



**PROTERRA**



# TECHNICAL SERVICE BULLETIN

<b>ISSUE DATE:</b>	11-16-2020
<b>SERVICE BULLETIN SUBJECT:</b>	Rear Door Aux Heat Tube Retrofit
<b>VINs or MODELS AFFECTED:</b>	Service Specified Buses
<b>COMPLETE BY:</b>	Next Service Opportunity
<b>SERVICE BULLETIN #:</b>	SC-20-162
<b>Labor Operation Code:</b>	VD41Z

**NOTICE! It is expected that this process will require 14 hours per bus. Please schedule appropriately to minimize vehicle downtime.**

## REAR DOOR AUX HEAT RETROFIT

### Retrofit Description:

This procedure updates the rear door aux heat to stainless steel material for improved corrosion resistance.

## Tools/Parts Required

### Tools and Supplies Required:

1. 3/16-Inch Allen Socket
2. T-20 Torx Socket
3. T-30 Torx Socket
4. T-55 Torx Socket
5. 13mm Socket
6. 8mm Socket
7. Ratchet
8. Flat Blade Screwdriver
9. Calibrated Torque Wrench
10. Heat Gun
11. Putty Knife
12. Acetone
13. Alcohol
14. Shop Towels
15. Yellow Stanchion Paint RAL 1023

### Kit Parts Required:

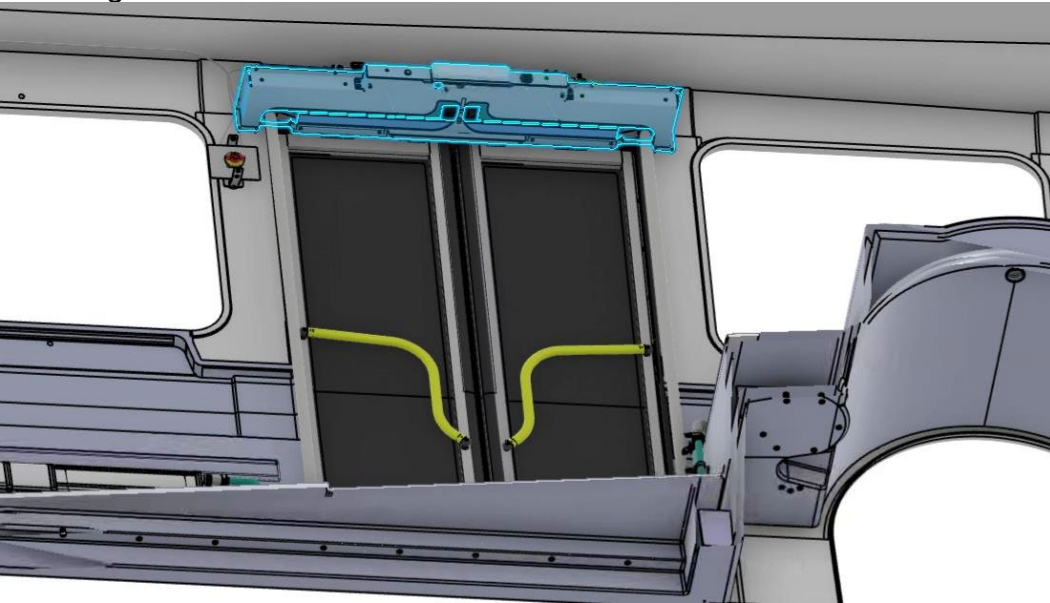
- 055828 RETROFIT KIT, AUX HEAT REAR DOOR TUBE ASSEMBLY (Consisting of)
  - 122-9285 TUBE, EXIT DOOR, AUX HEAT 1 EA
  - 018362 PLEXUS, MA-530 2 EA
  - 043090 FITTING, DRAIN, 1/4"-18 MNPT 1 EA
  - 009314 SEALER, CAULK, ALTROMASTIC, ZEAL/MIN/FUSION 2 EA
  - 044137 CLAMP, CONSTANT TENSION, 21 to 38mm OD HOSE 4 EA
  - 051571 BONDO, 1 QT, GLASS REINFORCED FILLER 2 EA
  - 012138 CABLE TIE, HEAVY DUTY .5" WIDE 9.1" BLACK 6 EA
  - 017244 SPRING CLAMP, 1.00" ID HOSE 4 EA

## Procedure:

1. Complete the Proterra approved Lockout/Tagout procedure to make the bus safe for work.
2. Using a 3/16-Inch Allen Driver, remove the Hadley Panel above the exit door.

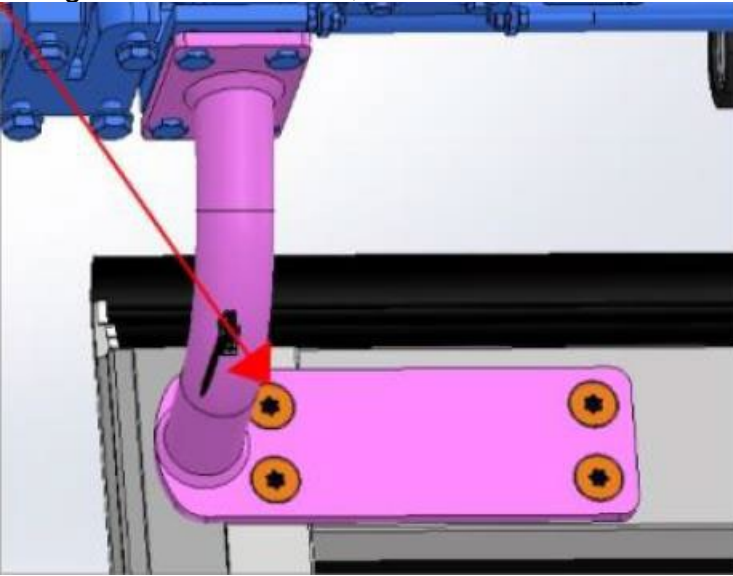


3. Using a T-30 Torx Driver, remove the Rear Door Closeout Panel shown highlighted in the following illustration.

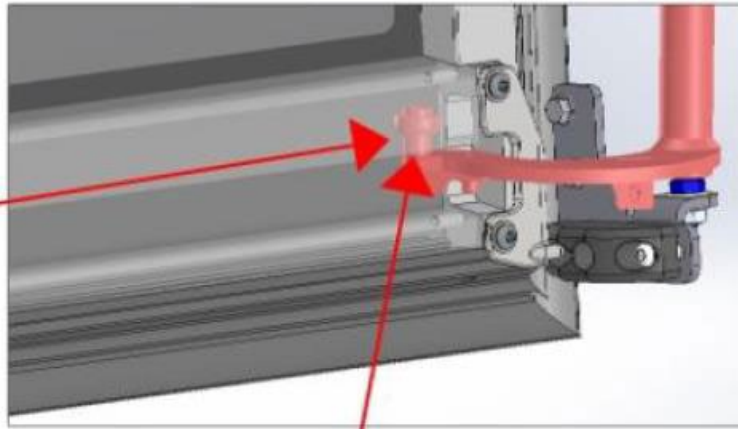


4. Disconnect the harness for the sensitive edge. Remove Cable Ties as necessary.

5. Using a T-55 Torx Driver, remove the M12 Torx Screws at the top of each door leaf.



6. Remove each Door Leaf from the door frame by lifting them off the lower bearing as shown in the following illustration.

