

Air Methods Process Specification

AMPS 020-0134

Identification and Marking of Commercial and Military Hardware

Revision: G

Identification and Marking of Commercial and Military Hardware AMPS 020-0134 Revision G



REVISION HISTORY

The latest revision of this document is indicated by the highest revision letter as listed below in the Revision History. All pages are revised when any page is changed so that all pages maintain the same revision level. A "List of Effective Pages" is therefore not included. Changes to the current revision shall be indicated within the document by change bars in the right margin.

FAA Approved Document – Revisions require FAA approval prior to implementation.

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ACRONYMS

AMPS	Air Methods Process Specification
CAGE	Commercial and Government Entity Code
FAA	Federal Aviation Administration
FOD	Face-of-Drawing
HRI	Human Readable Information
IUID	Item Unique Identification

MRI	Machine Readable Information
NSN	National Stock Number
ODA	Organization Designation Authorization
PMA	Parts Manufacturer Approval
UID	Unique Identification Marking



DEFINITIONS

Acquisition Instrument Identification Number	A government contract or purchase order number.
Commercial and Government Entity (CAGE) Code	Air Method's five-character code which identifies the entity as a commercial or governmental supplier develops items or provides services and supplies to the government.
Commercial Products	Products developed, modified, or sold by Air Methods which are not procured through or by US Military agencies.
Configuration Item	The part, assembly, or installation requiring configuration management and control.
Face-of-Drawing (FOD)	The geometry, notes, or text on the front surface of an engineering drawing.
Machine Readable Information (MRI), a.k.a. MIL STD-130	Identification marking of U.S. Military Property, is a specification commonly used for giving directions on how to mark items sold to the Department of Defense.
Military Products	Products developed, modified, or sold by Air Methods which are procured through or by US Military Agencies.
National Stock Number (NSN)	A 13-digit stock number, consisting of the 4-digit Federal Supply Classification code and the 9-digit National Item Identification Number.
Organization Designation Authorization (ODA)	A delegation from the FAA that allows Air Methods to act on behalf of the FAA on a limited basis.
Part Number	The identification number assigned by Air Methods Engineering to a configuration item at the time design activity commences.
Parts Manufacture Approval (PMA)	An approval granted by the United States Federal Aviation Administration (FAA) to a manufacturer of aircraft parts.
Purchase Order	The unique identification number assigned by Air Methods Material to a configuration item at the time procurement commences.
Serial Number	The unique identification number assigned by Air Methods Production Control to the configuration item at the time fabrication or modification commences.
Unique Identification Marking (UID) & Item Unique Identification (IUID)	A part of the compliance process mandated by the United States Department of Defense. It is a permanent marking method used to give equipment a unique ID.



1 PURPOSE

This Air Methods Process Specification (AMPS) details the identification and marking processes and procedures performed by Air Methods and its agents or subcontractors.

2 SCOPE

The marking methods and procedures applied herein shall be applicable to all detail parts, subassemblies, and assemblies delivered by Air Methods as a product or service to other commercial or military agencies.

This document is intended to correspond with the requirements of MIL-STD-130 at the latest revision, Identification and Marking of US Military Property, and 14 CFR Part 21 and 45.15.

In the event that a conflict exists between what is on the released drawing and the methods outlined within this specification, the drawing shall be considered the prevailing document.

This document is arranged in two sections:

- 1) Product related to civil aircraft (commercial) subject to 14 CFR.
- 2) Product related to Military items.

3 ENGINEERING DATA REQUIREMENTS

3.1 General Part Marking

- 3.1.1 The identification marking requirement shall be indicated in the general notes section of all detail part and assembly prints.
- 3.1.2 Identification marking may be placed on a suitable surface that has a sufficient amount of area for the intended marking. The selected surface shall not be one that rubs or interferes with another surface such that the marking may become degraded. The surface area to be marked, shall not be one that (once marked) could potentially impact the overall form, fit, function, or cosmetic appearance of the part or assembly.
- 3.1.3 The text height used for marking shall be no smaller than 0.060 inches.
- 3.1.4 Whenever possible, labeling of parts shall not be applied in a location that is visible after installation.
- 3.1.5 The primary choice of method to be used shall be permanent ink stamp and shall be in contrasting color to that of the surface.
- 3.1.6 The method of marking shall be determined by the designer and/or design engineer to be one of the following:



- a) <u>General Identification</u> General part identifications shall be addressed by using the following note callout:
 - X. IDENTIFY PART PER AMPS 020-0134, METHOD X
- b) <u>Specific Location</u> Markings that are to be located in a specific area on the part, shall be identified on the field of the drawing by using a leader, a flag note symbol and note number.



