



NATIONAL AEROSPACE STANDARD

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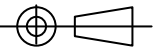


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FORM 09-01	THIRD ANGLE PROJECTION 	CUSTODIAN ENGINEERING MANAGEMENT COMMITTEE	REVISION 1
	PROCUREMENT SPECIFICATION NONE	TITLE COMPONENT LEAD CUTTING AND FORMING EQUIPMENT ELECTRONIC PRINTED CIRCUIT BOARD	CLASSIFICATION SPECIFICATION NAS975 SHEET 1 OF 16



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1.0 SCOPE

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- 1.1 **Purpose:** This specification provides a standard for the manufacture, performance, inspection, and procurement of equipment used to cut and form electronic component leads. This standard lists minimum requirements and is not to limit design advances.
- 1.2 **Classification:** This equipment shall be a single complete unit containing all mechanisms to perform the intended use. It shall be classified as a bench or floor-mounted Electronic Component Lead Preparing Machine, with capabilities for automatic or hand feeding.
- 1.3 **Intended Use:** The equipment described by this specification is intended for use in the aerospace manufacturing industry to cut and form the leads of axial lead type electronic components for subsequent insertion into printed circuit boards. Components processed by the equipment herein described shall be those requiring a 90° bend in one or both leads. Deviations in finished component lead configuration can be processed only if optional equipment is requested, and then certain limitations apply.

2.0 APPLICABLE SPECIFICATIONS, CODES AND STANDARDS

The latest revision of the following specifications, codes and standards, are included as a portion of this specification. Detail requirements listed in this specification shall override any contradictory portions of the following specifications, codes and standards.

- 2.1 The National Machine Tool Builders Association's (NMTBA) Electrical Standards
- 2.2 The Joint Industries Conference (JIC) Hydraulic and Pneumatic Standards for Industrial Equipment.
- 2.3 The American Society of Mechanical Engineers' (ASME) Boiler and Pressure Vessel Code, Section VIII.

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CUSTODIAN: Manufacturing Equipment Committee

PROCUREMENT SPECIFICATION	TITLE	CLASSIFICATION
	COMPONENT LEAD CUTTING AND FORMING EQUIPMENT ELECTRONIC PRINTED CIRCUIT BOARD	Specification

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- 2.4 Applicable State and local electrical and safety codes that are more exacting shall apply.

3.0 REQUIREMENTS

The manufacturer's contractual obligation for the design and function of the machine shall be specified in this section.

- 3.1 Design The dimensions and capacities for the respective types and sizes shall be as shown in Section 3.2. The manufacturer has the choice of configuration and the functional operation of the machine, except where specifically stated in this specification.

- 3.2 Types, Size, Class

- 3.2.1 Types:

A combination of letters shall designate the six (6) possible types. The first letter(s) shall denote the type of feed, the second letter(s) shall denote the type of mounting. (Example - Type H-B- Hopper Feed, Bench Mounted)

H	-	Hopper Feed - (Bulk Components)
T	-	Taped Reel Feed
H/T	-	Combination Hopper and Taped Reel Feed
MF	-	Manual Feed
B	-	Bench Mounted
F	-	Floor Mounted

- 3.2.1.1 All types shall be equipped for hand feeding as specified in Section 3.3.5

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3.2.2

Size:

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One basic machine size shall accommodate all sizes of components and accomplish all variations of cutting and forming as listed in Tables I and II. All types shall be basically the same size; the only exception shall be the height.

Bench Mounted - 3 ft. X 4 ft. X 4 1/2 ft. high (Max)

Floor Mounted - 3 ft. X 4 ft. X 7 ft. high (Max)

3.2.2.1

Size of Work Piece (capacity) - See Tables I and II, Pages 4 and 5

3.2.3

Class: Precision

3.3

Machine Sub-Assemblies:

3.3.1

Operator Controls will include those necessary for all items listed in Sections 3.3.1.1 through 3.3.1.8 as well as any others required to operate the machine when performing specified functions, and shall be located convenient to the operator when he is in the normal and established operating position.

3.3.1.1

Cycle time of cut and form mechanism.

3.3.1.2

Rate of feed - reel.

3.3.1.3

Rate of feed - hopper.

3.3.1.4

Change from automatic to manual control.

3.3.1.5

When machine is being hand fed it will be set for manual control and will single cycle only. It shall be equipped with both foot and palm controls, either of which, at the option of the operator, activates the machine (both shall be interlocked with safety guard - Ref. Section 3.8.1)

3.3.1.6

On/off for automatic cycling.

3.3.1.7

Jog.

3.3.1.8

Emergency Stop.

3.3.2

Cut-Off and Forming Mechanism

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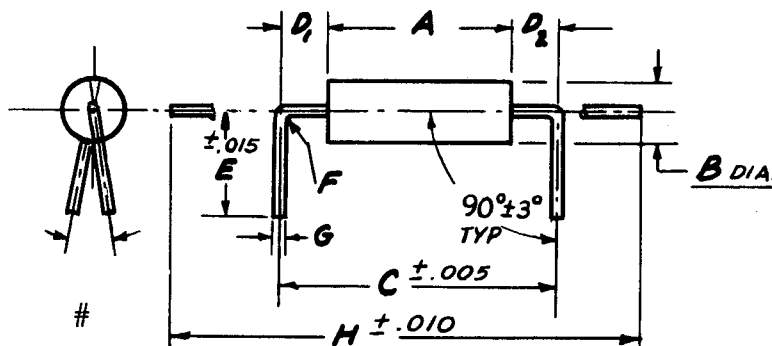
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TABLE I
CYLINDRICAL COMPONENTS
(REF. 3.2.2.1)



	MIN	MAX
A	.060	2.250
B	.030	.750
C	.230	2.300
D ₁	.085	.530
D ₂	.085	.530
E	.085	.560
F	1XG	3XG
G	.010	.050
H	.400	4.070

1. Equipment shall cut and form leads of resistors, diodes, capacitors, and also tantalum weld leads.
2. "H" Dim. applies when cutting off only
3. Angular misalignment of formed leads not to exceed 5°
4. Leads of component supplied to machine must be in true axial position within .125 inch of component centerline.

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