

Allweigh Scale Systems Inc
Digital Scale with Custom Computer Software



AW-SCALE - TORQUE

Made in Canada

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Introduction:

The AW-Scale system was designed to display live applied torque to Casing or Pipe. The system utilizes custom designed strain gage load cells to monitor the line pull from the tongs. The indicator can have an optimum and maximum torque value programmed into it so that when the connection is being made a green light indicates to the operator that optimum torque has been achieved. Once a connections is made the Digital Indicator will show the peak torque reading which is the last highest torque value. This value can then be stored in memory on the unit. The supplied software connects the user's computer to the scale indicator via standard USB interface. Once the software is loaded onto the computer and the scale is connected and powered up, the units work together without the need for drivers to be installed. The supplied software can be loaded on multiple computers allowing the data to be easily transferred to multiple users. Once the scale indicator is connected to the computer and a new job is started, the stored joint list can be downloaded into the computer. An upgraded unit also connects to a dump valve that can dump the hydraulics from the tongs at a preset torque value, displaying the value on the screen so that it can then be stored in memory.

Hardware Connections:

Load Cell connection (Scale Connection):

- The load cell input on the scale indicator is a 5-Pin Military Connector

USB Connections:

- The scale indicator connects to the computer through a standard A-Male to A-Male USB cable. (Systems come with a 10 Foot cable)
 - Extension Cables are available up to 15 Feet
 - Please contact factory for more information.

Power Connections:

- Power is supplied to the scale indicator through a 12Volt 500mA AC adaptor
 - The plug end on the supply is a 2-Pin Military Connector
 - Internal rechargeable batteries are Lithium Ion, unit comes with a battery charging system built in. Fully charges in 4 hours.

Installing Software:

Software:

- Software will be available from our website at www.allweigh.com in the near future.
 - Clicking on the AWScale attachment will start the download process, follow the on screen instructions to install the software.
- Installing from a memory stick
 - Open up the memory stick in computer settings
 - Find the AW Scale Icon and drag it to the desk top
- Starting the Program
 - Double clicking the Icon will start the program.



Settings:

Program Settings:



Control Settings:

- **Entering Company Name**
 - This attaches the Company name to all data files.
- **Default Scan Title**
 - This labels the displayed Scan Field on the screen
Barcode scanners can be attached to scan pipe into system
- **Clear Data Fields After Log**
 - When data is logged in the program, the user has the option to have the logged data to stay on the screen or have it cleared.

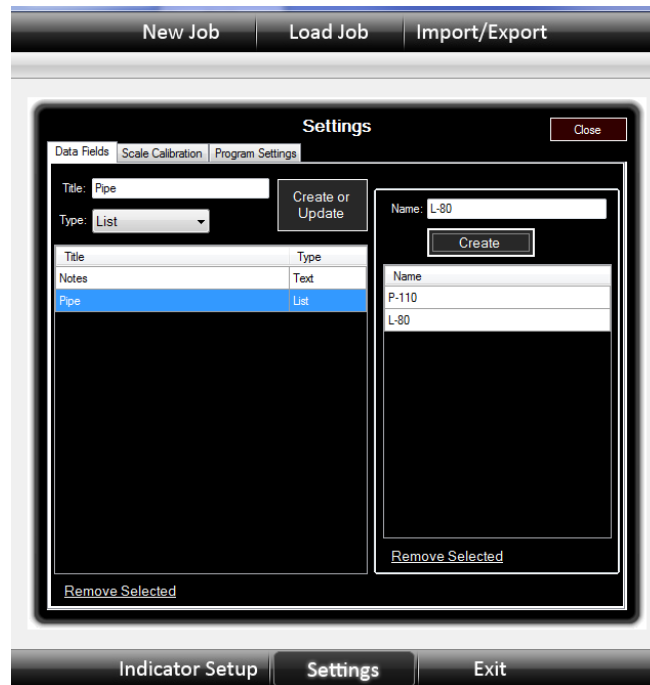
Update Software:

- **Check for Updates**
 - When the user's computer is connected to the internet, clicking on the Check for Updates button will allow the program to go to Allweigh's Secure Server and check the current version of the software against what the Server has for its latest version and allows the customer to update the current software.
 - When checking for updates, the program will indicate whether there is a software update or if the latest version of the program is already installed.

