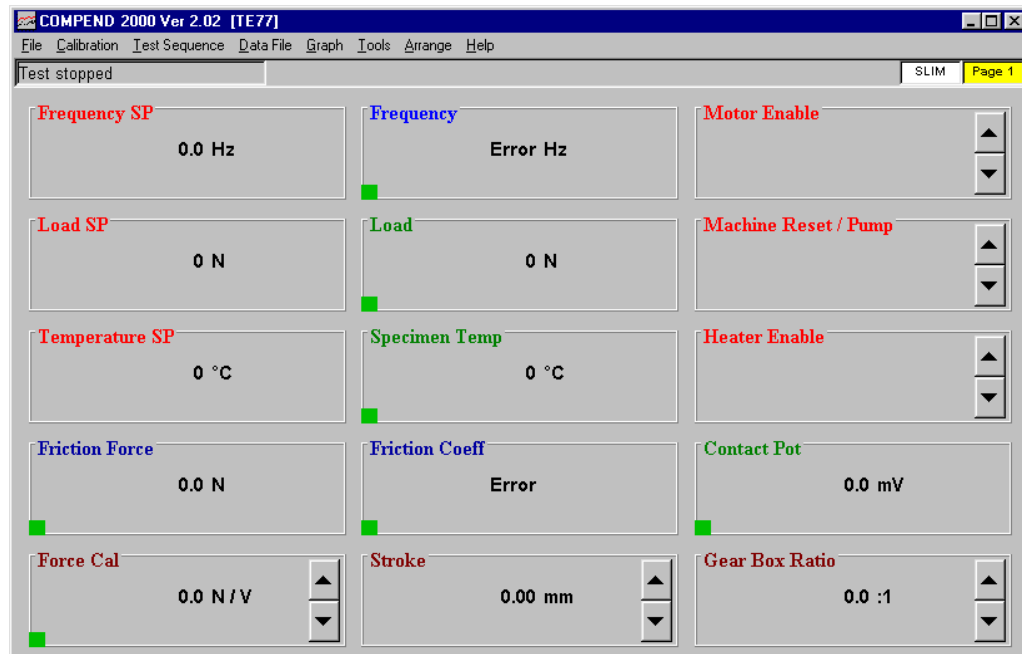## Screen and Menus

Double clicking the COMPEND ICON on the Windows Program Manager opens the COMPEND Window. This Window contains a series of boxes whose configurations are defined in Setup Files (*.CFG) with calibrations are stored in Calibration Files (*.CAL).

A single screen or Page contains up to 40 boxes and there are 6 Pages of display (giving a total of 240 boxes). The current Page Number is shown in the top right hand corner. The page Number may be increased with a right click of the mouse or by pressing Page Up on the keyboard. The Page Number may be reduced by a left click of the mouse or by pressing Page Down on the keyboard. Home will return to Page 1 and End will move to Page 6.

Right clicking on the box title will switch the text to show the current I/O connection for that box. A left click of the mouse will restore the box title.

File Menu

Clicking on the **File** menu enables different configurations to be loaded (**Load Setup**). These will be machine mode specific for standard Phoenix Tribology products, but by pressing **New** a new un-configured file can be loaded.

After editing a set-up, **Save Setup** over-writes the existing file and **Save Setup As** allows the edited file to be saved under a different name. File can have any name allowed by Windows and do not use file extensions as these are automatically added by the system.

Saving a set-up also saves the current calibration values to the Calibration File linked to that set-up. Use **Show Setup** to view the current connections and open Files.

Use **Edit Setup** to enter the edit mode. This allows configuration and calibration of each box.

Use **Set Box Fonts** either to adjust the size of the Title or Data Fonts (using the arrow buttons) or to change the Font Type for the Title (the Data Font Type is not adjustable).

Use **Exit** to close COMPEND.

Calibration Menu

The calibrations relevant to the current Setup File are stored in a separate file (the current connection is viewed under the **File Menu**: **Show Setup**).

These calibrations can be saved to a new file name using **Save This Calibration As**. This can, for instance, be used as part of an annual calibration routine where the "old" figures are archived and the new figures used for the next year's operation.

Load Existing Calibration allows the current Setup File to be linked to a set of calibrations already stored (for example a previous year's calibration, or the default calibrations delivered with the machine).

