HYDROGEN EMBRITTLEMENT TREATMENT

I. SCOPE

A. This process covers the procedure for hydrogen embrittlement treatment of plated parts. Hardened steel parts with a hardness greater than C45 Rockwell should be treated. Parts requiring hydrogen embrittlement treatment will have a finish specification with the suffix "2" or "4" such as F70E2A2 or F70E2A4, also RC-29 & RC-53 per SI 10559.

II. PROCEDURE

A. Parts shall be electroplated in such a manner that they go directly from the hook or drying barrel into the bake oven. Any part sorting shall be performed after the bake operation.

B. Parts shall be warmed to bake temperature. This must be accomplished within 1 hour from removal from plating tank. Warm-up time for basket size, load and oven in use shall be developed by Process Engineering and documented with the oven. If information is not available, then assume a 5 hour warm-up period.

C. Parts shall be baked for a minimum of 4 hours at 375 degree F to 400 degree F (191 degree C to 205 degree C).

D. Air cool parts upon removal.

III. SAFETY PRECAUTIONS

A. Standard shop safety practices apply.

IV. STANDARD OF QUALITY

A. Freedom from embrittlement can be determined only by test. Holding the part for 48 hours in a stressed condition simulating the intended application should reveal embrittlement condition.

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