RADIO VALVE COMPANY LIMITED

21DAP4

CATHODE RAY TUBE

The 21DAP4 is a rectangular all glass picture tube which provides a 19-1/16 by 15-1/16 inch picture for direct view television reception. It employs electrostatic focusing and magnetic deflection of 110 degrees, also a light weight bulb.

The 21DAP4 has the new straight type electron gun that does away with the need of an ion-trap magnet.

Other features of the 21DAP4 include a high quality fluorescent screen which is aluminized to increase light output, a gray faceplate which improves picture contrast, and an external conductive coating which serves as a filter capacitor when grounded.

ELECTRICAL DATA

Focusing Method	Electrostatic
Deflection Method	Magnetic
Deflection Angles, Approximate	
Horizontal	105 Degrees
Vertical	87 Degrees
Diagonal	110 Degrees
Direct Interelectrode Capacitances, Approximate	
Cathode to all other electrodes	5 uuf
Grid No. 1 to all other electrodes	6 uuf
External Conductive Coating to Anode	2500 max. uuf 2000 min. uuf

OPTICAL DATA

Phosphor Number	P4 Sulphide Type
Fluorescent Colour	White
Phosphorescent Colour	White
Persistence	Short
Faceplate	
Light Transmission at Center, Approx.	74 Percent

MECHANICAL DATA

Overall Length	14-11/16 ±5/16 Inches
Greatest Dimensions of Bulb	
Diagonal	21-3/8 ±1/8 Inches
Height	16-3/8 ±1/8 Inches
Width	20-1/4 ±1/8 Inches

from JETEC release #1941, June 10, 1957

MECHANICAL DATA (Continued)

Minimum Useful Screen Dimensions	
Diagonal	20-1/4 Inches
Height	15-1/16 Inches
Width	19-1/16 Inches
Area	262 Sq. In.
Neck Length	5-7/16 Inches
Bulb Number	J171G1
Bulb Contact	Recessed small cavity cap JETEC No. J1-21
Base	Small button 7 pin JETEC No. B7-183
Basing	8HR
Bulb Contact Alignment	
Anode contact aligns with pin No. 4 ±30 degrees	
Mounting Position	Any
Net Weight, Approximately	20 Lbs.

RATINGS (Design Center Values)

Heater Voltage	6.3 Volts
Heater Current	0.6 ±10% Amp.
* Heater Warm-Up Time	11 Seconds
Anode Voltage	18,000 Max. Volts DC
	12,000 Min. Volts DC
Grid No. 4 (Focusing Electrode) Voltage	-500 to +1,000 Max. Volts DC
Grid No. 2 Voltage	500 Max. Volts DC
Grid No. 1 Voltage	
Negative - bias value	140 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
During Warm-up Period not to exceed 15 seconds	410 Max. Volts
After equipment warm-up period	180 Max. Volts
Heater positive with respect to cathode	180 Max. Volts

* Heater warm-up time is the time required for the voltage across the heater terminals to increase to 5.0 volts in the JETEC test circuit, with E = 25 volts and series R = 31.5 ohms.

