



SUBJECT: BULB WASHING BY HAND - CATHODE-RAY
 Process Specification

SUPERSEDES Sept. 28, 1950

This specification covers the Bulb Preparation Section (Cathode-Ray Tube Factory) Process for removing the screen and graphite coating from salvaged metal cone bulbs.

→ Lancaster procedure is as follows; see *Schedule 2 for Marion procedure.

SCHEDULE NO. 1

MAY 1955

1. EQUIPMENT
 - a. Acid wash sink.
 - b. Horsehair brush (3"l. x 3/4"w. x 3/8" bristles), and holder.
 - c. Rubber gloves, apron and goggles.
 - d. Roller type bulb coating machine.
2. MATERIALS

Klem 159, Detergent MXP, or Glim; 5% solutions. These three cleaning solutions may be used interchangeably.
 A609 Ammonium bifluoride, 10-12% solution (by wt.).
 W7 Distilled water
 - - - Tap Water



AMMONIUM BIFLUORIDE SAFETY PRECAUTIONS: See 33-2-7C.
 KLEM 159 & DETERGENT MXP SAFETY PRECAUTIONS: See 33-2-8A.

3. PROCEDURE
 - a. Place bulb to be cleaned in the acid position.
 - b. Close window for 30 seconds.
 - c. Open window and leave bulb set for 20 seconds.
 - d. Move bulb from acid to tap water rinse position (10 seconds). With tap water hose, wet outside surface of face plate.
 - e. Remove bulb and place on chuck of coating machine.
 - f. Place second bulb on acid position and close window.
 - g. Dip cleaning brush into cleaning solution, put into bulb, and rotate bulb.
 - (1) Hold brush firmly onto metal cone sliding from upper coating mark 1-1/2" from face plate down to end of coating in glass neck. (30 sec.)
 - (2) Be sure the metal cone-glass cone seal is particularly brushed.
 - h. Remove bulb from chuck and on opening window place on tap water position. (10 seconds).
 - i. Move to distilled water position and give bulb two (2) spurts of distilled water.
 - j. Remove bulb and using light provided inspect visibly for coating.
 - k. Place cleaned bulb on conveyor.
 - l. Remove second bulb from acid position and continue as listed above at Step "d".

CAUTIONS: (1) Never shut windows unless a bulb is in acid position.
 (2) Sink must not be used unless exhaust fan on bulb washer is operating.

m. All bulbs shall be rewashed on automatic washing machine prior to settling, except in the case of washing machine breakdown. Wash by Sch. 2 of S.N. 34-17-4J.

→ SCALE—

** End of Schedule #1.

DIMENSIONS IN

UNLESS OTHERWISE SHOWN. DIMENSIONS SHOWN WITHOUT TOLERANCES ARE DESIGN CENTERS

* CHANGE
 ** ADDITION
 *** DELETION

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SUBJECT:

BULB WASHING BY HAND-CATHODE RAY
 Process Specification

SUPERSEDES

SCHEDULE NO. 3

(Initially for 27" metal bulb assemblies with screens but without internal coating)

1. EQUIPMENT:
 - a. Two position acid wash sink.
 - b. Chemical safety goggles.
 - c. Rubber gloves.
 - d. Plastic armlets.
 - e. Plastic apron.

2. MATERIALS:
 - H7 Hydrofluoric Acid, 1-2% solution
 - Tap Water
 - W60 Demineralized Water

3. PROCEDURE:
 - a. Open door of sink. The sink is loaded at this point.
 - b. Turn off tap water and start demineralized water.
 - c. Turn off demineralized water, remove bulb from water wash position and place on truck.
 - d. Remove bulb from acid wash position, place on water wash position, and turn on tap water.
 - e. Remove bulb from storage truck and place on acid wash position.
 - f. Close door.
 - g. The time schedule for the washing is as follows:
 - Hydrofluoric Acid wash - - - - - 10 seconds
 - Tap water rinse - - - - - 30 seconds
 - Demineralized water - - - - - 5 seconds
 - h. Maintenance Procedure:
 1. The acid tank is to be emptied and flushed once each week. The tank should be thoroughly cleaned, and all accumulated sludge removed. The drum is to be charged as follows:
 - 40 gal of tap water (fill to within 2" of the top of the tank).
 - Add 10# of Hydrofluoric Acid (H7).
 2. Check for acid concentration according to Stdzg. Not. 34-33-63, Sched. 1 and record in log.

End of Schedule #3

SCALE—

DIMENSIONS IN

UNLESS OTHERWISE SHOWN.

DIMENSIONS SHOWN WITHOUT TOLERANCES ARE DESIGN CENTERS

1-5311-11-62

PCI22308-133LG

* CHANGE
 ** ADDITION
 *** DELETION

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13D26—R1



SUBJECT:

BULB WASHING BY HAND - CATHODE RAY
 Process Specification

SUPERSEDES

SCHEDULE NO. 4

(Initially for 27" metal bulb assemblies with screen and internal coatings.)

1. EQUIPMENT:
 - a. Three position acid wash sink.
 - b. Slide wire operated hinged brushes.
 - c. Chemical safety goggles.
 - d. Rubber gloves.
 - e. Plastic Armllets.
 - f. Plastic apron.
2. MATERIALS:
 - H7 Hydrofluoric acid, 2-4% solution
 - Tap Water
 - W60 Demineralized Water.
3. PROCEDURE:
 - a. Open door of sink (acid position and tap water position are loaded at this point).
 - b. Remove bulb from tap water position and inspect for coating.
 - c. If any coating is left in the cone, brush to remove loose coating and rinse on tap water position. If there is no coating left in the cone procede directly to "d".
 - d. Remove bulb from tap water position and transfer to demineralized water position turning the water on for the specified time and then off again.
 - e. Remove bulb from demineralized position and place on truck.
 - f. Remove bulb from acid wash position and transfer to tap water wash position.
 - g. Remove bulb from storage rack and transfer to acid wash position.
 - h. Close door.
 - i. The time schedule for washing is as follows:
 - Hydrofluoric acid wash - - - - - - - - -60 seconds.
 - Tap water rinse- - - - - - - - - - -60 seconds
 - Demineralized water rinse- - - - - - - - - 5 seconds
 - j. Maintenance Procedure
 1. The acid tank is to be emptied and flushed once each week. The tank should be thoroughly cleaned and all accumulated sludge removed. The drum is to be charged as follows:
 - 40 gal. of tap water (fill to within 2" of the top of the tank).
 - Add 20# of 52% hydrofluoric acid (H7)
 2. Check for acid concentration according to Stdzg. Not. 34-33-63, Sched. 1 and record in log.

- NOTES: 1. If acid titrated is between 2-4% and is not cleaning properly, clean and recharge tank.
2. If acid titrated is low add approximately 6# of 52% Hydrofluoric acid for each 1% desired. This will not hold true if water level is too low.

SCALE—

End of Schedule #4.

DIMENSIONS IN

UNLESS OTHERWISE SHOWN. DIMENSIONS SHOWN WITHOUT TOLERANCES ARE DESIGN CENTERS

* CHANGE
 ** ADDITION
 *** DELETION

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