SU/GP-B P0724 Rev-

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

REMOVAL OF POPPET GUIDES FROM FLIGHT GMA SOLENOID VALVES

GPB ENGINEERING PROCEDURE

3 August, 2001

PREPARED	_____	_____
	R. Stephenson, GMA Engineer	Date
APPROVED	_____	_____
	C. Gray, GMA REE	Date
APPROVED	_____	_____
	D. Ross, Quality Assurance	Date
APPROVED	_____	_____
	R. Brumley, Hardware Manager	Date

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1. SCOPE

This procedure describes the removal of the poppet guides (bottom caps) from the flight GMA solenoid valves, spares, and regulators prior to rework. All parts involved will be kept in separate kits for matched reassembly later.

2. TEST INFORMATION

- Proper care should be taken in handling components, and their cleanliness must be preserved.
- Temperature: Room temperature
- Humidity: not critical

2.1 Cleanliness

2.1.1 Normal lab environment when components are double bagged.

2.1.2 Class 10 clean room, or a clean hood in class 1000 clean room when valves are open to atmosphere.

2.2 ESD precautions

None required.

ONR representative, and QA to be notified prior to beginning this procedure

2.3 Personnel, QA, and Documentation

Personnel Integration and Test Director

The Integration and Test Director (ITD) shall be Rick Stephenson or an alternate that he shall designate. The ITD has overall responsibility for the implementation of this procedure and shall sign off the completed procedure and relevant sections within it. The GMA REE shall also sign off the completed "As-Built" procedure.

Integration Engineers and other personnel. All engineers and technicians participating in this procedure shall work under the direction of the ITD who shall determine personnel that are qualified to participate in this procedure. Participant in this procedure is to be R. Stephenson.

The test shall 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 (if deemed necessary) and shall review any discrepancies noted and approve their disposition. Upon completion of this procedure, the QA Manager, D. Ross or her designate, shall certify their 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. If a re-test of any or all of the hardware is necessary, the ITD will determine the appropriate changes in the procedure, with the QA Manager's approval.

2.4 Red-line Authority

Authority to red-line (make minor changes during execution) this procedure is given solely to the ITD or his designate, or the GMA Manager, and shall be approved by QA. Additionally, approval by the Hardware Manager shall be required, if in the judgment of the ITD or QA Representative, experiment functionality may be affected.

3.┌ DOCUMENTS AND EQUIPMENT

3.1 Applicable Documents

Document number	Rev	Description
25110	C	GMA Assembly
26204	B	Poppet Guide
26211-101	B	Solenoid Valve Assembly
P0578	AB	Reassembly of Gas Flow Hardware into Flight Gma

3.2 Test Equipment

Equipment	Model and Serial Number	Calibration
Solenoid Control Box		P0621
GMA Rotating Fixture		
Offset crucifix head screwdriver		
Serialized Plastic boxes		

4 REMOVAL OF POPPET GUIDES

Started on: _____

4.1 Place the GMA in an appropriate spot in the clean room and install it on the rotating fixture.

4.2 Turn the GMA so that the plate is parallel to the floor. This will facilitate dissassembly.

4.3 Collect the plastic boxes so that the parts may be kept together in labeled kits.

4.4 Use the diagram at the back of P0578 “As Built” to determine which poppet guides go with which valves.

4.5 While holding the bottom cap with a finger to keep pressure on the spring, remove all four screws from the poppet guide and place in appropriate container.

4.6 Carefully remove the poppet guide. Be cautious of any parts that may fall out of the opening.

4.7 Remove the poppet and spring and put into the appropriate box.

4.8 Remove the o-ring and o-ring retainer. Place retainer into appropriate box, and discard o-ring.

4.9 Place a non-flight cap on the bottom of the valve with the original screws. They don’t have to be tightened hard, just snug enough to hold the cap in place.

4.10 Repeat steps 4.5 –4.9 for all solenoid valves and low pressure regulators.

5 PROCEDURE COMPLETION

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

_____ date: _____
R. Stephenson, GMA Engineer

Discrepancies if any:

Approved: _____ date: _____
C. Gray, GMA REE

Approved: _____ date: _____
QA Representative

Approved: _____ date: _____
D. Ross, QA

6 DATA BASE ENTRY

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

- Name, number and revision of this procedure
- Date of successful completion of procedure.