

~ESCG~

1. PROJECT CODE		2. JPIC CODE		TASK PERFORMANCE SHEET			
SA-AMS		AMS		NASA - LYNDON B. JOHNSON SPACE CENTER			
T Y P E	A	CONFIGURATION CHANGE		<input checked="" type="checkbox"/>	4. TPS NO. 2A0720190		5. PAGE 1 OF 11
	PERMANENT		<input checked="" type="checkbox"/>	TEMPORARY	<input type="checkbox"/>	6. MOD SHEET(S) NUMBER(S)	7. ORG.
	B	NONCONFIGURATION CHANGE		<input type="checkbox"/>			8. SYSTEM EA N/A
10. PART NAME USS-02 Assembly				11. PART NO./DRAWING NO. SEG39135726-302		12. SERIAL/LOT NO. 1001	13. TIME/CYCLE/SHELF LIFE <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
14. APPLICABLE DOCUMENTS N/A				15. CONTRACT NO./JOB NO. NNJ05HI05C		16. HAZ. TEST <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	17. ENG. EVAL. <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
18. SHORT TITLE OF TPS USS-02 Removal from PSS and Placement in RAS at CERN						19. ADP UPDATE <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
20. OPER. SEQ. NO.		21. OPERATIONS (Print, Type, or Write Legibly)				VERIFICATION	
		<p style="text-align: center;">NOTE</p> <p>The Jacobs Project Engineer on site has the option to reorder the steps in order to facilitate the logistics of moving around this large hardware.</p> <p>All hardware removed during the performance of this TPS shall be bagged and tagged to identify applicable P/N, S/N, and Lot#.</p> <p>All lift operations are to be performed by CERN Facility personnel.</p> <p>All fork lift operations are to be performed by CERN Facility personnel.</p> <p style="text-align: center;">CAUTION</p> <p>Take care with lifting operations performed above or near flight hardware during the PSS / USS-02 STA Disassembly</p> <ol style="list-style-type: none"> Open this TPS. Remove the spacer block assembly, SEG38117134-301 (GSE), item 9 in Figure 1. The spacer block assembly is secured to the trunnion pin with a single fastener, NAS1954C96. See Figure 2. Remove the spacer block from all 4 trunnion pins. Check the fastener and nut for signs of damage. If the fastener or the nut shows damage, mark the hardware and remove from service. After removal of the spacer block assembly, re-install the fastener, NAS1954C96, into the spacer block assembly. Torque the fastener and nut to hand tight. Store Spacer block assembly for reuse under another TPS. 				<p style="text-align: center;">ESC PA 82 8-9-07</p> <p style="text-align: center;">ESC TECH 18 8-17-07</p>	
24. ORIGINATOR John Heilig		DATE 8-9-07		25. FINAL ACCEPTANCE STAMP AND DATE			
APPROVALS (Printed or Typed and Signed)							
26. PROJECT ENGINEER John Heilig		DATE 8-9-07		27. QUALITY ENGINEER Steve Caldwell		DATE 8-9-07	
28.				29.			
30.				31.			
				<div style="border: 2px solid black; padding: 5px; display: inline-block;"> ORIGINAL </div>			
				Return to Bldg. <u>10</u>			
				Rm. <u>114</u> QARC			

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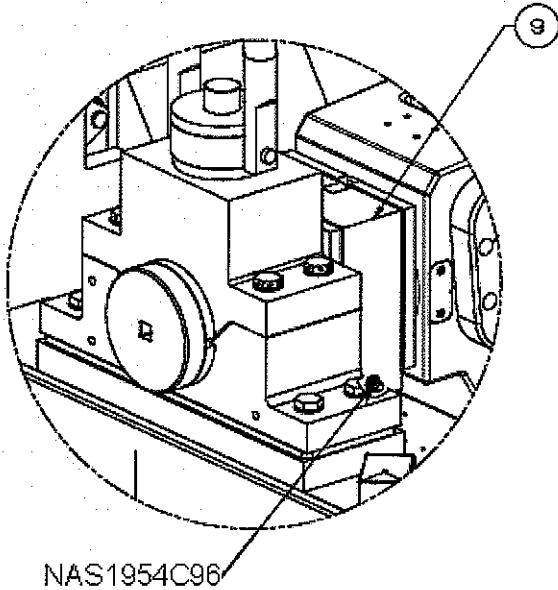


