STANDARD OVERHAUL PRACTICES MANUAL

BRIGHT CADMIUM PLATING

PART NUMBER NONE

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STANDARD OVERHAUL PRACTICES MANUAL

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To: All holders of BRIGHT CADMIUM PLATING 20-42-05.

Attached is the current revision to this STANDARD OVERHAUL PRACTICES MANUAL

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Subject/Page	Date	Subject/Page	Date	Subject/Page	Date
TITLE PAGE					
O 1	Jul 01/2009				
2	BLANK				
20-42-05 TRANSMITTAL LETTER					
O 1	Jul 01/2009				
2	BLANK				
20-42-05 HIGHLIGHTS					
O 1	Jul 01/2009				
2	BLANK				
20-42-05 EFFECTIVE PAGES					
1	Jul 01/2009				
2	BLANK				
20-42-05 CONTENTS					
1	Nov 01/2006				
2	BLANK				
20-42-05 REVISION RECORD					
1	Jul 01/2005				
2	Jul 01/2005				
20-42-05 RECORD OF TEMPORARY REVISIONS					
1	Jul 01/2005				
2	Jul 01/2005				
20-42-05 INTRODUCTION					
1	Jul 01/2005				
2	BLANK				
20-42-05 SUBJECT					
1	Mar 01/2008				
2	Nov 01/2005				
3	Nov 01/2006				
4	Nov 01/2006				
5	Nov 01/2006				
6	Nov 01/2006				
7	Mar 01/2008				
8	Mar 01/2008				
9	Mar 01/2008				
10	Mar 01/2008				

A = Added, R = Revised, D = Deleted, O = Overflow

TABLE OF CONTENTS

All revisions to this manual will be accompanied by transmittal sheet bearing the revision number. Enter the revision number in numerical order, together with the revision date, the date filed and the initials of the person filing.

Revision		Filed	
Number	Date	Date	Initials

Revision		Filed	
Number	Date	Date	Initials

Revision		Filed	
Number	Date	Date	Initials

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Number	Date	Date	Initials

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Temporary Revision		Inserted		Removed	
Number	Date	Date	Initials	Date	Initials

Temporary Revision		Inserted		Removed	
Date	Initials	Number	Date	Date	Initials

Temporary Revision		Inserted		Removed		Temporary Revision		Inserted		Removed	
Number	Date	Date	Initials	Date	Initials	Date	Initials	Number	Date	Date	Initials

INTRODUCTION

1. General

A. The instructions in this manual tell how to do standard shop procedures during maintenance functions from simple checks and replacement to complete shop-type repair.

B. This manual is divided into separate sections:

(1) Title Page

(2) Transmittal Letter

(3) Highlights

(4) Effective Pages

(5) Contents

(6) Revision Record

(7) Record of Temporary Revisions

(8) Introduction

(9) Procedures

C. Refer to SOPM 20-00-00 for a definition of standard industry practices, vendor names and addresses, and an explanation of the True Position Dimensioning symbols used.

D. The data is general. It is not about all situations or specific installations. Use it as a guide to help you write minimum standards.

E. If the component overhaul instructions are different from the data in this subject, use the component overhaul instructions.

BRIGHT CADMIUM PLATING

1. INTRODUCTION

A. The data in this subject comes from Boeing Process Specifications BAC5701 for cadmium plating, and BAC5849 for brush cadmium plating. The airline has a copy of the Boeing Process Specification Manual.

B. The data is general. It is not about all situations or specific installations. Use this data to help you write minimum standards.

C. This procedure will make plating that agrees with AMS-QQ-P-416, but it is only for materials which cannot get hydrogen embrittlement. Thus tests for hydrogen embrittlement are not necessary.

D. The types and classes are the same as those specified in AMS-QQ-P-416:

Type 1 – As plated (no supplementary chromate or phosphate treatment)

Type 2 – With supplementary chromate treatment

Type 3 – With supplementary phosphate treatment

Class 1 – 0.0005 inch thick minimum

Class 2 – 0.0003 inch thick minimum

Class 3 – 0.0002 inch thick minimum

E. Do not use this procedure to plate steels heat treated above 220 ksi unless they are springs, or unless specified by the overhaul instructions.

