



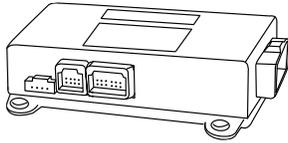
**GENUINE PARTS**  
**INSTALLATION**  
**INSTRUCTIONS**

DOCUMENT NUMBER: SPN0004850

PART NUMBER: H001SAL021 & H001SAL040

DESCRIPTION: REMOTE ENGINE START  
 ECU & HOOD SWITCH/BRACKET  
 REPLACEMENT KITS

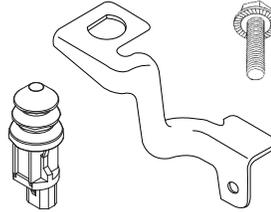
**1 KIT CONTENTS**



Remote Engine Start  
 Control Module  
 Quantity=1



Hood Switch  
 Harness Clip  
 Quantity=1



Hood Safety Switch,  
 Mounting Bracket &  
 Mounting Bolt  
 Quantity=1

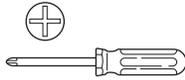


Phillips Screw  
 Quantity=4



Tie Wraps  
 20cm Quantity=1

**2 TOOLS REQUIRED**



Phillips Screwdriver  
 Short and Standard



Torque Wrench



Panel Removal Tool



Wire Cutters



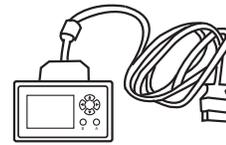
Ruler



Ratchet, 10mm and 12mm Sockets,  
 Extension and U-Joint



SSM III  
 Diagnostic Interface or



SSM IV (DST-i)  
 Diagnostic Interface

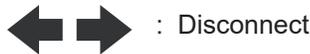
**3 MEANING OF CHARACTERS**



: Remove



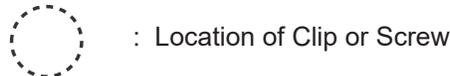
: Install



: Disconnect



: Connect



: Location of Clip or Screw

**T** : Tighten Torque



: Loosen



: Discard



: Re-use

**CAUTION: DO NOT SECURE ANY REMOTE START HARNESSSES / MODULES TO ANY YELLOW HARNESSSES / CONNECTORS (AIRBAG SYSTEM) IN THE VEHICLE.**

PART NUMBER  
 H001SAL021/040

ISSUE  
 -

DATE  
 2 Jun 2022

SUBARU OF AMERICA

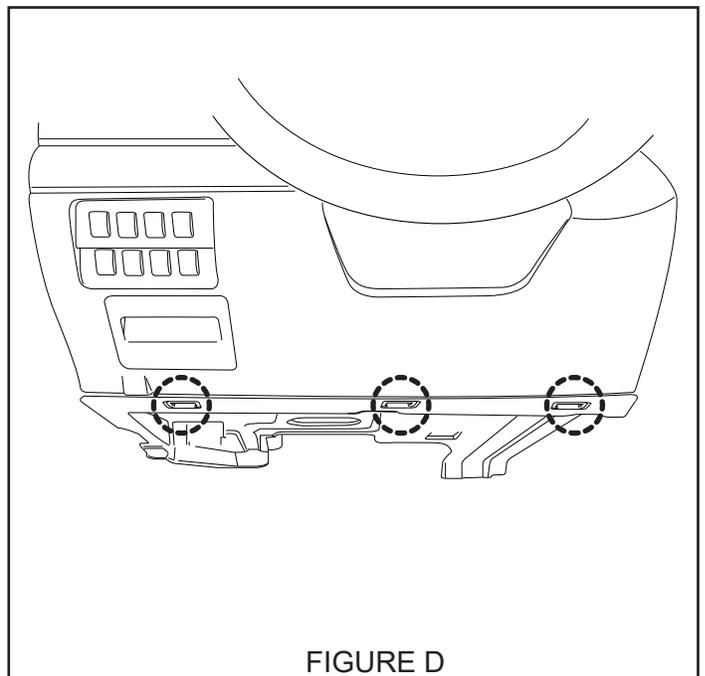
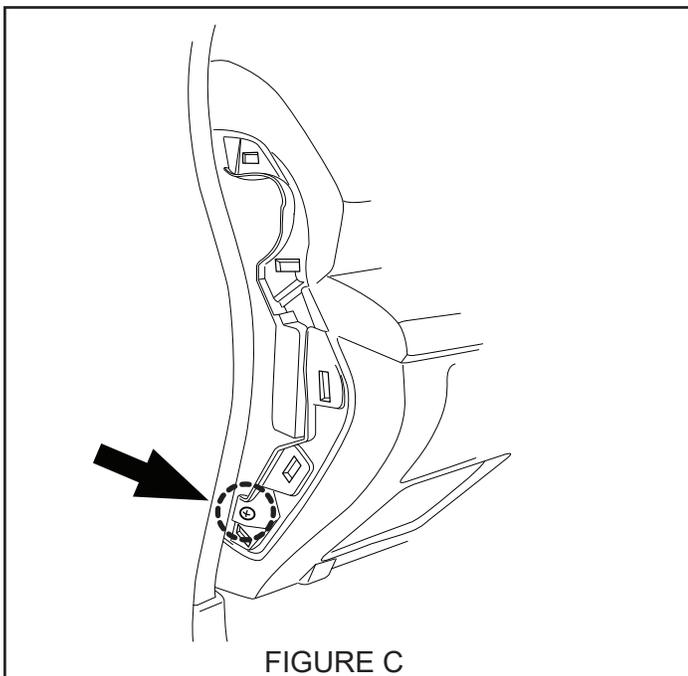
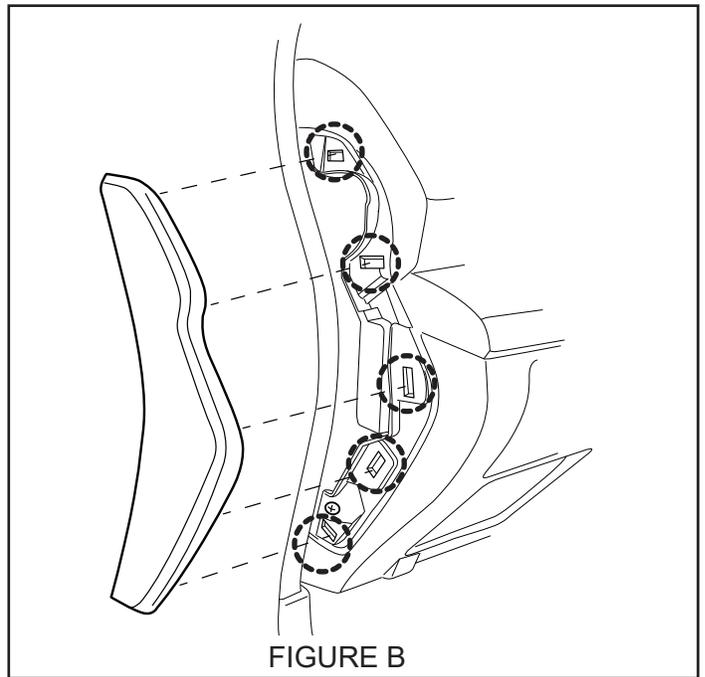
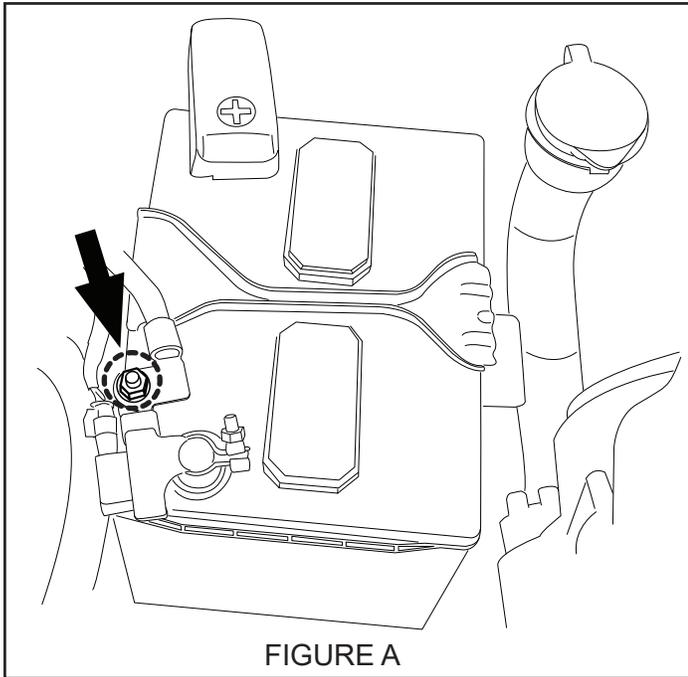
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## 4 VEHICLE PREPARATION

