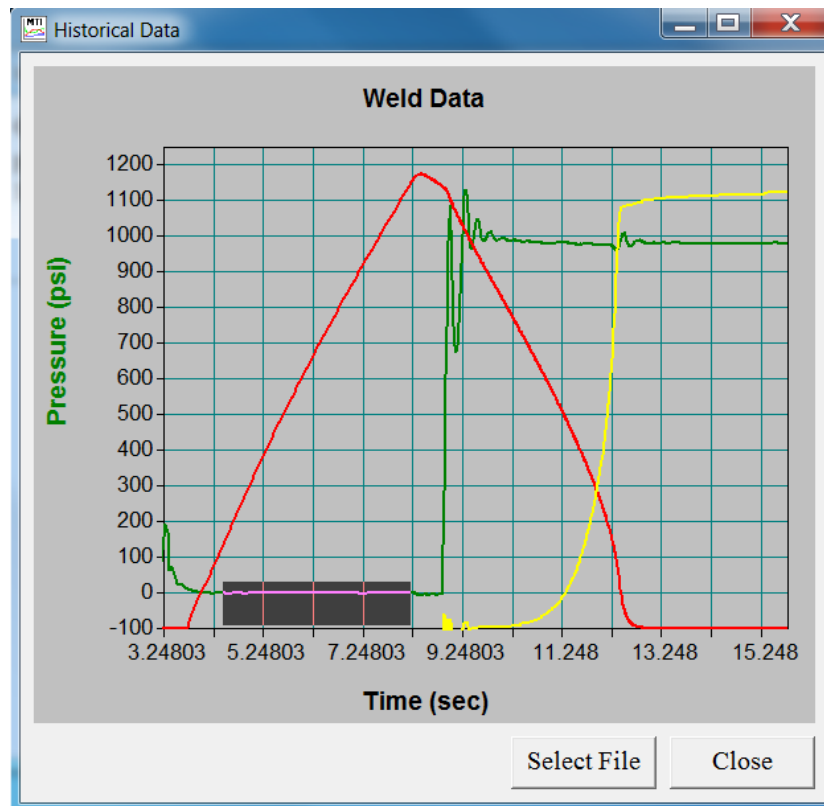




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11.11....Operator Interface

Weld Cycle Data Zoomed Window

Zoom Window — The Zoom Window changes the current time scale for every trace displayed on the graph, and it also changes the current Y-Scale, but only to one trace on the graph. The Y-scales for all other traces do not change when the Zoom Window is created.

Use the left mouse button to define a Zoom Window that includes the time scale of interest as follows:

1. Move the cursor to one corner of the window.
2. Press and hold the left mouse button.
3. Define the Zoom Window by moving the cursor to the opposite corner of the window (black area).
4. Release the left mouse button. The zoomed area of the time scale will appear (Sheet 2).
 - a) Repeat Steps 1 through 4, above, until the desired time scale is displayed.
5. To go back to the previous time scale, do as follows:
 - a) Press the right mouse button to activate the popup menu.
 - b) Click on Zoom Previous (Sheet 3). The graph will revert back to the previously zoomed time scale.



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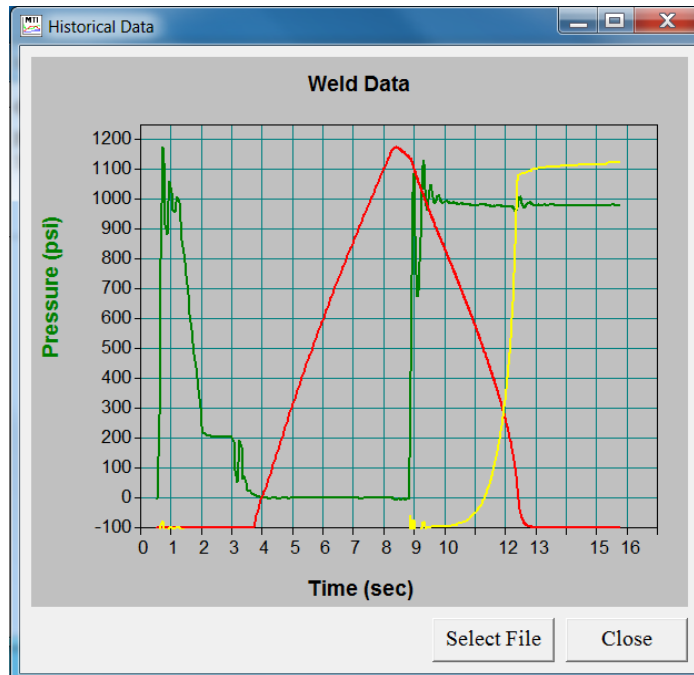
6. To go back to the original time scale of the graph, repeat Step 5, above, as often as necessary until the original time scale is displayed.



