INSTRUCTION TO SERVICE

ITS: 59266	09/21/2021
SECTION:	400 - Structure
WRITTEN BY:	Jeff Kosheluk
SUBJECT:	Rework to mechanically fasten support bracket to existing upper bulkhead structure. This will include inspecting center pivot bolt at center hoop top bracket and EGS support bracket.
ISSUE:	Current mounting bracket that holds upper bulkhead plate on front coach is breaking.
SUMMARY:	Apply support by fastening mounting brackets, this is for buses showing no cracks.

ITS59266

Ref. NHTSA Recall No.	Ref. Transport Canada Recall No.
Not Applicable	Not Applicable

THIS ITS DOCUMENT SHOULD BE RETAINED AND REFERRED TO FOR FUTURE MAINTENANCE UNTIL THE NEW FLYER PARTS AND/OR SERVICE MANUAL IS UPDATED TO REFLECT WORK DONE AS A RESULT OF THIS DOCUMENT. ENSURE THAT THIS DOCUMENT IS AVAILABLE FOR PARTS AND MAINTENANCE STAFF GOING FORWARD.

PROCEDURE:

1. Set park brake and chock wheels.
2. Turn the main battery disconnect switch to the “OFF” position.

ITS will include inspections and rework as follows:

1. **Inspect EGS support bracket (x2), if found crack, this is then required to be replaced. This will be completed under warranty. WO to be created for this repair.**
2. **Inspect and check the torque on the center hoop top bracket. If bolt loose, it must be re-torqued. Check to ensure the clamp is properly installed.**
   Check if center EGS support bracket can move laterally. If yes, then check for wear in the hoop bracket.
3. **Inspect for cracks and repair at the upper tube area and upper bulkhead bracket on the rear of the front coach.**
   Note: If cracks found, ITS 59082 must be used.

PART 1: INSPECT THE EGS SUPPORT BRACKETS FOR CRACKS

3. On the interior of the bus, at the center joint area, remove the top inner bellows at the ceiling area. Follow the instructions per the service manual to removed. Once removed, set aside to re-install later. See Figure 1.

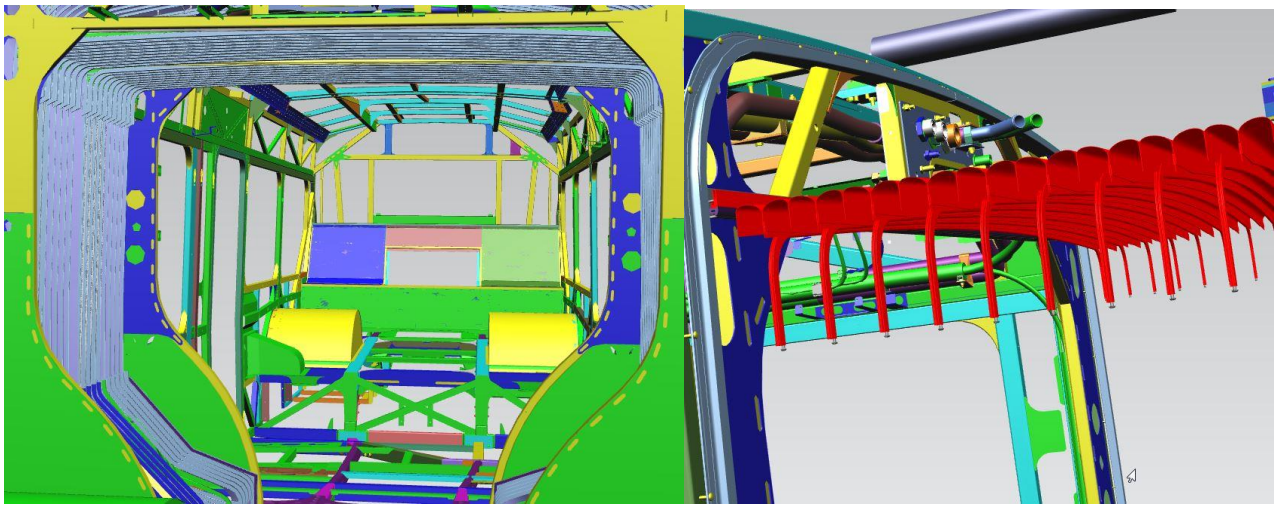
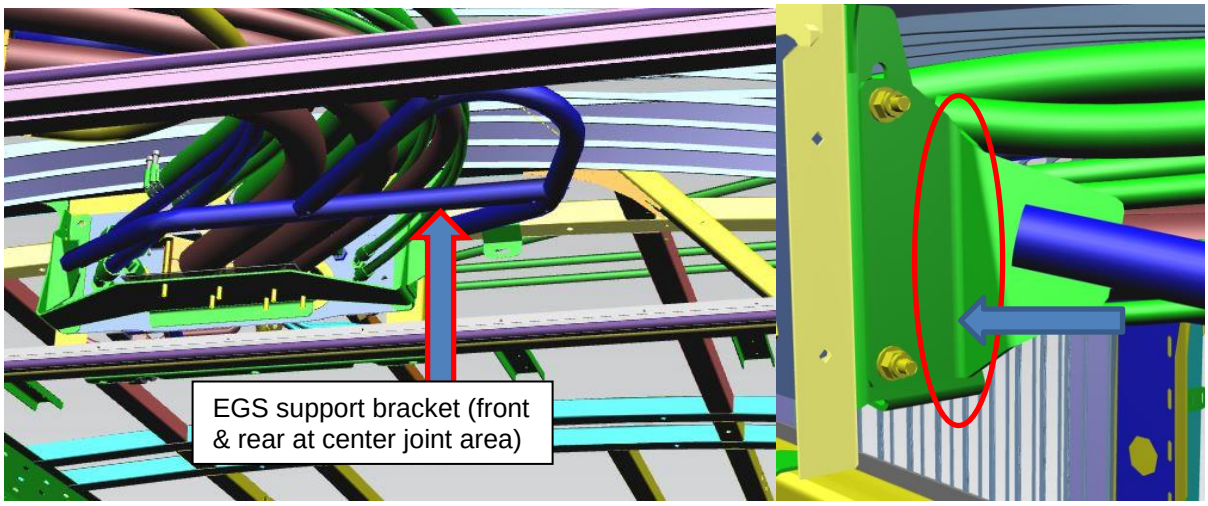


FIGURE 1: VIEW OF TOP INNER BELLOW TO BE REMOVED.

4. Once the ceiling bellows are removed, this will allow you to gain access to the upper hose support area.
5. Inspect the EGS support brackets for cracks at the 90-degree bend on the mount brackets that are secured to the upper bulkhead bracket. This will be at the forward and rear section in the joint area. See Figure 2.

Front EGS bracket – Cracked (Yes/No)

Rear EGS bracket – Cracked (Yes/No)



Show example of the flange broken.

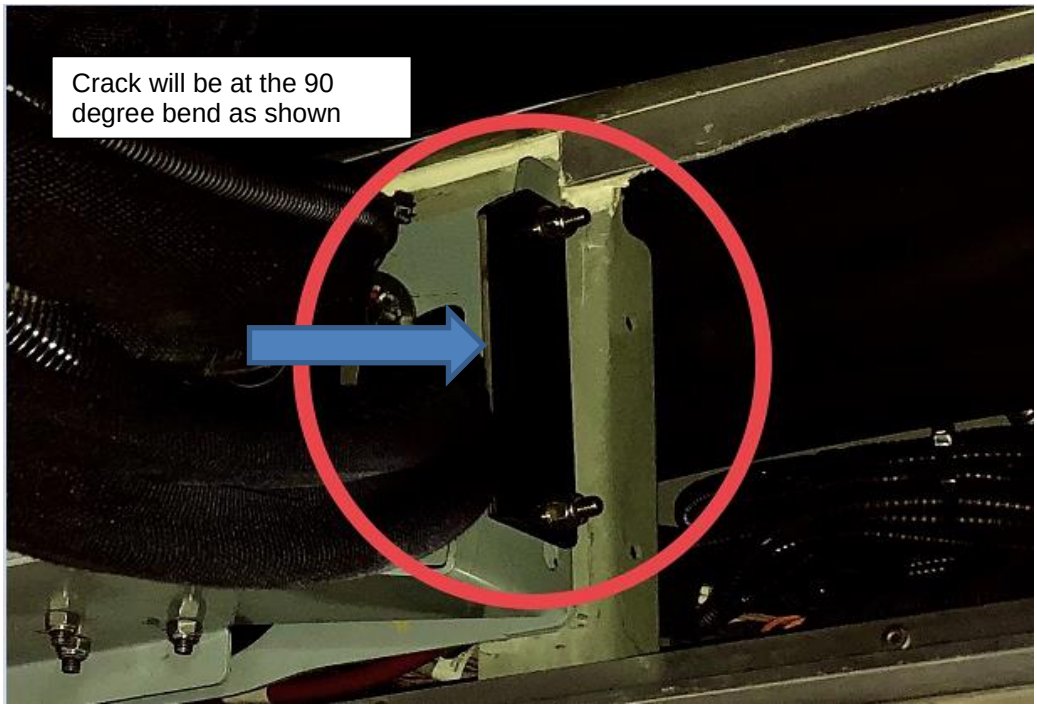
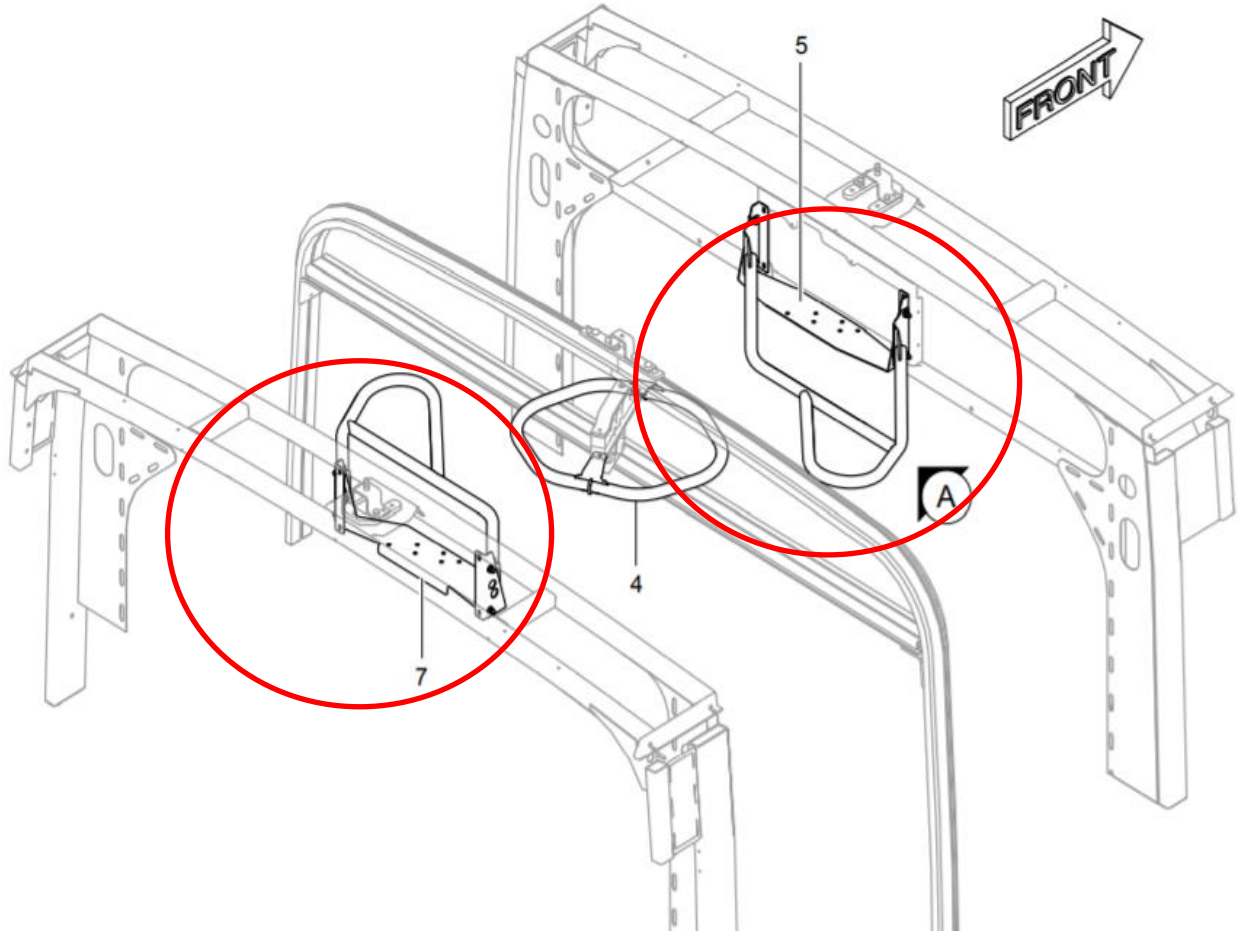


