STS-130/20A

FD 06 Execute Package

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Approved by FAO:
L. Knowlton

Last Updated: Feb 12 2010 9:31 PM GMT
JEDI *(**J**oint **E**xecute package **D**evelopment and **I**ntegration), v3.0*

Ballad of the MUX
(to the tune of the Chicken Dance)

Yeah, we're tryn' ta fix the MUX.
Flight is chewing hockey pux,
But I'll betcha 50 bux
The MUX just SUX.

The procedure is in flux,
INCO's lining up his dux,
But I'll bet my finest tux,
The MUX just SUX.

Sure as any chicken clux,
We discovered that the crux
of the matter is the MUX
'Cause it just sux!

Yeah, this ditty really trux
Though the FAO upchux.
Shoulda spent a few more bux
On that darned MUX!

Shux!

MSG INDEX

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MSG-069	Biocide Addition
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MSG-071	EMU 3004 Power Harness Removal and Installation
MSG-072	2.1.425 ARED - Node 1 to Node 3 Relocation

1. Post-Sleep Cryo Config

For today's Post-Sleep cryo config, O2 tanks 1 and 2 will be active and H2 Tanks 1 and 4 will be active.

R1 O2,H2 MANF VLV TK1 (two) - OP (tb-OP)
O2 TK2 HTRS A,B (two) - AUTO

A15 CRYO TK5 HTR O2 A - OFF

Pre-Sleep Cryo Config

√MCC for deltas prior to configuring for Pre-Sleep.

For tonight's Pre-Sleep cryo config, Manifold 2 will be closed with O2 tanks 2 and 5 and H2 Tanks 2 and 4 active.

A15 CRYO TK5 HTR O2 A - AUTO

R1 O2,H2 TK1 HTRS A,B (four) - OFF
H2 TK2 HTRS A,B (two) - AUTO
O2,H2 MANF VLV TK2 (two) - CL (tb-CL)

2. Updated LiOH Cue Card

Message 62 contains an updated LiOH Cue Card. MCC will continue to monitor CO2 levels for the potential to save LiOH cans as agreed pre-flight.

3. Condensate CWC Check
   To assist in our condensate changeout planning, please provide an estimate of how full condensate bag s/n 5030 is at your convenience.

4. ECLSS Airlock Questions
   Bob and Nick, were you comfortable with the A/L temperature during your campout sleep? If not, please let us know how to adjust it and we'll take care of that. We'll even take deg F or deg C.

5. CSA-O2 Labeling
   Starting today you'll be performing activities that require CSA-O2 checks behind closeout panels. You may notice some procedures have you check the labels on the CSA-O2s as a reference to acceptable O2 ranges and some procedures have you call down to MCC-H to perform the verification. We'd like to apologize up front for the mixed configuration. The work associated with labeling the CSA-O2s was only recently completed, thus only a portion of our procedures have incorporated the use of those labels. We are working to migrate all procedures to reference the labels and not require communication with MCC-H, hence for your activities, you may use the CSA-O2 labels for all verification steps.

6. REPLACE PAGES 2-18 THROUGH 2-21 and 3-56 THROUGH 3-63.

FD06
GMT 02/12/10 (043)
MET Day 004

12 22 23 02/13 01 02 03 04 05 06 07 08 09 005/00
13 14 15 16 17 18 19 20 21 22 23

STS-130

CDR ZAMKA	LOG; POST SLEEP; CWC; INIT #1; EXERCISE; CWC; TERM; CWC; XFER; CWC BIOCIDE ADD; N2-I; MEAL; NODE 3 VO PART 2; EVA2
PLT VIRTS	LOG; POST SLEEP; IMU; MCIU*; SSRMS WALKOFF TO LAB; N2 RLS & MNVR*; EXERCISE; N3 PORT IMV CAP; N3 PORT CDC INSTALL; MEAL; LIOH TRANSFER; N2-T; ARED VIS XFER/INSTL; ARS RACK XFER; EVA2
MS1 HIRE	POST SLEEP; P/TVO6; S/U; SSRMS WALKOFF TO LAB; N2 RLS & MNVR*; N3 PORT IMV CAP; N3 PORT CDC INSTALL; MEAL; N3 OVHD IMV CAP; N3 VAP CAP REMOVAL; NODE 3 PPRV CAP RMV; EXERCISE; EVA2
MS2 ROBINSON	POST SLEEP; EXERCISE; NODE 3 VO PART 1; NODE 3 VO PART 2; EVA TOOL CONFIG; NODE 3 VO PART 2; MEAL; NODE 3 VO PART 2; EVA2
MS3 PATRICK	ASPIRIN; LOG; POST SLEEP; EMU RESIZE; POWER HARNESS R&R; EVA TOOL CONFIG; TOOL AUDIT; QD FAM OPS; NPV; PACK; EXERCISE; MEAL; PAO; REBA*; REBA C/O; E_LK PREP; EVA2
MS4 BEHNKEN	ASPIRIN; POST SLEEP; MDDK CK; POST SLEEP; EMU RESIZE; POWER HARNESS R&R; EVA TOOL CONFIG; TOOL AUDIT; QD FAM OPS; EXERCISE; BSA-T; EMU-I; INSTL^; MEAL; MDDK CK; PAO; REBA*; REBA C/O; E_LK PREP; EVA2

STS

DAY/NIGHT

ORBIT 72 73 74 75 76 77 78 79 80

TDRS W E Z

ORB ATT BIAS -XLV -ZVV

ISS TDRS AVAIL

NOTES

*FILTER CK
*TO OVERNIGHT PARK
^LIOH & BATTERY
SSRMS BASE CHANGE
NODE 3 HATCH OPEN
NODE 3 TO CUPOLA HATCH OPEN

FD06 GMT 02/12/10 (043) MET Day 004

02/12/10 13:46:57 **REPLANNED**

GMT: 22 23 02/13 01 02 03 04 05 06 07 08 09
MET: 12 13 14 15 16 17 18 19 20 21 22 23 005/00

ISS
- DAILY ORBIT: 15 16 1 2 3 4 5 6 7
- TLM FORMAT: 112 112 112
- ATTITUDE: -XVV +ZLV TEA

EXP 22

ISS CDR WILLIAMS: SLEEP | POST SLEEP | PW | DPC | ♣ | FN LK CK TRM | NODE 3 VO PART 1 | ⊕ | ♦ | ® | NODE 3 VO PART 2 | CAMS/U | MEAL | NODE 3 VO PART 2 | INSTL RACK H/W | CEVIS | T2 | ♥

FE-1 SURAEV: ЭЛКТ | POST SLEEP | PW | DPC | Δ | TEX-15 DL | ♠ | ϕ | СОЖ-МНТ | T2 | MEAL | • | БИО-5-INSTL-TST | TVIS

FE-4 KOTOV: POST SLEEP | PW | DPC | ∇ | ARED PREP | ϕ | ◊ | СУБА-БСК-КАБ-INSTL | * | MEAL | ♣ | ИП-1 | VIS RMV | TVIS | VELO

FE-5 NOGUCHI: POST SLEEP | D2XS | PW | DPC | ⊕ | ARED PREP | ♦ | GC/DMS | ® | HTCSU | NOD3-IMV SETUP | ♥ | PEPS INSTALL | T2 | MEAL | GC/DMS | ΔVIS RMV | ARED VIS XFER/INSTL | ARS RACK XFER | CEVIS

FE-6 CREAMER: SLEEP | POST SLEEP | PW | DPC | PW | ♠ | T2 | CEVIS | EMER DPLY | EVAH/W | UNSTOW | VELOCI CALC | NPRV | INSPECT | ϕ | • | ∇ | MEAL | ◊ | UPA FILL | HDSU | O2 PRG | N2 PRG | PAO | CWCI | FILL 1 | * | ♣

TDRS: W E Z

STS ORB ATT: BIAS -XLV -ZVV

NOTES

♣CQ-LHA-R&R ♦NOD1-UOP2-ON
ΔБИО-5-FE1-CLCT ϕСУБА-БРИ-R&R
⊕NOD1-UOP2-RECON ♠СОГС-ВОЗДУХ-АУТ MOD
∇СУБА-ИУС-АСП-INSTALL
♠CMS-T2 WKLY-MNT

⊕EHS-N3 AIR-SAMPLE
♦PPRV CAP
®UPA FILL
◊СУБА-БРИ-КАБ-CNCT
®EVA CAMR ♥PEPS UNSTW

*СУБА-СБИ КАБ-INSTL
ϕHYZOD-OUTER-INSTALL
•HYZOD-INNER-INSTALL
∇HYZOD-SHIELD-INSTALL

•БИО-5-XFER-PREP
♣СОГС-ВОЗДУХ-MODE
ΔP/TV-XFER VID-S/U
◊QD-PLUG-TRANSFER

♥EVA 2 PRO
*NOD2-IMV DUCT
♣CWCI FILL

SSRMS BASE CHANGE **NODE 3 HATCH OPEN** **NODE 3 TO CUPOLA HATCH OPEN**

GMT 02/13/10 (044)

MET Day 005

005/00 10 11 12 13 14 15 16 17 18 19 20 21

01 02 03 04 05 06 07 08 09 10 11 12

STS-130										
CDR ZAMKA	EVA 2 PROC REVIEW	PRE SLEEP	FD CONF	PMC A/G	PRE SLEEP	MASK P/B CONFIG	PRE SLEEP	SLEEP		
PLT VIRTS	EVA 2 PROC REVIEW	N3N*	ILLUM-I	PAO	PRE SLEEP	SLEEP	ISS EXTERNAL SURVEY			
MS1 HIRE	EVA 2 PROC REVIEW	PRE	SLEEP	PAO	PRE SLEEP	SLEEP				
MS2 ROBINSON	EVA 2 PROC REVIEW	PRE SLEEP	DPC	PRE SLEEP	SLEEP					
MS3 PATRICK	EVA 2 PROC REVIEW	PRE SLEEP	MASK P/B CONFIG	PRE SLEEP	SLEEP	ISS A/L Campout @ 10.2 psi				
MS4 BEHNKEN	EVA 2 PROC REVIEW	PRE SLEEP	MASK P/B CONFIG	PRE SLEEP	SLEEP					

10.2 DPRS

STS: DAY/NIGHT; ORBIT 80 81 82 83 84 85 86 87; TDRS W E Z; ORB ATT BIAS -XLV -ZVV

ISS: TDRS AVAIL

*HATCH UNLATCH

NOTES

FD06 02/12/10 13:46:57 **REPLANNED**

GMT 02/13/10 (044)

MET Day 005

		005/00	01	02	03	04	05	06	07	08	09	10	11	12
ISS	TDRS AVAIL													
ISS	DAY/NIGHT													
ISS	DAILY ORBIT	7	8	9	10	11	12	13	14					
ISS	TLM FORMAT	112	142	112	122									
ISS	ATTITUDE	-XVV +ZLV TEA												
ISS	ALL VHF													
EXP 22	ISS CDR WILLIAMS	EVA 2 PROC REVIEW; HD SU; CAMSTW; PW; PS; DPC; ♣; PRE SLEEP-ISS	SLEEP; ISS EXTERNAL SURVEY											
EXP 22	FE-1 SURAEV	TVIS; ⊕; ♦; PW; PS; DPC; ♣; PRE SLEEP-ISS	SLEEP											
EXP 22	FE-4 KOTOV	VELO; ®; PW; PS; DPC; ♣; PRE SLEEP-ISS	SLEEP											
EXP 22	FE-5 NOGUCHI	CEVIS; PS; PADO; DPC; ♣; PRE SLEEP-ISS	SLEEP											
EXP 22	FE-6 CREAMER	♥; EVA 2 PROC REVIEW; HAM; PW; PS; DPC; ♣; PRE SLEEP-ISS	SLEEP											
TDRS	W													
TDRS	E													
TDRS	Z													
STS	ORB ATT	BIAS -XLV -ZVV												
	NOTES	®IMS-EDIT ♣FD/ISS CREW-CONF ⊕TEX-7-CHRG-START ♥CWCI FILL 2 ♦TEX-15-DAKON-CK												

STS-130 FD06

GMT Date 02/12 (043) | W | T D R S E | Z | D / N | O R B | MET Day 004 | STS ATI

MET	CDR ZAMKA	PLT VIRTS	MS1 HIRE	Notes
12:00	SLEEP LOGBOOK (ORB OPS, SDBI) POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	SLEEP LOGBOOK (ORB OPS, SDBI) POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	
22:00				
13:00	**FD06 EZ ACTIVITIES:** √OCAC FILTER & MDDK DUCT SCREEN TEPC (STATUS CHECK) (ORB OPS, CREW SYS) HARD REBOOT ALL PGSCs EXCEPT: STS-6(WLES),STS-5(RPOP2),& OCA ROUTER. Return all Shuttle IFM tools used on ISS, per MSG 052, to Endeavour prior to sleep.			
23:00				
14:00				
00:00				
15:00	CWC FILL (ORB OPS, CWC OPS) Init Fill #1 Ref. MSG 027	IMU STAR OF OPPTY ALIGN (ORB OPS, GNC) L17 Check MCIU filter screen ROBO: 1.310 SSRMS NODE 3 RELEASE AND WALKOFF TO LAB PDGF	P/TV06 ROBOTICS OPERATIONS (PHOTO/TV, SCENES) Perform SETUP ROBO: 1.310 SSRMS NODE 3 RELEASE AND WALKOFF TO LAB PDGF	
01:00	EXERCISE			
16:00				

Day 004 STS ATI: BIAS-XLV-ZVV

DON/ORB: 72, 73, 74

STS-130 FD06

GMT Date 02/12 (043) | W | T D R S E | Z | D / N | O R B | MET Day 004 | STS ATI

MS2 ROBINSON

12:00 — POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)

13:00 — BIAS-XLV-ZVV

14:00 — EXERCISE

15:00 — 1.104 VESTIBULE OUTFITTING NOD1 TO NOD3 (ASSY OPS, ACT&C/O)
Steps 2-7
Ref. MSG 068
Ref. MSG 057, Item 5

16:00

MS3 PATRICK

EVA CREW: TAKE 1 ASPIRIN (325mg)
SLEEP LOGBOOK (ORB OPS, SDBI)
POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)

EMU 3004 RESIZE FOR NICK
Ref. MSG 070 & MSG 066
Ref. EVA SYS: 1.550 EMU RESIZE

EMU 3004 POWER HARNESS REMOVAL & INSTALL
Ref. MSG 071 & MSG 066

MS4 BEHNKEN

EVA CREW: TAKE 1 ASPIRIN (325mg)
POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)

GLACIER STATUS CHECK (ASSY OPS,CC)
POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)

EMU 3004 RESIZE FOR NICK
Ref. MSG 070 & MSG 066
Ref. EVA SYS: 1.550 EMU RESIZE

EMU 3004 POWER HARNESS REMOVAL & INSTALL
Ref. MSG 071 & MSG 066

Notes

72 73 74

22:00 23:00 00:00 01:00

8

STS-130 FD06

GMT Date 02/13 (044) | W | T D R S E Z | D/N | O R B | MET Day 004 | STS ATI

MET	CDR ZAMKA	PLT VIRTS	MS1 HIRE	Notes
16:00	EXERCISE			
	CWC FILL (ORB OPS, CWC OPS) Perform FILL TERMINATION			
	CWC TRANSFER Transfer CWC to ISS			
02:00	CWC BIOCIDE ADDITION √CWC Fill #1 complete Ref. MSG 069	ROBO: 1.320 SSRMS NODE2 RELEASE & MNVR TO OVERNIGHT PARK	ROBO: 1.320 SSRMS NODE2 RELEASE & MNVR TO OVERNIGHT PARK	
17:00	N2 REPRESS INIT A			
	A N2 REPRESS USING P/L N2 VLVS (ORB OPS, ECLS) Steps 1-6; MCC will TMBU S/W FDA in Step 1. On MCC go, perform Step 7. Work the ()s for all steps performed			
	MEAL	EXERCISE		
03:00				
18:00	1.104 VESTIBULE OUTFITTING NOD1 TO NOD3 (ASSY OPS, ACT&C/O) Steps 8-22 Ref. MSG 068 Ref. MSG 057, Item 5	1.114 NODE 3 PORT AFT IMV CAP INSTALL (ASSY OPS, ACT&C/O)	1.114 NODE 3 PORT AFT IMV CAP INSTALL (ASSY OPS, ACT&C/O)	
04:00				
19:00		S&M: 1.104 CBM CENTER DISC COVER INSTALLATION Verify CBCS Flap open, restrained with Snap and Velcro. Close Node 3 port hatch per decal	S&M: 1.104 CBM CENTER DISC COVER INSTALLATION Verify CBCS Flap open, restrained with Snap and Velcro. Close Node 3 port hatch per decal	
		MEAL	MEAL	
05:00				
20:00				

BIAS-XLV-ZVV

DON: 75, 76, 77

STS-130 FD06

GMT Date 02/13 (044) | W | TDRS E | Z | D/N | ORB | MET Day 004 | STS ATI

MS2 ROBINSON

16:00
1.104 VESTIBULE OUTFITTING NOD1 TO NOD3
(ASSY OPS, ACT&C/O)
Steps 2-7
Ref. MSG 068
Ref. MSG 057, Item 5

17:00
1.104 VESTIBULE OUTFITTING NOD1 TO NOD3
(ASSY OPS, ACT&C/O)
Steps 8-22
Ref. MSG 068

18:00
EVA 2 TOOL CONFIG
(EVA, TIMELINES)
Ref. MSG 066

1.104 VESTIBULE OUTFITTING NOD1 TO NOD3
(ASSY OPS, ACT&C/O)
Steps 8-22
Ref. MSG 068

19:00

20:00
MEAL

BIAS-XLV-ZVV

MS3 PATRICK

EMU 3004 POWER HARNESS REMOVAL & INSTALL
Ref. MSG 071 & MSG 066

EVA 2 TOOL CONFIG
(EVA, TIMELINES)
Ref. MSG 066

EVA TOOL AUDIT
Ref. EVA 2 TOOL CONFIG (EVA, TIMELINES)
Ref. MSG 066

QD FAM OPS
(EVA, TIMELINES)
(EVA, TOOLS AND STOWAGE)

EVA 2 TOOL CONFIG (NPV PACK)
(EVA, TIMELINES)

MS4 BEHNKEN

EMU 3004 POWER HARNESS REMOVAL & INSTALL
Ref. MSG 071 & MSG 066

EVA 2 TOOL CONFIG
(EVA, TIMELINES)
Ref. MSG 066

EVA TOOL AUDIT
Ref. EVA 2 TOOL CONFIG (EVA, TIMELINES)
Ref. MSG 066

QD FAM OPS
(EVA, TIMELINES)
(EVA, TOOLS AND STOWAGE)

EXERCISE

Notes

STS-130 FD06

GMT Date 02/13 (044) | W | T D R S E | Z | D/N | O R B | MET Day 004 | STS ATI

CDR ZAMKA

20:00 — 1.104 VESTIBULE OUTFITTING NOD1 TO NOD3
(ASSY OPS, ACT&C/O)
Steps 8-22
Ref. MSG 068
Ref. MSG 057, Item 5

21:00 — B N2 REPRESS USING P/L N2 VLVS
(ORB OPS, ECLS) on MCC GO,
perform Steps 8-13
MCC will TMBU S/W FDA in Step 13
Work the ()s for all steps performed

22:00 — BIAS - XLV - ZVV

23:00 — EVA PROCEDURE REVIEW Ref. Pg 3-62

00:00

PLT VIRTS

MEAL

LIOH TRANSFER
Ref. MSG 067

N2 REPRESS TERM (On MCC GO) B

ARED - NODE 1 TO NOD3 RELOCATION
Ref. MSG 072, Steps 4-7
Ref. MSG 042

1.152 ATMOSPHERE REVITALIZATION RACK XFER
(ASSY OPS, ACT&C/O)
JPM1F3 to NOD3A4
Steps 1-6

EVA PROCEDURE REVIEW Ref. Pg 3-62

MS1 HIRE

MEAL

1.111 NODE 3 OVERHEAD IMV CAP INSTL
(ASSY OPS, ACT&C/O)

1.124 NODE 3 VACUUM ACCESS PORT CAP SEAL R&R
(ASSY OPS, ACT&C/O)

1.120 NODE 3 PPRV SAMPLE PORT CAP RMVL
(ASSY OPS, ACT&C/O)

EXERCISE

EVA PROCEDURE REVIEW Ref. Pg 3-62

Notes

06:00 07:00 08:00 09:00

77 78 79 80

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STS-130 FD06

GMT Date 02/13 (044) | W | TDRS E | TDRS Z | DO/N | ORB | MET Day 004 | STS ATI

BIAS-XLV-ZVV

MS2 ROBINSON	MS3 PATRICK	MS4 BEHNKEN	Notes
MEAL	EXERCISE	EXERCISE	
1.104 VESTIBULE OUTFITTING NOD1 TO NOD3 (ASSY OPS, ACT&C/O) Steps 8-22 Ref. MSG 068		EVA SYSTEMS: 1.605 BSA BATTERY RECHARGE TERMINATE [C] EVA SYSTEMS: 1.605 BSA BATTERY RECHARGE INITIATE [C] EMU LIOH & BATTERY INSTALL [C] Ref.EVA SYS:1.515 EMU MTX/LIOH/BAT REPLCE	
	[C] Ref. STS-130 Consumables Tracking CC(EVA) Ref. STS-130 Battery Recharge Plan (EVA) Ref. MSG 066		
	MEAL	MEAL	
		GLACIER STATUS CHECK (ASSY OPS,CC)	
	PUBLIC AFFAIRS EVENT ISS KU AVAIL: 22:08-22:51 Ref. MSG 064	PUBLIC AFFAIRS EVENT ISS KU AVAIL: 22:08-22:51 Ref. MSG 064	
	EVA SYS: 1.307 REBA INSTALL Ref. MSG 066 Ref. STS-130 Consumables Tracking CC(EVA)	EVA SYS: 1.307 REBA INSTALL Ref. MSG 066 Ref. STS-130 Consumables Tracking CC(EVA)	
	EVA SYSTEMS: 1.403 REBA POWERED HARDWARE CHECKOUT Perform for both EMU 3018 and 3004	EVA SYSTEMS: 1.403 REBA POWERED HARDWARE CHECKOUT Perform for both EMU 3018 and 3004	
	EVA SYSTEMS: 1.305 EQUIPMENT LOCK PREP Fill 2 Drink Bags (1 per EVA crew member) In step 27, use Vacuum Manometer s/n 13	EVA SYSTEMS: 1.305 EQUIPMENT LOCK PREP Fill 2 Drink Bags (1 per EVA crew member) In step 27, use Vacuum Manometer s/n 13	
EVA PROCEDURE REVIEW Ref. Pg 3-63	EVA PROCEDURE REVIEW Ref. Pg 3-63	EVA PROCEDURE REVIEW Ref. Pg 3-63	

STS-130 FD06

GMT Date 02/13 (044) | W | T D R S E | Z | D/N | O R B | MET Day 005 | STS ATL

CDR ZAMKA

EVA PROCEDURE REVIEW
Ref. EVA 2 BRIEFING CARD
(EVA, TIMELINES)
Ref. MSG 066

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

BIAS - XLV

FLIGHT DIRECTOR CONFERENCE
PRIVATE MEDICAL CONFERENCE
L9 PAYLOAD STATION A/G (two) - OFF
Perform via A/G2

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

- ZVV

EVA SYSTEMS: 1.206 10.2 PSIA CAMPOUT MASK
PREBREATHE Steps 1-16

Ref. STS-130 Consumables Tracking CC(EVA)
Ref. MSG 066

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

PLT VIRTS

EVA PROCEDURE REVIEW
Ref. EVA 2 BRIEFING CARD
(EVA, TIMELINES)
Ref. MSG 066

S&M:1.606 HATCH LATCH POSITION TO HARDSTOP, FOR NODE 3 NADIR

TV (ILLUM OPS)(P/TV, CC)ILLUMS ON - A & D

PUBLIC AFFAIRS EVENT
ISS KU AVAIL: 00:54-01:34
Ref. MSG 065

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

MS1 HIRE

EVA PROCEDURE REVIEW
Ref. EVA 2 BRIEFING CARD
(EVA, TIMELINES)
Ref. MSG 066

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

PUBLIC AFFAIRS EVENT
ISS KU AVAIL: 00:54-01:34
Ref. MSG 065

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

Notes

CREW WAKE AT 05/12:00

STS-130 FD06

GMT Date 02/13 (044) | W E Z | TDRS | DON/ORB | MET Day 005 | STS ATI

MS2 ROBINSON | MS3 PATRICK | MS4 BEHNKEN | Notes

00:00

EVA PROCEDURE REVIEW
Ref. EVA 2 BRIEFING CARD (EVA, TIMELINES)
Ref. MSG 066

PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)

01:00

DAILY PLANNING CONFERENCE

PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)

02:00

EVA SYSTEMS: 1.206 10.2 PSIA CAMPOUT MASK PREBREATHE
Ref. STS-130 Consumables Tracking CC(EVA)
Ref. MSG 066

03:00

PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)

04:00

CREW WAKE AT 05/12:00

10:00 11:00 12:00 13:00

80 81 82

BIAS -XLV -ZVV

14

Good Morning Endeavour!!!!

Fantastic EVA yesterday- and that about sums it up!!!!

On the timeline today you will notice a few changes. Robotics have been moved to the morning because there is no focused inspection and transfer ops been deleted. EMU re-sizing and power harness R&R have been added since there was the fan problem seen in EV2's suit.

Have a great time today entering your new room!!!

YOUR CURRENT ORBIT IS: 188 X 182 NM

NOTAMS: NOTAMS - TWO CHANGES (DELETED DOV AND FOK).

EDW -	TEMP RWY IN USE. PERM RWY CLOSED FOR CONSTRUCTION.
EDW -	LAKEBED RWYS RED.
NOR -	LAKEBED RWYS USABLE. DRYING OUT.
WAL-	CLOSED.
ZZA -	ARRESTING NET INSTALLED 40M FROM END OF RWY 30L.
ESN -	RWY 03R/21L CLOSED. 03L/21R USABLE.
GUA -	RWY 06L/24R RWY END LIGHTS OUT OF SERVICE.
PTN -	CLOSED FOR RUNWAY CONSTRUCTION.
IKF -	NOT USABLE. NO AGREEMENT.
BEN -	NOT RECOMMENDED/NOT SUPPORTED.