Figure 1

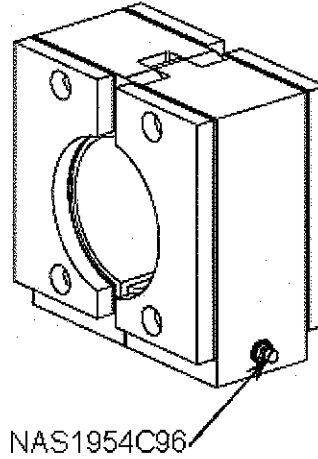


Figure 2

3. Cut the lock wire that secure the bolts, NAS1958C20H, item 5 in Figure 3. Repeat for all four Trunnion Block Assembly, SEG38117010-301 (GSE). Loosen the bolts, item 5, to relieve compression on sleeve bearing, item 3. The top of Trunnion Block Assembly should be free to move. Do not remove the bolts at this time.



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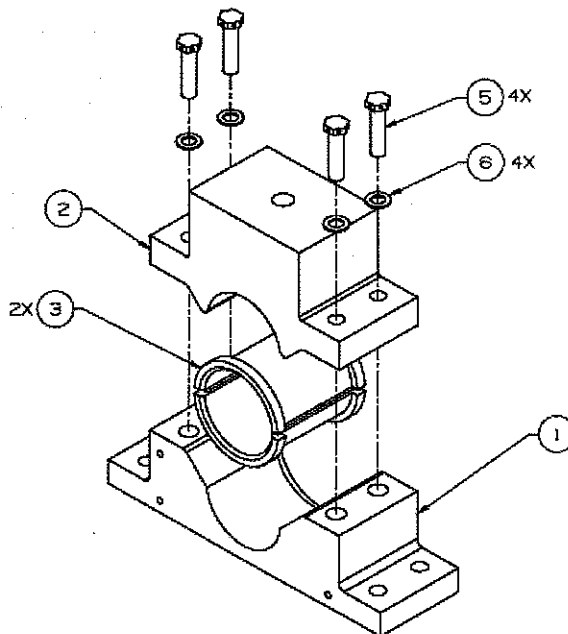


Figure 3

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4. Carefully remove four Sill Trunnion Retainers, SDG38117023-001, item 3 in Figure 4.

Caution: Sill Trunnion retainer threads must be protected from any debris or mechanical damage. Wrap Sill Trunnion retainers in bubble wrap (or similar) and store in a secure cabinet.

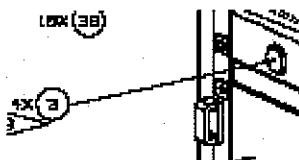


Figure 4



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5. Remove six (6) item 32 the USS-02 interface bolts, NAS1958C25 , twelve (12) item 37 countersink washers, NAS1587-8C, and six (6) item 41 self-locking nuts, NAS1291C8M, that secure the Upper USS-02 Assembly to the pedestal weldment as shown in Figure 5. Repeat for all 4 pedestal weldment. Check the fastener and nut for signs of damage. If the bolt or the nut shows damage, mark the hardware and remove from service. Place the bolts, washers, and nuts in a bag. Mark on bag the location from which the bolts, washers, and nuts were removed.

