

SPECIFICATION FOR ELECTROPOLISHING

Stainless Steel Material

Process No. CELCO – 1000


Revision E

Dated: May 13, 2009

Reviewed and approved for adequacy prior to issue by:



Steve D. Bellesine, President



Randy Moore, Vice President

REVISION HISTORY

Revision A: Dated – April 13, 1989

First Edition was called Revision A in error.

Revision B: Dated – June 20, 2001

Para 7.1.6 - Changed to read: Final rinse is made with D.I. Water.

Revision C: Dated – August 15, 2001

Approval Signature and Date added to front page.

Revision D: Dated – October 28, 2008

Revision History page added.

Para 6.1 – Changed to read: The component will be processed as instructed on the customers P.O., customer supplied drawing, tags, e-mail, Celco Quote form or other customer communication.

Para 6.3 - Changed to read: After Electropolishing and examination of the first Article(s), the time, voltage and fluid temperature will be recorded to be put on a Job History Sheet with other information.

Revision E: Dated – May 13, 2009

Para 7.1.1 - Change to read: Rinse components in the drag out rinse to remove EP fluid.

Para 7.1.2 - Change to read: Potable water rinse.

1.0 SCOPE

1.1 This procedure will define the various steps involved in electropolishing components for use in high purity applications.

2.0 MATERIAL

2.1 The material used in these components will be 300 series stainless alloy or of a chromium/nickel alloy suitable for electropolishing.

2.2 The components will be in a prefinished state with the surface to be electropolished having a surface roughness no more than twice the roughness of the desired finished roughness.

2.3 All components will be assumed to be cleaned and absent of all scale, oil or surface film upon receiving.

3.0 RECEIVING

3.1 All components received will be inspected for damaged during shipment immediately after receipt of shipment.

3.2 All surfaces will be checked for visual damage to critical surfaces. If any protective cover is separated from the component, the customer will be notified immediately.

3.3 All quantities will be verified to the quantity shown on the packing list. If discrepancies are found, the customer will be notified immediately.

4.0 STORAGE OF INCOMING COMPONENTS

4.1 All components will be stored in their shipping containers until preparation for electropolishing.

4.2 All components will be stored with a work order detailing the quantity, EP instructions and customer purchase order.

5.0 RECEIVING INSPECTION

5.1 An inspection will be undertaken prior to electropolishing to verify the components conform to the specifications and/or the instructions so noted on the customer P.O. or provided drawings.

5.2 If a specific surface roughness is specified by the specification and/or instructions the surface may be checked with a profilometer as required to verify that the initial surface is suitable for the instructed surface to be obtained.

6.0 ELECTROPOLISHING

6.1 The component will be processed as instructed on the customers P.O., customer supplied drawing, tags, e-mail, Celco Quote form or other customer communication.

6.2 Electrolytes used in the process are evaluated bi-weekly for specific gravity and temperature and are adjusted accordingly.

6.3 After Electropolishing and examination of first article(s), the time, voltage and fluid temperature will be recorded to be put on a Job History Sheet with other information.

7.0 RINSING

7.1 Following the electropolishing of the component the following rinsing procedure is performed.

7.1.1 Rinse components in the drag out rinse to remove EP fluid.

7.1.2 Potable water rinse.

7.1.3 Rinse in pigging bath.

7.1.4 Rinse in first stage water rinse.

7.1.5 Rinse in second stage water rinse. The components can be stored in this tank until final rinse.

7.1.6 Final rinse is made with D.I. water.

8.0 INSPECTION

8.1 The components are place in a clean air area to dry, dried with compressed air or dried utilizing heated air or lint free cloths.

8.2 The components are 100% visually inspected for consistency and uniformity of electropolishing.

8.3 If required, the micro inch roughness is measured by a profilometer to assure the required surface.

8.4 All rejects are either rerun or recorded for separate packaging.

9.0 PACKAGING

9.1 Normal packaging of components are placed in plastic bags and heat sealed to assure maximum cleanliness.

9.2 Large components which are not placed in plastic bags are wrapped in appropriate material to assure maximum cleanliness.

9.3 The components are counted for final packaging and placed in the original shipping container or appropriate container for final shipment.

10.0 SHIPPING

10.1 All shipments are shipped by most efficient means.