1. Using a 12mm socket/ratchet, disconnect the negative battery cable. (FIGURE A)

**NOTE: Do not disconnect the battery terminal from the battery post.**

2. Starting at the bottom, use a panel removal tool to carefully remove the left side dashboard panel (FIGURE B). Remove one (1) Phillips screw securing the lower dashboard panel on the left side of the dashboard. (FIGURE C)
3. Remove the driver's side under dashboard finisher panel by depressing the three (3) pressure clips and pulling downwards. Disconnect any connectors that may be attached to it. (FIGURE D)



## 4 VEHICLE PREPARATION, continued

- Using a panel removal tool, carefully remove the driver's left side lower dashboard panel by pulling straight out. Unplug all connectors attached to the dashboard panel. (FIGURE E)

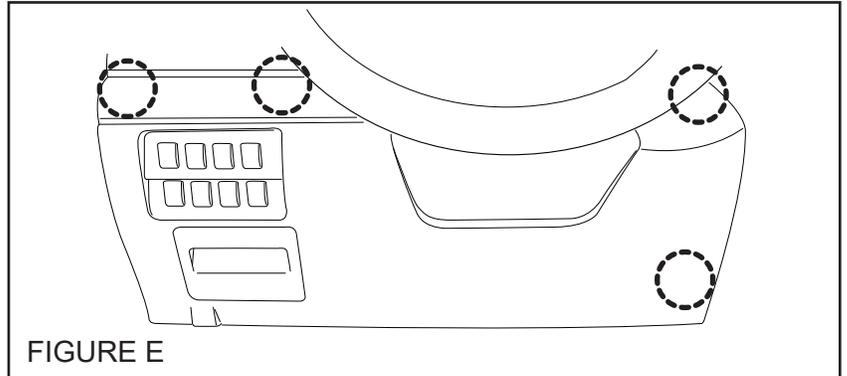


FIGURE E

- Using a 10mm socket/ratchet, remove the two (2) 10mm bolts securing the metal knee bolster. (FIGURE F)

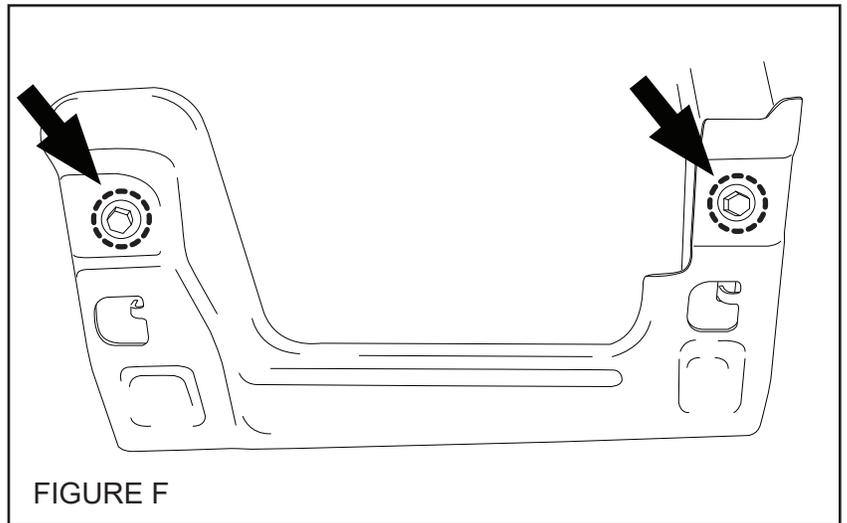
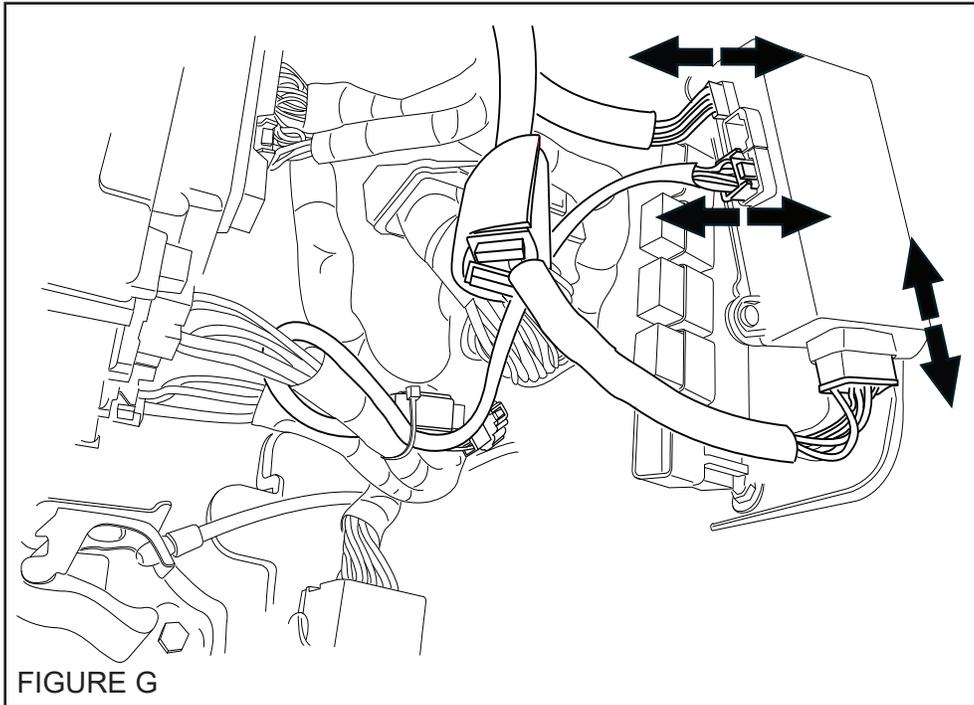


