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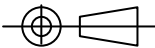
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	PROCUREMENT SPECIFICATION NONE		TITLE STANDARD FORMAT FOR NAS 900 SERIES EQUIPMENT SPECIFICATIONS	CLASSIFICATION STANDARD PRACTICE NAS983 SHEET 1 OF 21

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PREFACE

The purpose of the attached document is to provide a standard format to be used as a guide in the preparation of NAS 900 series equipment specifications. NAS 900 series specifications, in turn, provide guidelines for the preparation of procurement specifications.

Section Title and Number Arrangement

Major sections should be identified by a fully capitalized title and two-digit numbers; e.g., 1.0 SCOPE, 3.0 REQUIREMENTS, etc. Sub or sub-subsections should be identified with titles having initial capitals and be numbered with as many digits as are applicable; e.g., 3.3 Machine Sub-Assemblies, 3.3.1 Tool Holder Head Assemblies, etc. Major sections and main subsections should always, if at all practical, bear the same number in all specifications; i.e., 3.0 should always cover "Requirements", 3.4 "Construction", 3.5 "Electrical Equipment", etc. (If deviation from this practice is mandatory, an effort should be made to maintain the format sequence as far as possible.) Detail requirements under the various sections should appear as paragraphs numbered with as many digits as are needed.

Although the standard format is slanted toward chip producing machine tools, the majority of the areas covered by the format are applicable to all machines. Adapting the format to other than chip producing machines can usually be done with a minimum of deviation.

Paragraph Referencing Policy

The following referencing practices should be observed in the preparation of a specification.

1. In Section 2.0, "Applicable Specifications, Codes, and Standards", reference other paragraphs/sections of the specification to which a given code or standard is applicable.
2. In other sections of the specification do not cross-reference to Section 2.0.
3. In Section 6.1, "Customer's Options", reference other paragraphs/sections of the specification in which a particular option is mentioned.

③

LIST OF CURRENT SHEETS

NO.	REV.	NO.	REV.	NO.	REV.	NO.	REV.
1	3	7	1	13	1	19	2
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5	1	11	1	17	NEW		
6	1	12	1	18	NEW		

CUSTODIAN: MANUFACTURING COMMITTEE

PROCUREMENT
SPECIFICATION

NONE

TITLE

STANDARD FORMAT FOR NAS 900 SERIES
EQUIPMENT SPECIFICATIONSCLASSIFICATION
STANDARD PRACTICENAS 983
SHEET 1 OF 20

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4. In other sections of the specification do not cross-reference to Section 6.1, "Customer's Options".
5. Except as restricted by the foregoing, paragraph-to-paragraph referencing within the body of the specification is permissible.

NOTE: See NAS 380, "NAS Documents Preparation and Maintenance", for information on the preparation and maintenance of specifications for NAS publication.

1.0 SCOPE

1.1 Purpose

This specification provides a standard for the manufacture, performance, reliability, inspection, and procurement of (describe equipment for which specification is being prepared). This standard lists minimum requirements and is not to limit design advances.

1.2 Classification

The machine(s) shall be of the following type(s), size(s), and class(es).

1.2.1 Type

(For example:)

- I. Vertical
- II. Horizontal

1.2.2 Size

(For example:)

- A - Small
- B - Medium
- C - Large

1.2.3 Class

(For example:)

- I. High speed
- II. Low speed

1.3 Intended Use

The machine(s) described by this specification are intended for use within the aerospace manufacturing industry to provide (describe any preferred relationships, applications, or special applications for the machine).

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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 Joint Industrial Council (JIC) Electrical Standards (State whether for General Purpose Machine Tools, EGP.1.1967 or Mass Production Equipment, EMP.1.1967).
- 2.2 The Joint Industrial Council (JIC) Hydraulic and Pneumatic Standards for Industrial Equipment.
- 2.3 The Joint Industrial Council (JIC) Electronic Standards for Mass Production Equipment and General Purpose Machine Tools EL-1-71.
- 2.4 The American National Standards Institute (ANSI).
(Enumerate and give title of applicable standard.)
- 2.5 The American Society of Mechanical Engineers' (ASME) Boiler and Pressure Vessel Code, Section VIII.
- 2.6 National Electrical Code (NEC).
- 2.7 The Electronic Industries Association (EIA) Construction Standards, Numerical Machine Tool Control, No. RS-281 and SP-621 Tape Format.
- 2.8 National Aerospace Standard (NAS) 938, Machine Axis and Motion Nomenclature.
- 2.9 National Aerospace Standard 943, Interchangeable Perforated Tape Standards - Variable Block Format for Positioning and Straight Cut Numerically Controlled Equipment.
- 2.10 National Aerospace Standard 953, Numerical Control System (Reference Only).
- 2.11 National Aerospace Standard 955, Interchangeable Tape Standards - Variable Block Format, Contouring and Contouring/Positioning Numerically Controlled Equipment.
- 2.12 National Aerospace Standard 968, Interchangeable Digital Magnetic Tape Standard, Variable Block, Word Address Format, Contouring and Contouring/Positioning Equipment.

