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First Release .

05-19-2022

SLIDING DOOR ADJUSTMENT

DESCRIPTION

On the vehicles affected by this bulletin, perform the wheelchair lift system sliding door adjustment.

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: 2021 - 2023	From 4RKJ33492 <u>M</u> 973 <u>7751</u> up to 4RKJ33492 <u>P</u> 973 <u>8032</u> incl.
This bulletin does not necessarily apply to all the above-mentioned vehicles, some vehicles may have been modified before delivery.	

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PARTS NEEDED

Parts that may be required depending on vehicle condition:

Part No.	Description	Qty
286421	SHIM "U" 54MM X 66MM X 14 GA (to be placed between upper rail or fork support and mounting bracket)	1-4
288588	SHIM 44MM x 132MM x 18 GA (required for shimming finger receptacle base)	2
2800296	SHIM 44MM x 132MM x 24 GA (required for shimming finger receptacle base)	2
5000106	WASHER FLAT .454X.913 THICKNESS=0.90"MIN / 0.106"MAX	2

NOTE

Material can be obtained through regular channels.

REQUIRED TOOLS / MATERIAL

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TORQUE WRENCH ¼ & 3/8 DRIVE					
	METRIC RATCHET AND SOCKET SET				
					
LARGE FLAT SCREW DRIVER					
	RULER				
					
PHILLIPS SCREWDRIVER					
	METRIC OPEN END WRENCH SET				
					
TORQUE ADAPTOR, 15 mm, 12 POINTS					
	TORQUE ADAPTOR, 13 mm, 12 POINTS				
					
CROW FOOT ADAPTOR SET					
	LOCTITE 243 (BLUE)				
					
STEPLADDER					
	FEELER GAGE SET				
					

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SAFETY PRECAUTIONS

- Eye protection should always be worn when working in a shop.
- Rules for Personal Protection Equipment should always be respected. Wear your PPE including but not limited to the following:



Safety First!



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PROCEDURE



DANGER

Park vehicle safely, apply parking brake, stop the 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.

Lockout & Tag out (LOTO) must be performed during set-up, maintenance or repair activities. Refer to your local procedure for detailed information regarding the control of hazardous energy.

PART 1 – FINISHING TRIM REMOVAL

1. From the inside, manually unlock the sliding door. To do so, rotate the emergency unlock slotted knob.

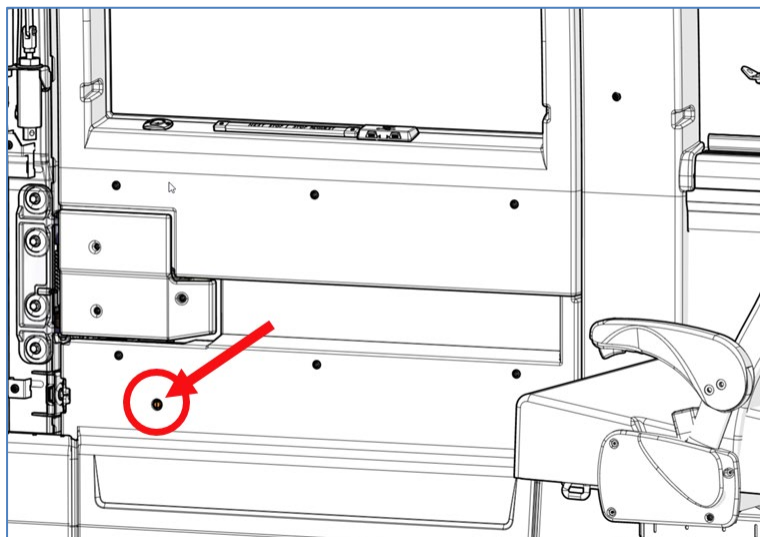


Figure 1

2. Remove the LH trim shown.

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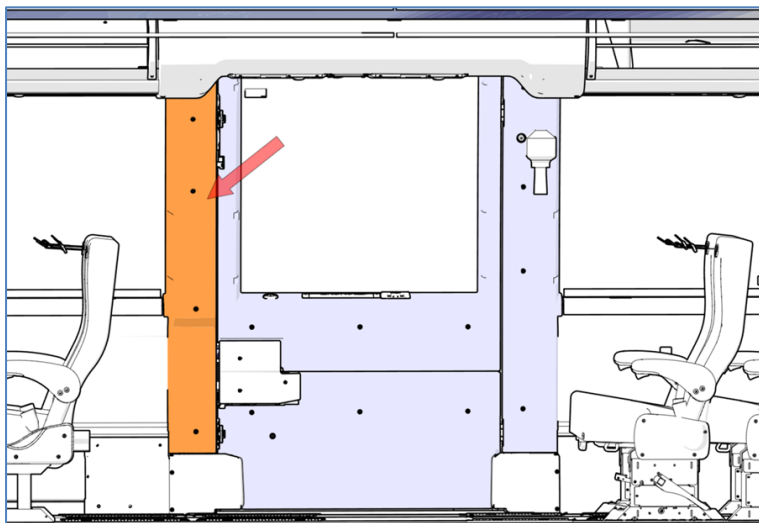


Figure 2

3. Remove or move aside the wheelchair area overhead console.

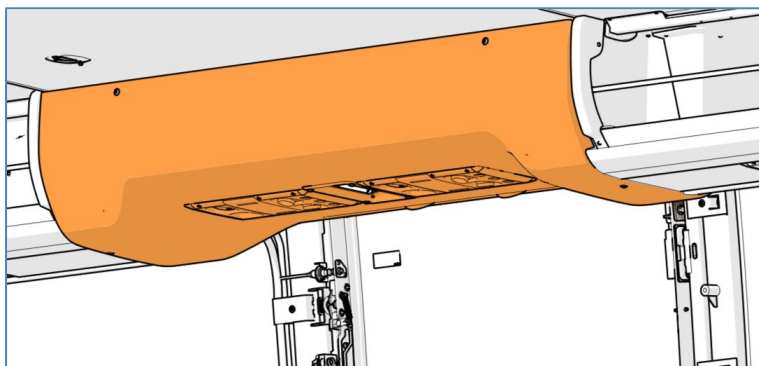


Figure 3

4. Remove the window trim shown. Disconnect the USB module and “Next Stop” button harnesses from underneath.

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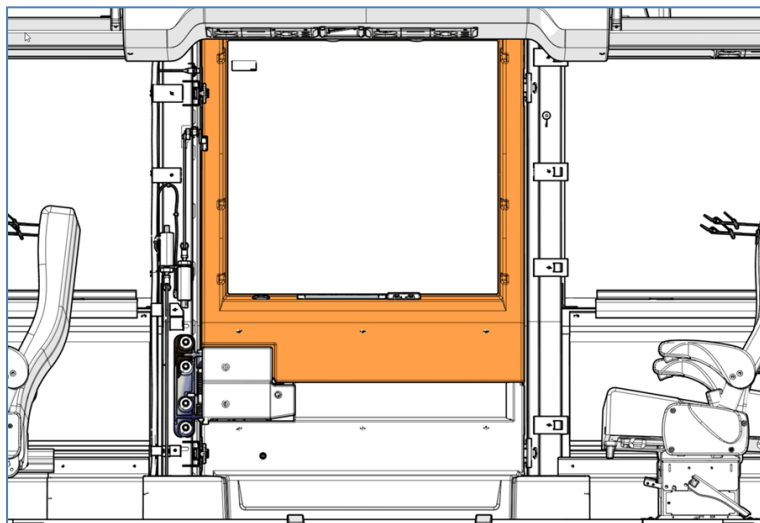


