

# Cover Page

Standard: BAC5875 Rev: (T) 21-Nov-2018

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**1 SCOPE**

**NOTE:** Incorporated Departures: NONE  
Cancelled Departures: NONE

- a. This specification establishes the requirements for the manufacturing processes required to produce appliques (aluminum and plastic) and aluminum markers.
- b. When installed in accordance with [BAC5305](#), these appliques and aluminum markers (used as nameplates) meet the requirements of [MIL-STD-130](#).
- c. Refer to [BAC001PREF](#) for guidance on use of Boeing process specifications and Boeing process specification departures.
- d. The sections of a process specification are for organizing information. Do not interpret the section headings as indicating responsibilities of functional organizations.

**WARNING**

WARNINGS may be included throughout this specification. Do not take these WARNINGS to be all inclusive, nor to completely describe hazards or precautionary measures applicable to specific procedures or operating environments. Non-Boeing personnel must refer to their employer's safety instructions for information concerning hazards which may occur during operations described in this specification.

**WARNING**

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**2 CLASSIFICATION**

2.1 TYPES

- a. This specification consists of the following Types. See [Table I](#).

**TABLE I - TYPE DEFINITIONS**

TYPE	DESCRIPTION	REQUIREMENTS	ADHESIVE	SUBSTITUTIONS/ SUPERSESSIONS
I	Obsolete	---	---	Superseded by Type II
II	Aluminum Foil Marker - manufactured from commercial anodized aluminum foil that is photosensitive printed.	0.003 inch thickness with black and aluminum	Yes	Type VII may be used when Type II is called out and color other than black and aluminum are required.
		0.005 or 0.008 inch thickness with black and aluminum	Optional	

ORIGINAL ISSUE: 09-DEC-1971

REV: (R) 25-SEP-2017 (T) 21-NOV-2018

Authorizing Signatures on File

**FABRICATION OF ALUMINUM MARKERS  
AND ALUMINUM AND PLASTIC APPLIQUES**

**BAC5875**

**BOEING PROCESS SPECIFICATION**

PAGE 1 of 24

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2.1

TYPES (Continued)

TABLE I - TYPE DEFINITIONS (Continued)

TYPE	DESCRIPTION	REQUIREMENTS	ADHESIVE	SUBSTITUTIONS/ SUPERSESSIONS
III	Aluminum Sheet Marker - manufactured from commercial anodized aluminum sheet that is photosensitive printed.	Greater than 0.010 inch thickness with black and aluminum	Optional	Type VIII may be used when Type III is called out and color other than black and aluminum are required.
IV	Plastic (Polyester) Applique - manufactured from colored photosensitive plastic stock.	0.006 inch thickness with white and black	Required	---
V	Aluminum Foil Marker - manufactured from commercial anodized aluminum foil that is screen printed.	0.003 inch thickness with color	Yes	Type VII may be used when Type V is called out and black and aluminum are required. Use Type VI if Type V is called out and the Engineering Drawing specifies sheet instead of foil.
		0.005 or 0.008 inch thickness with color	Optional	
VI	Aluminum Sheet Marker - manufactured from commercial anodized aluminum sheet that is screen printed.	Greater than 0.010 inch thickness with color	Optional	Type VIII may be used when Type VI is called out and black and aluminum are required.
VII	Aluminum Foil Marker - manufactured from commercial anodized aluminum foil that uses combination of photosensitive and screen printing to achieve all colors.	0.003 inch thickness with black, aluminum, and color	Yes	---
		0.005 or 0.008 inch thickness with black, aluminum, and color	Optional	
VIII	Aluminum Sheet Marker - manufactured from commercial anodized aluminum sheet that uses combination of photosensitive and screen printing to achieve all colors.	Greater than 0.010 inch thickness with black, aluminum, and color	Optional	---

- b. When the Engineering Drawing lists BAC5875 without identifying the specific manufacturing Type, use the Type that matches with the Engineering Drawing requirements (refer to [Table I](#)). If definition is not clear to determine appropriate Type, contact Boeing Liaison Engineering.

BAC5875

Page 2

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3

## REFERENCES

The current issue of the following documents must be considered a part of this specification to the extent herein indicated. See [Section 5](#) for material references.

- [ATA SPEC 2000](#) - E-Business Specification for Materials Management
- [BAC5305](#) - Application of Aluminum Foil Markers
- [BAC5307](#) - Part Marking
- [BAC5750](#) - Solvent Cleaning
- [BDS-1241](#) - Marker Drawings
- [BSS7217](#) - Air Cleanliness, Shop Compressed Air
- D6-36000 - Color and Appearance Evaluation of Decorative Interior Materials
- Exposure Guide No. 78148 - Stouffer Stop Exposure Guide, Metalphoto, Division of Horizons, Inc.
- [GG-P-455](#) - Plates and Foils, Photographic (Photosensitive Anodized Aluminum)
- [MIL-A-8625](#) - Anodic Coatings for Aluminum and Aluminum Alloys
- [MIL-STD-130](#) - Identification Marking of U.S. Military Property

BAC5875

Page 3

\*\*\*\*\* PSDS GENERATED \*\*\*\*\*

4

**CONTENTS**

<u>Section</u>	<u>Title</u>	<u>Page</u>
1	SCOPE.....	1
2	CLASSIFICATION.....	1
2.1	TYPES.....	1
3	REFERENCES.....	3
4	CONTENTS.....	4
5	MATERIALS CONTROL.....	6
5.1	DELIVERABLE MATERIALS.....	6
5.1.1	PHOTOSENSITIVE ANODIZED ALUMINUM MARKER MATERIALS.....	6
5.1.2	PHOTOSENSITIVE POLYESTER MARKER MATERIALS.....	7
5.1.3	ANODIZED ALUMINUM MARKER MATERIALS FOR SCREEN PRINTING.....	7
5.1.4	ADHESIVE MATERIALS.....	8
5.1.5	INK AND DYE MATERIALS.....	8
5.2	CONTACT MATERIALS.....	8
5.3	MATERIAL STORAGE CONTROL.....	8
5.3.1	STORAGE AND HANDLING OF PHOTOSENSITIVE MATERIAL.....	8
5.3.2	STORAGE OF PRESSURE SENSITIVE ADHESIVE, INKS, AND DYES.....	9
6	FACILITIES CONTROL.....	9
7	DEFINITIONS.....	9
8	MANUFACTURING CONTROL.....	10
8.1	GENERAL NOTES.....	10
8.2	TYPES II, III, V, VI, VII, AND VIII ALUMINUM MARKERS.....	11
8.2.1	ARTWORK.....	11
8.2.2	EXPOSING THE MATERIALS.....	11
8.2.2.1	Exposing Materials Using Film Negatives.....	11
8.2.2.2	Exposing Materials Using Computer to Plate (CTP) Exposure Unit .....	12
8.2.3	PROCESSING METALPHOTO PRODUCT GROUPS I AND II AND METALPHOTO PLUS (TYPES II, III, VII, AND VIII ALUMINUM MARKERS).....	12

**BAC5875**

Page 4

4 CONTENTS (Continued)

<u>Section</u>	<u>Title</u>	<u>Page</u>
8.2.4	DYEING PRIOR TO SEALING.....	13
8.2.5	PROCESSING OF POLYCOLOR (Section 5.1.1.d.).....	13
8.2.6	PROCESSING OF ECONALUM (Section 5.1.3.b.).....	14
8.3	APPLICATION OF ADHESIVE AND TRIM.....	15
8.4	TYPE IV APPLIQUES - PLASTIC.....	19
8.4.1	ARTWORK.....	20
8.4.2	PROCESSING ID-MARK (Section 5.1.2.a.).....	20
8.4.3	PROCESSING QUICK-MARK (Section 5.1.2.b.).....	21
8.5	MARKING.....	21
8.6	PACKAGING AND STORAGE.....	21
9	MAINTENANCE CONTROL.....	22
9.1	ZIP DEVELOPER.....	22
9.2	ZIP FIXER.....	22
9.3	SEALING SOLUTION.....	22
9.4	IMAGE INTENSIFIER SOLUTION.....	22
9.5	METALPHOTO WATER SOLUBLE BACKGROUND DYE (Section 5.1.5.f.).....	23
10	QUALITY CONTROL.....	23
11	REQUIREMENTS.....	24
12	TEST METHODS.....	24
13	QUALIFICATION.....	24

**LIST OF TABLES**

<u>Table</u>	<u>Title</u>	<u>Page</u>
TABLE I	TYPE DEFINITIONS.....	1
TABLE II	STOUFFER GREY SCALE READINGS (REFERENCE) FOR VARIOUS PRODUCTS.....	12
TABLE III	STANDARD TRIM DIES.....	15
TABLE IV	PROPER OPERATING TEMPERATURE AND PH FOR METALPHOTO WATER SOLUBLE BACKGROUND DYES.....	23

**BAC5875**

Page 5

**5 MATERIALS CONTROL****5.1 DELIVERABLE MATERIALS**

Only the following deliverable materials must be incorporated into the part as specified in [Section 8](#) of this specification. Deliverable materials are such that any component of the material remains on the hardware.