FIGURE 2: SHOWN VIEW OF EGS SUPPORT BRACKET

6. If bracket is cracked, then replace support bracket. Remove and re-install new EGS support bracket (PN: 506665). Re-use existing hardware. If new hardware is required, use the following per support bracket:
    - Bolt (PN: 10B05016) qty.4
    - Flat washer (PN: 10W05000) qty.8
    - Lock nut (PN: 40N05000) qty.4

Note: File a warranty claim to replace the brackets under warranty. Labor time of (0.75 hours for both).



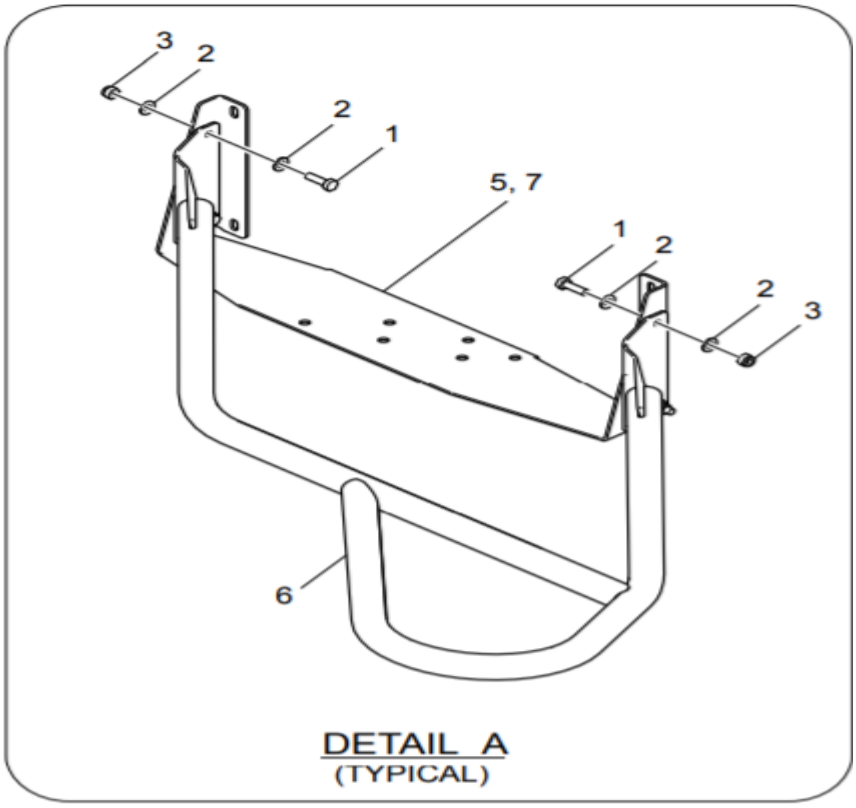


FIGURE 2A: VIEW OF THE EGS SUPPORT BRACKETS

PART 2: INSPECT CLAMP BRACKET AND PIVOT BOLT ON CENTER CLAMP AT HOSE SUPPORT

7. Inspect to see if the center bolt is loose. Check the torque on the center bolt. Check for lateral movement of center hoop bracket. **Tighten center bolt to 15 FT/LBS (20 NM), then loosen nut by ¼ turn.** See Figure 3. **Note: If the center hoop bracket lateral movement still exists after torqueing the center bolt, the aluminum bracket may be worn at the hole location. If there are signs that show wearing of the bracket, this will need to get replaced (PN: 6354662).** Bracket **(PN: 6354662)**, M12 bolt **(PN: 6354583)** and M12 nut **(PN: 6354582)**.

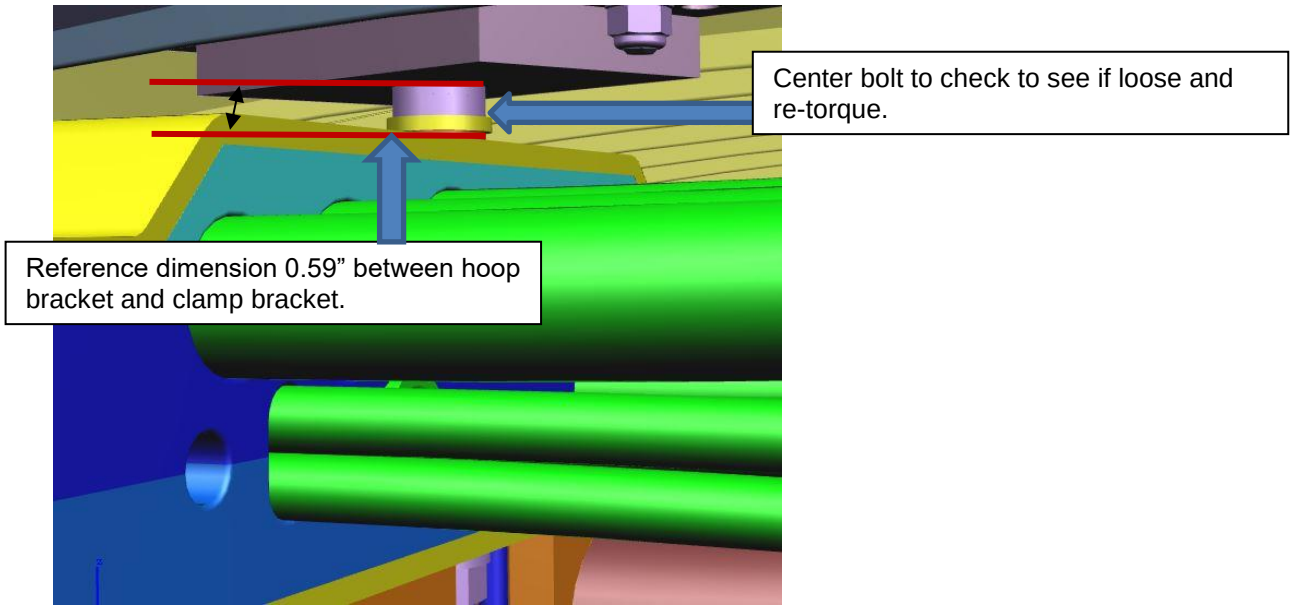
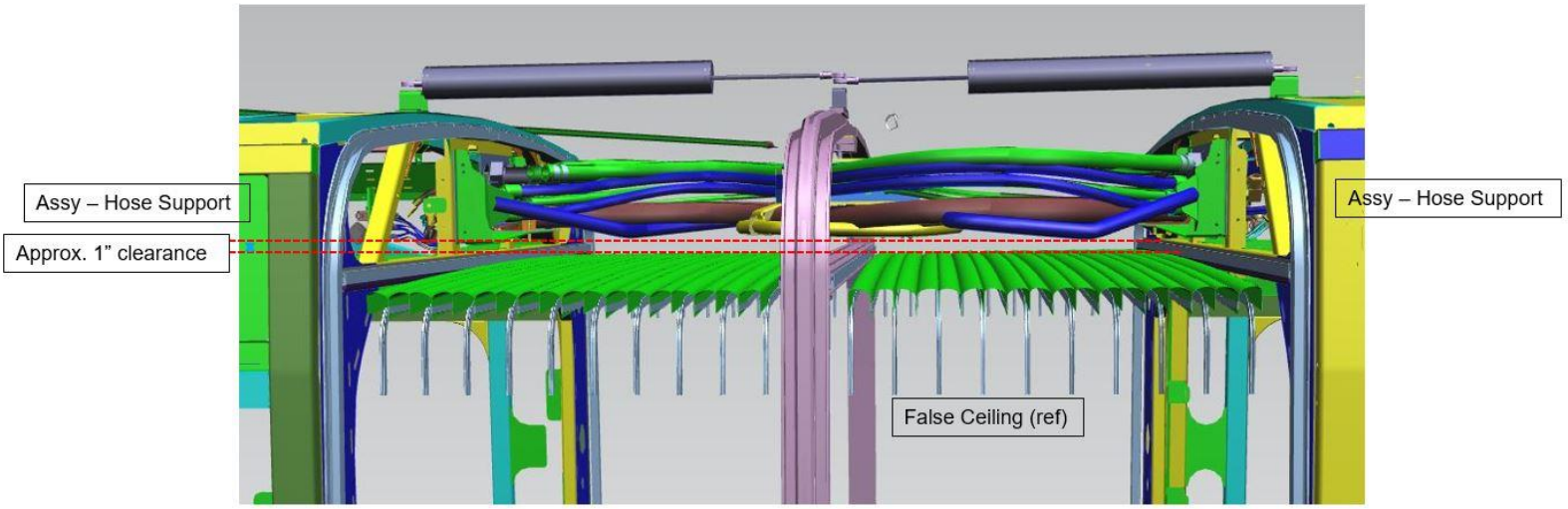


