

7ATP7

CATHODE RAY TUBE

7-INCH ROUND, GLASS                    POST ACCELERATION  
 FOCUS -- ELECTROSTATIC                PERSISTENCE -- LONG  
 DEFLECTION -- ELECTROSTATIC          FACEPLATE -- SPHERICAL, CLEAR

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DESCRIPTION AND RATING

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The 7ATP7 is a cathode ray tube for radar and oscillographic applications. A feature of this tube is post acceleration which assures maximum deflection sensitivity with high brightness.

GENERAL

ELECTRICAL

Heater Voltage . . . . . 6.3 Volts  
 Heater Current . . . . .  $0.6 \pm 10\%$  Amperes

Focusing Method -- Electrostatic  
 Deflecting Method -- Electrostatic

Direct Interelectrode Capacitances, approximate

Cathode to All Other Electrodes . . . . .	6.0	uuf
Grid No. 1 to All Other Electrodes . . . . .	7.0	uuf
D1 to D2 . . . . .	3.0	uuf
D3 to D4 . . . . .	2.0	uuf
D1 to All Other Electrodes . . . . .	8.0	uuf
D2 to All Other Electrodes . . . . .	8.0	uuf
D3 to All Other Electrodes . . . . .	4.5	uuf
D4 to All Other Electrodes . . . . .	4.5	uuf

CATHODE RAY TUBE DEPARTMENT

**GENERAL  ELECTRIC**

Syracuse, N. Y.

OPTICAL

Phosphor Number -- P7  
Fluorescent Color -- Blue-White  
Phosphorescent Color -- Yellow  
Persistence -- Long

Faceplate -- Clear

MECHANICAL

Over-all Length . . . . . 17-1/8 + 3/8 Inches  
Greatest Bulb Diameter. . . . . 7-3/8 + 3/16 Inches  
Minimum Useful Screen Diameter . . . . . 6.5 Inches

Bulb Contact -- Recessed Small-ball Cap, JETEC No. J1-22  
Base -- 12-Pin Medium Shell Dihelptal JETEC No. B12-37  
Basing -- JETEC Designation 14J  
Bulb Contact Alignment  
J1-22 Contact Aligns with Trace of D1-D2 + 10 Degrees  
J1-22 Contact on Same Side as Pin No. 5

Base Alignment  
D1-D2 Trace Aligns with Pin.No. 5 and Tube Axis + 10 Degrees  
Positive Voltage on D1 Deflects Beam Approximately Toward Pin No. 5  
Positive Voltage on D3 Deflects Beam Approximately Toward Pin No. 2

Trace Alignment  
Angle Between D3-D4 and D1-D2 Traces . . . . . 90 + 1 Degrees

Mounting Position -- Any

RATINGS

DESIGN-CENTER VALUES\*

Post Accelerator Voltage . . . . . 6,000 Max Volts DC  
Anode Voltage+ . . . . . 2,000 Max Volts DC  
Radio Post Accelerator Voltage to Anode Voltage. . . . . 2.5 Max  
Anode Input/ . . . . . 6 Max Watts  
Focusing Electrode Voltage . . . . . 1,100 Max Volts DC  
Grid No. 1 Voltage  
Negative-Bias Value . . . . . 200 Max Volts DC  
Positive-Bias Value . . . . . 0 Max Volts DC  
Positive-Peak Value . . . . . 2 Max Volts  
Peak Heater-Cathode Voltage  
Heater Negative with Respect to Cathode . . . . . 180 Max Volts  
Heater Positive with Respect to Cathode . . . . . 180 Max Volts  
Peak Voltage between Anode and Any Deflecting Electrode. . . 1,500 Max Volts

