



INSTRUCTION TO SERVICE

ITS61012		07/15/2024
SECTION:	490-Entrance Door	
SUBJECT:	Front Plug Door Updates	
ISSUE:	Update front plug door to improve reliability and reduce wind noise	
SUMMARY:	Rework front plug doors per this ITS	

ITS61012

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 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:

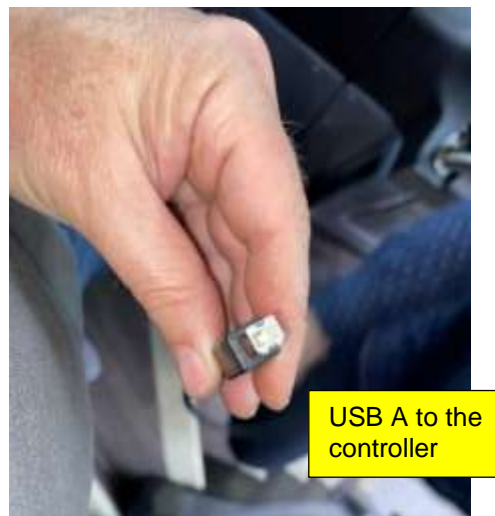
1. Apply parking brake and place wheel chocks underneath the front wheels.
2. Operate the front door from outside by using the door control switch.



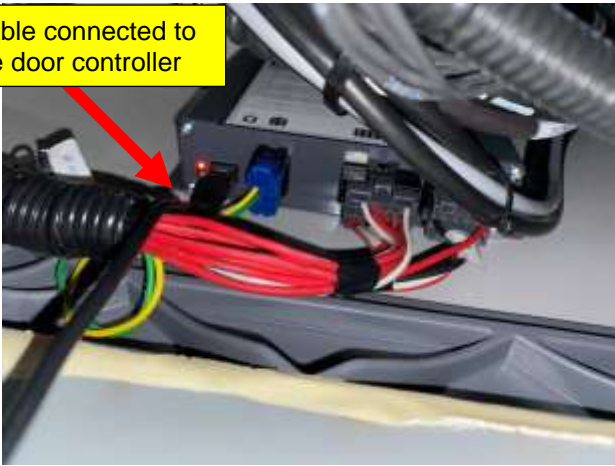
3. Ensure the coach has the latest door controller software. It must be the 426110B4v0413.s19 or newer version. If the door software needs to be updated, then:
 - a. Remove cover from the LH parcel rack to gain access to the door controller.

Note: refer to your maintenance manual for the exact location of the door controller.

- b. Connect the cable with USB A and USB B ends to the controller and laptop.
- c. Use the Masats door software to upload the new program. Refer to photos below.



Cable connected to the door controller



Start Masats software, chose language

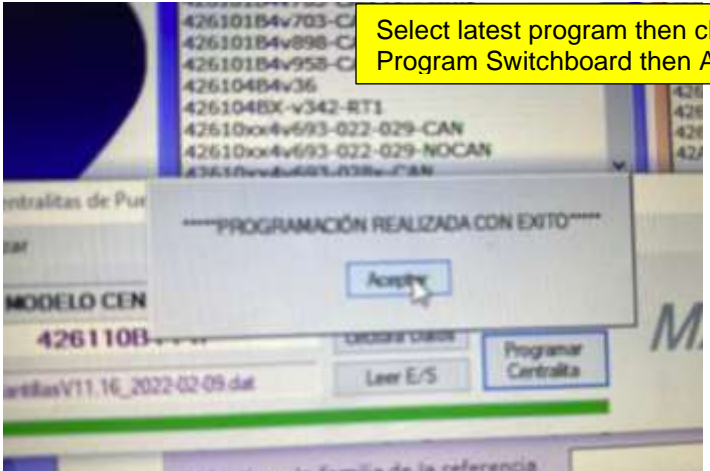


Click Open Test & Diagnosis

Click Network & Serial Tools



Select latest program then click Program Switchboard then Accept



d. After new program has been uploaded, operate the door couple times to ensure it works properly.