Save Settings:

- When any information is changed or added to this screen, you must click on the save settings in order for the program to save the settings. Otherwise when the program is closed those changes will be lost.

Data Fields



Title:

- This is the Displayed Title on the Computer Screen and Report List
 - Type in the information for the Title and click on Create or Update to either change or create the Title

Type:

- Can be either:
 - Text – User types in the information required into the designated field
 - List – User has a drop down menu to select from
 - To create the drop down menu, click on the desired Title to be edited or created, once selected another field is created on the right hand side of the screen where the desired drop down menu selections can be created.

Each Data Field is fully customizable so that the user can set up the program to gather as much information as needed or as little.

Scale Calibration

- Entering Scale Calibration
 - The calibration settings on the program are password protected so that unauthorized personnel do not alter the calibration or setup of the system. Factory authorization is required to enter this page.
 -

Customer Calibrations are done through the Indicator Setup Page.

Indicator Setup

The screenshot shows the 'Indicator Setup' window. At the top, there are three buttons: 'New Job', 'Load Job', and 'Import/Export'. The main content area has a dark background. On the left, it says 'Mode: P'. To the right, there is a green square icon followed by 'Indicator: Dump' and a blue link 'Reload Settings From Hardware'. Below that, it says 'Status: Data Loaded.'. There are two main sections: 'Peak Indicator' and 'Dump Indicator'. The 'Peak Indicator' section contains: 'Count By: 10', 'Decimal Place: 0', 'Backlight: Auto', 'Sample Size: 20', 'Enable Peak: False', and 'Lever Length (Inches): 12'. The 'Dump Indicator' section contains: 'Dump Enabled: False', 'Dump Polarity: Power to Close', 'Optimal (Dump) Torque: 1100', and 'Max Torque: 1500'. At the bottom of the main area are two buttons: 'Apply Values' and 'Cancel'. At the very bottom of the window is a footer bar with three buttons: 'Indicator Setup', 'Settings', and 'Exit'.

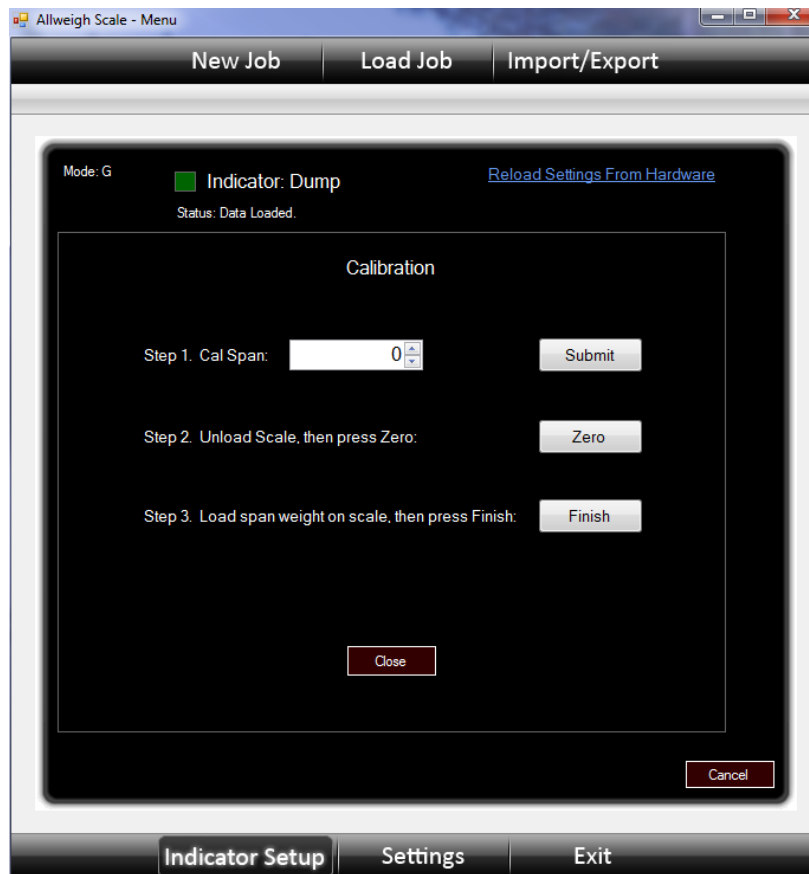
- **Reloading Settings From Hardware**
 - With the USB Cable installed and the Scale Indicator on, the Box beside Indicator at the top of the screen should be green if the Scale and computer are communicating. By clicking on the [Reload Settings From Hardware](#) the Scale Indicator will transmit into the program what its settings are.
- **Count By:**
 - This is what the display increments will be set to.
- **Decimal Place:**
 - Setting a decimal into the display for more accuracy (Normally not required for power tong use.)
- **Backlight:**
 - Can be turned to auto or selected on all the time, leaving on auto will conserve battery life.
- **Sample Size:**
 - Averaging on the displayed weights, the higher the number the slower the display will respond.
- **Enable Peak:**
 - When enabled this will allow the indicator to monitor all of the applied torque and take the highest reading and display it on the screen.
- **Lever Length:**
 - The operator can set the lever length on the system to match the lever length of the tongs being used.

