

Toyota (Push-to-Start)

Avalon		19						
Avalon Hybrid		19						
Camry	18	19	20	21	22	23	24	
Camry Hybrid	18	19	20	21	22	23		
Corolla			20	21	22			
Corolla Hybrid			20	21	22			
Highlander			20	21				
Highlander Hybrid			20	21	22	23		
Rav 4		19	20	21				
Rav 4 Hybrid		19	20	21	22	23	24	25

Lexus (Push-to-Start)

ES 300h		19	20	21	22	23	24	
LS 500	18	19						
UX 250H		19	20	21	22	23	24	

*For automatic transmission vehicles only

- This remote start will monitor the vehicle lock circuit and use the pulses generated by pressing Lock>Lock>Lock on your OEM remote to start the vehicle.
- This is a pre-wired "plug & play" kit with the exception of the vehicles listed in Step 1. Locate your specific vehicle in Step 2 - System Wiring Diagram for connections. Any unused wires in the t-harness not shown in your guide can be taped up and tucked up out of the way.
- We have already loaded the correct firmware into the remote start module. You will need to program the module to your vehicle when the wiring is complete, see Step 3 Programming instructions on Pg 23.

Overview

There are 5 basic steps to this remote start installation. We're going to address each of these:

1. Prepare the vehicle & Locate Connectors
2. Make your plug-in and wiring connections
3. Program/pair the remote start to the vehicle
4. Test the system
5. Button it up!

Step 1:

Prepare the Vehicle

The majority of the wiring for the module is done under the dash on the driver's side, so you'll want to install the module in that general area. You will need to remove the plastic from around the steering column and the knee bolster panel under the dash to access the connectors needed for this installation.

Remote Start Module

The ECU and Steering Lock connections are plug-in connections required for all covered vehicles. Make sure you have selected your specific vehicle's system wiring overview in step 3. This is important as vehicles up to 2021 require 3 t-harness connections while vehicles 2022 and up need 4 t-harness connections, some vehicles will also require 1-3 wire to wire connections. Look for a location where there's some open space that will fit the module. Pay attention to moving parts like the pedals, e-brake and steering column. Be sure to route your wiring away from those areas.

Additional Wire Connections

Highlander, and all Hybrid models require 1-3 additional wire connections to remote start via the OEM Key FOB.

- **2020-2021 Highlander Gas** - 2 wires for Telematics Interrupt. **Pages 15, 16, 21, 22**
- **2020-2021 Highlander Hybrid** - 2 wires for Telematics Interrupt, 1 for the start wire. **Pages 17, 18, 21, 22**
- **2022-2023 Highlander Hybrid** - 2 wires for Telematics Interrupt, 1 for the start wire. **Pages 19, 20, 21, 22**
- **2019-2024 Rav4 Hybrid** - 1 additional wire connection for the start wire. **Pages 15, 16**
- **2019-2021 Lexus 300H** - 1 additional wire connection for the start wire. **Pages 17, 18**
- **2019-2022 Lexus UX 250H** - 1 additional wire connection for the start wire. **Pages 19, 20**

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Pages 4-5: Wiring (Gas Only). 100% plug and play, no wire to wire connections needed on the following vehicles: **2019 Avalon - 2018-2022 Camry - 2020-2022 Corolla - 2019-2021 Rav4 - Lexus 2018-2019 LS 500**

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Page 10: Images. **2018-2024 Toyota Camry - 2019-2024 Lexus ES 300h Hybrid**

Page 11: Wiring Diagram. **2018-2022 Toyota Camry Hybrid - 2019 Avalon Hybrid - 2019-2024 Lexus ES 300H Hybrid.**

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Page 21: Telematics Connection. **2020-2023 Highlander WITH Stop/Start Button.**

Page 22: Telematics Connection. **2020-2023 Highlander WITHOUT Stop/Start Button.**

Page 23: Step 3 – Programming the remote start module (all models).

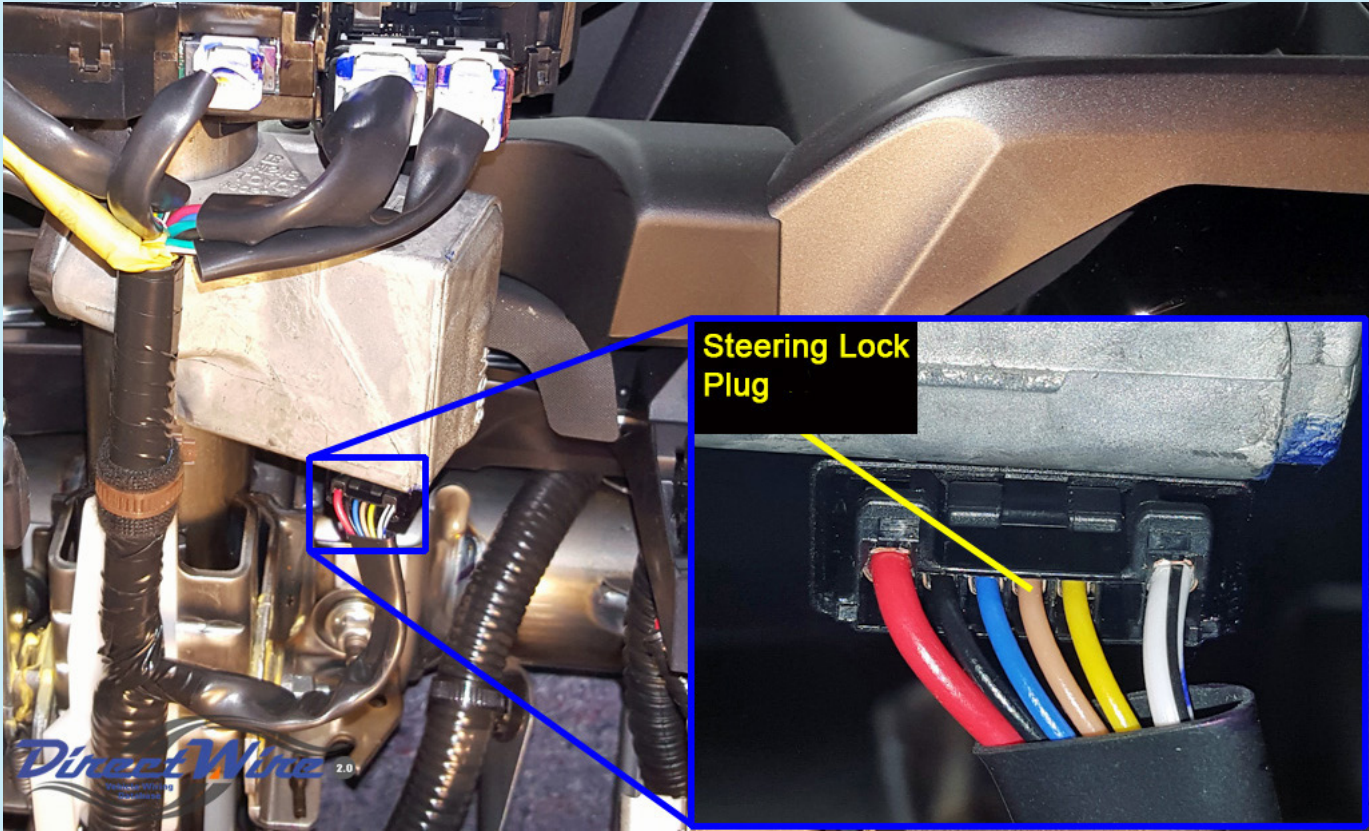
Page 24: Steps 4-5 – Testing the system and Take-Over.

Step 2:

This page outlines the harness connections on earlier vehicles, some 2022 plus models will have the steering lock connector adapted to the vehicles OBD II port instead of at the steering column. For details on your vehicles wiring connections, refer to the System Wiring Diagram page in the guide that matches your year, make, and model. Vehicle specific photos and Telematics wiring instructions are included in this guide.

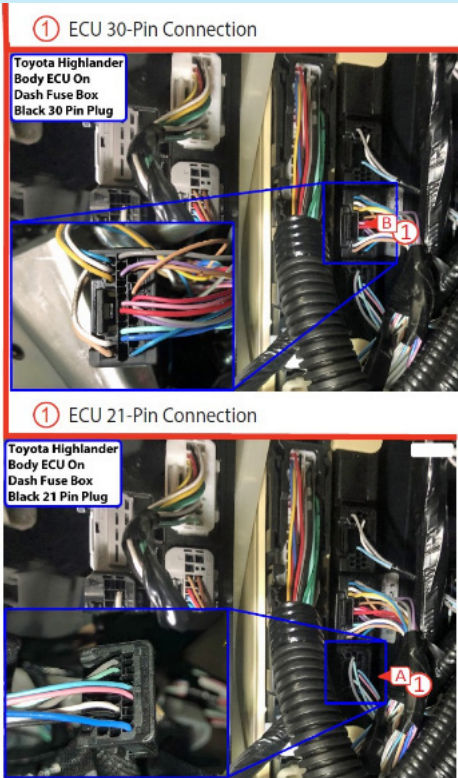
Make Plug in and wire connections

A. Locate the Steering Lock Connector on the underside of the steering column on models up to 2021. Remove the OEM plug from the socket and replace it with the identical plug in the T-harness assembly. Insert the OEM plug in to the female receptacle on the T-harness. See model specific diagram for details on 2022 and up models, they will use the TOY13OBD t-harness that connects to the main harness and connects to the OBD II port.



B. Locate the main ECU - behind the dash on the left side. Release the locking tab on the plug in the center position and the plug under it, then remove and plug it in to the matching receptacles of the T-harness. Insert the male connector from the T-harness in to the vacated positions on the ECU. Note that depending on how the specific vehicle is equipped, the upper and/or lower receptacles on the ECU may have plugs in them. Leave them alone -the only plugs relevant to this installation shown on the diagram.

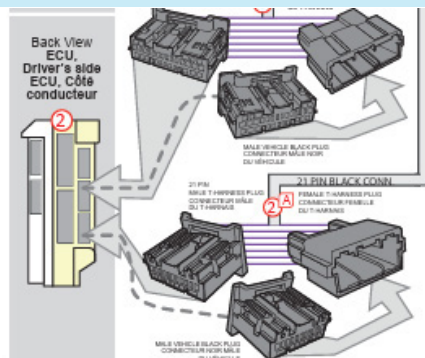
ECU Location Driver's side dash



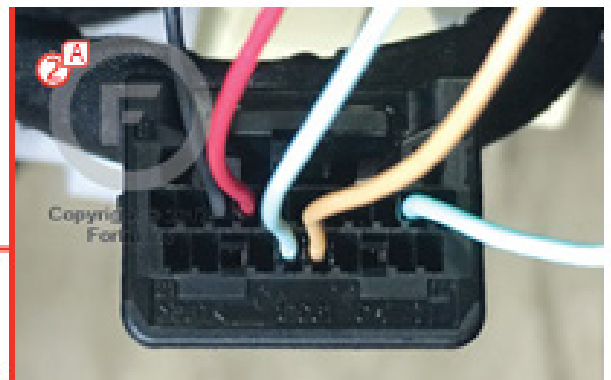
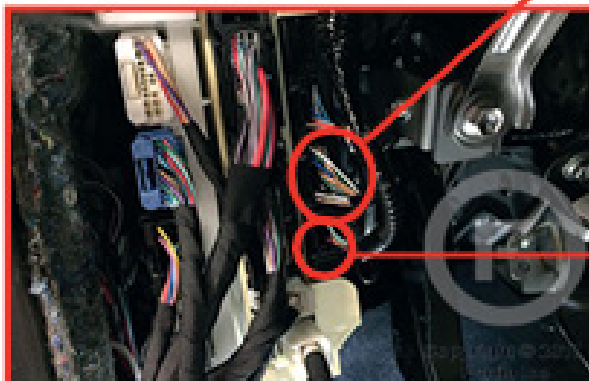
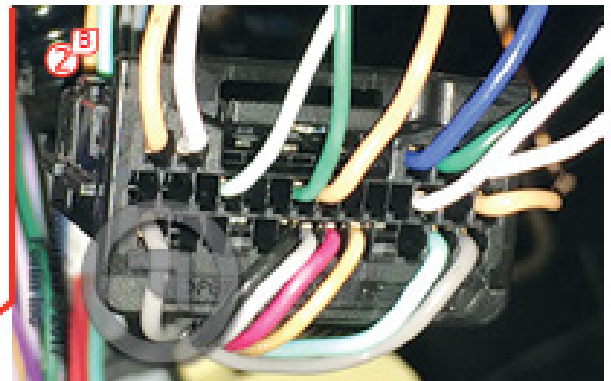
Wire Location Additional Images:

TOYOTA 2019 Avalon Gas Only - 2018-2022 Camry Gas Only - 2020-2022

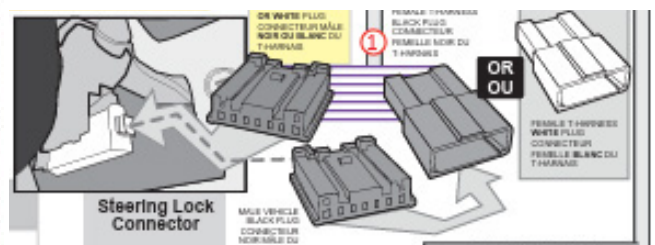
Corolla Gas Only - 2019-2021 RAV 4 Gas Only - LEXUS 2018-2019 LS 500



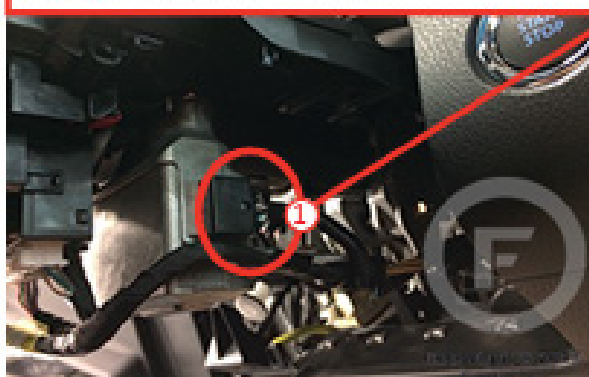
② ECU, Driver's side
ECU, Côte Conducteur



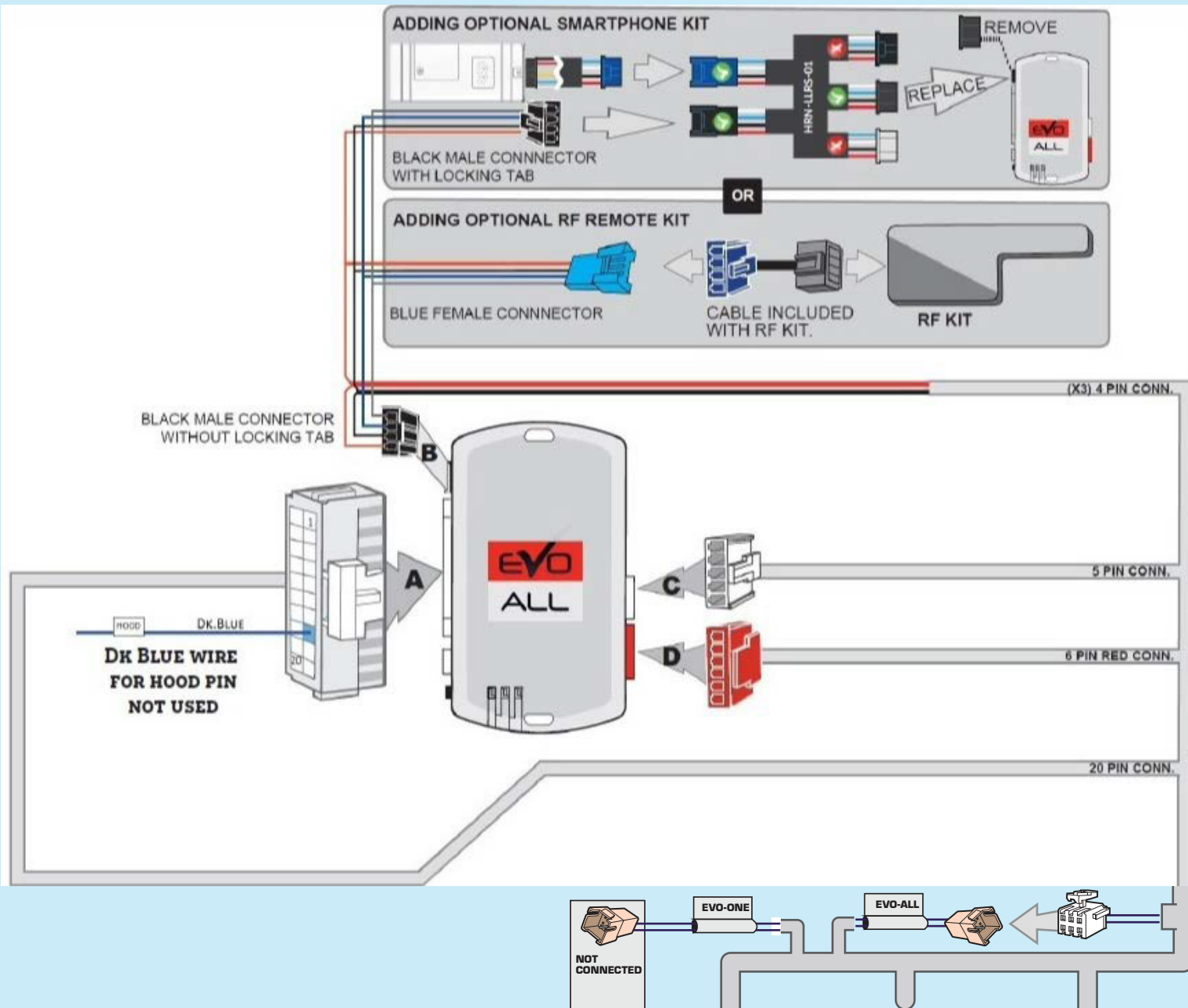
① ③ At Steering Column
À la colonne de direction



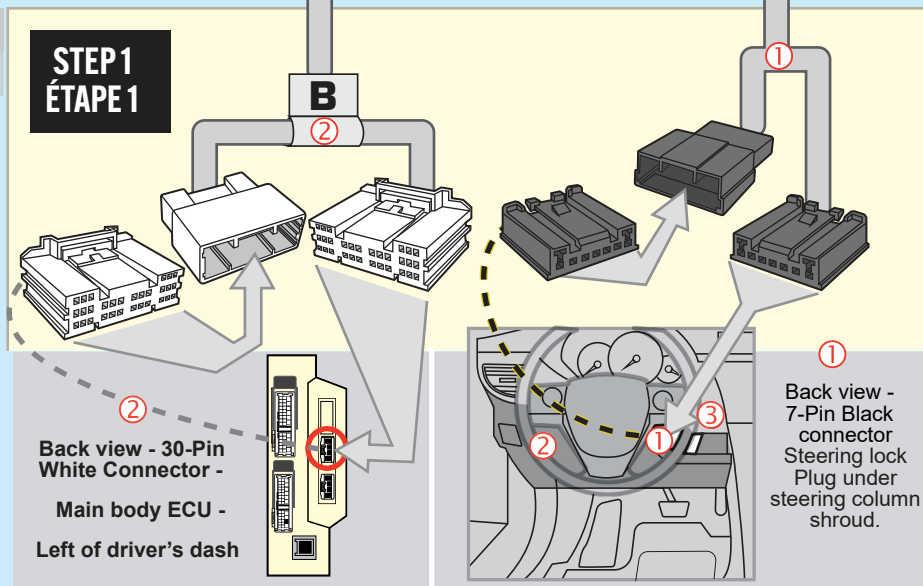
Steering Lock Connector
Connecteur Steering Lock



System Wiring Diagram: TOYOTA - 2019 Avalon Gas- 2018-2022 Camry Gas - 2020-2022 Corolla Gas - 2019-2021 RAV 4 Gas - LEXUS - 2018-2019 LS 500

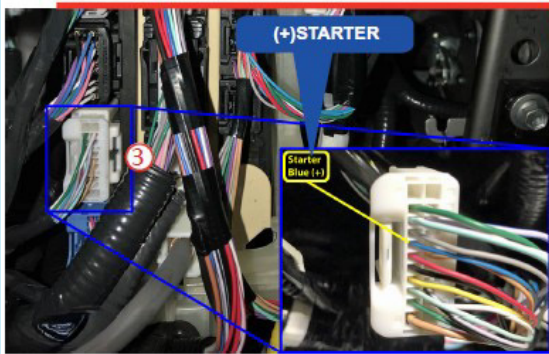


ECU and Steering Lock connections for Toyota Push Start
ECU 30-Pin White / Steering Lock 7-Pin Black

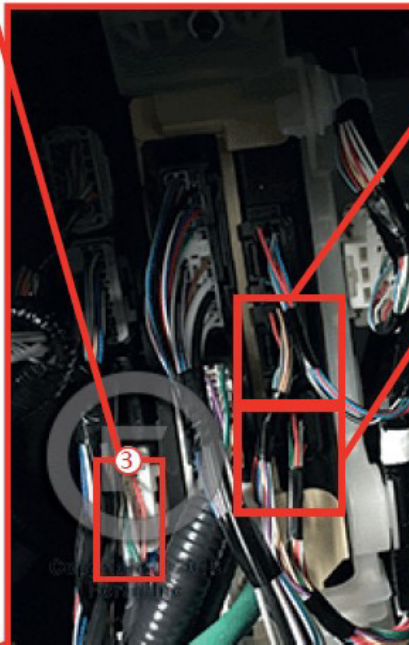


Move on to programming the module at the end of this guide.