**5.1.1 PHOTSENSITIVE ANODIZED ALUMINUM MARKER MATERIALS**

All materials in [Section 5.1.1](#) must be tested and approved in accordance with [GG-P-455](#).

**OPTION:** In lieu of test requirements specified in [GG-P-455](#), the following tests must be performed by the raw material supplier:

- a. Monthly anodic coating weight in accordance with [MIL-A-8625](#).
- b. Anodic coating thickness in accordance with [GG-P-455](#) - once for each coil as it is anodized.
- c. Monthly Taber abrasion (not less than 7000 cycles in accordance with [GG-P-455](#)) on randomly selected lots.
- d. Annual salt spray corrosion resistance (720 hours minimum in accordance with [GG-P-455](#) or 336 hours minimum in accordance with [MIL-A-8625](#)).
- e. An image quality test method and frequency of the test must be documented. The recommended frequency is one sample every 1500 linear feet or more often. These documents must be made available to the end user upon request.

**EXCEPTION:** Image quality testing is not required for PolyColor material ([Section 5.1.1.d](#)).

<b>MATERIAL</b>	<b>SOURCE</b>
a. Metalphoto Product Group I; <a href="#">GG-P-455</a> , Type I, Class 1	Metalphoto Division of Horizons, Inc.
Product Characteristics:	
(1) One side photosensitive	
(2) Produces black and aluminum (silver color) images	
(3) Processed with Metalphoto Zip or tray processing chemicals	
(4) Finish is either satin (semigloss) or matte (non-reflective)	
b. Metalphoto Product Group II; <a href="#">GG-P-455</a> , Type I, Class 2	Metalphoto Division of Horizons, Inc.
Product Characteristics:	
(1) Two sides photosensitive	
(2) Produces black and aluminum (silver color) images	
(3) Processed with Metalphoto Zip or tray processing chemicals	
(4) Finish is either satin (semigloss) or matte (non-reflective) or No. 4 coarse brushed.	
c. Metalphoto Plus; <a href="#">GG-P-455</a> , Type I, Class 1.	Metalphoto Division of Horizons, Inc.

**BAC5875**

Page 6

\*\*\*\*\* PSDS GENERATED \*\*\*\*\*

## 5.1.1 PHOTSENSITIVE ANODIZED ALUMINUM MARKER MATERIALS (Continued)

<b>MATERIAL</b>	<b>SOURCE</b>
c. Product Characteristics:	Metalphoto Division of Horizons, Inc.
(1) One side photosensitive	
(2) Produces black images on aluminum (silver color) or other color background	
(3) Processed with Metalphoto Zip or tray processing chemicals	
(4) Finish is gloss (almost mirror) or satin (semigloss)	
d. Polycolor: <a href="#">GG-P-455</a> , Type I, Class 1	Metalphoto Division of Horizons, Inc.
Product Characteristics:	
(1) One side photosensitive	
(2) Produces one or more colors and aluminum (silver color) images	
(3) Processed in trays. High ultraviolet (UV) exposure required (for example, using Metalphoto metal halide exposure system)	

## 5.1.2 PHOTSENSITIVE POLYESTER MARKER MATERIALS

<b>MATERIAL</b>	<b>SOURCE</b>
a. ID-Mark	Metalphoto Division of Horizons, Inc.
Product Characteristics:	
(1) Produces two color images in various colors	
(2) Over-laminating film materials	
b. Quick-Mark	Vital Presentation Concepts, Inc.
Product Characteristics:	
(1) Imaging film in various colors	
(2) Base sheet materials in various colors	
(3) Over-laminating film materials	

## 5.1.3 ANODIZED ALUMINUM MARKER MATERIALS FOR SCREEN PRINTING

<b>MATERIAL</b>	<b>SOURCE</b>
a. Alumaprint	Lawrence & Frederick, Inc.
Product Characteristics:	
(1) Non-photosensitive anodized aluminum foil and nameplate	
(2) Matte finish	
b. Econalum	Metalphoto Division of Horizons, Inc.
Product Characteristics:	
(1) One side anodized for 0.005 to 0.032 inch thick materials. Two sides anodized for 0.063 inch or thicker materials	
(2) Finish is either satin (semigloss) or matte (non-reflective) or No. 4 coarse brushed	

BAC5875

Page 7

## 5.1.4 ADHESIVE MATERIALS

MATERIAL	SOURCE
a. Adhesive Transfer Tape 467MP	3M Co.
b. Adhesive Transfer Tape 468MP	<a href="#">BMS5-91</a> , Type II
c. Adhesive Transfer Tape 9668MP	3M Co.

## 5.1.5 INK AND DYE MATERIALS

MATERIAL	SOURCE
a. ADE Series Epoxy Ink	<a href="#">BMS10-151</a> , Type VI, Grade A
b. Alumaprint Screen Printing Ink Series	<a href="#">BMS10-151</a> , Type VI, Grade A
c. PolyColor Screen Printing Ink	<a href="#">BMS10-151</a> , Type VI, Grade A
d. PolyColor Dyes	<a href="#">BMS10-151</a> , Type VII, Grade A
e. Sinvaluminum Ink	<a href="#">BMS10-151</a> , Type VI, Grade A
f. Metalphoto Water Soluble Background Dyes	<a href="#">BMS10-151</a> , Type VII, Grade A

5.2 CONTACT MATERIALS

Only the following non-deliverable materials must be used in contact with production hardware or deliverable materials, as indicated in this specification.

MATERIAL	SOURCE
a. Rapid Tac Application Fluid	Vital Presentation Concepts, Inc.
b. Developer Applicator Pad ML-4	Metalphoto Division of Horizons, Inc.
c. Image Intensifier, Part No. 7200	Metalphoto Division of Horizons, Inc.
d. Metalphoto Zip Developer	Metalphoto Division of Horizons, Inc.
e. Metalphoto Zip Fixer	Metalphoto Division of Horizons, Inc.
f. Liquid Sealing Concentrate	Metalphoto Division of Horizons, Inc.
g. No-Nickel Liquid Sealing Concentrate 7571	Metalphoto Division of Horizons, Inc.
h. Polycolor Cleaner/Diluent	Metalphoto Division of Horizons, Inc.
i. Polycolor Resist	Metalphoto Division of Horizons, Inc.
j. Polycolor Stripper	Metalphoto Division of Horizons, Inc.

5.3 MATERIAL STORAGE CONTROL

## 5.3.1 STORAGE AND HANDLING OF PHOTSENSITIVE MATERIAL

- Materials used for this process are light sensitive, photographic products which must be processed in a darkroom with appropriate lighting, temperature controls and ventilation.
- Store and handle process materials in a cool and dry area so that integrity of these products original packaging is preserved.
- Material is supplied in black colored, plastic pouches which are opaque (that is, the plastic pouch cannot be penetrated by light) to prevent photo exposure of Types II, III, IV, VII, and VIII.
- Handle photosensitive sheets by the edges to minimize contamination of printable areas on sheet surface.

BAC5875

Page 8

### 5.3.2 STORAGE OF PRESSURE SENSITIVE ADHESIVE, INKS, AND DYES

- a. Store 467MP ([Section 5.1.4.a](#)) and 9668MP ([Section 5.1.4.c](#)) pressure sensitive adhesive transfer tapes at 40 to 90 F (4.4 to 32 C). Shelf life is two years from date of manufacture.
- b. Store [BMS5-91](#), Type II ([Section 5.1.4.b](#)) at a temperature between 40 and 90 F (4.4 to 32 C). Storage time allowed is 18 months from date of manufacture with retest for appearance and peel strength in accordance with [BMS5-91](#) to extend for 6 months for maximum shelf life of two years.
- c. Marker ink and dye materials listed in [Section 5.1.5](#) are time and temperature sensitive (TATS) materials and must be stored in accordance with the applicable BMS.

