

Toyota

Sienna

2016

On Board Vacuum Cleaner

Part Number (s); 00016-08013; 14
(01,02,10 & 11)



Code: SV1000

Conflicts

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Kit Contents

Item #	Quantity Req'd.	Description
1	1	Vacuum Assembly
2	1	Hose Assembly
3	1	Tool Kit
4	1	Template
5	1	Mounting Bracket
6	1	Wire Harness
7	1	User Manual

Hardware Bag Contents

Item #	Quantity Req'd.	Description
1	2	Rubber Washer, 9.7mm ID
2	4	Rubber Washer, 6mm ID
3	2	Lock Washer, 5/16"
4	1	Hex Nut, 5/16"-18
5	2	Shoulder Washer, 23mm
6	4	Flat Washer, 23mm x 2mm
7	1	Hex Bolt, 5/16"-18 x .75"
8	3	Flange Bolt, M6 x 25mm
9	3	Flange Bolt, M6 x 16mm
10	15	Cable Tie, 8" Black
11	2	Screw Rivet

Additional Items Required for Installation

Item #	Quantity Req'd.	Description
1	1	3M Automotive Sealant

Recommended Tools

Safety Tools	Notes
Safety Glasses	
Vehicle Protection	Cloth / Rag
Protective Tape	
Installation Tools	Notes
Ratchet	3/8" Drive
Socket	10mm,12mm,13mm,14mm
Wrench	13mm
Trim Panel Removal Tool	
Screwdriver	Flat Head, Phillips Head
Flexible Pickup Tool or	Fish Tool
Torque Wrench	26.5", 48",67" & 31 ft. lbs.
Drill Bit .25"	
Scissors	
Tape	
Grinder or Scraper	
Knife or Cutters	
Zip Cutter or equivalent	
Electrical Tape	

Accessory Color Guide

Part Number	Accessory Color									
	Black	Charcoal	Dark Bisque	Ash						
00016-08013-01				X						
00016-08013-02	X									
00016-08013-10			X							
00016-08013-11		X								
00016-08014-01				X						
00016-08014-02	X									
00016-08014-10			X							
00016-08014-11		X								

Recommended Sequence of Application

Item #	Description
1	Harness
2	Bracket
3	Panels
4	Vacuum

Legend

STOP: Damage to the vehicle may occur. Do not proceed until process has been complied with.

OPERATOR SAFETY: Use caution to avoid risk of injury.

CAUTION: A process that must be carefully observed in order to reduce the risk of damage to the accessory/vehicle and to ensure a quality installation.

TOOLS & EQUIPMENT: Used in Figures calls out the specific tools and equipment recommended for this process.

REVISION MARK: This mark highlights a change in installation with respect to previous issue.

SAFETY TORQUE: This mark indicates that torque is related to safety.

SPECIAL NOTE: Installation Sequences

After TMS and Safety mandated preparatory steps have been taken, the installation sequence is the suggested method for completing the accessory installation. In some instances the suggested sequence is written for one associate to install and in others the sequence is given as part of a team accessory installation. Unless otherwise stated in the document, the associates may perform the installation steps in any order to make the installation as efficient as possible while maintaining consistent quality.

Procedure

Installation instructions must be followed precisely. Damage or malfunction that occurs due to deviation from the installation instructions or mis-assembly of adjacent parts that are not within the scope of these instructions are not the responsibility of Shop Vac® Corporation.

Care must be taken when installing this accessory to ensure damage does not occur to the vehicle. The installation of this accessory should follow approved guidelines to ensure a quality installation.

These guidelines can be found in the "Accessory Installation Practices" document.

This document covers such items as:

- Vehicle Protection (use of covers and blankets, cleaning chemicals, etc.).
- Safety (eye protection, re-checking torque procedure, etc.).
- Vehicle Disassembly/Reassembly (panel removal, part storage, etc.).
- Electrical Component Disassembly/Reassembly (battery disconnection, connector removal, etc.).

Notes:

Removed Parts -
Place all removed parts on a protected surface.



Cable Ties -
When using cable ties to secure the harness, clip the ties after securing them.



Machine Screws -
Start all machine screws by hand.

Vehicle Preparation:

1. Professional installation by an authorized dealer is highly recommended. Read all instructions thoroughly prior to installation. Ensure all parts are included in kit and follow all vehicle safety guidelines.



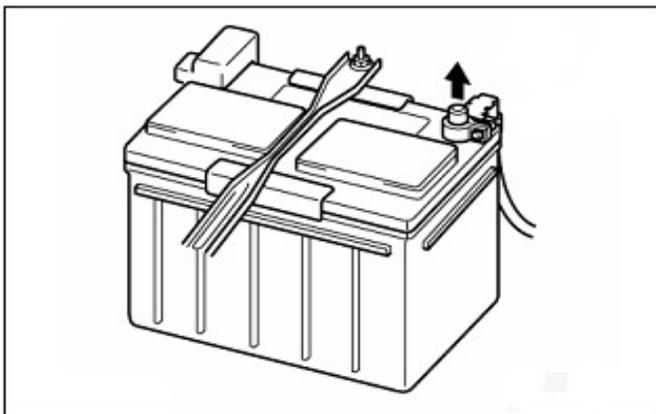
2. Read all battery warnings on disconnecting and reconnecting the vehicle's battery. Follow all procedures and disconnect and isolate the negative battery terminal.



3. Wear safety glasses and take all safety precautions during installation.



4. Template included in kit has Scale Verification box that should be measured before proceeding with installation. If box does not measure to dimensions specified on template, discard template and get a replacement template that does measure correctly.

**Disassembly of Vehicle**

1. Open rear hatch, driver's door and driver's side sliding door.
2. Open the hood and locate the battery on the driver's side of the vehicle. Follow all guidelines and disconnect the negative battery cable using a 10mm wrench, and isolate the negative battery terminal. Optional step: remove battery from vehicle.



Note: Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS System.