TYPICAL OPERATING CONDITIONS

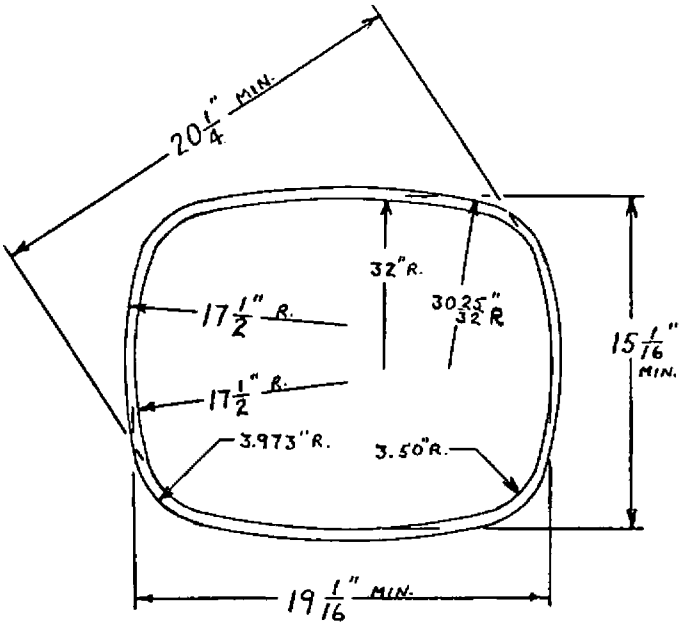
Anode Voltage	14,000	16,000 Volts DC
Grid No. 2 Voltage	300	400 Volts DC
Grid No. 4 Voltage	0 to 400	0 to 400 Volts DC
Grid No. 1 Voltage for visual extinction of focused raster	-28 to -72	-36 to -94 Volts DC

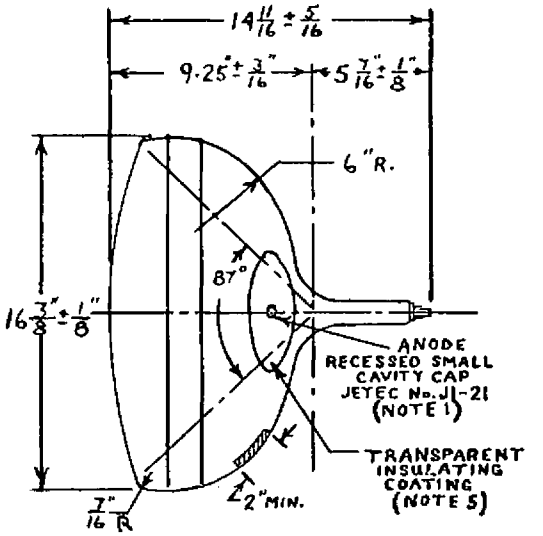
MAXIMUM CIRCUIT VALUES

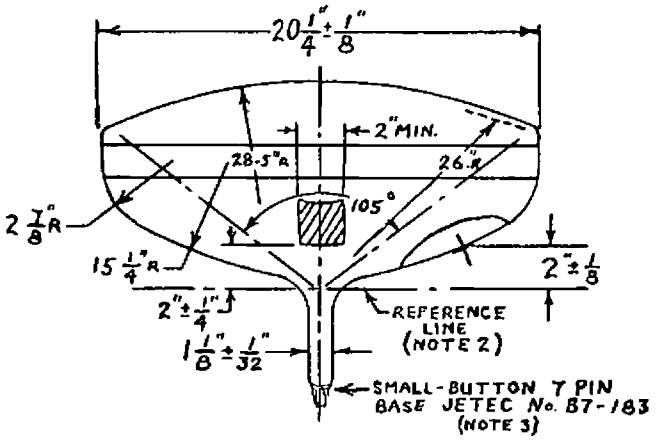
Grid No. 1 Circuit Resistance	1.5 Max. Megohms