NEXT 2 PLS OPPORTUNITIES:

EDT22R	ORB 79 – 4/23:04	SKC	7	270/5P7
KSC33	ORB 93 – 5/20:22	SKC	7	320/8P13

OMS TANK FAIL CAPABILITY:

L OMS FAILS: NO
R OMS FAILS: NO

LEAKING OMS PRPLT BURN:

L OMS LEAK: ALWAYS BURN RETROGRADE
R OMS LEAK: ALWAYS BURN RETROGRADE

OMS QUANTITIES(%)

L OMS OX = 30.2 R OMS OX = 31.4
FU = 29.9 FU = 31.2

Subtract interconnect counter for current OMS quantities.

DELTA V AVAILABLE:

OMS	320 FPS
ARCS (TOTAL ABOVE QTY1)	44 FPS
TOTAL IN THE AFT	364 FPS
ARCS (TOTAL ABOVE QTY2)	78 FPS
FRCS (ABOVE QTY 1)	32 FPS
AFT QTY 1	82 %
AFT QTY 2	44 %

SYSTEM	FAILURE	IMPACT	WORK AROUND
EVA 1	During EVA 1, telemetry on EMU 3005 (Pk) indicated lower than expected Fan RPMs.	EMU 3005 is currently no-go for EVAs while suit data is being evaluated by Engineering.	EMU 3004 will be resized for use by EV2 for subsequent EVAs. (This will also require a swap of the REBA Power Harness to regain WVS and glove heaters.) Note: EMU rotation plan is being evaluated.
EVA 2	Post EVA 1, EV2 reported water droplets in helmet and in LTA.	None.	A slightly warmer TCV setting during ingress may preclude water drops forming when transitioning to vehicle cooling.
EVA 3	EV1 (Be) reported degraded audio in his primary EVA comm cap during EVA 1 ingress.	None.	Backup comm cap (BE2) was checked post EVA and will be used for future EVAs.

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Timeline Procedures:

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ARED-VIS-RMV
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ESA Timeline Procedures:

None

JAXA Timeline Procedures:

None

Tasklist Procedures:
BCAT3-CRYSTAL-CHECK
WHC-KTO-REPLACE
WHC-ЕДВ-У-R&R
PWD-BEV ADPTR-R&R

JAXA Tasklist Procedures:
None

ESA Tasklist Procedures:
None

Timeline Procedures:

ARED-XFER-PREP **ARED-VIS-RMV** **ARED-VIS-XFER/INSTL**						
22-0579 2.1.425 ARED - NODE 1 TO NODE 3 RELOCATION						
Type: Standard						
#	**LOCATION**	**ITEM NAME**	**P/N**	**S/N**	**B/C**	**Notes**
1	**NOD1D4**	3/4" Combination Wrench	SKG33117562-322	-	-	
2		3/4" Deep Socket, 3/8” Drive	SKG33117562-690	-	-	
3		(10-50 in-lbs) Trq Wrench, 1/4" Drive	SEG33112395-301	M206422		
4		(40-200 in-lbs) Trq Wrench, 3/8" Drive	SEG33117289-302	M213569	-	
5		Tape Measure	2210-10	-	-	
6	**Pregathered Toolset “TV”**	7/16" Deep Socket, 3/8" Drive	F141	-	-	
7		1/4" to 3/8" Adapter	TA3	-	-	
8		9/16" Socket, 3/8" Drive	F181	-	-	
9		Ratchet, 3/8" Drive	F830	-	-	

N3 FINE LK CK TERM						
1.117 Node 1/Node 3 Vestibule Pressurization and Leak Check						
Type: Standard						
#	**LOCATION**	**ITEM NAME**	**P/N**	**S/N**	**B/C**	**Notes**
1	**Attached to Node1 Port Hatch MPEV**	MPEV Internal Sampling Adapter (ISA)	97M55830-1	2	000002M	
2		Scopemeter Pressure Probe	SEG39130244-302	-	004461J	Installed on ISA
3		VAJ-78-1 5ft	683-17111-1	-	00002677J	
4		Multimeter Kit	10118-10018-04	1017	-	
5		Multimeter	87	1010	00088636J	Happy
Type: Restow						
6	**Temp Stow NOD3 for Cupola Depress on FD7**	MPEV Internal Sampling Adapter (ISA)	97M55830-1	2	000002M	
7		Scopemeter Pressure Probe	SEG39130244-302	-	004461J	Installed on ISA
8		VAJ-78-1 5ft	683-17111-1	-	00002677J	
9		Multimeter Kit	10118-10018-04	1017	-	
10		Multimeter	87	1010	00088636J	Happy

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1

NOD3-IMV SETUP NOD2-IMV DUCT S/U						
1.106 Node 3 Temporary Ventilation Install and Remove for Initial Ingress						
Type: Standard						
#	**LOCATION**	**ITEM NAME**	**P/N**	**S/N**	**B/C**	**Notes**
1	**Pregathered ToolSet Labeled "Jeff" or "TV"**	Ratchet, 1/4" Drive	-	-	-	
2	**NOD1D4**	10" Ext, 1/4" Drive	-	-	-	
3		1/4" Deep Socket, 1/4" Drive	-	-	-	
4		2" Cut Scissors	-	-	-	
Type: Restow						
5	**Temp Stow for Install on FD8**	Muffler	-	-	-	

1

PPRV CAP INSTL						
1.108 NODE 3 POSITIVE PRESSURE RELIEF VALVE (PPRV) CAP INSTALL						
Type: Standard						
#	**LOCATION**	**ITEM NAME**	**P/N**	**S/N**	**B/C**	**Notes**
1	**LAB1D5** 1.0 CTB: 20A Pregather #1, S/N 1263, B/C 010599J	PPRV Cap [QTY: 2]	PPRV-1-915	-	Any	**Report** B/C to **MCC-H**

2

EHS-NOD3-AIR-SAMPLE						
2.6.240 GRAB SAMPLER CONTAINER: GSC-OPERATIONS						
Type: Standard						
#	**LOCATION**	**ITEM NAME**	**P/N**	**S/N**	**B/C**	**Notes**
1	**NOD2D2**	1.0 CTB	SEG33111838-307	**Any**	**Any**	Empty. **Report** S/N and B/C to **MCC-H**
2	**LAB1O5_A2**	GSC	SDD46108778-301	1082	00010912J	
3	**Crew Pref**	CSA-CP	SED46115801-304	Any	Any	
Type: Restow						
4	**Transfer List Resupply Item #719**	1.0 CTB	SEG33111838-307	**Any**	**Any**	
5		GSC	SDD46108778-301	1082	00010912J	

3

N3-DCT-VELOCICLC-OPS						
21-0398 2.1001 VELOCICALC OPERATIONS						
Type: Standard						
#	**LOCATION**	**ITEM NAME**	**P/N**	**S/N**	**B/C**	**Notes**
1	**LAB1P5_A1**	Velocicalc	8386A	55090468	BCC00259J	
2		AA Batteries [QTY: 4]	528-41350-3	-	-	

4

PEPS UNSTOW **PEPS INSTALL**						
1.112 PORTABLE FIRE EXTINGUISHER AND PORTABLE BREATHING APPARATUS INSTALLATION						
Type: Standard						
#	**LOCATION**	**ITEM NAME**	**P/N**	**S/N**	**B/C**	**Notes**
1	**Pregathered ToolSet Labeled "Jeff" or "TV"**	5/32" Hex Head, 1/4" Drive	-	-	-	
2		Driver Handle, 1/4" Drive	-	-	-	
3	**A/L1A0**	PEP Emergency PBA	SEG33105002-301	-	-	
4		Quick Don Mask Assembly	SEG33105020-301	1035	00044539J	
5		PBA Oxygen Reducer/Cylinder Assembly	SEG33105010-301	1017	00030303J	
6	**NOD3D4_D1** 2.0 CTB: INSTALLATION H/W 1, S/N 1092, B/C 010680J	PBA Extension Hose/Tee Kit 30'	SJG33104995-305	1002	00030314J	
7	**NOD3D4_J2** 2.0 CTB: MISC 2, S/N 1126, B/C 010714J	PBA Oxygen Reducer/Cylinder Assembly	SEG33105010-301	1007	00030300J	Leave foam in CTB
8	**NOD1P2**	Quick Don Mask Assembly	SEG33105020-301	1038	00044542J	
9		PFE	683-60489-1	0011	00126762K	
10	**A/L1A0**	PBA Oxygen Reducer/Cylinder Assembly	SEG33105010-301	1017	00030303J	

NPRV INSPECT						
1.110 NODE 3 NEGATIVE PRESSURE RELIEF VALVE (NPRV) INSPECTION						
Type: Standard						
#	**LOCATION**	**ITEM NAME**	**P/N**	**S/N**	**B/C**	**Notes**
1	**NOD1D4**	5/32" Hex Head, 1/4" Drive	-	-	-	
2		Driver Handle, 1/4" Drive	-	-	-	
3	**NOD2D2**	0.5 CTB	SEG33111836-303	**Any**	**Any**	Empty. **REPORT** S/N to **MCC-H. LABEL** "NOD3 Uninstalled Hardware"
Type: Restow						
4	**NOD1** 3.0 CTB: Node 3 Vestibule Outfitting kit (VOK), S/N 1048, B/C 004233J	0.5 CTB: NOD3 Uninstalled Hardware	SEG33111836-303	**Any**	**Any**	
5		Ziplock	-	-	-	
6		Launch Restraint Bolts [Qty:3]	-	-	-	Two bolts from NOD3A2-33; One bolt from NOD3A2-13.

INSTL RACK H/W						
1.142 Node 3 Rack Hardware Installation						
Type: Standard						
#	**LOCATION**	**ITEM NAME**	**P/N**	**S/N**	**B/C**	**Notes**
1	**LAB1D5** 1.0 CTB: 20A Pregather #1, S/N 1263, B/C 010599J	K-BAR Capture Fitting, Left	683-62201-27	1228	-	
2		K-BAR Capture Fitting, Right	683-62201-28	1229	-	
3		ARIS - Pivot Fitting Bottom Left	683-61711-31	**Any**	**Any**	**Report** S/N to MCC-H
4		Knee Brace	683-50249-4	**Any**	**Any**	**Report** S/N to MCC-H
5	**Pregathered ToolSet Labeled "Jeff" or "TV"**	Ratchet, 3/8" Drive	-	-	-	
6		Ratchet, 1/4" Drive	-	-	-	
7		5/32" Hex Head, 1/4" Drive	-	-	-	

8	**NOD1D4**	6” Long 3/8” Hex Head, 3/8” Drive	-	-	-	
9		(10-50 in-lbs) Trq Wrench, 1/4” Drive	-	-	-	
10		(40-200 in-lbs) Trq Wrench, 3/8” Drive	-	-	-	
Type: Restow						
11	**LAB1D5** 1.0 CTB: 20A Pregather #1, S/N 1263, B/C 010599J	ARIS - Pivot Fitting Bottom Right [Qty:3]	683-61711-32	**Any**	**Any**	**Report** S/N to MCC-H

HYZOD-OUTER-INSTALL **HYZOD-INNER-INSTALL** **HYZOD SHIELD-INSTALL**						
1.605 USOS Common Hatch Window Cover Install						
Type: Standard						
#	**LOCATION**	**ITEM NAME**	**P/N**	**S/N**	**B/C**	**Notes**
1	**NOD3D5_J2** 2.0 CTB: Installation HW 2, S/N 1045, B/C 004179J	Outer Hatch Window Cover Assembly	683-13141-1	000013	-	Installed on Node 3 Starboard Hatch - EVA side
2		Inner Hatch Window Cover Assembly [QTY: 2]	683-13141-2	000012 000014	-	Installed Node 3 Zenith and Starboard Hatch - IVA side
3		Inner Hatch Window Shield Kit	SJD33117564-301	-	-	Installed Node 3 Nadir, Fwd, Aft, Port - IVA Side
4		Inner Hatch Window Shield	SJD33117563-301	1011 1012 1014 1015	00055715J 00055716J 00055718J 00055719J	

1

**N3 PORT IMV CAP						
1.114 NODE 3 PORT-AFT IMV CAP INSTALLATION						
Type: Standard						
#	**LOCATION**	**ITEM NAME**	**P/N**	**S/N**	**B/C**	**Notes**
1	**Pregathered ToolSet Labeled "Jeff" or "TV"**	5/32" Hex Head, 1/4" Drive	-	-	-	
2		7/16" Deep Socket, 1/4" Drive	-	-	-	
3		1/2" Deep Socket, 1/4" Drive	-	-	-	
4		Driver Handle, 1/4" Drive	-	-	-	
5	**NOD1D4**	(10-50 in-lbs) Trq Wrench, 1/4" Drive	-	-	-	
	LAB1D5 1.0 CTB: 20A Pregather #1, S/N 1263, B/C 010599J	Node 1 Mod Kit		-	-	
6		IMV Cap w/Test Adapter	683-15016-6	**Any**	**Any**	**REPORT** P/N and S/N to **MCC-H**
7		Face O-Ring [QTY: 2]	2-255S0604	-	-	
8		Bore O-Ring [QTY: 2]	2-248S0604	-	-	
9	**NOD3D4_D1** 2.0 CTB: INSTALLATION H/W 1, S/N 1092, B/C 010680J	V-Flange IMV Cap	683-15016-1	-	-	
Type: Restow						
10	**NOD1** 3.0 CTB: Node 3 Vestibule Outfitting kit (VOK), S/N 1048, B/C 004233J	0.5 CTB: NOD3 Uninstalled Hardware	SEG33111836-303	-	-	Created during NPRV INSPECT activity
11		Ziplock: NOD1-NOD3 IMV H/W				
12		IMV Flange Saver [Qty: 2]	683-15016-8	-	-	
13		Ziplock	-	-	-	
14		Launch Restraint Bolts [Qty:2]	-	-	-	

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**N3 PORT CDC INSTALL						
1.104 CBM Center Disk Cover Installation						
Type: Standard						
#	**LOCATION**	**ITEM NAME**	**P/N**	**S/N**	**B/C**	**Notes**
1	**Temp Stowed from NODE 3 VO PART 1 and 2**	CBM Center Disk Cover	683-14575	-	-	

1

N3 VAP CAP REMOVAL **NODE 3 PPRV CAP RMV						
1.120 NODE 3 PPRV SAMPLE PORT CAP REMOVAL						
Type: Standard						
#	**LOCATION**	**ITEM NAME**	**P/N**	**S/N**	**B/C**	**Notes**
1	**Pregathered ToolSet Labeled "Jeff" or "TV"**	Ratchet, 3/8" Drive	-	-	-	
2		5/32" Hex Head, 1/4" Drive	-	-	-	
3		Driver Handle, 1/4" Drive	-	-	-	
4	**NOD1D4**	Breaker Bar, 3/8" Drive	-	-	-	
5		1-5/8" Crowfoot, 3/8" Drive	-	-	-	
6		2" Crowfoot, 3/8" Drive	-	-	-	
7		Universal Joint, 3/8" Drive	-	-	-	
8		Wire Cutters	-	-	-	
9	**LAB1D5** 1.0 CTB: 20A Pregather #1, S/N 1263, B/C 010599J	FFTD and Gamah Seal Maintenance Kit	SDG39135920-701	1001	-	
10		Gamah Fitting Maintenance Kit	683-60408-4	000001	-	
11		Retaining Ring Installation/Removal Tool, 1"	683-60474-4	-	-	
12		Gamah Fitting Maintenance Kit	683-60408-3	-	-	
13		Gamah Seal Removal Tool, 1" Gamah Fitting	683-60467-4	-	-	
14		Gamah Seal Maintenance Kit	528-50000-4	-	-	Ziplock

15		1.0 Gamah Fitting Soft Seal	S2L121-V75	-	-	
16		Dry Wipes	SEG33107170-306	-	-	
17		Fluid Fitting Torque Device	990204-101	-	-	
18		Brass Picks	887-200	-	-	

1

****N3 OVHD IMV CAP**						
1.111 Node 3 Overhead IMV Cap Installation						
Type: Standard						
#	**LOCATION**	**ITEM NAME**	**P/N**	**S/N**	**B/C**	**Notes**
1	**Pregathered ToolSet Labeled "Jeff" or "TV"**	5/32" Hex Head, 1/4" Drive	-	-	-	
2		7/16" Deep Socket, 1/4" Drive	-	-	-	
3		Driver Handle, 1/4" Drive	-	-	-	
4	**NOD1D4**	(10-50 in-lbs) Trq Wrench, 1/4" Drive	-	-	-	
5	**LAB1D5** 1.0 CTB: 20A Pregather #1, S/N 1263, B/C 010599J	Node 1 Mod Kit	-	-	-	Ziplock
6		IMV Cap w/ Test Adapter	683-15016-6	**Any**	**Any**	**REPORT** P/N and S/N to **MCC-H**
7		Face O-Ring [QTY: 2]	2-255S0604	-	-	
8		Bore O-Ring [QTY: 2]	2-248S0604	-	-	
9		V-Band Coupling Clamp[QTY: 2]	MS27115-21R	-	**Any**	**REPORT** B/C to **MCC-H**
10	**Call MCC-H for Location**	IMV Cap w/ Test Adapter	683-15016-6	**Any**	**Any**	**REPORT** P/N and S/N to **MCC-H**
Type: Restow						
11	**NOD1** 3.0 CTB: Node 3 Vestibule Outfitting kit (VOK), S/N 1048, B/C 004233J	0.5 CTB: NOD3 Uninstalled Hardware	SEG33111836-303	-	-	Created during NPRV INSPECT activity
12		Ziplock	-	-	-	
13		Launch Restraint Bolts [Qty:3]	-	-	-	

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WRS-UPA-FILL						
21-0223 1.904 UPA ACTIVATION						
Type: Standard						
#	**LOCATION**	**ITEM NAME**	**P/N**	**S/N**	**B/C**	**Notes**
1	**LAB1P2** 0.5 CTB, S/N 1221, B/C 010402J	Regen ECLSS Tox-2 PPE Kit	SEG42103702-302	1002	CHCCPK02J	
2		Safety Goggles	503R	-	-	
3		Mess-Up Mitts	RMUM-12	-	-	
4		Silver Shield Gloves	SS104M	-	-	
5		Surgical Masks	8210	-	-	
6	**LAB1S1** TeSS Stowage Area	Крышка ЕДВ (EDV Cover)	11Ф615.8711-180A15-1	911	00047146R	
7		Корпус ЕДВ (EDV Bucket)	11Ф615.8711-120A15-1	441	00047817R	
Type: Restow						
8	**LAB1S1** TeSS Stowage Area	Крышка ЕДВ (EDV Cover)	11Ф615.8711-180A15-1	916	00047825R	
9		Корпус ЕДВ (EDV Bucket)	11Ф615.8711-120A15-1	2 п.34	00043103R	

2

NODE3-O2-PRG/LK CK NODE3-N2-PRG/LK CK						
1.107 NODE 3 OXYGEN SYSTEM PURGE AND LEAK CHECK **1.105 NODE 3 NITROGEN SYSTEM PURGE AND LEAK CHECK**						
Type: Standard						
#	**LOCATION**	**ITEM NAME**	**P/N**	**S/N**	**B/C**	**Notes**
1	**LAB1P1**	O2 Lo P Male Purge Adapter	683-42344-6	000001	-	
2		N2 Lo P Male Purge Adapter	683-42344-8	000001	00010994J	
3	**NOD1O4_C1** 0.5 CTB: Rubber Gloves, S/N 1159, B/C 006608J	Clean Room Gloves [QTY: 2 pair]	SEG33116979-301	-	-	Use instead of Teflon Bag

3

ARS RACK XFER						
1.152 ATMOSPHERE REVITALIZATION RACK TRANSFER JPM1F3 TO NOD3A4						
Type: Standard						
#	**LOCATION**	**ITEM NAME**	**P/N**	**S/N**	**B/C**	**Notes**
1	**Pregathered ToolSet Labeled "Jeff" or "TV"**	9/16" Socket, 3/8" Drive	-	-	-	
2		Ratchet, 3/8" Drive	-	-	-	
3		Wire Cutters	-	-	-	
4		Adjustable Joint Pliers, Straight Jaw	-	-	-	
5		5/32" Hex Head, 1/4" Drive	-	-	-	
6		Ratchet, 1/4" Drive	-	-	-	
7	**NOD1D4**	(40-200 in-lbs) Trq Wrench, 3/8" Drive	-	-	-	
8		6" Long, 5/32" Hex Head, 3/8" Drive	-	-	-	
9		6" Long 3/8" Hex Head, 3/8" Drive	-	-	-	
10		(10-50 in-lbs) Trq Wrench, 1/4" Drive	-	-	-	

WRS-CWCI-FILL-PT1 WRS-CWCI-FILL-PT2						
20-0021 2.913 CWC - Iodine Fill from WPA with WPA H2O Transfer Common Hose						
Type: Standard						
#	**LOCATION**	**ITEM NAME**	**P/N**	**S/N**	**B/C**	**Notes**
1	**NOD2O2** Mesh Bag	CWC-Iodine	SEG33120607-301	2018	00107930J	
2	**LAB1O3**	WPA H2O Transfer Common Hose	SEG33119491-302	1004	00073323J	
	LAB1P4	Ziplock	-	-	-	
		Ziplock: "Yellow/Yellow Hose - QD Removed on GMT XXX"	-	-	-	
3		R/Y QD Adapter	10108-20175-01	5008	-	
Type: Restow						
4	**JLP1F1**	CWC-Iodine	SEG33120607-301	2018	00107930J	

CQ-LHA-R&R						
1.2.402 Lamp Housing Assembly R&R						
Type: Standard						
#	**LOCATION**	**ITEM NAME**	**P/N**	**S/N**	**B/C**	**Notes**
1	**NOD1O2**	Lamp Housing Assembly	219010 or 226415	**Any**	**Any**	**REPORT** S/N and B/C to **MCC-H**
2	**NOD1D4**	1/8" Hex Head, 1/4" Drive	-	-	-	
3	**Pregathered ToolSet Labeled "Jeff" or "TV**	Driver Handle, 1/4" Drive	-	-	-	
4		Static Wrist Tether	-	-	-	
Type: Restow						
5	**COL1D3** 3.0 CTB, S/N 1070, B/C 004255J	Lamp Housing Assembly	219010	**Any**	**Any**	**REPORT** S/N and B/C to **MCC-H**

ESA Timeline Procedures:
None

JAXA Timeline Procedures:
None

Tasklist Procedures:

BCAT3-CRYSTAL-CHECK						
2.034 BCAT-4 CRYSTAL CHECK FOR SAMPLES 8,9, and 10						
Type: Standard						
#	**LOCATION**	**ITEM NAME**	**P/N**	**S/N**	**B/C**	**Notes**
1	**LAB1O7 Rack Front**	BCAT-3 Slow Growth Sample Module	67041FSM2200	-	00030426L	
2	**LAB1O4_J1** 0.5 CTB BCAT S/N 1240, B/C 010421J	LED Mini Maglight	60107MFA2017	-	00105256L	
3		1.5V Battery Size AA	528-41350-3	-	-	(if required)

1

WHC-KTO-REPLACE						
2.305 WHC [KTO] R&R						
Type: Standard						
#	**LOCATION**	**ITEM NAME**	**P/N**	**S/N**	**B/C**	**Notes**
1	**FGB Panel 220** or **FGB Floor** or **NOD1O2**	Solid Waste Container – Body (aka KTO Body)	11Φ615.8720A55-20	257 263 264 265 272 275 278 282 304 307 308 309 310 325	- 00112722J 00112724J 00112735J 00116316J 00116313J 00116302J 00116311J 00112744J 00112738J - 00112746J 00112748J 00112736J	This is the list of available KTO Bodies. **REPORT S/N and B/C**
2		Solid Waste Container – Lid (aka KTO Bottom)	11Φ615.8720A55-10	257 258 263 265 272 274 275 278 282 307 308 309 310 325	00098427R 00098428R 00112721J 00112733J 00098472R 00098474R 00098475R 00098438R 00098442R 00112737J - 00112745J 00112747J -	This is the list of available KTO Lids. **REPORT S/N and B/C**
3	**LAB1D1**	Solid Waste Container – Body (aka KTO Body)	11Φ615.8720A55-20	305	00112730J	Prepositioned for Install

4		Solid Waste Container – Lid (aka KTO Bottom)	11Ф615.8720A55-10	276	00098436R	
5	**NOD1D4**	Ratchet, 1/4" Drive	SKG33117562-939	-	-	
6		10 mm 6 Pt Socket, 1/4" Drive	SKG33117562-657	-	-	
7		(10-50 in-lbs) Trq Wrench, 1/4" Drive	SEG33112395-301	M206422	-	
Type: Restow						
8	**LAB1S1** TeSS	Solid Waste Container – Body (aka KTO Body)	11Ф615.8720A55-20	-	-	**REPORT S/N and B/C**
9		Solid Waste Container – Lid (aka KTO Bottom)	11Ф615.8720A55-10	-	-	

WHC-ЕДВ-У-R&R						
2.302 WHC ЕДВ R&R						
Type: Standard						
#	**LOCATION**	**ITEM NAME**	**P/N**	**S/N**	**B/C**	**Notes**
1	**LAB1P2** 0.5 CTB S/N 1221, B/C 010402J	Regen ECLSS Tox-2 PPE KIT	SEG42103702-302	1002	CHCCPK02J	
2		Safety Goggles	16644-00000	-	-	
3		Silver Shield Gloves	SSG/10	-	-	
4		Dust Mask	9211	-	-	
5	**LAB1D1**	ЕДВ Крышка (EDV Lid)	11Ф615.8711-180A15-1	935	00125549J	Prepositioned
6		ЕДВ Корпус (EDV Bucket)	11Ф615.8711-120A15-1	459	00125565J	
7	**NOD1O2**	ЕДВ Крышка (EDV Lid)	11Ф615.8711-180A15-1	902	00098592R	
8		ЕДВ Крышка (EDV Lid)	11Ф615.8711-180A15-1	904	00098594R	
9		ЕДВ Крышка (EDV Lid)	11Ф615.8711-180A15-1	922	00047831R	
10	**FGB**	ЕДВ Крышка (EDV Lid)	11Ф615.8711-180A15-1	-	-	**REPORT S/N and B/C**
11		ЕДВ Корпус (EDV Bucket)	11Ф615.8711-120A15-1	-	-	
Type: Restow						
12	**LAB1S1**	ЕДВ Крышка (EDV Lid)	11Ф615.8711-180A15-1	931	00116326J	
13		ЕДВ Корпус (EDV Bucket)	11Ф615.8711-120A15-1	455	00116319J	

PWD-BEV ADPTR-R&R						
22-0309 PWD Beverage Adapter Modification and Install						
Type: Standard						
#	**LOCATION**	**ITEM NAME**	**P/N**	**S/N**	**B/C**	**Notes**
1	**LAB1O4_D1**	PWD Beverage Adapter	SEG33120333-302	1002	-	
2	**NOD1D4**	Ratchet, 1/4” Drive	SKG33117562-939	-	-	
3		5/32” Hex Head, 1/4” Drive	SKG33117562-742	-	-	
Type: Restow						
4	**LAB1O4_D1**	PWD Beverage Adapter	SEG33120333-301	-	-	

JAXA Tasklist Procedures:

None

ESA Tasklist Procedures:

None

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FLIGHT DAY 3 DOCKING
ORBITER with ISS
CO2 ABSORBER REPLACEMENT
(6 crewmembers/Single Shift/FD 1-15)

FLIGHT DAY	POS A	POS B	CK CMPLT
LAUNCH	1	2	
PRE FD01	"	"	
POST FD02	3	4	
PRE FD02	5	"	
POST FD03	6	7	DOCKING
PRE FD03	"	8	
POST FD04	"	"	
PRE FD04	9	"	
POST FD05	"	“	EVA1
PRE FD05	“	10	
POST FD06	11	“	
PRE FD06	“	12	
POST FD07	13	“	EVA2
MID FD07	“	14	
PRE FD07	15	“	
POST FD08	"	"	
PRE FD08	"	16	
POST FD09	17	"	EVA3
PRE FD09	"	18	
POST FD10	"	"	
PRE FD10	19	"	
POST FD11	"	"	
MID FD11	20*	21*	ODS HATCH CL
PRE FD11	"	"	
POST FD12	STS-128 ___*	STS-128 ___	UNDOCK
PRE FD12	STS-128 ___	"	
POST FD13	STS-128 ___	STS-128 ___*	
PRE FD13	"	STS-128 ___	
POST FD14	STS-128 ___*	STS-128 ___	EOM
PRE FD14	33	"	
POST FD15	34	35*	EOM+1

*Re-bag and seal LiOH cans w/ Gray Tape and stow.
(Locations of canisters on back)

NOTE

This card is specifically used for the STS-130 mission with the orbiter conducting single shift ops with a shuttle crew size of 6 and an ISS crew size of 5. Changeout scheme reflects FD3 docking with ISS, Vozdukh and CDRA (activated in dual-bed mode) during docked ops, and undocking on FD12. ODS hatch closure will be worked the night before undocking.