## 6 FACILITIES CONTROL

- a. Compressed air must be free of oil, moisture and particulate matter when tested in accordance with [BSS7217](#).
- b. Light sources used to expose photosensitive materials must be adequate for this intended use.
- c. Ovens used for drying or curing of material must be tested and certified to ensure that all temperatures within the working zone of facility are maintained within  $\pm 10$  F of temperatures specified herein.

## 7 DEFINITIONS

The following definitions apply to terms that are uncommon or have special meaning as used in this specification.

Aluminum foil	- Aluminum sheet with a thickness of 0.010 inch or less
Applique	- A part with graphic, decorative, or informational feature applied to at least one surface (also known as a decal, placard, and marker).
Engineering Drawing	- The collection of product definition data used to disclose, directly or by reference, through pictorial or textual presentations, or combinations or both, the physical and functional end product requirements and configuration of an item. The term may be used regardless of the actual medium or method used for the depiction. A drawing may be computer-aided, manually produced, digitally defined within a dataset and plotted, or digitally defined within a dataset and not plotted.
Release Liner	- A film that protects the adhesive side of a marker that is cleanly removed before or during marker installation. Also known as a backing sheet, backing film, or backing paper.
Resist	- An ultraviolet (UV) sensitive coating that is hardened after exposure to UV light source.

**BAC5875**

Page 9

## 7 DEFINITIONS (Continued)

Safe Light - A light source suitable for use in a photographic darkroom. It provides illumination only from parts of the visible spectrum to which the photographic material in use is nearly or completely insensitive.

## 8 MANUFACTURING CONTROL

### **WARNING**

This specification involves the use of chemical substances which are hazardous. Boeing personnel must refer to the work area hazard communication information about health effects and control measures. Additional information is contained in the Globally Harmonized System (GHS) Safety Data Sheets (SDS), or Material Safety Data Sheets (MSDS). For disposition of hazardous waste materials, consult site environmental engineers for proper disposal methods.

Non-Boeing personnel should refer to manufacturer's Globally Harmonized System (GHS) Safety Data Sheets (SDS), or Material Safety Data Sheets (MSDS), and their employer's safety instructions.

### 8.1 GENERAL NOTES

- a. Materials used for producing Types II, III, VII, and VIII aluminum markers must consist of aluminum foils, sheets or plates which have been anodized and photosensitized. Images must be produced by exposure of photosensitive material to a UV light source, through a negative or positive transparency. When processed in accordance with this specification, images are trapped under the aluminum's anodic coating.
- b. Types II, III, VII, and VIII photosensitive anodized aluminum markers must be anodized in accordance with [MIL-A-8625](#), Type II, Type IIB, or Type III, Class 2.
- c. Operations described in this specification are sensitive to dust, contamination and fingerprints. Use utmost care to keep all operations clean. Handle anodized and photosensitive materials only with clean gloves.
- d. For non-dimensional features, locate characters approximately as shown on the Engineering Drawing.
- e. If there is no font type callout on the Engineering Drawing, use a standard font type of Futura Heavy or Swiss Bold.
- f. Types II, III, VII, and VIII photosensitive anodized aluminum markers must be used when permanent barcode labels are required in accordance with applicable Engineering Drawing(s) which specify barcoding in accordance with [ATA SPEC 2000](#).
- g. When the Engineering Drawing lists aluminum foil material or Metal-Cal, then the 0.003 inch thickness must be used if no material thickness is specified on the Engineering Drawing.
- h. When the Engineering Drawing lists aluminum sheet material or nameplate then the 0.020 inch thickness must be used if no material thickness is specified on the Engineering Drawing.

**BAC5875**

Page 10

## 8.2 TYPES II, III, V, VI, VII, AND VIII ALUMINUM MARKERS

- a. Unless otherwise specified, make Types II, III, VII, and VIII aluminum markers from photosensitive anodized aluminum stock ([Section 5.1.1.a.](#), [Section 5.1.1.b.](#), [Section 5.1.1.c.](#), and [Section 5.1.1.d.](#)) or make Types V, VI, VII, and VIII aluminum markers from screen printed aluminum stock ([Section 5.1.3.a](#) or [Section 5.1.3.b](#)).
- b. Color requirements of Engineering Drawing(s) that apply to Types II, III, V, VI, VII, and VIII aluminum markers must be met. If necessary, use ink and dye materials listed in [Section 5.1.5](#) to add the color in accordance with the Engineering Drawing requirements.

### 8.2.1 ARTWORK

Prepare graphics on a 1:1 scale using film negatives.

**OPTION:** For Metalphoto Product Group I or II plates that are 0.039 inch thick or thinner, the graphics may be prepared on a 1:1 scale using a computer generated file that is transmitted to a Computer to Plate (CTP) laser exposure unit.

### 8.2.2 EXPOSING THE MATERIALS

#### 8.2.2.1 Exposing Materials Using Film Negatives

- a. Remove only material to be exposed from opaque package.
- b. Clean dust and dirt from glass on printing frame using a vacuum (or other cleaning technique that does not damage surface).
- c. Place material in vacuum frame with emulsion side of material facing light source. A film negative or positive, produced in accordance with [Section 8.2.1](#), must be placed with emulsion side of film contacting emulsion side of Metalphoto material.

**NOTE:** Film will be between material and light source.

- d. Turn on vacuum unit and allow sufficient time for film and material to develop positive contact.
- e. Expose Metalphoto Product Group I ([Section 5.1.1.a.](#)), Metalphoto Product Group II ([Section 5.1.1.b.](#)) or Metalphoto Plus ([Section 5.1.1.c.](#)) using mercury vapor or metal halide light source.

**NOTE:** Exposure time will vary in accordance with nature and intensity of light source.

- f. Expose PolyColor ([Section 5.1.1.d.](#)) or PolyColor resist ([Section 5.2.i](#)) coated material, in accordance with this section, using mercury vapor, metal halide, or black lights.
- g. Determine exposure time for each type of material with a given light source using a Stouffer Exposure Guide 78148. See [Table II](#) for approximate reading.

**BAC5875**

Page 11

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8.2.2.1 Exposing Materials Using Film Negatives (Continued)**TABLE II - STOUFFER GREY SCALE READINGS  
(REFERENCE) FOR VARIOUS PRODUCTS**

MATERIAL	STOUFFER READING (REFERENCE)
Product Group I	6
Product Group II	6
Metalphoto Plus	6
PolyColor	6

8.2.2.2 Exposing Materials Using Computer to Plate (CTP) Exposure Unit

- a. Remove only material to be exposed from opaque package.
- b. Feed plates into the exposure unit in accordance with the procedures recommended by the manufacturer of the Metalphoto Product Group I or II plates.

8.2.3 **PROCESSING METALPHOTO PRODUCT GROUPS I AND II AND METALPHOTO PLUS  
(TYPES II, III, VII, AND VIII ALUMINUM MARKERS)**

Metalphoto products consist of photosensitive anodized aluminum for black and silver plates or colored background plates.

- a. Fill first chamber in Metalphoto processor with Metalphoto Zip Developer ([Section 9.1](#)).
- b. Fill second chamber in Metalphoto processor with Metalphoto Zip Fixer ([Section 9.2](#)).
- c. Run Metalphoto Zip processor for 60 seconds minimum before inserting first sheet.
- d. Expose material in accordance with [Section 8.2.2.1](#) or [Section 8.2.2.2](#).

**NOTE:** Exposure time for Metalphoto Plus may be longer than for Metalphoto Product Group I or II.

- e. Place exposed sheet into Metalphoto processor with exposed side facing down. Keep sheet in developer chamber of processor for approximately 9 to 12 seconds.
- f. Immediately rinse in cold water.

**OPTION:** To increase UV stability and high temperature resistance of marker, immerse sheet in Metalphoto Image Intensifier solution ([Section 9.4](#)) for 60 to 90 seconds. This process is complete when image changes to blue-black color. Matte finished sheet (< 0.008 inch thick) also may be immersed in Image Intensifier solution to enhance black color. The image on matte finished sheet (< 0.008 inch thick) that is not immersed in Image Intensifier solution will be grayer in color than matte finished sheet (< 0.008 inch thick) that is processed in Image Intensifier solution.

- g. If color must be added to sheet, proceed to [Section 8.2.4](#) for background coloring process.

**BAC5875**

Page 12

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### 8.2.3 PROCESSING METALPHOTO PRODUCT GROUPS I AND II AND METALPHOTO PLUS (TYPES II, III, VII, AND VIII ALUMINUM MARKERS) (Continued)

- h. Using clamp or sealing rack, immerse sheet for 15 minutes minimum in Metalphoto sealing solution ([Section 9.3](#)) maintained at vigorous (or rolling) boil.
- i. Rinse sheet. PolyColor cleaner/diluent ([Section 5.2.h](#)) may be used to remove excess color that may have migrated to surface of the sheet during sealing.