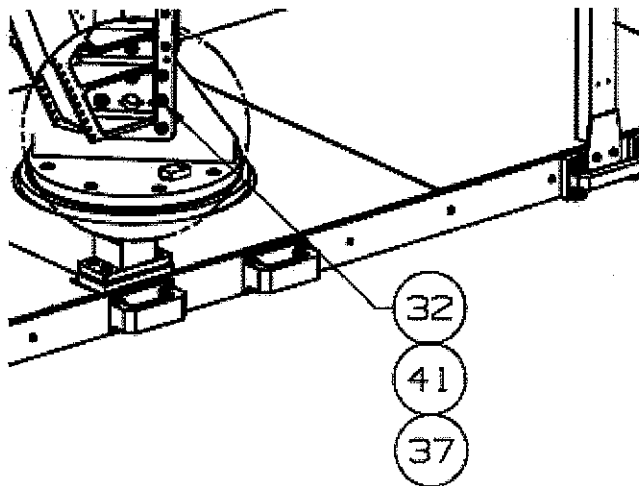


Figure 5



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6. Using Figure 6 as a reference, remove eight (8) item 65 bolts, SDG38117090-801 (C1), eight (8) item 78 washers, NAS1587-8C, and one (1) item 35 pedestal shims, SDG38117053-805 (GSE), used in securing each of the two (2) item 10 Pedestal Weldment A, SEG38117020-701 (GSE), the one (1) item 18 Pedestal Weldment B, SEG38117020-702 (GSE), and one (1) item 63 pedestal weldment C, SEG38117020-703 (GSE). Check the fastener for signs of damage. If the fastener shows signs of damage, mark the hardware and remove from service. Place the bolt, washer, and shims in a bag. Mark on bag the location from which



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the bolts, washers, and shims were removed. Move the Pedestal Weldment to an area designated by integration engineer for storage.