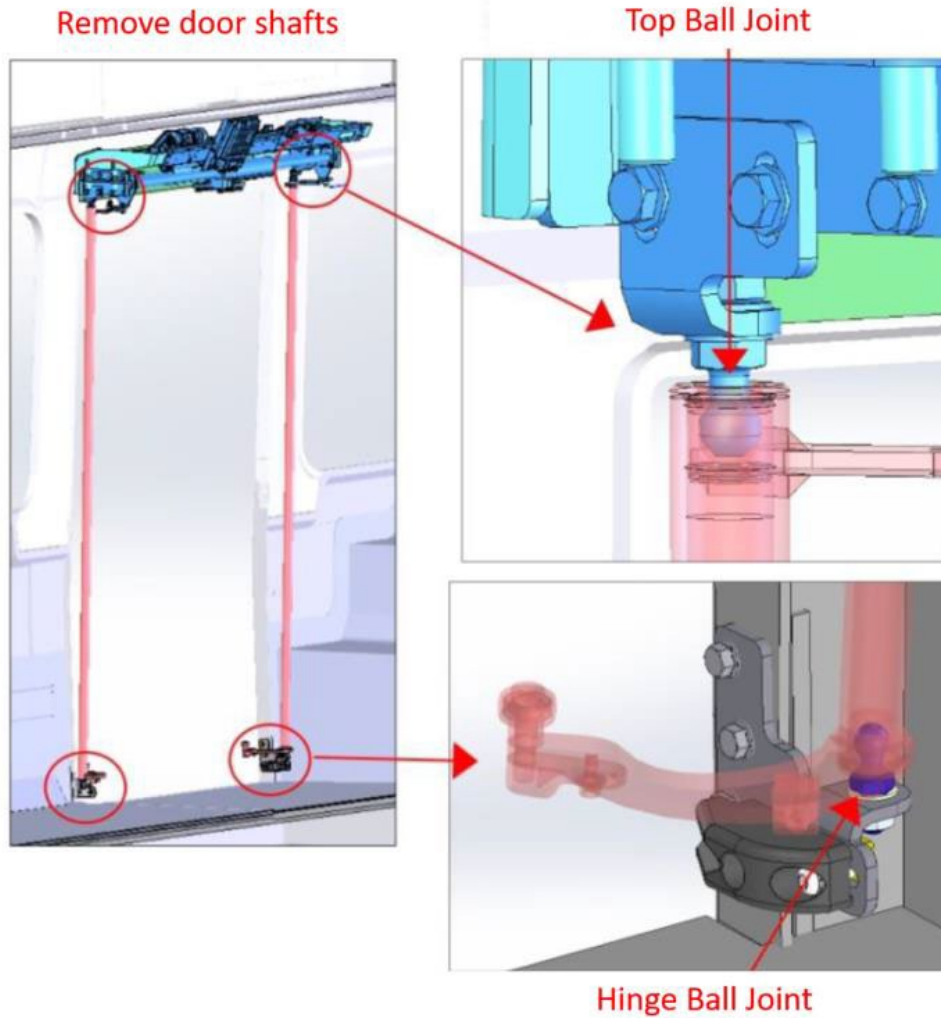


**Bearing**

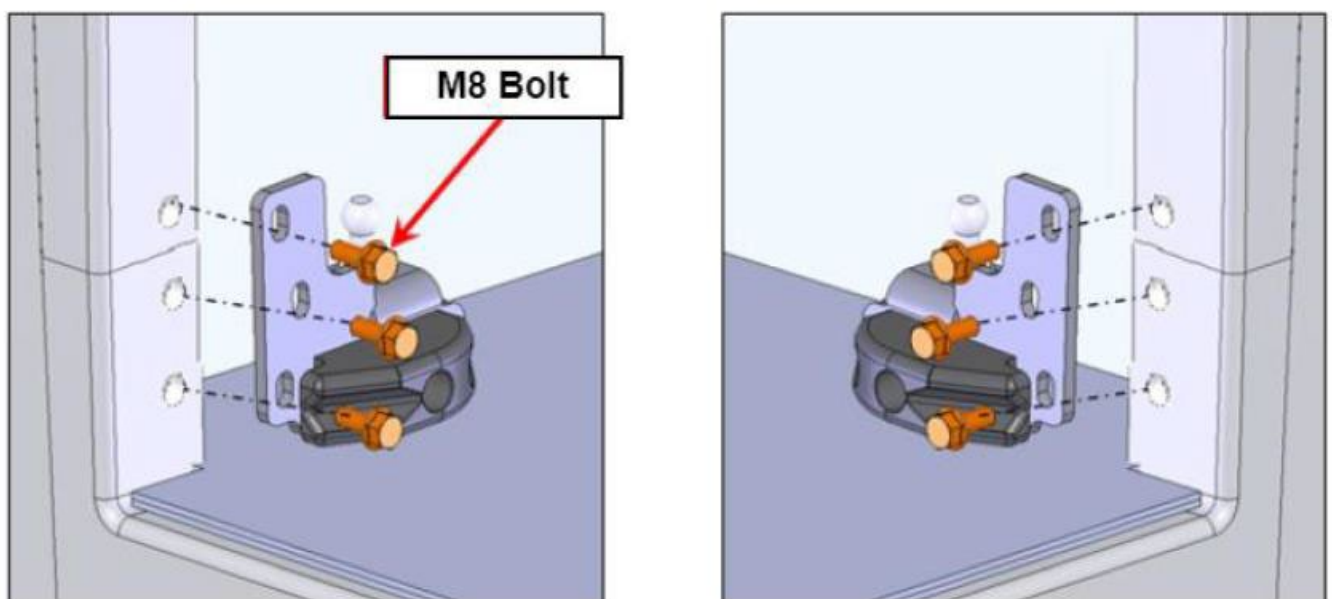
7. Using an M8 Ratchet/Socket, remove the turnbuckle bolts at the top of each door leaf.



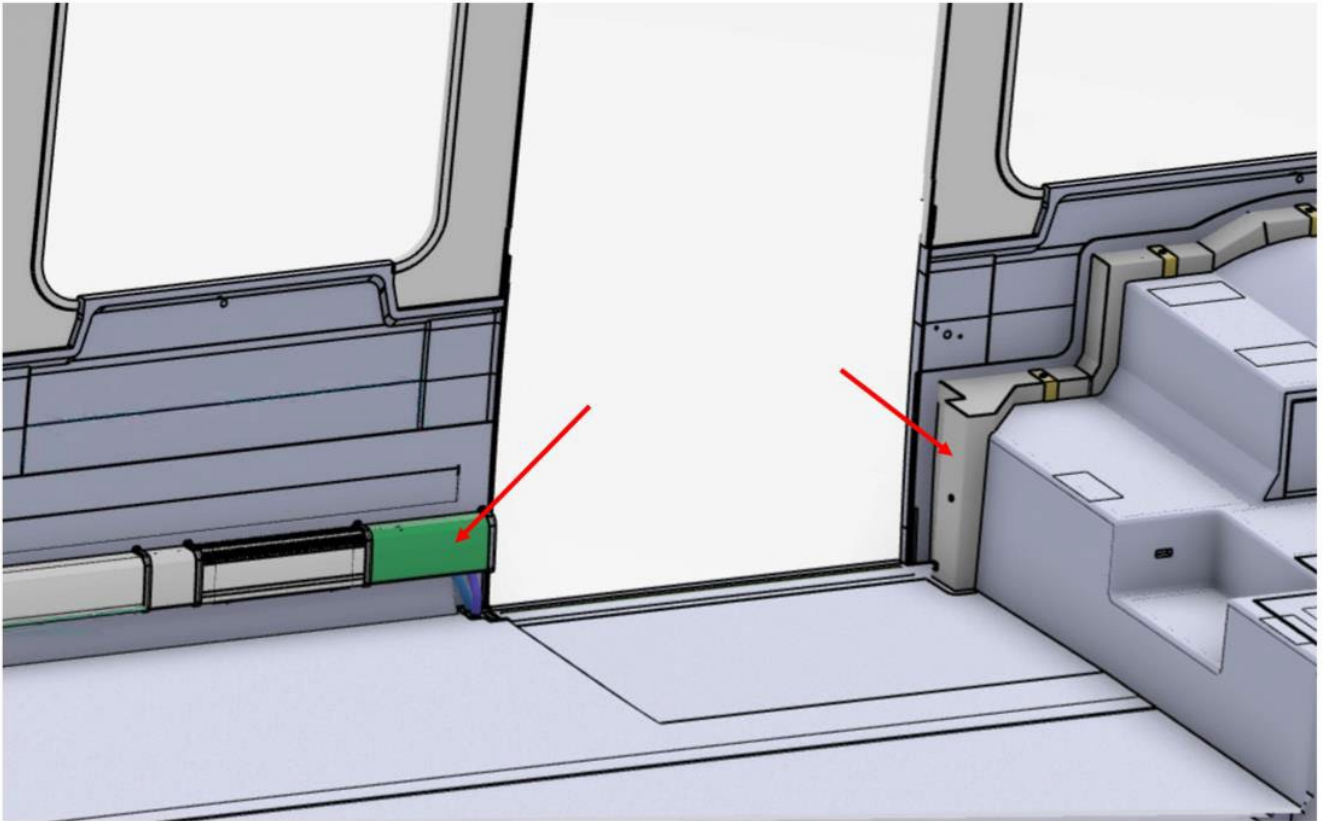
8. Using an M8 Ratchet/Socket, loosen the hinge brackets at the bottom of the doorway. Remove the door shafts from the upper and lower ball joints.



