



ALUMINIZED SCREEN
MAGNETIC DEFLECTION

17BJP4



17BJP4 PICTURE TUBE

GRID-DRIVE[▲] SERVICE

Unless otherwise specified, voltage values are positive with respect to cathode

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:

With any ultor voltage (E_{c5k}) between 12000[#] and 16000 volts and grid-No.2 voltage (E_{c2k}) between 200 and 500 volts

Grid-No.4 Voltage for focus	-0.4% to +2.2% of E_{c5k}	volts
Grid-No.1 Voltage (E_{c1k}) for visual extinction of focused raster.	See Raster-Cutoff-Range Chart for Grid-Drive Service	
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

Examples of Use of Design Ranges:

<i>With ultor voltage of</i>		14000	16000	volts
<i>and grid-No.2 voltage of</i>		300	300	volts
Grid-No.4 Voltage for focus	-55 to +300	-65 to +350	volts	
Grid-No.1 Voltage for visual extinction of focused raster.	-28 to -72	-28 to -72	volts	

▲, #, *: See next page.



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Grid-No.1 Video Drive
from Raster Cutoff
(Black Level):
White-level value 28 to 72 28 to 72 volts

Maximum Circuit Values:

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

CATHODE-DRIVE[■] SERVICE

*Unless otherwise specified, voltage values are positive
with respect to grid No.1*

Maximum Ratings, Design-Center Values:

ULTOR-TO-GRID-No.1 VOLTAGE. 16000 max. volts
GRID-No.4-TO-GRID-No.1 VOLTAGE:
Positive value. 1000 max. volts
Negative value. 500 max. volts
GRID-No.2-TO-GRID-No.1 VOLTAGE. 640 max. volts
GRID-No.2-TO-CATHODE VOLTAGE. 500 max. volts
CATHODE-TO-GRID-No.1 VOLTAGE:
Positive peak value 200 max. volts
Positive bias value 140 max. volts
Negative bias value 0 max. volts
Negative 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:

With any ultor-to-grid-No.1 voltage (E_{c5g1}) between 12000
and 16000 volts and grid-No.2-to-grid-No.1 voltage (E_{c2g1})
between 220 and 640 volts*

Grid-No.4-to-Grid-No.1
Voltage for focus 0% to 2.6% of E_{c5g1} volts
Cathode-to-Grid-No.1 Voltage
(E_{kg1}) for visual extinction
of focused raster See Raster-Cutoff-Range Chart
for Cathode-Drive Service

Cathode-to-Grid-No.1 Video
Drive from Raster Cutoff
(Black Level):
White-level value
(Peak negative) Same value as determined for
 E_{kg1} except video drive is a
negative voltage

Grid-No.4 Current -25 to +25 μ a

▲, #, *, ■: See next page.

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Grid-No.2 Current.	-15 to +15	μ a
Field Strength of Adjustable Centering Magnet*.	0 to 8	gausses

Examples of Use of Design Ranges:

<i>With ultor-to-grid-</i>			
<i>No.1 voltage of</i>	14000	16000	volts
<i>and grid-No.2-to-grid-</i>			
<i>No.1 voltage of</i>	300	300	volts
Grid-No.4-to-Grid-No.1			
Voltage for focus.	0 to 365	0 to 415	volts
Cathode-to-Grid-No.1 Voltage			
for visual extinction			
of focused raster.	28 to 60	28 to 60	volts
Cathode-to-Grid-No.1 Video			
Drive from Raster Cutoff			
(Black Level):			
White-level value.	-28 to -60	-28 to -60	volts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance	1.5 max.	megohms
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- ▲ Grid drive is the operating condition in which the video signal varies the grid-No.1 potential with respect to cathode.
- # Brilliance and definition decrease with decreasing ultor voltage or ultor-to-grid-No.1 voltage. In general, the ultor voltage or ultor-to-grid-No.1 voltage should not be less than 12000 volts.
- * 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.
- Cathode drive is the operating condition in which the video signal varies the cathode potential with respect to grid No.1 and the other electrodes.

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

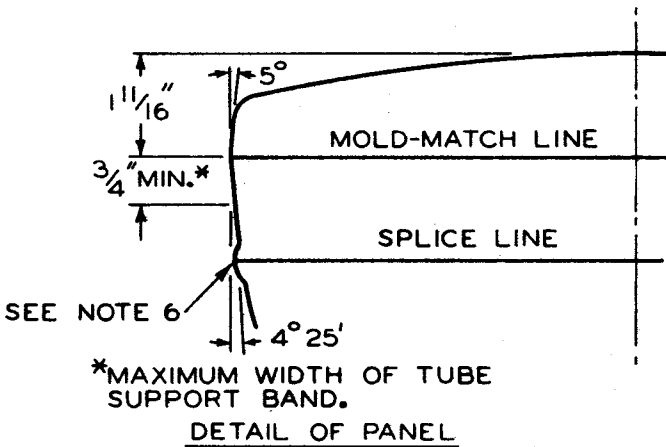
**Curves and Charts shown under Type 17BZP4
also apply to the 17BJP4**



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NOTE 1: THE PLANE THROUGH THE TUBE AXIS AND PIN 6 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 6.

NOTE 2: WITH TUBE NECK INSERTED THROUGH FLARED END OF REFERENCE-LINE GAUGE JETEC No. 116 (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 SHELL WILL FALL WITHIN A CIRCLE CONCENTRIC WITH BULB AXIS AND HAVING A DIAMETER OF 2-3/4".

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 LINT-LESS CLOTH.

