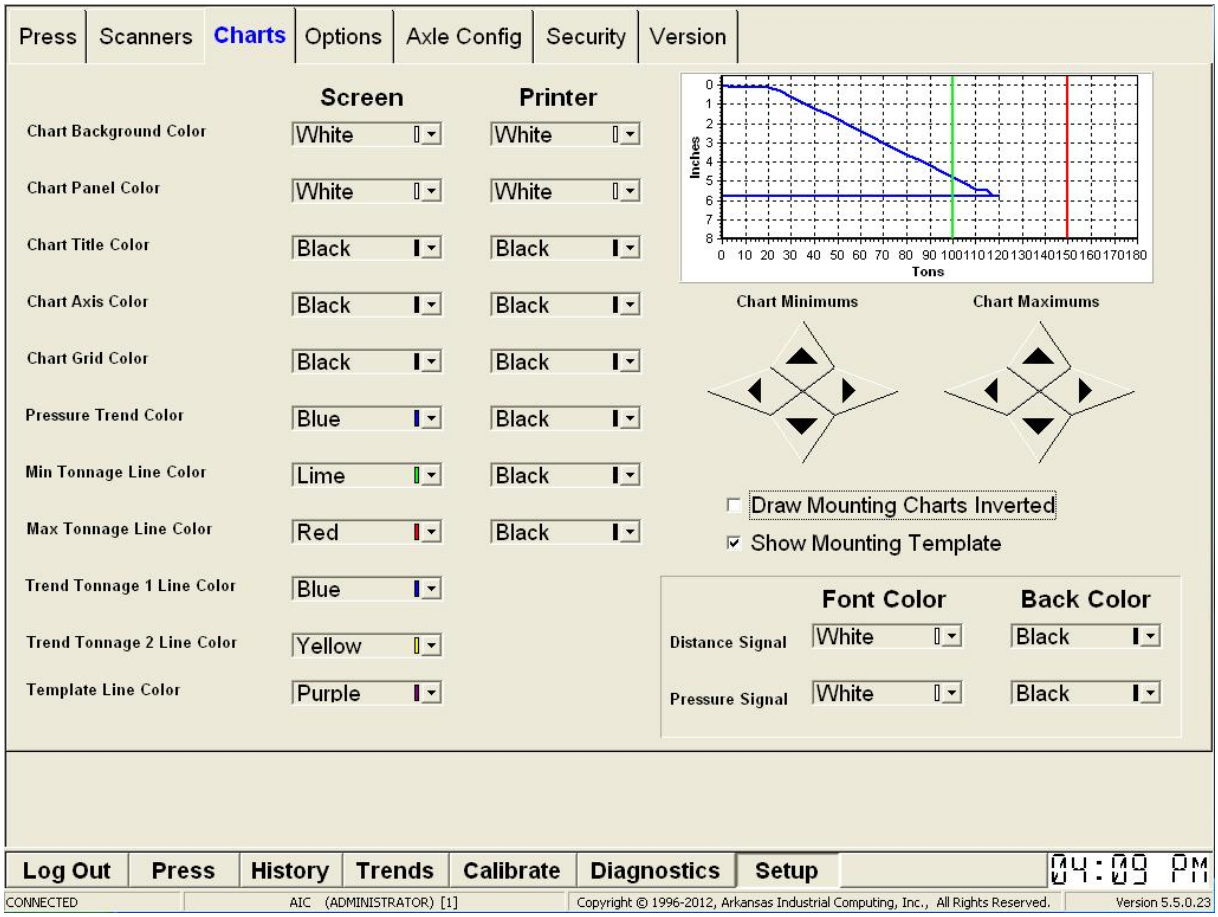
20 Charts Tab

Select colors for the various parts of the mounting graph. Use the Chart Minimums and Chart Maximums buttons to set the chart scales. Check the Draw Mounting Charts Inverted checkbox to reverse the mounting graph orientation.

Check the Show Mounting Template checkbox to draw the AAR mounting template on all mount charts.