Test Sequence Menu

Test programs are called Test Sequence Files (TSF). This menu is used to open a previously created Test Sequence File (**Open**).

To create a new program starting with a blank file **Create 10 Step Blank TSF** and **Create 20 Step Blank TSF** are used. Note that the number of steps in a Test Sequence File is not fixed and that extra steps can be added as required.

Selecting either of these options opens the **Test Control Panel** Window and **Test File View** Window. These have a default tiling arrangement, which can always be reached, even after re-sizing of the Windows by the user, by selecting **Arrange** on the COMPEND Window menu bar.
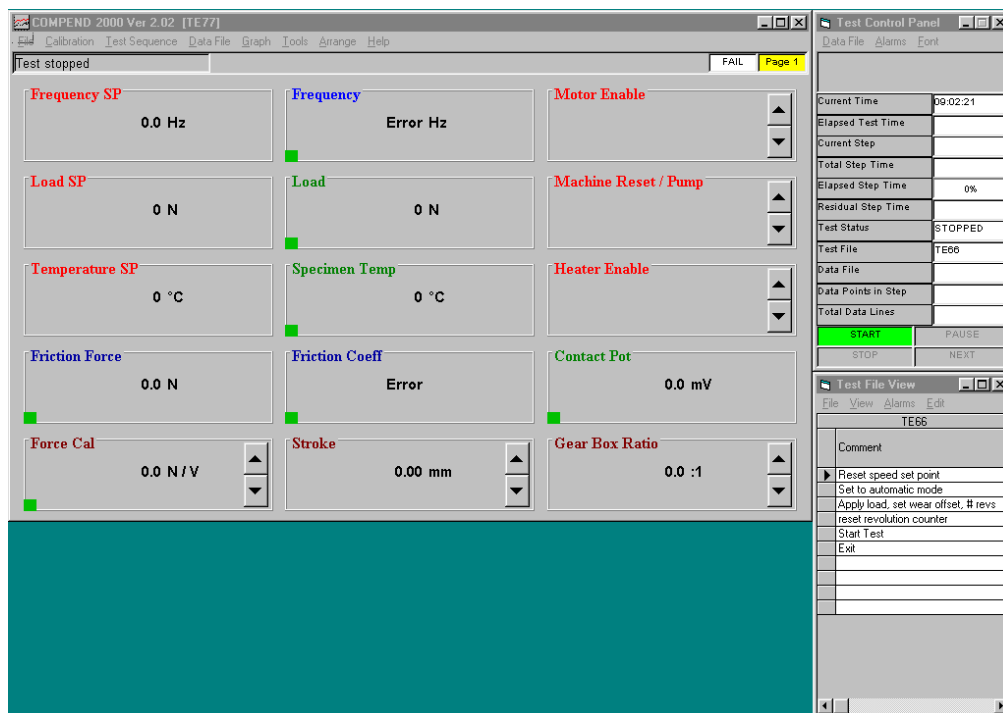
Data File Menu

View Data File in Excel provides a hot-link to Excel and offers a pick-list of available Data Files. The default directory is C:\compendx\data and the data is stored as *.tsv format (TAB separated variables). This is recognised by Excel as a "native" file format and does not require the Import Wizard. It is also possible to store data as *.csv format (comma separated variables).

To change the data separator from TAB to comma select the Tools Menu. select **System File** and then **INI File**. This will open a window containing the COMPENDX.INI file. The COMPENDX.INI file consists of different section named between []. The **EXTENSIONS** section have the following format:

```
[EXTENSIONS]
CFG_EXT=.CFG
TSF_EXT=.TSF
CAL_EXT=.CAL
DAT_EXT=.TSV
DAT_SEP=9
```