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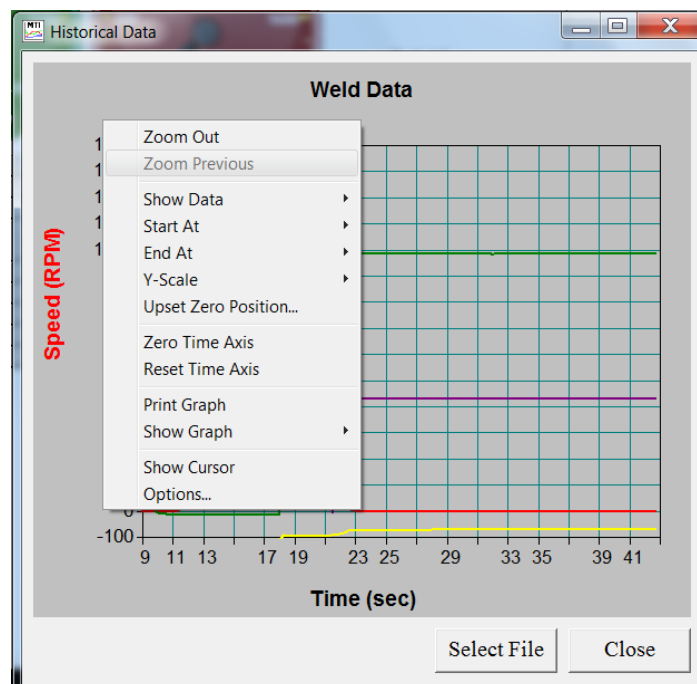
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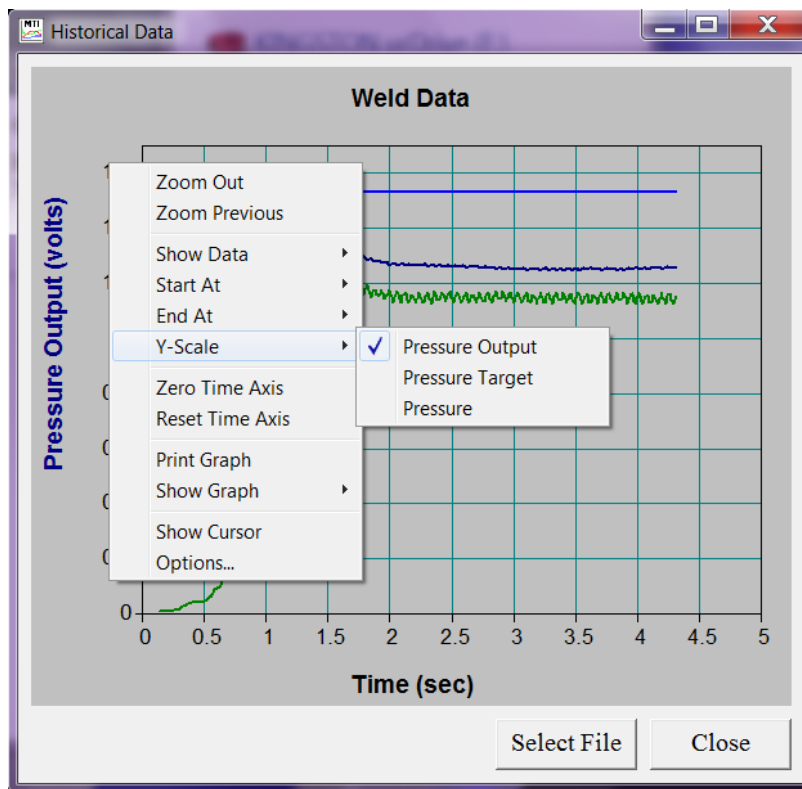