Figure 4

5. Remove the bottom door trim shown.

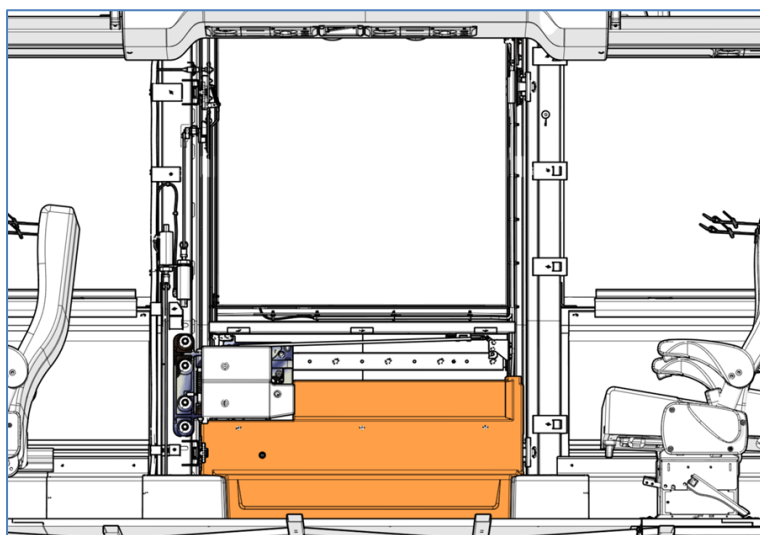


Figure 5

6. Remove the hinge trim.

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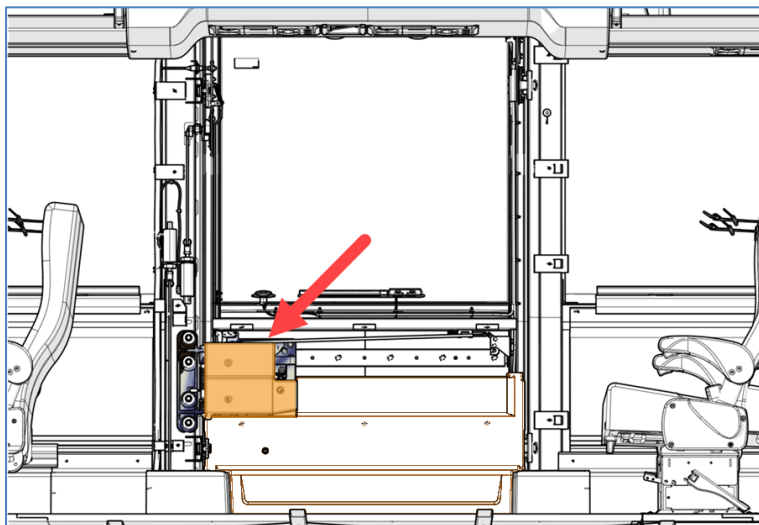


Figure 6

7. Remove the small duct section forward of the door. This part is secured with three (3) screws on the outside. On the inside, there are 2 screws in the floor that need to be removed as well.

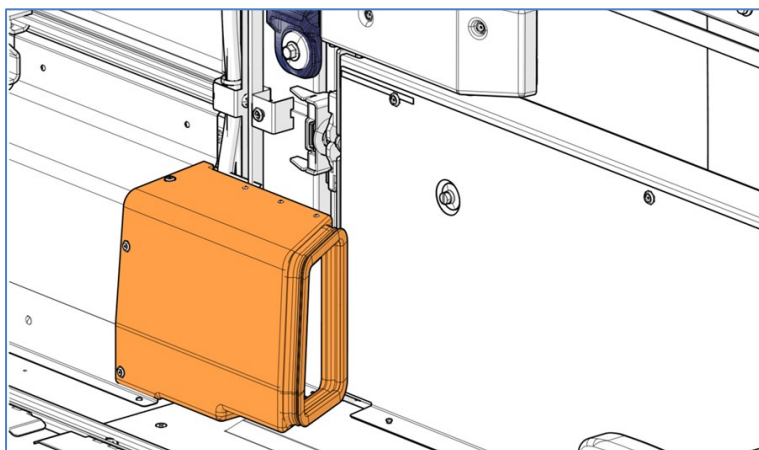


Figure 7

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PART 2 – TORQUE CHECK

upper door switch

1. **Open the sliding door** and locate the upper door switch.

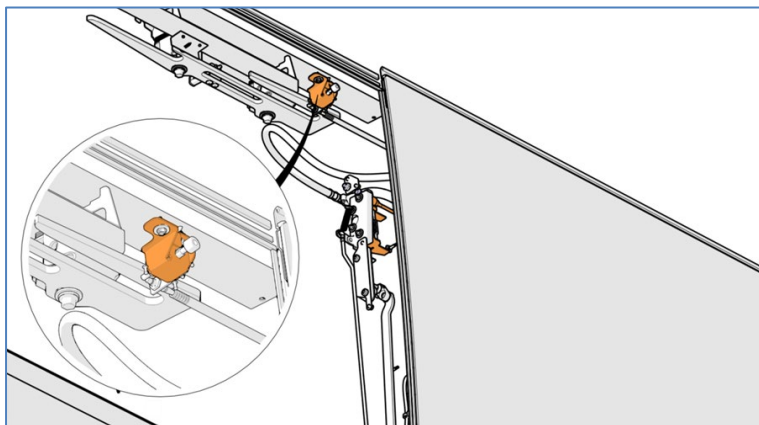


Figure 8

2. Make sure the door switch support is properly fastened i.e. not loose. Tighten screws if applicable. No prescribed torque for these self-taping screws.

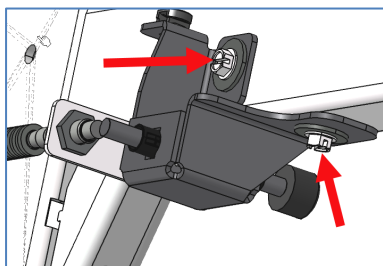


Figure 9

upper door arm

1. **Open the sliding door.** On the upper door arm vertical face, loosen the bolts (Figure 10).

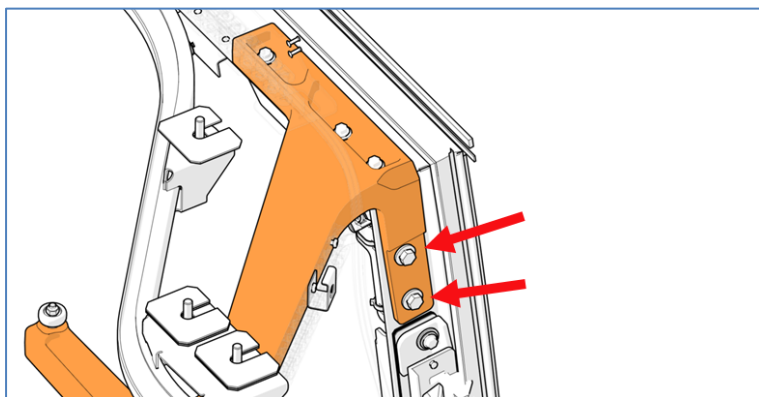


Figure 10

2. Tighten to **16 lb-ft** after checking for proper Belleville washer arrangement (Figure 11).

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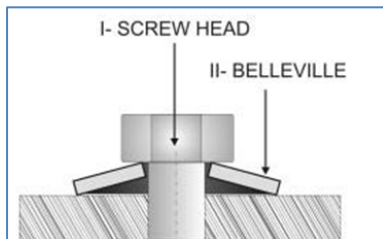


Figure 11

3. Apply torque seal marks.
4. On the door upper arm top, loosen the bolts (Figure 12).

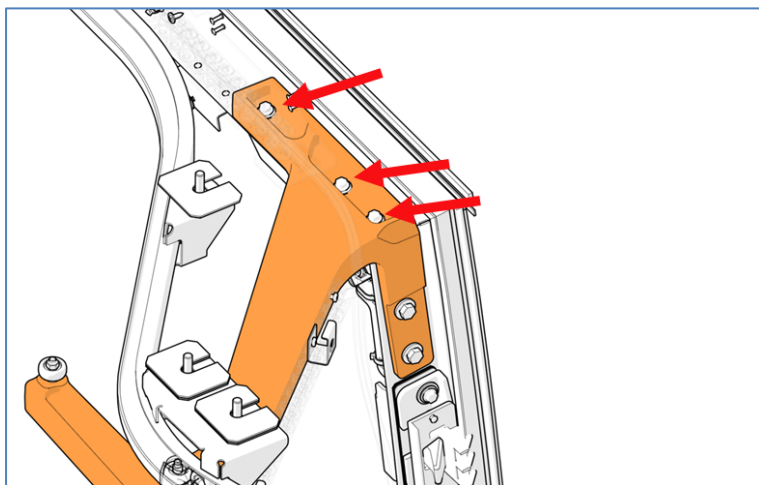


Figure 12

5. Tighten to **7 lb-ft** after checking for proper Belleville washer arrangement (Figure 10).
6. Apply torque seal marks.