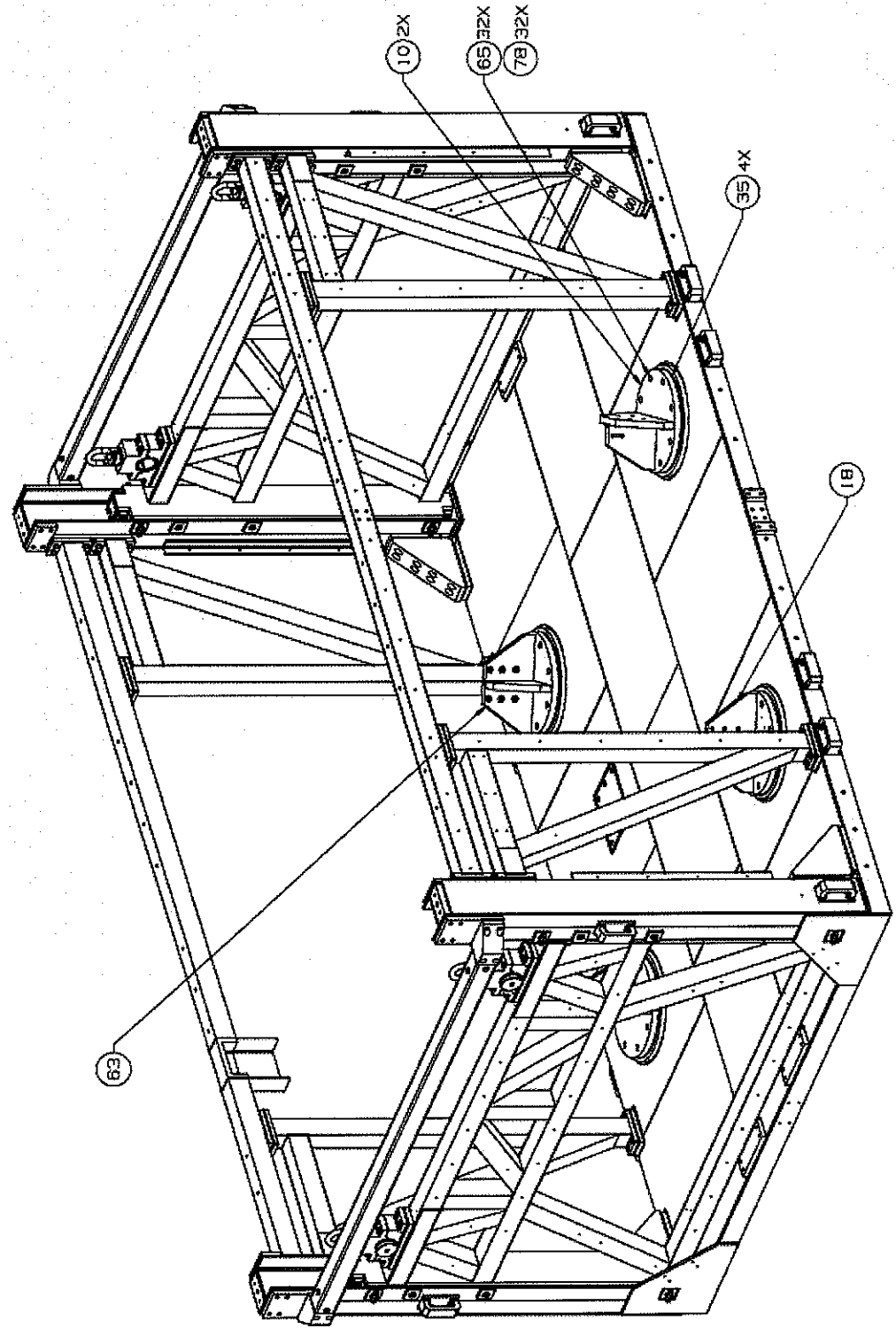


Figure 6

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7. Using Figure 7 as a reference, remove the item 4, Longitudinal Tie-bar Assembly, Left, SEG38117007-701 (GSE), the item 5, Longitudinal Tie-bar Assembly, Right, SEG38117009-701 (GSE), and four (4) item 6 Diagonal Brace Assembly, Short, SEG38117016-701 (GSE). The removal of these components will generate sixty-four (64) bolts, SDG38117090-801 (C1), sixty-four (64) washers, NAS1587-8C, and eight (8) shims, 1/4" Short Shim A1, SDG38117053-801 (GSE), four (4) 1/4" Short Shim A2, SDG38117053-811 (GSE), and four (4) 1/4" Long Shim B2, SDG38117053-813 (GSE). Check the bolts for signs of damage. If the bolts show damage, mark the hardware and remove from service. Place the bolts, washers, and shims that are from each interface in separate bags. Mark on bags the location from which the bolts, washers, and shims were removed.

