

OPERATING INSTRUCTIONS

OPERATING TIPS

The following recommendations will help obtain the best performance from the oscilloscope.

1. Always use the probe ground clips for best results, attached to a circuit ground point near the point of measurement. Do not rely solely on an external ground wire in lieu of the probe ground clips as undesired signals may be introduced.
2. Avoid the following operating conditions:
 - a. Direct sunlight.
 - b. High temperature and humidity.
 - c. Mechanical vibration.
 - d. Electrical noise and strong magnetic fields, such as near large motors, power supplies, transformers, etc.
3. Occasionally check trace rotation, probe compensation, and calibration accuracy of the oscilloscope using the procedures found in the MAINTENANCE section of this manual.
4. Terminate the output of a signal generator into its characteristic impedance to minimize ringing, especially if the signal has fast edges such as square waves or pulses. For example, the typical 50 W output of a square wave generator should be terminated into an external 50 W terminating load and connected to the oscilloscope with 50 W coaxial cable.
5. Probe compensation adjustment matches the probe to the input of the scope. For best results, compensation should be adjusted initially, then the same probe always used with the same channel. Probe compensation should be readjusted when a probe from a different oscilloscope is used.

INITIAL STARTING PROCEDURE

Until you familiarize yourself with the use of all controls, the settings given here can be used as a reference point to obtain a trace on the CRT in preparation for waveform observation.

1. Set these controls as follows:

On both models:

VERTical MODE to **CH1**.

CH1 AC/GND/DC to **GND**.

Trigger COUPLING to **AUTO**.

Trigger SOURCE to **CH1**.

All **POSition** controls and **INTENSITY** control centered (pointers facing up).

Main Time Base control to **1 mS/div**.

2. Press the red **POWER** pushbutton.
3. A trace should appear on the CRT. Adjust the trace brightness with the **INTENSITY** control, and the trace sharpness with the **FOCUS** control.

SINGLE TRACE DISPLAY

Either channel 1 or channel 2 may be used for single-trace operation. To observe a waveform on channel 1:

1. Perform the steps of the "Initial Starting Procedure".
2. Connect the probe to the **CH 1 (X)** input jack.
3. Connect the probe ground clip to the chassis or common of the equipment under test. Connect the probe tip to the point of measurement.
4. Move the **CH1 AC/GND/DC** switch out of the **GND** position to either **DC** or **AC**.
5. If no waveforms appear, increase the sensitivity by turning the **CH 1 VOLTS/DIV** control clockwise to a position that gives 2 to 6 divisions vertical deflection.
6. Position the waveform vertically as desired using the **CH1 POSition** control.
7. The display on the CRT may be unsynchronized. Refer to the "Triggering" paragraphs in this section for procedures on setting triggering and sweep time controls to obtain a stable display showing the desired number of waveforms.

DUAL TRACE DISPLAY

In observing simultaneous waveforms on channel 1 and 2, the waveforms are usually related in frequency, or one of the waveforms is synchronized to the other, although the basic frequencies are different. To observe two such related waveforms simultaneously, perform the following:

1. Connect probes to both the **CH 1 (X)** and **CH 2 (Y)** input jacks.
2. Connect the ground clips of the probes to the chassis or common of the equipment under test. Connect the tips of the probes to the two points in the circuit where waveforms are to be measured.