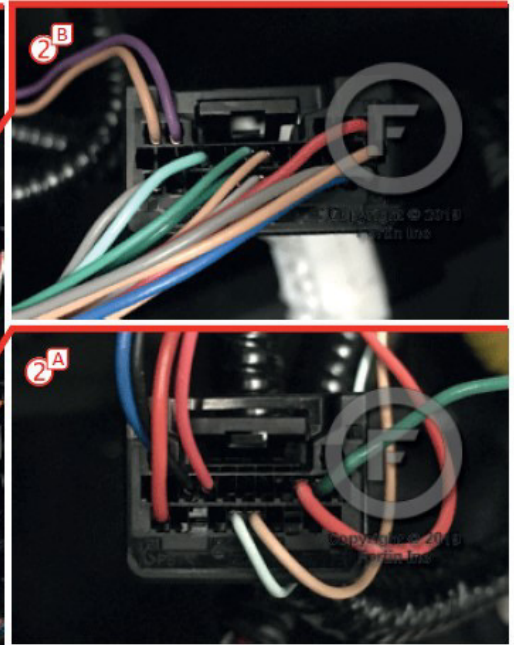
STARTER WIRE CONNECTORS



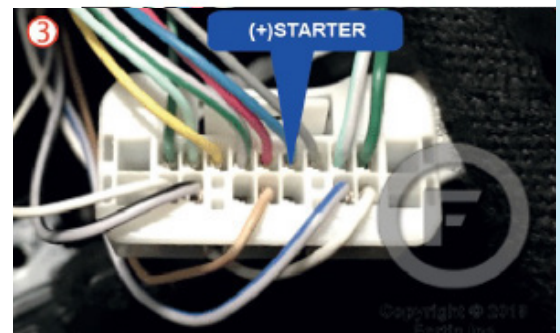
②③ ECU, Driver's side



ECU CONNECTORS

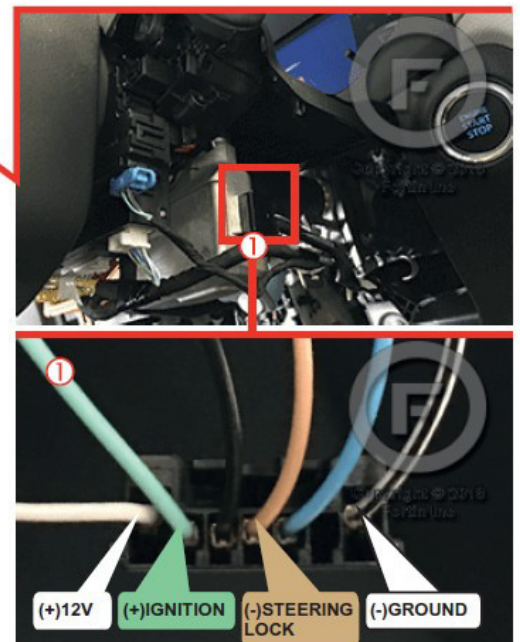


STARTER WIRE (+) BLUE

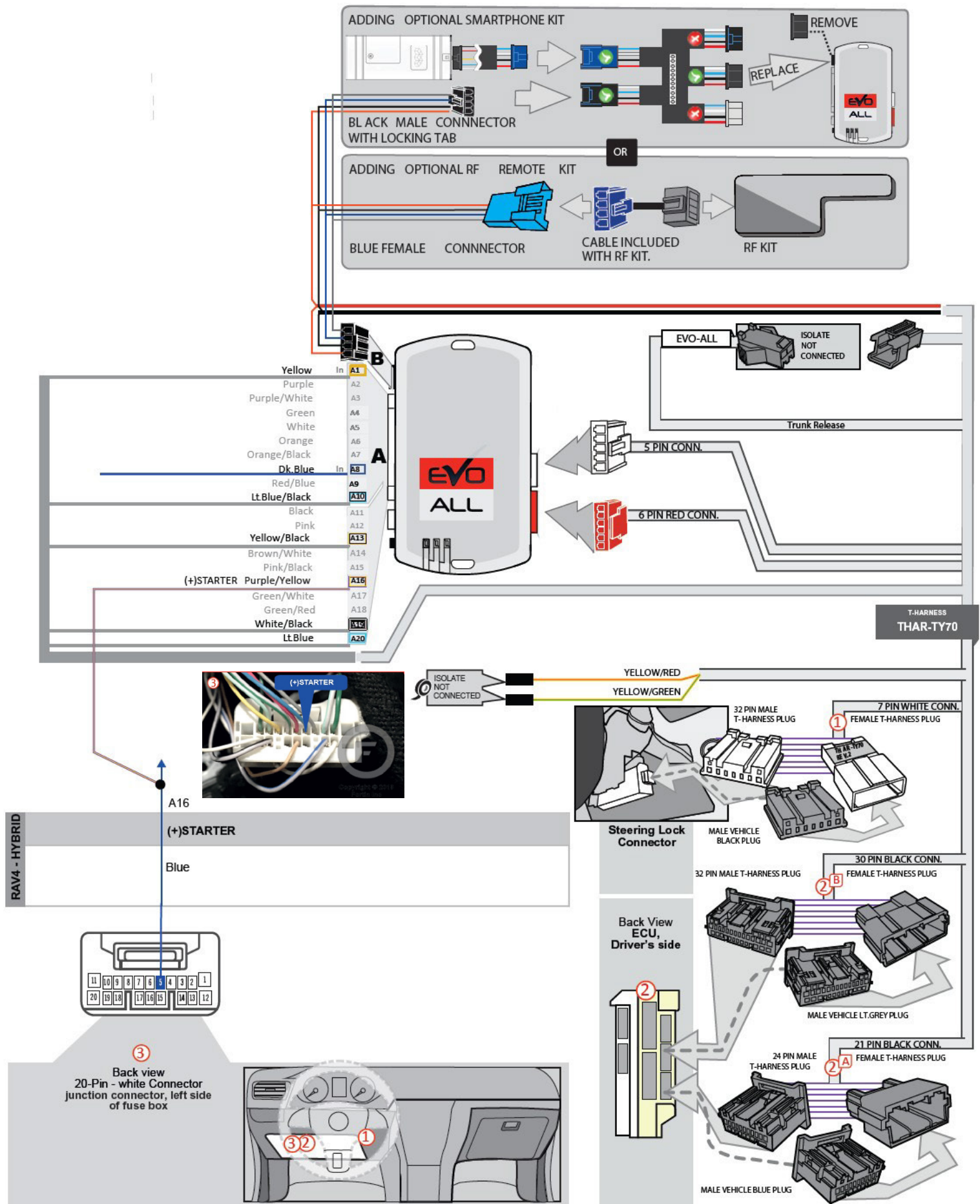


STEERING LOCK PLUG

① At Steering Column



System Wiring Diagram Toyota 2019-2021 RAV 4 Hybrid

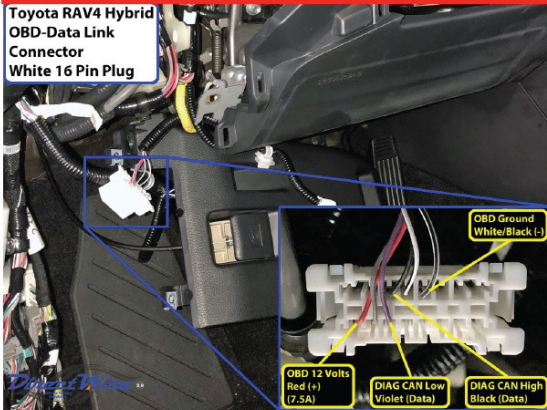


2022-2025 RAV 4 Hybrid

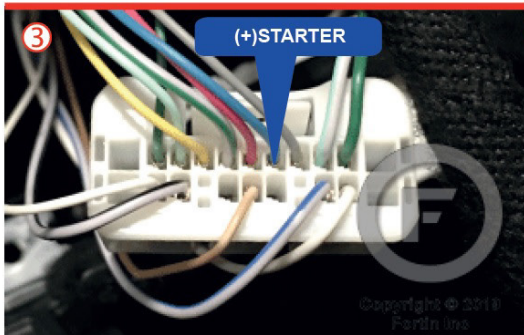


RAV4

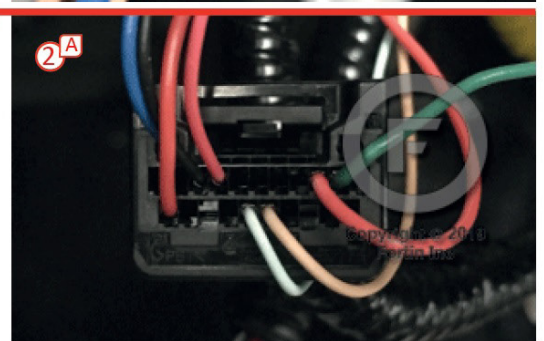
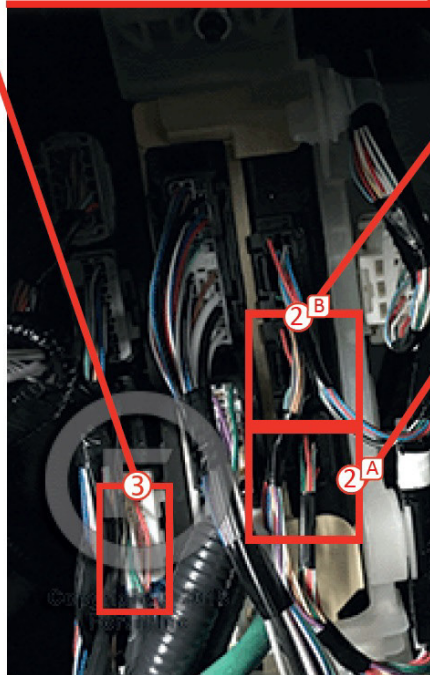
① OBDII Connector, Under Dash Driver's side



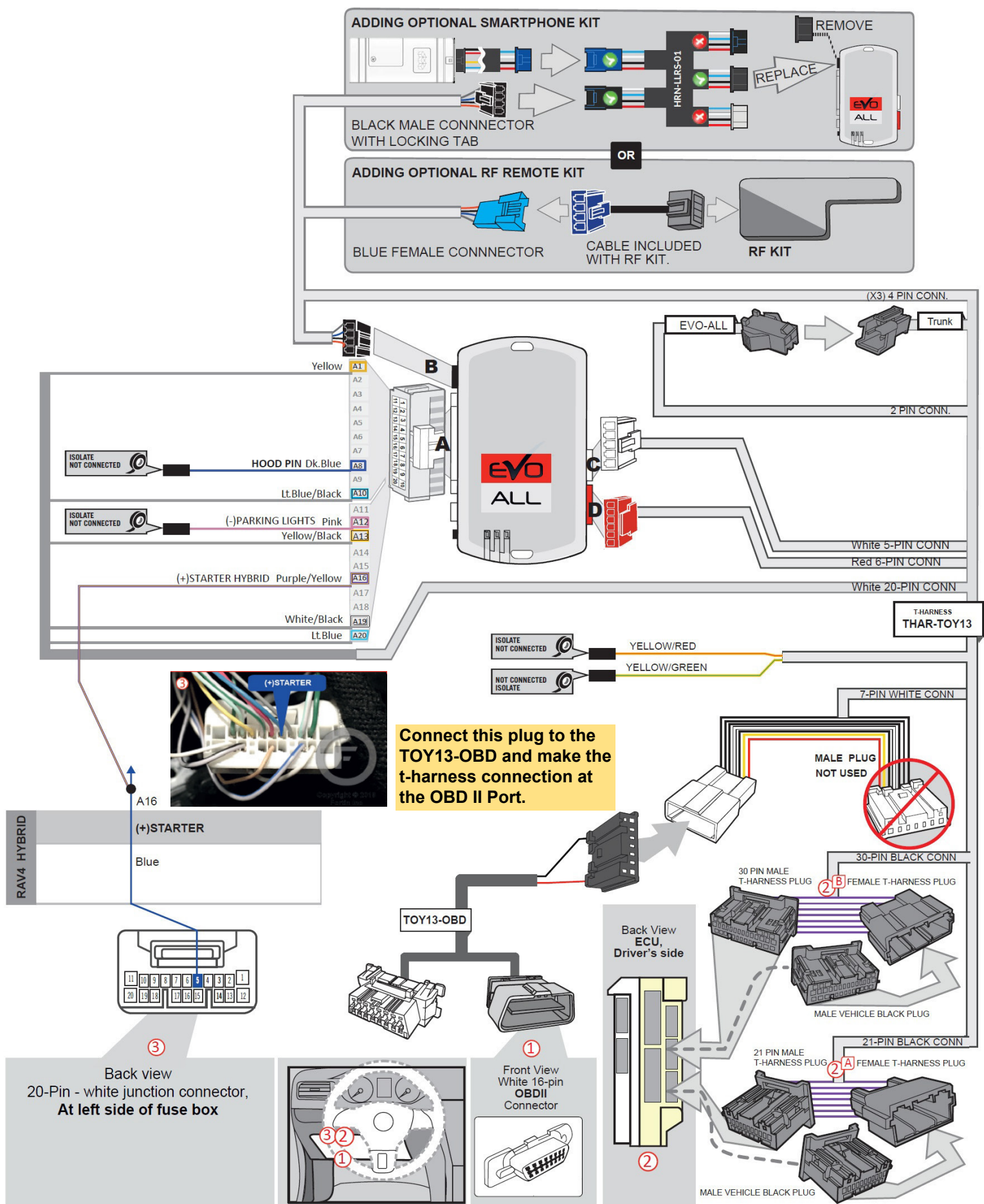
Starter (+) Blue



③ ② ECU, Driver's side

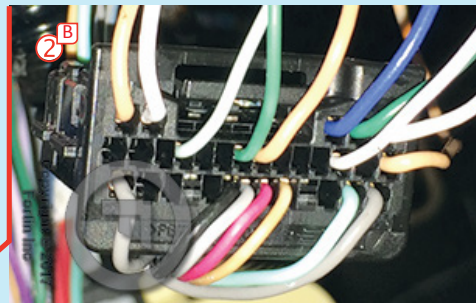
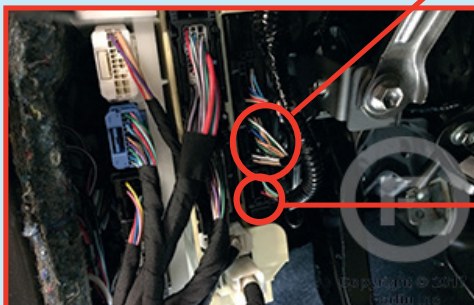


