APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE	2. KSC TEST NO.
F-1 Engine Turbopump Torque Test	V-24022-S1C2
	11. VEHICLE EFFECTIVITY AS- 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB	N/A	3 Hours

15. TEST CONFIGURATION

S-1C Stage Erected on Mobile Launcher in High Bay of VAB

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

☐ GROUND POWER	☐ LCC MEASURING (LVO)	☐ ETR/KSC RADAR
☐ S-IB OR S-IC STAGE PWR	☐ LCC MEASURING (INS)	☐ ETR COMMAND XMITTER
☐ S-II STAGE POWER	☐ GSE MEASURING (LVO)	☐ LOCAL COMMAND (C.L.)
☐ S-IVB STAGE POWER	☐ GSE MEASURING (INS)	☐ ALDS
☐ IU POWER	☐ LCC DATA DISPLAY	☐ LCC TM STA. (MONITOR)
☐ LEM POWER	☐ CIF DATA DISPLAY	☐ LCC TM RECORDING
☐ SM POWER	☐ DDAS	☐ CIF TM STA. (MONITOR)
☐ CM POWER	☐ DDAS TAPE RECORDING	☐ CIF TM RECORDING
☐ BACK-UP BATTERIES	☐ SERVICE STRUCTURE MEAS.	☐ CIF COMPUTER
☐ TIMING	☐ RCA-110A COMPUTERS	☐ CIF DATA
☐ COUNTDOWN CLOCK	☐ ACE	☐ TM RECORDS
☐ ETR SEQUENCER	☐ L/V W-G ECS	☐ REAL-TIME CIF COMPUT.
☐ ETR COUNTDOWN CLOCK	☐ CM W-G ECS	☐ POST-TEST CIF COMPUT.
☐ ETR S.R.O.	☐ FACILITY ECS (GAS)	☐ KSC TRACKING
☐ ETR R.S.O.	☐ H.P. GAS	☐ RFI MONITORING
☐ ETR PAD SAFETY	☐ CCF	☐ RF READOUTS (ETR)
☐ KSC PAD SAFETY	☐ FACILITY TV (OTV)	☐ RF READOUTS (KSC)
☐ SECURITY POLICE	☐ FACILITY COMM. (OIS)	☐ WEATHER FORECAST
☐ FIRE FIGHTING	☐ FILM CAMERAS	☐ MCC-C
☐ MEDICAL	☐ SEARCH LIGHTS	☐ MCC-H
☒ QC	☐	☐ FOOD SERVICE
☐	☐	☐
☐	☐	☐
☐	☐	☐
☐	☐	☐

OTHERS:

50)

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

F-1 Engine Turbo-pump Heater Functional Test

2. KSC TEST NO.
V-24023-S1C2

3. STAGE, VEHICLE OR GSE
S1C Stage (TEST)

4. TEST OBJECTIVES

The purpose of this test is to verify proper operation of the turbo-pump heater on each of the five (5) F-1 Engines.

5. TEST DESCRIPTION/EQUIPMENT STATUS

The turbo-pump heater will be verified for proper operation by supplying power to the heater from the Heater Control Panel in the LCC. The proper reading at the Ammeter, also located on the Heater Control Panel, indicates the heaters are functioning correctly. Each heater is verified independently by use of the Engine Selector Switch.

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CONTRACTOR REF. NO. 6S-240

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
Grady R. McBrayer for J. M. Collins	R. Newall R. Newall	May 20, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC	LVO-33	AS 502

KSC FORM 23-191A (2/66)

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2
1. TEST TITLE F-1 Engine Turbo-pump Heater Functional Test	2. KSC TEST NO. V-24023-S1C2 11. VEHICLE EFFECTIVITY AS- 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB/LCC	N/A	4 Hours

15. TEST CONFIGURATION

S-1C Stage Erected on Mobile Launcher in High Bay of VAB

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[ ] GROUND POWER	[ ] LCC MEASURING (LVO)	[ ] ETR/KSC RADAR
[X] S-IB OR S-IC STAGE PWR	[ ] LCC MEASURING (INS)	[ ] ETR COMMAND XMITTER
[ ] S-II STAGE POWER	[ ] GSE MEASURING (LVO)	[ ] LOCAL COMMAND (C.L.)
[ ] S-IVB STAGE POWER	[ ] GSE MEASURING (INS)	[ ] ALDS
[ ] IU POWER	[ ] LCC DATA DISPLAY	[ ] LCC TM STA. (MONITOR)
[ ] LEM POWER	[ ] CIF DATA DISPLAY	[ ] LCC TM RECORDING
[ ] SM POWER	[X] DDAS	[ ] CIF TM STA. (MONITOR)
[ ] CM POWER	[ ] DDAS TAPE RECORDING	[ ] CIF TM RECORDING
[ ] BACK-UP BATTERIES	[ ] SERVICE STRUCTURE MEAS.	[ ] CIF COMPUTER
[ ] TIMING	[X] RCA-110A COMPUTERS	[ ] CIF DATA
[ ] COUNTDOWN CLOCK	[ ] ACE	[ ] TM RECORDS
[ ] ETR SEQUENCER	[ ] L/V W-G ECS	[ ] REAL-TIME CIF COMPUT.
[ ] ETR COUNTDOWN CLOCK	[ ] CM W-G ECS	[ ] POST-TEST CIF COMPUT.
[ ] ETR S.R.O.	[ ] FACILITY ECS (GAS)	[ ] KSC TRACKING
[ ] ETR R.S.O.	[ ] H.P. GAS	[ ] RFI MONITORING
[ ] ETR PAD SAFETY	[ ] CCF	[ ] RF READOUTS (ETR)
[ ] KSC PAD SAFETY	[ ] FACILITY TV (OTV)	[ ] RF READOUTS (KSC)
[ ] SECURITY POLICE	[X] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[X] ELECTRICAL SUPPORT EQUIPMENT GROUP.	[ ]	[ ] FOOD SERVICE
[ ]	[ ]	[ ]
[X] QC	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

F-1 Engine Sequence Test

2. KSC TEST NO.
V-24024-S1C2

3. STAGE, VEHICLE OR GSE
S-1C Stage (TEST)

4. TEST OBJECTIVES

The purpose of this test is to verify that the F-1 Engine Valves operate in the correct sequence during a normal engine start operation and that the valves operate within their respective allowable time limits.

5. TEST DESCRIPTION/EQUIPMENT STATUS

The S-1C Stage Hydraulic System will be pressurized to the nominal operating pressure, using the Ground Hydraulic Supply and Checkout Unit. Engine start command (one engine) will be initiated from the engine panel in the LCC and all engine valve position feedback indications will be monitored on the panel. Valve sequence and timing information will be obtained from the D.E.E. record and compared with the required values. This test will be performed on each of the (5) F-1 Engines.

Special Equipment Required:

1. F-1 Engine Hypergol Simulator.
2. S-1C Pneumatic Valve Consoles.
3. S-1C Ground Hydraulic Supply and Checkout Unit.

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CONTRACTOR REF. NO. 6S-241

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
G. B. McCorquodale	R. Newall	May 20, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC	LVO-33	AS-502

KSC FORM 23-191A (2/66)

APOLLO/SATURN TEST CATALOG (Continuation Sheet)

1. TEST TITLE

F-1 Engine Sequence Test

2. KSC TEST NO.

V-24024-S1C2

11. VEHICLE EFFECTIVITY

AS-502

12. WHERE TEST PERFORMED

VAB

13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)

N/A

14. EST. TEST TIME

8 Hours

15. TEST CONFIGURATION

S-1C Stage Erected on Mobile Launcher in High Bay of VAB

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[X] GROUND POWER	[ ] LCC MEASURING (LVO)	[ ] ETR/KSC RADAR
[X] S-IB OR S-IC STAGE PWR	[ ] LCC MEASURING (INS)	[ ] ETR COMMAND XMITTER
[ ] S-II STAGE POWER	[ ] GSE MEASURING (LVO)	[ ] LOCAL COMMAND (C.L.)
[ ] S-IVB STAGE POWER	[ ] GSE MEASURING (INS)	[ ] ALDS
[ ] IU POWER	[X] LCC DATA DISPLAY	[ ] LCC TM STA. (MONITOR)
[ ] LEM POWER	[ ] CIF DATA DISPLAY	[ ] LCC TM RECORDING
[ ] SM POWER	[X] DDAS	[ ] CIF TM STA. (MONITOR)
[ ] CM POWER	[X] DDAS TAPE RECORDING	[ ] CIF TM RECORDING
[ ] BACK-UP BATTERIES	[ ] SERVICE STRUCTURE MEAS.	[ ] CIF COMPUTER
[ ] TIMING	[X] RCA-110A COMPUTERS	[ ] CIF DATA
[ ] COUNTDOWN CLOCK	[ ] ACE	[ ] TM RECORDS
[ ] ETR SEQUENCER	[ ] L/V W-G ECS	[ ] REAL-TIME CIF COMPUT.
[ ] ETR COUNTDOWN CLOCK	[ ] CM W-G ECS	[ ] POST-TEST CIF COMPUT.
[ ] ETR S.R.O.	[ ] FACILITY ECS (GAS)	[ ] KSC TRACKING
[ ] ETR R.S.O.	[ ] H.P. GAS	[ ] RFI MONITORING
[ ] ETR PAD SAFETY	[ ] CCF	[ ] RF READOUTS (ETR)
[X] KSC PAD SAFETY	[ ] FACILITY TV (OTV)	[ ] RF READOUTS (KSC)
[ ] SECURITY POLICE	[X] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[X] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[ ]	[ ]	[ ] FOOD SERVICE
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE	2. KSC TEST NO.
S-1C Stage F-1 Engine Hydraulic System - Leak and Functional Test	V-24026-S1C2
	11. VEHICLE EFFECTIVITY AS-502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB/LCC	N/A	24 Hours

15. TEST CONFIGURATION

S-1C Erected on Mobile Launcher in VAB

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[X] GROUND POWER	[ ] LCC MEASURING (LVO)	[ ] ETR/KSC RADAR
[X] S-IB OR S-IC STAGE PWR	[ ] LCC MEASURING (INS)	[ ] ETR COMMAND XMITTER
[ ] S-II STAGE POWER	[ ] GSE MEASURING (LVO)	[ ] LOCAL COMMAND (C.L.)
[ ] S-IVB STAGE POWER	[ ] GSE MEASURING (INS)	[ ] ALDS
[ ] IU POWER	[ ] LCC DATA DISPLAY	[ ] LCC TM STA. (MONITOR)
[ ] LEM POWER	[ ] CIF DATA DISPLAY	[ ] LCC TM RECORDING
[ ] SM POWER	[X] DDAS	[ ] CIF TM STA. (MONITOR)
[ ] CM POWER	[X] DDAS TAPE RECORDING	[ ] CIF TM RECORDING
[ ] BACK-UP BATTERIES	[ ] SERVICE STRUCTURE MEAS.	[ ] CIF COMPUTER
[ ] TIMING	[X] RCA-110A COMPUTERS	[ ] CIF DATA
[ ] COUNTDOWN CLOCK	[ ] ACE	[ ] TM RECORDS
[ ] ETR SEQUENCER	[ ] L/V W-G ECS	[ ] REAL-TIME CIF COMPUT.
[ ] ETR COUNTDOWN CLOCK	[ ] CM W-G ECS	[ ] POST-TEST CIF COMPUT.
[ ] ETR S.R.O.	[ ] FACILITY ECS (GAS)	[ ] KSC TRACKING
[ ] ETR R.S.O.	[ ] H.P. GAS	[ ] RFI MONITORING
[ ] ETR PAD SAFETY	[ ] CCF	[ ] RF READOUTS (ETR)
[ ] KSC PAD SAFETY	[ ] FACILITY TV (OTV)	[ ] RF READOUTS (KSC)
[ ] SECURITY POLICE	[X] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[XX] ESE	[ ]	[ ] FOOD SERVICE
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

5/5

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

S-1C Ground Pneumatic Consoles - GN_2 Systems L & F Test

2. KSC TEST NO.
V-24030-ML

3. STAGE, VEHICLE OR GSE
GSE (Test)

4. TEST OBJECTIVES

The purpose of this test is to verify proper operation of all components in the GN_2 systems of the S-1C pneumatic consoles, to verify leak tight integrity of the system lines and components, and to verify cleanliness of the systems.