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Back of LiOH Cue Card

BACK OF 'FLIGHT DAY 3 DOCKING
ORBITER with ISS
CO2 ABSORBER REPLACEMENT'

FLIGHT DAY	POS A	POS B	CK CMPLT
PRE FD15	"	36	
POST FD16	37*	38	EOM+2
PRE FD16	39	"	
POST FD17	40	41	EOM+3

LIOH CANISTER STOWAGE LOCATIONS

ASCENT STOWAGE LOCATIONS

Orbiter:
MD52M (LiOH Box): Cans 1-31*

Cans 33-41 Node 3

ENTRY (EOM) STOWAGE LOCATIONS

Orbiter:
MD52M (LiOH Box): Cans 1-31*

Cans 33-41 TBD

*****2 LiOH cans installed in LiOH slots A and B

TDRS	AOS	LOS	Delta (min)	Notes
W-171	5/01:04	5/01:34	30	
W-171	5/02:38	5/03:10	32	

Note: Please notify MCC-H 10 minutes prior to the event to allow for ground network configuration.

Bob and Nick,

Great work getting those get-aheads accomplished on EVA 1. With regards to that, we have a few pen and inks for your procedures on EVA 2. Also, with the loss of the tether loop on Nick's glove we have a small change to Nick's tool config for EVA 2 & EVA 3.

We also wanted to let you know that we're looking into a low RPM signature seen on Nick's suit during EVA 1. We saw the RPMs start at about 19,200 RPM, then drop to about 18,800 for a few hours, and then go back up to 19,200 for the last hour. We're not sure right now why this is happening, so for now EMU 3005 is NO GO for EVA. That means that we'll need to resize EMU 3004 for Nick to use for EVA 2. Since 3004 has the bad power harness, we'll also have you do a power harness R&R and replace the bad one with a good one on ISS. You'll see the resize in MSG 070 EMU 3004 Resize for Nick, and the harness R&R in MSG 071 EMU 3004 Power Harness Removal and Installation. We've scheduled you 2.5 hours today to do this. It should take about 2 hours for the resize and harness R&R, 10 min for REBA installation, and 20 minutes for REBA checkout.

EVA Checklist Pen and Inks:

For **EVA 2** procedures delete the following that were completed on EVA1:
- FS 7-60 EV1 Step 13
- FS 7-60 EV2 Step 11
- FS 7-61 EV2 Step 2
- FS 7-67 EV1 Steps 7-11
- FS 7-69 EV1 Step 17

There will not be a replan for EVA 2, if time available plan to move on to the get-aheads list.

For **EVA 2** Tool Config on EV2 due to loss of tether loop change the following:
- FS 7-56 EV2
  WAS: Adj Equip Tether (L wrist)
  IS: T-bar
    Adj Equip Tether

Remove the tape from your trash bags, stow in trash. Verify zippers are closed and reinstall on T-bars.

For **EVA 3** Tool Config on EV2 due to loss of tether loop change the following:
- FS 7-93 EV2
  WAS: Adj Equip Tether (L wrist)
  IS: T-bar
    Adj Equip Tether

On the CONSUMABLES TRACKING CUE CARD & FS CC 10-15,
In the EMU column, in row, EVA2, EV2 change 3005 to 3004.
In the EMU column, in row, EVA3, EV2 change 3005 to 3004.

MSG 067 (22-0692) - LIOH TRANSFER

OBJECTIVE:

Swap 9 unused LiOH cans from Node 3 with 9 used cans from the shuttle LiOH box. Also swap 8 new LiOH cans from the shuttle LiOH box with 8 older, unused cans from the ISS USOS LiOH Contingency Reserve. All LiOH cans on ISS should have blue socks.

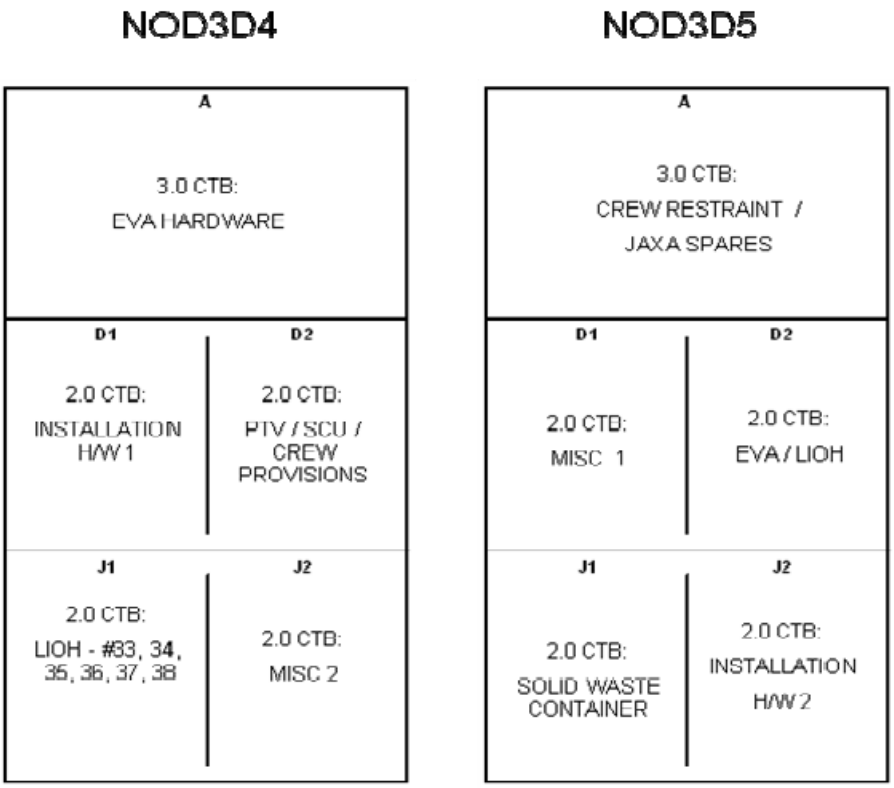


Figure 1: NOD3 ISP Layouts-Launch

Node 3 LiOH Swap

1. Unstrap 2.0 CTB: EVA / LiOH (s/n 1102) from NOD3D5_D2. Strap foam wedges surrounding the CTB back to the D2 location.

2. Remove four CWCs from CTB and temp stow back on the D2 location (ISP Stowage Transfer procedure will retrieve these CWCs).

3. Unstrap 2.0 CTB: LiOH (s/n 1032) from NOD3D4_J1. Strap foam wedges surrounding the CTB back to the J1 location.

4. Exchange LiOH cans per the tables (as described below):
    - Swap 9 used STS-130/20A cans (1-9) from the LiOH box with 9 new STS-130/20A cans (33-41) in CTBs in Node 3.
    - Transfer blue socks from new cans onto the used cans.

From the Middeck

LiOH Can	Initial Location	Final Location
STS-130/20A cans 1-3	Shuttle LiOH Box	2.0 CTB: EVA/LiOH (s/n 1102)
STS-130/20A cans 4-9	Shuttle LiOH Box	2.0 CTB: LiOH (s/n 1032)

From ISS

LiOH Can	Initial Location	Final Location
STS-130/20A cans 39-41	2.0 CTB: EVA/LiOH (s/n 1102)	Shuttle LiOH Box
STS-130/20A cans 33-38	2.0 CTB: LiOH (s/n 1032)	Shuttle LiOH Box

5. Remove yellow labels from CTBs. Re-label as “Used STS-130/20A LiOH cans 1-3 (4-9)”
6. Stow CTBs at NOD3A2.

ISS USOS LiOH Contingency Reserve Swap

7. Exchange LiOH cans per the table (as described below):
    - Swap 8 new STS-130/20A cans (24-31) from the LiOH box (verify cans have socks) with 8 older, unused STS-128/17A cans (48-52, 70-72). STS-128/17A cans 48-52, 70, and 71 can be found in the ISS USOS LiOH Contingency Reserve.
    - STS-128/17A can 72 can be found in the ISS Post Fire Kit at NOD1P4_B2. Replace this can with any STS-129/ULF3 can from the ISS USOS LiOH Contingency Reserve and report decal number to MCC-H.
    - Remove socks from the STS-128/17A cans and stow in a ziplock in the LiOH box.

LiOH Can	Initial Location	Final Location
STS-130/20A cans 24-31	Shuttle LiOH Box	NOD1S4_D2
STS-128/17A cans 48-52 & 70-71	NOD1S4_D2	Shuttle LiOH Box
STS-128/17A can 72	NOD1P4_B2	Shuttle LiOH Box
STS-129/ULF3 can TBD	NOD1S4_D2	NOD1P4_B2

Complete Transfer List Paperwork

8. Mark Transfer List items 44, 44.1, 48, 48.3, 802, 803, 736 complete.

OVERVIEW: This message provides stowage information for the NOD3 Vestibule Outfitting activities on FD 07

Table A: Hardware and Tools

NODE 3 1553 CONNECT **NODE 3 IMV RTRN INST** **NODE 3 VO PART 1** **NODE 3 VO PART 2**						
1.104 Vestibule Outfitting NOD1 to NOD3						
Type: Standard						
#	**LOCATION**	**ITEM NAME**	**P/N**	**S/N**	**B/C**	**Notes**
1	**Pregathered ToolSet Labeled "Jeff" or "TV"**	Ratchet, 3/8", Drive	-	-	-	
2		Ratchet, 1/4" Drive	-	-	-	
3		4" Ext, 1/4" Drive	-	-	-	
4		5/32" Hex Head, 1/4" Drive	-	-	-	
5		Static Wrist Tether	-	-	-	
6		1/4" to 3/8" Adapter	-	-	-	
7		3/16" Hex Head, 1/4" Drive	-	-	-	
8		3/8" Socket, 1/4" Drive	-	-	-	
9		7/16" Deep Socket, 1/4" Drive	-	-	-	
10		1/2" Deep Socket, 1/4" Drive	-	-	-	
11	**NOD1D4**	(10-50 in-lbs) Trq Wrench, 1/4" Drive	-	-	-	
12		(40-200 in-lbs) Trq Wrench, 1/4" Drive	-	-	-	
13		1/8" Hex Head, 1/4" Drive	-	-	-	
14		#6 Long Torq Driver, 3/8" Drive	-	-	-	
15		7/16" Socket, 1/4" Drive	-	-	-	
16	**NOD2D2**	CTB [QTY: 2]	SEG33111838-301	**Any**	**Any**	Empty. **REPORT** S/N and B/C to **MCC-H**
17	**LAB1D5** 1.0 CTB: 20A Pregather #1, S/N 1263, B/C	CTB Divider [QTY: 2]	SEG33111841-317	-	-	
18		Ground Straps [QTY: 2]	683-13477-7	001043 001041	00097044K 00097043K	
19		FFTD and Gamah Seal Maintenance Kit	SEG33114223-301	1001	-	

20	010599J	Braycote	601	-	-	
21	**COL1D2** 5 MLE Bag F	3.0 CTB: Node 3 Vestibule Outfitting kit (VOK)	SEG33111840-303	1048	004233J	
22		24” x 24” Ziplock Bag [Qty: 4]	528-50000-8	-	-	Labeled “Node 1 Port CBM CPA”
23		Ziplock: Node 1 Port CBM CPA [Qty: 4]	-	-	-	
24		Protective Cap [Qty: 1]	NATC-RPC-N-15-0	-	-	
25		Protective Cap [Qty: 1]	NATC-PPC-N-15-0	-	-	
26		Protective Cap [Qty: 2]	NATC-RPC-N-11-0	-	-	
27		Protective Cap [Qty: 2]	NATC-PPC-N-11-0	-	-	
28		Protective Cap [Qty: 6]	NATC-RPC-N-13-0	-	-	
29		Protective Cap [Qty: 6]	NATC-PPC-N-13-0	-	-	
30		IMV Supply Vestibule Jumper (W9432)	683-99521-1	-	-	
31		1553 CH A/ISL Ethernet Vestibule Jumper (W9429)	683-99429-1	-	-	
32		MSS BCP Vestibule Jumper	683-99432-1	-	-	
33		Video/Audio Bus A Vestibule Jumper (W9434)	683-99434-1	-	-	
34		Potable Water Vestibule Jumper	683-99511-11	-	-	
35		Wireless Audio Vestibule Jumper (W9433)	683-99433-1	-	-	
36		Waste Water Vestibule Jumper	683-99511-10	-	-	
37		MSS Video Vestibule Jumper (W9431)	683-99431-1	-	-	
38		1553 CH B Vestibule Jumper (W9430)	683-99430-1	-	-	
39		Audio Bus B Vestibule Jumper (W9435)	683-99435-1	-	-	
40		Air Sample Vestibule Jumper	683-99511-12	-	-	
41		Nitrogen Vestibule Jumper	683-99511-9	-	-	
42		Oxygen Vestibule Jumper	683-99511-8	-	-	
43		MTL Supply Vestibule Jumper	683-99511-13	-	-	
44		MTL Return Vestibule Jumper	683-99511-14	-	-	
45		Ziplock:NOD1-NOD3 CBM Hardware	-	-	-	

46		Ziplock:NOD1-NOD3 IMV Hardware	-	-	-	
47		Ziplock:NOD1-NOD3 Electrical Protective Caps	-	-	-	
48		Ziplock:NOD1-NOD3 Fluid Caps	-	-	-	
49		Ziplock::Node 3 Closeout Panel Launch Bolts	-	-	-	
50		Ziplock: For Kay	-	-	-	Will be put in Lid of 3.0 CTB for later use by Kay
51	**LAB1P2** 0.5 CTB, S/N 1221, B/C 010402J	Regen ECLSS Tox-2 PPE Kit	SEG42103702-302	-	-	
52		Safety Goggles	503R	-	-	
53		Surgical Mask	8210			
Type: Restow						
54	**Temp Stow for N3 PORT CDC INSTALL**	CBM Center Disk Cover	683-14575-14	-	-	**REPORT** P/N and S/N to **MCC-H**
55	**NOD1D2**	1.0 CTB	SEG33111838-301	**Any**	**Any**	Empty. **REPORT** S/N and B/C to **MCC-H**
56		CBM CPA [QTY:2]	**Any**	**Any**	-	**REPORT** P/N and S/N to **MCC-H**
57		1.0 CTB	SEG33111838-301	**Any**	**Any**	Empty. **REPORT** S/N and B/C to **MCC-H**
58		CBM CPA [QTY:2]	**Any**	**Any**	-	**REPORT** P/N and S/N to **MCC-H**
59	**NOD3A1** 3.0 CTB: Node 3 Vestibule Outfitting kit (VOK), S/N 1048, B/C 004233J	Thermal MLI Blanket	3120ND611	-	-	**PLACE** on bottom of CTB
60		Thermal MLI Blanket [QTY: 2]	3120ND613	-	-	
61		0.5 CTB: NOD3 Uninstalled Hardware	SEG33111836-303	**Any**	**Any**	Created per NPRV Inspect
62		Ziplock: NOD1-NOD3 IMV H/W	-	-	-	
63		IMV Cap [Qty: 2]	**REPORT**	-	-	
64		IMV Flange Saver [Qty: 2]	683-15016-8	-	-	

65		Ziplock: NOD1-NOD3 Fluid Caps	-	-	-	
66		Gamah Caps [Qty: 4]	683-16347-818	-	-	From Potable and Waste Water Jumpers
67		Gamah Caps [Qty: 4]	683-16347-822	-	-	From Nitrogen Jumpers
68		Gamah Caps [Qty: 2]	683-16347-824	-	-	From Oxygen Jumper - Stowed in Clean Room Gloves
69		Gamah Caps [Qty: 2]	683-16347-806	-	-	From MTL Supply Jumper
70		Gamah Caps [Qty: 2]	683-16347-808	-	-	From MTL Return Jumper
71		QD Plug [Qty: 2]	683-19485-9	-	-	From Air Sample Jumper
72		Gamah Caps [Qty: 4]	683-16347-841	-	-	From Node 1 and Node 3 Water Feedthroughs
73		Gamah Caps [Qty: 4]	683-16347-845	-	-	From Node 1 and Node 3 Oxygen and Nitrogen Feedthroughs, Oxygen caps in Clean Room Gloves
74		QD Caps [Qty: 2]	683-19485-6	-	-	From Node 1 and Node 3 ARS Feedthrough
75		Gamah Caps [Qty: 4]	683-16347-847	-	-	From Node 1 and Node 3 MTL Feedthrough
76		Ziplock: Node 3 Closeout Panel Launch Bolts	-	-	-	
77		Launch Restraint Bolts [Qty:4]	NAS1351N3-10	-	-	NOD3D6-52
78		Launch Washers [Qty: 4]	-	-	-	
79		Launch Restraint Bolts [Qty:8]	NAS1351-3-12	-	-	NOD3D6-51
80		Launch Washers [Qty: 8]	-	-	-	
81		Launch Restraint Bolts [Qty:3]	NAS1351N3-10	-	-	Stbd Deck Grille
82		Launch Washers [Qty: 3]	-	-	-	

83		Ziplock: For Kay				Put in Lid of CTB
84	**JLP1A2_B2** 3.0 CTB: NODE2 VEST OUTFIT/ALIGN GUIDES/LHAs, S/N 1120, B/C 006777J	Ziplock: NOD1-NOD3 CBM Hardware	-	-	-	
85		PCBM Alignment Guide [Qty: 4]	683-13484	-	-	**REPORT** Qty
86		CBM Ready to Latch	683-13729	-	-	
87		Ziplock: NOD1-NOD3 Electrical Protective Caps	-	-	-	
88		Protective Caps [Qty: 13]	NATC-PPC-N-25-0	-	-	
89		Protective Caps [Qty: 11]	NATC-RPC-N-25-0	-	-	
90		Protective Caps [Qty: 3]	NATC-PPC-N-13-0	-	-	
91		Protective Caps [Qty: 3]	NATC-RPC-N-13-0	-	-	
92		1553 Bus Terminator [Qty: 2]	1F8991-1	-	-	
93		NOD1 1553 Termination Plug (W9427) [Qty: 2]	683-99427	-	-	
94		NOD1 Wireless Audio Loopback Plug (W9428)	683-99428	-	-	

1

Perform the following actions from CWC FILL (ORB OPS, CWC OPS), p. 10-2, using the Silver Biocide Addition Table below. This will add Silver Biocide to two CWCs (S/Ns 1068 & 1089) that did not receive it on STS-129/ULF3.

EQUIPMENT PREPARATION

Unstow CWC S/Ns 1068 and 1089, which are pregathered at NOD2O2, and Silver Biocide Kit S/N 1001, which is temp stowed near the galley.

CWC FILL INITIATION

Report to MCC prior to connecting the CWC.

Perform Steps 1 through 3 to initiate flow into CWC. Flow is required to evenly distribute Biocide throughout the CWC.

Perform Step 5 to add the Silver Biocide using Silver Biocide Kit S/N 1001 and immediately proceed to Fill Termination.

CWC FILL TERMINATION

Perform Step 2 to terminate flow. Report to MCC when complete.

Return CWCs to original stowage locations.

SILVER BIOCIDE ADDITION TABLE

			INIT	TERM			
CWC S/N	Obtain from Stowage Location	Disinfect QDs	Silver Biocide Kit	Report Term to MCC	Cap Water Transfer Hose	Verify Label in Window	Return to Stowage Location
1068	NOD2O2 ☐	☐	S/N 1001 ☐	☐	N/A	Green ☐	NOD2O2 ☐
1089	NOD2O2 ☐	☐	S/N 1001 ☐	☐	☐	Green ☐	NOD2O2 ☐

END OF PAGE 1 OF 1, MSG 069A

OBJECTIVE:
During EVA1, EMU 3005's Fan had a degraded RPM signature that the MER cannot explain. Currently the suit is no-go for EVA. Therefore resize of EMU 3004 for Nick is required. This procedure will swap the components from EMU 3005 to EMU 3004 for Nick.

REBA charging will be terminated to deconflict the cables running through the airlock with the EMU resize and to provide a REBA battery to check out the spare REBA power harness prior to installation.

Reference Figure 1 for the final config of EMU 3004 and Figure 2 for the final config for EMU 3005.

NOTE

1. Reference 1.550 EMU RESIZE (SODF: ISS EVA SYS: EMU MAINTENANCE) for component changeout steps.

2. Reference 5.115 EMU BARCODE LOCATION REFERENCE (SODF: ISS EVA SYS: REFERENCE) for barcode and EMU serial number locations.

3. All stowed hardware requires a pouch OR cover installed. You can retrieve/stow any needed/extra pouches from A/L1D0 1.0 CTB S/N 1163, B/C 004157J.

CAUTION
1. Remove rings and other jewelry before exposing EMU bladder.
2. √All seals are clean and free of debris before making connections.

