APOLLO G&N Specification
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PROCESS REQUIREMENTS

FOR

CONTROL AND INSPECTION OF

ROPE MEMORY ASSEMBLIES

Record of Revisions

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This specification consists of pages 1 to 5 inclusive.

APPROVALS	A. C. METZGER NASA/MSC	10/28/65	R C Hall 11/3/65 MIT/IL	W Cooper 2 Nov 65	15 Oct 1965 11 Oct 1965 RAY	

APOLLO
G & N SPECIFICATION
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PROCESS REQUIREMENTS

FOR

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ROPE MEMORY ASSEMBLIES

1. SCOPE

1.1 Scope. This document establishes the process requirements for control and inspection in the fabrication of rope memory assemblies (Dwg 2003053) to be used in the APOLLO Guidance Computer.

2. APPLICABLE DOCUMENTS

2.1 The following documents form a part of this specification to the extent specified herein.

DRAWINGS

NASA -

2003053	Fixed Memory Module Assembly
SCD 1006303	Insulating Compound, Electrical, Quick Drying

SPECIFICATIONS

NASA -

MD 1002071	Soldering, General
MD 1002214	Specification for preservation and Packaging of AGE Assemblies and Sub-Assemblies

3. REQUIREMENTS

3.1 Unless otherwise specified, a preproduction sample shall meet all the requirements of this specification.

3.2 Soldering. Soldering shall be in accordance with MD 1002071 except stripping of the leads shall be by abrasion and shall be limited to the use of fiberglass. Stripped leads to be soldered shall be clean, and 2 to 4 turns of bare wire plus 3/4 to 1 1/2 turns of insulated wire shall be securely wrapped. In addition, a stress release loop shall be formed per Figure 1.

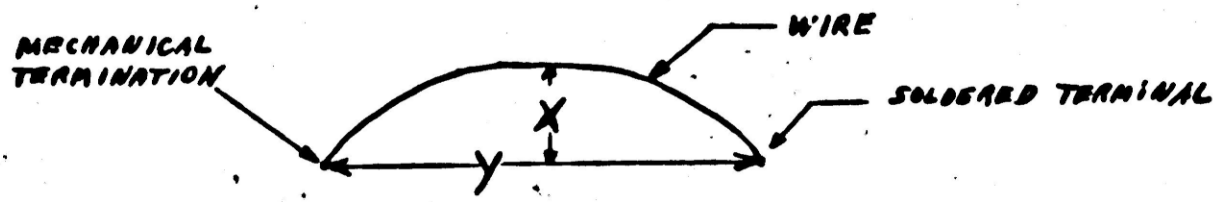

FIGURE 1
STRESS RELEASE LOOP - $\frac{X}{y} \geq \frac{1}{6}$

3.3 Wire Routing. The following requirements shall apply to wire routing of inhibit and sense wires.

3.3.1 Crossing Core Openings. As little slack as possible shall be maintained without the inhibit wires or sense wires crossing any core openings.

3.3.2 Total Wires. The maximum number of inhibit and sense wires, including incorrect wires, shall not exceed that number which would cause a mechanical interference thru the core openings i.e. blocking of the core opening which would prevent threading of any more wire thru the core.

3.3.3 Incorrect or Defective Wires. After threading, incorrect or defective wires shall not be removed. The cut or broken ends of incorrect or defective wires shall be coated with clear insulating compound per SCD 1006303.

3.3.4 Examination of Wire. After the threading of every sixteen (16) wires, the wires shall be examined for the following.

3.3.4.1 Insulation. Insulation shall be intact, except at the solder joints, when examined under 10X magnification. Nicks, cuts, or scratches which do not expose bare wire shall not be cause for rejection. The cut ends of incorrect or defective wires shall be insulated per par 3.3.3.

3.4 Electrical. The following electrical requirements shall apply.

3.4.1 Functional Electrical Tests. Functional electrical tests shall be performed at the completion of the following manufacturing operations:

A. Inhibit wiring
B. Sense wiring
C. Core holder potting
D. Final assembly
E. Final potting

3.4.2 Continuity. Continuity tests shall be performed at the completion of sense wiring and at the completion of core holder potting. Inhibit wire runs shall exhibit 1.5 to 4.5 ohms except for wire numbers 207, 211, 212, and 213 which shall exhibit 3 to 5.5 ohms, and sense wire runs 3.5 to 12 ohms when measured with an appropriate ohmeter or Robotester Model LA 30303 or equivalent.

3.4.3 Insulation Resistance. Insulation resistance tests shall be performed at the completion of sense wiring and at the completion of core holder potting. The insulation resistance between any one wire and all other wires shall be not less than 10 megohms at 50 or 100 volts when measured with a DITMCO 610 or Robotester or equivalent.

4. QUALITY ASSURANCE PROVISIONS

4.1 Visual Examination. Visual examination shall be performed on 100% of production on the soldering (par 3.2) and wire routing (par 3.3) requirements of this specification.

4.2 Examination Testing. Examination testing shall be conducted on 100 percent of production on the electrical requirements (par 3.4) of this specification.

PREPARATION FOR DELIVERY

5.1 Preservation & Packaging. The rope memory module assembly shall be preserved and packaged in accordance with ND 1002214.

6. NOTES

6.1 Intended Use. The rope memory assemblies (2003053) & (2003972) are intended for use in the APOLLO Guidance Computer.