

Special Bulletin

SP18-304 A

Date	Expiration	Release	Page
06.2018	06.2020	1	1(28)

Revision: A Changed *figure 9*. Updated related steps. Time required was 1h, is 2.5h. 2018-06-20

SLIDING DOOR ADJUSTMENT AND HARDWARE REPLACEMENT

Prevost vehicles

DESCRIPTION

For vehicles affected by this bulletin, on the wheelchair area sliding door, install a new upper roller carrier, adjust the door and inspect all fasteners.

MODEL YEAR(S) AND VEHICLES INVOLVED

NOTICE TO SERVICE CENTERS Verify vehicle eligibility by checking warranty bulletin status with SAP or via ONLINE WARRANTY SYSTEM available on Service / Warranty tab of Prevost website.	
Model	VIN
X3-45 Commuter Model Year : 2014, 2015, 2016	The following individual vehicles: 2PCG33495EC735590; 2PCG33498EC735602, And from 4RKG33497E9737001 up to 4RKG33491G9737299
This bulletin does not necessarily apply to all the above-mentioned vehicles, some vehicles may have been modified before delivery. The owners of the vehicles affected by this bulletin will be advised by a letter indicating the Vehicle Identification Number (VIN) of each vehicle concerned.	

MATERIAL NEEDED

Order Kit SP18-304 which includes the following parts:

Part No.	Description	Qty
281454	UPPER CARRIER ASSY	1
502681	NUT HEX NYRT M6-1.0 N500 G8	1
500877	WASHER FL .250x.562x.065 N500	1
507378	BUSHING W/SHOULDER	2

Other parts that may be required depending on vehicle condition:

Part No.	Description	Qty
680038	LOCTITE 243 "BLUE"	1
685353	TORQUE SEAL PAINT	1
286421	SPACER "U" 54MM X 66MM X 14GA	2
288588	SPACER 44MM x 132MM x 18GA	2
2800296	SPACER 44MM x 132MM x 24GA	2
504318	RETAINER RING	1
2800270	ROLLER	1

Writer: FL

NOTE

Material can be obtained through regular channels.

RECOMMENDED TOOLS

Figure 1: RATCHET WRENCH



Figure 3: TORQUE WRENCHES (IN-LB & FT-LB)



Figure 2: CROWFOOT ADAPTER SET



Figure 4: FEELER GAGE SET



Figure 5: Torque adaptor, 15mm, 12 point



DANGER

Park vehicle safely, apply parking brake, stop engine. Prior to working on the vehicle, set the ignition switch to the OFF position and trip the main circuit breakers equipped with a trip button. On Commuter type vehicles, set the battery master switch (master cut-out) to the OFF position.



DANGER

Do not leave keys in wheelchair door lock while performing service operations described in this bulletin.

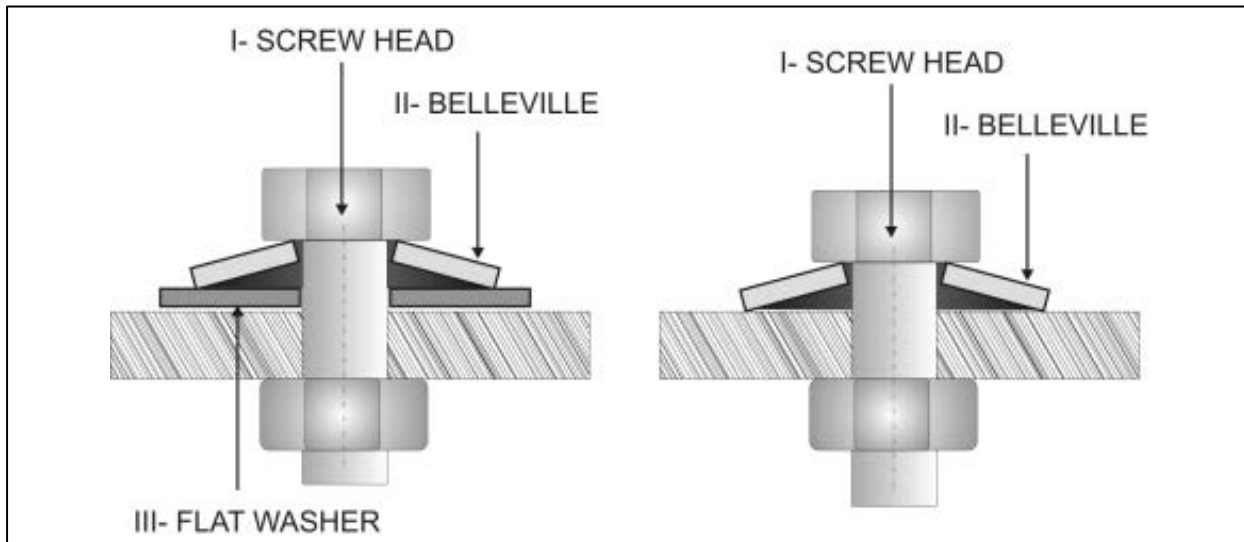


Figure 6: PROPER BELLEVILLE WASHER ARRANGEMENT.

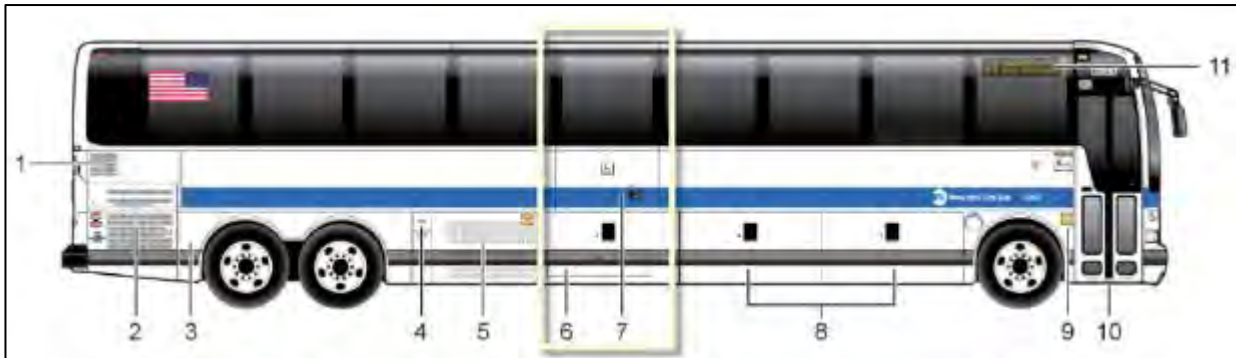


Figure 7

1. Locate the sliding door in the curbside mid-section of the vehicle. (fig. 5, item 7,)

2. From the inside, looking out, remove left hand trim on door frame.
3. Also remove the upper right hand corner trim. (Figure 8)

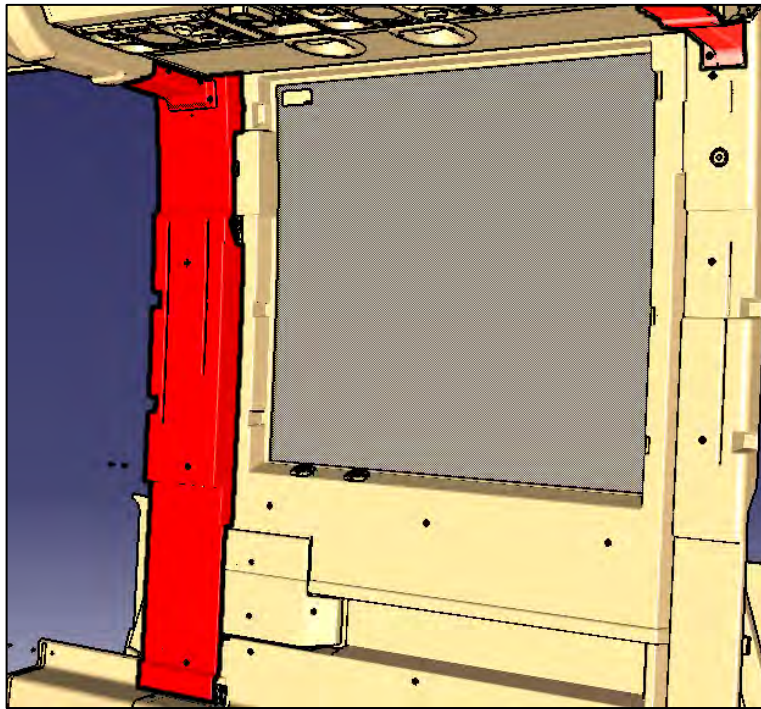


Figure 8

4. Create some working space by removing screws and disconnecting both modules, lights and the ultrasound threshold sensor. Reserve hardware. (Figure 9)
5. The black ground may be hard to disconnect. Use a pair of long nose pliers to help disconnection.
6. Disconnect the main connector of the left hand vent & light module.

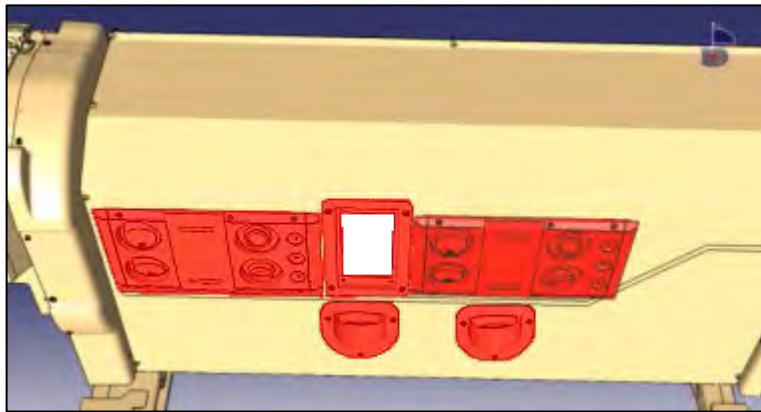


Figure 9

7. Remove all screws holding the wheelchair area roof. Reserve hardware. Move the roof assembly forward on the seats and remove the cable ties securing the threshold warning module harness to allow additional harness length.
8. Place masking tape on the threshold warning module sensors.