11.12...Operator Interface-

Weld Cycle Data, Zoomed Time Scale



11.13...Operator Interface — Weld Cycle Data, Popup Menu, Zoom Previous



11.14...Operator Interface — Weld Cycle Data, Popup Menu, Y-Scale

Change the Y-Scale — When there are multiple traces displayed on the graph simultaneously, each trace is drawn according to its own Y-scale. The Y-scale that is drawn to the left of the graph is applicable to only one of the traces. There are two methods to choose from to change the Y-scale for this trace:

Method One: The **Graph Options** dialog box.

The Graph Options dialog box allows the operator to customize the data and scales displayed on the graph. The Graph Options dialog box is accessed from the popup menu. Refer to paragraph **Graph Options**, above.

Method Two: The Zoom Window.

Use the left mouse button to define a Zoom Window that includes the time scale of interest. Refer to paragraph **Zoom Window**, above.

Associate the Y-Scale with a different Trace — As stated in the previous paragraph, when there are multiple traces displayed on the graph simultaneously, each trace is drawn according to its own Y-scale. The Y-scale that is drawn to the left of the graph is applicable to only one of the traces. Therefore, to display the Y-scale corresponding to a different trace, do as follows:

1. Click the right mouse button over the graph to display the popup menu.
2. Select Y-Scale from the menu.



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3. Select the name of the trace, listed below, whose Y-scale is to be displayed.
 - Pressure Output
 - Pressure Target
 - Pressure



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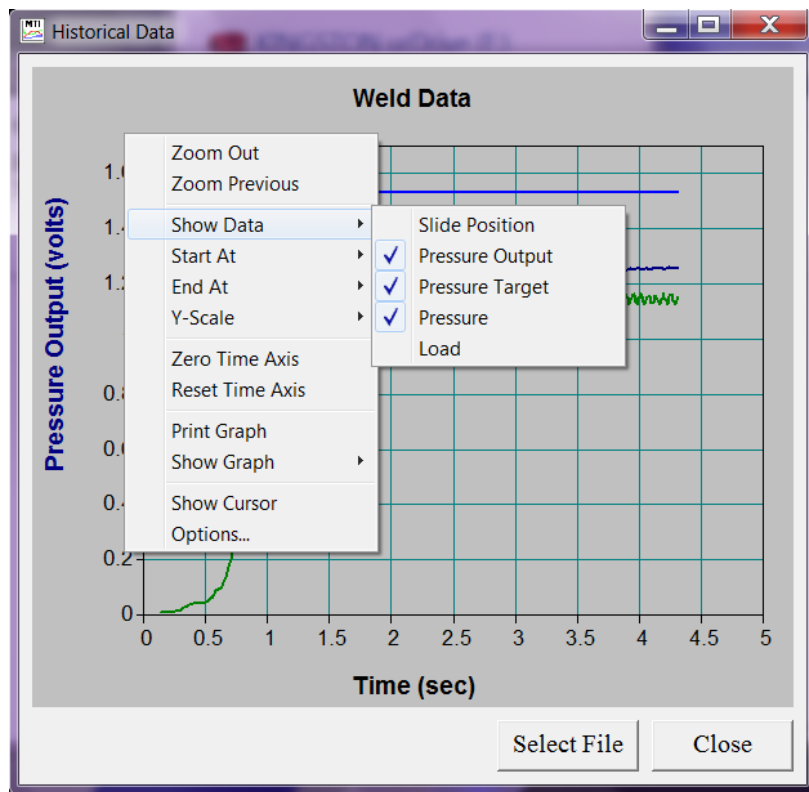
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11.15...Operator Interface — Weld Cycle Data, Y-Scale Unit Change

Change the Units of the Y-scale — To change the units of the Y-scale, double-click the label text of the displayed Y-scale. This will display the **Select Unit** dialog box. Select the units to display, then press the OK button.