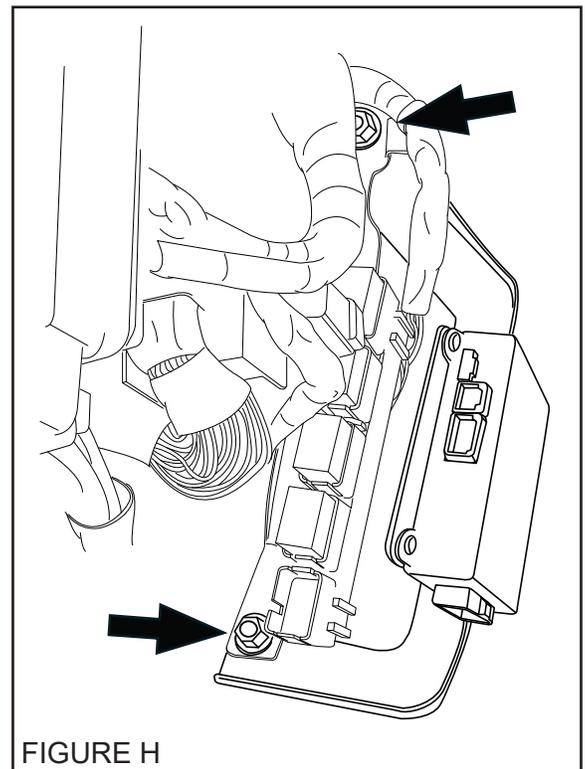
FIGURE F

## 5 REMOTE STARTER ECU REPLACEMENT

1. Unplug the 12-pin pre-arranged harness from the 12-pin white port on the remote engine starter ECU. (FIGURE G)
2. Unplug the 5-pin antenna harness from the 5-pin black port on the remote engine starter ECU. (FIGURE G)
3. Unplug the 8-pin remote engine starter ignition harness from the bottom (large) connector on the remote engine starter ECU. (FIGURE G)

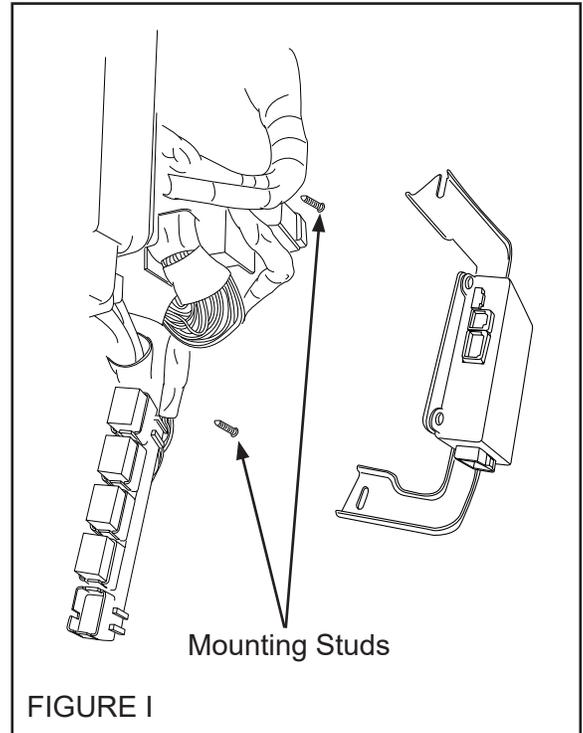


4. Remove the two (2) 10mm mounting nuts. (FIGURE H)

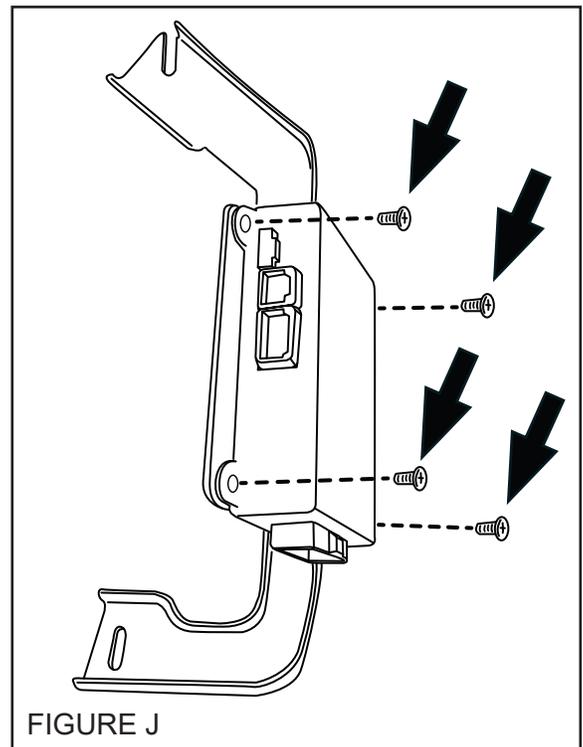


## 5 REMOTE STARTER ECU REPLACEMENT, continued

5. Lift the auxiliary relay block bracket off of the mounting studs.
6. Remove the remote engine starter ECU bracket from the mounting studs. (FIGURE I)