The corresponding note associated with this callout, shall be located in the general note section and shall read:



IDENTIFY PART PER AMPS 020-0134, METHOD X, IN APPROXIMATE LOCATION INDICATED

- c) <u>Bag and Tag</u> Those components which are determined to be unsuitable for conventional marking shall be identified by using the bag and tag method (see Method K, Section 5). The following note shall be used and located in the general note section of the drawing:
 - X. IDENTIFY PART PER AMPS 020-0134, METHOD K

Note: Only under those circumstances designated above shall either the location-critical or bag and tag identification be accepted.

<u>Note</u>: If the article does not have at minimum a 1" X 3/4" area for ink stamping, then Method K is acceptable.

Note: Placards and non-metallic articles generally should not have physical labels applied. Examples of such materials are plastics (i.e., UHMW, Nylon, Delrin, Teflon/PTFE, ABS), rubber, NVIS filters, wire and glass.



4 APPLICATION METHODS

All lettering and identification shall be placed on clean, oil-free surfaces using a method indicated in Table 1 below:

Table 1: Application Method

Method	Description	
Α	The parts shall be stamped or legibly lettered using ink of a contrasting color	
	(including permanent pen)	
В	Paper label marking	
С	Laser etch with top coat sealant ¹ after etching	
D	Vibrate etching with top coat sealant ¹ after etching	
E	Leather tag (sewn into seam of parts)	
F	Air Methods label (TESA tape or similar) that has been laser etched	
G	Paper label sealed under resin on composite parts	
Н	Embroidered on the fabric	
I	Letter (I) is not used.	
J	Metal tag (riveted or adhered)	
K	Bag/container and tag	
L	Heat Shrink Tube with marking	
М	Fabric or Material (such as cloth, leather, vinyl) tag, sewn or bonded to the part.	
	Marking on tag may be laser, ink, embroidered.	

Note: For drawings released prior to this revision that <u>do not</u> call out location for marking, parts except for upholstery items will be marked using Method A with location at the discretion of Quality Control personnel, OR Method K if there is not a sufficient sized area, i.e., 1" X 3/4", or material type is not conducive to marking (see Section 3.1.6c). Upholstery items are to be part marked using Method M. The figure below indicates the minimum size for part marking.

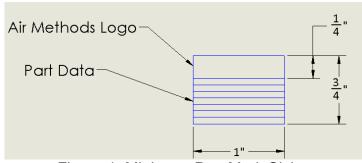


Figure 1: Minimum Part Mark Sizing

<u>Note</u>: For drawings released prior to this revision that call out a Type, the type shall be ignored and Quality Control personnel are responsible for determining if it is an FAA-PMA part.

¹ When marking penetrates to metal, apply any acceptable standard aviation top coat, unless otherwise specified on drawing.



5 PRODUCT RELATED TO CIVIL AIRCRAFT (COMMERCIAL) SUBJECT TO TITLE 14 CFR

5.1 Parts Manufacturer Approval (PMA) Articles

The following process applies to the marking of all articles subject to 14 CFR Part 21. The engineering data shall contain the marking requirements as outlined in Section 3.

Part marking consists of Traceability and PMA markings, as defined below, these markings can be separate or on mark but will be found in close proximity to each other on the part.

5.1.1 Traceability Markings

Each part will be marked with the following information at the location specified by the engineering drawing as applicable, utilizing the marking method specified:

- a) Air Methods name, trademark, or symbol.
- b) Part Number.
- c) Part Revision.
- d) Lot Number.
- e) Serial Number if Applicable.

<u>Note:</u> Critical parts – A part for which a replacement time, inspection interval, or related procedure is specified in the Airworthiness Limitations section of a manufacturer's maintenance manual or Instructions for Continued Airworthiness. Such parts must be permanently and legibly marked with a serial number (or equivalent) unique to that part as shown in Figure 2 below.

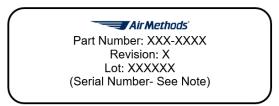


Figure 2: Traceability Part Mark Example

5.1.2 FAA PMA Markings

Each article that is not consumed by a next higher level assembly must also include the following information shown in Figure 3 below:

FAA-PMA

Figure 3: FAA-PMA Part Mark

4 ECCN / EAR 9E991



Note: If the article is being manufactured under an open FAA (ODA, STC, PMA, etc.) project, the article is not to be marked "FAA-PMA".

