1. PROJECT CODE	2. JPIC CODE	TASK PERFORMANCE SHEET
SA-AMS	AMS	NASA - LYNDON B. JOHNSON SPACE CENTER

3. TYPE				4. TPS NO.	5. PAGE		6. MOD SHEET(S) NUMBER(S)	7. ORG.	8. SYSTEM	9. NEED DATE
A	CONFIGURATION CHANGE	☒		2A0720061	1	OF 9		EA	AMS	3/19/07
	PERMANENT ☒	TEMPORARY ☐								
B	NONCONFIGURATION CHANGE	☐								

10. PART NAME	11. PART NO./DRAWING NO.	12. SERIAL/LOT NO.	13. TIME/CYCLE/SHELF LIFE
Upper USS-02/Payload Shipping	SEG38116929	N/A	☐ YES ☒ NO

14. APPLICABLE DOCUMENTS	15. CONTRACT NO./JOB NO.	16. HAZ. TEST	17. ENG. EVAL.
N/A	NNJ05H105C	☐ YES ☒ NO	☐ YES ☒ NO

18. SHORT TITLE OF TPS	19. ADP UPDATE
Installation of VC STA into Upper USS-02	☐ YES ☒ NO

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
1.	Open this TPS. **The Jacobs Project Engineer on site has the option to reorder steps in order to facilitate the logistics of moving around this large hardware.** **All hardware removed during the performance of this TPS shall be bagged and tagged to identify their P/N and S/N or Lot# if applicable.** **<u>This TPS is to install the STA VC into the Upper USS-02</u>**		3.17
2.	Reconfigure (if necessary) the Multi-Purpose Lifting Fixture (MPLF) to the SEG38117125-313 VC Hoisting 45 Degree Configuration. NOTE: Support the MPLF on jack stands while reconfiguring the drop slings.		3.1
	<u>WARNING</u> **THE FOLLOWING STEPS INVOLVE HAZARDOUS CRITICAL LIFTING OPERATIONS.**		
3.	Suspend the MPLF over the STA VC.		3.18D
4.	Attach the MPLF drop slings to the VC Lifting Blocks. Torque the swivel hoists to 60 ft-lbs. Torque wrench M#: 213884 and due date 6/24/07.		3.18

24. ORIGINATOR	DATE	25. FINAL ACCEPTANCE STAMP AND DATE
Joe Kastelic		

APPROVALS *(Printed or Typed and Signed)*

26. PROJECT ENGINEER	DATE	27. QUALITY ENGINEER	DATE
Joe Kastelic		Steve Caldwell	
28.		29.	
30.		31.	

TASK PERFORMANCE SHEET

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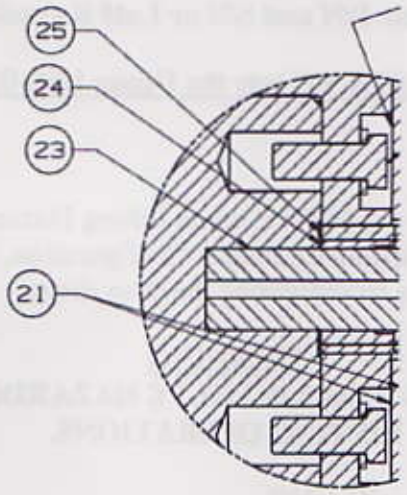
4. TPS NO. 2A0720061

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
	Record the actual final torque here: Bolt# Final Torque 1. 60.2 2. 60.1 3. 60.3 4. 57.0		
5.	Install the one (1) Shear Pin, Upper VC Joint P/N SDG39135755-005, item 23 in Figure 1; Bushing, Inner SML VC Joint P/N SDG39135757-001, item 24; Bushing, Outer SML VC Joint P/N SDG39135757-003, item 25, into each of the four (4) VC Upper Interface Plates as shown on the Upper USS-02 Assembly drawing P/N SEG39135726-302.		
			
	Figure 1		
6.	Install the one (1) Shear Pin, Lower VC Joint P/N SDG39135755-001, item 22 in Figure 2; Bushing, Inner SML VC Joint P/N SDG39135757-001, item 24; Bushing, Outer SML VC Joint P/N SDG39135757-003, item 25, into each of the four (4) VC Lower Interface Plates as shown on the Upper USS-02 Assembly drawing P/N SEG39135726-302.		