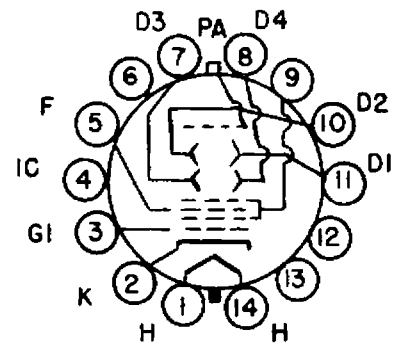
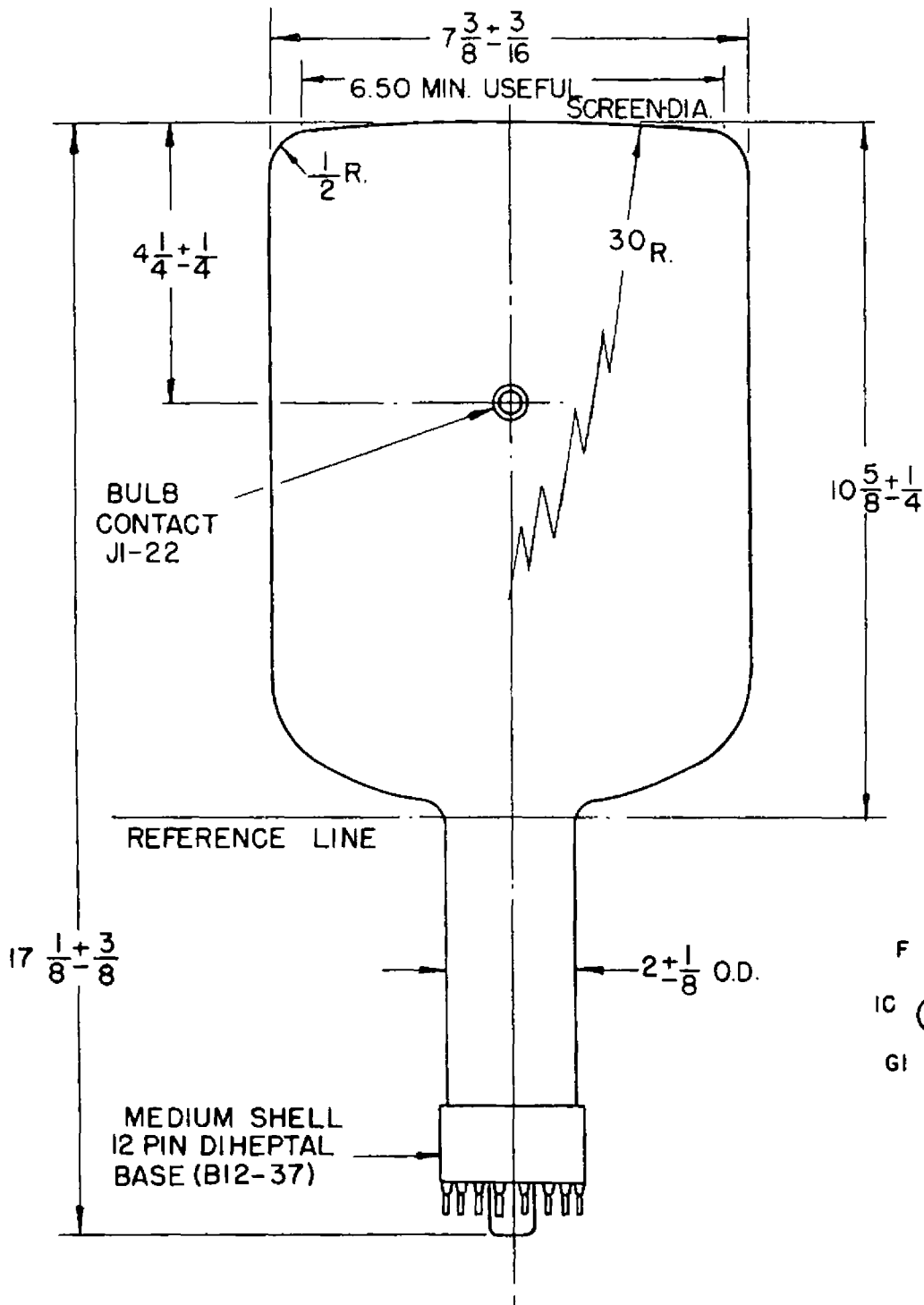
TYPICAL OPERATING CONDITIONS

Post Accelerator Voltage . . . . .	4,000	Volts DC
Anode Voltage . . . . .	2,000	Volts DC
Focusing Electrode Voltage . . . . .	392 to 672	Volts DC
Grid No. 1 Voltage $\phi$ . . . . .	-40 to -80	Volts DC
Modulation Factor $\#$ . . . . .	38	Max Volts
Deflecting Factors		
D1 and D2 . . . . .	72 to 108	Volts DC per Inch
D3 and D4 . . . . .	64 to 96	Volts DC per Inch
Focusing-Electrode Current for any Operating Condition.	-25 to +25	Microamperes
Spot Position, Undelected** . . . . .	Within a 20	Millimeter Square
Line Width A++ . . . . .	0.45	Millimeters
Line Width B++ . . . . .	0.55	Millimeters

CIRCUIT VALUES

Grid No. 1 Circuit Resistance . . . . .	1.5	Max Megohms
Resistance in Any Deflecting Electrode Circuit $\#\#$ . . . . .	5.0	Max Megohms

- \* The maximum ratings provide a ten percent safety factor in accordance with the standard design-center system of rating cathode ray tubes. The tube will withstand the combined effects of variations in line voltage and components provided the maximum design-center values are not exceeded by more than ten percent.
- + Anode, grid No. 2 and grid No. 4 which are connected together within the tube are referred to herein as anode.
- $\phi$  Anode input equals the product of anode voltage and average current measured at the terminal.
- $\phi$  For visual extinction of focused undeflected spot.
- # For an  $I_{b3}$  of 25 microamperes d-c in accordance with MIL-E-1C specification.
- \*\* With post accelerator anode voltage of 4,000 volts, the center of the focused undeflected spot will lie within a square of 20 millimeters radius centered on the tube face.
- ++ Measured with specification MIL-E-1C, paragraph 4.12.6.1, at an anode No. 3 (post-acceleration) current of 25 microamperes d-c.
- $\#\#$  It is recommended that the deflection electrode resistance be approximately equal.



**BASING DIAGRAM**  
14J

**NOTES**

1. REFERENCE LINE - POINT WHERE RING GAGE 2.063 +.001, -.000 I.D, 1/2 LONG WILL STOP.
2. BULB CONTACT ALIGNS WITH PIN NO.5 POSITION ±10 DEGREES.