- **Dump Enabled:**
 - Can only be enabled if the unit is a dump unit. This feature allow Digital Indicator to be connected to a dump valve and the unit will dump the hydraulics at a preset torque value.
- **Dump Polarity:**
 - This setting allows the unit to operate a power to close or a power to open valve.
- **Optimal (Dump) Torque:**
 - This is the optimum torque value for the casing/pipe being used. This is also the value at which a dumping unit will dump the hydraulics.
 - This is where the unit will turn on a green LED to indicate to the operator that the optimum torque has been reached.
- **Maximum Torque:**
 - This is the maximum torque value for the casing/pipe being used.
 - This is the value at which the unit turns on a Red LED to indicate to the operator that the maximum torque has been reached or exceeded.

If any of the settings are changed, the Apply Values button must be selected.

Scale Calibration

- To enter Scale Calibration:
 - Press <Ctrl> & <Shift> and click on Indicator beside the Green box



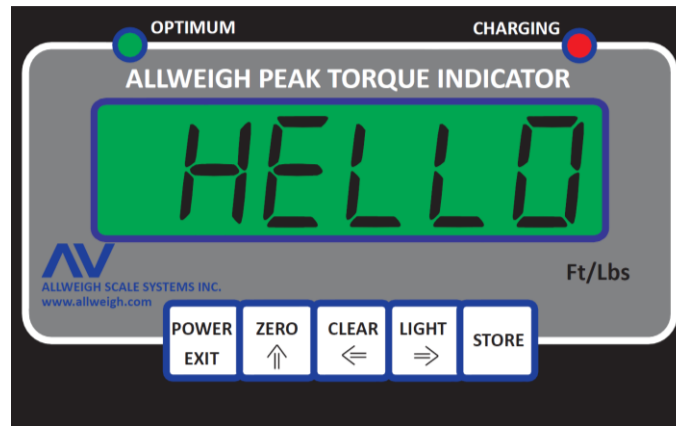
- Step 1. Cal Span:**
The actual weight that is used to calibrate the system must be entered then press Submit.
The unit must be set to a 12-Inch Lever Length to properly calibrate the unit.
- Step 2. Unload the Load Cell, then press Zero**
- Step 3. Load the span weight onto the Load Cell, then press Finish.**

Calibration is complete.

It is very important to use accurate weights for calibration

Periodically the system will have to be returned to the factory for calibration and certification.

Manual Setup Using Front Keypad



To enter the setup menu through the front keypad, press the LIGHT & STORE keys.