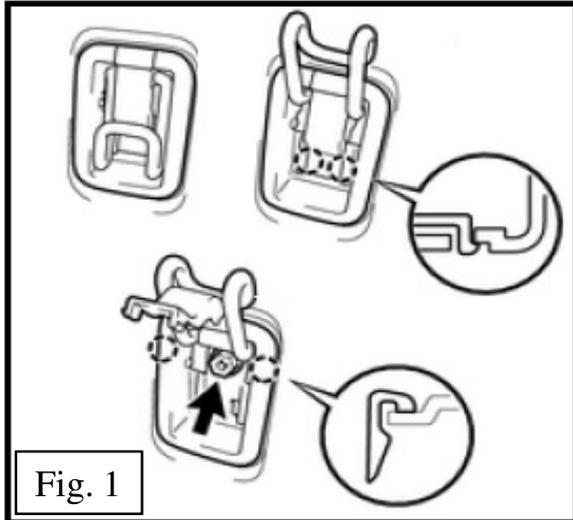


Fig. 1

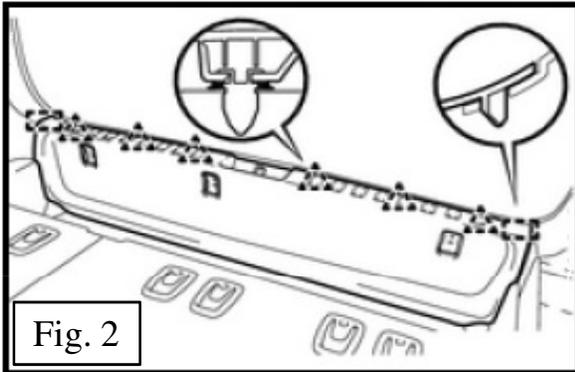


Fig. 2

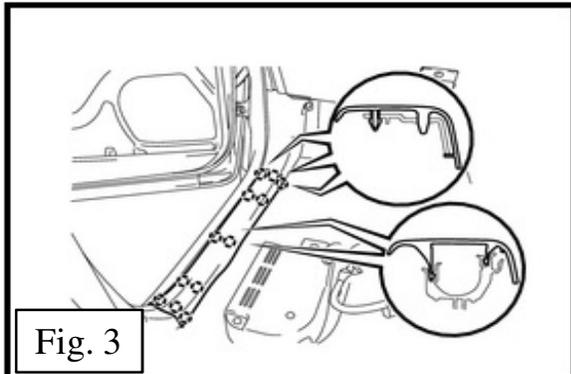


Fig. 3

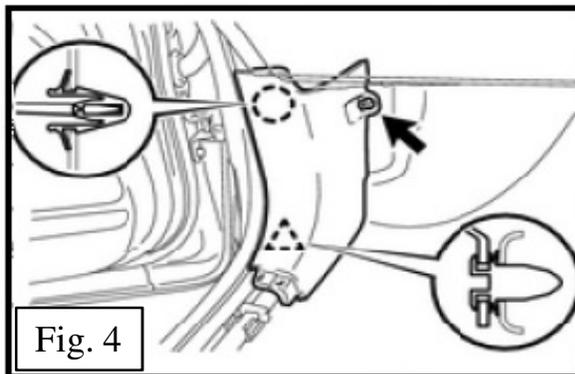


Fig. 4

Disassembly of Vehicle

3. In the rear cargo area, locate 3 cargo net hook tie downs. Using a 10mm socket and ratchet, temporarily remove (Fig.1).



4. Gently pry the threshold plate up and away from the vehicle using a trim panel removal tool (Fig.2).

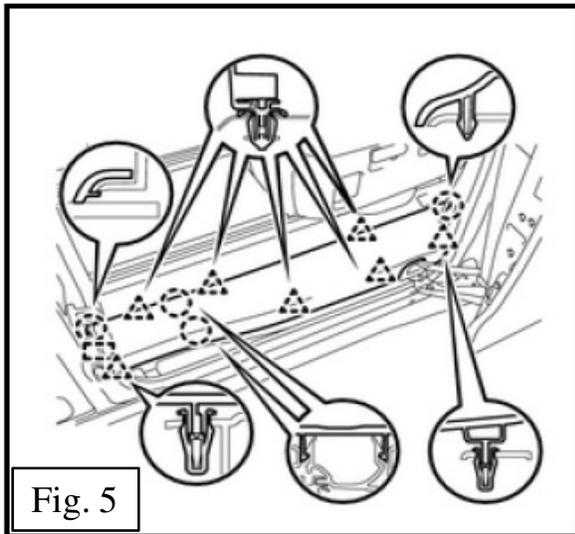


5. Using a trim panel removal tool, pry the plastic threshold step plate off, being careful not to break the plastic clips (Fig.3).



6. Remove the kick panel by removing the fastener and then gently pry the kick panel plate up and away from the vehicle using a trim panel removal tool (Fig.4).



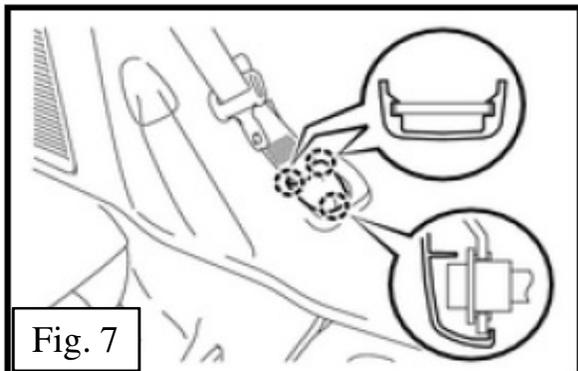


Disassembly of Vehicle

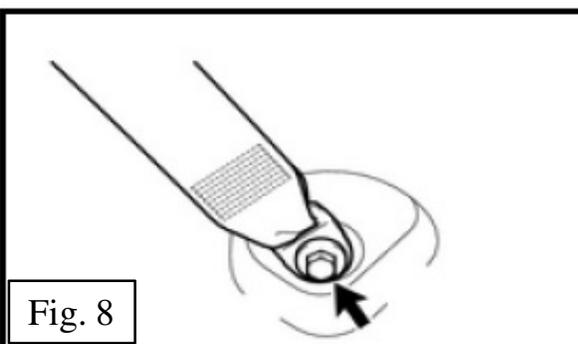
7. Using a trim panel removal tool, pry the 2nd row plastic threshold step plate off, being careful not to break the plastic clips (Fig.5). 



