DATE: 02-25-92

OMI NO. - V1009.007
REV. - A

****
*
* MPS LEAK AND FUNCTIONAL TEST (LPS)
* (GH2 PRESSURIZATION SYSTEM)
*
****
* EFFECTIVITY CATEGORY: F *
* NF-V *
* CENTER: KSC *
* SYSTEM: MPS/SSME *
* SITE: OPF BAY 1/2/3 *
* *
* VEHICLE: ALL *
* *
* FLOW: ALL *
* *
* DESIGN CENTER CONCURRENCE: JSC *
****

****
* THIS DOCUMENT CONTAINS FUNCTIONAL *
* CRITICALITY 1 AND/OR 1R RELATED *
* OPERATIONS. *
****

THIS DOCUMENT DOES NOT CONTAIN HAZARDOUS OPERATIONS

NASA
National Aeronautics and Space Administration

Kennedy Space Center

SPACE SHUTTLE

KSC FORM 23-352B (REV. 6/90) PREVIOUS EDITIONS ARE OBSOLETE

*U.S. Government Printing Office: 1991 — 631-279/41055

DATE: 02-25-92

OMI NO. - V1009.007
REV. - A

LOCKHEED SPACE OPERATIONS COMPANY

****
*
* MPS LEAK AND FUNCTIONAL TEST (LPS)
* (GH2 PRESSURIZATION SYSTEM)
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* EFFECTIVITY CATEGORY: F
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* SITE: OPF BAY 1/2/3
*
* VEHICLE: ALL
*
* FLOW: ALL
*
* DESIGN CENTER CONCURRENCE: JSC
****

PREPARED BY:

3-9-92
LSOC TEST DOCUMENTATION

APPROVED BY:

CONTRACTOR

SPC SAFETY ENGINEERING

THIS PROCEDURE DOES NOT CONTAIN HAZARDOUS OPERATIONS

10538

INSTRUCTION CHANGE REQUEST

INSTRUCTION CHANGE REQUEST FOR:	(2) ICR NUMBER	(3)
( ) OMI ( ) S/W	01/LS0-206	SHEET 1 OF 1

(4) OMI/CAP NUMBER	(5) REV/EFFECTIVITY	(6)
V1007.007	BASIC	THIS ICR DOES ( ) DOES NOT (X) INCREASE HAZARD LEVEL OF OMI.

(7) SYSTEM	(8) DOCUMENTS AFFECTED?
MPS	OMP : YES ( ) NO ( ) OMRSD: YES ( ) NO ( )

(9) OMI/CAP TITLE

MPS LEAK AND FUNCTIONAL TEST (LPS) (GH2 PRESS SYSTEM)

(10) PAGE	(11) STEP	(12) CHANGE	(13) REASON
		INCORPORATE THE FOLLOWING PERMANENT DEVIATIONS:	1) KSC
		00-01 THRU 00-08, 01-01 THRU 01-03,	2) PREVIOUS
		02-01, 03-01, 03-02, 05-01, 06-01,	DEVIATIONS
		08-01 THRU 08-03, 10-01 THRU 10-03,	3) NONE
		12-01, 13-01, APPA-01, APPB-01,	4) LAST RUN
		APPB-02, APPA-02	5) MANDATORY
			6) NONE
		INCORPORATE RCN 0V10544, DEV'S:	7) N/A
		00-06, 10-03 And RCN 0V10150M	8) USE:

APPENDIX Z AFFECTED?
☐ YES ☒ NO
Signature: LSOCMB 12/20/91

(14) APPROVAL:

CONTRACTOR	DATE	GOVERNMENT	DATE	SAFETY	DATE
	12-6-91		12-20-91		2-13-92
	12-20-91				

KSC FORM 4-202 (REV. 10/86)

DATE: 02-25-92

OMI NO. - V1009.007
REV. - A

REVISION RECORD PAGE

REV-CHANGE	DATE	REASON	PAGES AFFECTED	EFFECTIVITY
BASIC	10-05-91	LS0420/00	ALL	ALL
A	02-25-92	01/LS0206 RCN OV10544 OV10150M	ALL	ALL

TABLE OF CONTENTS

SECTION IV - OPERATION INSTRUCTIONS

SECTION V - POST OPERATION INSTRUCTIONS

APPENDICES

OBJECTIVE

VERIFY MAIN PROPULSION SYSTEM (EXCLUDING SSME) OPERATIONAL READINESS BY INTERNAL/EXTERNAL LEAK CHECKS, COMPONENT FUNCTIONAL VERIFICATION AND ELECTRICAL CHECKS IN OPF

DESCRIPTION

1. VISUAL INSPECTION OF MPS.
2. TEST SET UPS.
   - A. PLACARD GSE (S3500, V3502).
   - B. VERIFY/ACTIVATE LPS.
   - C. GSE POWER UP (VAE24).
   - D. PRESSURIZE GSE.
3. GH2 PRESS SYSTEM
   - A. VALVE CYCLING (VAE43).
   - B. EXTERNAL LEAK CHECKS (VAE20) USES HELIUM SUPPLIED BY THE S70-0695-8 PNL.
   - C. FUNCTIONAL AND INTERNAL CHECK TESTS (VAE20) USES HELIUM SUPPLIED BY THE S70-0695-8 PNL.
4. GH2 REPRESS SYSTEM
   - A. EXTERNAL LEAK CHECKS (VAE20) USES HELIUM SUPPLIED BY THE S70-0695-8 PNL.
   - B. FUNCTIONAL AND INTERNAL CHECK TSETS (VAE20) USES HELIUM SUPPLIED BY THE S70-0695-8 PNL.
5. TEST SECURING
   - A. SECURE VEHICLE.
   - B. SECURE GSE (VAE24).

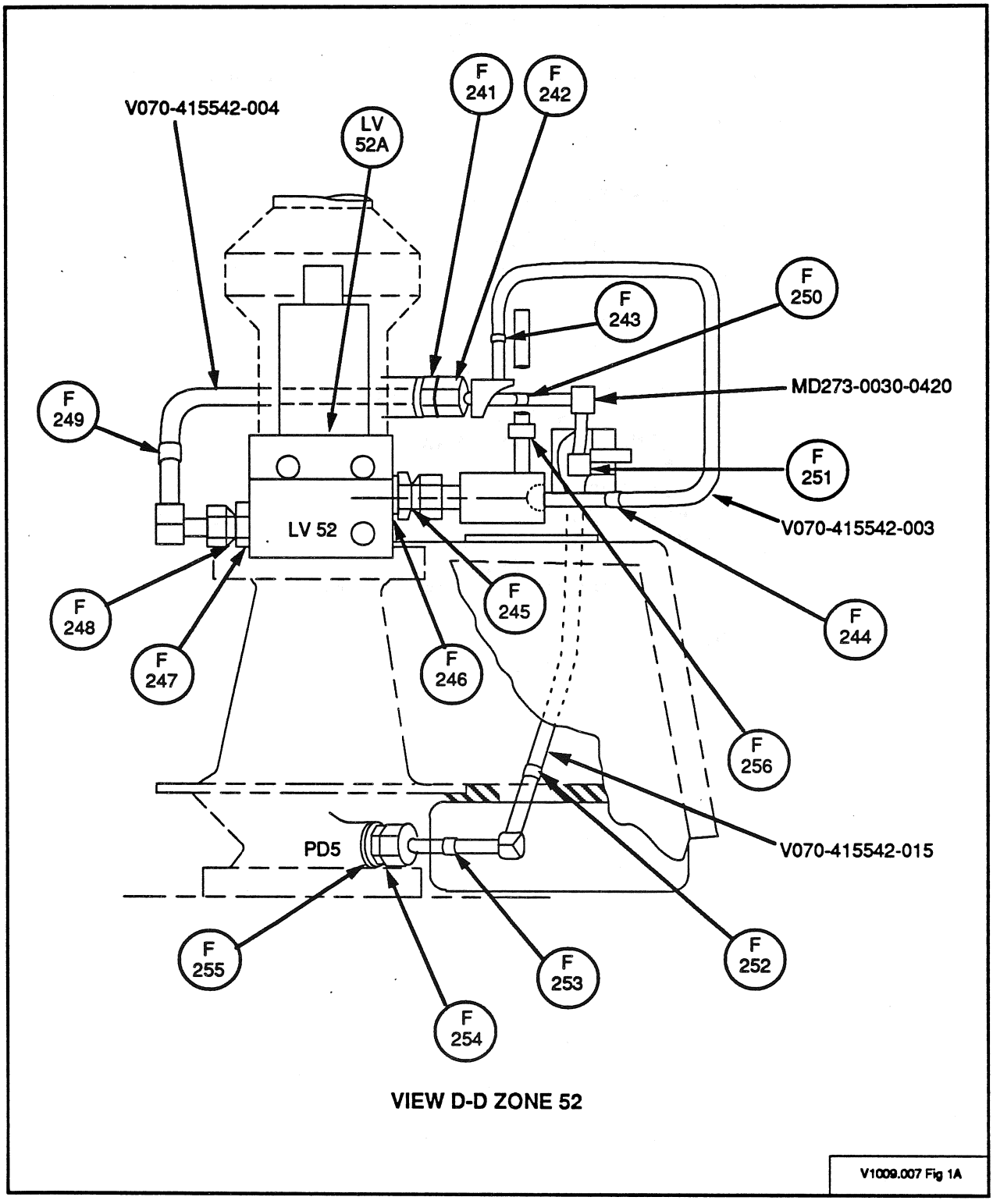


FIGURE 1 - PD5/LV52 INSTALLATION (REF V070-415142)
(FOR REFERENCE ONLY)

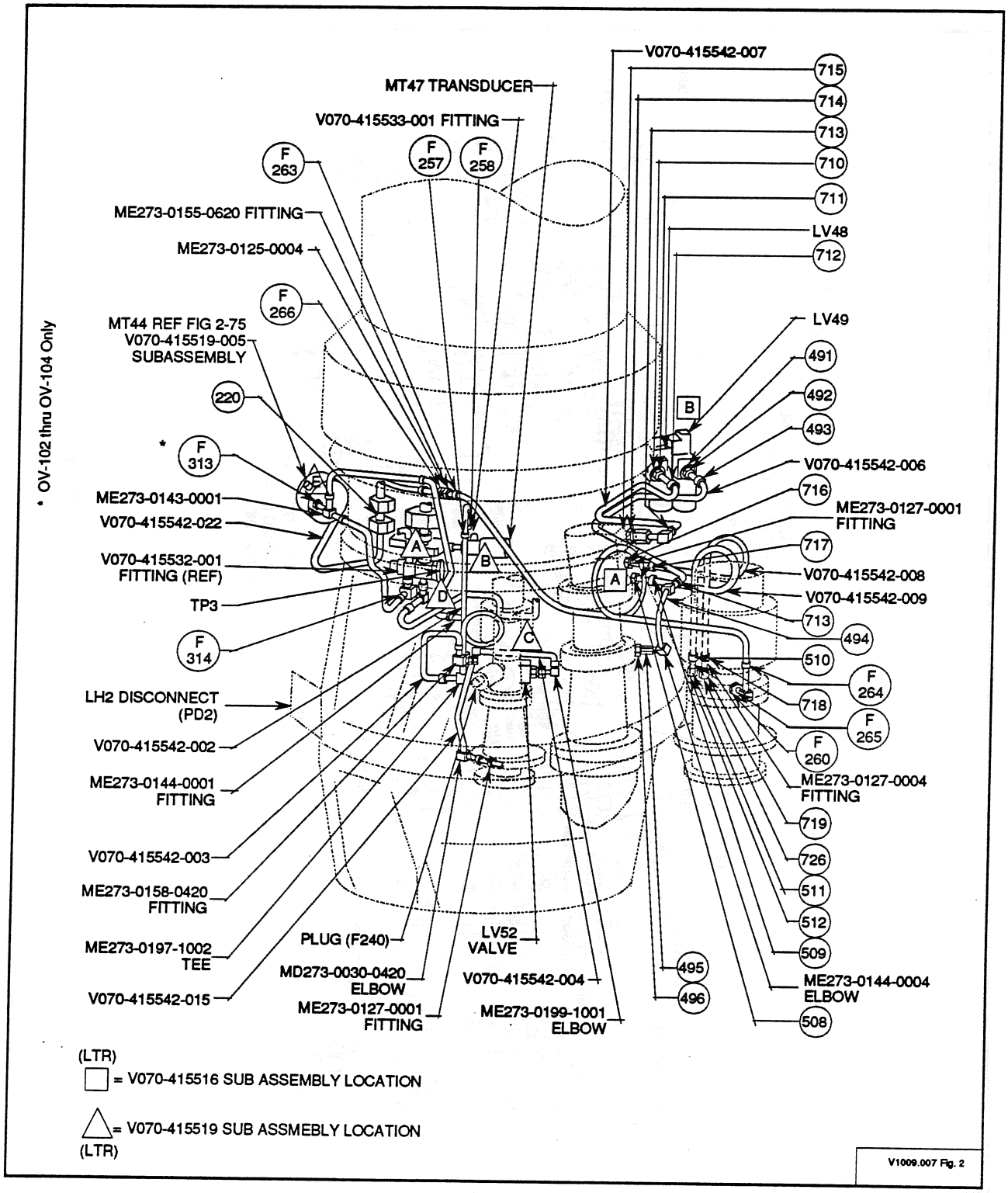


FIGURE 2 - GH2 SYSTEM JOINTS AT LH2/GH2 ORB/ET DISCONNECT
(OV-105 HAS NO DELTA P)
(FOR REFERENCE ONLY)

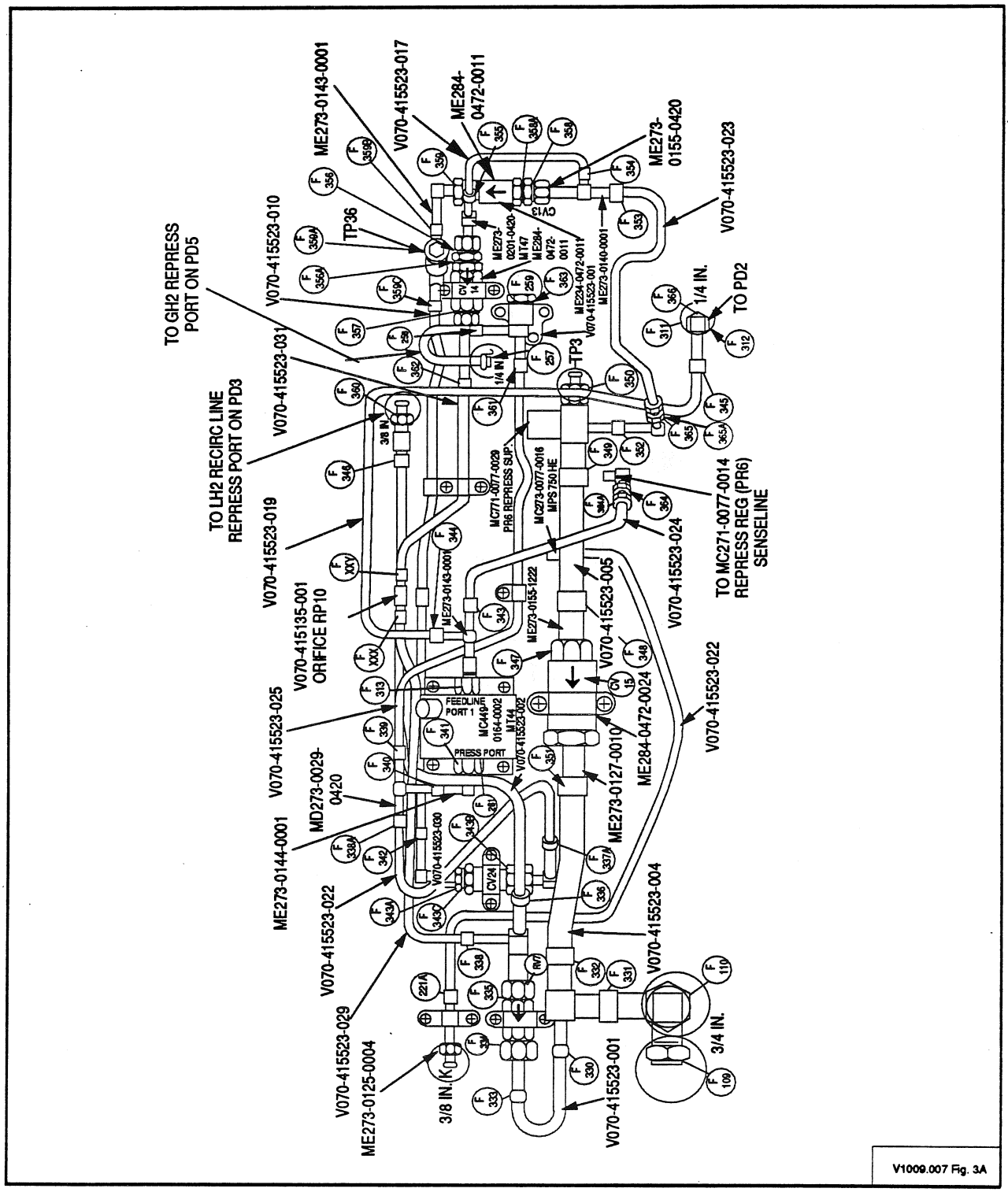


FIGURE 3A - LH2 PNEUMATIC SUPPORT ASSEMBLY
(FOR REFERENCE ONLY) (OV102,OV103,OV104)
(REF DWGS V070-415519 AND ML0-720-4152-103)

FIGURE 3B - LH2 PNEUMATIC SUPPORT ASSEMBLY (FOR REFERENCE ONLY)
(OV-105 ONLY) (REF DWGS ML0-720-4150-105)

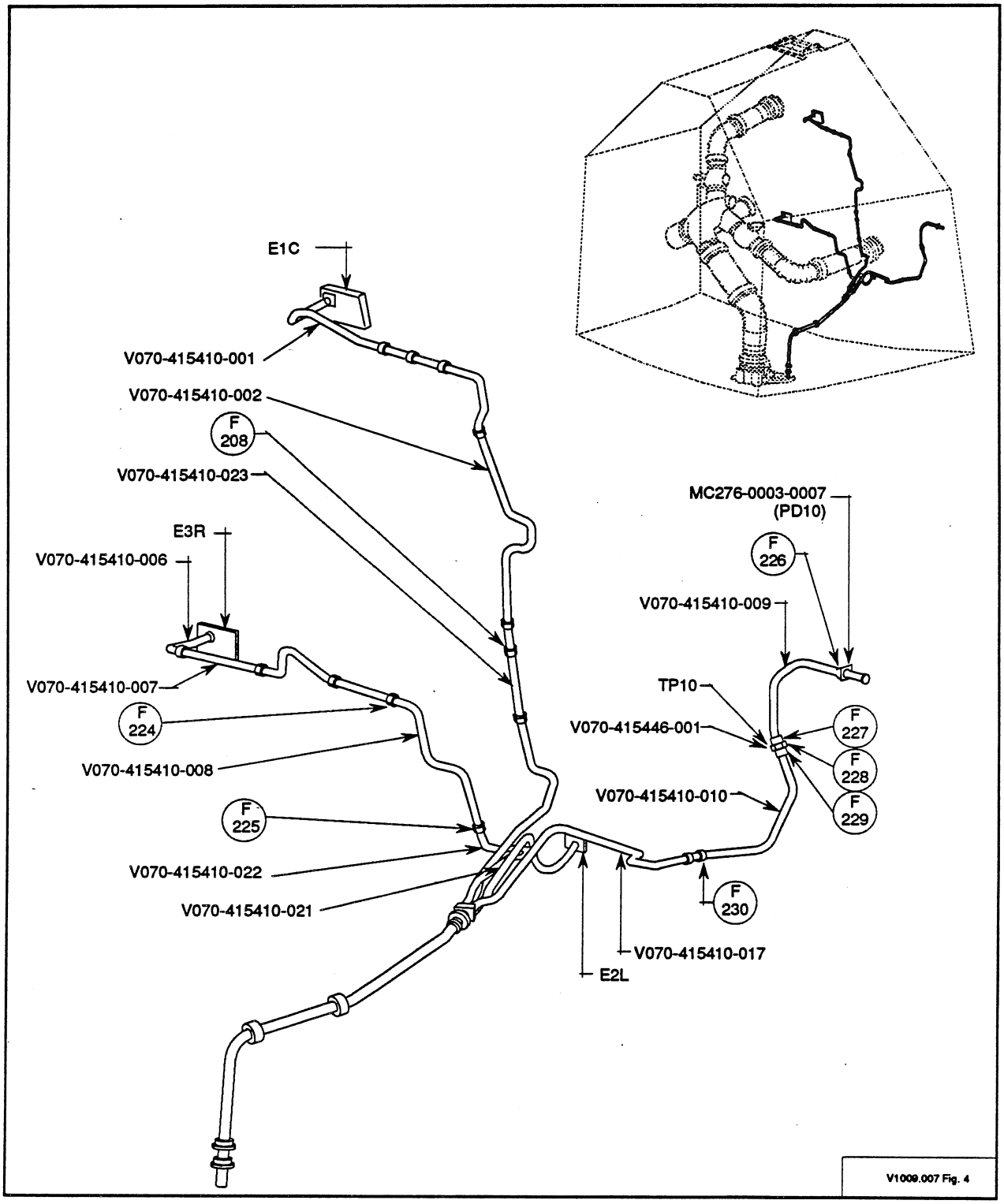


FIGURE 4 - GH2 PRESSURIZATION SYSTEM BRAZE-LEAK TEST POINTS (DWG V070-415402) (FOR REFERENCE ONLY)

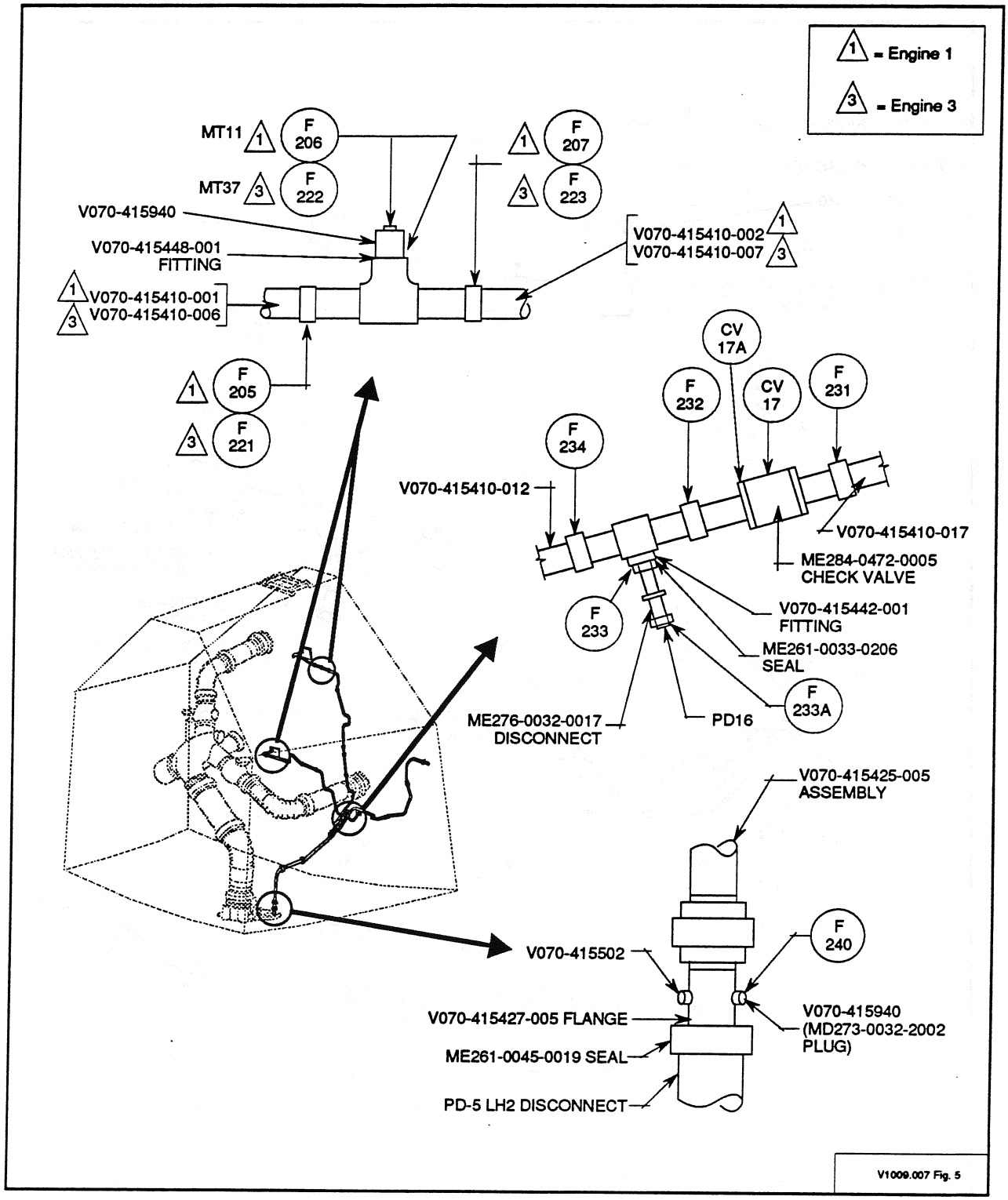


FIGURE 5 - GH2 PRESSURIZATION SYSTEM - BRAZE/TEST PORT LEAK TEST POINTS (DWG V070-415402) (FOR REFERENCE ONLY)

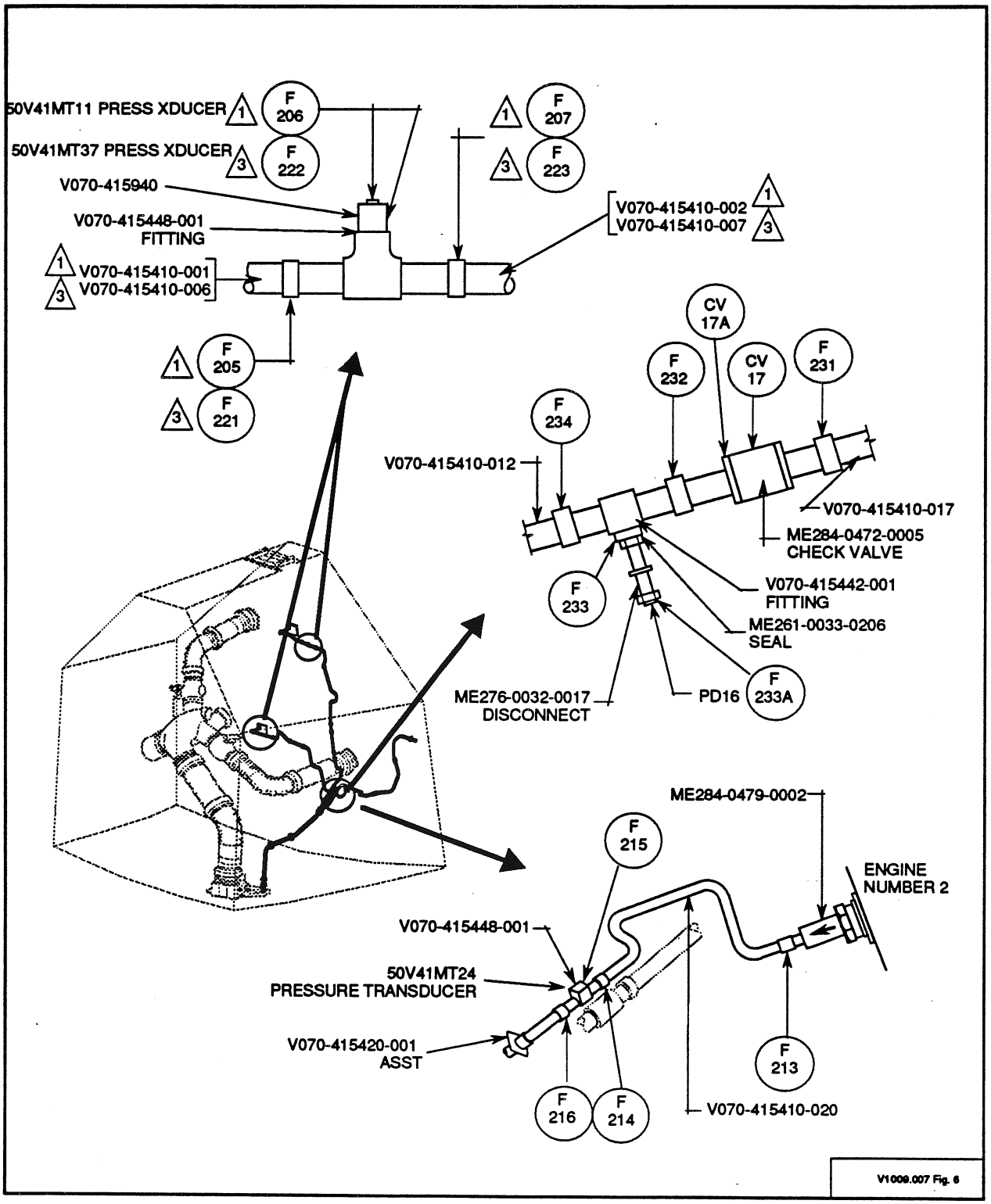


FIGURE 6 - GH2 PRESSURIZATION SYSTEM - ORB/SSME I/F LEAK TEST POINTS (DWG V070-415402) (FOR REFERENCE ONLY)

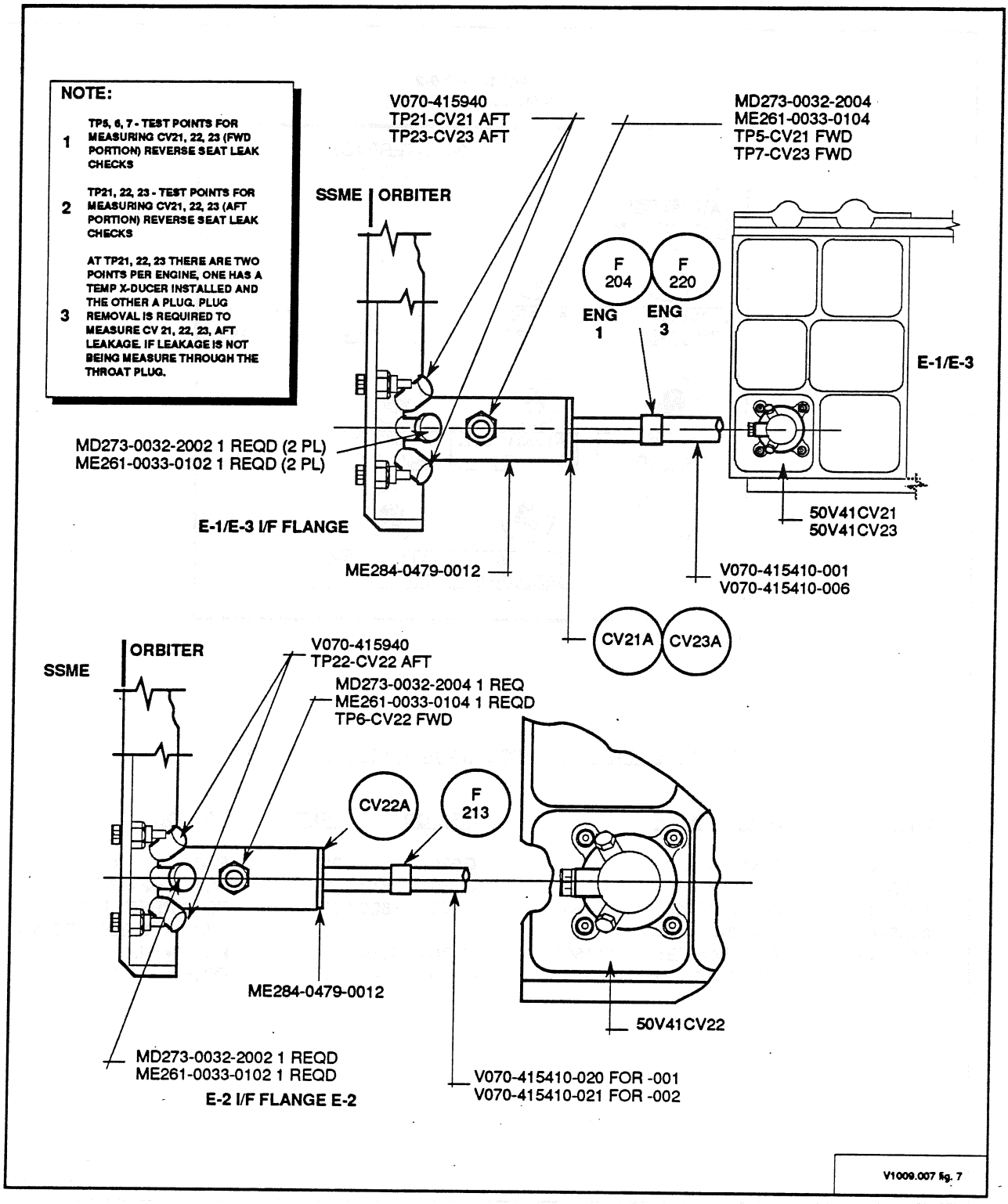
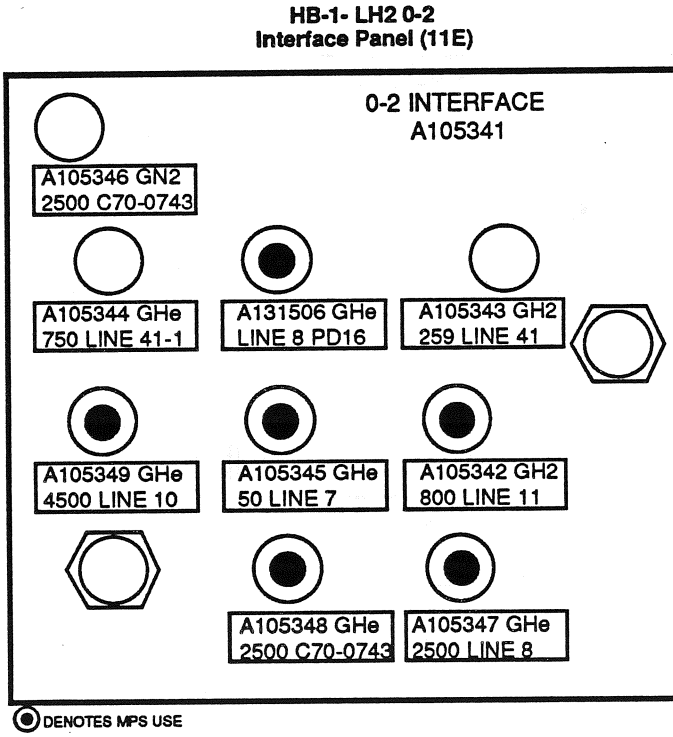


FIGURE 7 - GH2 SYSTEM AT ORB/SSME I/F TEST PORT DETAIL
(FOR REFERENCE ONLY)

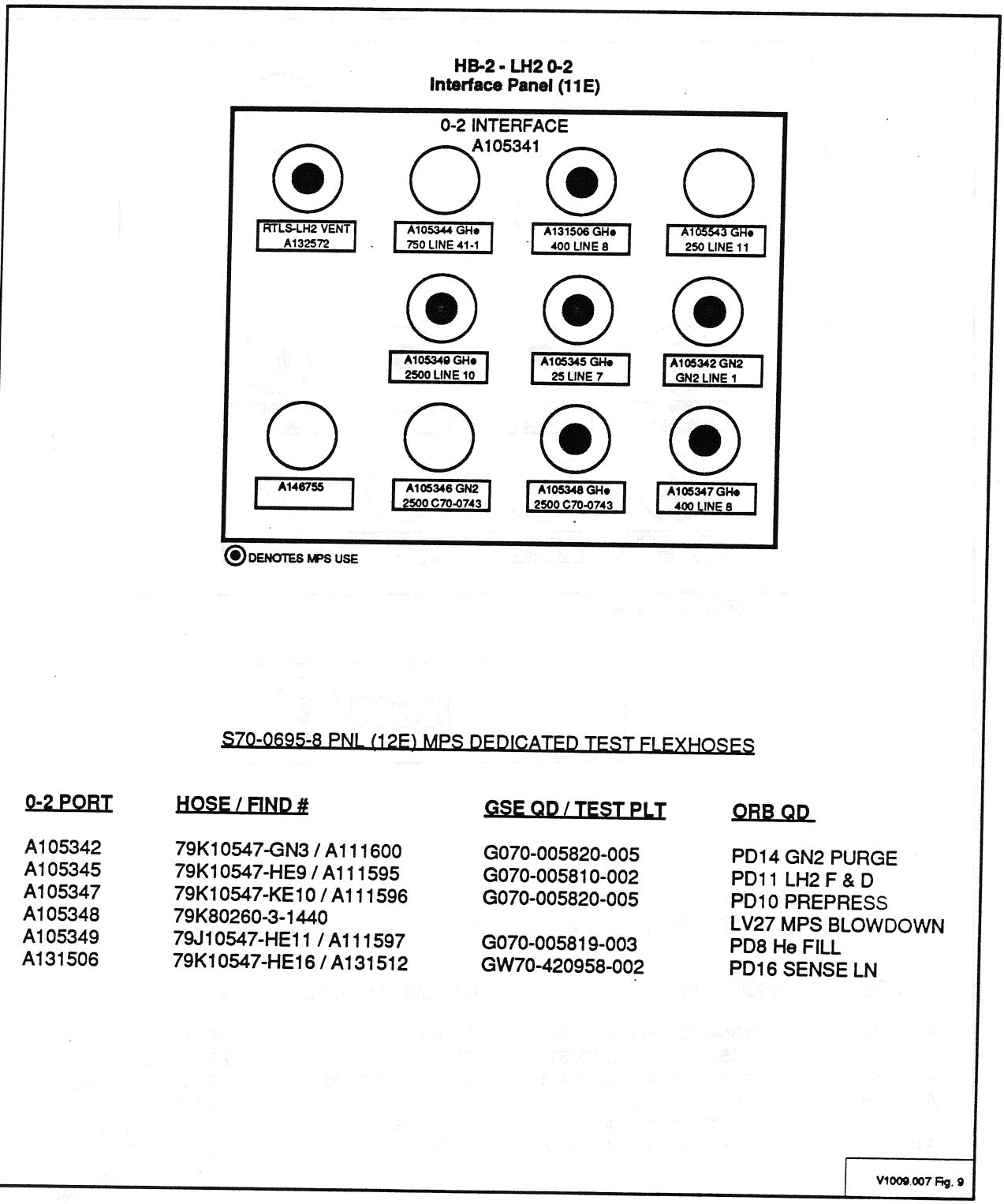


S70-0695-8 PNL (12E) MPS DEDICATED TEST FLEXHOSES

0-2 PORT	HOSE / FIND #	GSE QD / TEST PLT	ORB QD
A105342	79K10547-GN3 / A111600	G070-005820-005	PD14 GN2 PURGE
A105345	79K10547-HE9 / A111595	G070-005810-002	PD11 LH2 F & D
A105347	79K10547-KE10 / A111596	G070-005820-005	PD10 PREPRESS
A105348	79K80260-3-1440		LV27 MPS BLOWDOWN
A105349	79J10547-HE11 / A111597	G070-005819-003	PD8 He FILL
A131506	79K10547-HE16 / A131512	GW70-420958-002	PD16 SENSE LN

V1009.007 Fig. 8

FIGURE 8 - (0-2) I/F PANEL FOR BAY-1 (MPS DEDICATED TEST FLEXHOSES/QD'S)
(FOR REFERENCE ONLY)