FIGURE 3: SHOWN CENTER BOLT TO TORQUE.

8. Inspect the clamp assembly at the top of the center hoop. Remove the center hoop bracket and check for any worn components (pivot bolt, hoop bracket). Check to see that the top bar is correctly in place and secured per the view below. If the clamp assembly is incorrect, rework and re-install as shown below. See Figure 4. ***(Only done if the center pivot bolt and clamp was removed).***

   Note: When re-installing the center pivot bolt and clamp, ensure the following is completed.

   With the bus straight & on flat surface, adjust position of assy. – hose support (x2) to assure approximately 1” clearance between supports & false ceiling.



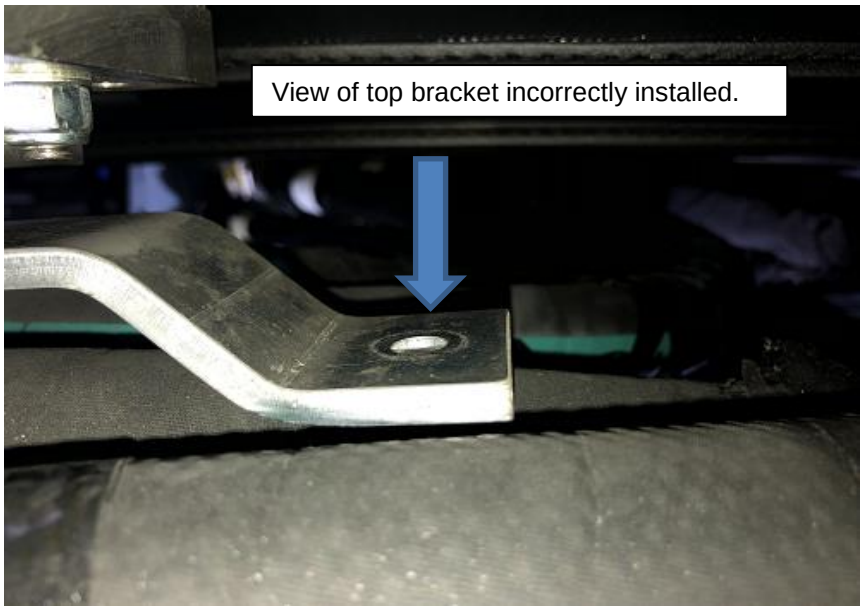
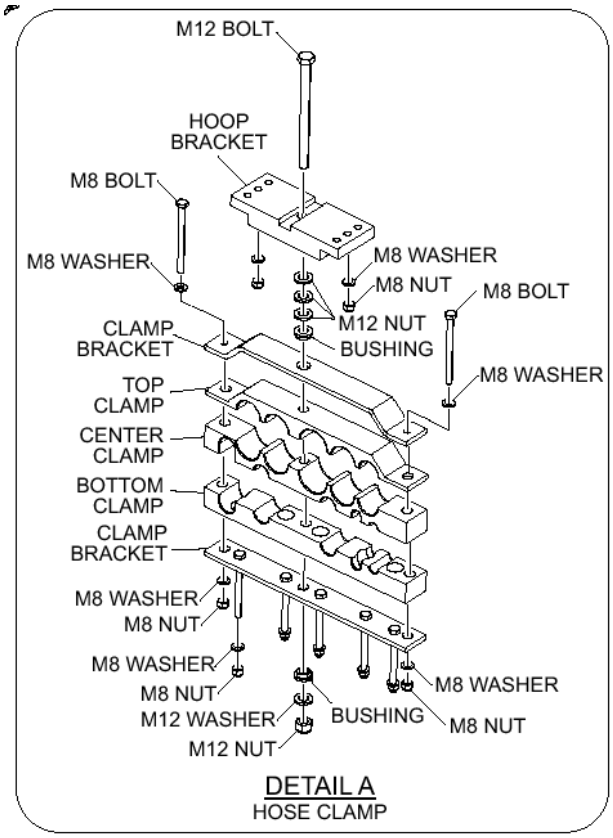


FIGURE 4: SHOWN VIEW OF CENTER CLAMP SUPPORT INCORRECTLY INSTALLED



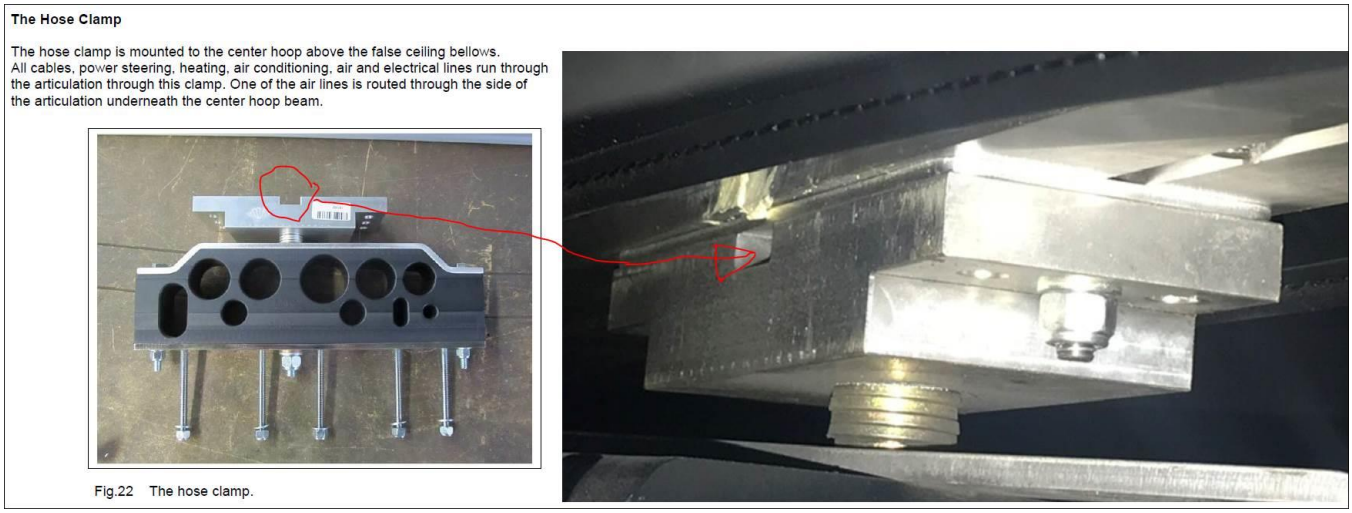


FIGURE 4A: SHOWN VIEW OF CENTER CLAMP SUPPORT

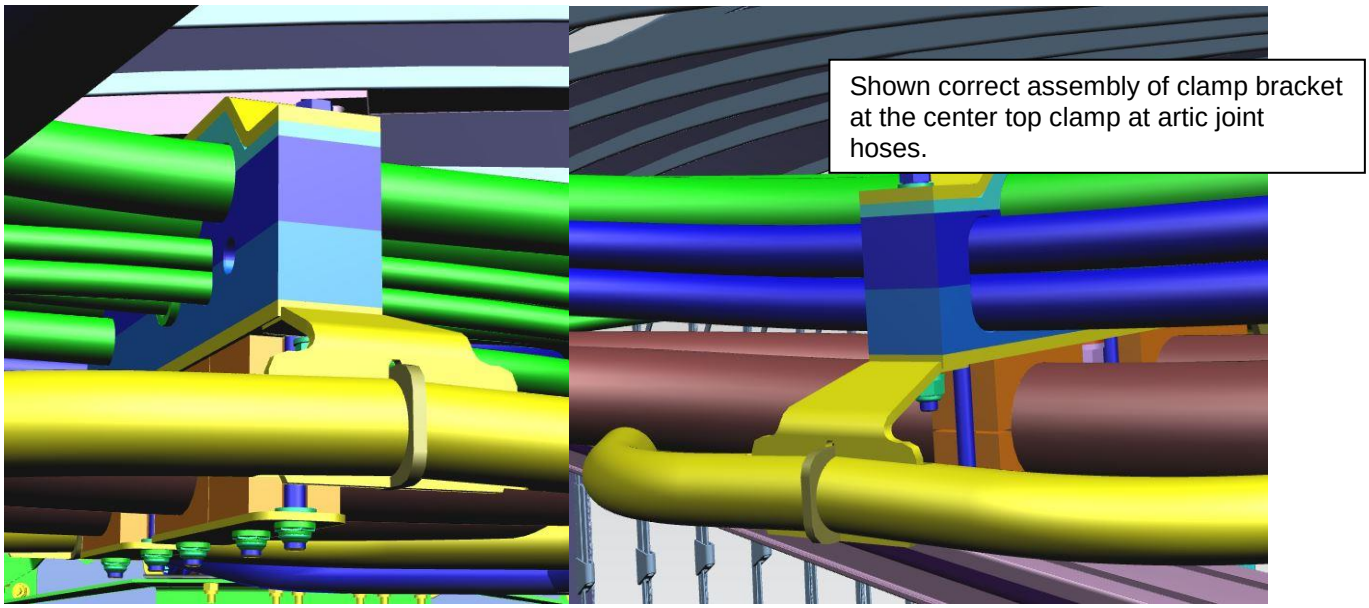


FIGURE 4B: SHOWN VIEW OF CENTER CLAMP SUPPORT

9. Ensure that no lines are rubbing/chaffing on the center support bracket. See view below showing the required clearance. See Figure 5.