7. Remove the four (4) Phillips screws securing the remote engine starter module to the ECU bracket. (FIGURE J)



## 5 REMOTE STARTER ECU REPLACEMENT, continued

8. Secure the remote engine starter module replacement part to the ECU bracket using the four (4) supplied Phillips screws. Torque the four (4) Phillips screws to 1.35 Nm +/- 0.5 Nm (0.14 Kgf-m +/- 0.2 Kgf-m, 1 ft-lbs +/- 0.5 ft-lbs). (FIGURE K)

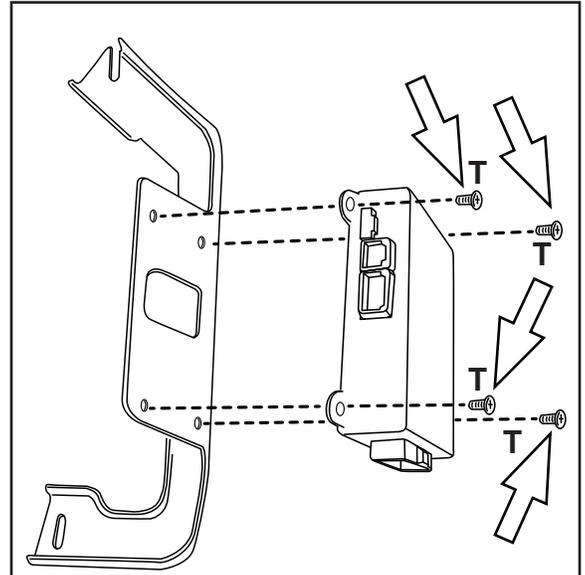


FIGURE K

9. Position the remote engine starter ECU bracket onto the mounting studs. (FIGURE L)
10. Install the relay block bracket back onto the mounting studs (on top of the remote engine starter ECU bracket). (FIGURE L)
- NOTE: Confirm the remote engine starter ECU bracket is positioned under the relay block bracket and on top of the dashwall insulation material.**

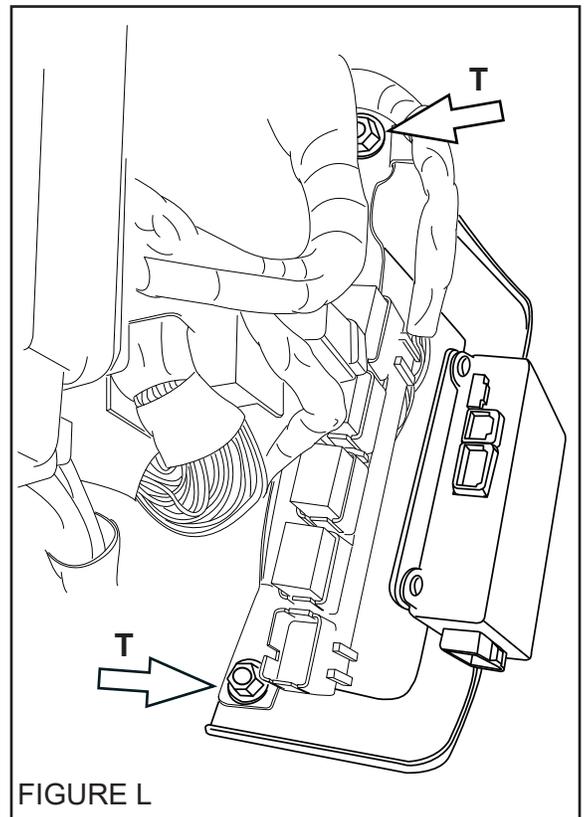
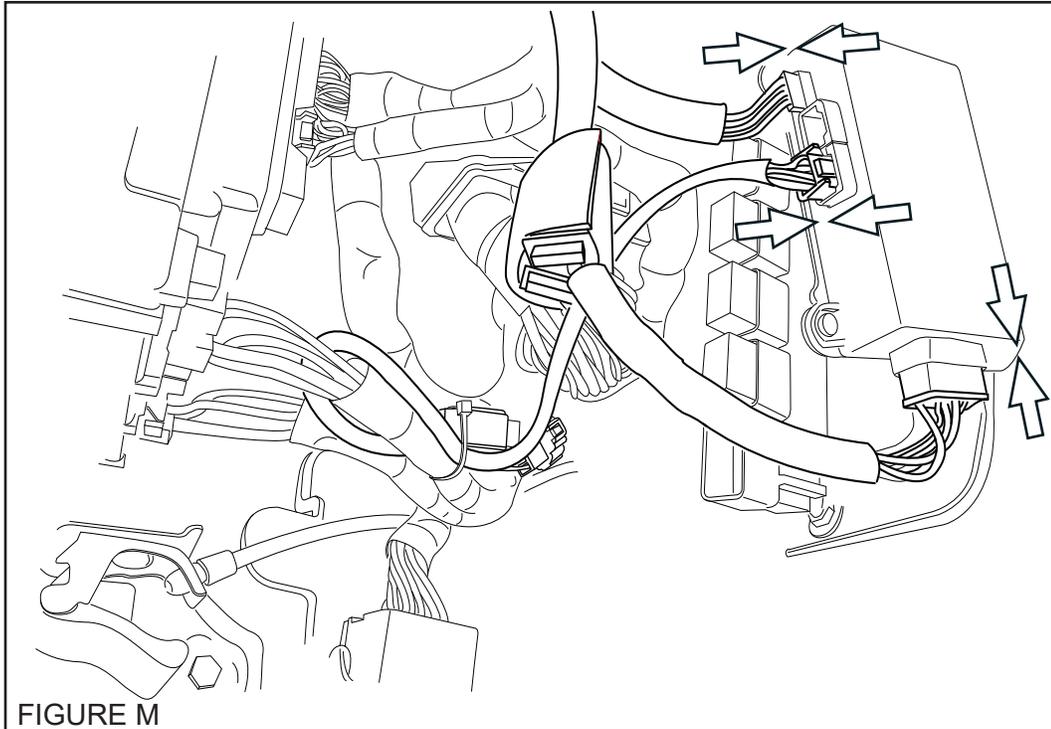


FIGURE L

11. Verify the remote engine starter ECU bracket and relay block bracket are properly seated, then torque the lower 10mm mounting nut, followed by the upper 10mm mounting nut to 10.8 Nm +/- 2 Nm (1.10 Kgf-m +/- 0.2 Kgf-m, 8 ft-lbs +/- 1.5 ft-lbs).

