

# RCA-956

## Super-Control R-F Amplifier Pentode (Acorn Type)

*Illustrated on page 133*

RCA-956 is a heater-cathode tube of the remote cut-off type for use by radio amateurs and experimenters as a radio- and intermediate-frequency amplifier, or mixer, in receivers operating at wavelengths as low as 0.7 meter. The super-control feature of the 956 makes the tube very effective in reducing cross-modulation and modulation-distortion over the entire range of received signals. This feature also makes the tube well-adapted to circuits incorporating automatic volume control, without the necessity for using local-distance switches or antenna potentiometers. At a wavelength of one meter, the 956 is capable of giving a gain of four or more when it is used as an r-f amplifier in circuits of conventional design. Higher gains are, of course, attainable at longer wavelengths. Operation at short wavelengths is made possible by means of an unconventional tube structure having small size, close electrode spacing, and short terminal connections.

### CHARACTERISTICS

|                                 |      |                            |                          |
|---------------------------------|------|----------------------------|--------------------------|
| Heater Volts (a-c or d-c) ..... | 6.3  | Grid-Plate Capacitance     |                          |
| Heater Amperes .....            | 0.15 | (With shield baffle) ..... | 0.007 max. $\mu\text{f}$ |
| Amplification Factor .....      | 1440 | Input Capacitance .....    | 2.7 $\mu\text{f}$        |
|                                 |      | Output Capacitance .....   | 3.5 $\mu\text{f}$        |

### As R-F Amplifier—Class A

|                                            |                                  |
|--------------------------------------------|----------------------------------|
| D-C PLATE VOLTAGE .....                    | 250 max. Volts                   |
| SUPPRESSOR (Grid No. 3)* .....             | Connected to cathode at mounting |
| D-C SCREEN VOLTAGE (Grid No. 2) .....      | 100 max. Volts                   |
| D-C GRID VOLTAGE (Grid No. 1) .....        | -3 min. Volts                    |
| D-C PLATE CURRENT .....                    | 5.5 Milliampères                 |
| D-C SCREEN CURRENT .....                   | 1.8 Milliampères                 |
| PLATE RESISTANCE .....                     | 0.8 Megohm                       |
| TRANSCONDUCTANCE .....                     | 1800 Micromhos                   |
| TRANSCONDUCTANCE (At -45 volts bias) ..... | 2 Micromhos                      |

\* Maximum d-c voltage=100 volts.

### INSTALLATION AND APPLICATION

For **terminal mounting** considerations and **outline drawing**, refer to type 954.

For **heater** and **cathode** considerations, refer to type 954.

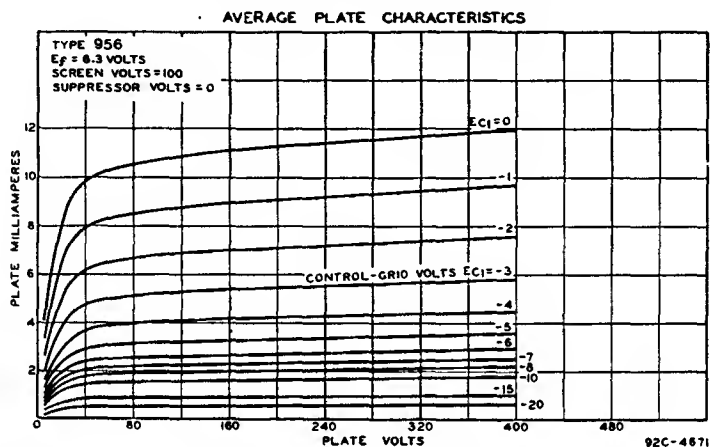
The **screen** voltage may be obtained from a potentiometer or bleeder circuit across the B-supply source. Due to the screen current characteristics of the 956, a resistor in series with the high-voltage supply may be employed for obtaining the screen voltage provided the cathode-resistor method of bias control is used. This method, however, is not recommended if the high-voltage B-supply exceeds 250 volts. Furthermore, it should be noted that the use of a resistor in the screen circuit will have an effect on the change in plate resistance with variation in suppressor voltage in case the suppressor is utilized for control purposes.

**Shielding** and **r-f grounding** requirements are the same as for the 954. A convenient method of shield construction is shown on the next page.

As a **radio-frequency** and **intermediate-frequency amplifier**, the 956 should be operated as shown under **CHARACTERISTICS**.

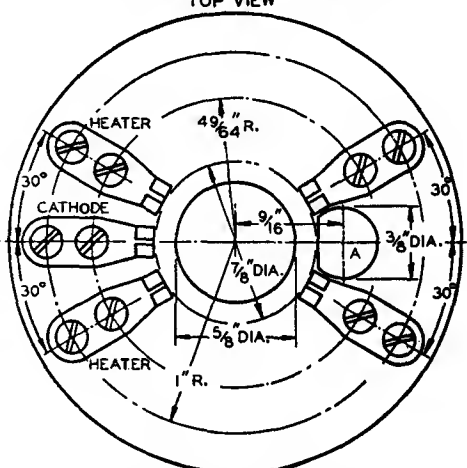
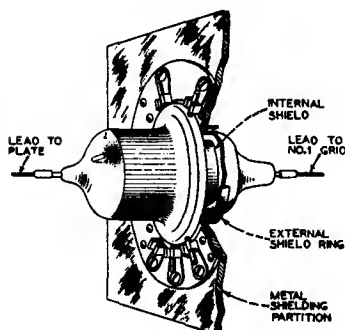
**Volume control** of receivers using this tube may be accomplished by variation of the negative grid bias. In order to realize the full volume-control range of the 956, an available grid-bias voltage of approximately 50 volts will be required, depending on the circuit design and operating conditions. This voltage may be obtained from a potentiometer, a bleeder, or from an adjustable cathode resistor.

As a **mixer** in superheterodyne receivers, the 956 may be used under the following conditions: Plate voltage, 250 volts; screen voltage, 100 volts; and grid bias, -10 volts approximately (with a 7-volt peak swing from the oscillator). The suppressor should be connected to the cathode at the mounting.



**TERMINAL MOUNTING TEMPLATE**  
TOP VIEW

Typical Shield Construction



A = ALIGNMENT PLUG  $\frac{1}{4}$ " HIGH

NOTE: INSERT TUBE IN CLIPS SO THAT SHORT TIPPED END OF THE BULB RESTS IN THE MOUNTING HOLE