Hardware Updates:

4. Ensure door operates and aligned as designed:
 - a. Check the gaps in front of and behind the door, between the door and the portal frame: gaps should be equal, in other words, the door must be positioned centered inside the portal frame.
 - b. When door is raised up and locked the gap between the top of the door and the portal frame must be $\frac{1}{2}$ ". At this time the bottom of the glass should aligned with the body lines.



- c. Ensure the curvature of the door is matching the curvature of the portal frame. If not, contact your local MCI representative for further inspection and corrective action.

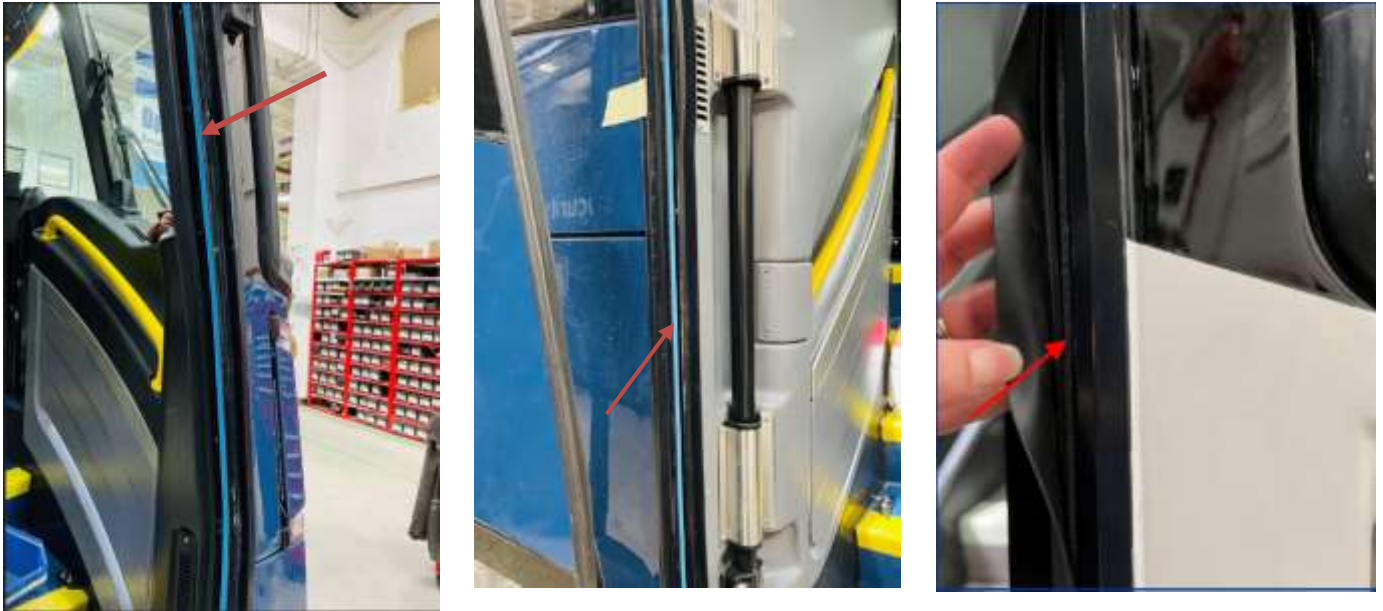


- 5. If the door alignment doesn't meet the above requirements, then adjust door per the Maintenance Manual. Also see some door adjustment notes at paragraph 14 of this document.
- 6. Pull the emergency release arm so the door can be opened and closed manually.



NOTE: Open clear cover and pull arm down to move door freely. Push red button on side to reconnect door with the motor.