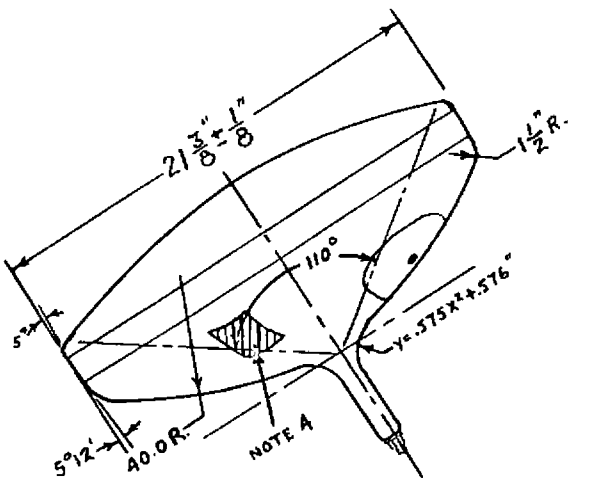
X-RAY WARNING

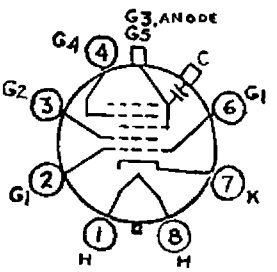
When operated at anode voltages up to 16 kilovolts, the 21DAP4 does not produce any harmful X-Ray radiation. However, because the rating of this type permits operation at voltages as high as 19.8 kilovolts (absolute maximum value), shielding of the 21DAP4 for X-Ray radiation may be needed to protect against possible injury from prolonged exposure at close range whenever the operating conditions involve voltages above 16 kilovolts.

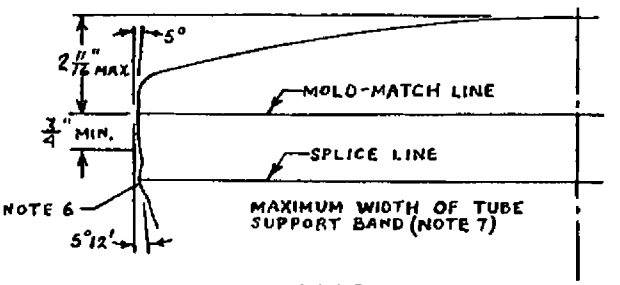












NOTE 1: THE PLANE THROUGH THE TUBE AXIS AND PIN NO. 4 MAY VARY FROM THE PLANE THROUGH THE TUBE AXIS AND ANODE TERMINAL BY ANGULAR TOLERANCE (MEASURED ABOUT THE TUBE AXIS) OF ± 30°. ANODE TERMINAL IS ON SAME SIDE AS PIN NO. 4.

NOTE 2: DETERMINED BY REFERENCE-LINE GAUGE JETEC NO.126.

NOTE 3: SOCKET FOR THIS BASE SHOULD NOT BE RIGIDLY MOUNTED; IT SHOULD HAVE FLEXIBLE LEADS AND BE ALLOWED TO MOVE FREELY. THE DESIGN OF THE SOCKET SHOULD BE SUCH THAT THE CIRCUIT WIRING CANNOT IMPRESS LATERAL STRAINS THROUGH THE SOCKET CONTACTS ON THE BASE PINS. BOTTOM CIRCUMFERENCE OF BASE WAFER WILL FALL WITHIN A CIRCLE CONCENTRIC WITH BULB AXIS AND HAVING A DIAMETER OF 1-3/4".

NOTE 4: THE DRAWING SHOWS THE MINIMUM SIZE AND LOCATION OF THE CONTACT AREA OF THE EXTERNAL CONDUCTIVE COATING. THE ACTUAL AREA OF THIS COATING WILL BE GREATER THAN THE CONTACT AREA SO AS TO PROVIDE THE REQUIRED CAPACITANCE. EXTERNAL CONDUCTIVE COATING MUST BE GROUNDED.

NOTE 5: TO CLEAN THIS AREA, WIPE ONLY WITH SOFT DRY LINTLESS CLOTH.

NOTE 6: BULGE AT SPLICE-LINE SEAL MAY INCREASE THE INDICATED MAXIMUM VALUE FOR ENVELOPE WIDTH, DIAGONAL, AND HEIGHT BY NOT MORE THAN 1/4", BUT AT ANY POINT AROUND THE SEAL, THE BULGE WILL NOT PROTRUDE MORE THAN 1/8" BEYOND THE ENVELOPE SURFACE AT THE MOLD-MATCH LINE.

NOTE 7: UNDISTURBED AREA BETWEEN MOLD-MATCH LINE AND SPLICE LINE IS 3/4" MINIMUM. THIS SHOULD BE THE MAXIMUM WIDTH OF TUBE SUPPORT BAND.