- ZERO key moves through setup parameters
- STORE key enters the parameter setting
- ZERO key to change the value, CLEAR & LIGHT key change the selected digit
- STORE key saves the changes made
- POWER key exits the setup menu.

Once the settings are saved, make sure to turn the Indicator off and then on to permanently write them to memory.

Parameter Settings:

C 04 Units

- The unit can be set for either Ft/Lbs or nM
 - 00 = Ft/Lbs
 - 22 = N= nM

C 13 Lever Length

- The unit comes pre-calibrated from factory using government certified weights. Once the lever length is changed the Indicator automatically calibrates itself to the lever length, no other calibration is required. This makes the unit adaptable to any lever length.

C 14 Dump / Optimum Torque Value

- The Dump / Optimum Torque Value is set here to either dump the hydraulics if it is a dumping unit and indicate on the face with a bright green led that optimum torque is achieved or just indicate if it is a peak unit

C 15 Over / Maximum Torque Value

- The Over / Maximum Torque Value is set to indicate on the face with a bright red led that torque value has exceed the maximum allowed torque

C 16 Peak Enable

- If peak is enabled, the display will lock onto the last highest torque value and will only reset itself if the STORE or CLEAR keys are pressed, this value is locked onto the display, if the torque is released and the torque value returns to zero this value will clear back to zero.

0 = Disable

1 = Enable

C 17 Dump Enable

- If equipped, the unit will dump or release the hydraulic pressure at the dump valve at the preset optimum torque value.
- The external 75 Foot power cable must be connected to a 12 Volt source in order for the dump feature to work. The unit will not dump with just the internal battery due to the amount of current required to trigger the dump valve coil.

0 = Disable

1 = Enable

C 18 Dump Polarity

- Due to different coils that are available, the polarity of the signal being sent to the dump valve can be either power to dump or power to pressure.

0 = Power to Pressure

1 = Power to Dump

Starting a New Job:

Jobs are the way our Database organizes actual job sessions so that all the information can be stored properly for easy access. Unlike programs that send directly to a spread sheet, the AW Scale program uses a very extensive Data Base.

- **Creating a New Job:**
 - Entering a Job Name, these names are unique and can only be used once
 - Use a name that describes the Job being performed like the customer with the date so it is easy to locate in the jobs folder.
 - Selected Hardware Fields and Scan Title
 - This is used to let the program know what information is being gathered, either weight (Torque) or weight and pipe information.
 - Available Data Fields
 - These are the preset Data Fields that were setup at the beginning, they are custom selectable so that each job created can use all of the Data Fields or only a portion of them. By Selecting the Field that you want to display in the program then clicking the right arrow above, it will transfer over to the Selected Data Field. If you do not wish to use a Data Field, simply select it in the right hand column and click on the left arrow to move it back to the available Data Fields. Or you can clear the items and start over again.

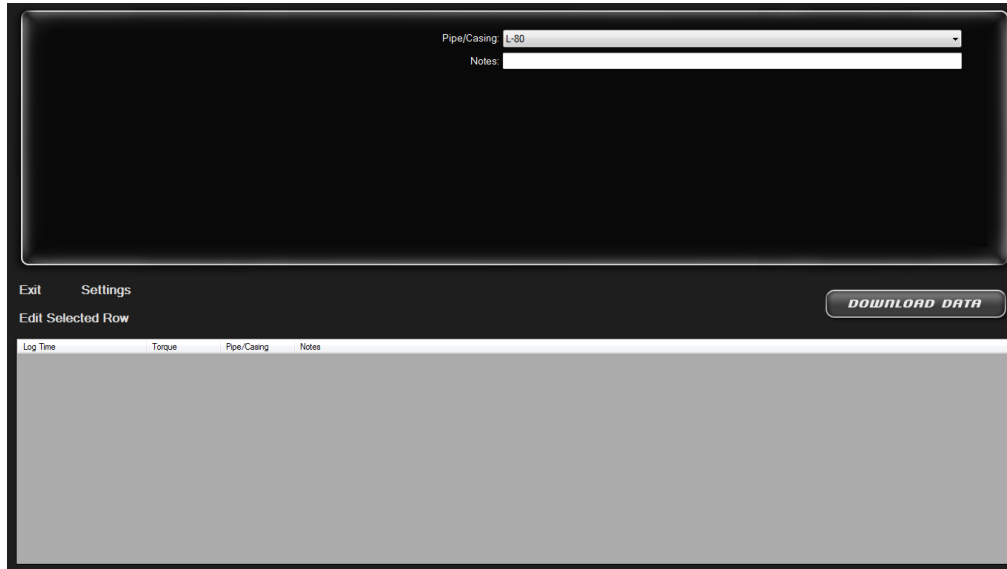
When all of the Data Fields have been selected and the Job Name is correct, Click on the Start button to start the program.