8. Slide the second row seat on the driver's side forward (Fig.6).



9. Locate the third row seatbelt attachment on the driver's side and pry the cover off (Fig.7). 



10. Remove the bolt using a 14mm socket and ratchet (Fig.8). 

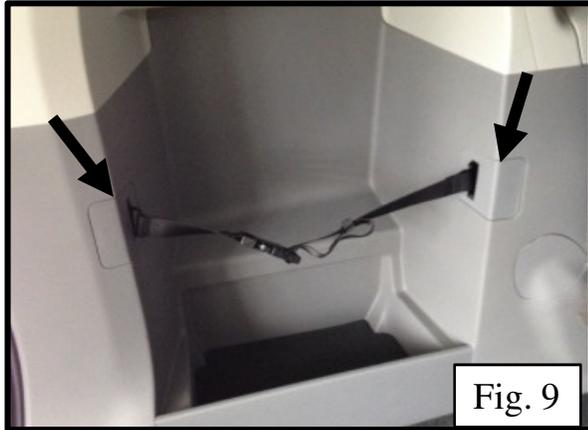


Fig. 9

Disassembly of Vehicle

11. If 8 Passenger Seat option is installed, remove covers (black arrows) and remove strap (Fig.9).

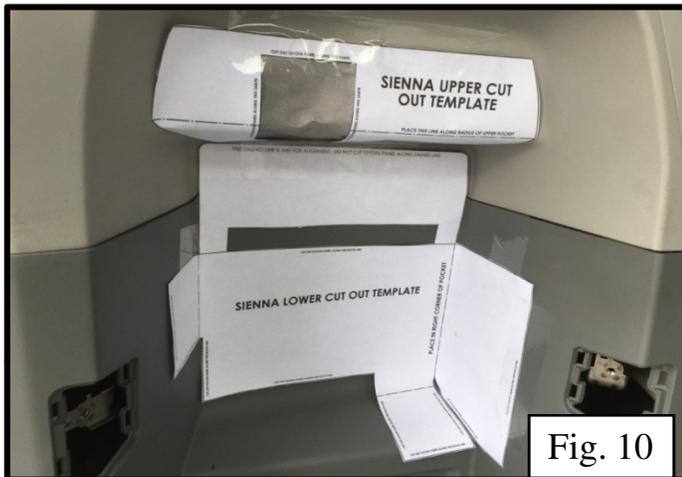


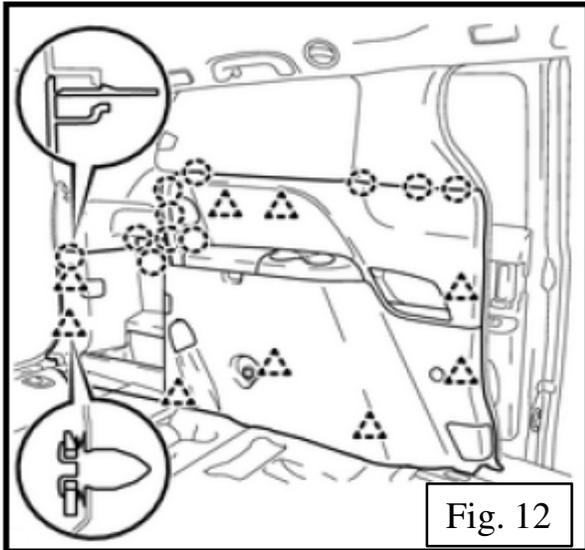
Fig. 10

12. After template has been checked for accuracy (see pg. 2, note 4), cut out paper templates according to the instructions on each (follow "Cut Out Template Along This Line"). Tape templates to vehicle panels, and place tape on hashed areas of template, leaving corners open for tracing (Fig.10).



Fig. 11

13. Trace templates onto panels wherever template instructs "Cut Out Interior Panel Along This Black Line" or "Cut Out Interior Panel Along This Shape." Remove the templates once tracing is complete (Fig.11).



Disassembly of Vehicle

14.  Using the trim panel removal tool, remove the driver's side rear panel from the sliding door to the rear tailgate area, including the panel under the window. If present,  remove the sensor. Set aside for modifications to panel (Fig.12).

Note: The panels are fused together, so both must be removed as one whole piece, being very careful not to break the plastic clips and claws in the process.



15.  If 8 Passenger Seat option is installed, remove the bolts (black arrows) that attach the brackets using a 10mm socket and ratchet (Fig.13 and 14). Remove brackets.



16.  Using a flat head screwdriver, remove 2 plastic fasteners at the top of the wheel well that hold the plastic under liner in place. Pull under liner away from fender to allow access to wire routing area (Fig.15).