9. Remove "Next Stop" and "Reading Light" buttons (Figure 10)

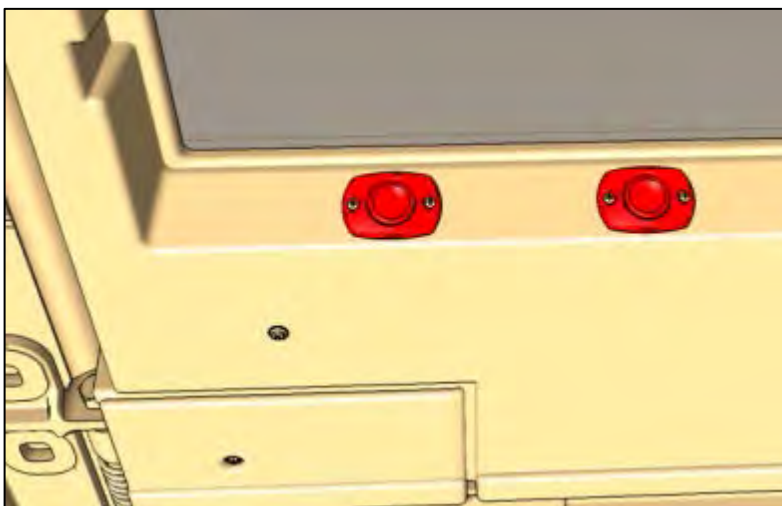


Figure 10

10. Remove door trim. (Figure 11)

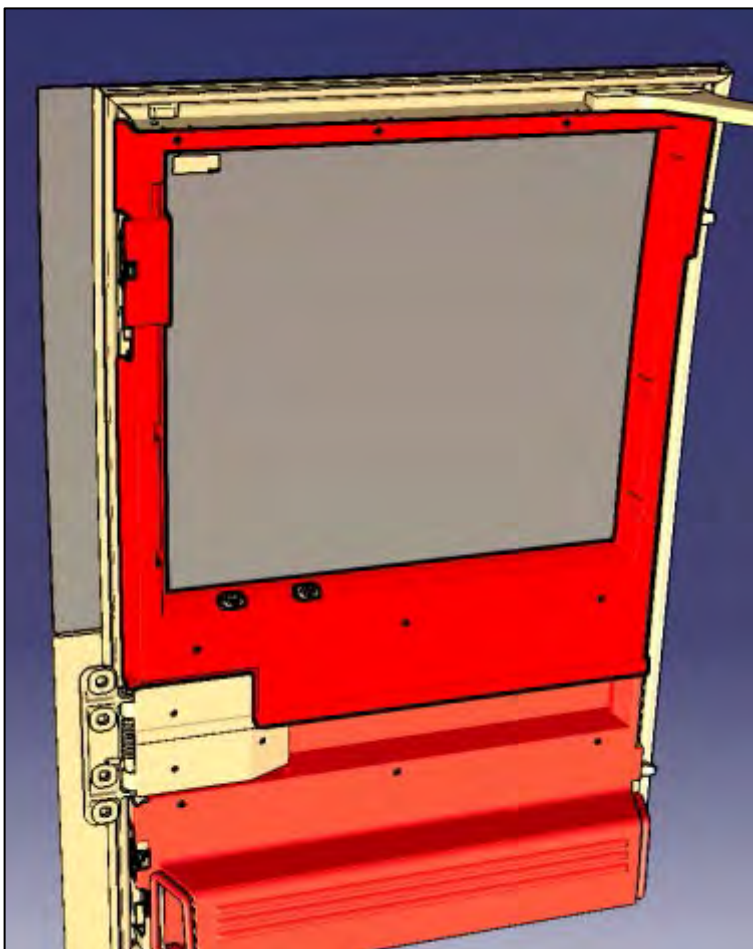


Figure 11

11. Remove the small duct section forward of the door. (Figure 12, Figure 13)

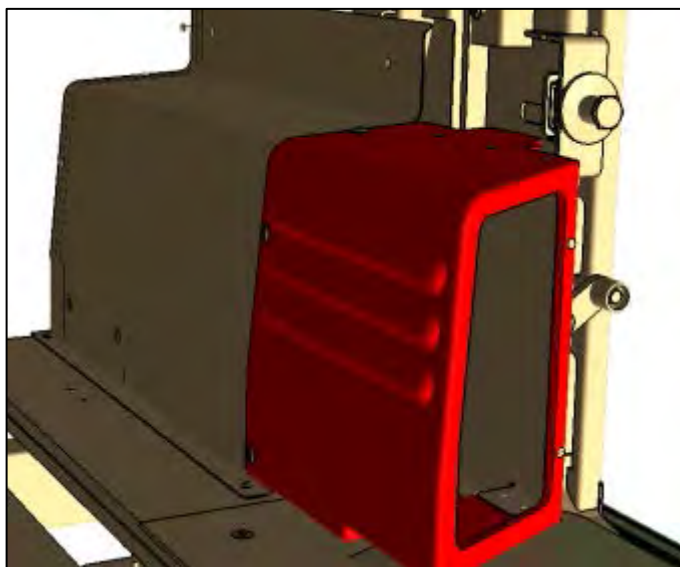


Figure 12

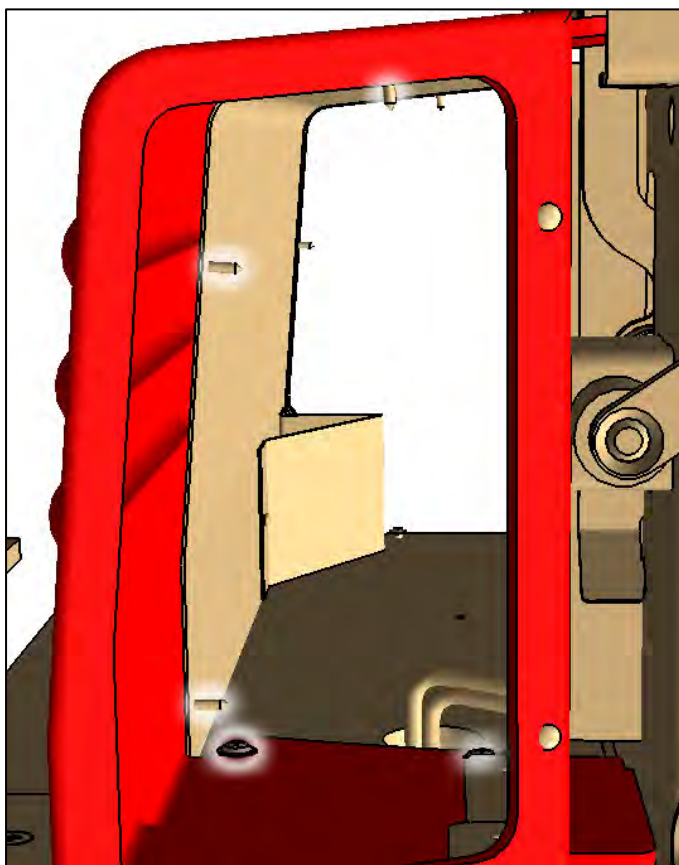


Figure 13

12. On the right side of the door, remove the capping trim and the parcel rack partition from the overhead parcel rack. Reserve hardware. (Figure 14)

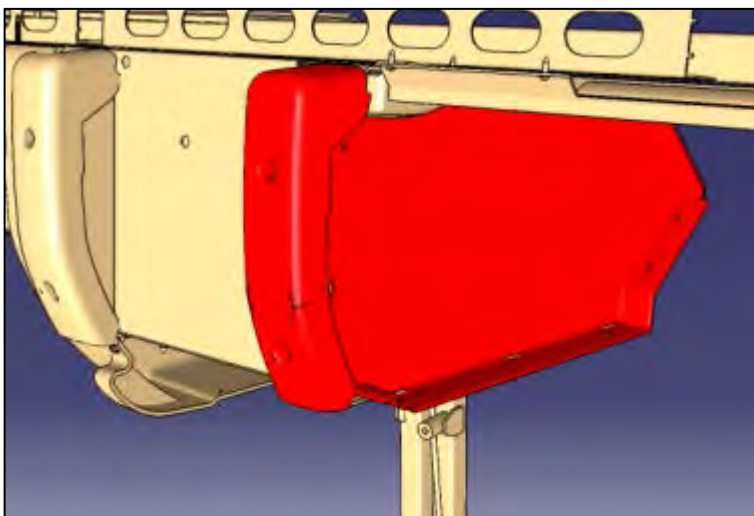


Figure 14

13. Locate the proximity switch on the left hand hinge jamb. (Figure 15)

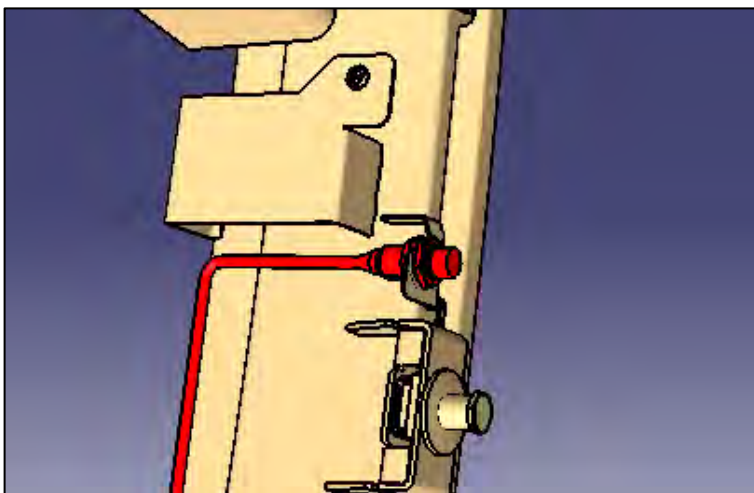
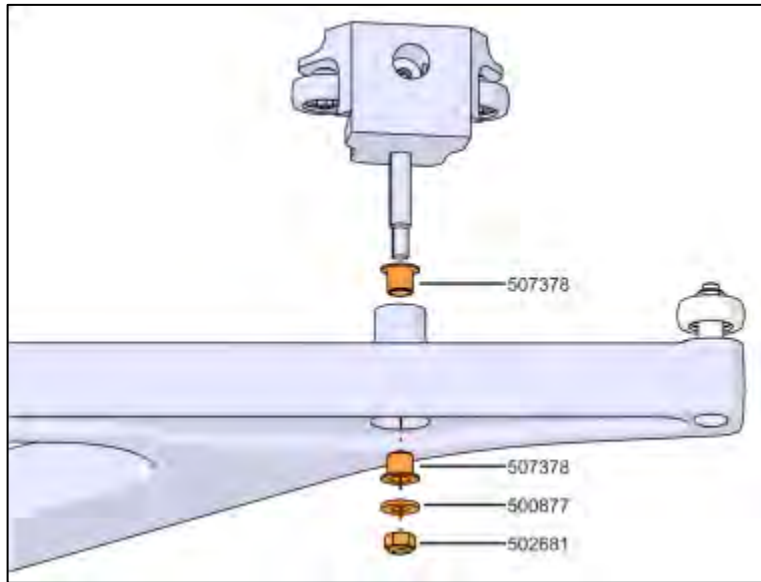