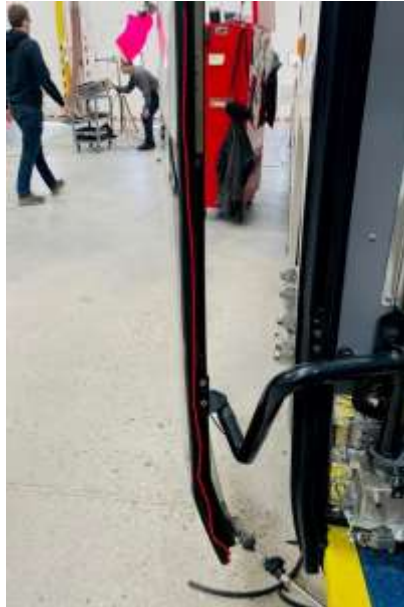
7. Apply foam "shim tape" (P/N **1079179**, total qty 15') to both leading edge and trailing edge of portal-extrusion to shift and rotate the outer seal for a better engagement with the door.



8. Use rivet (P/N **19-13-170**, qty 2) and washer (P/N **19-2-165**, qty 2) to secure the seal to the step.
9. Wipe the joint of the step and seal with a cloth lightly soaked with denatured alcohol. Allow 2 minutes of flash off time, then apply black Sika 221 sealer (PN **055700**) between the leading and trailing inner door seals and the stepwell to prevent gaps that result in road noise.



10. If bulb seal is not already present, then wipe the inside surface of the door with denatured alcohol along the leading edge just rearward of the sensitive edge rubber molding. Allow 2 minutes flash off time, then add a D-seal (P/N **6819301**, QTY 88.3") to the inside surface of the door as shown on the photos below.



11. Close the door and check for gaps at the forward and rearward edges at the bottom. Add foam block (P/N **1081184**, QTY 2) to the lower seal section of the door if required to close gaps. Use black Sika 221 to secure foam blocks to the door.

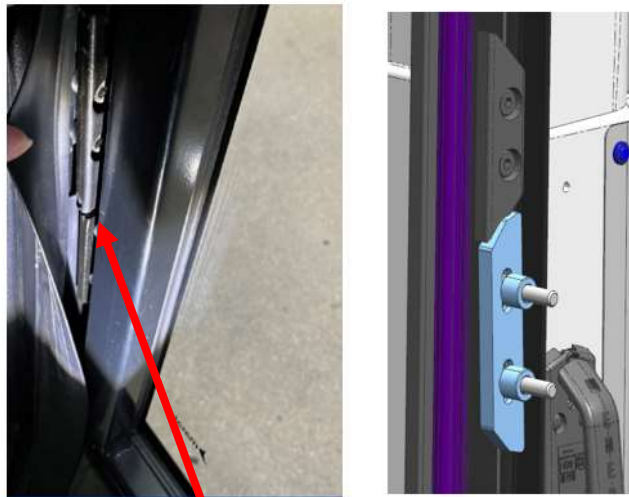


12. Slide lower door seal forward or rearward as required to close gaps. If required, trim seal to prevent interference with the portal.

13. Replace existing upper door-side wedges (PN 03-32-2714, qty 2) with new wedges (P/N 1078171, qty 2) to enhance wedge engagement. All other wedges can remain as is.

