

TOYOTA GRAND HIGHLANDER 2023-

DASHCAM (Digital Video Recorder)

Preparation

Part Number: PT949-34222 (Dashcam)

Legacy Part Numbers: PT949-34221 (Dashcam)
PT949-34220 (Dashcam)

Dashcam Kit Contents

Item #	Quantity Req'd.	Description
1	1	Dashcam Main Unit
2	1	SD Card Holder
3	1	SD Card (16 GB)
4	1	Window Mounting Plate
5	1	Foam Tape
6	2	Cable Ties
7	1	Quick Start Guide

Vehicle Service Parts (may be required for reassembly)

Item #	Quantity Req'd.	Description
1	Up to 4 pcs	Roof Console YELLOW Clips if damage occurs during removal. P/N: 90467-09245
2		
3		
4		

Y-Harness Kit Contents

Item #	Quantity Req'd.	Description
1	1	Mirror Patch Y-Harness
2	2	Foam Tape
3	4	Cable Ties

Kit Service Parts (may be required in future)

Item #	Part Number	Description
1	PT949-34220-AA	Camera Unit + SD
2	PT949-60220-AB	SD Card 16GB Industrial
3	PT949-60220-AC	SD Card Holder Assembly
4	PT949-08210-AD	Window Plate with Tape

Additional Items Required For Installation

Item #	Quantity Req'd.	Description
1	1	PT949-34222 (Dashcam Unit)
2		

Conflicts

N/A

Recommended Tools

Personal & Vehicle Protection	Notes
Seat Protection	
Dash Protection	
Temperature Gauge	
Special Tools	Notes
Gra24-0003 Install Aid	For Port Installations Only The legacy part number PT949-IAD0M also valid and can be used.
Installation Tools	Notes
Panel Tool	
Socket Wrench	With 10 mm Socket
Torque Wrench	With 10 mm Socket
Hooked Panel Tool	
Needle Nose Pliers	For Sun Visor Clip Removal
Special Chemicals	Notes
VDC Approved Cleaner	To Clean Windshield

General Applicability








All Models

Recommended Sequence of Application

Item #	Accessory
1	Dashcam (PT949-34222)
2	

*Mandatory

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.
	REGULATORY MARK: This mark indicates the component is related to regulatory compliance

TOYOTA GRAND HIGHLANDER 2023 - DASHCAM (Digital Video Recorder) Procedure

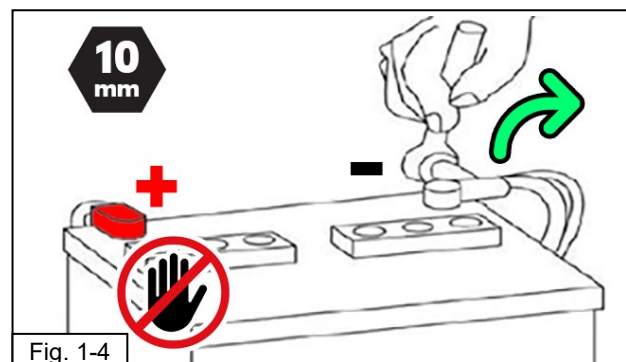
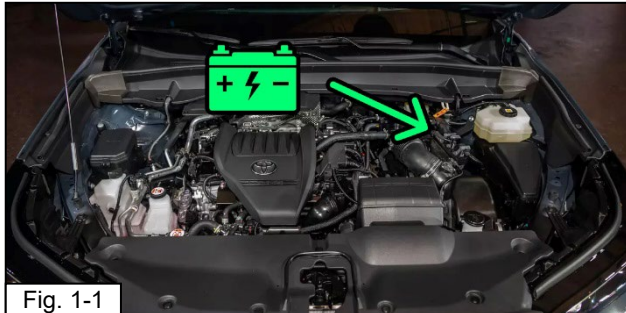
Care must be taken when installing this accessory to ensure damage does not occur to the vehicle. The installation of this accessory should follow approved guidelines to ensure a quality installation.

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, rechecking torque procedure, etc.).
- Vehicle Disassembly/Reassembly (panel removal, part storage, etc.).
- Electrical Component Disassembly/Reassembly (battery disconnection, connector removal, etc.).

Please see your Toyota dealer for a copy of this document.



1. Disconnect Battery

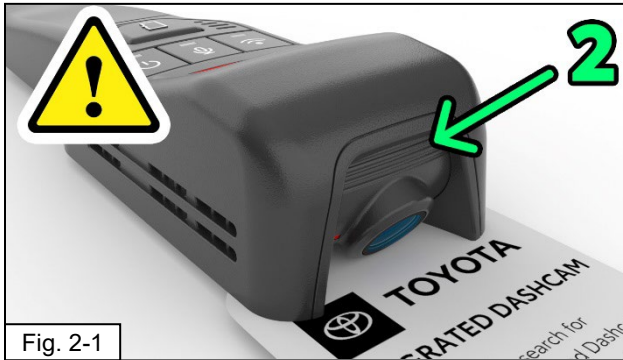
- (a) Protect the fender / bumper before starting.
- (b) The engine components and coolant may be hot.