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upper catch

1. Behind the upper catch, at lever spring anchor location, remove the nuts highlighted.

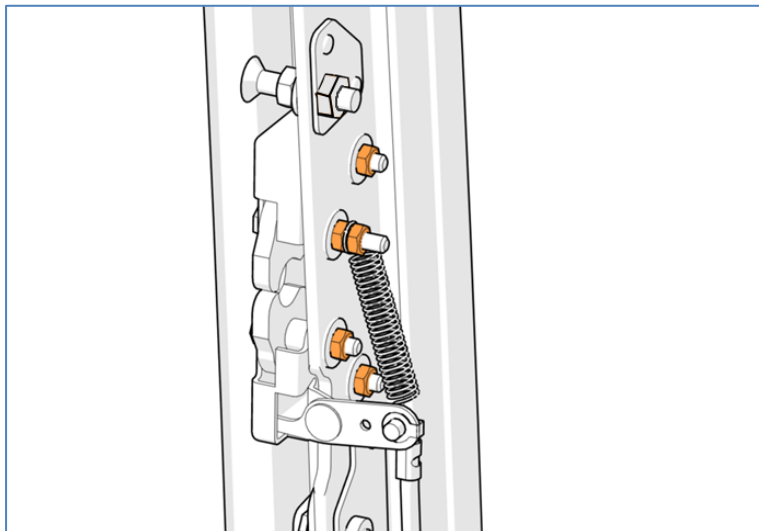


Figure 13

2. Reinstall the nuts and tighten to **7 lb-ft** after checking for proper Belleville washer arrangement (Figure 11). Tighten the exterior nut slightly below 7 lb-ft if spring deforms.
3. Apply torque seal mark.
4. At the remaining three locations, loosen the nuts.
5. Tighten the nuts to **7 lb-ft** after checking for proper Belleville washer arrangement (Figure 11).
Note: inner nuts need #10 crowfoot adaptor to torque properly.
6. Apply Torque seal mark.

lower catch

1. Behind the lower catch, loosen the nuts (Figure 14).

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Figure 14

2. Tighten the nuts to **7 lb-ft** after checking for proper Belleville washer arrangement (Figure 10).
3. Apply Torque seal mark.

lower door arm

1. On the lower door arm, inspect loosen the bolts (Figure 15).

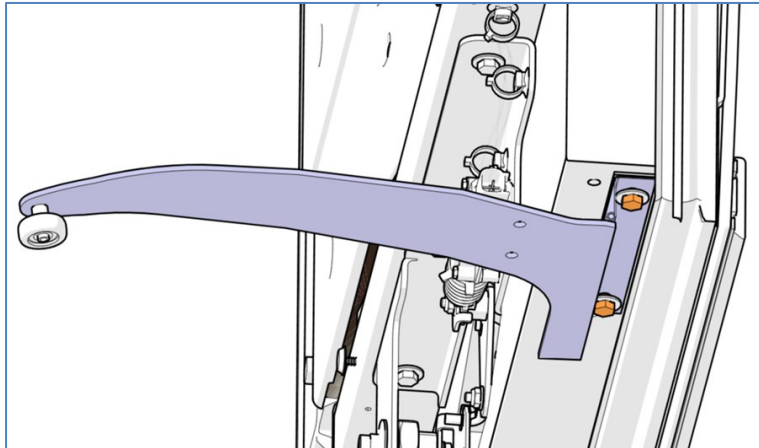


Figure 15

2. Tighten the bolts to **7 lb-ft**.
3. Apply Torque seal mark.

PART 3 – ADJUSTMENT OF SLIDING DOOR POSITION

1. **Close the door** to the second latch state.

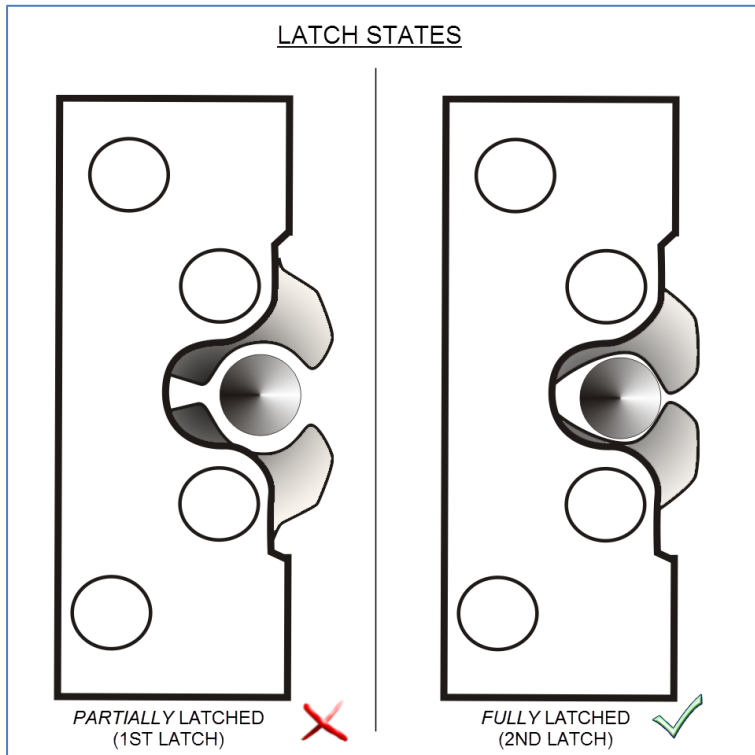


Figure 16

2. Properly adjust door position. Assure that the top right of the sliding door windowpane surface is as even as possible with the adjacent (fore) windowpane surface.

At 3 inches from the top edge, check that the windowpanes are on the same plane. Unevenness not exceeding 1/8" (3 mm) between the windowpanes is acceptable.

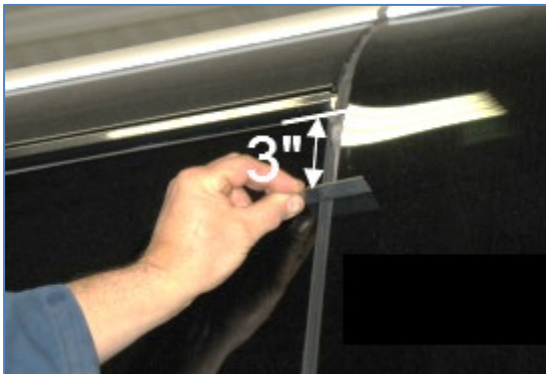


Figure 17

3. If an adjustment is required, shift the windowpane either toward the inside or the outside by moving the striker pin as follows:

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- a) **Open the sliding door.** Locate the upper striker pin.



Figure 18

- b) Using a marker pen, mark the striker pin and the washer position to keep a position reference.



Figure 19



Figure 20

- c) Loosen the striker pin slightly. NOTE: striker pin must remain tight enough to stay in place. It must be possible to move it without damage by tapping it lightly with a hammer.
- d) Using a hammer, tap the striker pin gently to move either in or out as required to correct an excessive unevenness of the windowpane.



Figure 21

4. **Close the door** and make sure the upper and lower striker pins are centered vertically in the catch jaws.

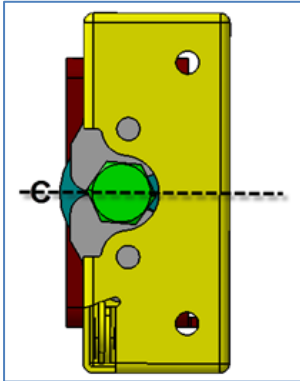


Figure 22

5. Make sure the head of the striker pin does not touch the catch jaws. An additional washer p/n 5000106 (flat Ecoguard coated .454X.913 thickness=0.90"min / 0.106"max) can be installed if required to increase the clearance. This additional washer is the same as the one present.