The Scale Indicator has been designed to run as a Stand Alone Data Logger that will Store the make-up torque and store in internal memory when the Store key is pressed.

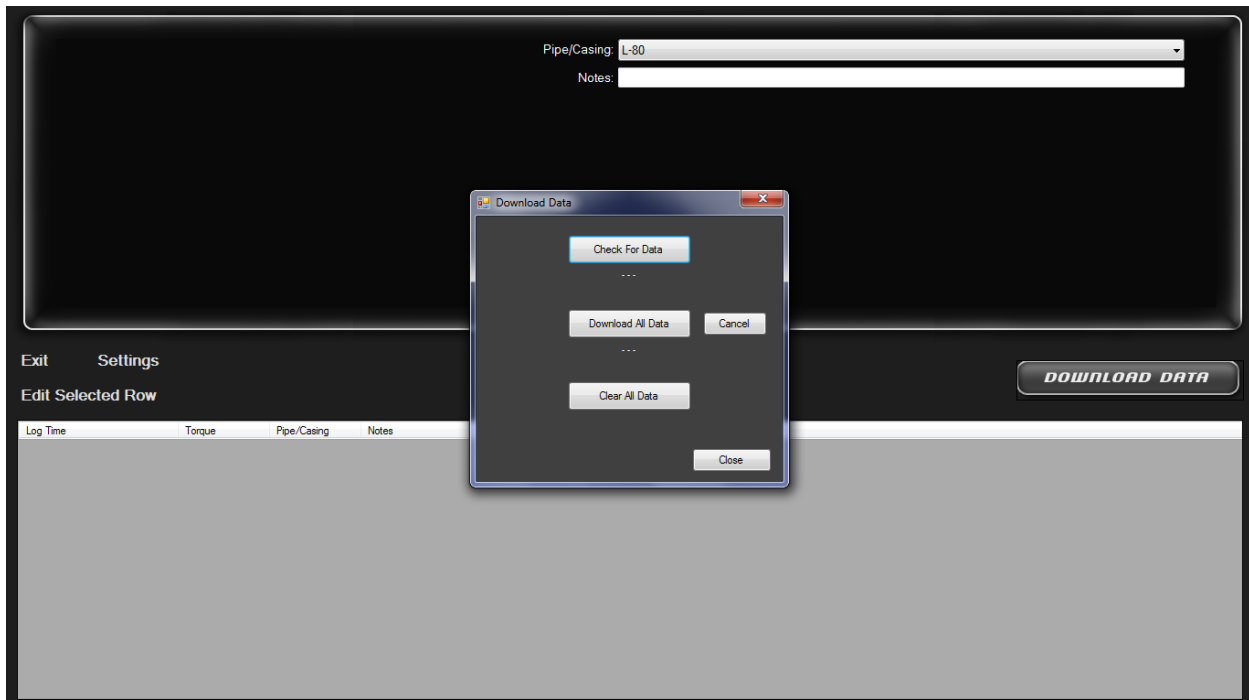
DownLoading Data from Digital Indicator

Once a job was completed, all of the joint connection make-up torque values can be downloaded from the Scale Indicator.