CAUTION: Do not touch the positive terminal with any tool during battery disconnection.

NOTE: Reinstall DCC Cut Fuse (Short Pin) if applicable. (Validate location by following fuse box diagram in reverse side of relay cover).

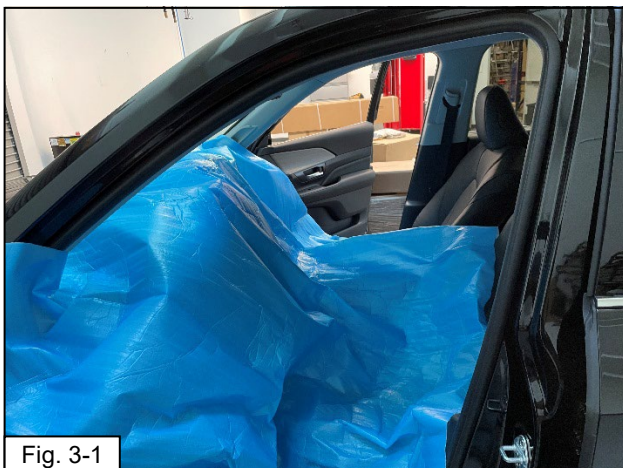
Battery Disconnection:

- (c) The 12V Battery in the Gas powered Grand Highlander is located in the engine bay (Fig. 1-1)
- (d) The 12V Battery in the Hybrid powered Grand Highlander is located in the trunk compartment on the passenger side. (Fig. 1-2).
- (e) Protect the Fender / Bumper paintwork.
- (f) If working on the Hybrid model, remove the cargo trim panel and remove the battery cover panel. (Fig 1-3).
- (g) Disconnect the Negative Cable by loosening the 10 mm nut shown by the arrow. It is not necessary to fully remove this nut. (Fig. 1-4)
- (h) Keep the Negative Cable away from the battery terminal to avoid accidentally reconnecting the 12V power if the cable falls back to its natural shape.



2. Kit Preparation

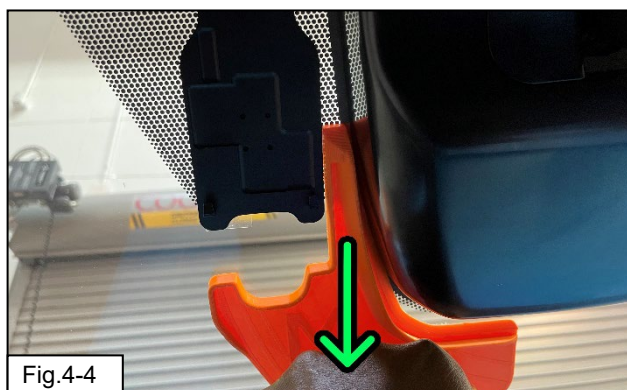
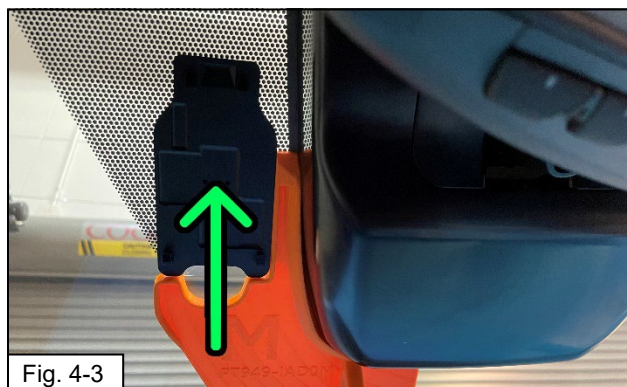
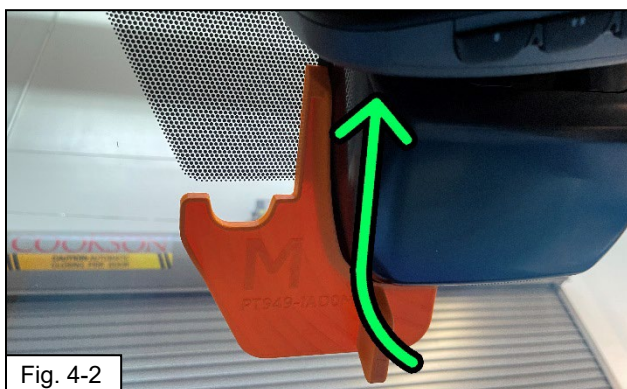
- (a) Check the Dashcam Kits for missing contents or damage.
- (b) Confirm Camera Angle Position – 2 visible recessed lines should be seen below the lens with the camera held in the as-installed orientation. (Fig. 2-1, Note: Camera is upside down in the image)



3. Vehicle Protection

- (a) Apply Vehicle Protection to driver and passenger's seat, steering wheel, dashboard, and center console. (Fig. 3-1, 3-2)





4. Install Windshield Base Plate



STOP: The front windshield must be at least 50°F (10°C).