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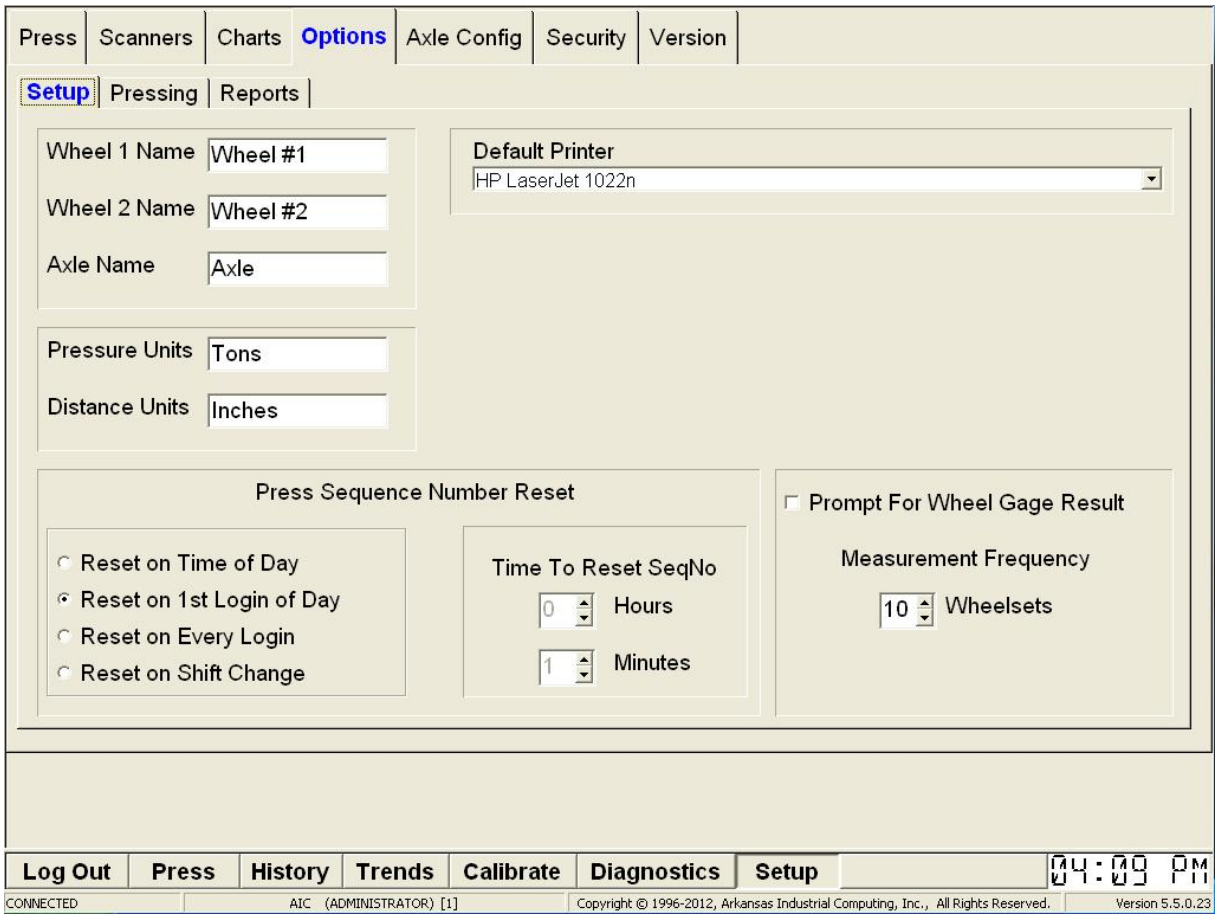
21 Options Tab - Page 1

Wheel 1 Name - Display name for Wheel # 1.
Wheel 2 Name - Display name for Wheel #2.
Axle Name - Display name for the Axle.
Pressure Units - Display name for pressure units.
Distance Units - Display name for distance units.
Default Printer - Select the printer where all reports will be printed.
Prompt For Wheel Gage Result - If checked, a dialog will be presented to the operator to obtain results of the back-to-back measurement of the wheelset.
Measurement Frequency - How often to prompt the operator for a back-to-back measurement.
Press Sequence Number Reset - Select the method of resetting the press sequence number.



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22 Options Tab - Page 2

Require Serial Number Before Pressing - Wheel serial numbers must be entered before pressing wheels. WARNING - mount will not be recorded if serial numbers are not entered and the Press Enable output is not wired.
Detect Remounts by Duplicate Serial Number - When checked, a remount is detected by searching for a duplicate serial number.
Print Every Wheelset - When checked, a mount report will be printed after every wheelset is completed.
Print Only Misfit Wheelsets - When checked, a mount report will be printed for every wheelset containing a misfit.
First Wheel Mounted is the Left Chart - Controls whether Wheel #1 is displayed as the left or right chart.
Hide Distance and Pressure Readings on Press Page - turns of digital display of distance and pressure on the Press Screen.
Operator Must Acknowledge Misfits - When checked, a dialog box will be displayed for the Operator to acknowledge when a misfit is detected.
Supervisor Must Acknowledge Misfits - When checked, a dialog box will be displayed for the Supervisor to acknowledge when a misfit is detected.
Prompt Operator for Tape Size on every press - When checked, the operator must manually enter the wheel tape size.
Detect Remounts by Demount Log - When checked and a Misfit Tracking client is installed, remounts are detected by finding the wheel serial number in the demount log.
Prompt Operator for Axle Condition - When checked, the operator will be prompted to enter an Axle Condition.
Allow Operator to skip Wheels - When checked, the operator is allowed to skip wheels.
Show Remount button on Press Page - When checked, a remout button is shown on the Press Page.
Show Message when tape size is changed - Causes the text in the textbox to be displayed when the tape size is changed.

