



EXPOSING RESIST COATING
 SUBJECT: Process Specification

SUPERSEDES Aug. 23, 1954

This specification applies to the process of exposing and developing the photo-resist coating on the face plate of the tri-color kinescope after each phosphor has been settled.

SCHEDULE NO. 1

MAY 1955

1. EQUIPMENT

- a. Mask insertion table.
- b. Mask and face plate storage cabinet.
- c. White rayon gloves No. 1002.
- d. Mask positioning jig.
- e. Spring bending pliers.
- f. Light house (carbon arc)
- g. Light house (mercury arc)
- h. Caustic wash sink. Model No. L886BR.
- i. Drying rack.
- j. UV Light box.
- k. Brushes (1-1/2 inch Osborn Pure Bristle)
- l. Microscope (wide focus 10x)
- m. Timers
- n. Safety glasses (for UV light)
- o. Check cap (type C73685 faceplate) 77% transmission glass.
- p. Weston photronic cell - Model No. 594
- q. Sensitive Research dc milliammeter - lma range
- r. Orange filter (Corning glass No. 3430).

2. MATERIALS

W60D - Demineralized water.

3. PROCEDURE

- a. Wipe phosphor from the three hemispheres on the face plate.
- b. Clean mask with high pressure air.
- c. Insert aperture mask in face plate.
- d. Position the three V blocks securely over the glass hemispheres.
- e. Place the mask spring under the cap flange. One operator should hold the mask in position while the other operator bends the springs under the flange. The 5 o'clock spring should be secured first, then the 12 o'clock spring and finally the 7 o'clock spring.
- f. Check the mask for movement. (If rotational movement occurs the mask is not seated properly.)
- ** Note: The distance from the light source to the bottom surface of the Face Plate Flange "F" should be 11.625". The offset of the light from the axis "S" should be 0.274".
- g. To check mask replacement for second and third exposure, place orange filter (Corning 3480) of 1.5mm thickness over light source. Place cap assembly on light house. Return light to first exposure position and observe landing of light spot. Remove and reseal mask if required. Reject face plate if misregister can not be reduced to 2 mils or less. If register is satisfactory remove orange filter and begin exposure.
- h. The following exposure time - light intensity relationship shall be considered valid only if the following primary checks are made:
 - 1. Light intensity to be read through the above listed face plate at the beginning of each shift in the following manner. See sketch on page 1a.

SCALE—

DIMENSIONS IN

UNLESS OTHERWISE SHOWN. DIMENSIONS SHOWN WITHOUT TOLERANCES ARE DESIGN CENTERS

14-548-27-60 PCL25359-126EB

* CHANGE
 ** ADDITION
 *** DELETION

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EXPOSING RESIST COATING
SUBJECT: Process Specification

SUPERSEDES Sept 28, 1954

This specification applies to the process of exposing the photo resist coating on the faceplate of the color kinescope face plate after each phosphor has been settled.

SCHEDULE NO. 2
(Initially for the C73685 Series.)

1. EQUIPMENT

- a. Mask insertion table.
- b. Mask and faceplate storage cabinet.
- c. Three mask insertion keys.
- d. Light house (mercury arc).
- e. Ten power hand lens.
- f. Light box.
- g. Pivot drill (0.009" diameter).
- h. Microscope (20X with scale graduated in 1mil div.).
- i. Timers.
- j. Safety glasses (for UV light).
- k. Check cap (type C73685 face plate) 77% emission glass.
- l. Weston photronic cell- Model No. 594.
- m. Sensitive research dc milliammeter - 1 ma range.
- n. Orange filter (Corning glass No. 3480).
- o. UV Inspection Unit - 2537A with darkened room (1 foot candle ambient light level).
- p. Flash light.

2. MATERIALS

High pressure filter air.

3. PROCEDURE

- a. Clean mask with high pressure air.
- b. Remove particles with pivot drill. Visually check mask for dents.
- c. Align the top of the aperture mask with the top of the faceplate and insert the aperture mask into the faceplate assembly.
- d. Insert keys in the aperture mask assembly and rotate keys 1/4 turn.
- e. Secure mask assembly by rotating keys. Start at top and continue in a clockwise direction.
- f. Check visually to make sure the support springs are seated properly.
- g. Expose the resist coating in accordance with the following exposure schedule with a "P" distance of 11.711 (measured from top surface of aperture to plane through bottom of faceplate flange) and "S" distance of 0.276.
- h. To check mask replacement for second and third exposure, place orange filter (Corning 3480) of 1.5 mm thickness over light source. Place faceplate assembly on light house. Return light to first exposure position and observe landing of light spot. Remove and reseal mask if required. Reject faceplate if misregister cannot be reduced to 2 mils or less. If register is satisfactory remove orange filter and begin exposure.

→ * Data Revised

SCALE—

DIMENSIONS IN

UNLESS OTHERWISE SHOWN.

DIMENSIONS SHOWN WITHOUT TOLERANCES ARE DESIGN CENTERS

20-5411-1-61 PCL25802-126JD

* CHANGE
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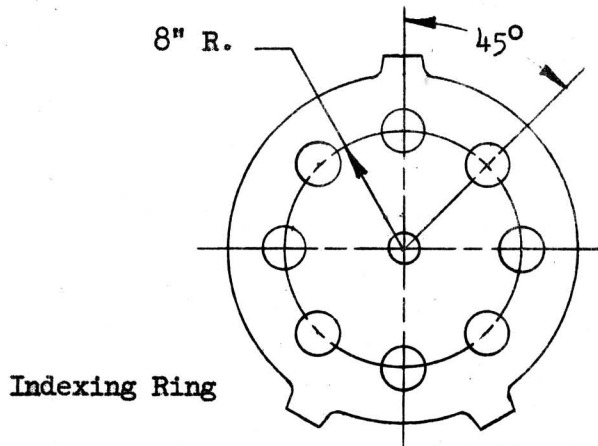
13D26-R1



3. PROCEDURE (Cont'd)

- i. The following exposure time - light intensity relationship shall be considered valid only if the following primary checks are made:
 1. Light intensity to be read through the above listed faceplate at the beginning of 1st shift in the following manner. See sketch. Center reading and minimum edge reading to be recorded.

Light source in blue position



2. BH6 mercury lamp to be replaced if edge to center millimeter reading ratio falls below 75% at lowest point.
3. Read the light intensity in center of check faceplate at 2 hour intervals.

Curve (micro-amps) Center of Faceplate	Exposure Time (minutes)		
	*Blue	Green	Red
480	8	9	9
470	8.5	10	10
460	8.5	10	10
450	9	11	11
440	9	11	11
430	9	11	11
420	9.5	12	12
410	9.5	12	12
400	9.5	12	12
390	10	13	13
380	10	13	13
370	10	13	13
360	10.5	14	14
350	10.5	14	14
340	10.5	14	14
330	11	15	15
320	11	15	15
310	11.5	16	16
300	11.5	16	16
290	12	17	17
280	12	17	17

j. Remove from light house after exposure.

k. Remove mask and deliver faceplate to development.

→ SCALE—

DIMENSIONS IN

UNLESS OTHERWISE SHOWN.

DIMENSIONS SHOWN WITHOUT TOLERANCES ARE DESIGN CENTERS

End of Schedule No. 2

6-553-2-62

PCL27039-126PD

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