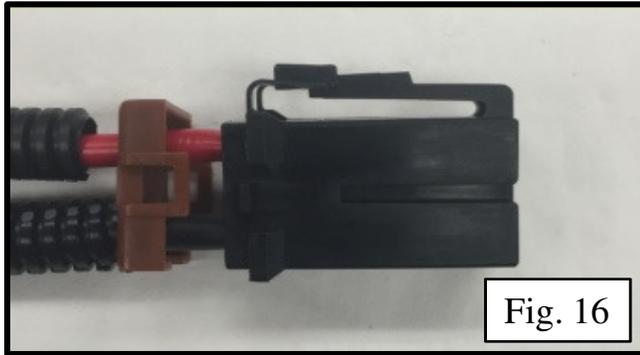


Fig. 16



Fig. 17

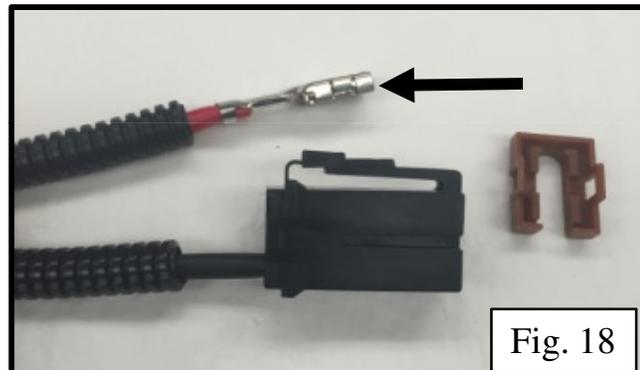


Fig. 18



Fig. 19



Fig. 20

Harness Installation

1. Remove the wire retainer on the back of the harness power connector by prying clips away from housing body and sliding back (Fig.16). 
2. Insert narrow flat blade screwdriver into mating end of connector, just under the top terminal. Apply pressure down and pull back on the top wire from the back of the housing (Fig.17). 
3. Fully remove the top wire from the connector housing (Fig.18). This wire (black arrow) will be routed in the following steps to the back of the vehicle. The rest of the harness will not be needed until making the connection near the unit installation location (Step 18).
4. Using electrical tape, cover the terminal removed from the connector housing to protect it while routing in the following steps (Fig.19). 
5. Locate the battery on the driver's side of the vehicle. Follow all guidelines and disconnect positive wire (white arrow) from the battery using a 12mm wrench or socket and ratchet. Keep the wire separated and avoid all contact between the battery posts (Fig.20). 



Note: All warning labels located on the battery.

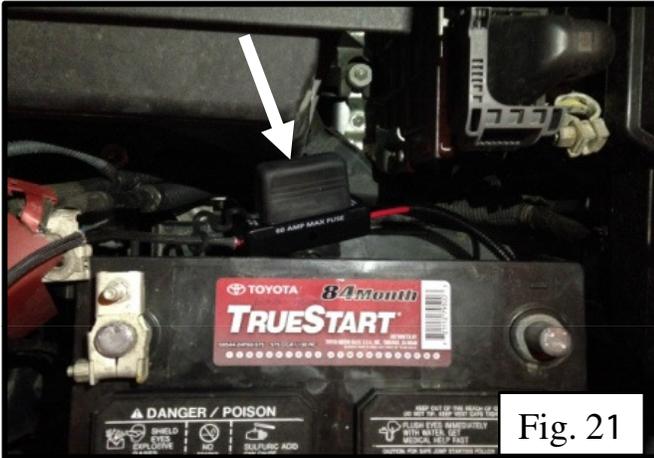
Harness Installation

Fig. 21

6. Install fuse holder in space behind battery (white arrow), with ring terminal routed near positive battery connection (Fig. 21). Use cable tie to connect ring terminal side of fuse holder to existing harness.

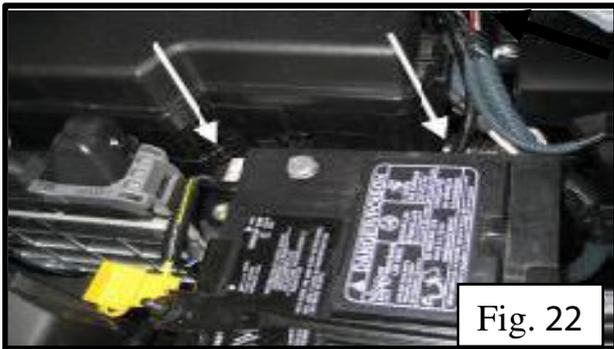


Fig. 22

7. Route the harness along the battery over to the driver's side fender (white arrows). Using 2 cable ties, secure the harness to the existing vehicle harnesses spaced out approximately 150mm (6 inches). This is done inside the engine bay (Fig.22).

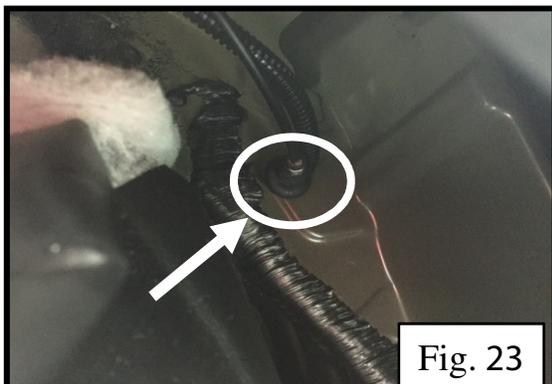


Fig. 23

8. Remove the grommet around the hood release cable located on the firewall (white circle/arrow) cut a slit or "V" shape in grommet and feed the harness through until snug (Fig.23).



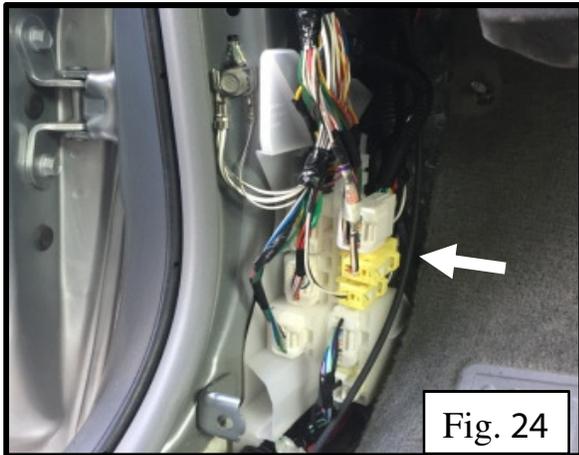


Fig. 24

Harness Installation

9. Route the harness under the dash along kick panel following the existing wiring harnesses, using a cable tie (white arrow) to secure to the existing harness (Fig.24).