BC 3,4

1. **On MCC-H GO**
   sw MODE (two) → STOP

2. sw MAIN POWER (two) → OFF

3. STOW REBA CHARGING HARDWARE

EMU 1,2

3.1 REBA/BSA Cables (two) ←|→ REBA Jumper Cables

3.2 Mate and stow REBA Jumper Cables.

BSA

3.3 REBA/BSA Cable ←|→ AUX CHARGE PORT

3.4 Stow REBA/BSA Cable in M-02 Bag.

EMU 3004

4. Retrieve EMU 3004 from Columbus,
   Install in AFT EDDA
   Temp stow EMU 3018

5. Remove LTA restraint bag and LTA Restraint Strap
   Temp stow for bundling EMU 3005

6. Remove LTA s/n 2075 (Waist s/n 029)
   Temp stow

7. Remove Helmet s/n 1072
   Temp stow

EMU 3005

8. Remove Helmet s/n 1080 (lights and camera stay on helmet)
   Temp stow

9. Remove EMU PLSS id stripes, flight patch, and national flag
   Swap with EMU 3004

10. Remove LTA s/n 2082 (Waist s/n 039)
    Install on EMU 3004

11. Remove Pk gloves (6E5 6261)
    Swap with arm covers on EMU 3004

12. Remove comm cap s/n 1187 (Pk1)
    Install in EMU 3004

13. Remove wrist mirrors (two) and cuff c/l
    Install on EMU 3004

14. Remove LiOH s/n 2003 and EMU Battery 2087 from EMU 3005
    Install in EMU 3004.
    Install Vent Port Plugs from EMU 3004 into EMU 3005.
    Reference 1.515 EMU METOX/LIOH/BATTERY REPLACEMENT (SODF: ISS EVA SYS: EMU MAINTENANCE)

15. Remove REBA battery s/n 1008
    Temp stow

16. Install LTA s/n 2075 (Waist s/n 029) from EMU 3004

17. Install Helmet s/n 1072 from EMU 3004, ✓locked

18. Remove EMU 3005 from FWD EDDA
    Install LTA restraint strap and Bag
    Stow in Columbus

19. Install EMU 3018 in AFT EDDA, and EMU 3004 in FWD EDDA

EMU 3004

20. Lower Arm Power Harness →|← Upper Arm Power Cable (both arms)

21. Verify all 3 locks are re-engaged on the arms, and verify arm cam positions

22. Install Helmet s/n 1080 (Pk) , ✓locked

Leak Check

23. ✓Helmet Purge vlv – cl, locked

DCM

24. sw POWER → BATT

25. PURGE vlv → cl (dn)

26. O2 ACT → PRESS, expect O2 USE HIGH msg, sw DISP → PRO

27. When SUIT P > 4.0 and stable, check with gauge, continue

28. sw DISP → STATUS, until LEAK CHECK? displayed
    sw DISP → YES (hold for 2 seconds)
    Follow displayed instructions

29. O2 ACT → OFF

30. PURGE vlv → op (up)

31. sw POWER → SCU

32. When SUIT P < 0.4, (compare with gauge),
    Remove and reinstall an EMU Glove to equalize suit.

33. Remove Helmet s/n 1080 (Pk), for the REBA Power Harness R & R procedure
    Temp stow

34. Remove LTA (Pk) to make the EMU easier to handle for the REBA Power Harness R & R procedure.

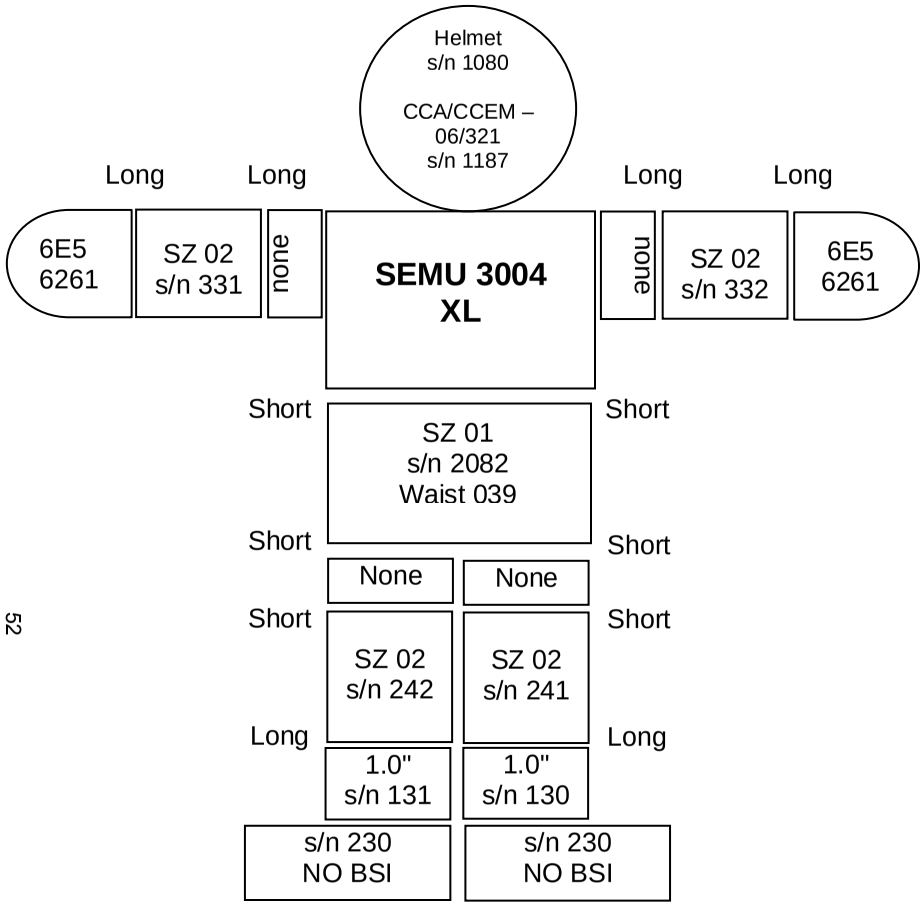


Figure 1 – Patrick (Pk) – EMU 3004

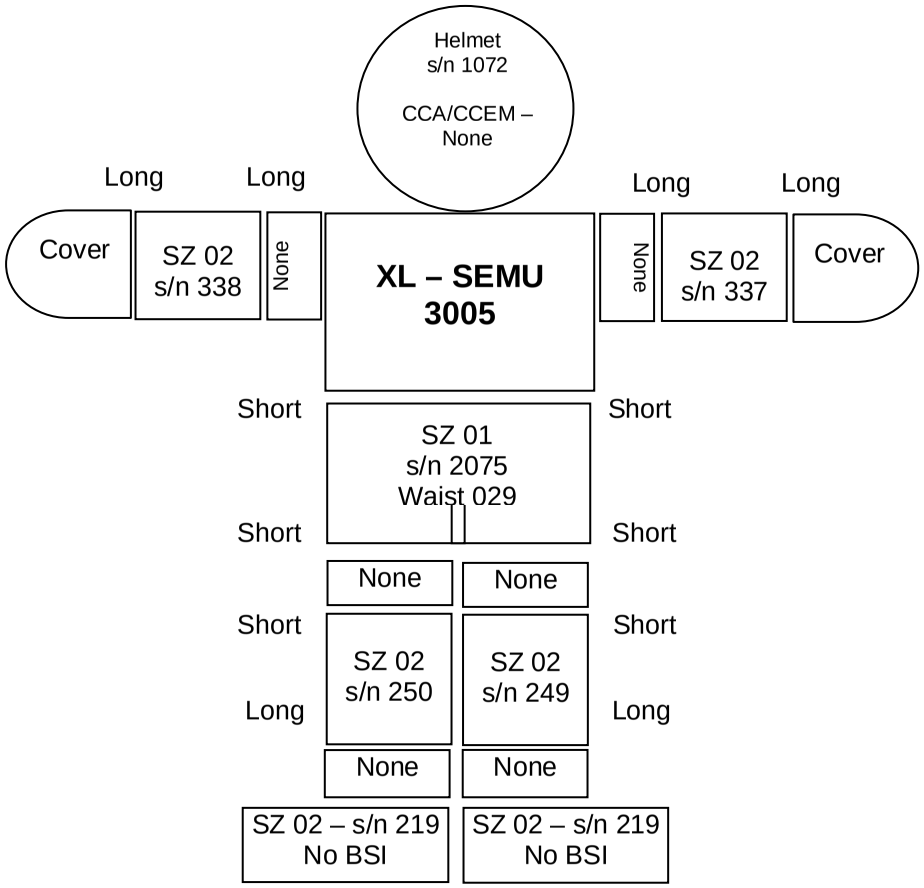


Figure 2 – EMU 3005

22-0696 (MSG 071) EMU 3004 POWER HARNESS REMOVAL AND INSTALLATION

OBJECTIVE:

This procedure will check out the EMU/REBA power harness on ISS (previously used for Orlan based EVAs). Once the cable is verified to be functional, the nonfunctional power cable will be removed from EMU 3004 and replaced with the station cable.

DURATION:

60 Minutes, 2 CM

NOTE
1. Location callouts are given from the perspective of a crewmember in the EMU.
2. EDDA should be swung open to access the rear of the PLSS. At any point in the procedure, the EMU can be removed from the EDDA for additional PLSS TMG clearance.

MATERIALS:

Kapton Tape, 2”

IVA Tool Box:

Drawer 5:
- Static Wrist Tether

Drawer 4:
- Wire Cutters

MO-2 S/N:1038

EMU/REBA Power Harness (stowed in ziplock)

REBA 1006.

AIRLOCK:

Retrieve either helmet with EMU TV.

CAUTION
All personal jewelry should be removed prior to beginning work on any EMU interfaces or sealing surfaces.

TEST OF ISS EMU/REBA POWER HARNESS

1. Inspect spare EMU power harness per the following:
   a. Legible Identification markings
   b. No obvious tears, rips, cuts etc. on sheath.
   c. No obvious damage to wire insulation.
   d. Secure mount of connectors.
   e. Inspect connectors per the following:
      i. Alignment marks visible/legible
      ii. Free of foreign debris.
      iii. Free of bent, damaged, missing female sockets or pins.
      iv. Free of nicks, burrs, and sharp edges.

2. √ sw REBA(pulltab) - OFF

3. REBA Power Harness (P1) →|← REBA Battery (J1)

4. REBA Power Harness (P2) →|← EMU TV

5. sw REBA (pulltab) - ON

6. pb EMU TV power - Press
   √Green LED - On

7. pb EMU TV power - Press
   √Green LED - Off

8. sw REBA (pulltab) - Off

9. REBA Power Harness (P2) ←|→ EMU TV

10. REBA Power Harness (P1) ←|→ REBA Battery (J1)

11. Stow REBA and Helmet with ERCA with cover.

<u>EMU 3004 WIRE HARNESS REMOVAL</u>

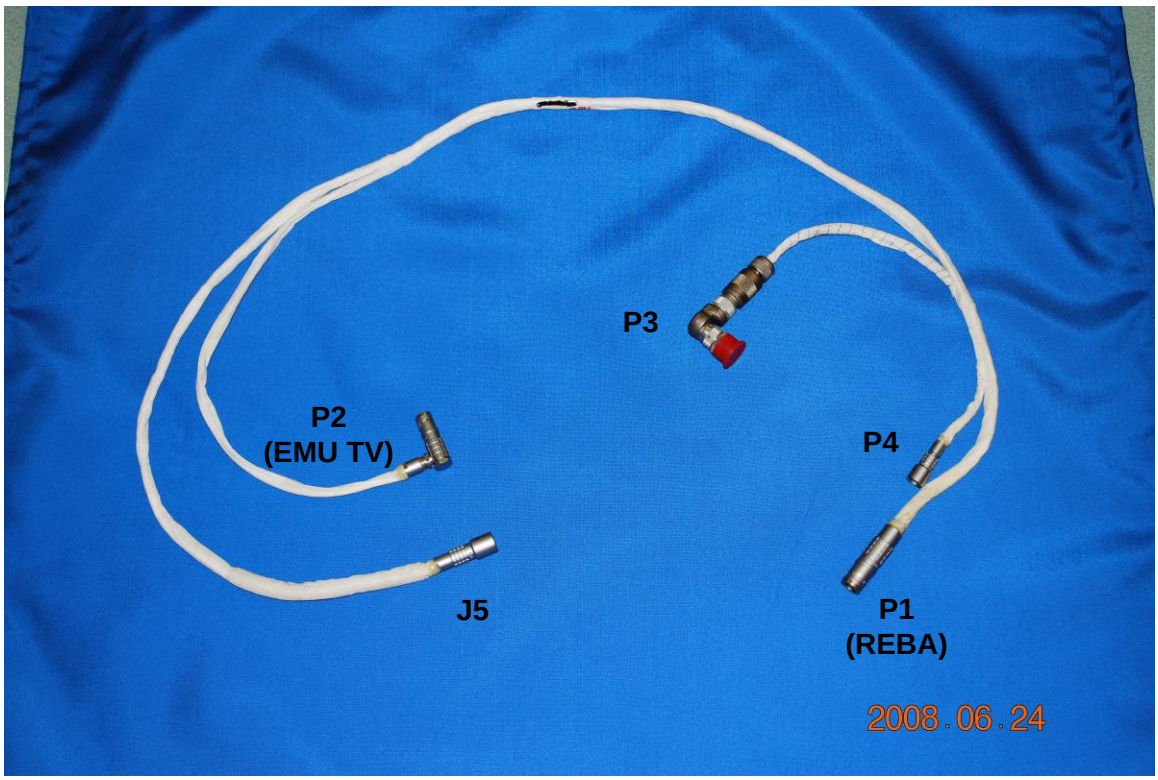


Figure 0: EMU/REBA Power Harness

PLSS 12. PROVIDE PLSS TMG SLACK

12.1 Fully unzip rear TMG thermal cover, all the way over the top of the PLSS, breaking tack stitches (2 places) by hand. Fold thermal cover over top of PLSS and under EDDA frame.

CAUTION
Take care when moving the EMU radio antenna as the orange cable (right hand side) can be damaged if strained. Refer to Figure 1.

12.2 Lift EMU antenna pad (Figure 2) off of the velcro interface and pivot forward (toward neck ring) for maximum PLSS TMG access on left hand side of PLSS.

12.3 Unzip and unsnap outboard REBA TMG (on the lower back of the PLSS). Leave the zipper closed on the inboard REBA restraint belt.

12.4 Connect static wrist tether to lower PLSS battery post (EMU battery). Fully open alligator clip to securely engage post beyond the alligator clip-teeth.

13. DISCONNECT EMU DATA CABLE (REAR OF PLSS)

13.1 Don static wrist tether.

13.2 EMU Power Harness P3 ←|→ PLSS (rear center).
To disconnect EMU Power Harness (P3) from the PLSS, use this technique: Push inward on forward-most locking collar while rotating CCW ~ 1/3 turn to release. If necessary, carefully lift fiberglass impact shield to improve access. Refer to Figure 1.

13.3 Doff static wrist tether. Leave connected to battery post.

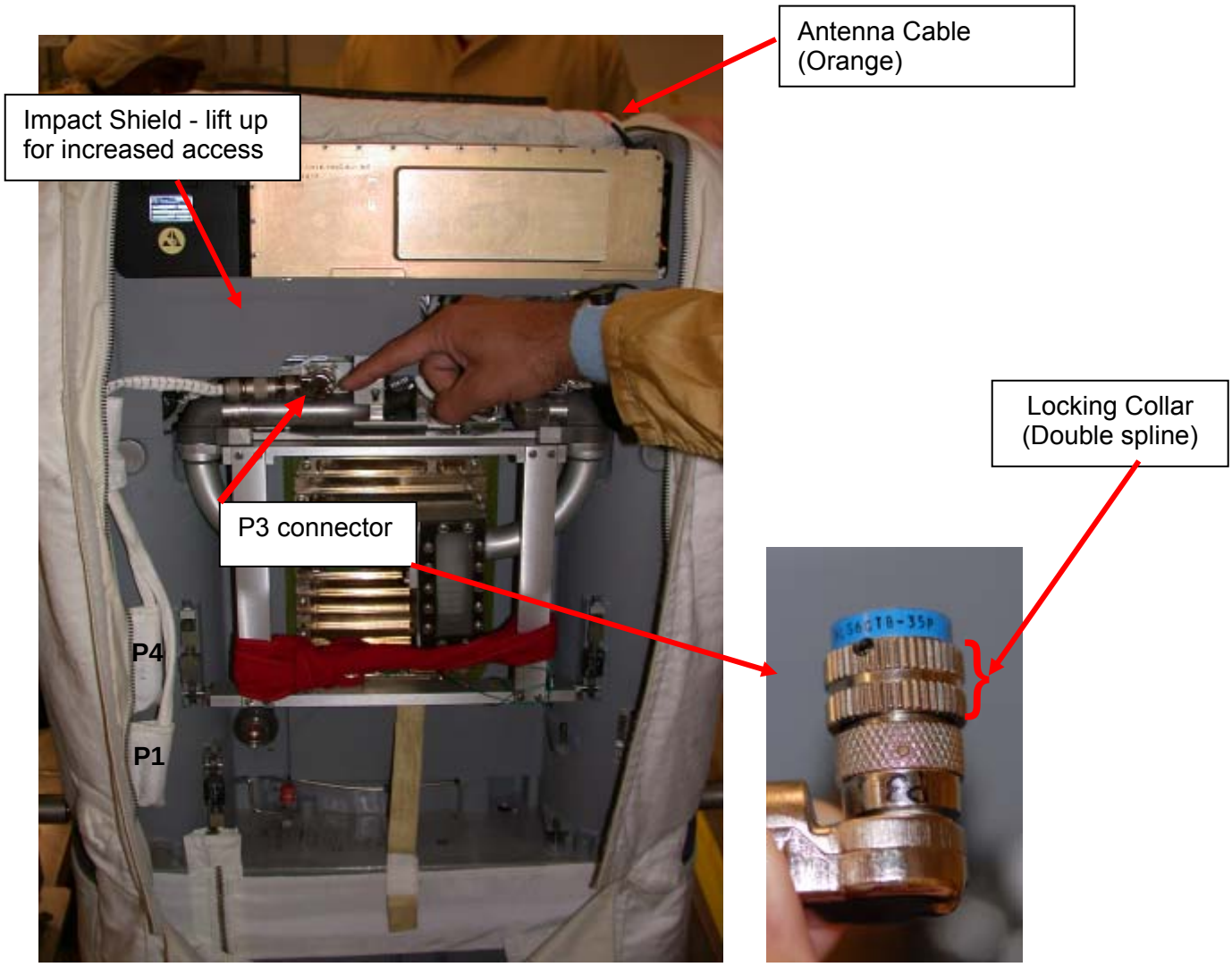


Figure 1 - P3 Data Cable Location

14. TMG INTERFACE SEPARATION
Refer to Figure 2.

14.1 Unzip and unsnap left TMG tunnel.

14.2 Unsnap TMG around HUT/PLSS from bottom left (TMG tunnel) approximately to the top center of the neck ring.

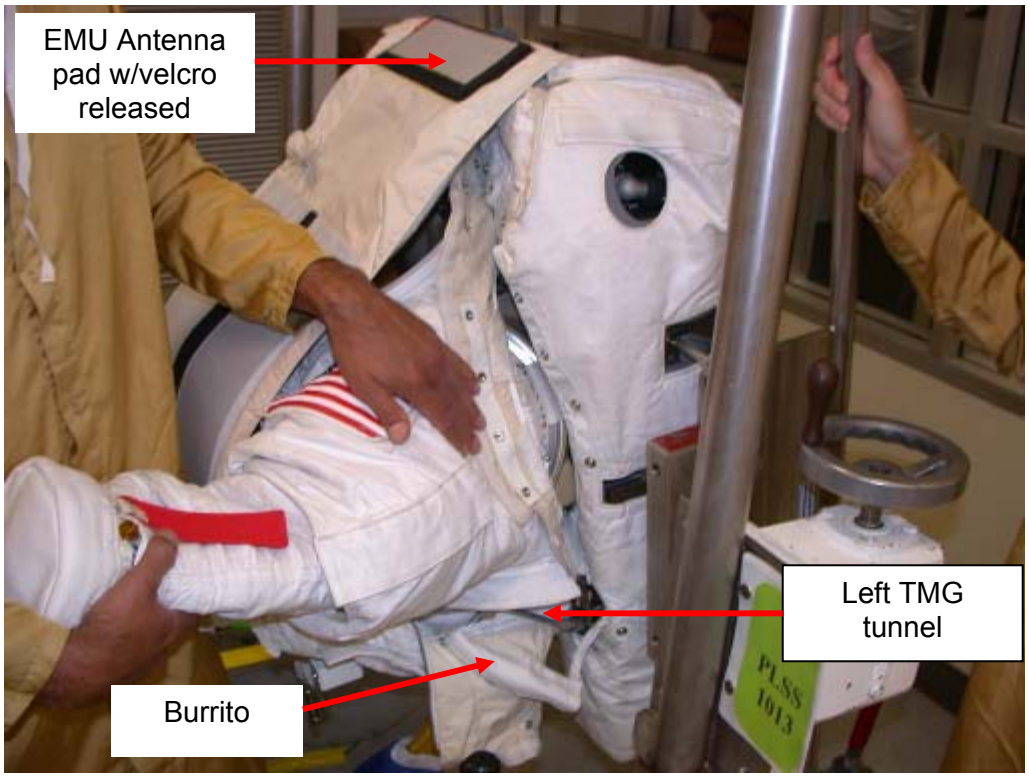


Figure 2. - HUT/PLSS TMG Interfaces

HUT 15. Inside left TMG Tunnel, open burrito (velcro pouch) to expose EMU voltage regulator.
Refer Figure 2.

CAUTION
Unique LEMO connector operation: Retract P5A connector prior to pulling J5. Pulling too hard on J5 can damage wires on voltage regulator.

16. Don static wrist tether

17. EMU Power Harness (J5) ←|→ Voltage Regulator (P5A)

To disconnect the EMU Power Harness (J5) from the voltage regulator use this technique: If gap is not visible between P5A & J5, lightly pull out J5 connector exposing a small gap between the two red dots.
Refer to Figure 3.

Use fingernail to push P5A connector collar toward the voltage regulator REBA label. With P5A retracted ~ 1/16 inch, J5 will release when pulled outward.
Refer to Figures 3 and 4.

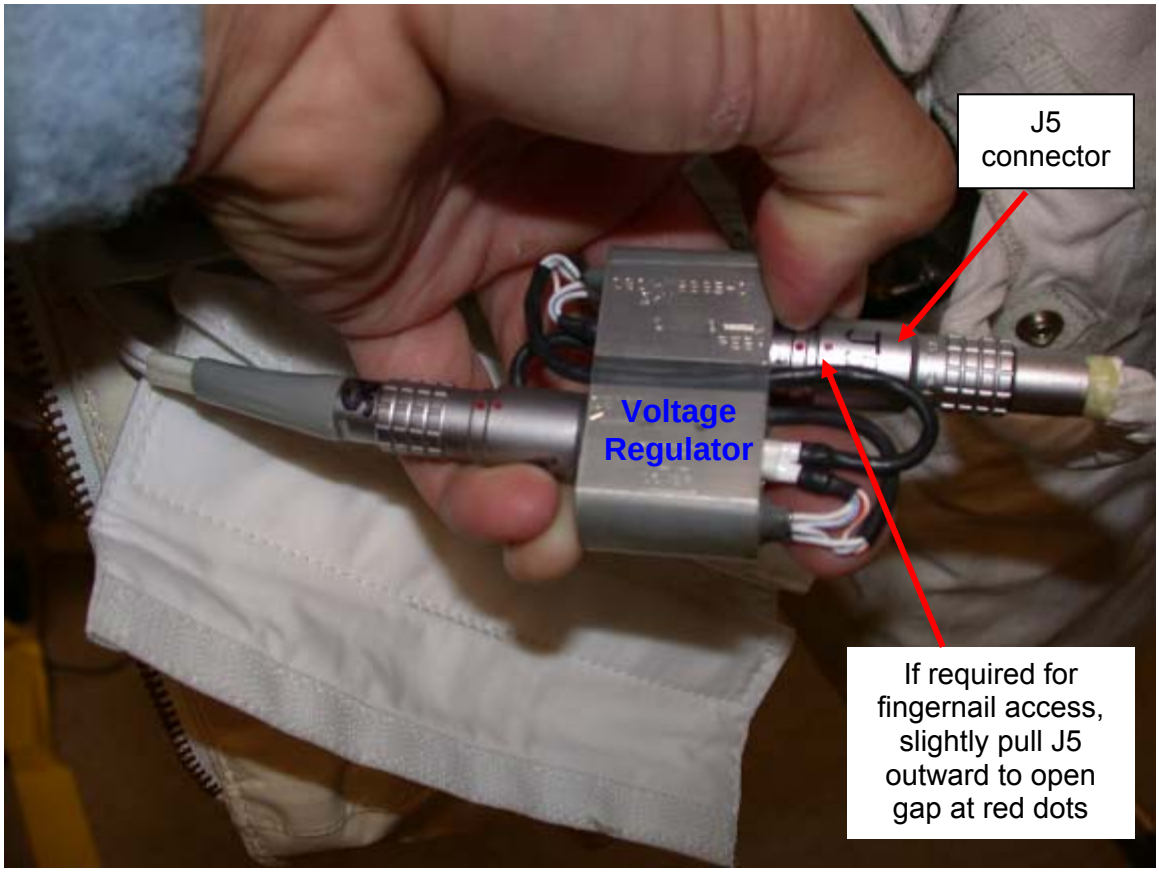


Figure 3 - Voltage Regulator - Verify/establish Gap Between Red Dots

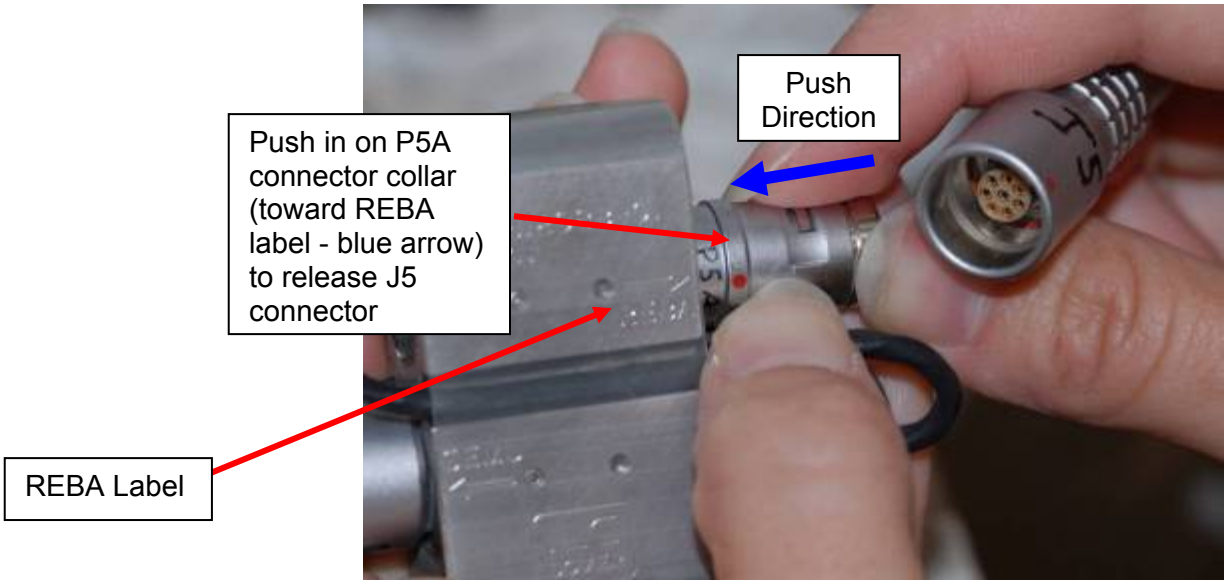


Figure 4 - Voltage Regulator P5A ←|→ J5
(Fingernail release technique - blue arrow)

18. Stow voltage regulator inside burrito and close velcro, leaving J5 end exposed (outside the burrito).

PLSS 19 . EMU power harness P2 ←|→ EMU TV ground plug (forward/upper left corner of PLSS).
Close TMG flap over ground plug.

