

VOXXSM POWER TAILGATES

General Application

2019- Toyota Rav4

Issues

N/A

Kit Contents

Item #	Component Description
1	Strut Bar Right
2	Strut Bar Left
3	Control Box
4	Front Button
5	Rear Button
6	Buzzer
7	Main Power Harness
8	Electric Latch Harness
9	Power Supply Harness
10	Unlock/Acc Harness
11	OE Switch / Latch Harness
12	Rear Button Harness
13	Guides - Owner's
14	Left brackets
15	Right bracket






Installation Kit Contents

Item #	Component Description
1	16mm Drill Bit
2	Plastic Wire Ties
3	(1) - 10mm bolt
4	Warning Stickers / Switch Template

Recommended Tools:

Safety Tools	
Seat / Floor Covers	Blankets
Safety Glasses	Gloves

Legend

	STOP: Damage to the vehicle may occur. Do not Proceed until process has been completed.
	Operator Safety: Use caution to avoid risk of injury.
	Critical Process: Proceed with caution to ensure a quality installation. These Points will be audited on a completed vehicle installation.
	Tools & Equipment: This calls out specific tools and equipment required for this process.
	Revision Mark: This mark highlights a change in installation with respect to previous issue.

Precaution / Installation Notes:

- After Safety mandated preparatory steps have been taken, the installation sequence is the suggested method for completing the accessory installation.
- When prying panels, use masking tape on all surfaces that a tool may come in contact with to prevent marring.
- After a wire tie is fully fastened, cleanly cut excess wire tie length with a pair of wire cutters.
- The wiring information is on an "as is" basis without any representation or warranty. It is the installer's responsibility to verify any circuit before interfacing with it using a digital multi-meter.
- Manufacturer's service documents can be used for any vehicle disassembly that may be depicted differently from what the instruction states.
- To ensure safety and normal usage of the lift gate, please let a professional complete the install. Do not dismantle the lift gate product, may cause damage to vehicle.
- Start engine before installation; check dashboard display function, check button operation, and check for scratches or damage to exterior and interior. Report any issues immediately.
- Check whether the Tailgate can normally open and close. Check that interior lights are working with tailgate operation.
- Do not change any wires with engine ON.

Installation Tools	
NRT - Nylon Removal Tool	Ratchet
Philips #2	Drill
10mm Socket	Side Cutters
Pick tool	Dremel Tool



Disconnecting the battery prior to any ground or harness removal / tapping to prevent possible vehicle damage is recommended. The battery may be temporarily reconnected and disconnected throughout the installation process to perform various tasks. However, prior to doing so all connectors and harnesses must be reassembled and reconnected. Once tasks are completed disconnect battery until installation is complete and Electric Tailgate system is ready to be tested. After testing, the vehicles interior may be re-assembled. Disconnecting the battery may cause certain vehicle settings to be lost. Manufacturer's recommendations for the battery removal should be followed.

A. Pre-Installation Precaution and Preparation

1. 2019 Toyota Rav4. (Figure A1)
2. Familiarize yourself with the installation instructions. Inspect kit components to verify everything is present, there is no damage, and to familiarize yourself with the parts.
3. Use Seat and Floor protectors to avoid damage to vehicle surfaces.

B. Disassemble Vehicle Trim

1. Starting with the center panel and moving from right to left, use a Nylon Removal Tool (NRT) to remove the upper trim panel. (Figure B1).
2. Locate the Tailgate Handle. (Figure B2)
3. Use an NRT to remove cover of tailgate handle, exposing two 10mm screws.
4. Using a 10mm socket, remove two 10mm screws in each side of handle. (Figure B3)



Figure A1



Figure B1

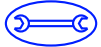


Figure B2



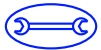
Figure B3





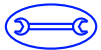
5. Remove the left and right middle trim panels from the tailgate. (Figure B4)

Figure B4



6. Starting on the right, use the NRT to release the plastic clips in the lower tailgate panel. (Figure B5)

Figure B5



7. Remove lower tailgate panel and set aside. (Figure B6)

Figure B6



8. Remove rear driver side panels, upper or lower depending on preference of harness routing. (Figure B7)

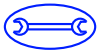
Figure B7



9. Remove the door sill panel from the front and rear driver side door. (Figure B8)

Figure B8





10. Using a 10mm socket remove 3 bolts attaching the factory latch to the tailgate. (Figure B19)

NOTE: To perform this process the installer must have a second person to hold the tailgate up or jack stand to hold the tailgate in place.

