

## CHARACTERISTICS

### GENERAL DATA

Focusing Method . . . . .	Magnetic
Deflection Method . . . . .	Magnetic
Deflection Angle (Approx.) . . . . .	54 Degrees
Phosphor . . . . .	P7
Fluorescence . . . . .	Blue-White
Phosphorescence . . . . .	Yellow
Persistence . . . . .	Long
Faceplate . . . . .	Gray Filter Glass
Light Transmittance (Approx.) . . . . .	74 Percent

In addition to the type shown the 12SP- can be supplied with several other screen phosphors.

### ELECTRICAL DATA

Heater Voltage . . . . .	6.3 Volts
Heater Current . . . . .	0.6 ± 10% Ampere
Direct Interelectrode Capacitances (Approx.)	
Cathode to All Other Electrodes . . . . .	5 μmf
Grid No. 1 to All Other Electrodes — 12SP7D . . . . .	8 μmf
Grid No. 1 to All Other Electrodes — 12SP7, 12SP7B . . . . .	6 μmf

### MECHANICAL DATA

Minimum Useful Screen Diameter . . . . .	11 Inches
Bulb . . . . .	J99½A or Equivalent
Bulb Contact (Recessed Small Cavity Cap) . . . . .	J1-21
Base (Small Shell Dodecal 5-Pin) . . . . .	B5-57
Basing . . . . .	12D

## RATINGS

### MAXIMUM RATINGS (Absolute Maximum Values)

	12SP7	12SP7B	12SP7D	
Anode Voltage . . . . .	11,000	11,000	15,000	Volts dc
Grid No. 2 Voltage . . . . .	450	550	770	Volts dc
Grid No. 1 Voltage				
Negative Bias Value . . . . .	140	140	200	Volts dc
Positive Bias Value . . . . .	0	0	0	Volts dc
Positive Peak Value . . . . .	2	2	2	Volts
Peak Heater-Cathode Voltage				
Heater Negative with				
Respect to Cathode . . . . .	150	200	200	Volts
Heater Positive with				
Respect to Cathode . . . . .	150	200	200	Volts

### TYPICAL OPERATING CONDITIONS

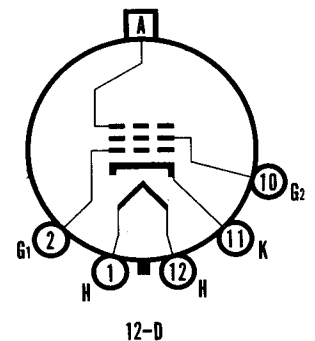
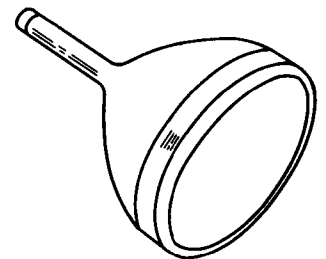
Anode Voltage <sup>1</sup> . . . . .	9000	Volts	dc
Grid No. 2 Voltage . . . . .	250	Volts	dc
Grid No. 1 Voltage Required for Cutoff <sup>2</sup> . . . . .	-27 to -63	Volts	dc
Focusing Coil Current (Approx.) <sup>3</sup> . . . . .	110	Ma	dc
Line Width A <sup>4</sup> — 12SP7D Only . . . . .	0.38	MM	Max.
Spot Position <sup>4</sup> . . . . .	20	MM	Max.

### CIRCUIT VALUES

Grid No. 1 Circuit Resistance . . . . .	1.5	Megohms	Max.
---	-----	---------	------

## QUICK REFERENCE DATA

- Radar Indicator Tube
- 12" Direct Viewed
- Round Glass Type
- Spherical Faceplate
- Gray Filter Glass
- Magnetic Deflection
- Magnetic Focus
- Aluminized Screen
- (12SP7B - 12SP7D)
- Non-Aluminized (12SP7)



## SYLVANIA ELECTRONIC TUBES

A Division of  
 Sylvania Electric Products Inc.