F. If BAC5701 Method 1 (General Method) or Method 2 (Method for Springs) is specified, use the procedures in this subject. If BAC5701 Method 3 is specified, use brush (contact) cadmium plating per BAC5849. Or, as an alternative, use low hydrogen embrittlement stylus cadmium plating per BAC5854 (Ref SOPM 20-42-10).

G. Refer to SOPM 20-00-00 for a list of all the vendor names and addresses.

2. MATERIALS

A. Abrasives for Scouring

(1) Lea Buffing and Polishing Compound, E grade or finer, V75554

(2) Pumice

(3) Wyandotte F-2013, V54151

B. Ammonium chloride, plating grade

C. Ammonium sulfate, plating grade

D. Bonderite 32 phosphate coating and Bonderite 32B replenisher, V84063

E. Brighteners

(1) Rohco Super XL, V98299 or V86460 (new supply not available)

(2) Rohco 20-XL, V98299 or V86460

(3) Cadmium Brightener LE, Industrial Metal Processes (IMP)

F. Cadmium anodes, spherical or slab with titanium hook – A-A-51126

G. Cadmium oxide – A-A-50800

H. Chromate remover – ARP210, V99442

I. Carbon trolls – C-9, V6F616

J. Charcoal, activated, plating grade
K. Chromic acid (chromium trioxide), technical – O-C-303
L. Cryscoat GR conditioner, V44389
M. Cryscoat MP phosphate coating, V44389
N. Cryscoat Ultra Rinse, V44389
O. Endox 214 solution (SOPM 20-30-03)
P. Filter aid – Diatomaceous earth, filtering grade
Q. Filter pads, V01577
R. Filters, plastic case, Dynel or polyethylene wound, 24 micron nominal
S. Hydrochloric acid, 20-degree Baume', technical – O-H-765
T. Inhibited hydrochloric acid solution (SOPM 20-42-07)
U. Irco 52822 phosphate coating, V1KS82
V. Iridite 80, V54785 or V99442
W. Maskants
    (1) Adcoat 828, V1M391
    (2) Micromask, V01058
    (3) Microshield Stop-Off Lacquer, V01058
    (4) Peel Coat B100, V56307
    (5) Platers tape, yellow, V3M808
    (6) Protex 1321-D, V06929
    (7) Turco 522 or 544, V61102
X. Meta Bond 51414 phosphate coating, V1KS82
Y. Meta Bond 51504 additive, V1KS82
Z. Nacconal 90F wetting agent, V01781
AA. Novalyte PR, V03CD3
AB. Novalyte 370-A, V03CD3
AC. Novalyte 370-W wetting agent, V03CD3
AD. Novaplex stabilizer, V03CD3
AE. Oakite MRP, V44389
AF. Parcolene W, V84063
AG. Parcolene Z, V84063
AH. Parcolene 95, V84063
AI. Parcolene 95B, V84063
AJ. Phosphoric acid, technical – O-O-670
AK. Sodium cyanide, 97% NaCN minimum, plating grade
AL. Sodium dichromate dihydrate, technical – O-S-595
AM. Sodium hydroxide, flake or granulated, technical – O-S-598

AN. Sulfuric acid, 66-degree Baume', plating grade – O-S-809

AO. TSPG Solution (SOPM 20-30-03)

AP. Ultrachromate 300 concentrate, V64709

AQ. Uninhibited hydrochloric acid solution (SOPM 20-42-07)

3. SOLUTION PREPARATION

A. Cyanide Cadmium Plating Solution

(1) Fully clean the tank. Then fill it approximately one-half full with water.

(2) For each 100 gallons of final solution, add in this sequence:

(a) 87 pounds of sodium cyanide. Mix until fully dissolved.

(b) 25 pounds of cadmium oxide, mixed with water into a paste.

(c) 6 pints of Rohco Super XL Brightener, diluted with 2-3 parts warm water, or 1 gallon Rohco 20-XL Liquid Brightener, diluted with 2-3 parts warm water, or 0.7 gallons (0.5-1.0% by volume) IMP Cadmium Brightener LE concentrate. Do not use IMP Cadmium Addition Agent.