Prescribed clearance:

Min: 3/64 in (1 mm)

Max: 5/64 in (2 mm)

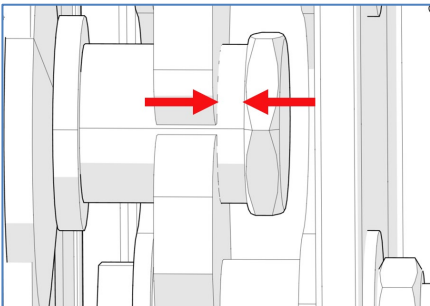


Figure 23

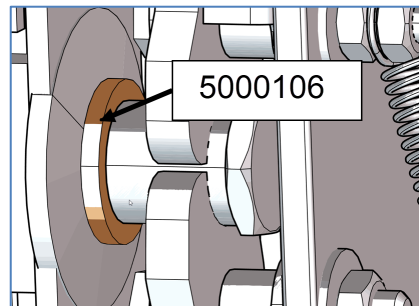


Figure 24

6. Tighten the striker pin to **60 lb-ft** & apply torque seal.

PART 4 – LATCH SYNCHRONIZATION

The upper and lower latch should unlatch simultaneously. If this is not the case, adjust as follows:

1. Disconnect the upper end (Figure 25) and the lower end (Figure 26) of the link rod between both latches.

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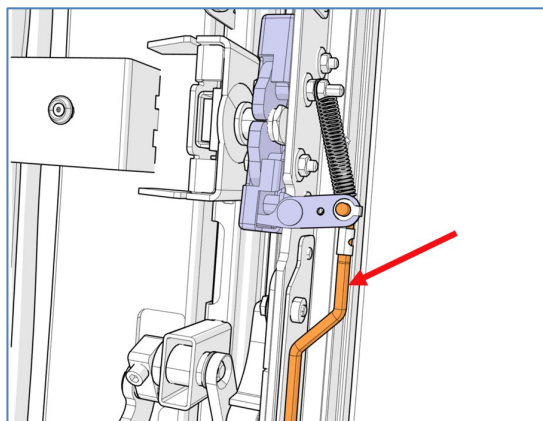


Figure 25

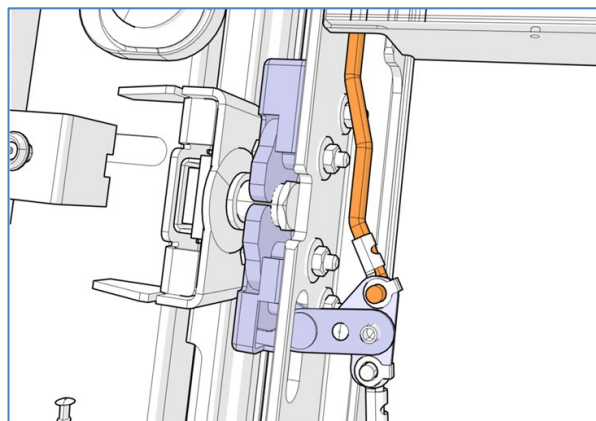


Figure 26

- Press **both latches**' lever down (without using force) so that they are the closest to their triggering position.

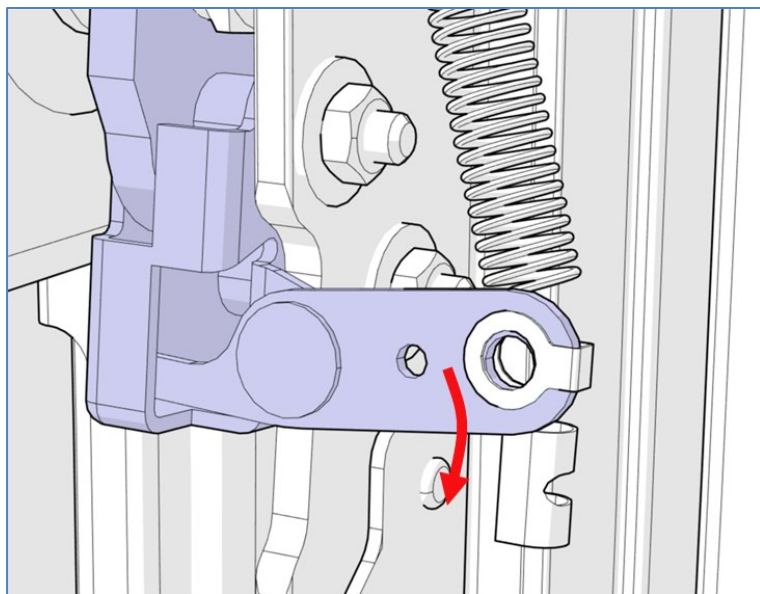


Figure 27

- The rod length should be so that it fit right in both holes on the latches lever, meaning the latches are synchronized. If not, adjust the length of the link rod by bending more or less where shown (Figure 28).

Note : Keep the last part of the rod approximately parallel with the long part of the rod to avoid interference with the rod and the finishing plastic part (Figure 29).

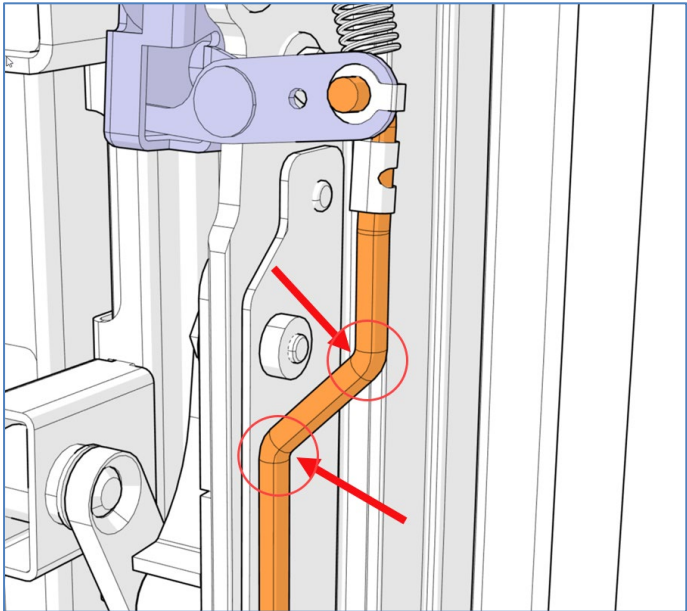


Figure 28

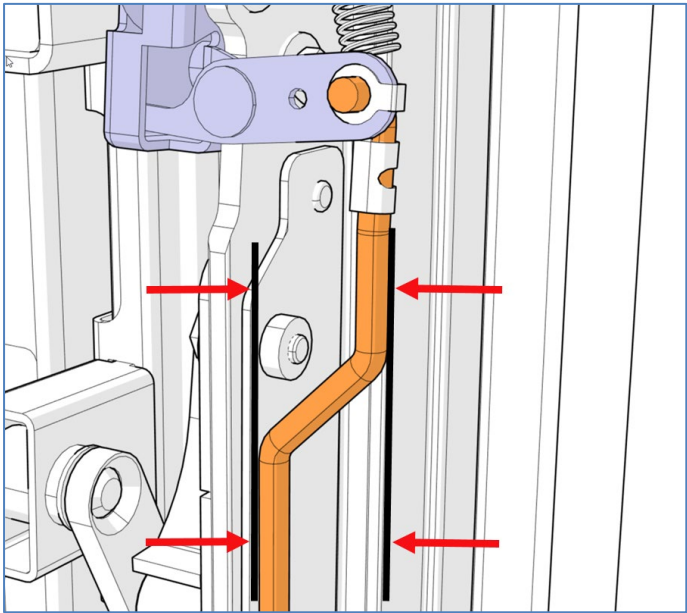


Figure 29

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PART 5 – FINGER & RECEPTACLE CLEARANCE CHECK

4. **Close the door** to the second latch state. Check if the lower and upper finger/receptacle are properly adjusted (Figure 30). Use feeler gages to assess the gap between the small boss on the finger and the receptacle face (Figure 32).

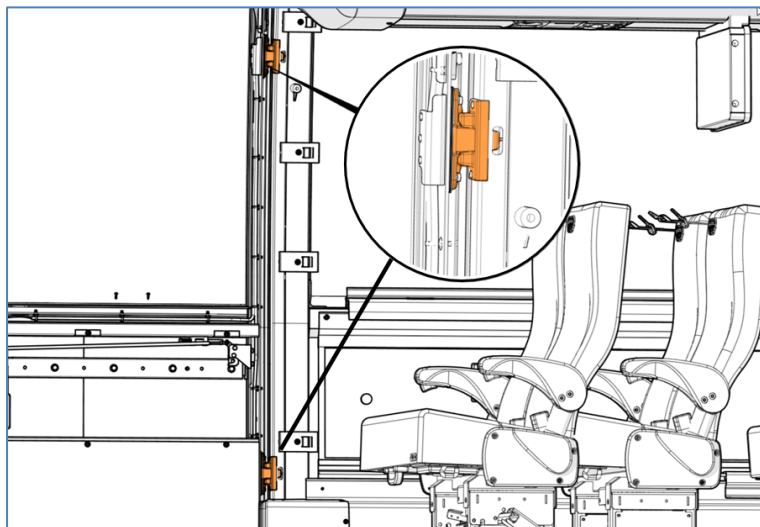


Figure 30

Confirm the gap (Figure 32):

Min:	0.012 in	(0.3 mm)
Max:	0.051 in	(1.3 mm)

5. **If gap is OK, skip this step.**

If gap is not within the above values, add, remove or combine shims under the finger base as required. Tighten the finger unit pressing downwards. Torque to **7 lb-ft** (2 cap screws).

