KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

S-IC PTCS PRE-LOADING PROCEDURE

2. KSC TEST NO.

V-25133-GSE39A

3. STAGE, VEHICLE OR GSE

GSE

4. TEST OBJECTIVES

Assure correct operation of the PTCS for Propellant Loading.

5. TEST DESCRIPTION/EQUIPMENT STATUS

1. Power Application.
2. Computer Alignment (as required).
3. Simulate/Standardize mass readouts.
4. Position all panel controls for loading.

Procedure Set-up & Conditions:

This procedure will be accomplished immediately prior to fuel and/or Qxidizer Loading of the S-IC Stage.

GSE and Special Materials Required: None

Manpower Required: 2 Engineers
1 Technician

169

(1G195)

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
P. S. Hayden 6/10/66	J. H. Jollay J. H. Jollay	6/10/66
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
The Boeing Company 5-8553	LVO-226	AS- 502 (TEST)

KSC FORM 23-191A (2/66)

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

1. TEST TITLE	2. KSC TEST NO.
S-IC PTCS PRE-LOADING PROCEDURE	V-25133-GSE39A
	11. VEHICLE EFFECTIVITY: AS- 502 (TEST)

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
LCC/FR #2 - FR #2 - PAD A	N/A	2 Hours

15. TEST CONFIGURATION

N/A

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
☒ DTS	☐	☐ FOOD SERVICE
☒ PROPELLANTS DC POWER	☐	☐
☐	☐	☐
☐	☐	☐
☐	☐	☐

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

NONE

KSC OPERATIONS APOLLO/SATURN TEST CATALOG	PAGE 1 OF 2
1. TEST TITLE S-II PTCS PRE-LOADING PROCEDURE	2. KSC TEST NO. V-25134-GSE39A 3. STAGE, VEHICLE OR GSE GSE

4. TEST OBJECTIVES

Assure correct operation of the PTCS for Propellant Loading.

5. TEST DESCRIPTION/EQUIPMENT STATUS

1. Power Application.
2. Computer Alignment (as required).
3. Simulate/Standardize mass readouts.
4. Position all panel controls for loading.

Procedure Set-up & Conditions:

This procedure will be accomplished immediately prior to fuel and/or Oxidizer Loading of the S-II Stage.

GSE and Special Materials Required: None

Manpower Required: 2 Engineers
1 Technician

101

(CONTINUE ON KSC FORM 23-192 IF REQUIRED) (1G196)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
P. S. Hayden 6/10/66	J. H. Jollay J. H. Jollay	6/10/66
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
The Boeing Company 5-8553	LVO 226	AS- 502 (TEST)

KSC FORM 23-191A (2/66)

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

1. TEST TITLE

S-II PTCS PRE-LOADING PROCEDURE

2. KSC TEST NO.

V-25134-GSE39A

11. VEHICLE EFFECTIVITY

AS- 502 (TEST

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
LCC/FR #2 - LUT #2	N/A	2 hrs.

15. TEST CONFIGURATION

N/A

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
☒ DTS	☐	☐ FOOD SERVICE
☒ PROPELLANTS DC POWER	☐	☐
☐	☐	☐
☐	☐	☐
☐	☐	☐

OTHERS:

502

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

NONE

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

S-IVB PTCS PRE-LOADING PROCEDURE

2. KSC TEST NO.

V-25135-GSE39A

3. STAGE, VEHICLE OR GSE

GSE

4. TEST OBJECTIVES

Assure correct operation of the PTCS for Propellant Loading.

5. TEST DESCRIPTION/EQUIPMENT STATUS

1. Power Application.
2. Computer Alignment (as required)
3. Simulate/Standardize mass readouts.
4. Position all panel controls for loading.

Procedure set-up and Conditions:

This procedure will be accomplished immediately prior to fuel and/or Oxidizer Loading of the S-IVB stage.

GSE and Special Materials Required: None

Manpower Required: 2 Engineers
1 Technician

203

(1G197)

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
P. S. Hayden 6/10/66	J. H. Jollay J. H. Jollay	6/10/66
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
The Boeing Company 5-8553	LVO 226	AS- 502(Test)

KSC FORM 23-191A (2/66)

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

1. TEST TITLE	2. KSC TEST NO.
S-IVB PTCS PRE-LOADING PROCEDURE	V-25135-GSE39A
	11. VEHICLE EFFECTIVITY
	AS- 502(Test)

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
LUT #2	N/A	2 hr.

15. TEST CONFIGURATION

N/A

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
☒ DTS	☐	☐ FOOD SERVICE
☒ PROPELLANTS DC POWER	☐	☐
☐	☐	☐
☐	☐	☐
☐	☐	☐

OTHERS:

704

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

NONE

V-25138-GSE 39A

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

LOX SYSTEM PREPARATIONS FOR VEHICLE LOADING

2. KSC TEST NO.

V-25138-GSE-39A

3. STAGE, VEHICLE OR GSE

4. TEST OBJECTIVES

TO PREPARE THE LOX TRANSFER SYSTEM FOR OPERATION TO SUPPORT VEHICLE LOADING.