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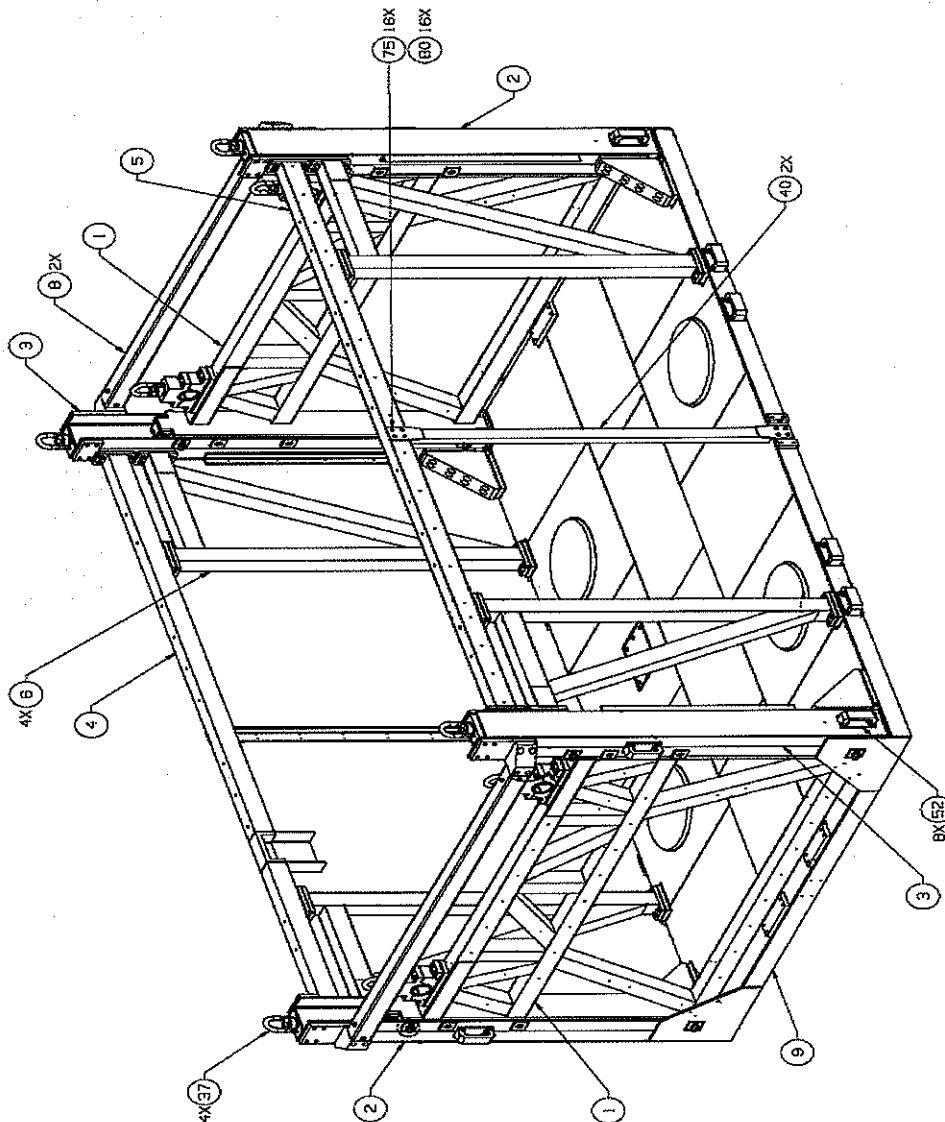


Figure 7: PSS Low Configuration

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8. Remove the bolts, NAS1958C20H, item 5 in Figure 8. Repeat for all four Trunnion Block Assembly, SEG38117010-301 (GSE). Check the bolts for signs of damage. If the bolts show damage, mark the hardware and remove from service. Bag and tag the bolts and washers. Remove the top of Trunnion Block Assembly, item 2 below, and the top of the bearing, item 3. Store these parts with the bolts.

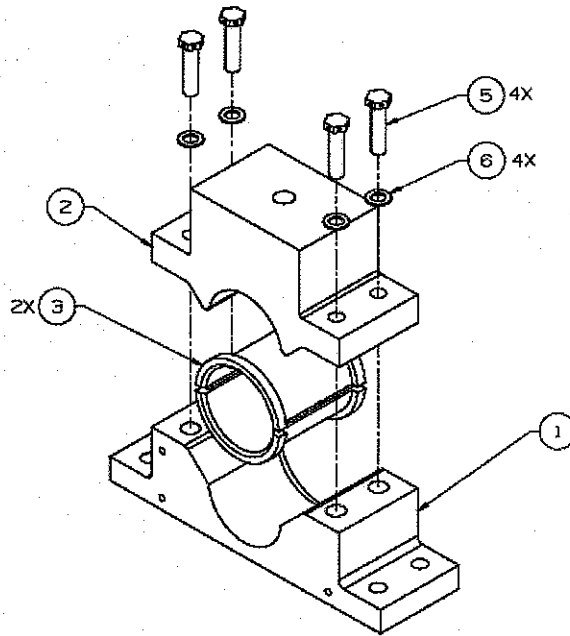


Figure 8

9. Configure the Primary Lifting Fixture (PLF) to USS-02 Lifting Configuration, SEG38117112-309, as shown in Figure 9. Attach the Upper Sling Assembly, SEG38117113-701, item 3, to the Primary Lifting Fixture, SEG38117100-701, item 1, and torque to manufacturer's specification. Attach four (4) Drop Sling Inner B Assembly, SEG38117118-301, item 8 to the Primary Lifting Fixture, SEG38117100-701, item 1. Do not attach the U-Hook Assembly to the Drop Slings.