### PICTURE TUBE OPERATIONS SENECA FALLS, NEW YORK

Prepared and Released By The  
 TECHNICAL PUBLICATIONS SECTION  
 EMPORIUM, PENNSYLVANIA

JUNE, 1961

PAGE 1 OF 3

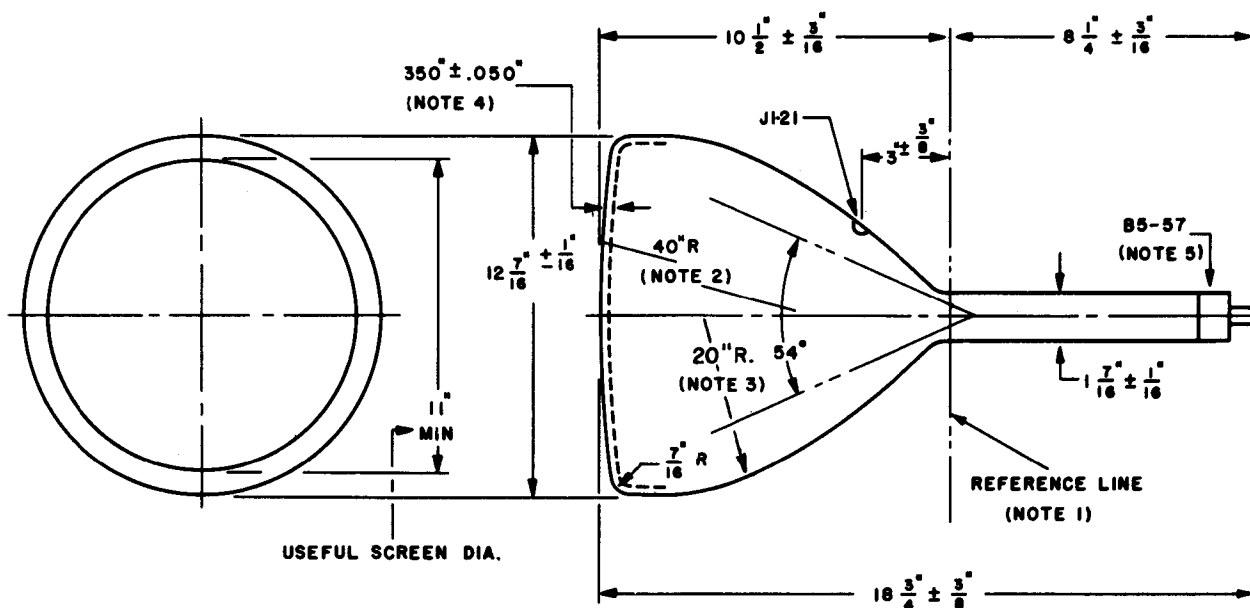
File Under  
 SPECIAL AND GENERAL PURPOSE  
 CATHODE RAY TUBES

**NOTES:**

1. Brightness and focus quality decrease with decreasing anode voltage. In general, the anode voltage should not be less than 4000 volts.
2. For visual extinction of undeflected focused spot.
3. For RETMA focusing coil No. 106 with distance from the yoke reference line to center of air gap equal to 3/4 inches.
4. Measured by compressed raster method of an anode current at 200 micro-amperes.
5. The center of the undeflected, unfocused spot will fall within a circle of 20 mm radius concentric with the tube face.

