



HITCH INSTALLATION INSTRUCTIONS

MAKE:
BMW

YEARS:
2020- 2021

MODEL/TRIM:
X6M or X6M COMPETITION
(F96 CHASSIS)

www.stealthhitches.com 833-694-4824

RACK RECEIVER KIT#: **SHR31039**

COMPATIBLE WITH TOW KIT: **SHT25015**

2" RACK RECEIVER MAXIMUM PAYLOAD: 600 LBS
MAXIMUM TOW RATING: 6000 LBS
MAXIMUM TONGUE WEIGHT: 600 LBS



UNDER VEHICLE TRIMMING:

HEAT SHIELD: **NO**

FASCIA: **NO**

GRAVEL GUARD TRIMMING: **YES**

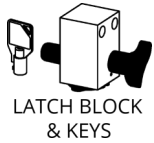


READ ALL INSTRUCTION WARNINGS AND LABELS

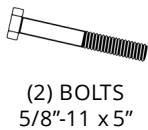


NO WELDING, METAL DRILLING OR VISIBLE TRIMMING REQUIRED

PARTS SUPPLIED WITH RACK RECEIVER KIT:



LATCH BLOCK & KEYS



(2) BOLTS
5/8"-11 x 5"



(2) 5/8"
NYLOCK NUTS



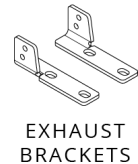
(2) BOLTS
5/16" x 1"



(2) 5/16" FLAT
WASHERS



(2) 5/16" SERRATED
FLANGE NUTS



EXHAUST
BRACKETS



2" RACK
RECEIVER

ADDITIONAL PARTS FOR TOW KIT:



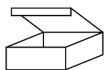
BALL MOUNT
5" RISE, SHORT



CHAIN HOOKS



2" BALL



PASSIVE WIRING
KIT BOX

TOOLS REQUIRED:



15/16" OPEN
END WRENCH



18mm DEEP WELL,
10mm DEEP WELL,
8mm, 13mm,
1/2" & 15/16" SOCKETS



RATCHET



SOCKET
EXTENSION



TORQUE
WRENCH



FLASHLIGHT



PLASTIC
PRY TOOLS



PAINTER'S TAPE



SAFETY GLASSES



90 DEGREE
PICK



DREMEL TOOL



FILE



T30 TORX

ADDITIONAL TOOLS FOR TOW KIT:



T20 TORX



STRIPPER/
CRIMPING
TOOL



PLIERS



PHILLIPS HEAD
SCREWDRIVER



SILICONE



MULTIMETER



DRILL &
3/8" BIT

RACK RECEIVER INSTALLATION: USE STEPS 1-18, & 37-42
TOW KIT INSTALLATION: USE STEPS 1-42

<THESE INSTRUCTIONS MUST BE GIVEN TO THE END USER>

NOTICE: Installation of Stealth products may or may not require the addition of a wiring harness to the vehicle.

- The Rack Receiver only product does not require adding a wiring harness.
- The Rack Receiver plus Tow Kit requires the addition of a "Passive" wiring harness to the vehicle. The passive harness "reads" the output of the vehicle's lights and translates the signals to the trailer without being connected to the vehicle computer.

INSTALLATION NOTE: In most instances, these instructions will only outline disassembly of vehicle components. Re-installation of components will require the installer to retain vehicle hardware and work through disassembly instructions in reverse order. When installation is complete, double check that all vehicle components have been replaced and are secured.

IMPORTANT SAFETY NOTICE FOR STEALTH HITCH INSTALLERS AND CUSTOMERS.

Read all installation and operating instructions along with all labels before installing or using this product. Do not perform any installation or towing procedures without fully understanding the correct tools and actions for all steps. Call for support if needed.

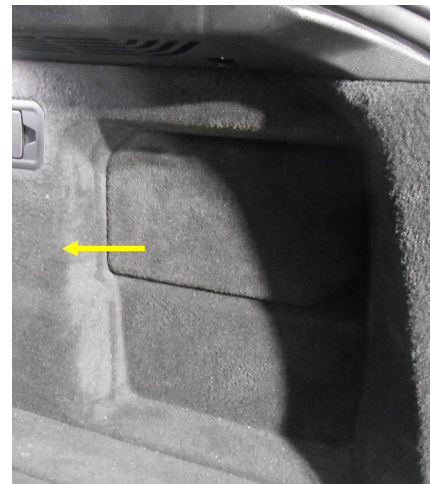
⚠ WARNING Failure to comply with the safety information in these instructions could result in serious injury or death.