Use Watchdog Timer While Pressing Wheels - When checked, a timer is run after graph recording has started, if the timer times out the mount is forced complete.
Enable Tonnage Alarm - When checked, the Tonnage Alarm is enabled. This can be set on the Config page.
Disable Press While Waiting on Serial Numbers - When checked, the press will be disabled until serial numbers are scanned or entered.
Require wheel set present signal to press - Enables handshake bit with the wheelpress control system
Save wheelsets to queue - Enabling this option allows wheel information to be entered downstream in an automated system
Require serial numbers - Enabling this option requires wheel serial numbers to be entered before a wheelset can be saved
Double ended press - Enabling this option allows for calibration of a press with two pressing rams
Run unattended - Enabling this option suppresses all operator warnings. Use this option for a completely automated press

Require Axle Serial Numbers - Require axle serial number to be entered.
Require WIP ID Tag - When checked, a Work In Progress tag is required before a wheelset can be saved.
Require Component ID Tag - When checked a component ID is required before a wheelset can be saved
Require CEPM Data - Check to require data per CEPM requirements

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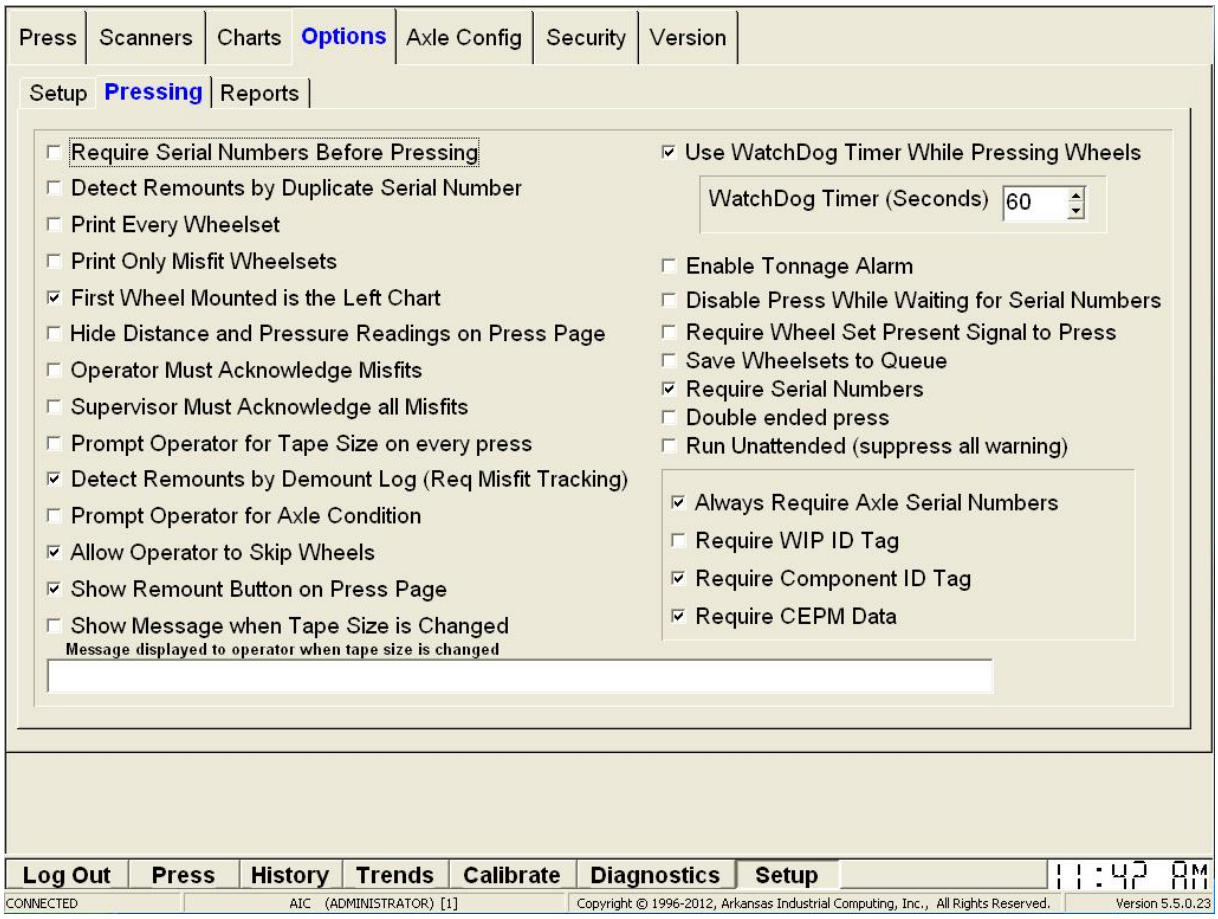