## 5 REMOTE STARTER ECU REPLACEMENT, continued

12. Plug the 12-pin pre-arranged harness into the 12-pin white port on the remote engine starter ECU. (FIGURE M)
13. Plug the 5-pin antenna harness into the 5-pin black port on the remote engine starter ECU. (FIGURE M)
14. Plug the 8-pin remote engine starter ignition harness into the bottom (large) connector on the remote engine starter ECU. (FIGURE M)

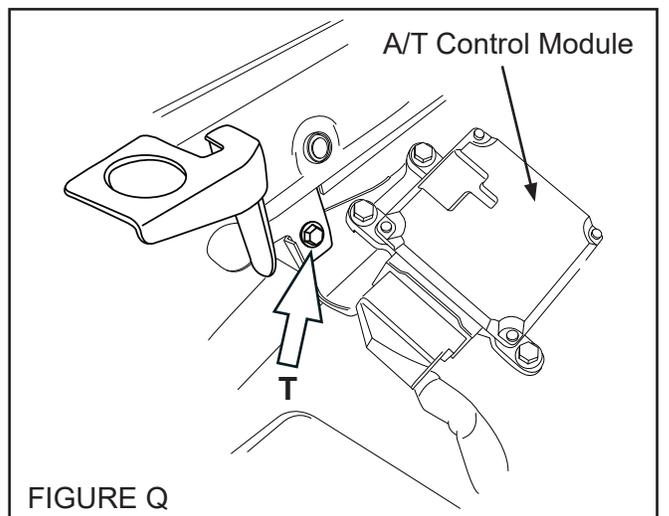
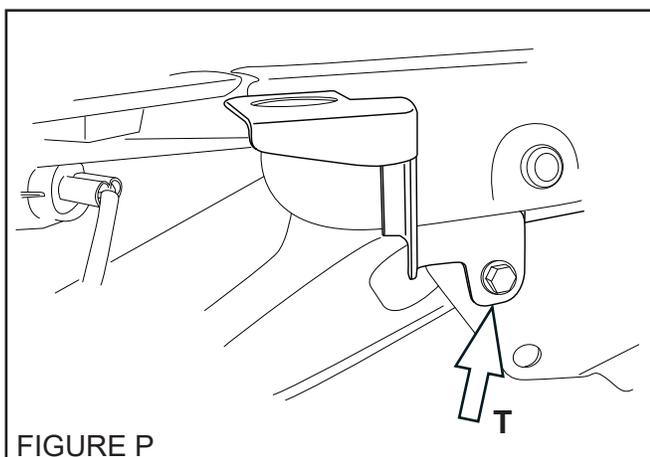
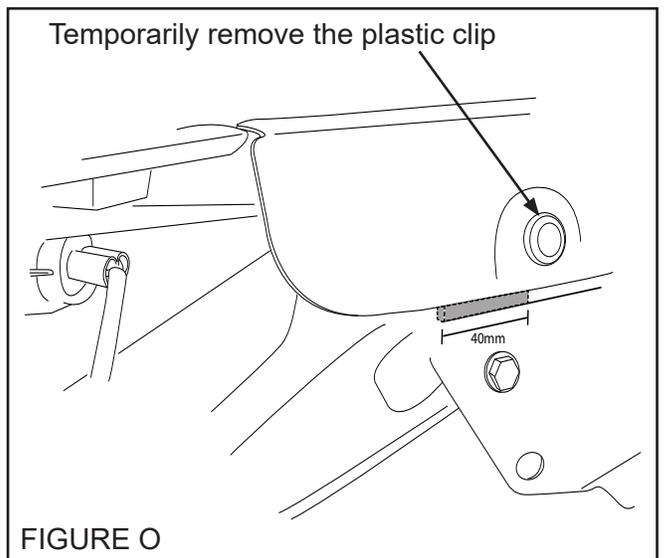
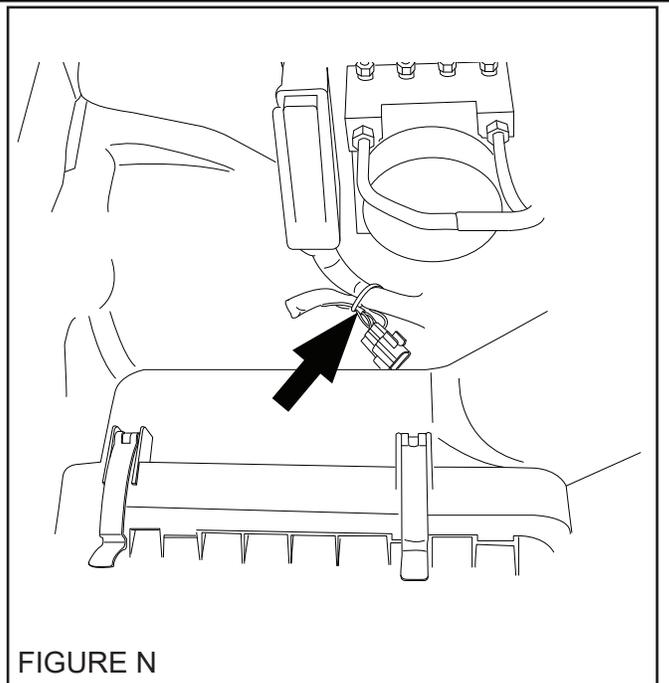


## 6 PANEL RE-ASSEMBLY

1. Re-install the metal knee bolster and torque the two (2) 10mm bolts to 7.5 Nm +/- 1.8 Nm (0.75 Kgf-m +/- 0.2 Kgf-m, 5.5 ft-lbs +/- 1.0 ft-lbs).
2. Plug in any previously removed connectors and re-install the lower dashboard panel.
3. Re-install the under dashboard finisher panel
4. Re-install the one (1) Phillips screw on the left side of the dashboard that secures the lower dashboard panel in place.
5. Re-install the left side dashboard panel.