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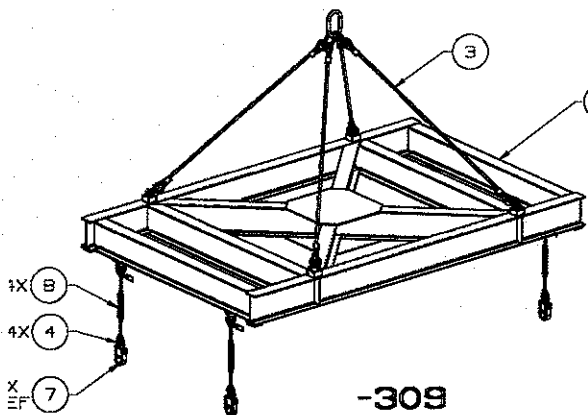


Figure 9

10. Clean the Upper USS, Main STA Radiators, PLF, lifting hardware and tools prior to moving the USS into the cleanroom per AMS-02 Task Sheet

(ATS) MITM 070807-1 Procedure start date 8-21-07

ESCG Designated Verifier (DV) John Hellig

Note: Contact AMS MITeam Engineering as required.

Note: ESCG Designated Verifiers (DV) shall witness and verify all torque applications, confirm the Running (or Run-in) and Final torques, and proper documentation of these torques relative to this procedure and any other sub-process relative to this task. Designated Verifier (DV) shall coordinate with ESCG quality personnel for any additional verification of steps that would normally require a Mandatory Inspection Point or (MIP). ESCG Designated Verifier shall insure compliance with NASA/JSC NT-CWI-001 work instruction.

11. Indicate procedure end date for the Upper USS cleaning, AMS-02 Task Sheet

(ATS) MITM 070807-1 Procedure end date 8-21-07

12. Using Figure 10 as a reference, disassemble the U-Hook Assembly, SEG38117120-301. Remove the cotter pin, MS24665-302, item 8 inserted in each castellated nut, AN310C8, Item 6. Remove the fastener, NAS1958C90D, item 5, castellated nut, AN310C8, item 6 and washer, NAS1149E0863R, item 7. Do not allow the U-hook Bushings, SDG38117123-001, item 3 or the Top Support Block, SDG38117122-001, item 2 to fall after removing the two (2) fasteners. Place the fasteners, nuts, washers, and cotter pin in a plastic bag. Mark on the plastic bag to identify the location from which the hardware was removed.



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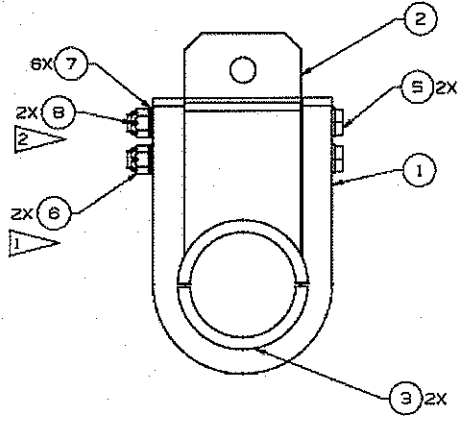


Figure 10

13.

Attach the U-Hook Assembly, SEG38117120-301, to the Sill Trunnion on the Upper USS as shown in Figure 13. Do not install the cotter pin, MS24665-302. Apply a thin layer of Braycote Grease to the threads of each fastener prior to installation. Torque fasteners to 90-304 inch-lbs above running torque. Record the running and final torque. Repeat for all four (4) U-Hooks.