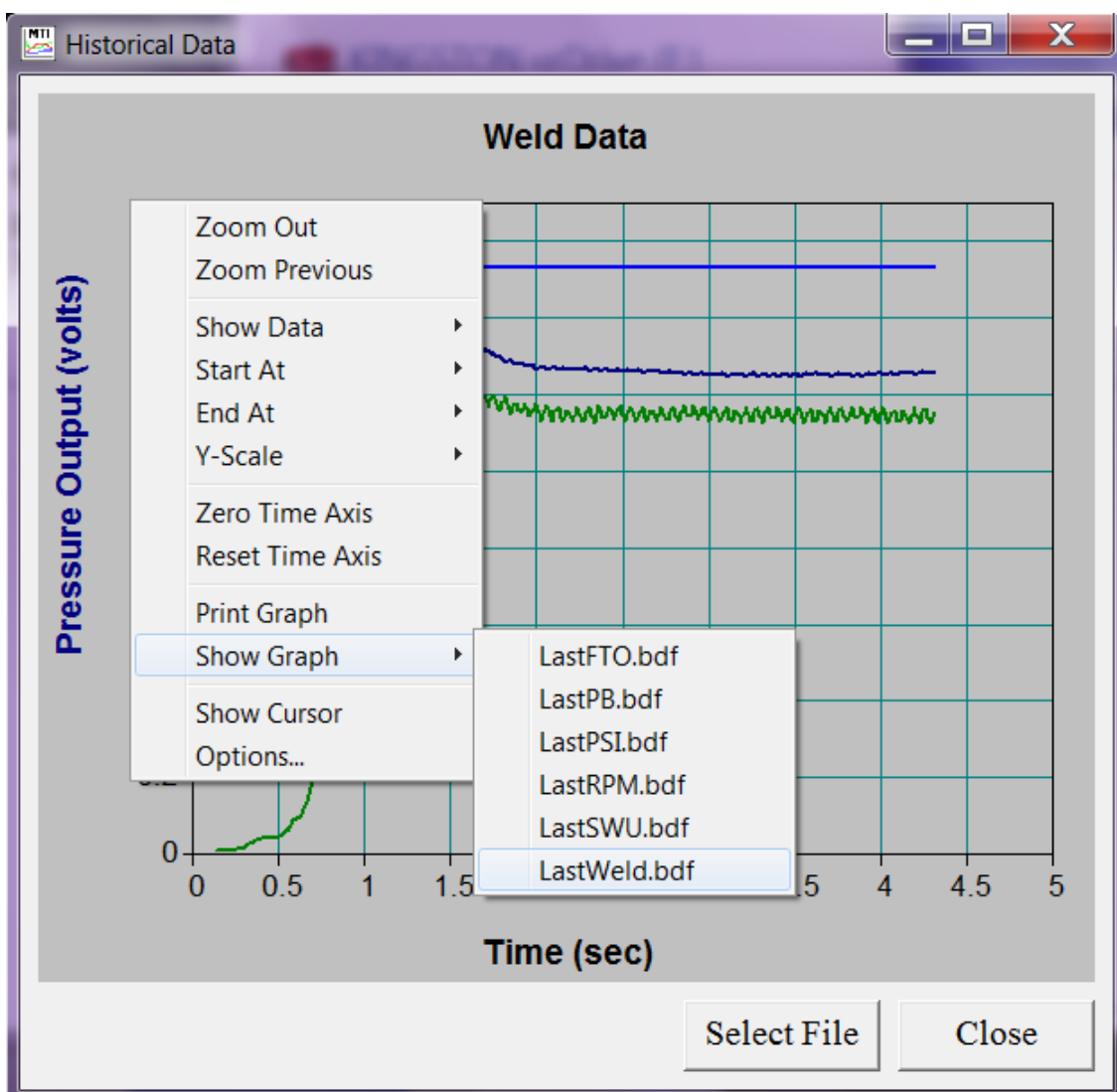
11.16...Operator Interface — Weld Data, Popup Menu, Show Data

Show Data — The Show Data menu item provides a list of data traces for display in the Trend Plot graph. Each data trace item with a checkmark next to it will be displayed in the Trend Plot graph. To display multiple data traces, the popup menu must be repeatedly accessed for each added data trace. Similarly, to remove data traces, the popup menu must be accessed repeatedly to clear the checkmark from the desired data traces.