5. TEST DESCRIPTION/EQUIPMENT STATUS

All GN_2 circuits of the S-1C pneumatic consoles will be pressurized in small increments to operating pressures. All components, lines, fittings, etc., will be checked for audible leakage during incremental pressurization and checked for external leakage at operating pressure using bubble soap solution. All components will be actuated and checked for proper operation using control from the S-1C pneumatic console testers and the regulation panels.

All systems will be sampled for conformance to the cleanliness requirements of MSFC-SPEC-164.

Procedure Set-Up and Conditions:

This test will be accomplished during refurbishment between stages.

GSE and Special Materials Required:

22A12004 Pneumatic Regulation Panels
Calibration Probe 2 ea. (75M51349-3)
S-1C Pneu Console Tester - He (65B23895-1)
S-1C Pneu Console Tester - GN_2 (65B23896-1)
MIL-L-25567 Leak Detector Solution (Type 1)
Test Hose 2 ea. 6000 psig x 3/8 dia. x 20'
Test Hose 2 ea. 6000 psig x 3/8 dia. x 5'
28 VDC - 30 amp power source
6000 psig GN_2 supply

CONTRACTOR REF. NO. 6S-260

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
J. Rogers	R. Newall	May 20, 1966
7. ORGANIZATION	**9. ORGANIZATION**	**11. VEHICLE EFFECTIVITY**
BATC	LVO-33	AS- 502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE	2. KSC TEST NO.
S-1C Ground Pneumatic Consoles - GN_2 Systems L & F Test	V-24030-ML
	11. VEHICLE EFFECTIVITY AS- 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB	N/A	40 hrs.

15. TEST CONFIGURATION

ML in VAB High Bay

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[x] GROUND POWER	[ ] LCC MEASURING (LVO)	[ ] ETR/KSC RADAR
[ ] S-IB OR S-IC STAGE PWR	[ ] LCC MEASURING (INS)	[ ] ETR COMMAND XMITTER
[ ] S-II STAGE POWER	[ ] GSE MEASURING (LVO)	[ ] LOCAL COMMAND (C.L.)
[ ] S-IVB STAGE POWER	[ ] GSE MEASURING (INS)	[ ] ALDS
[ ] IU POWER	[ ] LCC DATA DISPLAY	[ ] LCC TM STA. (MONITOR)
[ ] LEM POWER	[ ] CIF DATA DISPLAY	[ ] LCC TM RECORDING
[ ] SM POWER	[ ] DDAS	[ ] CIF TM STA. (MONITOR)
[ ] CM POWER	[ ] DDAS TAPE RECORDING	[ ] CIF TM RECORDING
[ ] BACK-UP BATTERIES	[ ] SERVICE STRUCTURE MEAS.	[ ] CIF COMPUTER
[ ] TIMING	[ ] RCA-110A COMPUTERS	[ ] CIF DATA
[ ] COUNTDOWN CLOCK	[ ] ACE	[ ] TM RECORDS
[ ] ETR SEQUENCER	[ ] L/V W-G ECS	[ ] REAL-TIME CIF COMPUT.
[ ] ETR COUNTDOWN CLOCK	[ ] CM W-G ECS	[ ] POST-TEST CIF COMPUT.
[ ] ETR S.R.O.	[ ] FACILITY ECS (GAS)	[ ] KSC TRACKING
[ ] ETR R.S.O.	[x] H.P. GAS	[ ] RFI MONITORING
[ ] ETR PAD SAFETY	[ ] CCF	[ ] RF READOUTS (ETR)
[ ] KSC PAD SAFETY	[ ] FACILITY TV (OTV)	[ ] RF READOUTS (KSC)
[ ] SECURITY POLICE	[ ] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[x] GSE	[ ]	[ ] FOOD SERVICE
[x] ESE	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

505

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

S-1C Ground Pneumatics Consoles - Helium Systems
L & F Test

2. KSC TEST NO.
V-24031-ML

3. STAGE, VEHICLE OR GSE
GSE (Test)

4. TEST OBJECTIVES

The purpose of this test is to verify proper operation of all components in the Helium systems of the S-1C pneumatic consoles, to verify leak tight integrity of the system lines and components, and to verify cleanliness of the systems.

5. TEST DESCRIPTION/EQUIPMENT STATUS

All Helium circuits of the S-1C pneumatic consoles will be pressurized in small increments to operating pressures. All components, lines, fittings, etc., will be checked for audible leakage during incremental pressurization and checked for external leakage at operating pressure using bubble soap solution. All components will be actuated and checked for proper operation using control from the S-1C pneumatic console testers and the pneumatic regulation panels.

All systems will be sampled for conformance to the cleanliness requirements of MSFC-SPEC-164.

Procedure Set-Up and Conditions:

This test will be accomplished during refurbishment between stages.

GSE and Special Materials Required:

22A12004 Pneumatic Regulation Panels
Calibration Probe 2 ea. (75M51349-3)
S-1C Pneu Console Tester - He (65B23895-1)
S-1C Pneu Console Tester - GN_2 (65B23896-1)
MIL-L-25567 Leak Detector Solution (Type 1)
Test Hose 2 ea. 6000 psig x 3/8 dia. x 20'
Test Hose 2 ea. 6000 psig x 3/8 dia. x 5'
28 VDC - 30 amp Power Source
6000 psig He supply
6000 psig GN_2 supply

T/6

CONTRACTOR REF. NO. 6S-261

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
J. Rogers	R. Newall	May 20, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC	LVO-33	AS- 502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE	2. KSC TEST NO.
S-1C Ground Pneumatics Consoles - Helium Systems L & F Test	V-24031-ML
	11. VEHICLE EFFECTIVITY AS - 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB	N/A	40 hrs.

15. TEST CONFIGURATION
ML in VAB High Bay

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[X] GROUND POWER	[ ] LCC MEASURING (LVO)	[ ] ETR/KSC RADAR
[ ] S-IB OR S-IC STAGE PWR	[ ] LCC MEASURING (INS)	[ ] ETR COMMAND XMITTER
[ ] S-II STAGE POWER	[ ] GSE MEASURING (LVO)	[ ] LOCAL COMMAND (C.L.)
[ ] S-IVB STAGE POWER	[ ] GSE MEASURING (INS)	[ ] ALDS
[ ] IU POWER	[ ] LCC DATA DISPLAY	[ ] LCC TM STA. (MONITOR)
[ ] LEM POWER	[ ] CIF DATA DISPLAY	[ ] LCC TM RECORDING
[ ] SM POWER	[ ] DDAS	[ ] CIF TM STA. (MONITOR)
[ ] CM POWER	[ ] DDAS TAPE RECORDING	[ ] CIF TM RECORDING
[ ] BACK-UP BATTERIES	[ ] SERVICE STRUCTURE MEAS.	[ ] CIF COMPUTER
[ ] TIMING	[ ] RCA-110A COMPUTERS	[ ] CIF DATA
[ ] COUNTDOWN CLOCK	[ ] ACE	[ ] TM RECORDS
[ ] ETR SEQUENCER	[ ] L/V W-G ECS	[ ] REAL-TIME CIF COMPUT.
[ ] ETR COUNTDOWN CLOCK	[ ] CM W-G ECS	[ ] POST-TEST CIF COMPUT.
[ ] ETR S.R.O.	[ ] FACILITY ECS (GAS)	[ ] KSC TRACKING
[ ] ETR R.S.O.	[X] H.P. GAS	[ ] RFI MONITORING
[ ] ETR PAD SAFETY	[ ] CCF	[ ] RF READOUTS (ETR)
[ ] KSC PAD SAFETY	[ ] FACILITY TV (OTV)	[ ] RF READOUTS (KSC)
[ ] SECURITY POLICE	[ ] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[X] GSE	[ ]	[ ] FOOD SERVICE
[X] ESE	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS APOLLO/SATURN TEST CATALOG	PAGE 1 OF 2

1. TEST TITLE	2. KSC TEST NO.
S-1C Ground Pneumatic Checkout Racks #1 and #2 L & F Test	V-24032-ML
	3. STAGE, VEHICLE OR GSE GSE (Test)

4. TEST OBJECTIVES

The purpose of this test is to verify proper operation of all components in the #1 and #2 S-1C pneumatic checkout racks, to verify leak tight integrity of all systems and components, and to verify cleanliness of the systems.

5. TEST DESCRIPTION/EQUIPMENT STATUS

All circuits of the #1 and #2 pneumatic checkout racks will be pressurized in small increments to operating pressure. All components, lines, fittings, will be checked for audible leakage during incremental pressurization and checked for external leakage at operating pressure, using bubble soap solution. All components will be checked for proper operation using control from the pneumatic checkout rack tester. The systems will be sampled for conformance to the cleanliness requirements of MSFC-SPEC-164.

Procedure Set-Up and Conditions:

This test will be accomplished during refurbishment between stages and after performance of the S-1C pneumatic consoles - leak and functional tests.

GSE and Special Materials Required:

22A12004 Pneumatic Regulation Panels
S-1C Pneumatic Checkout Rack Tester #1 and #2
750 psi GN_2 supply from S-1C Pneumatic Consoles
Calibration probe (75M51349-3) 2 ea.
Test Hose - 6000 psig x 3/8 dia.
MIL-L-25567 Leak Detector Solution (Type 1)
28 VDC - 30 amp power source
120 VAC power source

510

CONTRACTOR REF. NO. 6S-262

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
J. Rogers	R. Newall	May 20, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC	LVO-33	AS- 502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE	2. KSC TEST NO.
S-1C Ground Pneumatic Checkout Racks - #1 and #2 L & F Test	V-24032-ML
	11. VEHICLE EFFECTIVITY AS - 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB	N/A	40 hrs.