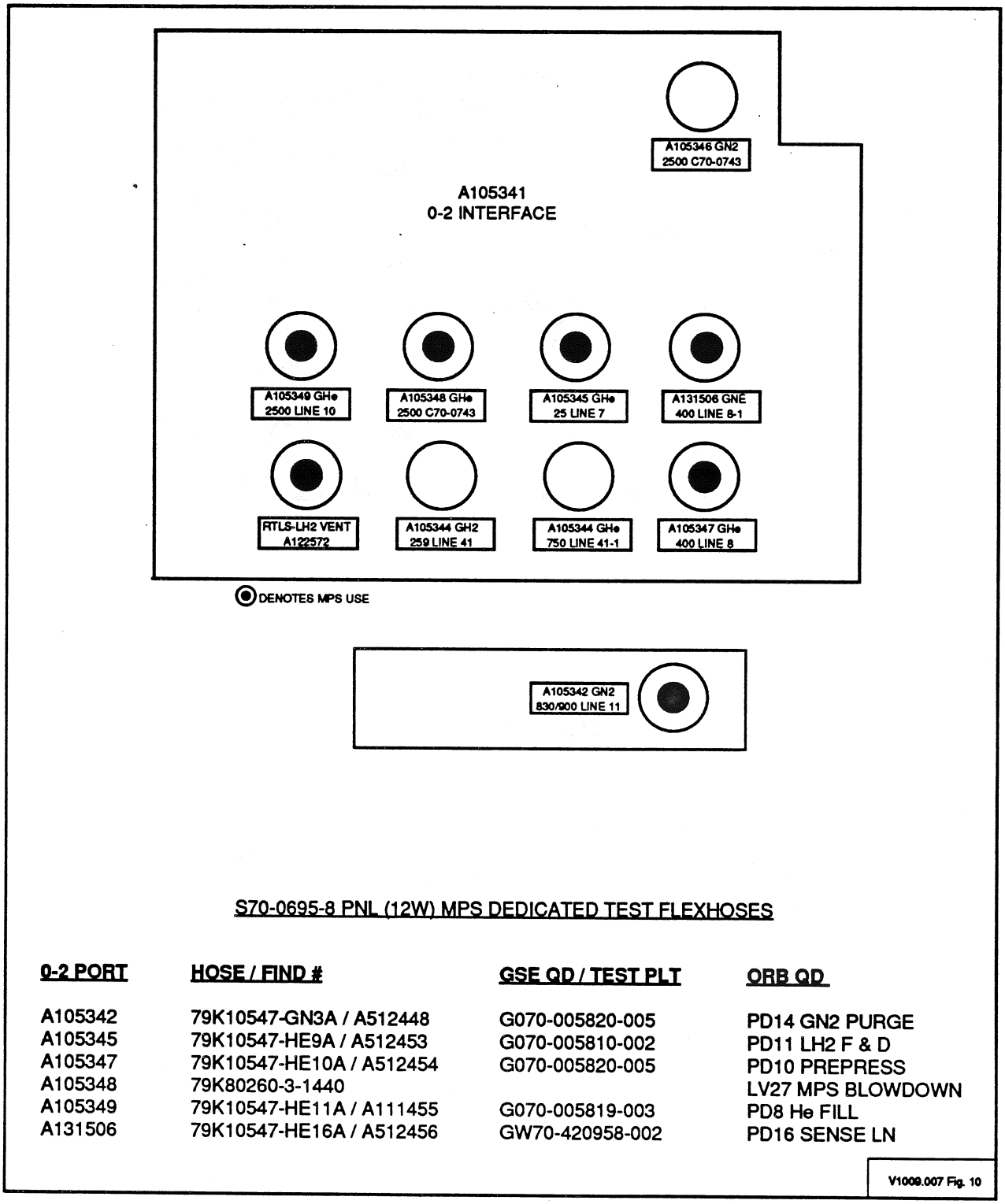


S70-0695-8 PNL (12E) MPS DEDICATED TEST FLEXHOSES

0-2 PORT	HOSE / FIND #	GSE QD / TEST PLT	ORB QD
A105342	79K10547-GN3 / A111600	G070-005820-005	PD14 GN2 PURGE
A105345	79K10547-HE9 / A111595	G070-005810-002	PD11 LH2 F & D
A105347	79K10547-KE10 / A111596	G070-005820-005	PD10 PREPRESS
A105348	79K80260-3-1440		LV27 MPS BLOWDOWN
A105349	79J10547-HE11 / A111597	G070-005819-003	PD8 He FILL
A131506	79K10547-HE16 / A131512	GW70-420958-002	PD16 SENSE LN

V1009.007 Fig. 9

FIGURE 9 - (0-2) I/F PANEL FOR BAY-2 (MPS DEDICATED TEST FLEXHOSES/QD'S)
(FOR REFERENCE ONLY)



S70-0695-8 PNL (12W) MPS DEDICATED TEST FLEXHOSES

0-2 PORT	HOSE / FIND #	GSE QD / TEST PLT	ORB QD
A105342	79K10547-GN3A / A512448	G070-005820-005	PD14 GN2 PURGE
A105345	79K10547-HE9A / A512453	G070-005810-002	PD11 LH2 F & D
A105347	79K10547-HE10A / A512454	G070-005820-005	PD10 PREPRESS
A105348	79K80260-3-1440		LV27 MPS BLOWDOWN
A105349	79K10547-HE11A / A111455	G070-005819-003	PD8 He FILL
A131506	79K10547-HE16A / A512456	GW70-420958-002	PD16 SENSE LN

V1009.007 Fig. 10

FIGURE 10 - (0-2) I/F PANEL FOR BAY-3 (MPS DEDICATED TEST FLEXHOSES/QD'S)
(FOR REFERENCE ONLY)

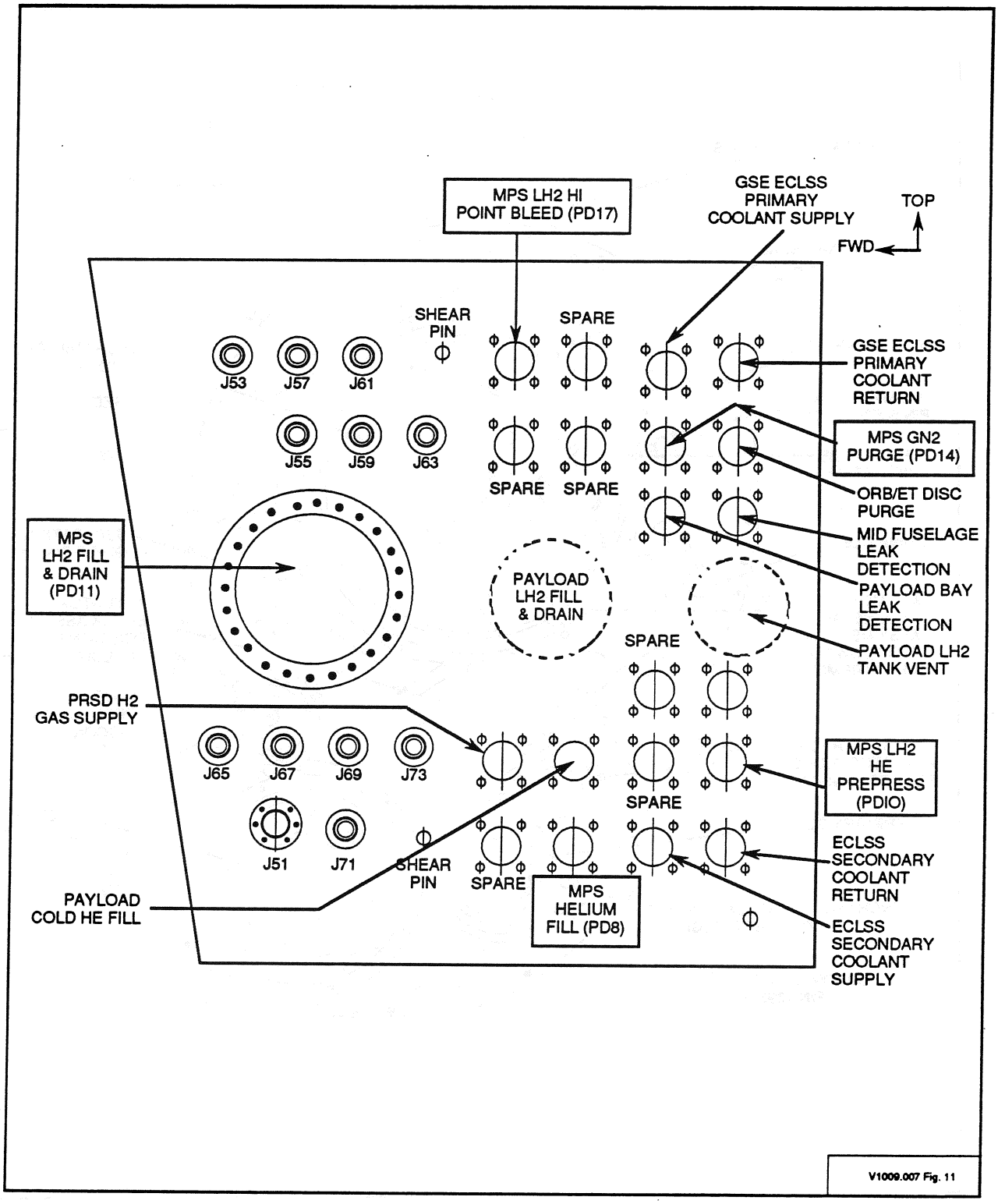


FIGURE 11 - LH2 T-0 UMBILICAL PANEL - ORBITER LEFT SIDE
(FOR REFERENCE ONLY)

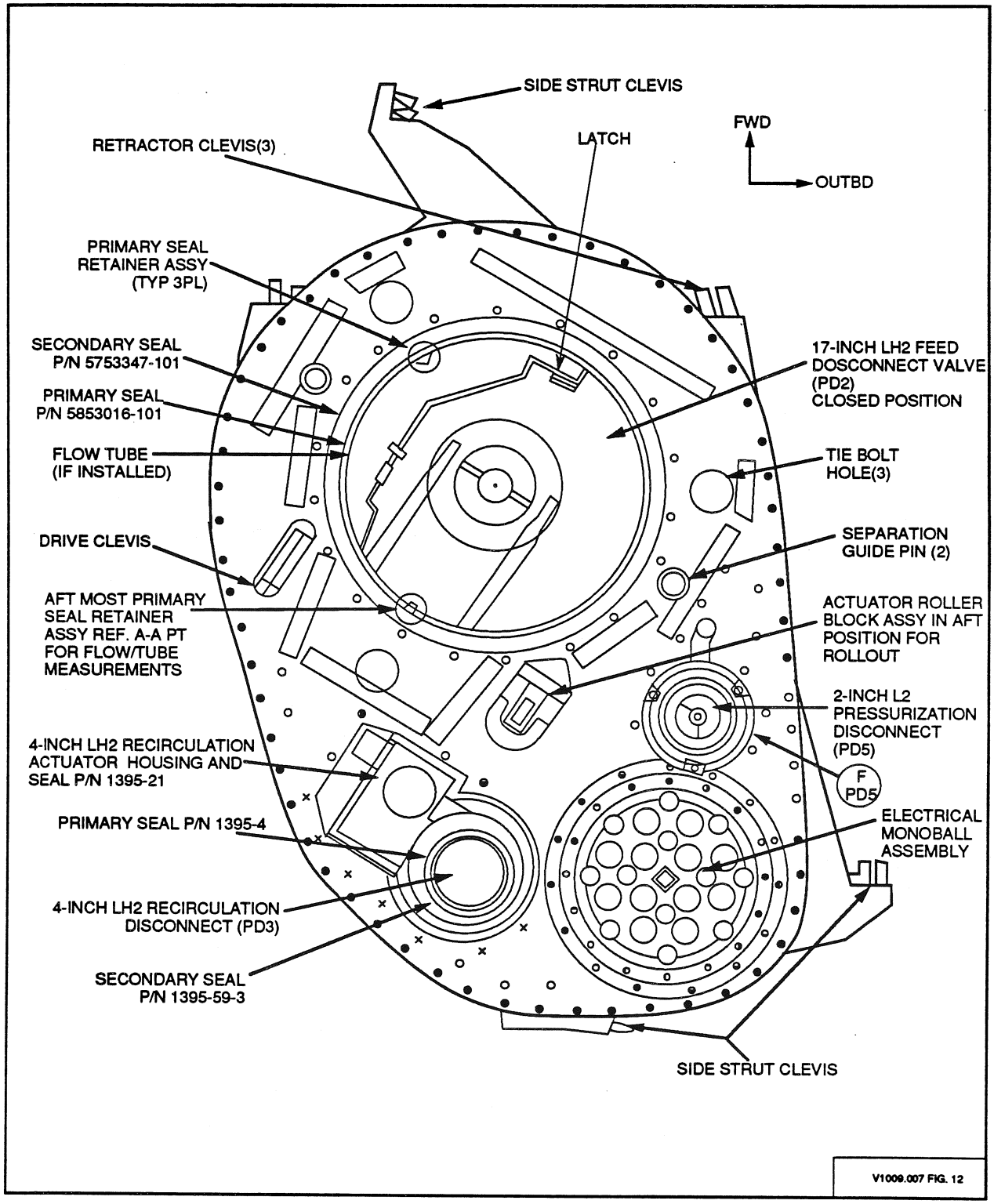


FIGURE 12 - LH2 ORB/ET UMBILICAL ORBITER HALF
(FOR REFERENCE ONLY)

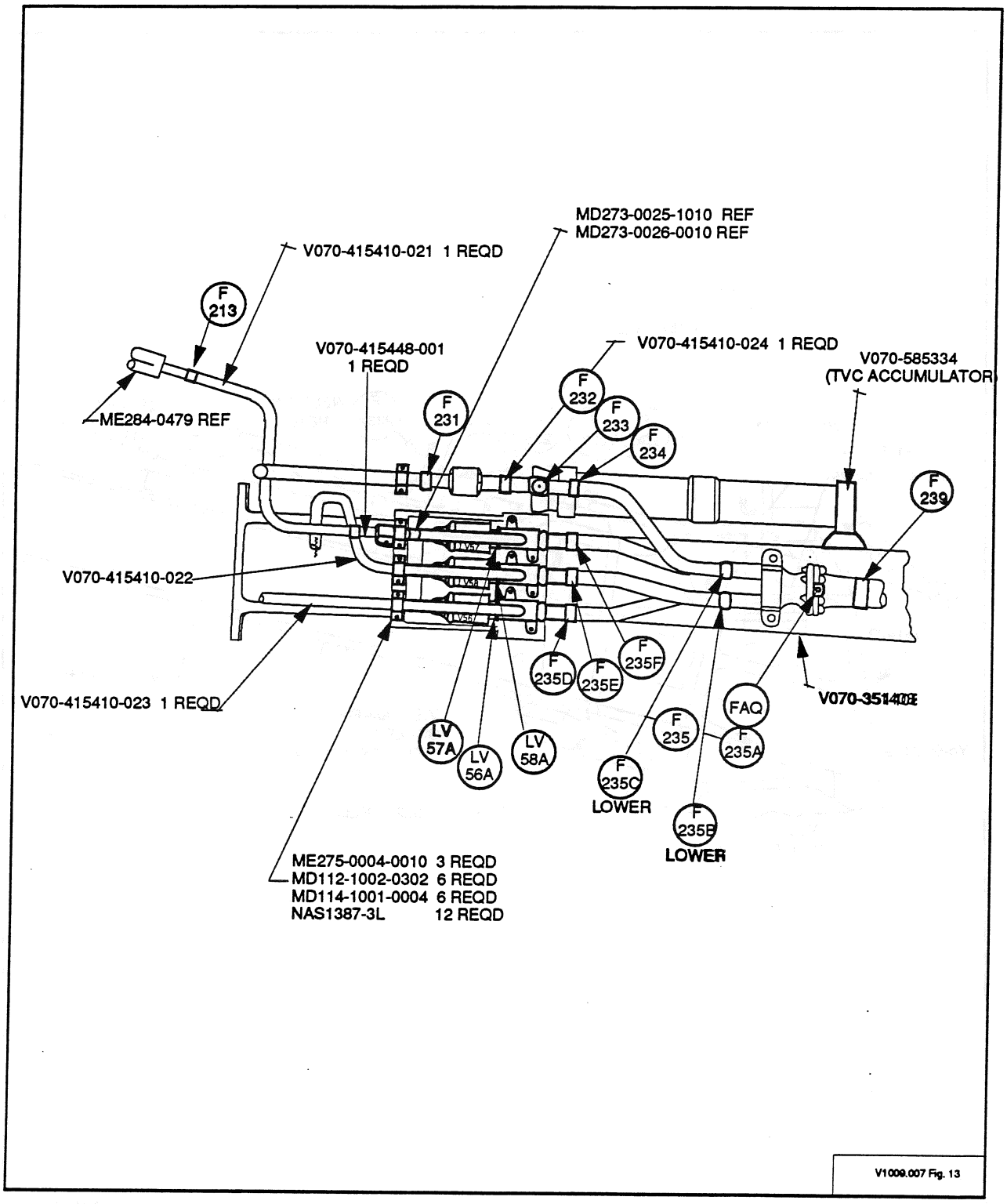


FIGURE 13 - GH2 FCV LEAK TEST POINTS (TOP VIEW)
(FOR REFERENCE ONLY)

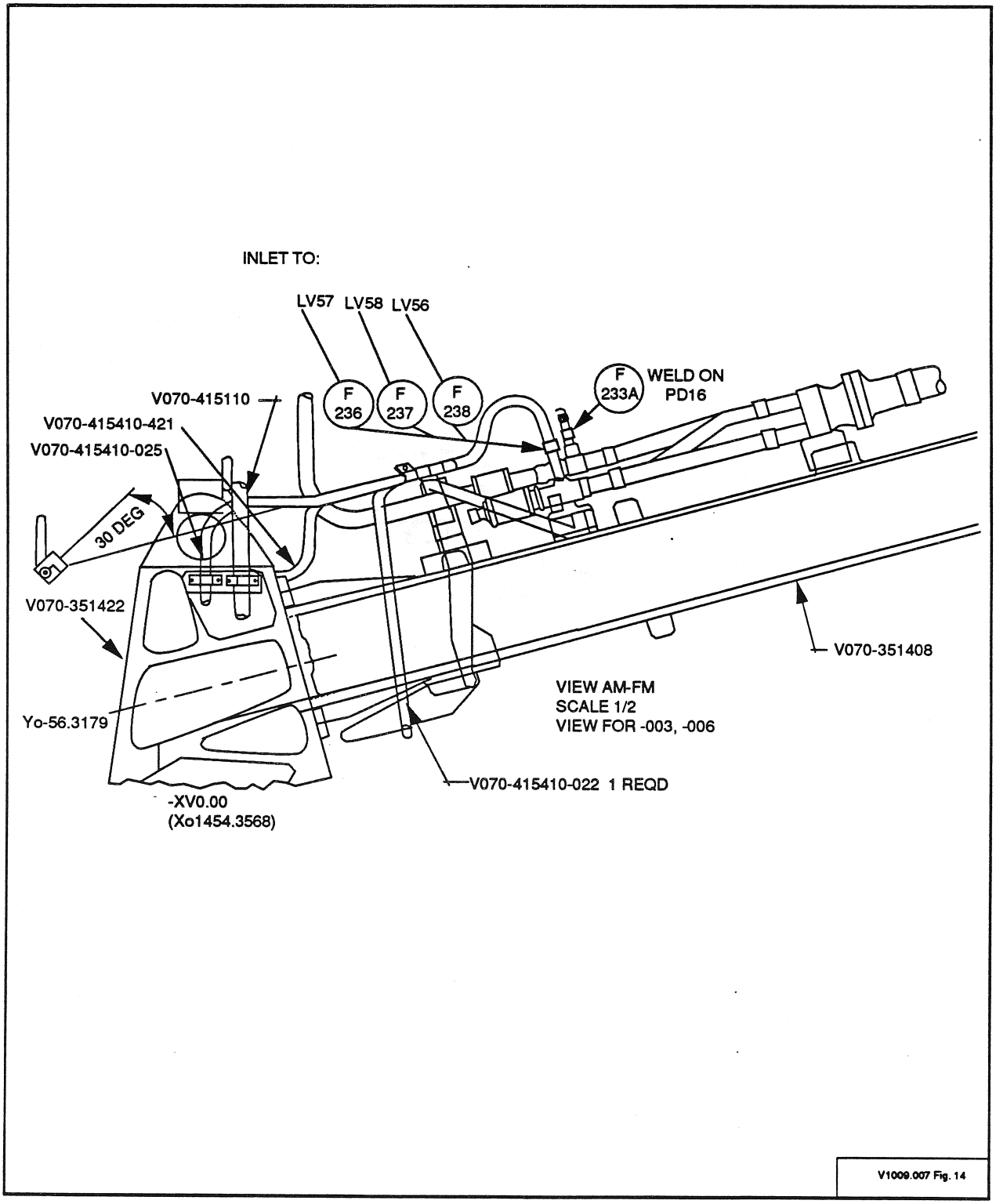


FIGURE 14 - GH2 FCV LEAK TEST POINTS (SIDE VIEW)
(FOR REFERENCE ONLY)

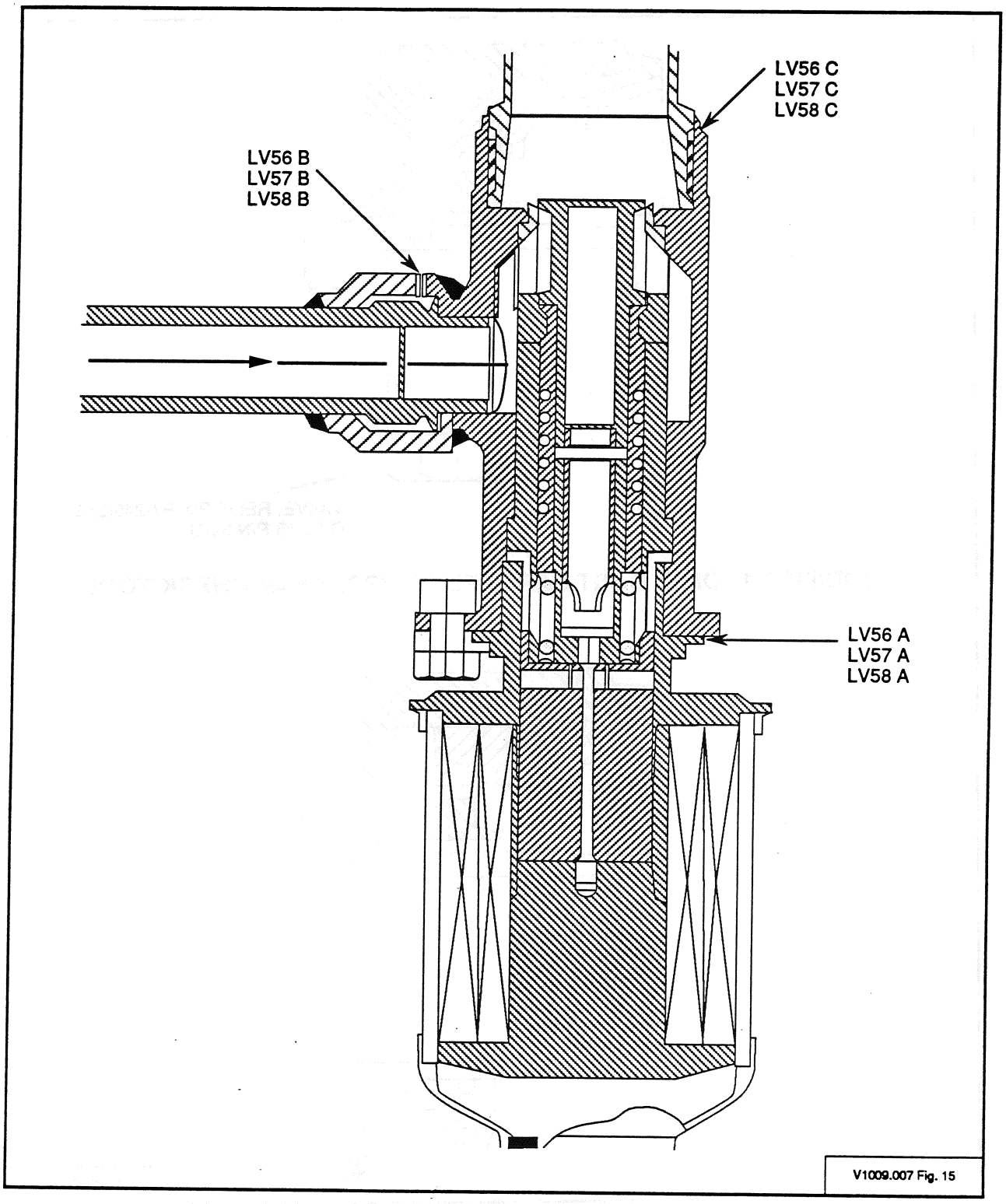


FIGURE 15 - GH2 FLOW CONTROL VALVE COMPONENT JOINTS
(FOR REFERENCE ONLY)

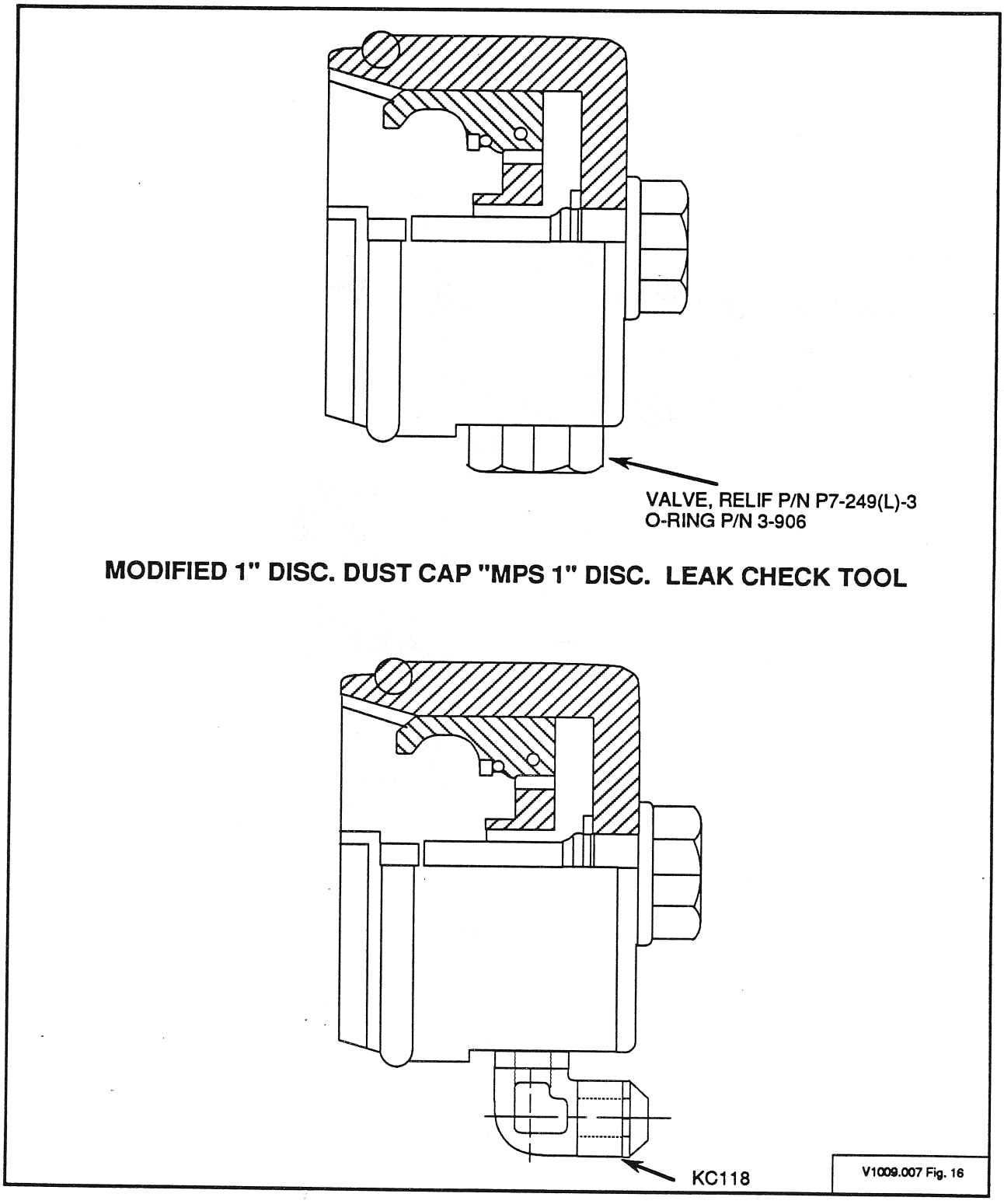


FIGURE 16 - MPS 1-INCH QD LEAK CHECK TOOL
(FOR REFERENCE ONLY)

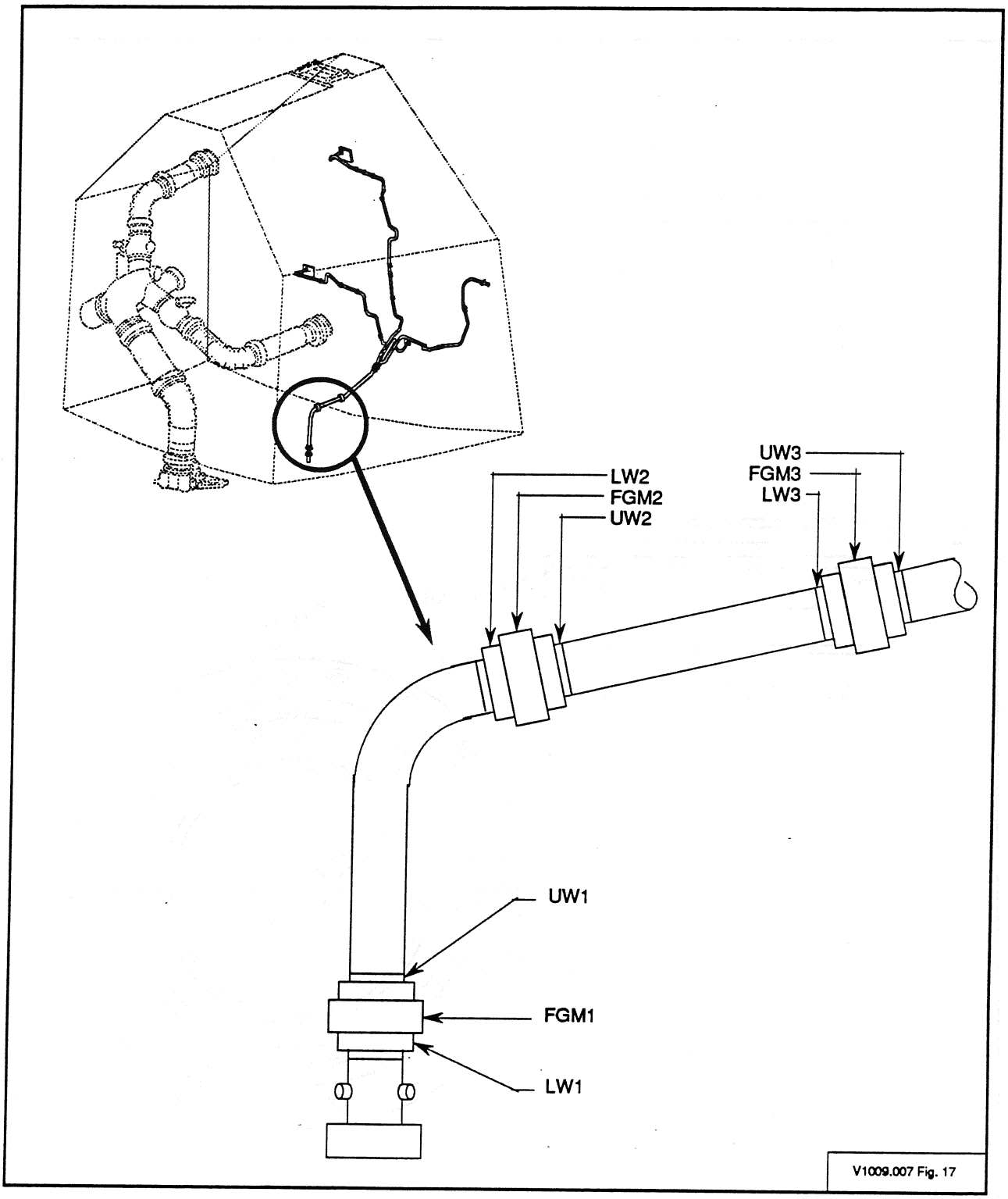


FIGURE 17 - VIEW OF GIMBAL TYPE BELLOWS FOR GH2 PRESSURIZATION SYSTEM (FOR REFERENCE ONLY)

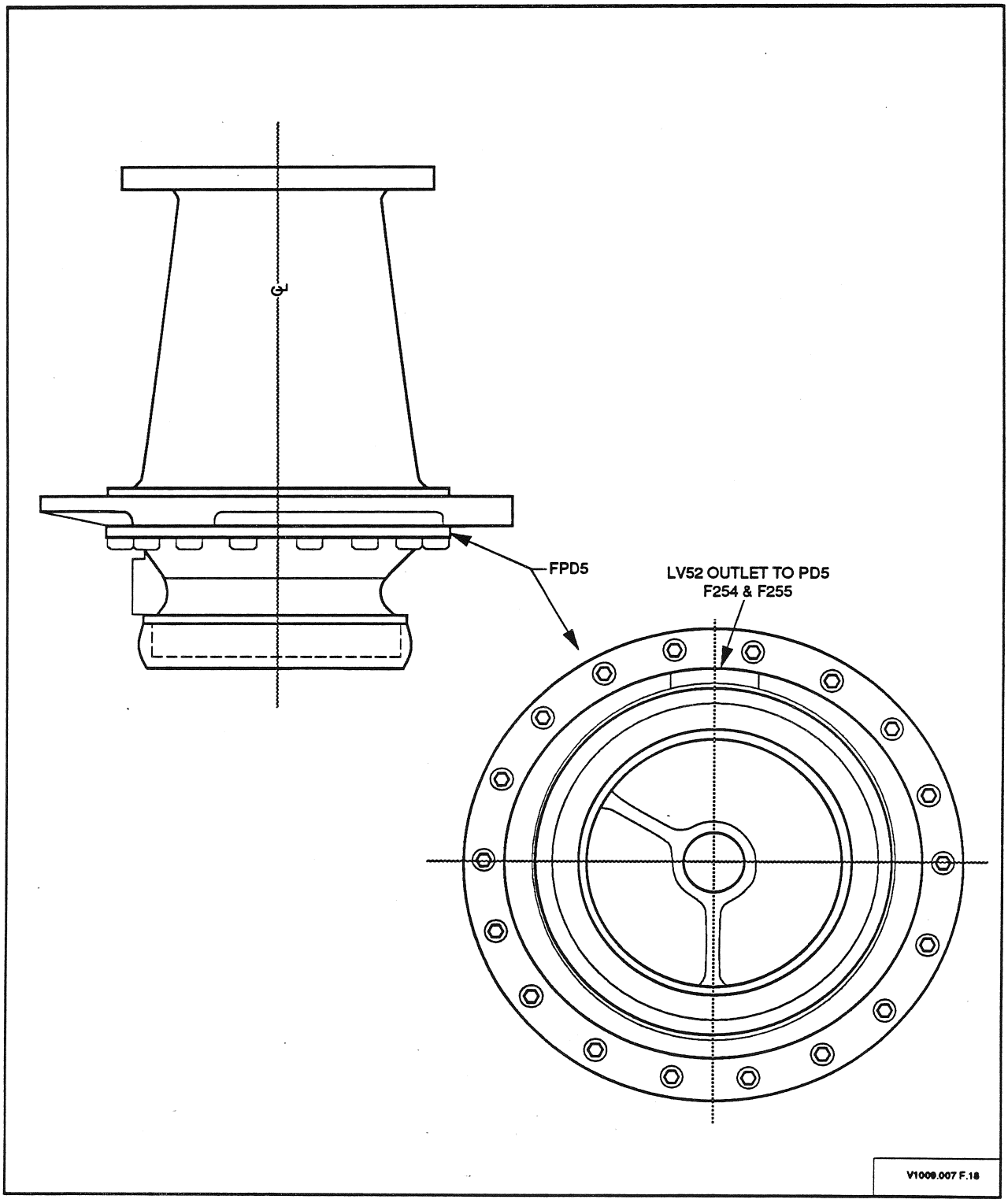


FIGURE 18 - GH2 DISCONNECT - JOINTS FPD5, F254, AND F255
(FOR REFERENCE ONLY)

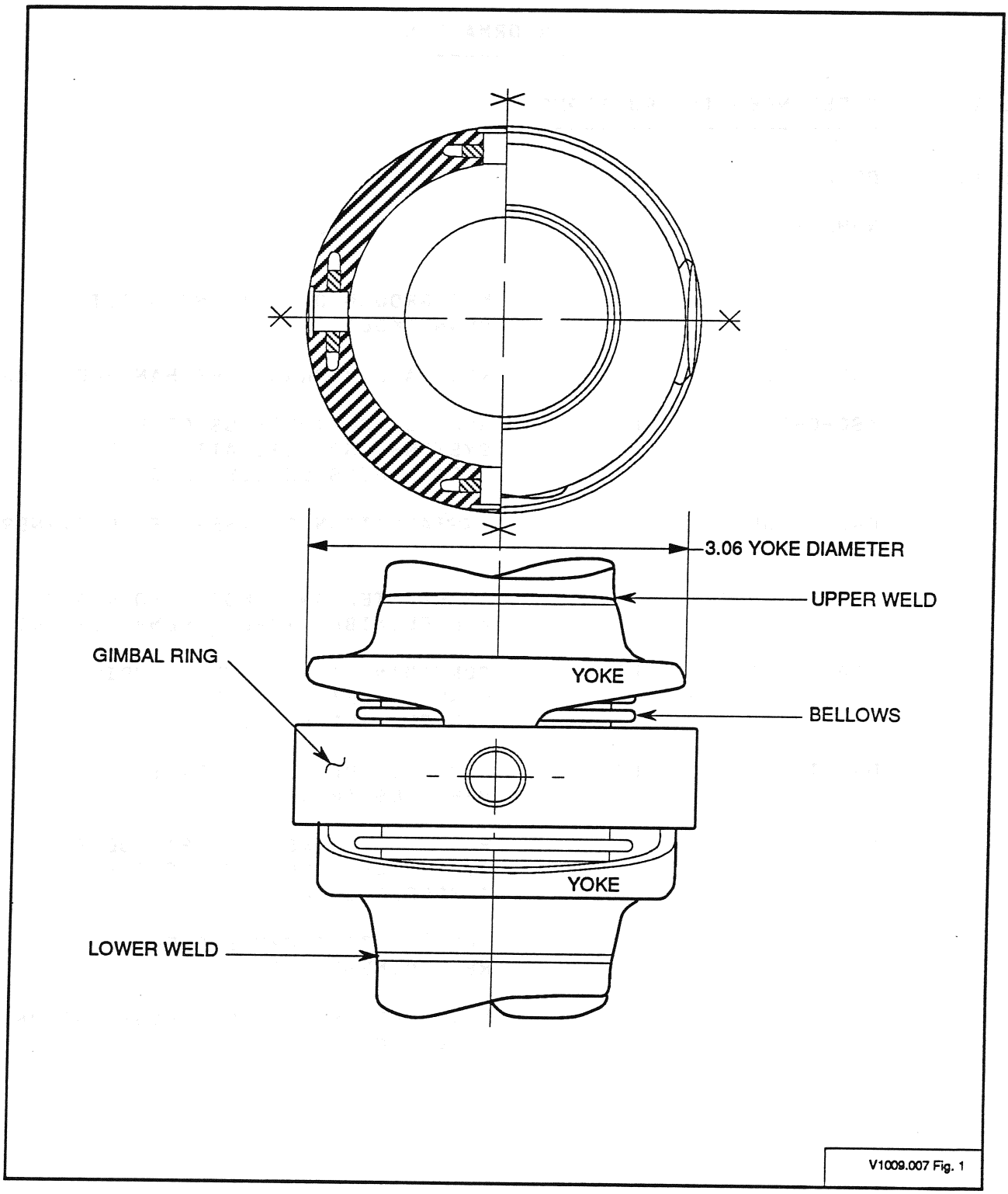


FIGURE 19 - VIEW OF GIMBAL-TYPE BELLOWS FOR LH2 PRESSURIZATION SYSTEM (FOR REFERENCE ONLY)