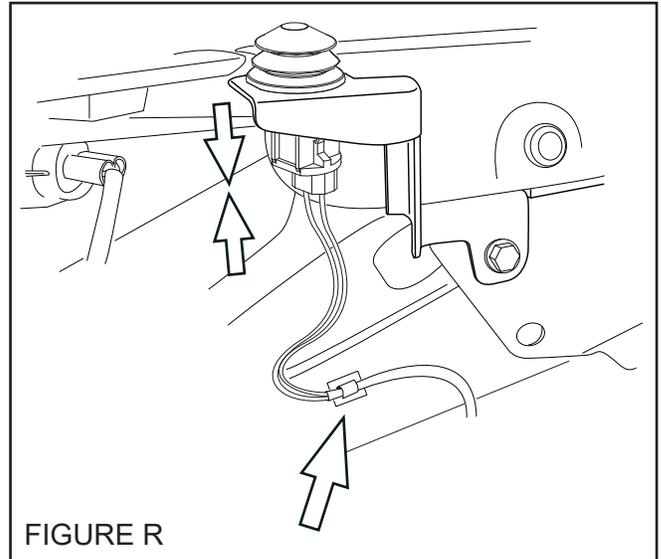
## 7 HOOD SAFETY SWITCH MOUNTING

1. In the engine compartment, locate and release the 2-pin pre-fit hood safety switch connector secured to the vehicle wire harness near the ABS Unit with breakaway tape. It is behind the air filter box on the passenger's side of the vehicle. (FIGURE N)
2. Locate the foam gasket along the bottom of the passenger side felt fender liner. Temporarily remove the plastic clip to prevent damage to the felt fender liner. Using a ruler and wire cutters, carefully measure, cut and remove 40mm of the foam gasket starting at the front of the felt fender liner. (FIGURE O)
3. **2.5L (4 Cylinder) vehicles** - Mount the hood safety switch bracket to the passenger side inner/lower fender support frame using the supplied 10mm bolt and pre-arranged weld nut in the inner fender support. Ensure that the supporting tongue on the bracket is seated flat against the top of the frame rail under the felt fender liner while tightening the 10mm bolt. (FIGURE P)
4. **3.6L (6 Cylinder) vehicles** - Locate the A/T control module mounted on the passenger's side fender support and remove the bracket mounting bolt closest to the front of the vehicle. Mount the hood safety switch bracket to the A/T control module bracket using the previously removed 10mm bolt. Ensure that the supporting tongue on the bracket is seated flat against the top of the frame rail under the felt fender liner while tightening the 10mm bolt. (FIGURE Q)
5. Torque the mounting bolt to 10.8 Nm +/- 2 Nm (1.10 Kgf-m +/- 0.2 Kgf-m, 8 ft-lbs +/- 1.5 ft-lbs).

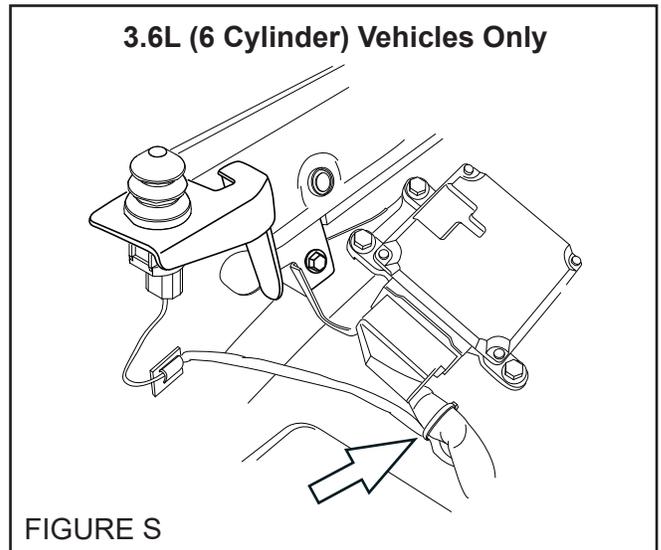


## 7 HOOD SAFETY SWITCH MOUNTING, continued

- Securely mount (snap-in) the supplied hood safety switch into the bracket and plug the vehicle's pre-fit 2-pin female hood switch connector to the base of the hood safety switch. (FIGURE R)
- Install the supplied adhesive backed cable clip to the angled vehicle frame rail approximately 6cm to the left of the hood safety switch mounting bolt. Coil any excess hood safety switch wiring and secure with the cable clip. (FIGURE R)



- 3.6L (6 Cylinder) vehicles** - Using one (1) of the supplied 20cm tie wraps, secure the hood switch harness to the factory wiring harness. (FIGURE S)