Add or Remove Data Traces — The graph has the ability to display multiple traces simultaneously. To add or remove data traces one at a time, do as follows:

1. Click the right mouse button over the graph to display the popup menu.
2. Select Show Data from the menu.
3. Select the name of the data trace to add or remove. Data traces that appear in the menu with a check mark are currently displayed on the graph. Selecting a checked data trace will remove it from the graph. Data traces that appear without a check mark are not currently displayed on the graph. Selecting an unchecked data trace will add it to the graph.

To add or remove multiple data traces at once, use the Graph Options dialog box. Refer to paragraph **Graph Options**, above, for information on accessing and using the popup menu to add or remove multiple data traces.



11.17...Operator Interface — Weld Cycle Data, Popup Menu, Show Graph

Show Graph — The Show Graph menu item allows the Operator to select from a list of weld cycle data files to display on the **Weld Data** graph.

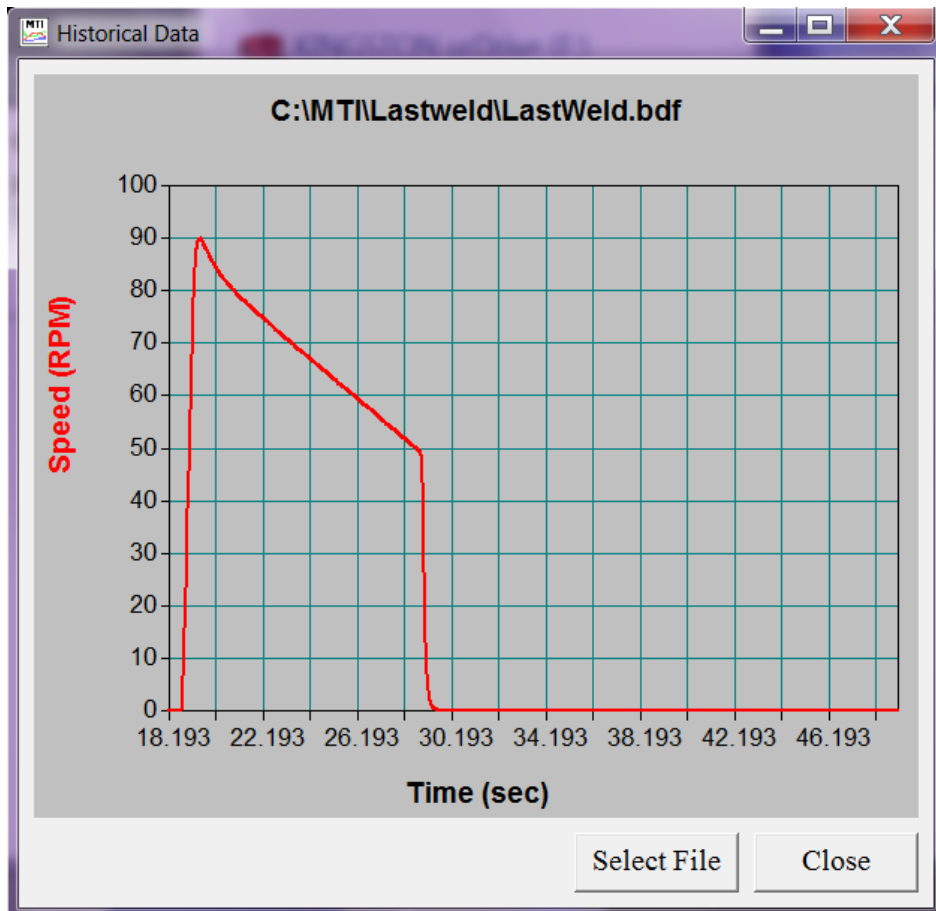
To display one of the weld cycle data files on the Operator Interface **Weld Data** graph, select one of the files as shown on the graph display, above. The selected file's file path and filename will appear above the graph and its data will be displayed in the graph (See Operator Interface – Graph, Popup Menu, Show Graph, Weld Cycle Data File). To return to the current weld cycle's data display, select LastWeld.bdf from the Show Graph popup menu.