SECTION I

INFORMATION

1.1 REFERENCED INSTRUCTIONS

1.1.1 DOCUMENTS

NUMBER	REV	TITLE
GP-1098	LI	KSC GROUND OPERATIONS SAFETY PLAN (KSC)
KHB 1710.2	LI	KSC SAFETY PRACTICES HANDBOOK (KSC)
KSC-C-123F	LI	SURFACE CLEANLINESS OF FLUID SYSTEMS, SPECIFICATION FOR CLEANLINESS LEVELS (KSC)
MA0101-301	LI	INSTALLATION OF THREADED FASTENERS (RI)
MA0102-306	LI	FABRICATED AND INSTALLED RIGID AND FLEXIBLE TUBE ASSEMBLIES (RI)
MA0110-311	LI	CONTAMINATION CONTROL DURING MANUFACTURING AND CHECKOUT OF THE ORBITER VEHICLE (RI)
MA0112-303	LI	APPLIED LUBRICANT FOR SPACE VEHICLES (RI)
MF0001-003	LI	PROOF PRESSURE AND LEAK DETECTION AEROSPACE PLUMBING SYSTEMS AND ASSEMBLIES (RI)
MF0004-028	LI	ORBITER TIME/CYCLE CHECKOUT REQUIREMENTS (RI)
80K51846	LI	METAL-REINFORCED FLEXHOSE ASSEMBLY REQUIREMENTS (LSOC)

MSFC-SPEC-384	LI	LEAK DETECTION COMPOUND OXYGEN SYSTEMS TYPE I (MSFC)
SE-S-0073	LI	SPACE SHUTTLE FLUID PROCUREMENT AND USE CONTROL (JSC)
S9904	LI	OPF EMERGENCY PROCEDURES DOCUMENT (LSOC)
SP-002(2)KV	LI	TOOL AND HARDWARE TETHERING REQUIREMENTS

1.1.2 DRAWINGS

NUMBER	REV	TITLE
GW70-005800-3	LI	MPS CAP AND PLUG SET (TEST)
GW70-005800-5	LI	MPS CAP AND PLUG SET (FERRY FLIGHT)
GW70-420958	LI	SET - QD FILTER ASSY (S70-0958)
VS70-415001	LI	MAIN PROPULSION SYSTEM - SCHEMATIC (OV-102)
VS70-415004	LI	MPS SCHEMATIC - DFI
V070-415001	LI	MPS INSTALLATION (OV-102)
V070-415003	LI	MPS INSTALLATION (OV-103)
V070-415402	LI	LH2 PRESS SYS INSTL (OV-102)
V070-415413	LI	LH2 PRESS SYS INSTL (OV-103 AND SUBS)
V070-415601	LI	SYSTEM INSTALLATION - PROPELLANT MANAGEMENT
V070-415940	LI	INST INSTL LH PRESS
79K06421	LI	MECH SCHEMATIC - 02 PNL
79K10547	LI	FLEXHOSE ASSY - PNEUMATIC SERVICE - OPF

1.1.3 SUPPORTING SUBTASKS

SUBTASK NUMBER	SUBTASK TITLE/ FUNCTION TO BE PERFORMED	CALLING SEQ-STEP
V1171VL1	MPS/SSME PRESSURIZATION OPERATIONS, OPF (LPS)	
	GH2 PREPRESS VENTING AND SECURING THRU PD16 OPF	04-001
	PD5 GH2 2 IN. ORB ET DISC COVER PLATE INSTALLATION	06-004
	LH2 MANIFOLD VENTING THRU FILL DRAIN LINE OPF	06-008
V41-50008	PD5 GH2 2-IN. TEST PLATE, CLEANING/INSPECTION/INSTALLATION	06-024
V1171VL1	MPS/SSME PRESSURIZATION OPERATIONS, OPF (LPS)	
	MPS GH2 PREPRESS SYSTEM SECURING OPF	06-028
V41-40016	PD5 2-IN. TEST PLATE, REMOVAL	06-029
V1171VL1	MPS/SSME PRESSURIZATION OPERATIONS, OPF (LPS)	
	LH2 MANIFOLD VENTING THRU FILL DRAIN LINE OR THRU RTLS DUMP PORT OPF	07-001
	ORBITER MPS 750 PSI PNEUMATIC SYSTEM SECURING AND BLOWDOWN THROUGH BLOWDOWN HOSE	07-002
	LH2 MANIFOLD VENTING THRU FILL DRAIN LINE OPF	07-009
	MPS LH2, LH2 RECIRC, AND GH2 MANIF PRESSURIZATION TO 25 PSIG USING REPRESS REGS	07-010
	LH2 MANIFOLD VENTING THRU FILL DRAIN LINE OR THRU RTLS DUMP PORT OPF	07-013
	ORBITER MPS 750 PSI PNEUMATIC SYSTEM SECURING AND BLOWDOWN THROUGH BLOWDOWN HOSE	07-014 08-061
	MPS GH2 PREPRESS SYSTEM SECURING OPF	09-004
V41-40016	PD5 2-IN. TEST PLATE, REMOVAL	10-005
V41-50008	PD5 GH2 2-IN. TEST PLATE, CLEANING/INSPECTION/INSTALLATION	10-009
V1171VL1	MPS/SSME PRESSURIZATION OPERATIONS, OPF (LPS)	10-011
	MPS GH2 PREPRESS SYSTEM SECURING OPF	10-013

V41-40016	PD5 2-IN. TEST PLATE, REMOVAL	10-014] 12-001]
V1171VL1	MPS/SSME PRESSURIZATION OPERATIONS, OPF (LPS)	]
	PD16 HARDWARE INSTALLATION OPF	14-002]

1.1.4 SUPPORTING SOFTWARE

APP PGM	TITLE
VAE18	GHE SYS DISPLAY/CONTROL/EM
VAE20	LH2 SYS DISPLAY/CONTROL/EM
VAE24	PNEU CONSOLES POWER UP/POWER DOWN OPF
VAE43	LOX/LH2 PREPRESS FLOW CONTROL C/O
VDE01	MPS GHE SYS DISPLAY SKEL OPF
VDE20	LH2 SYS DISPLAY
VDE41	LH2 SYS SOLENOID C/O MENU

THE FOLLOWING PROGRAMS MAY BE REQUIRED FOR CONTINGENCY PURPOSES

SAE12	MPS LH2 PROPELLANT MONITOR
SDE07	MPS LO2 ANALOG STATUS
SDE11	MPS LH2 SYSTEM VALVE STATUS
SDE12	MPS LH2 SYSTEM GRAPHIC DISPLAY
SDE13	MPS LH2 SYSTEM PRESS., TEMP VS TIME
SDE15	MPS LH2 SYSTEM ANALOG STATUS
VAE02	LH2 PNEU CONSOLE (OPF) EM VERIF

1.2 COMPUTER SYSTEMS

LPS
CCMS
CDS

1.2.1 SYSTEM CONFIGURATION:

GSE
6/18

VEHICLE LINKS AND FORMATS:
LDB
OI128
GPC128
FORMAT 129
FORMAT 42,44
PASS: MC7,MC9
BFS: N/A

CONSOLES REQUIRED:

C4

HIMS ACTIVE:

8096

1.2.2 DATA REQUIREMENTS (REAL TIME)

RPS

1.2.3 DATA REQUIREMENTS (POST TEST)

NONE REQUIRED

1.3 SPECIAL TOOLS, EQUIPMENT AND MATERIALS

1.3.1 MATERIALS

ISSUE/ RETURN	PART NO.	NOMENCLATURE	AVAIL	MAX KIT	QTY	FUNCTION
___/___	NA	SOAP SOLUTION (UI=BOTTLE)	_____	1	1	TBD-00
___/___	NA	TEFLON TAPE (UI=ROLL)	_____	1	1	SOSU-02
___/___	MS20955N32	SAFETY WIRE (UI=ROLL)	_____	1	1	TBD-00
___/___	MB0140-010	TYPE II LUBE (UI=EACH)	_____	1	1	OSSU-1
			_____		1	TBD-00
___/___	L070-000080-122	FLEXHOSE 9 FT (UI=EACH)	_____	1	1	TBD-00
___/___	L070-000080-168	FLEXHOSE 50 FT (UI=EACH)	_____	1	1	TBD-00

1.3.2 EQUIPMENT

ISSUE/ RETURN	PART NO.	NOMENCLATURE	AVAIL	MAX KIT	QTY	FUNCTION
___/___	LO70-000070-009	BACK-TO-BACK 1/4 IN. OD (UI=EACH)	_____	1	1	OI-11
___/___	LO70-000070-016	BACK-TO-BACK 1/4 IN. OD (UI=EACH)	_____	1	1	OSSU-1
___/___	ME286-0068-0008-0001 AND -0015 EQUIV SUBS	1/4 IN. MINIFILTER (UI=EACH)	_____	7		OSSU-1
			_____		3	TBD-00
___/___	C-MS28778-4	O-RING (UI=EACH)	_____	2	2	OSSU-1
___/___	SSKG250-4T	HAND VALVE (UI=EACH)	_____	1	1	OSSU-1
___/___	C-KC118C6	ELBOW 90 (UI=EACH)	_____	1	1	OSSU-2
___/___	74332026-503	DUST CAP P/O A70-0640-3 (UI=EACH)	_____	1	1	OSSU-2
___/___	C-KC133C6-4	REDUCER ADAPTER (UI=EACH)	_____	1	1	OSSU-1
___/___	C-KC112C4	ADAPTER (UI=EACH)	_____	1	1	OSSU-1
___/___	C-KC103-4	NOSE SEAL (UI=EACH)	_____	2	2	OSSU-1
___/___	C-KC150C4	CAP (UI=EACH)	_____	1	1	OSSU-1
___/___	C-KC125C6-4	REDUCER (UI=EACH)	_____	1	1	OI-11
___/___	C-KC103-6	NOSE SEAL (UI=EACH)	_____	1	1	OSSU-1
___/___	C-KC131C4	ELBOW (UI=EACH)	_____	1	1	OI-11

___/___	C70-0903	FLOWMETER (UI=EACH)	_____	1	1	OI-ALL
___/___	C70-0796	ET/SRB ELECT INTERFACE UNIT	_____	1	1	TBD-00
		(UI=EACH)	_____		1	TBD-00
___/___	E70-0036	CRYOGENIC SENSOR SIMULATOR	_____	1	1	TBD-00
		(UI=EACH)	_____		1	TBD-00
___/___	HP428B	AMMETER (CLAMP-ON) (UI=EACH)	_____	1	1	OI-04
___/___	NA	*TEKTRONIX 2200 OSCILLOSCOPE (UI=EACH)	_____	1	1	OI-04
___/___	NA	*TEKTRONIX HC100 PLOTTER (UI=EACH)	_____	1	1	OI-04

1.3.3 TOOLS

ISSUE/ RETURN	PART NO.	NOMENCLATURE	AVAIL	MAX KIT	QTY	FUNCTION
___/___	NA	TORQUE WRENCH 0-200 IN. LBS (UI=EACH)	_____	1	1	POSU-ALL
			_____		1	OSSU-ALL
			_____		1	OI-ALL
			_____		1	POI-ALL
___/___	NA	TORQUE WRENCH 0-600 IN. LBS (UI=EACH)	_____	1	1	POSU-ALL
___/___	NA	TORQUE WRENCH 0-1200 IN. LBS (UI=EACH)	_____	1	1	POSU-ALL
			_____		1	OSSU-ALL
			_____		1	OI-ALL
			_____		1	POI-ALL
___/___	NA	TORQUE WRENCH 0-50 IN. LBS (UI=EACH)	_____	1	1	POSU-ALL
			_____		1	OSSU-ALL
			_____		1	OI-ALL
			_____		1	POI-ALL
___/___	NA	TORQUE WRENCH 0-100 IN. LBS (UI=EACH)	_____	1	1	OI-ALL

1.3.4 FLIGHT EQUIPMENT

ISSUE/ RETURN	PART NO.	NOMENCLATURE	AVAIL	MAX KIT	QTY	FUNCTION
___/___	MD273-0044-2004	PLUG (UI=EACH)	_____	10	10	OSSU-01
			_____		10	OI-09
			_____		10	OI-13
			_____		10	OI-28
			_____		10	OI-29
___/___	ME261-0033-0104	SEAL (UI=EACH)	_____	4	4	OI-10
			_____		4	OI-09
			_____		4	OI-16
___/___	ME261-0033-0202	SEAL (UI=EACH)	_____	25	25	OI-18
			_____		25	OI-21
___/___	ME261-0033-0204	SEAL (UI=EACH)	_____	9	9	OI-07
			_____		9	OI-13
			_____		9	OI-28
			_____		9	OI-29
			_____		9	OI-32
___/___	MD273-0032-2004	PLUG (UI=EACH)	_____	1	1	OI-16
			_____		1	POI-02
___/___	MD273-0032-2002	PLUG (UI=EACH)	_____	1	1	OI-18

1.4 SUPPORT TOOLS, EQUIPMENT AND MATERIALS

1.4.2 COMMUNICATIONS (PER KICS)

1. VOICE RECORDING - CONTINUOUS WITH TIMING

   OIS CHANNELS 132, 168, 111, 117, 232
   RADIO NET 105/205 (BACKUP)

2. PAGING AND AREA WARNING: OPF

1.4.8 SERVICES

SERVICE/SPECIAL REQUIREMENTS	LOCATION	PURPOSE
FACILITY PNEUMATICS 6000 PSI GHE		
3000 PSIG GHE		
3000 PSI GN2		
50 PSI AIR PURGE		

1.5 PERSONNEL REQUIREMENTS

FOLLOWING CRITICAL SKILLS ARE REQUIRED FOR PERFORMANCE OF INDICATED PORTIONS OF THIS OMI.

CONTROL NO.	TITLE	SEQUENCE
028	ELECTRICAL CONNECTOR MATE/DEMATE	04,05
085	MASS SPEC LEAK DETECTOR (LEYBOLD)	10
086	MASS SPEC PROBE OPERATOR - ORB (LEYBOLD & CEC)	10
242	TORQUE AND SAFETY WIRING	01,02,06 07,08,09 11
403	FLIGHT ELECTRICAL TESTING (INSPECTORS & TECHNICIANS)	04

1.6 SAFETY REQUIREMENTS

1.6.1 HAZARDS

NONE

1.6.2 REQUIREMENTS

1. ALL TOOLS AND EQUIPMENT TO BE USED WITHIN 5 FEET OF THE ORBITER SHALL BE TETHERED.

2. OTHER SAFETY REQUIREMENTS PERTINENT TO THIS OMI ARE CONTAINED IN THE APPROPRIATE SEQUENCES/STEPS.

1.7 SPECIAL INSTRUCTIONS

1. EXTERNAL LEAK CHECKS USING SOAP SOLUTION - TYPE 1 JOINTS

   NOTE

   ALL THREADED, BRAZED, WELDED, AND COMPONENT JOINTS BETWEEN THE SSME ISO CHECK VALVES AND FLOW CONTROL VALVE INLETS MUST BE MASS SPEC LEAK CHECKED.

   A. JOINTS WHICH CAN BE INSPECTED AROUND 360 DEG OF THE CIRCUMFERENCE WILL BE REFERRED TO AS "TYPE 1". OPTICAL AIDS FOR FULL INSPECTION OF JOINT (BORESCOPE, MIRROR, ETC.) ARE ACCEPTABLE.

   B. JOINTS WHICH CANNOT BE INSPECTED FOR BUBBLE FORMATION AROUND 360 DEG OF THE CIRCUMFERENCE (DUE TO POSITION OR FOAM), ARE CONSIDERED "TYPE 2" AND REQUIRE MASS SPEC LEAK CHECK.

   C. UNLESS OTHERWISE SPECIFIED, ALL EXTERNAL LEAK CHECKS WILL BE PERFORMED USING LEAK DETECTION COMPOUND PER MSFC-SPEC-384, TYPE I. AFTER LIQUID OR FOAM IS APPLIED TO THE COMPONENT, NO VISIBLE BUBBLE FORMATION FOR 1 MINUTE WILL BE CONSIDERED NO LEAKAGE. A 360 DEGREE INSPECTION OF THE JOINT WILL BE MADE. A MIRROR WILL BE USED ON JOINTS WHERE 360 DEGREE INSPECTION IS NOT POSSIBLE WITH EYE ALONE. FOLLOWING THE LEAK CHECK, ALL AFFECTED FITTINGS, COMPONENTS, TUBING AND SURROUNDING AREAS WILL HAVE LEAK CHECK SOLUTION REMOVED USING DISTILLED DEIONIZED WATER, AND CLEAN LOW-LINT CLOTH PRIOR TO REDUCING PRESS. DO NOT APPLY LEAK CHECK SOLUTION TO FLEXLINES OR BELLOWS. EXTREME CARE SHOULD BE USED TO KEEP LEAK CHECK SOLUTION FROM CONTACTING ELECTRICAL COMPONENTS.

2. PRESSURE MUST BE VENTED BEFORE FITTINGS ARE LOOSENED OR REPAIRS ATTEMPTED.

3. ALL IDENTIFIED LEAKS MUST BE DOCUMENTED FOR DISPOSITION BY ENGINEERING.

4. THROUGHOUT THIS OMI, THE SYMBOL BD INDICATES INFORMATION TO BE GATHERED AS ENGINEERING BASELINE DATA ONLY.

5. THROUGHOUT THIS OMI, REFERENCE IS MADE TO SOLENOID VALVES, PNEUMATIC VALVES AND RELIEF VALVES. REF DES NUMBERS; LVXX, PVXX, AND RVXX ARE ALL PREFIXED WITH 50V41.

6. OPERATION OF THE C70-0903 ATMOSPHERIC FLOWMETER UNIT.

NOTE

PYROMETER IS NOT TO BE USED UNLESS OTHERWISE SPECIFIED.

SETUP

VERIFY CALIBRATED AND HAS VALID CALIBRATION STICKERS AND VALID CALIB CURVES.

LEVEL UNIT BY ADJUSTING LEVELING LEGS UNTIL LEVELING BUBBLE, AT TOP OF UNIT, IS CENTERED.

CONNECT SENSE LINE TO APPROPRIATE FLOWMETER INLET PORT.

TEST

VERIFY SYSTEM TO BE LEAK CHECKED IS PRESSURIZED.

SELECT APPROPRIATE PLUG ADAPTER TO FIT OUTLET TO BE TESTED.

ATTACH PLUG TO SENSE LINE.

CONNECT SENSE LINE INTO TEST ARTICLE OUTLET.

PERFORM "PINCH TEST" OF SENSE LINE AND VERIFY GOOD SEAL BY FLOWMETER BALL MOVEMENT.

NOTE

DO NOT HANDLE SENSE LINE
WHILE TAKING MEASUREMENTS.

ALLOW FLOWMETER TO STABILIZE
BEFORE RECORDING DATA.
USE FLOWMETER THAT WILL
READ IN THE UPPER 2/3 OF
THE SCALE WHERE POSSIBLE.

WHEN FLANGE, SHAFT SEAL OR
INTERNAL LEAKAGE IS MEASURED
AND IS AS MUCH AS ONE-HALF
THE MAX ALLOWABLE LEAKAGE
AT A PRESSURE IN THE RANGE
SPECIFIED FOR THAT JOINT,
THEN MEASUREMENTS MUST BE
MADE AT OR NEAR THE MINIMUM
AND MAXIMUM PRESSURE LIMITS
TO DETERMINE THE PRESSURE
VERSUS LEAKAGE CHARACTERISTICS
FOR THAT CONDITION.

IF UNABLE TO READ FLOWMETER DUE TO SMALL LEAKAGE RATE, REMOVE SENSE LINE FROM NUMBERED METER PORT AND INSERT INTO NEXT MOST SENSITIVE PORT. CONTINUE UNTIL ACCEPTABLE MEASUREMENT IS OBTAINED.

RECORD READINGS ON DATA SHEET AND CALCULATE LEAK RATE FROM TUBE CALIBRATION CURVE GRAPH OR DATA TABLES.

7. MASS SPECTROMETER LEAK CHECKS

THIS LEAKAGE DETECTION METHOD MUST BE USED FOR FLEXLINES AND BELLOWS, AND MAY BE USED FOR WELDS, BRAZED JOINTS, THREADED CONNECTIONS, OR BOLTED JOINTS AS SPECIFIED IN INDIVIDUAL WORK UNIT CODES.

THE MASS SPECTROMETER LEAK CHECK METHOD SHALL BE EITHER PROBE TECHNIQUE (METHOD A) OR THE ENCLOSURE TECHNIQUE (METHOD B) AS DEFINED IN MF0001-003 OR AS SPECIFIED IN THIS DOCUMENT.

UNLESS OTHERWISE SPECIFIED IN INDIVIDUAL REQUIREMENTS, THE MAXIMUM ALLOWABLE LEAKAGE FOR WELDS, BRAZED JOINTS, FLEXLINES, BELLOWS, CRYOGENIC AND PNEUMATIC THREADED JOINTS, AND GH2 LOW PRESSURE JOINTS, SHALL BE 1 X 10 - 6 SCCS INDICATED FOR METHOD A OR B. GH2 HIGH PRESSURE SHALL BE 1 X 10 - 7 AS INDICATED PER MF0001-003 METHOD A OR B. BASELINE DATA BUBBLE SOAPS AND MASS SPEC'S MAY BE PERFORMED BY MPS ENGINEER AT ANY TIME AS REQUIRED. BASELINE DATA TO BE RECORDED BY THE ENGINEER.

8. LEAK CHECK METHODS FOR NEW AND REPAIRED JOINTS.

NEW AND REPAIRED GH2 CONNECTIONS AND COMMPONENT JOINTS SHALL BE LEAK CHECKED PER MATRIX EXCEPT FOR LISTED JOINTS.

	TYPE I	TYPE II	INST. & TEST PORTS
GH2 LOW	SOAP SOLUTION INCLUDING A CHECK OF ADJACENT THREADED FITTINGS	MASS SPEC PER MF0001-003 WITH MAX ALLOWABLE INDICATED LEAKAGE 1 X 10-6	SOAP SOLUTION
GH2 HIGH	MASS SPEC PER MF0001-003 WITH MAX ALLOWABLE INDICATED LEAKAGE 1 X 10-7	MASS SPEC PER MF0001-003 WITH MAX ALLOWABLE INDICATED LEAKAGE 1 X 10-7	MASS SPEC PER MF0001-003 WITH MAX ALLOWABLE INDICATED LEAKAGE 1 X 10-7

GH2 LOW PRESSURE: FCV BODY TO ORB/ET I/F AND T=0 DISCONNECT.
GH2 HIGH PRESSURE: SSME I/F TO FCV INLET.

NEW AND REPAIRED GH2 COMPONENT FLANGED CONNECTIONS NOT EQUIPPED WITH LEAK DETECTION PORTS SHALL BE LEAK CHECKED USING MASS SPEC. (PER MF0001-003 METHOD A OR B). ALLOWABLE LEAKAGE IS 1 X 10 - 6 SCCS, INDICATED, UNLESS OTHERWISE SPECIFIED BY INDIVIDUAL REQUIREMENT.

NEW AND REPAIRED COMPONENT AND LINE FLANGES EQUIPPED WITH LEAK DETECTION PORTS BEFORE REASSEMBLY SHALL BE INSPECTED TO VERIFY THAT LEAK DETECTION PORT IS CLEAR AND FREE OF DEBRIS. DURING LEAK TEST TEMPORARILY APPLY SEALANT TAPE AROUND THE FLANGE CIRCUMFERENCE TO DIRECT LEAKAGE OUT TO THE LEAK DETECTION PORT.

9. OPERATION OF LEYBOLD ULTRA TEST IV MASS SPECTROMETER:

WHEN LEYBOLD ULTRA TEST IV MASS SPECTROMETER IS BEING USED, ALTERNATE METHOD B IS NOT ALLOWED, METHOD A (PROBE TECHNIQUE), METHOD B (VENTED ENCLOSURE TECHNIQUE), OR METHOD D (ACCUMULATED LEAKAGE TECHNIQUE) ARE ALLOWED AND SHALL BE PERFORMED IN ACCORDANCE WITH MF0001-003. RESPONSE TIME SHALL BE LESS THAN 20 SEC.

PERMEABILITY RATIO SHALL BE LESS THAN 600

MAXIMUM BACKGROUND SHALL BE LESS THAN 0.8 X ALLOWABLE MAXIMUM LEAK RATE OF THE JOINT.

10. MPS WILL BE RESPONSIBLE FOR PERFORMING AN INFORMAL OIR.

11. LUBRICATION

NOTE

PREVIOUSLY LUBRICATED MALE DYNATUBE FITTINGS SHALL NOT BE RELUBRICATED (MA0112-303,3.4.6)

LUBRICATE ALL NON-DRY LUBED MALE THREADED JOINTS AND O-RINGS WITH MB0140-010 TYPE II APPROVED LUBRICANTS, (EXAMPLE: BRAYCOTE 3L-38RP GREASE).

A. O-RINGS

1. TO ASSIST IN THE INSTALLATION OF A DRY O-RING, APPLY LUBRICANT OVER THE SURFACE OF THE O-RING USING GLOVE COVERED FINGERTIPS. WIPE LUBRICANT OFF GLOVED FINGERS WITH A CLEAN LOW-LINT WIPE THEN REMOVE EXCESS LUBRICANT FROM O-RING WITH FINGERTIPS. WORK WITH O-RING IN THIS MANNER UNTIL NO VISUAL ACCUMULATION OF LUBRICANT IS OBSERVABLE ON GLOVED FINGERTIPS BY FURTHER WIPING.

2. TO HOLD A STATIC O-RING IN ITS GROOVE WHEN INSTALLING A MATING PART, APPLY LUBRICANT IN THE GROOVE NOT TO EXCEED 10 PERCENT OF THE TOTAL GROOVE VOLUME.

CAUTION

DO NOT APPLY LUBE TO MD273-0032 OR -0044 PLUGS. DRY LUBE IS ALREADY APPLIED.

B. THREADED PARTS

1. APPLY LUBRICANT IN A STREAK ACROSS ALL MALE THREADS, WITH A STREAK WIDTH NOT TO EXCEED 0.12 IN. THE LUBRICANT SHOULD BE APPLIED AT AT ONE POINT WITH THE LUBRICANT FLUSH WITH THE CREST OF THE THREADS.

CAUTION

EXERCISE CARE NOT TO GET LUBRICANT ON FLARED SEALING SURFACES OR ON THE ENDS OF FITTINGS WHERE IT COULD GET INTO A SYSTEM.

2. APPLY A THIN LAYER OF THREAD LUBRICANT TO THRUST SURFACE OF A TUBING SLEEVE TO PREVENT GALLING WHEN TORQUING.

12. SAFETY WIRE ALL PLUGS, TRANSDUCERS, ETC PER MA0102-306 USING SAFETY WIRE AS SPECIFIED IN BODY OF OMI.

13. CLEANLINESS LEVEL OF MPS SUBSYSTEMS ARE

GHE AND GO2 SUBSYSTEM	LEVEL 100A
LO2 SUBSYSTEM	LEVEL 800A
LH2 AND GH2 SUBSYSTEM	LEVEL 400

PERSONNEL INSTALLING TEST EQUIPMENT SHALL VERIFY THAT ALL EQUIPMENT IS CLEANED TO THE PROPER LEVEL PRIOR TO INSTALLATION

TEST EQUIPMENT MAY BE TRANSFERRED FROM ONE SUBSYSTEM TO ANOTHER SUBSYSTEM ONLY IF THE SECOND SYSTEM HAS THE SAME OR LOWER CLEANLINESS LEVEL REQUIREMENT.

ALL FLUID TEST EQUIPMENT THAT INTERFACES ORBITER FLUID SYSTEMS TO BE CLEANED TO KSC-C-123F LEVEL 100A.

14. MATERIAL USAGE PERMIT (MUP)

MUP 87-009 - ALLOWS MPS TO USE ACLAR DURING PROCESSING. CLEANLINESS CLASS 100A REQUIRED.

15. LEAK CHECK OF FOAMED JOINTS (BRAZED OR THREADED)

BRAZED, WELDED, THREADED OR FLANGED JOINTS WITHOUT TEST PORTS COVERED WITH FOAM INSULATION DO NOT REQUIRE CHECKS EXCEPT WHEN INVALIDATED.

16. TORQUE CHECK OF LEAKING DYNATUBE JOINT

A. VERIFY PRESSURE IS AT ZERO IN LINE.

B. DETERMINE HOW LOOSE FITTING IS. ATTEMPT TO TIGHTEN IT BY HAND AND COUNT NUMBER OF TURNS UNTIL FINGER TIGHT.

C. USING DIAL INDICATOR TORQUE WRENCH, APPLY TIGHTENING TORQUE (CW) TO FITTING AND RECORD TORQUE REQUIRED TO CAUSE FIRST MOVEMENT UP TO MAXIMUM ALLOWED TORQUE.

D. IF FITTING IS FOUND TO BE AT MAXIMUM TORQUE VALUE AND NO (CW) MOVEMENT OCCURED, DISASSEMBLE FITTING AND INSPECT MATING SURFACES FOR MISALIGNMENT, SCRATCHES, OR LACK OF LUBRICANT ON MALE THREADS.

17. MPS CAP/PLUG SET REMOVAL PROCEDURE

A. WHEN CAP/PLUG HAS BEEN REMOVED FROM THE VEHICLE RINSE OFF CAP/PLUG SEALING SURFACE WITH FREON-TF. WIPE WITH LINT FREE CLOTHS. OBTAIN TIR LOG NO. TO DOCUMENT REMOVAL.

B. INSPECT GSE SEALING SURFACE FOR DAMAGE: DINGS, SCRATCHES, GOUGES ETC. RECORD RESULTS.

C. BAG PLATE BY COVERING SEALING SURFACE WITH ACLAR 22A PER MK0116-0011, APPLY INTEGRITY SEALS. COVER SEALING SURFACE WITH LIBERAL AMOUNT OF PLASTIC WRAP FOR PROTECTION.

D. BAG AND IDENTIFY ALL ATTACHMENT HARDWARE AND INSPECTION STAMP.

E. I.D. CAP/PLUG WITH P/N, AND INSPECTION STAMP.

F. ON PARTS TAG PLACE LEVEL OF CLEANLINESS MAINTAINED BASED ON SYSTEM WHICH CAP/PLUG WAS REMOVED PER 1.7.13 AND MA0110-311.

G. ATTACH HARDWARE BAG TO CAP/PLUG BAG USING TAPE AND RETURN ITEMS TO RESPECTIVE CAP/PLUG SET:

MPS TEST A70-0640-3-11
MPS TEST A70-0640-3-14
FERRY FLIGHT A70-0640-5-21

CAUTION

DO NOT SPRAY FREON INTO
DISCONNECT BEING CLEANED.

18. MPS VEHICLE DISCONNECT CLEANING PROCEDURE AND TEST EQUIPMENT INSTALLATION.

    A. VISUALLY INSPECT DISCONNECT WITH WHITE LIGHT FOR DAMAGE TO SEALING SURFACE. RECORD RESULTS. INITIATE PR IF DAMAGE IS NOTED TO SEALING SURFACE, IF DAMAGE (SMALL SCRATCHES, NICKS, ETC.) ARE NOTED ON NON-SEALING SURFACE CONTACT MPS ENGR FOR FURTHER INFORMATION.

    B. VISUALLY INSPECT MPS 1 IN. QD'S (PD8-10,14) AND VERIFY MS16625-4250 SNAP RING IS FULLY SEATED IN GROOVE AND NO DISTORTION OR DISLOCATION IS EVIDENT.

    C. VISUALLY INSPECT VENT HOLES IN QD'S (PD9,10,14) FOR OBSTRUCTIONS OR CONTAMINATION.

    D. IF PARTICULATE/CONTAMINATION IS NOTED, REMOVE BY WIPING AREA WITH FREON-TF MOISTENED LINT FREE CLOTH. (REPEAT THIS AND FREON WIPE UNTIL VISUALLY CLEAN.

    E. IF A CAP/PLUG IS TO BE INSTALLED IT MUST CONFORM TO CLEAN LEVELS CALLED OUT IN 1.7.13.

    F. ON PARTS TAG, PLACE LEVEL OF CLEANLINESS MAINTAINED, BASED ON SYSTEM WHICH CAP/PLUG WAS REMOVED PER CLEANLINESS SPECIAL INSTRUCTION AND MA0110-311.

    G. IF NO CAP/PLUG IS TO BE INSTALLED, COVER DISCONNECT WITH ACLAR 22A CLEAN LEVEL 100A. APPLY INTEGRITY SEALS.

19. WHEN AN MPS SUBSYSTEM IS OPENED OR WHEN INTERFACING HARDWARE IS ATTACHED. THE INTERFACE AND/OR THE INTERIOR SURFACES OF THE MPS THAT CAN BE SEEN SHALL BE INSPECTED FOR CLEANLINESS. INSPECTED SURFACES SHALL BE VISIBLY CLEAN (WITH THE UNAIDED EYE) PER MA0110-311.

    REF OMRS V41GEN.041 MPS CLEANLINESS INSPECTION

20. V1171VL1 - MPS/SSME PRESSURIZATION OPERATIONS (LPS)

THIS OMI ALLOWS MPS ENGR TO USE SPECIFIC TASKS REQUIRED FOR TESTING IN CASES WHERE VEHICLE IS OUT OF NORMAL CONFIGURATION OR TO PERFORM SPECIAL TEST REQUIREMENTS. V1171VL1 MAY BE USED AT ANY TIME DURING STS FLOW TO SUPPORT ENGR AND TASK BEING PERFORMED. THIS OMI MAY ALSO BE CALLED OUT BY OTHER WADS, (OMI'S, TPS'S, PR'S, ETC.)

21. CDS DATA RETRIEVAL

A. CDS ENABLE KEY - PRESS

B. TYPE IN "TXK-"

C. SIGN ON KEY - PRESS

D. PAGE CLEAR BREAK KEY - PRESS

E. TYPE "XX_TCID",FD (UP TO 6 FD'S); START TIME (GMT), STOP TIME (GMT), DATE

F. (XX=LC, LIST CHANGE; P, PLOT; L, LIST)

G. CDS XMIT KEY - PRESS AT END OF EACH LINE

22. EFFECTIVITY CODES

EFFECTIVITY CODES DEFINE FLIGHTS AND ORBITERS FOR WHICH EACH OMRSD REQUIREMENT APPLIES. THIS PROCEDURE CONTAINS NOTES WITH A BRIEF DESCRIPTION OF REQUIREMENT, OMRSD NUMBER, EFFECTIVITY OF THE REQUIREMENT AND A NOT PERFORMED STATEMENT IF APPLICABLE. THE SYSTEM ENGINEER WILL DETERMINE FROM THE EFFECTIVITY CODES IF STEPS FOLLOWING THE NOTE ARE REQUIRED. THE NOT PERFORMED STATEMENT APPLIES TO ALL STEPS BETWEEN NOTE AND COMPLETION STATEMENT WHICH CONTAINS DESCRIPTION OF THE REQUIREMENT COMPLETED. EFFECTIVE FLIGHTS AND ORBITERS ARE DETERMINED FROM THE CODES AS FOLLOWS.

VXX	ORBITER EFFECTIVITY
VA	ALL ORBITERS
V02	OV-102
V03	OV-103
V04	OV-104
V05	OV-105

CODE	FLIGHTS
VXXF;C	CONTINGENCY
VXXF1-90	ALL
VXXF1;C	1 AND CONTINGENCY
VXXF1,I5F;C	1 AND INTERVALS OF EVERY 5 THEREAFTER AND CONTINGENCY
VXXF1,2,5;C	1, 2, 5 AND CONTINGENCY
VXXF1-90;Z	ALL, SATISFIED BY JSC REVIEW OF FLT DATA
VXXF1-4,I5F;C	1 THRU 4 AND INTERVALS OF EVERY 5 THEREAFTER AND CONTINGENCY
VXXF5I10F;C	FLIGHT 5 AND INTERVALS OF EVERY 10 AND CONTINGENCY

23. THE ORDER OF PERFORMANCE OF SEQUENCES/STEPS (HAZARDOUS OR NON-HAZARDOUS) WITHIN THIS OMI IS GOVERNED IN ACCORDANCE WITH SPI-519.

24. THROUGHOUT THIS OMI THE BELOW LISTED GSE PANELS WILL BE LOCATED AS FOLLOWS:

OPF BAYS 1&2:	OPF BAY 3:
S70-0695-2 PNL PLATFORM 12W	S70-0695-2 PNL PLATFORM 12E
S70-0695-8 PNL PLATFORM 12E	S70-0695-8 PNL PLATFORM 12W

25. ONCE A GSE HAND REG IS SET PER THIS OMI OR SUPPORTING SUBTASK WAD, THE REG MAY BE ADJUSTED (CW) OR (CCW) TO INCREASE OR DECREASE GSE SUPPLY PRESSURE TO MAINTAIN INITIALLY SET VALUE.

ADDITIONALLY, FOR SELF VENTING TYPE HAND REGS, THE BLEEDER VALVE ADJUSTMENT SCREW MAY BE ADJUSTED TO PROPERLY ALLOW HAND REG TO VENT AS DESIGNED. STANDARD PRACTICE IS AS FOLLOWS:

WHILE INCREASING THE REG UP TO SET PRESSURE, TURN THE BLEEDER VALVE ADJUSTMENT SCREW COUNTERCLOCKWISE TO REDUCE/STOP VENTING. WHEN DESIRED PRESSURE IS OBTAINED, TURN ADJUSTMENT SCREW COUNTERCLOCKWISE UNTIL VENTING STOPS, PLUS ONE QUARTER TURN.

26. THIS OMI COMPLIES WITH THE FOLLOWING MPS V41 GEN REQUIREMENTS:

V41GEN.041	MPS CLEANLINESS INSPECTION
V41GEN.130	MAX SOAP W/PERSONNEL PRESENT (GH2 PRESS)
V41GEN.160	ORBITER EXTERNAL LEAK CHECK CRITERIA
V41GEN.170	SOAP SOLUTION LEAK CHECKS
V41GEN.180	FOAM INSULATED JOINT LEAK CHECKS
V41GEN.190	MASS SPECTROMETER LEAK CHECKS
V41GEN.200	FLANGED JOINTS/SHAFT SEAL/INTERNAL LK CK
V41GEN.210	LEAK CK METHODS - NEW/REPAIRED JOINTS

27. MPS WILL BE RESPONSIBLE FOR PERFORMING AN INFORMAL OIR.

MINIMUM ATTENDEES ARE LSOC/NASA SYSTEM ENGINEERING AND PP&C.

28. THIS BOOK IS NON-HAZARDOUS AND MAY BE RUN ROR.

1.8 OMRS REQUIREMENTS SATISFIED BY THIS TOP

VEHICLE/ELEMENT NO. ORB_____/FLT_____ ET_____ SRB_____ LH___ RH___

GROUND HARDWARE PMN/SN _____ COMPONENT/SEGMENT _____/FLT_____

SITE _____ TCN _____ DATE _____

TOP WAS RUN AS A STANDALONE YES _____ NO _____
TOP WAS RUN AS A SUBTASK TO TOP _____.