5. TEST DESCRIPTION/EQUIPMENT STATUS

A. FUNCTIONALLY CHECK PNEUMATICALLY-OPERATED VALVES FROM THE LCC.
B. SET ALL MANUAL VALVES FOR LOADING.
C. VERIFY SUFFICIENT LOX IN STORAGE TANK FOR PLANNED OPERATIONS.
D. VERIFY ELECTRICAL PREPARATION PROCEDURES HAVE BEEN COMPLETED.
E. VERIFY LOX DEW POINT IS SATISFACTORY.
F. VERIFY LOX SAMPLING HAS BEEN COMPLETED.
G. VERIFY WITH STAGE PROPULSION PERSONNEL, STAGE IS READY FOR LOADING.

PROCEDURE SET-UP AND CONDITIONS:

THESE PROCEDURES WILL BE PERFORMED AFTER THE VEHICLE IS ERECTED AT THE PAD AND BEFORE LOADING TESTS.

GSE AND SPECIAL MATERIALS REQUIRED:

LCC

705

Stage Processing

6G-229

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA/KSC APPROVAL	10. APPROVAL DATE
R.J. BUCINA 7/11/66	J. G. RAWLS 7/16/66	MAY 31, 1966
7. ORGANIZATION	**9. ORGANIZATION**	**11. VEHICLE EFFECTIVITY**
BATC - M&PS - PROP.	LVO-34	AS-SA 502 (TEST)

KSC FORM 23-191 (2/66)

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2
1. TEST TITLE LOX SYSTEM PREPARATIONS FOR VEHICLE LOADING	2. KSC TEST NO. V-25138-GSE-39A 11. VEHICLE EFFECTIVITY AS-SA 502 (TEST)

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
LC39		

15. TEST CONFIGURATION

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.)
[ ] 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	[ ] 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	[X] FACILITY TV (OTV)	[ ] RF READOUTS (KSC)
[ ] SECURITY POLICE	[X] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[X] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[X] SEARCH LIGHTS	[ ] MCC-H
[X] BOEING PROPELLANT NETWORKS	[ ]	[ ] FOOD SERVICE
[X] BOEING GSE	[ ]	[ ]
[X] BOEING S-IC	[ ]	[ ]
[X] NAA S-II	[ ]	[ ]
[X] DOUGLAS S-IVB	[ ]	[ ]

OTHERS:

700

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

6G-229

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

RP-1 STORAGE TANK RELIEF VALVE AND PRESSURE SYSTEM TEST

2. KSC TEST NO.

V-25143-GSE39A

3. STAGE, VEHICLE OR GSE

39AGSE

4. TEST OBJECTIVES

TO VERIFY PROPER OPERATION OF THE STORAGE TANK RELIEF VALVES A4123, A4124, A4125, A4126, A4127, A4128 AND REGULATOR A4146.

5. TEST DESCRIPTION/EQUIPMENT STATUS

A. RAISE TANK PRESSURE.

B. CHECK FIRST VALVE FOR ACTUATION PRESSURE.

C. BLOCK EACH RELIEVING VALVE IN SEQUENCE UNTIL ALL VALVES HAVE OPERATED.

D. ADJUST VALVES AS REQUIRED.

E. REMOVE BLOCKS FROM ALL VALVES.

F. ADJUST TANK BLANKET PRESSURE REGULATOR.

707

Activation

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA KSC APPROVAL	10. APPROVAL DATE
D. A. Patrick D. A. PATRICK	Robert G. Ward ROBERT G. WARD	JULY 15, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC-M&PS-FUELS	LVO-34	AS- 502 (TEST)

A

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

1. TEST TITLE	2. KSC TEST NO.
RP-1 STORAGE TANK RELIEF VALVE AND PRESSURE SYSTEM TEST	V-25143-GSE39A
	11. VEHICLE EFFECTIVITY AS- 502 (TEST)

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
COMPLEX 39A RP-1 AREA	NONE	

15. TEST CONFIGURATION

STANDBY

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 STORAGE AREA GN2	☐ 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:

708

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

6G-275

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

RP-1 SHOCK ARRESTOR SERVICING PROCEDURE

2. KSC TEST NO.

V-25145-GSE-39A

3. STAGE, VEHICLE OR GSE

GSE

4. TEST OBJECTIVES

TO PRECHARGE THE SHOCK ARRESTOR A4103.

5. TEST DESCRIPTION/EQUIPMENT STATUS

A. CHARGE SHOCK ARRESTOR TO PROPER PRESSURE.

PROCEDURE SET-UP AND CONDITIONS:

THIS TEST IS REQUIRED PRIOR TO RP-1 TRANSFER PUMP CHECKOUT AND LINE LEAK CHECK.

