

SUBJECT TUMBLE FINISHING OF PARTS AND  
ASSEMBLIES

SUPERSEDED DATE 6/29/45

1. SCOPE This is a general specification applying to all parts and assemblies subject to tumble deburring, polishing, cleaning, etc.

For process details, consult operation department.

2. EQUIPMENT

- a. Rotating barrel in which parts and medium are tumbled together.
- b. Pan for loading and unloading barrel.
- c. Hoist for handling pans.
- d. Separator for separating medium and parts.
- e. Water connection.
- f. Water-proof floor with drain and grit trap.
- g. Storage space for tumbling materials.
- h. Washer and dryer.

3. MATERIALS

- a. Abrasive for grinding, polishing or coloring.  
The following are approved abrasives:
  - (1) Roto-Finish Grinding Chips.
  - (2) Roto-Finish Polishing and Britchoning Chips.
  - (3) Steel Balls.
  - (4) Honite.
  - (5) Sand (Silica).
  - (6) Aluminum Oxide.
- b. Detergent or detergent-abrasive mixture.  
The following are approved compounds:
  - (1) Soap.
  - (2) Roto-Finish Compounds No. 10,11,12,13,14.
- c. Hot and cold water through mixing valve.
- d. Distilled water for rinsing.
- e. Methanol for drying.
- f. Protective oil for rust-proofing steel parts.

4. PROCEDURE

- a. Pour abrasive grit into barrel.
- b. Add parts to be tumbled.
- c. Add detergent.
- d. Add water.
- e. Tumble for specified time.
- f. Remove contents from barrel.
- g. Separate grit and parts.
- h. If additional finishing is required, repeat above steps.
- i. Wash and dry parts. If parts require rust-proofing, dip in soluble oil before drying.

\* General Revision

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★ INDICATES A CHANGE

★★ INDICATES AN ADDITION

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STANDARDIZING 34-34-65  
NOTICE

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5. PART SPECIFICATIONS AFTER TUMBLING

- a. Dimensions must remain within specified limits.
- b. Parts must be thoroughly clean and free from any material which will adversely affect the function of the part or tube.
- c. If ferrous parts must be oiled to prevent rust, only approved lubricants may be used.
- d. Specific requirements for cathode ray apertures:
  - (1) Parts must become thoroughly clean when fired in a reducing atmosphere furnace.
  - (2) No burr visible under 17X min. magnification shall be present.

6. PRECAUTIONS

- a. Grit and equipment used for tumbling copper or copper alloys must not be used for tumbling ferrous alloys. Keep separate.
- b. Non-standard parts must be approved by the engineer before being tumbled. This is to reduce the possibility of tube shrinkage due to contamination by high vapor pressure metals such as lead, zinc, antimony, etc.
- c. Be sure barrels are completely emptied of parts before reloading. This is to prevent mixing of different parts or different aperture sizes.
- d. Wood-lined barrels must never be allowed to dry. When idle, keep barrels half full of water with covers in place.
- e. Parts must not be allowed to dry between abrasive tumbling operation and a thorough rinsing, because scum drying on parts will not wash or fire off in subsequent operations. If parts are by error dried between operations, then retumble until the scum again goes into suspension and rinse thoroughly.

STANDARDIZING SECTION  
ENGINEERING DEPARTMENT

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