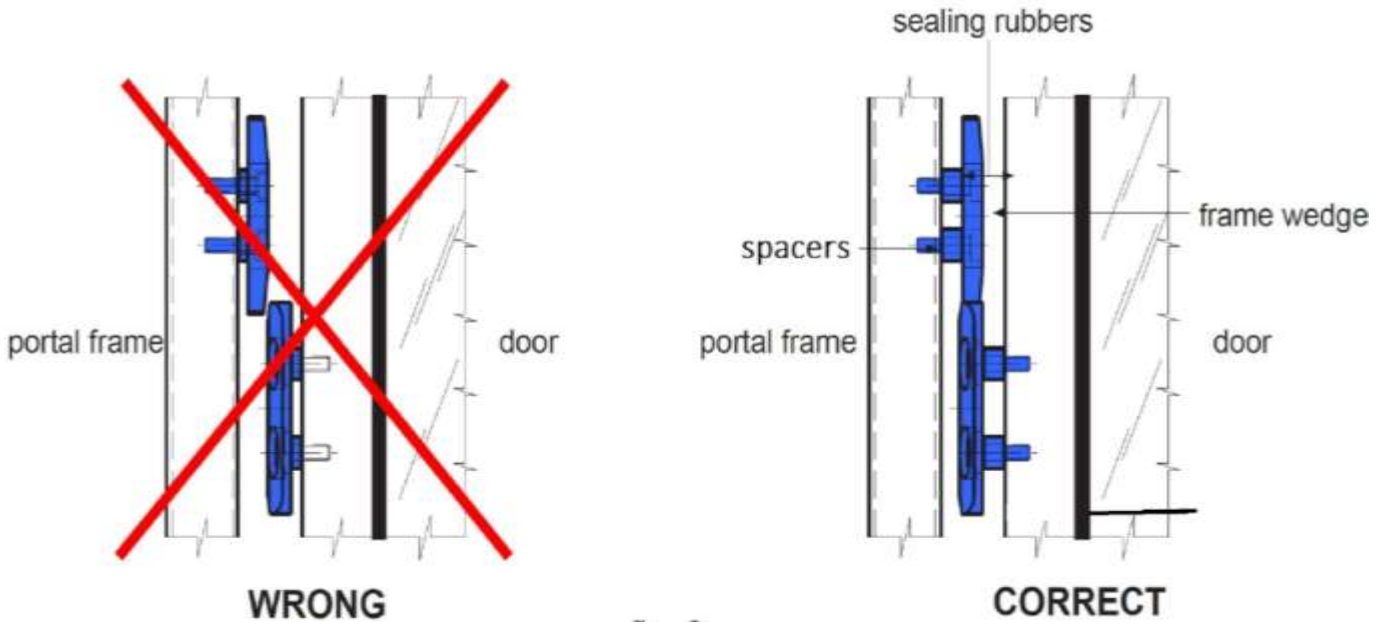


14. Follow normal door adjustment procedure. Pay specific attention to:
a. Ensure wedges are well aligned with each other (fore-aft) to prevent missing or sliding off one another.



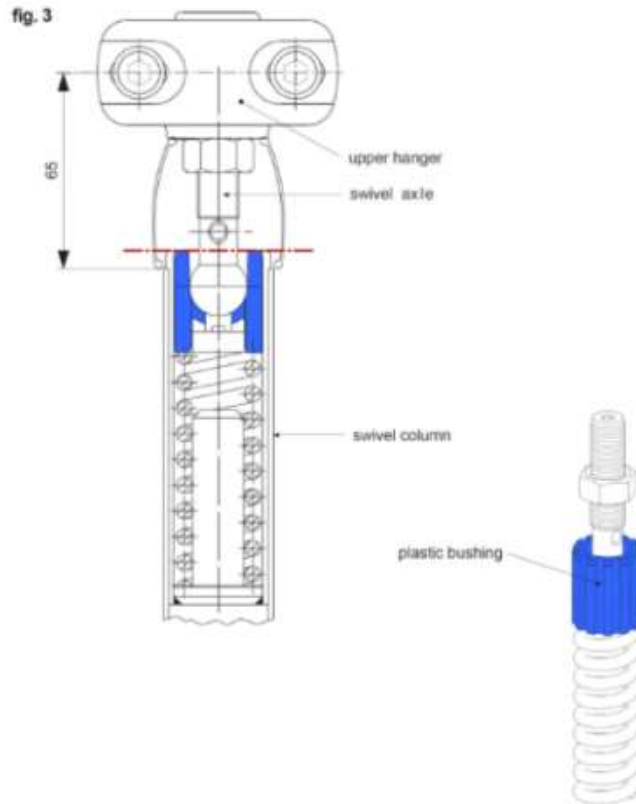
Pull inner seal back and watch how the wedges engaging while door is closing

- b. Ensure good overlap between the wedges when door closes -before door starts vertical travel (for reliable latching in all conditions). Latch must always “catch” in hot, cold, windy, slope, etc.)
- c. Ensure good wedge engagement when closed (to ensure reliable door retention in operation).
- d. Ensure door does not bounce when closing (to ensure wedges engage).