(d) Mix until all of these components are fully dissolved.

(3) Add water to fill the tank to operating level. Install the cadmium anodes in the tank.

(4) Before you start to use the new solution, mix it after each 2-3 hours for 12-14 hours. Then electrolyze the solution with some of the anodes used as cathodes, until you can get a satisfactory plate. Then make an analysis of the solution and adjust it per Paragraph 3.A.(5).

(5) Control the solution at 2.3-4.5 oz/gal cadmium metal, 9.0-17.5 oz/gal total sodium cyanide, 8.0 oz/gal maximum sodium carbonate, and 1.6-3.2 oz/gal sodium hydroxide.

(6) Add brightener as necessary to keep the plating bright.

(7) To control sodium carbonate, chill or freeze it out of solution at approximately 25°F, or remove some of the plating solution and add new solution, or use carbonate remover.

(8) If necessary, put the solution through a filter with filter aids or pads. When you use filter aid, make a thin slurry of the filter material and send it though the filter to make a smooth deposit on the filter plates.

(9) Use containers of glass, wood, stoneware, or bare steel to keep the plating solution.

B. Noncyanide Cadmium Plating Solution

(1) Use a tank with a plastic lining. Fill the tank half-full with water.

(2) For each 100 gallons of final solution, add in this sequence:

(a) 1300 oz (81.25 pounds) of ammonium sulfate. Mix until fully dissolved.

(b) 13 gal Novaplex stabilizer

(c) Cadmium chloride solution

1) To make this solution, mix 115 oz cadmium oxide with 6-10 gal water to make a slurry. Then slowly add 100-115 fl oz hydrochloric acid and stir constantly until the solution is clear. If the solution is not clear after 1 hour, add more hydrochloric acid, 1 fl oz at a time, up to a total of 120 fl oz.

2) Add this solution to the plating tank and fully mix until the solution is clear.

(d) 0.6 gal Novalyte 370-A brightener

(3) Add water to fill the tank to the operating level.

(4) Control the solution at 1.0-3.0 oz/gal cadmium metal, 3.0-5.0 oz/gal ammonium chloride, 10-15 oz/gal ammonium sulfate, 7-9 pH, 10-15 volume percent Novaplex, and 0.5-1.0 volume percent Novalyte 370-A.

(5) Use this solution at 65-100°F.

(6) Inorganic contamination, such as dissolved metals, can cause problems with the plating quality, as when bright dipping or chromate treatments will be used. Low-current electrolysis will remove many of the metallic contaminations. An insoluble metallic hydroxide such as Novalyte-PR, added at 1-2 fluid ounces per 100 gallons of plating solution, will usually make neutral the effects of this contamination.

(7) Organic contamination is caused by oils, greases, or other contamination from parts not fully cleaned before they were put into the plating solution. Regular treatment of the solution with activated charcoal will usually remove organic contamination, but it could also remove some of the Novalyte 370-A brightener.

(8) To control pitting, use Novalyte 370-W wetting agent.

C. Solutions for Type 2 Chromate Coating

(1) Cronak (sodium dichromate - sulfuric acid)

(a) Fill an acid-resistant container with water to 2/3 of the final level. For each 100 gal of final solution, add 165 pounds of sodium dichromate and 6.0 oz Nacconol 90F or 90G wetting agent. The wetting agent can first be dissolved in warm or hot water to make it easier to mix into the solution. Slowly add 1 gal sulfuric acid per 100 gallons of final solution. Add water to the final level and mix fully.

(b) Control the solution at 16-20 oz/gal chromic acid (as CrO_3), or 24-30 oz/gal as sodium dichromate dihydrate.

(c) Control the solution pH at 0.65-1.00. To decrease the pH, add sulfuric acid. One quart of acid per 100 gallons of solution will decrease the pH approximately 0.25. To increase the pH, add sodium hydroxide.

(d) Use this solution at room temperature.

(2) Ultrachromate 300 (normal strength)

(a) For each 100 gallons of final solution, add 20 gal Ultrachromate 300 concentrate to 80 gal water.