NOTE 6: BULGE AT SPLICE-LINE SEAL MAY INCREASE THE INDICATED MAXIMUM VALUE FOR ENVELOPE WIDTH, DIAGONAL, AND HEIGHT BY NOT MORE THAN 1/8", BUT AT ANY POINT AROUND THE SEAL, THE BULGE WILL NOT PROTRUDE MORE THAN 1/16" BEYOND THE ENVELOPE SURFACE AT THE MOLD-MATCH LINE.



Technical drawing of a small-shell duodecal, showing two views: a top view (upper) and a side view (lower).

Top View Dimensions:

- SCREEN DIAGONAL: $15 \frac{9}{16}$ MIN.
- SCREEN HEIGHT: $11 \frac{1}{8}$ MIN.
- SCREEN WIDTH: $14 \frac{5}{16}$ MIN.
- Internal dimensions and radii:
 - Top horizontal: 27" R.
 - Top right corner: $26 \frac{1}{2}$ " R.
 - Left vertical: 21" R.
 - Bottom left corner: $20 \frac{1}{2}$ " R.
 - Bottom left corner: $2 \frac{5}{8}$ " R.
 - Bottom right corner: $2 \frac{1}{8}$ " R.

Side View Dimensions:

- Top width: $15 \frac{3}{8} \pm \frac{1}{8}$
- Top radius: 27" R.
- Internal angle: 85°
- Internal radius: $2 \frac{1}{8}$ " R.
- Internal width: 2" MIN.
- Internal radius: 4" R.
- Reference line (Note 2) at the base of the shell.
- Base width: $1 \frac{7}{16} \pm \frac{1}{16}$
- Base height: $2'' \pm \frac{1}{4}''$

Labels:

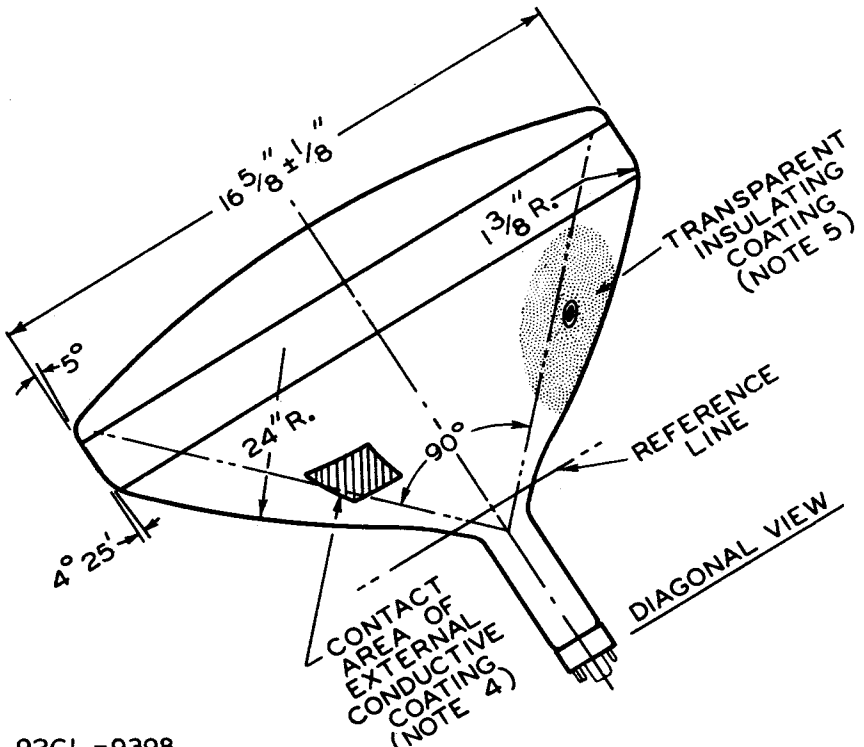
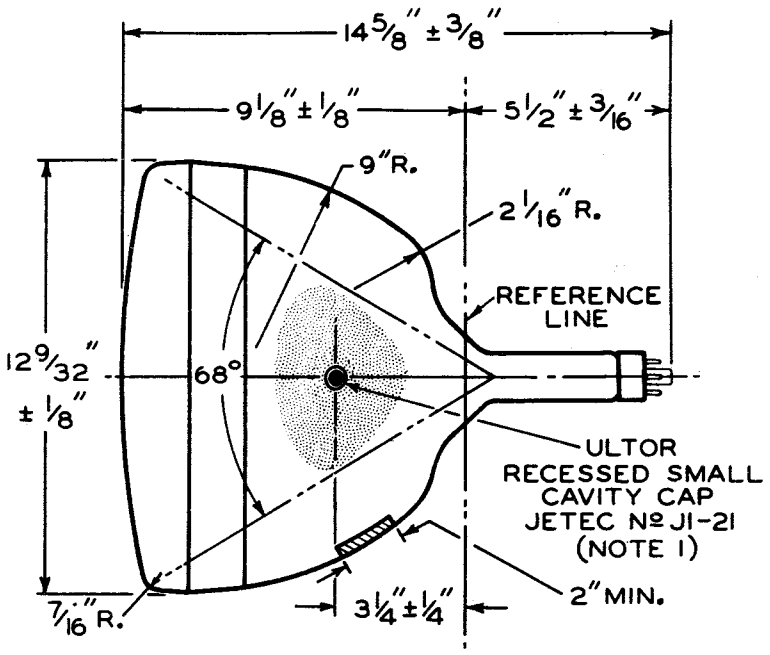
- SMALL-SHELL DUODECAL
- 6-PIN BASE (NOTE 3)
- JETEC № B6-63



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