



1. EQUIPMENT a. 12 head rotary bulb washing machines, models No. L886-AS and No. L886-BN.
2. MATERIALS ** A280 Hydrofluoric Acid (Marion)
H7 Hydrofluoric Acid (Lancaster)
A634 Detergent MXP Alkaline Cleaner.
W7E (or better quality) Distilled Water.
- - Tap Water.
A609 Ammonium Bifluoride



HYDROFLUORIC ACID SAFETY PRECAUTIONS: See 33-2-7A.
DETERGENT MXP SAFETY PRECAUTIONS: See 33-2-8A.
AMMONIUM BIFLUORIDE SAFETY PRECAUTIONS: See 33-2-7C.

3. PROCEDURE

This machine is a device used for washing cathode-ray bulbs. The bulbs are carried into the machine loading area by conveyor where the operator transfers them to bulb washer. The bulb supporting part of the machine is retractable being forced up and down by hydraulic means. The bulbs are loaded on the universal holder while the machine is in the down position; after which the machine goes up, indexes and then lowers the mounted bulbs over the spraying pipes. The functioning of the spray pipes is time controlled by the indexing of the machine. (The various spray solutions used are listed under "Washing Schedules"). All water sprays use regular water pressure. Other sprays are forced into bulb by pump action.

When bulbs have passed through the machine, they are unloaded and placed on conveyor for delivery to the settling room.

4. OPERATING INSTRUCTIONS

- a. To start:
1. Make sure "Run-Dwell" switch is on "Dwell" and HF acid switch is "off".
 2. Turn on exhaust fan.
 3. Turn on main switch on control panel door.
 4. Turn on all 6" valves which the operating schedule sheet directs you to turn on.
 5. Make sure that all spraying and drying pipes in position #1 and #10 are straight and in good condition and that there is nothing inside machine which will interfere with movement of the turret.
 6. Push hydraulic pump control switch "start".
 7. Push master control button switch "start".
 8. Turn acid pump switch to "on" position.
 9. Turn "Run-Dwell" switch to "Run" position and machine will now start to index.
 10. Check operation of entire machine to see that pumps are operating satisfactorily, each position spraying correctly with pipes well centered in neck.

SCALE _____

DIMENSIONS IN "

(Continued on page 2)
UNLESS OTHERWISE SHOWN. DIMENSIONS WITHOUT TOLERANCES ARE DESIGN CENTERS

5-551-4-80

PCM300-802/126JD

* CHANGE
** ADDITION
*** DELETION

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SUBJECT:

BULB WASHING BY MACHINE - Cathode-Ray
Process Specifications

SUPERSEDED DATE Dec. 24, 1952

4. OPERATING INSTRUCTIONS (Cont'd)

b. To Stop:

1. Stop loading machine and remove all bulbs as they come into unloading position.
2. When turret is in down position push master control "stop" button.
3. Turn "Run-Dwell" to "Dwell".
4. Turn acid pump to "off" button.
5. Push hydraulic pump "stop" button.
6. Throw main switch on panel "off".
7. Turn off all 6'6" valves. Cold water may be left on if required for cleaning purposes until work is done.
8. Check for any leaks of any kind around machine.
9. Clean up around machine.

c. To prepare ammonium bifluoride solution:

1. Original Charge - 60 lb. (28 kg.) per 60 gal. water.
2. Replacement charge - 3.6 kg. per tank each shift.

SCALE—

DIMENSIONS IN

UNLESS OTHERWISE SHOWN. DIMENSIONS SHOWN WITHOUT TOLERANCES ARE DESIGN CENTERS

10-539-11-60

PCL21377-133LG

* CHANGE
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13D26



SUBJECT: BULB WASHING BY MACHINE - CATHODE RAY
 Process Specification

SUPERSEDES

SCHEDULE NO. 6

(Initially for all glass bulbs at Lancaster, No. 1 ABW)

1. Wash on automatic bulb washer on the following set-up.
2. Place glass bulbs to be washed with acid in heads that are equipped with extended tripper.

<u>Machine Position</u>	<u>Spray</u>	<u>Duration</u>
1	Idle	
2	Idle	
3	Tap water 35±2.8°C. (75±5°F.)	5 sec.
4	Hydrofluoric acid wash (4-6%)	5 sec.
5	Hydrofluoric acid wash (4-6%)	5 sec.
6	Tap water 35±2.8°C. (75±5°F.)	5 sec.
7	Tap water 35±2.8°C. (75±5°F.)	5 sec.
8	Demineralized water	5 sec.
9	Demineralized water	5 sec.
10	Idle	
11	Load and unload	
12	Load and unload	

NOTES:

1. Total index time - fifteen seconds.
2. Concentration of hydrofluoric acid must be checked once per shift according to Schedule #1, S.N. 34-33-63.

End of Schedule #6

SCALE—

DIMENSIONS IN

UNLESS OTHERWISE SHOWN.

DIMENSIONS SHOWN WITHOUT TOLERANCES ARE DESIGN CENTERS

20-5310-21-62

PCL22234-133LG

* CHANGE
 ** ADDITION
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13D26-R1