GSE & SPECIAL MATERIALS REQUIRED:

PNEUMATIC TEST PANELS

Activation

6G-290
6-BLGSEV-1057

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
Robert O. Ewart R. O. EWART	Robert E. Ward Jr. for R. E. RHODES	JULY 8, 1966
7. ORGANIZATION	**9. ORGANIZATION**	**11. VEHICLE EFFECTIVITY**
BATC M&PS FUELS	LVO-34	AS- 502 (TEST)

KSC FORM 23-191 (2/66)

A

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

1. TEST TITLE	2. KSC TEST NO.
RP-1 SHOCK ARRESTOR SERVICING PROCEDURE	V-25145=GSE-39A
	11. VEHICLE EFFECTIVITY: AS-502 (TEST)

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
COMPLEX 39A		

15. TEST CONFIGURATION
STANDBY

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
☒ STORAGE AREA 3500 PSI GN2	☐	☐ FOOD SERVICE
☐	☐	☐
☐	☐	☐
☐	☐	☐
☐	☐	☐

710

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

6G-290
6-BLGSEV-1057

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

PROPELLANT LEVEL SENSOR FUNCTIONAL

2. KSC TEST NO.
V-25147-SII2

3. STAGE, VEHICLE OR GSE

4. TEST OBJECTIVES

VERIFY THAT THE LEVEL SENSORS (INCLUDING ASTFILL AND OVERFILL CUTOFF) FUNCTION PROPERLY

5. TEST DESCRIPTION/EQUIPMENT STATUS

DRY, WET AND OPEN SIMULATIONS ARE APPLIED SEQUENTIALLY FROM THE ESE PROPELLANT MANAGEMENT PANEL IN THE LOW BAY CONTROL ROOM, AND PROPER INDICATIONS ARE VERIFIED FOR EACH SENSOR.

PREREQUISITES:
1. THIS TEST IS PERFORMED IN LOW BAY.
2. S-II-2 INITIAL POWER APPLICATION COMPLETE.

711

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
N. Mayeda	Nils E. Rosland	14 June 66
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
NORTH AMERICAN AVIATION, INC	LV0-222	AS-502 DOP-C02-H009

KSC FORM 23-191 (2/66)

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

1. TEST TITLE	2. KSC TEST NO.
PROPELLANT LEVEL SENSOR FUNCTIONAL	11. VEHICLE EFFECTIVITY AS- 502

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

15. TEST CONFIGURATION

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
[X] 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
[X] LOW BAY COMM.	[ ]	[ ] 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

AUTOMATIC PROPELLANT UTILIZATION FUNCTIONAL

2. KSC TEST NO.
V-25148-SII2

3. STAGE, VEHICLE OR GSE

4. TEST OBJECTIVES

VERIFY PROPELLANT UTILIZATION SYSTEM BRIDGE SLEW CAPABILITY.
VERIFY FUNCTIONAL STATUS OF VALVE AMPLIFIER SERVO.

5. TEST DESCRIPTION/EQUIPMENT STATUS

SIMULATE VARIOUS TANK LEVELS AND MEASURE BRIDGE OUTPUT.

SIMULATE ERROR INPUT SIGNAL TO VALVE AMPLIFIER AND MONITOR VALVE POSITION. DISPLAY VALVE POSITION CURVE ON CRT.

PREREQUISITES :

1. PROPELLANT UTILIZATION CALIBRATION COMPLETE.
2. TEST IS CALLED AND RUN VIA THE DISPLAY CONSOLE.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
N. Magden	Milton E. Crosland	21 June 66
7. ORGANIZATION NORTH AMERICAN AVIATION, INC	9. ORGANIZATION LVO-222	11. VEHICLE EFFECTIVITY AS-502 DOP-C02-H011

KSC FORM 23-191 (2/66)

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

1. TEST TITLE

AUTOMATIC PROPELLANT UTILIZATION FUNCTIONAL

2. KSC TEST NO.

11. VEHICLE EFFECTIVITY

AS- 502

12. WHERE TEST PERFORMED

HIGH BAY AND/OR PAD

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

14. EST. TEST TIME

15. TEST CONFIGURATION

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
[X] 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] BOEING SUPPORT	[X] DEE	[ ] FOOD SERVICE
[ ]	[X] DISPLAY CONSOLE	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

AUTOMATIC PROPELLANT LEVEL AND DEPLETION SENSOR FUNCTIONAL

2. KSC TEST NO.

V-25149-SII2

3. STAGE, VEHICLE OR GSE

4. TEST OBJECTIVES

VERIFY THAT THE LEVEL SENSORS (INCLUDING FASTFILL AND OVERFILL CUTOFF) AND DEPLETION SENSORS FUNCTION PROPERLY.

VERIFY ALL COMBINATIONS OF THE 2 OF THE 5 DEPLETION ENGINE CUTOFF LOGIC.

5. TEST DESCRIPTION/EQUIPMENT STATUS

DRY, WET, AND OPEN SIMULATIONS ARE APPLIED SEQUENTIALLY BY THE COMPUTER AND SENSOR OUTPUTS VERIFIED.

PROPELLANT DEPLETION ENGINE CUTOFF LOGIC IS TESTED BY SIMULATING ALL COMBINATIONS OF TWO DRY SENSORS AND THREE WET SENSORS AND VERIFYING THE PRESENCE OF THE CUTOFF SIGNAL. ALL COMBINATIONS OF ONE DRY SENSOR AND FOUR WET SENSORS ARE SIMULATED AND THE ABSENCE OF THE CUTOFF SIGNAL VERIFIED.

DISCREPANCIES WILL BE DISPLAYED AT THE S-II DISPLAY CONSOLE. TEST RESULTS WILL BE RECORDED AT THE DEE.