1. Connect the Scale Indicator to the Computer
2. Start a New Job or Load a previous Job to add the Data to it.
3. Start the program
4. Click on DownLoad Data

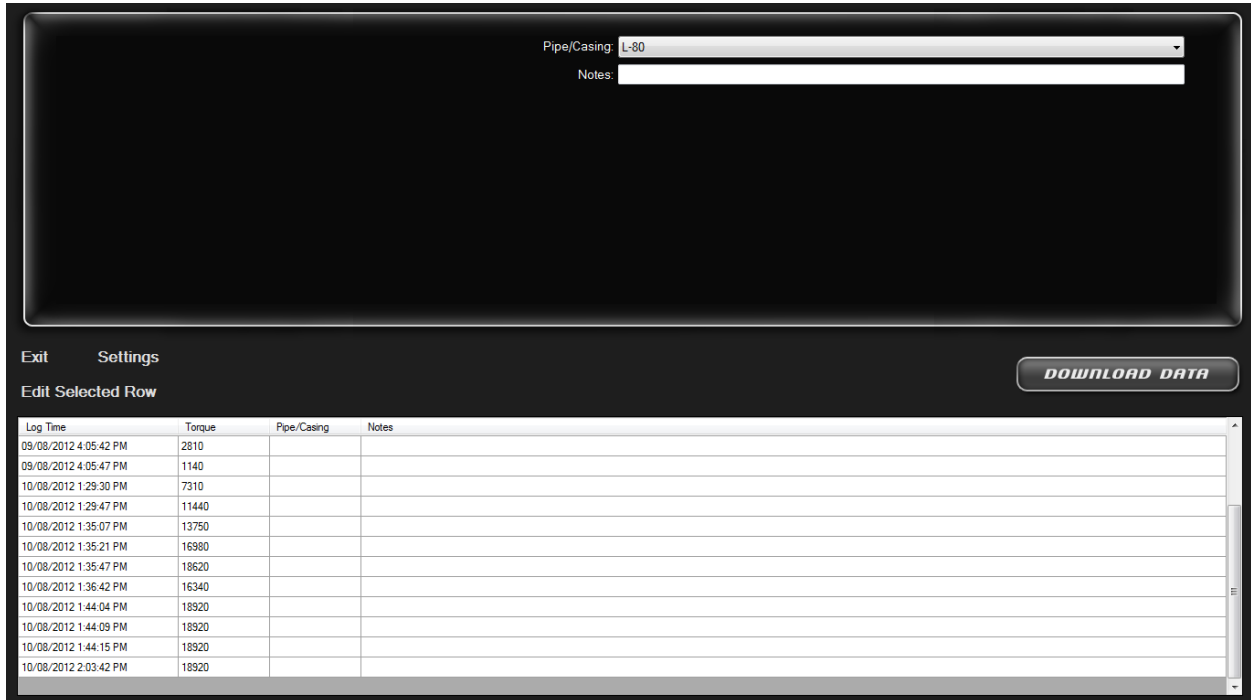


5. Click on check for Data, this will display how much data is available; this is the amount of logged entries that are stored.



6. Click on Download Data. This will take the data off of the Scale Indicator and load it into the program and display it in the list. This data can now be edited and more information added to the list before it is saved.

7. Once the data is downloaded and viewed on the computer it can then be cleared off of the Scale Indicator. The Scale Indicator can hold up to 2000 entries. **If the data is not cleared, it will be present the next time the data is accessed.**



- **Editing Selected Rows**
 - Allows User to Edit any row of Data to add or delete information
- **Settings**
 - Allows Job Data to be exported to a Spreadsheet
 - Enables user to add notes to Job File
 - Allows user to Lock Job File
 - Once the Job is locked, no data in the file can be changed by anyone other than the person who locked the job
 - Export Data to Spreadsheet
 - Sends Joint list and associated notes to a spreadsheet program

Job Settings

Company Name:

Job Name:

Job Notes:

File Locked

[Export Data to Spreadsheet](#)

Save

Documents library

Name	Date modified	Type
BifaxRx	29/08/2012 11:04 ...	File folder
microsoft	18/07/2012 11:16 ...	File folder
NTIBUNS.dll	30/12/2010 1:00 AM	Application extens...
NTLiveUpdate.dll	30/12/2010 1:00 AM	Application extens...