(b) Control the solution pH at 0.8-1.1 and the Ultrachromate concentration at 5.0-10.1 oz/gal as CrO_3. To increase CrO_3 and decrease pH, add more Ultrachromate concentrate. The pH can also be adjusted with sulfuric acid and sodium hydroxide.

(c) Use this solution at 65-95°F.

(3) Ultrachromate 300 (diluted strength)

(a) For each 100 gallons of final solution, add 9 gal Ultrachromate 300 concentrate to 91 gal water.

(b) Control the solution pH at 0.9-1.3 and the Ultrachromate concentration at 2.2-5.5 oz/gal as CrO_3. To increase CrO_3 and decrease pH, add more Ultrachromate concentrate. The pH can also be adjusted with sulfuric acid and sodium hydroxide.

(c) Use this solution of 65-95°F.

(4) Iridite 80

(a) Make a solution of 1.25-3.0 volume percent Iridite 80 in water.

(b) Control the solution pH at 0.8-1.5

(c) Use this solution at 75-100°F.

D. Solutions for Type 3 Phosphate Coating

(1) General

(a) To the cleaned tank, add water to 1/2-2/3 of the final volume.

(b) For heated solutions, heat the water to 120-140°F to help dissolve the chemicals.

(c) Add the chemicals. Stir as you add liquid chemicals. Sprinkle solid chemicals on the surface of the water and then stir until dissolved.

(d) Add water to the final volume. Make final solution adjustments and heat to the specified temperature range.

(e) Refer to BAC5810 for details about analytical procedures. As an option, the vendor's recommended procedures can be used.

(2) Bonderite 32

(a) Use 4.5 gallons or 37 pounds Bonderite 32 for each 100 gallons of final solution.

(b) Control the solution at 0.18-0.23 N total acidity, and a temperature of 165-175°F.

(3) Meta Bond 51414

(a) For each 100 gallons of final solution, add 2.0 galllons Meta Bond 51504 additive, and then add 3.0 gallons Meta Bond 51414.

(b) Control the solution at 0.30-0.35 N total acidity, and a temperature of 170-180°F.

(4) Cryscoat MP

(a) For each 100 gallons final solution, add 3.5 gallons Cryscoat MP, and then add 0.1 gal Oakite MRP.

(b) Control the solution at 0.15-0.21 N and a temperature of 110-150°F.

(c) Sludge will occur during solution adjustment and the phosphating procedure. Remove the sludge with a continuous filter to keep the acidity constant.

(5) Parcolene W Conditioner

(a) For each 100 gallons final solution, add 6 pounds Parcolene W.

(b) Control the solution pH at 8.0-10.0. To increase the pH, add more Parcolene W. To decrease the pH, add a 5-10 volume percent solution of phosphoric acid.

(c) Control the solution temperature at 135-145°F.

(6) Parcolene Z Conditioner

(a) For each 100 gallons final solution, add 1 pound Parcolene Z.

(b) Control the solution temperature at 60-135°F.

(c) Discard the solution when the phosphate coatings become granules.

(7) Cryscoat GR Conditioner

(a) For each 100 gallons final solution, add 1 pound Cryscoat GR.

(b) Use this solution at 60-100°F.

(c) Discard the solution when the phosphate coatings become granular or the solution pH is more than 9.0.

(8) Chromic Acid Rinse

(a) For each 100 gallons final solution, add 4 oz chromium trioxide.

(b) Control the pH at 2.0-4.0 with chromium trioxide or a mixture of chromium trioxide and phosphoric acid.

(c) Control the solution temperature at 150-200°F.

(d) Discard the solution when the total acid to free acid ratio is greater than 7.0.

(9) Parcolene 95 Post-Treatment Solution

(a) For each 100 gallons final solution, add 1 fluid ounce Parcolene 6 and then 8.3 lb Parcolene 95A.

(b) Control the solution pH at 6.0-6.5. To decrease the pH, add Parcolene 6. (An amount of 4.3 oz per 100 gal will decrease the pH by 0.1.) To increase the pH, add Parcolene 95A.

(c) If foam occurs, add Parcolene 95B in 0.1 fluid ounce increments until the foam goes away.

(d) Control the solution temperature at 110-140°F.