DAT_SEP is the mnemonic for data separator and 9 is the ASCII code of TAB. By replacing DAT_SEP=9 by DAT_SEP=44 (44 is the ASCII code for the comma) the data mode change from TSV to CSV.
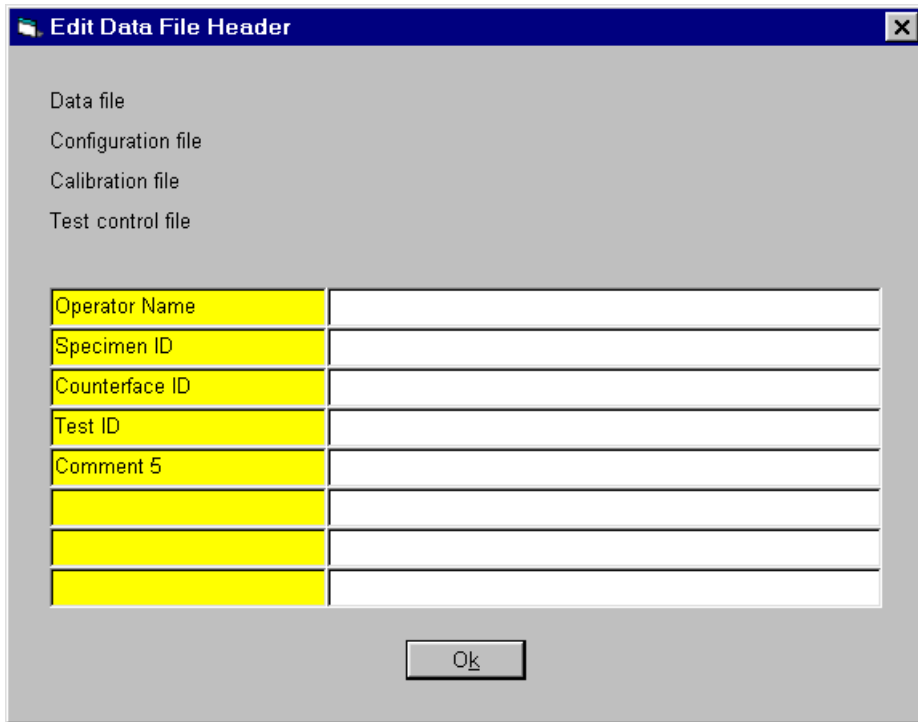
Any change to the INI file must be saved and COMPEND must then be closed and restarted for the changes to take effect, as the INI file is only read at start up.

The EXCEL path is also defined in the INI file. If the hyperlink to Excel is not functioning the path should be changed. The Excel path is defined in the PATHS section:

```
[PATHS]
APP_PATH="C:\COMPENDX\"
CFG_DIR=CONFIGS\
TSF_DIR=TESTS\
DAT_DIR=DATA\
DAT_PATH=c:\COMPENDX\DATA\
CAL_DIR=CALIBS\
EXCEL_PATH=C:\PROGRAM FILES\MICROSOFT OFFICE\OFFICE\EXCEL.EXE
MANDAT_DIR=IMMEDIATE\
```

Test File Header

In addition to the test data, a Data File may be linked to a Header, which contains information specific to that test or machine configuration. The Header template may be edited by selecting **Edit Header**. The left hand boxes are then made available to the user for customising.

Edit Data File Header

Data file	
Configuration file	
Calibration file	
Test control file	

Operator Name	
Specimen ID	
Counterface ID	
Test ID	
Comment 5	

Ok

If a Data File is opened before the start of a test (see **Test Control Panel** window), when the test is started, the Header template is opened. This retains the right hand side information from the previously run test. The user may fill in or edit the information on the right hand side.

Manual Data Recording

Manual collection and recording of data is available as an alternative to Test Sequence File programmed data acquisition. Data may be collected at user-defined rates and under the user's manual control in a Data File.

The data is saved in a sub directory <C:\COMPENDX\DATA\IMMEDIATE\>. If this directory does not exist it will be created automatically. The name of this directory is controlled by the following entry in <COMPENDX.INI> e.g.

```
[PATHS]
MANDAT_DIR=IMMEDIATE\
```

If the above entry does not exist it will be created automatically with the default name <IMMEDIATE\>.

The user may edit this entry to create a new user directory.