### 8.2.4 DYEING PRIOR TO SEALING

Metalphoto Water Soluble Background Dyes ([Section 5.1.5.f](#) and [Section 9.5](#))

- a. Process Metalphoto Product Group I or Group II plates through steps [Section 8.2.3.a.](#) through [Section 8.2.3.g.](#) only. Do not process through sealing steps ([Section 8.2.3.h.](#) and [Section 8.2.3.i.](#)).

- b. Dry plates completely.

**CAUTION**

Fingerprints, oils, or other contamination on unsealed surfaces can produce nondyed or unevenly dyed spots.

- c. Immerse in tray or tank containing Metalphoto Water Soluble Background Dye ([Section 5.1.5.f](#)) until desired color is obtained.
- d. Remove plate; then immediately rinse both sides, using running tap water until no color is observed in rinse water.
- e. Air dry each plate.
- f. Immerse plate in vigorously boiling sealing solution in accordance with [Section 8.2.3.h.](#)
- g. Remove from sealing tank and rinse well.

### 8.2.5 PROCESSING OF POLYCOLOR ([Section 5.1.1.d.](#))

- a. Expose material in accordance with [Section 8.2.2.](#) Areas of PolyColor that are not exposed to light during exposure will accept color later.
- b. Develop exposed PolyColor plates with cold running (or spraying) tapwater. Continue rinsing plates until unexposed areas are clear or no longer exhibit blue or milky white color of photosensitive resist coated layer.
- c. Wipe plate using a damp photographic sponge to remove excess water.
- d. Dry PolyColor plate in vertical position using a heat gun. Do not overheat or burn the plate.
- e. Examine the dry plate to ensure that hardened resist (blue or milky white area) completely covers areas not to be dyed. Repair voids in those areas by carefully applying approximately one to two drops of PolyColor resist. Dry repair spots using a heat gun.

**BAC5875**

Page 13

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8.2.5 PROCESSING OF POLYCOLOR ([Section 5.1.1.d.](#)) (Continued)

- f. Apply dye solution ([Section 5.1.5.d](#)) of desired color directly from bottle to applicator pad ([Section 5.2.b](#)) or equivalent nonfibrous material.
- g. Rub unexposed (clear) areas on plate several times, using circular motion.
- h. Allow dye solution to penetrate for 30 seconds minimum before removing excess solution by rubbing with clean paper towel to promote uniform and continuous application of dye solution.
- i. Repeat [Section 8.2.5.f.](#) to [Section 8.2.5.h.](#) for other colors to be applied (if required) on same coating. Keep multiple colors separated.
- j. Dyed areas must be dried using a heat gun.
- k. Allow plate to cool.
- l. Immerse dried plate in full strength PolyColor stripper ([Section 5.2.j](#)) for one minute minimum for new solution or two to three minutes for previously used stripper bath.
- m. Remove plate from tray, allowing excess stripper to drain into tray.
- n. Rinse well, using warm, running tap water; then, with water running on plate, use a photographic sponge to wipe residual dye or resist from surface of plate.
- o. Rinse plate again with tap water; then wipe with a clean paper towel.
- p. Dry plate by exposing to air or using a heat gun.
- q. Immerse plate in vigorously boiling sealing solution in accordance with [Section 8.2.3.h.](#)
- r. Remove plate from sealing tank; then rinse well.

8.2.6 PROCESSING OF ECONALUM ([Section 5.1.3.b](#))

- a. EconAlum is photosensitive anodized aluminum, which is used with PolyColor screen printing inks ([Section 5.1.5.c](#)) to produce products containing one or more selected colors. Images are screen printed into the anodic coating.
- b. EconAlum must be screen printed using either semi-automatic or automatic equipment in accordance with supplier's instructions.
- c. New and used screens must be solvent cleaned, using denatured alcohol or acetone, in accordance with [BAC5750](#), to ensure adhesion and prevent contamination of stencil.
- d. After printing, immerse product in boiling sealing solution to trap image within anodic film.
- e. Immediately after removing products from sealing tank, remove smut by washing products with a wet sponge under running water.

**CAUTION**

Streaking may result if smut is not washed off of plates prior to removal of excess ink.

**BAC5875**

Page 14

## 8.2.6 PROCESSING OF ECONALUM (Section 5.1.3.b) (Continued)

- f. Solvent clean excess ink from product using denatured alcohol or acetone in accordance with [BAC5750](#).
- g. Place product(s) on drying rack. Use a heat gun to facilitate drying.

**NOTE:** Approximate air drying time for PolyColor screen printing ink (Section 5.1.5.c) is 30 minutes at 73 to 77 F (23 to 25 C). Longer drying times may be required when relative humidity exceeds 50 percent.

## 8.3 APPLICATION OF ADHESIVE AND TRIM

- a. Place product face down on nonabrasive surface. Apply pressure sensitive transfer tape (Section 5.1.4.a, Section 5.1.4.b, or Section 5.1.4.c) by rolling or squeezing onto back of marker or sheet.
- b. Cut trim and die markers as required in accordance with applicable Engineering Drawing(s). When the Engineering Drawing specifies a die number only or trim according to [BDS-1241](#), Table III must be used to determine the equivalent part size.

TABLE III - STANDARD TRIM DIES

Dimensions are in inches and tolerances are $\pm 0.03$ inches for dimensions 0.49 inches and $\pm 0.06$ inches for dimensions 0.50 inches.					
All rectangular dies have 0.125 inch radii.					
TRIM DIE NUMBER	SIZE	TRIM DIE NUMBER	SIZE	TRIM DIE NUMBER	SIZE
0205	0.25 x 0.50	0227	0.25 x 2.75	0252	0.25 x 5.25
0207	0.25 x 0.75	0230	0.25 x 3.00	0257	0.25 x 5.75
0209	0.25 x 0.90	0232	0.25 x 3.25	0260	0.25 x 6.00
0210	0.25 x 1.00	0235	0.25 x 3.50	0262	0.25 x 6.25
0212	0.25 x 1.25	0237	0.25 x 3.75	0265	0.25 x 6.50
0215	0.25 x 1.50	0240	0.25 x 4.00	0270	0.25 x 7.00
0217	0.25 x 1.75	0242	0.25 x 4.25	0272	0.25 x 7.25
0220	0.25 x 2.00	0245	0.25 x 4.50	0275	0.25 x 7.50
0222	0.25 x 2.25	0247	0.25 x 4.75	0277	0.25 x 7.75
0225	0.25 x 2.50	0250	0.25 x 5.00		
Rectangular Dies - 0.35 trim short					
0305	0.35 x 0.50	0327	0.35 x 2.75	0350	0.35 x 5.00
0307	0.35 x 0.75	0330	0.35 x 3.00	0355	0.35 x 5.50
0310	0.35 x 1.00	0332	0.35 x 3.25	0357	0.35 x 5.75
0312	0.35 x 1.25	0335	0.35 x 3.50	0360	0.35 x 6.00
0315	0.35 x 1.50	0337	0.35 x 3.75	0365	0.35 x 6.50
0317	0.35 x 1.75	0340	0.35 x 4.00	0370	0.35 x 7.00
0320	0.35 x 2.00	0342	0.35 x 4.25	0372	0.35 x 7.25
0322	0.35 x 2.25	0345	0.35 x 4.50	0375	0.35 x 7.50
0325	0.35 x 2.50	0347	0.35 x 4.75		

BAC5875

Page 15

\*\*\*\*\* PSDS GENERATED \*\*\*\*\*

8.3

## APPLICATION OF ADHESIVE AND TRIM (Continued)

TABLE III - STANDARD TRIM DIES (Continued)