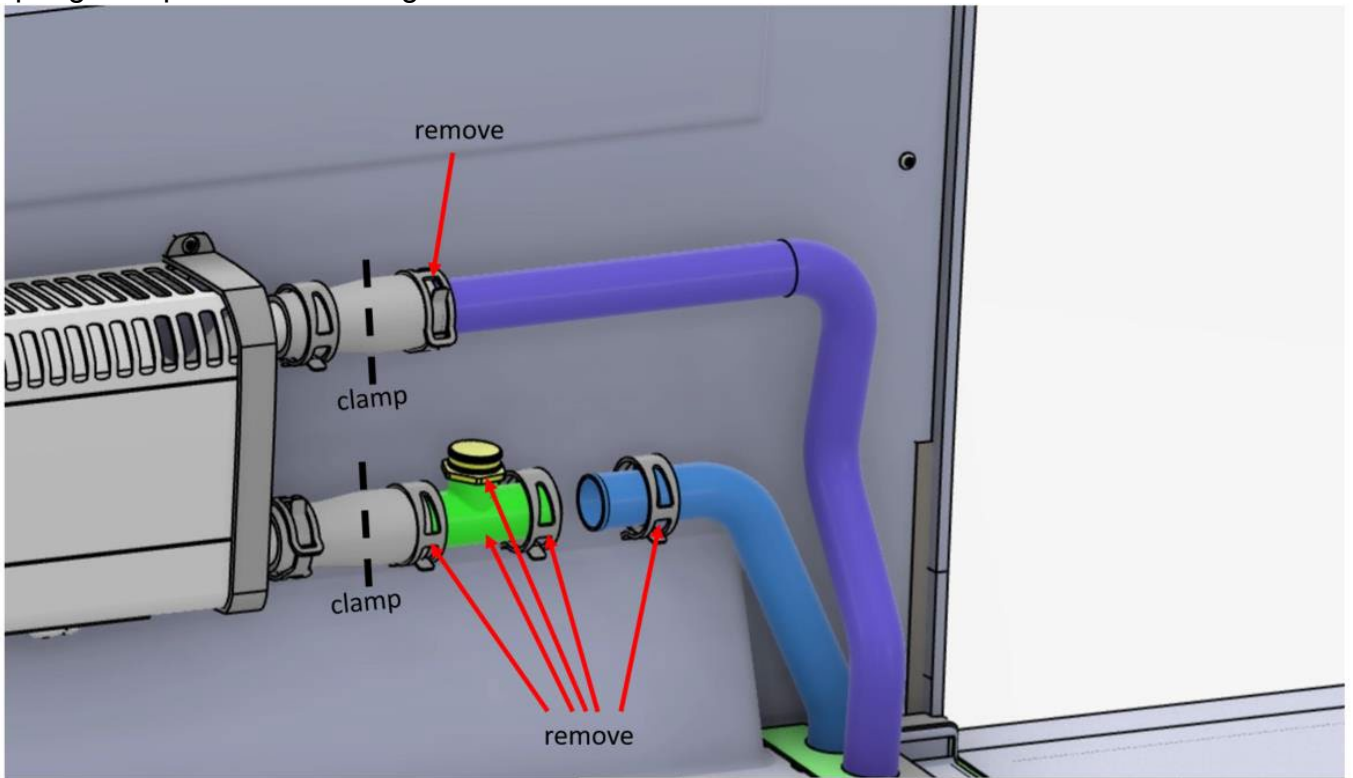
9. Using a 13mm Ratchet/Socket, remove the hinge brackets from the bottom of the doorway.



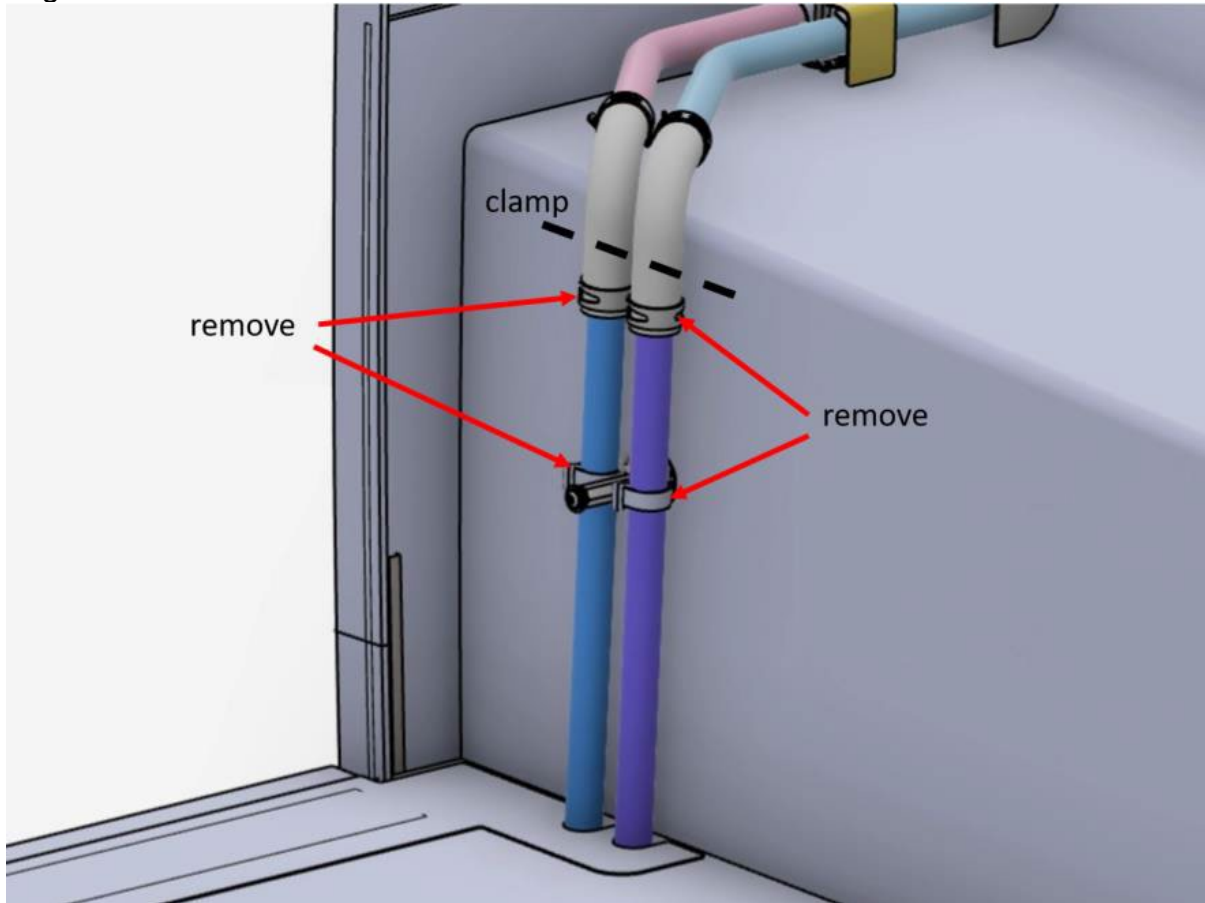
10. Using a T-20 Torx Driver, remove the metal covers on each side or the rear doorway.