Open Immediate Data File

Selecting **Open Immediate Data File** will display a window where the user may either enter a new name for a Data File or select an existing Data File name. If the selected file exists, choose to overwrite the existing file or to append the data to the existing file:
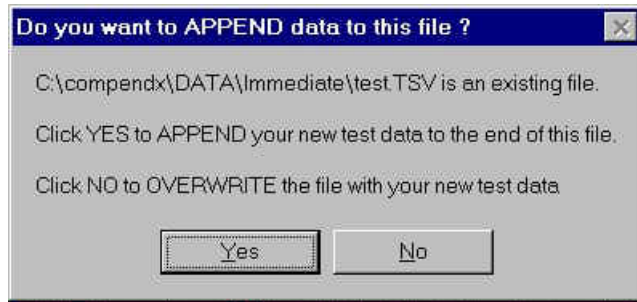
A popup menu allow the user to select the data collection method:

The COMPEND window will then display three boxes:
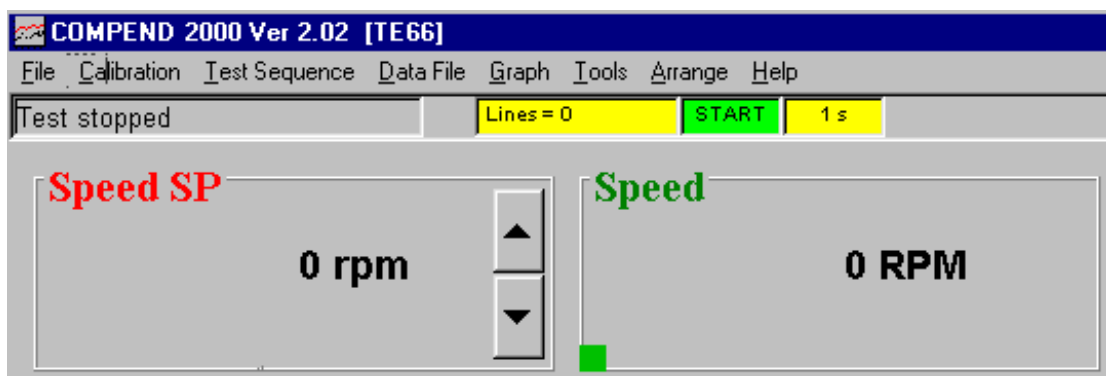
Clicking on the green START button will begin the data collection at the chosen rate. The buttons then change to the following:

The user may click **STOP** to suspend the data collection and subsequently restart collection by clicking **START** again.

The data rate can be modified without having to stop the data collection by right clicking once on the right hand yellow data rate button. This will display the popup data rate menu.

When Manual Trigger is selected the buttons are as follows:

Each time the user clicks on the cyan Line button a new data set is recorded.

When the data collection process has been completed, the user closes the file by clicking the Data File menu and selecting **Close Immediate Data File**. The Immediate Data File can then be displayed in Excel by using **View Immediate Data File in Excel**.

Automatically Forward File Data

The last feature of this Data File Menu is Setup Auto-Email. This feature can be used when running unattended tests provided that a network connection with e-mail service is available. At the end of the test a message can be sent to an e-mail address indicating that the test has ended and giving the reasons for termination.
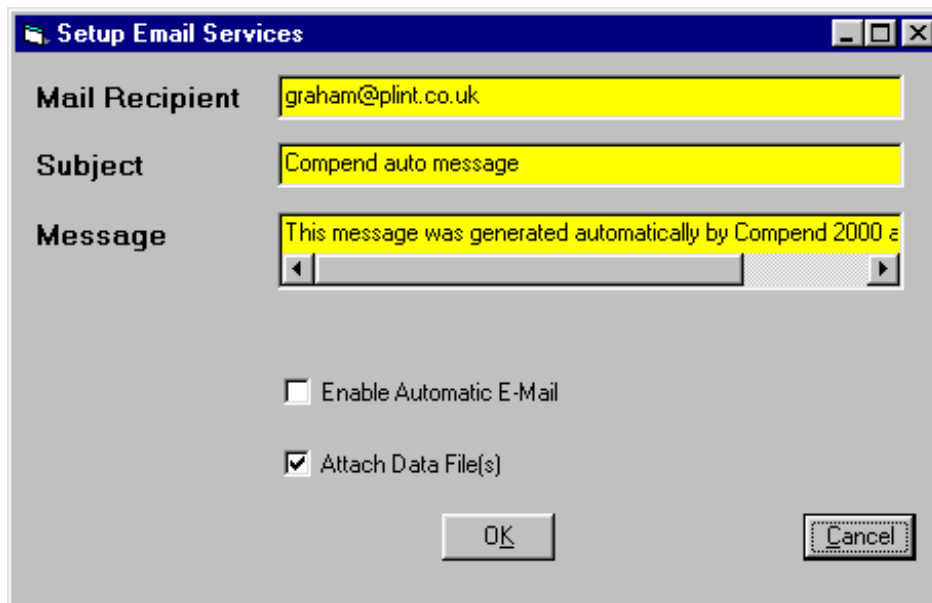

Mail Recipient is the e-mail address where the message is to be sent. **Select Attach Data File(s)** is used to attach the data collected during the test to the e-mail. **Enable Automatic E-Mail** activates this feature.

