

Vertical aluminum braces are attached between the end of the liner and the "end tuner" structure, to provide rigidity to the tuner. An end tuner consists of a drift tube extending into the resonant cavity from the end of the liner, with length controllable by a worm gear which is driven by a flexible shaft leading to a motor outside the vacuum tank. Electrical contact is made between this drift tube and the end of the liner by means of a tight fitting slotted collar of silver-plated steel, fitting around the drift tube, and bolted to the liner. The west end (entrance) tuner drift tube is 4.750 inches diameter, and adjustable in length from 2 inches to 4 inches. The east end tuner drift tube is 2.750 inches diameter and 4 inches to 7 inches long.

(4) Drift Tube Construction and Support. The drift tubes are basically a cylinder of variant length and diameter, supported by a single stem perpendicular to the liner axis at the center line of each drift tube. The drift tube diameter varied from 4-3/4 inches to 2-3/4 inches, the first eleven drift tubes being constant at 4-3/4", and the remaining 35 drift tubes diminishing to 2-3/4", in steps of approximately sixty-thousands of an inch. The drift tube lengths vary from about 4-3/8" for the first drift tube to 11 inches for the last drift tube. The drift tube body is made of a copper tube, with the end at the beam exit made from a copper plate hard soldered into the tube, and with a threaded ring in the opposite end. Into this threaded ring is screwed a cap, which in turn receives a grid holder. The exit end of the drift tube has a re-entrant opening, formed by a brass tail tube about 3 inches in length, and varying from 1 inch inside diameter to 1-1/2 inches inside diameter, for the range of drift tube sizes. All external edges are uniformly rounded with a radius of 3/8 inch. The threaded cap was originally designed to be screwed into the drift tube body after the grid holder had been inserted from the inside. On the initial runs, serious sparking was found to have occurred across the contact surface between the drift tube cap and body, even though special effort had been taken to