Shims: #288588 (18 GA, 0.0478")

#2800296 (24 GA, 0.0239")

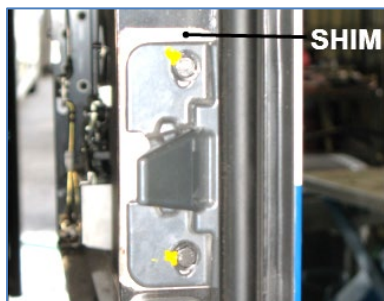


Figure 31

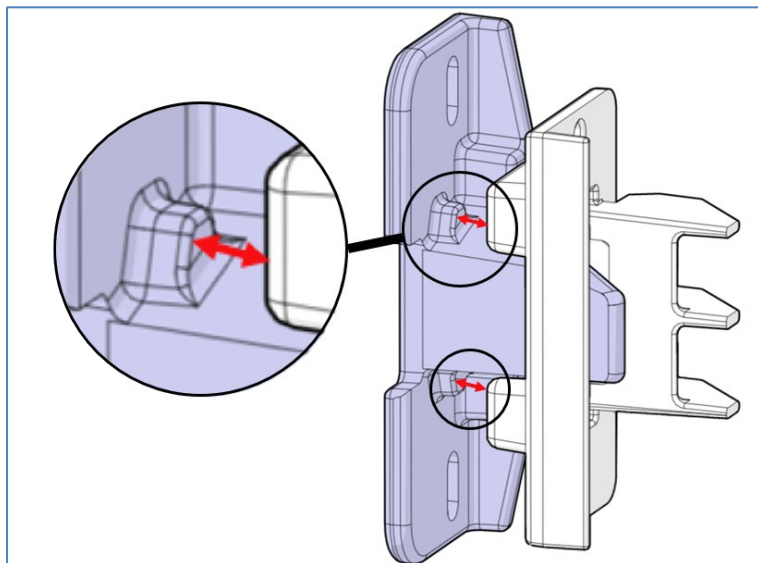


Figure 32

6. By visual inspection, check proper parallelism of the sliding door vertical edge in comparison to the nearby body panel edge (Figure 33).

If in doubt, a difference not exceeding 1/8" (3 mm) between measurement A and B is acceptable.

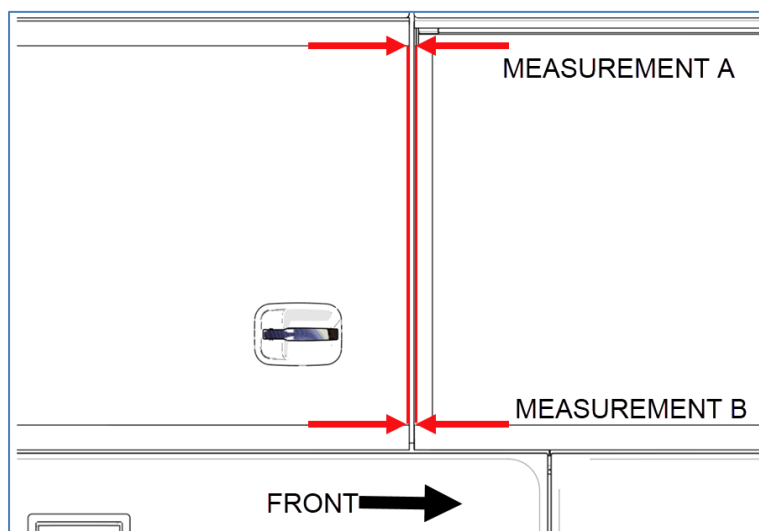


Figure 33

If an adjustment of the parallelism is required:

- a) Parallelism is adjusted by rotating the door within the opening. To do so, add or remove shims under the finger base. Shims can be added or removed at the upper finger or the lower finger independently.

NOTE: The receptacle and finger define both vertical (height) and horizontal (position within opening) position of the door.

- b) Tighten finger base mounting bolts to 7 lbf-ft.

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7. By visual inspection, check for proper sliding door height. To do so, compare the door lower aft corner edge height with the adjacent body panel.

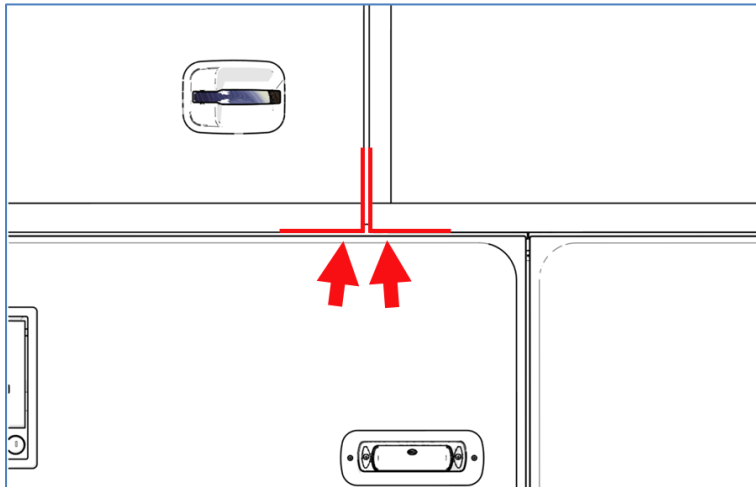


Figure 34

- Raise or lower the door height as required. For example, if the door must be raised 1/8", proceed as follows:
 - Open the sliding door.**
 - Loosen the lower and upper finger base mounting bolts (2 bolts). Move down both fingers bases 1/8". Tighten the finger bases mounting bolts.
 - Close the door** fully latched and make sure that the height adjustment is correct. If not, repeat the previous steps and check one again.
 - With the door closed, from the inside, inspect both fingers position in relation to the receptacles. One of the fingers might not be leaning on the receptacle. If this is the case, keep the door closed. Using an open-end wrench, loosen the finger base mounting bolts. Firmly press down on the finger.
 - Tighten finger base mounting bolts to 7 lbf-ft.
8. Regardless of if adjustment was made or not, torque the finger bases to 7 lbf-ft, apply torque seal marks.

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PART 6 – CAM CLEARANCE CHECK

1. Projected measure between roller and cam with the door closed should be 1/8 in (3 mm).

NOTE: Insert measurement tool at 90 degree to the roller for accurate measurement

NOTE: for reference, socket hex bolt (Allen head) proper torque: 7 lb-ft. Requires Loctite 243 (blue).

