



SUBJECT STEM & BUTTON SEAL LEAK TESTING
 Process Specification

SUPERSEDED DATE 2/10/50

This specification covers the process which is to be followed in taking air and gas tubes from floor or test scrap and testing for leaks in stem and button seals. This process initially performed by Salvage Section of Lancaster Cathode-Ray Tube Factory.

1. EQUIPMENT

- a. Debaser.
- b. Crackoff lathe.
- c. Spray gun, with 6 oz., No. C38 spray bottle.
- d. Spray booth.
- e. Ventilated storage cabinet for stems and bulbs while being dye tested.
- f. Paper cups.
- g. Rubber caps.
- h. Rubber stoppers.

2. MATERIALS

- a. Carbonate coating material (C131) - rejected material.
- b. Dyetest solution -
 Formula: 10-12 gm. Calco condensation maroon B (D12).
 5 gal. Acetone (A55).

3. PROCEDURE

- a. Air and gas tubes which are picked up as floor scrap or test scrap are to be debased and examined for cracks, holes, defective tips, etc. Soft or loose basing cement should be carefully removed, being extremely careful not to damage the tip, wires, or other parts of the stem. When removing basing cement always pull the knife away from the inside of the mount.
- b. If no defects are apparent a dyetest label Form 9469 (S.N. 27-1-5) shall be affixed to the bulb. If the cause of the reject is air, "Gas" shall be crossed off, and vice versa. Record scrap number in the space provided on dyetest label.
- c. Send to Salvage Section.
- d. Crack off at first choice (see S. N. 20-17K-600).
- e. (1) Pull gas tube mount, send mount to dyetesting with the dyetest label attached.
- *(2) Pull mounts of types 10B, 12L, and non-button types except metal cone tubes. Remove dyetest label from face, copy exhaust information on label, attach label to side of mount and send mounts to dyetesting.
- *(3) Metal cone types and button type tubes (except 10B and 12L) are to be sent to dyetesting with their mounts attached.
- f. At dyetesting record the following information, for air tubes only, on the dyetest sheet: tube number, type, date and exhaust information. Also, record this information in the "Air Analysis Book".
- g. Attach a tag to air tube mount containing the following information: tube number, type, and date. Remove mounts from bulbs if necessary.

(Cont. on page 2)

★ CHANGE
 ★★ ADDITION
 ★★★ DELETION



SUBJECT STEM & BUTTON SEAL LEAK TESTING
Process Specification

SUPERSEDED DATE 1/10/50

3. PROCEDURE (Cont.)

- h. Spray a thin, uniform coating of the carbonate material on the stem and tubulation.
- i. If the stem has not been tipped off, place a rubber cap over the end of the tubulation.
- j. Fill stems with dyetest solution to within 3/16" of the top.
- k. Check for any obvious leaks.
- l. Place mount in cup in dyetest cabinet.
- m. Check for leaks after one hour.
- n. Check for leaks daily for four operating days.
- o. Fill stems with clear acetone daily.
- p. If, after four operating days, the stems do not show any results remove the stem and mark "no results" on the tag.
- q. If a "no results" stem is from a button type (except 10B or 12L) air tube the button shall dyetest as follows:
 - (1) Spray button area.
 - (2) Fill the bulb with enough dyetest solution to cover the button when the bulb is laying on its side, button down.
 - (3) Close open end of bulb with rubber stopper.
 - (4) Place bulb in dyetest cabinet.
 - (5) Inspect for leaks daily for three days.
- **r. If a no results stem is from a metal cone type air tube the cone shall be dyetested as follows:
 - (1) Place about 3 liters of dyetest solution in the cone.
 - (2) Seal bulb with No. 6-1/2 rubber stopper and secure with scotch tape.
 - (3) Spray face plate to cone seal area, the cone for about 3" above the face plate, the cone to neck seal, and the cone for about 3" below the glass cone.
 - (4) Place the bulb in the dyetest cabinet, on either its face or neck, for 24 hours.
 - (5) Reverse the bulb and leave in for another 24 hours.
 - (6) Remove and inspect.
 - (7) If no defect appears mark cone "221" and return to production.
If this cone is returned to be dyetested again it is to be scrapped.

(Cont. on page 3)



RADIO CORPORATION OF AMERICA

RCA VICTOR DIVISION

TUBE DEPT. STANDARDIZING K2c4KcsX1

HARRISON, N. J. LANCASTER, PA.

DATE May 18, 1950 PAGE 3

STANDARDIZING
NOTICE

34-17-37B

SUBJECT STEM & BUTTON SEAL LEAK TESTING
Process Specification

SUPERSEDED DATE

3. PROCEDURE (Cont.)

- s. When a leak is found in an air tube mount the nature of the leak shall be recorded on the tag, the dyetest sheet, and in the "Air Analysis Book". If no leak is found "No Results" shall be recorded in the above places. The results of gas tube mounts shall be recorded on the tag only.
- t. Stems are to be sent to the respective type engineers when the dyetest procedure has been completed.

ENGINEERING SECTION
STANDARDIZING

12-504-28-60 PCL12920-121/bw

★ CHANGE
★★ ADDITION
★★★ DELETION

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