- e. Ensure upper hinge spring setting is correct.

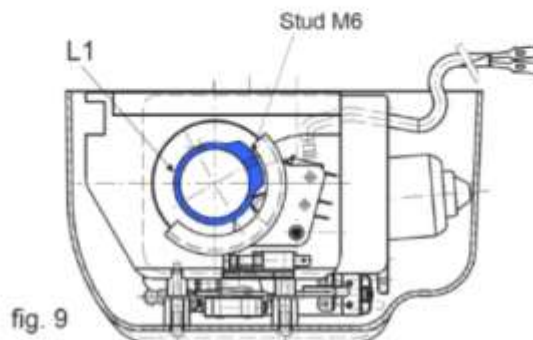
Once all the screwing points on the turning bar (actuator, bar and holder) have been defined, the swivel axle shall be tightened so that the inner plastic bushing (fig. 3) remains at the end of the slot.



- f. Remove door motor cover (refer to photo at Paragraph 27 of this document) to gain access to the switches and cam. Ensure rotational cam is positioned correctly (should actuate microswitch when door is about $\frac{3}{4}$ "-1" from closed position)

Loosen stud M6 and regulate cam L1 (Figure 9) so that the end run is tight when the door is closed. Once the cam is positioned, screw stud M6 to 3,5Nm.

This end-of-run must operate about 2 cms before the complete closing of the door. It cancels the sensitivity so that the door keeps closed.



15. Confirm adequate seal engagement with paper test (close door on a piece of paper at leading and trailing edges of the door to confirm seal pressure is adequate to prevent wind noise).



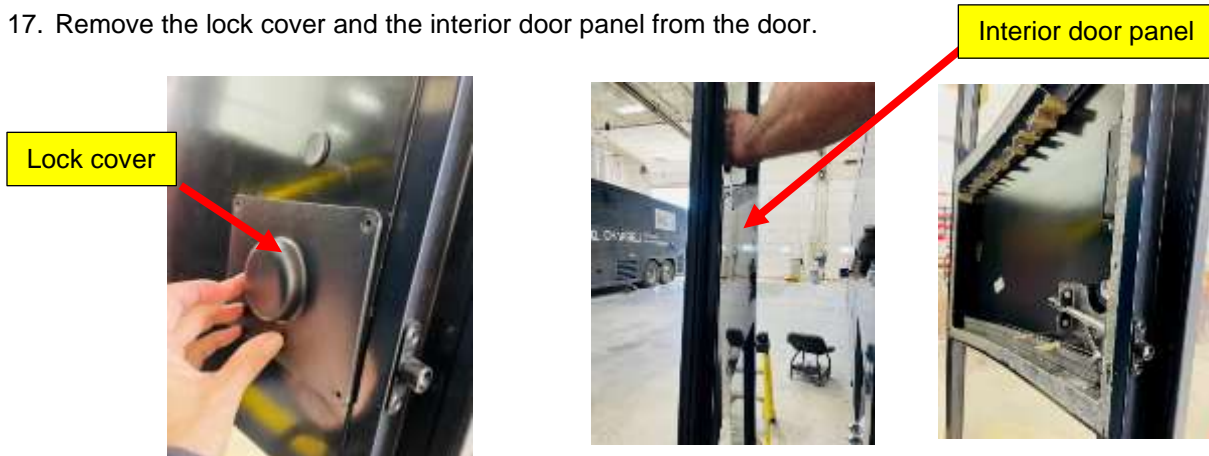
16. Remove the existing pin of the cam switch sensor and replace it with a longer pin (P/N 1079979, qty 1) to prevent microswitch ring coming off the pin.