Figure 15

14. Move the door mid-way.
15. Remove the old carrier assembly. Discard.
16. Install the new carrier assembly 281454 using
 - 507378 (2x) Bushing
 - 500877 Washer
 - 502681 M6 Nylon Lock NutTighten to **36 lb-in**



17. Check dimension (Figure 17) and position of proximity switch in support opening (Figure 16)

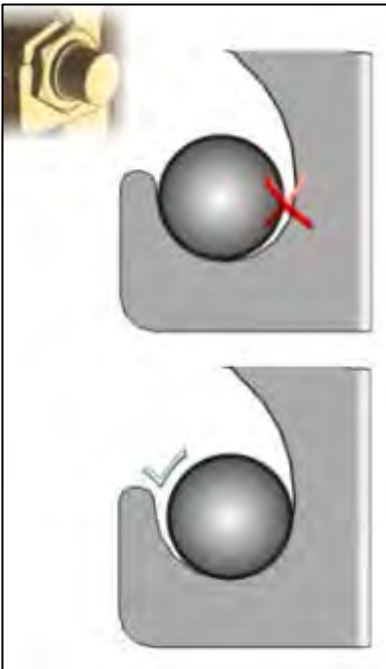


Figure 16



Figure 17

18. Check dimension "A" on proximity switch target.

Note: Target screw should be a countersunk socket head cap screw.

If target is a hex head screw, Inform the service manager and refer to bulletin SP15-343 for replacement instructions.

Hand tighten and adjust to **$13/16" \pm 1/16"$** (21 $\pm$ 2mm) (A) (Figure 18)

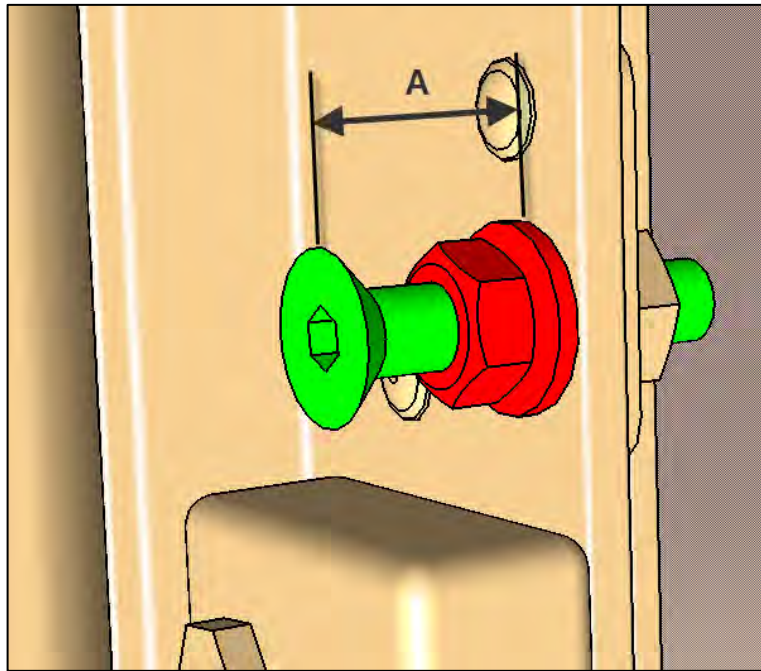


Figure 18

19. Check gap between proximity switch and cap screw to **$5/16" \pm 1/32"$** (8mm $\pm$ 1mm) (B) (Figure 19)

20. If adjustment was required:

Hold cap screw and tighten nut to **16 lb-ft** using a crowfoot adapter on the torque wrench. Re-Apply torque seal mark.

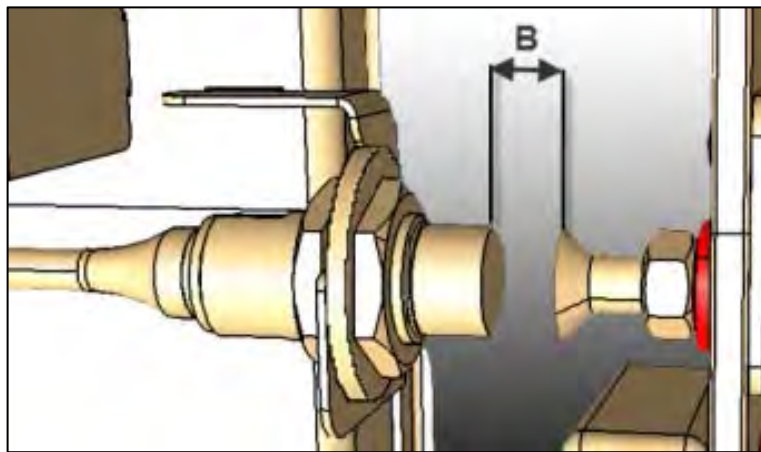


Figure 19

21. Check torque seal on the door switch support.

If broken, tighten to **7lb-ft**

Re-apply torque seal mark.

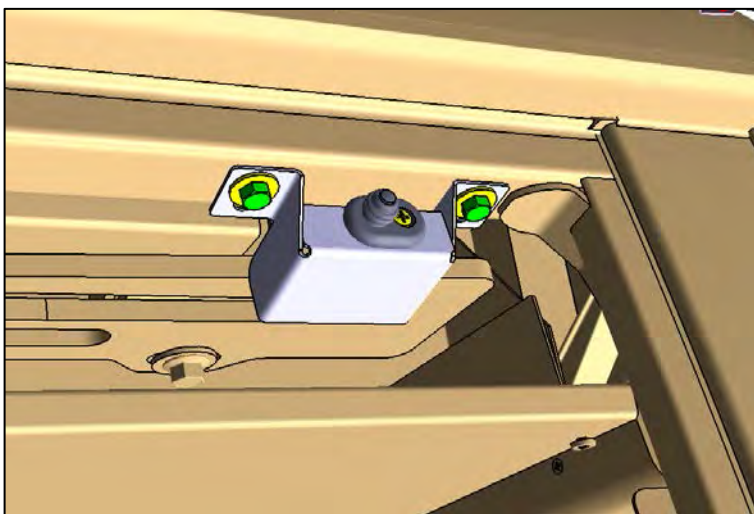


Figure 20

22. Close the door.

Looking at the fingers from the top. Use feeler gages to assess the gap between the small boss on the finger and the receptacle face

(Figure 21, Figure 22)

Use a feeler gage to confirm gap

Min **1/64"** (0.5mm)

Max **3/64"** (1.1mm)

If gap is not within the above values, add or remove shims as required.

#288588 18GA

#2800296 24GA

If gap is OK, skip to next step.

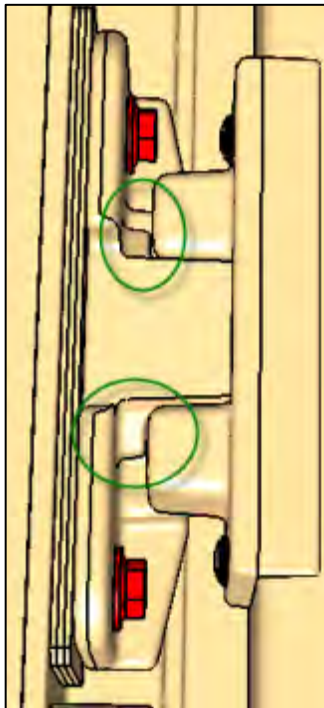


Figure 21

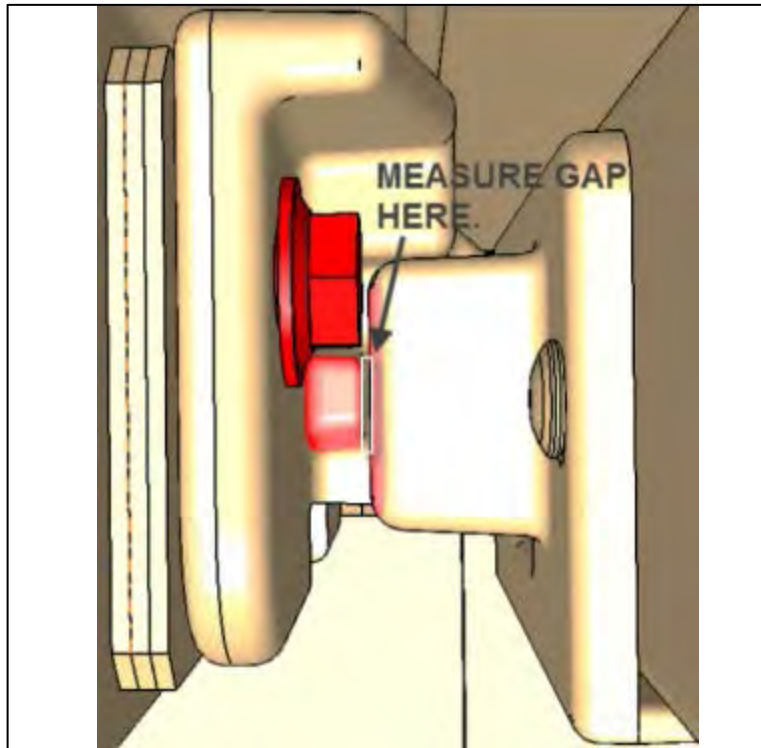


Figure 22: top view

23. Open the door.

24. On the upper and lower fingers, check torque seal.

25. If broken, tighten to **7 lb-ft**
Apply torque seal mark.



Figure 23

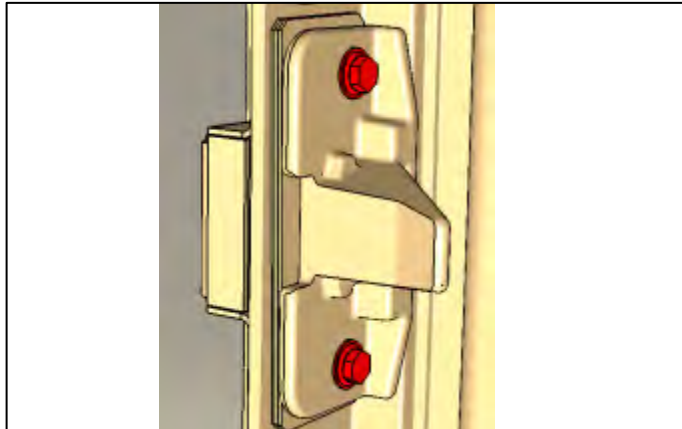


Figure 24



Figure 25

26. Go to the driver's area on the left hand portion of the dashboard.

27. Switch OFF the WCL power switch.

(Figure 26)



Figure 26

28. On the upper and lower lock,

Make sure the striker pin is centered in the door jaws. Adjust vertically & horizontally if required.