Fig. 25

10. Continue to route the harness along the driver's side threshold following the existing wiring harnesses, using 2 cable ties (white arrows) spaced out evenly in the span to secure to the existing harness as shown (Fig.25).

NOTE: Harness will be in channel on the outboard side near the factory door seal.

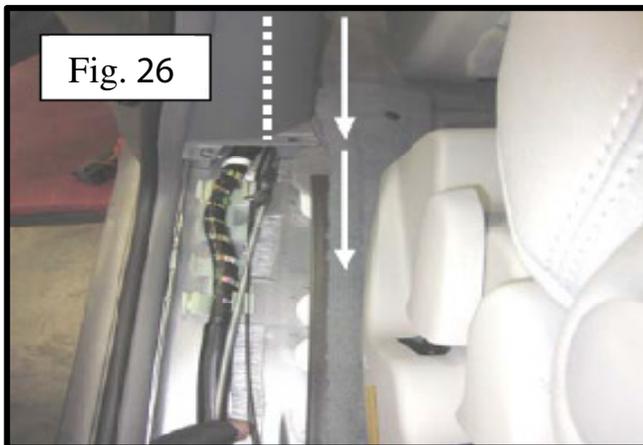


Fig. 26

11. Route the harness following the existing wiring harnesses under the cross member along the center post (white arrows / white dotted line). Using a flexible pickup tool, route the harness between the front and rear door behind the panel following the existing wiring harness (Fig.26).

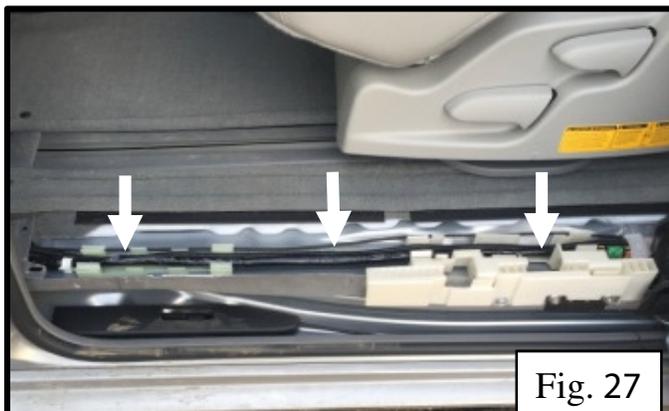


Fig. 27

12. Continue routing the harness along the sliding door threshold following the existing wiring harnesses, using 3 cable ties (white arrows) spaced out evenly in the span to secure to the existing harness as shown (Fig.27).

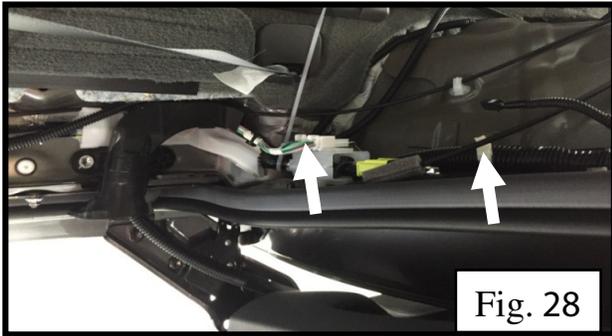


Fig. 28

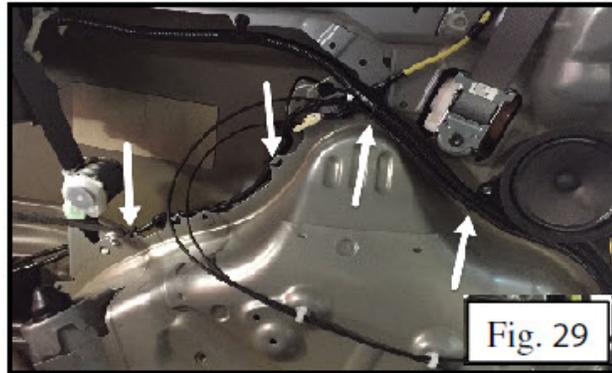


Fig. 29

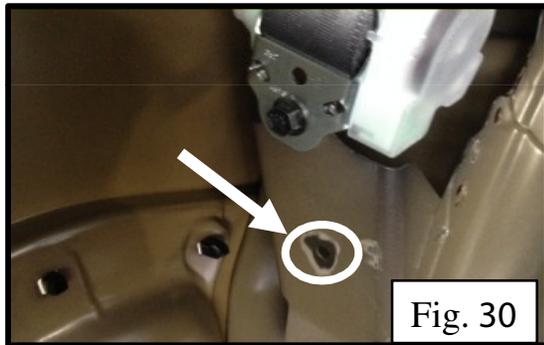


Fig. 30

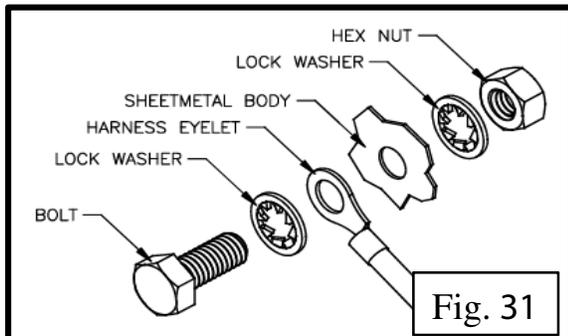


Fig. 31



Fig. 32

Harness Installation

13. Before proceeding, make sure that the panels and threshold plates can be reinstalled and do not cut or pinch the harness or the existing wiring.



14. Route the harness up through the inner structure of the driver's side quarter panel, using 2 cable ties (white arrows) to secure to the existing harness as shown (Fig.28).

15. Continue routing the harness up over the wheel well, using cable ties (white arrows) to secure to the existing harness as shown (Fig.29).

16. Using grinder or scraper remove paint off metal at ground connection point (white circle/arrow). Size of removed area should be at least as large as lock washer from hardware kit (Fig.30).