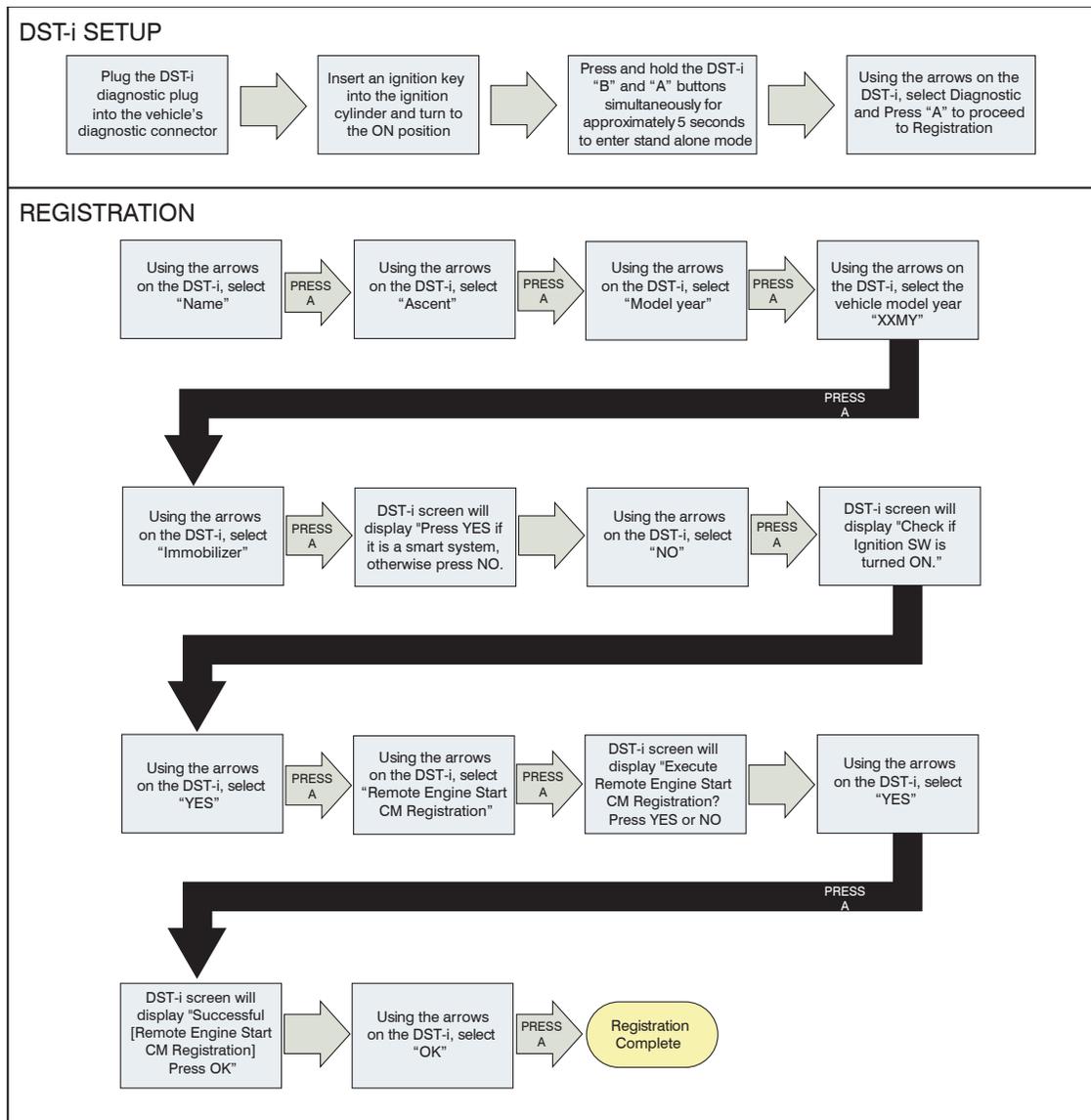


## 8 SYSTEM POWER-UP

1. After all the connections are complete, re-connect the vehicle's negative battery cable. Using a 12mm socket/ torque wrench, tighten the 12mm nut to 7.5 Nm +/- 2 Nm (0.76 Kgf-m +/- 0.2 Kgf-m, 5.5 ft-lbs +/- 1.5 ft-lbs).
2. Start the vehicle at least one (1) time using the ignition key prior to activating the remote engine start system. This is required to allow the vehicle's electronic systems to re-synchronize.
3. With the vehicle running via the ignition key, verify that the instrument cluster airbag light turns off. If the airbag light remains on, refer to the vehicle service information for troubleshooting.
4. Refer to the vehicle Owner's manual for the Power Window Reset Procedure to restore the power window functions.

## 9 SYSTEM REGISTRATION - DST-i

**NOTE: Once the Ignition is turned ON, the system will exit System Registration after 2 minutes.**



**9 SYSTEM REGISTRATION - DST-i WITH NETWORK ENABLED LAPTOP  
ENSURE THE SOFTWARE VERSION HAS BEEN UPDATED TO THE LATEST REVISION  
BEFORE ATTEMPTING SYSTEM REGISTRATION.**

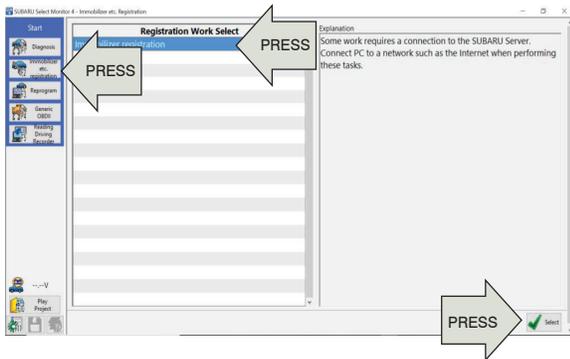
**NOTE: Once the Ignition is turned ON, the system will exit System Registration after 2 minutes.**

**DST-i SETUP**

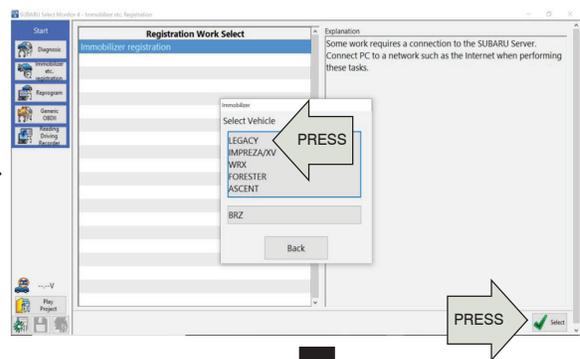


**REGISTRATION**

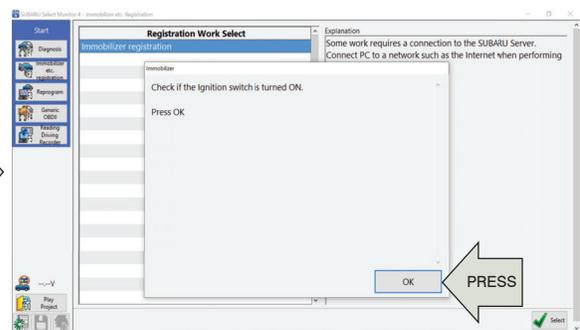
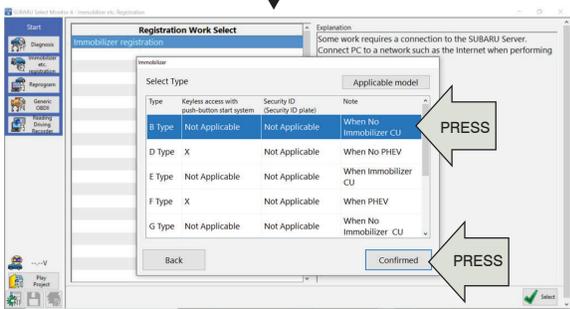
**1. PRESS IMMOBILIZER ETC. REGISTRATION, PRESS IMMOBILIZER REGISTRATION AND PRESS SELECT**



**2. PRESS LEGACY AND PRESS SELECT**



Insert an ignition key into the ignition cylinder and turn to the ON position



**3. PRESS B TYPE FOR KEY START MODELS AND PRESS CONFIRMED**

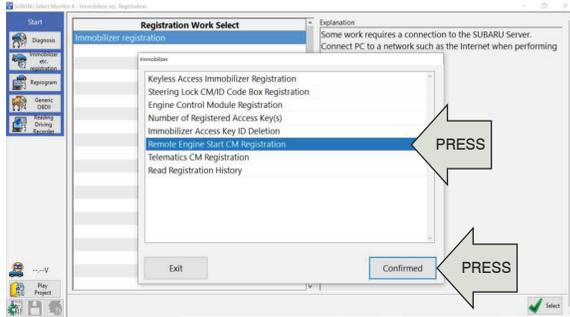
**4. ENSURE THE IGNITION IS TURNED ON AND PRESS OK**