System Wiring Diagram: Toyota 2022-2025 RAV 4 Hybrid

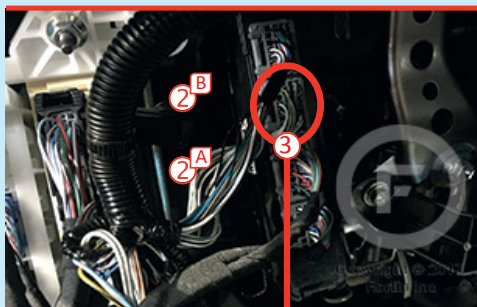




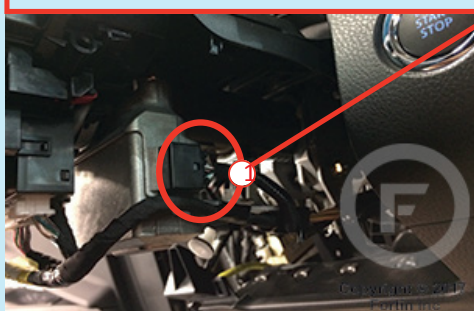
② ECU, Driver's side
ECU, Côté Conducteur



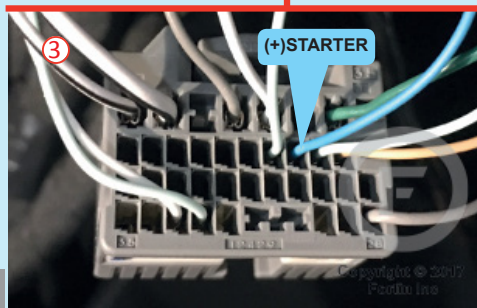
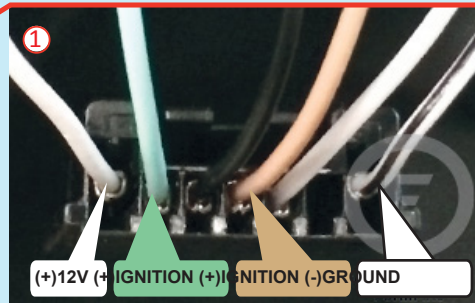
② ③ Hybrid ECU, left of steering column
ECU Hybride, gauche de la colonne
de direction



① At Steering Column À la
colonne de direction



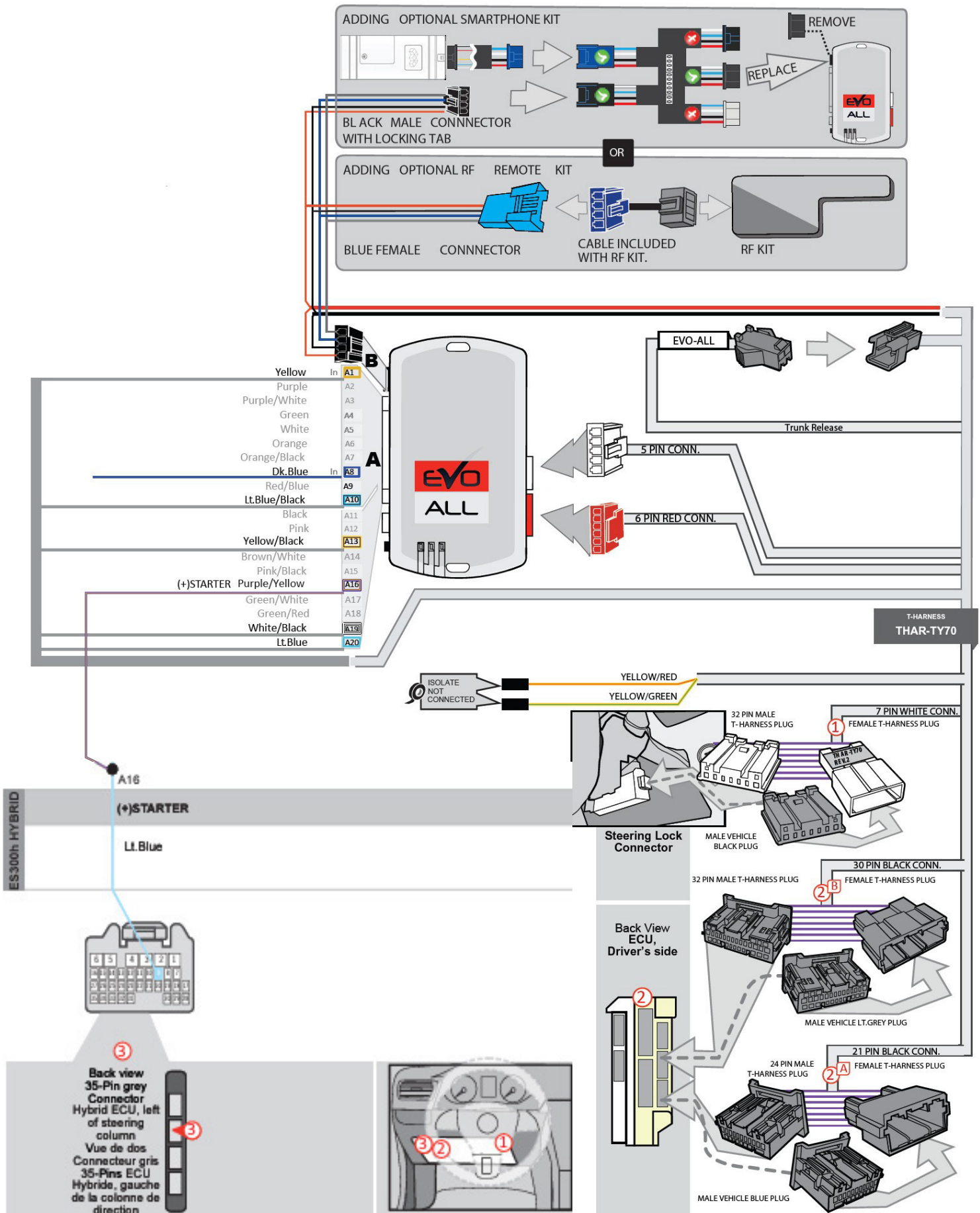
Steering Lock Connector
Connecteur Steering Lock



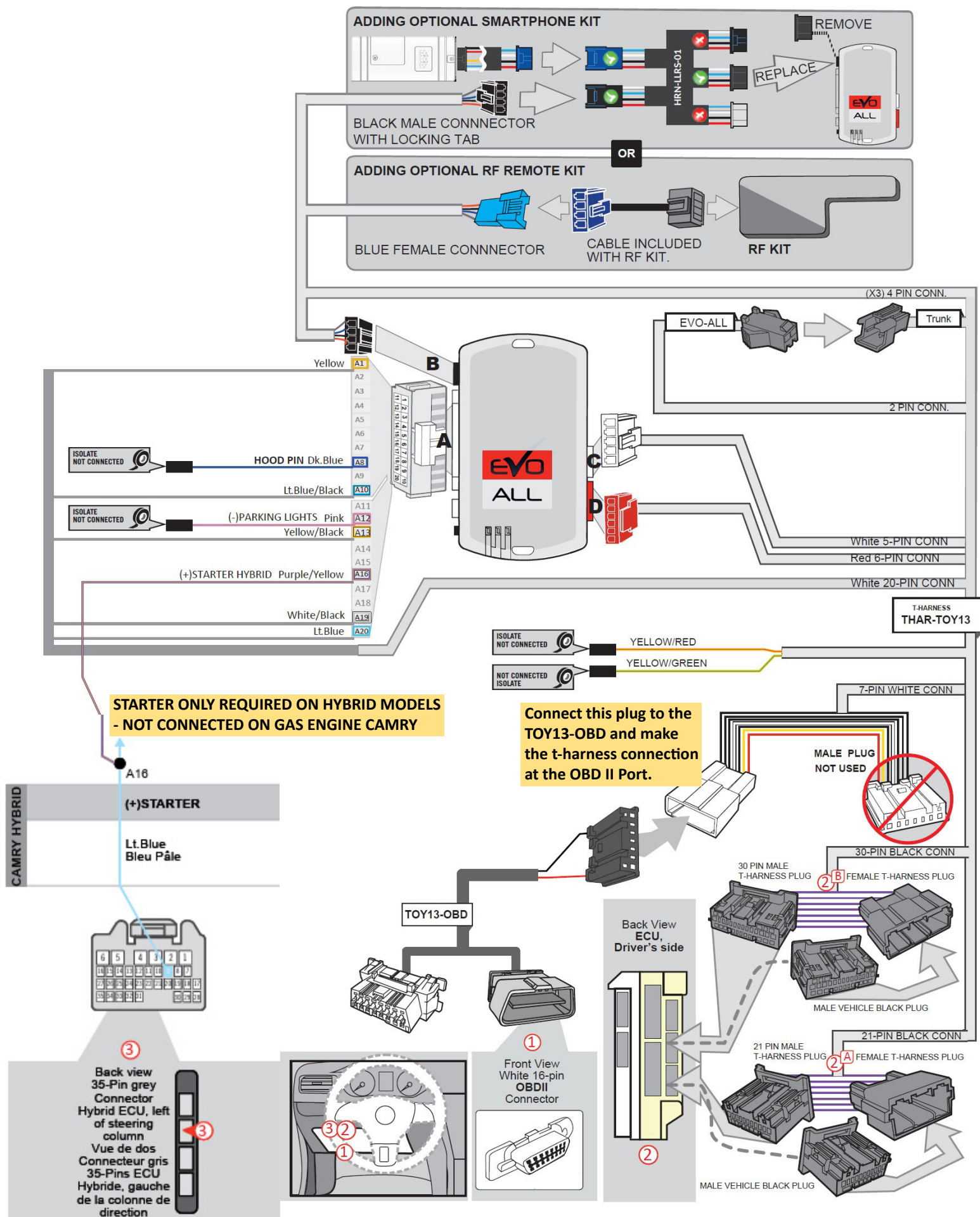
ES300H HYBRID

2018-2024 Toyota Camry
2019-2024 ES 300h Hybrid

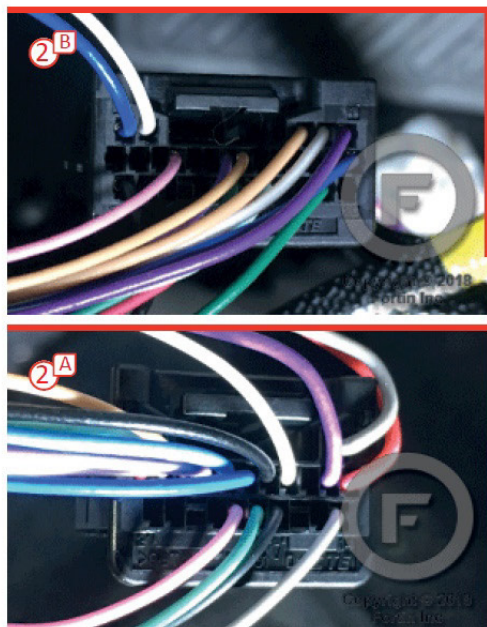
System Wiring Diagram 2018-2022 Toyota Camry Hybrid - 2019 Avalon Hybrid - 2019-2024 Lexus ES 300H Hybrid



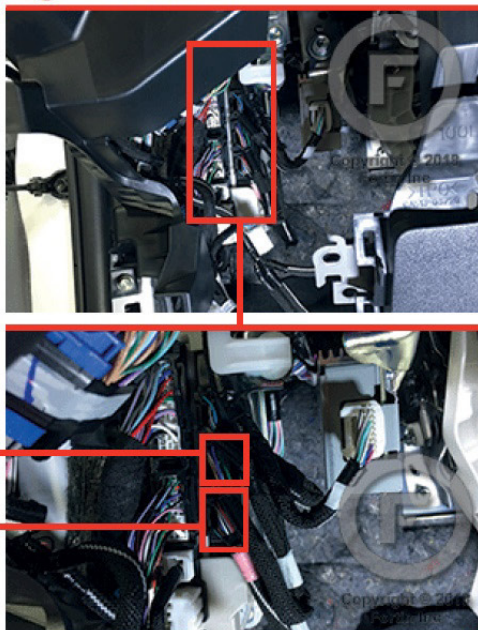
System Wiring Diagram: 2023-2024 Toyota Camry Gas / Hybrid