5.1.3 General Requirements

a) Figure 4 shows acceptable markings for Air Methods name, trademark, or symbol:



Figure 4: Trademark Part Mark Example

- b) Top-Level Assemblies or Parts Installed at Aircraft Level Marking is required if marked parts are to be finished (paint, etc.). The markings must remain visible. Do not paint or permanently cover Traceability or PMA markings.
- c) Markings may be scaled for parts, but text height must be at least .060 inches and easily located.
- d) Marking shall be applied adequately to contrast with the color/texture of the part for ease of identification.

5.1.4 FAA-PMA Part Marking Examples

Figure 5 outlines examples of FAA-PMA part markings:



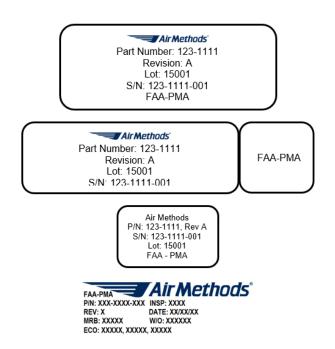


Figure 5: FAA-PMA Park Mark Examples

5.2 Civil Aircraft Non-PMA Articles

5.2.1 Traceability Markings

Each part will be marked as shown in Figure 6 with the following information at the location specified by the engineering drawing as applicable. If the article is not suitable for ink stamping due to size, type, or material constraints stated in Section 3.1.6c, then Method K is acceptable.

- a) Air Methods name, trademark, or symbol.
- b) Part Number.
- c) Part Revision.
- d) Lot Number.
- e) Serial Number if Applicable.

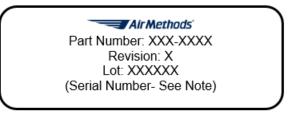


Figure 6: Traceability Part Mark Example

6

ECCN / EAR 9E991



6 PRODUCT RELATED TO MILITARY ITEMS

6.1 Commercial Item Identification for Military Products

- 6.1.1 Commercial items procured by Air Methods for use in its military products are not reidentified unless part number is not permanently affixed.
- 6.1.2 On assemblies, a permanent identification plate must be affixed with the manufacturer's name, part number, and CAGE code or NSN number (if applicable) prior to delivery if the commercial product is not delivered with one in place.

6.2 Military Products

- 6.2.1 All Air Methods parts (Manufactured or Modified) shall have a tag or label attached with the following information (as applicable). For articles that do not need data tags, Method K is acceptable.
 - a) The part number.
 - b) The work order under which the part was built.
 - c) Any NCR numbers that affect next level of installation or assembly.

Note: Part must be reworked and remarked if NCR occurs after original marking.

- d) Bar Coded Serial Number (when applicable).
- e) Bar Coded Part Number (when applicable) UID (unique identification number) or part number Assigned by Air Methods Engineering. As standard operating procedure, only production parts that have serialized (riveted or adhered) data tags will also get an item unique identification (IUID) tag. In some cases, the contract may specify if IUID tagging is required. In this case, IUID tagging requirements will be communicated on the specific work orders that repair, produce or ship these items. IUID tag placement will be adjacent to the existing data tag. In the case where no data tag is present, locate in an area not subject to sliding or bearing and doesn't affect the parts cosmetic appearance. Additionally, the tag shall be readily visible without disassembly of parts or components.
- f) Acquisition Instrument Identification Number (when applicable).
- g) Nomenclature (Item Name and Type Designation) (when space allows).
- h) Special Characteristics.
- i) Manufacturers CAGE Number (Air Methods CAGE number if manufactured by Air Methods).
- j) Design Activity CAGE Number (Air Methods CAGE number if designed by Air



Methods).

- k) National Stock Number (when applicable).
- I) Government Ownership Designation (when applicable).

6.2.2 Traceability Markings

Each IUID tag will be laser etched and be of two "parts"; Human Readable Information (HRI), text on the left side and Machine Readable Information (MRI), square matrix on the right.

The HRI portion will contain (but not be limited to) the following information:

- a) Cage Code.
- b) Part Number.
- c) Serial Number*.

The MRI will only contain:

- a) Cage Code.
- b) Part Number.
- c) Serial Number*.

Note: If a part that has a serialized data tag is required to have IUID marking as well, the serial number from the data tag MUST be recorded on the IUID tag.



Figure 7: IUID Standard Part Mark Example

^{*} Serial Number is defined as a standard, assigned AM Document Control generated (and documented) serial number. In the case of contractually required IUID marking there may not be an associated serial number for that specific part number so the production work order number with an additional dash number added to differentiate between multiple parts made from the same work order will be used as the "serial number" shown in Figure 7 and Figure 8.







Figure 8: IUID Multiple Parts Part Mark Example

7 APPLICABLE DOCUMENTS

Ref#	Document Number	Document Title
1	MIL-STD-130	Identification Marking of US Military Property
2	Title 14 CFR	Code of Federal Regulations