Graph Menu

Create Graph sets up a new **Graph** Window. This is automatically tiled to the bottom of the COMPEND window. This default arrangement can always be reached, even after re-sizing of the windows, by selecting **Arrange** on the COMPEND window menu bar.

The created Graph has the configuration defined under **Edit Graph Connections** and **Setup Graph**.

Edit Graph Connections is used to populate the graph by defining which parameters are to be displayed (by connecting the required parameter to a line number), the display scaling and whether auto-scaled on the y-axis.
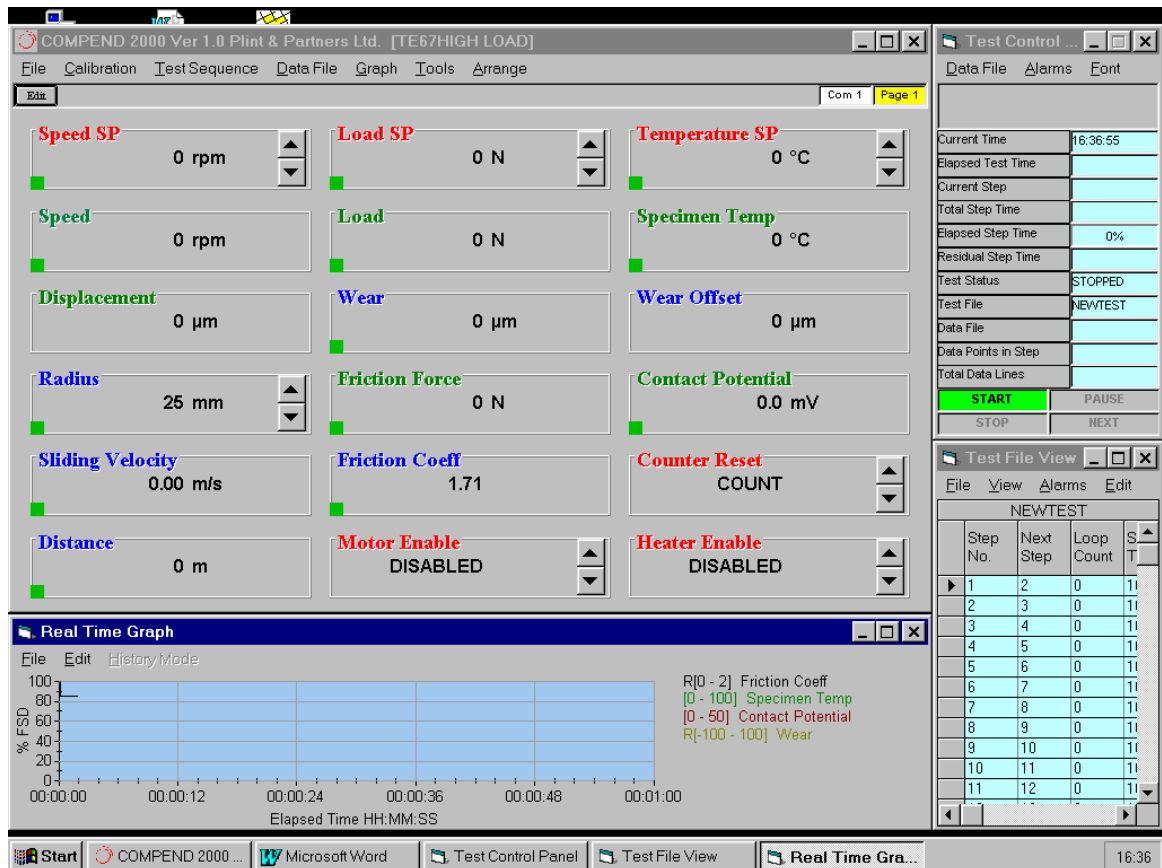
There are 16 possible lines on the graph. Click on the line to be connected, click on the parameter to be connected to that line (the parameters are all those defined in the Setup File currently in use) and then click **Connect**.
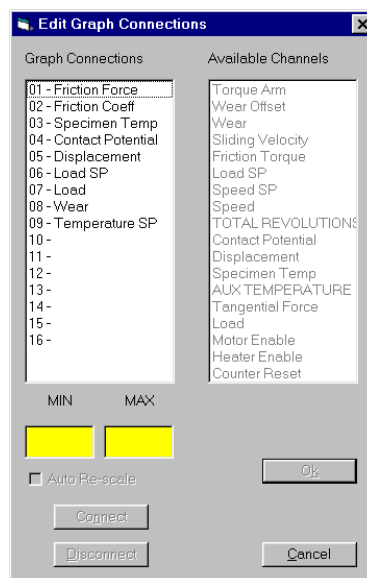