(Figure 27, Figure 28)

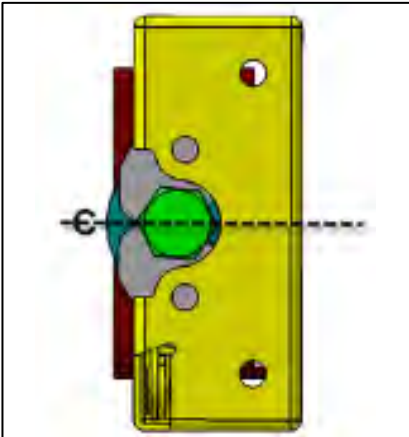


Figure 27

29. If adjustment was required, tighten to **60 lb-ft**. Re-Apply torque seal.

30. Check gaps as shown on Figure 28. Min **1/64"** (0.5mm)

If gaps are smaller, inform your Prevost Regional Service Manager (RSM).

31. Inspect roller condition.

Rollers should be free of flats, and have a smooth surface finish.

Replace the roller as required.

(Figure 29)

#504318 Retainer Ring

#2800270 Roller

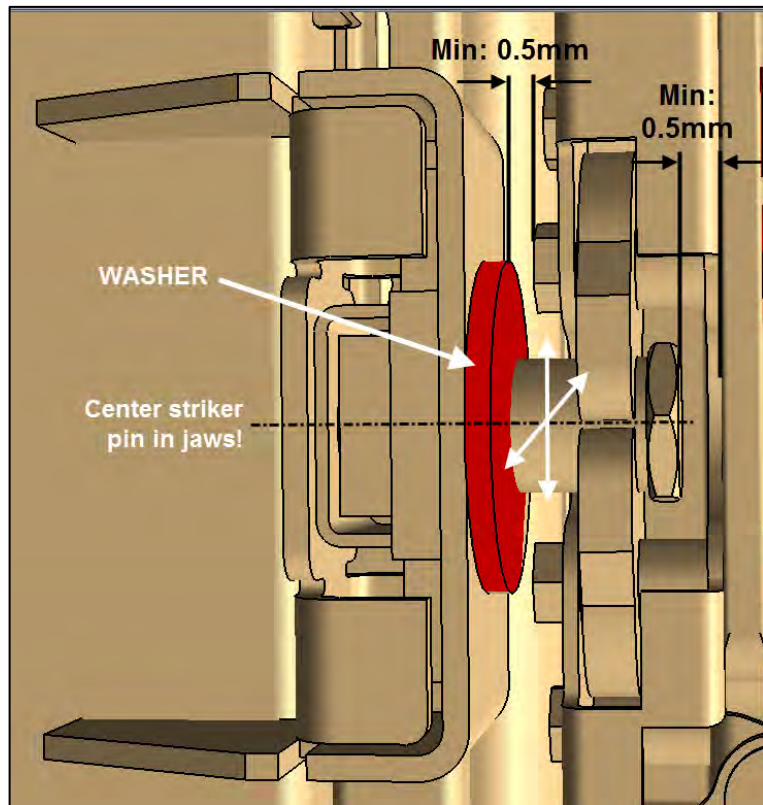


Figure 28

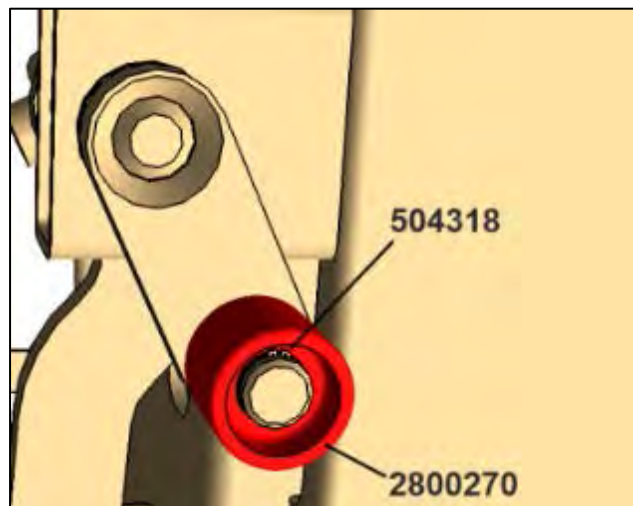


Figure 29

32. Distance between *roller and plate* with door closed should be **1/8"** (3mm).

Adjust as required on upper and lower catch plate.

(Figure 31, Figure 30)

33. Gap between *roller end and door* should be minimum **1/16"** (2mm).

Trim roller end as required to get closer the target value.

(Figure 31, Figure 30)

34. If adjustment was required, tighten the catch plate screws to **7 lb-ft**

35. Apply torque seal mark.

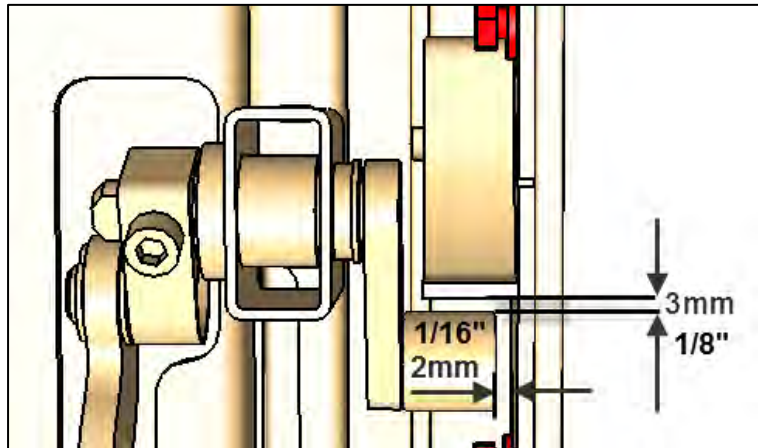


Figure 30 Upper plate

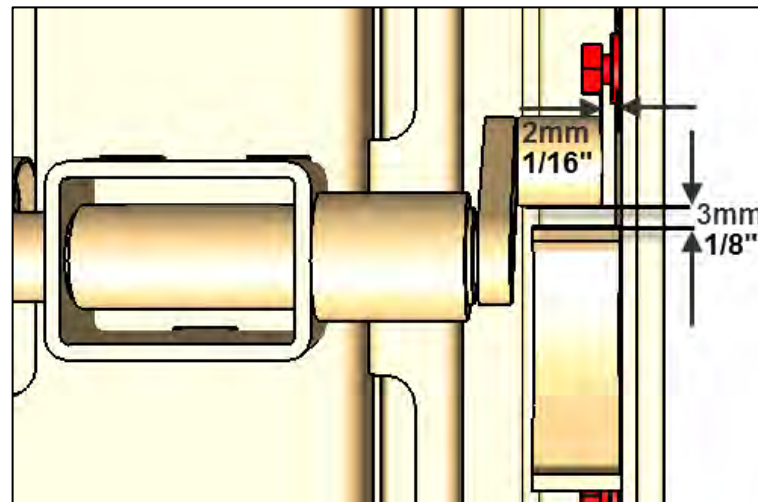


Figure 31 Lower plate

36. Verify minimum air pressure is **120psi** or correct before starting checks.

37. Switch ON the WCL power switch.

(Figure 32)



Figure 32

38. Open and close the door a few times to confirm proper operation of the *lock assist* sequence

39. The second latch state (Figure 33) should be applied by the lock assist mechanism alone, *without any operator intervention each time the door is closed.* If door fails this test, return to step 34.