17. Install wiring harness ground terminal with 13mm socket and ratchet and 13mm wrench using hardware provided. Use the Hex Bolt, (2) Lock Washers, and Hex Nut from the Hardware Bag in the stackup shown to attach to ground connection point (Fig.31). Tighten the nut to 5.4 N•m (48 in-lbf) (Fig.32).



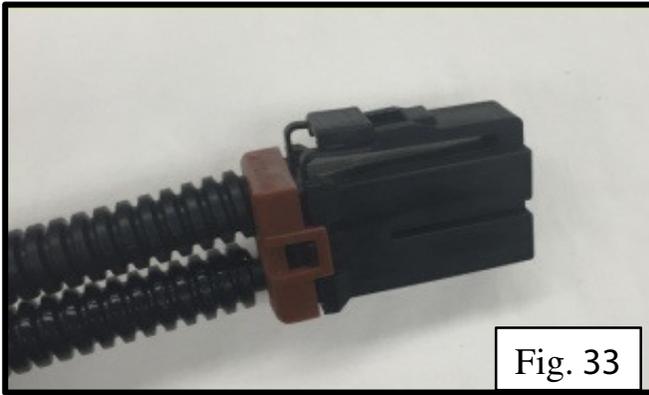


Fig. 33

Harness Installation

- Remove electrical tape from routed wire terminal.
18. Connect positive wire back into wiring harness connector - terminal is polarized and will only latch in when inserted correctly. Pull back on wire once inserted to test connection. Replace wire retainer on back of connector (Fig.33).

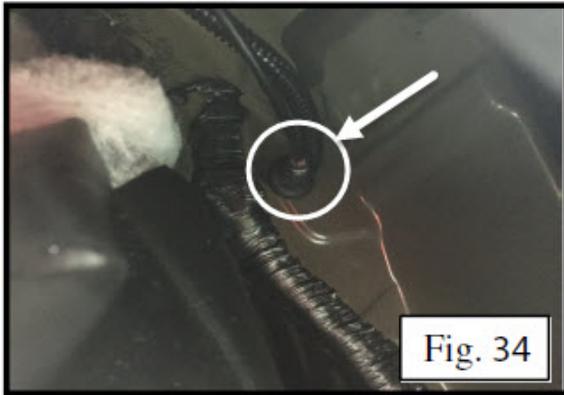


Fig. 34

19. Seal area around harnesses through the firewall (white circle/arrow) with automotive sealant (not provided) (Fig.34).



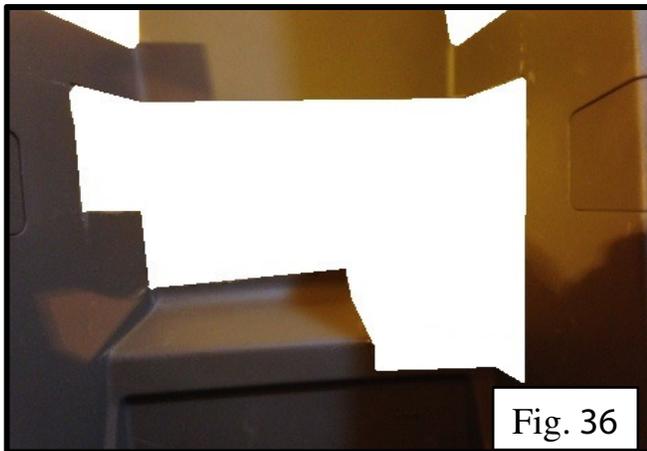
Fig. 35

Bracket Installation

1. Using cutting tool, cut side panels removed previously and top panel still installed along the traced lines from the template (Fig.35).



Note: Use caution when cutting top panel in place.
On power liftgate models, a wiring harness is located just above the cutout area.



Bracket Installation

2. Remove cut out sections of panel. (Fig.36).



Fig. 36

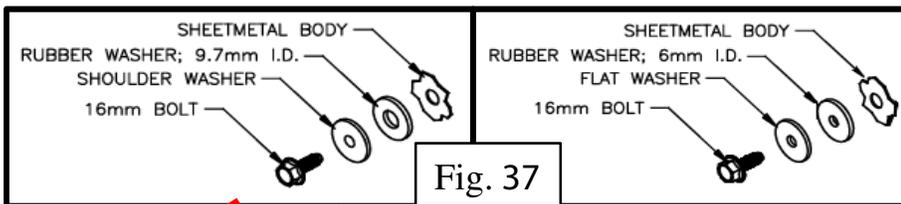


Fig. 37



Fig. 38

3. Install bracket with 10mm socket and ratchet using hardware provided to existing mounting holes. The (3) 16mm long silver flange bolts are used, along with the (2) shoulder washers, (2) rubber washers with 9.7mm ID, and (1) flat washer and (1) rubber washer with 6mm ID. Stackup breakouts are provided (Fig.37).



The left mounting point and the bottom right mounting point (red circle) require the shoulder washer and 9.7mm ID rubber washer. The top right mounting point (yellow circle) requires the flat washer and the 6mm ID rubber washer (Fig.38).

Tighten all bolts to 3.0 N•m (26.5 in-lbf).

4. Reinstall modified panels to original position, making sure to route the harness connection through the opening and above the bracket for access in connecting vacuum assembly (Fig.39).