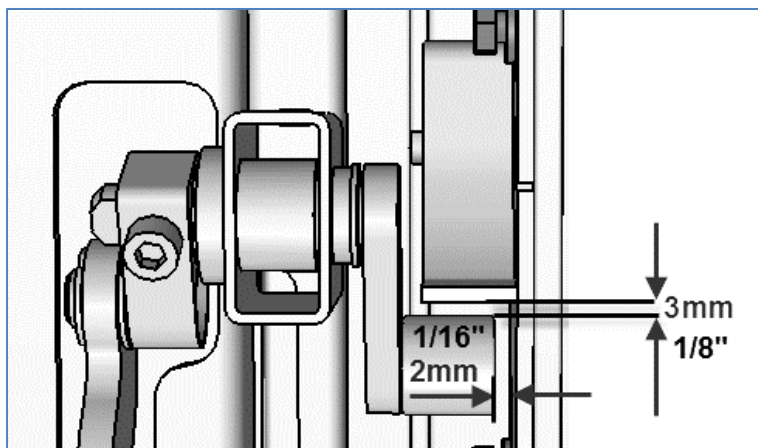


Figure 35: UPPER UNIT

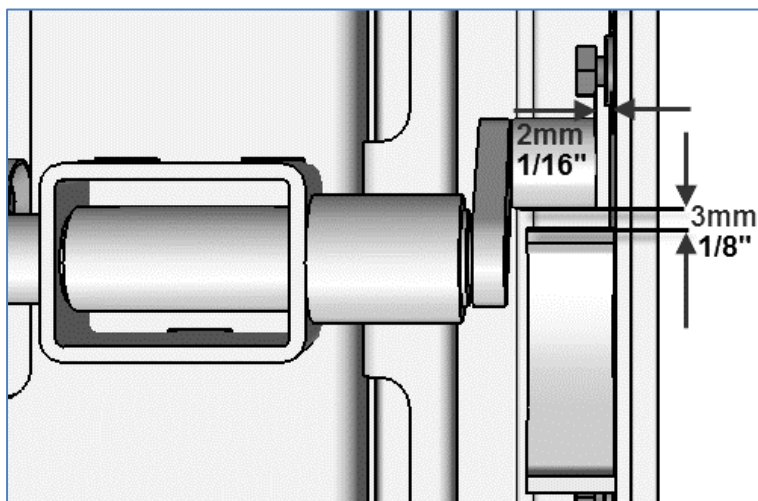


Figure 36: LOWER UNIT

2. Adjust if required. To do so, loosen the two bolts on the cam plate. Use your feeler gauge to slide in and rest on top of the roller, hold at a 90-degree angle. Let the cam plate rest on the feeler gauge and tighten the two bolts to 7 ft-lbs.
3. Apply torque seal mark.

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PART 7 – PROXIMITY SENSOR CHECK

1. Locate the proximity sensor on the fore jamb & target bolt.

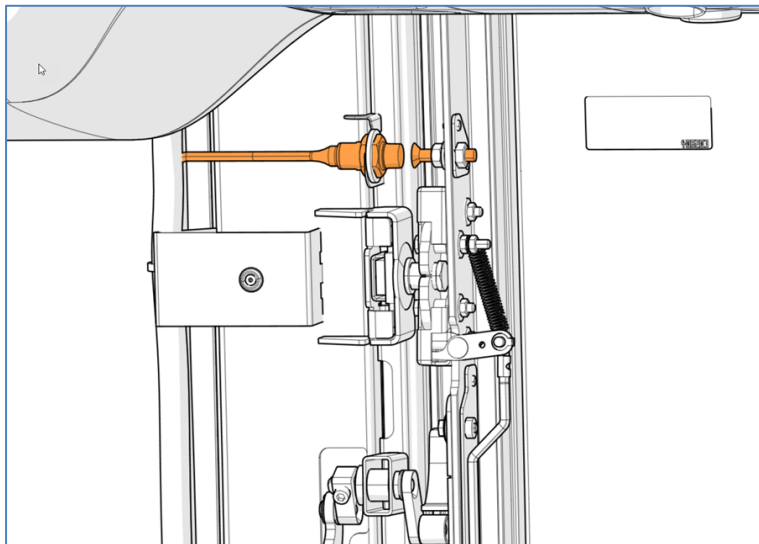


Figure 37

2. Make sure proximity sensor is placed in support opening as shown below (Figure 38), pushing it down and curbside in the opening. If not, reposition and apply Loctite 243 (blue).

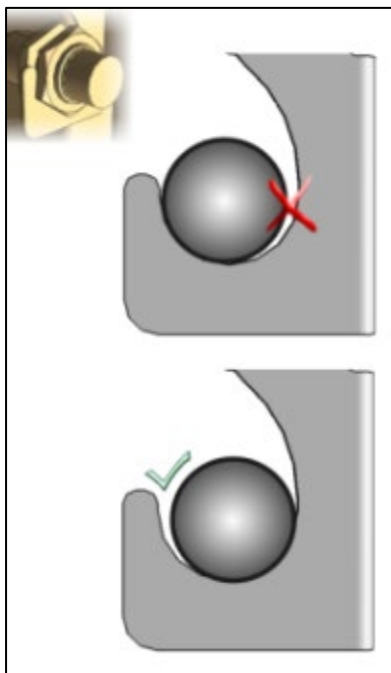


Figure 38

3. Make sure the tip of the proximity sensor exceeds the bracket located below according to the following dimension. Adjust if required. Firmly tighten with a wrench. No prescribed torque. Requires Loctite 243 (blue).

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3/64 in (1 mm)

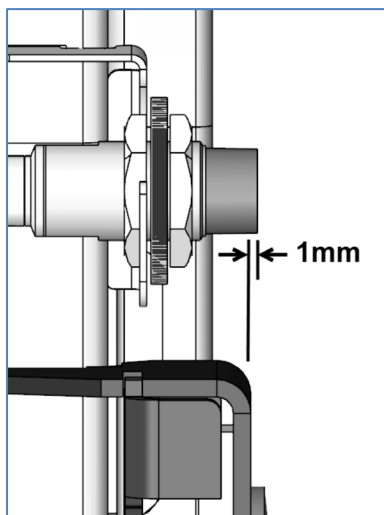


Figure 39

4. Measure dimension "B", gap between proximity sensor and target cap screw.

Prescribed value gap B: $11/32 \pm 1/8$ in (9 mm $\pm$ 3mm)

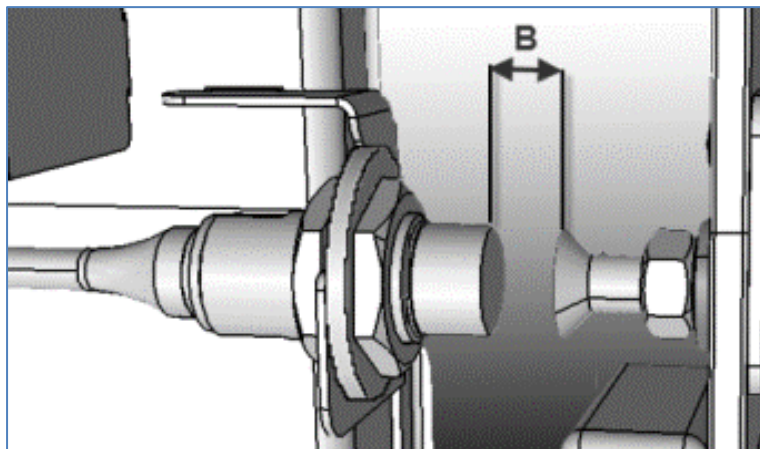


Figure 40

5. Adjust gap if required moving the target cap screw. Hold target cap screw and tighten nut to **16 lb-ft** using a crowfoot adaptor for the torque wrench. Apply torque seal mark.

PART 8 – CARRIER RAIL ADJUSTMENT

1. **Close the door** to the second latch state.