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20. OPER SEQ. NO	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

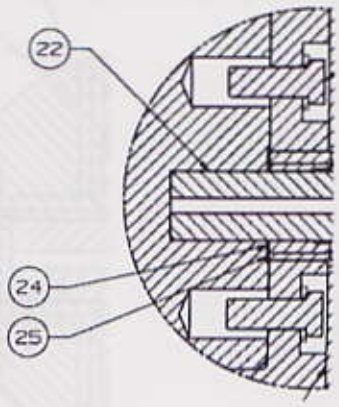

Figure 2

7. Remove the four (4) Shear Pin, Upper VC Joint P/N SDG39135755-005 and four (4) Shear Pin, Lower VC Joint P/N SDG39135755-001. NOTE: Retain the parts removed in this step as they will be reinstalled in a later step.

8. Lift the VC, orient it relative to the Upper USS-02 per SEG39135726-302 and lower it into USS-02, line up holes on the USS joints with the inserts on the VC. Insert spacers and shims between the VC interface plates and Pedestals to support the VC at the appropriate height.

9. Install the eight (8) Bolts, Altered Item P/N SDG39135892-809, item 50 in Figure 3; Washers CSK P/N NAS1587-8C, item 40; Washers, Flat P/N NAS1149E0816R, item 45; two (2) Shims, Upper VC Joint P/N SDG39135754-801; one (1) Shear Pin, Upper VC Joint P/N SDG39135755-005; Bushing, Outer LG Upper VC Joint P/N SDG39135757-015, item 33 in Figure 4; Bushing, Inner LG Upper VC Joint P/N SDG39135757-013, item 32, into each of the four (4) Upper USS Joints of the Upper USS-02 Assembly per drawing P/N SEG39135726-302. Install two (2) Counter Sink Washer Upper USS Joint, SDG39135748-003, item 54 in Figure 3, in place of standard counter sink washers and flat washers. Peel or add shim as necessary to center the VC between the joints.

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4. TPS NO. 2A0720061

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

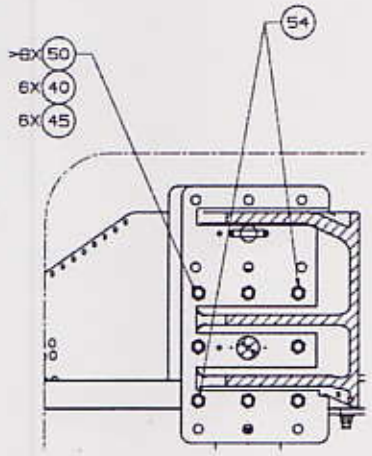

Figure 3

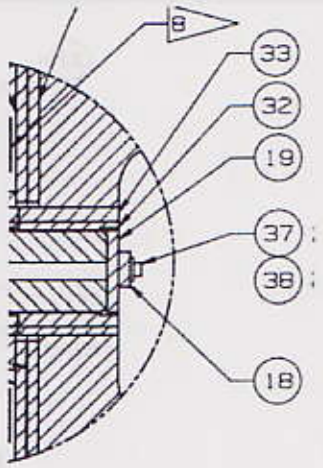

Figure 4

10. Apply Grease, Braycote 601EF to the threads of each bolt prior to installation.

Record Lot# 86440 Exp. Date 3/24/2026.
Torque the fasteners installed in the previous step per the Upper USS-02 Assembly drawing P/N SEG39135726-302. Torque wrench M#: 86440 and due date 6/26/07. Locking torque shall be 16-220 in-lb, and final torque shall be 81.7-86.0 ft-lb above locking torque. Record the actual locking and final torque here:

Bolt#	Locking Torque	Final Torque
1	5	88.3
2	6	90.0
3	4	86.4
4	4	86.4
5	4	86.4
6	6	89.2
7	5	87.7
8	8	92.8
9	5	88.1
10	6	88.6
11	6	91.6
12	4	87.3
13	4	88.0
14	6	89.9
15	4	86.9
16	5	87.9
17	5	88.7
18	5	88.0
19	5	87.5

P1 1 2 3
4 5
6 7 8

4 3.26.07

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4. TPS NO. 2A0720061

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)			22. TECH	23. QA/DV
	20	4	87.9		
	21	5	87.2		
	22	6	88.5		
	23	5	~~87.9~~ 88.0		
	24	5	87.5 88.8		
	25	7	~~91.6~~ 87.9		
	26	6	~~89.7~~ 87.5		
	27	6	~~88.9~~ 91.6		
	28	5	~~90.8~~ 89.7		
	29	4	~~86.5~~ 88.9		
	30	5	90.8		
	31	6	86.5		
	32	7	91.3		