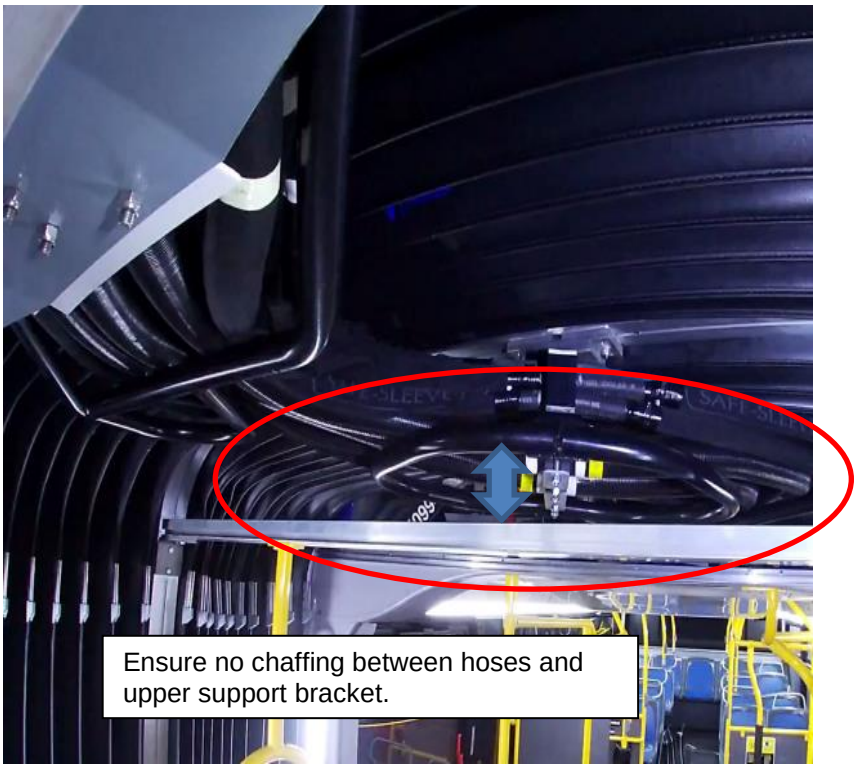


FIGURE 5: SHOWN CLEARANCE SO THAT THERE IS NO CHAFFING AT TOP CENTER SUPPORT

***PART 3:** REMOVE COMPONENTS AS REQUIRED GAINING ACCESS TO STRUCTURE AT AFFECTED AREA.*

INSPECT FOR CRACKS. IF NO CRACKS FOUND, REWORK TO ADD SUPPORT BRACKETS. NOTE: BUSES WITH CRACKS WILL HAVE ITS 59082 APPLIED FOR REWORK.

NOTES:

1. ***DON'T DISCONNECT THE A/C LINES, WE MANEUVERED AROUND THE ARTIC BRACKET IN ORDER TO WELD ANY CRACKS. THE A/C LINES WERE COVERED WITH WELDING BLANKETS TO PROTECT THE SOLDERING JOINTS. TAKE APART THE BRACKETS FOR THE A/C LINES ON THE CURBSIDE OF THE BUS BEHIND THE PANEL TO ALLOW TO MANEUVER THE A/C LINES. SUPPORT THE A/C LINES TO ALLOW FOR EASE WHEN RE-ASSEMBLING.***
2. ***IF THE A/C LINES HAVE TO BE DISCONNECTED, RECOVER THE FREON BEFORE ATTEMPTING TO WELD AT THE JOINT***
3. ***SIPHON OUT ½ OF THE POWER STEERING RESERVOIR SO WHEN THE P/S STEERING LINES ARE DISCONNECTED IN ARTIC JOINT, THE P/S FLUID DOESN'T LEAK EVERYWHERE. CAP OFF THE LINES WITH FITTING. ADD FLUID AS REQUIRED AND RUN THE BUS TO ENSURE THE PROPER FLUID LEVEL AND INSPECT FOR LEAKS.***
4. ***AFTER EVERYTHING IS PUT BACK TOGETHER, PROPERTY TO TAKE THE BUS FOR A TEST RIDE TO CONFIRM THERE ARE NO LEAKS AND EVERYTHING IS WORKING PROPERLY.***

10. Remove the top section of the artic joint covers on the rear section at artic joint on the front coach. See Figure 6.

FIGURE 6: SHOWN INTERIOR COVERS TO BE REMOVED TO GAIN ACCESS

11. On the interior of the coach, gain access to the rear bulkhead plate at the rear of the front bus. Open the access door to gain access. See Figure 7.

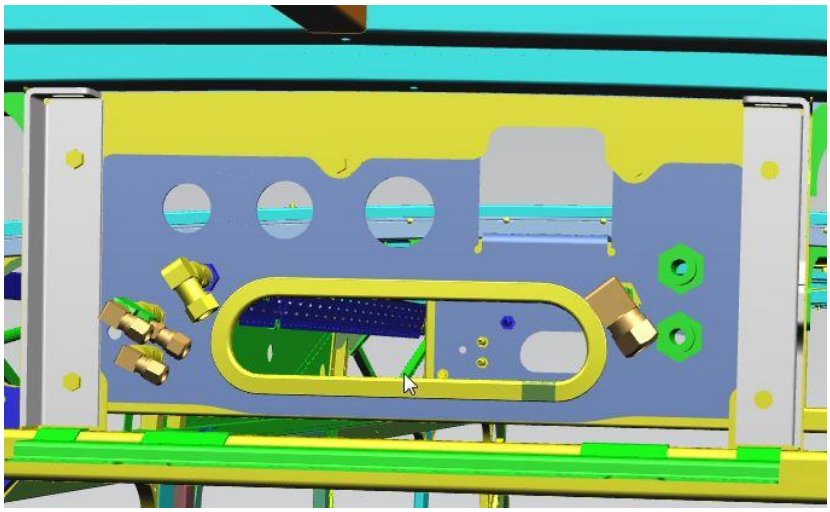


FIGURE 7: VIEW OF THE AFFECTED WORK AREA.

12. Remove any components and disconnect any electrical that will be in the way. See Figure 7a & b.

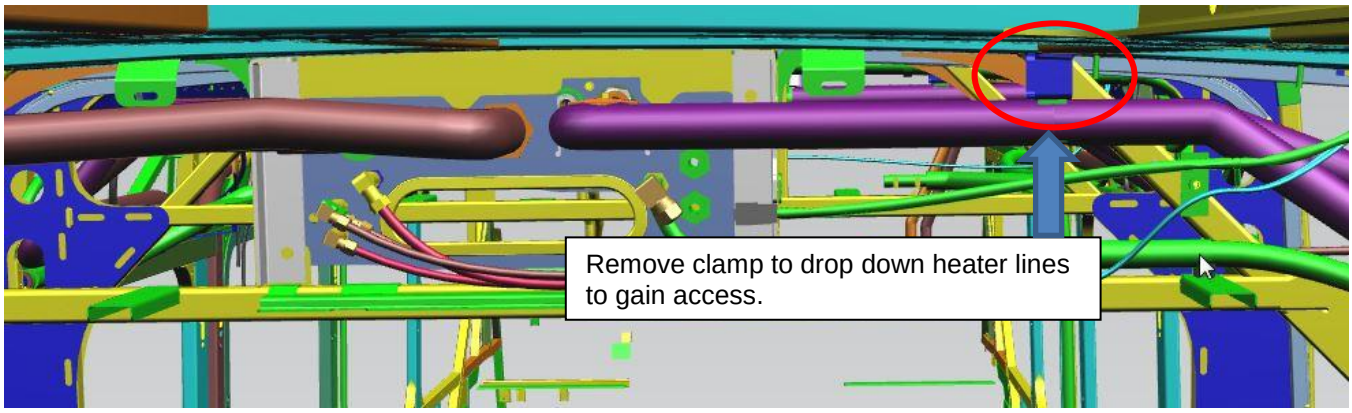


FIGURE 7A: VIEW OF THE AFFECTED WORK AREA.