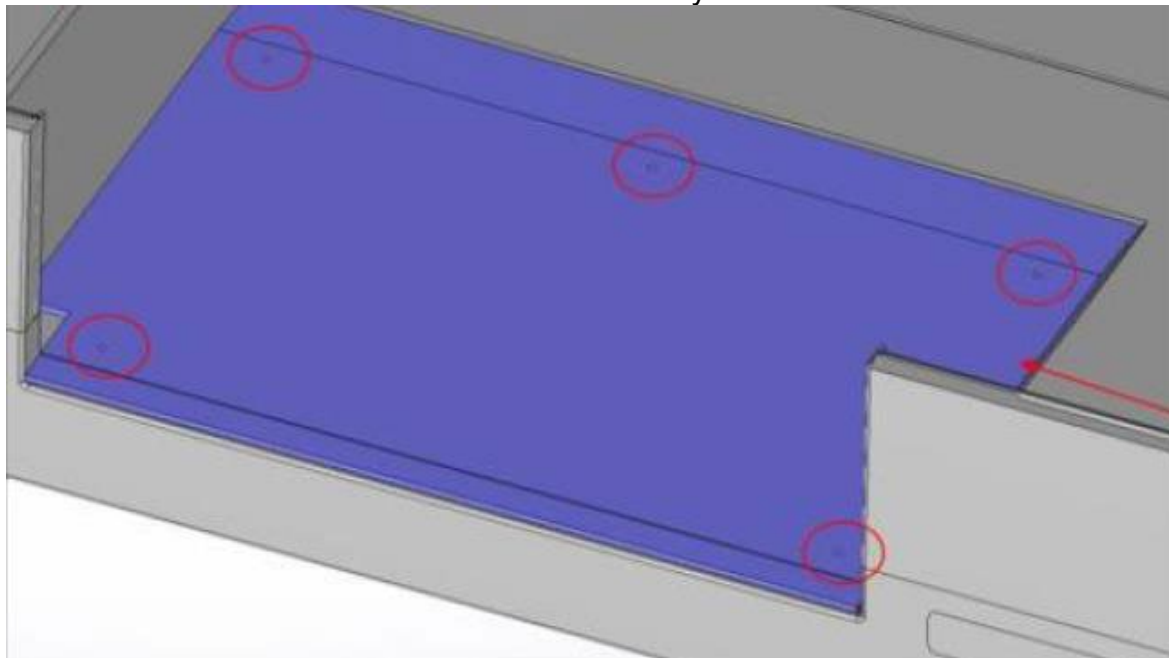
11. Using Pinch Clamp Pliers, clamp the coolant tubes in the location shown below. Remove the spring clamps and Tee Fitting as shown.



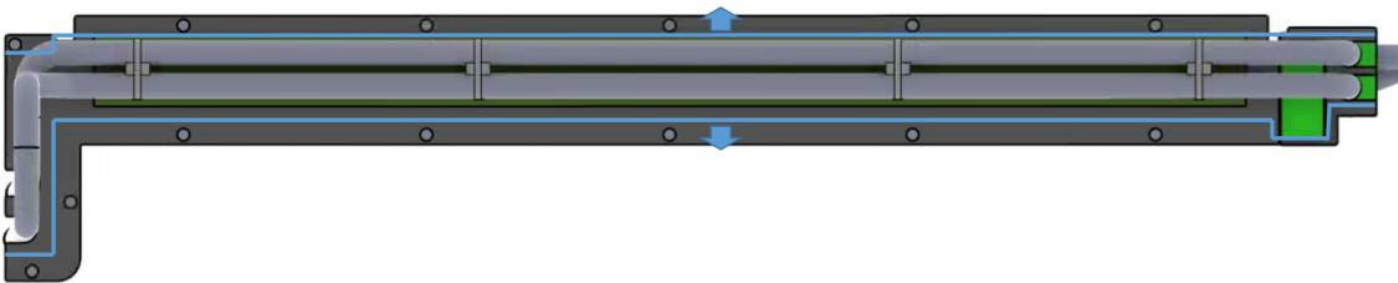
12. Using Pinch Clamp Pliers, clamp the coolant tubes in the location shown below. Remove the Cable Ties and Spring Clamps. Detach the rear passthrough tube assembly from the 90-degree tubes.



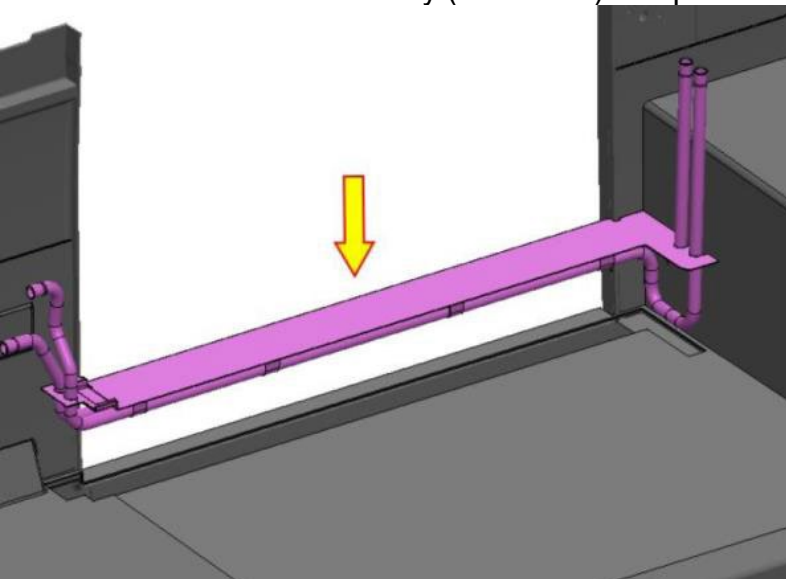
13. Using a Flat Blade Screwdriver, remove the M6 Screws shown circled in red below. Disconnect the heated mat harness. Remove any caulk around the mat. Remove the mat.



