



# 17TP4 KINESCOPE

Low-Voltage Electro-  
static Focus  
Magnetic Deflection

Rectangular Metal-Shell Type  
Frosted Filterglass Faceplate  
Ion-Trap Gun

14-5/8" x 11" Picture Size  
17" Max. Shell Diagonal  
19-5/16" Max. Length

TENTATIVE DATA

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	$\mu\mu f$
Cathode to All Other Electrodes . . . . .	5	$\mu\mu f$
Faceplate (With about 66% 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 . . . . .	66°	
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" $\pm$ 3/16"	
Greatest Width of Tube at Lip . . . . .	15-15/16" $\pm$ 1/8"	
Greatest Height of Tube at Lip . . . . .	12-1/4" $\pm$ 1/8"	
Screen Size . . . . .	14-5/8" x 11"	



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**General (Cont'd):**

Ultor <sup>®</sup> Terminal . . . . .	Metal-Shell Lip
Base. . . . .	Small-Shell Duodecal 6-Pin (JETEC No. B6-63)
Mounting Position . . . . .	Any

**Maximum Ratings, Design-Center Values:**

ULTOR <sup>®</sup> 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 ultor voltage ( $E_u$ ) between 12000 and 16000 volts  
and grid-No.2 voltage ( $E_{c2}$ ) between 150 and 500 volts*

Grid-No.4 Voltage for Ultor Current of 100 $\mu$ amp.	0% to 2.5% of $E_u$	. . . . .	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	. . . . .	$\mu$ amp
Grid-No.2 Current . . . . .	-15 to +15	. . . . .	$\mu$ amp
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

**Examples of Use of Design Ranges:**

*For ultor voltage of  
and grid-No.2 voltage of*

	14000	16000	volts
	300	300	volts
Grid-No.4 Voltage for Ultor Current of 100 $\mu$ amp.	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
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In the 17TP4, grid No.5 which has the ultor function, grid No.3, and collector are connected together within the tube and are conveniently referred to collectively as "ultor". The "ultor" in a cathode-ray tube is the electrode, or the electrode in combination with one or more additional electrodes connected within the tube to it, to which is applied the highest dc voltage for accelerating the electrons in the beam prior to its deflection.

\* brilliance and definition decrease with decreasing ultor voltage. In general, the ultor voltage should not be less than 12000 volts.