20. Turn TMG inside out at left shoulder of PLSS.
If required for TMG access, remove EMU from EDDA.

21. From inside TMG, pull J5 and P2 connectors upward thru the internal TMG restraint loops. Start at the connector ends first, going loop by loop until you reach the stitched restraint loop location.
Refer to Figures 5, 6 and 7.

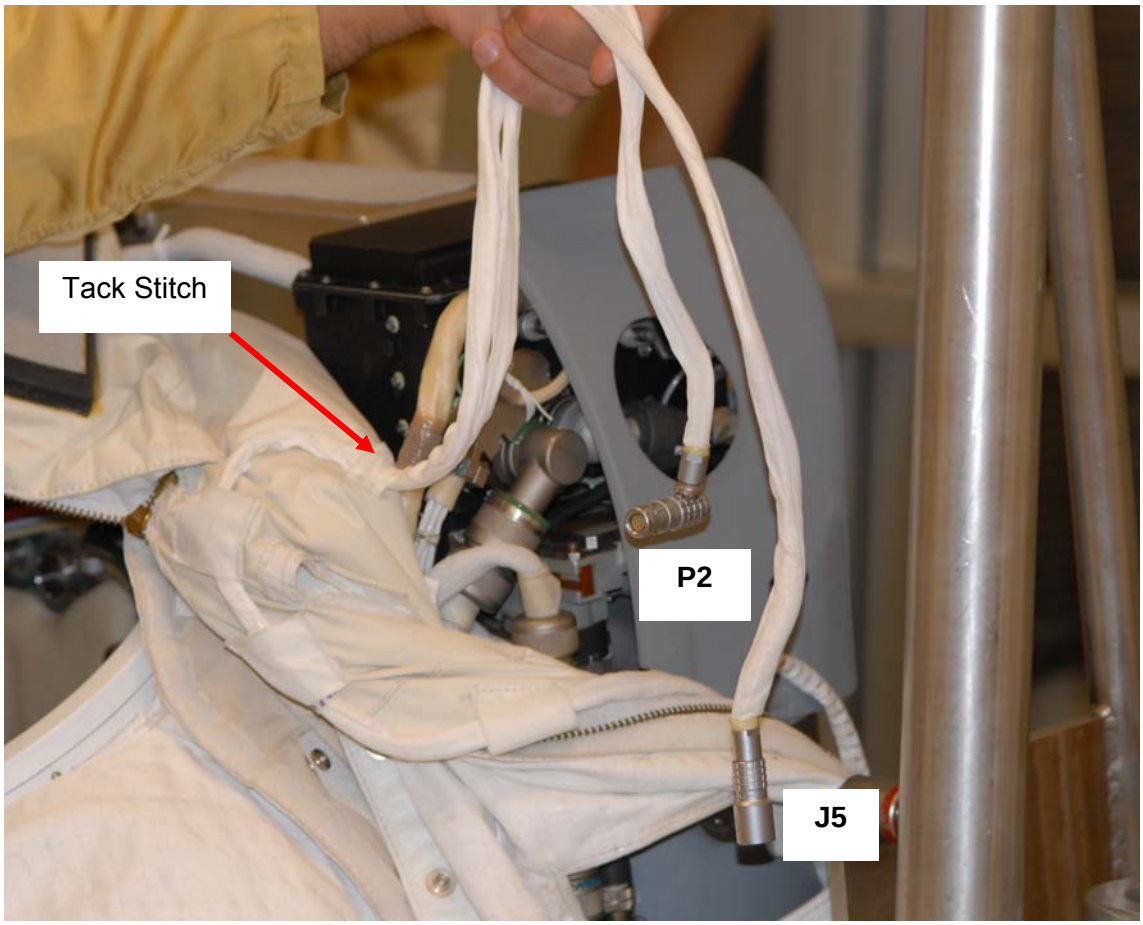


Figure 5 - P2 & J5 Ends Free of PLSS TMG Restraints

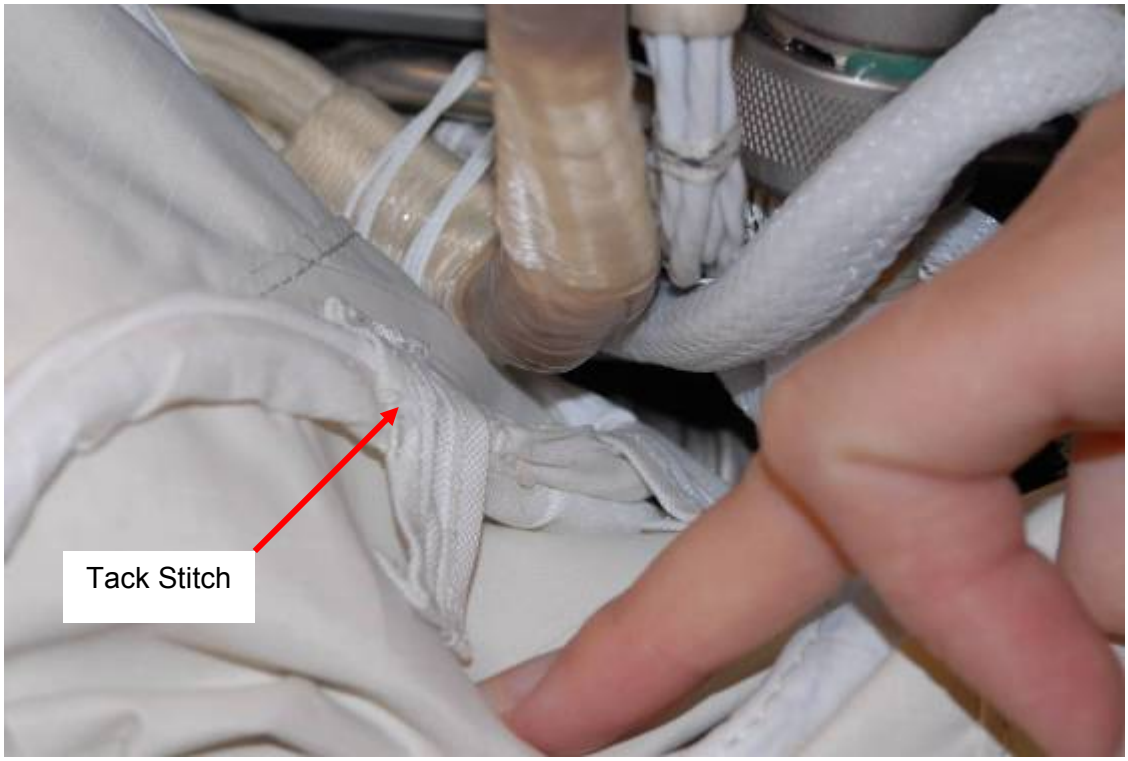


Figure 6 - Stitched Restraint Loop Location

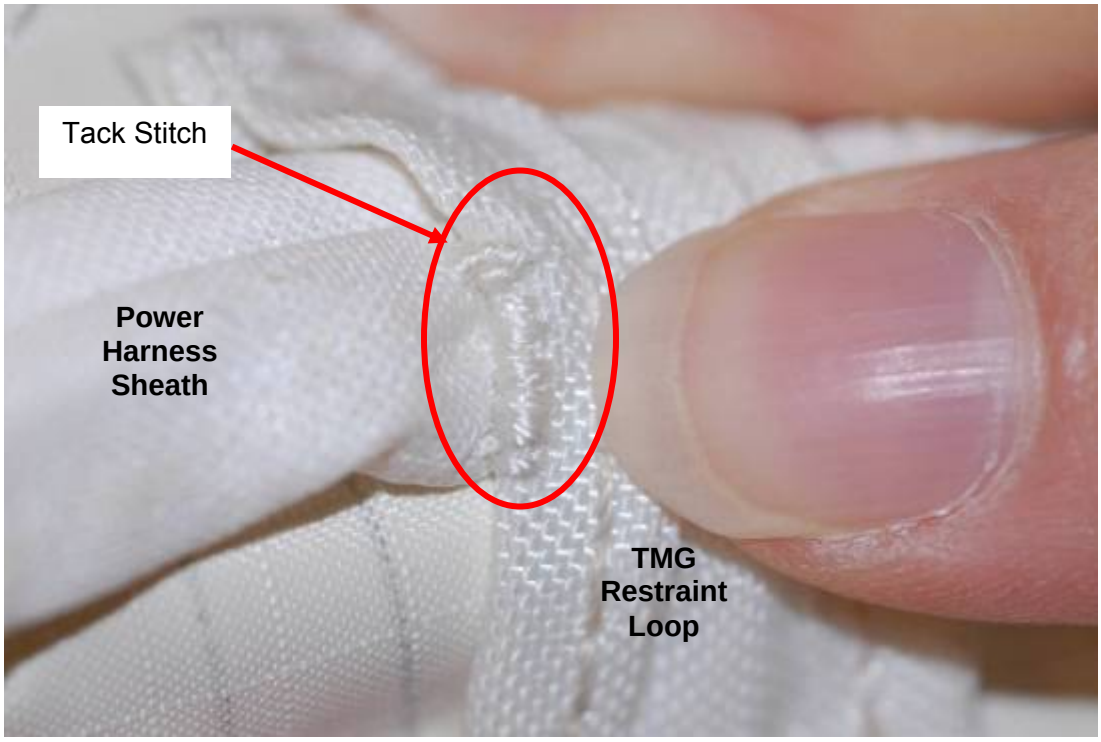


Figure 7 - Tack Stitching (close up view)

CAUTION
Take care that you DO NOT inadvertently cut the EMU Power Harness sheath. If necessary, sacrifice the PLSS TMG restraint loop instead.

22. Using wire cutters, cut the tack stitch to free the harness.
    Refer to Figure 8.
    Collect all removed thread and discard (to prevent FOD in PLSS)

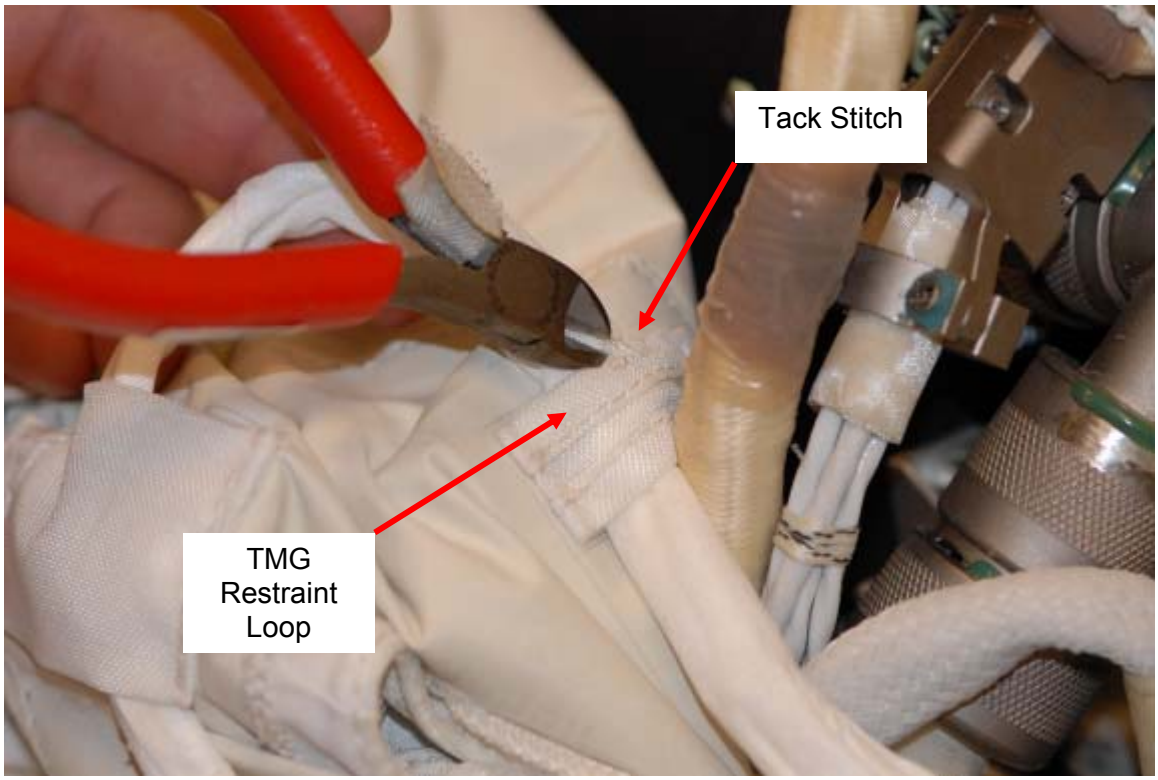


Figure 8 - Cut Tack Stitching & Remove FOD

23. Continue guiding P2/J5 connectors upward thru remaining 4 loops (includes the tack stitched restraint loop)

24. Remove P1 and P4 connectors from internal (left rear) PLSS TMG stowage pockets (labeled P1/REBA & P4/PCS) and pull upward thru last restraint loop.

    EMU power harness should now be free of the PLSS TMG.

25. Inspect removed harness for obvious damage.

26. Cover all connectors on removed harness with Kapton tape.

INSTALLING ISS REBA/EMU POWER HARNESS

The following steps provide detailed instructions for routing the new cable in EMU 3004. Figure 9 provides a reference of the TMG tunnels used to restrain the cable.

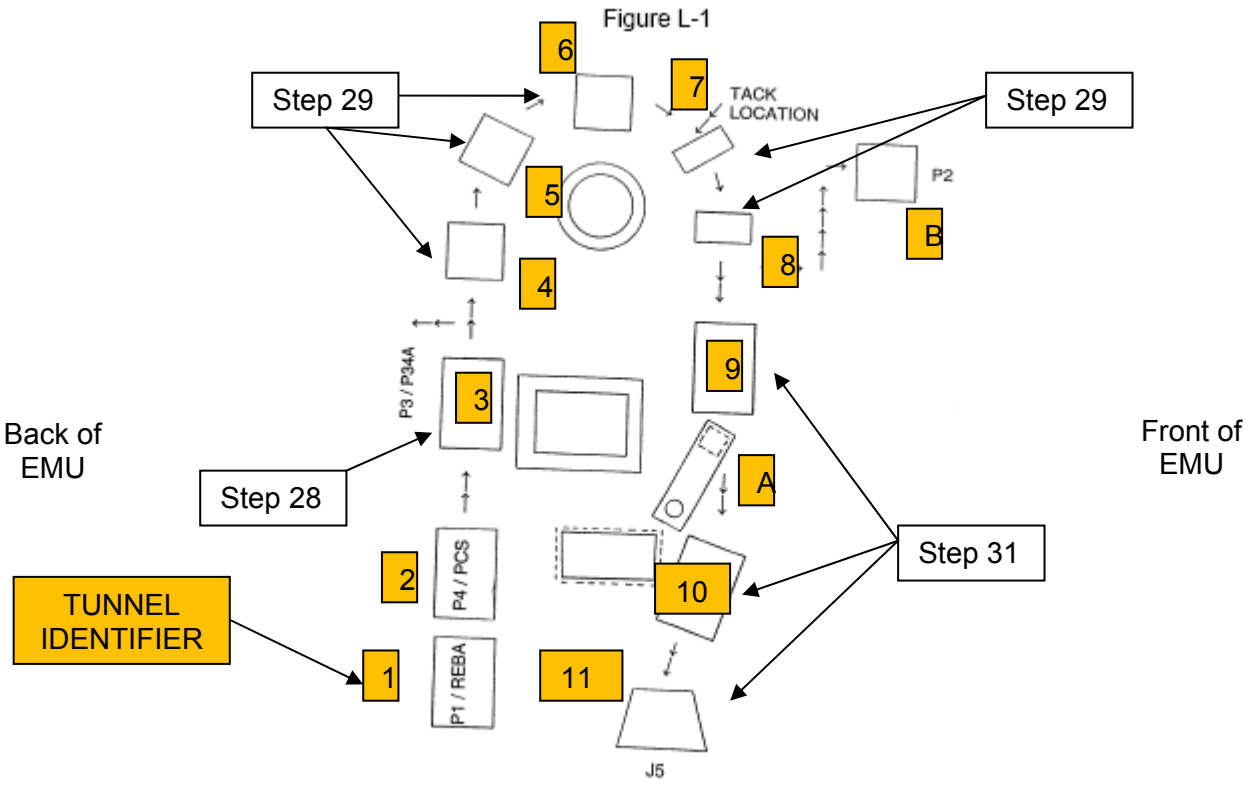


Figure 9 - EMU Pwr Harness Restraints (TMG Cut Tack Stitching & Tunnels) Routing Viewed from Right Side of EMU

NOTE
Refer to Figure 9 for Wire Harness routing and TMG restraints for EMU Pwr Harness

27. Position TMG to allow access to the LEFT side of the TMG interior where the cable is to be installed.

ROUTING CABLE TO REBA

28. Route the P1/P4 connector up through the first tunnel located above the P4/PCS pouch
    Refer to Figure 10.

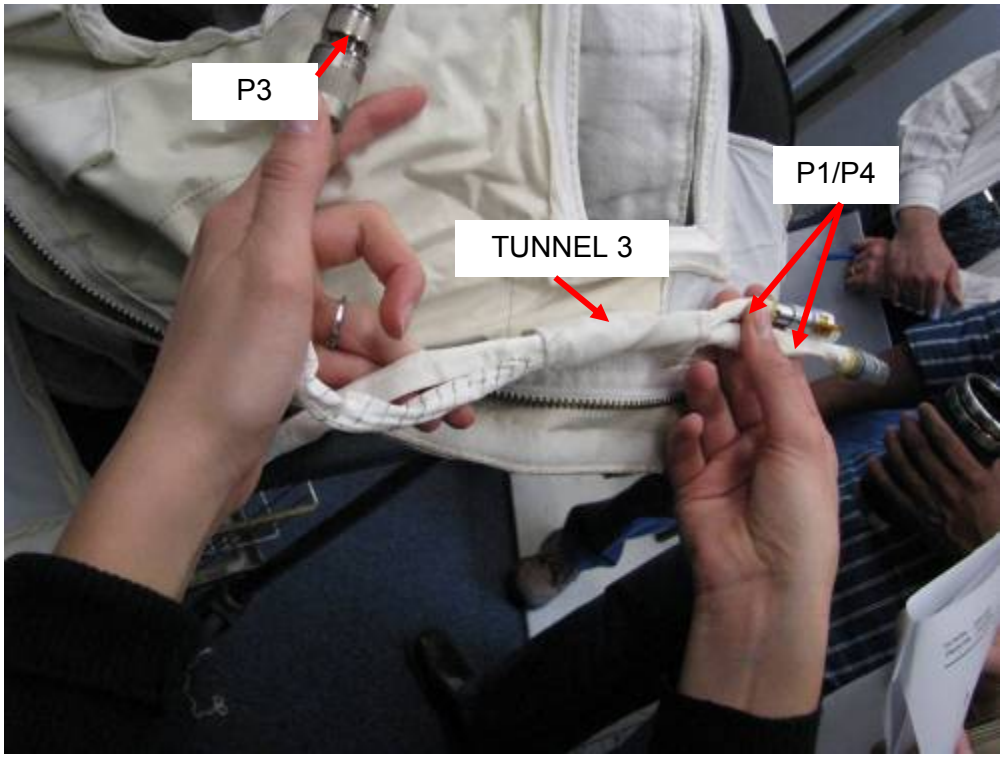


Figure 10. P1/P4 Routing

ROUTING HARNESS OVER EMU LEFT SHOULDER

29. Route the P2 and J5 connectors (in that sequence) up through the next three tunnels, and two loops
    Refer to Figures 11 to 15.

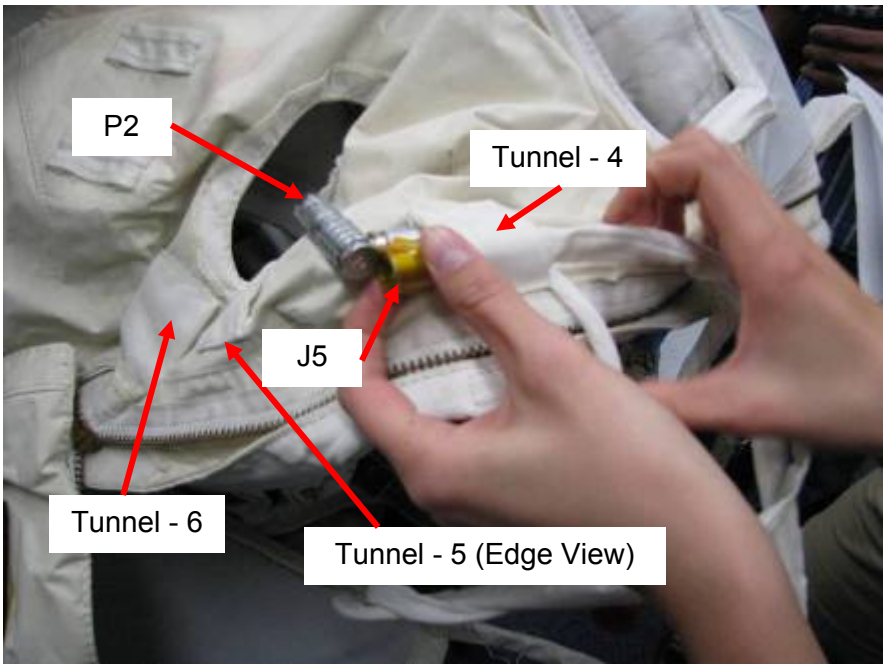


Figure 11: P2 and J5 Connector Routing

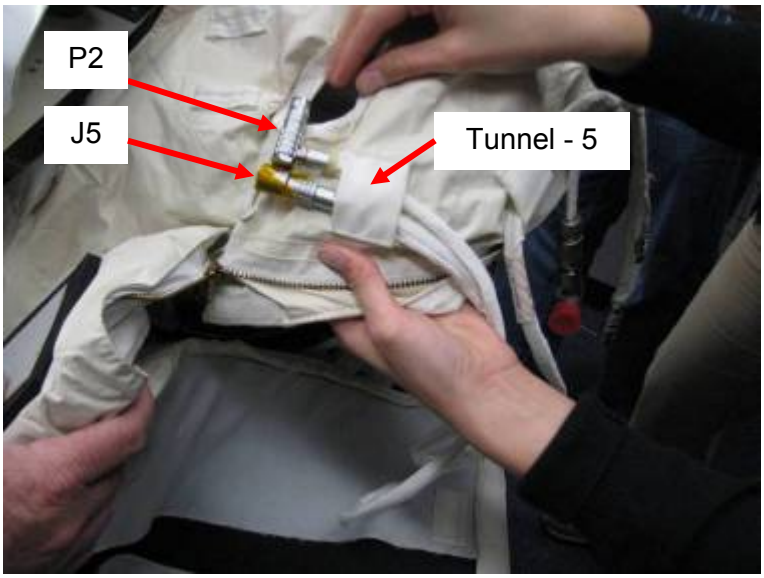


Figure 12: P2 and J5 Connector Routing

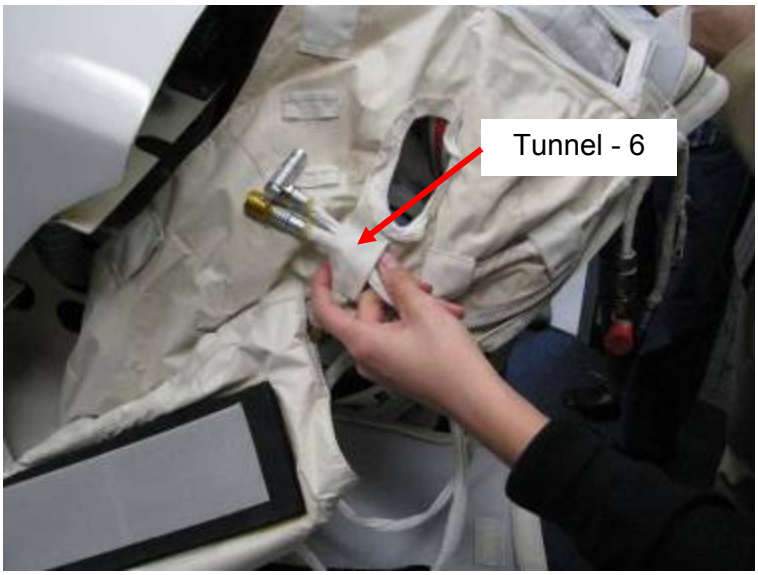


Figure 13: P2 and J5 Connector Routing

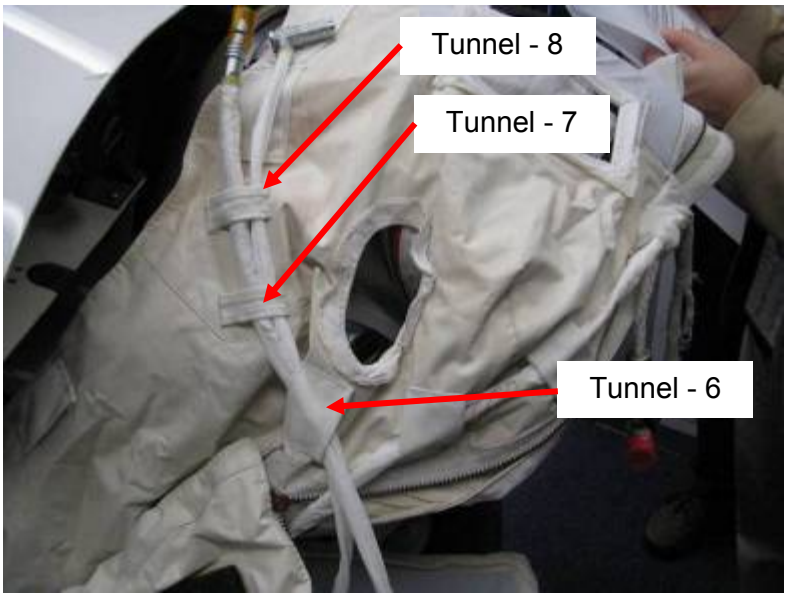


Figure 14: P2 and J5 Connector Routing

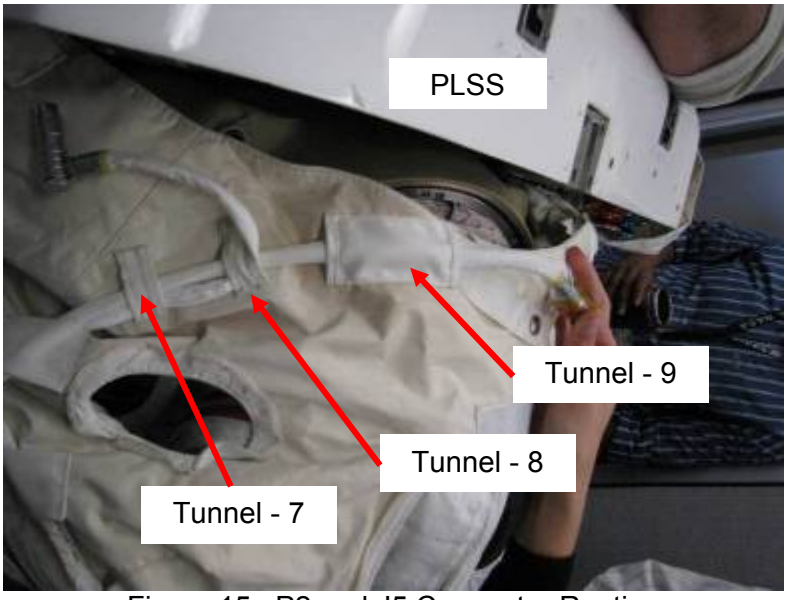


Figure 15: P2 and J5 Connector Routing
(View of Top Left Shoulder - Looking Nadir)

STOWING REBA CONNECTOR

30. Insert the P1 and P4 connectors into their respective pouches and secure the Velcro
Refer to Figure 16.

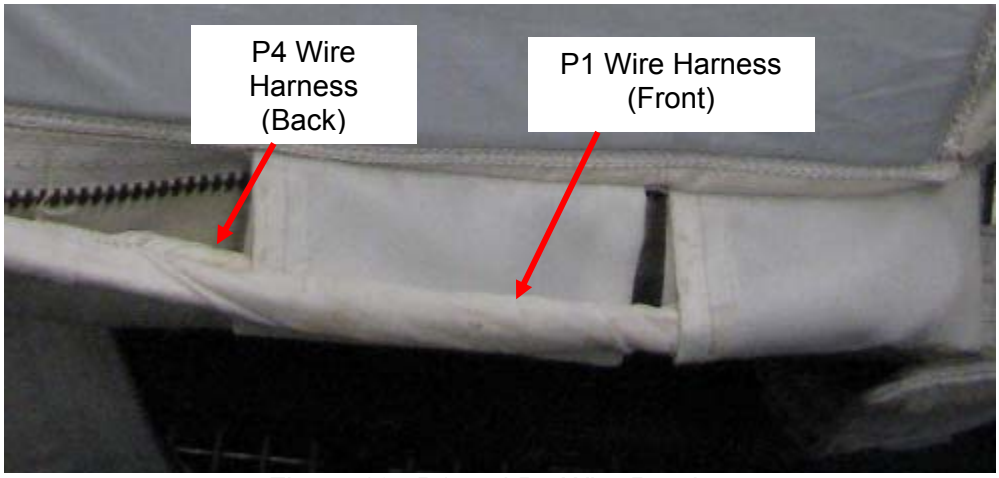


Figure 16: P1 and P4 Wire Routing

ROUTING HARNESS TO VOLTAGE REGULATOR (TMG TUNNEL LEFT SIDE OF EMU)

31. Route the J5 connector down through the next two tunnels, then through the last tunnel (trapezoid shaped).
    Refer to Figures 17 and 18.