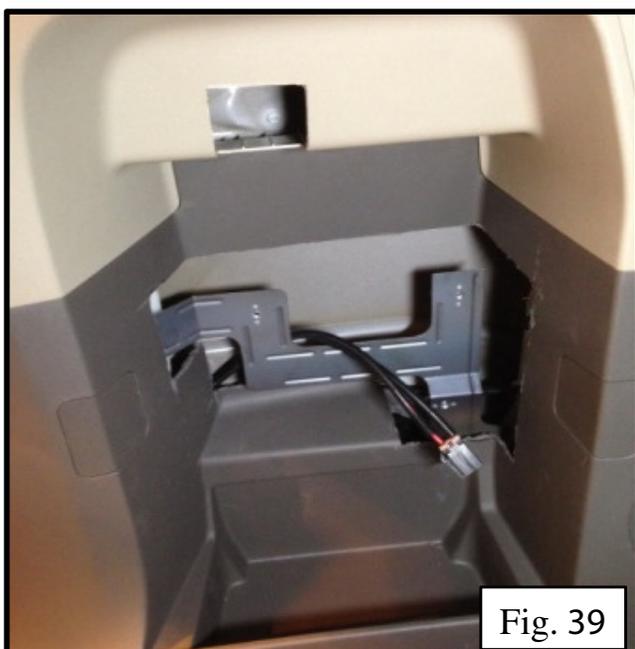
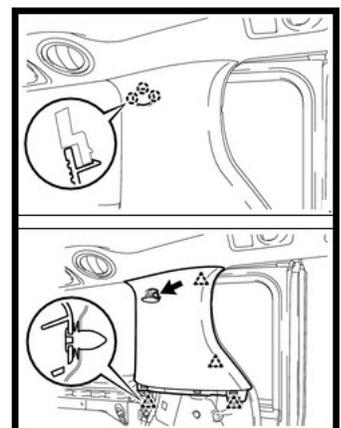


Fig. 39

NOTE: If excessive gap is noticed between main panel and upper C pillar trim; remove cover cap and loosen the 10mm bolt align panels to reduce gap. Retighten 10mm bolt and reinstall cover cap.



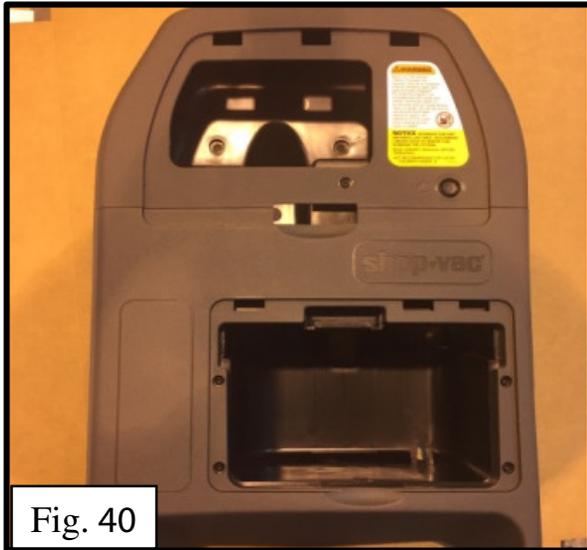


Fig. 40



Fig. 41



Fig. 42



Fig. 43

Vacuum Assembly Installation

1. Remove both panel doors on vacuum assembly, and remove canister assembly (Fig.40).

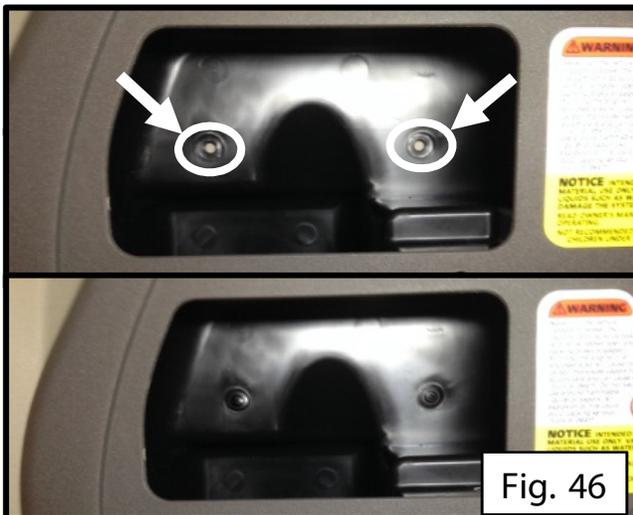
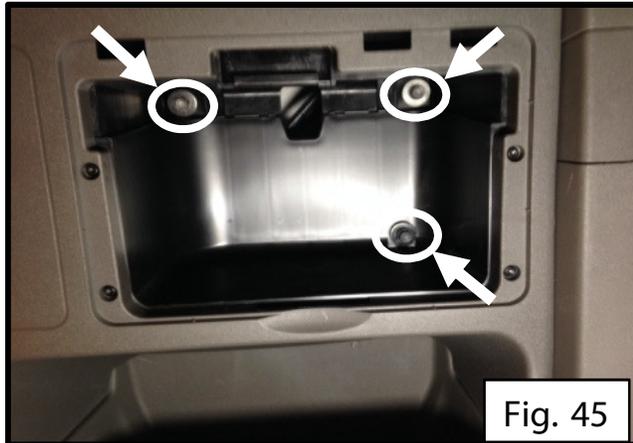
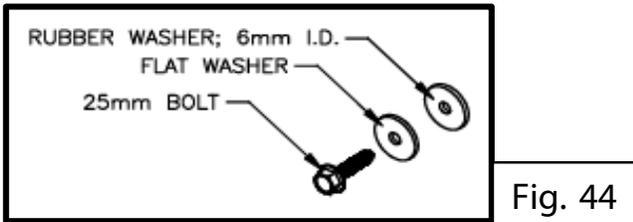
2. Following all guidelines, reinstall the positive ring terminal connection and attach the wiring harness ring terminal to it. Tighten the nut to 7.5 N•m (67 in-lbf).



Note: Make sure to position the ring terminal so that the protective cover can be reattached over the battery post (Fig.41).

Reinstall battery bracket & assembly, if applicable. Reconnect the vehicle's negative battery cable (Fig.42). Tighten the nut to 5.4 N•m (48 in-lbf). Do not touch the positive terminal with any tool when installing the negative battery cable.