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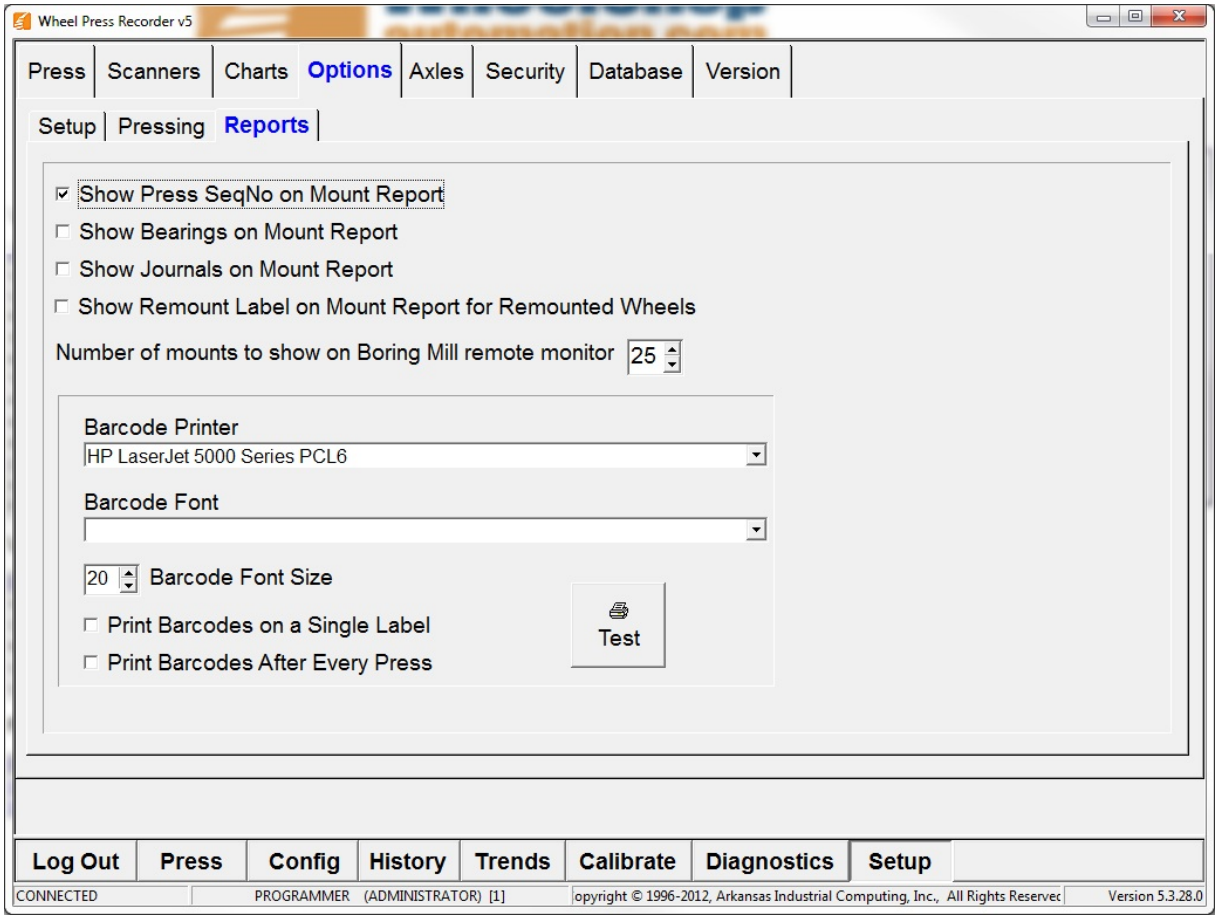
23 Options Tab - Page 3

Show Press Sequence Number on Mount Report - When checked, the Press Sequence Number will be shown on the Mount Report.
Show Bearings on Mount Report - When checked, Bearings will be shown on the Mount Report.
Show Journals on Mount Report - When checked, Journals will be shown on the Mount Report.
Show Remount Label on Mount Report for Remounted Wheels - When checked, a remount label will be shown on the Mount Report for remounted wheels.
Number of mount to show on Boring Mill Remote monitor - When checked, the mount number will be shown on the Boring Mill Monitor.
Barcode Printer - Set the printer that will be used to print Barcodes.
Barcode Font - Set the Barcode font.
Barcode Font Size - Set the Barcode font size.
Print Barcodes on a Single Label - When checked, Barcodes will be printed on a single label.
Print Barcodes After Every Press - When checked, Barcodes will be printed after every press.
Test - Press the Test Button to Print a test Barcode.



