

LANSDALE TUBE COMPANY
Radio and Television Tubes
LANSDALE, PENNSYLVANIA

12WP4 CATHODE-RAY TUBE

The 12WP4 is a magnetic focus and magnetic deflection direct view picture tube specifically designed for low cost television receivers. It features a small diameter neck and uses a specially designed deflection yoke requiring unusually low power for deflection. The bulb has been designed for low cost and low weight. The overall length of the tube is 18 inches. Other features are a standard 9-pin miniature stem accommodating a low cost socket, a triode ion trap gun using a single field ion trap magnet and a gray tinted face plate having approximately 65% light transmission:

DATA

GENERAL CHARACTERISTICS

Electrical Data

Heater Voltage.	6.3	Volts	Focusing Method	Magnetic
Heater Current.	0.6 $\pm 10\%$	Ampere	Deflecting Method	Magnetic
			Deflecting Angle (Approx.)	55°

Phosphor.	P4	Direct Interelectrode Capacitances, Approx.
Fluorescence	White	Cathode to all other electrodes . 3.22 uuf
Persistence	Medium	Grid #1 to all other electrodes . 3.19 uuf

External conductive coating to anode capacitance. 2000 Max. uuf
750 Min. uuf

Mechanical Data

Overall length	17 $\frac{3}{4}$ $\pm$ $\frac{1}{4}$	Inches
Greatest diameter of bulb.	12 $\frac{7}{16}$ $\pm$ $\frac{1}{8}$	Inches
Useful screen diameter	11 $\frac{1}{4}$	Inches
Bulb Contact.	Special	
Base	E9-1	
Basing	See Diagram	
Bulb contact alignment	40° $\pm$ 5° clockwise from plane that is midpoint between Pins #1 and #9 when viewed from bottom.	

MAXIMUM RATINGS - Design Center Values

Anode Voltage.	12,000	Max. Volts D-C
Grid #1 Voltage.		
Negative - Bias value.	125	Max. Volts D-C
Positive - Bias value.	0	Max. Volts D-C
Positive - Peak value.	2	Max. Volts
Peak-Heater Cathode Voltage ¹		
Heater negative with respect to cathode		
During warm-up period not to exceed 15 seconds	410	Max. Volts D-C
After equipment warm-up period	140	Max. Volts D-C
Heater positive with respect to cathode.	140	Max. Volts D-C

TYPICAL OPERATING CONDITIONS

Anode voltage	10,000	Volts D-C
Grid #1 Voltage ²	-27 to -63	Volts D-C
Permanent magnet focus unit ³	240	Gauss
Ion trap field strength at center of neck ⁴	95	Gauss

MAXIMUM CIRCUIT VALUES

Grid #1 circuit resistance.	1.5	Max. Megohms
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12WP4

