



17BWP4 PICTURE TUBE

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RECTANGULAR GLASS TYPE
LOW-VOLTAGE FOCUS

ALUMINIZED SCREEN
MAGNETIC DEFLECTION

DATA

General:

Heater, for Unipotential Cathode:

Voltage.	6.3	ac or dc volts
Current.	$0.6 \pm 5\%$	amp
Warm-up time (Average)	11	sec

For definition of heater warm-up time and method of determining it, see sheet HEATER WARM-UP TIME MEASUREMENT at front of Receiving Tube Section.

Direct Interelectrode Capacitances:

Grid No.1 to all other electrodes.	6	μf
Cathode to all other electrodes.	5	μf
External conductive coating to ultor	{ 1500 max.	μf
	{ 1000 min.	μf

Faceplate, Spherical Filterglass

Light transmission (Approx.) 79%

Phosphor (For curves, see front of this section) . P4—Sulfide Type
Aluminized

Fluorescence White

Phosphorescence. White

Persistence. Short

Focusing Method. Electrostatic

Deflection Method. Magnetic

Deflection Angles (Approx.):

Diagonal 110°

Horizontal 105°

Vertical 87°

Electron Gun Type Requiring No Ion-Trap Magnet

Tube Dimensions:

Overall length $12-5/16" \pm 5/16"$

Greatest width $15-5/8" \pm 1/8"$

Greatest height. $12-3/4" \pm 1/8"$

Diagonal $16-9/16" \pm 1/8"$

Neck length. $5-3/16" \pm 3/16"$

Screen Dimensions (Minimum):

Greatest width $14-3/4"$

Greatest height. $11-11/16"$

Diagonal $15-3/4"$

Projected area 155 sq. in.

Weight (Approx.) 10 lbs

Operating Position Any

Cap. Recessed Small Cavity (JETEC No. J1-21)

Bulb J132-1/2 (110°)

Base Special (JETEC No. B6-185)

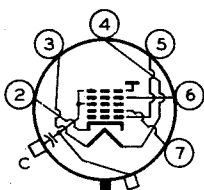
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Basing Designation for BOTTOM VIEW 7FA

Pin 2 - Cathode
Pin 3 - Heater
Pin 4 - Heater
Pin 5 - Grid No.1
Pin 6 - Grid No.4
Pin 7 - Grid No.2



Cap - Ultor
(Grid No.3,
Grid No.5,
Collector)
C - External
Conductive
Coating

Maximum Ratings, Design-Center Values:

ULTOR VOLTAGE.	16000 max.	volts
GRID-No.4 VOLTAGE:		
Positive value	1000 max.	volts
Negative value	500 max.	volts
GRID-No.2 VOLTAGE.	500 max.	volts
GRID-No.1 VOLTAGE:		
Negative peak value.	200 max.	volts
Negative bias value.	140 max.	volts
Positive bias value.	0 max.	volts
Positive peak value.	2 max.	volts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode:		
During equipment warm-up period		
not exceeding 15 seconds	410 max.	volts
After equipment warm-up period	180 max.	volts
Heater positive with respect to cathode.	180 max.	volts

Equipment Design Ranges:

<i>With any ultor voltage (E_{c5k}) between 12000 and 16000 volts and grid-No.2 voltage (E_{c2k}) between 200 and 500 volts</i>		
Grid-No.4 Voltage for focus§	-50 to +350	volts
Grid-No.1 Voltage (E_{c1k}) for visual extinction of focused raster.	<i>See Raster-Cutoff-Range Chart</i>	
Grid-No.1 Video Drive from Raster Cutoff (Black Level):		
White-level value		
(Peak positive).	Same value as determined for E_{c1k} except video drive is a positive voltage	
Grid-No.4 Current.	-25 to +25	μ a
Grid-No.2 Current.	-15 to +15	μ a
Field Strength of Adjustable Centering Magnet*.	0 to 8	gausses

§, *: See next page.



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Examples of Use of Design Ranges:

With ultor voltage of	14000	volts
and grid-No.2 voltage of	300	volts
Grid-No.4 Voltage for focus. . .	-50 to +350	volts
Grid-No.1 Voltage for visual extinction of focused raster .	-35 to -72	volts
Grid-No.1 Video Drive from Raster Cutoff (Black Level):		
White-level value.	35 to 72	volts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance 1.5 max. megohms

§ The grid-No.4 voltage required for focus of any individual tube is independent of ultor current and will remain essentially constant for values of ultor voltage or grid-No.2 voltage within design ranges shown for these items.