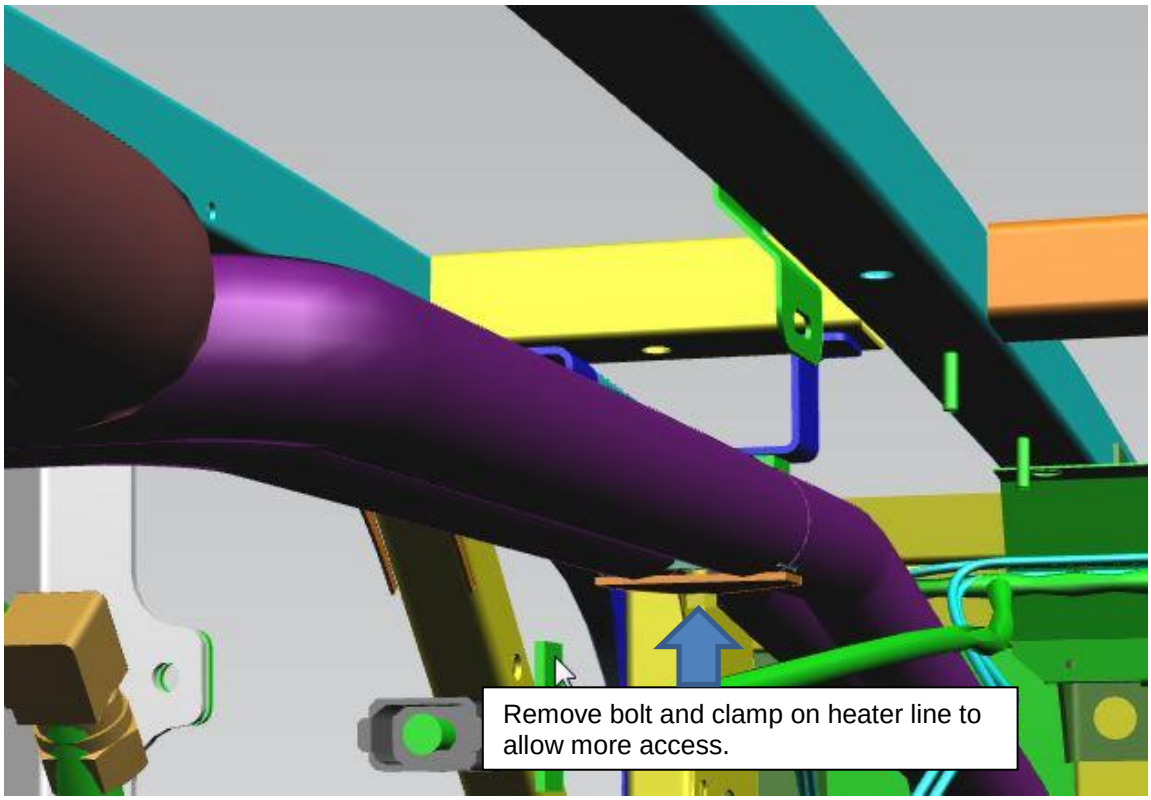


FIGURE 7B: VIEW OF HEATER LINE TO HAVE MTG BRACKET REMOVED TO GAIN ACCESS

13. If necessary, remove mounting screws on fuse plate & set off to the side. See Figure 8.

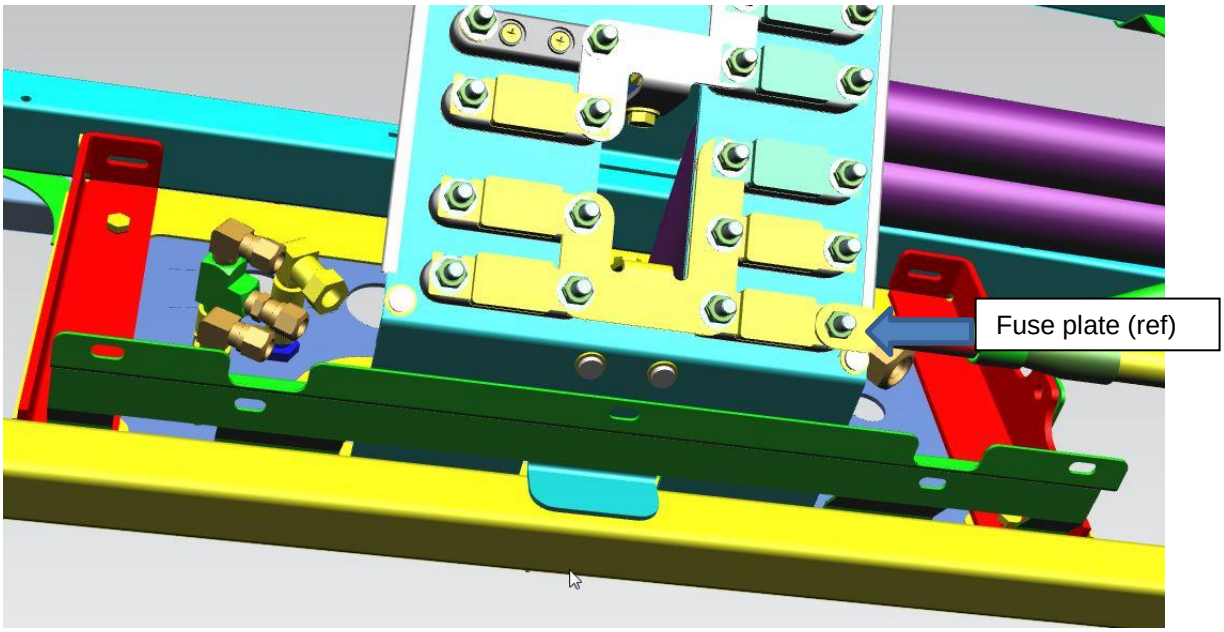


FIGURE 8: VIEW OF FUSE PLATE.

14. Disconnect the (5) airlines at the bulkhead plate. Mark and label to ensure the correct airline is installed back at the correct location. See Figure 9.

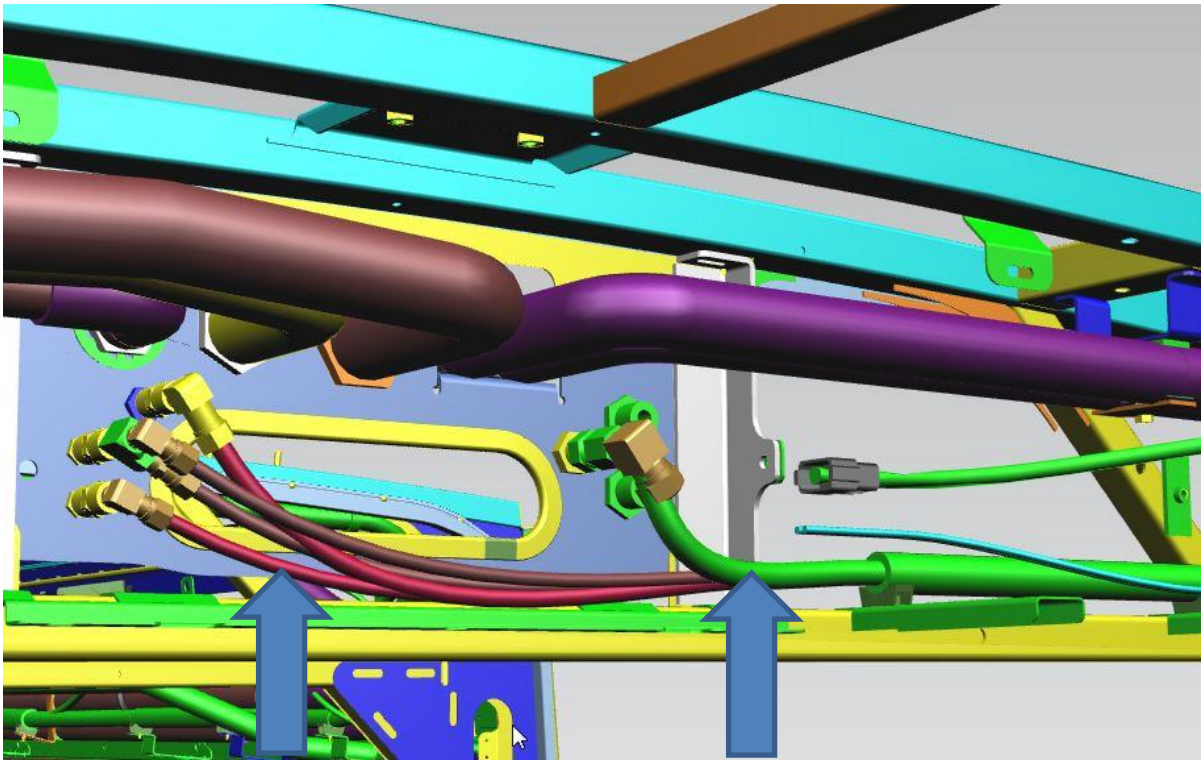


FIGURE 9: VIEW OF THE AIRLINES TO BE DISCONNECTED

15. Remove the nuts on the backside of the bulkhead plate that secures to the bulkhead bracket frame. See Figure 10.

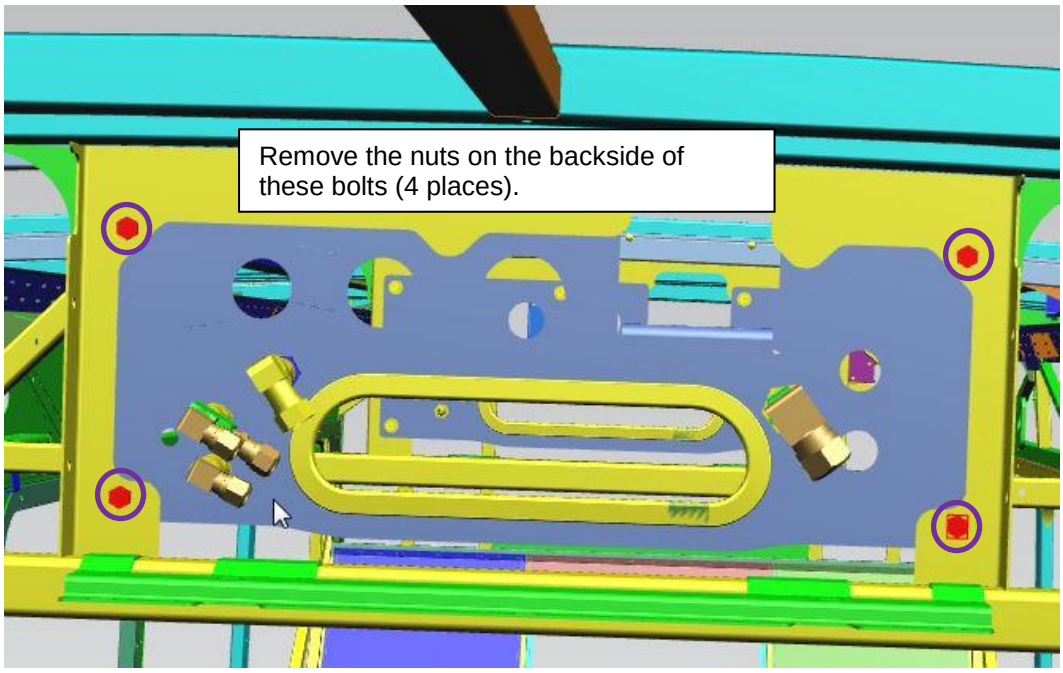


FIGURE 10: VIEW OF THE BOLTS THAT REQUIRE THE LOCK NUTS TO BE REMOVED

16. Disconnect the PC radio/ATG joint harness from the bulkhead bracket ground plate. Set off to the side. See Figure 10A. Trim off existing ground stud.