11. Using a small hook tool, release the retaining clips on the upper strut mounts. Do not remove the clip completely. Wedging the hook tool between the clip and the strut should allow for removal of the strut. Repeat for lower clip. (Figure B10 a-b)

12. Repeat Step 11 above on the opposite strut. (Figure B11)

13. Using a 10mm socket remove the right factory lower strut mount bracket. Repeat on left side. (Figure B12)

Figure B9



Figure B10a

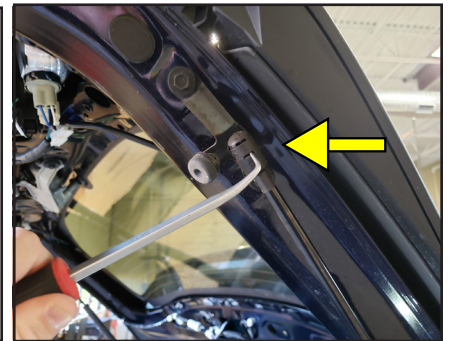


Figure B10b

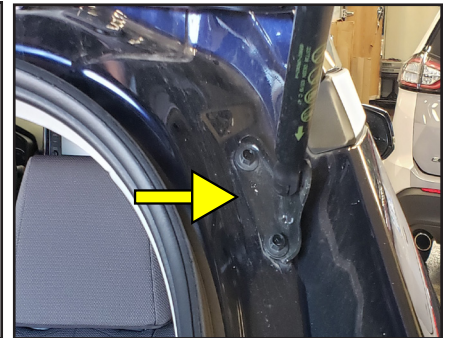
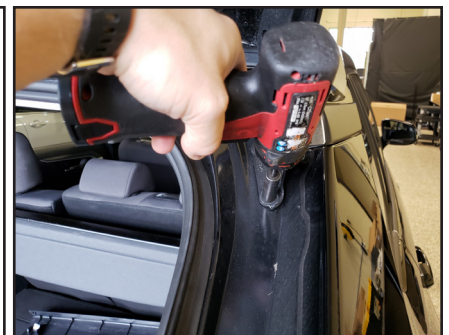


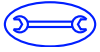
Figure B11



Figure B12



C. Power Strut/Latch Installation



- Using the original screws, install new lower strut mount bracket labeled R on right side. (Figure C1)

Figure C1



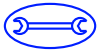
- Install right power strut onto vehicle. NOTE: The strut should be installed with the power cable end pointed to the vehicle's tailgate. (Figure C2)

Figure C2



- Locate and remove the factory rubber grommet approximately 2" above the upper factory ball mount. (Figure C3)

Figure C3



- Using a long wire tie or fish tape, route the motor power cable through the hole to the inside of the tailgate. (Figure C4)
- Insert the new grommet and pull remaining wire into the tailgate. Make sure the excess wire does not interfere with the closing of the tailgate. (Figure C4)
- Repeat Steps 1 to 5 above on the left side of the tailgate. (Figure C5)

Figure C4

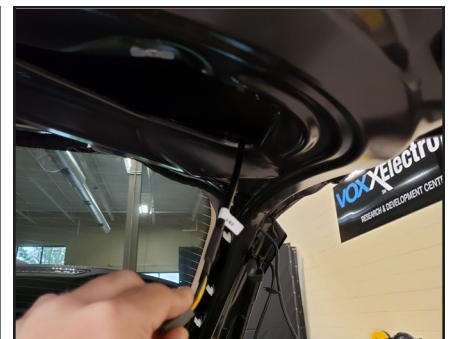


Figure C5





7. Install new latch included in kit, using factory 10mm bolts. (Figure C6)

Figure C6



D. Harness Installation

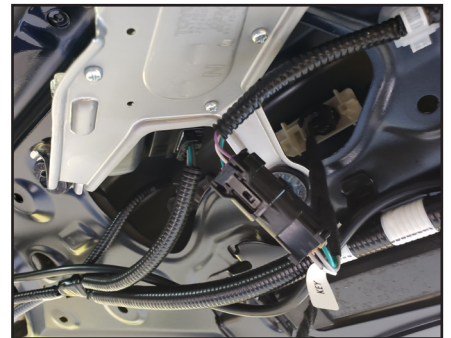
1. Using the factory wiring as a guide, route the power strut harnesses to the left side of the tailgate where the control box will be mounted. (Figure D1)