Add Interior Accessible Manual Slide Bolt:

Note: These updated latches now can be used to lock the door from inside in closed position in case of a door motor failure.

17. Remove the lock cover and the interior door panel from the door.



18. Remove original pawl (PN 03-32-2871) then the original keylock tumbler (PN 03-08-7140) and discard both.

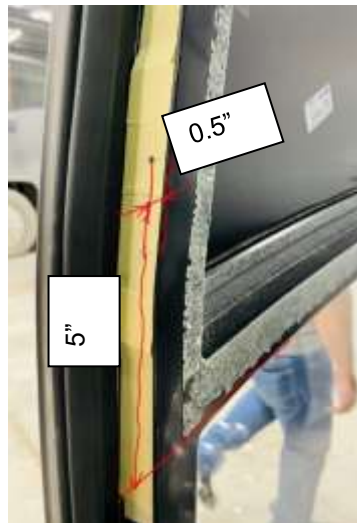


19. Install new keylock tumbler (PN **1056413**), new lever (pawl) (PN **1088175**) with a larger clip (PN **3j-29-73**, qty 1). Refer to photo above and below.

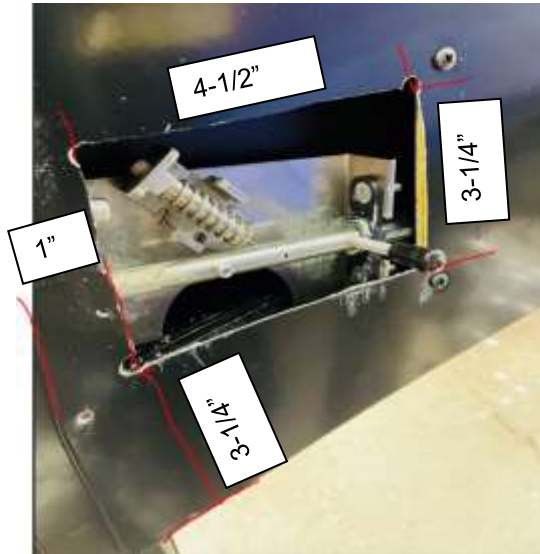
20. Replace clip with a larger size clip (P/N 3j-29-73, qty 1).



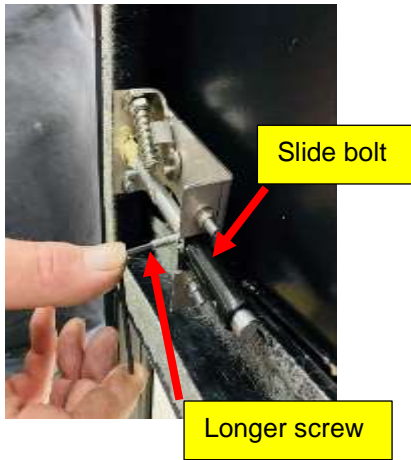
21. Add an additional slide bolt assembly (without a key lock) to the leading edge of the door. Drill a 0.1935" (4.92 mm) dia. holes per photos below, then install the slide bolt kit PN 03-32-3049 by using 10-24 thread size inserts (P/N 515277, qty 2), #10-24 screws (P/N 19-1-542, qty 2) and washers (P/N 19-02-6035, qty 2). Refer to photos below.



22. Cut the door panel for the new forward side bolt assembly then reinstall interior door panel.



23. Replace the screws of both the front and rear slide bolts with longer screws (P/N 19-01-1775, qty 2) and install rubber caps (P/N 03-32-1580, qty 2) onto the head of the screws.



24. Reinstall the interior door panel by applying toluene to the edge of the panel and the cutout on the door to reactivate the glue. Install covers and decals to the front and rear lock cutouts. Front cover (P/N 1077141, qty 1), front decal (P/N 1075644, qty 1), rear cover (P/N 1077133, qty 1), rear decal (P/N 03-15-1180, qty 1), screws (P/N 19-01-2074, qty 4) for the front cover only.