15. TEST CONFIGURATION

ML in VAB High Bay

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[X] GROUND POWER	[ ] LCC MEASURING (LVO)	[ ] ETR/KSC RADAR
[ ] S-IB OR S-IC STAGE PWR	[ ] LCC MEASURING (INS)	[ ] ETR COMMAND XMITTER
[ ] S-II STAGE POWER	[ ] GSE MEASURING (LVO)	[ ] LOCAL COMMAND (C.L.)
[ ] S-IVB STAGE POWER	[ ] GSE MEASURING (INS)	[ ] ALDS
[ ] IU POWER	[ ] LCC DATA DISPLAY	[ ] LCC TM STA. (MONITOR)
[ ] LEM POWER	[ ] CIF DATA DISPLAY	[ ] LCC TM RECORDING
[ ] SM POWER	[ ] DDAS	[ ] CIF TM STA. (MONITOR)
[ ] CM POWER	[ ] DDAS TAPE RECORDING	[ ] CIF TM RECORDING
[ ] BACK-UP BATTERIES	[ ] SERVICE STRUCTURE MEAS.	[ ] CIF COMPUTER
[ ] TIMING	[ ] RCA-110A COMPUTERS	[ ] CIF DATA
[ ] COUNTDOWN CLOCK	[ ] ACE	[ ] TM RECORDS
[ ] ETR SEQUENCER	[ ] L/V W-G ECS	[ ] REAL-TIME CIF COMPUT.
[ ] ETR COUNTDOWN CLOCK	[ ] CM W-G ECS	[ ] POST-TEST CIF COMPUT.
[ ] ETR S.R.O.	[ ] FACILITY ECS (GAS)	[ ] KSC TRACKING
[ ] ETR R.S.O.	[X] H.P. GAS	[ ] RFI MONITORING
[ ] ETR PAD SAFETY	[ ] CCF	[ ] RF READOUTS (ETR)
[ ] KSC PAD SAFETY	[ ] FACILITY TV (OTV)	[ ] RF READOUTS (KSC)
[ ] SECURITY POLICE	[ ] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[X] GSE	[ ]	[ ] FOOD SERVICE
[X] ESE	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

1. TEST TITLE

S-1C Ground Pneumatic Checkout Racks - #3 and #4
L & F Test

2. KSC TEST NO.
V-24033-ML

3. STAGE, VEHICLE OR GSE
GSE (Test)

4. TEST OBJECTIVES

The purpose of this test is to verify proper operation of all components in the #3 and #4 S-1C pneumatic checkout racks, to verify leak tight integrity of all systems and components, and to verify cleanliness of the systems.

5. TEST DESCRIPTION/EQUIPMENT STATUS

All circuits of the #3 and #4 pneumatic checkout racks will be pressurized in small increments to operating pressure. All components, lines, fittings will be checked for audible leakage during incremental pressurization and checked for external leakage at operating pressure using bubble soap solution. All components will be checked for proper operation using control from the pneumatic checkout rack testers. The systems will be sampled for conformance to cleanliness requirements of MSFC-SPEC-164.

Procedure Set-Up and Conditions:

This test will be accomplished during refurbishment between stages and after performance of the S-1C pneumatic consoles --leak and functional tests.

GSE and Special Materials Required:

S-1C Pneumatic Checkout Rack Tester #3 and #4
Test Hose - 6000 psig x 3/8 dia.
MIL-L-25567 Leak Detector Solution (Type I)
3500 GN_2 supply from S-1C Pneumatic Consoles
28 VDC - 30 amp power source
Calibration Probe (75M51349-3)
110 VAC power source
22A12004 Pneumatic Regulation Panels

CONTRACTOR REF. NO. 6S-263

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
J. Rogers	R. Newall	May 20, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC	LVO-33	AS-502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE	2. KSC TEST NO.
S-1C Ground Pneumatic Checkout Racks #3 and #4 L & F Test	V-24033-ML
	11. VEHICLE EFFECTIVITY AS- 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB	N/A	40 hrs.

15. TEST CONFIGURATION
ML in VAB High Bay

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[X] GROUND POWER	[ ] LCC MEASURING (LVO)	[ ] ETR/KSC RADAR
[ ] S-IB OR S-IC STAGE PWR	[ ] LCC MEASURING (INS)	[ ] ETR COMMAND XMITTER
[ ] S-II STAGE POWER	[ ] GSE MEASURING (LVO)	[ ] LOCAL COMMAND (C.L.)
[ ] S-IVB STAGE POWER	[ ] GSE MEASURING (INS)	[ ] ALDS
[ ] IU POWER	[ ] LCC DATA DISPLAY	[ ] LCC TM STA. (MONITOR)
[ ] LEM POWER	[ ] CIF DATA DISPLAY	[ ] LCC TM RECORDING
[ ] SM POWER	[ ] DDAS	[ ] CIF TM STA. (MONITOR)
[ ] CM POWER	[ ] DDAS TAPE RECORDING	[ ] CIF TM RECORDING
[ ] BACK-UP BATTERIES	[ ] SERVICE STRUCTURE MEAS.	[ ] CIF COMPUTER
[ ] TIMING	[ ] RCA-110A COMPUTERS	[ ] CIF DATA
[ ] COUNTDOWN CLOCK	[ ] ACE	[ ] TM RECORDS
[ ] ETR SEQUENCER	[ ] L/V W-G ECS	[ ] REAL-TIME CIF COMPUT.
[ ] ETR COUNTDOWN CLOCK	[ ] CM W-G ECS	[ ] POST-TEST CIF COMPUT.
[ ] ETR S.R.O.	[ ] FACILITY ECS (GAS)	[ ] KSC TRACKING
[ ] ETR R.S.O.	[X] H.P. GAS	[ ] RFI MONITORING
[ ] ETR PAD SAFETY	[ ] CCF	[ ] RF READOUTS (ETR)
[ ] KSC PAD SAFETY	[ ] FACILITY TV (OTV)	[ ] RF READOUTS (KSC)
[ ] SECURITY POLICE	[ ] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[X] GSE	[ ]	[ ] FOOD SERVICE
[X] ESE	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

T21

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

S-1C Forward Umbilical Servicing Unit - L & F Test

2. KSC TEST NO.
V-24034-ML

3. STAGE, VEHICLE OR GSE
GSE (Test)

4. TEST OBJECTIVES

The purpose of this test is to verify proper operation of all components in the S-1C Forward Umbilical Servicing Unit, to verify leak tight integrity of the system lines and components, and to verify cleanliness of the systems.

5. TEST DESCRIPTION/EQUIPMENT STATUS

All circuits of the S-1C Forward Umbilical Servicing Unit will be pressurized in small increments to operating pressures. All components, lines, fittings, etc., will be checked for external leakage at operating pressure using bubble soap solution. All components will be actuated and checked for proper operation.

The systems will be sampled for conformance to the cleanliness requirements of MSFC-SPEC-164.

Procedure Set-Up and Conditions:

This procedure will be accomplished during refurbishment, prior to connecting the unit to the S-1C stage.

GSE and Special Materials Required:

Forward Umbilical Service Unit Tester
MIL-L-25567 (Type I) Leak Detector Solution
Calibration Probe 2 ea. (75M51349-3)
Test Hose 2 ea. 6000 psig x 3/8 dia. x 20'
Test Hose 2 ea. 6000 psig x 3/8 dia. x 5'
28 VDC - 30 amp power source
6000 psig GN_2 supply

CONTRACTOR REF. NO. 6S-264

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
D. Polly	R. Newall	May 20, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC	LVO-33	AS- 502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE	2. KSC TEST NO.
S-1C Forward Umbilical Servicing Unit - L & F Test	V-24034-ML
	11. VEHICLE EFFECTIVITY: AS- 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB	N/A	30 hrs.

15. TEST CONFIGURATION
ML in VAB High Bay

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[X] GROUND POWER	[ ] LCC MEASURING (LVO)	[ ] ETR/KSC RADAR
[ ] S-IB OR S-IC STAGE PWR	[ ] LCC MEASURING (INS)	[ ] ETR COMMAND XMITTER
[ ] S-II STAGE POWER	[ ] GSE MEASURING (LVO)	[ ] LOCAL COMMAND (C.L.)
[ ] S-IVB STAGE POWER	[ ] GSE MEASURING (INS)	[ ] ALDS
[ ] IU POWER	[ ] LCC DATA DISPLAY	[ ] LCC TM STA. (MONITOR)
[ ] LEM POWER	[ ] CIF DATA DISPLAY	[ ] LCC TM RECORDING
[ ] SM POWER	[ ] DDAS	[ ] CIF TM STA. (MONITOR)
[ ] CM POWER	[ ] DDAS TAPE RECORDING	[ ] CIF TM RECORDING
[ ] BACK-UP BATTERIES	[ ] SERVICE STRUCTURE MEAS.	[ ] CIF COMPUTER
[ ] TIMING	[ ] RCA-110A COMPUTERS	[ ] CIF DATA
[ ] COUNTDOWN CLOCK	[ ] ACE	[ ] TM RECORDS
[ ] ETR SEQUENCER	[ ] L/V W-G ECS	[ ] REAL-TIME CIF COMPUT.
[ ] ETR COUNTDOWN CLOCK	[ ] CM W-G ECS	[ ] POST-TEST CIF COMPUT.
[ ] ETR S.R.O.	[ ] FACILITY ECS (GAS)	[ ] KSC TRACKING
[ ] ETR R.S.O.	[X] H.P. GAS	[ ] RFI MONITORING
[ ] ETR PAD SAFETY	[ ] CCF	[ ] RF READOUTS (ETR)
[ ] KSC PAD SAFETY	[ ] FACILITY TV (OTV)	[ ] RF READOUTS (KSC)
[ ] SECURITY POLICE	[ ] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[X] GSE	[ ]	[ ] FOOD SERVICE
[X] ESE	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

S-1C Ground Pneumatics Consoles - Functional Test
LCC Control

2. KSC TEST NO.
V-24035-HL

3. STAGE, VEHICLE OR GSE
GSE (Test)

4. TEST OBJECTIVES

The purpose of this test is to verify proper operation of all LCC Control and Monitor Functions of the S-1C Pneumatic Consoles.

5. TEST DESCRIPTION/EQUIPMENT STATUS

All components in the S-1C Pneumatic Consoles will be actuated from the S-1C Propulsion Panels and the panels will be monitored for proper feedback indications.

Procedure Set-Up and Conditions:

This test will be accomplished during refurbishment, after the S-1C Pneumatic Consoles Leak and Functional Tests.

GSE and Special Materials Required:

S-1C Propulsion Panels
DEE Station
RCA - 110A Computer
6000 psig GN_2 and He Supply

5 4

CONTRACTOR REF. NO. 6S-265

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
R. Byrd	R. Newall	May 20, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC	LVO-33	AS- 502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE	8. KSC TEST NO.
S-1C Ground Pneumatic Consoles - Functional Tests - LCC Control	V-24035-ML
	11. VEHICLE EFFECTIVITY: AS- 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB/LCC	N/A	8 hrs.

15. TEST CONFIGURATION
ML in VAB High Bay

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[ ] GROUND POWER	[ ] LCC MEASURING (LVO)	[ ] ETR/KSC RADAR
[ ] S-IB OR S-IC STAGE PWR	[ ] LCC MEASURING (INS)	[ ] ETR COMMAND XMITTER
[ ] S-II STAGE POWER	[ ] GSE MEASURING (LVO)	[ ] LOCAL COMMAND (C.L.)
[ ] S-IVB STAGE POWER	[ ] GSE MEASURING (INS)	[ ] ALDS
[ ] IU POWER	[ ] LCC DATA DISPLAY	[ ] LCC TM STA. (MONITOR)
[ ] LEM POWER	[ ] CIF DATA DISPLAY	[ ] LCC TM RECORDING
[ ] SM POWER	[ ] DDAS	[ ] CIF TM STA. (MONITOR)
[ ] CM POWER	[ ] DDAS TAPE RECORDING	[ ] CIF TM RECORDING
[ ] BACK-UP BATTERIES	[ ] SERVICE STRUCTURE MEAS.	[ ] CIF COMPUTER
[ ] TIMING	[X] RCA-110A COMPUTERS	[ ] CIF DATA
[ ] COUNTDOWN CLOCK	[ ] ACE	[ ] TM RECORDS
[ ] ETR SEQUENCER	[ ] L/V W-G ECS	[ ] REAL-TIME CIF COMPUT.
[ ] ETR COUNTDOWN CLOCK	[ ] CM W-G ECS	[ ] POST-TEST CIF COMPUT.
[ ] ETR S.R.O.	[ ] FACILITY ECS (GAS)	[ ] KSC TRACKING
[ ] ETR R.S.O.	[X] H.P. GAS	[ ] RFI MONITORING
[ ] ETR PAD SAFETY	[ ] CCF	[ ] RF READOUTS (ETR)
[ ] KSC PAD SAFETY	[ ] FACILITY TV (OTV)	[ ] RF READOUTS (KSC)
[ ] SECURITY POLICE	[ ] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[X] RSE	[ ]	[ ] FOOD SERVICE
[X] DEE Station	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

T65

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

S-1C Ground Pneumatic Checkout Racks - Functional Tests - LCC Control

2. KSC TEST NO.

V-24036-ML

3. STAGE, VEHICLE OR GSE

GSE (Test)

4. TEST OBJECTIVES

The purpose of this test is to verify proper operation of all LCC Control and Monitor Functions of the S-1C Pneumatic Checkout Racks.

