

9QP4-A  
CATHODE RAY TUBE

|                            |                                    |
|----------------------------|------------------------------------|
| 9 INCH RECTANGULAR, GLASS  | 7-11/16 BY 6-1/8 INCH PICTURE SIZE |
| FOCUS - ELECTROSTATIC      | FACEPLATE - SPHERICAL, GRAY        |
| DEFLECTION - MAGNETIC      | ION-TRAP GUN                       |
| 70 DEGREE DEFLECTION ANGLE | PERSISTENCE - SHORT                |

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DESCRIPTION AND RATING

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The 9QP4-A is a television picture tube designed to feature small size, lightweight, and a low current heater for series-string operation.

The reduction in size and weight over other tubes with comparable characteristics makes it particularly suitable for use in small, lightweight portable television receivers.

Since the tube is designed primarily for series-string operation, its use will permit the circuit simplification and power reduction possible in such service.

GENERAL

ELECTRICAL

|                           |                |         |
|---------------------------|----------------|---------|
| Heater Voltage .....      | 4.7 $\pm$ 10 % | Volts   |
| Heater Current .....      | 0.3            | Amperes |
| Heater Warm-up Time ..... | 11             | Seconds |

Focusing Method - Electrostatic

Deflecting Method - Magnetic

Deflection Angle, approximate

|                  |    |         |
|------------------|----|---------|
| Diagonal .....   | 70 | Degrees |
| Horizontal ..... | 61 | Degrees |
| Vertical .....   | 49 | Degrees |

Direct Interelectrode Capacitances, approximate

|                                          |   |     |
|------------------------------------------|---|-----|
| Cathode to All Other Electrodes .....    | 6 | uuf |
| Grid-No. 1 to All Other Electrodes ..... | 4 | uuf |

OPTICAL

Phosphor Number - P4

Fluorescent Color - White

Phosphorescent Color - White

Persistence - Short

GENERAL ELECTRIC COMPANY

from JETEC release #2164, Sept. 29, 1958

Faceplate - Gray  
Light Transmission At Center, approximate ..... 83 Percent

# MECHANICAL

Over-all Length .....  $12-3/4 \pm 5/16$  Inches  
Greatest Bulb Dimensions  
Diagonal .....  $8-5/8 + 1/8 - 1/16$  Inches  
Width .....  $8-7/32 + 1/8 - 1/16$  Inches  
Height .....  $6-11/16 + 1/8 - 1/16$  Inches  
Minimum Useful Screen Dimensions  
Diagonal .....  $8-1/4$  Inches  
Width .....  $7-11/16$  Inches  
Height .....  $6-1/8$  Inches  
Neck Length .....  $6-1/2$  Inches  
Base - Small-shell Duodecal 7 Pin, JETEC No. B7-179  
Basing, JETEC Designation - 12AD  
Mounting Position - Any  
Net Weight, approximate .....  $3-1/2$  Pounds

## MAXIMUM RATINGS \* Cathode-Drive-Service

# DESIGN-CENTER VALUES +

Anode Voltage + ..... 6800 Max Volts DC  
Focusing-Electrode Voltage for Focus ..... - 100 to + 500 Max Volts DC  
Grid-No.2 Voltage ..... 300 Max Volts DC  
Cathode to Grid No. 1 Voltage  $\phi$   
Negative-Bias Value ..... 0 Max Volts DC  
Positive-Bias Value ..... 100 Max Volts DC  
Negative-Peak Value ..... 2 Max Volts  
Positive-Peak Value ..... 130 Max Volts  
Peak Heater-Cathode Voltage  
Heater Negative with Respect to Cathode  
During Warm-up Period not to exceed 15 seconds ..... 200 Max Volts  
After Equipment Warm-up Period ..... 150 Max Volts  
Heater Positive with Respect to Cathode ..... 150 Max Volts

## TYPICAL OPERATING CONDITIONS \* Cathode-Drive-Service

Anode Voltage  $\mathcal{V}$  ..... 5500 Volts DC  
Focusing-Electrode Voltage for Focus ..... 0 to 400 Volts DC  
Focusing-Electrode Current ..... 15 to + 25 Microamperes DC