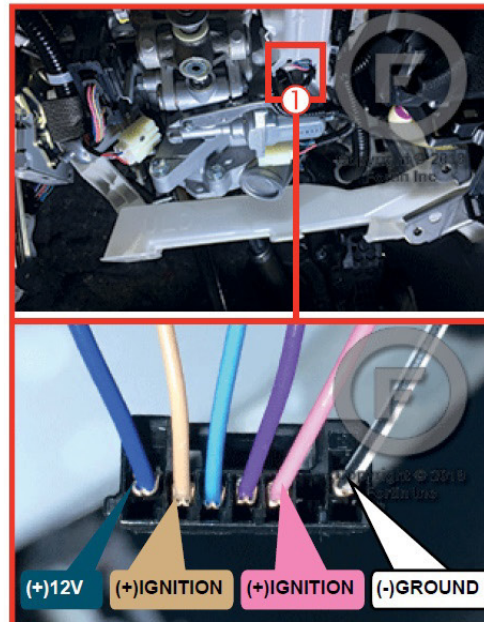
2019-2022 Lexus UX250h



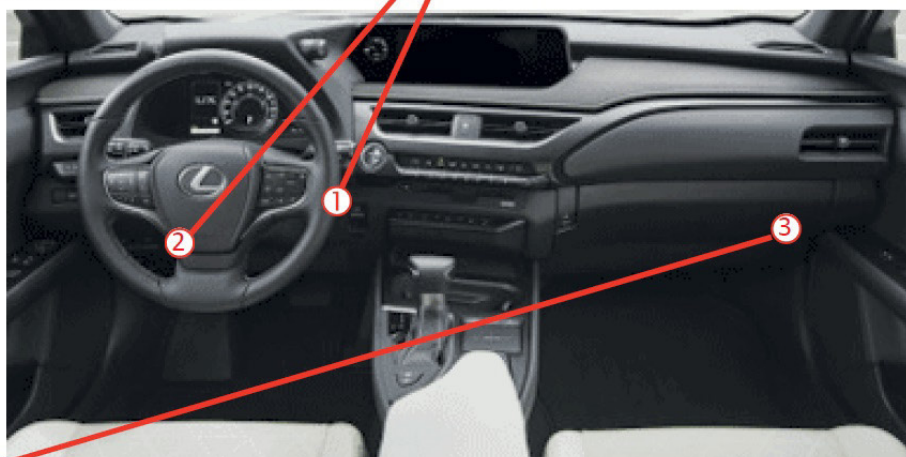
② ECU, driver's side



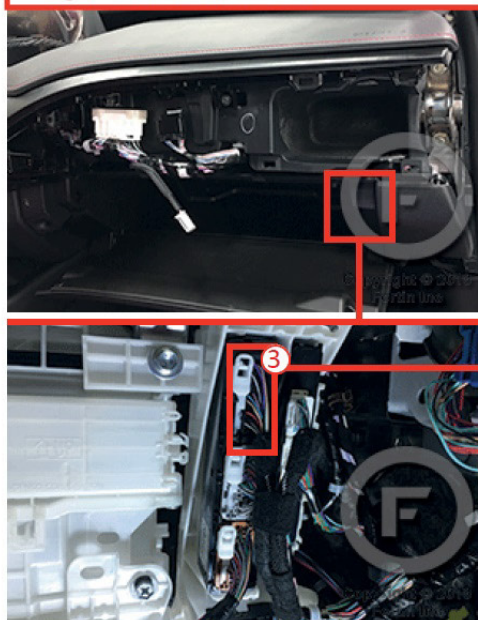
① Steering Lock Connector



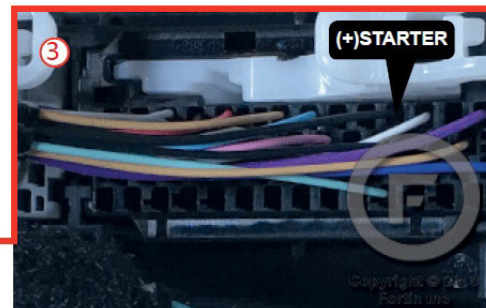
UX250H

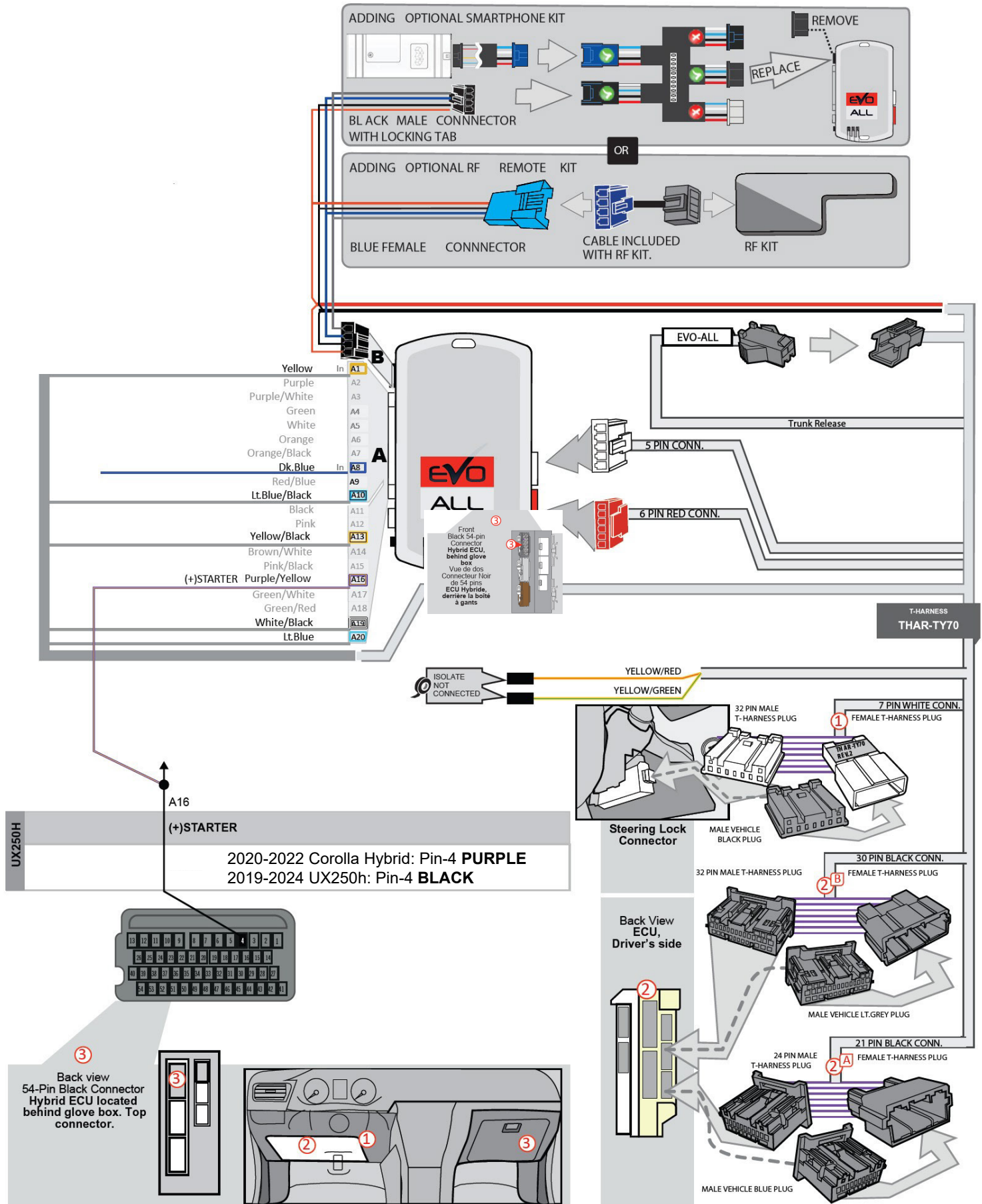


③ ECU, behind glove box



Starter (+) Black

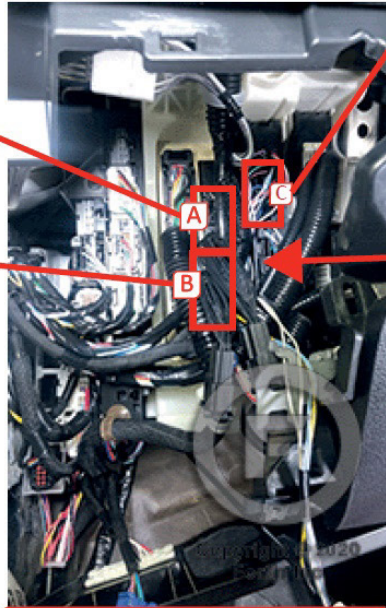




2^A



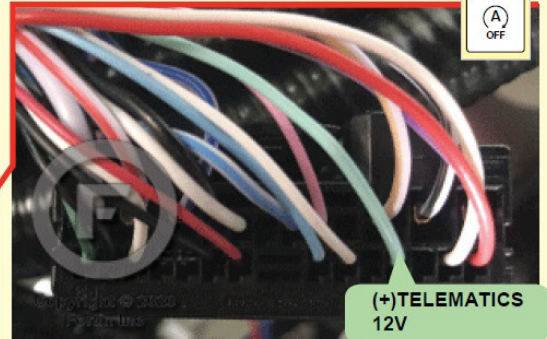
② Main body ECU
left side of the dash



2^B



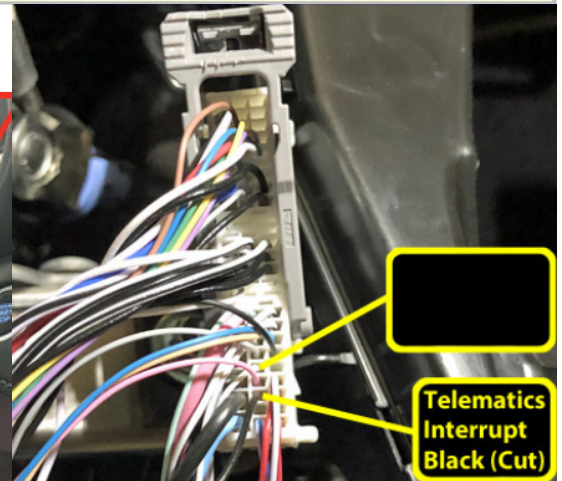
2^C With stop and start system
(Look for button in center console)