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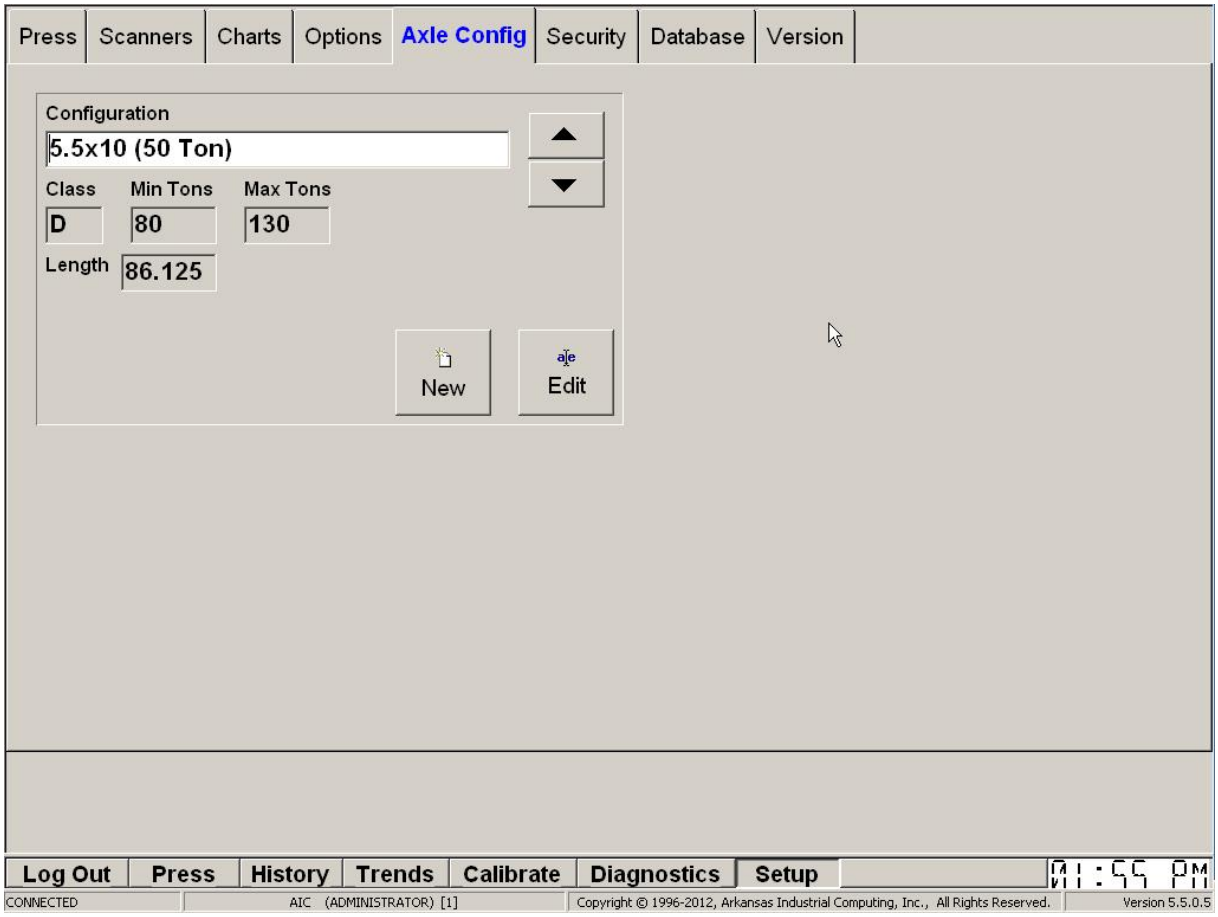
24 Axles Tab

Press the New button to add a new axle configuration. Enter the information for the Axle Configuration and press the Save button.
Press the Edit button to edit information for the currently selected Axle Configuration.



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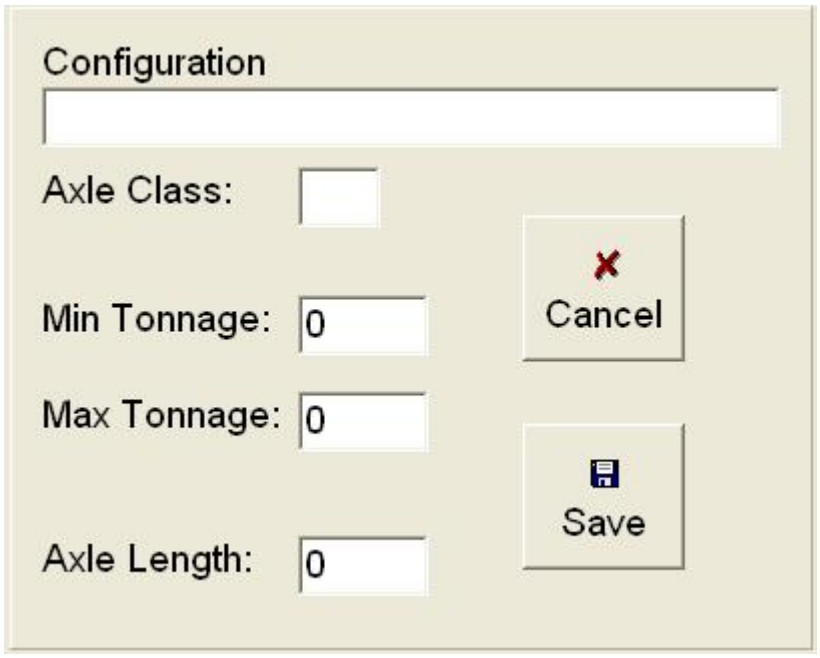