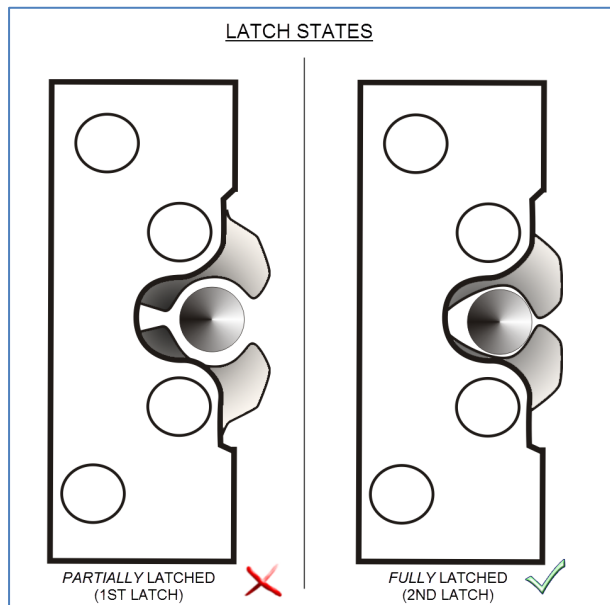


Figure 41

2. Locate the carrier rail end supports (two supports) (Figure 42).

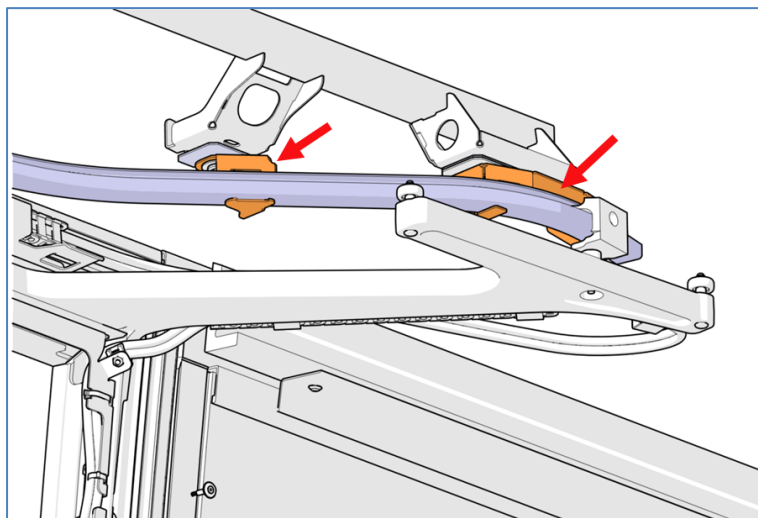


Figure 42

3. With door closed, loosen the three (3) bolts on the rail supports and **remove all shims** (Figure 43). Use of the **13mm** torque adaptor is required (Figure 44).

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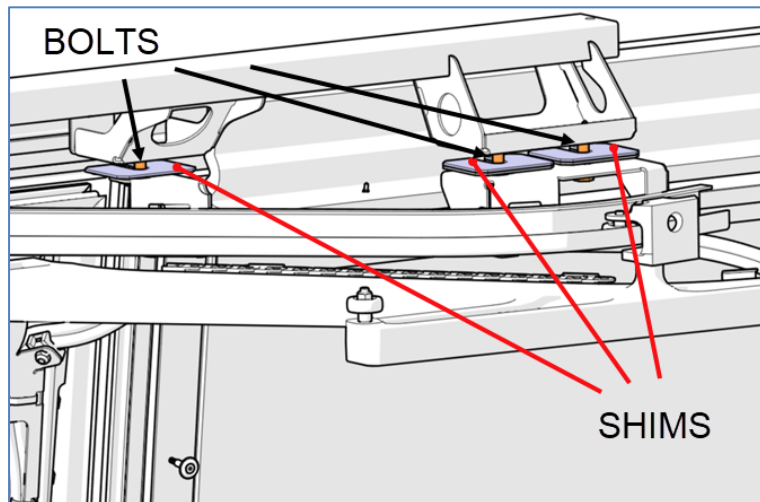


Figure 43



Figure 44: TORQUE ADAPTOR

4. Ask for help of a co-worker. Push the rail in an upwards direction so that the vertical wheel of the carrier meets the bottom of the rail. While maintaining this position, reinstall the shims on the three (3) bolts so to leave only a 5/32" (4 mm) **gap** (same quantity of shims on each bolt).

For reference if additional shims are required. Shim part number: 286421

NOTE: Special attention needs to be used here to ensure the gap is filled properly. If the wrong quantity of shims is used, it can cause the door the shift at the top causing the door to strike the structure.

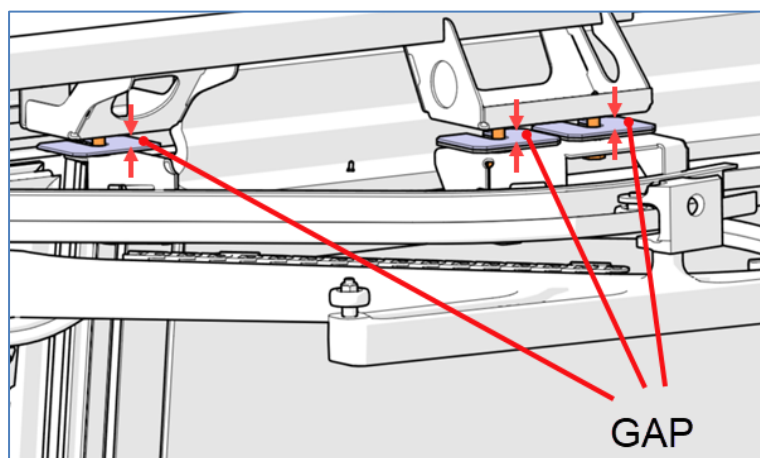


Figure 45

5. While pulling the rail toward the interior of the vehicle, tighten the three (3) bolts to a torque of 17 lb-ft. Apply torque seal marks.
6. **Open the sliding door** up to the end of the stroke.

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7. Locate the front rail support (Figure 46).

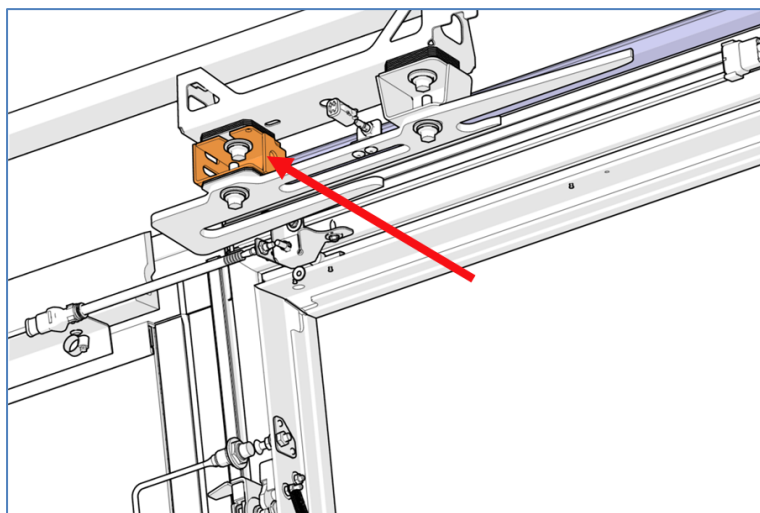


Figure 46

8. With opened door, loosen the bolt on the rail support and remove all upper shims (Figure 47). Use of the torque adaptor is required.

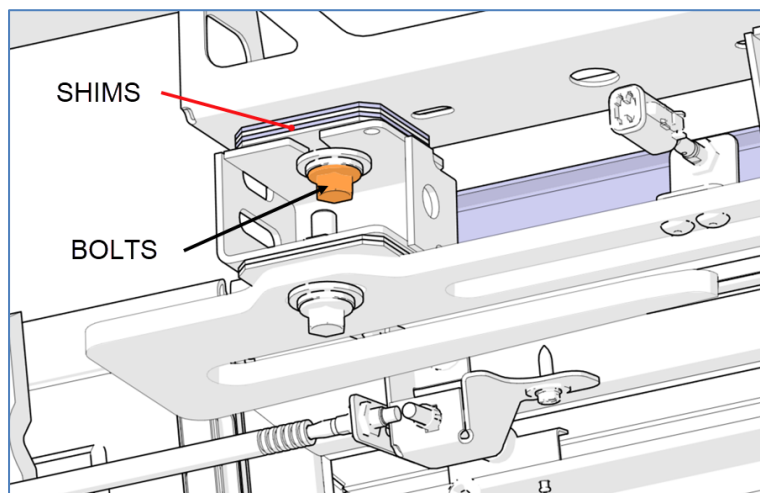


Figure 47

9. Lift the front of the rail until it touches the wheel (without forcing it) and place shims to fill the gap. Ask for help of a co-worker. Push the rail in an upwards direction so that the vertical wheel of the carrier meets the bottom of the rail. While maintaining this position, reinstall the shims to fill the gap.

For reference if additional shims are required. Shim part number: 286421

10. While pulling the rail toward the interior of the vehicle, tighten the bolts to a torque of **34 lb-ft**. Apply torque seal marks.

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PART 9 – UPPER ARM ROLLERS & FORK CLEARANCE CHECK

1. **Open the sliding door** up to the end of the stroke.
2. Locate the roller guide (a.k.a. fork) shown on Figure 48.
3. Tighten the bolts but not to a specific torque at this moment (Figure 48).