11. Install ten (10) Bolts, Altered Item P/N SDG39135892-811, item 41 in Figure 5, Washers CSK P/N NAS1587-8C, item 40, and two (2) Shims, Lower VC Joint P/N SDG39135752-801, item 20 in Figure 6; Bushing, Outer LG Lower VC Joint P/N SDG39135757-007, item 31 in Figure 6; Bushing, Inner LG Lower VC Joint P/N SDG39135757-005, item 30, into each of the four (4) Lower USS Joints of the Upper USS-02 Assembly per drawing P/N SEG39135726-302. Install two (2) Counter Sink Washer Lower USS Joint, SDG39135748-002, item 34 in Figure 5, in place of standard counter sink washers and flat washers. Peel or add shim as necessary to center the VC between the joints. — # 3-20-07

(Margin note: As per the ASS. PRK [illegible])

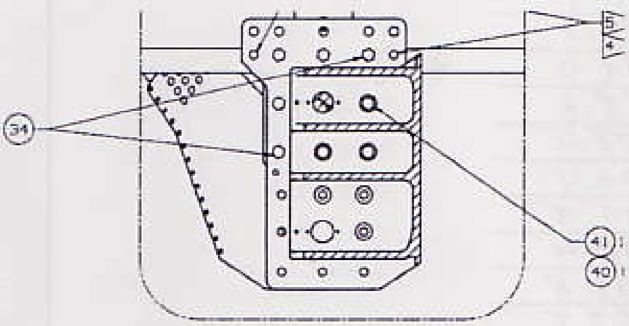

Figure 5

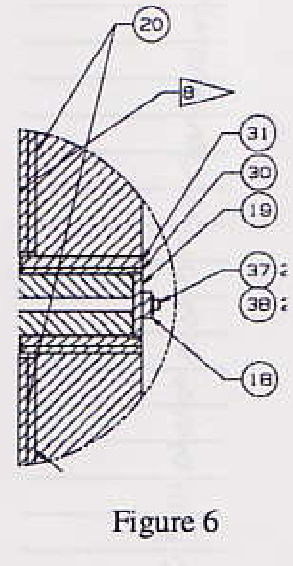

Figure 6

12. Apply Grease, Braycote 601EF to the threads of each bolt prior to installation. — # 3-20-07

Record Lot# 864416 Exp. Date 3/29/2026.

Torque the fasteners installed in the previous step per the Upper USS-02 Assembly drawing P/N SEG39135726-302. Torque wrench M#: 213884 and due date 06/26/07. Locking torque shall be 16-220 in-lb, and final

5. Page 6 of 9

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4. TPS NO. 2A0720061

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

torque shall be 81.7-86.0 ft-lb above locking torque. Record the actual locking and final torque here:

Bolt#	Locking Torque	Final Torque	
1	13 165 in lb	~~95.9~~ 95.2	P4
2	12 145	~~94.9~~ 94.9	
3	12 142	~~96.4~~ 95.5	
4	5 64	~~85.0~~ 84.0	1 2 3 4 5
5	7 97	~~88.8~~ 90.7	
6	4 55	~~89.2~~ 89.9	6 7
7	4 58	~~87.3~~ 86.5	
8	7 88	~~89.1~~ 89.9	8 9 10
9	10 125	~~94.7~~ 93.8	
10	12 126 in	94.3	
11	10	92.2	P3
12	7	89.9	
13	7	90.5	
14	6	88.7	
15	8	90.5	
16	4	87.0	
17	7	90.0	
18	6	89.0	
19	8	91.6	
20	8	90.7	
21	7	89.3	
22	9	91.0	P2
23	6	88.7	
24	6	88.4	
25	7	91.4	
26	8	91.1	
27	7	90.4	
28	7	90.8	
29	5	87.5	
30	6	88.8	P1
31	8	92.0	
32	6	89.7	
33	5	88.4	
34	5	88.7	
35	2	~~90.2~~ 84.1	
36	4	88.8	
37	5	88.0	
38	5	88.5	
39	5	88.7	
40	4	88.1	