Dimensions are in inches and tolerances are $\pm 0.03$ inches for dimensions 0.49 inches and $\pm 0.06$ inches for dimensions 0.50 inches.					
All rectangular dies have 0.125 inch radii.					
TRIM DIE NUMBER	SIZE	TRIM DIE NUMBER	SIZE	TRIM DIE NUMBER	SIZE
Rectangular Dies - 0.50 trim short					
0505	0.50 x 0.50	0527	0.50 x 2.75	0550	0.50 x 5.00
0507	0.50 x 0.75	0530	0.50 x 3.00	0552	0.50 x 5.25
0510	0.50 x 1.00	0532	0.50 x 3.25	0555	0.50 x 5.50
0512	0.50 x 1.25	0535	0.50 x 3.50	0560	0.50 x 6.00
0515	0.50 x 1.50	0537	0.50 x 3.75	0562	0.50 x 6.25
0517	0.50 x 1.75	0540	0.50 x 4.00	0565	0.50 x 6.50
0520	0.50 x 2.00	0542	0.50 x 4.25	0567	0.50 x 6.75
0522	0.50 x 2.25	0545	0.50 x 4.50	0570	0.50 x 7.00
0525	0.50 x 2.50	0547	0.50 x 4.75		
Rectangular Dies - 0.60 trim short					
0605	0.60 x 0.50	0615	0.60 x 1.50	0627	0.60 x 2.75
0607	0.60 x 0.75	0616	0.60 x 1.60	0630	0.60 x 3.00
0608	0.60 x 0.80	0617	0.60 x 1.75	0632	0.60 x 3.25
0609	0.60 x 0.90	0620	0.60 x 2.00	0635	0.60 x 3.50
0610	0.60 x 1.00	0622	0.60 x 2.25	0637	0.60 x 3.75
0612	0.60 x 1.25	0625	0.60 x 2.50	0640	0.60 x 4.00
Rectangular Dies - 0.75 trim short					
0707	0.75 x 0.75	0732	0.75 x 3.25	0757	0.75 x 5.75
0710	0.75 x 1.00	0735	0.75 x 3.50	0760	0.75 x 6.00
0712	0.75 x 1.25	0737	0.75 x 3.75	0762	0.75 x 6.25
0715	0.75 x 1.50	0740	0.75 x 4.00	0765	0.75 x 6.50
0717	0.75 x 1.75	0742	0.75 x 4.25	0770	0.75 x 7.00
0720	0.75 x 2.00	0745	0.75 x 4.50	0772	0.75 x 7.25
0722	0.75 x 2.25	0747	0.75 x 4.75	0775	0.75 x 7.50
0725	0.75 x 2.50	0750	0.75 x 5.00	0777	0.75 x 7.75
0727	0.75 x 2.75	0752	0.75 x 5.25	0780	0.75 x 8.00
0730	0.75 x 3.00	0755	0.75 x 5.50	0785	0.75 x 8.50
Rectangular Dies - 1.00 trim short					
1010	1.00 x 1.00	1032	1.00 x 3.25	1055	1.00 x 5.50
1012	1.00 x 1.25	1035	1.00 x 3.50	1057	1.00 x 5.75
1015	1.00 x 1.50	1037	1.00 x 3.75	1060	1.00 x 6.00
1017	1.00 x 1.75	1040	1.00 x 4.00	1062	1.00 x 6.25
1020	1.00 x 2.00	1042	1.00 x 4.25	1065	1.00 x 6.50
1022	1.00 x 2.25	1045	1.00 x 4.50	1067	1.00 x 6.75
1025	1.00 x 2.50	1047	1.00 x 4.75	1070	1.00 x 7.00
1027	1.00 x 2.75	1050	1.00 x 5.00	1072	1.00 x 7.25
1030	1.00 x 3.00	1052	1.00 x 5.25	1075	1.00 x 7.50

BAC5875

Page 16

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8.3

## APPLICATION OF ADHESIVE AND TRIM (Continued)

TABLE III - STANDARD TRIM DIES (Continued)

Dimensions are in inches and tolerances are $\pm 0.03$ inches for dimensions 0.49 inches and $\pm 0.06$ inches for dimensions 0.50 inches.					
All rectangular dies have 0.125 inch radii.					
TRIM DIE NUMBER	SIZE	TRIM DIE NUMBER	SIZE	TRIM DIE NUMBER	SIZE
Rectangular Dies - 1.25 trim short					
1212	1.25 x 1.25	1230	1.25 x 3.00	1247	1.25 x 4.75
1215	1.25 x 1.50	1232	1.25 x 3.25	1250	1.25 x 5.00
1217	1.25 x 1.75	1235	1.25 x 3.50	1252	1.25 x 5.25
1220	1.25 x 2.00	1237	1.25 x 3.75	1255	1.25 x 5.50
1222	1.25 x 2.25	1240	1.25 x 4.00	1257	1.25 x 5.75
1225	1.25 x 2.50	1242	1.25 x 4.25	1260	1.25 x 6.00
1227	1.25 x 2.75	1245	1.25 x 4.50		
Rectangular Dies - 1.50 trim short					
1515	1.50 x 1.50	1532	1.50 x 3.25	1550	1.50 x 5.00
1517	1.50 x 1.75	1535	1.50 x 3.50	1552	1.50 x 5.25
1520	1.50 x 2.00	1537	1.50 x 3.75	1555	1.50 x 5.50
1522	1.50 x 2.25	1540	1.50 x 4.00	1557	1.50 x 5.75
1525	1.50 x 2.50	1542	1.50 x 4.25	1560	1.50 x 6.00
1527	1.50 x 2.75	1545	1.50 x 4.50	1565	1.50 x 6.50
1530	1.50 x 3.00	1547	1.50 x 4.75	1570	1.50 x 7.00
Rectangular Dies - 1.75 trim short					
1717	1.75 x 1.75	1737	1.75 x 3.75	1757	1.75 x 5.75
1720	1.75 x 2.00	1740	1.75 x 4.00	1760	1.75 x 6.00
1722	1.75 x 2.25	1742	1.75 x 4.25	1762	1.75 x 6.25
1725	1.75 x 2.50	1745	1.75 x 4.50	1765	1.75 x 6.50
1727	1.75 x 2.75	1747	1.75 x 4.75	1767	1.75 x 6.75
1730	1.75 x 3.00	1750	1.75 x 5.00	1770	1.75 x 7.00
1732	1.75 x 3.25	1752	1.75 x 5.25	1775	1.75 x 7.50
1735	1.75 x 3.50	1755	1.75 x 5.50		
Rectangular Dies - 2.00 trim short					
2020	2.00 x 2.00	2045	2.00 x 4.50	2067	2.00 x 6.75
2022	2.00 x 2.25	2047	2.00 x 4.75	2070	2.00 x 7.00
2025	2.00 x 2.50	2050	2.00 x 5.00	2075	2.00 x 7.50
2027	2.00 x 2.75	2052	2.00 x 5.25	2077	2.00 x 7.75
2030	2.00 x 3.00	2055	2.00 x 5.50	2080	2.00 x 8.00
2032	2.00 x 3.25	2057	2.00 x 5.75	2082	2.00 x 8.25
2035	2.00 x 3.50	2060	2.00 x 6.00	2085	2.00 x 8.50
2037	2.00 x 3.75	2062	2.00 x 6.25	20110	2.00 x 11.00
2040	2.00 x 4.00	2065	2.00 x 6.50		
2042	2.00 x 4.25				

BAC5875

Page 17

\*\*\*\*\* PSDS GENERATED \*\*\*\*\*

8.3

## APPLICATION OF ADHESIVE AND TRIM (Continued)

TABLE III - STANDARD TRIM DIES (Continued)