Fill in the **MIN** and **MAX** boxes to define the display scaling for that graph line. **Check** the **Auto Re-Scale** box for the y-axis to re-scale if the MIN or MAX value is exceeded. The MIN and MAX values will be used as the starting scales for that line on the graph.

To disconnect a parameter from a line, simply click on the line number and click on **Disconnect**.

Press **Cancel** to abort changes and **Apply** to accept changes.

Note that the **Graph Connections** may also be edited while running on the current graph using the **Edit** menu.

Setup Graph is used to define the x-axis (time axis) of the graph. Two graph types are available: a **History Graph** with a defined width and an **Auto-Scaling Graph**.
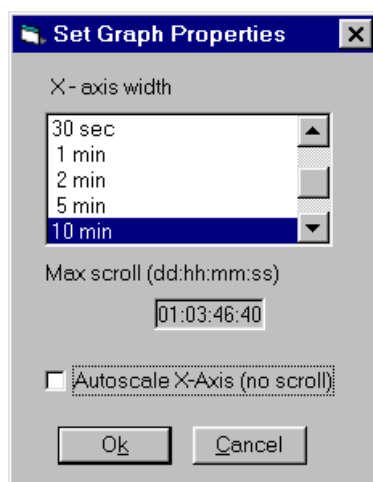
A number of **History Graph** time "widths" are available. Select one by clicking on the time parameter. The grey box under the pick-list will display the total time size of the History Graph buffer. For instance if the width is 1 minute, the total History Graph scroll will be 2 hours, 46 minutes and 40 seconds. If the test runs for longer than this period, data will be lost from the History buffer.

Check the **Auto-Scale X-Axis** to run a graph with the whole test automatically compressed into the field of view at all times.

Note that in addition to this graph, when the High Speed Data Acquisition Card is installed, a similar utility is provided for displaying snapshots of high speed data. Both graph types may be displayed simultaneously.

Tools Menu

The Tools Menu is used for initial system configuration purposes, offering editing of the various system files in a text editor. Most of the Menu items are locked to prevent user access.

The **Show Channel Usage** menu option shows a list of all the I/O channels with their current box connections. Multiple connections are shown and clicking on the left hand column of the list will show the screen labels and positions for all the connections to the selected channel.

The **System Files** menu allows the user to open the different system files used by COMPEND in Windows Notepad. Changes in COMPEND system files should only be undertaken with advice from Phoenix Tribology.

The **Save Screen** item captures the computer screen in the clipboard of the computer so that it can be pasted as a picture into a different application. This can be used in reports or for sending screen data for diagnostic purposes to Phoenix Tribology.

Arrange Menu

Arrange will re-size the open windows to a single default layout, similar to a Windows "tile" command.

Help Menu

About COMPEND provides information about the version of the software, the system configurations and contact numbers for support.

The Help system is accessed via a searchable **Help Index.** This is not context specific, but is arranged in Window/Menu/Tab sequence. The Help Index may also be searched for key words.

Revision and Application Notes provides a history of all the software upgrades since COMPEND Ver 1.00. In addition, two application notes are provided, one detailing the High Speed Data Acquisition capabilities the second explaining how to create a Manual Offset Channel.