**STANFORD UNIVERSITY**
W.W. HANSEN EXPERIMENTAL PHYSICS LABORATORY
GRAVITY PROBE B, RELATIVITY GYROSCOPE EXPERIMENT
STANFORD, CALIFORNIA 94305-4085

# FABRICATION OF GMA WIRING HARNESS

## GP-B SCIENCE MISSION PROCEDURE

21 September 1999

PREPARED _____ _____
D. Welsh, Test Engineer Date

APPROVED _____ _____
D. Bardas, Integration Manager Date

APPROVED _____ _____
D. Ross, Quality Assurance Date

APPROVED _____ _____
S. Buchman, Hardware Manager Date

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# 1 SCOPE

This procedure is used for fabrication of the GMA wiring harness

## 1.1 Acronyms

The following acronyms may be used in this document

- QA Quality Assurance

# 2. REFERENCES

## 2.1 Plans and Procedures

N/A

## 2.2 Drawings

GMA Harness 26202 Rev-
Gas Management Assembly 25110 Rev A

## 2.3 Specifications

LAC 3200

# 3 GENERAL REQUIREMENTS

**ONR representative and QA to be notified 24 hours prior to beginning this procedure**

## 3.1 Environmental Requirements

### 3.1.1 Cleanliness

A normal lab environment is appropriate for this assembly

### 3.1.2 Magnetic Contamination

N/A

### 3.1.3 Electrostatic Discharge Control

N/A

## 3.2 Personnel

### 3.2.1 Technician

The technician shall be Dan Welsh or an alternate that he shall designate. The technician has overall responsibility for the implementation of this procedure and shall sign off the completed procedure and relevant sections within it.

## 3.3 Safety

N/A

### 3.4 Quality Assurance

This assembly will be conducted on a formal basis to approved and released procedures. The QA program office shall be notified of the start of this procedure. A Quality Assurance Representative, designated by D. Ross shall be present during the procedure and shall review any discrepancies noted and approve their disposition. Upon completion of this procedure, the QA Program Engineer, D. Ross or her designate, will certify her concurrence that the effort was performed and accomplished in accordance with the prescribed instructions by signing and dating in the designated place(s) in this document. Discrepancies will be recorded in a D-log or as a DR per Quality Plan P0108.

### 3.5 Red-line Authority

Authority to red-line (make minor changes during execution ) this procedure is given solely to the technician or his designate and shall be approved by the QA Representative.

## 4 REQUIRED EQUIPMENT

### 4.1 Tools and Materials

The following tools and Materials will be available:

| # | Tools and Materials Required: | Part/Drawing # | Rev. | Qty Needed | Qty Issued | S/N or LCD |
|---|---|---|---|---|---|---|
| 1 | Connector 9S 311P409-1S-B12 | 207253-2 | N/C | 32 | | |
| 2 | contact socket | 205090-1 | | 61 | | |
| 3 | Backshell | S2610-9-DJ-SL | | 32 | | |
| 4 | wire , 24awg TSP | M7500A24SC2m23 | | A/R | | |
| 5 | wire , 24awg TP | M7500A24SC2m23 | | A/R | | |
| 6 | wire, 22awg TSP | M7500A22SC2m23 | | A/R | | |
| 7 | wire, 26awg TSP | M7500A26SC2m23 | | A/R | | |
| 8 | Connector 6s (Stanford Supplied) | MS311-10-65 | | 14 | | |
| 9 | Heat Shrink Tubing | AMS3593A | | A/R | | |
| 10 | Wire Marker | HT-TMS-CM-1/4-4H-9 | | A/R | | |
| 11 | Shield Terminator | MIL835192-8 | | 100 | | |
| 12 | Connector Bracket (Stanford Supplied) | 25120-102 | | 1 | | |
| 13 | Contact socket | 202071-1 | | 122 | | |
| 14 | Contact pin | 204370-8 | | 122 | | |
| 15 | Connector 62p 311P407-4S-B12 | 206502-4 | | 2 | | |
| 16 | Connector 62s 311P407-4S-B12 | 206503-4 | | 2 | | |
| 17 | Splice | NAS1387-3 | | A/R | | |
| 18 | wire connector | CTL20 | | 4 | | |
| 19 | wire connector | CTL22 | | 12 | | |

# 5 ASSEMBLY OF WIRE HARNESS

## 5.1 Wire Routing and cutting

The wire harness is to be routed per the pin outs on drawing 26202. The wire lengths are to be determined by using a full scale layout of the GMA top assembly drawing (25110) mounted on a board.

## 5.2 Install pins

Strip wires and crimp pins per LAC 3200

## 5.3 Inspect Crimps

Inspection to inspect crimps per LAC 3200 (Record table below)

## 5.4 Install Connectors and Backshells

Install connectors and backshells, If the flight backshell are not available Install NFI connector backshells, mark as NFI.

## 5.5 Test wire harness

Test the completed wire harness per note 9, dwg. 26202

## 5.6 QA Final Inspection

Q.A. INSPECT ASSEMBLY COMPLETE (Record table below)

**Connector Assembly Inspection Record**

| Connector ID | Crimp Completed | QA Crimp Inspection verify | QA Inspection of Complete Assembly |
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| Connector ID | Crimp Completed | QA Crimp Inspection verify | QA Inspection of Complete Assembly |
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| Temp Sensor SD | Crimp Completed | QA Crimp Inspection verify | QA Inspection of Complete Assembly |
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| Heat Strip | Crimp Completed | QA Crimp Inspection verify | QA Inspection of Complete Assembly |
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## 6 PROCEDURE COMPLETION

The results obtained in the performance of this procedure are acceptable:

Technician _____ Date _____

Discrepancies if any:

The information obtained under this assembly and test procedure is as represented and the documentation is complete and correct:

ITD _____ Date _____

Test procedure is as represented and the documentation is complete and correct:

QA Representative _____ Date _____

QA Program Engineer_____ Date _____

Copy discrepancies to D-Log and open Discrepancy Reports when required.

Hardware Manager _____ Date _____

## 7 DATA BASE ENTRY

The following data shall be entered into the GP-B Data Base:

a) Name, number and revision of this procedure

b) An electronic copy of this document

c) A copy of the “as-built” procedure with data and pictures, when completed.