**WARNING:**

X-Ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

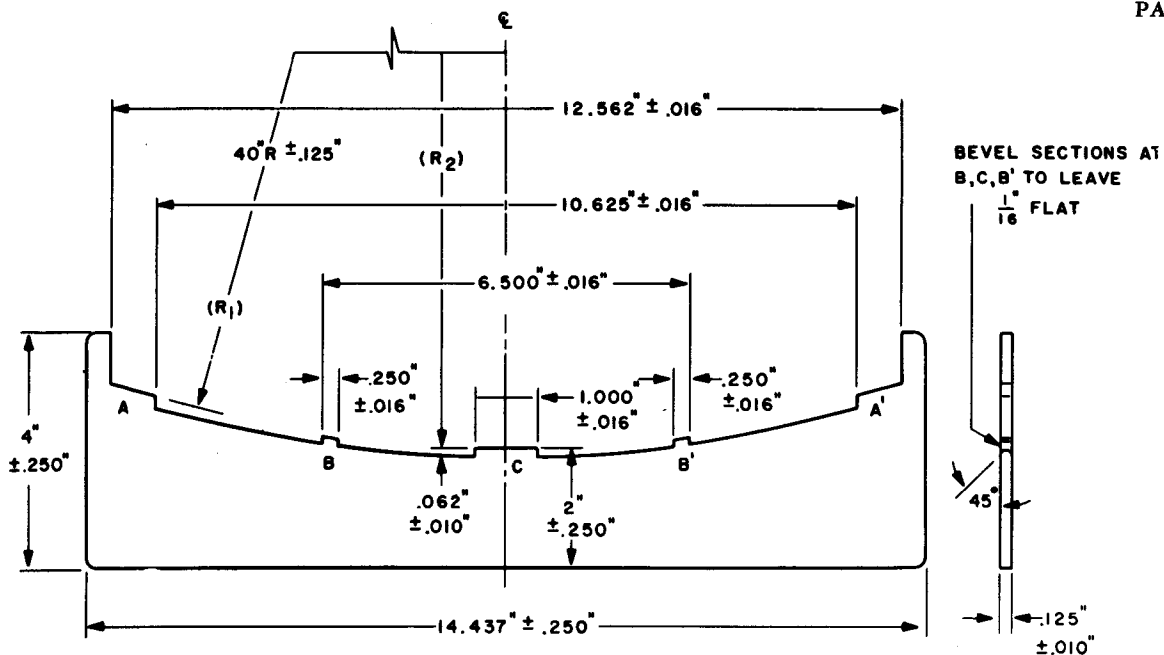


858050A

**DIAGRAM NOTES:**

1. Reference line is determined by the plane of the upper edge of the reference line gauge (JEDEC No. 112) when the gauge is seated against the glass cone.
2. To meet requirements of faceplate contour gauge shown. (12SP7D only)
3. To meet requirements of bulb contour gauge shown. (12SP7D only)
4. Faceplate thickness over entire useful screen area. (12SP7D only)
5. Base Pin Position No. 3 aligns with anode Contact (J1-21), within 10 degrees.

FACEPLATE CONTOUR GAUGE  
 (12SP7D — Only)

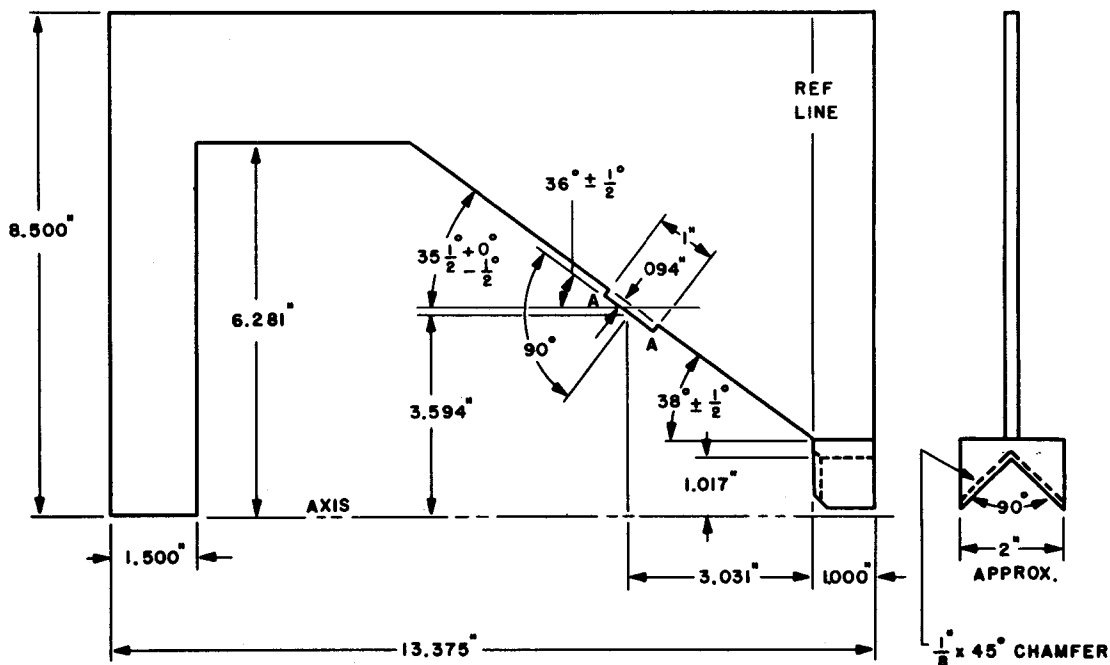


358052

$R_2$  shall be equal to the Absolute Value of  $R_1 + .050'' \pm .002''$

The contour of the Bulb Face shall be checked with this Gauge at two orientations approximately 90 degrees apart. The gap between the bulb face and gauge points B, B', or C shall not exceed 0.100", and the bulb shall seat on steps A and A'.

BULB CONTOUR GAUGE  
 (12SP7D — Only)



358051

With the Bulb Neck seated in V-Blocks, the bulb shall rest on flat A-A.