PREREQUISITES:
1. S-II-2 INITIAL POWER APPLICATION TEST COMPLETE.
2. TEST IS CALLED AND RUN VIA THE DISPLAY CONSOLE.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
N. Mayda	Nils P. Coseland	21 June 66
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
NORTH AMERICAN ... TION, INC	610-222	AS- 502 DOP-C02-H010

KSC FORM 23-191 (2/66)

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2
1. TEST TITLE AUTOMATIC PROPELLANT LEVEL AND DEPLETION SENSOR FUNCTIONAL	2. KSC TEST NO. 11. VEHICLE EFFECTIVITY AS- 502

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

15. TEST CONFIGURATION

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
[X] 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] DEE	[ ] FOOD SERVICE
[ ]	[X] DISPLAY CONSOLE	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS APOLLO/SATURN TEST CATALOG	PAGE 1 OF 2 Rev. B
1. TEST TITLE VERIFICATION OF CAPACITANCE PROBES (LOW BAY)	2. KSC TEST NO. V-25150-SII2 3. STAGE, VEHICLE OR GSE S-II-2

4. TEST OBJECTIVES

VERIFY CORRECT CAPACITANCE OF THE PROBES IN THE LH_2 AND LOX TANKS.

5. TEST DESCRIPTION/EQUIPMENT STATUS

MEASURE PROBE CAPACITY WITH A CAPACITANCE BRIDGE.

TEST EQUIPMENT: CAPACITANCE BRIDGE

PREREQUISITES: THIS TEST WILL BE PERFORMED IN LOW BAY.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
N. Maneda	Nels E. Roseland	19 June 66
7. ORGANIZATION NORTH AMERICAN AVIATION, INC	9. ORGANIZATION LVO-222	11. VEHICLE EFFECTIVITY AS- 502 DOP-C02-H008

KSC FORM 23-191 (2/66)

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2
1. TEST TITLE VERIFICATION OF CAPACITANCE PROBES (LOW BAY)	2. KSC TEST NO. 11. VEHICLE EFFECTIVITY AS- 502

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

15. TEST CONFIGURATION

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

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

PROPELLANT UTILIZATION CALIBRATION AND FUNCTIONAL TEST

2. KSC TEST NO.
V-25151-SII2

3. STAGE, VEHICLE OR GSE
S-II-2

4. TEST OBJECTIVES

CALIBRATE COMPUTER BRIDGE NETWORK, FUNCTIONAL TEST VALVE POSITIONING SERVO, AND VERIFY PROPER OPERATION OF THE PROPELLANT UTILIZATION SYSTEM COMPUTER.

5. TEST DESCRIPTION/EQUIPMENT STATUS

THE COMPUTER BRIDGE NETWORK IS CALIBRATED BY THE C7-84 CALIBRATION UNIT. A PRECISION CAPACITOR IN THE C7-84 IS USED AS A REFERENCE TO ADJUST THE EMPTY AND FULL POTENTIOMETERS IN THE COMPUTER. MASS READINGS ARE OBTAINED FROM THE LOADING POTS.

PREREQUISITES:

1. C7-84 IS CALIBRATED ON C7-85 OR GR-1620A BRIDGE NOT MORE THAN TWENTY-FOUR (24) HOURS PRIOR TO THIS TEST.
2. TO BE PERFORMED IN HIGH BAY AND PAD.

TEST EQUIPMENT:

1. C7-84 PROPELLANT UTILIZATION CALIBRATION UNIT.
2. 500V MEGGER
3. STD-023A POWER CONTROL
4. STD-008 ADAPTER CABLE

(CONTINUE ON KSC FORM 23-102 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
N. Mayeda	Milt E. Roselund	14 June 66
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
NORTH AMERICAN AVIATION, INC	WO-222	AS- 502 DOP-C02-H013

KSC FORM 23-1 (2/66)

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

1. TEST TITLE

PROPELLANT UTILIZATION CALIBRATION AND FUNCTIONAL TEST

2. KSC TEST NO.

11. VEHICLE EFFECTIVITY

AS- 502

12. WHERE TEST PERFORMED

HIGH BAY AND/OR PAD

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

14. EST. TEST TIME

15. TEST CONFIGURATION

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
[X] 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
[ ]	[ ]	[ ] 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

LH2 MOBILE LAUNCHER RELIEF VALVE CHECKOUT PROCEDURE

2. KSC TEST NO.

V-25152-ML

3. STAGE, VEHICLE OR GSE

GSE

4. TEST OBJECTIVES

TO VERIFY CORRECT SETTINGS OF THE LH2 SYSTEM RELIEF VALVES;
FIND NOS. A1571, A3382, A3437, A3383, A3438.

5. TEST DESCRIPTION/EQUIPMENT STATUS

A. PROVIDE FOR PURGE DURING REMOVAL.
B. REMOVE RELIEF VALVE FROM SYSTEM.
C. CAP LINE AND VALVE END TO PROTECT CLEANLINESS.
D. BENCH CHECK TO DETERMINE THE RELIEF PRESSURE.
E. CHECK FOR PROPER RESEAT.
F. RESET OR REPAIR AS NECESSARY.
G. REPLACE IN SYSTEM AND LEAK CHECK.