Figure D1



2. The "LOCK/KEY" harness plugs in to the tailgate switch and at the factory latch connector. The T-harness portion labeled "KEY" plugs in at the rear of the exterior switch. (Figure D2)

Figure D2



3. The "Lock" portion of the harness plugs into the connector from the factory latch. Route the last connector to control box mounting location. (Figure D3)

Figure D3



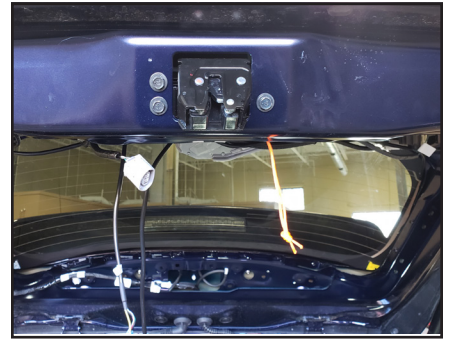
4. Route the Rear Switch Harness from the control box mounting location to the rear switch mounting location. The rear switch will be mounted in the right side hatch pull handle. The hole will be drilled prior to reassembly. Connect and mount the buzzer to the rear switch harness and mount the buzzer in the rear tailgate. (Figure D4)

Figure D4



5. Route the new Power Latch Harness from the control box mounting location to the latch location. Plug the white 8 pin plug into the newly installed latch. (Figure D5)

Figure D5



6. Route the Main Power harness and unlock/ accessory harness from the control box mounting location to the factory tailgate rubber boot. (Figure D6)

Figure D6



7. Using a long wire tie or fish tape, Route the Main Power wire harness and the unlock / ACC wire harness through the factory rubber boot. (Figure D7)

Figure D7



Note: Do not poke a hole in the rubber boot. This will allow water to enter the vehicle's cabin and damage the interior.

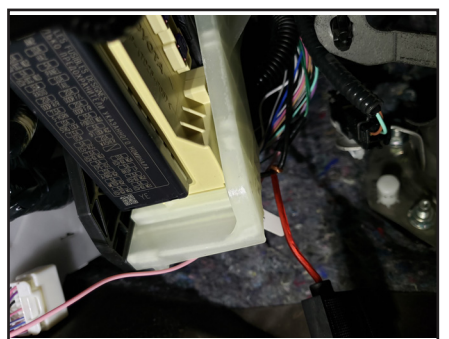
8. Route the Main Power harness and the unlock/ACC wire harness from the rear of the vehicle to the front driver's kick panel. (Figure D8)

Figure D8

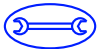


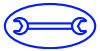
9. Locate the 12v power supply. On the rear of the fuse block locate the black 12 AWG wire. Attach power supply harness here. (Figure D9)

Figure D9



Note: Remove the 30A fuse from the holder before connecting the Power Supply harness.





10. The pink wire labeled ACC from the unlock harness will connect to a wire in the vehicle showing voltage with the vehicle's ignition in the on position. This prevents the tailgate from operating from the unlock switch on the door while the vehicle's ignition is on. The orange wire connects to the drivers door lock motor wire. (Figure D10)

NOTE: Always verify your wire connections using a digital multi meter.

11. In the same location as figure D9 locate the green accessory wire. Attach the pink wire labeled ACC.(Figure D11)

12. In the diver kick panel locate the 18 pin white plug. Pin 1 (blue or gray) is unlock sensing wire. Connect orange wire of harness supplied to the wire in the location Pin 1. (Figure D12)

E. Control Box Installation

1. The control box will be mounted in the tailgate using the supplied bracket. Locate the opening pictured in (Figure E1)
2. Using the supplied bolt and supplied 10mm nut align the control box with the factory whole located in Figure E2. Tighten bolt securing control box in tailgate.