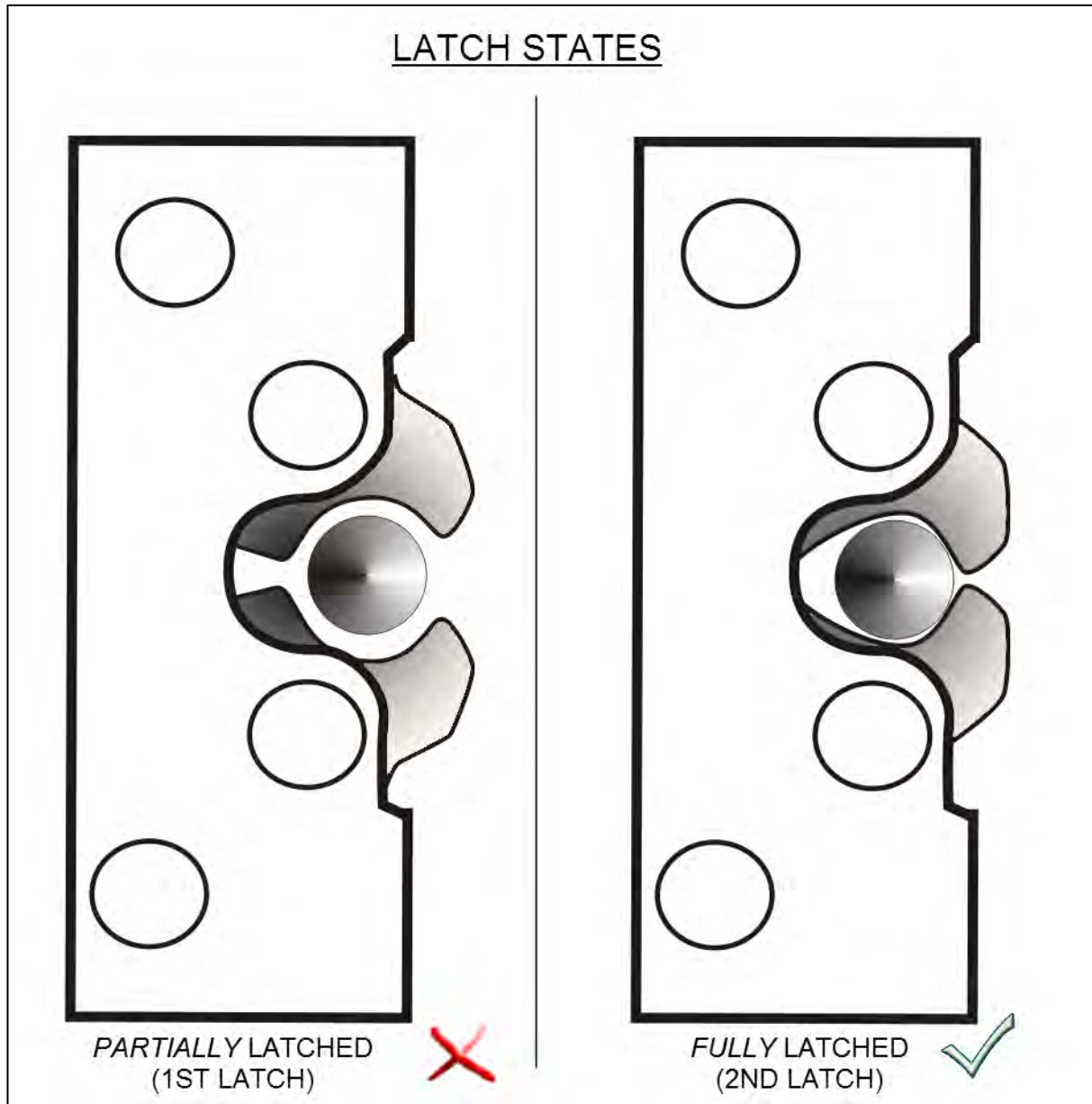


Figure 33

40. Open the door.

On the door upper arm vertical face, inspect torque seal. (Figure 34)

41. If broken, tighten to **16lb-ft**

Refer to Figure 6 for proper washer arrangement.

42. Apply torque seal mark

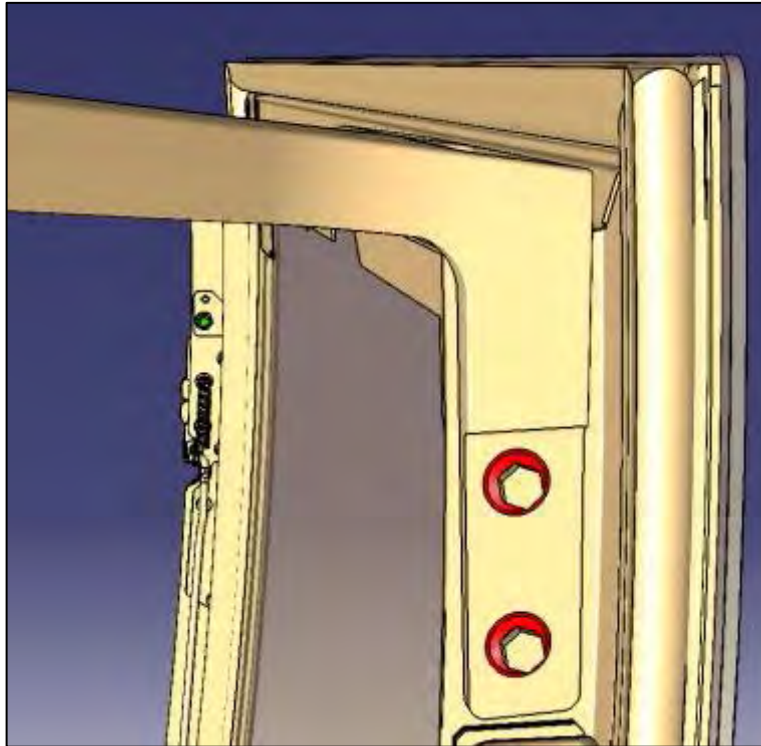


Figure 34

43. On the door upper arm top, inspect torque seal. (Figure 35)

44. If broken, tighten to **7 lb-ft**

Refer to Figure 6 for proper washer arrangement.

45. Apply torque seal mark

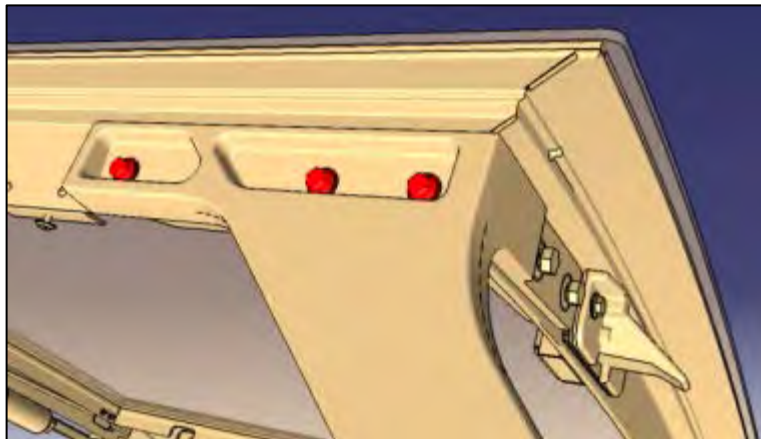


Figure 35

46. Behind the striker plates, upper and lower.

47. At lever spring anchor location, inspect torque seal. (Figure 36, Figure 37)

Refer to Figure 6 for proper washer arrangement.



Figure 36

48. If broken, tighten to **7 lb-ft**

49. Apply torque seal mark.

50. At the remaining three locations inspect torque seal. (Figure 37)

Refer to Figure 6 for proper washer arrangement.

51. If broken tighten to **7 lb-ft***

**Note- Inner nuts need #10 crowfoot adapter to torque properly*

52. Apply Torque seal mark

53. With door open, clean door switch contacts on door and frame with a clean cloth. Remove any trace of oxidation with fine Scotchbrite pad.

54. Clean with contact cleaner. (Figure 38)

55. Locate the door lower arm mounting screws. (Figure 38)

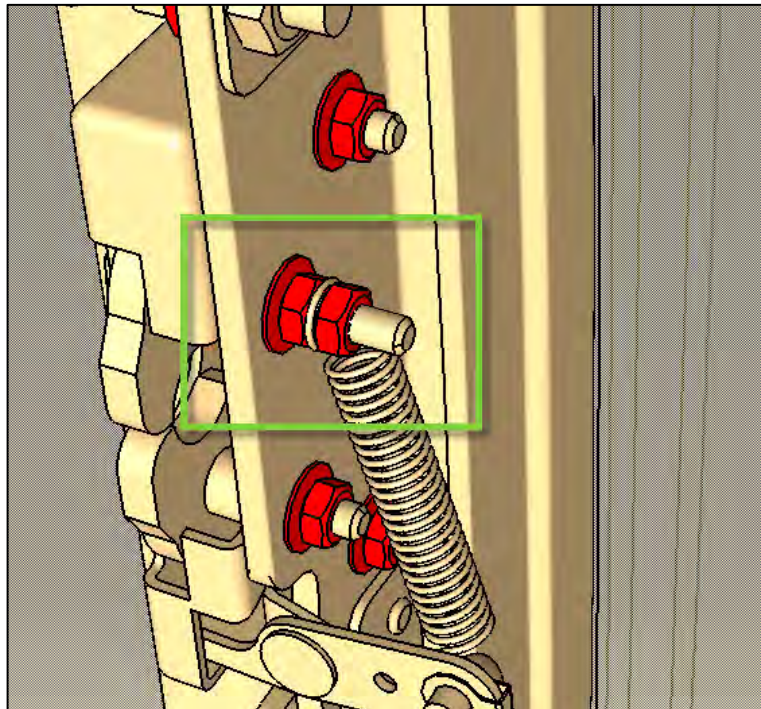


Figure 37

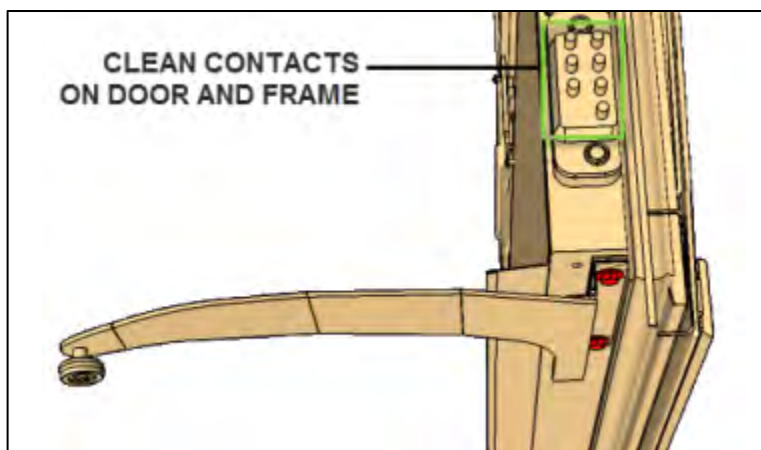


Figure 38

56. With a flashlight, visually inspect full length of lower rail for foreign objects.

57. Blow clean lower rail.

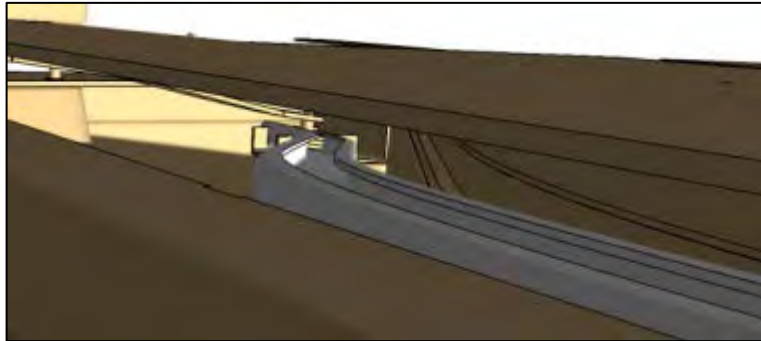


Figure 39

58. On the door lower arm, inspect torque seal on the mounting screws

Refer to Figure 6 for proper washer arrangement.