5. TEST DESCRIPTION/EQUIPMENT STATUS

All components in the S-1C Pneumatic Checkout Racks will be actuated from the S-1C Propulsion Panels and the Panels will be monitored for proper feedback indications.

Procedure Set-Up and Conditions:

This test will be accomplished during refurbishment, after the S-1C Pneumatic Checkout Consoles Leak and Functional Tests.

GSE and Special Materials Required:

S-1C Propulsion Panels
RCA 110-A Computers
6000 psig GN_2 Supply to S-1C Pneumatic Consoles

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CONTRACTOR REF. NO. 6S-266

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
R. Byrd	R. Newall	May 20, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC	LVO-33	AS- 502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE	2. KSC TEST NO.
S-1C Ground Pneumatic Checkout Racks - Functional Tests - LCC Control	V-24036-ML
	11. VEHICLE EFFECTIVITY: AS- 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB/LCC	N/A	16 hrs.

15. TEST CONFIGURATION
ML in VAB High Bay

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

☐ GROUND POWER	☐ LCC MEASURING (LVO)	☐ ETR/KSC RADAR
☐ S-IB OR S-IC STAGE PWR	☐ LCC MEASURING (INS)	☐ ETR COMMAND XMITTER
☐ S-II STAGE POWER	☐ GSE MEASURING (LVO)	☐ LOCAL COMMAND (C.L.)
☐ S-IVB STAGE POWER	☐ GSE MEASURING (INS)	☐ ALDS
☐ IU POWER	☐ LCC DATA DISPLAY	☐ LCC TM STA. (MONITOR)
☐ LEM POWER	☐ CIF DATA DISPLAY	☐ LCC TM RECORDING
☐ SM POWER	☐ DDAS	☐ CIF TM STA. (MONITOR)
☐ CM POWER	☐ DDAS TAPE RECORDING	☐ CIF TM RECORDING
☐ BACK-UP BATTERIES	☐ SERVICE STRUCTURE MEAS.	☐ CIF COMPUTER
☐ TIMING	☒ RCA-110A COMPUTERS	☐ CIF DATA
☐ COUNTDOWN CLOCK	☐ ACE	☐ TM RECORDS
☐ ETR SEQUENCER	☐ L/V W-G ECS	☐ REAL-TIME CIF COMPUT.
☐ ETR COUNTDOWN CLOCK	☐ CM W-G ECS	☐ POST-TEST CIF COMPUT.
☐ ETR S.R.O.	☐ FACILITY ECS (GAS)	☐ KSC TRACKING
☐ ETR R.S.O.	☒ H.P. GAS	☐ RFI MONITORING
☐ ETR PAD SAFETY	☐ CCF	☐ RF READOUTS (ETR)
☐ KSC PAD SAFETY	☐ FACILITY TV (OTV)	☐ RF READOUTS (KSC)
☐ SECURITY POLICE	☐ FACILITY COMM. (OIS)	☐ WEATHER FORECAST
☐ FIRE FIGHTING	☐ FILM CAMERAS	☐ MCC-C
☐ MEDICAL	☐ SEARCH LIGHTS	☐ MCC-H
☒ ESE	☐	☐ FOOD SERVICE
☐	☐	☐
☐	☐	☐
☐	☐	☐
☐	☐	☐

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

1. TEST TITLE

S-1C Forward Umbilical Servicing Unit - Functional Test - LCC Control

2. KSC TEST NO.
V-24037-ML

3. STAGE, VEHICLE OR GSE
GSE (Test)

4. TEST OBJECTIVES

The purpose of this test is to verify proper operation of all LCC Control and Monitor functions of the S-1C Forward Umbilical Servicing Unit.

5. TEST DESCRIPTION/EQUIPMENT STATUS

All components in the S-1C Forward Umbilical Servicing Unit will be actuated from the S-1C Propulsion Panels and the panels will be monitored for proper feedback indications.

Procedure Set-Up and Conditions:

This test will be accomplished during refurbishment, after the FUSU Leak and Functional Test.

GSE and Special Materials Required:

S-1C Propulsion Panels
DEE Station
RCA - 110A Computer
6000 psig GN_2 supply

CONTRACTOR REF. NO. 6S-267

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
D. Polly	R. Newall	May 20, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC	LVO-33	AS- 502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE

S-1C Forward Umbilical Servicing Unit - Functional Test - LCC Control

8. KSC TEST NO. V-24037-ML

11. VEHICLE EFFECTIVITY AS- 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB/LCC	N/A	4 hrs.

15. TEST CONFIGURATION
ML in VAB High Bay

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

☐ GROUND POWER	☐ LCC MEASURING (LVO)	☐ ETR/KSC RADAR
☐ S-IB OR S-IC STAGE PWR	☐ LCC MEASURING (INS)	☐ ETR COMMAND XMITTER
☐ S-II STAGE POWER	☐ GSE MEASURING (LVO)	☐ LOCAL COMMAND (C.L.)
☐ S-IVB STAGE POWER	☐ GSE MEASURING (INS)	☐ ALDS
☐ IU POWER	☐ LCC DATA DISPLAY	☐ LCC TM STA. (MONITOR)
☐ LEM POWER	☐ CIF DATA DISPLAY	☐ LCC TM RECORDING
☐ SM POWER	☐ DDAS	☐ CIF TM STA. (MONITOR)
☐ CM POWER	☐ DDAS TAPE RECORDING	☐ CIF TM RECORDING
☐ BACK-UP BATTERIES	☐ SERVICE STRUCTURE MEAS.	☐ CIF COMPUTER
☐ TIMING	☒ RCA-110A COMPUTERS	☐ CIF DATA
☐ COUNTDOWN CLOCK	☐ ACE	☐ TM RECORDS
☐ ETR SEQUENCER	☐ L/V W-G ECS	☐ REAL-TIME CIF COMPUT.
☐ ETR COUNTDOWN CLOCK	☐ CM W-G ECS	☐ POST-TEST CIF COMPUT.
☐ ETR S.R.O.	☐ FACILITY ECS (GAS)	☐ KSC TRACKING
☐ ETR R.S.O.	☒ H.P. GAS	☐ RFI MONITORING
☐ ETR PAD SAFETY	☐ CCF	☐ RF READOUTS (ETR)
☐ KSC PAD SAFETY	☐ FACILITY TV (OTV)	☐ RF READOUTS (KSC)
☐ SECURITY POLICE	☐ FACILITY COMM. (DIS)	☐ WEATHER FORECAST
☐ FIRE FIGHTING	☐ FILM CAMERAS	☐ MCC-C
☐ MEDICAL	☐ SEARCH LIGHTS	☐ MCC-H
☒ DSE Station	☐	☐ FOOD SERVICE
☒ Boeing Networks	☐	☐
☐	☐	☐
☐	☐	☐
☐	☐	☐

OTHERS:

5 29

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

S-1C Stage GN_2 Control Pressure Purge Systems - L & F Test

2. KSC TEST NO.

V-24041-S-1C-2

3. STAGE, VEHICLE OR GSE

S-1C Stage (Test)

4. TEST OBJECTIVES

The purpose of this test is to verify proper operation of all components in the GN_2 Control and Purge Pressure Systems, and to verify the leak tight integrity of the system lines and components.

5. TEST DESCRIPTION/EQUIPMENT STATUS

The high pressure sub-system of the GN_2 Control and Purge Pressure Systems will be pressurized, in small increments to 1500 psig. During pressurization the GN_2 Fill Solenoid Valves will be checked for proper operation and all lines, components, etc., will be monitored for audible leakage.

After pressurization to 1500 psig the High Pressure System and The Purge Low Pressure System will be checked for external leakage using leak detector solution.

The setting of the 750 psig control pressure regulator will then be increased in small increments to 750 psig. During pressurization of the 750 psig system, all valves will be actuated to check for proper operation and all lines, components, etc., will be monitored for audible leakage. After pressurization to 750 psig the system will be checked for external leakage using leak detector solution.

The setting of the 750 psig regulator will then be varied to check for the proper cracking and reseat values for the GN_2 Control Pressure Relief Valve. The regulator will then be backed off to 750 psig.

All solenoid valves will be actuated from the S-1C Propulsion System Consoles in the LCC to verify proper operation of valves, valve position indications, and control cabaility. Leakage measurements will be made on all solenoid valves to determine seat leakage and on all pneumatic actuated valves to determine actuator seal leakage.

Procedure Set-Up and Conditions:

This test will be performed as part of the S-1C/Saturn V Systems Checkout. Power will be on the S-1C Stage.

GSE and Special Materials Required:

RCA - 110A Computer
Leak Detection Equipment
S-1C Vehicle Networks

S-1C Propulsion Consoles (LCC)
S-1C Ground Pneumatic Vavles Consoles
S-1C Ground Networks
Stage Processing

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
E. Cook	R. Newall	May 20, 1966
7. ORGANIZATION	**9. ORGANIZATION**	**11. VEHICLE EFFECTIVITY**
BATC M&PS - S-1C	LVO-33	AS- 502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF

TEST TITLE	8. KSC TEST NO.
S-1C Stage GN_2 Control Pressure Purge Systems - L & F Test	V-24041-S-1C-2
	11. VEHICLE EFFECTIVITY AS- 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB/LCC	N/A	8 hrs.

15. TEST CONFIGURATION

S-1C Stage erected on the ML in the VAB

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

☐ GROUND POWER	☐ LCC MEASURING (LVO)	☐ ETR/KSC RADAR
☐ S-IB OR S-IC STAGE PWR	☐ LCC MEASURING (INS)	☐ ETR COMMAND XMITTER
☐ S-II STAGE POWER	☐ GSE MEASURING (LVO)	☐ LOCAL COMMAND (C.L.)
☐ S-IVB STAGE POWER	☐ GSE MEASURING (INS)	☐ ALDS
☐ IU POWER	☐ LCC DATA DISPLAY	☐ LCC TM STA. (MONITOR)
☐ LEM POWER	☐ CIF DATA DISPLAY	☐ LCC TM RECORDING
☐ SM POWER	☒ DDAS	☐ CIF TM STA. (MONITOR)
☐ CM POWER	☐ DDAS TAPE RECORDING	☐ CIF TM RECORDING
☐ BACK-UP BATTERIES	☐ SERVICE STRUCTURE MEAS.	☐ CIF COMPUTER
☐ TIMING	☒ RCA-110A COMPUTERS	☐ CIF DATA
☐ COUNTDOWN CLOCK	☐ ACE	☐ TM RECORDS
☐ ETR SEQUENCER	☐ L/V W-G ECS	☐ REAL-TIME CIF COMPUT.
☐ ETR COUNTDOWN CLOCK	☐ CM W-G ECS	☐ POST-TEST CIF COMPUT.
☐ ETR S.R.O.	☐ FACILITY ECS (GAS)	☐ KSC TRACKING
☐ ETR R.S.O.	☐ H.P. GAS	☐ RFI MONITORING
☐ ETR PAD SAFETY	☐ CCF	☐ RF READOUTS (ETR)
☐ KSC PAD SAFETY	☐ FACILITY TV (OTV)	☐ RF READOUTS (KSC)
☐ SECURITY POLICE	☐ FACILITY COMM. (OIS)	☐ WEATHER FORECAST
☐ FIRE FIGHTING	☐ FILM CAMERAS	☐ MCC-C
☐ MEDICAL	☐ SEARCH LIGHTS	☐ MCC-H
☒ S-1C Ground Networks	☐	☐ FOOD SERVICE
☒ Vehicle Networks	☐	☐
☐	☐	☐
☐	☐	☐
☐	☐	☐

OTHERS:

531

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

1. TEST TITLE

S-1C Fuel Tank Pressurization System - Leak and Functional Test

2. KSC TEST NO.
V-24044-S-1C-2

3. STAGE, VEHICLE OR GSE
S-1C Stage (Test)

4. TEST OBJECTIVES

The purpose of this test is to verify proper operation of all components and to verify the leak tight integrity of the system lines and components.