PROCEDURE SET-UP AND CONDITIONS:

THIS TEST WILL BE COMPLETED PRIOR TO VEHICLE LOADING AND WILL REQUIRE ENTRY IN THE SYSTEM.

GSE AND SPECIAL MATERIALS REQUIRED:

PRESSURE TEST PANEL
GN2 SUPPLY (PORTABLE)
TEST FIXTURES

Activation

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
J. M. Kramer J. M. KRAMER	Robert G. Ward ROBERT G. WARD	AUGUST 1, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC M&PS/FUELS	LVO-341	AS- 502 (TEST)

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2
1. TEST TITLE LH2 MOBILE LAUNCHER RELIEF VALVE CHECKOUT PROCEDURE	2. KSC TEST NO. V-25152-ML 11. VEHICLE EFFECTIVITY AS- 502 (TEST)

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
COMPLEX 39A	NONE	

15. TEST CONFIGURATION
STANDBY

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:

NONE

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

6G-172

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

RP-1 MOBILE LAUNCHER RELIEF VALVE TEST

2. KSC TEST NO. V-25155-ML
V-25155-ML

3. STAGE, VEHICLE OR GSE
LUT

4. TEST OBJECTIVES

TO VERIFY THAT THE RP-1 SYSTEM RELIEF VALVES RELIEVE AT THE PROPER PRESSURES. F/N'S A4061, A4063, A4159.

5. TEST DESCRIPTION/EQUIPMENT STATUS

A. REMOVE THE VALVES FROM THE SYSTEM AND CONNECT TO SUITABLE TEST APPARATUS.

B. PNEUMATICALLY ACTUATE VALVES TO VERIFY PROPER RELEIF.

C. REINSTALL.

PROCEDURE SET-UP AND CONDITIONS:

PERFORM PRIOR TO RP-1 MOBILE LAUNCHER LINE LEAK CHECK PROCEDURE.

GSE AND SPECIAL MATERIALS REQUIRED:

PNEUMATIC SUPPLY

REGULATOR TEST PANEL

Activation

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
R. L. Westmoreland R. L. WESTMORELAND	Robert G. Ward Jr ROBERT G. WARD	JULY 11, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC-M&PS-FUELS	LVO-341	AS- 502 (TEST)

KSC FORM 23-191 (2/66)

A

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

1. TEST TITLE	2. KSC TEST NO.
RP-1 MOBILE LAUNCHER RELIEF VALVE TEST	V-25155-ML
	11. VEHICLE EFFECTIVITY AS- 502 (TEST)

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
LC 39A	NONE	

15. TEST CONFIGURATION
STANDBY

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:
NONE

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

6G-175

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

SATURN S-IVB/V PNEUMATIC CONSOLES AND HEAT EACHANGER CHECKOUT

2. KSC TEST NO.

V-26002-ML

3. STAGE, VEHICLE OR GSE

S-IVB GSE

4. TEST OBJECTIVES

THIS DOCUMENT ESTABLISHES THE PROCEDURES REQUIRED TO VERIFY THAT THE S-IVB/V STAGE PNEUMATIC CONSOLES AND HEAT EXCHANGER ARE COMPLETELY OPERATIONAL.

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 AND FUNCTIONALLY CHECK ALL CONSOLE SOLENOID VALVES, RELIEF VALVES, CHECK VALVES, AND PRESSURE REGULATORS.

D. PRESSURE AND LEAK CHECK ALL CONSOLE 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

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

1. TEST TITLE	2. KSC TEST NO.
SATURN S-IVB/V PNEUMATIC CONSOLES AND HEAT EXCHANGER CHECKOUT	V-26002-ML
	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
N/A

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:

(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 UMBILICAL LINE BLOWDOWN

2. KSC TEST NO.

S-V-26003-ML

3. STAGE, VEHICLE OR GSE

S-IVB GSE

4. TEST OBJECTIVES

THIS DOCUMENT ESTABLISHES THE PROCEDURES REQUIRED TO VERIFY THE "END-TO-END" CLEANLINESS OF ALL S-IVB/V UMBILICAL PNEUMATIC LINES PRIOR TO MATING THE UMBILICALS TO THE STAGE.

5. TEST DESCRIPTION/EQUIPMENT STATUS

A. BLOWDOWN THE PNEUMATIC LINES FROM THE PNEUMATIC CONSOLES TO THE UMBILICAL CARRIER.

B. TAKE AND ANALYZE PARTICLE SAMPLES OF EACH 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 UMBILICAL LINE BLOWDOWN	2. KSC TEST NO. S-V-26003-ML 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.)
[ ] 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:

(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 APS PNEUMATIC CONSOLE CHECKOUT

2. KSC TEST NO.

V-26005-ML

3. STAGE, VEHICLE OR GSE

S-IVB GSE

4. TEST OBJECTIVES

THIS DOCUMENT ESTABLISHES THE CHECKOUT PROCEDURES NECESSARY TO VERIFY THAT THE APS PNEUMATIC CONSOLE (MODEL 436A) IS COMPLETELY OPERATIONAL.

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 CONSOLE PRESSURE TRANSDUCERS AND CALIBRATE THEIR CORRESPONDING LCC PANEL METERS AND STRIP CHART.