59. If broken, tighten to **7 lb-ft**

60. Apply torque seal mark.



Figure 40

61. Inspect torque seal. (Figure 41)

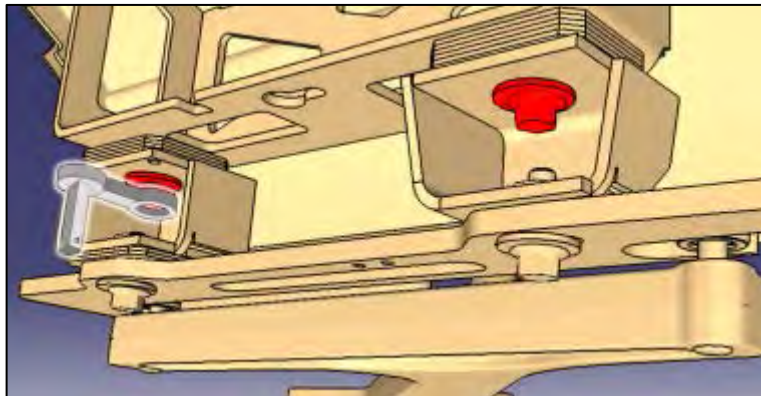


Figure 41

62.If torque seal is broken,
tighten to **34 lb-ft**

(Specific torque+2lb-ft)

Use a **torque extension** and a
vertical **socket extension**. (See
RECOMMENDED TOOLS)
(Figure 42).

NOTE: Place the torque
extension at 90deg from the
wrench (Figure 43).

Refer to Figure 6 for proper
washer arrangement.

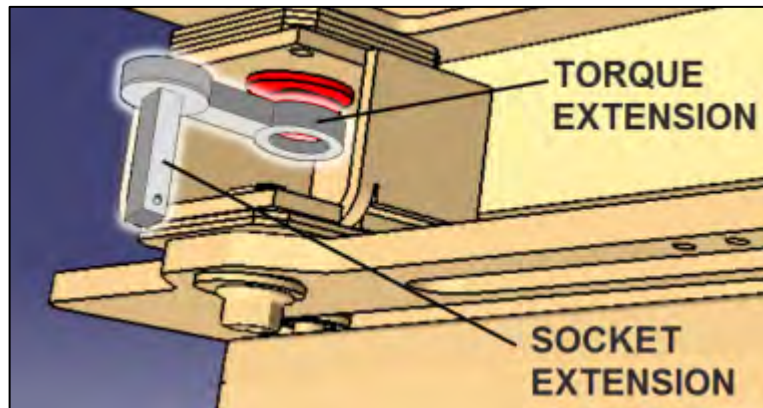


Figure 42

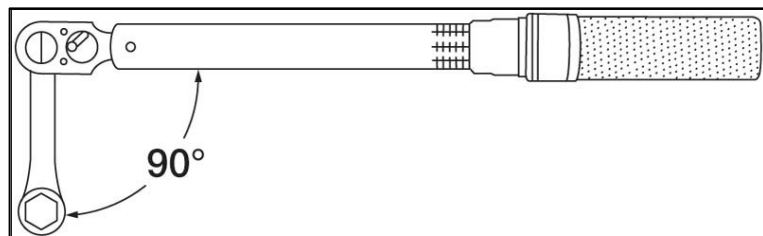


Figure 43

63.Place the door fully open.

64.Assess roller position with
regards to the fork vertically,
back and forth and sideways
according to *INSPECTION*
instructions below. If required
add spacer # **286421**

65.If inspection reveals
adjustment is OK, check
torque seal. (Figure 44).

66.If broken, tighten screws to
32 lb-ft.

67.Add torque seal mark.

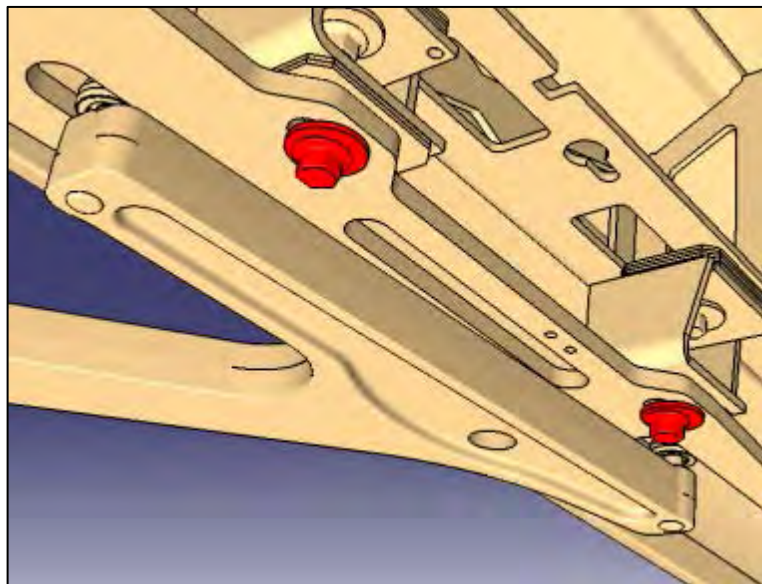


Figure 44

68.If **adjustment is required**, slack the screws slightly and hand tighten. Refer to Figure 6 for proper
washer arrangement.

69.Perform any required adjustment per *INSPECTION* instructions below, tighten fork screws to **32 lb-ft**.
Add torque seal mark.

INSPECTION #1: Distance between the end of both fork slots and roller should be:

$9/64 \pm 1/16$ "

$3.5 \pm 1.5\text{mm}$

(Figure 45)

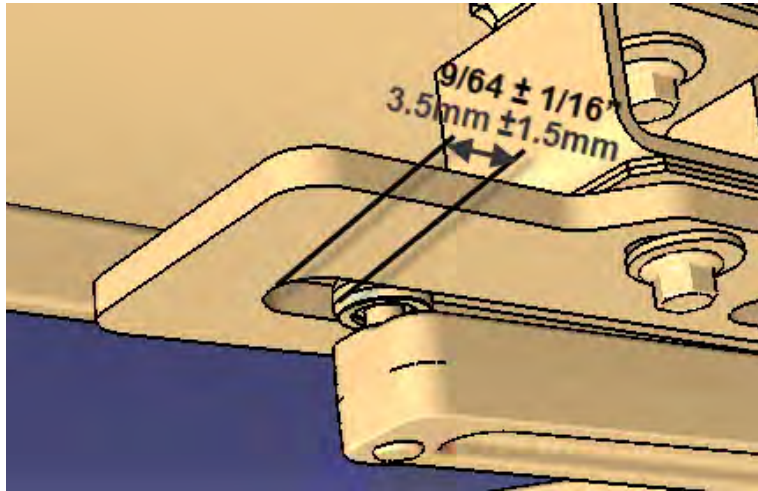


Figure 45

INSPECTION #2: Move the door back and forth at the point of engagement of the roller in the fork. The roller should be properly centered in the slot opening without striking on either side of the fork. (Figure 46)

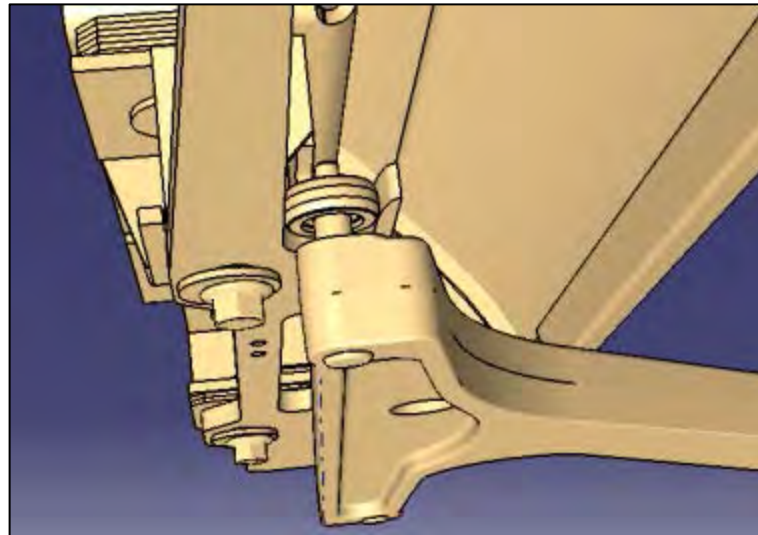


Figure 46

INSPECTION #3: Minimum gap between the aft fork support and wheel carrier should be $1/32$ " (1mm) (dimension A)

Confirm with feeler gage.
(Figure 47)

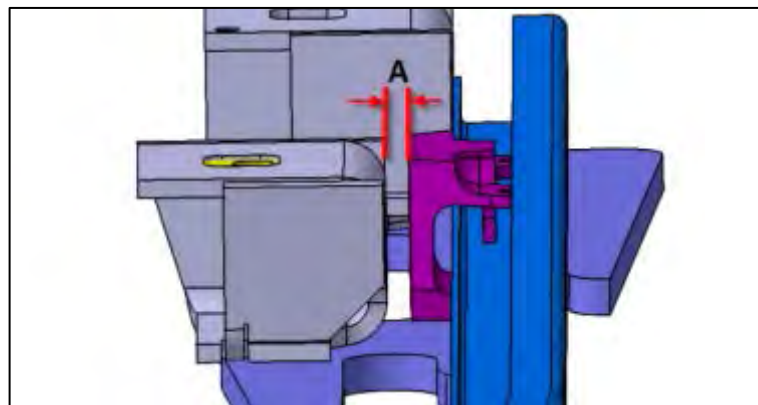


Figure 47

INSPECTION #4: Check the roller **vertically** to make sure it is centered in the fork slot surface. (Figure 48)

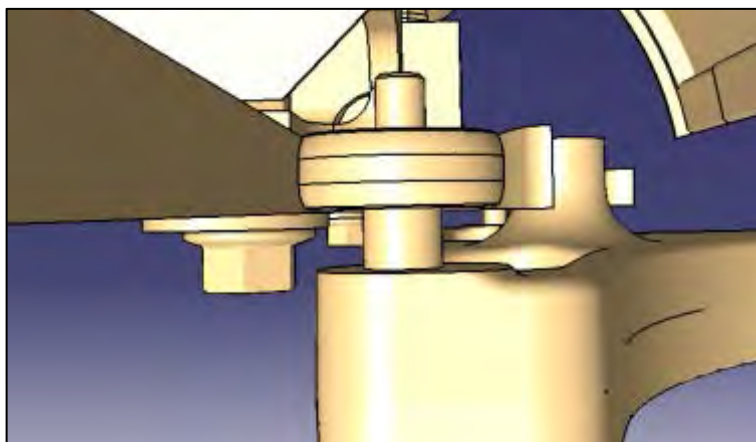


Figure 48

70. From the outside of the vehicle, close the door. Slow down as it approaches the point of contact between the fingers and the receptacles to properly feel the door behavior. Repeat a few times to properly feel the door.