(a) On the driver's side of the vehicle, using window cleaner and a lint free cloth, clean the windshield area next to the TSS cover.



(b) For PPO Installations, please use 3D hard template "M" with the part number **"Gra24-0003"** (Legacy: **PT949-IAD0M**) (Fig. 4-1) and follow steps (d) through (f).



(c) For Dealer Installations or in the case that the 3D hard template is unavailable, please follow steps (g) through (i)

(d) Insert the 3D Template (**Gra24-0003**) between the TSS cover and the windshield glass, it should fit snugly against the TSS cover side walls, and the features of the template should allow it to stay in place hands free. If not, apply a small bit of tape for support to the lower edge. (Fig. 4-2)

(e) Remove adhesive and stick mounting plate on windshield while aligning to the lower and right-side edges of the mounting plate. Press firmly to reduce visible air pockets. Note that the narrow end of the plate is towards the top of the windshield. (Fig. 4-3)

(f) Remove the 3D hard template by gently pulling towards the base of the windshield (wiper cowl area) to slide it out from under the TSS cover. (Fig. 4-4)



Fig. 4-5



Fig. 4-6

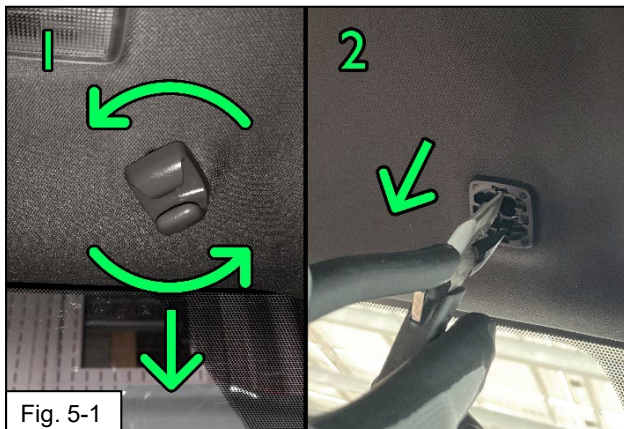


Fig. 5-1

For Dealer Installations / No 3D Hard Template Available:

- (g) Using scissors, cut the paper template as indicated. For PPO Installations, please use 3D hard template provided.
- (h) Referencing the TSS cover, align to the indicated line and affix the template to the windshield using tape. (Fig. 4-5)
- (i) Remove adhesive and stick mounting plate on windshield paying attention to the reference lines on template. Press firmly to reduce visible air pockets. Note that the narrow end of the plate is towards the top of the windshield. (Fig. 4-6)
- (j) Once the base plate is fitted, remove template in the direction towards the lower edge of the windshield and clean any tape residue from the glass.

All Installation types continue from here onwards.

5. Remove Visor Mount Clips and Base

- (a) Remove the Sun Visor Hooks on BOTH Driver and Passenger side of the Map Light Console, to allow for gentle pulling down of the headliner without damage.

⚠ Note: Both sides remove in the same direction, Passenger side is not mirrored.

- (1) Twist the Visor Hook Anti-Clockwise and pull down to release hook component. (Fig. 5-1)
- 🦴 (2) After removing the hook component, release the two tabs and pull out the base, needle nose pliers recommended.