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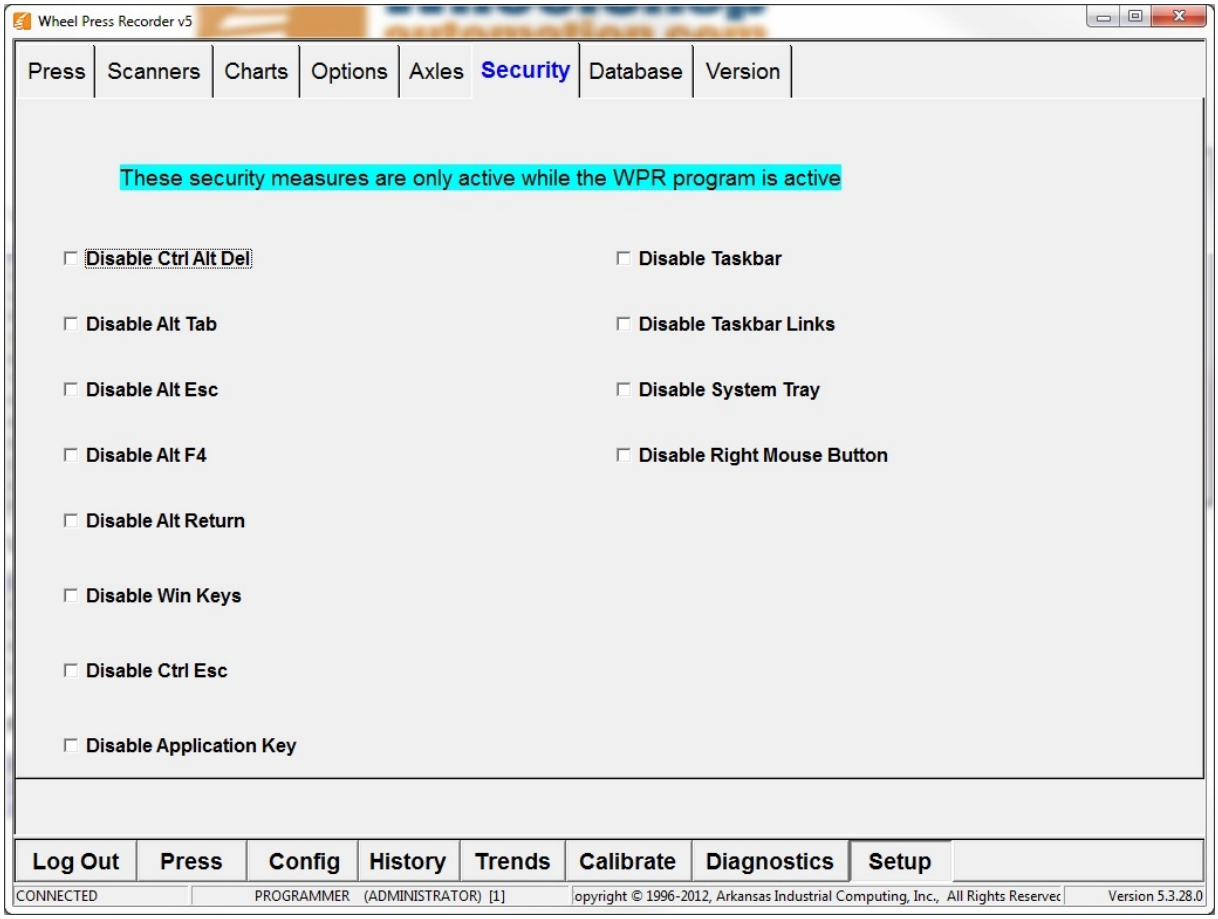
25 Security Tab

Disabling these securty measures are only active while the WPR program is active.