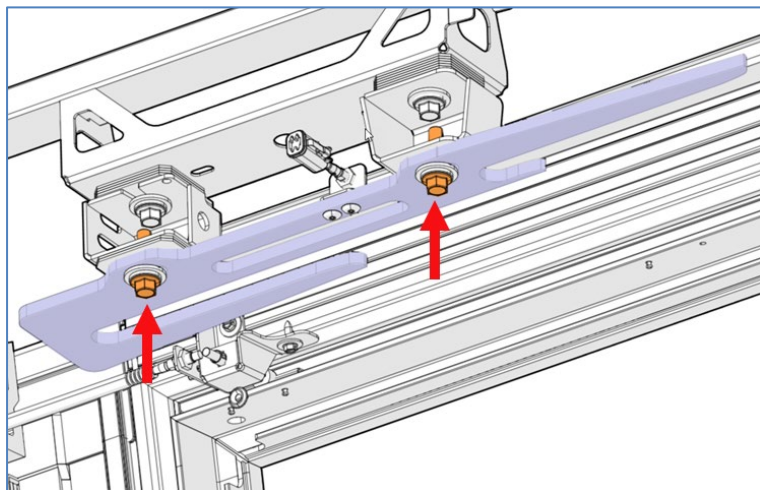


Figure 48

4. Perform the following inspections:
 - a) When door open and fully latched, the distance between the end of both fork slots and roller should be:
GAP: $5/32 \pm 1/16$ 3.5 ± 1.5 mm

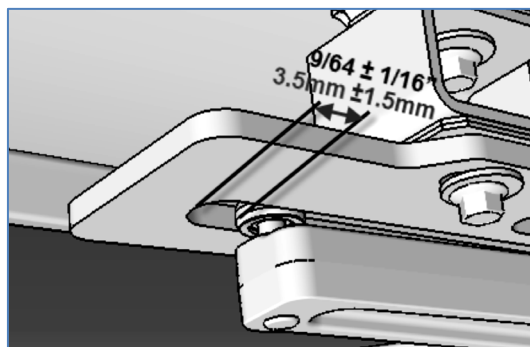


Figure 49

- b) 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.

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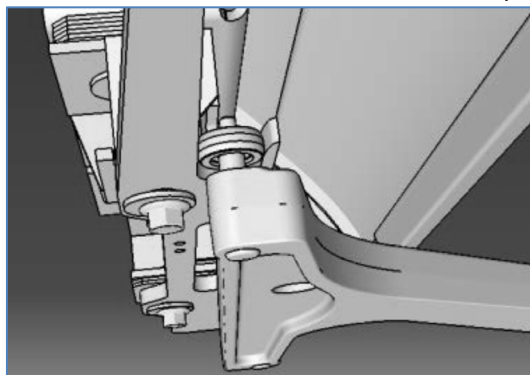


Figure 50

- c) The minimum clearance between the aft fork support and wheel carrier should be $\frac{1}{32}$ " (1 mm) (dimension A). Confirm with feeler gage.

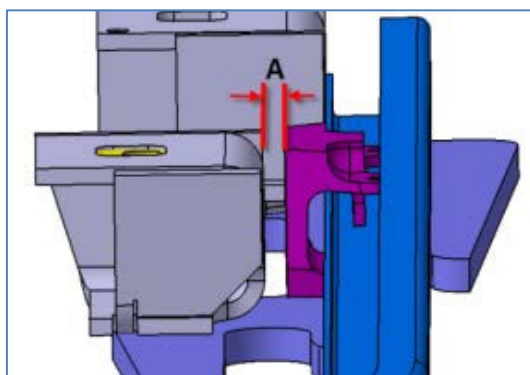


Figure 51

- d) Check the roller vertically to make sure it is centered in the fork slot surface. Maximum off-center: $\frac{3}{32}$ " (2.5 mm) above or below the guide (fork) surface.

NOTE: With the door in the fully open position, you can see and have access to this area from the outside of the bus.

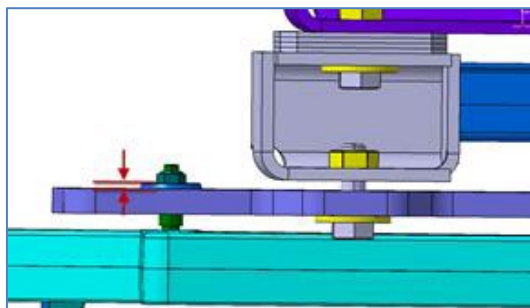


Figure 52

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5. If adjustment is required, loosen the two (2) guide mounting bolts (Figure 53) and shift the guide as required. The guide is provided with slotted holes. Tighten mounting bolts to a torque of **34 lb-ft** and apply torque seal.

To correct off-center roller, remove or add shim p/n 286421 only where indicated (Figure 54).

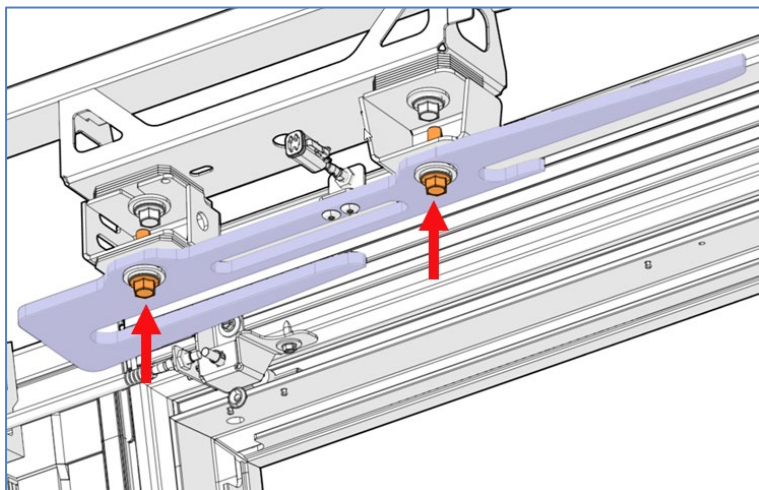


Figure 53

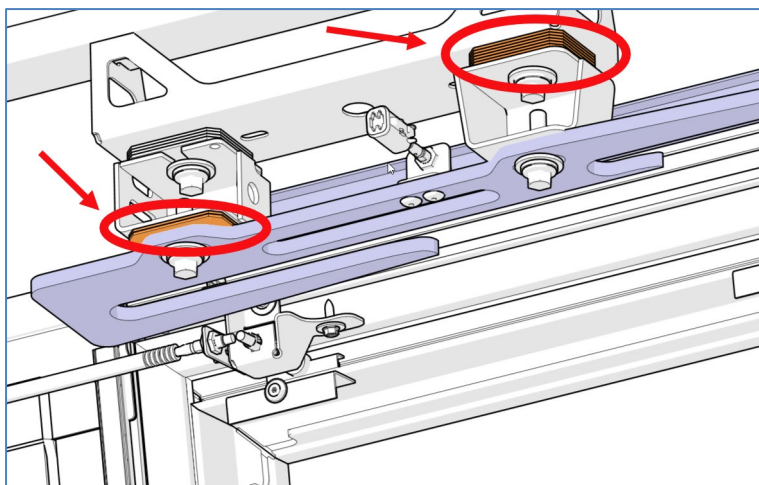


Figure 54

6. Apply torque seal mark.

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PART 10 – SLIDING DOOR OPERATIONAL TEST

1. Re-establish electrical power.
2. Go to the driver's area on the left-hand portion of the dashboard. 27. Switch ON the WCL power switch.



Figure 55

3. Verify proper operation of the door.
 - a) Double latch operates properly. **NOTE** - Verify air pressure is minimum of 120 psi before performing checks or correct.
 - b) Lock assist applies 2nd latch state without operator intervention upon engagement of 1st latch. *

PART 11 – DOOR TRIM REINSTALLATION

1. Reinstall the door trims in the reverse order of removal as per **PART 1 – FINISHING TRIM REMOVAL**. Refer to PART 1.
2. Verify proper operation of all related door functions after repairs: “stop request” button, light operation, dash indicators, sonic sensor and alarm, interlock, etc.

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PARTS / WASTE DISPOSAL

Return replaced parts to Prevost with A.F.A. for full reimbursement.
Discard waste according to applicable environmental regulations (Municipal/State [Prov.]/ Federal)

ESTIMATED TIME

The time required to perform this special bulletin is 2 ½ hours (2.5 hr).

OTHER

VBC Bulletin	N/A
Fail Code	18.05
Defect Code	09
Syst. Cond	B
Causal Part	780809

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