NOTE
Do not route harness through snap strap.

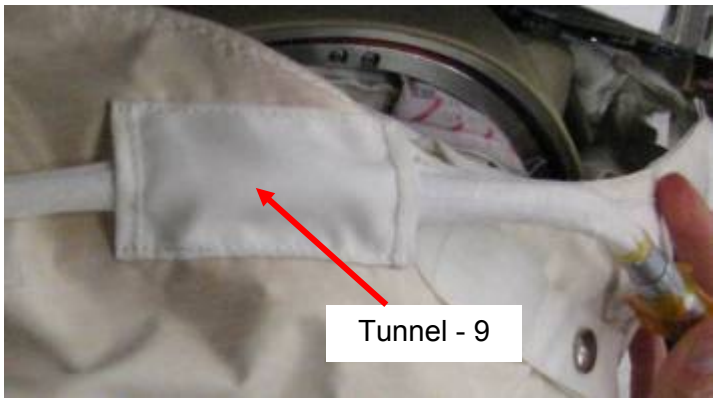
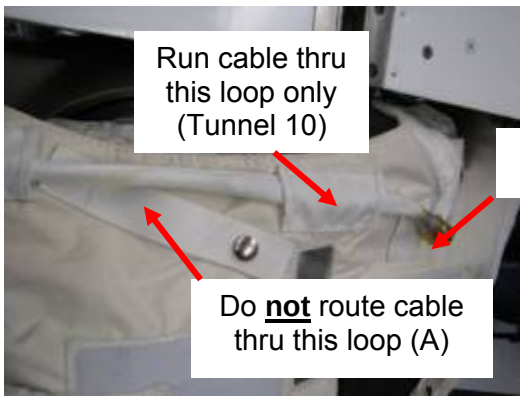


Figure 17. J5 thru Tunnel 9



Tunnel 11

Figure 18 - Correct Harness Routing

ROUTING HARNESS TO ERCA

32. Route the P2 connector through the tunnel located at the upper-left-front of the TMG
    Refer to Figure 19.

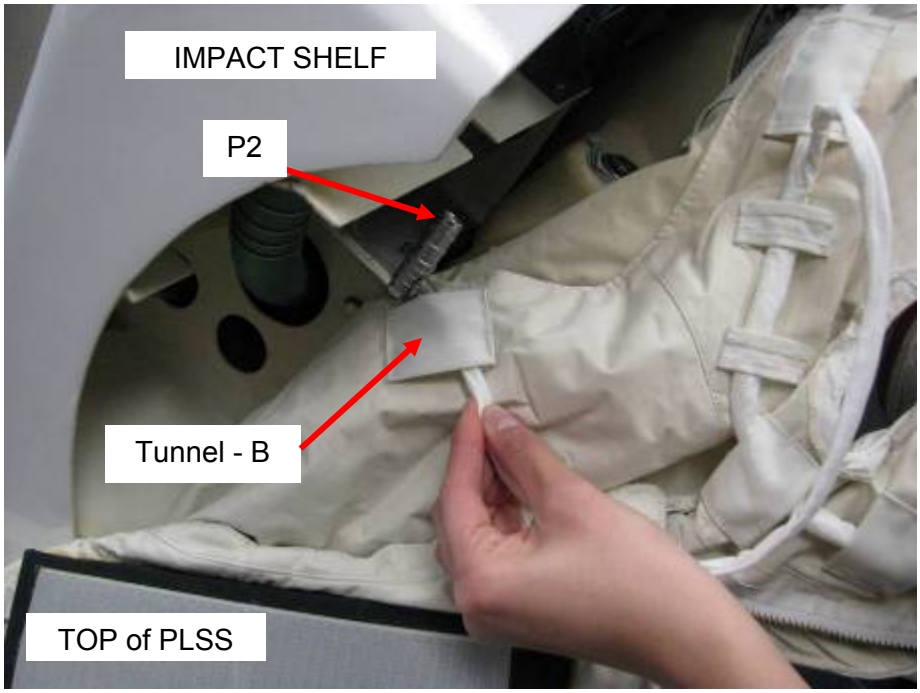


Figure 19 - View of Top Left Shoulder Looking Down

33. Remove any twists in the harness.

34. Don static wrist tether (IVA Tool Box).

35. While rotating left side of PLSS TMG onto PLSS, pull J5 connector onto TMG exterior.

CONNECTING HARNESS TO VOLTAGE REGULATOR

36. Inside left TMG tunnel, open burrito (Velcro pouch) to expose EMU Voltage regulator. Connect J5 to P5A.
    Refer to Figures 3 and 4.

37. Close burrito and left TMG tunnel.
    Refer to Figure 2.

CONNECTING HARNESS TO GROUND PLUG (NEAR ERCA)

38. Pull P2 connector onto PLSS TMG exterior and mate to J2B. (WIRE HARNESS to ERCA Connection)

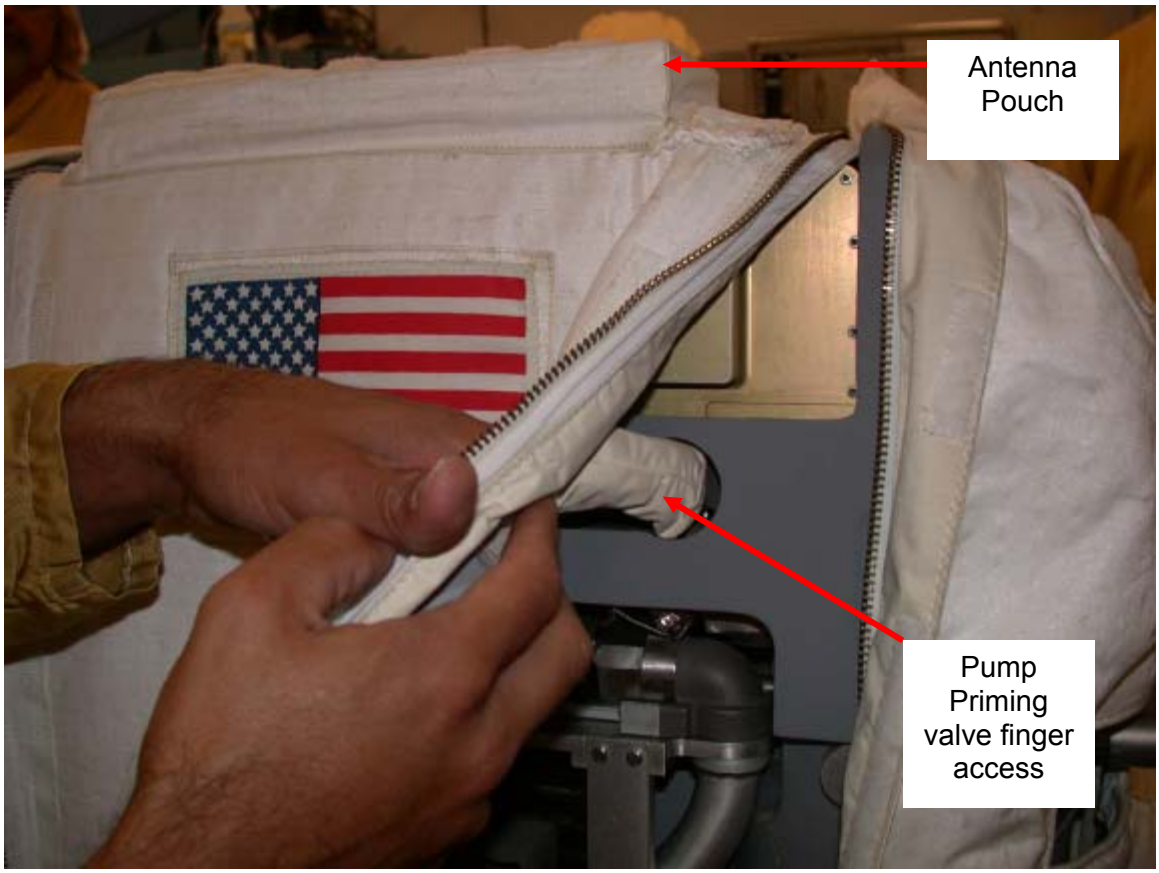


Figure 20 – Pump Priming Valve Finger Opening

CLOSING TMG AND CONNECTING P3

39. Pull PLSS TMG upward on left side of PLSS to re-cover top corner of PLSS and to allow left side zipper of rear TMG cover to just begin closing.
Refer to Figure 20.

40. Fold antenna pouch down onto velcro restraint and partially fold down flap on rear of PLSS to engage pump priming valve finger opening.
Refer to Figure 20.

41. Mate EMU power harness (P3) to PLSS (near center)
Refer to Figure 1.

42. Continue folding flap to cover rear PLSS opening.

43. FRONT TMG INTERFACE MATING
As required, refer to Figure 2.

43.1 Secure TMG snaps and velcro around HUT/PLSS.

43.2 √HUT TMG secured over suit pressure gauge and TMG snaps secure around Temperature Control Valve.

43.3 Secure with Velcro the flap under O2 line on the front, left side of HUT/PLSS interface to secure TMG around SOP.
Refer to Figures 21 and 22.

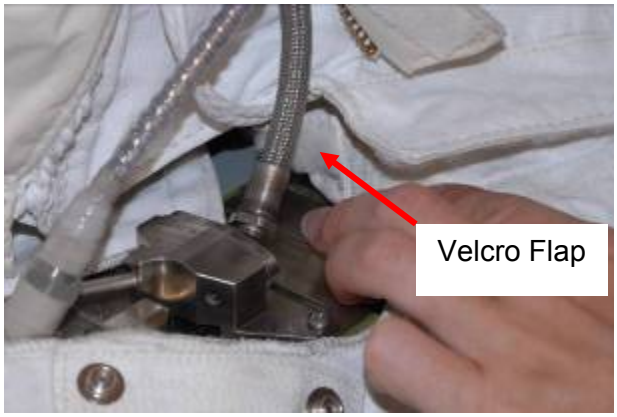


Figure 21 - Flap Opened

Figure 22 - Flap Velcroed

44. √TMG interfaces are smooth and free of gaps

45. BACK TMG INTERFACE MATING

45.1 Engage zipper and snaps on outboard REBA TMG (lower rear of PLSS)

45.2 Close both left and right side zippers of the rear PLSS TMG flap

22-0579A (MSG 072A) 2.1.425 ARED- NODE 1 TO NODE 3 RELOCATION
(MED OPS/E22 – ALL/FIN/REAL-TIME) Page 1 of 21 pages

OBJECTIVE:

Remove ARED from NOD1O2 and reinstall in NOD3F2

CREW:

Two

MATERIALS:

2 small Ziplocks
Nitrile Gloves (1 Pair)
Rheolube
Kapton Tape

TOOLS:
Sharpie
Digital Camera
ISS IVA Toolbox:
Drawer 1:
3/4" Combination Wrench
Drawer 2:
3/4" Deep Socket, 3/8" Drive
7/16" Deep Socket, 3/8" Drive
9/16" Socket, 3/8" Drive
(10-50 in-lbs) Trq Wrench, 1/4" Drive
(40-200 in-lbs) Trq Wrench, 3/8" Drive
Ratchet, 3/8" Drive
1/4" to 3/8" Adapter
Drawer 3:
(200-1000 in-lbs) Trq Wrench, 3/8" Drive
Drawer 5:
Tape Measure

1. DETACHING ARED FROM VIS
   1.1. Powering ARED off
      1.1.1. ARED Display pwr → OFF

      1.1.2. Instrumentation Box → OFF

      1.1.3. A31p 120VDC Power Supply → OFF

   1.2. √UOP Power is OFF

   1.3. Disconnect the following cables
      US DC Power Cable:
         P2 ←|→ UOP

      ARED Capacitor Cable (only one end)
         P2 ←|→ J2 (Instrumentation Box)

      ARED Display Cable (Instrumentation Box Connections)
         P3B ←|→ J3 (USB)
         P1 ←|→ J1 (Power)
      Refer to Figure 1.

Figure 1. - ARED Display, Instrumentation Box Connection Cable.

1.4. Cover ARED cable connectors with Kapton Tape.
Cover Instrumentation Box connectors with Kapton Tape.

1.5. Remove, stow Multi-Use Bracket with ARED Display and Cables.
Temporarily stow display so that it is protected from scratches and dings.

1.6. Loosen 1/2 to 1 turn VIS Rotation Post Fasteners, (eight, four per side) per Figure 2 (Ratchet 3/8" Drive; 9/16" Socket, 3/8" Drive).

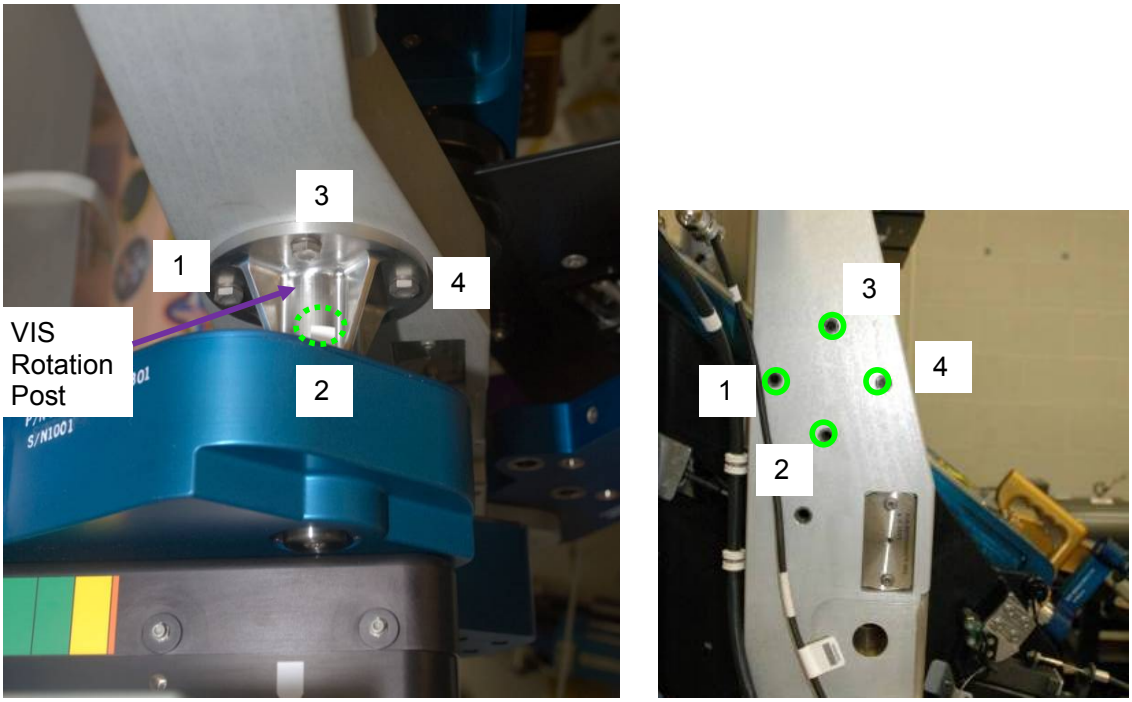


Figure 2.- VIS Rotation Post Fastener Locations

1.7. Decrease ARED Load to hard stop.
√ARED Crank Handle is oriented in 3 o'clock or 9 o'clock position.

1.8. Simultaneously turn both Cylinder Flywheel Valves to Open (hard stop).
Refer to Figure 3.

Figure 3. - Cylinder Flywheel Valves.

1.9. Label Ziplock "VIS Rotation Post Fasteners and Washers."
Remove non-captive VIS Rotation Post Fasteners numbers 1 and 2 per Figure 2, washers (four, two per side) (Ratchet 3/8" Drive; 9/16" Socket, 3/8" Drive).
Temporarily stow fasteners, washers in Ziplock.
Tape Ziplock to Platform.

1.10. Rack Main Arm to Upper Stops.

1.11. Raising ARED Platform

1.11.1. Remove Lower Stop PIP Pin (two, one per side).
Remove Lower Stops (two, one per side).
Reinsert Lower Stop PIP Pin into Lower Stop.
Refer to Figure 4

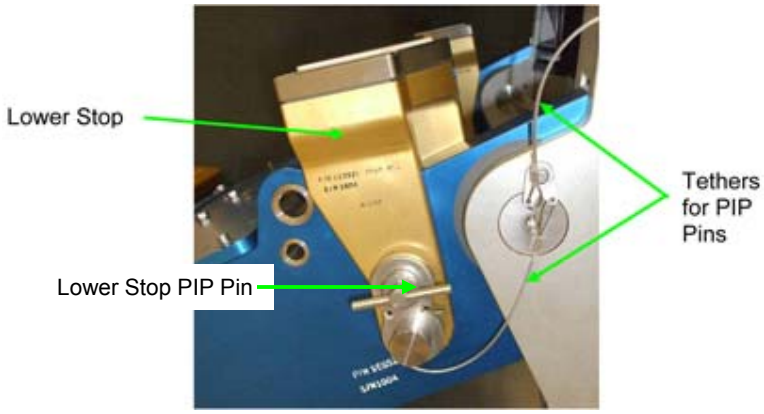


Figure 4. - Right Side Lower Stop on Platform Arm.

1.11.2. Remove Platform PIP Pins (two, one per side) from Location A.
Refer to Figure 5.

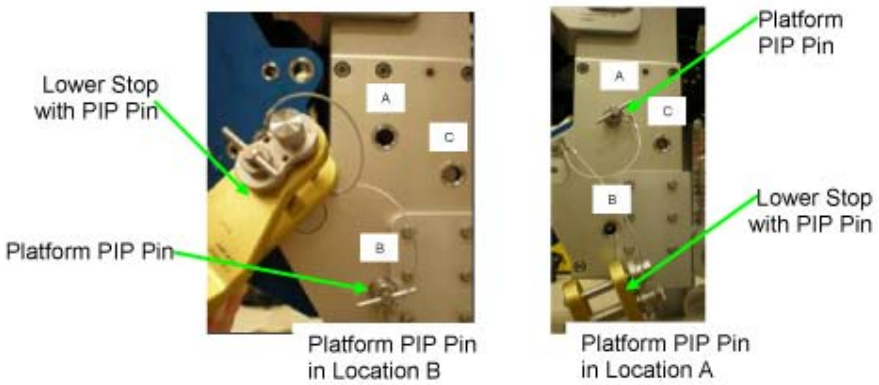


Figure 5. - Platform PIP Pin Locations.

CM 2 1.11.3. Raise Main Arm, Platform.

CM 1 1.11.4. Insert Platform PIP Pins (two, one per side) into location B. Refer to Figure 5.

1.12. Remove Lower Stop PIP Pins (two) from Lower Stops (two, one per side).
Straddle Lower Stop on back of frame over hole location C
Insert larger pin of Lower Stop PIP Pin in Hole C on Frame.
Refer to Figures 5, 6

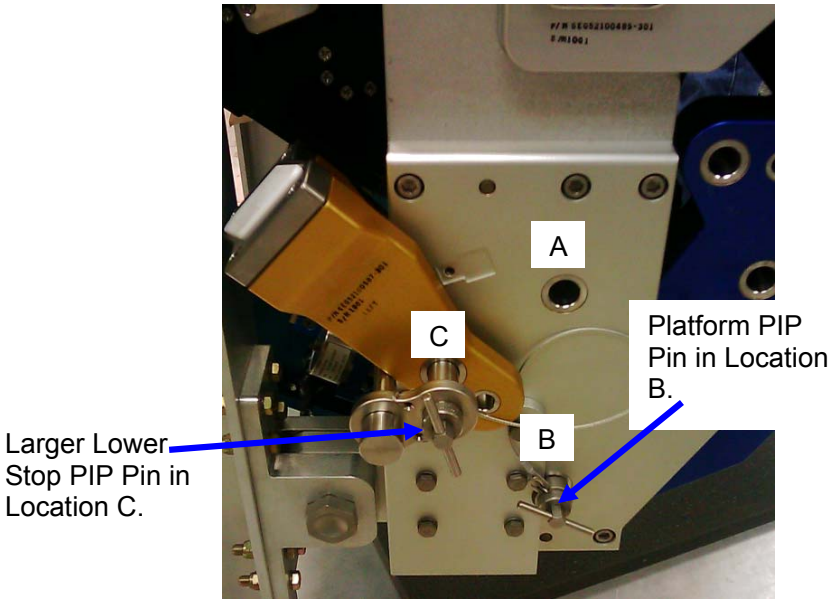


Figure 6.- Lower Stop Secured to ARED Frame

2. REMOVING AND TRANSLATING ARED

2.1. Remove remaining non-captive VIS Rotation Post Fasteners (four, two per side), washers (four, two per side) (Ratchet 3/8" Drive; 9/16" Socket, 3/8 Drive).
Temporarily stow fasteners, washers in Ziplock labeled “VIS Rotation Post Fasteners and Washers.”
Refer to Figure 2.

CM 1, 2 2.2. Remove ARED from VIS.

CAUTION
During temp stow ensure ARED does not come into contact with Aft hatch window.

CM 1, 2 2.3. Translate ARED to Node 3.
Temp stow ARED in Aft hatch area.

NOD1O2 3. DETACHING VIS FROM SEAT TRACK INTERFACES

CAUTION
The VIS system and its components are fragile. Any impact or kick loads imparted to the VIS could cause hardware damage.

NOTE
Once VIS is detached it will consist of Left VIS, Right VIS, and Yoke Beam as a single piece.