If the door is adjusted properly, you should feel a slight upward movement when closing.

If there is no upward movement, "door fingers" will need to be adjusted vertically. Contact your RSM.

71. To see the movement, stare at the paint line. As the door approaches the point of contact between the fingers and the receptacles you can see the paint line on the door move up slightly. (Figure 49 & Figure 50)



Figure 49 Door slightly open, fingers released



Figure 50 Door closed

72. Close the door for next steps

73. Locate the rail end and frame support. (Figure 51)

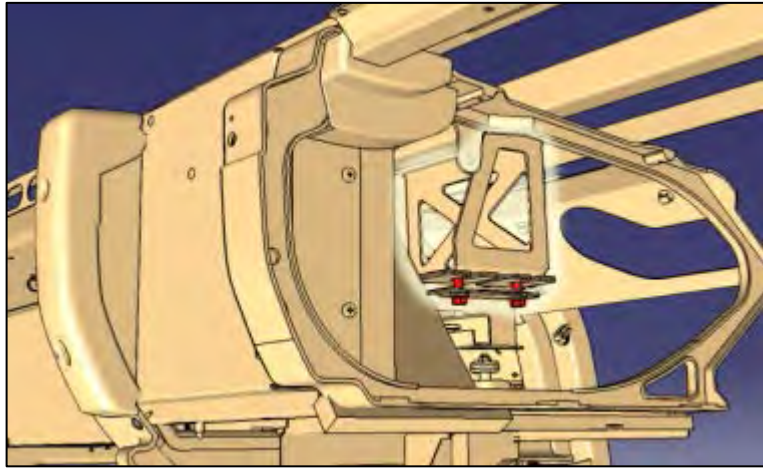


Figure 51

74. With closed door, loosen the bolts for the rail supports and remove all shims.

(Figure 52)

Refer to Figure 6 for proper washer arrangement.

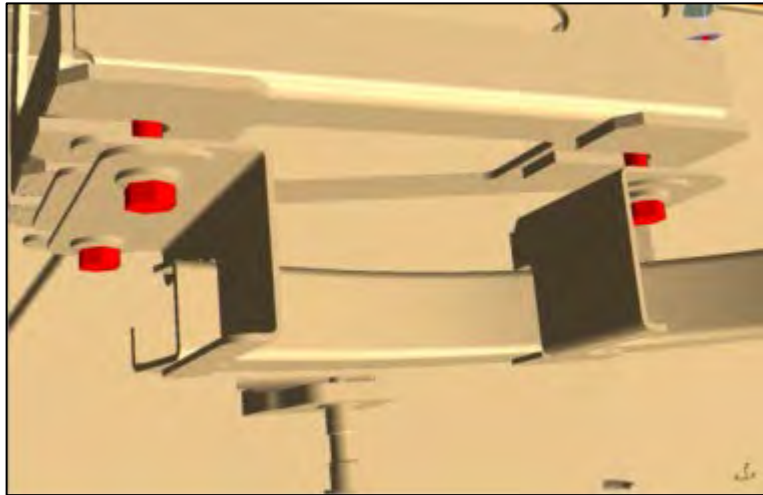


Figure 52

75. Two persons are required for next steps.

Lightly push the rail up to the point of contact with the vertical wheel without applying any additional force. (Figure 53)

Keep rail in this condition and proceed to next step.

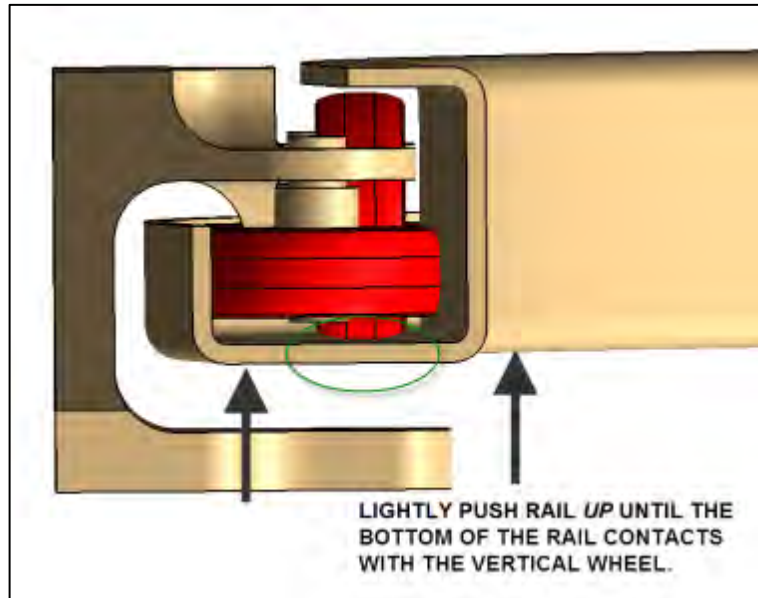


Figure 53

76. Measure the gap between the rail support and frame. (Figure 54)

Calculate the required number of #286421 shims equivalent to the gap value minus 5/32". See calculation example below.

Example:

Measured gap: 7/16"

Remove 5/32" to gap:
 $7/16" - 5/32" = 9/32"$

Required Shim thickness:
 $9/32" (0.281)$

Divide by individual shim thickness of 5/64" (0.078).

$0.281 \div 0.078 = 3.602$

Result is rounded to the closest whole number. Round up for results with "0.5".

Closest whole number is: 4

Therefore, install 4 shims.

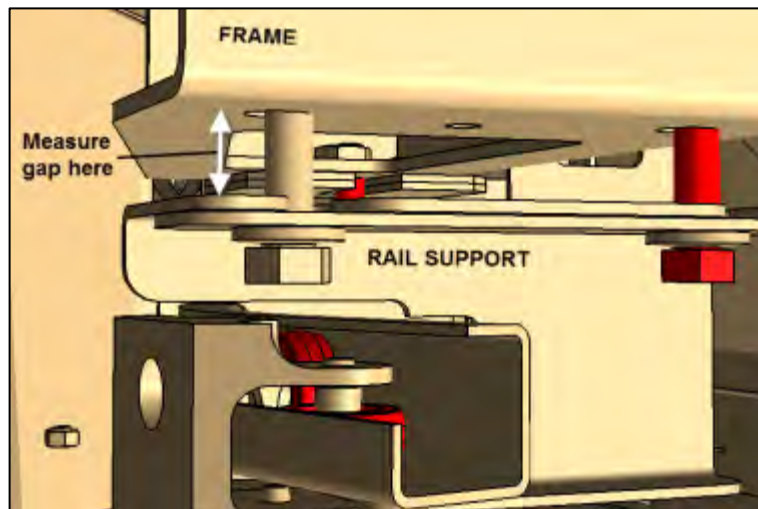


Figure 54

ACTUAL MEASURED GAP: _____ in

GAP _____ - 5/32" = _____ in (REQUIRED SHIM THICKNESS)

_____ $\div$ 0.078" = _____ (RATIONAL NUMBER OF SHIMS)

ROUND TO THE CLOSEST WHOLE NUMBER, (UP IF "0.5") TO GET ACTUAL NUMBER OF SHIMS REQUIRED:

_____ Shims #286421 required on each screw.

77. Insert the required number of shims for all three screws on the front and rear rail support. (Figure 55)

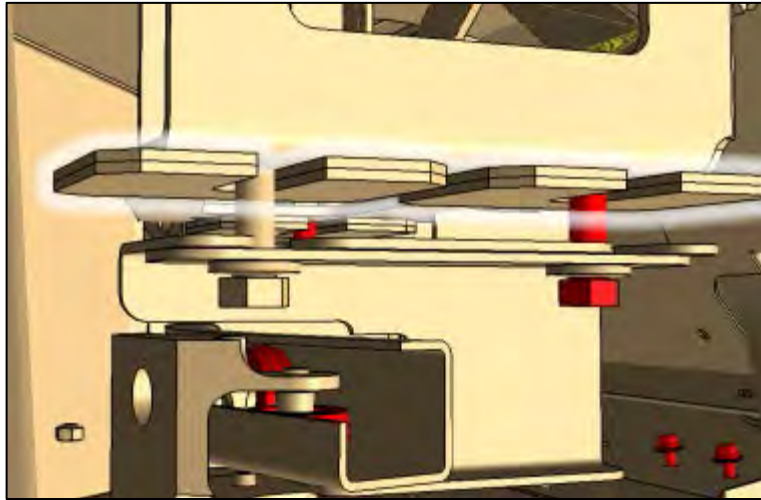


Figure 55

78. Lightly tighten the assembly.

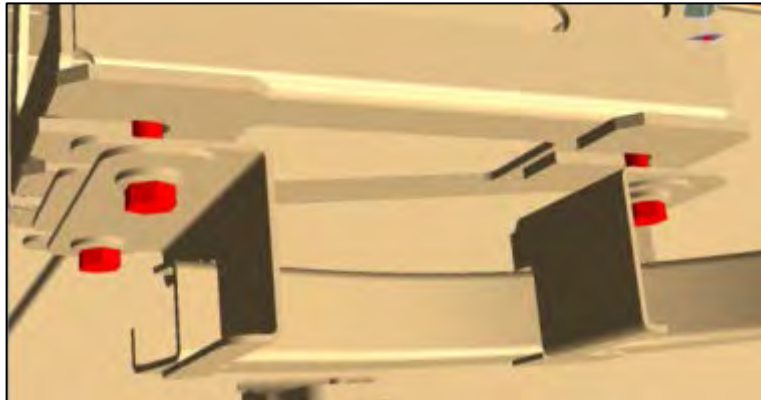


Figure 56

79. Next, apply the proper gap for the horizontal wheels. Insert a **5/64"** (2mm) feeler gage behind the vertical wheel. (Figure 57)

80. Pull on the rail support towards the inside of the bus to have the proper gap.

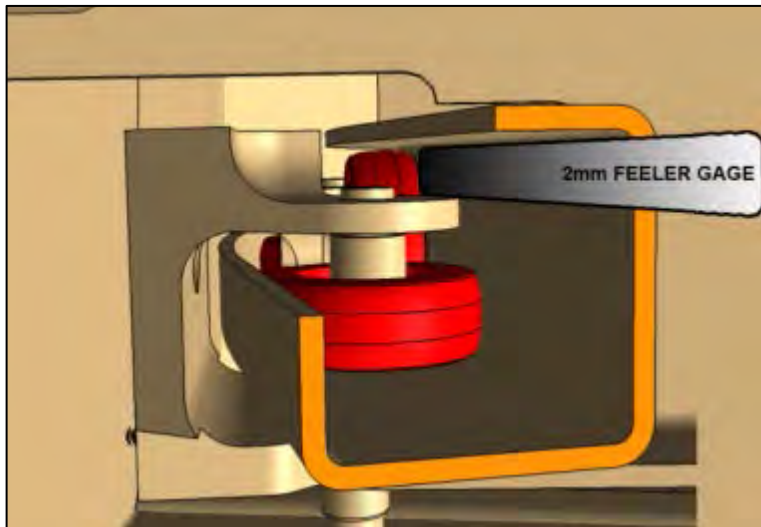


Figure 57

- 81. Tighten all three screws to **16 lb-ft.** (Figure 58)
- 82. Start with the rear screws and end with the front screw.
- 83. Apply torque seal mark.