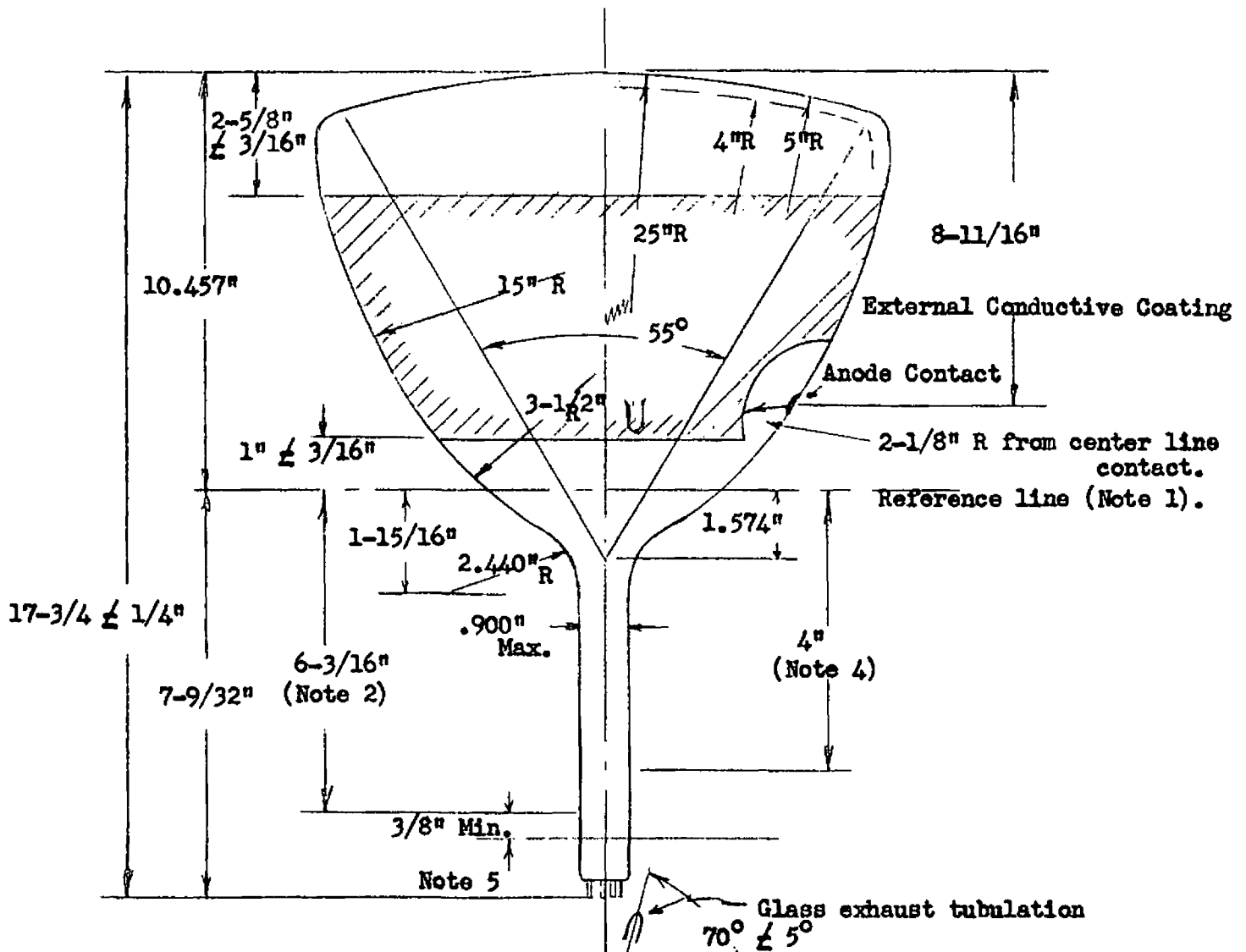
NOTES

1. Cathode should be returned to one side or to the mid-tap of the heater transformer winding.
2. Visual extinction of undeflected focused spot.
3. For standard focus magnet, Philco Part No. 76-6126-5, or equivalent, with the Combined Grid No. 1 - bias voltage and video-signal voltage adjusted to produce a highlight brightness of 35 foot lamberts on a 6" x 8" picture area. Distance (D) shall be $\frac{4}{8}$ inches from the reference line to the center of the air gap. $\rightarrow 4/8$
4. For standard ion trap, Philco Part No. 76-~~6240~~-1, or equivalent.
5. Identification line on bulb extending from top of grid cylinder to base is aligned with vacant pin #10 and tube axis and indicates major axis of elliptical section of grid cylinder to be used as guide in adjusting ion trap magnet.

DRAWING NOTES

- NOTE 1: The reference line is the line determined by plane x-x of the gauge shown in Dwg. 217-0003, when such gauge is moved along the neck until it comes to rest against the body of the bulb.
- NOTE 2: Plane of #1 grid aperture.
- NOTE 3: Keep this space clear for single field ion trap magnet.
- NOTE 4: Location of deflection yoke and focusing coil should be within this space.

12WP4



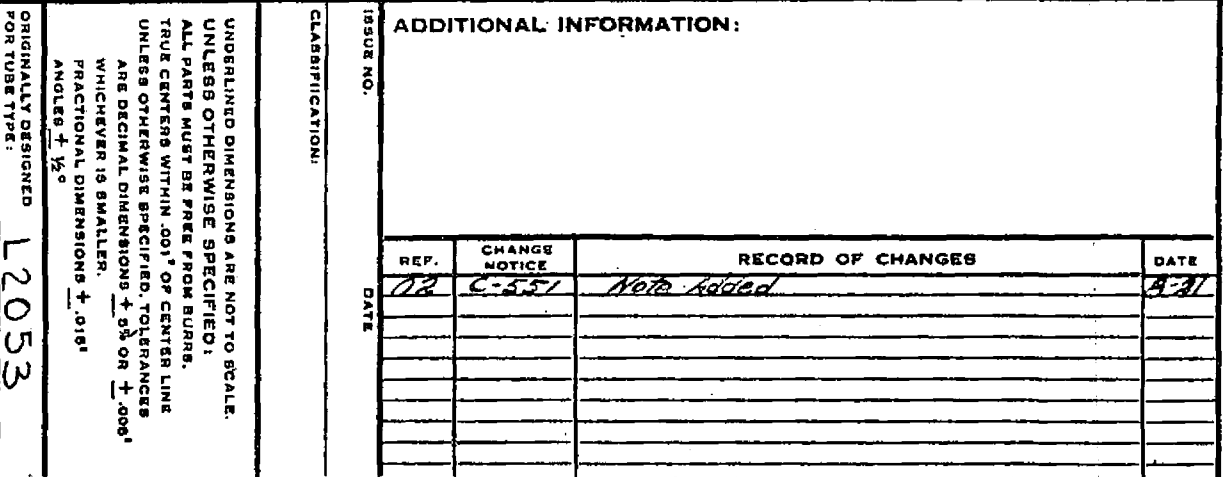
BASE CONNECTIONS

1. Grid
2. N. C.
3. Heater
4. Grid
5. Cathode
6. Grid
7. N.C.
8. Heater
9. Grid

BOTTOM VIEW OF BASE

See next page for notes.