NOTE: Make sure all connector locations are accessible and the control box will not prohibit the tailgate trim panel from being reinstalled.

Figure D10

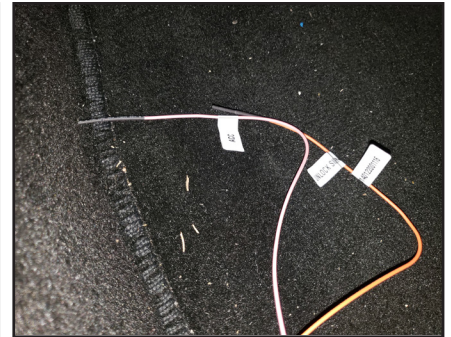


Figure D11



Figure D12



Figure E1



Figure E2



F. Switch Installation

1. Identify a suitable location for the driver's front open/close switch. The recommended location is pictured in Figure F1.

Figure F1



2. Using the Supplied 16mm drill bit, drill a mounting hole for the front open/close switch and mount the switch into the dash panel. Connect the Front Switch Connector to the Unlock Box harness. The Brown wire labeled ILL is optional. Attach this wire to a wire that tests positive 12v when the vehicle's ignition is on. This will illuminate the switch. (Figure F2)

Figure F2



Caution: Check both sides of the panel for obstruction. Be sure to drill in a location that will accommodate the depth of the switch.

Figure F3



3. Return to the location for the rear switch previously identified in figure D4. (Figure F3)

4. After checking clearance on the inside of the tailgate use the supplied 16mm hole saw bit to drill a hole. Insert switch and hand tighten from behind. (Figure F4)

Figure F4



5. Connect the rear switch to the rear switch harness installed in Step D4 and reinstall the tailgate trim panels. The added weight from this panel can affect the tailgate open/close procedure. (Figure F5)

Figure F5



Note: Check all connectors & secure all loose wiring before assembling the trim panel.





G. System testing

1. Check all connections before inserting the main power fuse. Ensure all connectors are fully seated and there are no bare wires.
2. Ensure the rear tailgate trim panels are reassembled before testing. This panel can affect the weight of the tailgate causing the system to not completely close.
3. Connect the main power fuse. The system will begin to beep one (1) time every 5 seconds. This beep will notify the installer or customer that the tailgate system has reset. Manually close the vehicle tailgate to complete the reset procedure. (Figure G1)
4. Test the power lift gate system from all open/close options.
 - a. Open the power lift gate using the vehicle's exterior switch. (Figure G2)
 - b. Close the tailgate from the NEW rear close switch. (Figure G3)
 - c. Open and close the tailgate from the NEW Front open/close switch. (Figure G4)
 - d. Open and close the tailgate by pressing Unlock of the vehicle's factory remote three (3) times within three (3) seconds. (Figure G5)

Figure G1

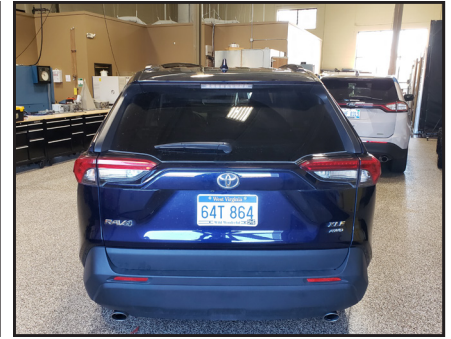


Figure G2



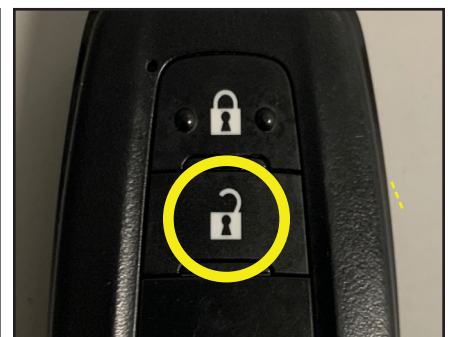
Figure G3



Figure G4



Figure G5



1. Height Adjustment

Open the tailgate to the desired height. Press and hold the inside rear close button until the system beeps two (2) times, then release. Cycle the tailgate to verify height adjustment.

