



RADIO MANUFACTURERS ASSOCIATION
ENGINEERING DEPARTMENT

RMA Release No. 348

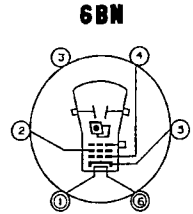
September 25, 1943

CATHODE RAY TUBE CHARACTERISTIC SHEET

Type 9NP1

Physical Characteristics

Focusing Method	Electrostatic
Deflecting Method	Electrostatic
Phosphor	P1
Overall Length	21" $\pm 3/8$ "
Diameter of Bulb	9" $\pm 1/4$ "
Bulb Type	J72J2
Base	Med. 6 pin bakelite
Bulb Contact	1 Medium Metal (A ₂)
Deflection Plate Contacts	4 small metal
Basing RMA designation	6BN
Base Alignment :	
D ₁ -D ₂ trace aligns with Pins #2 and 5 $\pm 15^\circ$	
Angle between traces is $90 \pm 3^\circ$	
Positive voltage on D ₁ deflects beam toward Pin #2	
Positive voltage on D ₃ deflects beam toward Mid-line between Pins #1 and #6.	



Bulb Contact Alignment

Anode #2 contact is on same side as Pin #2 and aligns
with Pins #2 and 5 $\pm 10^\circ$

Spot Centering ⁽⁴⁾ within 30 mm. square

Electrical Characteristics

Ratings

Heater Voltage	2.5 volts
Heater Current	2.1 $\pm 15\%$ amps.
Anode #2 Voltage (High Voltage Electrode)	5500 volts Max.
Anode #1 Voltage (Focusing Electrode)	1500 volts Max.
Grid Voltage (Control Electrode)	Never Positive
Peak Voltage between Anode #2 and any Deflection Plate	1500 volts Max.
D.C. Heater Cathode Potential (Heater Negative) ⁽¹⁾	-125 volts Max.

Typical Operation

Heater Voltage	2.5 volts	
Anode #2 Voltage ⁽²⁾	5000 volts	
Anode #1 Voltage for focus ⁽³⁾	1150 $\pm 25\%$ volts	★
Grid voltage for cutoff ⁽³⁾	-90 $\pm 50\%$ volts	★
Deflection Factor		
Electrodes D ₁ and D ₂	190 $\pm 20\%$ volts/inch	★
Electrodes D ₃ and D ₄	175 $\pm 20\%$ Volts/inch	★

★ These values vary as the Anode #2 Voltage varies.

(Continued)

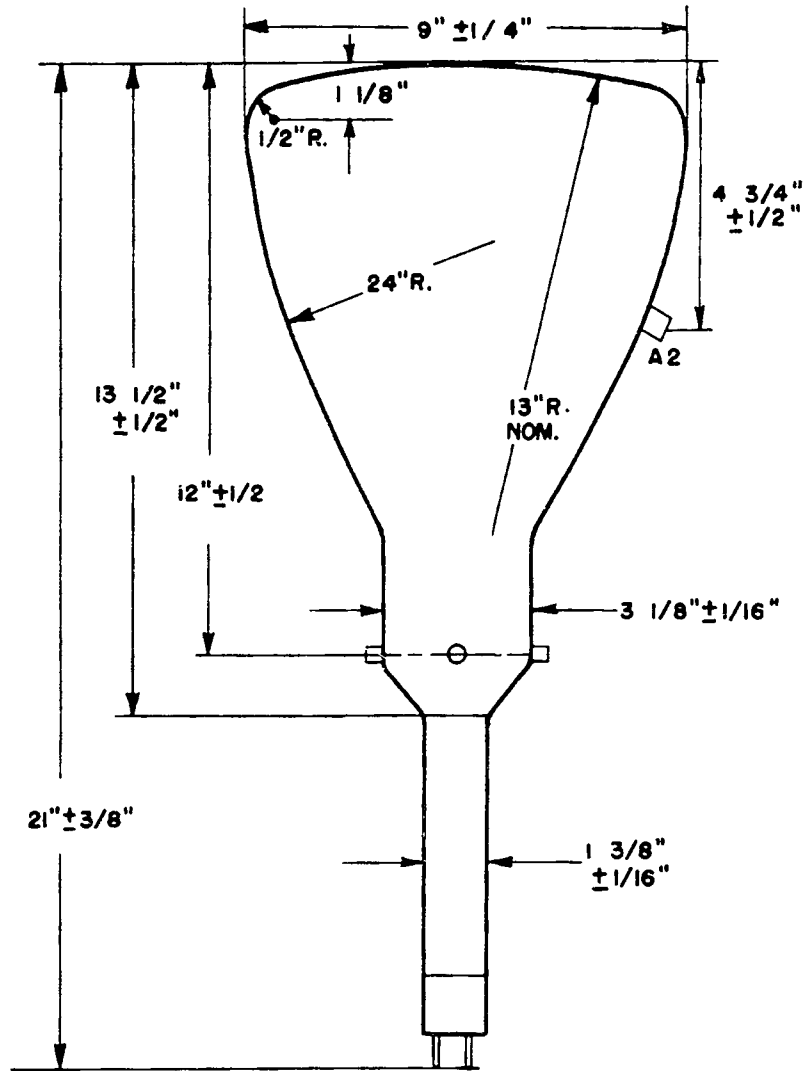
Cathode Ray Tube Characteristic Sheet -- Type 9NP1 (Continued)

NOTES

- (1.) Subject to verification. Cathode should be connected to the mid point or one side of the heater supply if possible.
- (2.) Brilliance and definition decrease with decreasing anode voltages. In general, Anode #2 voltage should not be less than 3000 volts.
- (3.) Cutoff voltage is voltage necessary for visual extinction of stationary focused spot.
- (4.) The undeflected focused spot will fall within a square of the given size centered at the geometric centre of the tube face having one side parallel to the trace produced by D_1D_2 .

HIGH VACUUM CATHODE RAY TUBE 9NP1

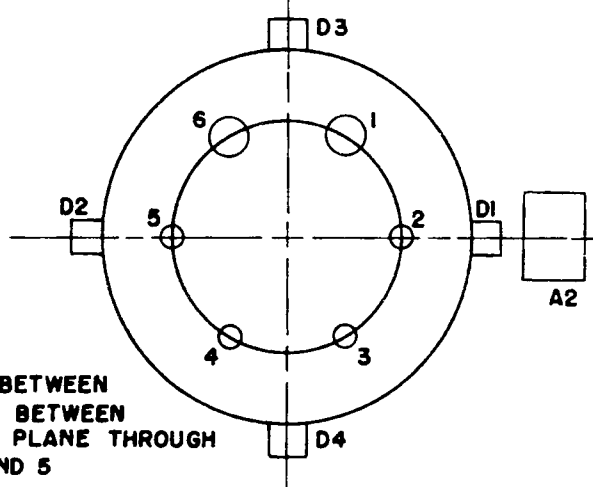
- A2-ANODE GAP
MEDIUM METAL
- DEFLECTION PLATE CAPS
SMALL METAL
- BASE-MEDIUM 6 PIN
BAKELITE



BOTTOM VIEW OF BASE AND CAP CONNECTIONS

PIN	ELECTRODE
1	HEATER
2	ANODE NO.1
3	NO CONNECTION
4	GRID
5	CATHODE
6	HEATER

D1 AND D2 ARE THE
DEFLECTION PLATES
NEARER THE SCEN



90° ± 10° BETWEEN
CAPS AND BETWEEN
CAPS AND PLANE THROUGH
PINS 2 AND 5

AUG. 31, 1943.