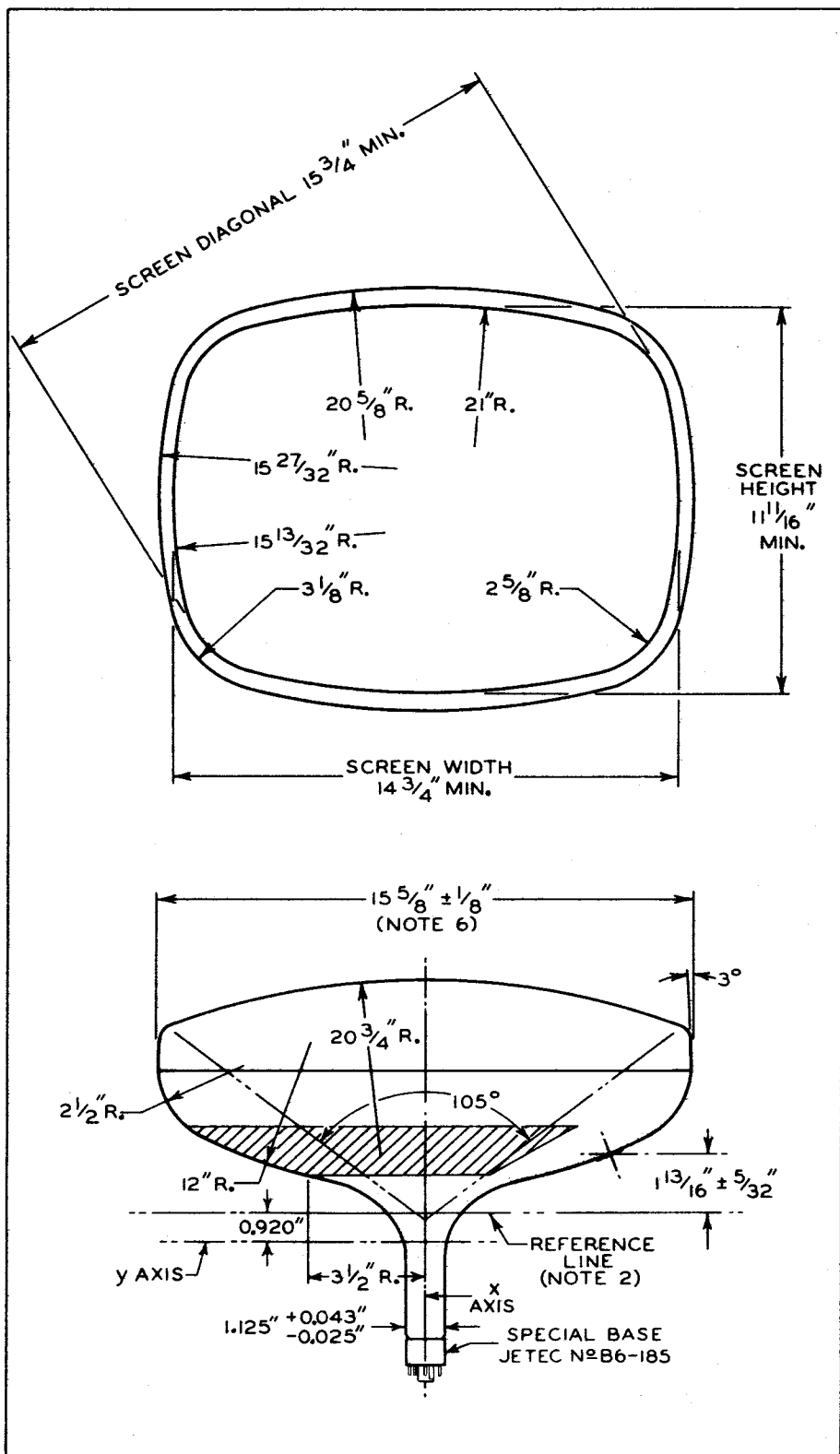
* Distance from *Reference Line* for suitable PM centering magnet should not exceed 2-1/2". Excluding extraneous fields, the center of the undeflected focused spot will fall within a circle having a 5/16-inch radius concentric with the center of the tube face. It is to be noted that the earth's magnetic field can cause as much as 1/2-inch deflection of the spot from the center of the tube face.