3.1. Remove PIP Pin from top Trunnion Clamp on Left Side.
Open Trunnion Clamp.
Refer to Figure 7.

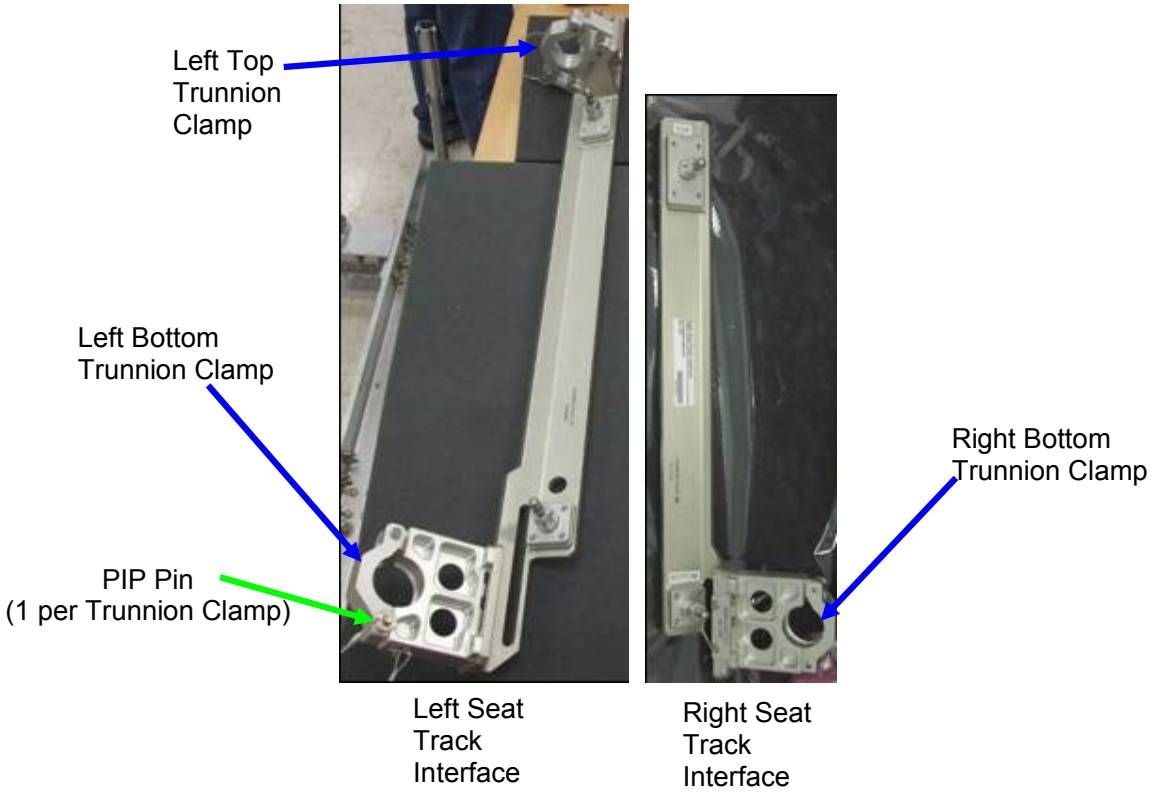


Figure 7.- Trunnion Clamps and PIP Pins

3.2. Remove PIP Pins (two) from bottom Trunnion Clamps on Left, Right Side.
Open Trunnion Clamps.
Refer to Figure 7.

CM 1, 2 3.3. Remove Left, Right VIS with Yoke Beam from Seat Track Interfaces.
Refer to Figure 8.

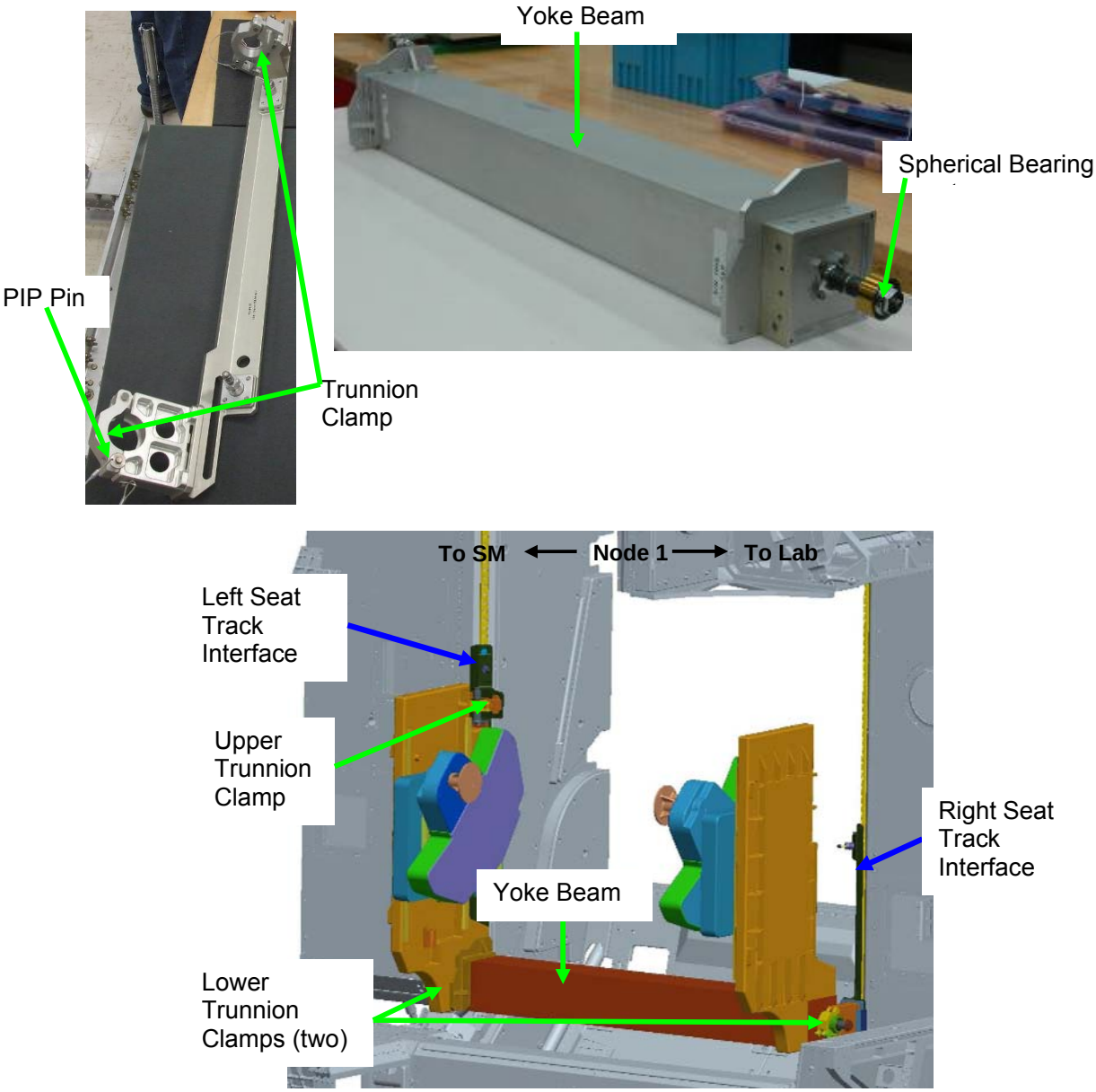


Figure 8.- Seat Track Interface,Yoke Beam Spherical Bearing, Trunnion Clamp.

3.4. Close Trunnion Clamps (three).
Reinstall PIP Pins (three) to hold Trunnion Clamps closed.

CM 1, 2

3.5. Translate Left, Right VIS with Yoke Beam to Node 3.
Temporarily stow VIS so that it is protected from inadvertent damage.

4. UNINSTALLING SEAT TRACK INTERFACES

4.1. Label Ziplock “Self-Locking Cap Nuts.”
Loosen, remove left Self- Locking Cap Nut (three on left, two on right)
(Ratchet, 3/8" Drive; 7/16” Deep Socket, 3/8" Drive).
Temporarily stow fasteners, washers in Ziplock.
Tape Ziplock to Platform.
Refer to Figure 9.

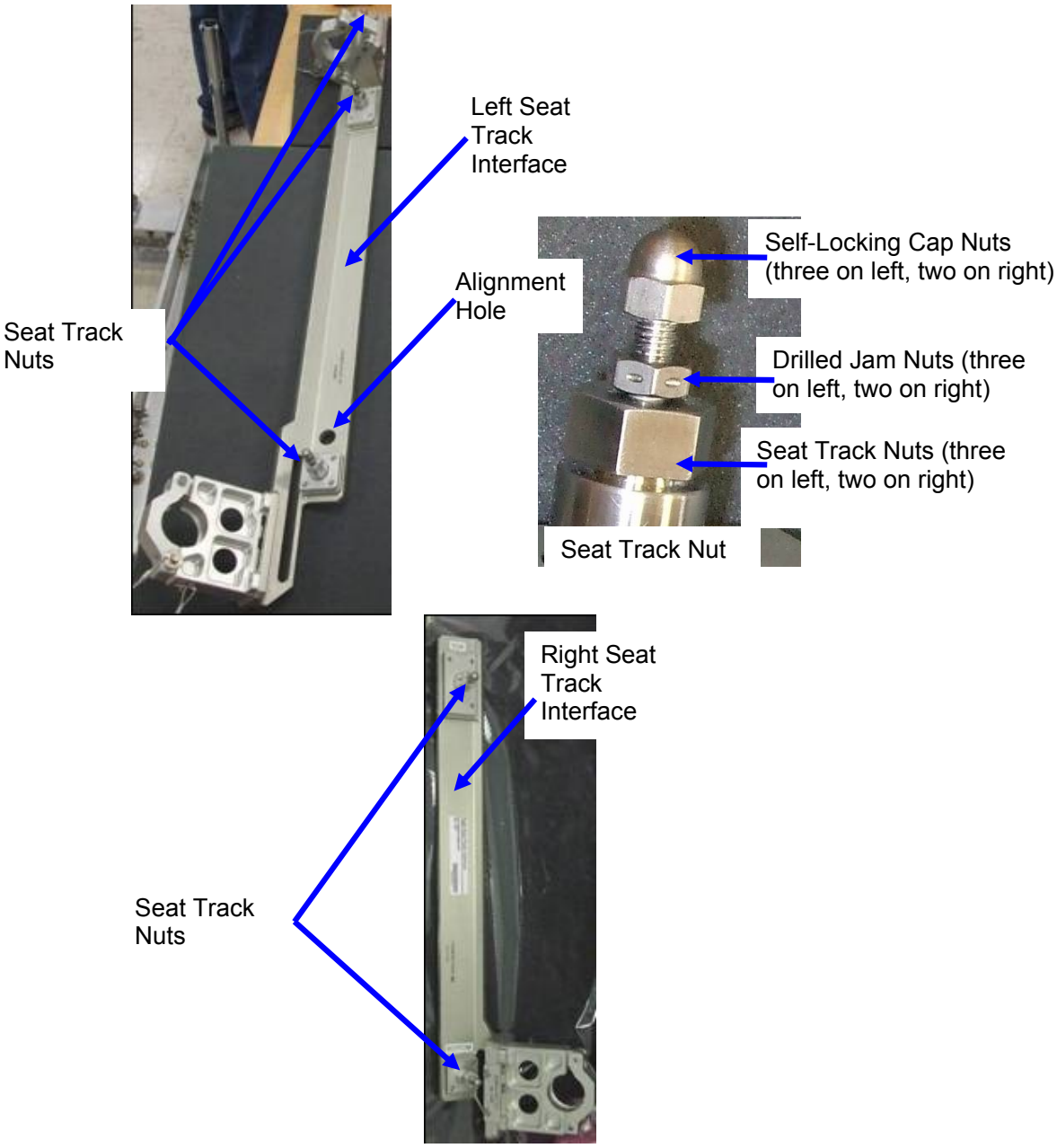


Figure 9.- Seat Track Interface.

4.2. Hold Seat Track Nut in place (3/4" Combination Wrench).

4.3. Completely loosen but do not remove Drilled Jam Nuts (three on left, two on right) (Ratchet, 3/8" Drive; 7/16" Deep Socket, 3/8" Drive). Refer to Figure 9.

4.4. Loosen Seat Track Nut approximately six turns (3/4" Combination Wrench).

4.5. Remove Left Seat Track Interface. Refer to Figure 9.

4.6. Repeat steps 4.1 to 4.5 for Right Seat Track Interface.

4.7. Inspect Left, Right Seat Tracks for damage
Photo document damage if found.

4.8. Translate Seat Track Interfaces (two) to Node 3.

5. ATTACHING SEAT TRACK INTERFACES

NOTE
All directional references (up, down, left, right) are with respect to front face of ARED (facing ARED in user position). Refer to Figure 10.

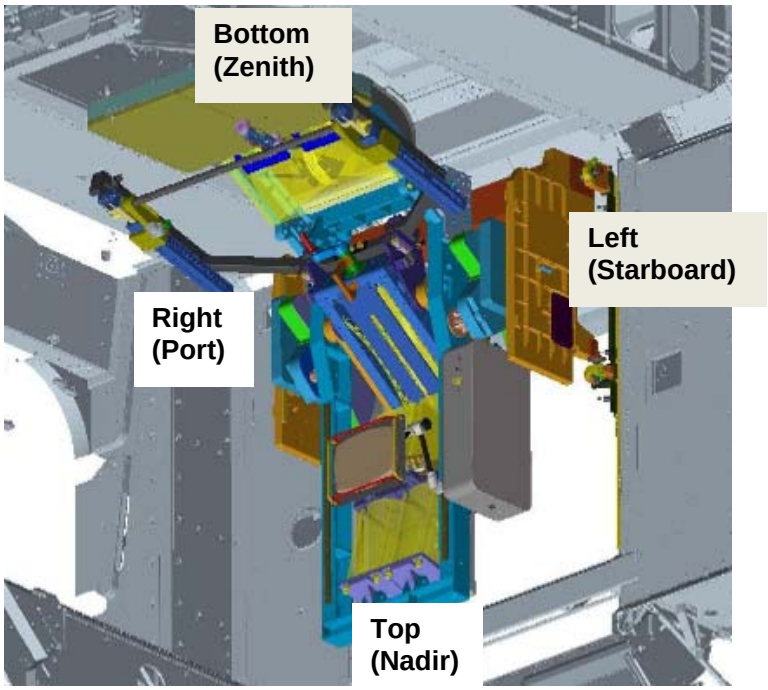


Figure 10.- ARED Node 3 Orientation

5.1. Attach Left Seat Track Interface to the Starboard Forward Seat Track in Node 3, attaching bottom foot in fifth full hole position on Seat Track.
Move sliding feet (top two) as necessary to allow bracket to seat properly.
When Seat Track Interface is installed properly, it will be flush against Seat Track.
√Seat track hole is completely visible through alignment hole.
Refer to Figures 11, 12, 13.

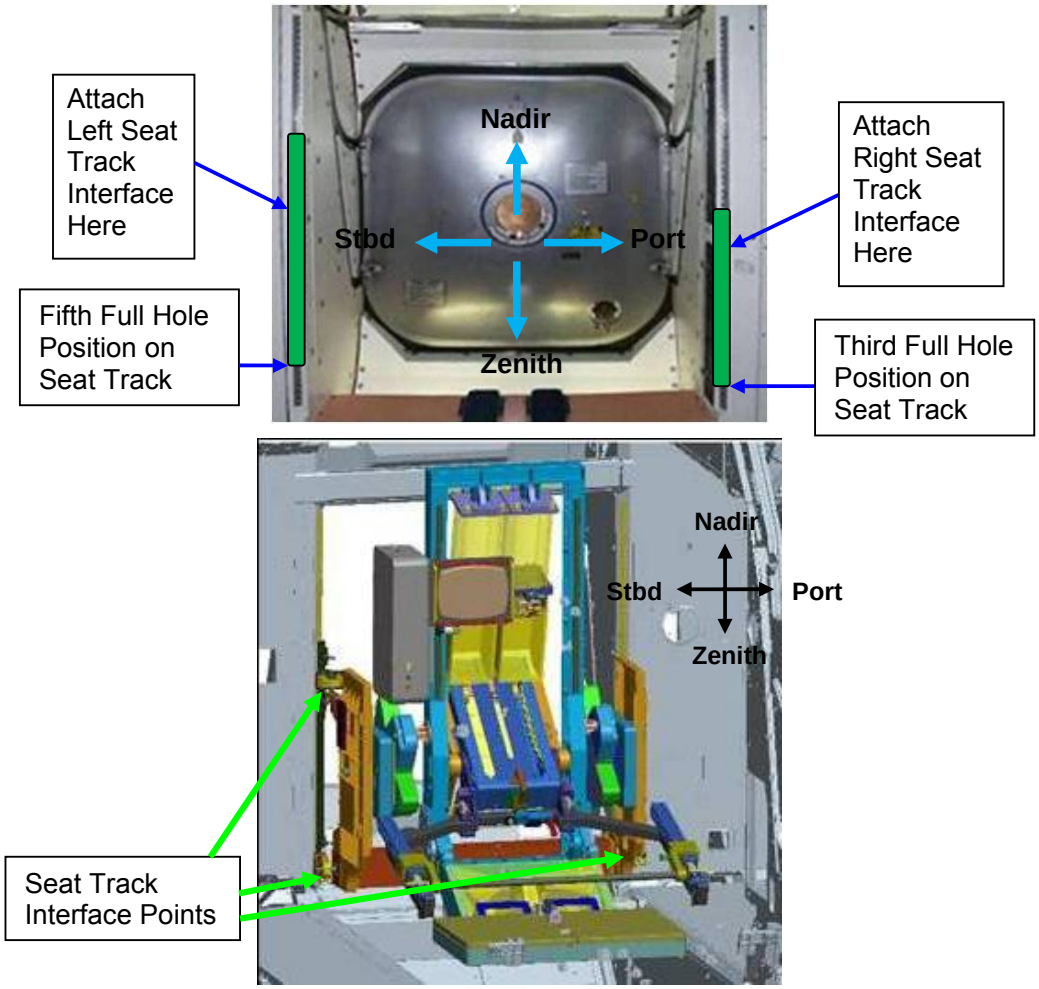


Figure 11.- Left, Right Node 3 Seat Tracks

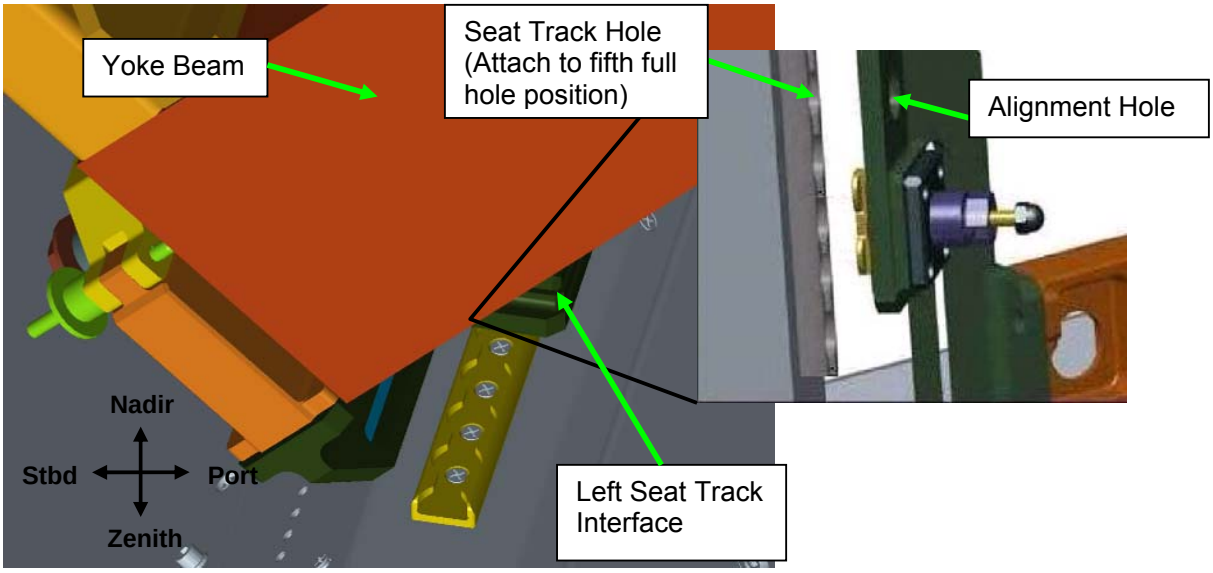
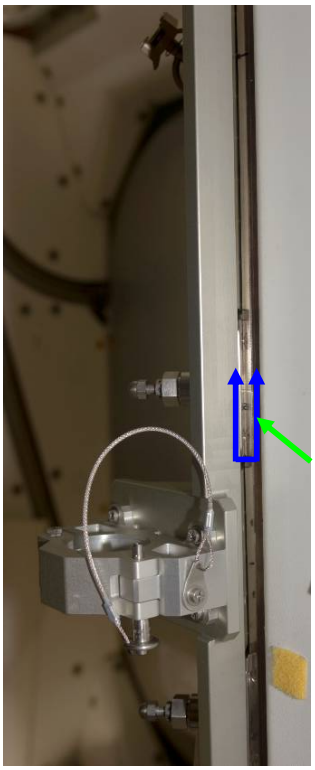
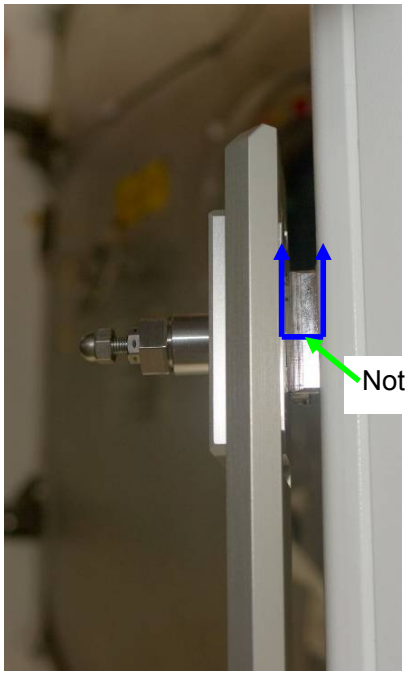


Figure 12.- Installation Position of Left Seat Track Interface, Lower Foot.



Correct



Incorrect

Figure 13.- Seat Track Interface Positioning

5.2. Attach Right Seat Track Interface to the Port Forward Seat Track in Node 3, attaching bottom foot in third full hole position on Seat Track. Move sliding feet (top one) in same direction as in step 5.1 to allow bracket to seat properly.

When Seat Track Interface is installed properly, it will be flush against Seat Track.
Refer to Figures 11, 13, 14.

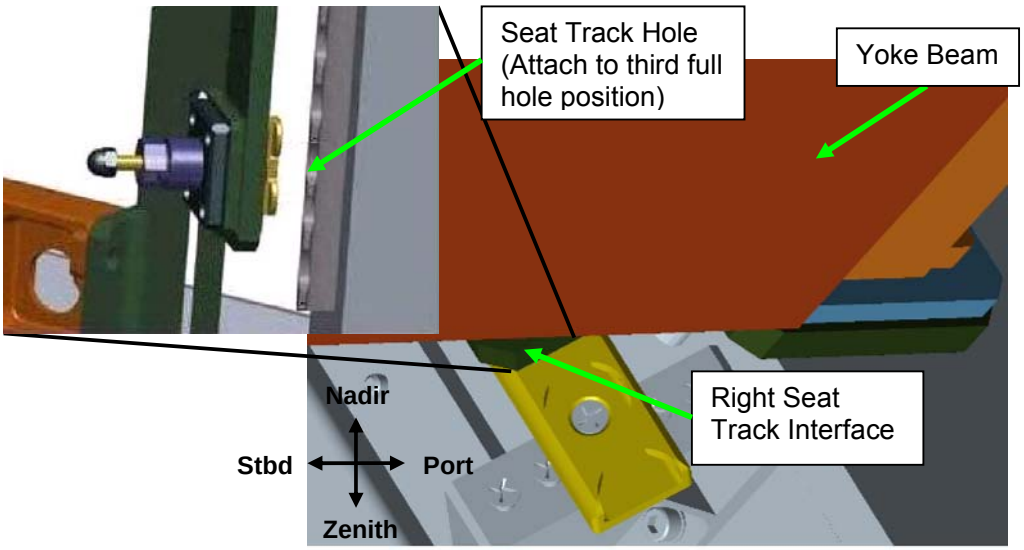


Figure 14.- Installation Position of Right Seat Track Interface, Lower Foot.

5.3. Torque Seat Track Nuts (three on left, two on right) on Left, Right Seat Track Interfaces (two) to 13 in-lbs [(10-50 in-lbs) Trq Wrench,1/4" Drive; 1/4" to 3/8" Adapter 3/4" Deep Socket, 3/8" Drive].
Refer to Figure 9.

5.4. Hold Seat Track Nut in place while torquing Drilled Jam Nuts (3/4" Combination Wrench).
Tighten, torque Drilled Jam Nuts (three on left, two on right) on Left, Right Seat Track Interfaces to 100 in-lbs (Ratchet, 3/8" Drive; 7/16" Deep Socket, 3/8" Drive; (40-200 in-lbs) Trq Wrench, 3/8" Drive).
Refer to Figure 9.

5.5. Install, tighten Self-Locking Cap Nuts (three on left, two on right) (Ratchet, 3/8" Drive; 7/16" Deep Socket, 3/8" Drive).

5.6. Photo document Seat Track Interfaces (two) attached to Node structure.
Take a minimum of six photos:
One overall picture of each Seat Track Interface.
Side photograph of each Seat Track Interface (top and bottom) that shows the feet are properly seated on the Seat Track.

6. ATTACHING LEFT, RIGHT VIS WITH YOKE BEAM TO SEAT TRACK INTERFACES

6.1. On Left, Right Seat Track Interfaces, remove PIP Pins (two) from the lower Trunnion Clamps.
Open clamps.
Refer to Figure 7.

6.2. Insert Yoke Beam Left side, Right side Spherical Bearings into lower Trunnion Clamps.
Center Spherical Bearings as close as possible between two alignment markings engraved in each Trunnion.

Check Yoke Beam is oriented per Figure 15.

