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Laboratory oscillograph model #3 operating instructions

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LABORATORY OSCILLOGRAPH MODEL #3
OPERATING INSTRUCTIONS

OTTAWA
JULY, 1942

LABORATORY OSCILLOGRAPH MODEL #3

Operating Instructions

This general purpose oscillograph may be used for viewing regularly recurring transients of duration from a fraction of a microsecond to half a millisecond.

I Power Requirements:

This instrument requires a 60 cycle, 100 - 150 V. power supply. Over this range of line voltage, the input voltage to the scope may be adjusted to 120 V. by means of the voltage control and meter mounted above the main sweep control panel. Turn on the green light first, then the red 15 seconds later. No serious damage will result, however, if both are turned on together.

II Method of Using Scope:

A. Input Connections: The voltage to be viewed is connected to the appropriate input connection on the end of the scope. If this voltage is greater than 2000 V., connect the input to the high voltage connection, Figure 1, and place the link to the right. If this voltage is less than 2000 V., connect the input to the low voltage terminal, Figure 1, and place the link to the left.

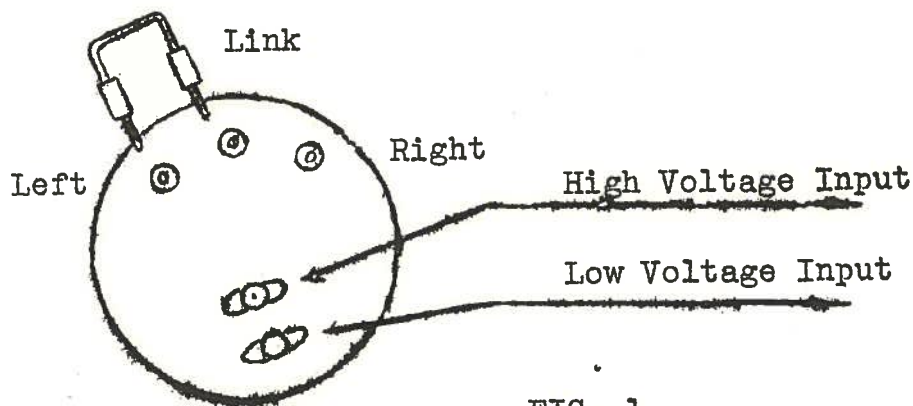


FIG. 1

B. Synchronizing: Two methods of synchronizing the scope are available.

1. For a phenomenon capable of being started by a positive or negative pulse, obtain this pulse from the "Pulse Out" plug on the main control panel. The polarity of the pulse may be selected with the "Synch Out Pulse" selector switch and the

point where the pulse occurs on the sweep may be set by the "Keying Pulse Delay" control. The "Synch Input Pulse" switch should be turned to "Int. Pulse" and the recurrence or keying frequency set to the desired value by means of the "Recurrence Freq. -- Coarse" and Recurrence Freq. -- Fine" controls. The "Keying Sensitivity" control should be left approximately in the middle of its range.

2. For a phenomenon which has available, in conjunction with it, a voltage pulse coming slightly before or coincident with the start of the voltage wave to be viewed, connect this synchronizing pulse to the plug marked "Pulse In". Turn the "Synch Input Pulse" switch to either "+Pulse" or "-Pulse" depending on the polarity of the synchronizing signal. Adjust the "Keying Sensitivity" control until the sweep keys without jitter.

C. Sweep Adjustment: The expansion or writing speed of the sweep can be adjusted from approximately 60 microseconds per inch to less than 1 microsecond per inch by the "Sweep Expansion - Coarse" and "Sweep Expansion - Fine" controls. The "Sweep Length" control should be adjusted simultaneously with the Expansion Controls so that a spot should just begin to appear at the right-hand end of the sweep. When the greatest expansion (fastest sweep) is used it is not possible to quite eliminate the spot at the right of the sweep.

D. Picutre Adjustments: The four controls grouped around the Cathode Ray tube are horizontal and vertical centering, intensity, and focus. These controls are adjusted in the usual manner until a clear, properly centered picture is obtained.

E. Calibration: There is available in the scope sine wave with a frequency of either 50 or 500 Kc/sec. Turning the "Calibration" switch to the "50K" or "500K" position puts the sine wave of corresponding frequency on the scope. The linear sweep may then be calibrated in terms of microseconds/inch. One complete oscillation of the 500 Kc/sec wave is 2 microseconds, while one complete oscillation of the 50 Kc/sec wave is 20 microseconds.

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