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4. TPS NO. 2A0720061

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
13.	Install one (1) Plate, Bushing P/N SDG39135749-001, item 18 in Figure 4 or 6; one (1) Shim, Bush Plate P/N SDG39135751-801, item 19; two (2) Screw, SCH HD P/N NAS1352N02-6, item 37, and two (2) Washers, flat P/N NAS1149EN232R, item 38, for each of the shear pins previously installed per Upper USS-02 Assembly drawing SEG39135726-302.		
14.	Torque the screws installed in the previous step per Upper USS-02 Assembly drawing SEG39135726-302. Torque wrench M#: 317962V and due date 9/07 * (6 mo after cert). Record the actual final torque here: Ref: Locking torque shall be 0.2 to 2.5 in-lbs. Final torque shall be 3.1 to 3.6 in-lbs above locking torque. .022 NM .28 NM .35 4		
15.	Remove the MPLF drop slings from the VC Lifting Blocks and place the MPLF to the side. The blocks and fasteners are to be bagged and tagged and will be used at a later time.		
16.	Install the Diagonal Strut Assemblies to the STA VC by installing one (1) Cotter Pin P/N MS24665-306, item 55 in Figure 7; one (1) Washer, Flat P/N NAS1149E1632R, item 42; one (1) Washer, CSK, P/N NAS1587-16C, item 39; one (1) Nut, Self Locking, P/N NAS1805-16, item 44; and one (1) Pin, Clevis, VC, Diagonal Bracket P/N SDG39135744-003, item 35, per Upper USS-02 Assembly P/N SEG39135726-302, as seen in Figure 7.		

Bolt#	Locking Torque	Final Torque
1.	.3 1 .1	.4 3.3
2.	.3 1.5 .15	.4 3.3
3.	.3 1 .1	.4 3.3 4U
4.	.3 1.5 .1	.4 3.3 4U
5.	.3 1 .15	.4 3.3 2L
6.	.3 1 .1	.4 3.3 2L
7.	.3 1.5 .15	.4 3.3 1L
8.	.3 1.5 .1	.4 3.3 1L
9.	.3 1.5 .1	.4 3.3
10.	.3 1 .1	.39 3.3
11.	.3 1 .15	.41 3.4
12.	.3 1 .1	.4 3.4
13.	.3 1 .1	.4 3.4
14.	.3 1.5 .15	.41 3.4
15.	.3 1.5 .15	.41 3.4
16.	.3 1.5 .15	.41 3.4

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4. TPS NO.	2A0720061
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

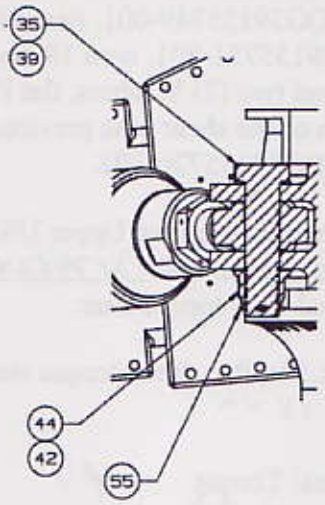

Figure 7

17. Install other end of the Diagonal Strut Assemblies to the USS-02 by installing one (1) Cotter Pin P/N MS24665-306, item 55 in Figure 8; one (1) Washer, Flat P/N NAS1149E1632R, item 42; one (1) Washer, CSK, P/N NAS1587-16C, item 39; one (1) Nut, Self Locking, P/N NAS1805-16, item 44; and one (1) Pin, Clevis, USS-02, Diagonal Bracket P/N SDG39135744-002, item 52, per Upper USS-02 Assembly P/N SEG39135726-302.

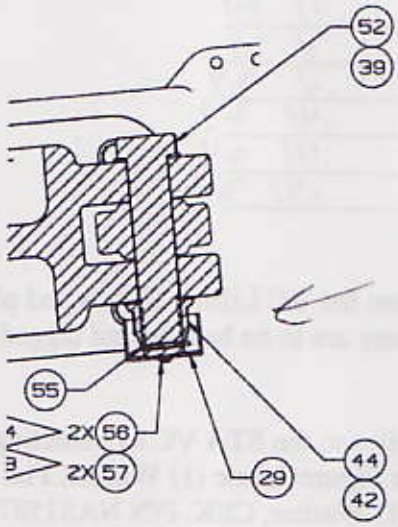

Figure 8

18. Remove the four (4) Intermediate Support Fixtures (ISF) by removing eight (8) NAS1008-10A bolts, **sixteen (16)** NAS1587-8C washers (**2** per bolt) and one (1) ISF Shim P/N Altered Item Drawing P/N SDG38117223-801 per ISF. NOTE:

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4. TPS NO.	2A0720061
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
	The hardware removed in this step will be transferred to controlled storage later in this TPS.		
19.	Close this TPS.		