Fig. 6-1

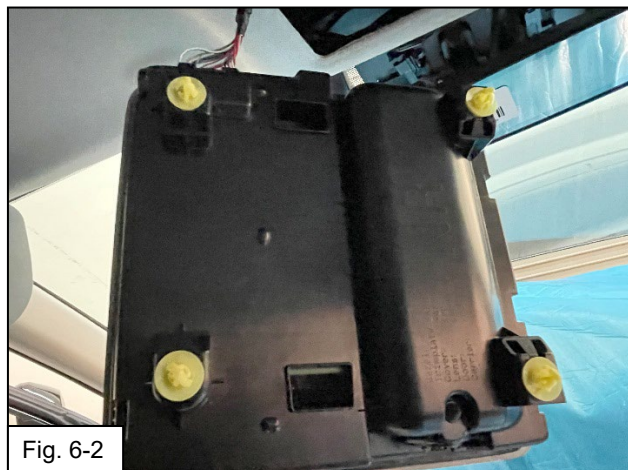




Fig. 6-2

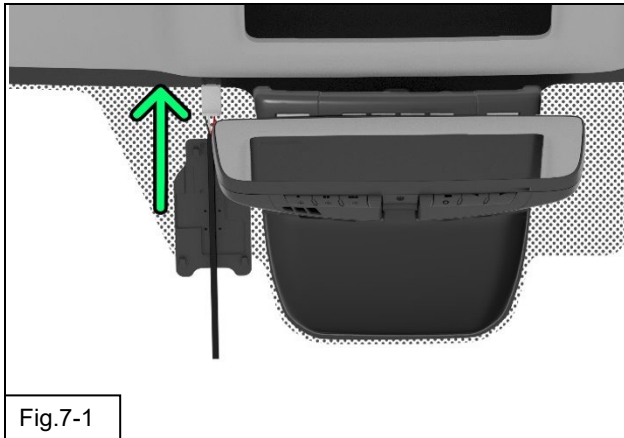


Fig. 6-3

6. Remove Roof Map Light Console

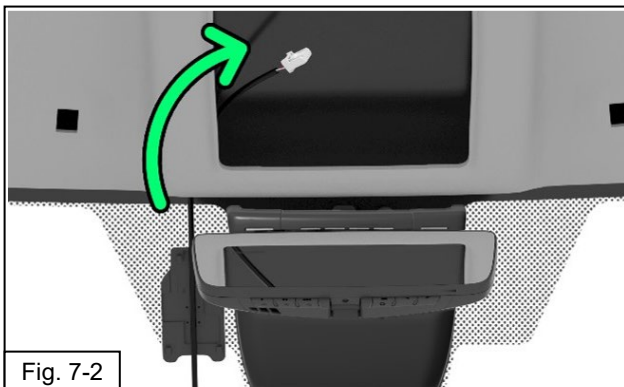
Remove the roof console by first moving the mirror down for clearance, then by pulling down firmly on the forward edge (towards the front of the vehicle). Pull down firmly to release front 2 clips first then again pull down on the clear plastic lens to release the 2 clips at the rear edge. Do NOT pull down on the rear edge first as this may cause visible headliner damage. (Fig. 6-1)

-  (1) A plastic panel removal tool may be used to pull down on the console.
-  (2) CAUTION: Do **not** pry against the headliner or it will leave visible damage.
- (3) Note clips appearance in the image to better understand the removal process. (Fig. 6-2)
- (b) Once fully detached, disconnect the wire harness from the roof console and place the console in a safe place to avoid damage. (Fig. 6-3)
- (c) Inspect the console clips and replace if damaged (Yellow: 90467-09245)



7. Route Dashcam Harness through the Headliner

- (a) From the Driver's side of the vehicle, feed the Dashcam's pigtail harness up into the headliner, directly above the Dashcam mounting plate fixed to the windshield. Take care not to crease the headliner in the process. (Fig. 7-1)



- (b) Route the Dashcam pigtail through the headliner to the map light console area. (Fig. 7-2)



- (c) Pull the majority of the wire length through to the console area so that the camera is ready to mount on to the window plate. (Fig. 7-3)



Fig. 8-1

8. Fitting the Dashcam to Base Plate



NOTE: The Hang Tag that is attached to the Dashcam is **only to be removed by the end user**. As the camera turns on with ignition, the hang tag is intended to block recording while the vehicle is being processed through areas which may be confidential / contain unreleased vehicles.



Do NOT remove the hang tag, please handle it with care to prevent accidental removal. (Fig. 8-1)



(a) **IMPORTANT: Remove the Semi-Transparent Blue Film** protective cover from the camera lens before fitting the camera to the vehicle. Handle the camera with care after removing. Ensure the film cover is not left behind in the vehicle and is properly discarded. (Fig. 8-2)



Fig. 8-2

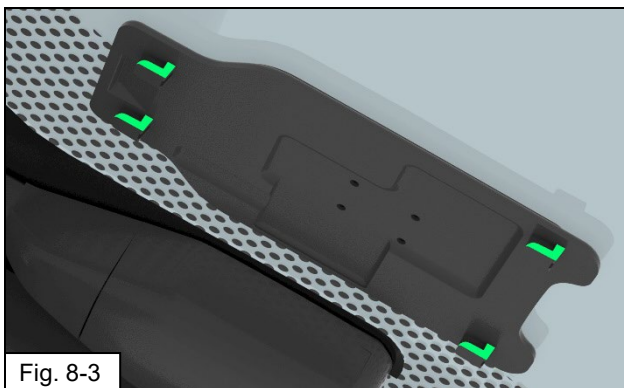


Fig. 8-3



NOTE: Observe the shape of the T-hook features for the Dashcam to lock on to. The hooks face upwards towards the headliner. (Fig. 8-3)