WAIT FOR LAPTOP TO ESTABLISH CONNECTION

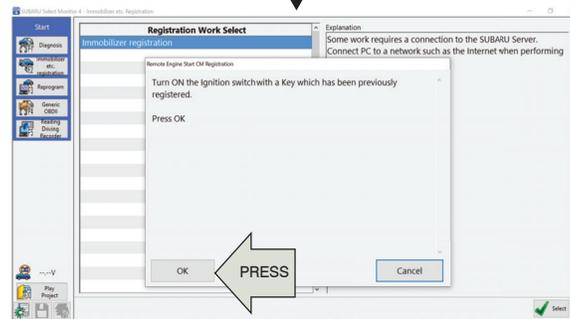
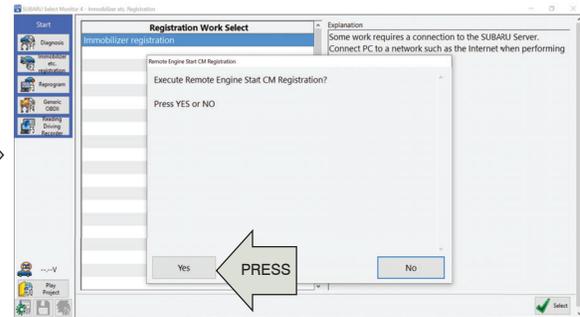
**NOTE: Once the Ignition is turned ON, the system will exit System Registration after 2 minutes.**

REGISTRATION, continued

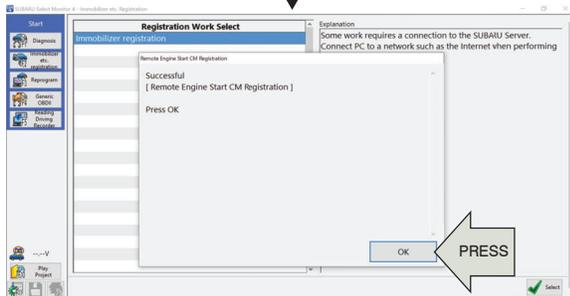
5. PRESS REMOTE ENGINE START CM REGISTRATION AND PRESS CONFIRMED



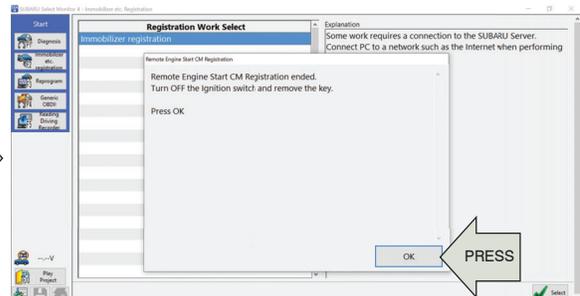
6. PRESS YES TO EXECUTE REGISTRATION



7. CONFIRM IGNITION IS ON AND PRESS OK



8. REGISTRATION SUCCESSFUL, PRESS OK



9. TURN OFF IGNITION AND PRESS OK

## 10 TRANSMITTER PROGRAMMING

1. Open the driver's door and enter the vehicle. The driver's door must remain open throughout the entire programming process. Ensure all other vehicle doors, the engine hood and trunk are closed.
2. Verify that the transmission shifter is in the "park" position.
3. Depress and hold the vehicle's brake pedal.
4. Turn the ignition "ON" then "OFF", "ON" then "OFF", "ON" then "OFF", then back "ON" and leave on throughout the entire programming process. (ON/OFF ignition cycles must be completed within eight (8) seconds.)
5. The system will flash the side marker lights, tail lights and parking lights and honk the horn three (3) times indicating that the system has entered transmitter learn mode.
6. Press and release the  button on the transmitter to be learned one (1) time.
7. The system will flash the side marker lights, tail lights and parking lights and honk the horn one (1) time indicating that the system has learned the transmitter. Upon successful programming, the remote start transmitter button may flash/beep one (1) time.
8. Repeat step five (5) for any additional transmitters. The system will accept up to eight (8) transmitters.
9. Turn the ignition OFF to exit transmitter learn mode.

**NOTE: The system will exit the transmitter learn mode if the ignition is turned OFF, the driver's door is closed or thirty (30) seconds of inactivity.**

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# 11 POST INSTALLATION CHECKLIST

- 1. REMOTE ENGINE START- Make sure the key is removed from the ignition switch, the engine hood, all doors and trunk are closed. Press the START button on the remote start transmitter two (2) times within 3 seconds. The vehicle's parking lights should flash and the vehicle's horn should honk one (1) time and then the vehicle should crank and start. Once started, the transmitter LED will flash two (2) times and the parking lights will turn on and stay on signifying the vehicle is running. The transmitter LED will flash one (1) time every three (3) seconds signifying the vehicle is still running.
- 2. SHUT DOWN WITH DOOR OPENING - While the vehicle is running by the remote engine start, wait at least five (5) seconds and then confirm that all functions (lock, unlock & trunk, but not panic) operate properly on the FACTORY transmitter. Once the FACTORY transmitter functionality is confirmed, press the UNLOCK button on the FACTORY transmitter and open any vehicle door. The remote engine start should shut down and the transmitter LED should flash three (3) times indicating the system has shut down.
- 3. ACTIVATION WITH DOOR OPEN - Ensure the key is removed from the ignition switch and the engine hood and trunk are closed. Open the driver's door, press the START button on the remote start transmitter two (2) times within three (3) seconds. The vehicle's parking lights should flash and the vehicle's horn should honk six (6) times. The vehicle should not start with any door or trunk opened.
- 4. BRAKE PEDAL SAFETY - While sitting in the vehicle with the engine hood, all doors and trunk closed, activate the remote engine start and press the brake pedal. The vehicle should shut off.
- 5. KEY-IN-SENSE - While sitting in the vehicle with the engine hood, all doors and trunk closed, insert the ignition key into the ignition switch, but keep it in the OFF position. Activate the remote engine start. The vehicle's parking lights should flash and the vehicle's horn should honk (2) times. The vehicle should not start since the key is in the ignition switch.
- 6. HOOD SAFETY SWITCH - Open the engine hood and activate the remote engine start. The vehicle's parking lights should flash and the vehicle's horn should honk two (2) times. The vehicle should not start since the hood safety switch is activated.
- 7. HEATER / A/C FUNCTION - Using the ignition key, turn the ignition to the ON position. Preset the vehicle's heater or air conditioning to the ON position. Turn the ignition OFF and remove the ignition key. Activate the remote engine start and verify that the heater or air conditioning turns on to the preset setting for manual climate controlled vehicles or turns to the "Full Auto" setting for electronic climate control vehicles.
- 8. 15 MINUTE RUN TIME - Activate the remote engine start and allow the system to run for the 15 minute preset run time. The remote engine start should shut down after 15 minutes (+/- 10 seconds).
- 9. TRANSMITTER FUNCTIONALITY VERIFICATION - Activate the remote engine start using both of the supplied single button remote start transmitters.

FUNCTIONAL TESTING IS NOW COMPLETE.

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