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

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

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
R. W. BOWMAN	[illegible]	9-8-66
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 SATURN S-IVB/V APS PNEUMATIC CONSOLE CHECKOUT	2. KSC TEST NO. V-26005-ML 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
N/A

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.)
[ ] 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
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[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

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 PNEUMATIC CONSOLE TRANSDUCER AND METER CALIBRATIONS

2. KSC TEST NO.
V-26006-GSE39

3. STAGE, VEHICLE OR GSE
S-IVB GSE

4. TEST OBJECTIVES

THIS DOCUMENT ESTABLISHES THE PROCEDURES FOR CALIBRATING THE PNEUMATIC CONSOLE LCC PANEL METERS AND STRIP CHART RECORDERS THAT ARE REQUIRED FOR MONITORING AND EVALUATING THE PNEUMATIC CONSOLE SYSTEMS.

5. TEST DESCRIPTION/EQUIPMENT STATUS

CALIBRATE THE PNEUMATIC CONSOLE LCC PANEL METERS AND STRIP CHART RECORDERS 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 PNEUMATIC CONSOLE TRANSDUCER AND METER CALIBRATIONS	V-26006-GSE39
	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
N/A

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.)
[ ] 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
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[ ]	[ ]	[ ]

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

GENERAL OPERATING PROCEDURE
MODEL A7-119 SET PORTABLE HELIUM
LEAK DETECTOR

2. KSC TEST NO.

V-26009-GSE 39

3. STAGE, VEHICLE OR GSE

S-II GSE

4. TEST OBJECTIVES

The purpose of this unit is to detect the presence of Helium Gas in air and to measure the equivalent leakage rate of Helium Gas in air from $1x10^{-3}$ cc/sec.

5. TEST DESCRIPTION/EQUIPMENT STATUS

Unit will be used throughout checkouts and systems operation to determine Helium Leakage and rate.

Prerequisites are:

a) Helium leak detector pressurized.
b) Helium calibrator assembly charged.
c) Battery packs charged.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
R.T. Russ	N/A	28 June 1966
7. ORGANIZATION	**9. ORGANIZATION**	**11. VEHICLE EFFECTIVITY**
Mechanical & Propulsion	N/A Group	AS-501 thru 510 GOP-C-G056

KSC FORM 23-191A (2/66)

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

1. TEST TITLE	2. KSC TEST NO.
GENERAL OPERATING PROCEDURE MODEL A7-119 SET, PORTABLE HELIUM LEAK DETECTOR	V-26009-GSE 39
	11. VEHICLE EFFECTIVITY AS- 501 thru 510

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
Low Bay, High Bay, Pad 39	N/A	N/A

15. TEST CONFIGURATION

N/A

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

KSC OPERATIONS **APOLLO/SATURN TEST CATALOG**	PAGE 1 OF 2
1. TEST TITLE Holddown Arm System LCC Integration	2. KSC TEST NO. V-26041-ML 3. STAGE, VEHICLE OR GSE GSE

4. TEST OBJECTIVES

To simultaneously retract the Holddown Arm Upper Links by operating the LCC Holddown Arm Panel in the manual mode to prove:

1. LCC/LUT Holddown Arm System end to end firing circuit compatibility.
2. The Holddown Arm Integrated System operates within the specified design limits.
3. The selected functions within the system can be manually controlled and monitored.
4. The switch over from local (LUT) to remote (LCC) will function within the design specifications.

5. TEST DESCRIPTION/EQUIPMENT STATUS

Test Description:

This test provides for remote holddown arm retraction after integration of LCC and LUT Control Systems. Through manual switch operation of the LCC Holddown Arm Control Panel, discrete signals are sent to the LUT Holddown Arm Release Panel to direct helium, under pressure, to disconnect the separation link of the pneumatic separators permitting the holddown arms to retract simultaneously.

Status:

1. Prerequisites:

   A. Test equipment installed and certified.
      1) Esterline Angus Event Recorder.
      2) Digital Event Evaluator (DEE).
   B. Holddown Arm Sub-System Functional Test V-26043-ML complete.
   C. All LUT and LCC Associated GSE and ESE Wiring and Control Devices functionally tested at sub-systems and system level.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY T. Poweleit 7/26/66	8. NASA-KSC APPROVAL W. C. Rainwater	10. APPROVAL DATE 21 July 66
7. ORGANIZATION BATC-M&PS-LSS	9. ORGANIZATION LVO-32	11. VEHICLE EFFECTIVITY AS- 502 Activation

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

1. TEST TITLE	2. KSC TEST NO.
Holddown Arm System LCC Integration	V-26041-ML
	11. VEHICLE EFFECTIVITY: AS-502 Activation

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
Pad 39A	N/A	

15. TEST CONFIGURATION
Vehicle Vertical

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	[X] 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
[X] 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
[ ]	[ ]	[ ] 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

Holddown Arm System Functional Test

2. KSC TEST NO.

V-26042-ML

3. STAGE, VEHICLE OR GSE

GSE

4. TEST OBJECTIVES

To retract the Holddown Arms using the Launcher Accessories Test Set #2 to prove:

1. Combined Holddown Arm Release monitoring Circuit Operation.
2. System compatability of the Holddown Arm Release Panel.
3. The time measurements from Release Command to actual retract of the Holddown Arms, when released simultaneously, meets the design s specifications.