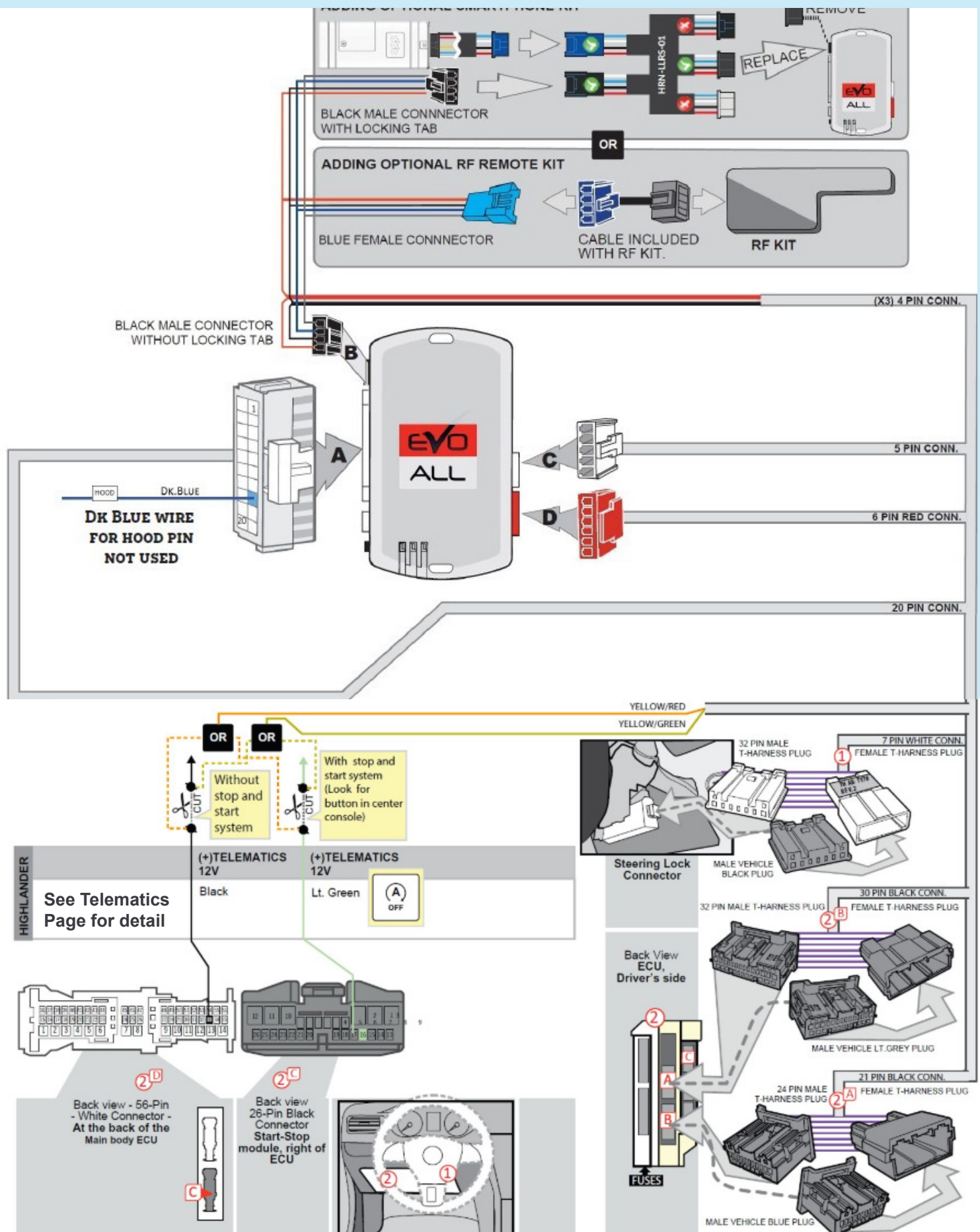


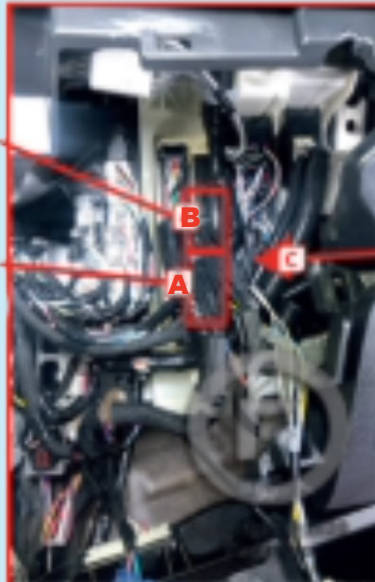
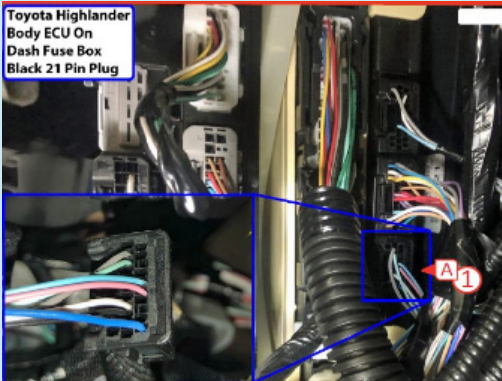
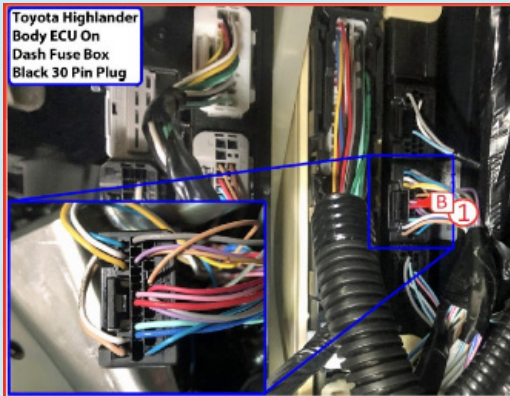
OR Without stop and start system
At the back of the Main body ECU -
below dash fuse box



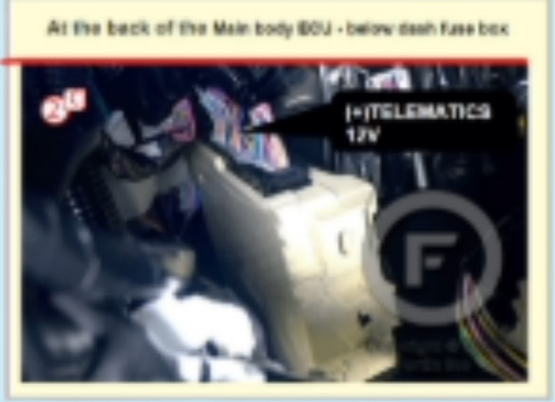
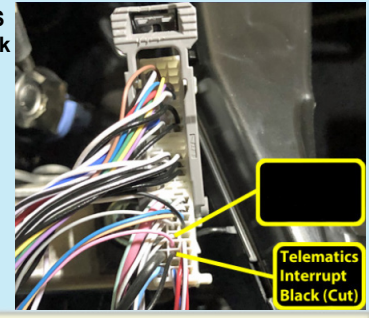
① Steering Lock Connector







TELEMATICS Wire (+) Black



Steering Lock Plug

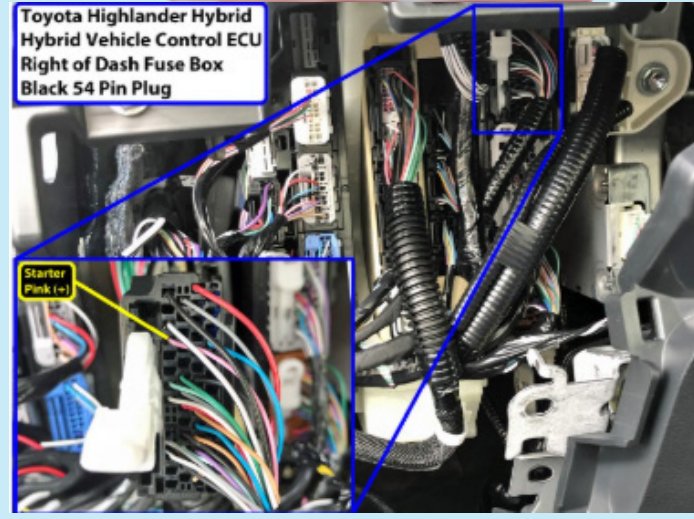


Highlander

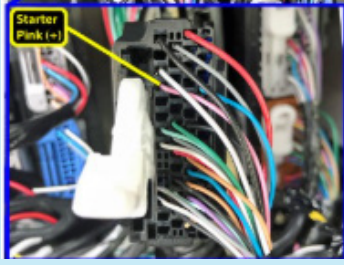
2020-2021 Highlander Hybrid



STARTER Wire Plug

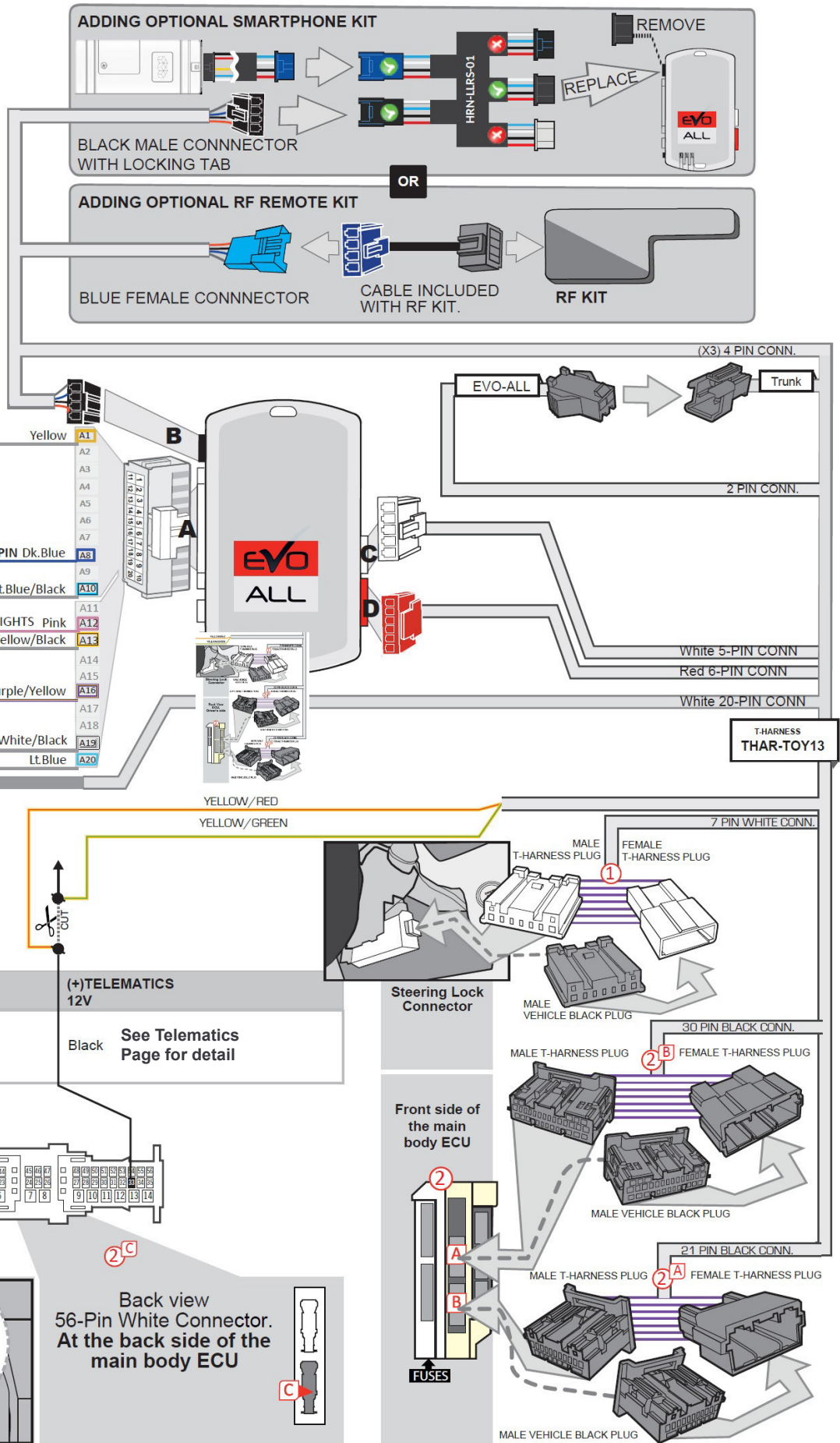


STARTER Wire (+) Pink



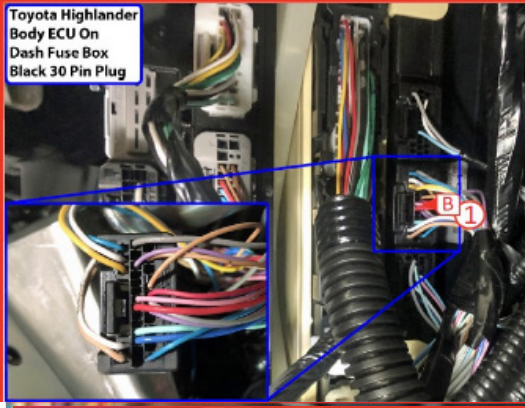
This vehicle requires additional wire to wire connections for the Starter wire and the Telematics connections to activate the remote starter using the OEM remote. See next pages for detailed wiring.

NOTE: The Telematics connection is not required when using one of our RF kits pr Drone Smart Phone Module to activate the remote starter.