OMRS NO./CIL NO	NOMENCLATURE/ EFFECTIVITY	SEQ-STEP (CAP)	QC/ENG VERIF
V41AD0.010 (1R)	LV53/LV56 ULL PRESS CNTL W/CK OUT CMDS	05-015	_____
L01	V03F1-12 V04F1-8		
L02	V02F11-90 V03F13-90 V04F9-90 V05F1-90		
V41AD0.020 (1R)	LV54/LV57 ULL PRESS CNTL W/CK OUT CMDS	05-015	_____
L01	V03F1-12 V04F1-8		
L02	V02F11-90 V03F13-90 V04F9-90 V05F1-90		
V41AD0.030 (1R)	LV55/LV58 ULL PRESS CNTL W/CK OUT CMDS	05-015	_____
L01	V03F1-12 V04F1-8		
L02	V02F11-90 V03F13-90 V04F9-90 V05F1-90		
V41AD0.100-A	E1 GH2 FCV CURRENT SIG (LV56)	04-021	_____
L02	V02FB16I5FR12;C V03FB18I5FR14;C V04FB13I5FR9;C V05F1-2I5F;C		
V41AD0.100-B	E2 GH2 FCV CURRENT SIG (LV57)	04-031	_____
L02	V02FB16I5FR12;C V03FB18I5FR14;C V04FB13I5FR9;C V05F1-2I5F;C		

DATE: 02-25-92

1.8 OMRS REQUIREMENTS SATISFIED BY THIS TOP

VEHICLE/ELEMENT NO. ORB_____/FLT_____ ET_____ SRB_____ LH___ RH___

GROUND HARDWARE PMN/SN _____ COMPONENT/SEGMENT _____/FLT_____

SITE _____ TCN _____ DATE _____

TOP WAS RUN AS A STANDALONE YES _____ NO _____
TOP WAS RUN AS A SUBTASK TO TOP _____.

OMRS NO./CIL NO	NOMENCLATURE/ EFFECTIVITY	SEQ-STEP (CAP)	QC/ENG VERIF
V41AD0.100-C	E3 GH2 FCV CURRENT SIG (LV58)	04-041	_____
L02	V02FB16I5FR12;C V03FB18I5FR14;C V04FB13I5FR9;C V05F1-2I5F;C		
V41AY0.040-A	GH2 PRESS SYSTEM JOINT LK CKS	10-016	_____
(1) L01	V03F7I5FE14 V04F3I5FE10		
L02	V02F8I5FR12 V03F7I5FR15 V04F3I5FR11 V05F2I5F		
V41AY0.040-B	GH2 PRESS SYS ORB/ORB FLANGE LK CKS	09-003	_____
(1) L01	V03F7I5FE14 V04F3I5FE10		
L02	V02F8I5FR12 V03F7I5FR15 V04F3I5FR11 V05F2I5F		
V41AY0.045	GH2 PRESS SYS INVALIDATED JNT LEAK CK VAF;C	08-060	_____
V41AY0.046	GH2 FCV WELD LK TEST V02F12-90 V03F15-90 V04F11-90 V05F2-90	10-002 (EFFECTI)	_____

1.8 OMRS REQUIREMENTS SATISFIED BY THIS TOP

VEHICLE/ELEMENT NO. ORB_____/FLT_____ ET_____ SRB_____ LH___ RH___

GROUND HARDWARE PMN/SN _____ COMPONENT/SEGMENT _____/FLT_____

SITE _____ TCN _____ DATE _____

TOP WAS RUN AS A STANDALONE YES _____ NO _____
TOP WAS RUN AS A SUBTASK TO TOP _____.

OMRS NO./CIL NO	NOMENCLATURE/ EFFECTIVITY	SEQ-STEP (CAP)	QC/ENG VERIF
V41AY0.200	GH2 PRESS SYSTEM DECAY CHECK	06-019	_____
(1) L01	V02F1-11		
	V03F1-13		
	V04F1-8		
L02	V02FR12;C		
	V03FR14;C		
	V04FR9;C		
	V05F;C		
V41AY0.380	LH2 REPRESS SYS INVALIDATED JT LK CK	07-012	_____
	VAF;C		
V41BA0.052	CV24 GH2 REPRESS CK VLV REV LK CK	07-007	_____
(1R)	V02F1-90;C		
	V03F1-90;C		
	V04F1-90;C		
	V05F2-90;C		
V41BA0.080-B	CV17 LH2 TK PREPRESS CK VLV LK CK	08-019	_____
(1R) L02	V02FOMDP;C		
	V03FOMDP;C		
	V04FOMDP;C		
	V05F5,OMDP;C		
V41BA0.100-A	CV21 E-1 GH2 ISO CK VLV LK CK	11-021	_____
(1R) L01	V02F8I5FE11;C		
	V03F7I5FE13;C	11-022	_____
	V04F3I5FE8;C		
L02	V02FR12;C		
	V03FR14;C		
	V04FR9;C		
	V05F2;C		

1.8 OMRS REQUIREMENTS SATISFIED BY THIS TOP

VEHICLE/ELEMENT NO. ORB_____/FLT_____ ET_____ SRB_____ LH___ RH___

GROUND HARDWARE PMN/SN _____ COMPONENT/SEGMENT _____/FLT_____

SITE _____ TCN _____ DATE _____

TOP WAS RUN AS A STANDALONE YES _____ NO _____
TOP WAS RUN AS A SUBTASK TO TOP _____.

OMRS NO./CIL NO		NOMENCLATURE/ EFFECTIVITY	SEQ-STEP (CAP)	QC/ENG VERIF
V41BA0.100-B		CV22 E-2 GH2 ISO CK VLV LK CK	11-034	_____
(1R)	L01	V02F8I5FE11;C		
		V03F7I5FE13;C	11-035	_____
		V04F3I5FE8;C		
	L02	V02FR12;C		
		V03FR14;C		
		V04FR9;C		
		V05F2;C		
V41BA0.100-C		CV23 E-3 GH2 ISO CK VLV LK CK	11-048	_____
(1R)	L01	V02F8I5FE11;C		
		V03F7I5FE13;C	11-049	_____
		V04F3I5FE8;C		
	L02	V02FR12;C		
		V03FR14;C		
		V04FR9;C		
		V05F2;C		
V41BB0.020		PD5/LV52 GH2 PRESS DISC LEAK CHECK	06-026	_____
(1)		V02F8;C		
		V03F7;C		
		V04F3;C		
		V05F;C		
V41BB0.050		PD10 LH2 PREPRESS DISC REV LK CK	08-041	_____
(1R)	L02	V02FB16I5FR12;C		
		V03FB18I5FR14;C		
		V04FB13I5FR9;C		
		V05F5I5F;C		
V41BB0.051		CV17/PD10 REV LK VALID	08-007	_____
		V02F12-90		
		V03F14-90		
		V04F9-90		
		V05F2-90		

1.8 OMRS REQUIREMENTS SATISFIED BY THIS TOP

VEHICLE/ELEMENT NO. ORB_____/FLT_____ ET_____ SRB_____ LH___ RH___

GROUND HARDWARE PMN/SN _____ COMPONENT/SEGMENT _____/FLT_____

SITE _____ TCN _____ DATE _____

TOP WAS RUN AS A STANDALONE YES _____ NO _____
TOP WAS RUN AS A SUBTASK TO TOP _____.

OMRS NO./CIL NO	NOMENCLATURE/ EFFECTIVITY	SEQ-STEP (CAP)	QC/ENG VERIF
V41BZ0.220	LV52 LH2 PRESS LINE VENT VLV FLOW PATH V02F8;C V03F7;C V04F3;C V05F;C	12-011	_____

SECTION II

PRE-OPERATION SETUP INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
01-000			PRE-OPERATION SETUPS - ORBITER	
01-001			PRE-OPERATION SETUP 1 - QUALITY SUMMARY SHEET (CMQC)	
01-002		CMQC	VERIFY REQUIRED PRE-OPERATION SETUPS COMPLETE FOR CALL TO STATIONS.	]]
			NOTE COMPLETION OF THE NEXT TWO PRE-OPERATION SETUPS IS NOT A CONSTRAINT TO CALL TO STATION.	
			2 PD16 GH2 SENSE LINE QD INSTALLATION NOT PERFORMED _____	
			3 PD10 GH2 PREPRESS QD INSTALLATION NOT PERFORMED _____	]]
01-003			ORBITER PRE-OPERATION SETUP 1 - QUALITY SUMMARY SHEET COMPLETE. REQUIRED PRE-OPERATIONS FOR CALL TO STATIONS COMPLETE.	QV:_____

PRE-OPERATION SETUP INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

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PRE-OPERATION SETUP INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
01-004			PRE-OPERATION SETUP 2 - PD16 GH2 SENSE LINE QD INSTALLATION - OMTO, OQCV, NASA QC NOTE DO NOT PERFORM THIS PRE-OPERATION SETUP IF FLEXHOSE/QD ASSY IS ALREADY INSTALLED AT ORBITER QD 50V41PD16. PRE-OPERATION SETUP 2 NOT PERFORMED	_____
			NOTE COMPLETION OF THIS PRE-OPERATION SETUP IS NOT A CONSTRAINT TO CALL TO STATION. COMPLETION VERIFICATION WILL BE PERFORMED PRIOR TO THE OPERATION BEING SUPPORTED.	
01-005			VERIFY GW70-420958-002 GRND HALF COUPLING IS CONNECTED TO 79K10547-HE16 FLEXHOSE. VERIFY 79K10547-HE16 FLEXHOSE IS CONNECTED TO (0-2) INTERFACE PANEL PORT A131506 (SEE FIGURES 8-10).	T:_____
01-006			S70-0695-8 PNL A83066 SOV - CLOSE (CW) A83070 - OPEN (CCW) A83065 GAGE SOV - OPEN (CCW) A83145 - OPEN (CCW) VERIFY GAGE A83143 READS 0 PSIG. A83070 - CLOSE (CW)	T:_____

PRE-OPERATION SETUP INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

NOTE

50V41PD16 IS LOCATED IN AFT FUSELAGE (LEFT HAND SIDE) JUST DOWNSTREAM OF GH2 FLOW CNTL VALVES.

01-007

1. REMOVE GRND PLUG (CCW) FROM GW70-420958-002 COUPLING. MAINTAIN SYSTEM CLEANLINESS (REF MA011-311).

2. REMOVE CAP (CCW) FROM 50V41PD16 TEST POINT COUPLING.

3. GW70-420958-002 QD FILTER ASSY

OK TO INSTALL QWN:____

CONNECT GW70-420958-002 QD/FILTER ASSY TO 50V41PD16 INSIDE THE AFT FUSELAGE.
INSERT GROUND HALF COUPLING AND TURN (CW).
TORQUE TO 15-20 IN. LBS.
SECURE WITH FLEXHOSE RESTRAINTS.
(REF 80K51846)

Z_____ DUE DATE_____

VERIFY CSR-242 TQV:____
SS3

4. CONNECT AIRBORNE CAP AND GND PLUG TOGETHER.

5. SUPPORT HE16 FLEXHOSE TO AVOID CREATING TORQUE ON THE GSE/VEHICLE DISCONNECT. USE TIE WRAPS.

TQW:____

01-008

ORBITER PRE-OPERATION SETUP 2 - PD16 GH2 SENSE LINE QD INSTALLATION COMPLETE.

QV:____

PRE-OPERATION SETUP INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
01-009			PRE-OPERATION SETUP 3 - PD10 GH2 PREPRESS	
			QD INSTALLATION - OMTO, OQCV, NASA QC	
			NOTE DO NOT PERFORM THIS PRE-OPERATION SETUP IF FLEXHOSE/QD ASSEMBLY IS ALREADY INSTALLED AT ORBITER QD 50V41PD10.	
			PRE-OPERATION SETUP 3 NOT PERFORMED	_____
			NOTE OPERATIONS INVOLVING CRIT 1 AND/OR 1R ITEMS ARE CONTAINED IN THE FOLLOWING SEQUENCE/ STEPS. COMPLETION OF THIS PRE-OPERATION SETUP IS NOT A CONSTRAINT TO CALL TO STATION. COMPLETION VERIFICATION WILL BE PERFORMED PRIOR TO THE OPERATION BEING SUPPORTED. FERRY FLIGHT CAPS ARE REMOVED POST FERRY FLIGHT PER JOB CARD V41-20005 IN SUPPORT OF V5003.	
01-010			IF NOT INSTALLED, INSTALL PD16 PER PRE-OPERATION SETUP 2.	
				TQV:_____
			NOT PERFORMED	_____
			PD10 - VEHICLE DISCONNECT INSPECTION	

PRE-OPERATION SETUP INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
01-011			IF INSTALLED REMOVE ACLAR/TAPE FROM DISCONNECT 50V41PD10.	TQV:_____
			NOT PERFORMED	_____
01-012			CLEAN AND INSPECT VEHICLE DISCONNECT (REF 1.7.18 SPECIAL INSTRUCTIONS). RESULTS _____	TQW:_____
01-013			S70-0695-8 PANEL A83066 SOV - CLOSE (CW) A83070 - OPEN (CCW) A83065 GAGE SOV - OPEN (CCW) A83145 - OPEN (CCW) UNTIL AUDIBLE VENTING CEASES, THEN CLOSE (CW). VERIFY GAGE A83143 READS 0 PSIG. A83070 - CLOSE (CW)	T:_____
01-014			IF TWISTED, LOOSEN 79K10547-HE10 FLEXHOSE FROM INLET OF G070-005820 QD. USE BACKUP WRENCH. MAINTAIN SYSTEM CLEANLINESS.	TQW:_____
			NOT PERFORMED	_____

PRE-OPERATION SETUP INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			CAUTION FLT HALF QD IS FLOATING. FLT HALF QD MUST BE CENTERED PRIOR TO ATTEMPTING MATE WITH GSE. PD10 IS KEYED WITH TWO SLOTS AT 90 DEGREE INTERVALS. ORIENT FLT HALF TO GND HALF PRIOR TO INSTALLATION. THE FOLLOWING STEPS MUST BE WORKED IN ORDER TO PREVENT INADVERTANT CONNECTION OF WRONG GROUND HALF TO ORBITER DISCONNECTS AS PD10 AND PD14 ARE PHYSICALLY IDENTICAL AND COULD BE SWITCHED.	
01-015			VERIFY 79K10547-HE10 FLEXHOSE IS CONNECTED TO (O-2) A105347 I/F PNL PORT (SEE FIGURES 8 THRU 10). TQV:_____]	
01-016			TRACE FLEXHOSE TO END AND VERIFY G070-005820-005 GH2 PREPRESS GND QD IS CONNECTED TO 79K10547-HE10 FLEXHOSE. TQV:_____	

PRE-OPERATION SETUP INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			WARNING PERSONNEL INVOLVED IN CLEANING OPERATIONS MUST WEAR RUBBER GLOVES AND IF WORKING ABOVE EYE LEVEL, GOGGLES.	
01-017			G070-005820-005 QD PRIOR TO INSTALLING G070-005820-005 QD, REMOVE ACLAR/TAPE FROM FORWARD END OF G070-005820-005. INSPECT TEFLON NOSE SEAL AND MATING SURFACE, RINSE OFF WITH FREON AND REMOVE ANY RESIDUE WITH LINT FREE CLOTH. VERIFY TWO LOCKING PINS ARE DISENGAGED AND RETENTION FINGERS ARE EXPOSED ON G070-005820-005 QD. TQW:_____	
01-018			LOCATE PD10 ON LH2 T-0 (SEE FIGURE 11). T:_____	
01-019			G070-005820-005 QD OK TO INSTALL QWN:_____ 1. ALIGN AND ENGAGE G070-005820-005 QD TO 50V41PD10 DISCONNECT PUSHING G070-005820-005 IN LINE TO ENGAGE COLLET. 2. MOVE LOCKING PINS TO THE LOCKED POSITION AND VERIFY QD IS FULLY ENGAGED. TURN LOCKING PINS (CW) SNUG. 3. SUPPORT G070-005820-005 QD ASSY IN HORIZONTAL POSITION, USING TIE WRAPS ATTACHED TO CARRIER FRAME. TQW:_____	

DATE: 02-25-92

OMI NO. - V1009.007
REV. - A

PRE-OPERATION SETUP INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
01-020			TORQUE 79K10547-HE10 FLEXHOSE TO INLET OF QD 270-345 IN. LBS.	
			Z_____ DUE DATE_____	
			VERIFY CSR-242	TQV:_____
				TQW:_____
01-021			ORBITER PRE-OPERATION SETUP 3 - PD10 GH2 PREPRESS QD INSTALLATION COMPLETE.	
				QV:_____

PRE-OPERATION SETUP INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

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SECTION III

OPERATION SUPPORT SETUP INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
02-000			OPERATION SUPPORT SETUPS - ORBITER	
02-001			OPERATION SUPPORT SETUP 1 - TP10 HANDVALVE	
			INSTALLATION - OMTO, OQCV, NASA QC	
			NOTE IF REQD BY EFFECTIVITY (1-5 FLIGHTS), PERFORM NEXT STEP TO INSTALL HANDVALVE AT TP10. THIS OPERATION SUPPORT SETUP INSTALLS A HANDVALVE AT GH2 PRESSURIZATION SYSTEM TEST PORT 50V41TP10 TO SUPPORT 50V41PD10 LH2 PREPRESS QD REVERSE LEAK CHECK.	
			OPERATION SUPPORT SETUP 1 NOT PERFORMED	_____

OPERATION SUPPORT SETUP INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
02-002			MPS ENG OK TO PROCEED _____	

NOTE

THE FOLLOWING HARDWARE IS REQD FOR THIS OPERATION SUPPORT SETUP (CLEAN LVL 100A):

QTY	PART NO.	NOMENCLATURE
1	SSKG250-4T	1/4" HANDVALVE - (ROBBINS OR DRAGON) (1000 PSI MIN)
1	L070-000070-016	1/4 " 90 DEG BACK-TO-BACK
1	C-KC150C4	CAP
1	C-KC133C6-4	REDUCER-ADAPTER
1	C-KC112C4	ADAPTER
1	C-KC103-6	SEAL
2	C-KC103-4	SEAL
2	MS28778-4	O-RING
1	ME286-0068-0008	MINIFILTER (-0001 AND -0015 ARE EQUIV SUBS)

OPERATION SUPPORT SETUP INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			TP10 HANDVALVE BUILD-UP	
02-003		OMTO	1. INSTALL KC112C4 ADAPTER IN OUTLET PORT OF ROBBINS TYPE (1/4 IN.) HANDVALVE. USE MS28778-4 O-RING. TORQUE TO 55-80 IN. LBS. Z_____ DUE DATE_____	
			2. INSTALL KC133C6-4 REDUCER ADAPTER IN INLET PORT OF (1000 PSI MIN. OPER. PRESS) ROBBINS TYPE 1/4 IN. HANDVALVE USING MS28778-4 O-RING. TORQUE FITTING TO 55-80 IN. LBS. Z_____ DUE DATE_____ VERIFY CSR-242 TQV:_____ SS1-2	
			3. BAG HANDVALVE ASSY TO MAINTAIN CLEAN. TQW:_____	

OPERATION SUPPORT SETUP INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

TP10 PLUG REMOVAL

NOTE

PERFORM THE FOLLOWING TWO STEPS IF TEST PORT PLUG IS INSTALLED.

02-004 OMTO VERIFY WITH CMPS THAT THE GH2 PRESSURIZATION SYSTEM IS AT AMBIENT PRESSURE FOR TP10 PLUG REMOVAL.

MPS ENGR CONTACTED _____

TIME/DATE _____/_____

T:_____

NOT PERFORMED _____

NOTE

A ME261-0033-0104 GOLD OR ME261-0033-0204 LEAD K-SEAL MAY BE INSTALLED/REMOVED AT TP10. (SEE FIG 4)

02-005 OMTO 1. SLOWLY LOOSEN BLEEDER PLUG IN TP10 APPROX 2-4 TURNS TO ALLOW LINE TO VENT TO AMBIENT.

2. REMOVE PLUG AT 50V41TP10. DOUBLE BAG AND SEAL PLUG. RETAIN K-SEAL CLEAN FOR INSTALLATION IN NEXT STEP.

3. ATTACH PLUG TO LINE NEXT TO TP10.

NOT PERFORMED _____

OPERATION SUPPORT SETUP INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
02-006			ME286-0068-0008 FILTER	
			OK TO INSTALL QW:_____	
			1. INSPECT ME286-0068-0008 MINIFILTER TO VERIFY THAT FILTER SCREEN IS INSTALLED.	
			2. LUBE MINIFILTER (REF. SPECIAL INSTRUCTIONS 1.7).	
			INSTALL ME286-0068-0008 MINIFILTER INTO TP10 WITH ME261-0033-0104 OR -0204 SEAL (PREVIOUSLY REMOVED FROM TP10). TORQUE TO 170-200 IN. LBS.	
			FILTER S/N _____	
			Z_____ DUE DATE_____	
			VERIFY CSR-242 TQV:____	

OPERATION SUPPORT SETUP INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			HANDVALVE INSTALLATION AT TP10	
			NOTE ORIENT HANDVALVE/BACK-TO-BACK SO THAT A FLEXHOSE/FILTER ASSY. MAY BE INSTALLED WITHOUT INTERFERENCE FROM SURROUNDING STRUCTURE/TUBING.	
02-007		OMTO	INSTALL A L070-000070-016 1/4 IN. 90 DEG BACK-TO-BACK ONTO THE KC112C4 ADAPTER AT THE HANDVALVE USING A KC103-4 SEAL. TORQUE TO 135-185 IN. LBS USING A BACKUP WRENCH. Z_____ DUE DATE_____ VERIFY CSR-242	TQV:_____ TQW:_____
02-008		OMTO	INSTALL L070-000070-016 1/4 IN. BACK-TO-BACK (HAND VALVE ASSY) ONTO MINIFILTER AT TP10 USING A KC103-4 SEAL. TORQUE FITTING TO 135-185 IN. LBS. Z_____ DUE DATE_____ VERIFY CSR-242	TQV:_____ TQW:_____
02-009		OMTO	INSTALL KC150C6 CAP TO OPEN PORT ON TP10 HANDVALVE WRENCH TIGHT.	T:_____]
02-010		OMTO	TP10 HANDVALVE - CLOSE (CW)	T:_____
02-011			ORBITER OPERATION SUPPORT SETUP 1 - TP10 HANDVALVE INSTALLATION COMPLETE.	

OPERATION SUPPORT SETUP INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
02-012			OPERATION SUPPORT SETUP 2 - MPS 1-INCH QD LEAK CHECK TOOL SETUP - OMTO, OQCV	

NOTE

DO NOT PERFORM THIS OPERATION SUPPORT SETUP IF LEAK CHECK TOOL ALREADY CONFIGURED OR IS NOT REQUIRED THIS FLOW.

PD10 LEAK CHECK TOOL IS ONLY REQUIRED TO SUPPORT PD10 CHECKOUT DURING OMDP FLOW OR FOR LRU RETEST. CONTACT MPS ENGR.

OPERATION SUPPORT SETUP 2 NOT PERFORMED _____

MPS ENGR CONTACTED:

_____

NOTE

THE FOLLOWING HARDWARE IS REQUIRED FOR THIS OPERATION SUPPORT SETUP.

1	KC118C6	90 DEG ELBOW
1	74332026-503	DUST CAP
A/R		TEFLON TAPE

02-013		OMTO	OBTAIN FOLLOWING PART FROM MERL 1 KC118C6 90 DEG ELBOW 1 NA TEFLON TAPE	T:_____
02-014		OMTO	OBTAIN ONE 74332026-503 DUST CAP FROM A70-0640-3 MPS CAP AND PLUG SET.	T:_____

OPERATION SUPPORT SETUP INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
02-015		OMTO	REMOVE P7-249(L)-3 RELIEF PLUG AND 3-906 O-RING (CCW), FROM 74332026-503 DUST CAP. BAG AND RETAIN PLUG FOR FUTURE INSTALLATION (SEE FIGURE 16).	
			TQV:_____	
			NOTE THE FOLLOWING STEP ALLOWS RE-POSITIONING OF INTERNAL SPRING TO PREVENT INTERFERENCE WITH KC118 ELBOW DURING CAP INSTALLATION.	
02-016		OMTO	IF GAP ON INTERNAL SPRING IS NOT POSITIONED DIRECTLY OVER RELIEF PLUG, RE-POSITION SPRING USING SNAP-RING OR NEEDLE NOSE PLIERS.	
			TQW:_____	
			NOT PERFORMED _____	
02-017		OMTO	INSTALL A KC118C6, 90 DEG ELBOW, USING TEFLON TAPE ON THREADS, INTO 74332026-503 DUST CAP RELIEF PORT, WRENCH TIGHT. ORIENT ELBOW SO FLOWMETER CAN BE CONNECTED DURING LEAK CHECKS. (SEE FIG 16)	
			TQW:_____	
02-018		OMTO	TEMPORARILY ID THIS DUST CAP AS "MPS 1-IN. QD LEAK CHECK TOOL".	
			TQW:_____	
02-019		OMTO	NOTIFY MPS ENGINEERING THAT OPERATION SUPPORT SETUP 2 - MPS 1-INCH QD LEAK CHECK TOOL SETUP IS COMPLETE. MPS ENGR CONTACTED:_____ DATE/TIME:_____/_____	
			T:_____	
02-020			ORBITER OPERATION SUPPORT SETUP 2 - MPS 1-INCH QD LEAK CHECK TOOL SETUP COMPLETE.	
			QV:_____	

SECTION IV

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
03-000			CALL TO STATION	
03-001	OTC NTD 232 STM 111	NTD STM GYCC	START VOICE RECORDING FOR V1009.007 AS SCHEDULED.	
03-002	OTC 132		ANNOTATE VOICE TAPE DOCUMENT NO. _____ TITLE _____ DATE _____ TIME _____ GMT VEHICLE _____ LOCATION _____	
03-003	OTC	CMQC	REPORT CONSTRAINTS STATUS.	QV:_____
03-004	OTC	CMQC	VERIFY PRE-OPERATION SETUPS REQUIRED FOR CALL TO STAION ARE RECORDED AS COMPLETE IN QUALITY SUMMARY SHEET.	]]] QV:_____
03-005	NTD PA	ALL	PERSONNEL PARTICIPATING IN V1009.007 GO TO COMMAND CHANNEL 168 AND STAND BY FOR STATUS CHECKS OF TEST READINESS.	
03-006	OTC		REPORT TEST READINESS STATUS.	
		CMPS	_____ MAIN PROPULSION SYS ENG (LSOC)	
		OMTO	_____ MECHANICAL TECH ORBITER (OPF)	
03-007	OTC	ALL	VERIFY YOUR COPY OF V1009.007 IS REV LEVEL ___.	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
03-008	NTD 232	LPS	VERIFY LPS READY TO SUPPORT V1009.007. RECORD TCID NO. _____. RECORD SYSTEM OPERATIONS SOFTWARE NO. _____.	
03-009	NTD	OTC	PROCEED WITH V1009.007 AND REPORT WHEN MILESTONES COMPLETE.	
03-010	NTD *SCC	*SCC *OSE	VERIFY READINESS TO SUPPORT V1009.007 REV ___.	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
04-000			GH2 FLOW CONTROL VALVE SIGNATURE TRACE	

NOTE

THE FOLLOWING STEPS WILL PERFORM ELECTRICAL (CURRENT) SIGNATURE TRACES OF THE GH2 FLOW CONTROL VALVES.

THE STEPS IN THIS SEQUENCE MAY BE WORKED OUT OF ORDER AT THE DIRECTION OF MPS ENGINEERING.

THE FOLLOWING EQUIPMENT WILL BE SUPPLIED BY MPS ENGINEERING.

1 TEKTRONIX 2220 OSCILLOSCOPE
1 TEKTRONIX HC100 PLOTTER

EFFECTIVITY: REF SECTION 1.8

04-001	CMPS	IF THE GH2 SYSTEM IS NOT AT AMBIENT PRESSURE, PERFORM "GH2 PREPRESS VENTING AND SECURING THRU PD16 (OPF)" PER OMI V1171VL1, OR THIS OMI. RT OMI LOG NO._____ NOT PERFORMED _____
04-002	CMPS	CRT (VAE20) RECORD GH2 SYSTEM PRESSURE: GH2 SYS PRESSURE_____PSIA BD
04-003	OQCV	THE FOLLOWING CRITICAL SKILL IS REQUIRED FOR PERFORMANCE OF THIS SEQUENCE. VERIFY CSR-403 TQV:_____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
04-004		OETO	VERIFY THE FOLLOWING EQUIPMENT IS ON HAND:	
			1 HP428B AMPMETER (CLAMP-ON)	
			Z_____ DUE DATE_____	
				T:_____
			NOTE IF GH2 FLOW CONTROL VALVE ELECTRICAL CONNECTORS ARE MATED DO NOT PERFORM NEXT THREE STEPS.	
04-005		CMPS	CONSOLE KYBD SAE12 PERF PGM KEY - PRESS	
			NOT PERFORMED	_____
			NOTE FOLLOWING STEP PROVIDES ELECTRICAL CONNECTOR SAFING FOR ELECTRICAL CONNECTOR MATING.	
04-006		CMPS	CRT (SAE12)	
			VERIFY ET OI POWER IS OFF	
			NOT PERFORMED	_____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
04-007		OETO	IF NOT MATED, MATE THE FOLLOWING CONNECTORS:	
			OK TO MATE	QW:_____
			1. 50V77W90P787 TO 50V41LV56J1	
			SCAN LOG NO. _____	
			NOT PERFORMED	_____ SS1
			2. 50V77W91P788 TO 50V41LV57J1	
			SCAN LOG NO. _____	
			NOT PERFORMED	_____ SS2
			3. 50V77W31P789 TO 50V41LV58J1	
			SCAN LOG NO. _____	
			NOT PERFORMED	_____ SS3
			VERIFY CSR-028	TQV:_____
				TQW:_____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
04-008	CMPS	OETO	SET UP TEK 2220 OSCILLOSCOPE AS FOLLOWS:	
			1. AUTO SW - IN	
			2. DISPLAY SW - OUT	
			3. SAVE REF SW - OUT	
			4. PRETRIG SW - IN	
			5. POSTTRIG SW - IN	
			6. SAVE SW - OUT	
			7. STORE SW - IN	
			8. INTENSITY - SET ON MEDIUM	
			9. CH1 VERTICAL MODE SW - CH1	
			10. X-Y SW - OUT	
			11. BW LIMIT SW - OUT	
			12. ADD-ALT-CHOP SW - ALT	
			13. VOLTS/DIV - 1X.1	
			14. AC-GND-DC - DC	
			15. SEC/DIV - 10 MS	
			16. <-POSITION-> - MIDDLE	
			17. STORE ONLY SW - OUT	
			18. TRIGGER VAR HOLD OFF - MIDDLE	
			19. TRIGGER ROLL/SGL SWP SW - OUT	
			20. TRIGGER ROLL/P-P AUTO SW - OUT	
			21. TRIGGER SCAN/NORM SW - OUT	
			22. TRIGGER SLOPE IN/OUT - OUT	
			23. TRIGGER LEVEL - TURN SLIGHTLY RIGHT OF CENTER	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
04-008 CON'T			24. TRIGGER INT SW - CH1 25. TRIGGER SOURCE SW - INT 26. TRIGGER EXT COUPLING - DC	T:_____
04-009	RMPS	OETO	IF NOT MATED, MATE HP428B OUTPUT TO OSCILLOSCOPE PROVIDED BY MPS ENGINEERING.	TV:_____
			NOT PERFORMED	_____
04-010		OETO	MATE HPIB INTERFACE CABLE FROM TEK 2220 OSCILLOSCOPE TO HC100 PLOTTER.	TQV:____
04-011		CMPS	IF NOT ACTIVE: CONSOLE KYBD (C4) VAE43 PERF PGM KEY - PRESS GO TO PG B	
			NOT PERFORMED	_____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

ENGINE 1 GH2 FLOW CONTROL VALVE SIGNATURE TRACES

NOTE

NOTED REQUIREMENT IS SATISFIED BY COMPLETION OF TWO OF THE NEXT NINE STEPS.

OMRS V41AD0.100-A

04-012 RMPS OETO LOCATE GH2 FLOW CONTROL VALVE LV56 AND INSTALL HP428B CLAMP-ON AMPMETER AROUND EITHER SOLENOID WIRE. IF CURRENT POLARITY IS REVERSED DURING VALVE CYCLE AS INDICATED BY NEGATIVE DEFLECTION OF NEEDLE ON HP428B, TURN CLAMP 180 DEG ON WIRE.

TQW:____

CAUTION

NO MORE THAN ONE GH2 FLOW CONTROL VALVE CAN BE ENERGIZED AT ANY ONE TIME. TOTAL ENERGIZED TIME CAN NOT EXCEED 20 MINUTES IN A THREE HOUR PERIOD.

NOTE

FLOW CONTROL VALVE IS TO REMAIN ENERGIZED WHILE OBTAINING ENERGIZED VALVE TRACE.

PGM VAE43 HAS BUILT-IN HARDWARE PROTECTION TO PRECLUDE CUMMULATIVE POWER ON TIME EXCEEDING 20 MINUTES.

REF OMRS V41GEN.060

04-013 CMPS CURSOR CNTL (VAE43)

E-1 GH2 FCV (LV56) - ENERGIZE

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
04-014	RMPS	OQCV	ONCE AN ACCEPTABLE SIGNATURE TRACE IS OBTAINED, TAKE A PLOT OF THE TRACE WITH PLOTTER PROVIDED. RECORD REQUIRED DATA ON PLOT PER MPS ENGR DIRECTION. OMRS V41AD0.100-A TQWN:____	
			NOTE IN NEXT STEP, CYCLING STORE SWITCH RESETS OSCILLOSCOPE.	
04-015	RMPS	OETO	POSITION OSCILLOSCOPE SWITCH: SLOPE SW - IN STORE SW - OUT STORE SW - IN TQW:_____	
04-016		CMPS	CURSOR CNTL (VAE43) E-1 GH2 FCV (LV56) - DE-ENERGIZED	
04-017	RMPS	OQCV	ONCE AN ACCEPTABLE SIGNATURE TRACE IS OBTAINED, TAKE A PLOT OF THE TRACE WITH PLOTTER PROVIDED. RECORD REQUIRED DATA ON PLOT PER MPS ENGR DIRECTION. OMRS V41AD0.100-A TQWN:____	
04-018	RMPS	OETO	POSITION OSCILLOSCOPE SWITCH: SLOPE SW - OUT STORE SW - OUT STORE SW - IN TQW:_____	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

NOTE

PREVIOUS SIX STEPS WILL BE REPEATED FOUR TIMES TO ENSURE ACCEPTABLE TRACES ARE OBTAINED.

04-019 OQCV FOLLOWING MATRIX WILL BE FILLED OUT FOR RUNS 2 THROUGH 5 OF THE PREVIOUS SIX STEPS.

	RUN 2	RUN 3	RUN 4	RUN 5
CMPS	_____	_____	_____	_____
TQWN:	_____	_____	_____	_____
TQW:	_____	_____	_____	_____
CMPS	_____	_____	_____	_____
TQWN:	_____	_____	_____	_____
TQW:	_____	_____	_____	_____

04-020 OETO REMOVE CLAMP-ON AMPMETER FROM SOLENOID WIRE ON LV56.

T:_____

04-021 COMPLETION OF TWO OF THE PREVIOUS NINE STEPS SATISFIES NOTED OMRS REQUIREMENT.

OMRSD V41AD0.100-A

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			ENGINE 2 GH2 FLOW CONTROL VALVE SIGNATURE TRACES	
			NOTE NOTED REQUIREMENT IS SATISFIED BY COMPLETION OF TWO OF THE NEXT NINE STEPS. OMRS V41AD0.100-B	
04-022	RMPS	OETO	LOCATE GH2 FLOW CONTROL VALVE LV57 AND INSTALL HP428B CLAMP-ON AMPMETER AROUND EITHER SOLENOID WIRE. IF CURRENT POLARITY IS REVERSED DURING VALVE CYCLE AS INDICATED BY NEGATIVE DEFLECTION OF NEEDLE ON HP428B TURN CLAMP 180 DEG ON WIRE.	TQW:_____
			CAUTION NO MORE THAN ONE GH2 FLOW CONTROL VALVE CAN BE ENERGIZED AT ANY ONE TIME. TOTAL ENERGIZED TIME CAN NOT EXCEED 20 MINUTES IN A THREE HOUR PERIOD.	
			NOTE FLOW CONTROL VALVE IS TO REMAIN ENERGIZED WHILE OBTAINING ENERGIZED VALVE TRACE. PGM VAE43 HAS BUILT-IN HARDWARE PROTECTION TO PRECLUDE CUMMULATIVE POWER ON TIME EXCEEDING 20 MINUTES. REF OMRS V41GEN.060	
04-023		CMPS	CURSOR CNTL (VAE43) E-2 GH2 FCV (LV57) - ENERGIZE	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
04-024	RMPS	OQCV	ONCE AN ACCEPTABLE SIGNATURE TRACE IS OBTAINED, TAKE A PLOT OF THE TRACE WITH PLOTTER PROVIDED. RECORD REQUIRED DATA ON PLOT PER MPS ENGR DIRECTION. OMRS V41AD0.100-B	TQWN:___
04-025	RMPS	OETO	POSITION OSCILLOSCOPE SWITCH: SLOPE SW - IN STORE SW - OUT STORE SW - IN	TQW:____
04-026		CMPS	CURSOR CNTL (VAE43) E-2 GH2 FCV (LV57) - DE-ENERGIZED	
04-027	RMPS	OQCV	ONCE AN ACCEPTABLE SIGNATURE TRACE IS OBTAINED, TAKE A PLOT OF THE TRACE WITH PLOTTER PROVIDED. RECORD REQUIRED DATA ON PLOT PER MPS ENGR DIRECTION. OMRS V41AD0.100-B	TQWN:___
04-028	RMPS	OETO	POSITION OSCILLOSCOPE SWITCH: SLOPE SW - OUT STORE SW - OUT STORE SW - IN	TQW:____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

NOTE

PREVIOUS SIX STEPS WILL BE REPEATED FOUR TIMES TO ENSURE ACCEPTABLE TRACES ARE OBTAINED.

04-029 OQCV FOLLOWING MATRIX WILL BE FILLED OUT FOR RUNS 2 THROUGH 5 OF THE PREVIOUS SIX STEPS.

	RUN 2	RUN 3	RUN 4	RUN 5
CMPS	_____	_____	_____	_____
TQWN:	_____	_____	_____	_____
TQW:	_____	_____	_____	_____
CMPS	_____	_____	_____	_____
TQWN:	_____	_____	_____	_____
TQW:	_____	_____	_____	_____

04-030 OETO REMOVE CLAMP-ON AMPMETER FROM SOLENOID WIRE ON LV57.

T:_____

04-031 COMPLETION OF TWO OF THE PREVIOUS NINE STEPS SATISFIES NOTED OMRS REQUIREMENT.