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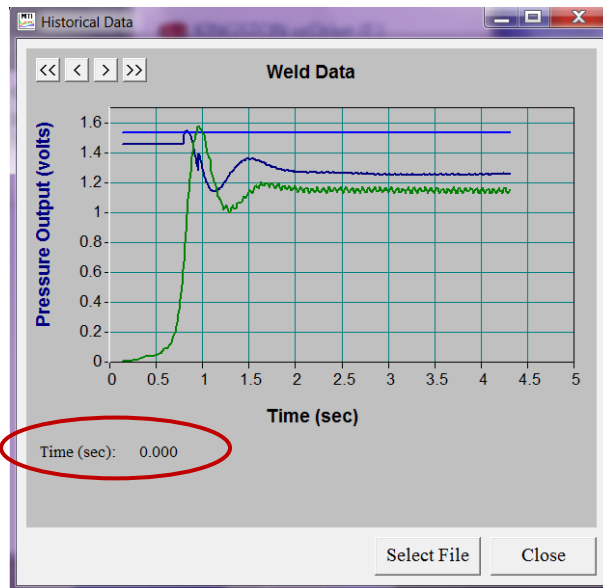
11.18...Operator Interface — Graph, Popup Menu, Show Graph, Weld Cycle Data File



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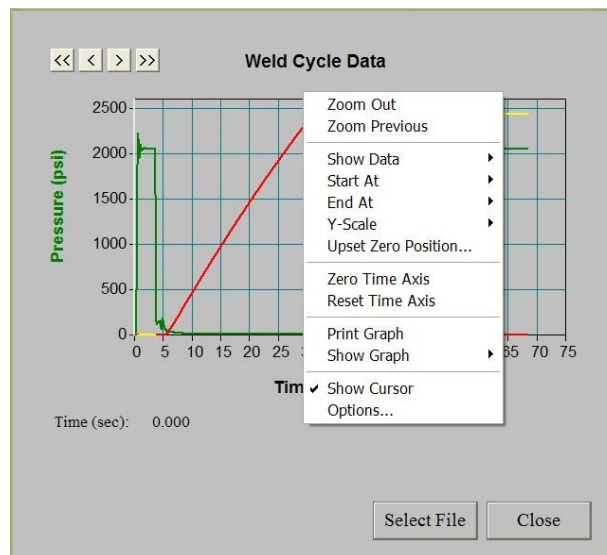
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11.19...Operator Interface — Weld Cycle Data, Show Cursor Visible

(Sheet 1 of 3)



Operator Interface — Weld Cycle Data, Popup Menu, Show Cursor Selected

(Sheet 2 of 3)