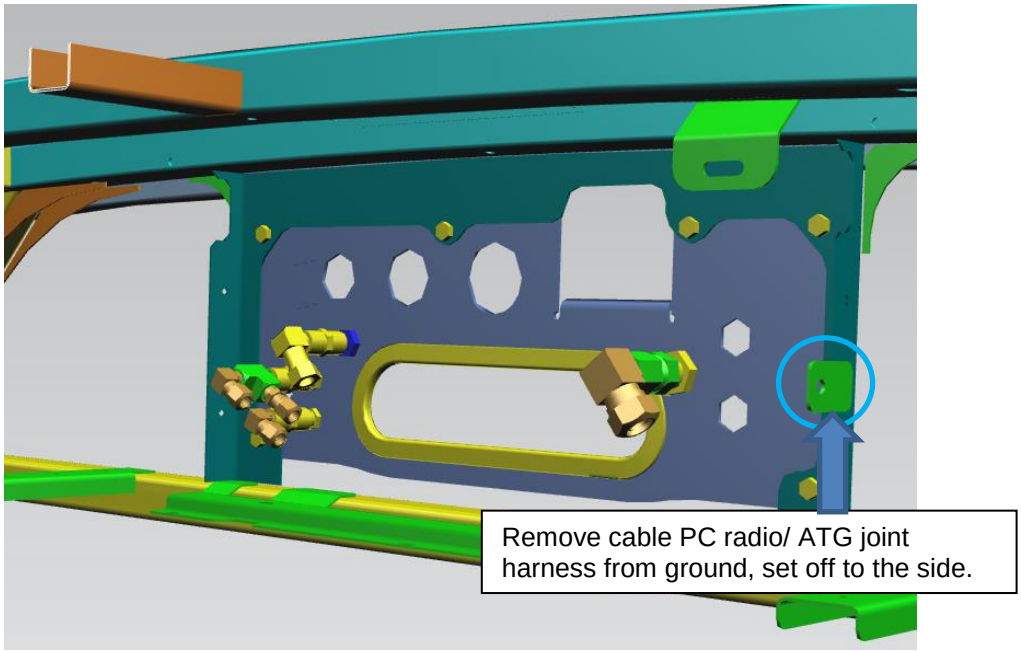


FIGURE 10A: VIEW OF CABLE TO BE REMOVED

17. Remove bolts (x2 per side) to allow to drop down harness support bracket at the artic joint to gain access. Push assembly off to the side to prevent any damage. See Figure 11.

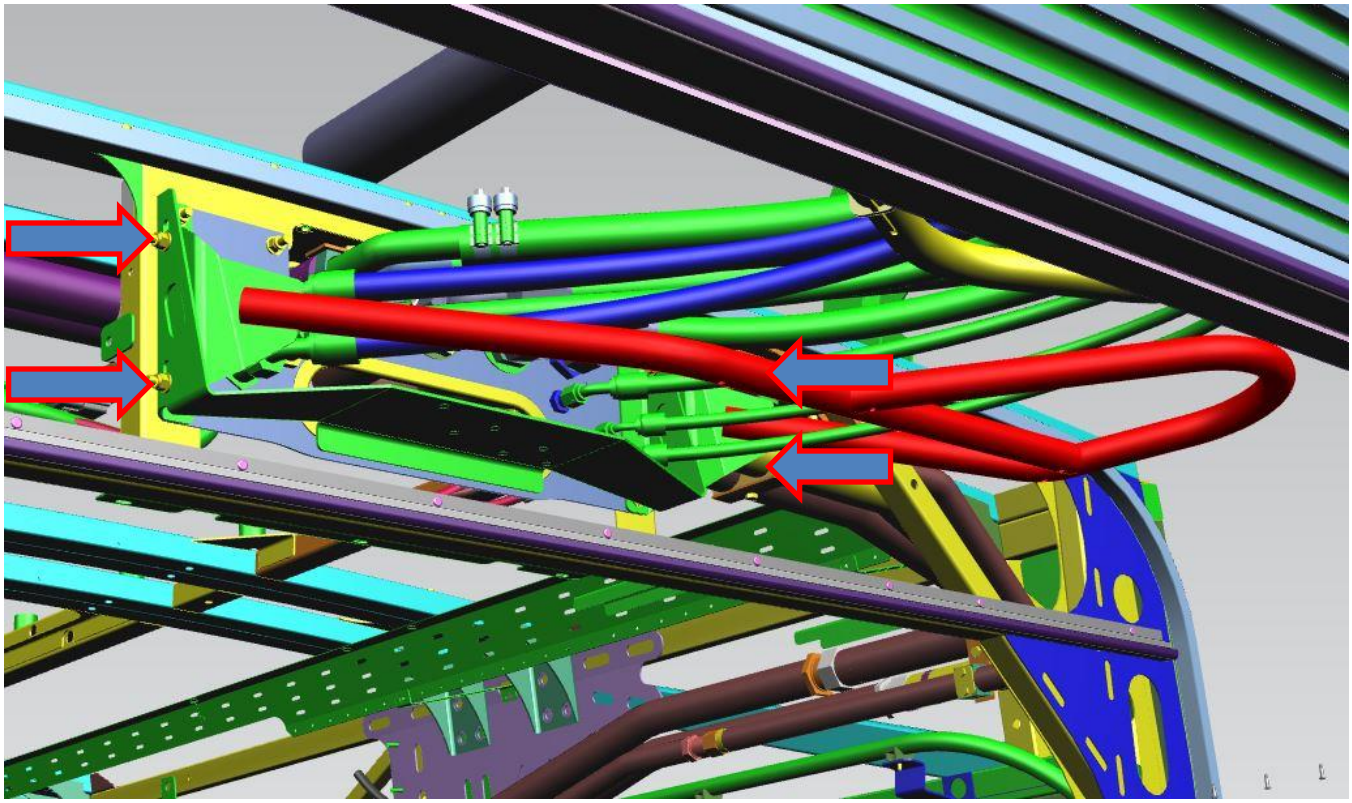


FIGURE 11: VIEW OF BRACKET TO BE DISCONNECTED AND SET OFF TO THE SIDE

18. Position bracket (PN: 890644) in place, clamp bracket in place to pre-drill holes. Drill 0.261” diameter holes. Note: Use a drill stop when drilling to avoid damage to other components. For steps 18 - 20, refer to Figure 12 & 13.