*For X-ray shielding considerations, see sheet
X-RAY PRECAUTIONS FOR CATHODE-RAY TUBES
at front of this Section*

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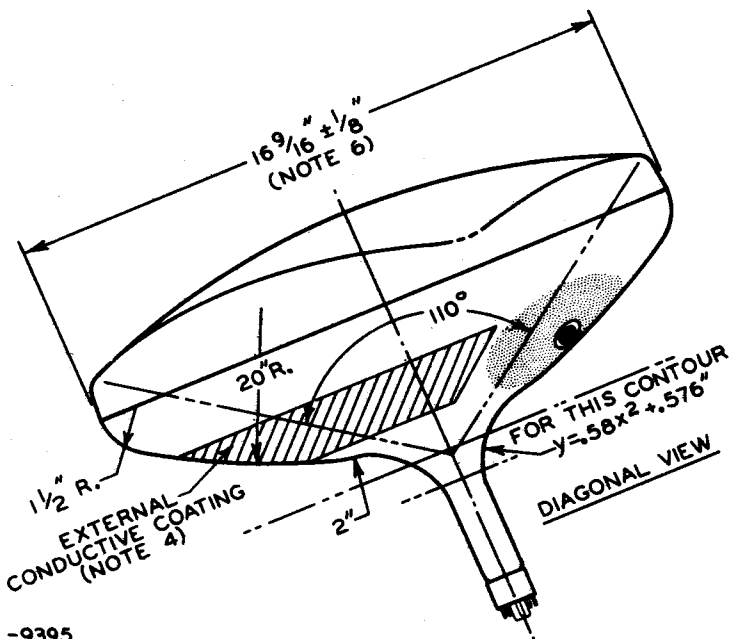
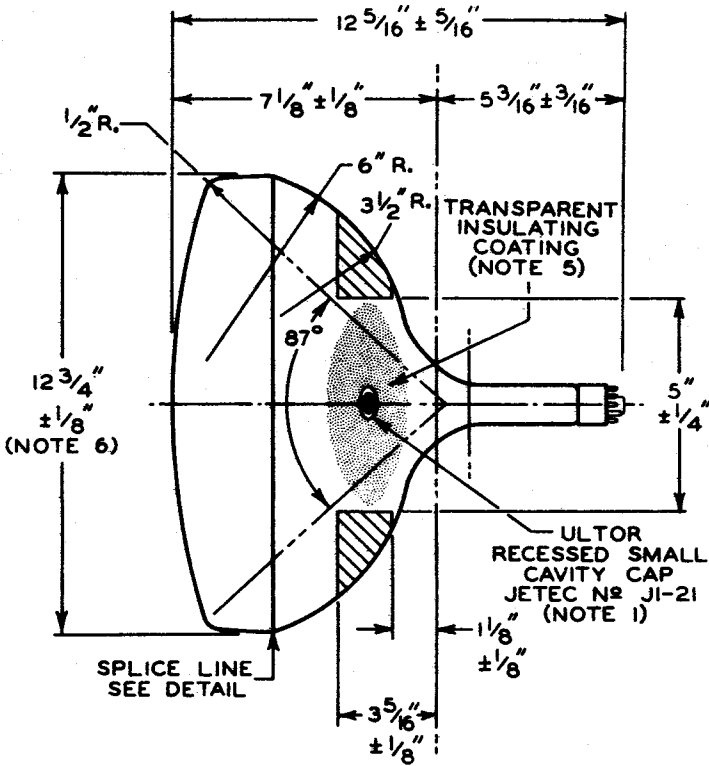
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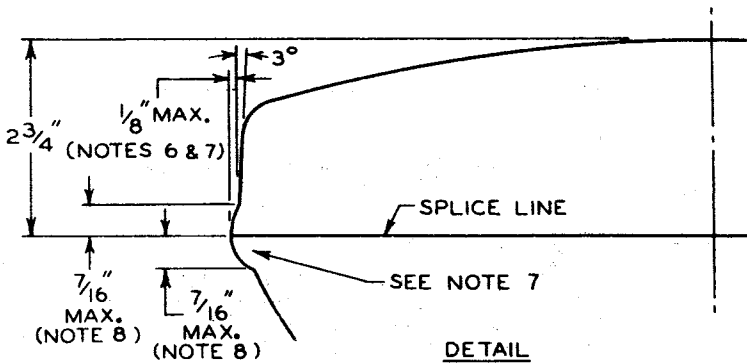
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92CL-9395



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NOTE 1: THE PLANE THROUGH THE TUBE AXIS AND PIN 7 MAY VARY FROM THE PLANE THROUGH THE TUBE AXIS AND ULTOR TERMINAL BY ANGULAR TOLERANCE (MEASURED ABOUT THE TUBE AXIS) OF $\pm 30^\circ$. ULTOR TERMINAL IS ON SAME SIDE AS PIN 7.