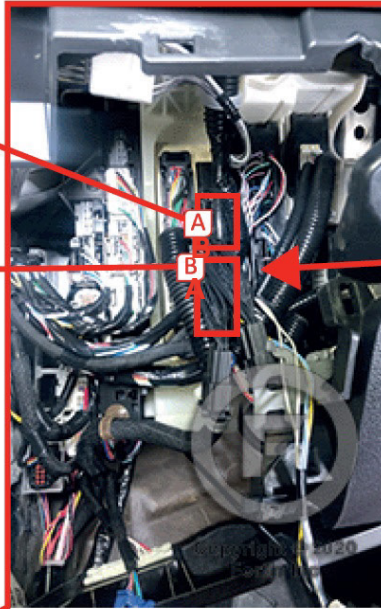


Wire Location Additional Images: 2022-2023 Toyota Highlander Hybrid

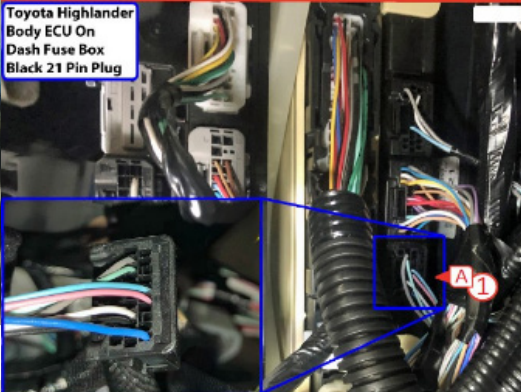
Toyota Highlander
Body ECU On
Dash Fuse Box
Black 30 Pin Plug



② Main body ECU
left side of the dash



Toyota Highlander
Body ECU On
Dash Fuse Box
Black 21 Pin Plug



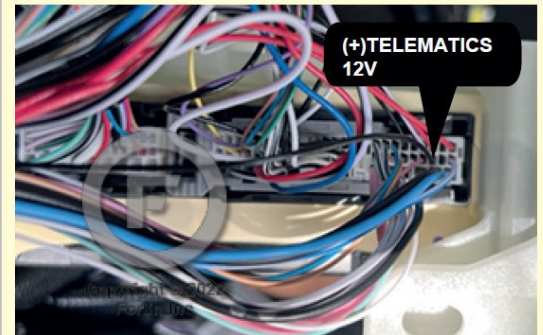
2022-2023 Highlander Hybrid



Highlander

TELEMATICS wire (+) Black

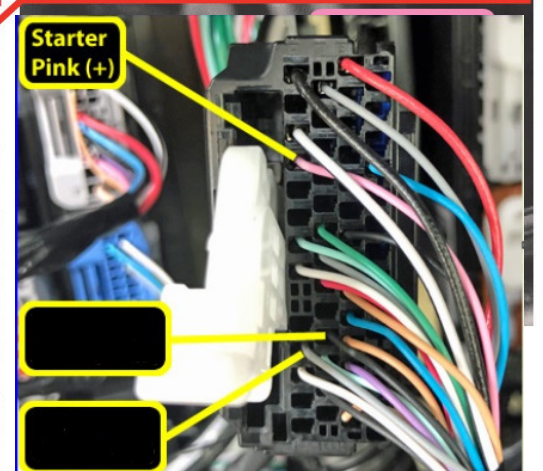
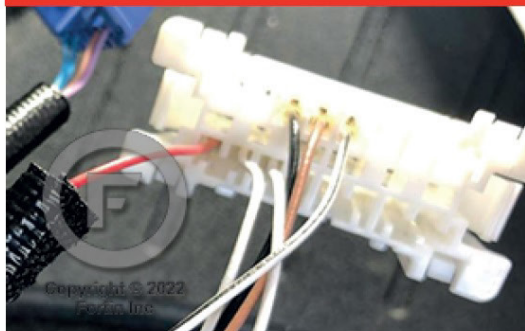
At the back of the Main body ECU - below dash fuse box



① OBDII connector

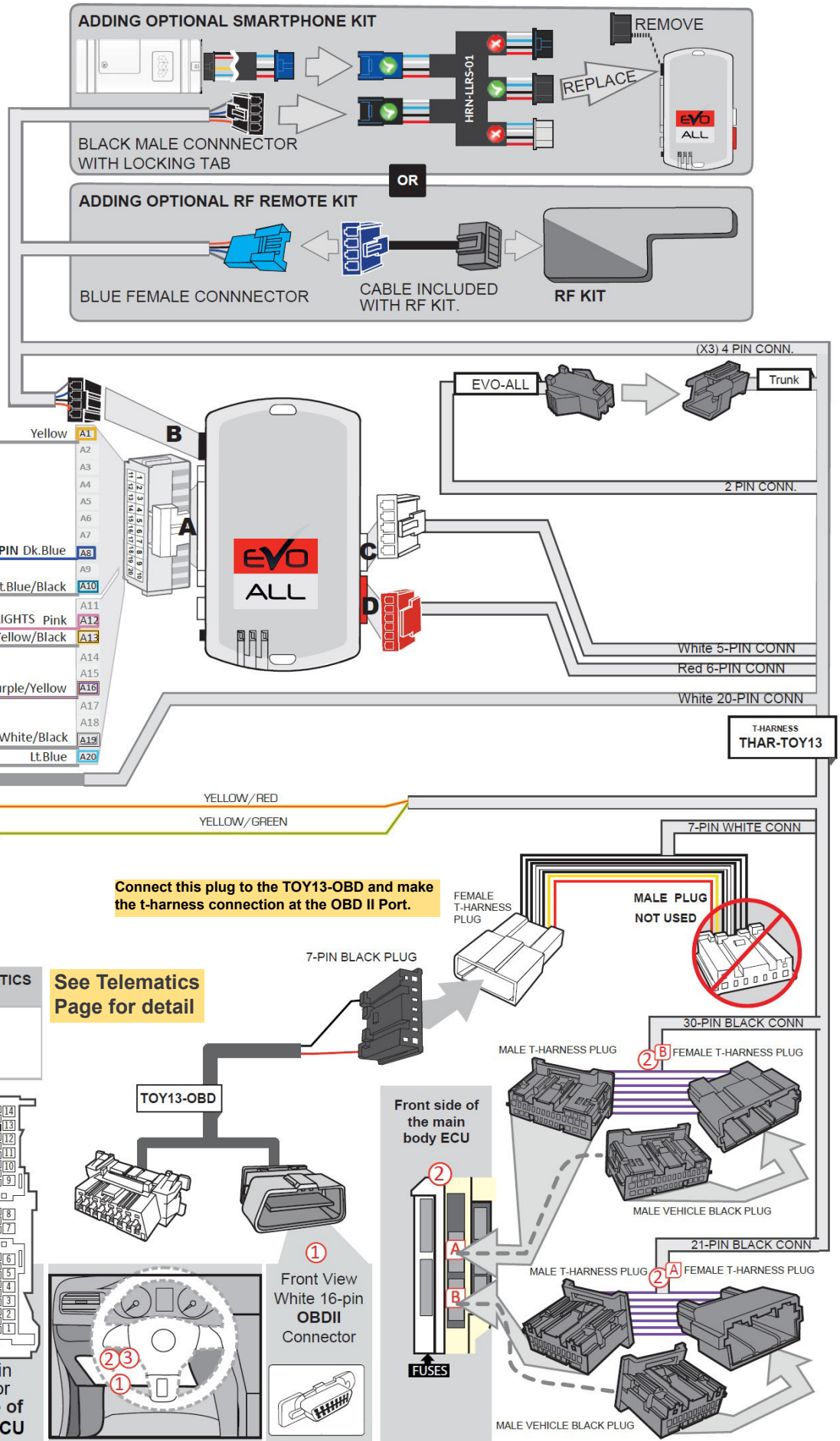
③ Hybrid ECU, beside fuse box in dash board.

Starter (+) Pink



This vehicle requires additional wire to wire connections for the Starter wire and the Telematics connections to activate the remote starter using the OEM remote. See next pages for detailed wiring.

NOTE: The Telematics connection is not required when using one of our RF kits pr Drone Smart Phone Module to activate the remote starter.

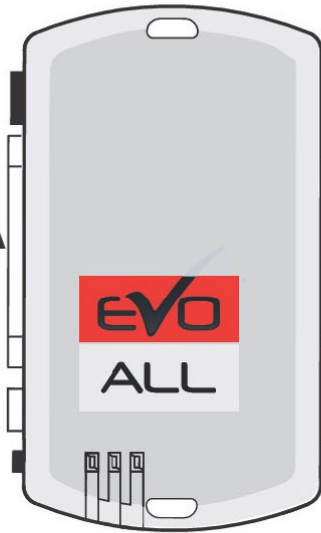


TELEMATICS CONNECTION

(TELEMATICS)
WITH STOP/
START
Button



A

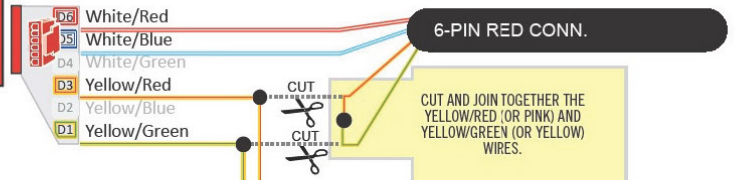


- 1) CUT D3 Yellow/Red wire in half.
- 2) CUT D1 Yellow/Green wire in half.
- 3) Take Yellow/Red and Yellow/Green halves leading back to the t-harness and connect them together. As shown below

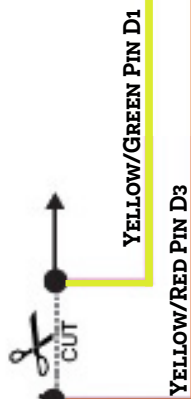
Make these connections and CUT for Telematics wires

- 1) CUT the Blue Telematics wire in half.
- 2) Take the Yellow/Red wire leading back to the Red 6-pin connector and connect it to the Blue Telematics wire leading back to the Telematics plug.
- 3) Take the Yellow/Green wire leading back to the Red 6-pin connector and connect it to the Blue Telematics wire leading away from the Telematics plug.

1. LOCATE THE RED 6-PIN PLUG IN THE REMOTE START T-HARNESS. CUT THE YELLOW/RED & YELLOW/ GREEN WIRES ABOUT HALF WAY BETWEEN THE RED PLUG AND WHERE THE WIRES ENTER THE T-HARNESS LOOM
2. JOIN THE TWO HALVES OF THE WIRES THAT GO IN TO THE T-HARNESS LOOM TOGETHER SHOWN IN THE IMAGE ON THE RIGHT WITH THE RED ARROW.
3. EXTEND EACH OF THE WIRES ON THE PLUG SIDE SEPARATELY WITH ENOUGH WIRE TO REACH THE RED WIRE AT THE DRIVERS SIDE DASH FUSE BOX PLUG.
4. THE BLUE WIRE IN PIN 1 NEEDS TO BE CUT. YOU WILL NEED TO CONNECT OUR WIRES TO BOTH SIDES OF THE CUT SO MAKE THE CUT WITH AS MUCH SLACK AS POSSIBLE ON BOTH SIDES & STRIP THE ENDS,
5. BUTT CONNECT THE YELLOW/GREEN WIRE TO THE CUT SIDE OF THE BLUE WIRE GOING AWAY FROM THE PLUG.
6. BUTT CONNECT THE YELLOW/RED WIRE TO THE CUT SIDE OF THE BLUE WIRE THAT GOES TOWARDS THE TELEMATICS PLUG.