Dimensions are in inches and tolerances are $\pm 0.03$ inches for dimensions 0.49 inches and $\pm 0.06$ inches for dimensions 0.50 inches.					
All rectangular dies have 0.125 inch radii.					
TRIM DIE NUMBER	SIZE	TRIM DIE NUMBER	SIZE	TRIM DIE NUMBER	SIZE
Rectangular Dies - 2.25 trim short					
2222	2.25 x 2.25	2237	2.25 x 3.75	2255	2.25 x 5.50
2225	2.25 x 2.50	2240	2.25 x 4.00	2257	2.25 x 5.75
2227	2.25 x 2.75	2242	2.25 x 4.25	2260	2.25 x 6.00
2230	2.25 x 3.00	2245	2.25 x 4.50	2262	2.25 x 6.25
2232	2.25 x 3.25	2247	2.25 x 4.75	2265	2.25 x 6.50
2235	2.25 x 3.50	2250	2.25 x 5.00	2270	2.25 x 7.00
		2252	2.25 x 5.25	2272	2.25 x 7.25
Rectangular Dies - 2.50 trim short					
2525	2.50 x 2.50	2545	2.50 x 4.50	2562	2.50 x 6.25
2527	2.50 x 2.75	2547	2.50 x 4.75	2565	2.50 x 6.50
2530	2.50 x 3.00	2550	2.50 x 5.00	2567	2.50 x 6.75
2532	2.50 x 3.25	2552	2.50 x 5.25	2570	2.50 x 7.00
2535	2.50 x 3.50	2555	2.50 x 5.50	2572	2.50 x 7.25
2537	2.50 x 3.75	2557	2.50 x 5.75	2575	2.50 x 7.50
2540	2.50 x 4.00	2560	2.50 x 6.00	25105	2.50 x 10.50
2542	2.50 x 4.25				
Rectangular Dies - 2.75 trim short					
2727	2.75 x 2.75	2742	2.75 x 4.25	2757	2.75 x 5.75
2730	2.75 x 3.00	2745	2.75 x 4.50	2760	2.75 x 6.00
2732	2.75 x 3.25	2747	2.75 x 4.75	2762	2.75 x 6.25
2735	2.75 x 3.50	2750	2.75 x 5.00	2765	2.75 x 6.50
2737	2.75 x 3.75	2752	2.75 x 5.25	2767	2.75 x 6.75
2740	2.75 x 4.00	2755	2.75 x 5.50		
Rectangular Dies - 3.00 trim short					
3030	3.00 x 3.00	3045	3.00 x 4.50	3060	3.00 x 6.00
3032	3.00 x 3.25	3047	3.00 x 4.75	3062	3.00 x 6.25
3035	3.00 x 3.50	3050	3.00 x 5.00	3065	3.00 x 6.50
3037	3.00 x 3.75	3052	3.00 x 5.25	3067	3.00 x 6.75
3040	3.00 x 4.00	3055	3.00 x 5.50	3070	3.00 x 7.00
3042	3.00 x 4.25	3057	3.00 x 5.75		
Rectangular Dies - 3.25 trim short					
3232	3.25 x 3.25	3245	3.25 x 4.50	3257	3.25 x 5.75
3235	3.25 x 3.50	3247	3.25 x 4.75	3260	3.25 x 6.00
3237	3.25 x 3.75	3250	3.25 x 5.00	3262	3.25 x 6.25
3240	3.25 x 4.00	3252	3.25 x 5.25	3265	3.25 x 6.50
3242	3.25 x 4.25	3255	3.25 x 5.50	3267	3.25 x 6.75

BAC5875

Page 18

8.3

## APPLICATION OF ADHESIVE AND TRIM (Continued)

TABLE III - STANDARD TRIM DIES (Continued)

Dimensions are in inches and tolerances are $\pm 0.03$ inches for dimensions 0.49 inches and $\pm 0.06$ inches for dimensions 0.50 inches.					
All rectangular dies have 0.125 inch radii.					
TRIM DIE NUMBER	SIZE	TRIM DIE NUMBER	SIZE	TRIM DIE NUMBER	SIZE
Rectangular Dies - 3.50 trim short					
3535	3.50 x 3.50	3550	3.50 x 5.00	3562	3.50 x 6.25
3537	3.50 x 3.75	3552	3.50 x 5.25	3565	3.50 x 6.50
3540	3.50 x 4.00	3555	3.50 x 5.50	3567	3.50 x 6.75
3542	3.50 x 4.25	3557	3.50 x 5.75	3570	3.50 x 7.00
3545	3.50 x 4.50	3560	3.50 x 6.00	3577	3.50 x 7.75
3547	3.50 x 4.75				
Rectangular Dies - 3.75 trim short					
3737	3.75 x 3.75	3747	3.75 x 4.75	3757	3.75 x 5.75
3740	3.75 x 4.00	3750	3.75 x 5.00	3760	3.75 x 6.00
3742	3.75 x 4.25	3752	3.75 x 5.25	3737	3.75 x 3.75
3745	3.75 x 4.50	3755	3.75 x 5.50		
Rectangular Dies - 4.00 trim short					
4040	4.00 x 4.00	4052	4.00 x 5.25	4062	4.00 x 6.25
4042	4.00 x 4.25	4055	4.00 x 5.50	4065	4.00 x 6.50
4045	4.00 x 4.50	4057	4.00 x 5.75	4067	4.00 x 6.75
4047	4.00 x 4.75	4060	4.00 x 6.00	4070	4.00 x 7.00
4050	4.00 x 5.00				
Rectangular Dies - 4.25 through 7.75 trim short					
4242	4.25 x 4.25	5050	5.00 x 5.00	6060	6.00 x 6.00
4247	4.25 x 4.75	5060	5.00 x 6.00	7777	7.75 x 7.75
4750	4.75 x 5.00	5557	5.50 x 5.75		
Circular Dies					
D025	0.25 dia.	D150	1.50 dia.	D275	2.75 dia.
D035	0.35 dia.	D175	1.75 dia.	D300	3.00 dia.
D050	0.50 dia.	D200	2.00 dia.	D325	3.25 dia.
D075	0.75 dia.	D225	2.25 dia.	D350	3.50 dia.
D100	1.00 dia.	D250	2.50 dia.	D400	4.00 dia.
D125	1.25 dia.				

8.4

## TYPE IV APPLIQUES - PLASTIC

- a. Unless otherwise specified, Type IV appliques must be made from photosensitive plastic (polyester) stock ([Section 5.1.2.a](#) and [Section 5.1.2.b](#)).
- b. Color requirements of Engineering Drawing(s) that apply to Type IV markers must be met.

BAC5875

Page 19

## 8.4.1 ARTWORK

- a. Any opaque copy on a transparent or translucent carrier can be used. Opaque copy may also be produced on vellum or tracing paper with:
  - (1) Transfer or rub-on lettering.
  - (2) Offset and letter press inks.
  - (3) Opaque pencil or ballpoint with carbon paper backing to produce darker artwork.
- b. Appliques will be produced in reverse image of artwork (that is, negatives will produce positive appliques). To make labels that are same as artwork, complete the following procedure:
  - (1) Expose artwork negative over reversing film.
  - (2) Develop in accordance with [Section 8.4.3](#).
  - (3) This now becomes artwork for the applique.

8.4.2 PROCESSING ID-MARK ([Section 5.1.2.a](#))

ID-Mark allows production of polyester, retro-reflective, photo-luminescent, or aluminum appliques. ID-Mark appliques contain a release liner ([Section 5.1.4.b](#)).

- a. Remove ID-Mark sheet from opaque packaging in dimly lighted area.
- b. Use a small strip of material and a Stouffer Step Guide ([Section 3](#)) to determine exposure time for each material.

**NOTE:** Various colors and substrates have different exposure times. Exposure times also depend on the specific light source used. When properly exposed to UV light, images on sheet should remain during washing; and unexposed areas should wash off.
- c. For best results, expose material in vacuum frame to maintain contact between emulsion side of film and coated side of ID-Mark sheet.
- d. Hold exposed plate in cold running water to wash off unexposed resist.
- e. Use light pressure when removing resist.
- f. Rub with wet cotton pad or wet photographic sponge to promote removal of resist. Continue wiping until resist is removed.
- g. Rinse sheet with water.
- h. Dry the sheet by patting (do not rub), using clean paper towel; then use heat gun to harden the resist that remains on the finished marker. When using a heat gun, do not exceed 250 F on the part surface.
- i. Apply protective overlay [Section 5.1.2.a.\(2\)](#) using laminator or hand roller.

#### 8.4.3 PROCESSING QUICK-MARK ([Section 5.1.2.b](#))

Developing of Quick-Mark must be in accordance with the following procedure:

- a. Mask two edges of imaging film with bond paper. Expose glossy side of imaging film to UV light with artwork between the glossy side and the UV source for about 5 seconds.
- b. Manually separate imaging film - peeling the top layer from the bottom layer.  
**NOTE:** A peeling board is recommended.
- c. Remove top layer off the base film and spray exposed adhesive with application fluid ([Section 5.2.a](#)).
- d. Apply imaging film to base sheet. Use a squeegee to remove the excess fluid, moving from the center to the edges.
- e. Trim to desired dimensions.

#### 8.5 MARKING

- a. Mark each marker or applique with the part number and the month and year the marker/applique is manufactured by rubber stamping, hand marking, or printing with permanent ink or paper label directly on the release liner, front of the premask, or in the excess material.
- b. For adhesive markers/appliques already in inventory that can be separated from their part mark, an acceptable alternative is to mark the markers/appliques in accordance with [BAC5307](#) Code M or Code P with the part number and date of manufacture (small parts of the same part number may be packaged together in excess of one hundred items per package).
- c. For markers/appliques without adhesive already in inventory that can be separated from their part mark, an acceptable alternative is to mark the markers/appliques in accordance with [BAC5307](#) Code M or Code P with the part number (small parts of the same part number may be packaged together in excess of one hundred items per package).