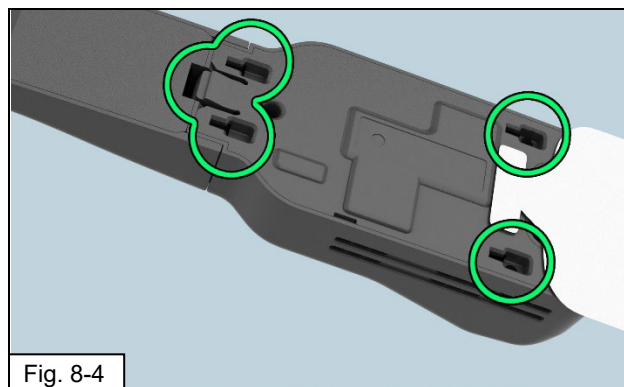
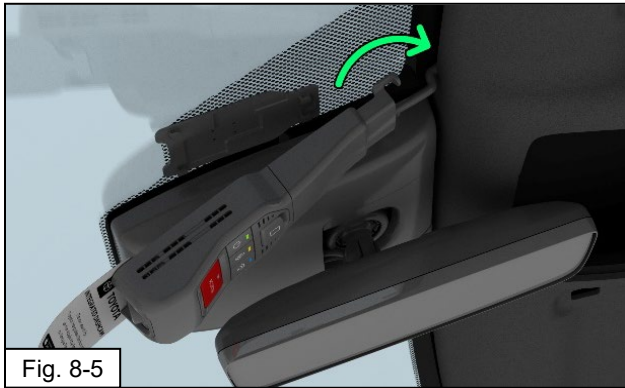
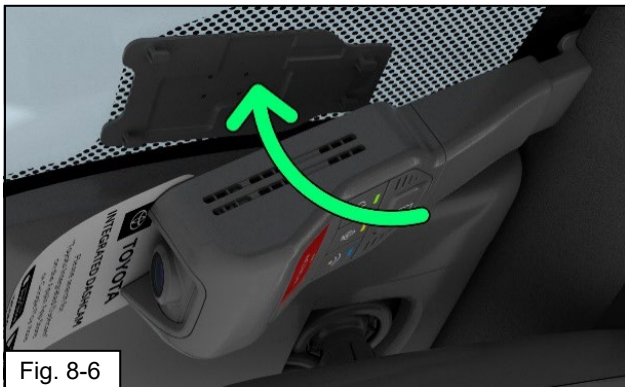


Fig. 8-4

(b) The Dashcam is affixed to the window by sliding on to these 4 T-hooks and allowing the clip to engage. (Fig. 8-4)



- (c) Hook the Dashcam wire extension cover hooks into the leading edge of the headliner. (Fig. 8-5)



- (d) Swing the Dashcam unit up towards the base plate. Check for alignment of the 4 T-hooks. (Fig. 8-6)

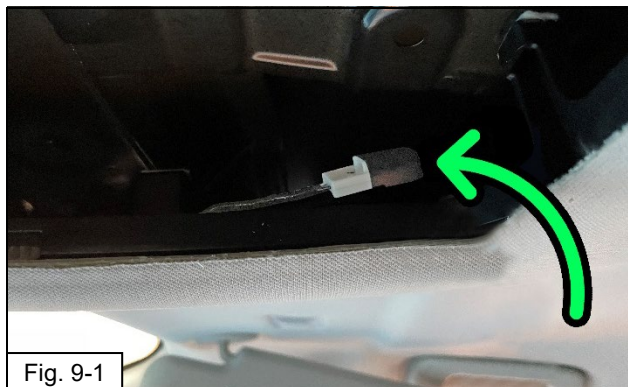


- (e) Push the dashcam unit in towards the windshield to ensure all 4 T-hooks are in the correct starting point. All sides should have a consistent gap to the glass. (Fig. 8-7)



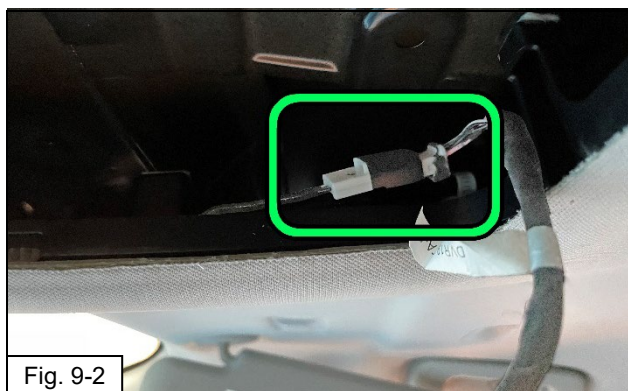
- (f) Slide the Dashcam down towards the T-hooks and engage the clip that secures it. Adjust the telescopic wire harness cover as required to sit correctly, and confirm the hooks are tucked inside the leading edge of the headliner. (Fig. 8-8)