14. Using a Heat Gun, weaken the Bondo on top of the Tube Assembly. Using a Putty Knife, remove the Bondo to access the Plexus adhesive on the Tube Assembly.
15. Using a Heat Gun and Putty Knife, de-bond the Plexus Adhesive that secures the Tube Assembly to the bus body.
16. Remove the Tube Assembly from the Bus.
17. Using a Heat Gun and Putty Knife, remove any excess Plexus and/or Bondo from the area where the Tube Assembly was removed.
18. Using 36-Grit Sandpaper, scuff the bus body for bonding to the new Tube Assembly (122-9226).
19. Using a Power Drill with a 36-Grit Sanding Disk, scuff the areas shown outside the blue lines on the new Tube Assembly (122-9285)



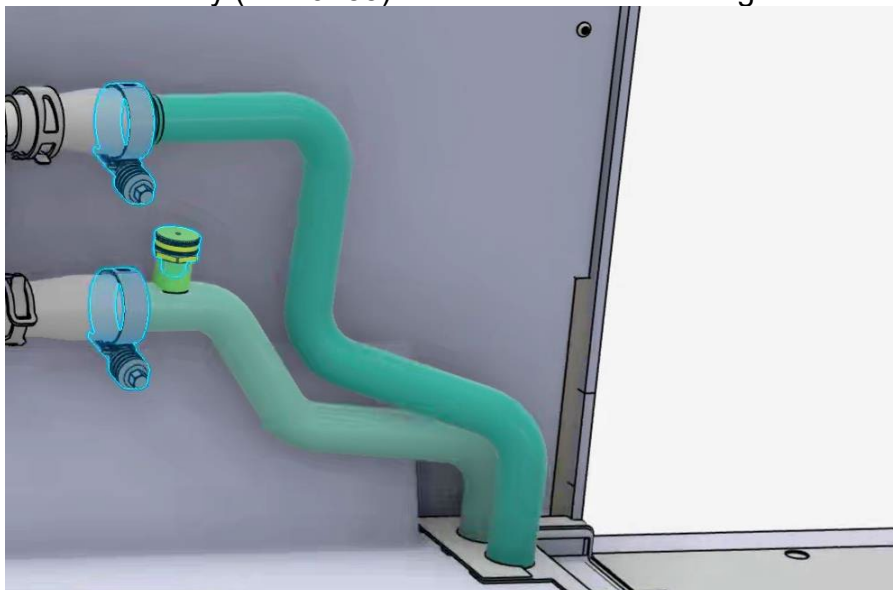
20. Using Alcohol and Shop Towels, clean the scuffed areas on the bus body and the Tube Assembly (122-9285).
21. Using a Shop Towel, apply Plexus Primer to the scuffed areas on the new Tube Assembly (122-9285).
22. Using a Plexus Gun, apply Plexus to the scuffed area on the new Tube Assembly (122-9285).
23. Lower the new Tube Assembly (122-9285) into position on the bus.



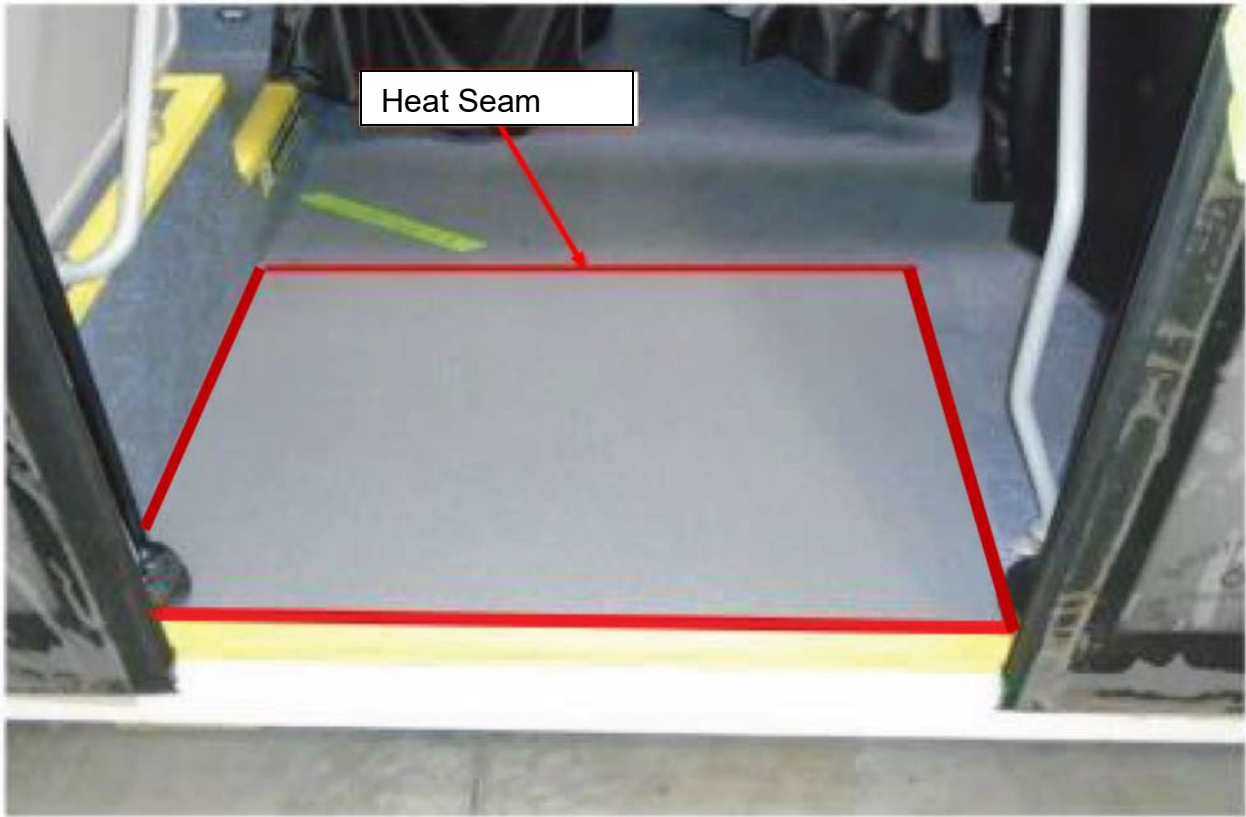
24. Using a Plexus Gun, apply a bead of Plexus around the perimeter of the new Tube Assembly (122-9285) to seal its edges.
25. Allow time for the Plexus to cure.
26. Using Pinch Clamp Pliers, connect the 90 degree silicone tubes at the rear to the new Tube Assembly (122-9285).



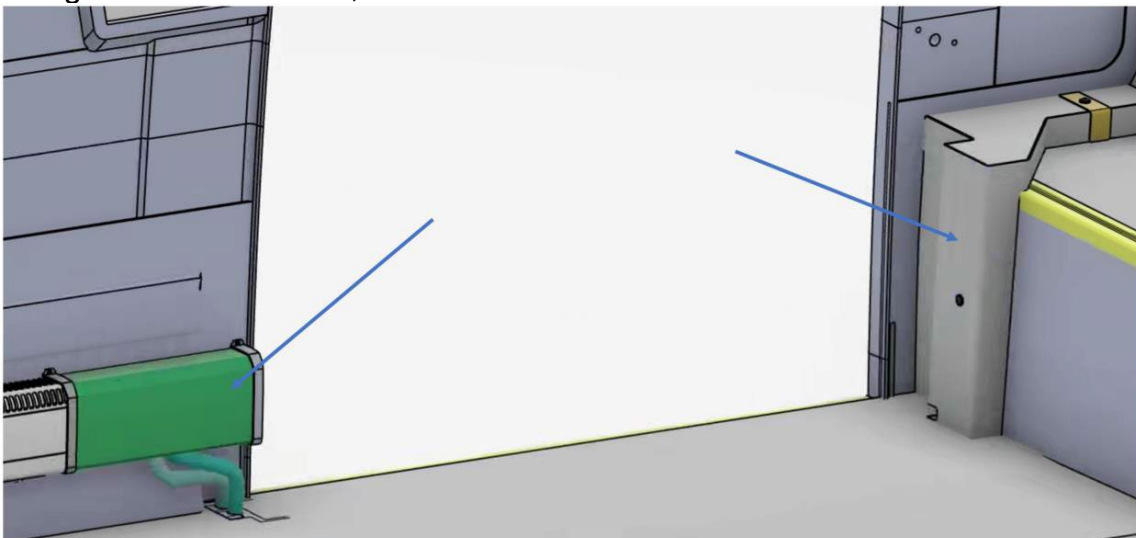
27. Using Cable Ties (012138), secure the tubes to the mounting hardware.
28. Using an XX-Inch Combination Wrench, install the new Drain Fitting (043090) into the new Tube Assembly (122-9285) as shown in the following illustration.