OMRSD V41AD0.100-B

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			ENGINE 3 GH2 FLOW CONTROL VALVE SIGNATURE TRACES	
			NOTE NOTED REQUIREMENT IS SATISFIED BY COMPLETION OF TWO OF THE NEXT NINE STEPS. OMRS V41AD0.100-C	
04-032	RMPS	OETO	LOCATE GH2 FLOW CONTROL VALVE LV58 AND INSTALL HP428B CLAMP-ON AMPMETER AROUND EITHER SOLENOID WIRE. IF CURRENT POLARITY IS REVERSED DURING VALVE CYCLE AS INDICATED BY NEGATIVE DEFLECTION OF NEEDLE ON HP428B, TURN CLAMP 180 DEG ON WIRE.	
				TQW:____
			CAUTION NO MORE THAN ONE GH2 FLOW CONTROL VALVE CAN BE ENERGIZED AT ANY ONE TIME. TOTAL ENERGIZED TIME CAN NOT EXCEED 20 MINUTES IN A THREE HOUR PERIOD.	
			NOTE FLOW CONTROL VALVE IS TO REMAIN ENERGIZED WHILE OBTAINING ENERGIZED VALVE TRACE. PGM VAE43 HAS BUILT-IN HARDWARE PROTECTION TO PRECLUDE CUMMULATIVE POWER ON TIME EXCEEDING 20 MINUTES. REF OMRS V41GEN.060	
04-033		CMPS	CURSOR CNTL (VAE43) E-3 GH2 FCV (LV58) - ENERGIZE	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
04-034	RMPS	OQCV	ONCE AN ACCEPTABLE SIGNATURE TRACE IS OBTAINED, TAKE A PLOT OF THE TRACE WITH PLOTTER PROVIDED. RECORD REQUIRED DATA ON PLOT PER MPS ENGR DIRECTION. OMRS V41AD0.100-C	TQWN:___
04-035	RMPS	OETO	POSITION OSCILLOSCOPE SWITCH: SLOPE SW - IN STORE SW - OUT STORE SW - IN	TQW:_____
04-036		CMPS	CURSOR CNTL (VAE43) E-3 GH2 FCV (LV58) - DE-ENERGIZED	
04-037	RMPS	OQCV	ONCE AN ACCEPTABLE SIGNATURE TRACE IS OBTAINED, TAKE A PLOT OF THE TRACE WITH PLOTTER PROVIDED. RECORD REQUIRED DATA ON PLOT PER MPS ENGR DIRECTION. OMRS V41AD0.100-C	TQWN:___
04-038	RMPS	OETO	POSITION OSCILLOSCOPE SWITCH: SLOPE SW - OUT STORE SW - OUT STORE SW - IN	TQW:_____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			NOTE PREVIOUS SIX STEPS WILL BE REPEATED FOUR TIMES TO ENSURE ACCEPTABLE TRACES ARE OBTAINED.	
04-039		OQCV	FOLLOWING MATRIX WILL BE FILLED OUT FOR RUNS 2 THROUGH 5 OF THE PREVIOUS SIX STEPS.	
			RUN 2 RUN 3 RUN 4 RUN 5	
			CMPS _____ _____ _____ _____	
			TQWN: _____ _____ _____ _____	
			TQW: _____ _____ _____ _____	
			CMPS _____ _____ _____ _____	
			TQWN: _____ _____ _____ _____	
			TQW: _____ _____ _____ _____	
04-040		OETO	REMOVE CLAMP-ON AMPMETER FROM SOLENOID WIRE ON LV58.	
				T:_____
04-041			COMPLETION OF TWO OF THE PREVIOUS NINE STEPS SATISFIES NOTED OMRS REQUIREMENT. OMRSD V41AD0.100-C	
04-042		OETO	RETURN HP428B CLAMP-ON AMPMETER TO STOCK.	
				T:_____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			ENGINEERING DATA REVIEW/ACCEPTANCE	
			NOTE ASSESSMENT OF CURRENT TRACES FOR EACH VALVE WILL BE PERFORMED BY RI-DOWNEY AND JSC SSM/EP2.	
04-043		OQCV	ROUTE ALL SIGNATURE TRACES TO MPS ENGINEERING FOR FORWARDING TO ROCKWELL/DOWNEY MPS DESIGN AND NASA JSC-SSM FOR DATA ASSESSMENT.	QV:_____
04-044			RECORD ENGINEERING ACCEPTABILITY OF GH2 FLOW CONTROL VALVE SIGNATURE TRACES. RESULTS:_____ (ACCEPTABLE/UNACCEPTABLE) LSOC-MPS ENGINEER_____ RI-LSS ENGINEER_____	
04-045			GH2 FLOW CONTROL VALVE SIGNATURE TRACES COMPLETE.	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

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OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
05-000			ORBITER GH2 MPS FLOW CONTROL VALVE AUTO CHECKOUT	
			VERIFICATION	
			EFFECTIVITY: (REF SECTION 1.8)	
			NOTE FLOW CONTROL VALVE SOLENOIDS WILL BE ENERGIZED. THIS SEQUENCE USES PGM VAE43 WHICH COMPLIES WITH FCV CONSTRAINTS PER OMRS V41GEN.060. OPERATIONS INVOLVING CRIT 1 AND/OR 1R ITEMS ARE CONTAINED IN THE FOLLOWING SEQUENCE/ STEPS. PERFORM NEXT STEP IF PGM VAE43 IS NOT ACTIVE. COMPLETION OF THIS SEQUENCE SATISFIES NOTED REQUIREMENTS. OMRS V41AD0.010] OMRS V41AD0.020] OMRS V41AD0.030]	
05-001		CMPS	CONSOLE KYBD (C4) VAE43 PERF PGM KEY - PRESS SELECT APPLICATIONS PAGE-B NOT PERFORMED _____	
05-002		CMPS	CONSOLE KYBD (C4) IF NOT ACTIVE SAE12 PERF PGM KEY - PRESS NOT PERFORMED _____	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			NOTE PERFORM NEXT TWO STEPS IF C70-0796 OR E70-0036 ET SIMULATORS ARE MATED TO VEHICLE. NEXT STEP PROVIDES ELECTRICAL CONNECTOR SAFING FOR CONNECTOR DEMATE. SCAN LOG NUMBERS ARE NOT REQUIRED FOR GSE ELECTRICAL CONNECTOR DEMATE.	
05-003		CMPS	CRT (SAE12) VERIFY ET OI POWER IS DOWN NOT PERFORMED	_____
05-004	CMPS	OETO	DEMATE 50V77W12P523 AND 50V77W12P533 CONNECTORS FROM C70-0796/E70-0036 ET SIMULATOR. VERIFY CSR-028	TQV:_____ TQV:_____
			NOT PERFORMED	_____
			ET OI PWR - ON	
05-005		CMPS	PFPK (SAE12) - PRESS TURN ON ET PWR - PRESS VERIFY ET OI PWR ON	
05-006	CMPS OTC	OTC *ACM	IF AFT FUSELAGE IS OCCUPIED, NOTIFY PERSONNEL THAT MPS SOLENOIDS WILL BE CYCLED INTERMITTENTLY FOR APPROXIMATELY 10 MINUTES AND MECHANICAL NOISES WILL OCCUR.	
			NOT PERFORMED	_____
05-007	CMPS	OTC	CDR SUPPORT FOR MPS FLOW CONTROL VALVE CHECKOUT IS REQUIRED ON CHANNEL 168. CHECKOUT WILL LAST FOR APPROX. 10 MINUTES.	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			NOTE THE FOLLOWING STEP PERFORMS ORBITER MPS FLOW CONTROL VALVE VERIFICATION USING CHECKOUT COMMANDS. CDR SUPPORT IS REQUIRED FOR NEXT STEP. DO NOT PROCEED UNTIL CDR REPORTS ON STATION.	
05-008		CMPS	CURSOR CNTL (VAE43) CURSOR TO "AUTO CHECKOUT (ELECTRONIC BOX)" XMIT CURSOR KEY - PRESS	
			NOTE PERFORM/NOT PERFORM NEXT TWO STEPS AS REQUIRED TO SUPPORT FURTHER CHECKOUT (SIGNAL COND - ON) OR SECURING (SIGNAL COND - OFF).	
05-009		CMPS	CURSOR CNTL (VAE43) TERMINATE (SIGNAL COND ON)	
			NOT PERFORMED	_____
05-010		CMPS	CURSOR CNTL (VAE43) TERMINATE (SIGNAL COND OFF)	
			NOT PERFORMED	_____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			ET OI PWR - OFF	
05-011		CMPS	IF ET OI PWR IS ON AND OI NOW REQUIRED OFF: PFPK (SAE12) - PRESS TURN OFF ET PWR - PRESS NOT PERFORMED _____ NOTE NEXT STEP PROVIDES ELECTRICAL CONNECTOR SAFING IF THE C70-0796 OR E70-0036 ET SIMULATORS MUST BE MATED TO THE ORBITER. SCAN LOG NUMBERS ARE NOT REQUIRED FOR GSE ELECTRICAL CONNECTOR MATE.	
05-012		CMPS	CRT (SAE12) VERIFY ET OI POWER IS DOWN NOT PERFORMED _____	
05-013	CMPS	OETO	IF DEMATED PER THIS SEQUENCE AND REQUIRED FOR FURTHER TESTING, MATE 50V77W12P523 AND 50V77W12P533 CONNECTORS TO C70-0796 OR E70-0036 ET SIMULATOR. VERIFY CSR-028	TQV:_____ TQW:_____
			NOT PERFORMED _____	
05-014		CMPS	ORBITER MPS FLOW CONTROL VALVE AUTO CHECKOUT VERIFICATION COMPLETE.	
05-015			COMPLETION OF THIS SEQUENCE SATISFIES NOTED OMRS REQUIREMENTS. OMRSD V41AD0.010-1R OMRSD V41AD0.020-1R OMRSD V41AD0.030-1R	]]]

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
06-000			GH2 PRESSURIZATION SYSTEM DECAY CHECK - CMPS, RMPS, RTH2, OMTO AND OQCV	
			NOTE THIS SEQUENCE SATISFIES OMRS V41AY0.200 IFC AND/ OR V41BB0.020, THEY ARE CONTINGENCY OMRS. DO NOT PERFORM THIS SEQUENCE IF NO LEAKAGE/LRU REPLACEMENT IS PERFORMED.	]]]
			ENTIRE SEQUENCE NOT PERFORMED	_____
			STEPS AND SUBSTEPS WITHIN THIS SEQUENCE MAY BE WORKED OUT OF NUMERICAL ORDER AS DETERMINED BY MPS ENGINEERING. OPERATIONS INVOLVING CRIT 1 AND/OR 1R ITEMS ARE CONTAINED IN THE FOLLOWING SEQUENCE/STEPS.	
06-001			VERIFY ALL GH2 SYSTEM LEAK AND FUNCTIONAL CHECKS WHICH CAN EFFECT DECAY TEST ARE COMPLETE. MPS ENGR_____ DATE_____	
			NOTE THE FOLLOWING EIGHT STEPS ESTABLISH SYSTEM CONFIGURATION FOR DECAY CHECK.	
06-002	CMPS	RMPS	VERIFY PD10 GH2 PREPRESS QD INSTALLED AT LH2 T-0 (SEG FIG 11).	
06-003	CMPS	*PAD	VERIFY LEFT HAND ET DOOR IS OPEN AND WILL REMAIN OPEN FOR THIS TEST.	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
06-004		OMTO	IF REQUESTED BY MPS ENGR, AND GH2 TEST PLATE IS NOT INSTALLED, PERFORM "PD5 GH2 2 IN. ORB/ET DISC COVER PLATE INSTALLATION" PER OMI V1171VL1. RT OMI LOG NO:_____ NOT PERFORMED _____	
06-005		OMTO	IF TEST PLATE IS INSTALLED AT MPS ORB/ET QD PD5, AND TEST PORT IS CAPPED, VERIFY POPPET ACUATOR BOLT IS FULLY RETRACTED (CCW) THEN REMOVE CAP ASSY. BAG AND SEAL CAP. LEAVE PORT OPEN TO VENT (PD5 SEAT LEAKAGE). TQV:____ NOT PERFORMED _____	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			PD16 - CONFIGURE	
			NOTE THE PD16 GROUND HALF COUPLING MAY BE DEMATED FROM THE FLIGHT HALF WITH PRESSURE IN THE GH2 SYSTEM.	
06-006	CMPS	OMTO	IF GSE FLEXHOSE/QD INSTALLED, REMOVE GW70-420958-002 GROUND HALF COUPLING FROM 50V41PD16 DISCONNECT BY TURNING (CCW) MAINTAIN CLEANLINESS. INSTALL GRND PLUG INTO GW70-420958-002 (CW) SNUG. DO NOT INSTALL FLIGHT CAP. LOOSELY BAG AND SEAL FLIGHT HALF QD. TQW:_____ NOT PERFORMED _____	
06-007	CMPS	OMTO	IF INSTALLED, REMOVE FLIGHT CAP FROM 50V41PD16 BY TURNING (CCW). MAINTAIN CLEANLINESS. LOOSELY BAG AND SEAL. TQW:_____ NOT PERFORMED _____	
06-008		CMPS	IF LH2 MANIFOLD IS NOT AT AMBIENT PRESSURE, PERFORM "LH2 MANIFOLD VENTING THRU FILL/ DRAIN LINE (OPF)" PER OMI V1171VL1. RT OMI LOG NO._____ NOT PERFORMED _____	
06-009	CMPS	RSME	VERIFY SSME HOT GAS SYSTEMS ARE VENTED ON ALL THREE ENGINES AND WILL REMAIN VENTED UNTIL COMPLETION OF GH2 DECAY TEST. SSME ENGR_____	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			GH2 SYSTEM PRESSURIZATION	
06-010		CMPS	IF NOT ACTIVE, PERFORM GH2 PREPRESS SYSTEM PRESSURIZATION (OPF)" PER OMI V1171VL1, OR THIS OMI. PRESSURIZE SYSTEM TO 400 +/- 25 PSIG. RT OMI LOG NO._____ NOT PERFORMED _____	
06-011		CMPS	CRT (VAE20) VERIFY ORBITER PRESSURE READS 400 +/- 25 PSIG. VERIFY NO INCREASE IN LH2 MANIFOLD PRESSURE. RECORD LH2 PRESS _____PSIA BD RECORD GMT _____	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

NOTE

IF TEST PLATE IS INSTALLED, PERFORM NEXT STEP TO MONITOR PD5 SEAT LEAKAGE FOR ENGINEERING BASELINE DATA (BD). NEXT STEP MAY BE PERFORMED IN PARALLEL WITH DECAY TEST. ENTER "N/A" FOR DATA NOT REQUIRED.

NEXT STEP MAY BE PERFORMED AT MPS ENGINEERING DISCRETION.

PD5 - 400 PSI SEAT LEAK TEST (BD)

06-012 CMPS OMTO CONNECT C70-0903 FLOWMETER TO TEST PLATE TEST PORT AT PD5. REPORT READING AT INTERVALS PER CMPS.

GH2 PRESS V41P1490A1 (CRT-PSIA)	TUBE NO./SCALE	LEAK RATE (SCIMS GHE) BD	TUBE Z NO. / DUE DATE
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

TQW:____

NOT PERFORMED _____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
06-013		CMPS	CRT (VAE20) VERIFY GH2 PRESSURIZATION SYSTEM HAS STABILIZED AT 400 +/- 25 PSI FOR 10 MINUTES MINIMUM NOTE THE GH2 DECAY TEST STARTS WHEN A83143 GAGE INDICATES ZERO PSIG.	
06-014	CMPS	RTH2	S70-0695-8 PNL A83115 REG - FULL DECREASE (CCW) A83070 VENT VALVE - OPEN (CCW) VERIFY PRESSURE BETWEEN T-0 UMBILICAL AND PANEL VENTS TO 0 PSIG ON GAGE A83143. RECORD GMT _____ TQW:_____	
06-015		CMPS	CURSOR CNTL (VAE20) VERIFY ORBITER GH2 SYSTEM PRESSURE INDICATES 400 +/- 25 PSIG. A83134 LH2 PREPRESS SOV - CLOSE	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

INITIAL VALUES

06-016 CMPS MONITOR LH2 MANIFOLD AND GH2 DISC PRESSURES AND RECORD RESULTS BELOW.

DECAY TEST START _____ GMT

1. GH2 DISC PRESS

V41P1490A1 _____PSIA BD

2. LH2 MANIFOLD PRESS

V41P1433C1 _____PSIA BD

NOTE

MONITOR GH2 SYSTEM DECAY FOR FIRST 100 PSI OF DECAY OR 20 MINUTES, WHICHEVER COMES FIRST. DECAY MAY BE MONITORED FOR MORE THAN 20 MINUTES AT MPS ENGINEERING DISCRETION.

FINAL VALUES

06-017 CMPS PERFORM CDS DATA RETRIEVAL ON V41P1490A1 AND RECORD ACTUAL GH2 SYSTEM DECAY RATE.

DECAY TEST FINISH _____ GMT

1. GH2 DISC PRESS

V41P1490A1 _____PSIA BD

2. LH2 MANIFOLD PRESS

V41P1433C1 _____PSIA BD

3. CALCULATE GH2 DISC PRESSURE DECAY RATE (ACTUAL)

ACTUAL DECAY RATE = _____ PSI/MINUTE

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

MAX ALLOWABLE DECAY CALCULATION

06-018

MAXIMUM ALLOWABLE DECAY IS EQUAL TO
0.031 X (15+C+D) WHERE:

NOTE

CV21, 22, 23 NET LEAKAGE TO SSME'S DURING DECAY CHECK ARE TO BE RECORDED AS FOLLOWS:

IF EITHER FWD OR AFT PORTION OF CHECK VALVE LEAKED 0 SCIM THE NET LEAKAGE EQUALS 0 SCIM.

IF THE FWD AND AFT CHECK VLV LEAKAGES ARE BOTH GREATER THAN 0 SCIM, THE NET LEAKAGE RECORDED MUST BE THE LOWER OF TWO LEAK RATES.

PD5/LV52 LEAKAGE WILL BE TAKEN FROM HISTORICAL DATA IF REAL TIME LEAK CHECK WAS NOT PERFORMED THIS FLOW.

C = SUM OF LAST RECORDED READINGS FROM CV21, CV22, CV23 REVERSE LEAK CHECKS (NET LEAKAGE TO SSME'S)

D = PD5/LV52 - 400 PSIG AVERAGE LEAK RATE

CV21 _____ SCIM

CV22 _____ SCIM

CV23 _____ SCIM

C = _____ SCIM

D = _____ SCIM

CALCULATE/RECORD MAXIMUM ALLOWABLE GH2

DECAY RATE _____ PSI/MINUTE

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
06-019		CMPS	RECORD AND VERIFY ACTUAL DECAY IS LESS THAN OR EQUAL TO MAX ALLOWABLE DECAY RATE. ACTUAL GH2 SYSTEM DECAY _____ PSI/MIN ALLOWABLE GH2 SYS DECAY _____ PSI/MIN OMRSD V41AY0.200-1 PD16 RECONFIGURE --- NOTE PD16 GRND HALF COUPLING IS DESIGNED TO BE MATED WITH SYSTEM PRESSURIZED.	
06-020		OMTO	REMOVE PLUG (CCW) FROM GW70-420958-002 GND HALF COUPLING. MAINTAIN SYSTEM CLEANLINESS (REF MA0110-311). TQW:____	
06-021		OMTO	REMOVE BAG/TAPE FROM FLT HALF 50V41PD16. TQW:____	
06-022		OMTO	GW70-420958-002 QD/FILTER ASSY OK TO INSTALL QW:_____ 1. PRIOR TO INSTALLING, VISUALLY INSPECT GROUND HALF AND FLIGHT HALF FOR DAMAGE OR CONTAMINATION. NO ANOMALIES ALLOWED. VERIFY NO PARTICULATES USING WHITELIGHT INSPECTION. 2. CONNECT QD/FILTER ASSY TO PD16 INSIDE AFT FUSELAGE. INSTALL GROUND HALF TURNING (CW). TORQUE TO 15-20 IN. LBS. Z_____ DUE DATE_____ VERIFY CSR-242 TQV:____ TQW:____	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
06-023		OMTO	CONNECT FLIGHT HALF DUST CAP AND GND PLUG TOGETHER FINGER TIGHT.	T:_____
			PD5 - 100 PSI GH2 PRESSURIZATION --- DISCONNECT AND LV52 SEAT LEAK TEST --- NOTE PD5 - 100 PSI GH2 PRESSURIZATION DISCONNECT AND LV52 SEAT LEAK TEST (NEXT FOUR STEPS) PERFORMED ONLY IF REQUIRED. CONTINGENCY REQUIREMENT TO BE PERFORMED AFTER LRU REPLACEMENT OR IF LEAKAGE IS SUSPECTED (REF OMRS V41BB0.020). ENTIRE SEQUENCE NOT PERFORMED _____ EFFECTIVITY: (REF SECTION 1.8)	
06-024	CMPS	OMTO	IF NOT INSTALLED, INSTALL G070-005861 TEST PLATE ONTO PD5 DISCONNECT PER: JC V41-50008 - TEST PLATE, PD5 GH2 2 IN. CLEANING/INSPECTION/INSTALLATION NOT PERFORMED _____	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

NOTE

PERFORM NEXT STEP ONLY IF PRESSURE HAS NOT YET DECAYED TO 100 +/- 20 PSIG AND PD16 GROUND HALF QD IS INSTALLED. IF PD5/LV52 LEAKAGE OF 100 SCIM IS EXCEEDED, PERFORM V41BC0.090 TO ISOLATE LV52 INTERNAL LEAKAGE FROM PD5.

06-025 CMPS RTH2 S70-0695-8 PNL

A83070 VLV - OPEN (CCW)
A83145 VLV - OPEN (CCW)

WHEN ORB GH2 PRESS LINE INDICATES 100 +/- 20 PSIG:

A83145 VLV - CLOSE (CW)
A83070 VLV - CLOSE (CW)

TQW:_____

NOT PERFORMED _____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
06-026	CMPS	OMTO	USING C70-0903 ATMOSPHERIC FLOWMETER, MEASURE COMBINED LEAKAGE AT 2 IN. DISC 50V41PD5 TEST PLATE TEST PORT (100 SCIM MAX).	
			GH2 PRESS (CRT-PSIA) _____ TUBE NO./SCALE ____/____ LEAK RATE (SCIMS GHE) 100 MAX _____ TUBE Z NO. / DUE DATE _____ _____	
			OMRSD V41BB0.020-1] TQW:____	
			NOT PERFORMED	_____
06-027		CMPS	PD5-100 PSI GH2 PRESSURIZATION DISCONNECT AND LV52 SEAT LEAK TEST COMPLETE.	
			NOT PERFORMED	_____
06-028		CMPS	IF NO LONGER REQUIRED, PERFORM "MPS GH2 PREPRESS SYSTEM SECURING (OPF)", PER OMI V1171VL1, OR THIS OMI.	
			RT OMI LOG NO._____	
			NOT PERFORMED	_____
			NOTE PERFORM NEXT STEP ONLY IF ALL TESTING WITH TEST PLATE IS COMPLETE.	
06-029	CMPS	OMTO	IF THE PD5 TEST PLATE IS INSTALLED, REMOVE GH2 2 IN. TEST PLATE PER: JC V41-40016 - PLATE, PD5 2 IN. GH2 PREPRESS, REMOVAL	
			NOT PERFORMED	_____
06-030	CMPS	OTC	GH2 PRESSURIZATION SYSTEM DECAY CHECK COMPLETE.	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
07-000			CV24 REVERSE SEAT LEAK CHECKS	

EFFECTIVITY: (V41BA0.052 REF SECTION 1.8)

NOTE

STEPS AND SUBSTEPS WITHIN THIS SEQUENCE MAY BE WORKED OUT OF NUMERICAL ORDER AS DETERMINED BY MPS ENGINEERING.

OPERATIONS INVOLVING CRIT 1 AND/OR 1R ITEMS ARE CONTAINED IN THE FOLLOWING SEQUENCE/ STEPS.

HARDWARE REQUIRED

PART NO.	NOMENCLATURE	QUANTITY
MD273-0044-2004	PLUG	1
ME261-0033-0204	K-SEAL	1
C70-0903	FLOWMETER	1

07-001 CMPS IF LH2 MANIFOLD IS NOT AT, OR NEAR AMBIENT PRESSURE, PERFORM "LH2 MANIFOLD VENTING THRU FILL/DRAIN LINE OR THRU RTLS DUMP PORT (OPF)" PER OMI V1171VL1.

RT OMI LOG NO._____

NOT PERFORMED _____

07-002 CMPS IF ACTIVE AND NOT REQUIRED FOR FURTHER TESTING, PERFORM "ORBITER MPS 750 PSI PNEUMATIC SYSTEM SECURING AND BLOWDOWN THROUGH BLOWDOWN HOSE (OPF)" PER OMI V1171VL1.

RT OMI LOG NO._____

NOT PERFORMED _____

07-003 CMPS VERIFY LH2 REPRESS SOLENOID VALVES LV42, LV43 ARE CLOSED (DEENERGIZED) AND WILL REMAIN CLOSED FOR THE DURATION OF CV24 LEAK CHECK.

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			TP36 PLUG REMOVAL	
07-004	CMPS	OMTO	USING A LINT-FREE CLOTH DAMPENED WITH FREON, WIPE EXTERIOR OF THE PLUG IN TP36 (LOCATED BETWEEN CV24 AND CV13).	TQW:_____
			CAUTION DURING PERFORMANCE OF NEXT STEP A SMALL AMOUNT OF HELIUM MAY VENT. IF VENTING CONTINUES FOR LONGER THAN 30 SECONDS NOTIFY CMPS.	
			NOTE THE FOLLOWING STEP IS REQUIRED TO SUPPORT CV24 LEAK CHECKS.	
07-005	CMPS	OMTO	REMOVE LOCKWIRE AND PLUG FROM TP36. IF PLUG WAS MD273-0032-2004, DISCARD PLUG AND OBTAIN MD273-0044-2004. IF PLUG WAS MD273-0044-2004, RETAIN AND MAINTAIN PLUG CLEAN AND DISCARD SEAL.	TQW:_____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

WARNING

MONITOR TP36 FOR AUDIBLE FLOW. IF AUDIBLE, OMTO MUST NOTIFY CMPS IMMEDIATELY TO VENT GH2 PRESS SYSTEM PER APPENDIX Z - EMERGENCY GH2 PRESSURIZATION SYS VENTING THRU S70-0695-8 PNL.

CV24 REVERSE LEAK CHECK

07-006 CMPS IF NOT ACTIVE, PERFORM GH2 PREPRESS SYSTEM PRESSURIZATION (OPF)" PER OMI V1171VL1 OR THIS OMI. PRESSURIZE SYSTEM TO 400 +/- 25 PSIG.

RT OMI LOG NO._____

NOT PERFORMED _____

07-007 CMPS OMTO LEAK CHECK USING C70-0903 FLOWMETER (REF 1.7 SPECIAL INSTRUCTIONS) AT 50V41TP36. RECORD DATA IN APPENDIX A, DATA SHEET A-1 FOR 50V41CV24 (15 SCIM MAX).

OMRSD V41BA0.052-1R

TQW:____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			TP36 RECONFIGURE/LEAK CHECK	
07-008	CMPS	OMTO	PLUG AND SEAL	
			OK TO INSTALL	QW:_____
			INSTALL MD273-0044-2004 PLUG AND NEW ME261-0033-0204 K-SEAL IN TP36. TORQUE TO 170-200 IN. LBS.	
			Z_____ DUE DATE_____	
			INSTALL SAFETY WIRE MS20995N32.	
			VERIFY CSR-242	TQV:_____
				TQW:_____
			NOT PERFORMED	_____
07-009		CMPS	IF LH2 MANIFOLD IS NOT AT AMBIENT PRESSURE PERFORM "LH2 MANIFOLD VENTING THRU FILL/ DRAIN LINE (OPF)" PER OMI V1171VL1.	
			RT OMI LOG NO._____	
			NOT PERFORMED	_____
07-010		CMPS	PRESSURIZE LH2 MANIFOLD TO 20-30 PSIG BY PERFORMING "MPS LH2, LH2 RECIRC, AND GH2 MANIF PRESSURIZATION TO 25 PSIG USING REPRESS REGS (OPF)" PER OMI V1171VL1.	
			RT OMI LOG NO._____	
07-011		CMPS	CRT (VAE20)	
			VERIFY LH2 PRESSURIZATION SYSTEM IS PRESSURIZED TO 20-30 PSIG.	
			RECORD LH2 PRESS_____PSIA BD	
			CONVERT TO_____PSIG BD	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			WARNING ALL PERSONNEL PERFORMING BUBBLE SOAP LEAK CHECKS MUST WEAR FACESHIELDS.	
07-012	CMPS	OMTO	PERFORM BUBBLE SOAP LEAK CHECKS OF THE JOINT LISTED BELOW. NO BUBBLE FORMATION IN ONE MINUTE ALLOWED. TP36 BUBBLE SOAP RESULTS:_____ OMRSD V41AY0.380	TQW:_____
07-013		CMPS	IF LH2 MANIFOLD IS NOT AT, OR NEAR AMBIENT PRESSURE, PERFORM "LH2 MANIFOLD VENTING THRU FILL/DRAIN LINE OR THRU RTLS DUMP PORT (OPF)" PER OMI V1171VL1. RT OMI LOG NO._____	NOT PERFORMED _____
07-014		CMPS	IF ACTIVE AND NOT REQUIRED FOR FURTHER TESTING, PERFORM "ORBITER MPS 750 PSI PNEUMATIC SYSTEM SECURING AND BLOWDOWN THROUGH BLOWDOWN HOSE (OPF)" PER OMI V1171VL1. RT OMI LOG NO._____	NOT PERFORMED _____
07-015		CMPS	CV24 LEAK TEST COMPLETE.	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

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OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

08-000

PD10 AND CV17 - VALIDATION AND INTERNAL LEAK CHECKS - CMPS, OMTO, OQCV, RTH2

NOTE

STEPS AND SUBSTEPS WITHIN THIS SEQUENCE MAY BE WORKED OUT OF NUMERICAL ORDER AS DETERMINED BY MPS ENGINEERING.

OPERATIONS INVOLVING CRIT 1 AND/OR 1R ITEMS ARE CONTAINED IN THE FOLLOWING SEQUENCE/ STEPS.

THE FOLLOWING OMRS' ARE SATISFIED WITHIN THIS SEQUENCE (BY EFECTIVITY):

	PD10	CV17	PD10/CV17
EFFECTIVITY	I-5 V41BB0.050	I-5 V41BA0.080-B	ALL V41BB0.051

HARDWARE REQUIRED:

QTY	PART NO.	NOMENCLATURE	
1	ME261-0033-0104	K-SEAL (CLN LVL 100A)	(OV-102)
1	ME261-0033-0204	K-SEAL (CLN LVL 100A)	(OV-103 & SUBS)
	OR		
1	ME261-0033-0104	K-SEAL	(OV-103 & SUBS)

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			NOTE DO NOT PERFORM CPV17/PD10 REV LK VALIDATION IF OMDP OMRS V41BA0.080-B REQUIREMENT IS TO BE MET THIS FLIGHT.	
			CV17/PD10 REV LK VALIDATION NOT PERFORMED _____	
			NOTE NOTED REQUIREMENT IS SATISFIED BY COMPLETION OF FOLLOWING SIX STEPS. OMRS V41BB0.051	
08-001		CMPS	PERFORM "GH2 PREPRESS SYSTEM PRESSURIZATION" (OPF) THRU PD10 PER V1171 VL1, OR THIS OMI. RTOMI LOG NO. _____	
08-002		CMPS	CRT (VAE20) VERIFY GH2 PREPRESS SYSTEM IS PRESSURIZED TO 400 +/- 25 PSIG. RECORD GH2 PRESS _____ PSIG 400 +/- 25	
08-003		CMPS	CURSOR CNTL (VAE20) A83134 LH2 PREPRESS SUPPLY SOV - CLOSE	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			GH2 PRESS SYS (SUPPLY SIDE) VENTING	
08-004	CMPS	RTH2	S70-0695-8 PANEL	
			A83066 SUPPLY SOV - CLOSE (CW)	
			VERIFY A83068 SUPPLY SOV CLOSED (CW)	
			A83115 REG - FULL DECREASE (CCW)	
			A83070 VENT - OPEN (CCW)	
			VERIFY A83143 GAGE 0 PSIG	
			A83070 VENT - CLOSE (CW)	
			LOCAL TIME _____EST	
				T:_____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

WARNING

DURING PERFORMANCE OF FOLLOWING STEP, AUDIBLE VENTING OF GHE WILL OCCUR. IF VENTING DOES NOT CEASE WITHIN 60 SECONDS, NOTIFY CMPS.

NOTE

CMPS WILL DETERMINE IF CV17 REV LEAK CHECK WILL BE PERFORMED (PER THIS SEQ) OR TO REINSTALL PLUG, IF VENTING DOES NOT CEASE.

ALLOW 5 MINUTES MINIMUM AFTER GSE GHE SUPPLY LINE IS VENTED BEFORE PERFORMING NEXT STEP. IF VENTING DOES NOT OCCUR IN THE FOLLOWING STEP, PERFORM PD10 REVERSE LEAK CHECK PER THIS SEQUENCE. IF VENTING DOES NOT CEASE (CV17 SUSPECT) OR DOES NOT OCCUR (PD10 SUSPECT) IN THE FOLLOWING STEP, NOT PERFORM SUBSTEP (3) AND PERFORM THE APPLICABLE CONTINGENCY TESTING PER THIS SEQUENCE.

TP10 PLUG REMOVAL

08-005 CMPS OMTO

1. VERIFY 5 MINUTES HAS ELAPSED SINCE GH2 PRESS SYS (SUPPLY SIDE) VENTING.

   LOCAL TIME _____EST

2. SLOWLY LOOSEN MD273-0044-2004 BLEEDER PLUG IN TP10 2-4 TURNS TO ALLOW LINE TO VENT.

3. VERIFY AUDIBLE VENTING FOLLOWED BY CESSATION OF AUDIBLE VENTING, (S/B LESS THAN 60 SEC.).

NOT PERFORMED _____
SS3

TQW:____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
08-006		CMPS	CRT (VAE20) VERIFY GH2 PREPRESS SYSTEM IS PRESSURIZED TO 400 +/- 25 PSIG. RECORD GH2 PRESS _____ PSIG 400 +/- 25 NOTE PERFORM FOLLOWING STEP IF VENTING AT TP10 CEASED THIS SATISFIES CV17/PD10 VALIDATION.	
08-007		CMPS	COMPLETION OF THE PREVIOUS SIX STEPS SATISFIES THE NOTED REQUIREMENT. OMRSD V41BB0.051 NOT PERFORMED	_____
08-008	CMPS	OMTO	PLUG OK TO INSTALL	QW:_____
			IF VENTING DID NOT CEASE AT TP10 AND DIRECTED BY CMPS, REINSTALL PLUG WRENCH TIGHT.	TQV:_____
			NOT PERFORMED	_____
			CV17/PD10 REV LK VALIDATION COMPLETE ----------	]]