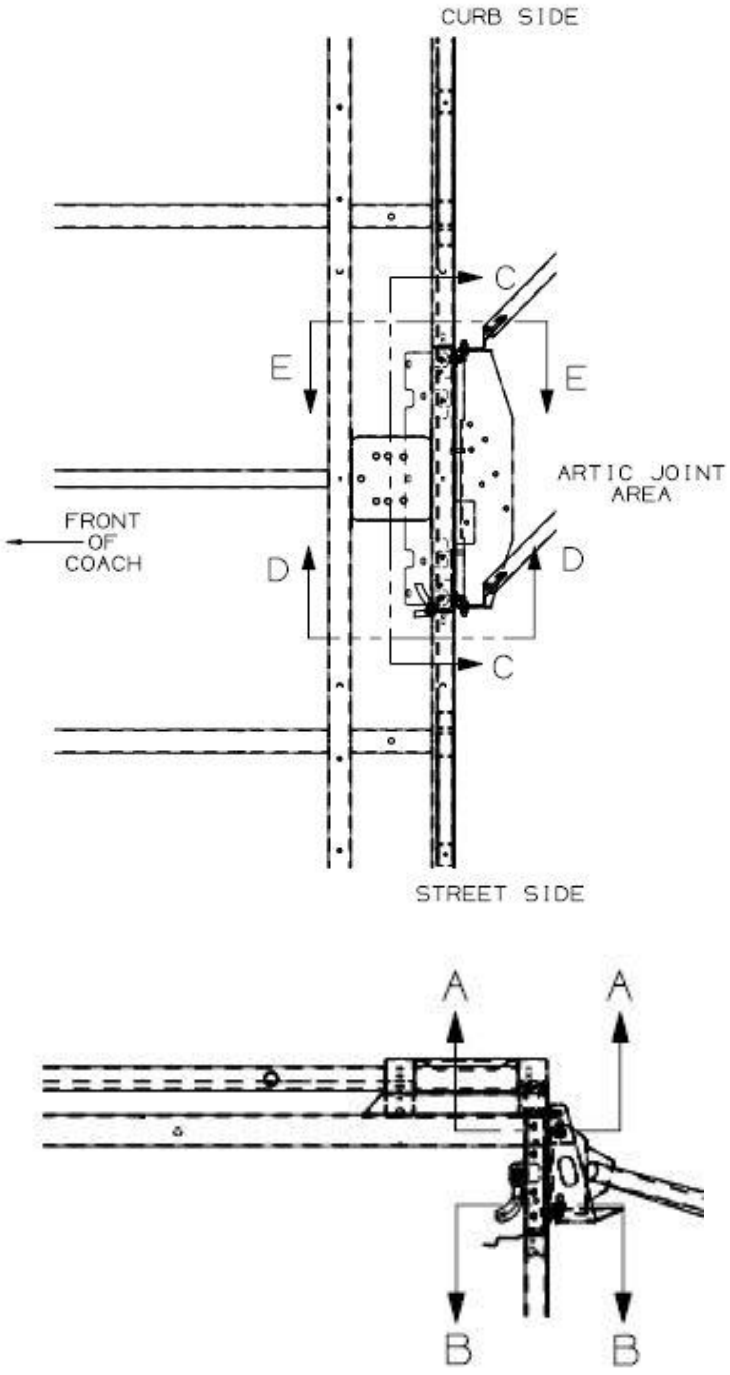


FIGURE 12: VIEW OF THE AFFECTED AREA

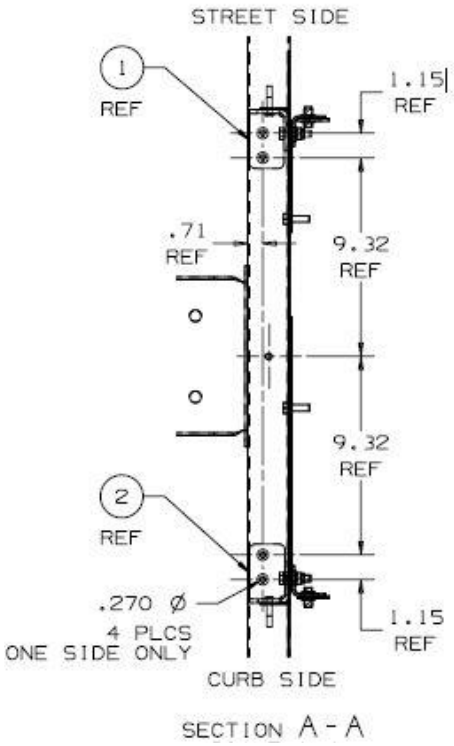


FIGURE 12A: VIEW OF SECTION A

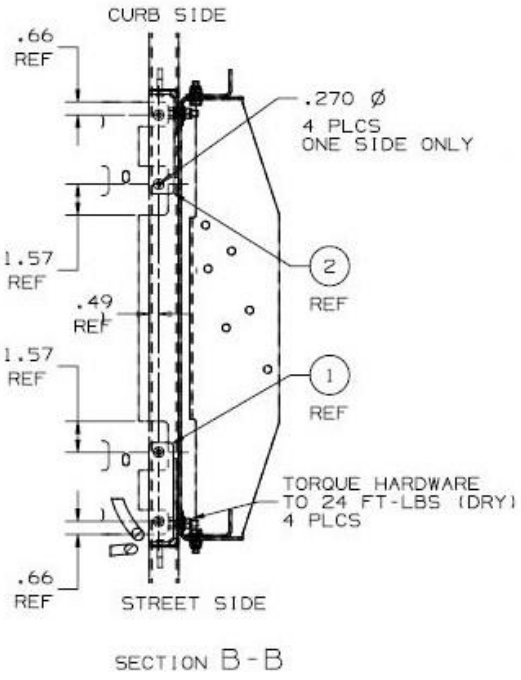


FIGURE 12B: VIEW OF SECTION B

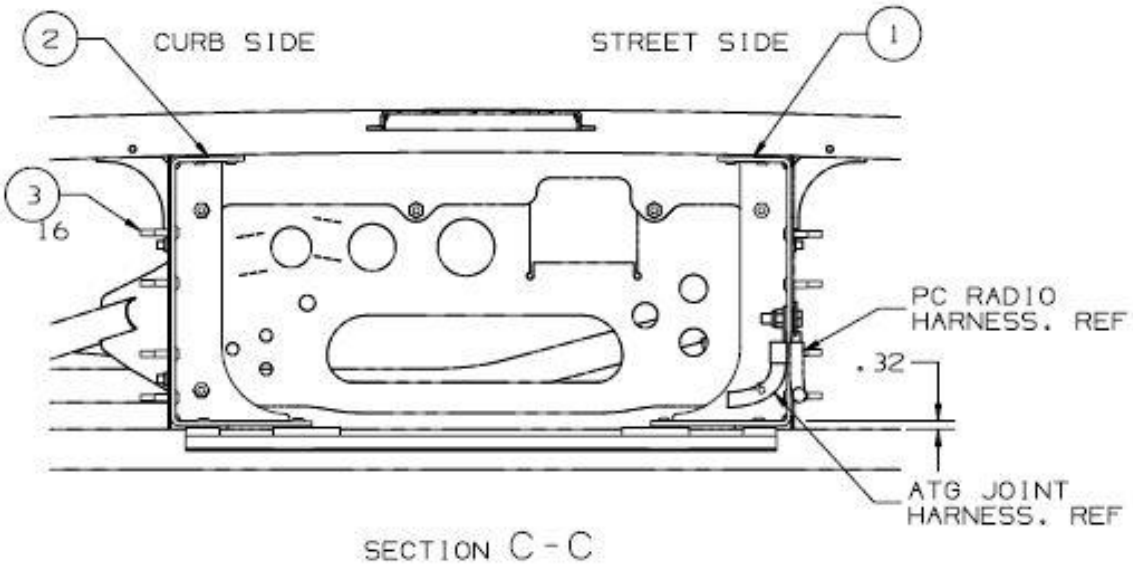


FIGURE 12C: VIEW OF SECTION C

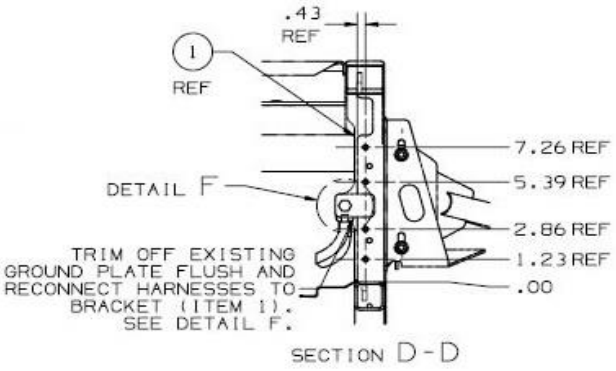


FIGURE 12D: VIEW OF SECTION D

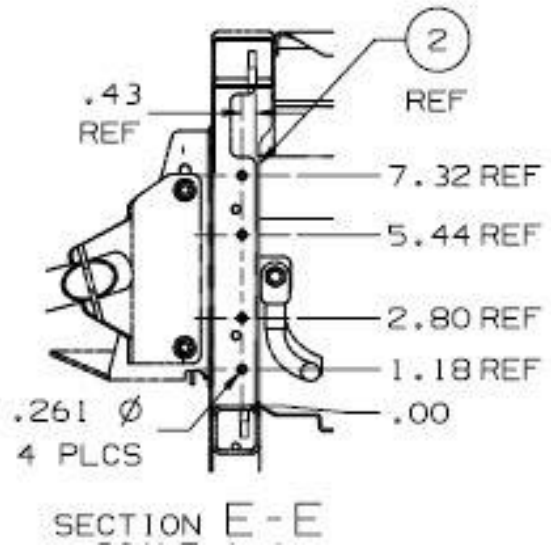


FIGURE 12E: VIEW OF SECTION E

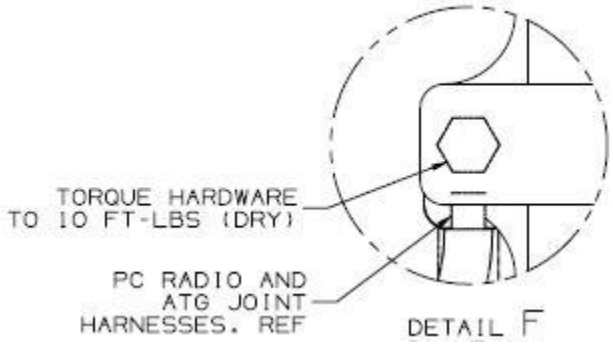


FIGURE 12F: VIEW OF DETAIL F

19. Install rivets (PN: 071992) and crimp in place. Repeat for all remaining holes.
20. Repeat steps 18 & 19 on the other side to install assy- cable support (PN: 890646).