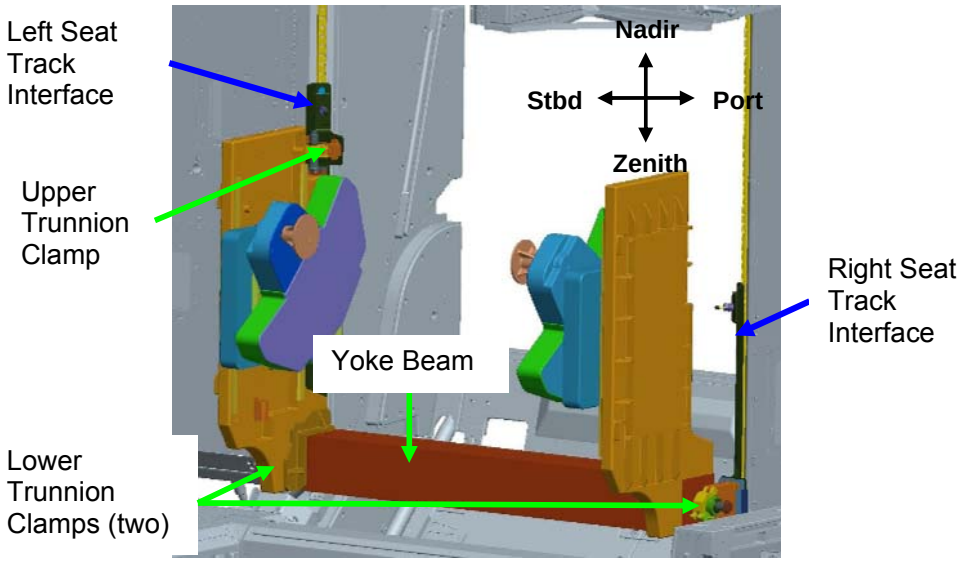


Figure 15. – Left, Right VIS and Yoke Beam Installed

6.3. Close Trunnion Clamps (two), insert PIP Pins (two) to secure Yoke Beam Spherical Bearing.

7. ATTACHING LEFT VIS SPHERICAL BEARING TO LEFT SEAT TRACK INTERFACE

7.1. On Left Seat Track Interface, remove PIP Pin from upper Trunnion Clamp.
Open clamp.
Refer to Figure 7.

7.2. Insert Left VIS Spherical Bearing into Trunnion Clamp.
Close clamp
Insert PIP Pin.
Refer to Figures 7, 16.

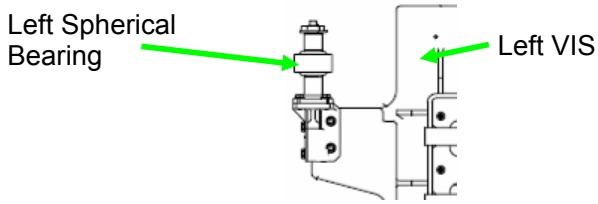


Figure 16.- Left VIS Spherical Bearing

7.3. √Yoke Beam is parallel to closest Node 3 Footbridge by:
Measuring distance from edge of Yoke Beam to edge of Footbridge on both left, right side (Tape Measure).

If difference between left, right measurements > 1/2", this could indicate improper Seat Track Interface installation.
Check alignment per Figure 17.
Repeat for Left Seat Track Interface only steps 3.1 to 3.4, 4.1 to 4.5 and 5.1 to 5.6.

If difference between left, right measurements is still > 1/2"
Notify **MCC-H.**

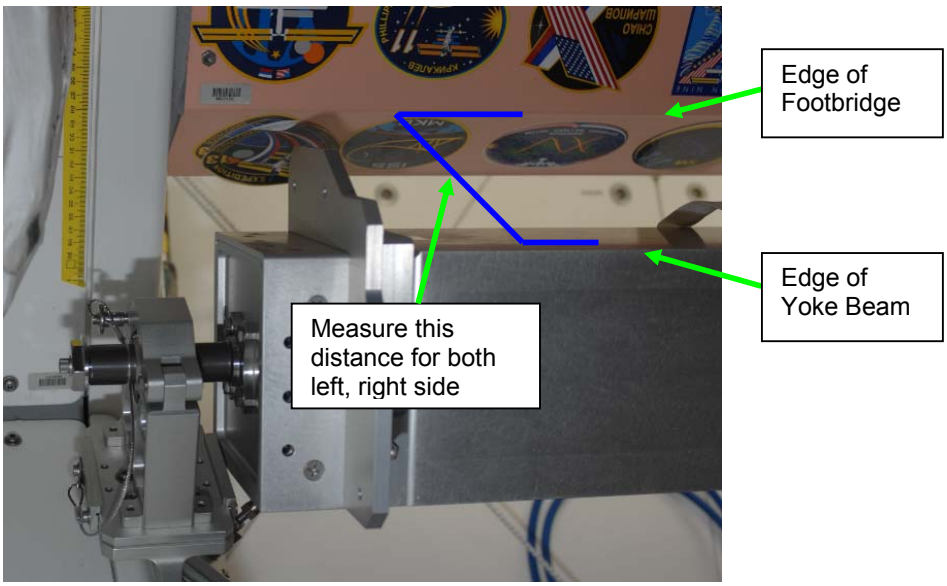


Figure 17. – Measurement Between Yoke Beam and Footbridge

7.4. Photo document the Yoke Beam attached to Seat Track Interfaces (two).
Take a minimum of two photos:
One showing each Yoke Beam Spherical Bearing position in relation to the alignment markings.

8. ATTACHING ARED TO VIS

8.1. CM2 Don Gloves.

8.2. Retrieve VIS Rotation Post Fasteners from Ziplock labeled "VIS Rotation Post Fasteners and Washers."
Apply small amount of Rheolube to threads of VIS Rotation Post Fasteners (eight).

CM 1 8.3. Position ARED to Left, Right VIS Rotation Post.
Hold ARED in position so CM 2 can insert fasteners.
Refer to Figure 18.

NOTE
Platform is shown in the deployed position in Figures 18 and 20. During the activity it will be in a stowed configuration.

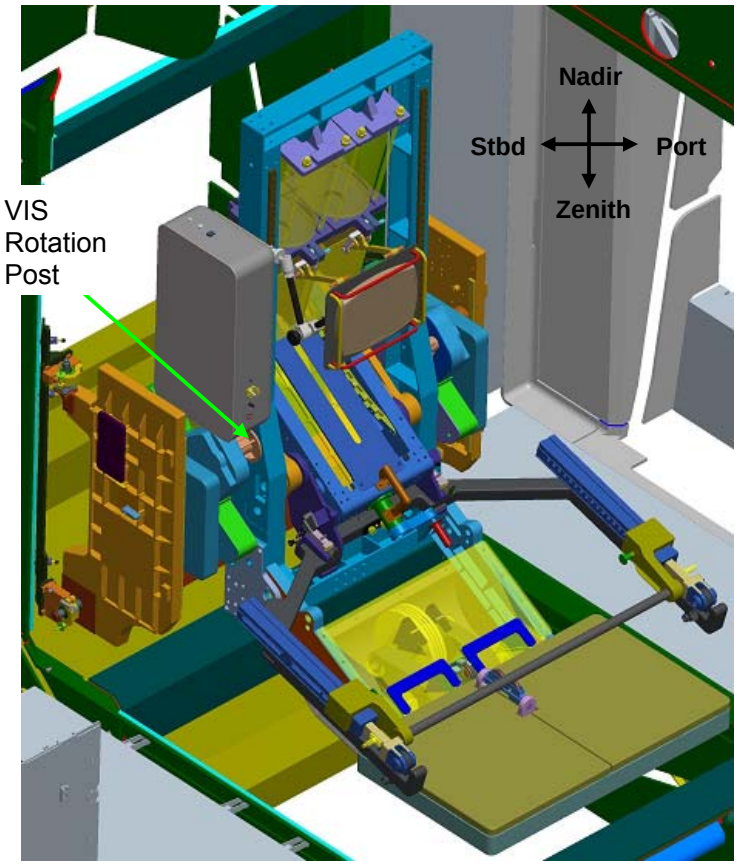


Figure 18.- ARED Launch Stack Positioned with Left VIS

CM 2 8.4. Install VIS Rotation Post Fasteners numbers 3 and 4 (four, two per side), Washers (four, two per side) through VIS Rotation Post into ARED Frame.
Snug fasteners, but do not torque (Ratchet, 3/8 " Drive; 9/16" Socket, 3/8" Drive).
Refer to Figures 19, 20.

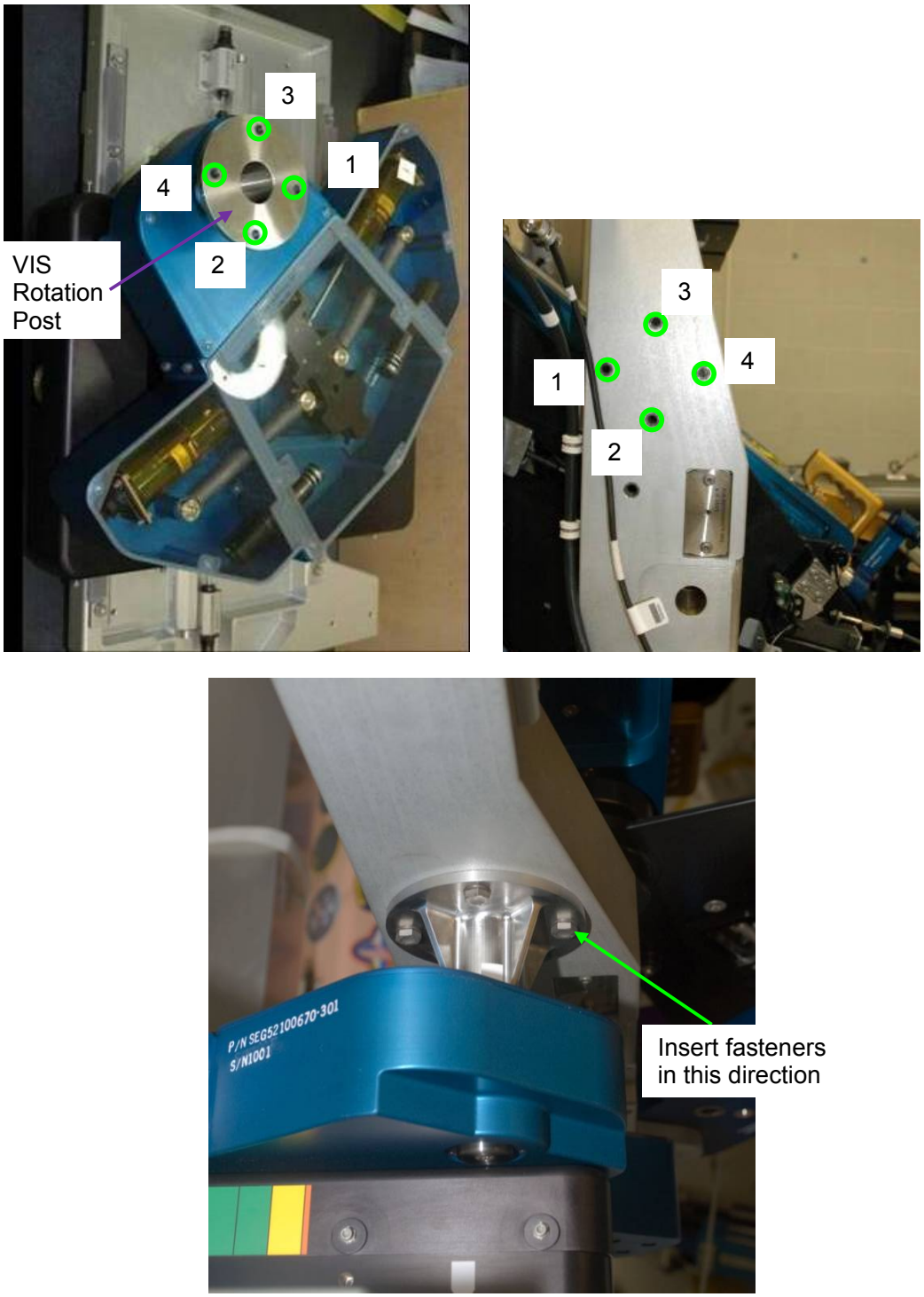


Figure19.- VIS Rotation Post.

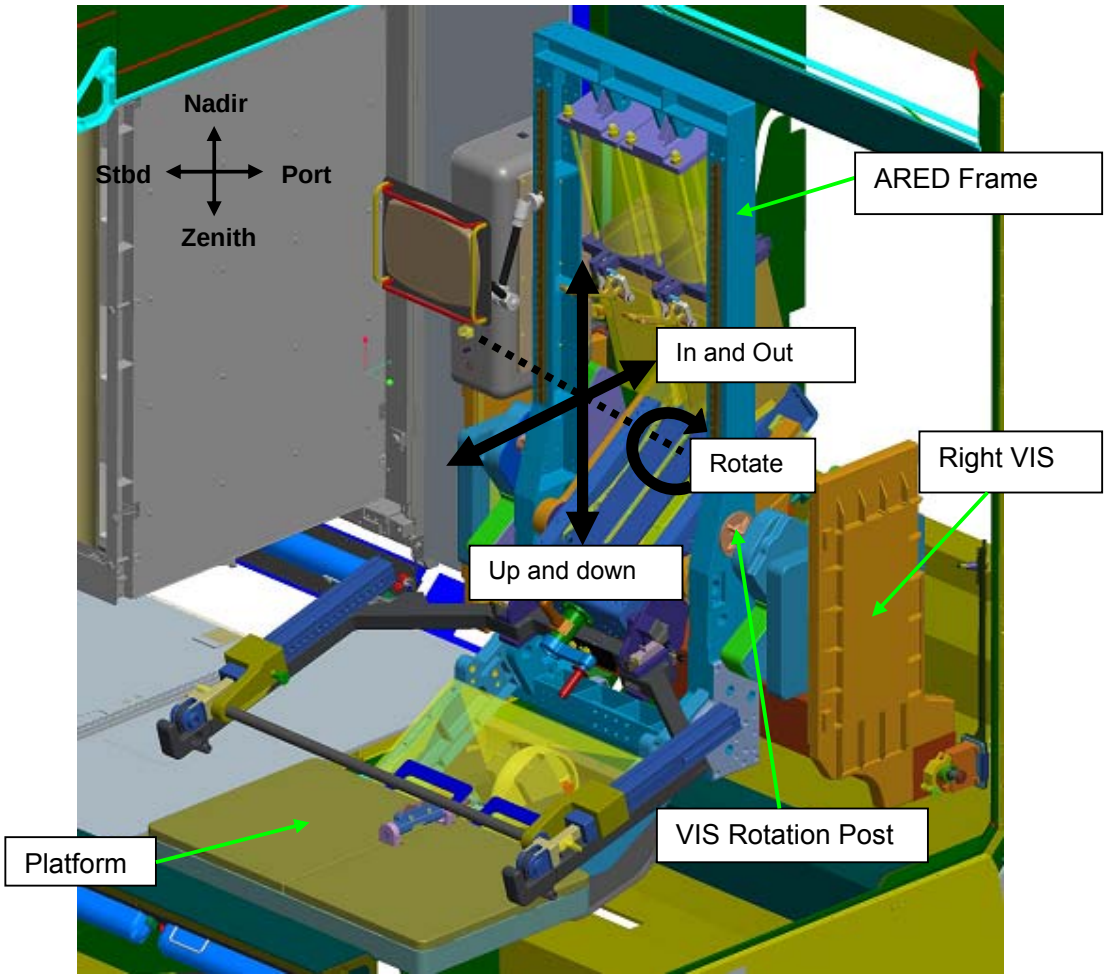


Figure 20.- ARED attached to Left, Right VIS.

9. LOWERING ARED PLATFORM

9.1. Remove Lower Stop PIP Pins from Lower Stops (two, one per side).
Remove Lower Stops from ARED Frame.
Reinstall Lower Stop PIP Pins into Lower Stops.
Refer to Figures 5, 6.

CM 1 9.2. Hold Platform up while CM 2 completes step 9.3.

CM 2 9.3. Remove Platform PIP Pins (two, one per side) from location B.
Hold Main Arm while CM 1 lowers Platform.

CM 1 9.4. Lower Platform.
Refer to Figure 21.

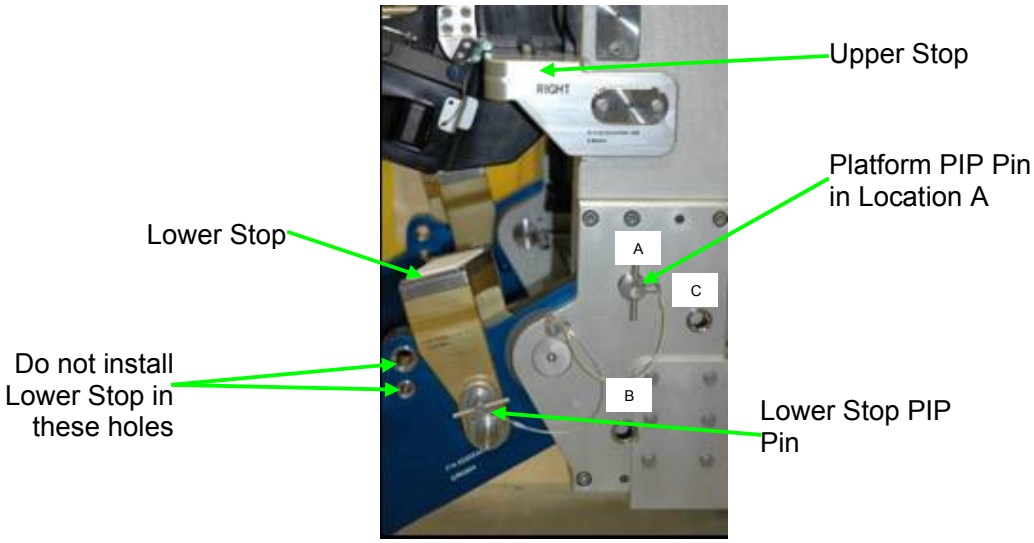


Figure 21. - Lower Stop Installation Location.

9.5. Lower Main Arm to Upper Stops.

9.6. Insert Platform PIP Pins (two, one per side) into location A.
Refer to Figure 21.

9.7. Remove Lower Stop PIP Pins (two, one per side).
Reinstall Lower Stops (two).
Reinsert Lower Stop PIP Pins.
Refer to Figure 21.

10. Unrack Main Arm to Lower Stops.

11. Retrieve VIS Rotation Post Fasteners from Ziplock labeled “VIS Rotation Post Fasteners and Washers.”
Install remaining VIS Rotation Post Fasteners (four 2 per side), Washers (four, two per side) through VIS Rotation Post into ARED Frame
Snug fasteners, but do not torque (Ratchet, 3/8 " Drive; 9/16" Socket, 3/8" Drive).
Refer to Figures 19, 20.

12. Doff Gloves

13. CHECKING VIS MOVEMENT

13.1. Verify Left, Right VIS X-Rotation dashpots (four) are not damaged and/or rod is not disconnected at either end.

13.2. Unlock Left, Right VIS.

13.3. Verify no binding is present by sliding ARED up and down, in and out, and rotate around VIS Rotation Posts completely through each axis.
Refer to Figure 20.

13.4. VIS should center back close to middle without manipulation.
Verify by Displacement Pointers.
Refer to Figure 22.

X Rotation | Z Translation (In and Out) | Y Translation (Up and Down)

Figure 22.- VIS Displacement Pointers.

13.5. Photo document VIS after it recenters.
Photos should be taken from an angle that clearly shows the location of the Displacement Pointers with relation to the Displacement Scales.
Take a minimum of six photographs, one of each displacement scale.
Photo document Left, Right VIS X-Rotation dashpots (four).
Refer to Figure 22.

13.6. Lock Left, Right VIS.

14. TORQUING VIS ROTATION POST FASTENERS

14.1. Torque Left, Right VIS Rotation Post Fasteners (eight) to 330 in-lbs [(200-1000 in-lbs) Trq Wrench, 3/8" Drive; 9/16" Socket, 3/8" Drive].
Refer to Figure 19.

14.2. Photo document Left, Right VIS Rotation Posts attachment to ARED.

15. EVACUATING CYLINDER-FLYWHEELS

15.1. Move Load Adjustment Unit PIP Pins (two) to Stowage Location.
Refer to Figure 23.

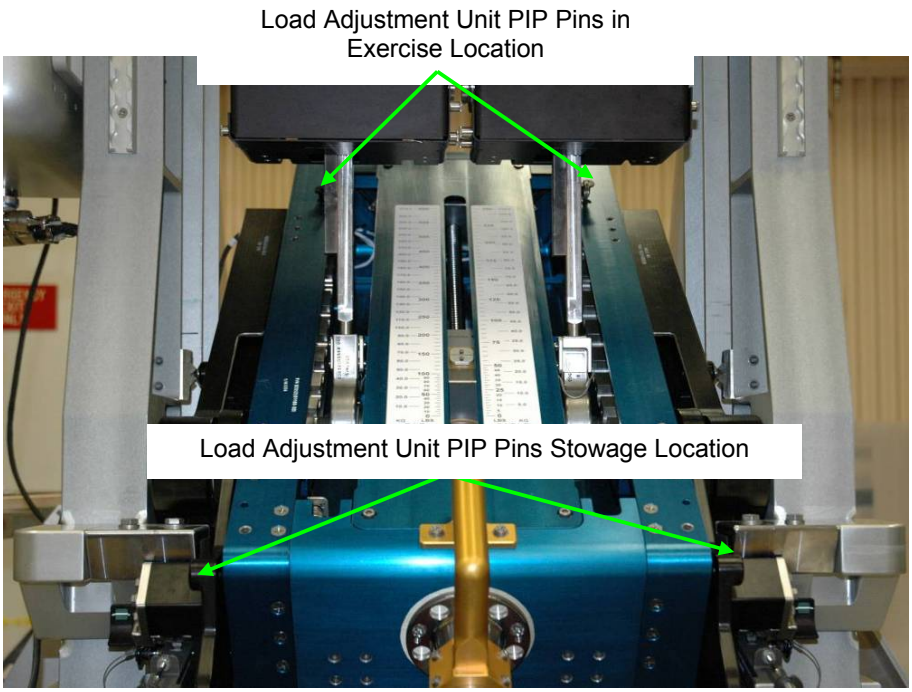


Figure 23.- Load Adjustment Unit PIP Pins

15.2. √Cylinder Flywheel Valves (two) open.

15.3. Increase load beyond 600lbs to hard stop.

NOTE
It is critical the Main Arm fully rests on Lower Stops to ensure complete evacuation. If Cylinders are not completely evacuated, loads during exercise will be lower.

15.4. Slowly, gently push Main Arm down until fully resting on Lower Stops.

15.5. Tightly secure Main Arm to Lower Stops (two) with Velcro straps. Refer to Figure 24.

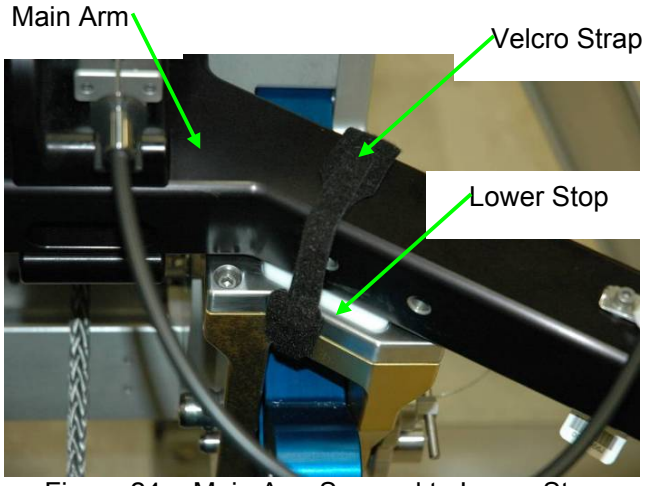


Figure 24. - Main Arm Secured to Lower Stop

15.6. Simultaneously turn both Cylinder Flywheel Valves to Close (hard stop).

15.7. Decrease bar load to 100 lbs.

15.8. Move Load Adjustment Unit PIP Pins (two) to Exercise Location.
Refer to Figure 23.

15.9. √Detents engaged.
Refer to Figure 25.

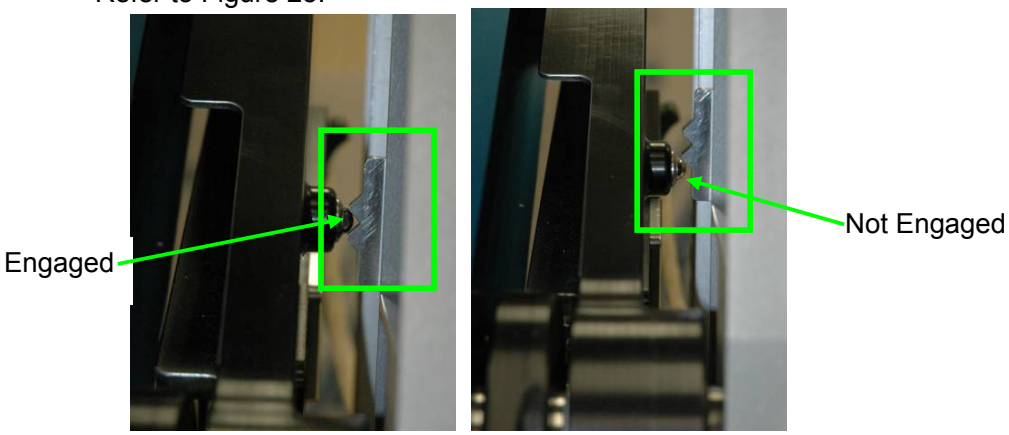


Figure 25. - Detents

15.10. Remove Velcro Straps
Stow on Lower Stops.

15.11. Adjust Bar Load to 10 lbs.

16. Raise Lift Bar to maximum position.
Verify Lift Bar and Lift Bar Slide Tracks do not contact node structure.

17. Install Multi-Use Bracket with ARED Display on Left Frame Seat Track.

18. CONNECTING ARED ELECTRICAL CABLES
18.1. √UOP4 Power is OFF

18.2. Connect following ARED cables:
Display Cable (Instrumentation Box Connections)
P3B →| ←J3 (USB)
P1 →| ←J1 (Power)

ARED Capacitor Cable (only one end)
P2 →| ← J2 (to Instrumentation Box)

US DC Power Cable:
P2 →| ← UOP

19. Transfer, deploy ARED accessories near ARED.
26" Weight Bar
Exercise Bench
Heel Block
Auxiliary Hand Grip
Photo document deployed accessories.

20. PHOTO DOCUMENT FINAL ARED CONFIGURATION
    20.1. Photo document the following
        20.1.1. View of entire node with ARED.

        20.1.2. View of entire ARED from front.

        20.1.3. View of entire ARED 45° from front (one per side).

        20.1.4. Side view of entire ARED (one per side).

        20.1.5. Yoke Beam attachments to Seat Track Interfaces.
        Show Yoke Beam Spherical Bearing to Trunnion Clamp interface (one per side).

        20.1.6. Lower Stop installation
        Side View (one per side)

        20.1.7. Cable connections
        Overall view of each cable (three cables total)
        View of each cable connector interface.

21. Notify **MCC-H** of task completion.