

## **Range Pro Impulse Meter - Data Acquisition Software**

### **Applicable Computer Systems**

These programs are intended for Windows 98,NT,2000, XP and Macintosh Systems 8.6 thru OSX. Processors with speeds greater than 400 MHz are preferred.

### **General Information**

The program must be armed before the motor being tested is fired. The plotting parameters may be set at any time, before or after the firing data is acquired. The data gathered may be given a file name at any time. During the motor firing, a real time plot of thrust vs. time will be shown on the monitor screen. When the burn is complete, the new data will be replotted in a final format. Then, the data may be saved. The thrust and time plotting parameters may be adjusted as required to best display the data and saved with the data. If the program is re-armed before saving the data, the data will be lost. Any saved data may be opened for display and will be shown with the same plotting parameters with which it was saved. However, the plotting axes, time and thrust, may be changed and the data re-saved under the same name or saved with a new name. The time and date of the plot is shown in the lower left part of the window. There is an XL option to save files in a format compatible with spread sheets such as Excel. These files cannot be used to plot in the Range Pro program.

Data files may be plotted one over another for comparison using the overplot function. It is best to overplot using saved files although data may be overplotted during firing and saved as desired. In this case, the plots will also show the preliminary plots as dotted lines.

### **Menu Bar**

Traditional menu bar items control the operation of the program. The **File** menu selects saving and retrieving files, printing and closing the program. The **Time** menu provides options of time bases from 1 thru 50 seconds. The **Nwts** menu provides selection of plotting thrust in Newtons from 100 thru 5000. The **Lbs** menu provides selection of plotting of thrust in Pounds from 100 to 1250. The **Plot** menu clears the plot, re-plots the current data, or selects

the Overplot mode (see above). In normal (not Overplot) mode, if the previous plot has not been cleared before new data is received, the new data will overplot and then clear old data when the final plot is made. Finally, the **Arm** menu arms the program to receive new data.

### **Re-sizing and Printing the Plot**

The plotting window may be resized from its opening size to full screen or dragged to larger or smaller sizes. Any plotted data will re-size along with the window. The size of the window will be reflected in the printed size. For large print-outs, the landscape printing mode should be used. Numbers will appear in the lower right corner area of the plotting window during re-sizing and indicate the X and Y ratios of the new size with respect to the default, program opening size of 1.000 1.000. The re-sized values will go up to almost 1.500 down to about 0.500. Use these numbers to gauge the printed size.

### **Naming Files**

When the program is first opened, a text box appears in the upper left corner of the window. A file name may be typed in and entered by clicking the "ID" button to the left of the text box. The text box will then disappear and only a flashing cursor will remain. The name typed in will show up in a data area at the upper right of the plot when the plot is complete. Any time data appears on the computer screen, its file name may be changed by typing in a name and clicking the area where the "ID" button initially appeared.

### **Macintosh Serial Ports**

When the program is started in a Mac system, a selection box appears at the lower left of the window. The name of the serial adapter used must appear in this box before the program is first armed.