5. TEST DESCRIPTION/EQUIPMENT STATUS

The S-1C stage fuel tank system will be pressurized to approximately 7 psig and all components, lines, fittings, etc., checked for leakage. All components will be actuated using control from the S-1C Fuel systems panel and checked for proper operation and feedback monitor indications.

The stage Helium bottles will be filled to 1500 psig max. (incrementally pressurized) using control from the S-1C Fuel System panel in the LCC Firing Room. The Helium bottles will be monitored for pressure decay and all external components, lines, and fittings will be leak checked using leak detector solution.

The stage Helium low pressure system will then be pressurized to approximately 250 psig (the Helium bottles will be vented down to 250 psig and the low pressure system will be pressurized by opening Helium Flow Control valve #1). All external components, lines, and fittings will be leak checked with leak detector solution.

The Helium Emergency Vent Valve, Fill Valve, and Pre-pressurization Check Valve seat leakage and operation will be checked.

The Helium Flow Control valves will be functionally tested and operation time recorded.

The pre-pressurization line will be pressurized to approximately 200 psig and all lines and fittings will be leak checked.

The pre-pressurization system will be functionally tested during pressurization of the fuel tank to stand-by pressure.

Procedure Set-Up and Conditions:

This test will be accomplished after checkout of the S-1C Stage GN_2 control system and will require vehicle power.

(Continued)

(CONTINUE ON KSC FORM 23-192 IF REQUIRED) Stage Processing

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
A. E. Cook Jr. A. E. Cook	R. Newall R. Newall	May 20, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC M&PS - S-1C	LVO-33	AS- 502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE	2. KSC TEST NO.
S-1C Fuel Tank Pressurization System - Leak and Functional Test	V-24044-S-1C-2
	11. VEHICLE EFFECTIVITY AS- 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB/LCC	N/A	8 hrs.

15. TEST CONFIGURATION

S-1C Stage erected on ML in VAB High Bay

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

☐ GROUND POWER	☐ LCC MEASURING (LVO)	☐ ETR/KSC RADAR
☐ S-IB OR S-IC STAGE PWR	☐ LCC MEASURING (INS)	☐ ETR COMMAND XMITTER
☐ S-II STAGE POWER	☐ GSE MEASURING (LVO)	☐ LOCAL COMMAND (C.L.)
☐ S-IVB STAGE POWER	☐ GSE MEASURING (INS)	☐ ALDS
☐ IU POWER	☐ LCC DATA DISPLAY	☐ LCC TM STA. (MONITOR)
☐ LEM POWER	☐ CIF DATA DISPLAY	☐ LCC TM RECORDING
☐ SM POWER	☒ DDAS	☐ CIF TM STA. (MONITOR)
☐ CM POWER	☐ DDAS TAPE RECORDING	☐ CIF TM RECORDING
☐ BACK-UP BATTERIES	☐ SERVICE STRUCTURE MEAS.	☐ CIF COMPUTER
☐ TIMING	☒ RCA-110A COMPUTERS	☐ CIF DATA
☐ COUNTDOWN CLOCK	☐ ACE	☐ TM RECORDS
☐ ETR SEQUENCER	☐ L/V W-G ECS	☐ REAL-TIME CIF COMPUT.
☐ ETR COUNTDOWN CLOCK	☐ CM W-G ECS	☐ POST-TEST CIF COMPUT.
☐ ETR S.R.O.	☐ FACILITY ECS (GAS)	☐ KSC TRACKING
☐ ETR R.S.O.	☒ H.P. GAS	☐ RFI MONITORING
☐ ETR PAD SAFETY	☐ CCF	☐ RF READOUTS (ETR)
☐ KSC PAD SAFETY	☐ FACILITY TV (OTV)	☐ RF READOUTS (KSC)
☐ SECURITY POLICE	☐ FACILITY COMM. (OIS)	☐ WEATHER FORECAST
☐ FIRE FIGHTING	☐ FILM CAMERAS	☐ MCC-C
☐ MEDICAL	☐ SEARCH LIGHTS	☐ MCC-H
☐	☐	☐ FOOD SERVICE
☐	☐	☐
☐	☐	☐
☐	☐	☐
☐	☐	☐

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

1. TEST TITLE

S-1C Fuel Tank Pressurization System - Leak and Functional Test

8. KSC TEST NO.

V-24044-S1C2

11. VEHICLE EFFECTIVITY

AS- 502

CONTINUED

GSE and Special Materials Required:

RCA 110-A Computer
DDAS Station
Halogen Leak Detector
S-1C Propulsion Panels
Leak Detector Solution
Pressure Test Fixtures (65B23058)
S-1C Pneumatic Consoles

1. TEST TITLE

S-1C Stage LOX Pressurization System - L & F Test

2. KSC TEST NO.

V-24045-S-1C-2

3. STAGE, VEHICLE OR GSE

S-1C Stage (Test)

4. TEST OBJECTIVES

The purpose of this test is to verify proper operation of all components in the S-1C LOX Tank Pressurization System and to verify leak tight integrity of all lines and components.

5. TEST DESCRIPTION/EQUIPMENT STATUS

The S-1C Stage LOX Tank Pressurization System will be checked out as follows:

1. All components, lines, fittings (including LOX tank bosses and fittings), etc., will be leak checked using leak detector solution and/or tracer gas. This will include a leak test of the stage tank pressurization line (blind flanged at tank inlet) at operating pressure.

2. All components (including those in the S-1C Pneumatic Consoles) will be functionally checked for proper operation and feedback indications using control from the S-1C LOX Systems Panel.

3. The S-1C Stage LOX feed system will be pressurized to approximately 10 psig and all components, lines, fittings, etc., checked for leakage. All components will be actuated using control from the S-1C LOX Systems Panel and checked for proper operation and feedback monitor indications.

Procedure Set-Up and Conditions:

This test will be accomplished after checkout of the S-1C Stage GN_2 Control System, and will require vehicle power.

GSE and Special Equipment Required:

RCA 110-A Computer	S-1C Pneumatic Consoles	Leak Detector Solution
DDAS Station	S-1C Pneumatic C/O Racks	Halogen Leak Detector
S-1C LOX Systems Panel	Pressure Test Fixtures (65B-23058)	

CONTRACTOR REF. NO. 6S-273

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
R. Byrd	R. Newall	May 20, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC	LVO-33	AS- 502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE	2. KSC TEST NO.
S-1C Stage LOX Pressurization System - L & F Test	V-24045-S-1C-2
	11. VEHICLE EFFECTIVITY AS- 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB/LCC	N/A	16 hrs.

15. TEST CONFIGURATION
S-1C Stage on ML in VAB High Bay

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

☐ GROUND POWER	☐ LCC MEASURING (LVO)	☐ ETR/KSC RADAR
☒ S-IB OR S-IC STAGE PWR	☐ LCC MEASURING (INS)	☐ ETR COMMAND XMITTER
☐ S-II STAGE POWER	☐ GSE MEASURING (LVO)	☐ LOCAL COMMAND (C.L.)
☐ S-IVB STAGE POWER	☐ GSE MEASURING (INS)	☐ ALDS
☐ IU POWER	☐ LCC DATA DISPLAY	☐ LCC TM STA. (MONITOR)
☐ LEM POWER	☐ CIF DATA DISPLAY	☐ LCC TM RECORDING
☐ SM POWER	☒ DDAS	☐ CIF TM STA. (MONITOR)
☐ CM POWER	☐ DDAS TAPE RECORDING	☐ CIF TM RECORDING
☐ BACK-UP BATTERIES	☐ SERVICE STRUCTURE MEAS.	☐ CIF COMPUTER
☐ TIMING	☒ RCA-110A COMPUTERS	☐ CIF DATA
☐ COUNTDOWN CLOCK	☐ ACE	☐ TM RECORDS
☐ ETR SEQUENCER	☐ L/V W-G ECS	☐ REAL-TIME CIF COMPUT.
☐ ETR COUNTDOWN CLOCK	☐ CM W-G ECS	☐ POST-TEST CIF COMPUT.
☐ ETR S.R.O.	☐ FACILITY ECS (GAS)	☐ KSC TRACKING
☐ ETR R.S.O.	☐ H.P. GAS	☐ RFI MONITORING
☐ ETR PAD SAFETY	☐ CCF	☐ RF READOUTS (ETR)
☐ KSC PAD SAFETY	☐ FACILITY TV (OTV)	☐ RF READOUTS (KSC)
☐ SECURITY POLICE	☐ FACILITY COMM. (OIS)	☐ WEATHER FORECAST
☐ FIRE FIGHTING	☐ FILM CAMERAS	☐ MCC-C
☐ MEDICAL	☐ SEARCH LIGHTS	☐ MCC-H
☒ ESE	☐	☐ FOOD SERVICE
☒ S-1C Electrical Group	☐	☐
☐	☐	☐
☐	☐	☐
☐	☐	☐

OTHERS:

5 10

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

1. TEST TITLE

S-1C Fuel Bubbling System - L & F Test

2. KSC TEST NO.

V-24047-S-1C-2

3. STAGE, VEHICLE OR GSE

4. TEST OBJECTIVES

The purpose of this test is to verify no external leakage exists in the Fuel Bubbling System and proper operation of all system components.

5. TEST DESCRIPTION/EQUIPMENT STATUS

The Fuel Bubbling System will be pressurized from the LCC utilizing the Fuel System Control Panel, Control and Purge Panel, and the Ground Pneumatics Panel. All system lines and components will be inspected for leakage using leak detector solution and all system components and interlocks activated to insure proper operation.

Procedure Set-Up and Conditions:

This test will be accomplished as a portion of the S-1C/Saturn V systems checkout.

GSE and Special Materials Required:

RCA - 110A Computer
Leak Detection Solution
S-1C Ground Pneumatic Console
S-1C Fuel System Control Panel
S-1C Ground Pneumatic Panel
S-1C Control and Purge Panel

CONTRACTOR REF. NO. 6S-276

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
D. Polly	R. Newall	May 20, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC	LVO-33	AS- 502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2
1. TEST TITLE S-1C Fuel Bubbling System - L & F Test	2. KSC TEST NO. V-24047-S-1C-2 11. VEHICLE EFFECTIVITY AS- 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB/LCC	N/A	8 hrs.