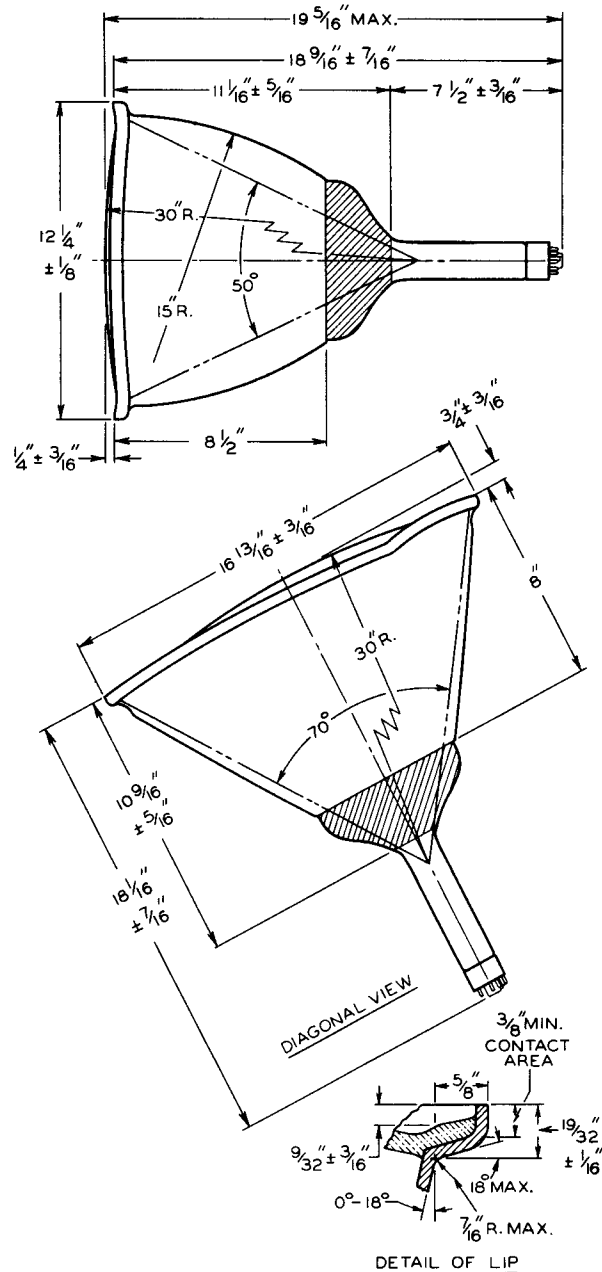
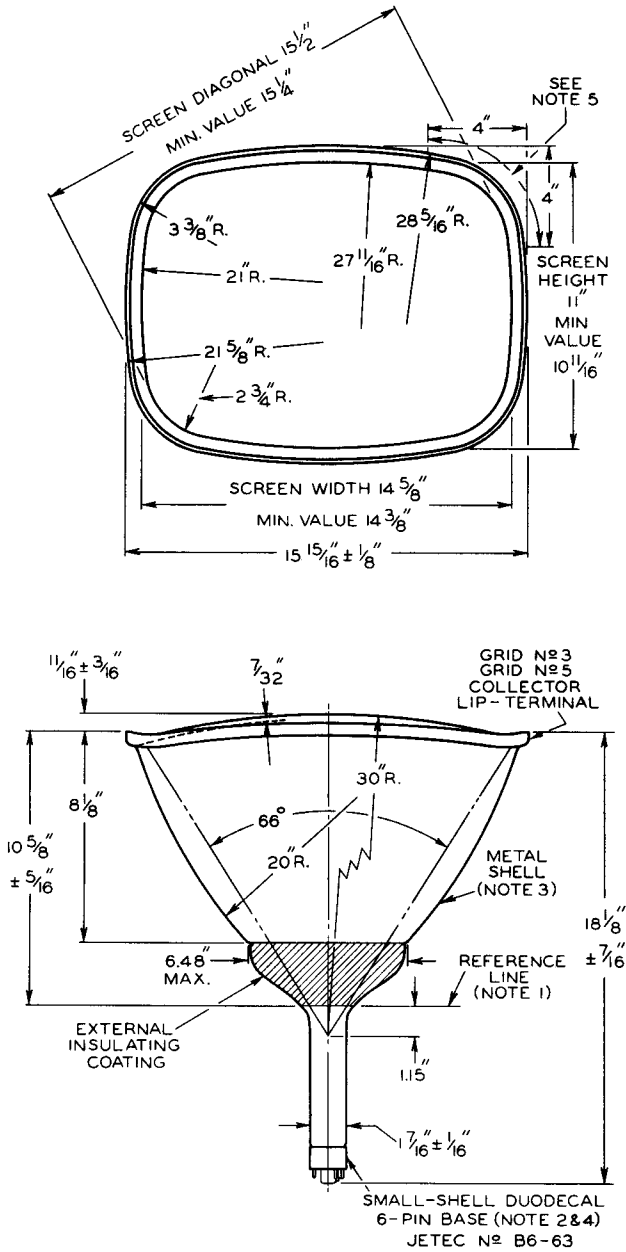
\*\* with a specimen ion-trap magnet similar to JETEC Ion-Trap Magnet No.111 located in optimum position and rotated to give maximum brightness, the ion-trap magnet current is 70 milliamperes dc when the ultor voltage is 14000 volts.