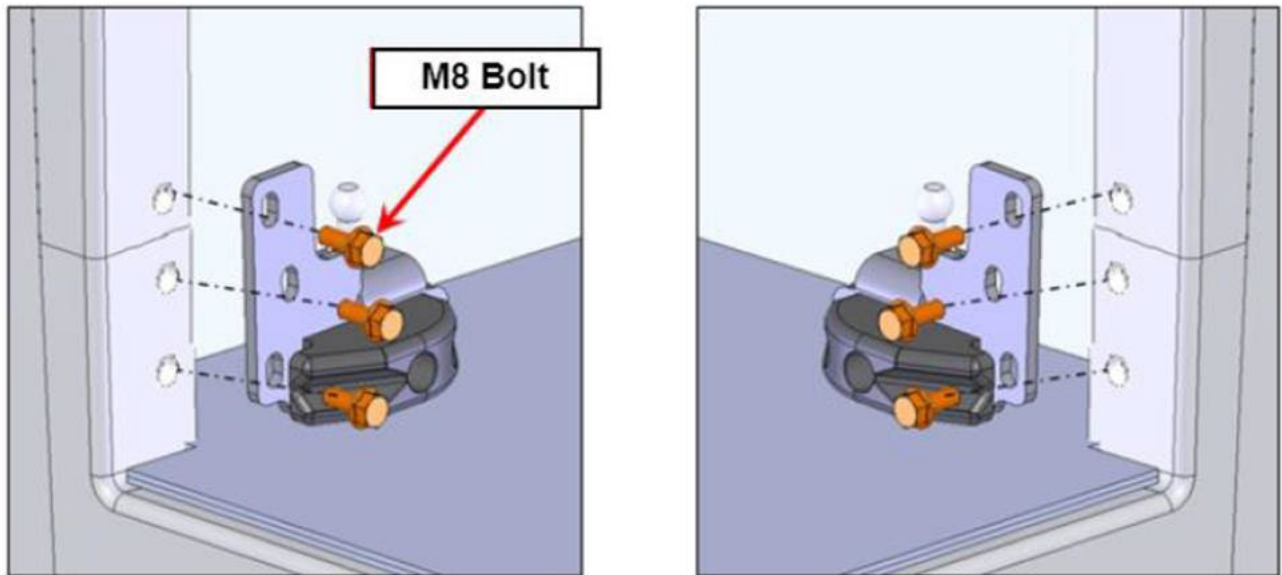
29. Secure the new Tube Assembly (122-9285) to the reducer coolant tubes using Constant Tension Worm Clamps (044137).
30. Using a Putty Knife, apply Bondo above the Tube Assembly (122-9285) to create a flat surface for the heated mat. The Bondo may cover the entire passthrough plate as well as the surrounding floor.  
**Note:** Keep the Bondo out of the threaded inserts.
31. Reinstall the Heated Map.
32. Using a Caulking Gun, apply Caulk (009314) to the edges of the heated mat.



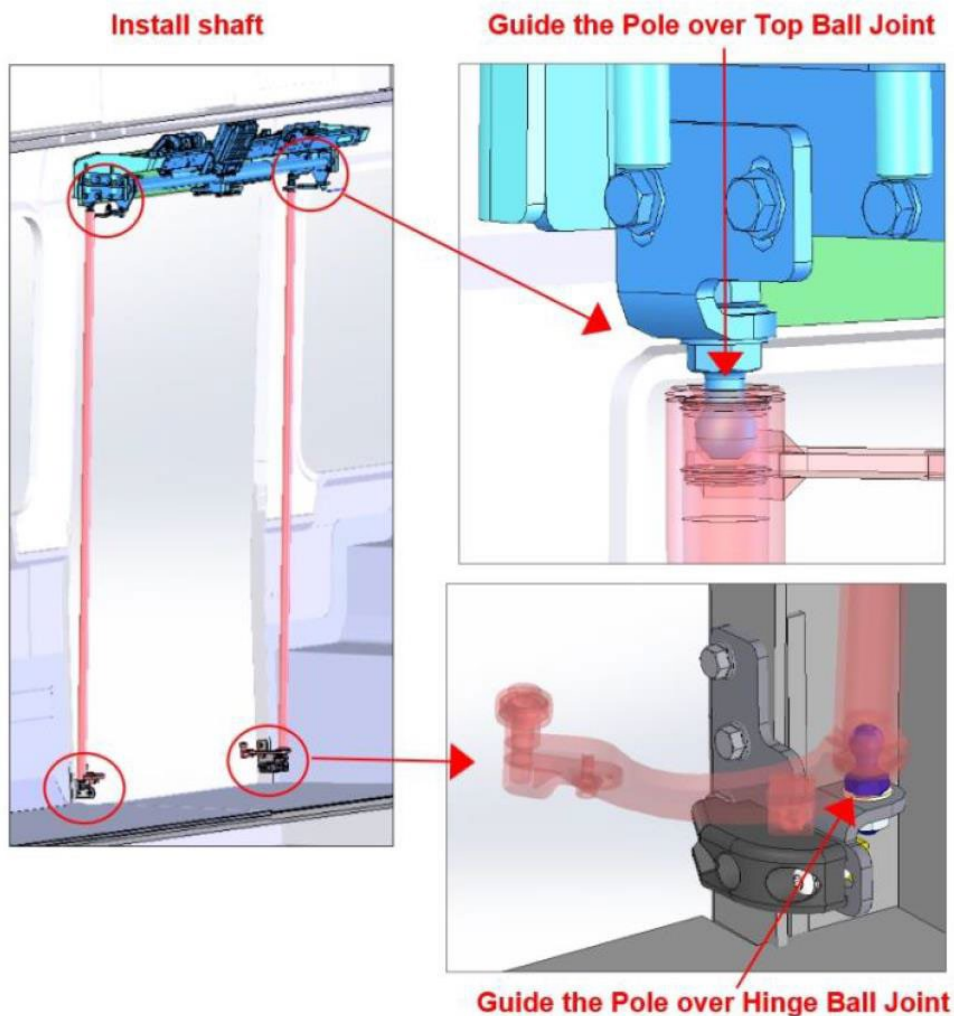
33. Using a T-20 Torx Driver, reinstall the metal covers that were removed earlier.



34. Using a 13mm Ratchet/Socket, reinstall the hinge brackets at the bottom of the doorway. Do not tighten the bolts completely.