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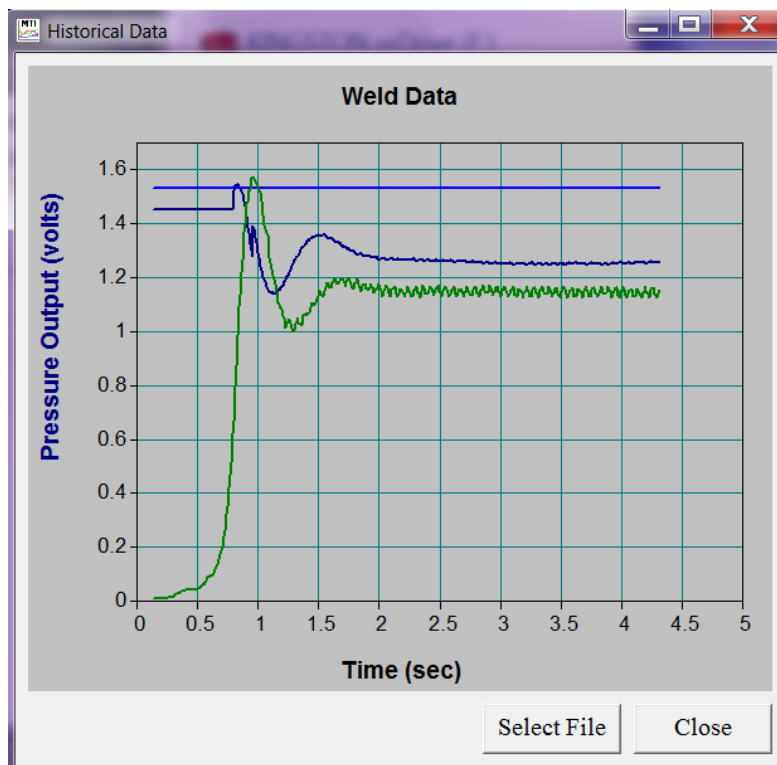
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Print Graph — The Print Graph popup menu item prints a hardcopy of the current graph to any printer configured on the computer. Typically, a copy of the cycle report is included with the printed graph.

Show Cursor — The Show Cursor popup menu item shows or hides the graph cursor. When the graph cursor is visible, the values of each data trace, at the time selected by the cursor, are displayed below the graph.



Operator Interface — Weld Cycle Data, Graph

(Sheet 3 of 3)

To hide the graph cursor, do as follows:

1. Open the popup menu.
2. Clear the checkmark from the Show Cursor menu item (Sheet 2). The Weld Cycle Data graph will return to its normal display (Sheet 3).

The graph cursor may be moved to various positions on the time axis by using the mouse or the cursor button controls (<<, <, >, >>) in the upper left-hand corner of the graph (Sheet 1 of 3). The displayed values may be interpolated from the actual data, depending on the position of the cursor and the data acquisition rate during the corresponding time of the weld/test cycle.



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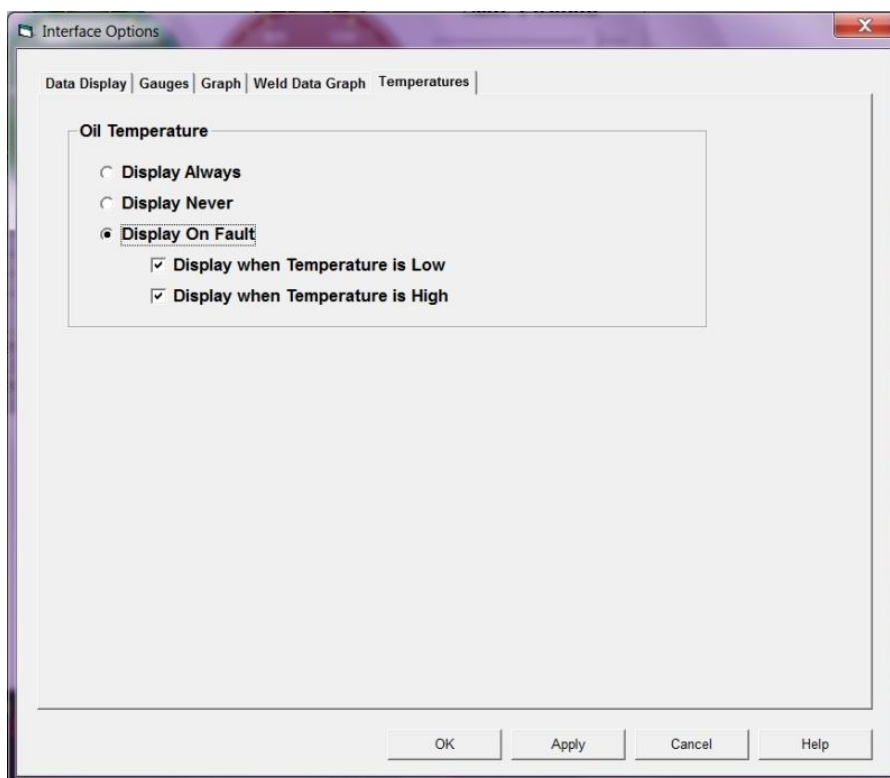
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Clicking the left mouse button over the graph, while the cursor is visible, moves the graph cursor to that position.