5. TEST DESCRIPTION/EQUIPMENT STATUS

Test Descriptions:

This test provides for local retraction of the four (4) Holddown Arm Linkage Assemblies simultaneously. By manual operation of the Launcher Accessories Test #2, discrete signals are sent to the Holddown Arm Release Panel to direct helium, under pressure, to each Holddown Arm Separator. The helium pressure drives the Separator Pneumatic Pistons forward allowing the separation link retainer balls to position in recesses provided in the pistons. The separation links disconnect from the pneumatic cylinders permitting the four (4) Holddown Arm Linkage Assemblies to retract.

Status:

1. Prerequisites:

   A. Test equipment installed and calibrated.
      1) Esterline Angus Event Recorder.
      2) Launcher Accessories Test Set #2 75M11087 (checked out per 1-BLGSEV-3030).
      3) Portable DC Power Supply (75M51116).

   B. Holddown Arm Sub-System Functional Test V-26043-ML complete.

   C. Area cleared of personnel not required to support the test.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
T. Poweleit	W. C. Rainwater	21 July 66
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC-M&PS-LSS	LVO-32	AS- 502 Activation

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2
1. TEST TITLE Holddown Arm System Functional Test	2. KSC TEST NO. V-26042-ML 11. VEHICLE EFFECTIVITY AS- 502 Activation

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
PAD 39A	N/A	

15. TEST CONFIGURATION
Vehicle Vertical

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
☒ ISS Electrical	☐	☐ FOOD SERVICE
☐	☐	☐
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☐	☐	☐
☐	☐	☐

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 Holddown Arm Sub-System Functional Test	2. KSC TEST NO. V-26043-ML 3. STAGE, VEHICLE OR GSE GSE

4. TEST OBJECTIVES

To retract the Holddown Arm using the Launcher Accessories Test Set #2 to prove:

1. The Holddown Arm Release Panel Operation.
2. The Holddown Arm Release Indicator Monitoring Circuit Operation.
3. The time measurements from Release Command to actual retract meets the design specification.

5. TEST DESCRIPTION/EQUIPMENT STATUS

Test Description:

This test provides for local retraction of the Holddown Arm Linkage Assembly. By manual operation of the Launcher Accessories Test Set #2, discrete signals are sent to the Holddown Arm Release Panel to direct helium, under pressure, to the Pneumatic Separator in the Holddown Arm. The helium pressure drives the Separator Pneumatic Piston forward allowing the separation link retainer balls to position in recesses provided in the piston. The separation link disconnects from the pneumatic cylinder permitting the holddown linkage to retract.

Status:

1. Prerequisites:

   A. Test equipment installed and calibrated.
      1) Esterline Angus Event Recorder.
      2) Launcher Accessories Test Set #2 (checked out per 1-BLGSEV-3030).
      3) Portable DC Power Supply (75M51116).
   B. Holddown Arm Manual Motion Checkout Procedure V-26044-ML complete.
   C. Holddown Arm Preloading Procedure V-26046-ML complete.
   D. Holddown Arm Release Panel Checkout Procedure V-26045-ML complete.
   E. Area cleared of personnel not required to support the test.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
T. Poweleit T. Poweleit 7/26/66	W. C. Rainwater W. C. Rainwater Chief	21 July 66
7. ORGANIZATION	**9. ORGANIZATION**	**11. VEHICLE EFFECTIVITY**
BATC-M&PS-LSS	LVO-32	AS- 502 Activation

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

1. TEST TITLE	2. KSC TEST NO.
Holddown Arm Sub-System Functional Test	V-26043-ML
	11. VEHICLE EFFECTIVITY AS- 502 Activation

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
Pad 39A	N/A	

15. TEST CONFIGURATION
Vehicle Vertical

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
☒ LSS Electrical	☐	☐ FOOD SERVICE
☐	☐	☐
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☐	☐	☐
☐	☐	☐

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 Holddown Arm System Manual Motion Check	2. KSC TEST NO. V-26044-ML 3. STAGE, VEHICLE OR GSE GSE

4. TEST OBJECTIVES

To manually cycle the Holddown Arm Linkage using the Holddown Arm Winch System to prove:

1. Combined upper, center, and lower link compatibility.
2. No interference exists between the linkage and components including associated cabling and plumbing installed in the Holddown Arm.
3. Position and alignment of the upper link striker plate with the shock absorber.

5. TEST DESCRIPTION/EQUIPMENT STATUS

Test Description:

The winch cable is attached to the lower link. The separation link is disconnected from the pneumatic cylinder. A manual extension and retraction cycle is performed using the Holddown Arm Winch System. The cycling operation in visually monitored through the Holddown Arm Access Doors to assure Test Objectives are met.