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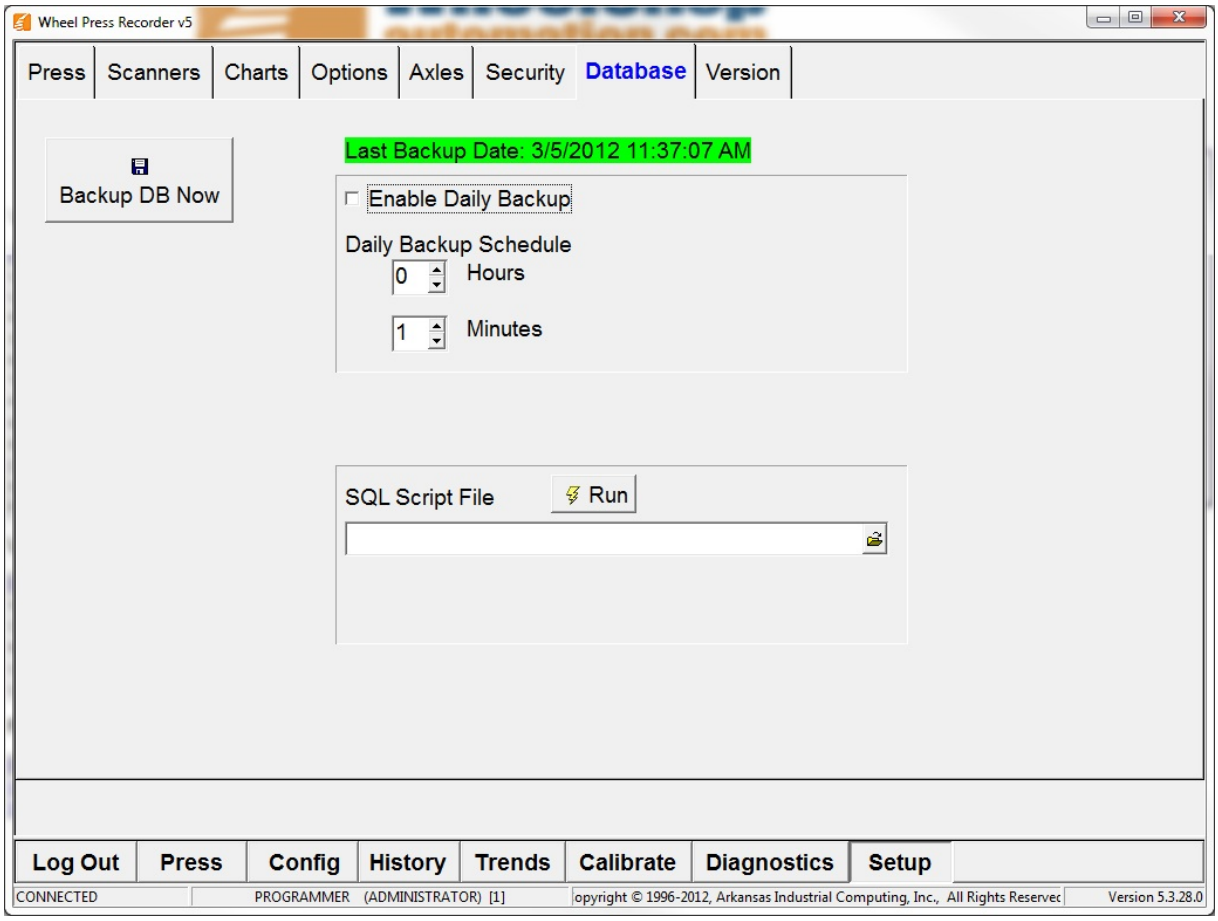
26 Database Tab

Backup DB Now - Select this button to backup the Database immediately.
Enable Daily Backup - When checked, the Daily Backup of the Database is enabled. Daily Backup Schedule can be set using the Hours and Minutes boxes.This should be configured as a scheduled task in MS-SQL.
SQL Script File - browse for the SQL Script file that needs to be ran.



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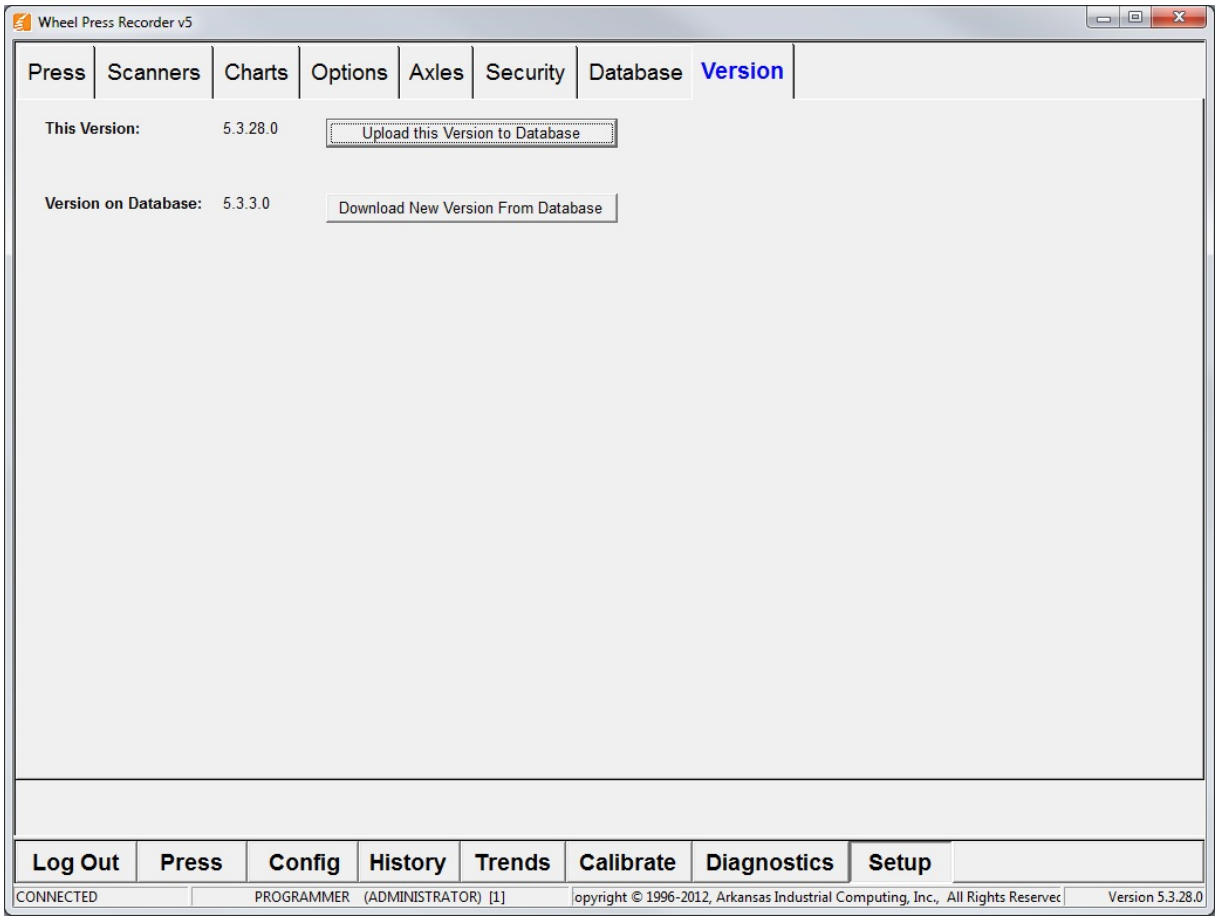
27 Version Tab