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- 2.13 National Aerospace Standard 969, Interchangeable Digital Magnetic Tape Cartridge for Numerically Controlled Machines.
- 2.14 National Aerospace Standard 972, Glossary of Manufacturing Equipment Terms.
- 2.15 National Aerospace Standard 979, Uniform Cutting Tests - NAS Series Metal Cutting Equipment Specifications.
- 2.16 National Aerospace Standard 985, Uniform Alignment Tests NAS 900 Series Equipment Specifications.
- 2.17 Illinois Institute of Technology Research Institute (IITRI) Standards for APT Programming Language.
- 2.18 Occupational Safety and Health Standards, Part 1910 of Chapter XVII of Title 29 of the Code of Federal Regulations. Ref: Occupational Safety and Health Act (OSHA) - 1970.
- 2.19 State and Local Safety and Electrical Codes.

(The above specifications, codes, and standards are listed as examples. Others may be added or these deleted as required.)

3.0 REQUIREMENTS

(Define the manufacturer's obligations for the design and function of the machine.)

3.1 Design

The manufacturer has the choice of configuration and the functional operation of the machine, except where specifically stated in this specification.

(If specific features are to be incorporated in the design or if a specific configuration is required, they are to be defined in sub-numbered paragraphs in this section.)

3.2 Type, Size, Class

(This information can usually be presented clearly and to best advantage in tabular form (Table I in the specification), especially if several types, sizes, and/or classes are involved. By so doing, all pertinent data relative to dimensions, capacities, movements, feeds, speeds, etc. will be readily available for easy reference.)

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3.3 Machine Sub-Assemblies3.3.1 Tool Holder Head Assemblies

Spindle head assemblies shall consist of spindle assembly (spindle and bearings), drive motor where applicable, and other necessary devices for providing variations in speed within the stipulated range, integral housing, and such saddle, slide and tilting mechanisms as necessary to satisfy the requirements of Table 1, Section 3.2.

(Additional detail requirements should be sub-numbered.)

3.3.2 Machine Controls

The machine shall be equipped with (--- numerical, tracer, manual or other controls at the customer's option. Specify the type of controls desired; e.g., if numerical controls ---) The machine shall be equipped with an AIA Class (III or IV) solid state, including integrated circuits (closed loop if applicable) numerical control system for controlling all movements specified in Paragraph 3.2 and shall be arranged for operation in manual, semi-automatic, and automatic modes.

3.3.2.1 (The Control System should be further defined in this and subsequent sub-paragraphs. If numerical, the control system should be defined using NAS 953 Numerical Control System Standards and/or NAS 943, NAS 955, NAS 968, depending on the type of control system.)

3.3.3 Operator's Controls

All operating control switches or levers shall be located convenient to the operator when he is in the normal and established operating positions.

(Add numbered sub-paragraphs as needed to define detail requirements.)

3.4 Construction

The machine shall be constructed to comply with the requirements of this specification.

3.4.1 (Features such as hardened, replaceable ways; protection for ways, lead screws, feed back racks or systems from chips, dirt, coolant, and mechanical damage; and other items of special or general nature may be included under "Construction" as sub-numbered paragraphs.)

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AIA **NAS** **Documents**
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3.5 Electrical Equipment

All electrical equipment and its installation shall conform to the latest revision of Joint Industrial Council Electrical Standards for General Purpose Machine Tools (or for mass production equipment if applicable), the National Electric Code, and State and Local Codes as specified by the customer.

3.5.1 Power supply shall be from one source, 460 volts, 3-phase, 60 Hertz A.C. with a maximum line voltage fluctuation of $\pm 10\%$ of rated voltage unless otherwise specified.

3.5.2 All inter-connecting wiring, conduit, and wireways shall be furnished by the manufacturer.

3.5.3 Controls using 115 volts shall be supplied by a transformer from the single power supply.

3.5.4 All motors shall be protected from contamination and foreign matter and be of ball bearing type. All motors shall be suitably cooled.

3.5.5 All motors shall provide ample power to drive their respective components. Under normal conditions no motor shall operate at overload.

3.5.6 If D.C. motors are used, the manufacturer shall include the equipment required to convert A.C. to D.C. (applicable when D.C. motors are permissible).

3.5.7 Electrical components shall be protected from damage due to power surges, transient power failures, etc.

3.5.8 Overload relays shall be supplied with all motors with an interlock provided to actuate the cycle stop in event of motor stoppage.

3.5.9 A manually operated fusible disconnect or circuit breaker shall be provided in accordance with Section E3 of JIC Electrical Standards.

3.5.10 All relays rated at less than 117 volts A.C. shall be of the sealed plug-in type.

(Add other sub-paragraphs as needed to cover further requirements.)

3.6 Hydraulic and Pneumatic Equipment

All hydraulic and/or pneumatic equipment and its installation shall conform to the latest Joint Industrial Council Standards, where they apply.

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