Status:

1. Prerequisites:

   A. Holddown Arm Work Platforms installed.
   B. Pneumatic Separator Housing cover open.
   C. Winch Cable connected to the Lower Link Assembly.
   D. All Holddown Arm Internal GSE and Associated Plumbing and ESE and Associated Cabling installation complete.
   E. Holddown Arm Shock Absorber installed.
   F. Area cleared of Personnel not required to support the test.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6 EPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
T. Poweleit T. Poweleit	Donald L. Trouille for W. C. Rainwater	21 Mar 66
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC-M&PS-LSS	LVO-32	AS- 502 Activation

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2
1. TEST TITLE Holddown Arm System Manual Motion Check	2. KSC TEST NO. V-26044-ML 11. VEHICLE EFFECTIVITY AS- 502 Activation

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

15. TEST CONFIGURATION
N/A

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
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☐	☐	☐

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 Holddown Arm Release Panel Checkout	2. KSC TEST NO. V-26045-ML 3. STAGE, VEHICLE OR GSE GSE

4. TEST OBJECTIVES

To prove the Holddown Arm Release Panel is properly installed and functionally ready to be used in running the Holddown Arm Sub-System functional test.

5. TEST DESCRIPTION/EQUIPMENT STATUS

Test Description:

Pressurize the Holddown Arm Release System through the Holddown Arm Release Panel to perform leak tests and to verify function of pneumatic system components.

Status:

A. Launcher Accessories Test Set #2 available.
B. Portable DC Power Supply (75M51116) available.
C. 1500 PSI He available at Valve Panel 11.
D. Sherwood Leak Detector available.

743

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
T. Powelei 7/26/6	W. C. Rainwater	21 July 66
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC- M&PS-LSS	LVO-32	AS- 502 Activation

KSC FORM 23-191 (2/66)

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2
1. TEST TITLE Holddown Arm Release Panel Checkout	2. KSC TEST NO. V-26045-ML 11. VEHICLE EFFECTIVITY AS-502 Activation

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

15. TEST CONFIGURATION
N/A

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
☒ LSS Electrical	☐	☐ FOOD SERVICE
☐	☐	☐
☐	☐	☐
☐	☐	☐ 744
☐	☐	☐

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 Holddown Arm Upper Link Preloading Procedure	2. KSC TEST NO. V-26046-ML 3. STAGE, VEHICLE OR GSE GSE

4. TEST OBJECTIVES

To preload the Holddown Arm Upper Link Assembly for Space Vehicle retention on the LUT.

5. TEST DESCRIPTION/EQUIPMENT STATUS

Test Description:

The Upper Link Torque Device is installed on the Holddown Arm Pneumatic Separator Housing. 2000 ± 100 PSIG of hydraulic pressure is applied to the torque device to obtain a down load of 700 kips of the Upper Link Assembly to the S-IC Stage Thrust Ring. The 700 kip down load must occur when there is a 1-7/8 in. eccentricity in the lower and center link center lines. To meet this requirement, shims are installed or removed on the Upper Link Pad Assembly as required. After satisfying the preload requirements, the Pneumatic Separator Spherical & Jam Nuts are torqued to 35 ± 15 ft.-lbs. prior to releaving the 2000 ± 100 PSIG of hydraulic pressure from the Upper Link Torque Device.

Status:

1. Prerequisites:

   A. Upper Link Torque Device installed with a valid calibration pressure gage installed in the lines.
   B. Pneumatic separation installed in the Holddown Arm.
   C. Holddown Arm Platforms installed.
   D. Quality Control Support.
   E. S-IC stage or simulator positioned on Holddown Arm.
   F. Pneumatic Separator Nut Adapter available.
   G. Calibrated Torque Wrench (100 ft.-lbs.).
   H. Upper Holddown Arm Link extended.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
T. Poweleit T. Poweleit 7/26/66	W. C. Rainwater W. C. Rainwater EH	21 July 66
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC-M&PS-LSS	LVO-32	AS- 502 Activation

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2
1. TEST TITLE Holddown Arm Upper Link Preloading Procedure	2. KSC TEST NO. V-26046-ML 11. VEHICLE EFFECTIVITY AS-502 Activation

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

15. TEST CONFIGURATION
S-IC Stage Vertical

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
☐	☐	☐
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☐	☐	☐

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 Service Arm Control Switch System LCC Integration	2. KSC TEST NO. V-26047-ML 3. STAGE, VEHICLE OR GSE GSE

4. TEST OBJECTIVES

To prove the Service Arm Control Switch System functionally ready to support a launch operation.

5. TEST DESCRIPTION/EQUIPMENT STATUS

Test Description:

Operation of the Service Arm Control Switches by application of pneumatic pressure from the pneumatics distributor controlled from the LCC Firing Room.

Satus:

1. Prerequisites:

A. Service Arm Control Switch Sub-System Functional Test V-26048-ML complete.
B. 750 PSI GN_2 Available at Valve Panel #11.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
T. Poweleit T. Poweleit	W. C. Rainwater W. C. Rainwater	21 July 66
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC-M&PS-LSS	LVO-32	AS-502 Activation

KSC FORM 23-191 (2/66)

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

1. TEST TITLE	2. KSC TEST NO.
Service Arm Control Switch System LCC Integration	V-26047-ML
	11. VEHICLE EFFECTIVITY
	AS- 502 Activation

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
PAD 39A	N/A	

15. TEST CONFIGURATION
N/A

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
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OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION