

# Radiotron Vacuum Tube

## Type WD-11

### STYLE 319533 RATING

Filament Volts.....	1.1
Filament Amperes.....	.25
Plate Volts.....	20 to 100

The WD-11 Radiotron is a high vacuum tube designed for use as a detector or amplifier. It is provided with a special form of oxide coated filament having an exceptionally long life when not abused. Such a filament gives sufficient electron emission at a comparatively low temperature. Therefore, but little energy, is required for filament heating and this may be supplied by the ordinary dry cell. A battery supplying more than 2 volts should never be used.

All vacuum tube filaments should be operated at the lowest temperature that will give satisfactory results. The proper operating temperature of WD-11 filaments is such that a dull red color, usually invisible in daylight and frequently barely visible in darkness is produced. Excessive filament current will greatly shorten the life of the filament.

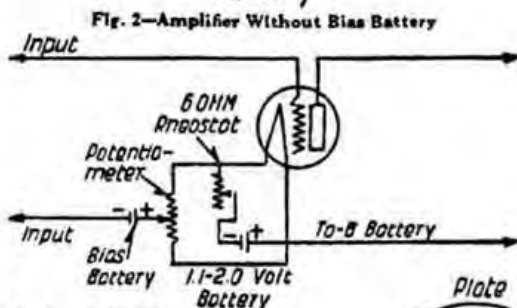
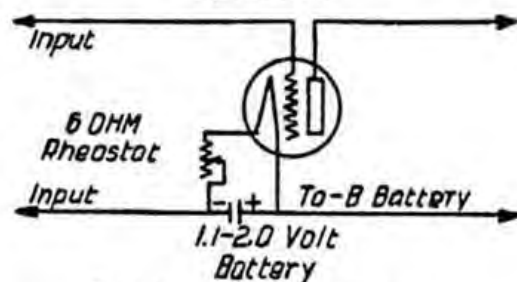
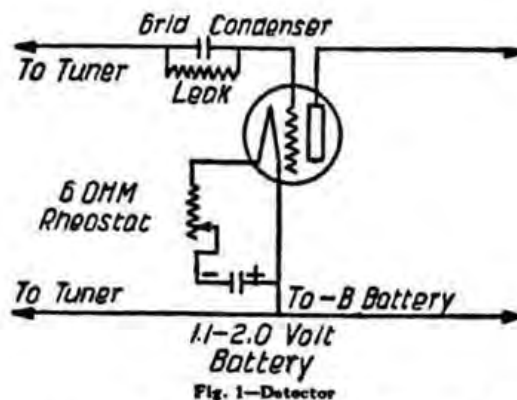
Care should be taken that the plate voltage is not accidentally applied to the filament as it will instantly destroy the filament. It is advisable to remove tubes when changing connections.

It is preferable to mount tubes vertically. They should also be mounted on cushioned supports to prevent undue noise from vibration. This applies particularly to tubes used as detectors.

The characteristics of the WD-11 are such that it works best as a detector when the grid return is connected to the positive end of the filament, as shown in Fig. 1. Normal plate voltage for detection is 20. In some circuits, it may be necessary to use more than 20 volts. A grid condenser of .00025 microfarad and a grid leak of not less than 3 megohms are recommended. The grid leak used should be of such a value that the set will go into and out of oscillation smoothly, that is, without a plop and without hangover.

For use as an amplifier, the grid return should be connected to the negative end of the filament, or better still, to the negative end of the battery with the rheostat in the negative lead, as shown in Fig. 2. With plate voltages up to 50 no further bias will be necessary.

For higher plate voltages, a separate bias battery is advisable. This should be placed as shown in Fig. 3.



A potentiometer is not necessary but offers a means of controlling the bias. If it is not used, the positive side of the bias battery should be connected to the negative side of the filament battery. For plate voltages between 50 and 75,  $1\frac{1}{2}$  volts bias should be used. For plate voltages between 75 and 100, 3 volts bias should be used.

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