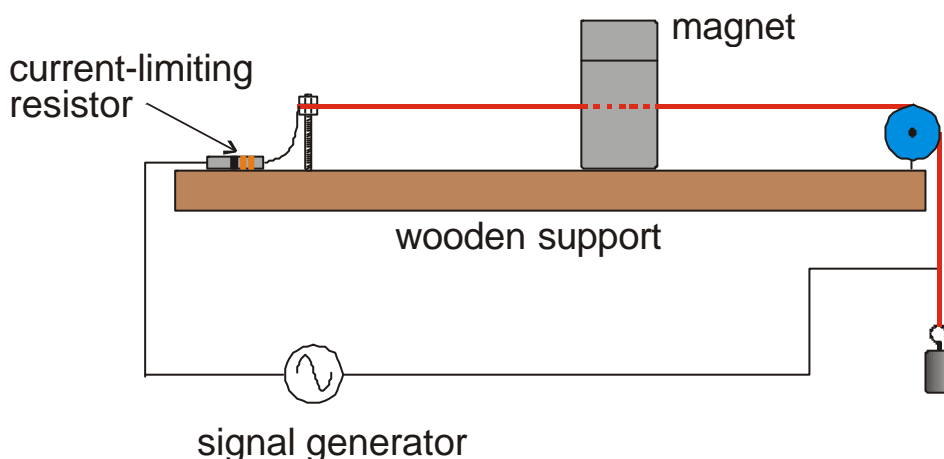


Resonances of a Wire under Tension

- Preparation:**
 - Find the relation between the fundamental frequency of vibration of a wire and the tension in the wire.
 - Remind yourself of the meaning of the word harmonics.
 - See parts 3 and 4 below.
- The aim of the experiment is to verify the relation between tension in a wire (for example the string of a musical instrument) and its fundamental frequency of vibration. Apparatus, as shown in the diagram below, will be provided.



Use the *low impedance* output of the signal generator.

The calibration of most signal generators is approximate. Use a frequency meter to measure the frequencies supplied by the generator. A frequency meter is connected in the same way as a voltmeter.

- The relation must be verified by plotting a suitable graph. Before starting the experiment decide what graph will be plotted.
- If you have enough time try to cause the wire to oscillate at one (or more) of its higher harmonics. What change should be made to the apparatus in order to make the second harmonic observable.