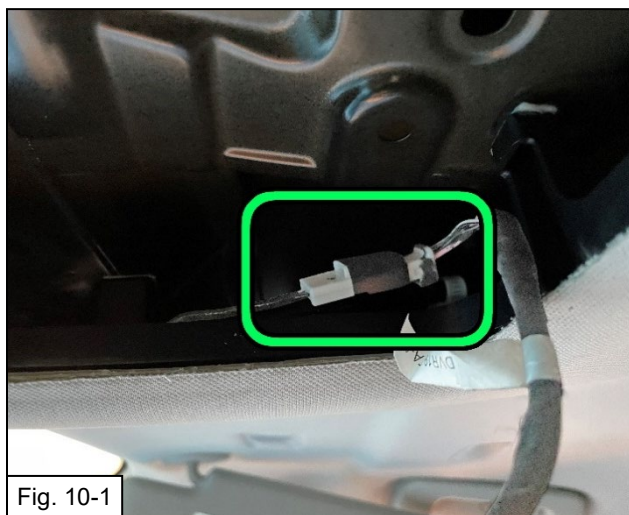


9. Connect the Power Harness

- (a) Locate the Dashcam Pre-wire harness connector secured on the Passenger's side of the Map Light Console opening. It is the white 5 pin connector that will appear to be unused. (Fig. 9-1)



- (b) Connect the Dashcam Pigtail harness to this pre-wire connector, ensuring there are no obstructions preventing bundling of the harness. (Fig.9-2)



10.Route / Bundle Wire Harness

- (a) Confirm that the Dashcam Pigtail Harness is securely fitted to the pre-wire connector. Ensure that the Pre-wire connector is still securely mounted in its original location on the headliner plastic frame. (Fig 10-1)



Note: As the connector is securely mounted, it is not necessary to use the included foam tape to cover the connector and these may be discarded.

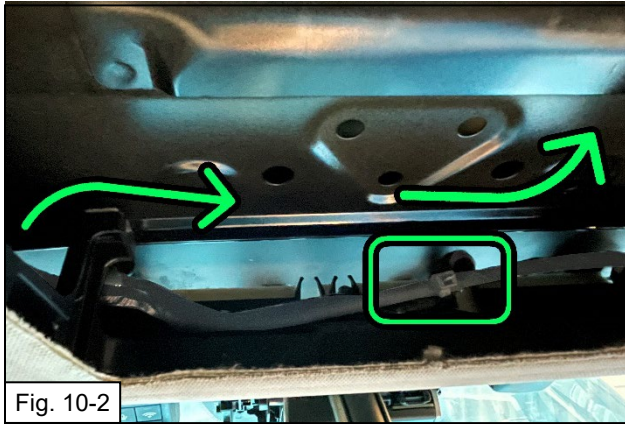


Fig. 10-2



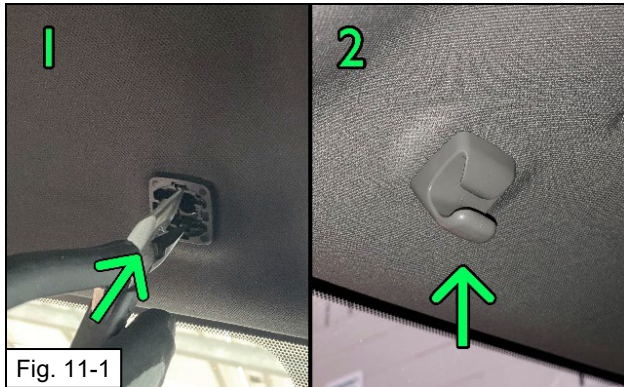
Fig. 10-3

- (b) Secure the Dashcam pigtail harnesses against the existing harness that leads to the Pre-Wire Connector on the passenger's side of the map light / sunglasses pocket opening. Loop and bundle them as required. Arrange this in a way that does not obstruct the console being reinstalled. Tighten the zip tie and snip off the excess, and then **orient the zip tie to have the block in the upright position to prevent noises from contact with the overhead console.** (Fig. 10-2)

- (c) Ensure that the connection for the console is still free to be connected and that the bundled harnesses are not obstructing the console map light connector. (Fig. 10-3)