2. Speed Adjustment

To switch between the 2 settings, Press and hold the inside rear close button until the system beeps five (5) times, then release.

The system will provide feedback to indicate the setting:

Ten (10) quick beeps = fast

One (1) long beep = slow (default).

H. Reassemble Trim and Complete Installation

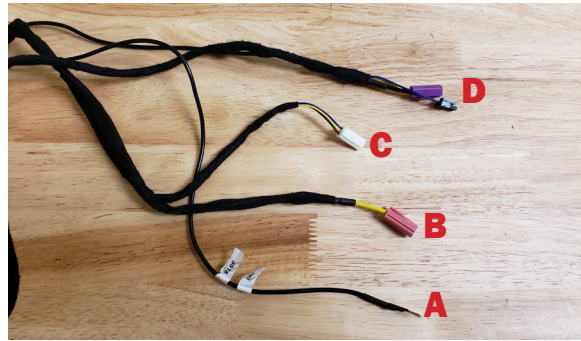
1. Replace all trim panels removed at the beginning of the installation.
2. After installing all trim panels, repeat step G4 again to verify full operation of the liftgate system.

ADVLFTRV42 Toyota Rav4 2019-2020

SMART ELECTRIC TAILGATE LIFT SYSTEM

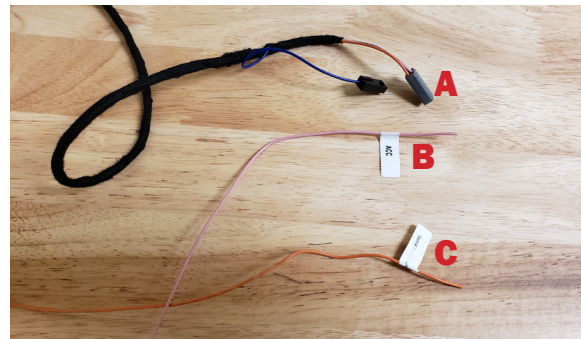
Main Power Harness

- A. Ground
- B. Connect to Main Power Supply
- C. Connect to Front Switch
- D. Connect to Control Box



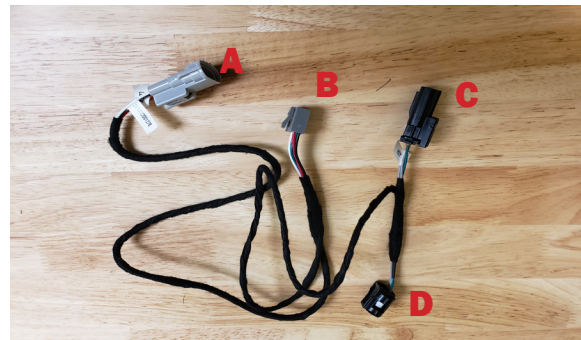
Unlock / ACC Harness

- A. Connect to Control Box
- C. Connect to Accessory wire at driver fuse box
- D. Unlock motor wire in driver kick panel



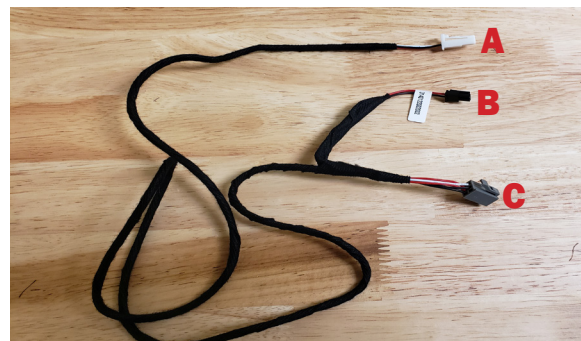
Tailgate Harness

- A. Connect to OE Latch Harness
- B. Connect to Control Box
- C. Connect to OE Exterior Button
- D. Connect to OE Exterior Button Harness



Rear Switch Harness

- A. Connect to Rear Switch
- B. Connect to Buzzer
- C. Connect to Control Box



Electric Struts

- A. Connect to Control Box
- B. Connect to Control Box

