

ELECTRON TUBES 425A AND 426A IDENTIFICATION

1. GENERAL

1.01 This section provides general information on 425A and 426A cold-cathode gas-filled electron tubes used in telephones, subscriber sets, and connecting blocks.

1.02 This section is reissued to:

- Add information on 425A tube when used with 96-volt dial long line circuits
- Include reference to sections on inductive noise and ringing limitations

1.03 These tubes are intended for use on grounded ringing lines where superimposed or pulsating ringing current is provided, as on 4-party selective and 8-party semiselective lines.

1.04 Where electron tubes of types 313, 333, 372, 405, or 411 are to be replaced by tubes of types 425A or 426A, the original mounting parts, electron tube socket, or bracket are no longer required and should be removed, where practicable.

2. IDENTIFICATION

2.01 The 426A (Fig. 1) and 425A (Fig. 2) tubes are permanently mounted on plastic angle brackets with a No. 6 self-tapping screw provided for mounting the bracket. Spade-tipped conductors, approximately 6 inches long are provided for connection to other apparatus.

2.02 The glass envelope of these tubes is coated with a lacquer compounded of red dye and black pigment. This coating is sufficiently translucent to allow the cathode glow to be visible.

426A Tubes (3-Element)

2.03 The 426A electron tube (Fig. 1) is a 3-element, inert gas-filled, cold-cathode tube with three spade tip conductors; red, yellow, and black. A

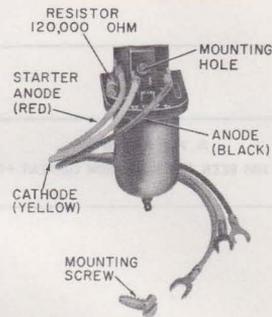


Fig. 1—426A Electron Tube

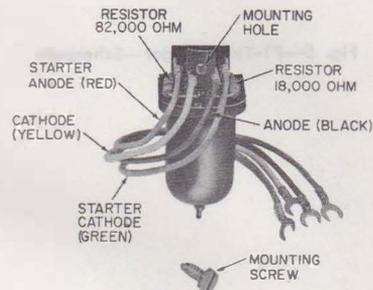


Fig. 2—425A Electron Tube

120,000-ohm resistor mounted on the base is included in the control anode (red) lead (Fig. 3).

2.04 Both the control and main gaps are an open circuit at low voltage. The minimum instantaneous potential required to activate the tube varies from about 65 to 85 volts; depending on the individual tube. The minimum instantaneous potential required to break down the *main gap* will vary from 150 to over 200 volts.

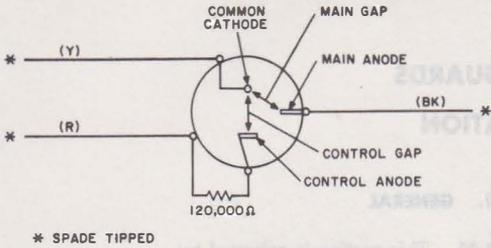


Fig. 3—Three-Element Tube, Schematic

2.05 The tube will sustain on voltages 5 to 10 volts below the breakdown voltage (60 to 75 volts) over a wide range of current values.

425A Tubes (4-Element)

2.06 The 425A electron tube (Fig. 2) is a 4-element inert gas-filled, cold-cathode tube with four spade tip conductors: red, green, yellow, and black. An 18,000-ohm resistor is in series with the control cathode and the green lead. An 82,000 ohm resistor, to limit current flow, is in series with the control anode and the red lead (Fig. 4).

2.07 The 4-element tube corresponds in action to the 3-element tube.

2.08 When a station set is equipped with a 4-element 425A electron tube and used with 96-volt dial long line circuit, install a 542K .5μf capacitor (furnished locally) in series with the (G) tube lead to block dc voltage and prevent breakdown of the control gap. Use any spare terminal or D-161488 connector to connect capacitor in series with (G) tube lead.

2.09 Refer to Section 500-112-100 entitled Inductive Noise and Section 500-114-100 entitled Ringing Limitations for detailed applications and uses of these three- and four-element tubes.

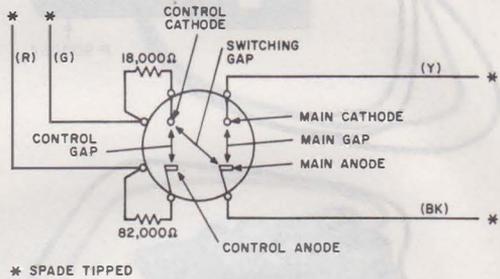


Fig. 4—Four-Element Tube, Schematic