The Version Tab displays the current version of WPR and the version on the Database.
The current version can be uploaded to the Database.
The new version can be downloaded from the Database.



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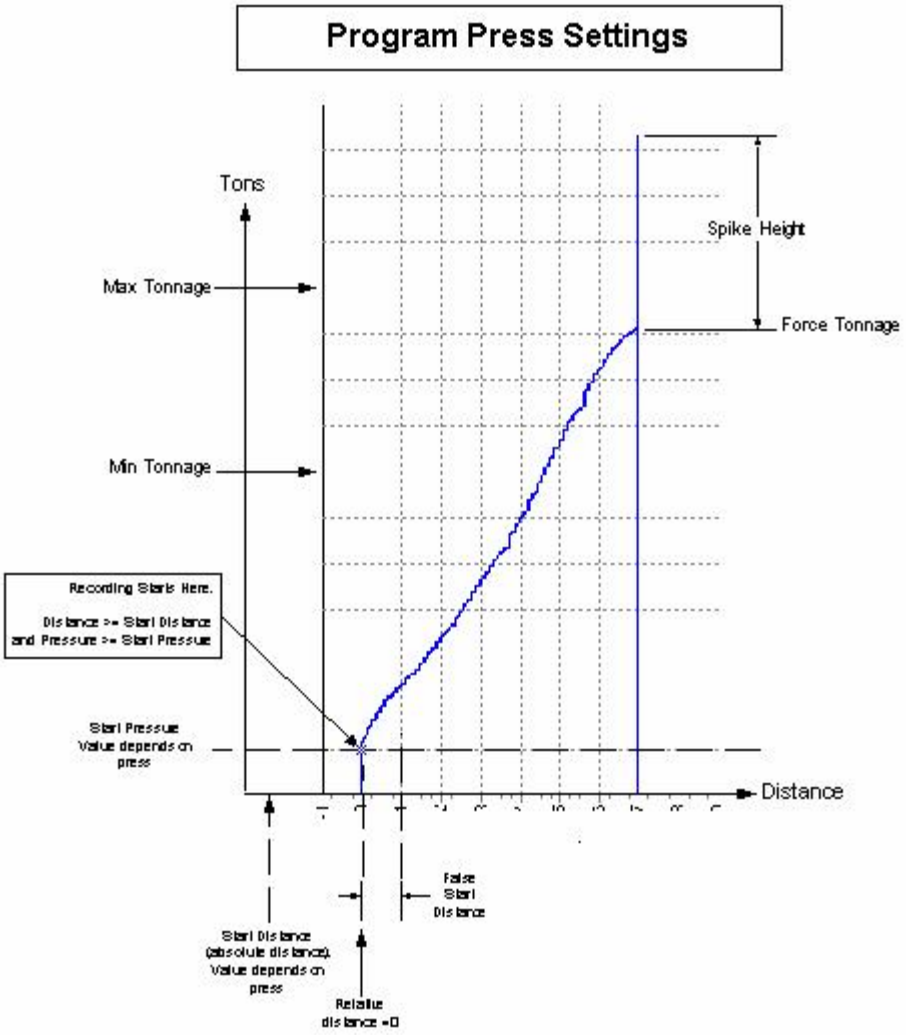
28 Press Settings



Notes:
1. Must meet start distance (absolute distance) and start pressure to begin recording.
2. Once recording begins, if pressure drops to below start pressure before false start distance is reached, the recording stops and distance resets to 0. This is to prevent recording 'bumping'.
3. Once the false start distance is exceeded then the chart is stored as is.

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