#### 8.6 PACKAGING AND STORAGE

Package and store to prevent wrinkling, tearing or other damage. Package in individual plastic bags, or interleaf with bond or suitable inert material when packaging multiple parts in a single plastic bag (markers/appliques with adhesive and therefore include a release liner do not require to be interleaved with separate material). When necessary, insert cardboard sheets for stiffening prior to placing in plastic bags. Store completed markers/appliques with adhesive at a temperature of 40 to 90 F for a maximum of 24 months from date of manufacture of the completed marker/applique. Markers/appliques which are not installed on the aircraft after the storage period expires must be scrapped. Completed markers/appliques without adhesive may be stored indefinitely.

**BAC5875**

Page 21

**9 MAINTENANCE CONTROL****9.1 ZIP DEVELOPER**

Use Metalphoto Zip Developer ([Section 5.2.d](#)) as received without dilution. Solution can only be used in Metalphoto processor. Recommended operating temperature is 68 to 72 F.

**9.2 ZIP FIXER**

Use Metalphoto Zip Fixer ([Section 5.2.e](#)) as received, without dilution. Recommended operating temperature is 68 to 72 F.

**9.3 SEALING SOLUTION**

Solution must be prepared and used in a 316 stainless steel tank. Prepare and use correct measure of Liquid Sealing Concentrate ([Section 5.2.f](#)) or No-Nickel Liquid Sealing Concentrate 7571 ([Section 5.2.g](#)).

- a. Fill tank approximately 1/2-full with distilled or deionized water and heat to 200 F, minimum.
- b. Add correct amount of liquid sealing concentrate, in accordance with directions on bottle, to tank.
- c. Heat tank to boiling.
- d. Add distilled or deionized water to fill the tank. When total solution begins boiling, it is ready for use. Keep solution boiling during processing.
- e. Add deionized or distilled water to maintain solution level. Do not add additional liquid sealing solution.

**9.4 IMAGE INTENSIFIER SOLUTION**

- a. The Image Intensifier ([Section 5.2.c](#)) is a two component system (that is, gold chloride and ammonium thiocyanate). Completely use component packages when preparing solution. All equipment or containers used for mixing, storing, or using the intensifier solution must be made of glass or plastic.
- b. Store prepared solution in airtight plastic or glass container. Use of a brown bottle for storage extends the life of solution. Avoid storage in a warm area. Do not return partially used solution back into original container.
- c. The following instructions are for making 1 gallon batches:
  - (1) Fill a 1 gallon container with approximately 4/5 gallon (102 fl oz) of distilled or deionized water. Add entire contents of gold chloride bottle. Stir thoroughly with clean plastic or glass rod.
  - (2) In a separate glass container, heat approximately 1/5 gallon (26 fl oz) of deionized or distilled water to 125 F minimum. Add some water to container of ammonium thiocyanate until container is nearly full. Stir with clean glass or plastic rod until all the powder is dissolved.

**BAC5875**

Page 22

9.4 IMAGE INTENSIFIER SOLUTION (Continued)

- (3) Without cleaning rod used for mixing ammonium thiocyanate solution mix, gold chloride solution until it changes from red to milky white. A few additional drops of ammonium thiocyanate solution may be needed to make the gold chloride turn milky white. The gold chloride solution will turn from milky white to clear when sufficient drops of ammonium thiocyanate has been added to gold chloride solution.
- (4) Slowly add remaining ammonium thiocyanate solution to the gold chloride while stirring. Stop adding if solution turns red, and stir until solution clears. Completely blend the two solutions.
- (5) Add water to bring total volume to 1 gallon nominal.

9.5 METALPHOTO WATER SOLUBLE BACKGROUND DYE (Section 5.1.5.f)

Dissolve 1 package of dye in approximately 1 quart of deionized or distilled water that has been preheated to nearly boiling. Stir until all dye is in solution. Add balance of water to make 1 gallon nominal. See [Table IV](#) for appropriate solution temperature and pH.

**TABLE IV - PROPER OPERATING TEMPERATURE AND PH FOR METALPHOTO WATER SOLUBLE BACKGROUND DYES**

PART NUMBER	DYE COLOR	OPERATING TEMP (F)	PH
7320	gold	65 to 75	5.0 ± 0.2
7330	sunfast gold	140 to 160	4.5 ± 0.2
7340	rapid gold	65 to 75	6.0 ± 0.2
7350	copper	65 to 75	4.5 ± 0.2
7360	green	65 to 75	6.0 ± 0.2
7370	blue	65 to 75	5.0 ± 0.2
7410	rapid blue	65 to 75	4.5 ± 0.2
7380	red	100 to 110	5.0 ± 0.2
7390	brilliant red	140 to 160	5.0 ± 0.2
7415	bronze	65 to 75	5.0 ± 0.2

10 QUALITY CONTROL

- a. Assure that the requirements of this specification are met by monitoring the process and examining the end items in accordance with established quality assurance provisions.
- b. Exposure time must be monitored to ensure production of legible markers and appliques.
- c. Compressed air must be tested with sufficient sampling and frequency to assure compliance with the requirement in [Section 6](#).

BAC5875

Page 23

**11 REQUIREMENTS**

- a. All markers and appliques must meet the requirements of the Engineering Drawing and must be clearly legible. When inspected without magnification, lettering must be sharp and without fuzziness.
- b. Slight color overprint is acceptable, provided that image is still readable. Slight variations in color intensity or shade may occur from part to part and are not cause for rejection. Identification characters must be of a san-serif font (for example, Arial, Helvetica, and et cetera) with Arabic numeral and have height of at least 3/32 inch (0.094 inch). Nomenclature characters must have height of at least 3/16 inch (0.188 inch).
- c. Adhesive liners must be in place and must be removable without damage to the label.
- d. Photosensitive sheets must be processed in a dark room with suitable and Safe Light source.
- e. Types II, III, VII, and VIII photosensitive anodized aluminum markers must be anodized in accordance with [MIL-A-8625](#), Type II, Type IIB, or Type III (Class 2 for these three types).
- f. Types II, III, VII, and VIII photosensitive anodized aluminum markers must be used when permanent barcode labels are required in accordance with applicable Engineering Drawing(s) which specify barcoding in accordance with [ATA SPEC 2000](#).
- g. Colors and appearance must be in accordance with D6-36000, photo-sensitive anodized appliques and markers.

**12 TEST METHODS**

Not applicable to this specification.

**13 QUALIFICATION**

Not applicable to this specification.

**BAC5875**

Page 24

<p><b>PROCESS SPECIFICATION DEPARTURE</b></p> <p>Implementation of this departure is:</p> <p><input checked="" type="checkbox"/> <b>OPTIONAL</b> - May be implemented at discretion of affected organization.</p> <p><input type="checkbox"/> <b>MANDATORY</b> - Must be implemented as noted below.</p>	<p><u>Originator:</u> D. T. Lovell</p> <p><u>Supervisor:</u> J. K. Bennett</p> <p><u>Manufacturer:</u> L. E. Pollack</p> <p><u>Quality:</u> L. E. Pollack</p> <p><u>Material:</u> L. E. Pollack</p> <p><u>Engineering:</u> S. E. Arthur</p>	<p>PSD NUMBER <b>6-16</b></p> <p>Page 1 of 1</p>	<p>PROCESS SPEC NO. <b>BAC5875</b></p>
			<p>PROCESS SPEC TITLE <b>FABRICATION OF ALUMINUM MARKERS AND ALUMINUM AND PLASTIC APPLIQUES</b></p>
<p>REASON: Change the storage requirement for completed markers with adhesive.</p>		<p>RELEASE DATE <b>11-OCT-2013</b></p>	
<p>SUBCONTRACTOR(S) AFFECTED ALL</p>	<p>ON MODELS ALL COMMERCIAL AIRPLANES AND DERIVATIVES THEREOF</p>	<p>MFG DEPTS OF DIV BELOW AFFECTED ALL BCA AND SUPPORTING</p>	

This PSD expires 12/31/2015

8

**MANUFACTURING CONTROL**

Revise Section 8.6 to read as follows:

8.6

PACKAGING AND STORAGE

Package and store to prevent wrinkling, tearing or other damage. Package in individual plastic bags, or interleaf with bond or suitable inert material when packaging multiple parts in a single plastic bag (markers with adhesive and therefore include backing paper do not require to be interleaved with separate material). When necessary, insert cardboard sheets for stiffening prior to placing in plastic bags. Store completed markers with adhesive at a temperature of 40 to 90 F for a maximum of 24 months from date of manufacture of the completed marker. Markers which are not installed on the aircraft after the storage period expires shall be scrapped. Completed markers without adhesive may be stored indefinitely.