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			NOTE PER V070-415413, EO C10, FOR OV-103 AND SUBS, ON THAT DRAWING, ME261-0033-0104 AND ME261-0033-0204 SEALS ARE EQUIVALENT. PLUG AND NEW SEAL INSTALLED AND LEAK CHECKED AT END OF THIS SEQUENCE.	
08-010	CMPS	OMTO	REMOVE MD273-0044-2004 PLUG AND ME261-0033-0104 (OV-102 ONLY) OR ME261-0033-0104/ME261-0033-0204 (103 AND SUBS) SEAL FROM 50V41TP10. DISCARD SEAL, RETAIN PLUG CLEAN FOR LATER INSTALLATION. TQV:_____	
			NOTE IF REQD BY EFFECTIVITY, (I-5 FLIGHTS), PERFORM NEXT STEP TO INSTALL HANDVALVE AT TP10.	
08-011	CMPS	OMTO	IF NOT INSTALLED, PERFORM ORBITER OPERATION SUPPORT SETUP 1 - TP10 HANDVALVE INSTALLATION. REPORT COMPLETION. NOT PERFORMED _____	
08-012	CMPS	OMTO	IF PD10 REV LK CK IS REQUIRED THIS FLOW, PERFORM OPERATION SUPPORT SETUP 2 - MPS 1-INCH QD LEAK CHECK TOOL SETUP. REPORT COMPLETION. NOT PERFORMED _____	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			NOTE IF AUDIBLE VENTING DID NOT CEASE (CV17 SUSPECT) AND DIRECTED BY CMPS OR REQUIRED BY EFFECTIVITY, PERFORM CV17 LH2 TANK PREPRESS CHECK VLV LEAK CHECK.	
			CV17 LH2 TANK PREPRESS CHECK VLV LEAK CHECK	
			EFFECTIVITY: (REF SECTION 1.8)	
			NOT PERFORMED _____	
08-013	CMPS	OMTO	VERIFY HANDVALVE AT TP10 IS CLOSED.	
			T:_____	
			NOTE IF GH2 SYSTEM IS NOT PRESSURIZED, PERFORM NEXT THREE STEPS.	
08-014			PERFORM GH2 SYSTEM PRESSURIZATION PER V1171VL1 OR THIS OMI.	
			NOT PERFORMED _____	
08-015			CURSOR CNTL (VAE20) A83134 LH2 PREPRESS SOV-CLOSE	
			NOT PERFORMED _____	
08-016	CMPS	RTH2	S70-695-8 PANEL A83-066 SUPPLY SOV - CLOSE (CW) VERIFY A83068 SUPPLY SOV CLOSED (CW) A83115 REG - FULL DECREASE (CCW) A83070 VENT - OPEN (CCW) VERIFY A83143 GAGE 0 PSIG A83070 VENT CLOSE (CW)	
			T:_____	
			NOT PERFORMED _____	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
08-017	CMPS	OMTO	REMOVE CAP AT TP10 HANDVALVE AND OPEN TP10 H/V.	T:_____
08-018		CMPS	CRT (VAE20) VERIF Y GH2 PREPRESS SYSTEM IS PRESSURIZED TO 400 +/- 25 PSIG. RECORD GH2 PRESS _____ PSIG 400 +/- 25 NOTE MONITOR FLOWMETER FOR ONE MINUTE MINIMUM DURING NEXT STEP.	
08-019	CMPS	OMTO	LEAK CHECK USING C70-0903 ATMOSPHERIC FLOWMETER (REF 1.7 SPECIAL INSTRUCTIONS) AT TEST PORT 50V41TP10 AND RECORD DATA IN APPENDIX A, DATA SHEET A-1 FOR 50V41CV17 (15 SCIM MAX). OMRSD V41BA0.080-B-1R	TQW:_____
08-020	CMPS	OMTO	CLOSE H/V AT TP10 AND INSTALL CAP, WRENCH TIGHT. CV17 LH2 TK PREPRESS CK VLV LK CK COMPLETE.	TQV:_____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			NOTE PERFORM PD10 LH2 PREPRESS DISCONNECT REVERSE LEAK CHECK IF REQUIRED BY EFFECTIVITY/ LRU REPLACEMENT/SUSPECTED LEAKAGE.	
			PD10 LH2 PREPRESS DISCONNECT REVERSE LEAK CHECK (SEE FIGURE 4)	
			EFFECTIVITY: (REF SECTION 1.8)	
			NOT PERFORMED _____	
08-021	CMPS	OMTO	VERIFY PD16 GROUND HALF QD AND FLEXHOSE IS CONNECTED TO FLIGHT HALF QD.	TQW:____
08-022	CMPS	OMTO	VERIFY MPS 1-INCH QD LEAK CHECK TOOL IS ON HAND AND READY TO SUPPORT LK CK.	TQV:____
08-023		CMPS	CRT (VAE20) VERIFY A83134 LH2 PREPRESS - CLOSE	
08-024	CMPS	RTH2	S70-0695-8 PNL A83115 REG - FULL DECREASE (CCW) VERIFY GAGE A83143 INDICATES 0 PSIG A83145 VENT - OPEN (CCW) A83070 VENT - OPEN (CCW)	
08-025		CMPS	CRT (VAE20) VERIFY GH2 PRESS SYSTEM IS AMBIENT RECORD GH2 PRESS _____ PSIG	
08-026	CMPS	OMTO	IF NOT PREVIOUSLY PERFORMED VERIFY H/V AT TP10 IS CLOSED. REMOVE KC150C4 CAP ON H/V. BAG AND SEAL.	TQW:____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
08-027	CMPS	OMTO	1. REMOVE GW70-420958-002 COUPLING AND FLEXHOSE FROM 50V41PD16 (CCW). INSTALL (SNUG ONLY) GND AND AIRBORNE DUST CAPS. 2. REMOVE GW70-420958-002 COUPLING FROM 79K10547-HE16 FLEXHOSE. MAINTAIN CLEANLINESS. CLEAN BAG AND SEAL GND HALF COUPLING.	TQW:_____
08-028	CMPS	OMTO	CONNECT 79K10547-HE16 FLEXHOSE PREVIOUSLY REMOVED, TO ADAPTER IN HANDVALVE AT TP10 USING A KC103-6 SEAL. TORQUE TO 270-345 IN. LBS. RESTRAIN FLEXHOSE (REF 80K51846) USING BACKUP WRENCH. Z_____ DUE DATE_____ VERIFY CSR-242	TQV:_____ TQW:_____
08-029	CMPS	RTH2	S70-0695-8 PANEL A83070 VENT VLV - CLOSE (CW) A83145 VENT VLV - CLOSE (CW)	T:_____
08-030		CMPS	CRT (VAE20) A83134 LH2 PREPRESS SOV - CLOSE	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			PD10 - PREPRESS QD REMOVAL	
08-031	CMPS	OMTO	REMOVE G070-005820-005 (GROUND QD ASSY FROM 50V41PD10 AS FOLLOWS: 1. DISENGAGE LOCKING PINS (2). 2. PULL BACK COLLAR UNTIL COLLET FULLY EXPOSED. 3. DISENGAGE GRND QD FROM FLT HALF.	TQV:_____
08-032	CMPS	OMTO	LH2 (T-0) QD PD10 1. INSPECT G070-005820-005 (GROUND QD ASSY FOR ANY NOSE SEAL OR OTHER OBVIOUS MATING SURFACE DAMAGE. 2. DOUBLE BAG AND INTEGRITY SEAL OUTLET OF G070-005820-005 GRND QD ASSY. 3. PLACE G070-005820-005 ASSY IN ITS PROTECTIVE QD COVER. 4. STOW GSE QD/FLEXHOSE ASSY SO IT WILL NOT INTERFERE WITH PLATFORM OPS. 5. SECURE G070-005820-005 ASSY TO PLATFORM WITH BALES.	TQW:_____
08-033	CMPS	OMTO	PERFORM VISUAL INSPECTION OF 50V41PD10. VERIFY NO SEALING SURFACE DAMAGE.	TQW:_____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			LH2 HELIUM PREPRESS (50V41PD10)	
08-034	CMPS	OMTO	INSTALL 74332026-503 MPS 1-INCH QD LK CK TOOL ASSY AS FOLLOWS:	
			OK TO INSTALL QW:_____	
			1. ADJUST CENTER BOLT FULL (CCW) TO EXTEND RETENTION FINGERS.	
			2. INSERT 74332026-503 CAP ONTO PD10 UNTIL RETENTION FINGERS ARE ENGAGED OVER FLIGHT HALF SWIVEL ASSY.	
			3. ORIENT CAP SO ACCESS TO ELBOW WITH FLOWMETER IS POSSIBLE.	
			4. ROTATE CENTER BOLT (CW) TO SET RETENTION FINGERS. TORQUE TO 120-180 IN. LBS.	
			Z_____ DUE DATE_____	
			VERIFY CSR-242 TQV:_____	
			TQW:_____	
08-035	CMPS	OMTO	VERIFY 79K10547-HE16 FLEXHOSE IS CONNECTED TO HANDVALVE AT TP10.	
			TQW:_____	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
08-036	CMPS OTC 132	OTC *ACM	IF AFT FUSELAGE IS OCCUPIED, NOTIFY PERSONNEL IN AFT FUSELAGE THAT GH2 PRESSURIZATION MANIFOLD WILL BE PRESSURIZED WITH GHE AND FLOW WILL BE AUDIBLE. NOT PERFORMED _____	
08-037		CMPS	CURSOR CNTL (VAE20) A83134 LH2 PREPRESS VLV - OPEN	
08-038	CMPS	OMTO	OPEN HAND VALVE (CCW) INSTALLED AT TP10. TQW:_____	
08-039	CMPS	RTH2	S70-0695-8 PNL A83145 VENT VLV - OPEN (CCW) A83115 REG - SLOWLY INCREASE (CW) UP TO 400 +/- 25 PSIG AS INDICATED ON A83143 TQW:_____	
08-040		CMPS	CRT (VAE20) VERIFY GH2 PRESSURIZATION SYSTEM PRESSURIZED TO 400 +/- 25 PSIG. RECORD GH2 PRESS_____ PSIA BD CONVERT TO_____PSIG BD	
08-041	CMPS	OMTO	USE A C70-0903 FLOWMETER TO LEAK CHECK PD10 BY CONNECTING FLOWMETER TO KC118C4 ELBOW ON MPS 1-INCH QD LEAK CHECK TOOL. RECORD DATA IN APPENDIX A, DATA SHEET A-1 FOR 50V41PD10 (10 SCIM MAX). OMRSD V41BB0.050-1R TQW:_____ PD10 LH2 PREPRESS DISC REV LK CK COMPLETE ---	]]

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
08-042	CMPS	RTH2	S70-0695-8 PANEL	
			A83066 SUPPLY VLV - CLOSE (CW)	
			A83068 SUPPLY VLV - CLOSE (CW)	
			A83115 REG - FULL DECREASE (CCW)	
			A83070 VENT - OPEN (CCW)	
			VERIFY GAGE A83143 IND 0 PSIG	
			A83070 VENT - CLOSE (CW)	T:_____
08-043		CMPS	CURSOR CNTL (VAE20) A83134 LH2 REPRESS VLV - CLOSE	
08-044	CMPS	OMTO	REMOVE HE16 FLEXHOSE FROM HAND VALVE AT 50V41TP10. BAG AND SEAL END.	TQW:____
08-045	CMPS	OMTO	CLOSE HANDVALVE (CW) AT TP10. INSTALL KC150C4 CAP WRENCH TIGHT.	TQW:____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

NOTE

PD16 MAY BE MATED UNDER PRESSURE.

08-046 CMPS OMTO RECONFIGURE PD16 SETUP AS FOLLOWS:

OK TO INSTALL QWN:____

1. INSTALL GW70-420958-002 LEAR-SEIGLER GND COUPLING TO HE16 FLEXHOSE. TORQUE TO 270-345 IN. LBS AND INSTALL KELLUM GRIPS.

   Z_____ DUE DATE_____

2. CONNECT GW70-420958-002 ASSY TO 50V41PD16 DISCONNECT. TORQUE TO 15-20 IN. LBS.

   Z_____ DUE DATE_____

3. SECURE 79K10547-HE16 FLEXHOSE TO AFT STRUCTURE WITH TIE WRAPS (REF 80K51846).

VERIFY CSR-242 TQV:____

TQW:____

08-047 CMPS IF PRESSURIZED, PERFORM GH2 PREPRESS VENTING/SYSTEM SECURING (OPF) PER THIS OMI.

RT OMI LOG NO._____

NOT PERFORMED _____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

WARNING

PERSONNEL HANDLING FREON MUST WEAR RUBBER GLOVES AND EYE PROTECTION.

08-048 CMPS OMTO REMOVE 74332026-503 MPS 1-INCH QD LK CK TOOL AS FOLLOWS:

1. TURN CENTER BOLT (CCW) TO EXTEND RETENTION FINGERS.
2. REMOVE CAP ASSY FROM PD10.
3. PERFORM FREON RINSE OF 74332026-503 CAP DOUBLE BAG AND SEAL. RETURN TO MPS CAP AND PLUG SET.

TQW:_____

CAUTION

DO NOT SPRAY FREON-TF DIRECTLY INTO DISCONNECT.

PD10 VEHICLE DISCONNECT INSPECTION

08-049 CMPS OMTO CLEAN AND INSPECT VEHICLE DISCONNECT.

1. WIPE QD CLEAN USING FREON MOISTENED LINT FREE CLOTH.
2. USING WHITE LIGHT INSPECTION, VERIFY NO RESIDUALS OR DAMAGE.
3. IF GND HALF QD IS NOT TO BE REINSTALLED, COVER VEHICLE QD PD10 WITH ACLAR AND SEAL.

NOT PERFORMED _____
SS3

TQW:_____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

PD10 - LH2 PREPRESS QD INSTALLATION

CAUTION

FLIGHT HALF QD IS FLOATING. FLIGHT HALF QD MUST BE CENTERED PRIOR TO ATTEMPTING MATE WITH GSE.

PD10 IS KEYED WITH TWO SLOTS AT 90 DEGREE INTERVALS. ORIENT FLIGHT HALF TO GND HALF PRIOR TO INSTALLATION.

THE FOLLOWING STEPS MUST BE WORKED IN ORDER TO PREVENT INADVERTANT CONNECTION OF WRONG GROUND HALF TO ORBITER DISCONNECTS AS PD10 AND PD14 ARE PHYSICALLY IDENTICAL AND COULD BE SWITCHED.

08-050		OMTO	VERIFY 79K10547-HE10 FLEXHOSE IS CONNECTED TO (O-2) A105347 I/F PNL PORT (SEE FIGURE 8-10).	TQV:_____
08-051		OMTO	TRACE FLEXHOSE TO END AND VERIFY G070-005820-005 GH2 PREPRESS GND QD IS CONNECTED TO 79K10547-HE10 FLEXHOSE.	TQV:_____
08-052		OMTO	LOCATE PD10 ON LH2 T-0 (SEE FIGURE 11).	T:_____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
08-053		OMTO	1. IF FLEXHOSE IS TWISTED, LOOSEN 79K10547-HE10 FLEXHOSE FROM INLET OF G070-005820-005 QD. MAINTAIN SYSTEM CLEANLINESS.	
			NOT PERFORMED _____ SS1	
			2. PRIOR TO INSTALLING G070-005820-005 GND HALF REMOVE ACLAR AND TAPE FROM FORWARD END OF G070-005820-005. INSPECT TEFLON NOSE SEAL AND MATING SURFACE, RINSE WITH FREON AND REMOVE ANY RESIDUE WITH LINT FREE CLOTH.	
			3. PRIOR TO MATE TO 50V41PD10 LH2 PREPRESS DISCONNECT, VERIFY TWO LOCKING PINS ARE DISENGAGED SO RETENTION FINGERS ARE EXPOSED ON G070-005820-005.	
			TQW:_____	
08-054		OMTO	G070-005820-005 QD	
			OK TO INSTALL QWN:_____	
			1. ENGAGE G070-005820-005 QD TO DISCONNECT 50V41PD10, PUSHING G070-005820-005 FORWARD TO LOCK COLLET.	
			2. MOVE TWO LOCKING PINS TO THE LOCKED POSITION AND VERIFY QD IS FULLY ENGAGED. TURN LOCKING PINS (CW) SNUG.	
			3. SUPPORT G070-005820-005 QD ASSY IN HORIZONTAL POSITION, USING TIE WRAPS ATTACHED TO CARRIER FRAME.	
			TQW:_____	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			NOTE IF FLEXHOSE WAS LOOSENED IN PREVIOUS STEP, PERFORM NEXT STEP.	
08-055		OMTO	CONNECT 79K10547-HE10 FLEXHOSE TO INLET OF G070-005820-005 QD. TORQUE 270-345 IN. LBS. Z_____ DUE DATE_____	

VERIFY CSR-242 TQV:_____

TQW:_____

NOT PERFORMED _____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			TP10 H/V REMOVAL	
08-056	CMPS	OMTO	1. REMOVE HANDVALVE, MINIFILTER, KC FITTING AND K-SEAL INSTALLED AT 50V41TP10. MAINTAIN SYSTEM CLEANLINESS. DISCARD K-SEAL LOCALLY RETURN REMAINING ITEMS TO STOCK. 2. INSPECT ME286-0068-0008 MINIFILTER TO VERIFY THAT FILTER SCREEN IS INSTALLED. TIR LOG NO._____ TQW:____	
08-057	CMPS	OMTO	MD273-0044-2004 PLUG ME261-0033-0104 SEAL (OV-102), OR ME261-0033-0104/ME261-0033-0204 (OV-103 AND SUBS). OK TO INSTALL QWN:____ INSTALL: MD273-0044-2004 TEST PORT PLUG WITH NEW ME261-0033-0104 SEAL/ME261-0033-0204 INTO 50V41TP10. TORQUE TO 170-200 IN. LBS Z_____ DUE DATE_____ INSTALL SAFETY WIRE MS20995N32 PER MA0102-306. VERIFY CSR-242 TQV:____ TQWN:____	
08-058		CMPS	IF NOT PRESSURIZED, PERFORM GH2 PREPRESS SYSTEM PRESSURIZATION (OPF)" PER OMI V1171VL1, OR THIS OMI. RT OMI LOG NO._____ NOT PERFORMED _____	
08-059		CMPS	CRT (VAE20) VERIFY GH2 PREPRESS SYSTEM IS PRESSURIZED TO 400 +/- 25 PSIG. GH2 PRESS _____ PSIG 400 +/- 25	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

TP10 LEAK CHECK

WARNING

PERSONNEL PERFORMING SOAP SOLUTION LEAK CHECKS SHALL WEAR EYE PROTECTION.

NOTE

REF 1.7 SPECIAL INSTRUCTIONS FOR MASS SPEC LEAK CHECKS.

08-060 OMTO PERFORM SOAP SOLUTION LEAK CHECK OF FOLLOWING JOINT. RECORD DATA BELOW:

JOINT DESCRIPTION	RESULTS
TP10	_____

OMRSD V41AY0.045

TQW:_____

08-061 CMPS IF NO LONGER REQUIRED, PERFORM MPS GH2 PREPRESS SYSTEM SECURING (OPF) PER OMI V1171VL1, OR THIS OMI.

RT OMI LOG NO._____

NOT PERFORMED _____

08-062 PD10 AND CV17 - VALIDATION AND INTERNAL LEAK CHECKS COMPLETE.

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

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OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
09-000			GH2 PRESSURIZATION SYSTEM FLANGE LEAK CHECKS	

NOTE

THIS OPERATION PERFORMED ONLY IF REQUIRED BY EFFECTIVITY/FLIGHT AND/OR VEHICLE. REF 1.7 SPECIAL INSTRUCTIONS FOR NOT PERFORMED DEFINITION.

EFFECTIVITY: (REF SECTION 1.8)

NOTE

STEPS AND SUBSTEPS WITHIN THIS SEQUENCE MAY BE WORKED OUT OF NUMERICAL ORDER AS DETERMINED BY MPS ENGINEERING.

OPERATIONS INVOLVING CRIT 1 AND/OR 1R ITEMS ARE CONTAINED IN THE FOLLOWING SEQUENCE/ STEPS.

GH2 SYSTEM PRESSURE MUST BE 400 +/- 25 PSIG.
THE FOLLOWING SEQUENCE WILL PERFORM FLANGE LEAK CHECKS OF GH2 PRESSURIZATION SYSTEM USING C70-0903 ATMOSPHERIC FLOWMETER (REF 1.7 SPECIAL INSTRUCTIONS).

REF FIGURES 5 AND 13

09-001	OMTO	OBTAIN C70-0903 FLOWMETER AND VERIFY DATA TABLES WITH METER.

Z_____ DUE DATE_____

T:_____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
09-002		CMPS	IF NOT ACTIVE, PERFORM GH2 PREPRESS SYSTEM PRESSURIZATION (OPF)" PER OMI V1171VL1, OR THIS OMI. PRESSURIZE SYSTEM TO 400 +/- 25 PSIG. RT OMI LOG NO._____ NOT PERFORMED _____	
			NOTE FOLLOWING STEP IS TO BE REPEATED FOR EACH JOINT LISTED BELOW.	
09-003	CMPS	OMTO	PERFORM GH2 SYS FLANGE LEAK CHECKS FOR EACH FLANGE PER THE FOLLOWING (SEE FIGURE 5 AND 13): 1. REMOVE MD273-0032-2002 LEAK CHECK PLUG AND SEAL. MAINTAIN PLUG AND SEAL CLEAN. TQW:____ SS1 2. INSPECT K-SEAL USING 3X (MINIMUM) GLASS FOR SCRATCHES OR OTHER DAMAGE. REPLACE IF DAMAGE FOUND. TQW:____ SS2 3. USING C70-0903 FLOWMETER PERFORM LEAK CHECK OF LISTED FLANGES (0.29 SCIM MAX).	

FLG	FLOWMETER Z	LEAK RATE (SCIMS)	WRENCH Z	TQW SS3
FAQ	_____	_____	_____	_____
FAR	_____	_____	_____	_____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
09-003 CON'T			4. ME261-0033-0102 K SEAL/MD273-0032-2002 PLUG	
			OK TO INSTALL QWN:____ SS4	
			INSTALL K-SEAL AND PLUG FOR GH2 PRESSURIZATION SYS FLANGES FAQ, FAR. TORQUE 70 +/- 5 IN. LBS.	
			Z_____ DUE DATE_____	
			5. SAFETY WIRE WITH MS20995N32.	
			OMRSD V41AY0.040-B-1	
			VERIFY CSR-242 TQV:____	
			TQWN:___ SS4-5	
09-004		CMPS	IF NO LONGER REQUIRED, PERFORM "MPS GH2 PREPRESS SYSTEM SECURING (OPF)", PER OMI V1171VL1, OR THIS OMI.	
			RT OMI LOG NO._____	
			NOT PERFORMED _____	
09-005		CMPS	GH2 PRESSURIZATION SYSTEM FLANGE LEAK CHECKS COMPLETE.	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

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OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
10-000			GH2 PRESSURIZATION SYSTEM LEAK CHECK - CMPS, OMTO, OQCV, AND RTH2	

NOTE

THIS OPERATION PERFORMED ONLY IF REQUIRED BY EFFECTIVITY/FLIGHT AND/OR VEHICLE. REF 1.7 SPECIAL INSTRUCTIONS FOR NOT PERFORMED DEFINITION.

EFFECTIVITY: (REF SECTION 1.8)

NOTE

STEPS AND SUBSTEPS WITHIN THIS SEQUENCE MAY BE WORKED OUT OF NUMERICAL ORDER AS DETERMINED BY MPS ENGINEERING.

OPERATIONS INVOLVING CRIT 1 AND/OR 1R ITEMS ARE CONTAINED IN THE FOLLOWING SEQUENCE/ STEPS.

NOTED REQUIREMENT IS SATISFIED BY COMPLETION OF THIS SEQUENCE.

OMRS V41AY0.040-A-1

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

NOTE

DO NOT RUN THE FOLLOWING LEAK CHECKS UNTIL ALL COMPONENT CHECKOUTS FOR THIS FLOW ARE COMPLETE (AS REQD BY OMRS EFFECTIVITY).

MPS GROUND HALF QD'S FOR PD10 AND PD16 ARE REQUIRED TO SUPPORT PRESSURIZATION/ SECURING IN THIS SEQUENCE (VERIFICATION IS PERFORMED PER V1171VL1). REF FIGURES 5 AND 13.

GH2 PRESSURIZATION SYSTEM MASS SPEC LEAK

CHECKS - 400 +/- 25 PSIG

10-001 CMPS IF NOT ACTIVE, PERFORM GH2 PREPRESS SYSTEM PRESSURIZATION (OPF) PER THIS OMI. PRESSURIZE SYSTEM TO 400 +/- 25 PSIG.]

RT OMI LOG NO._____

RUN: _____ _____ _____ _____ _____

NOT PERF: _____ _____ _____ _____ _____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
10-002	CMPS	OMTO	PERFORM MASS SPEC LEAK CHECK OF GH2 FCV INLET AND OUTLET WELD JOINTS LV56B, LV56C, LV57B, LV57C, LV58B AND LV58C. RECORD DATA IN DATA SHEET B-1.	
			OMRSD V41AY0.046 EFFECTIVITY: V02F12-90] V03F15-90] V04F11-90] V05F1-90]	
			VERIFY CSR-085	TQV:_____
			VERIFY CSR-086	TQV:_____
				TQW:_____]
			NOTE NOT PERFORM NEXT STEP IF I-5 FLIGHT LEAK CHECKS ARE REQUIRED PER OMRS V41AY0.040-A V02 F8 I5F V03 F7 I5F V04 F3 I5F V05 F2 I5F	
10-003	CMPS		IF ACTIVE AND NO LONGER REQUIRED, SECURE MPS GH2 PRESS PER V1171VL1, OR THIS OMI. RT OMI NO._____	
			NOT PERFORMED	_____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

NOTE

DO NOT PERFORM REMAINDER OF SEQUENCE IF LEAK CHECKS NOT REQUIRED PER ABOVE OMRS V41AY0.040-A

10-004 CMPS OMTO PERFORM A MASS SPEC LEAK CHECK OF GH2 PRESSURIZATION SYSTEM (REF 1.7 SPECIAL INSTRUCTIONS) AS FOLLOWS:

1. ALL BRAZED, WELDED, AND THREADED JOINTS INCLUDING COMPONENT JOINTS FROM FCV'S TO SSME INTERFACES.

2. BELLOWS AND ADJACENT WELDS.

3. BRAZED, WELDED AND THREADED FITTINGS INCLUDING COMPONENT JOINTS BETWEEN FCV'S TO T-0 AND ET/ORB I/F THAT ARE NON-FOAMED (TYPE II).

4. FLOW CONTROL VALVE SOLENOIDS TO VALVE BODY O-RING.

5. RECORD DATA IN APPENDIX B, DATA SHEETS B-1, B-2, AND B-4.

VERIFY CSR-086 TQV:_____

VERIFY CSR-085 TQV:_____

TQW:_____

NOT PERFORMED _____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

GH2 PRESSURIZATION SYSTEM BUBBLE SOAP

LEAK CHECKS - 400 +/- 25 PSIG

WARNING

FACESHIELDS OR GOGGLES SHALL BE WORN BY PERSONNEL PERFORMING SOAP SOLUTION LEAK CHECKS.

NOTE

DO NOT RUN THE FOLLOWING LEAK CHECKS UNTIL ALL COMPONENT CHECKOUTS FOR THIS FLOW ARE COMPLETE (AS REQD, BY OMRS EFFECTIVITY).

PD5 TEST PLATE MUST BE REMOVED FOR FPD5 LEAK CHECK.

10-005 CMPS OMTO IF INSTALLED, REMOVE PD5 TEST PLATE PER:

JC V41-40016 - PLATE, PD5 2 IN. GH2 PREPRESS REMOVAL

NOT PERFORMED _____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			NOTE DO NOT RUN THE FOLLOWING LEAK CHECKS UNTIL ALL COMPONENT CHECKOUTS FOR THIS FLOW ARE COMPLETE (AS REQD, BY OMRS EFFECTIVITY).	
10-006	CMPS	OMTO	PERFORM A LEAK CHECK OF ALL NONFOAMED GH2 PRESSURIZATION SYSTEM TYPE I THREADED, COMPONENT, WELD, AND BRAZED JOINTS BETWEEN FCV'S, T-0 I/F, AND ET/ORB I/F THAT CAN BE ACCESSED FOR 360 DEG BUBBLE SOAP OBSERVATION (TYPE I), USING LEAK DETECTION SOLUTION (REF 1.7 SPECIAL INSTRUCTIONS). RECORD DATA IN APPENDIX B, DATA SHEETS B-1 AND B-4, AND JOINT FPD5 (DATA SHEET B-3). TQW:_____ NOT PERFORMED _____	]]
10-007	CMPS	RTH2	S70-0695-8 A83066 SUPPLY SOV - CLOSE (CW) A83115 REG - FULL DECREASE (CCW) VERIFY A83145 VENT/SOV OPEN (CCW) A83070 VENT VALVE - OPEN (CCW) VERIFY A83143 GAGE 0 PSIG T:_____ NOT PERFORMED _____	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

GH2 PRESSURIZATION SYSTEM BUBBLE SOAP LEAK CHECKS

DOWNSTREAM OF LV52

NOTE

FOLLOWING STEPS PERFORM LEAK CHECK OF JOINTS DOWNSTREAM OF LV52.

10-008 CMPS VERIFY GH2 SYSTEM PRESSURE IS AMBIENT.

10-009 CMPS OMTO IF NOT INSTALLED, INSTALL GH2 2 IN. DISC TEST PLATE ONTO PD5 DISC PER:

JC V41-50008 - TEST PLATE, PD5 GH2 2 IN. CLEANING/INSPECTION/INSTALLATION

NOT PERFORMED _____

10-010 CMPS OMTO OPEN PD5 FLT POPPET BY TURNING POPPET ACTUATOR BOLT FULL (CW) UNTIL SNUG AND SEATED AGAINST BASE.

TQW:____

NOT PERFORMED _____

10-011 CMPS IF NOT ACTIVE, PERFORM GH2 PREPRESS SYSTEM PRESSURIZATION (OPF) PER OMI V1171VL1, OR THIS OMI. PRESSURIZE SYSTEM TO 400 +/- 25 PSIG.

RT OMI LOG NO._____

RUN: _____ _____ _____ _____ _____

NOT PERF: _____ _____ _____ _____ _____

10-012 CMPS OMTO PERFORM SOAP SOLUTION LEAK CHECK OF JOINTS F247 THRU F255. RECORD RESULTS IN APPENDIX B, DATA SHEET B-3.

TQW:____

NOT PERFORMED _____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
10-013		CMPS	IF NO LONGER REQUIRED, PERFORM "MPS GH2 PREPRESS SYSTEM SECURING (OPF)" PER OMI V1171VL1, OR THIS OMI. RT OMI LOG NO._____ NOT PERFORMED _____ NOTE DO NOT PERFORM NEXT STEP IF GH2 SYSTEM DECAY TEST STILL REQUIRED TO BE PERFORMED THIS FLOW.	
10-014	CMPS	OMTO	REMOVE PD5 TEST PLATE PER: JC V41-40016 - PLATE, PD5 2 IN. GH2 PREPRESS, REMOVAL NOT PERFORMED _____	
10-015			GH2 PRESSURIZATION SYSTEM LEAK CHECK COMPLETE. VERIFY DATA IS COMPLETE AND ENGINEER WILL VERIFY ACCEPTABLE. CMPS:_____ NOT PERFORMED _____	
10-016	CMPS	CMQC	COMPLETION OF THIS SEQUENCE SATISFIES NOTED OMRS REQUIREMENT. OMRSD V41AY0.040-A-1	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
11-000			CV21, CV22, CV23 INTERNAL LEAK CHECK - CMPS, OMT2, OMTO, OQCV & RTH2	

NOTE

THIS OPERATION PERFORMED ONLY IF REQUIRED BY EFFECTIVITY/FLIGHT AND/OR VEHICLE. REF 1.7 SPECIAL INSTRUCTIONS FOR NOT PERFORMED DEFINITION.

EFFECTIVITY: (REF SECTION 1.8)

NOTE

STEPS AND SUBSTEPS WITHIN THIS SEQUENCE MAY BE WORKED OUT OF NUMERICAL ORDER AS DETERMINED BY MPS ENGINEERING.

OPERATIONS INVOLVING CRIT 1 AND/OR 1R ITEMS ARE CONTAINED IN THE FOLLOWING SEQUENCE/ STEPS.

HARDWARE REQUIRED

QTY	PART NO.	NOMENCLATURE
3	MD273-0032-2004	PLUG
3	ME261-0033-0104	K-SEAL
1	KC131C4	ELBOW
5	KC103-4	SEAL
6	MS28778-4	O-RING
1	C70-0903	FLOWMETER
3	RG001505	THROAT PLUG
3	ME286-0068-0008	MINIFILTER
3	KC125C6-4	REDUCER-ADAPTER
3	L070-000070-009	1/4 IN. BACK-TO-BACK

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			RG001505 THROAT PLUG INSTALLATION SSME 1, 2, 3	
11-001		OMT1	INSTALL, IF REQUIRED AND NOT ALREADY INSTALLED, RG001505 THROAT PLUGS:	

1. HANDWIPE MAIN COMBUSTION CHAMBER CONVERGING AREA IMMEDIATELY UPSTREAM OF THROAT FREE OF VISIBLE CONTAMINATION.

2. REMOVE CAPS FROM UNIONS INSTALLED IN PORTS MARKED INLET AND MONITOR ON PLUG HALF.

3. FOLD SEAL AS REQUIRED TO PERMIT INSTALLATION: THEN CAREFULLY INSERT PLUG HALF WITH SEAL THROUGH THRUST CHAMBER THROAT. DO NOT ALLOW ANY METAL PORTION OF PLUG TO CONTACT WALLS OF THRUST CHAMBER.

4. CAREFULLY INSERT SECOND PLUG HALF THROUGH THRUST CHAMBER THROAT.

5. INSTALL SECOND PLUG HALF ONTO SHAFT OF PLUG HALF WITH SEAL. STRETCH SEAL AS REQUIRED TO SEAT PLUG HALF INTO SEAL. DO NOT USE SHARP OR METAL TOOL TO STRETCH SEAL.

6. ALIGN HOLES IN PLUG HALVES AND INSTALL PIN.

7. CENTER AND SEAT ASSEMBLED THROAT PLUG IN THRUST CHAMBER THROAT.

8. INSTALL SUPPORT ON SHAFT OF THROAT PLUG. SECURE WITH NUT/WASHER. TIGHTEN WRENCH TIGHT.

	E1C	E2L	E3R
OK TO INSTALL QWN:	_____	_____	_____
TQW:	_____	_____	_____
NOT PERF:	_____	_____	_____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
11-002		CMPS	CONSOLE KYBD (C4) PVO GH2 PRESSURIZATION SYSTEM PRESSURE TRANDUCER, RECORD VALUES: PVO_V41P1160A1 XMIT CMD KEY - PRESS E1C _____ PSIA BD PVO_V41P1260A1 XMIT CMD KEY - PRESS E2L _____ PSIA BD PVO_V41P1360A1 XMIT CMD KEY - PRESS E3R _____ PSIA BD PVO_V41P1490A1 XMIT CMD KEY - PRESS MANIFOLD _____ PSIA BD	
11-003		CMPS	VERIFY GH2 PRESSURIZATION SYSTEM PRESSURE IS AMBIENT.	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			CV21, CV22, CV23 (FWD) REVERSE SEAT LEAK CHECKS	
			CAUTION ME261-0033-0104 K-SEALS ARE NOT REUSEABLE AND MUST BE LOCALLY SCRAPPED. GH2 PRESSURIZATION SYSTEM MUST BE AMBIENT BEFORE REMOVING PLUG. (SEE FIGURE 7)	
			E1C	
11-004	CMPS	OMTO	REMOVE GH2 E1C PRESS CV TEST PORT PLUG MD273-0044-2004 TP5. MAINTAIN PLUG CLEAN AND DISCARD SEAL.	TQW:____
			E2L	
11-005	CMPS	OMTO	REMOVE GH2 E2L PRESS CV TEST PORT PLUG MD273-0044-2004 TP6. MAINTAIN PLUG CLEAN AND DISCARD SEAL.	TQW:____
			E3R	
11-006	CMPS	OMTO	REMOVE GH2 E3R PRESS CV TEST PORT PLUG MD273-0044-2004 TP7. MAINTAIN PLUG CLEAN AND DISCARD SEAL.	TQW:____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

WARNING

MONITOR TP5, TP6, TP7 FOR AUDIBLE FLOW. IF AUDIBLE, OMTO MUST NOTIFY CMPS IMMEDIATELY TO VENT GH2 PRESS SYSTEM PER APPENDIX Z - EMERGENCY GH2 PRESSURIZATION SYSTEM VENTING THRU S70-0695-8 PANEL.

11-007 CMPS IF NOT ACTIVE, PERFORM GH2 PREPRESS SYSTEM PRESSURIZATION (OPF)" PER OMI V1171VL1, OR THIS OMI. PRESSURIZE SYSTEM TO 400 +/- 25 PSIG.

RT OMI LOG NO._____

NOT PERFORMED _____

11-008 CMPS CONSOLE KYBD - C4
PVO GH2 PRESSURIZATION SYSTEM, GH2 MANIFOLD PRESSURE TRANSDUCERS, AND RECORD VALUES. VERIFY GH2 MANIFOLD AND PRESSURIZATION READS 400 +/- 25 PSIG.

PVO_V41P1160A1
XMIT CMD KEY - PRESS

E1C _____ PSIA

PVO_V41P1260A1
XMIT CMD KEY - PRESS

E2L _____ PSIA

PVO_V41P1360A1
XMIT CMD KEY - PRESS

E3R _____ PSIA

PVO_V41P1490A1
XMIT CMD KEY - PRESS

MANIFOLD _____ PSIA

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			NOTE THE FOLLOWING MEASURES LEAKAGE PAST FORWARD CHECK VALVE IN CV21, CV22, CV23.	
11-009	CMPS	OMTO	MEASURE LEAKAGE AT 50V41TP5 E1C GH2 PRESS CV TEST PORT 50V41TP6 E2L GH2 PRESS CV TEST PORT 50V41TP7 E3R GH2 PRESS CV TEST PORT USING C70-0903 ATMOSPHERIC FLOWMETER (REF 1.7 SPECIAL INSTRUCTIONS). RECORD DATA IN APPENDIX A, DATA SHEET A-2 FOR 50V41CV21 (FWD)/ 50V41CV22 (FWD)/50V41CV23 (FWD) (1000 SCIM MAX). REFERENCE: OMRS V41BA0.100-A-1R OMRS V41BA0.100-B-1R OMRS V41BA0.100-C-1R	TQW:_____
11-010	CMPS	RTH2	S70-0695-8 PANEL 12E A83115 REG - FULL DECREASE (CCW) A83070 VENT - OPEN (CCW) A83145 VENT/SUPPLY - OPEN (CCW) VERIFY A83143 GAGE 0 PSIG	T:_____
11-011		CMPS	CURSOR CNTL (VAE20) A83134 LH2 PREPRESS - CLOSE	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
11-012	CMPS	OMTO	1. IF INSTALLED, REMOVE MPS GH2 SENSE LINE AND GROUND COUPLING (50V41PD16) TURN (CCW).	
			2. DUST CAPS	
			OK TO INSTALL QW:_____ SS2	
			INSTALL AIRBORNE AND GND HALF DUST CAPS ON PD16 FLT AND GND COUPLING.	
			TQW:_____	
			NOT PERFORMED _____	
11-013	CMPS	OMTO	IF INSTALLED, REMOVE GW70-420958-002 LEAR-SEIGLER GND COUPLING FROM 79K10547-HE16 FLEXHOSE. MAINTAIN CLEANLINESS OF GW70-420958-002 COUPLING AND HE16 FLEXHOSE. RETAIN GND HALF FOR REINSTALLATION.	
			T:_____	
			NOT PERFORMED _____	
11-014	CMPS	OMTO	1. CONNECT MPS GH2 SENSE LINE FLEXHOSE (HE16) TO KC125C6-4 REDUCER-ADAPTER USING KC103-6 SEAL. TORQUE 3/8 IN. FITTING TO 270-345 IN. LBS.	
			Z_____ DUE DATE_____	
			2. CONNECT FLEXHOSE/ADAPTER ASSEMBLY TO LO70-000070-009, 1/4 IN. BACK-TO-BACK USING KC103-4 SEAL. TORQUE TO 135-185 IN. LBS. SECURE FLEXHOSE RESTRAINTS (REF 80K51846).	
			Z_____ DUE DATE_____	
			VERIFY CSR-242 TQV:_____	
			TQW:_____	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

CV21, CV22, CV23 (AFT) REVERSE SEAT

LEAK CHECKS

NOTE

THE FOLLOWING MEASURES LEAKAGE PAST THE AFT CHECK VALVE IN 50V41CV21, 50V41CV22, AND 50V41CV23.

IF SSME ARE NOT INSTALLED, PERFORM CHECK VALVE LEAK CHECKS AT REMOVED PLUG ON SSME INTERFACE PLATE.

IF SSME ARE INSTALLED, PERFORM CHECK VALVE LEAK CHECKS AT SSME THROAT PLUGS.

RG000014 AND C70-0903 ARE EQUIVALENT FLOWMETERS.

E1C/CV21 LEAK CHECK

11-015 CMPS OMTO INSPECT ME286-0068-0008 MINIFILTER TO VERIFY THAT FILTER SCREEN IS INSTALLED.

TQW:____

11-016 CMPS OMTO MINIFILTER WITH O-RING

OK TO INSTALL QWN:____

INSTALL ME286-0068-0008 MINIFILTER WITH MS28778-4 O-RING INTO 50V41TP5. LUBE MINIFILTER AND O-RING (REF 1.7 SPECIAL INSTRUCTIONS).
TORQUE TO 60-90 IN. LBS.

