

1B42 – Spark Gap



Series spark gap tube intended for high-power radar modulator circuits. Copper radiator around the cathode. Cathode is formed by mercury immobilized by a cup-shaped iron sponge, anode is a 0.06" diameter molybdenum rod. Mercury evaporating due to the high-energy sparks condenses and returns into the iron sponge, always leaving a fresh mercury film over the cathode because of its surface tension. The iron sponge was made of sintered iron powder treated in hydrogen atmosphere and was filled with about 9 cm³ of mercury. Hydrogen filling to minimize pulse jitter.

No radioactive salts were needed to stabilize operation in this tube.

80 to 300A pulses, 5 kV operating voltage.

Introduced by WE during WWII as D-170135. RMA registration in 1947. Also manufactured by Machlett. Three tubes in series were used to generate 0.8 / 1.6 MW pulses into high power triode oscillators.

Registered to Western Electric in 1947, when obsolete, RMA record [626](#). Described in the [BSTJ, volume 25, October 1946](#).