(10) Irco 52822

(a) For each 100 gallons final solution, add 1 gal Irco 52822. The solution will have a pH of 7. Adjust the pH to 4.0-4.5 with sulfuric acid mixed with an equal volume of water.

(b) Use this solution at room temperature.

(11) Cryscoat Ultra Rinse

(a) For each 100 gallons final solution, add 1.5 gal Cryscoat Ultra Rinse.

(b) Use this solution at temperatures from room temperature up to 140°F.

4. STANDARD PLATING PROCEDURE

A. Before plating, stress relieve low alloy and corrosion-resistant steel parts per the overhaul instructions. Where no stress relief details are given, stress relieve per SOPM 20-10-02. Do this stress relief if the parts were ground, machined, straightened, formed or proof loaded after they were heat treated.

B. Low alloy steels, including coil springs

(1) Alkaline clean and rinse per SOPM 20-30-03 to get a water-break-free surface.

(2) Remove scale per SOPM 20-30-03. On carburized steels, use dry abrasive blast.

(3) Activate the surface with one of these two procedures:

(a) Put the part in inhibited hydrochloric acid solution for 2 minutes maximum, or uninhibited hydrochloric acid solution for 60 seconds maximum. Use shorter times if much smut occurs. Rinse in cold water for 30-120 seconds. Use shorter times for carburized parts.

(b) Electrolytically clean in Endox 214 solution or TSPG solution per SOPM 20-30-03. (This is not necessary if this was used to remove scale in Paragraph 4.B.(2) above.) After the rinse, do the electrolytic treatment again for 1-2 minutes. Stop on the anodic cycle. Drain the parts. Rinse fully for 5 minutes.

(4) If the parts have smut, remove it with one of these four procedures:

(a) Scour with abrasive and rinse, or

(b) For parts to be plated in the cyanide solution, put them in Endox 214 solution. Anodic clean at 60-80 asf for 2-6 minutes, or

(c) Blast the parts with pumice and water, or

(d) Put the parts in uninhibited or inhibited hydrochloric acid solution for 5-30 seconds. Rinse in cold water.

(5) Immediately put the parts in the plating bath. Do not let them dry.

C. Nitrided steels

(1) Wet or dry abrasive blast the parts per SOPM 20-30-03. Remove abrasive and unwanted matter with an air blast.

(2) Within 4 hours, put the parts in the plating bath and start to plate them.

D. Corrosion resistant steels, nickel or cobalt alloys, and nickel or cobalt plated areas – Prepare the parts per SOPM 20-42-09.

E. Aluminum alloys – Prepare the surfaces per SOPM 20-42-04. Then put the parts in the plating bath and plate them per Paragraph 4.G.

F. Copper alloys – Prepare the surfaces per Cleaning of Copper and Copper Alloys in SOPM 20-30-03.

G. Cadmium plating

(1) Put the parts in the plating solution and apply current. For the cyanide plating solution, use 10-60 asf. For the noncyanide plating solution, use 10-20 asf.

(2) Plate to the thickness specified in the overhaul instructions, or 0.0005 inch minimum if the thickness is not specified. The approximate time to plate 0.0006 inch is 17 minutes for the cyanide solution and 20 minutes for the noncyanide solution. Plate sample parts or test panels to find the exact times for your conditions. Also, plate control coupons as necessary for bond and corrosion tests.

(3) Rinse fully. Dry. Do not bend or put a load on springs until after they are baked.

(4) Touch up locations that touched the rack with brush plating as necessary.

(5) Remove cadmium plating from chrome plated areas, as with a motor driven buffer and Lea compound.

H. Post Plate Bake

(1) Type 1 parts (no chromate or phosphate treatment) can be alkaline or manually cleaned per SOPM 20-30-03 to prevent stains during the bake.

(2) Air dry all cleaned parts. The parts can be soaked in hot water to help them dry.

(3) If the parts will be phosphate treated, or given a solid film lubricant per SOPM 20-50-08, the bakes necessary after those procedures can be replaced by one bake at the end if you use the times and temperatures given below and start the bake within 8 hours after the plating.