35. Reinstall the Door Shafts. Position the shafts over the bottom ball joint and guide them into place.

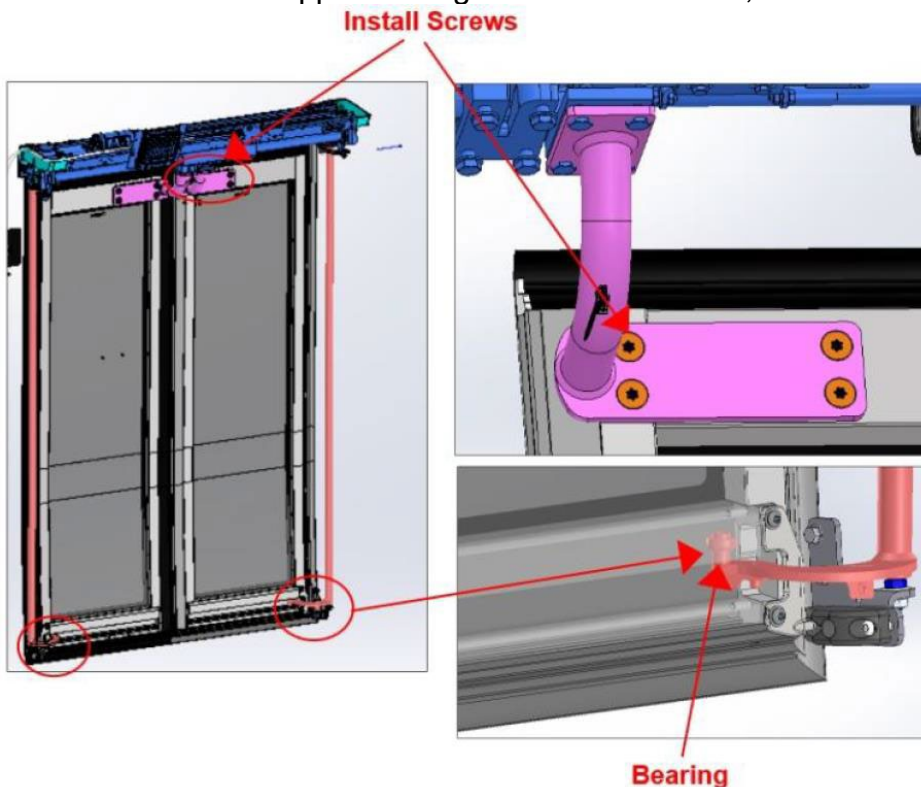


36. Using a 13mm Ratchet/Socket, tighten the M8 bolts on the bottom hinge brackets so that the door leaves can be installed.

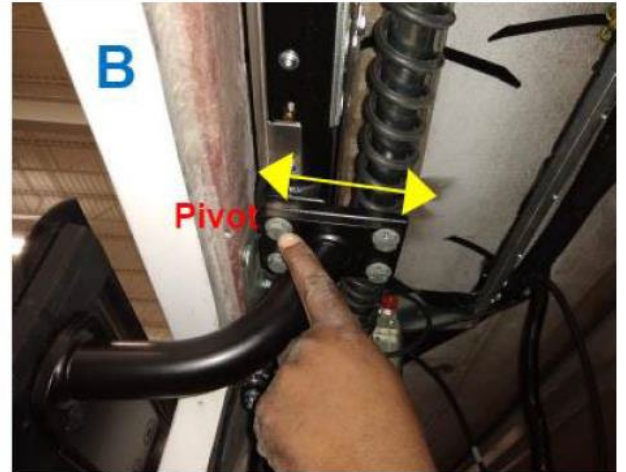
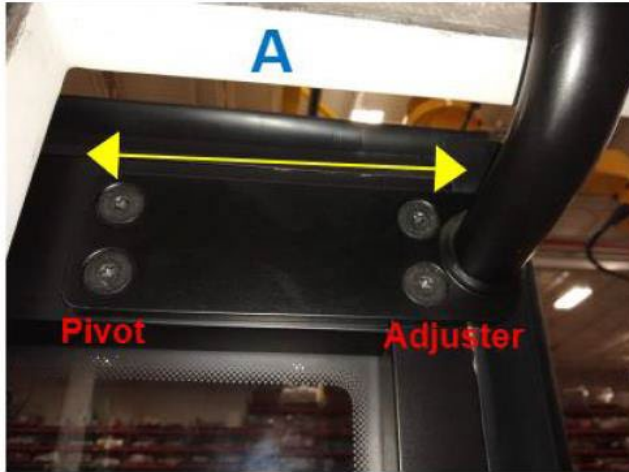
37. Using an M8 Ratchet/Socket, reinstall each turnbuckle bolt.



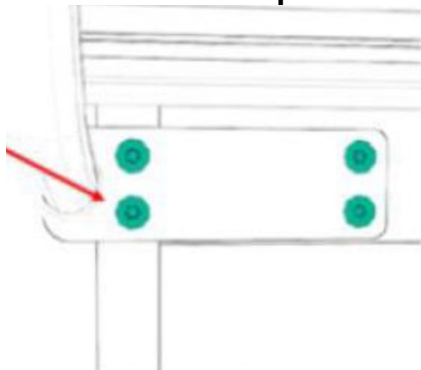
38. Lift each door leaf so that the bottom slot is over the lower bearing. Align the upper face of the door with the door support. Using a T-55 Torx Socket, install the M12 Countersunk screws.



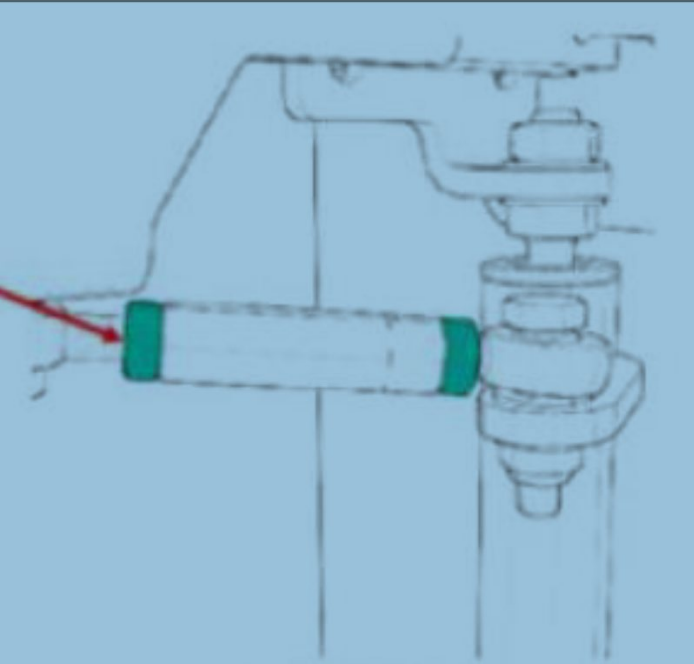
39. Reconnect the sensitive edge harness. Use Cable Ties (012138) to secure the cables so that they do not interfere with the motion of the doors.
40. Adjust the doors as necessary using the following illustrations.
- A Adjust for forward and aft direction.
  - B Adjust for door clearance (Cross-car with body direction).
  - C Adjust the tightness of the doors.