25. Add pull-handle along the window: drill a 25/64" (0.39") diameter hole for the rear rivnut 7.5" from the rear edge of the door. Use the handle to mark the hole location of the forward mounting screw. Install 1/4-20 thread size rivnut (P/N 19-3-469, qty 2) then install handle (P/N 17K-3-178) with 1/4-20 screws (P/N 19-1-645, qty 2).



26. Retrofit new slide bolt striker plate (P/N 1075166, qty 2) to both leading and trailing sides of the portal using screws (P/N 19-1-492, qty 4) and inserts (P/N 1079976, qty 4).



27. Reinstall the cover of the door motor.



Cover

28. Double check that all door related hardware (jam nuts of the lower control arm, bolts of the upper and lower door arms, bolts of all wedges, etc.) are torqued. Apply torque seal onto this hardware and take photos when it is done.

29. Check for completeness of the work. Remove debris, unused parts and tools from work area. Return coach to service condition.



LABOUR ESTIMATE				
	Operation	Number of Technician(s)	Hours	Labor Time T X HR
1	Update door per this ITS	1	10	10

PARTS REQUIRED					
Item	Part Number	Description	Qty. per Coach	Units	Notes
1	1079179	FOAM TAPE (1/8 T x 3/8 W ADHESIVE)	15	FT	Portal edge
2	19-13-170	RIVET-3/16X1/2, BREAK MANDREL	2	EA	Portal bottom
3	19-2-165	WASHER-FENDER, 3/16 ID X 3/4 OD, BLK OXIDE	2	EA	Portal bottom
4	6819301	SEAL-.625, ADH, W/HT ACTIVATED ACRYLIC FOAM ADH	8	FT	For door edge
5	1078171	WEDGE	2	EA	At top of door
6	3J-29-73	LARGER CLIP	1	EA	For rear lock
7	19-01-1775	CAPSCREW	1	EA	For rear lock
8	03-32-1580	CAP-PROTECTIVE	1	EA	For rear lock
9	1077133	COVER PLATE	1	EA	For rear lock
10	03-15-1180	DECAL-DEADBOLT, ENT DR	1	EA	For rear lock
11	1088175	LEVER - LOCK TUMBLER	1	EA	For rear lock
12	1056413	LOCK-CODEABLE	1	EA	For rear lock
13	03-32-3049	LOCK ASSEMBLY	1	EA	To add front lock
14	19-01-1775	CAPSCREW	1	EA	To add front lock
15	03-32-1580	CAP-PROTECTIVE	1	EA	To add front lock
16	515277	INSERT-#10-24 UNC SST	2	EA	To add front lock
17	19-1-542	CAPSCREW, HEX SKT, #10-24X.75, STL, ZN PLTD	2	EA	To add front lock
18	19-02-6035	WASHER - DIN9021B-A2/M5	0.02	EA	To add front lock
19	1077141	COVER PLATE	1	EA	To add front lock
20	1075644	DECAL	1	EA	To add front lock
21	19-01-2074	SCREW - PAN HEAD, #8 X .50", BLACK	4	EA	To add front lock
22	17K-3-178	HANDLE-GRAB	1	EA	Add handle
23	19-1-645	SCREW-MACHINE, PAN HD.1/4-20 X .75, SST	2	EA	Add handle
24	19-3-469	NUT-RIVNUT,1/4 - 20	2	EA	Add handle



25	1075166	STRIKER PLATE	2	EA	Rework Striker
26	19-1-492	OVAL HD-#10-24 X 1.25, SST, AB	4	EA	Rework Striker
27	1079976	INSERT	4	EA	Rework Striker
28	1079979	LONGER PIN	1	EA	Replace switch pin
29	NA	Toluene	0.01	QT	Purchased locally

SPECIAL TOOLS REQUIRED					
Item	Part Number	Description	Qty.	Units	Notes
1	NA	Cordless drill, rivnut applicator gun			
2	NA	Cutting tool with cutting and grinding discs			To cut door for the front latch addition