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### DIMENSIONAL OUTLINE



92CL-7601R1

**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- $\frac{3}{4}$ ".

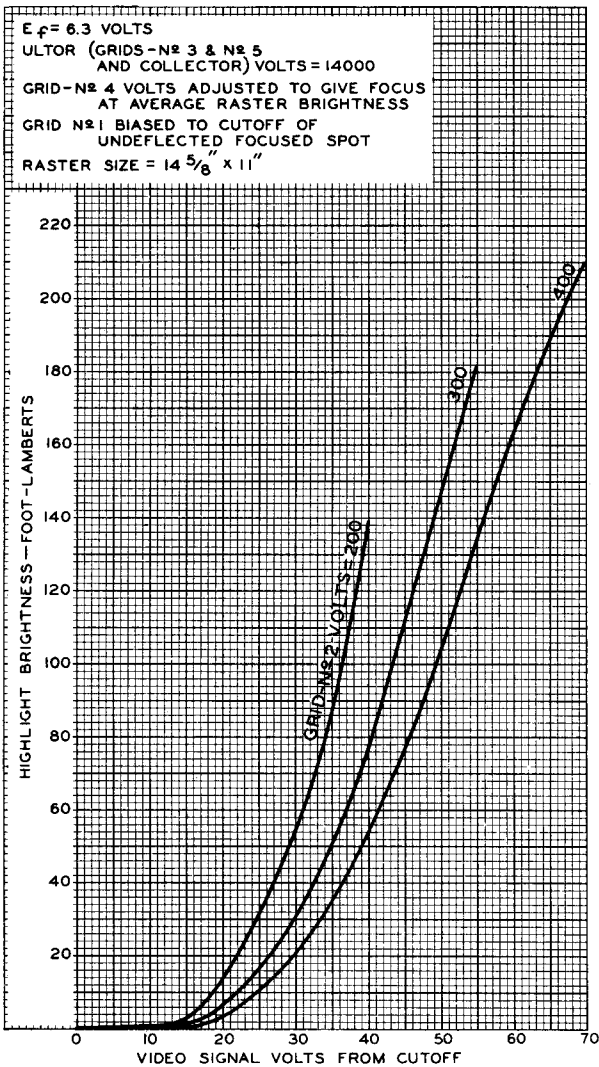
**NOTE 3:** METAL SHELL AND GLASS FACE OPERATE AT HIGH VOLTAGE. ANY MATERIAL IN CONTACT WITH THE SHELL OR THE FACE MUST BE INSULATED TO WITHSTAND THE MAXIMUM APPLIED ULTOR VOLTAGE.

**NOTE 4:** THE PLANE THROUGH THE TUBE AXIS AND PIN NO. 6 MAY VARY FROM THE HORIZONTAL AXIS OF THE GLASS FACE BY AN ANGULAR TOLERANCE (MEASURED ABOUT THE TUBE AXIS) OF  $\pm 10^\circ$ .

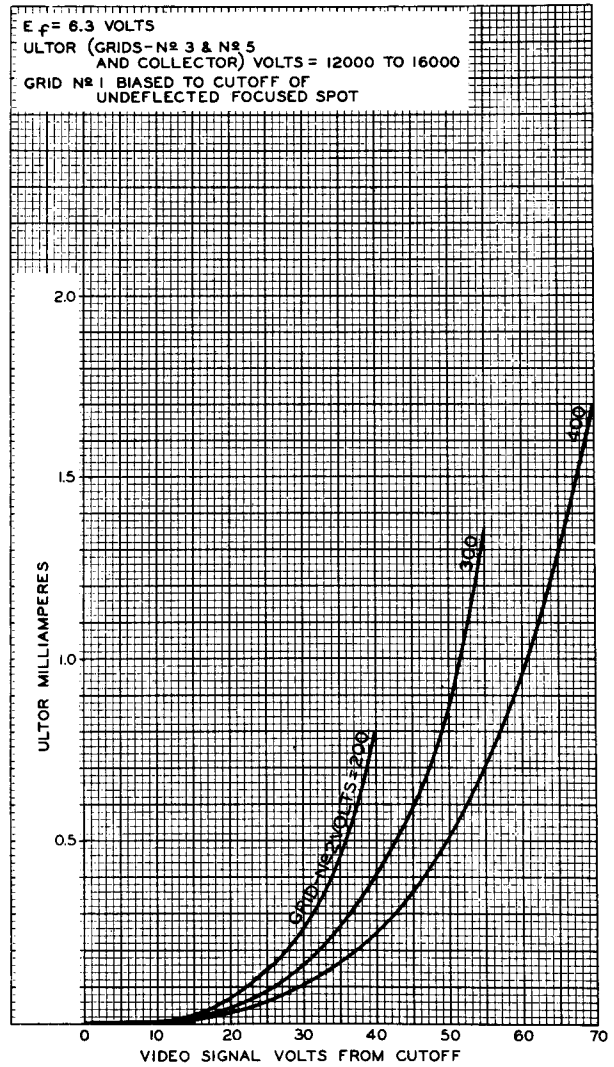
**NOTE 5:** SUPPORT TUBE BY LIP ONLY AT CORNERS WITHIN THIS SPACE.



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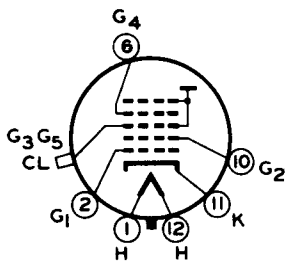


Average Grid-Drive Characteristics of Type 17TP4.



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