Braycote Grease

PN 601EF Lot# 86440 Exp. Date 03-15-2026

Torque Wrench

PN P3200 M# 213883 Cal Due Date 10/23/07

U-Hook	Running Torque	Final Torque
U-Hook 1		
1.	<u>0</u>	<u>254</u>
2.	<u>0</u>	<u>262</u>
U-Hook 2		
1.	<u>0</u>	<u>254</u>
2.	<u>0</u>	<u>272</u>
U-Hook 3		
1.	<u>0</u>	<u>255</u>
2.	<u>0</u>	<u>252</u>
U-Hook 4		
1.	<u>0</u>	<u>256</u>
2.	<u>0</u>	<u>255</u>

14.

Attach the drop slings from the PLF to the U-hooks as shown in Figure 11, using shackle shown in Figure 12

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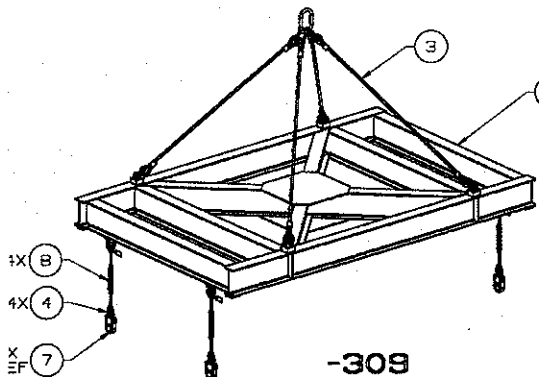
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Figure 11

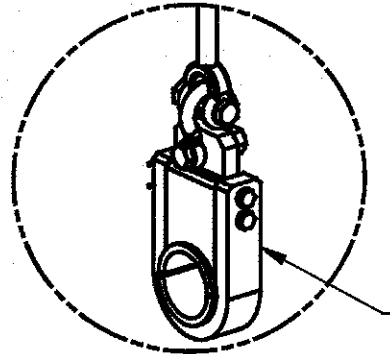


Figure 12

NOTE: CRITICAL LIFT TO BE PERFORMED. BEFORE LIFT ENSURE SAFETY OF PERSONNEL AND FLIGHT HARDWARE. ENSURE COLABORATION ATP IS READY FOR RECIPT OF HARDWARE.