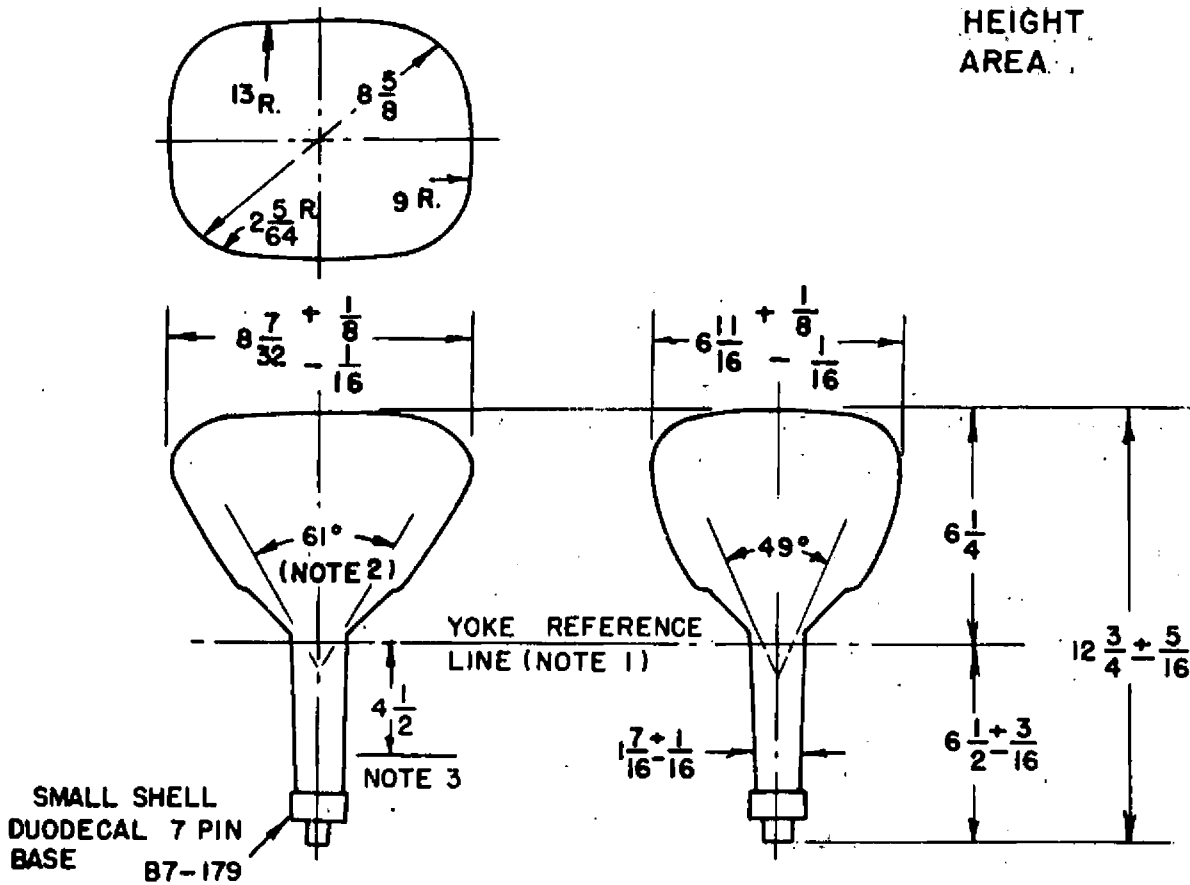
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|----------------------------------------------|--------------|-------------|
| Grid-No. 2 Voltage .....                     | 200          | Volts DC    |
| Cathode to Grid-No. 1 Voltage ♦.....         | + 28 to + 52 | Volts DC    |
| Ion-Trap Field Intensity△, approximate ..... | 22           | Gausses     |
| Grid-No. 1 Circuit Resistance .....          | 1.5          | Max Megohms |

- \* Voltages are positive with respect to Grid- No. 1 unless otherwise specified.
- ✱ 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.3 and Grid-No. 5 which are connected together within the tube are referred to herein as Anode.
- ⌘ Grid-No. 1 must not be positive with respect to cathode at any time during warm-up or subsequent operation.
- π Brightness and focus quality decrease with decreasing anode voltage. In general, the anode voltage should not be less than 3500 volts.
- ◆ For visual extinction of focused raster.
- △ Single-field ion-trap magnet adjusted to optimum position, equivalent to 22 milliamperes through EIA ion-trap magnet No. 117.

GENERAL ELECTRIC COMPANY  
ELECTRONICS COMPONENTS DIVISION  
CATHODE RAY TUBE DEPARTMENT  
SYRACUSE, N.Y.

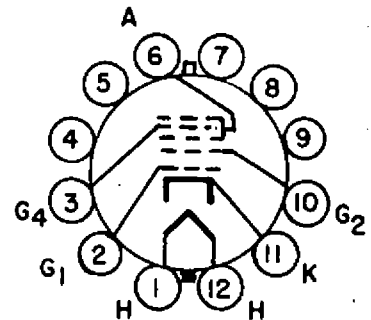
# SCREEN DIMENSIONS

|          |            |
|----------|------------|
| DIAGONAL | 8 - 1/4"   |
| WIDTH    | 7 - 11/16" |
| HEIGHT   | 6 - 1/8"   |
| AREA     | 43 SQ. IN. |



## NOTES:

1. REFERENCE LINE IS DETERMINED BY THE PLANE OF THE UPPER EDGE OF THE SHOULDER OF THE REFERENCE-LINE GAGE (EIA NO. 110) WHEN THE GAGE IS RESTING ON THE CONE.
2. DEFLECTION ANGLE ON DIAGONAL IS 70 DEGREES.
3. APPROXIMATE POSITION OF ION-TRAP MAGNET.



BASING DIAGRAM  
12AD