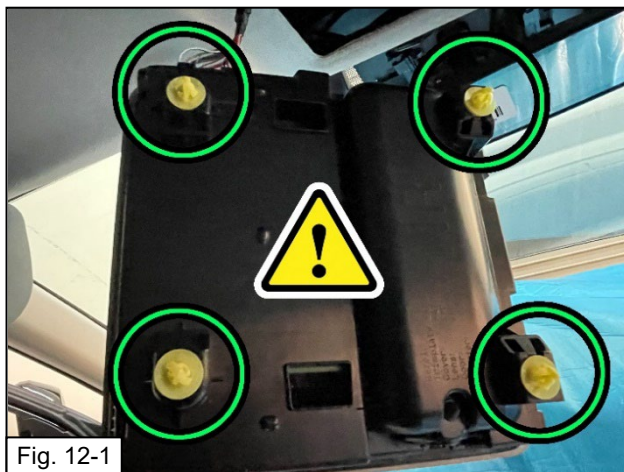
- (d) **Note:** Take care not to cause bulging in the headliner. Some adjustments to the bundle may be required to avoid bulging the headliner.

- (e) **Note:** Do not block access to the clip holes in the body structure or the roof console may not fit properly.



11. Reinstall Sun Visor Clips

- (a) Insert the clip bases on both sides of the map light console, they should snap securely into place. (Fig. 11-1 L)
- (b) Insert the visor clips by placing them in the correct orientation and pushing them directly up into the bases. (Fig. 11-1 R)

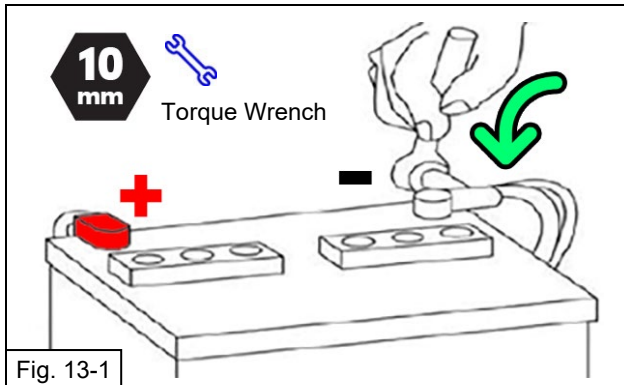


12. Reinstall Overhead Console

- (a) Re-connect harness for the overhead console, test map lights and sunroof control if equipped. (Fig. 12-1)
- (b) Check all console clips are in good condition and are present on the console. If any are still installed in the roof of the vehicle and have separated from the console, a panel tool with a forked end can be used to pry them out, then reinstall in the console. (Fig. 12-1)
- (c) Reinstall the console by carefully aligning the clips towards the front of the opening and observe the marks in headliner for alignment references. Carefully push in to place to lock, starting at the front and then the rear. Take care not to apply pressure to the lens covers or sunglasses holder door. Check all corners for gaps. If needed, reposition harnesses and try again. (Fig. 12-2)