WARNING: START of hazardous LIFTING operations

Do not leave hardware suspended overnight

Do not perform lift operations without ESCG and CERN personnel present

15. Slowly lift the Upper USS-02 to clear the PSS, as seen in Figures 13 and 14.

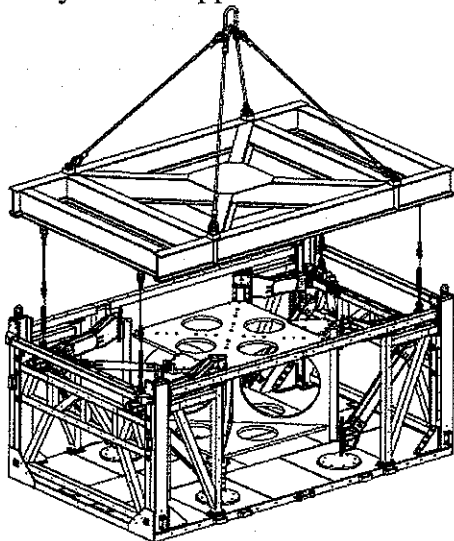


Figure 13

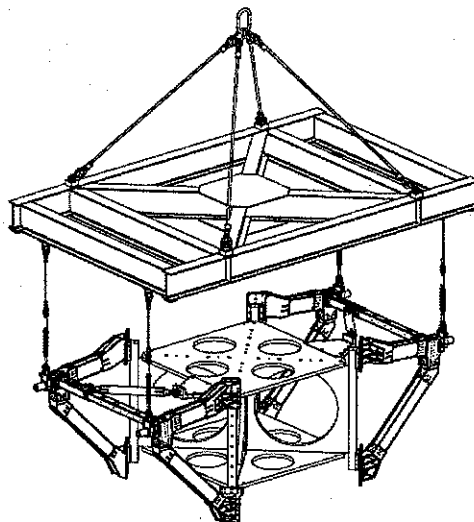


Figure 14

16. Move the USS-02 Assembly towards the Rotation Assembly Stand, RAS. Stop the crane when there is approximately 3 foot (1 m) of clearance between the PSS and the USS-02 Assembly.

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17. Orient the USS-02 Assembly to match the orientation requested by CERN engineer.

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18. Install the USS in the RAS per AMS-02 Task Sheet

(ATS) MITM 070807-2 . Procedure start date 8-23-07 .

ESCG Designated Verifier (DV) John Heilig .

Note: Contact MITeam Integration Engineering as required.

Note: ESCG Designated Verifiers (DV) shall witness and verify all torque applications, confirm the Running (or Run-in) and Final torques, and proper documentation of these torques relative to this procedure and any other sub-process relative to this task. Designated Verifier (DV) shall coordinate with ESCG quality personnel for any additional verification of steps that would normally require a Mandatory Inspection Point or (MIP). ESCG Designated Verifier shall insure compliance with NASA/JSC NT-CWI-001 work instruction.



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19. Indicate procedure end date for the USS into the RAS per AMS-02 Task Sheet
(ATS) MITM 070807-2 . Procedure end date 8-23-07 .

20. Disconnect the PLF, SEG38117112-309, from the USS trunnions

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20.1 Using Figure 10 as a reference, disassemble the U-Hook Assembly, SEG38117120-301. Remove the fastener, NAS1958C90D, item 5, castellated nut, AN310C8, item 6 and washer, NAS1149E0863R, item 7. Do not allow the U-hook Bushings, SDG38117123-001, item 3 or the Top Support Block, SDG38117122-001, item 2 to fall after removing the two (2) fasteners.

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20.2 Remove the U-hook components from the USS trunnion

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20.3 Reassemble the U-hook components. Reinstall the cotter pin, MS24665-302, item 8 inserted in each castellated nut, AN310C8, Item 6 per Figure 10. .

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21. Store the PLF for future use.

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22. Remove the bottom of the Trunnion Block Assembly bearing , item 3 of Figure 15. Bag these with the upper half of the bearings removed previously. Store all of these parts for later reuse.

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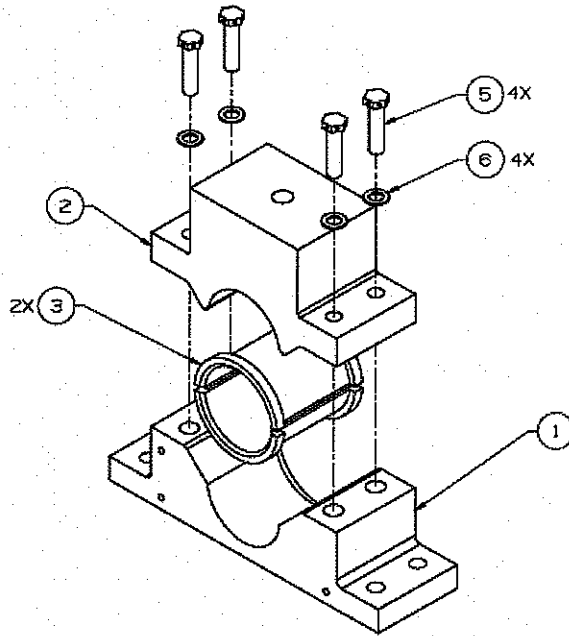


Figure 15

23. Close this TPS.