Z_____ DUE DATE_____

VERIFY CSR-242 TQV:____

TQW:____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
11-017	CMPS	OMTO	CONNECT MPS HE16 FLEXHOSE ASSEMBLY TO MINIFILTER INSTALLED IN 50V41TP5. RESTRAIN FLEXHOSE (REF 80K51846). TORQUE TO 135-185 IN. LBS. Z_____ DUE DATE_____ VERIFY CSR-242 TQV:_____ TQW:_____	
11-018	CMPS	OMTO	IF TEST PLATE IS INSTALLED, REMOVE 45-11333 GLAND NUT AND 45-11340 PLUG FROM G070-005904-001 GH2 PRESS ORB/ SSME INTERFACE TEST PLATE AT E1C. MAINTAIN CLEANLINESS. BAG AND SEAL PLUG. TQW:_____ NOT PERFORMED _____	
11-019		CMPS	CURSOR CNTL (VAE20) A83134 LH2 PREPRESS - OPEN WARNING MONITOR ORB/SSME INTERFACE PLATE FOR AUDIBLE FLOW. IF AUDIBLE, OMTO MUST NOTIFY CMPS IMMEDIATELY TO VENT GH2 PRESS SYSTEM PER APPENDIX Z - EMERGENCY GH2 PRESSURIZATION SYSTEM VENTING THRU S70-0695-8 PANEL.	
11-020	CMPS	RTH2	S70-0695-8 A83070 VENT - CLOSE (CW) A83115 REG - INCREASE SLOWLY (CW) TO INDICATE 400 +/- 25 PSIG ON GAGE A83143 TQW:_____	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
11-021	CMPS	OMTO	IF SSME NOT INSTALLED: LEAK CHECK AFT CHECK VALVE IN 50V41CV21 AT ORB/SSME INTERFACE TEST PLATE USING C70-0903 ATMOSPHERIC FLOWMETER (REF 1.7 SPECIAL INSTRUCTIONS). RECORD DATA IN APPENDIX A, DATA SHEET A-2 FOR 50V41CV21 (AFT) (1000 SCIM MAX). OMRSD V41BA0.100-A-1R TQW:_____ NOT PERFORMED _____	
11-022	QSME	QMTG	IF SSME AND THROAT PLUG INSTALLED (E1C) MEASURE LEAKAGE WITH RG000014 AT THROAT PLUG MONITOR HOSE. MONITOR FOR 10 MINUTES THEN RECORD IN APPENDIX A, DATA SHEET A-2 FOR 50V41CV21 (AFT). (1000 SCIM MAX) OMRSD V41BA0.100-A-1R TQW:_____ NOT PERFORMED _____	
11-023	CMPS	RTH2	S70-0695-8 A83115 REG - FULL DECREASE (CCW) A83070 VENT VALVE - OPEN (CCW) VERIFY A83143 GAGE IND 0 PSIG. T:_____	
11-024		CMPS	CURSOR CNTL (VAE20) A83134 LH2 PREPRESS - CLOSE	
11-025	CMPS	OMTO	REMOVE FLEXHOSE ASSY FROM FILTER IN TP5. TV:_____	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
11-026	CMPS	OMTO	1. REMOVE ME286-0068-0008 MINIFILTER AND MS28778-4 O-RING FROM 50V41TP5. 2. INSPECT ME286-0068-0008 MINIFILTER TO VERIFY FILTER SCREEN IS INSTALLED. TQW:____	
			NOTE ALL THREE TEST PORT PLUGS MAY BE INSTALLED AT THE SAME TIME AT THE END OF THIS SEQUENCE. ACLAR/TAPE PLUG TO LINE NEAR PORT IF THIS IS TO BE DONE. THE -0104 AND -0204 K-SEALS ARE INTERCHANGEABLE ON OV-103 AND SUBS (REF V070-415413 EOC10).	
11-027	CMPS	OMTO	TEST PORT PLUG OK TO INSTALL QWN:____ INSTALL MD273-0044-2004 TEST PORT PLUG WITH NEW ME261-0033-0104 (OV-102 ONLY) OR ME261-0033-0104/ME261-0033-0204 (OV-103 AND SUBS) SEAL INTO 50V41TP5. TORQUE TO 170-200 IN. LBS. Z_____ DUE DATE_____ INSTALL SAFETY WIRE MS20995N32. VERIFY CSR-242 TQV:____ TQWN:____ E2L/CV22 LEAK CHECK	
11-028	CMPS	OMTO	INSPECT ME286-0068-0008 MINIFILTER TO VERIFY THAT FILTER SCREEN IS INSTALLED. TQW:____	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
11-029	CMPS	OMTO	MINIFILTER WITH O-RING	
			OK TO INSTALL	QWN:____
			INSTALL ME286-0068-0008 MINIFILTER WITH MS28778-4 O-RING INTO 50V41TP6. LUBE MINIFILTER AND O-RING (REF 1.7 SPECIAL INSTRUCTIONS). TORQUE TO 60-90 IN. LBS.	
			Z_____ DUE DATE_____	
			VERIFY CSR-242	TQV:____
				TQW:____
11-030	CMPS	OMTO	CONNECT MPS HE16 FLEXHOSE ASSEMBLY TO MINIFILTER INSTALLED IN 50V41TP6. RESTRAIN FLEXHOSE (REF 80K51846). TORQUE TO 135-185 IN. LBS.	
			Z_____ DUE DATE_____	
			VERIFY CSR-242	TQV:____
				TQW:____
11-031	CMPS	OMTO	IF TEST PLATE IS INSTALLED, REMOVE 45-11333 GLAND NUT AND 45-11340 PLUG FROM G070-005904-001 GH2 PRESS ORB/SSME INTERFACE TEST PLATE AT E2L. MAINTAIN CLEANLINESS, BAG AND SEAL PLUG.	
				TQW:____
			NOT PERFORMED	_____
11-032		CMPS	CURSOR CNTL (VAE20) A83134 LH2 PREPRESS - OPEN	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			WARNING MONITOR ORB/SSME INTERFACE PLATE FOR AUDIBLE FLOW. IF AUDIBLE, OMTO MUST NOTIFY CMPS IMMEDIATELY TO VENT GH2 PRESS SYSTEM PER APPENDIX Z - EMERGENCY GH2 PRESSURIZATION SYSTEM VENTING THRU S70-0695-8 PANEL.	
11-033	CMPS	RTH2	S70-0695-8 12E A83070 VENT - CLOSE (CW) A83115 REG - INCREASE SLOWLY (CW) TO INDICATE 400 +/- 25 PSIG ON GAGE A83143	TQW:_____
11-034	CMPS	OMTO	IF SSME NOT INSTALLED: LEAK CHECK AFT CHECK VALVE IN 50V41CV22 AT ORB/SSME INTERFACE TEST PLATE USING C70-0903 ATMOSPHERIC FLOWMETER (REF 1.7 SPECIAL INSTRUCTIONS). RECORD DATA IN APPENDIX A, DATA SHEET A-2 FOR 50V41CV22 (AFT) (1000 SCIM MAX). OMRSD V41BA0.100-B-1R	TQW:_____ NOT PERFORMED _____
11-035	QSME	QMTG	IF SSME AND THROAT PLUG INSTALLED (E2L) MEASURE LEAKAGE WITH RG000014 AT THROAT PLUG MONITOR HOSE. MONITOR FOR 10 MINUTES THEN RECORD IN APPENDIX A, DATA SHEET A-2 FOR 50V41CV22 (AFT). (100 SCIM MAX) OMRSD V41BA0.100-B-1R	TQW:_____ NOT PERFORMED _____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
11-036	CMPS	RTH2	S70-0695-8 A83115 REG - FULL DECREASE (CCW) A83070 VENT VALVE - OPEN (CCW) VERIFY A83143 GAGE IND 0 PSIG.	T:_____
11-037		CMPS	CURSOR CNTL (VAE20) A83134 LH2 PREPRESS - CLOSE	
11-038	CMPS	OMTO	REMOVE FLEXHOSE ASSY FROM FILTER IN TP6.	TV:_____
11-039	CMPS	OMTO	1. REMOVE ME286-0068-0008 MINIFILTER AND MS28778-4 O-RING FROM 50V41TP6. 2. INSPECT ME286-0068-0008 MINIFILTER TO VERIFY FILTER SCREEN IS INSTALLED.	TQW:____
11-040	CMPS	OMTO	TEST PORT PLUG OK TO INSTALL	QWN:____
			INSTALL MD273-0044-2004 TEST PORT PLUG WITH NEW ME261-0033-0104 (OV-102 ONLY) OR (ME261-0033-0104/ME261-0033-0204 (103 AND SUBS) SEAL INTO 50V41TP6. TORQUE TO 170-200 IN. LBS. Z_____ DUE DATE_____ INSTALL SAFETY WIRE MS20995N32 VERIFY CSR-242	TQV:____ TQWN:___

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			E3R/CV23 LEAK CHECK	
11-041	CMPS	OMTO	INSPECT ME286-0068-0008 MINIFILTER TO VERIFY FILTER SCREEN IS INSTALLED.	TQW:_____
11-042	CMPS	OMTO	50V41TP7	
			OK TO INSTALL	QWN:_____
			INSTALL ME286-0068-0008 MINIFILTER WITH MS28778-4 O-RING INTO 50V41TP7. LUBE MINIFILTER AND O-RING (REF 1.7 SPECIAL INSTRUCTIONS). TORQUE TO 60-90 IN. LBS.	
			Z_____ DUE DATE_____	
			VERIFY CSR-242	TQV:_____
				TQW:_____
11-043	CMPS	OMTO	ELBOW WITH SEAL	
			OK TO INSTALL	QWN:_____
			INSTALL KC131C4 SWIVEL ELBOW WITH KC103-4 SEAL TO ME286-0068-0008 MINIFILTER AT TP7. TORQUE TO 135-180 IN. LBS.	
			Z_____ DUE DATE _____	
			VERIFY CSR-242	TQV:_____
				TQW:_____
11-044	CMPS	OMTO	CONNECT MPS HE16 FLEXHOSE ASSEMBLY TO ELBOW INSTALLED IN 50V41TP7. RESTRAIN FLEXHOSE (REF SP611(2)KV). TORQUE TO 135-185 IN. LBS.	
			Z_____ DUE DATE_____	
			VERIFY CSR-242	TQV:_____
				TQW:_____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
11-045	CMPS	OMTO	IF TEST PLATE IS INSTALLED, REMOVE 45-11333 GLAND NUT AND 45-11340 PLUG FROM G070-005904-001 GH2 PRESS ORB/SSME INTERFACE TEST PLATE AT E3R. MAINTAIN CLEANLINESS, BAG AND SEAL PLUG.	
			TQW:_____	
			NOT PERFORMED _____	
11-046		CMPS	CURSOR CNTL (VAE20) A83134 LH2 PREPRESS - OPEN	
			WARNING MONITOR ORB/SSME INTERFACE PLATE FOR AUDIBLE FLOW. IF AUDIBLE, OMTO MUST NOTIFY CMPS IMMEDIATELY TO VENT GH2 PRESS SYSTEM PER APPENDIX Z - EMERGENCY GH2 PRESSURIZATION SYSTEM VENTING THRU S70-0695-8 PANEL.	
11-047	CMPS	RTH2	S70-0695-8 12E A83070 VENT - CLOSE (CW) A83115 REG - INCREASE SLOWLY (CW) TO INDICATE 400 +/- 25 PSIG ON GAGE A83143	
			TQW:_____	
11-048	CMPS	OMTO	IF SSME NOT INSTALLED: LEAK CHECK AFT CHECK VALVE IN 50V41CV23 AT ORB/SSME INTERFACE TEST PLATE USING C70-0903 ATMOSPHERIC FLOWMETER (REF 1.7 SPECIAL INSTRUCTIONS). RECORD DATA IN APPENDIX A, DATA SHEET A-2 FOR 50V41CV23 (AFT) (1000 SCIM MAX). OMRSD V41BA0.100-C-1R	
			TQW:_____	
			NOT PERFORMED _____	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
11-049	QSME	QMTG	IF SSME AND THROAT PLUG INSTALLED (E3R): MEASURE LEAKAGE WITH RG000014 AT THROAT PLUG MONITOR HOSE. MONITOR FOR 10 MINUTES THEN RECORD IN APPENDIX A, DATA SHEET A-2 FOR 50V41CV23 (AFT). (1000 SCIM MAX) OMRSD V41BA0.100-C-1R TQW:_____ NOT PERFORMED _____	
11-050	CMPS	RTH2	S70-0695-8 A83115 REG - FULL DECREASE (CCW) A83070 VENT VALVE - OPEN (CCW) VERIFY A83143 GAGE IND 0 PSIG. T:_____	
11-051		CMPS	CURSOR CNTL (VAE20) A83134 LH2 PREPRESS - CLOSE	
11-052	CMPS	OMTO	REMOVE FLEXHOSE ASSY AND ELBOW FROM MINIFILTER IN TP7 AND MAINTAIN CLEANLINESS. TQW:_____	
11-053	CMPS	OMTO	1. REMOVE ME286-0068-0008 MINIFILTER AND MS28778-4 O-RING FROM 50V41TP7. 2. INSPECT ME286-0068-0008 MINIFILTER TO VERIFY FILTER SCREEN IS INSTALLED. TQW:_____	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			NOTE IF NOT PREVIOUSLY INSTALLED, INSTALL ALL THREE TEST PORTS FOR TP5, TP6 AND TP7.	
11-054	CMPS	OMTO	TEST PORT PLUG	
			OK TO INSTALL QWN:____	
			INSTALL MD273-0044-2004 TEST PORT PLUG WITH NEW ME261-0033-0104 (102) OR (ME261-0033-0104/ME261-0033-0204) (103 AND SUBS) SEAL INTO 50V41TP7. TORQUE TO 170-200 IN. LBS.	
			Z_____ DUE DATE_____	
			INSTALL SAFETY WIRE MS20995N32	
			VERIFY CSR-242 TQV:____	
			TQWN:___	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

PD16 RECONFIGURE

11-055 CMPS GW70-420958

OK TO INSTALL QW:_____

IF NOT REQUIRED FOR FURTHER TESTING:
REMOVE KC125C6-4 REDUCER-ADAPTER AND
LO70-000070-009 1/4 IN. BACK-TO-BACK FROM
HE16 FLEXHOSE. INSTALL GW70-420958
LEAR-SIEGLER GND COUPLING TO HE16 FLEXHOSE.
USE KC103-6 SEAL. TORQUE TO 270-345 IN. LBS.

Z_____ DUE DATE_____

VERIFY CSR-242 TQV:_____

TQW:_____

NOT PERFORMED _____

CAUTION

GH2 SYSTEM IS PRESSURIZED TO
400 PSI MAX. THE LEAR-SIEGLER
QD IS DESIGNED TO BE MATED/
DEMATED WITH PRESSURE APPLIED.
IF LEAKAGE IS NOTED DURING
MATE OR DEMATE, NOTIFY MPS.

11-056 CMPS OMTO PD16 FLT TO GRND HALF MATE

OK TO INSTALL QWN:_____

1. REMOVE CAP/PLUG (DUST CAPS) FROM PD16 FLT AND GRND HALFS AND CONNECT TOGETHER.

2. INSTALL GH2 SENSE LINE TO 50V41PD16 FLT HALF. TURN CW. TORQUE TO 15-20 IN. LBS.

Z_____ DUE DATE_____

VERIFY CSR-242 TQV:_____

TQWN:_____

NOT PERFORMED _____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

CAUTION

THE G070-005911 PLUG MUST HAVE LUBRICANT APPLIED PRIOR TO INSTALLATION TO PREVENT GALLING.

E1C I/F SECURING

11-057 CMPS OMTO PLUG

OK TO INSTALL QW:_____

IF ENGINE IS REMOVED AND TEST PLATE IS INSTALLED, LUBRICATE AND INSTALL 45-11333 GLAND NUT WITH 45-11340 PLUG ON E1C G070-005904-001 GH2 PRESS ORB/SSME INTERFACE PLATE. TORQUE TO 264-336 IN. LBS.

Z_____ DUE DATE_____

VERIFY CSR-242 TQV:_____

TQW:_____

NOT PERFORMED _____

E2L I/F SECURING

11-058 CMPS OMTO PLUG

OK TO INSTALL QW:_____

IF ENGINE IS REMOVED AND TEST PLATE IS INSTALLED, LUBRICATE AND INSTALL 45-11333 GLAND NUT WITH 45-11340 PLUG ON E2L G070-005904-001 GH2 PRESS ORB/SSME INTERFACE PLATE. TORQUE TO 264-336 IN. LBS.

Z_____ DUE DATE_____

VERIFY CSR-242 TQV:_____

TQW:_____

NOT PERFORMED _____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			E3R I/F SECURING	
11-059	CMPS	OMTO	PLUG	
			OK TO INSTALL QW:_____	
			IF ENGINE IS REMOVED AND TEST PLATE IS INSTALLED, LUBRICATE AND INSTALL 45-11333 GLAND NUT WITH 45-11340 PLUG ON E3R G070-005904-001 GH2 PRESS ORB/SSME INTERFACE PLATE. TORQUE TO 264-336 IN. LBS.	
			Z_____ DUE DATE_____	
			VERIFY CSR-242 TQV:_____	
			TQW:_____	
			NOT PERFORMED _____	
			GH2 SYSTEM SECURING	
11-060	CMPS	RTH2	S70-0695-8	
			A83066 SUPPLY SOV - CLOSE (CW)	
			A83070 VENT - OPEN (CCW)	
			A83115 REG - FULL DECREASE (CCW)	
			VERIFY A83143 GAGE IND 0 PSI.	
			A83070 VENT - CLOSE (CW)	
			A83145 SUPPLY/VENT - CLOSE (CW)	
			T:_____	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			RG001505 THROAT PLUG REMOVAL	
11-061	OMT1		REMOVE RG001505 THROAT PLUG IF INSTALLED AND NO LONGER REQUIRED: 1. WHILE HOLDING SUPPORT, REMOVE NUT/WASHER THEN CAREFULLY REMOVE SUPPORT FROM THRUST CHAMBER. 2. CAREFULLY PUSH PLUG HALVES INTO COMBUSTION ZONE AS REQUIRED TO OBTAIN ACCESS TO SEAL. 3. REMOVE PIN SECURING PLUG HALVES TOGETHER. 4. CAREFULLY SEPARATE PLUG HALVES. WHILE HOLDING PLUG HALF WITH SEAL, REMOVE SECOND PLUG HALF, THEN REMOVE PLUG HALF WITH SEAL. E1C E2L E3R TQV:_____ _____ _____ NOT PERF_____ _____ _____	
11-062		CMPS	CV21, CV22, CV23 INTERNAL LEAK CHECK COMPLETE.	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
12-000			LV52 GH2 VENT SOL FLOW PATH VERIFICATION - CMPS, OMTO, RTH2, OQCV, AND NASA QC	
			NOTE THIS OPERATION PERFORMED ONLY IF REQUIRED BY EFFECTIVITY/FLIGHT AND/OR VEHICLE. REF 1.7 SPECIAL INSTRUCTIONS FOR NOT PERFORMED DEFINITION.	
			EFFECTIVITY: (REF SECTION 1.8)	
			NOTE STEPS AND SUBSTEPS WITHIN THIS SEQUENCE MAY BE WORKED OUT OF NUMERICAL ORDER AS DETERMINED BY MPS ENGINEERING. OPERATIONS INVOLVING CRIT 1 AND/OR 1R ITEMS ARE CONTAINED IN THE FOLLOWING SEQUENCE/STEPS.	
12-001	CMPS OMTO		IF INSTALLED, REMOVE G070-005861-003 TEST PLATE FROM PD5 PER JC V41-40016 - PLATE, PD5 2 IN. PREPRESS REMOVAL TQV:____ NOT PERFORMED _____	]]]]
12-002	CMPS OMTO		VERIFY G070-005861-003 TEST PLATE NOT INSTALLED AT PD5. TQV:____	
12-003	CMPS OMTO		VERIFY PD16 CONNECTED TO GW70-420958-002 GND HALF COUPLING, 79K10547-HE16 FLEXHOSE AND A131506 (0-2) I/F PNL PORT (SEE FIGURE 8 THRU 10). T:_____	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
12-004	CMPS	OMTO	IF INSTALLED, VERIFY TP10 HAND VALVE CLOSED (CW).	
				T:_____
			NOT PERFORMED	_____
12-005	CMPS	RTH2	S70-0695-8 PANEL	
			VERIFY FOLLOWING POSITIONS:	
			A83066 SUPPLY CLOSED	
			A83115 REG FULL DECREASE	
			A83068 SUPPLY SOV CLOSED	
			A83116 REG FULL DECREASE	
			A83070 VENT VALVE CLOSED	
			A83065 GAGE SOV OPEN	
			A83143 GAGE IND 0 PSIG	
				T:_____
12-006		CMPS	CRT (VAE20) VERIFY A83135 LH2 F/D CLOSED A83041 F/D VENT CLOSED A83134 LH2 PREPRESS CLOSED LV52 DEENERGIZED	
12-007	CMPS	RTH2	S70-0695-8 PANEL	
			A83066 SUPPLY SOV - SLOWLY OPEN	
			A83145 PD16 SUPPLY VLV - OPEN	
			A83115 REG - SLOWLY INCREASE UNTIL 150 +/- 10 PSIG INDICATED ON GAGE A83143	
				TQW:____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
12-008	CMPS	OTC	IF AFT FUSELAGE IS OCCUPIED, NOTIFY PERSONNEL IN AFT FUSELAGE THAT GH2 PRESSURIZATION MANIFOLD WILL BE PRESSURIZED WITH GHE AND FLOW WILL BE AUDIBLE.	
	OTC	*AAM		
				T:_____
			NOT PERFORMED	_____
12-009	CMPS	OMTO	VERIFY LV52 OUTLET TUBE AT PD5 DISC IS OPEN TO ALLOW FLOW VERIFICATION.	
			NOTE THE FOLLOWING STEP WILL ENERGIZE LV52 AND SUPPLY PRESSURE TO VERIFY FLOW OUT OF LV52 OUTLET TUBE. OMTO SHOULD NOTIFY CMPS AS SOON AS FLOW VERIFICATION IS ACCOMPLISHED.	
12-010		CMPS	CURSOR CNTL (VAE20) A83134 LH2 PREPRESS - OPEN VERIFY PD5 DISC PRESSURE IND BETWEEN 100-425 PSIA RECORD _____PSIA 100 - 425 LV52 LH2 PRESSURIZATION VENT VLV - ENERGIZE	
12-011	CMPS	OMTO	VERIFY AUDIBLE FLOW OUT OF LV52 OUTLET TUBE AT PD5 DISC. OMRSD V41BZ0.220	
				TQWN:___
12-012		CMPS	CUSROR CNTL (VAE20) LV52 LH2 PRESSURIZATION VENT VLV - DEENERGIZE A83134 LH2 PREPRESS - CLOSE	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
12-013	CMPS	RTH2	S70-0695-8 PANEL	
			A83066 SUPPLY SOV - CLOSE	
			A83070 VENT VLV - OPEN, WHEN VENTING CEASES, CLOSE	
			A83115 REG - FULL DECREASE	
			VERIFY A83143 GAGE IND 0 PSIG.	
			A83145 SOV - CLOSE	
				T:_____
12-014		CMPS	LV52 GH2 VENT SOL FLOW PATH VERIFICATION COMPLETE.	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
13-000			GH2 PREPRESS SYSTEM PRESSURIZATION (OPF) (CONTINGENCY)	
			NOTE THIS IS A MULTIPLE RUN SEQUENCE. BUYOFFS ARE TO BE PERFORMED ON A COPY OF THIS SEQUENCE AND ATTACHED TO THIS OMI AT CALLING SEQ/STEP. THIS SEQUENCE MAY BE PERFORMED AT ANY TIME PER MPS ENGINEERING DIRECTION. STEP/SUBSTEPS MAY BE WORKED OUT OF ORDER WITH ENGINEERING CONCURRENCE.	
			ENTIRE SEQUENCE NOT PERFORMED	_____
13-001		CMQC	RECORD SEQUENCE AND STEP THAT THIS OPERATION WAS PERFORMED AT: SEQ_____, STEP_____ QW:_____	
13-002	CMPS		CONSOLE KYBD VAE18 PERF PGM KEY - PRESS PFK-3 KEY - PRESS (OPF)	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
13-003	CMPS		CONSOLE KYBD VAE20 PERF PGM KEY - PRESS PFK-3 KEY - PRESS (OPF) NOTE PD10 AND/OR PD16 GSE ARE REQUIRED TO BE INSTALLED. THE FOLLOWING STEPS VERIFY CONNECTION OF PD10 OR PD16 TO RESPECTIVE GSE. PD10 GSE IS REQUIRED IF PRESSURIZATION BETWEEN FLIGHT HALF QD (PD10) AND CHECK VLV (CV17) IS NEEDED TO SUPPORT TESTING. PD10 CONFIGURATION VERIFICATION ----------	
13-004	CMPS	OMTO	PLATFORM 11 LEFT IF PRESSURIZATION THRU LH2 T-0 DISC (PD10) IS REQUIRED AND IF NOT ALREADY VERIFIED, VERIFY THAT G070-005820 LH2 T-0 GSE QD IS INSTALLED AT 50V41PD10 AND THAT A111596 (BAY 1/2) A512454 (BAY 3) (79K10547 HE10) FLEXHOSE IS CONNECTED TO DISCONNECT AND TO A105347 (0-2) I/F PANEL PORT.]]] TQV:____ NOT PERFORMED _____	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

NOTE

IF PRESSURIZATION THRU PD16 IS PERFORMED, FLEXHOSE AND QD FOR PD10 WILL ALSO BE PRESSURIZED.

PD16 CONFIGURATION VERIFICATION

13-005 CMPS OMTO IF PRESSURIZATION OR SECURING THRU 50V41PD16 WILL BE PERFORMED, VERIFY GW70-420958-002 GND HALF COUPLING IS INSTALLED TO FLT HALF 50V41PD16. VERIFY 79K10547-HE16 FLEXHOSE CONNECTED TO PD16 AND TO A131506 (0-2) I/F PNL PORT.

TQV:_____

NOT PERFORMED _____

TP10 CONFIGURATION VERIFICATION

13-006 CMPS OMTO IF HANDVALVE IS INSTALLED AT 50V41TP10, VERIFY H/V CLOSED (CW).

TQV:_____

NOT PERFORMED _____

LH2 ORB/ET 2-INCH DISC

13-007 CMPS OMTO IF MPS TEST PLATE IS INSTALLED AT PD5 GH2 2 IN. DISCONNECT, VERIFY SECURED AS FOLLOWS:

1. IF FLIGHT HALF POPPET IS REQUIRED OPEN DURING PRESSURIZATION, VERIFY BOTH TEST PLATE PORTS CAPPED OR PLUGGED.

NOT PERFORMED _____
SS1

2. IF FLIGHT HALF POPPET IS NOT REQUIRED OPEN, TURN POPPET ACTUATOR BOLT FULL (CCW).

NOT PERFORMED _____
SS2

TQV:_____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
13-008	CMPS	RTH2	S70-0695-8 PANEL IF A83048 PANEL INLET SUPPLY VLV IS CLOSED: A83049 VENT VLV - CLOSE (CW) A83062 VENT VLV - CLOSE (CW) A83051 SUPPLY SOV - CLOSE (CW) A83053 SUPPLY SOV - CLOSE (CW) A83054 SUPPLY SOV - CLOSE (CW) A83066 SUPPLY SOV - CLOSE (CW) A83063 SUPPLY SOV - CLOSE (CW) A83050 GAGE SOV - OPEN (CCW) A83048 PANEL INLET - SLOWLY OPEN (CCW) VERIFY A83097 GAGE INDICATES 3000-6000 PSIG T:_____ NOT PERFORMED _____	
13-009	CMPS		CRT (VAE20) VERIFY A83134 LH2 PREPRESS SUPPLY SOV CLOSED A83041 LH2 FILL AND DRAIN LINE VENT CLOSED LV52 DEENERGIZED	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			NOTE PERFORM NEXT STEP IF PANEL LEG IS SECURED, A83066 VLV IS CLOSED AND/OR GAGE A83143 INDICATED 0 PSIG.	
13-010	CMPS	RTH2	S70-0695-8 PANEL A83066 SUPPLY SOV - CLOSE (CW) A83115 REG - FULL DECREASE (CCW) A83068 SUPPLY SOV - CLOSE (CW) A83065 GAGE SOV - OPEN (CCW) VERIFY A83143 GAGE IND 0 PSIG A83070 VENT - CLOSE (CW) A83145 VENT - CLOSE (CW) A83066 SUPPLY SOV - SLOWLY OPEN (CCW) T:_____ NOT PERFORMED _____	
13-011	CMPS	RTH2	S70-0695-8 PANEL IF PRESSURIZATION THRU PD16 REQUIRED: A83145 - PD16 SUPPLY VLV - OPEN (CCW) T:_____ NOT PERFORMED _____	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

GH2 SYSTEM PRESSURIZATION

WARNING

GH2 SYSTEM WILL BE PRESSURIZED WITH HELIUM. FLOW WILL BE AUDIBLE TO PERSONNEL IN AFT AND AT LH2 T-0.

13-012 CMPS OTC
OTC *AAM

IF AFT FUSELAGE IS OCCUPIED, NOTIFY PERSONNEL IN AFT FUSELAGE THAT GH2 PRESSURIZATION MANIFOLD WILL BE PRESSURIZED WITH GHE, FLOW WILL BE AUDIBLE.

T:_____

NOT PERFORMED _____

13-013 CMPS

CURSOR CNTL (VAE18)
A83134 LH2 PREPRESS SUPPLY SOV - OPEN

13-014 CMPS RTH2

S70-0695-8 PANEL (12E)

A83115 REG - INCREASE (CW) TO INDICATE 400+/-25 PSIG ON GAGE A83143.

TQW:____

13-015 CMPS

CRT (VAE20)

VERIFY GH2 PRESS SYSTEM PRESSURE IS 400 +/- 25 PSIG.

RECORD: GH2 PRESS_____PSIG

LH2 MANIF PRESS_____PSIG

13-016 CMPS

GH2 PREPRESS SYSTEM PRESSURIZATION (OPF) COMPLETE.

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
14-000			GH2 PREPRESS SYSTEM VENTING THRU PD16 (OPF) (CONTINGENCY)	
			NOTE THIS SEQUENCE MAY BE PERFORMED AT ANY TIME PER MPS ENGINEERING DIRECTION.	
			ENTIRE SEQUENCE NOT PERFORMED	_____
			NOTE THIS IS A MULTIPLE RUN SEQUENCE. BUYOFFS ARE TO BE PERFORMED ON A COPY OF THIS SEQUENCE AND ATTACHED TO THIS OMI AT CALLING SEQ/STEP. STEP/SUBSTEPS MAY BE WORKED OUT OF ORDER WITH ENGINEERING CONCURRENCE.	
14-001		CMQC	RECORD SEQUENCE AND STEP THAT THIS OPERATION WAS PERFORMED AT: SEQ_____, STEP_____	
				QW:_____
14-002	CMPS	OMTO	IF NOT INSTALLED, PERFORM "PD16 HARDWARE INSTALLATION (OPF)" PER OMI V1171VL1.	
				TQ:_____
			NOT PERFORMED	_____
14-003	CMPS		CURSOR CNTL (VAE20) A83134 LH2 PREPRESS SUPPLY SOV - CLOSE	
14-004	CMPS	RTH2	S70-0695-8 PANEL A83070 VENT - OPEN (CCW) A83145 VENT - OPEN (CCW)	
				T:_____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
14-005	CMPS		CRT (VAE20) V41P1490A1 VERIFY ORBITER GH2 SYSTEM VENTS TO AMBIENT.	
14-006	CMPS	RTH2	S70-0695-8 PANEL A83145 VENT - CLOSE (CW) A83070 VENT - CLOSE (CW) T:_____	
			NOTE DO NOT PERFORM NEXT STEP IF LH2 FILL/DRAIN SYSTEM PRESSURIZATION STILL REQUIRED.	
14-007	CMPS	RTH2	S70-0695-8 PANEL A83066 SUPPLY SOV - CLOSE (CW) VERIFY A83068 SUPPLY SOV CLOSED (CW) A83115 REG - FULL DECREASE (CCW) A83143 GAGE IND 0 PSIG T:_____ NOT PERFORMED _____	
14-008	CMPS		IF NO LONGER REQUIRED: TERMINATE PGM (VAE20) NOT PERFORMED _____	
14-009	CMPS		GH2 PREPRESS SYSTEM VENTING THRU PD16 (OPF) COMPLETE.	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
15-000			GH2 PREPRESS SYSTEM VENTING THRU PD5/LV52 (OPF)	
			(CONTINGENCY)	
			NOTE THIS SEQUENCE MAY BE PERFORMED AT ANY TIME PER MPS ENGINEERING DIRECTION.	
			ENTIRE SEQUENCE NOT PERFORMED	_____
			NOTE THIS IS A MULTIPLE RUN SEQUENCE. BUYOFFS ARE TO BE PERFORMED ON A COPY OF THIS SEQUENCE AND ATTACHED TO THIS OMI AT CALLING SEQ/STEP. STEP/SUBSTEPS MAY BE WORKED OUT OF ORDER WITH ENGINEERING CONCURRENCE.	
15-001	CMQC		RECORD SEQUENCE AND STEP THAT THIS OPERATION WAS PERFORMED AT: SEQ_____, STEP_____	QW:_____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			CAUTION PERFORM VENTING OF GH2 PRESS SYSTEM THRU PD5/LV52, ONLY IF VENTING THRU PD16 IS NOT POSSIBLE. (INCREASE IN OPF HELIUM BACKGROUND MAY IMPACT OTHER TESTING.)	
15-002	CMPS		CRT (VAE20) VERIFY A83134 LH2 PREPRESS SUPPLY SOV CLOSED A83041 LH2 FILL AND DRAIN LINE VENT CLOSED LV52 DEENERGIZED	
			NOTE DO NOT PERFORM NEXT STEP IF LH2 FILL/DRAIN SYSTEM PRESSURIZATION STILL REQUIRED.	
15-003	CMPS	RTH2	S70-0695-8 PANEL A83066 SUPPLY SOV - CLOSE (CW) VERIFY A83068 SUPPLY SOV CLOSED (CW) A83115 REG - FULL DECREASE (CCW) A83143 GAGE IND 0 PSIG	T:_____ NOT PERFORMED _____

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
			PD5 CONFIGURATION VERIFICATION	
15-004	CMPS	OMTO	IF NOT PREVIOUSLY VERIFIED, REPORT CONFIGURATION OF MPS 2 IN. GH2 DISCONNECT PD5. 1. TEST PLATE INSTALLED WITH POPPET ACTUATOR FULL (CW) - FLT HALF OPEN. 2. TEST PLATE INSTALLED WITH POPPET ACTUATOR FULL (CCW) - FLT HALF CLOSED. 3. NO TEST PLATE INSTALLED. RECORD CONFIGURATION NO._____	TQV:_____ NOT PERFORMED _____
15-005	CMPS	OMTO	IF PD5 TEST PLATE IS INSTALLED WITH POPPET ACTUATOR FULL (CW), TURN POPPET ACTUATOR FULL (CCW) TO CLOSE FLT HALF POPPET.	TQW:_____ NOT PERFORMED _____
15-006	CMPS	OMTO	IF PD5 TEST PLATE IS INSTALLED WITH POPPET ACTUATOR FULL (CCW) OR IF PREVIOUS STEP WAS PERFORMED AND TETHERED CAP IS INSTALLED, SLOWLY REMOVE TETHERED CAP FROM PLATE TEST PORT. A SMALL VOLUME OF HELIUM MAY VENT DURING CAP REMOVAL.	TQW:_____ NOT PERFORMED _____
15-007	CMPS	OMTO	IF PD5 TEST PLATE IS NOT INSTALLED, REMOVE ACLAR FROM THE PD5 DISCONNECT TO PERMIT VENTING.	TQV:_____ NOT PERFORMED _____
15-008	CMPS OTC	OTC *PAD	NOTIFY PERSONNEL TO CLEAR AREA AROUND LH2 ORBITER/ET DISCONNECT. HELIUM WILL BE VENTED THRU PD5 AND THERE WILL BE AN AUDIBLE FLOW.	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
15-009	NTD PA		ATTENTION IN OPF BAY ___: LOUD VENTING WILL OCCUR IN AREA OF LH2 17 IN. DISC.	
15-010	CMPS		CURSOR CNTL (VAE20) LV52 - ENERGIZE	
15-011	CMPS		VERIFY GH2 PRESSURE DECAYS TO AMBIENT.	
15-012	CMPS		CURSOR CNTL (VAE20) LV52 - DEENERGIZE	
15-013	CMPS		IF NO LONGER REQUIRED: TERMINATE PGM (VAE20) NOT PERFORMED	_____
15-014	CMPS	OMTO	IF TEST CAP WAS REMOVED TO PERMIT VENTING, INSTALL CAP ONTO PD5 TEST PLATE TEST PORT WRENCH TIGHT AND CONFIGURE POPPET AS NEEDED FOR FURTHER TESTING AS DIRECTED BY CMPS. 1. POPPET ACTUATOR FULL (CW) NOT PERFORMED	_____ SS1
			2. POPPET ACTUATOR FULL (CCW) NOT PERFORMED	_____ SS2
				TQW:_____
			ENTIRE STEP NOT PERFORMED	_____
15-015	CMPS	OMTO	IF PD5 TEST PLATE WAS NOT INSTALLED AND ACLAR WAS REMOVED TO PERMIT VENTING, REINSTALL ACLAR AND TAPE OVER PD5 DISCONNECT OPENING. MAINTAIN SYSTEM CLEANLINESS (REF MA0110-311).	
				TQV:_____
			NOT PERFORMED	_____
15-016		CMPS	GH2 PREPRESS SYSTEM VENTING THRU PD5/LV52 (OPF) COMPLETE.	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
16-000			TEST SUPORT TERMINATION ----------	
16-001	CMPS	OTC	V1009.007 COMPLETE.	
16-002	OTC NTD 232	NTD STM LPS	TEST COMPLETE FOR V1009.007. RELEASE ALL SUPPORT.	
16-003	STM 111 GYCC 117	GYCC GYCR	TERMINATE VOICE RECORDING FOR V1009.007. TEST COMPLETE. SUPPORT RELEASED.	
16-004	CMPS	OTC	TEST SUPPORT TERMINATION COMPLETE.	

OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

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SECTION V

POST OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
17-000			POST OPERATION INSTRUCTIONS - ORBITER	
17-001			POST OPERATION INSTRUCTION 1 - MPS GH2 SYSTEM DATA REVIEW	
17-002			MPS ENGINEER - RECORD/COPY ALL DATA FROM APPENDICES TO SUPPORT MPS ENGINEERING DATA FILE. COPY ALL PERMANENT DEVIATIONS AND PEN AND INK CHANGES. MPSE _____ DATE_____	
17-003			ORBITER POST OPERATION INSTRUCTION 1 - MPS LH2 SYSTEM DATA REVIEW COMPLETE.	QV:_____

POST OPERATION INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

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APPENDIX A

GH2 SYSTEM COMPONENTS - INTERNAL LK CKS

DATA SHEET A-1 - MPS COMPONENT SEAT INTERNAL LEAK CHECKS

ITEM DESCRIPTION	MAX LEAK ALLOWED (SCIMS)	TUBE SCALE READING	LEAK RATE (SCIMS)	FLOWMETER TUBE Z NO.	DUE DATE
CV17	15	_____	_____	_____	_____
					TQW:_____]
					]
				NOT PERFORMED	_____]
					]
PD10	10	_____	_____	_____	_____
					TQW:_____
				NOT PERFORMED	_____]
					]
CV24	15	_____	_____	_____	_____
					TQW:_____
					]
				NOT PERFORMED	_____]

APPENDIX A

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APPENDIX A

DATA SHEET A-2 - CHECK VALVE REVERSE LEAKAGE (INTERVAL REQUIREMENTS)

NOTE

CV21,22,23 - MAX ALLOWABLE LEAKAGE IS 1000 SCIM TOTAL FOR FWD AND AFT CHECK VALVES.

REF DESGN	MAX ALLOWABLE (SCIM)	LEAK RATE (SCIM)	MANIF PRESS (PSIA)	FLWMTR TUBE Z NO.	FLWMTR SCALE READING	DUE DATE
CV21 (FWD)	1000	_____	_____	_____	_____	_____
						TQW:_____
					NOT PERFORMED	_____
CV22 (FWD)	1000	_____	_____	_____	_____	_____
						TQW:_____
					NOT PERFORMED	_____
CV23 (FWD)	1000	_____	_____	_____	_____	_____
						TQW:_____
					NOT PERFORMED	_____
CV21 (AFT)	1000	_____	_____	_____	_____	_____
						TQW:_____
					NOT PERFORMED	_____
CV22 (AFT)	1000	_____	_____	_____	_____	_____
						TQW:_____
					NOT PERFORMED	_____
CV23 (AFT)	1000	_____	_____	_____	_____	_____
						TQW:_____
					NOT PERFORMED	_____

APPENDIX A

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DATE: 02-25-92

APPENDIX B

DATA SHEET B-1 - GH2 PRESSURIZATION SYSTEM (HIGH PRESSURE) JOINT LIST AND RESULTS

EFFECTIVITY: (REF SECTION 1.8)

WARNING

FACESHIELDS OR GOGGLES SHALL BE WORN BY PERSONNEL PERFORMING SOAP LEAK CHECKS.

NOTE

ACCEPTANCE CRITERIA FOR LEAK CHECKS USING MASS SPECTROMETER AND LEAK CHECK OF FOAMED JOINTS ARE DEFINED IN 1.7 SPECIAL INSTRUCTIONS.

NON-FOAMED THREADED, BRAZED OR WELDED FITTINGS MAY BE LEAK CHECKED USING SOAP SOLUTION. ENTER "SOAP" UNDER METHOD COLUMN IF LEAK DETECTION SOAP SOLUTION METHOD IS BEING USED. ENTER N/A FOR SENS. FACTOR, BACK GROUND AND SCALE READING.

APPENDIX B

DATA SHEET B-1 (CONTINUED)

NOTE

GH2 HIGH PRESSURE SYSTEM
LEAK CHECKS ARE FROM
SSME I/F TO INLET OF FCV.

OV-105 UNIQUE JOINTS
ARE SHOW IN BRACKETS.

E1C GH2 HIGH PRESSURE SYSTEM - SSME I/F TO FCV

JOINT	DESCRIPTION	FIG NO.
CV21A	WELD ON CV21 BODY OUTLET	7
F204	ME284-0479-0012 ASSY BRAZE JOINT AT V070-415410-001 TUBE	7
F205	V070-415410-001 TUBE BRAZE JOINT AT V070-415448-001 FITTING	5
F206	SEAL AT MT11 TRANSDUCER ON V070-415448-001 FITTING	5
F207	V070-415448-001 FITTING BRAZE JOINT AT V070-415410-002 TUBE	5
F208	V070-415410-002 TUBE BRAZE JOINT AT V070-415410-023 TUBE	4
F238 (F228)	V070-415410-023 TUBE BRAZE JOINT AT LV56	14

APPENDIX B

JOINT	DESCRIPTION	FIG NO.
LV56A (F261)	O-RING BETWEEN SOLENOID VALVE HOUSING AND LV56 BODY	15
LV56B	WELD ON FCV INLET MEASURED THRU VENT PORT	15
	E2L - GH2 HIGH PRESSURE SYSTEM	
CV22A	WELD ON CV22 BODY OUTLET	7
F213	ME284-0479-0012 ASSY BRAZE JOINT AT V070-415410-021 TUBE	7
F213A	MR JOINT BETWEEN CV22 AND TEE (OV-102 ONLY, NOT SHOWN IN FIGURE)	7
F214	V070-415448-001 ASSY INLET TO TEE	6
F215	V070-415448-001 ASSY SEAL AT MT24 TRANSDUCER	6
F216	V070-415448-001 ASSY OUTLET BRAZE JOINT AT V070-415410-021 TUBE	6

APPENDIX B

JOINT	DESCRIPTION	FIG NO.
F236 (F226)	V070-415410-024 TUBE ASSY BRAZE JOINT AT LV57	14
LV57A (F262)	O-RING BETWEEN SOLENOID VALVE HOUSING AND LV57 BODY	15
LV57B	WELD ON FCV. INLET MEASURED THRU VENT PORT	15
	E3R - GH2 HIGH PRESSURE SYSTEM	
CV23A	WELD ON CV23 BODY OUTLET	7
F220	ME284-0479-0012 ASSY BRAZE JOINT AT V070-415410-006	7
F221	V070-415410-006 TUBE BRAZE JOINT AT V070-415448-001 FITTING	6
F222	V070-415448-001 FITTING SEAL AT TRANSDUCER	6
F223	V070-415448-001 FITTING BRAZE JOINT AT V070-415410-007 TUBE	6

APPENDIX B

JOINT	DESCRIPTION	FIG NO.
F224	V070-415410-007 TUBE BRAZE JOINT AT V070-415410-019 TUBE (OV-103 & SUBS) V070-415410-008 TUBE (OV-102 ONLY)	4
F225	V070-415410-008 TUBE (OV-102 ONLY) V070-415410-019 TUBE (OV-103 & SUBS) BRAZE JOINT AT V070-415410-022 TUBE	4
F237 (F227)	V070-415410-022 TUBE BRAZE JOINT AT LV58	14
LV58A (F263)	O-RING BETWEEN SOLENOID VALVE HOUSING AND LV58 BODY	15
LV58B	WELD ON FCV INLET MEASURED THRU VENT PORT ON INLET PORT	15

APPENDIX B

LOW PRESSURE GH2 SYSTEM

LH2 (T-0) TO FCV - AND ORB/ET

JOINT	DESCRIPTION	FIG NO.
F226	BRAZE JOINT AT (PD10) V070-415410-009 TUBE	4
F227	V070-415410-009 TUBE BRAZE JOINT AT (TP10) V070-415446-001 ASSY	4
F228	ME261-0033-0104 K-SEAL AT TP10	4
F229	V070-415446-001 ASSY BRAZE JOINT AT (TP10) V070-415410-010 TUBE	4
F230	V070-415410-010 TUBE BRAZE JOINT AT V070-415410-017 TUBE	4
F231	V070-415410-017 TUBE BRAZE JOINT AT CV17 INLET	5OR13
CV17A	OUTLET WELD ON CV17	5
F232	CV17 (OUTLET) BRAZE JOINT AT V070-415442-001 TEE ASSY	5OR13
F233	V070-415442-001 ASSY SEAL AT PD16 DISCONNECT	5OR13

APPENDIX B

JOINT	DESCRIPTION	FIG NO.
F233A	EXTERNAL WELD ON 50V41PD16 FLIGHT HALF DISCONNECT	5
F234	V070-415442-002 TEE ASSY BRAZE JOINT AT V070-415410-012 TUBE	5
F235	V070-415410-012 TUBE BRAZE JOINT AT V070-415420-001 MANIF ASSY	13
F235A	V070-415420 MANIF ASSY BRAZE JOINT (REF UPPER TUBE TO LV58)	13
F235B	V070-415420 MANIF ASSY BRAZE JOINT (REF LOWER TUBE TO LV56)	13
F235C	V070-415420 MANIF ASSY BRAZE JOINT (REF LOWER TUBE TO LV57)	13
F235D	V070-415420 ASSY BRAZE JOINT (REF JOINT AT LV56)	13
F235E	V070-415420 ASSY BRAZE JOINT AT LV58	13
LV56C	OUTLET WELD ON FCV TO TUBE	15

APPENDIX B

JOINT	DESCRIPTION	FIG NO.
F235F	V070-415420 ASSY BRAZE JOINT AT LV57	13
LV58C	OUTLET WELD ON FCV TO TUBE	15
LV57C	OUTLET WELD ON FCV TO TUBE	15
F239	V070-415420-001 ASSY WELD AT 2 IN. LINE FLANGE.	13
F240	V070-415425-001 ASSY SEAL AT TRANSDUCER (OV-102 ONLY) (V070-415440)	5

APPENDIX B

JOINT	DESCRIPTION	FIG NO.
F241	ME273-0115-0004 CONNECTOR TO BOSS IN LH2 PRESS LINE AT PD5	1
F242	ME273-0144-0420 ELBOW TO ME273-0115-0004 CONNECTOR	1
F243	V070-415542-003 TUBE TO ME273-0144-0420 ELBOW	1
F244	V070-415542-003 TUBE TO ME273-0197-0002 TEE	1
F245	ME273-0197-0002 TEE TO ME273-0115-0006 CONNECTOR AT LV52 INLET	1
F246	ME273-0115-0006 CONNECTOR TO LV52 INLET	1
LV52A	BODY CONNECTION ON LV52	1

APPENDIX B

DATA SHEET B-1 - JOINT LIST AND RESULTS

JOINT NO.	CV21A	F204	F205
SYSTEM PRESSURE (PSIA)			
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)]
MACHINE S/N			
PERM RATIO - PR (600 MAX)			
RESPONSE TIME - RT (20 SEC MAX)			
FLOW RATE - FR (1.25 - 1.75 SCCS)			
PRESSURE - PIII (< 8 X 10 -5 MBAR)			
EMISS CURRENT - IE (0.5 - 1.5 MA)			
BK GRND READING (</= 0.8 X SLR)			]
MAX METER READING			
CORRECTED LEAK RATE (CLR)			]
PASS/FAIL			
TIME			]
VFY CSR 085/086 TQV:			
MACHINE OPERATOR T:			
PROBE OPERATOR (OR BUBBLE SOAP) T:			
INSPECTOR QW:			
ENGINEER			]]
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)			
JOINT NOT PERFORMED			

APPENDIX B

DATA SHEET B-1 - JOINT LIST AND RESULTS

JOINT NO.	F206	F207	F208
SYSTEM PRESSURE (PSIA)			
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N			
PERM RATIO - PR (600 MAX)			
RESPONSE TIME - RT (20 SEC MAX)			
FLOW RATE - FR (1.25 - 1.75 SCCS)			
PRESSURE - PIII (< 8 X 10 -5 MBAR)			
EMISS CURRENT - IE (0.5 - 1.5 MA)			
BK GRND READING (</= 0.8 X SLR)			
MAX METER READING			
CORRECTED LEAK RATE (CLR)			
PASS/FAIL			
TIME			
VFY CSR 085/086	TQV:		
MACHINE OPERATOR	T:		
PROBE OPERATOR (OR BUBBLE SOAP)	T:		
INSPECTOR	QW:		
ENGINEER			
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)			
JOINT NOT PERFORMED			

APPENDIX B

DATA SHEET B-1 - JOINT LIST AND RESULTS

JOINT NO.	F238	LV56A	LV56B
SYSTEM PRESSURE (PSIA)			
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N			
PERM RATIO - PR (600 MAX)			
RESPONSE TIME - RT (20 SEC MAX)			
FLOW RATE - FR (1.25 - 1.75 SCCS)			
PRESSURE - PIII (< 8 X 10 -5 MBAR)			
EMISS CURRENT - IE (0.5 - 1.5 MA)			
BK GRND READING (</= 0.8 X SLR)			
MAX METER READING			
CORRECTED LEAK RATE (CLR)			
PASS/FAIL			
TIME			
VFY CSR 085/086	TQV:		
MACHINE OPERATOR	T:		
PROBE OPERATOR (OR BUBBLE SOAP)	T:		
INSPECTOR	QW:		
ENGINEER			
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)			
JOINT NOT PERFORMED			

APPENDIX B

DATA SHEET B-1 - JOINT LIST AND RESULTS

JOINT NO.	CV22A	F213	F213A
SYSTEM PRESSURE (PSIA)			
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N			
PERM RATIO - PR (600 MAX)			
RESPONSE TIME - RT (20 SEC MAX)			
FLOW RATE - FR (1.25 - 1.75 SCCS)			
PRESSURE - PIII (< 8 X 10 -5 MBAR)			
EMISS CURRENT - IE (0.5 - 1.5 MA)			
BK GRND READING (</= 0.8 X SLR)			
MAX METER READING			
CORRECTED LEAK RATE (CLR)			
PASS/FAIL			
TIME			
VFY CSR 085/086	TQV:		
MACHINE OPERATOR	T:		
PROBE OPERATOR (OR BUBBLE SOAP)	T:		
INSPECTOR	QW:		
ENGINEER			
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)			
JOINT NOT PERFORMED			

APPENDIX B

DATA SHEET B-1 - JOINT LIST AND RESULTS

JOINT NO.	F214	F215	F216
SYSTEM PRESSURE (PSIA)			
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N			
PERM RATIO - PR (600 MAX)			
RESPONSE TIME - RT (20 SEC MAX)			
FLOW RATE - FR (1.25 - 1.75 SCCS)			
PRESSURE - PIII (< 8 X 10 -5 MBAR)			
EMISS CURRENT - IE (0.5 - 1.5 MA)			
BK GRND READING (</= 0.8 X SLR)			
MAX METER READING			
CORRECTED LEAK RATE (CLR)			
PASS/FAIL			
TIME			
VFY CSR 085/086 TQV:			
MACHINE OPERATOR T:			
PROBE OPERATOR T: (OR BUBBLE SOAP)			
INSPECTOR QW:			
ENGINEER			
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)			
JOINT NOT PERFORMED			

APPENDIX B

DATA SHEET B-1 - JOINT LIST AND RESULTS

JOINT NO.	F236	LV57A	LV57B
SYSTEM PRESSURE (PSIA)			
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N			
PERM RATIO - PR (600 MAX)			
RESPONSE TIME - RT (20 SEC MAX)			
FLOW RATE - FR (1.25 - 1.75 SCCS)			
PRESSURE - PIII (< 8 X 10 -5 MBAR)			
EMISS CURRENT - IE (0.5 - 1.5 MA)			
BK GRND READING (</= 0.8 X SLR)			
MAX METER READING			
CORRECTED LEAK RATE (CLR)			
PASS/FAIL			
TIME			
VFY CSR 085/086	TQV:		
MACHINE OPERATOR	T:		
PROBE OPERATOR (OR BUBBLE SOAP)	T:		
INSPECTOR	QW:		
ENGINEER			
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)			
JOINT NOT PERFORMED			

APPENDIX B

DATA SHEET B-1 - JOINT LIST AND RESULTS

JOINT NO.	CV23A	F220	F221
SYSTEM PRESSURE (PSIA)			
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N			
PERM RATIO - PR (600 MAX)			
RESPONSE TIME - RT (20 SEC MAX)			
FLOW RATE - FR (1.25 - 1.75 SCCS)			
PRESSURE - PIII (< 8 X 10 -5 MBAR)			
EMISS CURRENT - IE (0.5 - 1.5 MA)			
BK GRND READING (</= 0.8 X SLR)			
MAX METER READING			
CORRECTED LEAK RATE (CLR)			
PASS/FAIL			
TIME			
VFY CSR 085/086	TQV:		
MACHINE OPERATOR	T:		
PROBE OPERATOR (OR BUBBLE SOAP)	T:		
INSPECTOR	QW:		
ENGINEER			
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)			
JOINT NOT PERFORMED			

APPENDIX B

DATA SHEET B-1 - JOINT LIST AND RESULTS

JOINT NO.	F222	F223	F224
SYSTEM PRESSURE (PSIA)			
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N			
PERM RATIO - PR (600 MAX)			
RESPONSE TIME - RT (20 SEC MAX)			
FLOW RATE - FR (1.25 - 1.75 SCCS)			
PRESSURE - PIII (< 8 X 10 -5 MBAR)			
EMISS CURRENT - IE (0.5 - 1.5 MA)			
BK GRND READING (</= 0.8 X SLR)			
MAX METER READING			
CORRECTED LEAK RATE (CLR)			
PASS/FAIL			
TIME			
VFY CSR 085/086	TQV:		
MACHINE OPERATOR	T:		
PROBE OPERATOR (OR BUBBLE SOAP)	T:		
INSPECTOR	QW:		
ENGINEER			
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)			
JOINT NOT PERFORMED			

APPENDIX B

DATA SHEET B-1 - JOINT LIST AND RESULTS

JOINT NO.	F225	F237	LV58A
SYSTEM PRESSURE (PSIA)			
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N			
PERM RATIO - PR (600 MAX)			
RESPONSE TIME - RT (20 SEC MAX)			
FLOW RATE - FR (1.25 - 1.75 SCCS)			
PRESSURE - PIII (< 8 X 10 -5 MBAR)			
EMISS CURRENT - IE (0.5 - 1.5 MA)			
BK GRND READING (</= 0.8 X SLR)			
MAX METER READING			
CORRECTED LEAK RATE (CLR)			
PASS/FAIL			
TIME			
VFY CSR 085/086 TQV:			
MACHINE OPERATOR T:			
PROBE OPERATOR T: (OR BUBBLE SOAP)			
INSPECTOR QW:			
ENGINEER			
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)			
JOINT NOT PERFORMED			

APPENDIX B

DATA SHEET B-1 - JOINT LIST AND RESULTS

JOINT NO.	LV58B	F226	F227
SYSTEM PRESSURE (PSIA)			
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N			
PERM RATIO - PR (600 MAX)			
RESPONSE TIME - RT (20 SEC MAX)			
FLOW RATE - FR (1.25 - 1.75 SCCS)			
PRESSURE - PIII (< 8 X 10 -5 MBAR)			
EMISS CURRENT - IE (0.5 - 1.5 MA)			
BK GRND READING (</= 0.8 X SLR)			
MAX METER READING			
CORRECTED LEAK RATE (CLR)			
PASS/FAIL			
TIME			
VFY CSR 085/086	TQV:		
MACHINE OPERATOR	T:		
PROBE OPERATOR (OR BUBBLE SOAP)	T:		
INSPECTOR	QW:		
ENGINEER			
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)			
JOINT NOT PERFORMED			

APPENDIX B

DATA SHEET B-1 - JOINT LIST AND RESULTS

JOINT NO.	F228	F229	F230
SYSTEM PRESSURE (PSIA)			
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N			
PERM RATIO - PR (600 MAX)			
RESPONSE TIME - RT (20 SEC MAX)			
FLOW RATE - FR (1.25 - 1.75 SCCS)			
PRESSURE - PIII (< 8 X 10 -5 MBAR)			
EMISS CURRENT - IE (0.5 - 1.5 MA)			
BK GRND READING (</= 0.8 X SLR)			
MAX METER READING			
CORRECTED LEAK RATE (CLR)			
PASS/FAIL			
TIME			
VFY CSR 085/086	TQV:		
MACHINE OPERATOR	T:		
PROBE OPERATOR (OR BUBBLE SOAP)	T:		
INSPECTOR	QW:		
ENGINEER			
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)			
JOINT NOT PERFORMED			

APPENDIX B

DATA SHEET B-1 - JOINT LIST AND RESULTS

JOINT NO.	F231	CV17A	F232
SYSTEM PRESSURE (PSIA)			
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N			
PERM RATIO - PR (600 MAX)			
RESPONSE TIME - RT (20 SEC MAX)			
FLOW RATE - FR (1.25 - 1.75 SCCS)			
PRESSURE - PIII (< 8 X 10 -5 MBAR)			
EMISS CURRENT - IE (0.5 - 1.5 MA)			
BK GRND READING (</= 0.8 X SLR)			
MAX METER READING			
CORRECTED LEAK RATE (CLR)			
PASS/FAIL			
TIME			
VFY CSR 085/086	TQV:		
MACHINE OPERATOR	T:		
PROBE OPERATOR (OR BUBBLE SOAP)	T:		
INSPECTOR	QW:		
ENGINEER			
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)			
JOINT NOT PERFORMED			

APPENDIX B

DATA SHEET B-1 - JOINT LIST AND RESULTS

JOINT NO.	F233	F233A	F234
SYSTEM PRESSURE (PSIA)			
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N			
PERM RATIO - PR (600 MAX)			
RESPONSE TIME - RT (20 SEC MAX)			
FLOW RATE - FR (1.25 - 1.75 SCCS)			
PRESSURE - PIII (< 8 X 10 -5 MBAR)			
EMISS CURRENT - IE (0.5 - 1.5 MA)			
BK GRND READING (</= 0.8 X SLR)			
MAX METER READING			
CORRECTED LEAK RATE (CLR)			
PASS/FAIL			
TIME			
VFY CSR 085/086	TQV:		
MACHINE OPERATOR	T:		
PROBE OPERATOR (OR BUBBLE SOAP)	T:		
INSPECTOR	QW:		
ENGINEER			
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)			
JOINT NOT PERFORMED			

APPENDIX B

DATA SHEET B-1 - JOINT LIST AND RESULTS

JOINT NO.	F235	F235A	F235B
SYSTEM PRESSURE (PSIA)			
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N			
PERM RATIO - PR (600 MAX)			
RESPONSE TIME - RT (20 SEC MAX)			
FLOW RATE - FR (1.25 - 1.75 SCCS)			
PRESSURE - PIII (< 8 X 10 -5 MBAR)			
EMISS CURRENT - IE (0.5 - 1.5 MA)			
BK GRND READING (</= 0.8 X SLR)			
MAX METER READING			
CORRECTED LEAK RATE (CLR)			
PASS/FAIL			
TIME			
VFY CSR 085/086	TQV:		
MACHINE OPERATOR	T:		
PROBE OPERATOR (OR BUBBLE SOAP)	T:		
INSPECTOR	QW:		
ENGINEER			
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)			
JOINT NOT PERFORMED			

APPENDIX B

DATA SHEET B-1 - JOINT LIST AND RESULTS

JOINT NO.	F235C	F235D	F235E
SYSTEM PRESSURE (PSIA)			
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N			
PERM RATIO - PR (600 MAX)			
RESPONSE TIME - RT (20 SEC MAX)			
FLOW RATE - FR (1.25 - 1.75 SCCS)			
PRESSURE - PIII (< 8 X 10 -5 MBAR)			
EMISS CURRENT - IE (0.5 - 1.5 MA)			
BK GRND READING (</= 0.8 X SLR)			
MAX METER READING			
CORRECTED LEAK RATE (CLR)			
PASS/FAIL			
TIME			
VFY CSR 085/086	TQV:		
MACHINE OPERATOR	T:		
PROBE OPERATOR (OR BUBBLE SOAP)	T:		
INSPECTOR	QW:		
ENGINEER			
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)			
JOINT NOT PERFORMED			

APPENDIX B

DATA SHEET B-1 - JOINT LIST AND RESULTS

JOINT NO.	LV56C	F235F	LV58C
SYSTEM PRESSURE (PSIA)			
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N			
PERM RATIO - PR (600 MAX)			
RESPONSE TIME - RT (20 SEC MAX)			
FLOW RATE - FR (1.25 - 1.75 SCCS)			
PRESSURE - PIII (< 8 X 10 -5 MBAR)			
EMISS CURRENT - IE (0.5 - 1.5 MA)			
BK GRND READING (<= 0.8 X SLR)			
MAX METER READING			
CORRECTED LEAK RATE (CLR)			
PASS/FAIL			
TIME			
VFY CSR 085/086	TQV:		
MACHINE OPERATOR	T:		
PROBE OPERATOR (OR BUBBLE SOAP)	T:		
INSPECTOR	QW:		
ENGINEER			
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)			
JOINT NOT PERFORMED			

APPENDIX B

DATA SHEET B-1 - JOINT LIST AND RESULTS

JOINT NO.	LV57C	F239	F240
SYSTEM PRESSURE (PSIA)			
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N			
PERM RATIO - PR (600 MAX)			
RESPONSE TIME - RT (20 SEC MAX)			
FLOW RATE - FR (1.25 - 1.75 SCCS)			
PRESSURE - PIII (< 8 X 10 -5 MBAR)			
EMISS CURRENT - IE (0.5 - 1.5 MA)			
BK GRND READING (</= 0.8 X SLR)			
MAX METER READING			
CORRECTED LEAK RATE (CLR)			
PASS/FAIL			
TIME			
VFY CSR 085/086	TQV:		
MACHINE OPERATOR	T:		
PROBE OPERATOR (OR BUBBLE SOAP)	T:		
INSPECTOR	QW:		
ENGINEER			
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)			
JOINT NOT PERFORMED			

APPENDIX B

DATA SHEET B-1 - JOINT LIST AND RESULTS

JOINT NO.	F241	F242
SYSTEM PRESSURE (PSIA)		
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N		
PERM RATIO - PR (600 MAX)		
RESPONSE TIME - RT (20 SEC MAX)		
FLOW RATE - FR (1.25 - 1.75 SCCS)		
PRESSURE - PIII (< 8 X 10 -5 MBAR)		
EMISS CURRENT - IE (0.5 - 1.5 MA)		
BK GRND READING (</= 0.8 X SLR)		
MAX METER READING		
CORRECTED LEAK RATE (CLR)		
PASS/FAIL		
TIME		
VFY CSR 085/086	TQV:	
MACHINE OPERATOR	T:	
PROBE OPERATOR (OR BUBBLE SOAP)	T:	
INSPECTOR	QW:	
ENGINEER		
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)		
JOINT NOT PERFORMED		

APPENDIX B

DATA SHEET B-1 - JOINT LIST AND RESULTS

JOINT NO.	BASELINE DATA	BASELINE DATA	BASELINE DATA
SYSTEM PRESSURE (PSIA)			
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N			
PERM RATIO - PR (600 MAX)			
RESPONSE TIME - RT (20 SEC MAX)			
FLOW RATE - FR (1.25 - 1.75 SCCS)			
PRESSURE - PIII (< 8 X 10 -5 MBAR)			
EMISS CURRENT - IE (0.5 - 1.5 MA)			
BK GRND READING (</= 0.8 X SLR)			
MAX METER READING			
CORRECTED LEAK RATE (CLR)			
PASS/FAIL			
TIME			
VFY CSR 085/086 TQV:			
MACHINE OPERATOR T:			
PROBE OPERATOR (OR BUBBLE SOAP) T:			
INSPECTOR QW:			
ENGINEER			
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)			
JOINT NOT PERFORMED			

APPENDIX B

DATA SHEET B-2 - GH2 2 IN. LINE GIMBAL JTS - MASS SPEC LEAK CHECK
JOINT LIST AND RESULTS

ENTIRE DATA SHEET NOT PERFORMED _____

JOINT	DESCRIPTION	FIG NO.
FGM1 TYPE I (LOWER)	LOWER GIMBAL JOINT BELLOWS	17
LW1	LOWER WELD	17
UW1	UPPER WELD	17
FGM2 TYPE I (MID)	MID GIMBAL JOINT BELLOWS	17
LW2	LOWER WELD	17
UW2	UPPER WELD	17
FGM3 TYPE I (AFT)	AFT GIMBAL JOINT BELLOWS	17
LW3	LOWER WELD	17
UW3	UPPER WELD	17

APPENDIX B

DATA SHEET B-2 - JOINT LIST AND RESULTS

JOINT NO.	FGM1	LW1	UW1
SYSTEM PRESSURE (PSIA)			
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N			
PERM RATIO - PR (600 MAX)			
RESPONSE TIME - RT (20 SEC MAX)			
FLOW RATE - FR (1.25 - 1.75 SCCS)			
PRESSURE - PIII (< 8 X 10 -5 MBAR)			
EMISS CURRENT - IE (0.5 - 1.5 MA)			
BK GRND READING (</= 0.8 X SLR)			
MAX METER READING			
CORRECTED LEAK RATE (CLR)			
PASS/FAIL			
TIME			
VFY CSR 085/086	TQV:		
MACHINE OPERATOR	T:		
PROBE OPERATOR (OR BUBBLE SOAP)	T:		
INSPECTOR	QW:		
ENGINEER			
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)			
JOINT NOT PERFORMED			

APPENDIX B

DATA SHEET B-2 - JOINT LIST AND RESULTS

JOINT NO.		FGM2	LW2	UW2
SYSTEM PRESSURE (PSIA)				
SPECIFIC LEAK RATE		1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N				
PERM RATIO - PR (600 MAX)				
RESPONSE TIME - RT (20 SEC MAX)				
FLOW RATE - FR (1.25 - 1.75 SCCS)				
PRESSURE - PIII (< 8 X 10 -5 MBAR)				
EMISS CURRENT - IE (0.5 - 1.5 MA)				
BK GRND READING (</= 0.8 X SLR)				
MAX METER READING				
CORRECTED LEAK RATE (CLR)				
PASS/FAIL				
TIME				
VFY CSR 085/086	TQV:			
MACHINE OPERATOR	T:			
PROBE OPERATOR (OR BUBBLE SOAP)	T:			
INSPECTOR	QW:			
ENGINEER				
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)				
JOINT NOT PERFORMED				

APPENDIX B

DATA SHEET B-2 - JOINT LIST AND RESULTS

JOINT NO.	FGM3	LW3	UW3
SYSTEM PRESSURE (PSIA)			
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N			
PERM RATIO - PR (600 MAX)			
RESPONSE TIME - RT (20 SEC MAX)			
FLOW RATE - FR (1.25 - 1.75 SCCS)			
PRESSURE - PIII (< 8 X 10 -5 MBAR)			
EMISS CURRENT - IE (0.5 - 1.5 MA)			
BK GRND READING (</= 0.8 X SLR)			
MAX METER READING			
CORRECTED LEAK RATE (CLR)			
PASS/FAIL			
TIME			
VFY CSR 085/086	TQV:		
MACHINE OPERATOR	T:		
PROBE OPERATOR (OR BUBBLE SOAP)	T:		
INSPECTOR	QW:		
ENGINEER			
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)			
JOINT NOT PERFORMED			

APPENDIX B

DATA SHEET B-3 GH2 PRESSURIZATION SYSTEM BUBBLE SOAP LEAK CHECKS
JOINT LIST AND RESULTS

NOTE

TEST OR FERRY PLATE MUST BE REMOVED FROM PD5 TO PERFORM THE FOLLOWING STEP. PERFORM LEAK CHECK FROM ET SIDE OF UMBILICAL.

FPD5 FLANGE SEAL BETWEEN PD5 CAP ASSEMBLY AND DISCONNECT BODY HELD IN PLACE BY 18 ALLEN HEAD SCREWS. (SEE FIGURE 18).

NOTE

THE FOLLOWING NINE JTS ARE DOWNSTREAM OF LV52 AND MUST BE LEAK CHECKED WITH TEST PLATE INSTALLED AND PD5 POPPET OPEN. SEE FIGURE 1 VIEW D-D.

JOINT	DESCRIPTION	FIG NO.
F247	ME273-0115-0006 CONNECTOR TO LV52 OUTLET	1
F248	ME273-0199 ELBOW ME273-0115-0006 CONNECTOR AT LV52 OUTLET	1
F249	V070-415542-004 LINE TO ME273-0199-0006 ELBOW AT LV52 OUTLET	1
F250	V070-415502-004 LINE TO MD273-0030-0420 ELBOW	1
F251	MD273-0030-0420 ELBOW TO V070-415542-015 LINE	1
F252	V070-415542-015 LINE TO MD273-0030-0420 ELBOW AT PD5	1

APPENDIX B

JOINT	DESCRIPTION	FIG NO.
F253	MD273-0030-0420 ELBOW TO ME273-0127-0420 FTG AT PD5	1
F254	ME273-0127-0420 FTG TO ME273-0115-0004 CONNECTOR AT PD5	1
F255	ME273-0115-0004 CONNECTOR/ ME261-0033-0104 K-SEAL TO BOSS	1

APPENDIX B

DATA SHEET B-3 - JOINT LIST AND RESULTS

JOINT NO.	FPD5	F247	F248
SYSTEM PRESSURE (PSIA)			
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N			
PERM RATIO - PR (600 MAX)			
RESPONSE TIME - RT (20 SEC MAX)			
FLOW RATE - FR (1.25 - 1.75 SCCS)			
PRESSURE - PIII (< 8 X 10 -5 MBAR)			
EMISS CURRENT - IE (0.5 - 1.5 MA)			
BK GRND READING (</= 0.8 X SLR)			
MAX METER READING			
CORRECTED LEAK RATE (CLR)			
PASS/FAIL			
TIME			
VFY CSR 085/086	TQV:		
MACHINE OPERATOR	T:		
PROBE OPERATOR (OR BUBBLE SOAP)	T:		
INSPECTOR	QW:		
ENGINEER			
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)			
JOINT NOT PERFORMED			

APPENDIX B

DATA SHEET B-3 - JOINT LIST AND RESULTS

JOINT NO.	F249	F250	F251
SYSTEM PRESSURE (PSIA)			
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N			
PERM RATIO - PR (600 MAX)			
RESPONSE TIME - RT (20 SEC MAX)			
FLOW RATE - FR (1.25 - 1.75 SCCS)			
PRESSURE - PIII (< 8 X 10 -5 MBAR)			
EMISS CURRENT - IE (0.5 - 1.5 MA)			
BK GRND READING (</= 0.8 X SLR)			
MAX METER READING			
CORRECTED LEAK RATE (CLR)			
PASS/FAIL			
TIME			
VFY CSR 085/086 TQV:			
MACHINE OPERATOR T:			
PROBE OPERATOR (OR BUBBLE SOAP) T:			
INSPECTOR QW:			
ENGINEER			
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)			
JOINT NOT PERFORMED			

APPENDIX B

DATA SHEET B-3 - JOINT LIST AND RESULTS

JOINT NO.	F252	F253	F254
SYSTEM PRESSURE (PSIA)			
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N			
PERM RATIO - PR (600 MAX)			
RESPONSE TIME - RT (20 SEC MAX)			
FLOW RATE - FR (1.25 - 1.75 SCCS)			
PRESSURE - PIII (< 8 X 10 -5 MBAR)			
EMISS CURRENT - IE (0.5 - 1.5 MA)			
BK GRND READING (</= 0.8 X SLR)			
MAX METER READING			
CORRECTED LEAK RATE (CLR)			
PASS/FAIL			
TIME			
VFY CSR 085/086	TQV:		
MACHINE OPERATOR	T:		
PROBE OPERATOR (OR BUBBLE SOAP)	T:		
INSPECTOR	QW:		
ENGINEER			
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)			
JOINT NOT PERFORMED			

APPENDIX B

DATA SHEET B-3 - JOINT LIST AND RESULTS

JOINT NO.	F255
SYSTEM PRESSURE (PSIA)	_____
SPECIFIC LEAK RATE	1 X 10 (-7)
MACHINE S/N	_____
PERM RATIO - PR (600 MAX)	_____
RESPONSE TIME - RT (20 SEC MAX)	_____
FLOW RATE - FR (1.25 - 1.75 SCCS)	_____
PRESSURE - PIII (< 8 X 10 -5 MBAR)	_____
EMISS CURRENT - IE (0.5 - 1.5 MA)	_____
BK GRND READING (</= 0.8 X SLR)	_____
MAX METER READING	_____
CORRECTED LEAK RATE (CLR)	_____
PASS/FAIL	_____
TIME	_____
VFY CSR 085/086	TQV:_____
MACHINE OPERATOR	T:_____
PROBE OPERATOR (OR BUBBLE SOAP)	T:_____
INSPECTOR	QW:_____
ENGINEER	_____
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)	_____
JOINT NOT PERFORMED	_____

APPENDIX B

DATA SHEET B-4 - GH2 LEAK CHECKS AT ORB/ET DISCONNECT

JOINT	DESCRIPTION	FIG NO.
F337A TYPE II	V070-415523-022 TUBE BRAZE JOINT AT CV24 OUTLET ELBOW	3A OR 3B
F338A TYPE II	V070-415523-022 TUBE BRAZE JOINT AT TEE N/A FOR OV-105	3A
F339 TYPE II	V070-415523-021 TUBE BRAZE JOINT AT TEE N/A FOR OV-105	3A
F340 TYPE II	BRAZE JOINT BETWEEN ELBOW AND TEE AT MT44, DELTA-P X-DUCER PRESSURE PORT N/A FOR OV-105	3A
F341 (FOAMED)	MECHANICAL FITTING AT MT44 DELTA-P XDUCER PRESSURE PORT N/A FOR OV-105	3A
F343B TYPE II (FOAMED)	MECHANICAL FITTING AT CV24 OUTLET	3A OR 3B
F361 TYPE II	V070-415523-021 TUBE BRAZE JOINT AT MT47, GH2 DISC PRESSURE X-DUCER	3A OR 3B
F363 TYPE II	50V41TM47 GH2 DISC PRESSURE X-DUCER XDUCER SEAL	3A OR 3B

APPENDIX B

JOINT	DESCRIPTION	FIG NO.
F256 TYPE I	ME273-0197-0002 TEE V070-415542-002 TUBE	1
F257	V070-415542-003 TUBE TO V070-415542-014	3A OR 3B
F258	V070-415542-014 TUBE TO V070-415533-001	3A OR 3B

APPENDIX B

DATA SHEET B-4 - JOINT LIST AND RESULTS

JOINT NO.		F337A	F338A	F339
SYSTEM PRESSURE (PSIA)				
SPECIFIC LEAK RATE		1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N				
PERM RATIO - PR (600 MAX)				
RESPONSE TIME - RT (20 SEC MAX)				
FLOW RATE - FR (1.25 - 1.75 SCCS)				
PRESSURE - PIII (< 8 X 10 -5 MBAR)				
EMISS CURRENT - IE (0.5 - 1.5 MA)				
BK GRND READING (</= 0.8 X SLR)				
MAX METER READING				
CORRECTED LEAK RATE (CLR)				
PASS/FAIL				
TIME				
VFY CSR 085/086	TQV:			
MACHINE OPERATOR	T:			
PROBE OPERATOR (OR BUBBLE SOAP)	T:			
INSPECTOR	QW:			
ENGINEER				
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)				
JOINT NOT PERFORMED				

APPENDIX B

DATA SHEET B-4 - JOINT LIST AND RESULTS

JOINT NO.	F340	F341	F343B
SYSTEM PRESSURE (PSIA)			
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N			
PERM RATIO - PR (600 MAX)			
RESPONSE TIME - RT (20 SEC MAX)			
FLOW RATE - FR (1.25 - 1.75 SCCS)			
PRESSURE - PIII (< 8 X 10 -5 MBAR)			
EMISS CURRENT - IE (0.5 - 1.5 MA)			
BK GRND READING (</= 0.8 X SLR)			
MAX METER READING			
CORRECTED LEAK RATE (CLR)			
PASS/FAIL			
TIME			
VFY CSR 085/086	TQV:		
MACHINE OPERATOR	T:		
PROBE OPERATOR (OR BUBBLE SOAP)	T:		
INSPECTOR	QW:		
ENGINEER			
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)			
JOINT NOT PERFORMED			

APPENDIX B

DATA SHEET B-4 - JOINT LIST AND RESULTS

JOINT NO.	F361	F363	F256
SYSTEM PRESSURE (PSIA)			
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N			
PERM RATIO - PR (600 MAX)			
RESPONSE TIME - RT (20 SEC MAX)			
FLOW RATE - FR (1.25 - 1.75 SCCS)			
PRESSURE - PIII (< 8 X 10 -5 MBAR)			
EMISS CURRENT - IE (0.5 - 1.5 MA)			
BK GRND READING (</= 0.8 X SLR)			
MAX METER READING			
CORRECTED LEAK RATE (CLR)			
PASS/FAIL			
TIME			
VFY CSR 085/086	TQV:		
MACHINE OPERATOR	T:		
PROBE OPERATOR (OR BUBBLE SOAP)	T:		
INSPECTOR	QW:		
ENGINEER			
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)			
JOINT NOT PERFORMED			

APPENDIX B

DATA SHEET B-4 - JOINT LIST AND RESULTS

JOINT NO.	F527	F258
SYSTEM PRESSURE (PSIA)		
SPECIFIC LEAK RATE	1 X 10 (-7)	1 X 10 (-7)
MACHINE S/N		
PERM RATIO - PR (600 MAX)		
RESPONSE TIME - RT (20 SEC MAX)		
FLOW RATE - FR (1.25 - 1.75 SCCS)		
PRESSURE - PIII (< 8 X 10 -5 MBAR)		
EMISS CURRENT - IE (0.5 - 1.5 MA)		
BK GRND READING (</= 0.8 X SLR)		
MAX METER READING		
CORRECTED LEAK RATE (CLR)		
PASS/FAIL		
TIME		
VFY CSR 085/086	TQV:	
MACHINE OPERATOR	T:	
PROBE OPERATOR (OR BUBBLE SOAP)	T:	
INSPECTOR	QW:	
ENGINEER		
BUBBLE SOAP LK CK (PASS/FAIL SEE NOTE)		
JOINT NOT PERFORMED		

APPENDIX Z

EMERGENCY INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
18-000			EMERGENCY SHUTDOWN	
			NOTE IN THE EVENT OF A LOSS OF OIS COMMUNICATIONS, SECURE THE OPF PNEUMATICS SYSTEMS PER THE FOLLOWING TWO STEPS. IN THE EVENT OF AN LPS LOSS. NO SPECIAL EMERGENCY ACTIONS ARE DICTATED.	
18-001	RTH2		SECURE THE S70-0695-8 (O-2) PANEL AS FOLLOWS A83048 SUPPLY SHUTOFF VALVE - CLOSE (CW)	
18-002			NOTIFY TEST CONDUCTOR OF THE PROBLEM AND THE ACTION TAKEN.	
			GENERAL	
18-003			INSTRUCTIONS FOR OTHER EMERGENCIES ARE CONTAINED IN EPD S9904 (OPF).	

EMERGENCY INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

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EMERGENCY INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.
19-000			EMERGENCY GH2 PRESSURIZATION SYSTEM VENTING THRU S70-0695-8 PANEL	
			NOTE IN THE EVENT OF EXCESSIVE LEAKAGE OF HELIUM INTO AFT FUSELAGE FROM THE MPS GH2 PRESSURIZATION SYSTEM SECURE/VENT SYSTEM PER THE FOLLOWING.	
19-001		CMPS	CURSOR CNTL (VAE20) A83134 LH2 PREPRESS - CLOSE	
19-002	CMPS	RTH2	S70-0695-8 PNL A83145 SUPPLY/VENT - OPEN A83070 VENT - OPEN A83115 REG - FULL DECREASE	

EMERGENCY INSTRUCTIONS

SEQ	CMD	RESP	DESCRIPTION	VERIF.

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