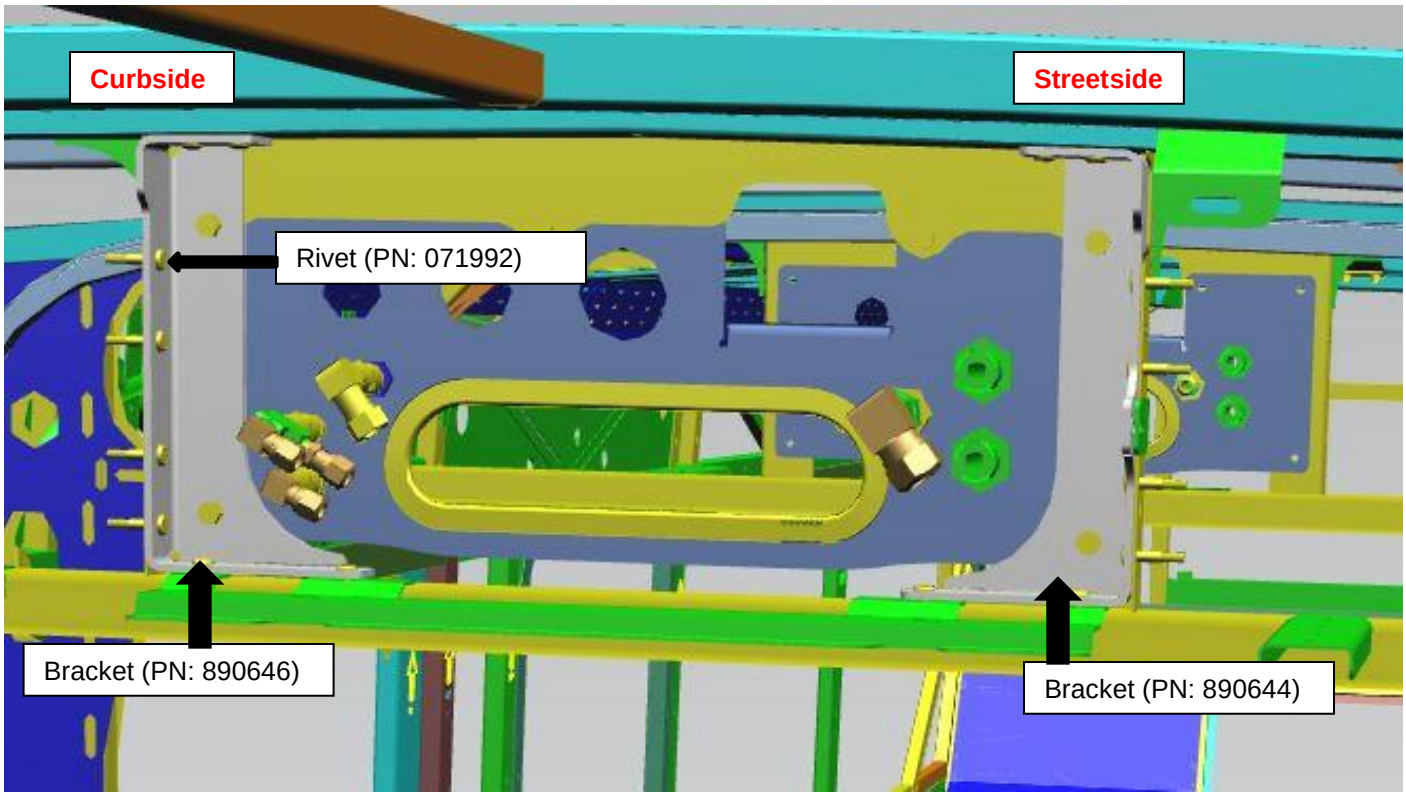


FIGURE 13: VIEW OF BRACKETS INSTALLED WITH RIVETS

21. Trim off existing ground plate flush. Refer to Detail F.
22. Re-install bulkhead plate. Secure in place with locknut (PN: 40N05000), tighten locknuts. Torque hardware to ***24 FT/LBS dry***. Typical 4 places **Note:** Ensure that all weld preparation is completed before the brackets are installed. Pictures below show the new brackets installed. See Figure 13B.

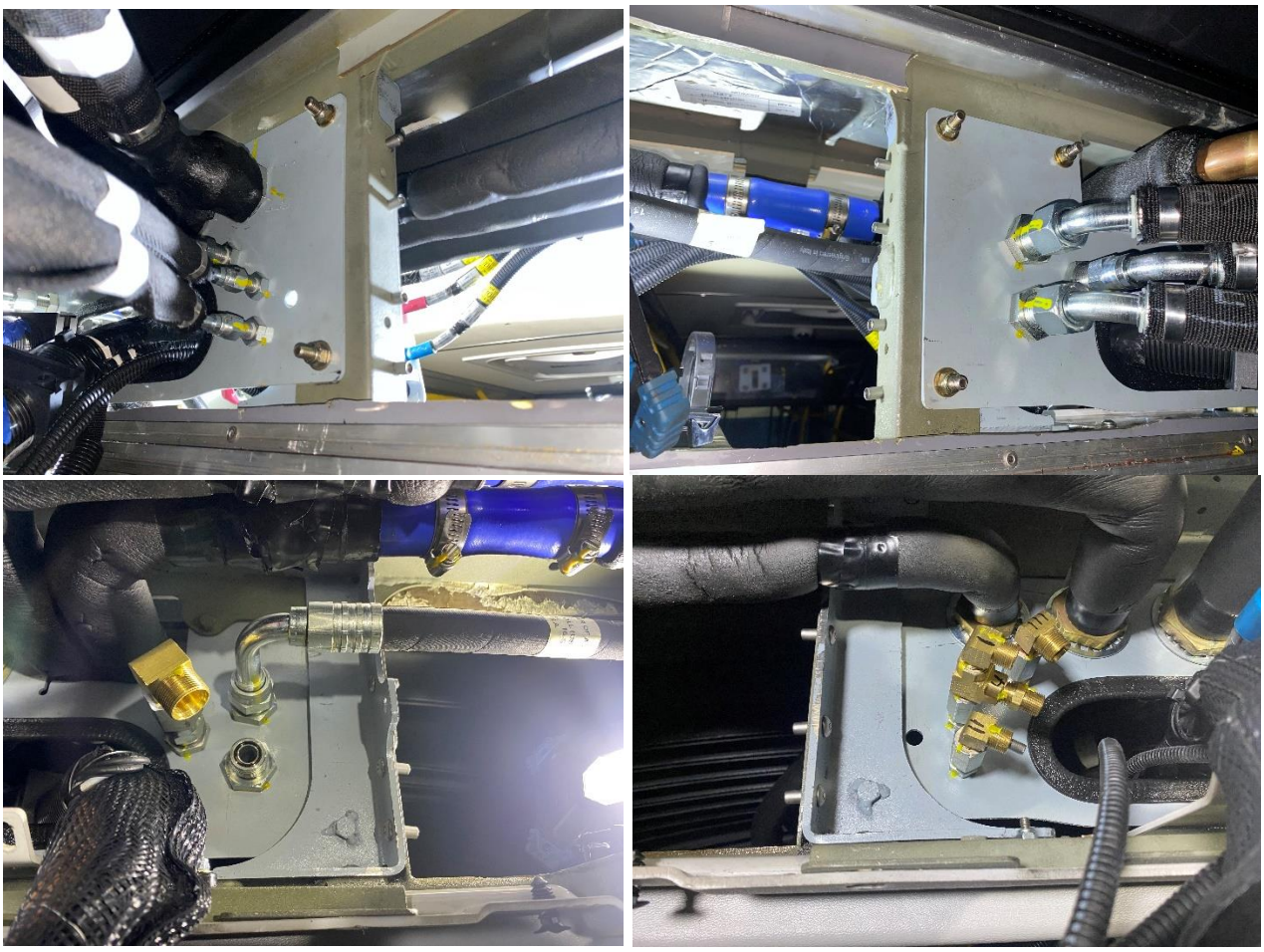


FIGURE 13B: VIEW OF BRACKETS INSTALLED WITH RIVETS

RE-INSTALL ALL COMPONENTS THAT WERE REMOVE D TO REWORK STRUCTURE

23. Re-install harness support bracket that was disconnected in step 9. Re-use hardware and torque 18-20 ft-lbs. If hardware is lost, here is what is required: ***PN: 10B05016; PN: 10W05000; 40N05000***.
    Note: With bus straight and on a flat surface, adjust position of assy-hose support to assure approximately 1" clearance between supports and false ceiling. Ensure no binding/rubbing or contact on any brackets.
    See Figure 14.

FIGURE 14: VIEWS OF HARNESS SUPPORT BRACKET

24. Re-connect airlines disconnected previously. Properly seat ferule in fitting, tighten bulkhead fittings finger tight then, using a wrench, the number of turns listed in the chart below depending on tube size.

TUBE SIZE	ADDITIONAL NUMBER OF TURNS FROM HAND-TIGHT
1/4	3
3/8 & 1/2	4
5/8 & 3/4	3-1/2

25. Connect any components or electrical that was disconnected in order to complete the welding.
26. Re-secure heater line to securement plate that was disconnected.
27. Connect PC radio & ATG joint harness to the new ground stud on the street side support bracket. ***Torque hardware to 10 FT-LBS (dry)***.
28. If the fuse plate was set aside, re-install fuse plate.
29. Re-install interior closeouts that were removed.
30. Re-install top inner bellow and secure in place.

31. Turn the main battery disconnect switch to the “ON” position.
32. Perform a final check of the area; the bus should now be back in-service condition. Verify that all bus systems work as intended. Perform an air leak test of airlines at the bulkhead plate to ensure no leaks. Air up bus and spray fittings with soapy water to see if there are any leaks. If leaks seen, you will see air bubbles forming. If so, repair the issue. If no leaks, bus can be returned to service.
33. Close up the access door and secure locks at closeout.
34. Remove all tools and debris from work area to return coach to service.
35. Turn the main battery disconnect switch to the “ON” position.

LABOUR ESTIMATE				
	Operation	Number of Technician(s)	Hours	Labor Time T X HR
1	Inspect EGS support bracket for cracks.	1	0.25	0.25
2	Inspect center top clamp & check torque on center bolt.	1	0.25	0.25
3	Removal of interior components.	1	5.5	5.5
4	Rivet on support brackets to upper bulkhead bracket on front coach.	1	1	1
5	Re-installation of interior components.	1	8	8

Total Hours: 15 hours

PARTS REQUIRED						
Item	Part Number	Description	Qty. per Coach	Units	Notes	
1	890644	Assy – Cable Support	1	EA		
2	890646	Assy – Cable Support	1	EA		
3	071992	Rivet – ¼” SS 0.08 – 0.575GP	16	EA		
6	40N05000	Locknut	4	EA		
7	506665	Assy – Hose Support (EGS)	2	EA	(order as req’d)	
8	10B05016	Bolt – Hex 5/16” 18 UNC x 1” LG	8	EA	(order as req’d)	
9	10W05000	Washer Flat 5/16”	16	EA	(order as req’d)	
10	40N05000	Nut Lock Nylon 5/16” 18 UNC	8	EA	(order as req’d)	
11	055701	Sika 221 White sealant	0.5	EA		
12	6354662	Bracket – Hoop Connecting	1	EA	(order as req’d)	
13	6354583	Bolt, Hex M12 x 160	1	EA	(order as req’d)	
14	6354582	M12 Nut	1	EA	(order as req’d)	