3. Plug wiring harness into mating connector on back of vacuum assembly (Fig.43).
4. Press power button to test vacuum for functionality before attaching vacuum assembly to vehicle. If vacuum does not start, and red light on power button flashes, see table of error codes (pg. 16) to aid in troubleshooting. If vacuum does start, press power button again to turn off - light on switch should be off.



Vacuum Assembly Installation

5. Install vacuum assembly with 10mm socket & ratchet using hardware provided to mounting holes on bracket (white circle/arrow). The (3) 25mm long silver flange bolts are used, along with the (3) flat washers and (3) rubber washers with 6mm ID. Stackup breakout is provided (Fig.44).



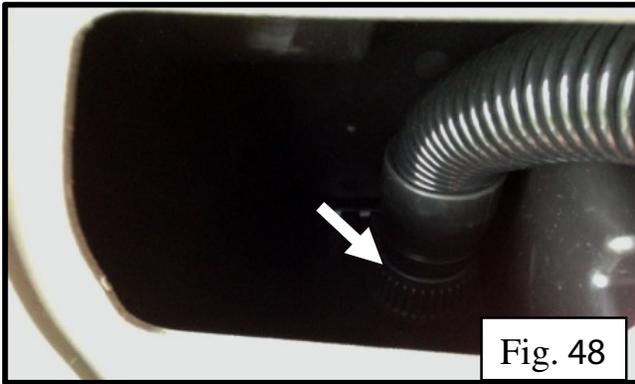
Start all (3) bolts by hand (Fig.45). Before tightening fully, check top edge of vacuum assembly for mating to top panel. If not aligned, loosen bolts and reposition unit. Once unit is aligned with the panel, tighten bolts to 3.0 Nm (26.5 in-lbf).



6. Drill two .25" holes in top panel at hose liner thru holes (white circle/arrow). Insert (2) screw rivets into hose liner at these location and tighten with Phillips screwdriver . (Fig.46).

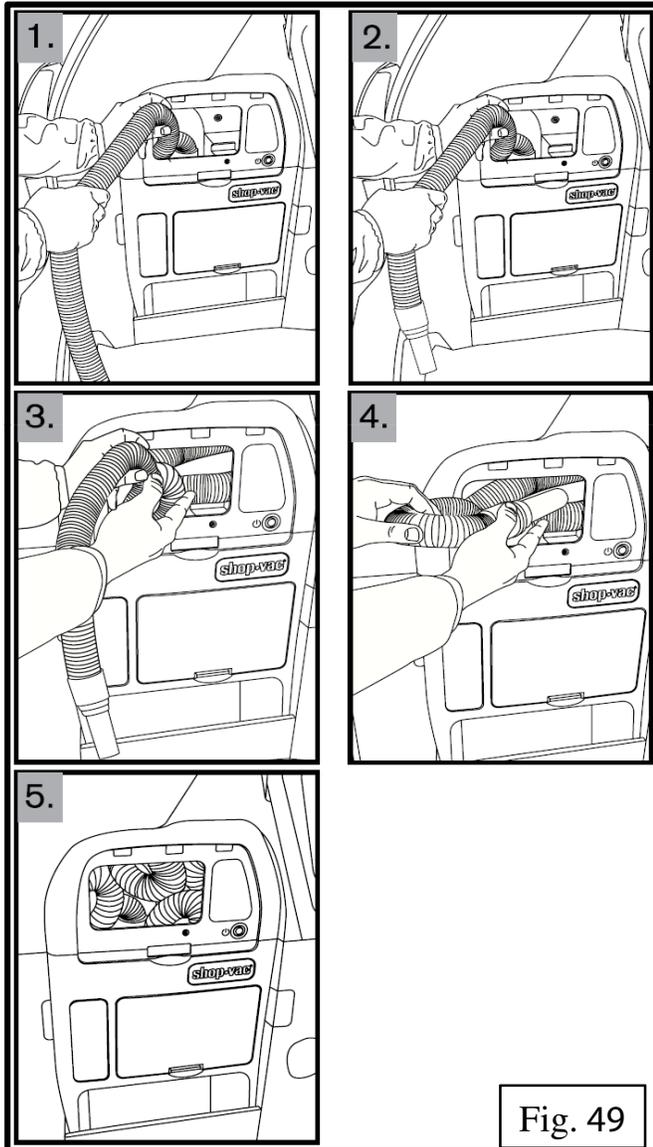


7. Insert canister assembly and panel door covering canister area (Fig.47).



Vacuum Assembly Installation

8. Install hose assembly by threading nut on hose end onto hose attachment point inside hose storage cavity (Fig.48). Press power button again to test vacuum airpath connections - suction should be felt at end of hose assembly. Turn vacuum off using power button.



9. Insert hose assembly into hose storage cavity following steps shown (Fig.49). Install panel door covering hose area.



Vacuum Assembly Installation

10. Place tool kit in area under vacuum assembly (Fig.50). Place user manual in glove compartment.

11. Reposition seat belt (Torque to 42 N•m (31 ft-lbf), thresholds, kick plate and components removed in previous steps.



Error Code Display

1. The following table lists the error codes (listed as Blinking Count) for possible errors the unit will encounter. The blinking will be visible on the LED in the user switch, repeating with a brief pause between counts. This can be stopped by pressing the switch, or the error will timeout on its own after approximately 30 seconds.

Blinking Count	Error Detected
2	Overtemperature
3	Maximum Voltage Exceeded
4	Overspeed
5	Motor Timing Error
6	Motor Overload
7	Voltage Out of Range
8	Locked Motor
10	Battery Voltage Low
12	Battery Voltage Low

<p>CHECKLIST - these points MUST be checked to ensure a quality installation.</p> <p>Check after installation:</p> <ul style="list-style-type: none"><input type="checkbox"/> All removed panels are reinstalled correctly.<input type="checkbox"/> Due to body variance in panels, no gaps greater than 3mm allowed between Vac and body panels.<input type="checkbox"/> Vaccum fuctions properly.<input type="checkbox"/> Tool kit and User manual stored proper location.	