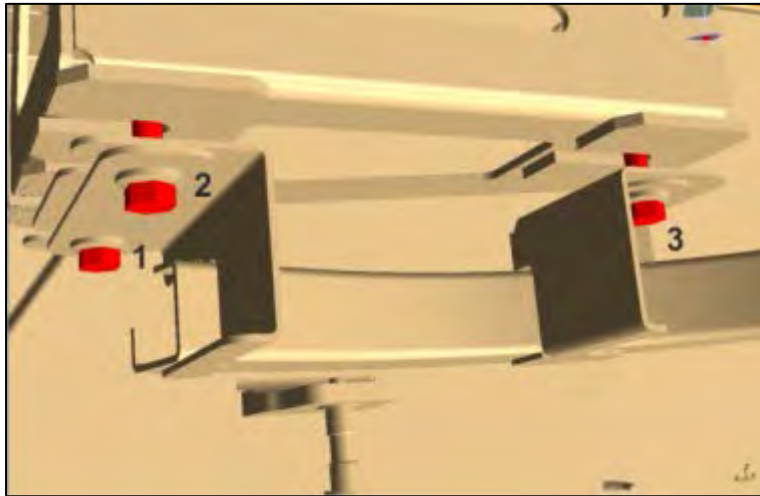


Figure 58

- 84. Locate the mid rail support (Figure 59)

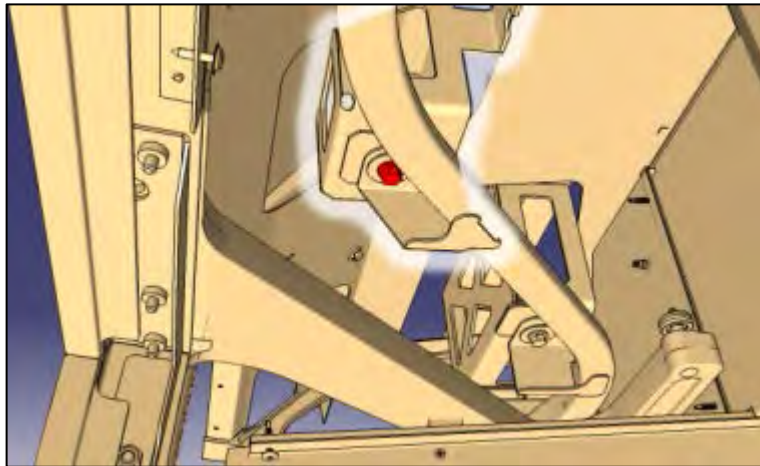


Figure 59: Looking aft

- 85. Check torque seal.
- 86. If seal is broken, Tighten to **16 lb-ft**
- 87. Apply torque seal mark.

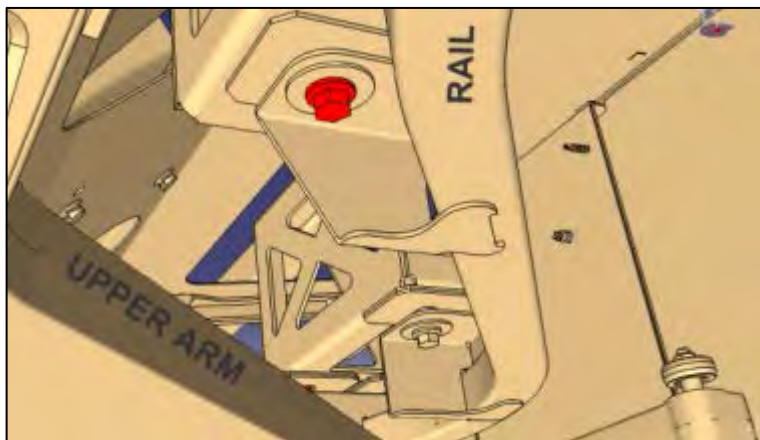


Figure 60

88. Verify proper operation of the door

- ✓ Double latch operates properly. *
- ✓ Lock assist applies 2nd latch without operator intervention upon engagement of 1st latch. *
- ✓ Slight upward movement on door closing.

**Note - Verify air pressure is minimum of 120psi before performing checks or correct.*

89. Move roof panel back. Secure the threshold warning harness with cable ties.

90. Removing masking tape on the module.

91. Re-assemble panels, switches and lights in the reverse order of removal. Re-use reserved hardware.

92. Verify proper operation of all related door functions after repairs: "stop request" button, light operation, dash indicators, sonic sensor and alarm, interlock, etc.

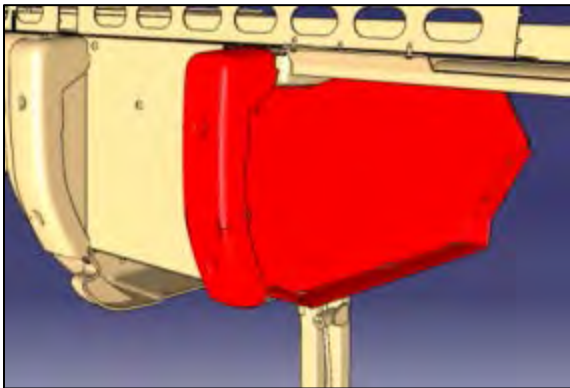


Figure 61

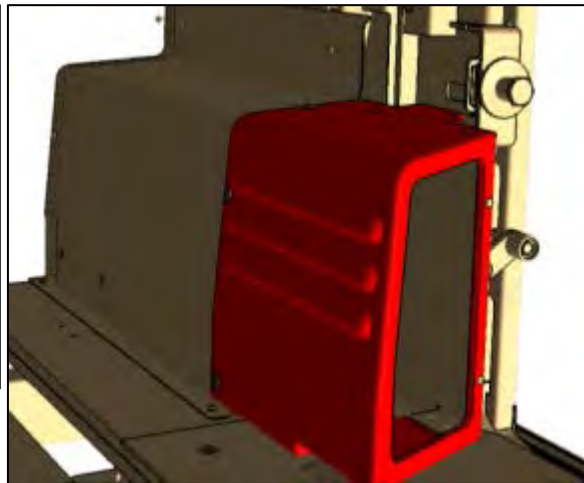


Figure 62: Careful not to squeeze cables and tubes.

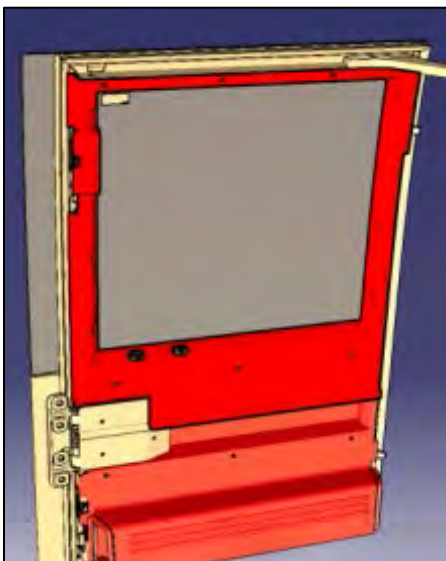


Figure 63

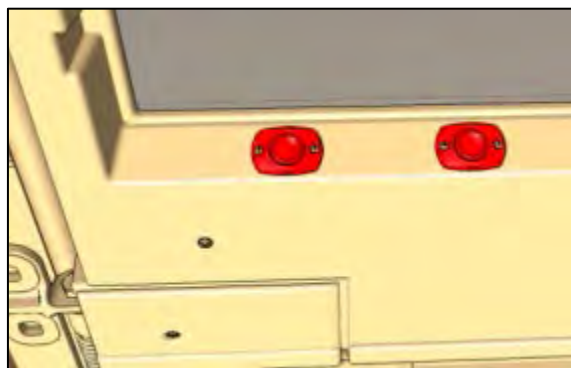


Figure 64



Figure 65



Figure 66

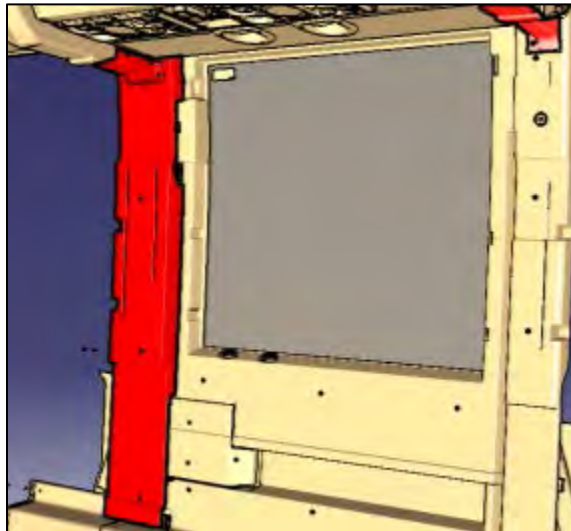


Figure 67

Discard waste according to applicable environmental regulations (Municipal/State[Prov.]/ Federal)

ESTIMATED TIME

The time required to perform this special bulletin is approximately two hours and a half (2.5 h).

OTHER

VBC Bulletin	N/A
Fail Code	18.05
Defect Code	09
System Condition	B
Causal Part	502836

Prevost engages in a continuous program of testing and evaluating to provide the best possible product. Prevost, however, is not committed to, or liable for updating existing products.