1. PROJECT CODE	2. JPIC CODE	**TASK PERFORMANCE SHEET**
SA-AMS	AMS	NASA - LYNDON B. JOHNSON SPACE CENTER

3. TYPE				4. TPS NO.	5. PAGE		6. MOD SHEET(S) NUMBER(S)	7. ORG.	8. SYSTEM	9. NEED DATE
A	CONFIGURATION CHANGE		☒	2A0720061M1	1	OF 2				
	PERMANENT	☒ TEMPORARY	☐					EA	AMS	03/20/07
B	NONCONFIGURATION CHANGE		☐							

10. PART NAME	11. PART NO./DRAWING NO.	12. SERIAL/LOT NO.	13. TIME/CYCLE/SHELF LIFE
Upper USS-02/Payload Shipping	SEG38116929	N/A	☐ YES ☒ NO

14. APPLICABLE DOCUMENTS	15. CONTRACT NO./JOB NO.	16. HAZ. TEST	17. ENG. EVAL.
N/A	NNJ05H105C	☐ YES ☒ NO	☐ YES ☒ NO

18. SHORT TITLE OF TPS	19. ADP UPDATE
Installation of VC STA into Upper USS-02	☐ YES ☒ NO

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
1.	Open this MOD.		
2.	Add Step 2.1 with the following notation: Configure the Primary Support Stand (PSS) SEG38117000 by removing on one side of the primary support stand Longitudinal Tie Bar Assembly Left SEG38117007-701 and Longitudinal Tie Bar Assembly Right SEG38117009-701 Bag and Tag the removed fasteners as they will be reinstalled later. Indicate on the bag "Longitudinal Tie Bar Fasteners", and the part number. 32 ~~24~~ Washers NAS1587-8C 32 ~~24~~ Bolts SDG38117090-801 2 Shim SDG38117053-811 2 Shim SDG38117053-813 2 Shim SDG38117053-801 2 shims ?		3.20.07 3.20.07

24. ORIGINATOR	DATE	25. FINAL ACCEPTANCE STAMP AND DATE
Joe Kastelic		

APPROVALS *(Printed or Typed and Signed)*

26. PROJECT ENGINEER	DATE	27. QUALITY ENGINEER	DATE
Joe Kastelic		Steve Caldwell	
28.		29.	
30.		31.	

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4. TPS NO. 2A0720061M1
6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

3. Add Step 18.1 with the following notation:

Reinstall Longitudinal Tie Bar Assembly Left SEG38117007-701 and Longitudinal Tie Bar Assembly Right SEG38117009-701 using the 24 Bolts, SDG38117090-801, the 24 Washers NAS1587-8C, the 2 Shim SDG38117053-811, the 2 Shims SDG38117053-813, and the 2 Shims SDG38117053-801 as removed from step 2.1. Reference SEG38117000 for torque specifications.
Ref: Running Torque shall be 16-220 in-lbs. Locking torque shall be 75-79 ft-lbs.

Apply Grease, Braycote 601EF to the threads of each bolt prior to installation.
Record Lot# 86440 Exp. Date 3/29/2026.
Torque wrench M#: 213987 and due date 06/26/07.
Record the actual final torque here:

Bolt#	Locking Torque	Final Torque
1	2	78.4
2	2	79.0
3	2	79.5
4	2	79.2
5	2	78.3
6	2	78.6
7	2.5	79.2
8	2.5	79.2
9	2.5	79.7
10	2.5	79.5
11	2.5	77.2
12	2	81.0
13	2	79.2
14	2.5	77.7
15	2.5	80.6
16	2	79.4
17	2	78.7
18	2	78.5
19	2.5	81.0
20	2.5	79.5
21	2	77.5
22	2	77.1
23	2	78.2
24	2.5	78.1
25	2	77.9
26	2	77.8
27	2.5	78.0
28	2	78.7
29	2	78.4
30	2	79.5
31	2.5	78.8
32	2.5	78.8

4. Close this MOD.

3.21.07

3.21.07