15. TEST CONFIGURATION
S-1C Stage on ML in VAB High Bay

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[ ] GROUND POWER	[ ] LCC MEASURING (LVO)	[ ] ETR/KSC RADAR
[ ] S-IB OR S-IC STAGE PWR	[ ] LCC MEASURING (INS)	[ ] ETR COMMAND XMITTER
[ ] S-II STAGE POWER	[ ] GSE MEASURING (LVO)	[ ] LOCAL COMMAND (C.L.)
[ ] S-IVB STAGE POWER	[ ] GSE MEASURING (INS)	[ ] ALDS
[ ] IU POWER	[ ] LCC DATA DISPLAY	[ ] LCC TM STA. (MONITOR)
[ ] LEM POWER	[ ] CIF DATA DISPLAY	[ ] LCC TM RECORDING
[ ] SM POWER	[X] DDAS	[ ] CIF TM STA. (MONITOR)
[ ] CM POWER	[ ] DDAS TAPE RECORDING	[ ] CIF TM RECORDING
[ ] BACK-UP BATTERIES	[ ] SERVICE STRUCTURE MEAS.	[ ] CIF COMPUTER
[ ] TIMING	[X] RCA-110A COMPUTERS	[ ] CIF DATA
[ ] COUNTDOWN CLOCK	[ ] ACE	[ ] TM RECORDS
[ ] ETR SEQUENCER	[ ] L/V W-G ECS	[ ] REAL-TIME CIF COMPUT.
[ ] ETR COUNTDOWN CLOCK	[ ] CM W-G ECS	[ ] POST-TEST CIF COMPUT.
[ ] ETR S.R.O.	[ ] FACILITY ECS (GAS)	[ ] KSC TRACKING
[ ] ETR R.S.O.	[X] H.P. GAS	[ ] RFI MONITORING
[ ] ETR PAD SAFETY	[ ] CCF	[ ] RF READOUTS (ETR)
[ ] KSC PAD SAFETY	[ ] FACILITY TV (OTV)	[ ] RF READOUTS (KSC)
[ ] SECURITY POLICE	[ ] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[X] ESE	[ ]	[ ] FOOD SERVICE
[X] GSE	[ ]	[ ]
[X] S-1C Electrical Group	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS APOLLO/SATURN TEST CATALOG	PAGE 1 OF 2
1. TEST TITLE S-1C Components - Verification of LCC Control	2. KSC TEST NO. V-24048-S-1C-2 3. STAGE, VEHICLE OR GSE S-1C Stage (Test)

4. TEST OBJECTIVES

The objective of this procedure is to verify LCC Control of all Ground and Stage S-1C System Components after transfer of the ML and Vehicle to the Pad.

5. TEST DESCRIPTION/EQUIPMENT STATUS

The Procedure will describe the following in detail:

1. Preparatory steps prior to verifying LCC Control.
2. Operations sequence for verifying LCC Control.
3. Securing Steps.

Procedure Set-Up and Conditions:

The procedure will be accomplished after transfer of the ML and Vehicle to the Pad.

GSE and Special Equipment Required:

S-1C Propulsion Systems Panels
S-1C Ground Pneumatic Consoles
S-1C Pneumatic Checkout Racks
RCA 110-A Computer
S-1C Hydraulic Unit
S-1C Inert Prefill Unit
S-1C Forward Umbilical Service Unit
DDAS Station

CONTRACTOR REF. NO. 6S-275

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
J. Rogers	R. Newall	May 20, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC	LVO-33	AS- 502

KSC FORM 23-191A (2/66)

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE	2. KSC TEST NO.
S-1C Components - Verification of LCC Control	V-24048-S-1C-2
	11. VEHICLE EFFECTIVITY AS- 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
LCC/Pad	N/A	8 hrs.

15. TEST CONFIGURATION
S-1C Stage on ML at Launch Pad.

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

☐ GROUND POWER	☐ LCC MEASURING (LVO)	☐ ETR/KSC RADAR
☐ S-IB OR S-IC STAGE PWR	☐ LCC MEASURING (INS)	☐ ETR COMMAND XMITTER
☐ S-II STAGE POWER	☐ GSE MEASURING (LVO)	☐ LOCAL COMMAND (C.L.)
☐ S-IVB STAGE POWER	☐ GSE MEASURING (INS)	☐ ALDS
☐ IU POWER	☐ LCC DATA DISPLAY	☐ LCC TM STA. (MONITOR)
☐ LEM POWER	☐ CIF DATA DISPLAY	☐ LCC TM RECORDING
☐ SM POWER	☒ LDAS	☐ CIF TM STA. (MONITOR)
☐ CM POWER	☐ DDAS TAPE RECORDING	☐ CIF TM RECORDING
☐ BACK-UP BATTERIES	☐ SERVICE STRUCTURE MEAS.	☐ CIF COMPUTER
☐ TIMING	☒ RCA-110A COMPUTERS	☐ CIF DATA
☐ COUNTDOWN CLOCK	☐ ACE	☐ TM RECORDS
☐ ETR SEQUENCER	☐ L/V W-G ECS	☐ REAL-TIME CIF COMPUT.
☐ ETR COUNTDOWN CLOCK	☐ CM W-G ECS	☐ POST-TEST CIF COMPUT.
☐ ETR S.R.O.	☐ FACILITY ECS (GAS)	☐ KSC TRACKING
☐ ETR R.S.O.	☐ H.P. GAS	☐ RFI MONITORING
☐ ETR PAD SAFETY	☐ CCF	☐ RF READOUTS (ETR)
☐ KSC PAD SAFETY	☐ FACILITY TV (OTV)	☐ RF READOUTS (KSC)
☐ SECURITY POLICE	☐ FACILITY COMM. (OIS)	☐ WEATHER FORECAST
☐ FIRE FIGHTING	☐ FILM CAMERAS	☐ MCC-C
☐ MEDICAL	☐ SEARCH LIGHTS	☐ MCC-H
☒ S-1C ESE Group	☐	☐ FOOD SERVICE
☐	☐	☐
☐	☐	☐
☐	☐	☐
☐	☐	☐

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

S-1C Stage LOX Bubbling System - L & F Test

2. KSC TEST NO.
V-24049-S-1C-2

3. STAGE, VEHICLE OR GSE
S-1C Stage (Test)

4. TEST OBJECTIVES

The purpose of this test is to verify no external leakage exists in the LOX Bubbling System and proper operation of all system components.

5. TEST DESCRIPTION/EQUIPMENT STATUS

The LOX Bubbling System will be pressurized from the LCC utilizing the LOX System Panel, Control and Purge Panel, and the Ground Pneumatics Panel. All system lines and components will be inspected for external leakage using leak detector solution and all system components and interlocks activated to insure proper operation.

Procedure Set-Up and Conditions:

This test will be accomplished as a portion of the S-1C/Saturn V systems checkout.

GSE and Special Material Required:

RCA - 110A Computer
S-1C Control and Purge Panel
Leak Detector Solution
S-1C Ground Pneumatic Panel
S-1C LOX System Control Panel
S-1C Ground Pneumatic Console

CONTRACTOR REF. NO. 6S-279

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA KSC APPROVAL	10. APPROVAL DATE
E. Cook	R. Newall	May 20, 1966
7. ORGANIZATION	**9. ORGANIZATION**	**11. VEHICLE EFFECTIVITY**
BATC	LVO-33	AS- 502

KSC FORM 23-191A (2/66)

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE
S-1C Stage LOX Bubbling System - L & F Test

2. KSC TEST NO.
V-24049-S-1C-2

11. VEHICLE EFFECTIVITY
AS- 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB/LCC	N/A	8 hrs.

15. TEST CONFIGURATION
S-1C Stage on ML in VAB High Bay

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

☐ GROUND POWER	☐ LCC MEASURING (LVO)	☐ ETR/KSC RADAR
☐ S-IB OR S-IC STAGE PWR	☐ LCC MEASURING (INS)	☐ ETR COMMAND XMITTER
☐ S-II STAGE POWER	☐ GSE MEASURING (LVO)	☐ LOCAL COMMAND (C.L.)
☐ S-IVB STAGE POWER	☐ GSE MEASURING (INS)	☐ ALDS
☐ IU POWER	☐ LCC DATA DISPLAY	☐ LCC TM STA. (MONITOR)
☐ LEM POWER	☐ CIF DATA DISPLAY	☐ LCC TM RECORDING
☐ SM POWER	☐ DDAS	☐ CIF TM STA. (MONITOR)
☐ CM POWER	☐ DDAS TAPE RECORDING	☐ CIF TM RECORDING
☐ BACK-UP BATTERIES	☐ SERVICE STRUCTURE MEAS.	☐ CIF COMPUTER
☐ TIMING	☒ RCA-110A COMPUTERS	☐ CIF DATA
☐ COUNTDOWN CLOCK	☐ ACE	☐ TM RECORDS
☐ ETR SEQUENCER	☐ L/V W-G ECS	☐ REAL-TIME CIF COMPUT.
☐ ETR COUNTDOWN CLOCK	☐ CM W-G ECS	☐ POST-TEST CIF COMPUT.
☐ ETR S.R.O.	☐ FACILITY ECS (GAS)	☐ KSC TRACKING
☐ ETR R.S.O.	☒ H.P. GAS	☐ RFI MONITORING
☐ ETR PAD SAFETY	☐ CCF	☐ RF READOUTS (ETR)
☐ KSC PAD SAFETY	☐ FACILITY TV (OTV)	☐ RF READOUTS (KSC)
☐ SECURITY POLICE	☐ FACILITY COMM. (OIS)	☐ WEATHER FORECAST
☐ FIRE FIGHTING	☐ FILM CAMERAS	☐ MCC-C
☐ MEDICAL	☐ SEARCH LIGHTS	☐ MCC-H
☒ ESE	☐	☐ FOOD SERVICE
☒ S-1C Stage Electrical Group	☐	☐
☐	☐	☐
☐	☐	☐
☐	☐	☐

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS **APOLLO/SATURN TEST CATALOG**	PAGE 1 OF 2

1. TEST TITLE	2. KSC TEST NO.
AFT UMBILICAL CARRIER/VEHICLE DIMENSIONAL CHECK	V-24079-SIVB2
	3. STAGE, VEHICLE OR GSE S-IVB Stage

4. TEST OBJECTIVES

This drawing describes the procedure to be used for a dimensional check of the aft umbilical carrier and its supports on the vehicle.

5. TEST DESCRIPTION/EQUIPMENT STATUS

The following operations are included in this drawing:

1. Inspection of both carrier and stage interface with carrier
2. Check of dimensions on umbilical carrier assembly
3. Check of dimensions on S-IVB stage

510

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
R. A. Bauman		
7. ORGANIZATION	**9. ORGANIZATION**	**11. VEHICLE EFFECTIVITY**
DAC		AS-502-510

KSC FORM 23-191A (2/66)

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE	2. KSC TEST NO.
AFT UMBILICAL CARRIER/VEHICLE DIMENSIONAL CHECK	V-24079-SIVB2
	11. VEHICLE EFFECTIVITY AS-502-510

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB Low Bay		

15. TEST CONFIGURATION

Access to stage carrier interface with stage horizontal

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

☐ GROUND POWER	☐ LCC MEASURING (LVO)	☐ ETR/KSC RADAR
☐ S-IB OR S-IC STAGE PWR	☐ LCC MEASURING (INS)	☐ ETR COMMAND XMITTER
☐ S-II STAGE POWER	☐ GSE MEASURING (LVO)	☐ LOCAL COMMAND (C.L.)
☐ S-IVB STAGE POWER	☐ GSE MEASURING (INS)	☐ ALDS
☐ IU POWER	☐ LCC DATA DISPLAY	☐ LCC TM STA. (MONITOR)
☐ LEM POWER	☐ CIF DATA DISPLAY	☐ LCC TM RECORDING
☐ SM POWER	☐ DDAS	☐ CIF TM STA. (MONITOR)
☐ CM POWER	☐ DDAS TAPE RECORDING	☐ CIF TM RECORDING
☐ BACK-UP BATTERIES	☐ SERVICE STRUCTURE MEAS.	☐ CIF COMPUTER
☐ TIMING	☐ RCA-110A COMPUTERS	☐ CIF DATA
☐ COUNTDOWN CLOCK	☐ ACE	☐ TM RECORDS
☐ ETR SEQUENCER	☐ L/V W-G ECS	☐ REAL-TIME CIF COMPUT.
☐ ETR COUNTDOWN CLOCK	☐ CM W-G ECS	☐ POST-TEST CIF COMPUT.
☐ ETR S.R.O.	☐ FACILITY ECS (GAS)	☐ KSC TRACKING
☐ ETR R.S.O.	☐ H.P. GAS	☐ RFI MONITORING
☐ ETR PAD SAFETY	☐ CCF	☐ RF READOUTS (ETR)
☐ KSC PAD SAFETY	☐ FACILITY TV (OTV)	☐ RF READOUTS (KSC)
☐ SECURITY POLICE	☐ FACILITY COMM. (OIS)	☐ WEATHER FORECAST
☐ FIRE FIGHTING	☐ FILM CAMERAS	☐ MCC-C
☐ MEDICAL	☐ SEARCH LIGHTS	☐ MCC-H
☐	☐	☐ FOOD SERVICE
☐	☐	☐
☐	☐	☐
☐	☐	☐
☐	☐	☐

OTHERS:

544

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

SATURN S-IVB/V STAGE METER AND RECORDER CALIBRATIONS

2. KSC TEST NO.

V-24084-SIVB2

3. STAGE, VEHICLE OR GSE

S-IVB STAGE/GSE

4. TEST OBJECTIVES

THIS DOCUMENT ESTABLISHES THE PROCEDURES FOR CALIBRATING THE LCC CONSOLE METERS AND RECORDERS THAT ARE REQUIRED TO MONITOR STAGE PRESSURE FUNCTIONS.

5. TEST DESCRIPTION/EQUIPMENT STATUS

CALIBRATE THE CONSOLE METERS, STRIP CHART RECORDERS AND TELEMETRY CHANNELS BY PERFORMING AN END-TO-END CALIBRATION AGAINST A KNOWN PRESSURE STANDARD.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
R. W. BOWMAN		
7. ORGANIZATION	**9. ORGANIZATION**	**11. VEHICLE EFFECTIVITY**
DOUGLAS AIRCRAFT CO.	LVO-33	AS- 502-515

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE	2. KSC TEST NO.
SATURN S-IVB/V STAGE METER AND RECORDER CALIBRATIONS	V-24084-SIVB2
	11. VEHICLE EFFECTIVITY AS - 502-515

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
HIGH BAY	N/A	

15. TEST CONFIGURATION
MATED

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[X] GROUND POWER	[X] LCC MEASURING (LVO)	[ ] ETR/KSC RADAR
[ ] S-IB OR S-IC STAGE PWR	[X] LCC MEASURING (INS)	[ ] ETR COMMAND XMITTER
[ ] S-II STAGE POWER	[X] GSE MEASURING (LVO)	[ ] LOCAL COMMAND (C.L.)
[X] S-IVB STAGE POWER	[X] GSE MEASURING (INS)	[ ] ALDS
[X] IU POWER	[ ] LCC DATA DISPLAY	[X] LCC TM STA. (MONITOR)
[ ] LEM POWER	[ ] CIF DATA DISPLAY	[X] LCC TM RECORDING
[ ] SM POWER	[X] DDAS	[ ] CIF TM STA. (MONITOR)
[ ] CM POWER	[X] DDAS TAPE RECORDING	[ ] CIF TM RECORDING
[ ] BACK-UP BATTERIES	[ ] SERVICE STRUCTURE MEAS.	[ ] CIF COMPUTER
[ ] TIMING	[X] RCA-110A COMPUTERS	[X] CIF DATA
[ ] COUNTDOWN CLOCK	[ ] ACE	[X] TM RECORDS
[ ] ETR SEQUENCER	[ ] L/V W-G ECS	[ ] REAL-TIME CIF COMPUT.
[ ] ETR COUNTDOWN CLOCK	[ ] CM W-G ECS	[ ] POST-TEST CIF COMPUT.
[ ] ETR S.R.O.	[ ] FACILITY ECS (GAS)	[ ] KSC TRACKING
[ ] ETR R.S.O.	[X] H.P. GAS	[ ] RFI MONITORING
[ ] ETR PAD SAFETY	[ ] CCF	[ ] RF READOUTS (ETR)
[ ] KSC PAD SAFETY	[ ] FACILITY TV (OTV)	[ ] RF READOUTS (KSC)
[ ] SECURITY POLICE	[X] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[ ]	[ ]	[ ] FOOD SERVICE
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

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(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS **APOLLO/SATURN TEST CATALOG**	PAGE 1 OF 2
1. TEST TITLE CLEANLINESS CHECK AND FILL PROCEDURE, THERMO-CONDITIONING SYSTEM, FORWARD SKIRT	2. KSC TEST NO. V-24085-SIVB2 3. STAGE, VEHICLE OR GSE S-IVB Stage

4. TEST OBJECTIVES

The purpose of this procedure is to validate the cleanliness of the thermo-conditioning system in the forward skirt of the S-IVB. In addition, this procedure includes the necessary operations to fill the system for operational purposes.

5. TEST DESCRIPTION/EQUIPMENT STATUS

The S-IVB thermo-conditioning system is coupled through the umbilicals to the ground support cooling unit and filled with water/methanol. The fluid is circulated for 30 minutes and samples taken for analysis. A particle count is made on the samples to determine if any contaminants are present that do not meet the specified particle size and number.

EQUIPMENT STATUS

The S-IVB will be erected on the S-II stage with the forward skirt thermo-conditioning system installed.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY L. M. Martynow	8. NASA-KSC APPROVAL	10. APPROVAL DATE
7. ORGANIZATION DAC	9. ORGANIZATION	11. VEHICLE EFFECTIVITY AS-502-515

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE

CLEANLINESS CHECK AND FILL PROCEDURE, THERMO-CONDITIONING SYSTEM, FORWARD SKIRT

2. KSC TEST NO.

V-24085-SIVB2

11. VEHICLE EFFECTIVITY

AS-502-515

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB High Bay		

15. TEST CONFIGURATION

S-IVB Staged and forward skirt thermo-conditioning system installed

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[X] GROUND POWER	[ ] LCC MEASURING (LVO)	[ ] ETR/KSC RADAR
[ ] S-IB OR S-IC STAGE PWR	[ ] LCC MEASURING (INS)	[ ] ETR COMMAND XMITTER
[ ] S-II STAGE POWER	[ ] GSE MEASURING (LVO)	[ ] LOCAL COMMAND (C.L.)
[ ] S-IVB STAGE POWER	[ ] GSE MEASURING (INS)	[ ] ALDS
[ ] IU POWER	[ ] LCC DATA DISPLAY	[ ] LCC TM STA. (MONITOR)
[ ] LEM POWER	[ ] CIF DATA DISPLAY	[ ] LCC TM RECORDING
[ ] SM POWER	[ ] DDAS	[ ] CIF TM STA. (MONITOR)
[ ] CM POWER	[ ] DDAS TAPE RECORDING	[ ] CIF TM RECORDING
[ ] BACK-UP BATTERIES	[ ] SERVICE STRUCTURE MEAS.	[ ] CIF COMPUTER
[ ] TIMING	[ ] RCA-110A COMPUTERS	[ ] CIF DATA
[ ] COUNTDOWN CLOCK	[ ] ACE	[ ] TM RECORDS
[ ] ETR SEQUENCER	[ ] L/V W-G ECS	[ ] REAL-TIME CIF COMPUT.
[ ] ETR COUNTDOWN CLOCK	[ ] CM W-G ECS	[ ] POST-TEST CIF COMPUT.
[ ] ETR S.R.O.	[ ] FACILITY ECS (GAS)	[ ] KSC TRACKING
[ ] ETR R.S.O.	[X] H.P. GAS	[ ] RFI MONITORING
[ ] ETR PAD SAFETY	[ ] CCF	[ ] RF READOUTS (ETR)
[ ] KSC PAD SAFETY	[ ] FACILITY TV (OTV)	[ ] RF READOUTS (KSC)
[ ] SECURITY POLICE	[X] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[ ]	[ ]	[ ] FOOD SERVICE
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

Ground support cooling unit and attached hardware
Water/methanol (40% water/60% methanol with 1% sodium benzoate)

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(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE
LEAK CHECK PROCEDURE, THERMO-CONDITIONING SYSTEM, FORWARD SKIRT

2. KSC TEST NO.
V-24086-SIVB2

3. STAGE, VEHICLE OR GSE
S-IVB Stage

4. TEST OBJECTIVES
The purpose of this procedure is to insure that the thermo-conditioning system is intact with no leakage.

5. TEST DESCRIPTION/EQUIPMENT STATUS

The S-IVB thermo-conditioning system (TCS) is coupled to a regulated helium supply through a gage/regulator assembly. The TCS is pressurized with gaseous helium and checked for leakage using bubble soap.

Equipment Status:

The S-IVB will be erected on the S-II stage with the forward skirt thermo-conditioning system completely installed.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
L. M. Martynow		
7. ORGANIZATION	**9. ORGANIZATION**	**11. VEHICLE EFFECTIVITY**
DAC		AS-502-515

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE	2. KSC TEST NO.
LEAK CHECK PROCEDURE, THERMO-CONDITIONING SYSTEM, FORWARD SKIRT	V-24086-SIVB2
	11. VEHICLE EFFECTIVITY: AS-502-515

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB High Bay		

15. TEST CONFIGURATION

S-IVB Staged and Forward Skirt TCS completely installed

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

☐ GROUND POWER	☐ LCC MEASURING (LVO)	☐ ETR/KSC RADAR
☐ S-IB OR S-IC STAGE PWR	☐ LCC MEASURING (INS)	☐ ETR COMMAND XMITTER
☐ S-II STAGE POWER	☐ GSE MEASURING (LVO)	☐ LOCAL COMMAND (C.L.)
☐ S-IVB STAGE POWER	☐ GSE MEASURING (INS)	☐ ALDS
☐ IU POWER	☐ LCC DATA DISPLAY	☐ LCC TM STA. (MONITOR)
☐ LEM POWER	☐ CIF DATA DISPLAY	☐ LCC TM RECORDING
☐ SM POWER	☐ DDAS	☐ CIF TM STA. (MONITOR)
☐ CM POWER	☐ DDAS TAPE RECORDING	☐ CIF TM RECORDING
☐ BACK-UP BATTERIES	☐ SERVICE STRUCTURE MEAS.	☐ CIF COMPUTER
☐ TIMING	☐ RCA-110A COMPUTERS	☐ CIF DATA
☐ COUNTDOWN CLOCK	☐ ACE	☐ TM RECORDS
☐ ETR SEQUENCER	☐ L/V W-G ECS	☐ REAL-TIME CIF COMPUT.
☐ ETR COUNTDOWN CLOCK	☐ CM W-G ECS	☐ POST-TEST CIF COMPUT.
☐ ETR S.R.O.	☐ FACILITY ECS (GAS)	☐ KSC TRACKING
☐ ETR R.S.O.	☒ H.P. GAS	☐ RFI MONITORING
☐ ETR PAD SAFETY	☐ CCF	☐ RF READOUTS (ETR)
☐ KSC PAD SAFETY	☐ FACILITY TV (OTV)	☐ RF READOUTS (KSC)
☐ SECURITY POLICE	☐ FACILITY COMM. (OIS)	☐ WEATHER FORECAST
☐ FIRE FIGHTING	☐ FILM CAMERAS	☐ MCC-C
☐ MEDICAL	☐ SEARCH LIGHTS	☐ MCC-H
☐	☐	☐ FOOD SERVICE
☐	☐	☐
☐	☐	☐
☐	☐	☐
☐	☐	☐

OTHERS:

TTD

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

SATURN S-IVB/V PROPULSION SUBSYSTEM CHECKOUT

2. KSC TEST NO.

V-24090-SIVB2

3. STAGE, VEHICLE OR GSE

S-IVB STAGE

4. TEST OBJECTIVES

THE PURPOSE OF THIS PROCEDURE IS TO VERIFY THAT ALL PROPULSION SUBSYSTEMS ARE LEAK TIGHT WITHIN DESIGN SPECIFICATION LIMITS AND THAT ALL SYSTEMS FUNCTION IN ACCORDANCE WITH DESIGN REQUIREMENTS.

5. TEST DESCRIPTION/EQUIPMENT STATUS

A. EXERCISE STAGE PRESSURE SWITCHES TO VERIFY PICKUP AND DROPOUT PRESSURES AND CORRECT FUNCTIONING OF PRESSURE SWITCH CONTROLLED COMPONENTS.

B. ACTUATE STAGE SYSTEM RELIEF VALVES TO VERIFY CORRECT CRACKING AND RESEAT PRESSURES.

C. LEAK CHECK OF LOX AND LH2 PROPELLANT TANKS.

D. LEAK AND FUNCTIONAL CHECK OF THE LOX TANK PRESSURIZATION SYSTEM, LH2 TANK PRESSURIZATION SYSTEM AND PNEUMATIC CONTROL SYSTEM.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
R. W. BOWMAN		
7. ORGANIZATION	**9. ORGANIZATION**	**11. VEHICLE EFFECTIVITY**
DOUGLAS AIRCRAFT CO.	LVO-33	AS-502-515

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2
1. TEST TITLE SATURN S-IVB/V PROPULSION SUBSYSTEM CHECKOUT	2. KSC TEST NO. V-24090-SIVB2 11. VEHICLE EFFECTIVITY AS - 502-515

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
HIGH BAY	N/A	

15. TEST CONFIGURATION
MATED

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[X] GROUND POWER	[ ] LCC MEASURING (LVO)	[ ] ETR/KSC RADAR
[ ] S-IB OR S-IC STAGE PWR	[ ] LCC MEASURING (INS)	[ ] ETR COMMAND XMITTER
[ ] S-II STAGE POWER	[ ] GSE MEASURING (LVO)	[ ] LOCAL COMMAND (C.L.)
[X] S-IVB STAGE POWER	[ ] GSE MEASURING (INS)	[ ] ALDS
[ ] IU POWER	[ ] LCC DATA DISPLAY	[ ] LCC TM STA. (MONITOR)
[ ] LEM POWER	[ ] CIF DATA DISPLAY	[ ] LCC TM RECORDING
[ ] SM POWER	[X] DDAS	[ ] CIF TM STA. (MONITOR)
[ ] CM POWER	[ ] DDAS TAPE RECORDING	[ ] CIF TM RECORDING
[X] BACK-UP BATTERIES	[ ] SERVICE STRUCTURE MEAS.	[ ] CIF COMPUTER
[ ] TIMING	[ ] RCA-110A COMPUTERS	[ ] CIF DATA
[ ] COUNTDOWN CLOCK	[ ] ACE	[ ] TM RECORDS
[ ] ETR SEQUENCER	[ ] L/V W-G ECS	[ ] REAL-TIME CIF COMPUT.
[ ] ETR COUNTDOWN CLOCK	[ ] CM W-G ECS	[ ] POST-TEST CIF COMPUT.
[ ] ETR S.R.O.	[ ] FACILITY ECS (GAS)	[ ] KSC TRACKING
[ ] ETR R.S.O.	[X] H.P. GAS	[ ] RFI MONITORING
[ ] ETR PAD SAFETY	[ ] CCF	[ ] RF READOUTS (ETR)
[ ] KSC PAD SAFETY	[ ] FACILITY TV (OTV)	[ ] RF READOUTS (KSC)
[ ] SECURITY POLICE	[X] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[ ]	[ ]	[ ] FOOD SERVICE
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

SATURN S-IVB/V ENGINE SEQUENCE TEST

2. KSC TEST NO.

V-24091-SIVB2

3. STAGE, VEHICLE OR GSE

S-IVB Stage

4. TEST OBJECTIVES

THIS DOCUMENT ESTABLISHES THE PROCEDURES REQUIRED TO VERIFY THAT THE S-IVB ENGINE SEQUENCE TIMING MEETS SPECIFICATIONS FOR INFLIGHT STARTING.

5. TEST DESCRIPTION/EQUIPMENT STATUS

A. FUNCTIONALLY CHECK THE J-2 ENGINE VALVE TIMING.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
R. W. BOWMAN	[illegible]	7-7-66
7. ORGANIZATION	**9. ORGANIZATION**	**11. VEHICLE EFFECTIVITY**
DOUGLAS AIRCRAFT CO.	LVO-33	AS- 502-515

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE	2. KSC TEST NO.
SATURN S-IVB/V ENGINE SEQUENCE TEST	V-24091-SIVB2
	11. VEHICLE EFFECTIVITY AS - 502-515

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB HIGH BAY	N/A	

15. TEST CONFIGURATION

MATED

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[X] GROUND POWER	[X] LCC MEASURING (LVO)	[ ] ETR/KSC RADAR
[ ] S-IB OR S-IC STAGE PWR	[ ] LCC MEASURING (INS)	[ ] ETR COMMAND XMITTER
[ ] S-II STAGE POWER	[X] GSE MEASURING (LVO)	[ ] LOCAL COMMAND (C.L.)
[X] S-IVB STAGE POWER	[ ] GSE MEASURING (INS)	[ ] ALDS
[X] IU POWER	[ ] LCC DATA DISPLAY	[ ] LCC TM STA. (MONITOR)
[ ] LEM POWER	[ ] CIF DATA DISPLAY	[ ] LCC TM RECORDING
[ ] SM POWER	[X] DDAS	[ ] CIF TM STA. (MONITOR)
[ ] CM POWER	[X] DDAS TAPE RECORDING	[ ] CIF TM RECORDING
[ ] BACK-UP BATTERIES	[ ] SERVICE STRUCTURE MEAS.	[ ] CIF COMPUTER
[X] TIMING	[X] RCA-110A COMPUTERS	[ ] CIF DATA
[ ] COUNTDOWN CLOCK	[ ] ACE	[X] TM RECORDS
[ ] ETR SEQUENCER	[ ] L/V W-G ECS	[ ] REAL-TIME CIF COMPUT.
[ ] ETR COUNTDOWN CLOCK	[ ] CM W-G ECS	[ ] POST-TEST CIF COMPUT.
[ ] ETR S.R.O.	[ ] FACILITY ECS (GAS)	[ ] KSC TRACKING
[ ] ETR R.S.O.	[X] H.P. GAS	[ ] RFI MONITORING
[ ] ETR PAD SAFETY	[ ] CCF	[ ] RF READOUTS (ETR)
[ ] KSC PAD SAFETY	[ ] FACILITY TV (OTV)	[ ] RF READOUTS (KSC)
[ ] SECURITY POLICE	[X] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[ ]	[ ]	[ ] FOOD SERVICE
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

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OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2
TEST TITLE SATURN S-IVB/V APS MODULE SUBSYSTEM CHECKOUT	2. KSC TEST NO. V-24092-SIVB2 11. VEHICLE EFFECTIVITY AS- 502-515

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
HIGH BAY (VAB)	N/A	

15. TEST CONFIGURATION

MATED

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[X] GROUND POWER	[ ] LCC MEASURING (LVO)	[ ] ETR/KSC RADAR
[ ] S-IB OR S-IC STAGE PWR	[X] LCC MEASURING (INS)	[ ] ETR COMMAND XMITTER
[ ] S-II STAGE POWER	[ ] GSE MEASURING (LVO)	[ ] LOCAL COMMAND (C.L.)
[X] S-IVB STAGE POWER	[X] GSE MEASURING (INS)	[ ] ALDS
[ ] IU POWER	[ ] LCC DATA DISPLAY	[ ] LCC TM STA. (MONITOR)
[ ] LEM POWER	[ ] CIF DATA DISPLAY	[ ] LCC TM RECORDING
[ ] SM POWER	[X] DDAS	[ ] CIF TM STA. (MONITOR)
[ ] CM POWER	[ ] DDAS TAPE RECORDING	[ ] CIF TM RECORDING
[ ] BACK-UP BATTERIES	[ ] SERVICE STRUCTURE MEAS.	[ ] CIF COMPUTER
[ ] TIMING	[ ] RCA-110A COMPUTERS	[ ] CIF DATA
[ ] COUNTDOWN CLOCK	[ ] ACE	[ ] TM RECORDS
[ ] ETR SEQUENCER	[ ] L/V W-G ECS	[ ] REAL-TIME CIF COMPUT.
[ ] ETR COUNTDOWN CLOCK	[ ] CM W-G ECS	[ ] POST-TEST CIF COMPUT.
[ ] ETR S.R.O.	[ ] FACILITY ECS (GAS)	[ ] KSC TRACKING
[ ] ETR R.S.O.	[X] H.P. GAS	[ ] RFI MONITORING
[ ] ETR PAD SAFETY	[ ] CCF	[ ] RF READOUTS (ETR)
[ ] KSC PAD SAFETY	[ ] FACILITY TV (OTV)	[ ] RF READOUTS (KSC)
[ ] SECURITY POLICE	[X] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[ ]	[ ]	[ ] FOOD SERVICE
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

. OTHER APPLICABLE REFERENCE DOCUMENTATION

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KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

SATURN S-IVB/V APS MODULE SUBSYSTEM CHECKOUT

2. KSC TEST NO.

V-24092-SIVB2

3. STAGE, VEHICLE OR GSE

S-IVB STAGE

4. TEST OBJECTIVES

THIS DOCUMENT ESTABLISHES THE PROCEDURES REQUIRED TO VERIFY THAT ALL APS MODULE SYSTEMS ARE LEAK TIGHT AND PERFORM IN ACCORDANCE WITH DESIGN REQUIREMENTS.

5. TEST DESCRIPTION/EQUIPMENT STATUS

A. PRESSURIZE AND VERIFY PICKUP AND DROPOUT PRESSURES ON ALL PRESSURE SWITCHES.

B. VERIFY PROPER FUNCTIONING OF ALL PRESSURE SWITCH CONTROLLED VALVES.

C. PRESSURIZE ALL MODULE PRESSURE TRANSDUCERS AND CALIBRATE THEIR CORRESPONDING LCC PANEL METERS AND STRIP CHARTS.

D. PRESSURIZE AND FUNCTIONALLY CHECK ALL SOLENOID VALVES, RELIEF VALVES, CHECK VALVES, AND PRESSURE REGULATORS.

E. PRESSURIZE AND LEAK CHECK ALL MODULE SYSTEMS AND COMPONENTS.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
R. W. BOWMAN		
7. ORGANIZATION	**9. ORGANIZATION**	**11. VEHICLE EFFECTIVITY**
DOUGLAS AIRCRAFT CO.	LVO-33	AS- 502-515