File name:

Save as type:

Save Cancel

Log Time Torque Pipe/Casing Notes

Log Time	Torque	Pipe/Casing	Notes
09/08/2012 4:05:42 PM	2810	P-110	Float Shoe
09/08/2012 4:05:47 PM	1140		
10/08/2012 1:29:30 PM	7310		
10/08/2012 1:29:47 PM	11440		
10/08/2012 1:35:07 PM	13750		
10/08/2012 1:35:21 PM	16980		
10/08/2012 1:35:47 PM	18620		
10/08/2012 1:36:42 PM	16340		
10/08/2012 1:44:04 PM	18920		
10/08/2012 1:44:09 PM	18920		
10/08/2012 1:44:15 PM	18920		
10/08/2012 2:03:42 PM	18920		

Job Settings

Company Name:

Job Name:

Job Notes:

File Locked

[Export Data to Spreadsheet](#)

Save

AW Scale

File successfully saved.

C:\Users\Wayne\Documents\Demo Job

OK

DOWNLOAD DATA

Log Time Torque Pipe/Casing Notes

Log Time	Torque	Pipe/Casing	Notes
09/08/2012 4:05:42 PM	2810	P-110	Float Shoe
09/08/2012 4:05:47 PM	1140		
10/08/2012 1:29:30 PM	7310		
10/08/2012 1:29:47 PM	11440		
10/08/2012 1:35:07 PM	13750		
10/08/2012 1:35:21 PM	16980		
10/08/2012 1:35:47 PM	18620		
10/08/2012 1:36:42 PM	16340		
10/08/2012 1:44:04 PM	18920		
10/08/2012 1:44:09 PM	18920		
10/08/2012 1:44:15 PM	18920		
10/08/2012 2:03:42 PM	18920		

Company:				
Job Name: Demo				
Job Name:				
ID	Log Time	Torque	Pipe/Casing	Notes
1	09/08/2012 4:04:58 PM	1560	P-110	Float Shoe
2	09/08/2012 4:05:04 PM	1320	P-110	
3	09/08/2012 4:05:16 PM	1310	P-110	
4	09/08/2012 4:05:23 PM	1340	P-110	
5	09/08/2012 4:05:29 PM	1300	P-110	
6	09/08/2012 4:05:36 PM	1320	P-110	
7	09/08/2012 4:05:42 PM	1350	P-110	
8	09/08/2012 4:05:47 PM	1330	P-110	
9	10/08/2012 1:29:30 PM	1340	P-110	
10	10/08/2012 1:29:47 PM	1320	P-110	
11	10/08/2012 1:35:07 PM	1360	P-110	
12	10/08/2012 1:35:21 PM	1310	P-110	
13	10/08/2012 1:35:47 PM	1340	P-110	
14	10/08/2012 1:36:42 PM	1350	P-110	
15	10/08/2012 1:44:04 PM	1320	P-110	
16	10/08/2012 1:44:09 PM	1350	P-110	
17	10/08/2012 1:44:15 PM	1320	P-110	
18	10/08/2012 2:08:42 PM	1340	P-110	

Loading a Job:

- **Load a Previous Job**
 - Allows the user to open and add more data to a job started previously
- **Select the job from the drop down menu and click <Load>**, this will bring up the job information. Data can now be added, make sure the old data was deleted

Import/Export

- **Import Job**
 - Allow data to be transferred between computers in a secure data file
- **Export Selected Job**
 - Formats data and transfers them to a file that can be sent via email or transferred to a memory stick
- **Manage Finished Jobs**
 - Allows user to organize the current jobs that have been completed, moving them into a Finished Jobs folder so they can be viewed at a later date
 - This also removes the Finished Jobs from the current jobs drop down menu.