RCA-17TP4 is a short, directly viewed, rectangular picture tube of the metal-shell type utilizing low-voltage, electrostatic focus and magnetic deflection. It has a frosted Filterglass faceplate; employs an ion-trap gun requiring an external, single-field magnet; and provides a picture 14-5/8" x 11" with slightly curved sides and rounded corners.

The focusing electrode in the 17TP4 has its own base-pin terminal to permit designers choice of focusing voltage for best results. Because the focusing electrode (grid No. 4) operates at low voltage (only 0 to 2.5% of the ultor voltage) and takes very low current, the focusing voltage can conveniently be obtained from a fixed tap on the low-voltage dc supply for the receiver, or from a potentiometer between the boost voltage and -B supply. With either method, focus is maintained automatically with variation in line voltage and with adjustment of picture brightness.

When fixed focus is used, the designer can set the focusing voltage at a value which will give good results for his particular operating voltages. If somewhat better performance is desired, he can provide for adjustment of the focusing voltage.

**DATA**

**General:**

Heater, for Unipotential Cathode:
- Voltage (AC or DC)........ 6.3 volts
- Current.................... 0.6 ampere

Direct Interelectrode Capacitances:
- Grid No. 1 to All Other Electrodes........ 6 μf
- Cathode to All Other Electrodes........ 5 μf

Faceplate (With about 60% light transmission)........ Frosted Filterglass

Phosphor ................. P4---Sulfide Type
- Fluorescence.................. White
- Phosphorescence.............. White
- Persistence.................. Short

Focusing Method .............. Electrostatic

Deflection Method ............ Magnetic

Deflection Angles (APPROX.):
- Diagonal.................. 70°
- Horizontal.................. 60°
- Vertical.................. 50°

Ion-Trap Gun................ Requires External, Single-Field Magnet

Maximum Overall Length........ 19-5/16"

Greatest Diagonal of Tube at Lip........ 16-13/16" ± 3/16"

Greatest Width of Tube at Lip........ 18-15/16" ± 1/8"

Greatest Height of Tube at Lip........ 12-1/4" ± 1/8"

Screen Size.................. 14-5/8" x 11"
General (Cont'd):
Ultor* Terminal .................................. Metal-Shell Lip
Base .............................................. Small-Shell Duodecal e-Pin (JETEC No. BG-62)
Mounting Position ................................ Any

Maximum Ratings, Design-Center Values:
ULTOR* VOLTAGE* .................................. 16000 max. volts
GRID-No.4 VOLTAGE ................................ 500 max. volts
GRID-No.2 VOLTAGE ................................ 500 max. volts
GRID-No.1 VOLTAGE:
  Negative bias value ............................... 125 max. volts
  Positive bias value ............................... 0 max. volts
  Positive peak value ............................. 2 max. volts
PEAK HEATER-CATHODE VOLTAGE:
  Heater negative with respect to cathode:
    During equipment warm-up period not exceeding 15 seconds... 410 max. volts
  After equipment warm-up period ................................ 180 max. volts
  Heater positive with respect to cathode .......................... 180 max. volts

Equipment Design Ranges:
  For any utor voltage (E_u) between 12000 and 18000 volts
  and grid-No.2 voltage (E_c2) between 150 and 500 volts
Grid-No.4 Voltage for utor Current of 100 μamp. 0% to 2.5% of Eu ...... volts
Grid-No.1 Voltage for Visual Extinction
  of Undelected Focused Spot ........................ 11% to 25.7% of E_c2 ...... volts
Grid-No.4 Current .................................. -25 to +25 μamp
Grid-No.2 Current .................................. -15 to +15 μamp
Field Strength of Single-Field
  Ion-Trap Magnet (Approx.) **} \[\sqrt{\frac{E_u}{12000}} \times 33\] gausses
Field Strength of Adjustable Centering Magnet ........................ 0 to 8 gausses

Examples of Use of Design Ranges:
  For utor voltage of
  and grid-No.2 voltage of
Grid-No.4 Voltage for utor Current of 100 μamp. 0 to 350 0 to 400 volts
Grid-No.1 Voltage for Visual Extinction
  of Undelected Focused Spot ........................ -33 to -77 -33 to -77 volts
Ion-Trap Magnet (Rated Strength) ....................... 35 40 gausses

Maximum Circuit Values:
Grid-No.1-Circuit Resistance ................................ 1.5 max. megohms

* Brilliance and definition decrease with decreasing utor voltage. In general, the utor voltage should not be less than 12000 volts.
** With a specimen ion-trap magnet similar to JETEC Ion-Trap Magnet No.111 located in optimum position and rotated to give maximum brightness, the ion-trap magnet current is 70 milliamperes dc when the utor voltage is 14000 volts.

Devices and arrangements shown or described herein may use patents of RCA or others. Information contained herein is furnished without responsibility by RCA for its use and without prejudice to RCA's patent rights.
NOTE 1: WITH TUBE NECK INSERTED THROUGH FLARED END OF REFERENCE-LINE GAUGE (JETEC NO. 110) AND WITH TUBE SEATED IN GAUGE, THE REFERENCE LINE IS DETERMINED BY THE INTERSECTION OF THE PLANE CC' OF THE GAUGE WITH THE GLASS FUNNEL.

NOTE 2: SOCKET FOR THIS BASE SHOULD NOT BE RIGIDLY MOUNTED; IT SHOULD HAVE FLEXIBLE LEADS AND BE ALLOWED TO MOVE FREELY. BOTTOM CIRCUMFERENCE OF BASE SHELL WILL FALL WITHIN A CIRCLE CONCENTRIC WITH METAL-SHELL AXIS AND HAVING A DIAMETER OF 2-3/4".

NOTE 3: METAL SHELL AND GLASS FACE OPERATE AT HIGH VOLTAGE. ANY MATERIAL IN CONTACT WITH THE SHELL OR THE FACE MUST BE INSULATED TO WITHSTAND THE MAXIMUM APPLIED ULTAVOLTAGE.


NOTE 5: SUPPORT TUBE BY LIP ONLY AT CORNERS WITHIN THIS SPACE.
Average Grid-Drive Characteristics of Type 17TP4.

Average Grid-Drive Characteristics of Type 17TP4.

Socket Connections
Bottom View

PIN 1: HEATER
PIN 2: GRID NO.1
PIN 6: GRID NO.4
PIN 10: GRID NO.2
PIN 11: CATHODE
PIN 12: HEATER
METAL-SHELL LIP: GRID NO.3,
GRID NO.5, COLLECTOR