



CX-374, C-376 and C-386 VOLTAGE REGULATOR TUBES

The CX-374, C-376 and C-386 are known as Voltage Regulator tubes. This group comprises two distinct types, one being an output voltage regulator and the other a line voltage regulator.

CX-374

OUTPUT VOLTAGE REGULATOR



The CX-374 is a special "glow" type voltage regulator designed for service in "B" supply units where great flexibility in output is required or where the A.C. line voltage varies over rather wide limits. This tube accomplishes voltage regulation from its characteristic that on any current flow from 10 to 50 milliamperes the tube develops a constant voltage averaging 90 volts. It consists of two elements (an anode and a cathode) in a gas-filled space and shows a pronounced glow when in operation.

Circuit Requirements

This tube cannot be used without a series resistance to limit the maximum current to 50 milliamperes. The application of the tube to a typical "B" supply unit is shown in Fig. 1. If the tube connections are reversed a bright glow will occur at the small terminal, and the connections should be corrected. Proper results will not be obtained unless connections are made as indicated in the diagram. The terminals which would normally be "+F" and "plate" are connected together in the base of the tube and this short circuited connections may be used as a line switch in the transformer primary. With this connection, the eliminator cannot be turned on until the CX-374 tube is inserted in the socket nor can the tubes be interchanged in such a way as to damage either the equipment or tubes themselves. If a rectifier or power tube is inserted in the socket intended for the CX-374, the transformer primary will remain open and no power will flow to the equipment.

Two CX-374 tubes may be placed in series to obtain 180 volts, a center tap between the two tubes then providing 90 volts.

RATING

Rated Voltage	90 volts D.C.
Starting Voltage	125 volts D.C.
D.C. Current	10-50 milliamperes

DIMENSIONS

Maximum Overall Length	5 $\frac{5}{8}$ "
Maximum Diameter	2 $\frac{3}{16}$ "
Base	Large CX

C-376 and C-386

LINE VOLTAGE REGULATOR



The C-376 and C-386 are "ballast" tubes designed to regulate the input voltage to the primary of power transformers. Either of these tubes when placed in series with a transformer primary of such design that 50 volts is applied to the tube, will maintain a constant current in the circuit. In this way a constant voltage is maintained on the load and the tube serves as a voltage regulator.

Circuit Recommendations

It takes several minutes for these tubes to heat up, the voltage drop increasing rapidly for the first three minutes and then slowly up to about ten minutes, by which time the tube has reached its final temperature. During this interval the voltage on the load will be slightly high, but will not exceed safe values, and thereafter the regulator tube will maintain the voltage practically constant.

As a matter of safety, these tubes should be housed in a metal covering that has proper ventilation.

The C-376 will regulate the primary transformer voltage on frequencies from 25 cycles to 60 cycles provided the transformer