Highlander with stop / start button. Locate the Lt Green wire in the 26-pin connector (pin 16) on the left side of the dash at the main body ecu



4

- Green with Stop /Start System
- Black without Stop / Start System

2020-2023

TELEMATICS

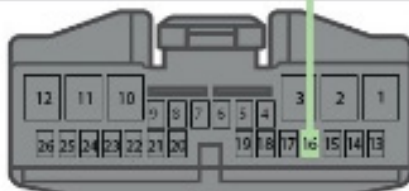
LEFT DASH AT
MAIN BODY ECU

Highlander

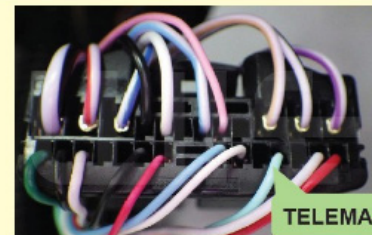
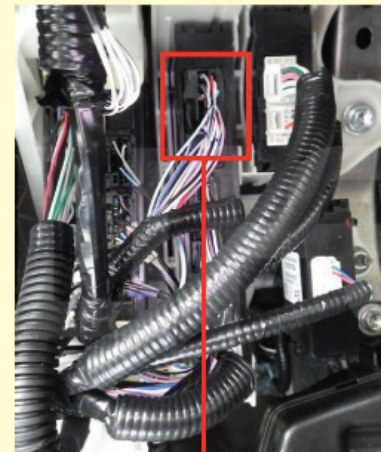
Lt. Green

26-PIN CONNECTOR
LT GREEN PIN-16

(Telematics).
WITH STOP/
START
Button



TELEMATICS Connection WITH STOP/START Main Body ECU



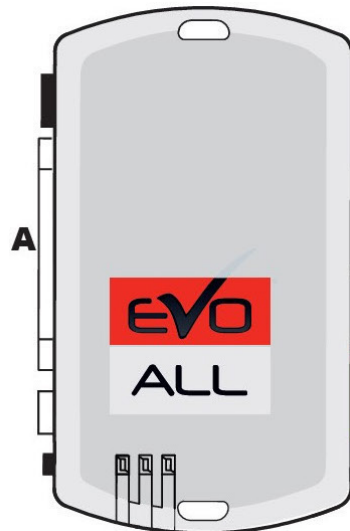
TELEMATICS

TELEMATICS CONNECTION

2020-2023 Toyota Highlander Without Stop/Start Button

1. LOCATE THE RED 6-PIN PLUG IN THE REMOTE START T-HARNESS. CUT THE YELLOW/RED & YELLOW/ GREEN WIRES ABOUT HALF WAY BETWEEN THE RED PLUG AND WHERE THE WIRES ENTER THE T-HARNESS LOOM
2. JOIN THE TWO 'HALVES' OF THE WIRES THAT GO IN TO THE T-HARNESS LOOM TOGETHER SHOWN IN THE IMAGE ON THE RIGHT WITH THE RED ARROW.
3. EXTEND EACH OF THE WIRES ON THE PLUG SIDE SEPARATELY WITH ENOUGH WIRE TO REACH THE PINK WIRE AT THE DASH FUSE BOX.
4. THE PINK WIRE IN PIN 19 NEEDS TO BE CUT. YOU WILL NEED TO CONNECT OUR WIRES TO BOTH SIDES OF THE CUT SO MAKE THE CUT WITH AS MUCH SLACK AS POSSIBLE ON BOTH SIDES AND STRIP THE ENDS.
5. BUTT CONNECT THE YELLOW/GREEN WIRE TO THE CUT SIDE OF THE PINK WIRE GOING AWAY FROM THE PLUG.
6. BUTT CONNECT THE YELLOW/RED WIRE TO THE CUT SIDE OF THE PINK WIRE THAT GOES TOWARDS THE PLUG.

- Green with Stop / Start System
- Black without Stop / Start System

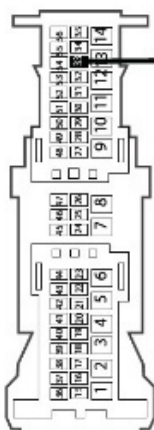


Run these two wires to the telematics wire.

YELLOW/GREEN PIN D1

YELLOW/RED PIN D3

2020-2023	TELEMATICS
Highlander	Black

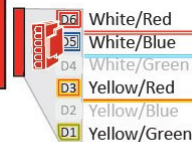


CUT these wires and make the Connections

- 1) CUT D3 Yellow/Red wire in half.
- 2) CUT D1 Yellow/Green wire in half.
- 3) Take Yellow/Red and Yellow/Green halves leading back to the t-harness and connect them together. As shown below

Make these connections and CUT for Telematics wires

- 1) CUT the Pink Telematics wire in half.
- 2) Take the Yellow/Red wire leading back to the Red 6-pin connector and connect it to the Pink Telematics wire leading back to the Telematics plug.
- 3) Take the Yellow/Green wire leading back to the Red 6-pin connector and connect it to the Pink Telematics wire leading away from the Telematics plug.



6-PIN RED CONN.

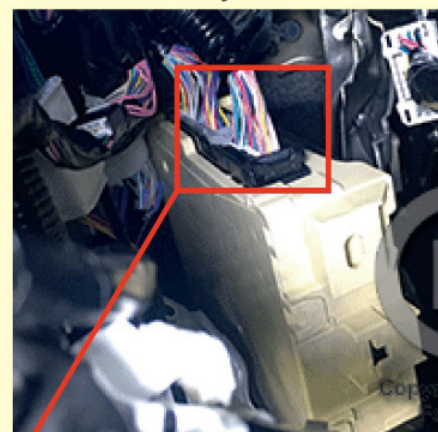
CUT AND JOIN TOGETHER THE YELLOW/RED (OR PINK) AND YELLOW/GREEN (OR YELLOW) WIRES.

MAKING "END-TO-END" WIRE WRAP CONNECTIONS

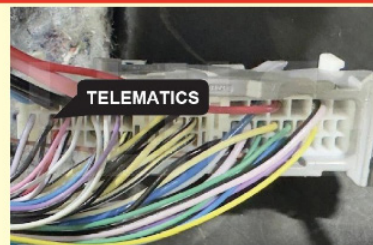
1. Strip back one inch of insulation on both remote start bypass wire and vehicle wire ends. Separate the strands of wire on each end. One inch of Bare Wire.
2. Wrap one section of remote start bypass wire end around one section of vehicle wire end, and separately repeat for second section.
3. Lay one wire wrap section along the remote start bypass wire and the other wire wrap section along the vehicle wire.
4. Tape connection, and wire in over wire wraps on each side. Restrip Ten.

Highlander with stop / start button locate the Lt Green wire in the 26-pin connector (pin 16) located on the left side of the dash at the main body ecu

TELEMATICS Connection WITHOUT STOP/START Back of Main Body ECU

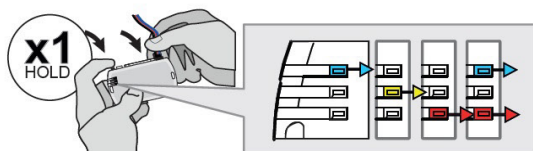


④ TELEMATICS Connection WITHOUT STOP/START



Step 3: Programming for All Models

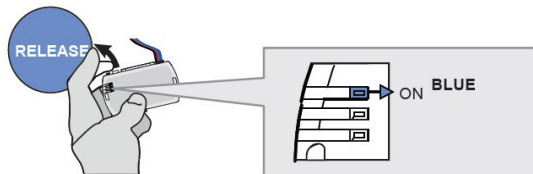
1



Press and hold the programming button:
Connect the 4-PIN Data-link connector.

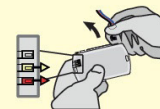
↳ The BLUE, RED, YELLOW and BLUE & RED LEDs will alternatively illuminate.

2

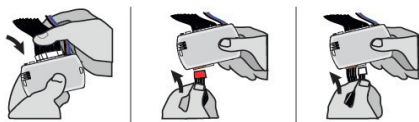


Release the programming button at the moment when the LED is BLUE.

If the LED does not remain solid BLUE after releasing the button, then **disconnect** the 4-Pin connector (Data-Link) and **go back** to step 1.

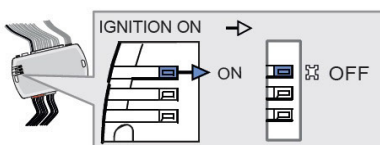
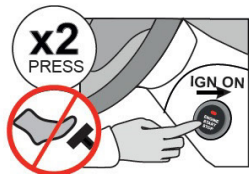


3



Insert the required remaining connectors.

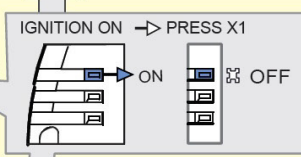
4



Do not press the brake pedal.
Press the Push-to-Start button twice to turn on the ignition.

↳ The BLUE LED should turn off.

OR



If the LED remains lit solid BLUE after the ignition is turned on, then **press and release** the programming button once (1x).

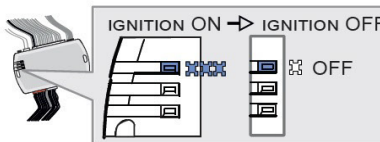
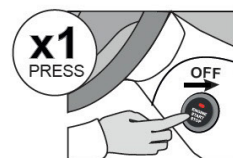
↳ The BLUE LED will turn off.



After the BLUE LED turns off, then **Wait**.

↳ The BLUE LED will flash rapidly.

5



Press the Push-to-Start button once to turn off the ignition.

↳ The BLUE LED will turn off.



The module is now programmed.



If a programming error occurs, disconnect all plugs from the EVO-ALL module with the Black 4-pin disconnected **LAST**

Step 4: Testing the system.

Once all wiring and programming are done, you should test the system to make sure everything is working properly before you close up the installation.

1. Press **LOCK>LOCK>LOCK** on your OEM fob 3 times with each press 1 second apart. The vehicle ignition/ accessory circuits will turn on after a few seconds. Another few seconds later the starter motor will engage.
NOTE: You will see the Blue light on the remote start module flash once with each press.
2. Step on the brake pedal to stop the engine.



LOCK 3X

Press the lock button on the OEM remote three times in a row to activate the remote starter.

The vehicles ignition/accessory circuits will turn on after a few seconds. Another few seconds later the starter motor will engage. It's all about getting the timing down when activating, count Lock-1000-Lock-1000-Lock. You will see the Blue light on the remote start module every time you press the Lock button. After it starts, open the drivers door, the remote start should turn off.

NOTES

NO KEY TAKEOVER



OFF The module will shut down the vehicle as soon as the drivers door is opened.

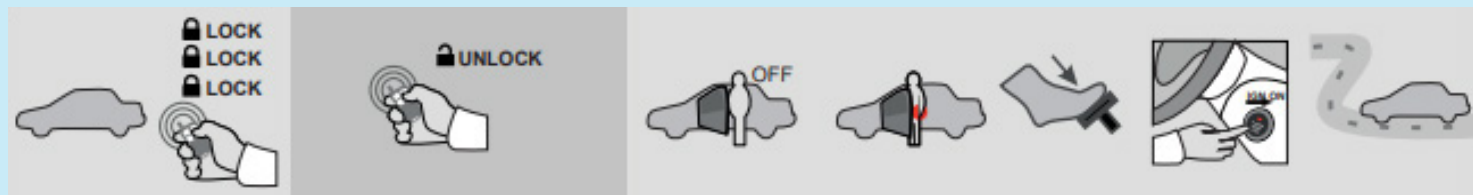


**The vehicles OEM remote and SmartKey are still operable during remote start.

Step 5: Take-Over.

Functionality: Push-to-Start Vehicles

- All Toyota's: When the vehicle is remote started, it will turn off when you open the door.



- Enter the vehicle with the OEM FOB and start the vehicle normally. The remote starter will run for a period of 15 minutes then turn itself off.
- After confirming that everything works properly, cap off or tape the ends of any wires you're not using to avoid grounding or other contacts.
- Now gather up all the wiring and neatly bundle it together using zip ties or electrical tape to prevent the wires from interfering with any of the moving parts under the dash.
- Test the system often when you are putting your vehicle back together.
- Find a secure place to put the remote start module and use zip ties to secure it. Be careful not to zip tie near your connections as it may create a bad connection.
- Replace any interior vehicle panels that were removed to gain access to the needed wires, in reverse order that they were removed.
- Test the system as you reinstall the panels in your vehicle to make sure you do not pull something loose or pinch a wire. Be careful not to run a screw through a wire or pinch a wire while reinstalling panels.

If you have any installation questions or problems, call for tech support

520-579-1531 or Email: info@kleinn.com