NOTE 2: WITH TUBE NECK INSERTED THROUGH FLARED END OF REFERENCE-LINE GAUGE JETEC No. 126 (SHOWN AT FRONT OF THIS SECTION) AND WITH TUBE SEATED IN GAUGE, THE REFERENCE LINE IS DETERMINED BY THE INTERSECTION OF THE PLANE CC' OF THE GAUGE WITH THE GLASS FUNNEL.

NOTE 3: SOCKET FOR THIS BASE SHOULD NOT BE RIGIDLY MOUNTED; IT SHOULD HAVE FLEXIBLE LEADS AND BE ALLOWED TO MOVE FREELY. BOTTOM CIRCUMFERENCE OF BASE WAFER WILL FALL WITHIN A CIRCLE CONCENTRIC WITH BULB AXIS AND HAVING A DIAMETER OF 1- $\frac{3}{4}"$.

NOTE 4: EXTERNAL CONDUCTIVE COATING MUST BE GROUNDED.

NOTE 5: TO CLEAN THIS AREA, WIPE ONLY WITH SOFT DRY LINT-LESS CLOTH.

NOTE 6: MEASURED $2-\frac{9}{32}" \pm \frac{1}{32}"$ FROM THE PLANE TANGENT TO THE SURFACE OF THE FACEPLATE AT THE TUBE AXIS.

NOTE 7: BULGE AT SPLICE-LINE SEAL MAY INCREASE THE INDICATED MAXIMUM VALUE FOR ENVELOPE WIDTH, DIAGONAL, AND HEIGHT BY NOT MORE THAN $\frac{1}{4}"$, BUT AT ANY POINT AROUND THE SEAL, THE BULGE WILL NOT PROTRUDE MORE THAN $\frac{1}{8}"$ BEYOND THE ENVELOPE SURFACE AT THE LOCATION SPECIFIED FOR DIMENSIONING THE ENVELOPE WIDTH, DIAGONAL, AND HEIGHT.

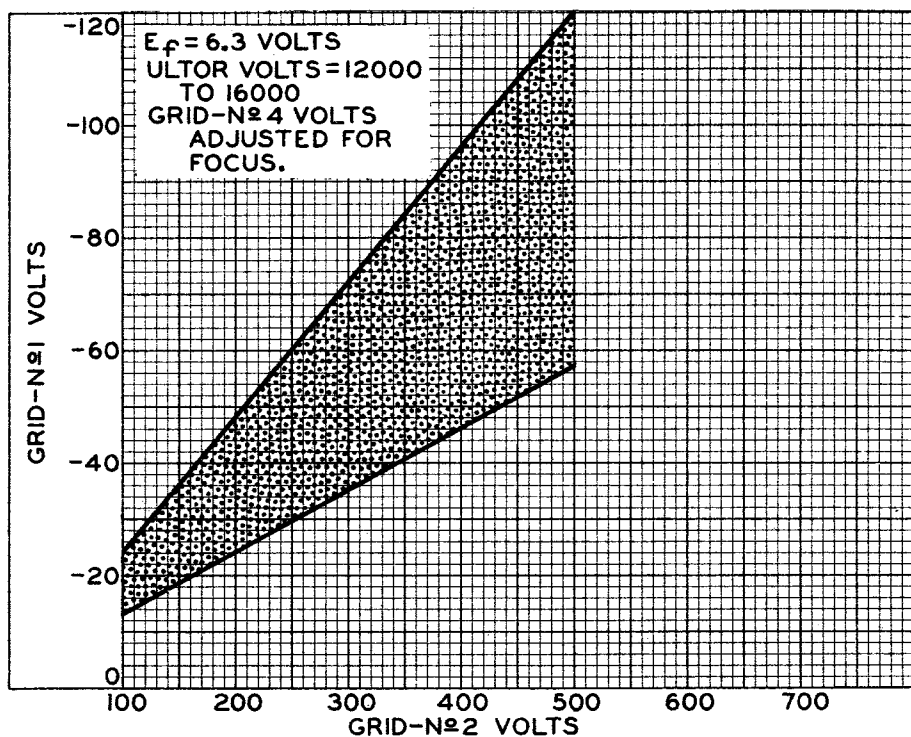
NOTE 8: THE TUBE SHOULD BE SUPPORTED ON BOTH SIDES OF THE BULGE. THE MECHANISM USED SHOULD PROVIDE CLEARANCE FOR THE MAXIMUM DIMENSIONS OF THE BULGE.



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RASTER-CUTOFF-RANGE CHART



92CS-9446