**EXCEPTION:** Completed markers with adhesive that are undated or whose date of manufacturing is beyond 24 months may temporarily be used until the end of 2015. Beginning on January 1, 2016, the above requirement applies.

<b>PROCESS SPECIFICATION DEPARTURE</b> Implementation of this departure is: <input checked="" type="checkbox"/> OPTIONAL - May be implemented at discretion of affected organization. <input type="checkbox"/> MANDATORY - Must be implemented as noted below.	Originator: J. Nofire Supervisor: K. Groeneweg Manufacturer: M. Seaver Quality: R. Engels Materiel: A. Patton Engineering: K. Groeneweg	PSD NUMBER <b>9-9</b> Page 1 of 4	PROCESS SPEC NO. <b>BAC5875</b>
	PROCESS SPEC TITLE <b>FAB. OF ALUMINUM FOR MARKERS, INSTRUMENT PANELS, DRAWER FRONT PANELS, AND FAB. OF METAL AND PLASTIC APPLIQUES</b>		RELEASE DATE <b>10-JAN-2007</b>
REASON: To add a laser printer and laser markable material. S-8908			
SUBCONTRACTOR(S) AFFECTED ALL	ON MODELS FL 1 IDS-WICHITA	MFG DEPTS OF DIV BELOW AFFECTED IDS-WICHITA	

**FL 1** Follow this hyperlink ([IDS-Wichita](#)) to determine the applicable models for this PSD.

**2 CLASSIFICATION**

2.1 TYPES

Revise the following type:

Type II - Aluminum Foil Marker - manufactured from adhesive backed commercial anodized aluminum foil. Meets [MIL-DTL-15024](#), Type G or Type L.

Type III - Aluminum Applique - manufactured from anodized aluminum. Meets [MIL-DTL-15024](#), Type H or Type L.

**5 MATERIALS CONTROL**

5.3 MARKER MATERIALS

Add the following new Sections:

5.3.X 102300-1 SATIN 5 MIL ALUMINUM PERMANENT

Laser sensitive aluminum satin finished foil for black on silver background, manufactured by Rippedsheets.com, Seattle, WA. Product characteristics:

- a. One side laser markable
- b. Produces black images on a silver background
- c. Marked using an Epilog Helix CO2 laser system
- d. Finish is satin (semigloss)

<b>PROCESS SPECIFICATION DEPARTMENT</b>	<b>PROCESS SPEC TITLE</b>	<b>PSD NUMBER</b>	<b>PROCESS SPEC NO.</b>
	<b>FAB. OF ALUMINUM FOR MARKERS, INSTRUMENT PANELS, DRAWER FRONT PANELS, AND FAB. OF METAL AND PLASTIC APPLIQUES</b>	<b>9-9</b> PAGE 2 of 4	<b>BAC5875</b>

5.3.Y JEAN13A-( ) \_\_C

Anodized 0.005 inch thick aluminum foil for silver on black colored background for Laser printing. Manufactured by JEA Enterprise, LLC, Middlebury, CT. Product characteristics:

- a. One side laser markable
- b. Produces silver images on a black background
- c. Marked using an Epilog Helix CO2 laser system
- d. Finish is flat black in accordance with [FED-STD-595](#), Color No. 37038
- e. The standard sizes of the labels available are shown in Table A.

**TABLE A - STANDARD SIZES FOR JEAN13A-( ) \_\_C LABELS**

Part Number	Length (inches)	Width (inches)
JEAN13A-A__C	3.00	2.25
JEAN13A-B__C	2.00	2.00
JEAN13A-C__C	2.00	1.12
JEAN13A-D__C	1.50	1.25
JEAN13A-E__C	2.50	0.50
JEAN13A-F__C	2.50	1.00
JEAN13A-G__C	3.50	1.12
JEAN13A-H__C	4.50	3.00
JEAN13A-J__C	4.00	1.25
JEAN13A-K__C	1.50	1.00
JEAN13A-L__C	1.50	0.50

5.3.Z JEAN13A-( ) \_\_A

Anodized 0.020 inch thick aluminum plates for silver on black colored background for Laser printing. Manufactured by JEA Enterprise, LLC, Middlebury, CT. Product characteristics:

- a. Both sides laser markable
- b. Produces silver image on a black background
- c. Marked using an Epilog Helix CO2 laser system
- d. Finish is flat black in accordance with [FED-STD-595](#), Color No. 37038
- e. The standard sizes of the labels available are shown in Table B.

**TABLE B - STANDARD SIZES FOR JEAN13A-( ) \_\_A**

Part Number	Length (inches)	Width (inches)
JEAN13A-A__A	3.00	2.25
JEAN13A-B__A	2.00	2.00

<b>PROCESS SPECIFICATION DEPARTMENT</b>	PROCESS SPEC TITLE	PSD NUMBER	PROCESS SPEC NO.
	FAB. OF ALUMINUM FOR MARKERS, INSTRUMENT PANELS, DRAWER FRONT PANELS, AND FAB. OF METAL AND PLASTIC APPLIQUES	9-9 PAGE 3 of 4	BAC5875

5.3.Z JEAN13A-( )\_\_A (Continued)

**TABLE B - STANDARD SIZES FOR JEAN13A-( )\_\_A (Continued)**

Part Number	Length (inches)	Width (inches)
JEAN13A-C__A	2.00	1.12
JEAN13A-D__A	1.50	1.25
JEAN13A-E__A	2.50	0.50
JEAN13A-F__A	2.50	1.00
JEAN13A-G__A	3.50	1.12
JEAN13A-H__A	4.50	3.00
JEAN13A-J__A	4.00	1.25
JEAN13A-K__A	1.50	1.00
JEAN13A-L__A	1.50	0.50

**8 MANUFACTURING CONTROL**

8.1 GENERAL NOTES

Revise Section 8.1a. as follows:

- a. Materials used for producing Type II markers and Type II appliques shall consist of aluminum sheet or plates which have been anodized.

Add the following new Sections:

8.X TYPE II ALUMINUM FOIL MARKERS (LASER GENERATED)

- a. Unless otherwise specified, make Type II markers from laser markable aluminum stock (Sections 5.3.X and 5.3.Y).
- b. Color requirements of Engineering drawing(s) that apply to Type II markers shall be met.
- c. Mark using Epilog Helix laser system (Epilog Laser, Golden CO). Adjust Epilog Helix laser settings to requirements of Table C. Power and speed settings should be adjusted within the specified limits to optimize text clarity and appearance.

**TABLE C - LASER MARKER SETTINGS**

Material	Speed (Percent)	Power (Watts)
102300-1 SATIN 5 MIL ALUMINUM PERMANENT	30 - 60	5 - 15
JEAN13A-( )__C	20 - 50	11 - 25

- d. Print foil marker as specified on the Engineering drawing.
- e. Solvent wipe marker in accordance with [BAC5750](#) using solvent approved for Final Cleaning, Prepaint.

<b>PROCESS SPECIFICATION DEPARTMENT</b>	PROCESS SPEC TITLE <b>FAB. OF ALUMINUM FOR MARKERS, INSTRUMENT PANELS, DRAWER FRONT PANELS, AND FAB. OF METAL AND PLASTIC APPLIQUES</b>	PSD NUMBER <b>9-9</b> PAGE 4 of 4	PROCESS SPEC NO. <b>BAC5875</b>
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8.X      TYPE II ALUMINUM FOIL MARKERS (LASER GENERATED) (Continued)

- f. Overcoat marker in accordance with [BAC5307](#), using overcoat resistant to abrasion, fuel, and [MIL-PRF-5606](#). Finish (gloss, satin or matte) of overcoated marker shall meet the Engineering requirements.

8.Y      TYPE III ALUMINUM APPLIQUES (LASER GENERATED)

- a. Unless otherwise specified, make Type III markers from laser markable aluminum stock (Sections 5.3.Z).
- b. Color requirements of Engineering drawing(s) that apply to Type III markers shall be met.
- c. Adjust Epilog Helix laser settings to requirements of Table D. Power and speed settings should be adjusted within the specified limits to optimize text clarity and appearance.

**TABLE D - LASER MARKER SETTINGS**

Material	Speed (Percent)	Power (Watts)
JEAN13A-( )_A	20 - 50	11 - 25

- d. Print marker as specified on the Engineering drawing.
- e. Solvent wipe marker in accordance with [BAC5750](#) using solvent approved for Final Cleaning, Prepaint.
- f. Overcoat marker in accordance with [BAC5307](#), using overcoat resistant to abrasion, fuel, and [MIL-PRF-5606](#). Finish (gloss, Satin or Matte) of overcoated marker shall meet the Engineering requirements.