Clicking the Left (<<, <) or Right (>, >>) cursor buttons on the graph, while the cursor is visible, moves the graph cursor in the indicated direction by the small time increment (located in the lower left corner of the graph). The “time increment” is based on the fastest data acquisition rate.



11.20...Operator Interface — Interface Options, Temperatures Page (Sheet 1 of 2)

Temperatures Tab, Interface Options — The Temperatures Page (Sheets 1 and 2) are used to specify which temperatures and under what conditions those temperatures are displayed on the Operator Interface - Main Screen (Figure 70). When selected, the real-time temperature readings are displayed on the left-hand side of the Operator Interface, just above the message box. Both Oil Temperature and Spindle Temperature can be displayed under the following conditions:

Display Always

Select this option to continuously display the corresponding temperature on the Operator Interface screen.

Display Never

Select this option to remove display of the corresponding temperature from the Operator Interface screen.



Display On Fault

Select this option to display the corresponding temperature when a specific temperature fault condition occurs. There are two temperature fault conditions available for display. One or both of the following fault conditions can be selected:

Oil Temperature

- Display Always
- Display Never
- Display On Fault**
 - Display when Temperature is Low
 - Display when Temperature is High

Operator Interface — Interface Options, Temperatures Page

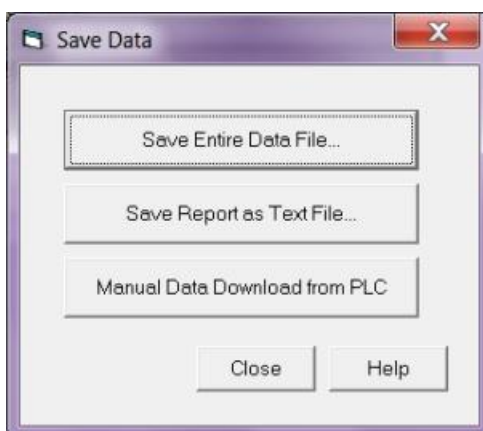
(Sheet 2 of 2)

Display when Temperature is Low

When this option is selected, the corresponding temperature is displayed only when the temperature drops below the Under-Temperature limit specified in the Edit Machine Parameters - Temperatures Page.

Display when Temperature is High

When this option is selected, the corresponding temperature is displayed only when the temperature exceeds the Over-Temperature limit specified in the Edit Machine Parameters - Temperatures Page.



11.21...Operator Interface — Save Data Page

Save Data Page, Operator Interface — Selecting this button launches the Save Data dialog page. This page offers the following options for post-machine cycle data:

Save Entire Data File...

Click this button to create a copy of the previous weld data file. After each weld/test cycle, the weld data file is written to the computer's hard drive at the following location:

C:\MTI\Lastweld\Lastweld.bdf

Also, after each weld cycle, a copy of the weld data file is written to a file whose file path is created from the Filename Generation parameters in the Weld Program. Refer to paragraph **Data Storage Tab, Edit Weld Program**, above. The weld data file, Lastweld.bdf, is considered a temporary file because it is overwritten after each new weld/test cycle. To prevent the data file from being overwritten, click on the Save Entire Data File... button to save the file with a unique filename.

Save Report as Text File...

Click this button to export the Report currently displayed on the Operator Interface screen to a text file.

Manual Data Download from PLC

Weld data is automatically downloaded from the programmable logic controller (PLC) to the computer immediately following every weld/test cycle. However, if the automatic data download process is interrupted, the previous weld data can be manually downloaded from the PLC to the computer. To manually download whatever data is currently in the PLC, click the Manual Data Download from PLC button.

NOTE: Weld data is only available for manual download until the next cycle is executed.



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NOTE: The PLC is programmed with all of the logic associated with machine control and data acquisition for the welder. All of the weld data is stored in the PLC until it is downloaded to the computer.