GLASS TUBULATION DESIGN

[illegible]

MAIN TITLE
SPLIT RING GAUGE

8UB TITLE
FOR 10 1/2" D - 60° BUBBLY NECK

SCALE: 1-

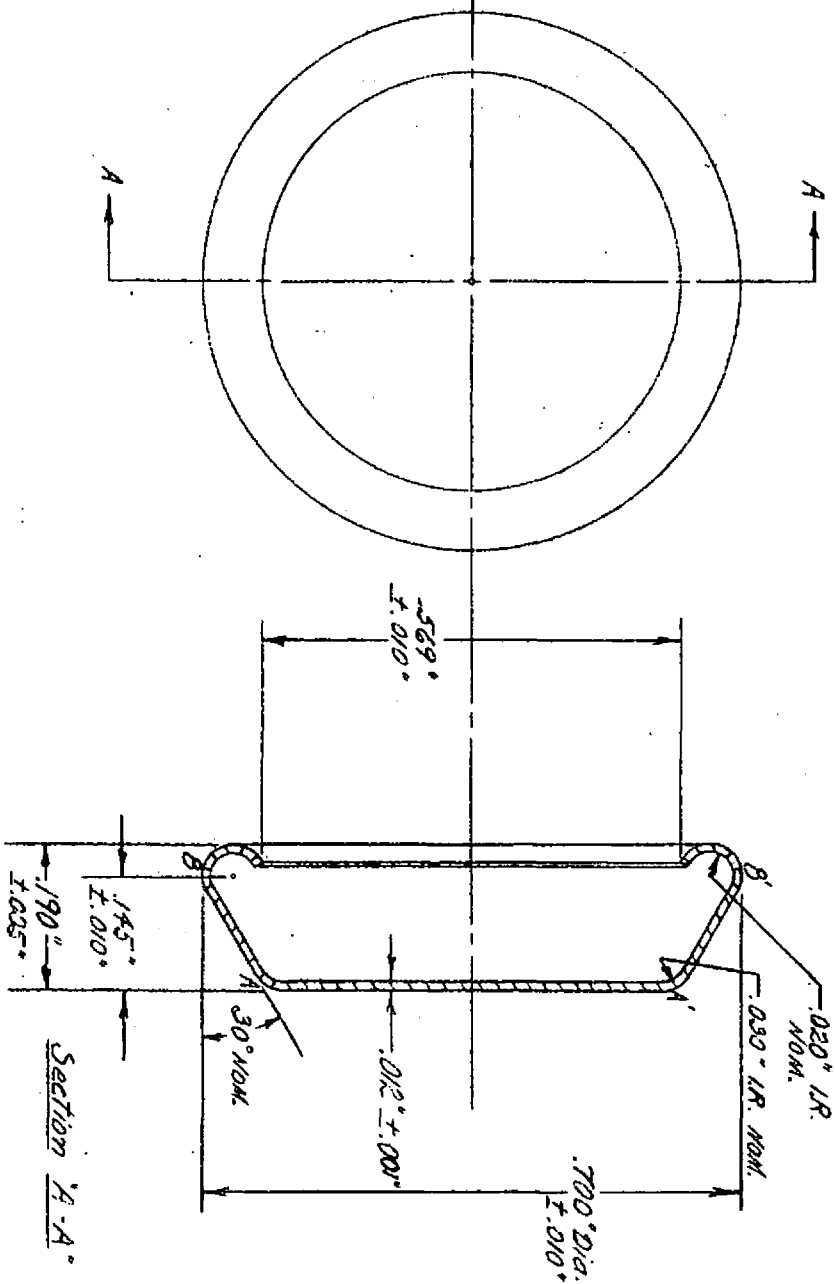
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APP'D.	DATE

DWG. NO.

DO NOT USE THIS NUMBER
- WHEN REFERRING TO PARTY

DATE	MATERIAL	SPECIFICATION	FINISH	SUPERSEDES



ADDITIONAL INFORMATION:

Surface A-A to be flat + free of wrinkles, grooves + die marks. Outside of button in area A-B, A-B must be free of scratches, tool + die marks.

REP.	CHANGE	DATE
02	C-536	6-30
03	C-536	6-21

DATE	RECORD OF CHANGES
6-30	Shift Dia was 5.69 ± .010 - Material Added
6-21	Lip I.D. was .030 - Height was 1.90 ± .010

CLASSIFICATION:

UNDRAWN DIMENSIONS ARE NOT TO SCALE. UNLESS OTHERWISE SPECIFIED: ALL PARTS MUST BE FREE FROM BURR. TRUE CENTERS WITHIN .001 OF CENTER LINE UNLESS OTHERWISE SPECIFIED. TOLERANCES ARE DECIMAL DIMENSIONS ± .001 UNLESS OTHERWISE SPECIFIED. FRACTIONAL DIMENSIONS ± .010 ANGLES ± 5°

ORIGINALLY DESIGNED BY 12WPA

LANDALE TUBE COMPANY • CHURCH ROAD • LANDALE, PENNSYLVANIA

MAIN TITLE
Contact Button

SUB TITLE

SUPERSEDED

SCALE: 4:1

DRAWN

DATE

6-3-50

DATE 6-7-50

TRACED

DATE

6-3-50

DATE 6-7-50

CHECKED

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APPROVED

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