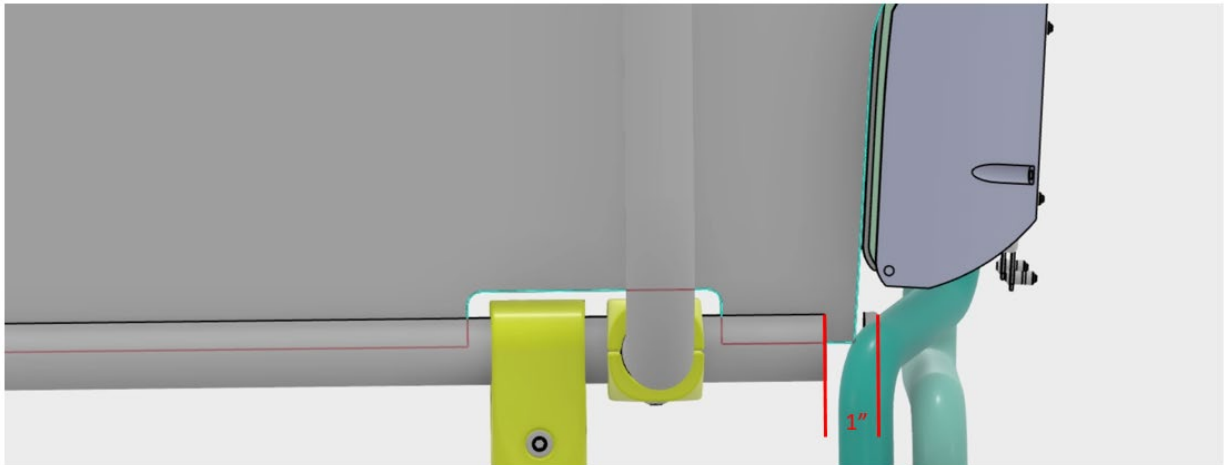
41. Adjust the Turnbuckle for the bottom leaf position.
42. Using a 13mm Socket, and a Calibrated Torque Wrench, **torque the M8 Bolts on the hinge brackets to 22 foot pounds.**
43. Using a T-55 Torx Socket and a Calibrated Torque Wrench, **torque the M12 Countersunk screws to 41 foot pounds.**



44. Using a 13mm Crow Foot Socket, and a Calibrated Torque Wrench, **torque the turnbuckle jamb nuts to 10 foot pounds.**



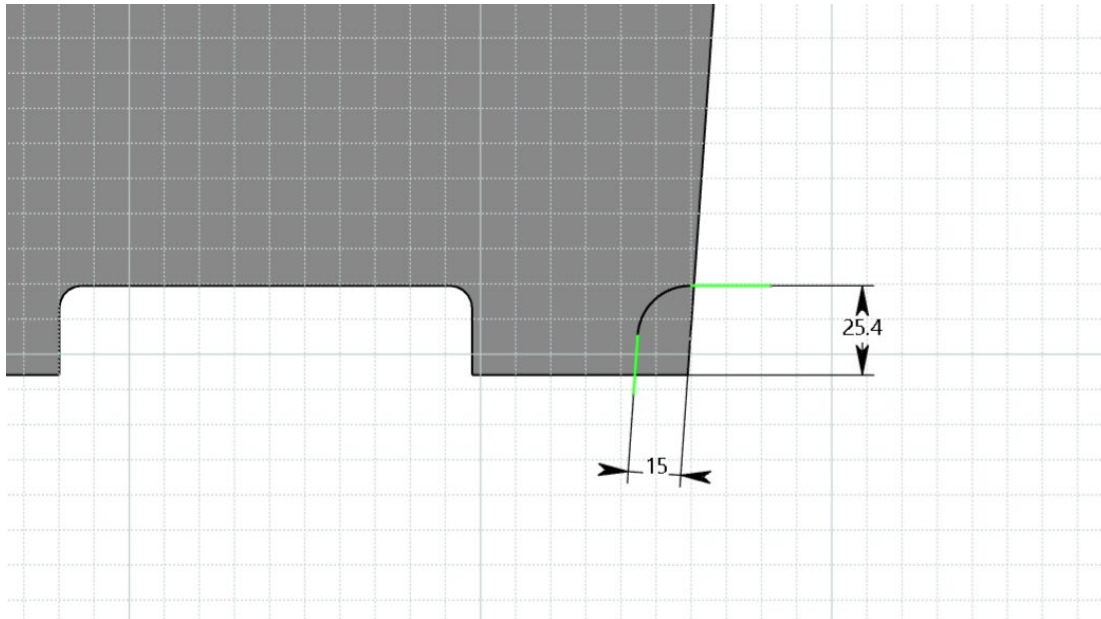
45. Using a Tubing Cutter, remove 1-Inch of the Stanchion shown in the following illustration.



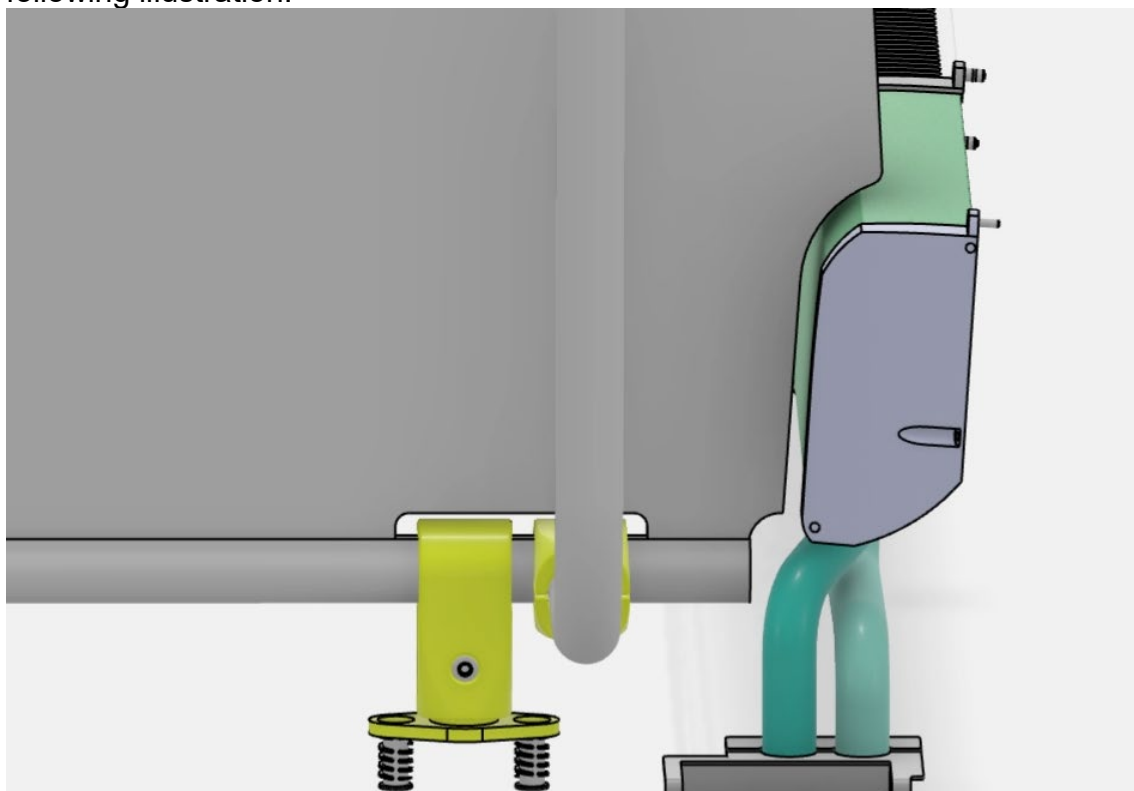
46. Using a Deburr Tool, smooth the edge of the modified Stanchion.

47. Paint the cut end of the Stanchion using Yellow Stanchion Paint RAL 1023.

48. Using an Approved Safety Knife, modify the modesty panel as shown in the following illustration.



49. Reassemble the Modesty Panel and Stanchion. The modified Modesty panel is shown in the following illustration.



50. Using Alcohol and Shop Towels, clean up any dust and debris.

51. Remove the Lockout/Tagout devices and power on the bus.

52. Verify proper operation of the exit door before returning the bus to service.