NOTE: If the overhaul instructions specify chromate treatment, and Ultrachromate 300 will be used, you can chromate treat before the hydrogen embrittlement bake as an option. But the resistance to corrosion will be better if you bake first, and then do the chromate treatment.

(4) Ferrous parts – Within 8 hours after plating, bake per the overhaul instructions. If not specified, bake as follows:

(a) Carburized parts and 440-series CRES: 5-8 hours at 250-300°F.

(b) Externally-threaded parts (unless carburized), 160-200 ksi, and all other parts 180-200 ksi: 3 hr minimum at 350-400°F.

(c) Parts heat treated 200-220 ksi; 8 hr minimum at 350-400°F

(d) PH steels 180 ksi or above: 12 hr minimum at 350-400°F.

(e) This bake is not necessary for these alloys:

1) 15-5PH, 17-4PH or 17-7PH, if these are below 180 ksi

2) 17-7PH (CH900 condition)

3) A-286 and 300-series

4) Other ferrous alloys below 180 ksi (unless they have external threads)

(5) Copper alloy parts – No bake is necessary.

(6) Aluminum alloy parts – Bake 1 hour at 200-225°F, or put in boiling water for 1 hour.

I. Type 2 Chromate Treatment

(1) If the parts must wait before this treatment, dry the parts and give them protection from contamination. Then, before you apply the chromate coating, alkaline clean the parts per SOPM 20-30-03 with a medium duty or aluminum cleaner, and rinse. Immediately apply the chromate coating before the surface can dry.

(2) When Type 2 chromate treatment is specified, treat the parts with one of these solutions, or other solutions that make a coating which agrees with the requirements of QQ-P-416, Type II.

(a) Put the parts in sodium dichromate-sulfuric acid (Cronak) solution for 5-10 seconds. This solution can also be applied with a swab

(b) Put the parts in Ultrachromate 300 normal strength solution for 15-30 seconds, or Ultrachromate 300 dilute solution for 30-90 seconds.

(c) Put the parts in Iridite 80 solution for 5-30 seconds. This solution can also be applied with a swab.

(3) Rinse for 30-120 seconds. Hot water (160°F max) can be used to help dry the parts.

(4) Dry the parts within 5 minutes at 195°F max.

J. Type 3 Phosphate Treatment

(1) Alkaline parts per SOPM 20-30-03 to get a water-break-free surface. This cleaning is not necessary if the parts will get the phosphate coating within 2 hours of the last plating rinse and had protection from contamination.

(2) The phosphate solutions are heated. If the parts are large, they could cool the solutions and make necessary a longer soak time than necessary. To prevent this, put the parts in hot water (130°F minimum) for 1 minute or more, immediately before you put them into the phosphate solution.

(3) When Type 3 phosphate treatment is specified, treat the parts with one of these solutions:

(a) Bonderite 32 – As an option, first put the parts in Parcolene W or Parcolene Z solution at 130-145°F for 30-60 seconds. If you use Parcolene W, rinse the parts in hot water 30-60 seconds. Then soak the parts in Bonderite 32 at 165-175°F. Rinse in cold water for 60 seconds or more.

(b) Put the parts in Meta Bond 51414 at 170-180°F for 2-5 minutes. Then rise in cold water for 60 seconds or more.

(c) Put the parts in Cryscoat GR solution at 60-100°F for 110 minutes. Then put the parts in Cryscoat MP solution at 110-160°F for 3-5 minutes. Rinse in cold water for 60 seconds or more.

(4) If the parts will be given solid film lubricant, dry them with clean air and continue with the procedure in SOPM 20-50-08.

(5) Put all other parts in chromic acid rinse solution at 150-200°F for 1 minute or more. Do not rinse.

(6) As an option, apply a nonchromated post-phosphate treatment:

(a) For parts coated with Bonderite 32, soak the parts in Parcolene 95 at 110-140°F for 30-60 seconds. Then rinse in cold water for 30-60 seconds.

(b) For parts coated with Meta Bond 51414, soak the parts in Irco 52822 at room temperature for 30-60 seconds. Then rinse in cold water for 30-60 seconds.

(c) For parts coated with Cryscoat MP, soak the parts in Cryscoat Ultra Rinse at room temperature or up to 140°F for 30-60 seconds. Do not rinse.