-  (d) **Note: Be careful aligning the clips to holes to avoid damage.**



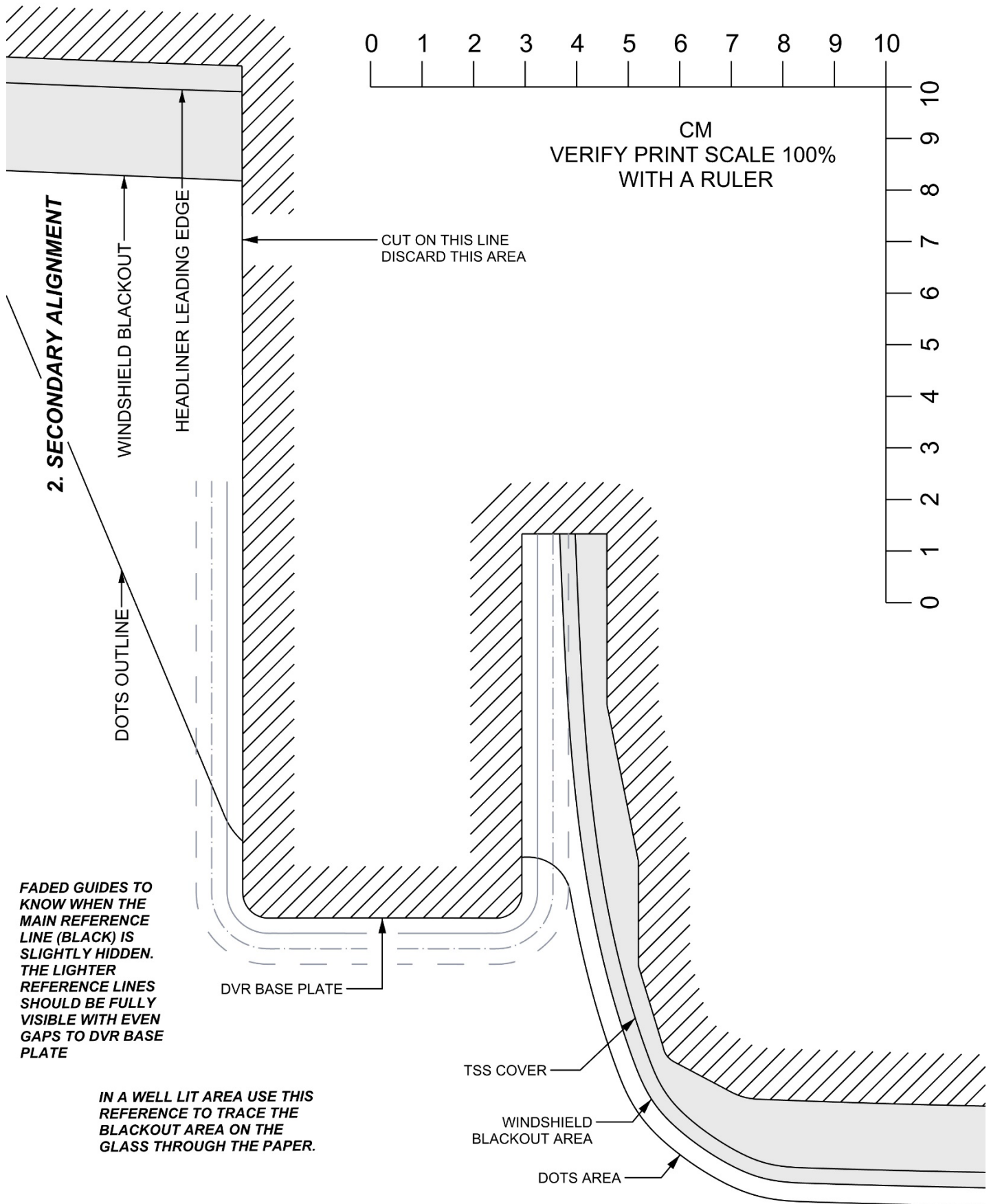
13. Reconnect Vehicle Battery

- (a) Reconnect the Negative Battery Cable and replace cover trim if necessary.
- (b) Torque to 5.4 N•m (48 in•lbf)
- (c) **CAUTION:** Do not touch the positive terminal with any tool.

14. NOTE: Remove DCC Cut Fuse (Short Pin) if applicable. (Validate location by following fuse box diagram in reverse side of relay cover).

15. Owner's Manual

Place the Owner's Manual ("Quick Start Guide") in the glove box with the other vehicle owner's manuals.



TOYOTA INTEGRATED DASHCAM 2024+ GRAND HIGHLANDER LHS TEMPLATE

TOYOTA GRAND HIGHLANDER 2023 - DASHCAM (Digital Video Recorder)

Checklist - these points **MUST** be checked to ensure a quality installation.

Check:	Look For:
<p><u>Accessory Function Checks</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Verify parts <input type="checkbox"/> Vehicle Startup <input type="checkbox"/> Power LEDs light up <input type="checkbox"/> Remove Blue Film on Dashcam Lens <input type="checkbox"/> Verify that Dashcam Pamphlet is placed in glovebox. 	<p>Removed items have been discarded & replaced items are in place</p> <p>Confirm Dashcam does not emit a continuous beep on vehicle startup. If it does, confirm SD card is installed</p> <p>Blue Lens Protector Film should be removed and discarded.</p>
<p><u>Vehicle Function Checks</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Standard exterior lights - low / high beams, left / right turn signal, emergency signal <input type="checkbox"/> Roof Console functions – map lights, sunroof / panoramic roof controls if equipped. <input type="checkbox"/> EC Mirror – Confirm power and dimming. <input type="checkbox"/> Mirror – View Angle 	<p>Confirm standard lighting functions work properly.</p> <p>Confirm roof console functions work properly.</p> <p>Confirm EC Mirror power status LED visible, cover the transparent lens on the reverse side with your hand, the mirror glass should fade darker after a few seconds.</p> <p>Confirm mirror is adjusted correctly for visibility for the average driver.</p>
<p><u>Vehicle Appearance Check</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> After accessory installation and removal of protective cover(s), perform a visual inspection. <input type="checkbox"/> All Templates and Tools removed from the vehicle. 	<p>Ensure no damage (including scuffs and scratches) was caused during the installation process. (For PPO installations, refer to TMS Accessory Quality Shipping Standard.)</p> <p>Confirm Windshield Template and all tools have been removed from the vehicle.</p>