(7) Dry the parts with clean air.

(8) Bake the parts as necessary.

(a) If the bake of Paragraph 4.H. is applicable, use the times and temperatures specified in Paragraph 4.H.(4) above.

(b) If the parts were baked before the phosphate treatment, bake them again. For carburized parts, bake 5 hours minimum at 250-300°F. For parts over 180 ksi which were plated to agree with QQ-P-416, bake 3 hours minimum at 350-400°F.

(c) If the parts have nonchromated post-phosphate treatment, do not bake above 400°F or damage to the coating could occur.

5. BRUSH CADMIUM PLATING

A. General

(1) Brush cadmium plating can be applied to copper alloys, nickel alloys, cobalt alloys, and ferrous alloys below 220 ksi.

(2) This paragraph is a summary of the procedure. Refer to BAC5849 for details about plating times, electrode preparation, and details for the different solutions used for surface preparation and plating.

(3) Do not use this procedure to brush cadmium plate ferrous parts 220 ksi or above. Use the procedures in SOPM 20-42-10 for these parts.

B. Surface Preparation

(1) Solvent clean or manually clean per SOPM 20-30-03, if parts are greasy or oily.

(2) If necessary, remove scale and rust from all of the area to be brush plated. Use abrasive paper, a brush, or other items. Make smooth the rough metal edges. Blend the damaged area into the good plating with a file or sandpaper. Make the blends as long as possible. Remove unwanted matter and contamination with solvent cleaning per SOPM 20-30-03.

(3) Apply masks around the area to be brush plated. To decrease edge buildup or burrs, use metallic tape at the edges. Make electrical connection between this tape and the part. Use a conductive adhesive, or turn an edge of the tape under to make contact with the part. Be sure to give all other areas protection from the plating solutions.

(4) For titanium surfaces, blast the area with a slurry of 180-240 grit aluminum oxide and water, until the area is a constant color. Use air pressure of 50-115 psi, an air water gun, and a 1 to 15 gallon paint pressure pot that has a stirrer. Then flush off all grit with water and start to plate within 1 minute.

(5) For all surfaces except titanium, electroclean per BAC5849. Or, as an alternative, blast clean the surface with the procedure for titanium in Paragraph 5.B.(4).

C. Brush cadmium plate with the procedure for Dip Feed Plating (Handheld Electrodes) in BAC5849.

D. Post Plate Treatment

(1) After plating, bake parts per Paragraph 4.H.

(2) If post plate treatment is specified, refer to Paragraph 4.I. or Paragraph 4.J.

6. QUALITY CONTROL

A. The cadmium plating must be smooth, fine grained, and have no blisters, pits, nodules, burrs or other defects when visually examined without magnification. Unless specified by the overhaul instructions, the plating can be shiny or dull.

B. The Type 2 chromate and Type 3 phosphate coatings must be continuous, smooth, and without powder. The coating must not be loose or come off when wiped with a cloth.

C. Unless specified by the overhaul instructions, the plating thickness must be Class 1 (0.0005 inch minimum) for all parts except fasteners. For fasteners, the plating must be Class 2 (0.0003 inch minimum). Unless specified, the plating must not be thicker than 0.0008 inch.

D. Unless specified by the overhaul instructions, the thickness requirements are for only visible surfaces which can be touched by a ball 0.75 inch in diameter. The plating must be continuous.

E. Adhesion

(1) Aluminum parts must have no blisters or loose plating after the bake or boiling water soak.

(2) For parts other than aluminum, do a test on the plating per BSS 7235 after the supplemental treatment and bake. The layer must stay tightly bonded to the surface.

F. Corrosion Resistance (Type 2 plating only) – Give parts or specimens a salt spray test. Refer to BAC5701 for details. This includes items given Ultrachromate 300 treatment before the bake.

G. Do tests on samples at regular intervals to be sure of the plating quality. If the interval is not specified by this procedure or in BAC5701, use an interval that agrees with standard industry practices, your experience with the procedure, and to make sure you can find parts that could have bad plating. If BAC5701 gives a formula to calculate the interval, use it for your basic quality control plan.