- ⚠ Do not modify this product in any manner. Doing so could alter its integrity and lead to a loss of attachment between the trailer and the tow vehicle.
- ⚠ Adding Stealth hitch components to the chassis of any vehicle can be hazardous. There is potential for unexpected combustion of fuel, electric shock, burns, shifting or falling of unstable vehicle, damage to vehicle, injury from tool usage and many other hazards. This installation must be completed by someone who is aware of the hazards involved. This person must be knowledgeable of proper safety procedures for a vehicle modification of this nature, and for usage of the equipment required to perform the installation.
- ⚠ Without proper knowledge, towing can be a dangerous activity. Understand all the risks involved with towing before proceeding. For information on towing safety, see "**The Trailer Handbook: A Guide to Understanding Trailer and Towing Safety**" from the National Association of Trailer Manufacturers, www.NATM.com and your trailer and tow vehicle manufacturer's owner's manual.
- ⚠ Do not exceed tow or tongue rating of coupler, tow or tongue rating of hitch, or tow or weight ratings of tow vehicle or trailer. See vehicle and trailer manufacturer information for ratings. Exceeding these ratings may cause damage to towing components or loss of attachment between the trailer and vehicle.
- ⚠ While installation is being performed, check for signs of damage or excessive corrosion. Do not install hitch components over vehicle parts that are broken or have compromised structural integrity.
- ⚠ This product was designed to fit vehicles in their original, "as manufactured" condition. Compatibility with vehicles having replacement parts, or other modifications is not guaranteed. Inspect vehicle for modifications before installation of this product.
- ⚠ Some accessories, like the rack receiver, are not rated for towing. Do not use any accessories without proper knowledge of their use.
- ⚠ A visual inspection of the hitch should be performed before each use. Regularly check that all connections are secure, including those that secure the hitch to the vehicle. Check for cracks or damage to the hitch. Do not use the hitch if cracks or damage outside of normal wear is found. Using a hitch that has unsecure connections and/or cracks or damage could result in damage to the tow vehicle, trailer, towing components and loss of attachment between the tow vehicle and trailer.
- ⚠ Stealth hitches are not compatible with any weight distribution or sway control products. Adding additional products to the trailer or chassis which modifies the function of the Stealth hitch may cause hitch failure.

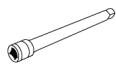
NOTICE: Installation of hitch requires removal of vehicle parts and interaction with vehicular electronics. Before installation, check the condition of body panels and note any locations where panels are not flush. Check the electronic functions of the vehicle, such as: headlights, taillights, turn signals, cameras, backup sensors, Parking Distance Controller (PDC), foot activated cargo access, etc. It is the responsibility of the installer to restore the fit and function of the vehicle.

GAIN ACCESS TO MOUNTING AREA

1. Open vehicle cargo area and remove driver and passenger side panels for access to rear of the tail lights.



10mm
DEEP WELL
SOCKET



SOCKET
EXTENSION

2. Locate the taillight nut behind the left and right side panels where shown. Remove each nut with a socket and extension.



USE A 10mm DEEP WELL SOCKET TO REMOVE (1) NUT ON PASSENGER & DRIVER SIDE



PLASTIC
PRY TOOLS

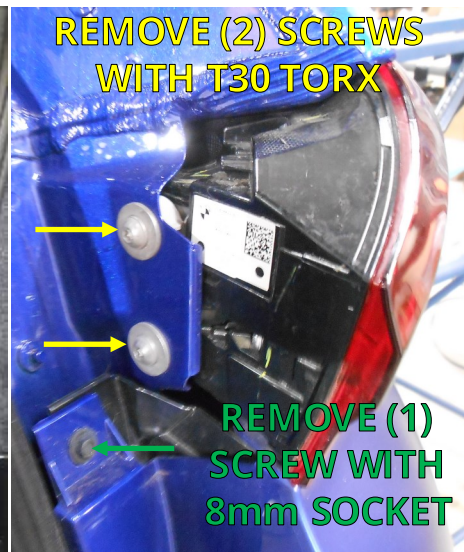


T30 TORX



8mm
SOCKET

3. With a pry tool, remove the light cover trim on each side of the vehicle.
4. While holding the taillight in place, remove the screws securing the taillight to the vehicle, and the (1) screw securing the fascia.



REMOVE (2) SCREWS
WITH T30 TORX

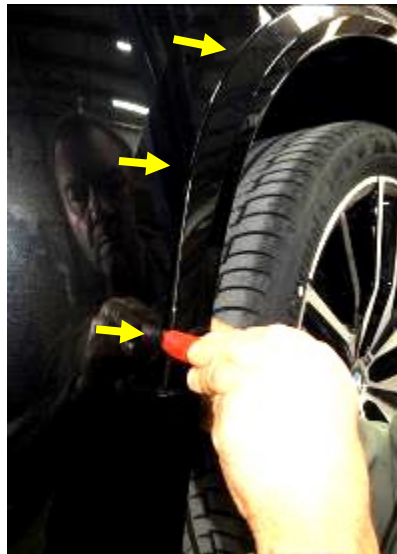
REMOVE (1)
SCREW WITH
8mm SOCKET

GAIN ACCESS TO MOUNTING AREA CONTINUED

5. With the taillight dislodged, disconnect the light plug by pushing down on the clip and pulling the plug outward. Repeat Steps 5-6 on other side of vehicle.



6. To allow partial removal of the rear wheel well trim, (3) clips will need to be disconnected. Apply outward pressure on wheel well trim. Start with the bottom clip and work up. Push down on clip to disconnect. Use plastic pry tools on hard to reach clips.
7. Behind the rear wheel well trim is a screw holding the fascia. Pull the trim away from vehicle to expose screw. Use a socket to remove screw. Repeat Steps 18-19 on other side of vehicle.



NOTE: To protect the trim from being scratched during the removal or replacement, cover it with painter's tape or something similar.



8. Remove the (2) reflectors located under the rear taillights on each side of the vehicle with a plastic pry tool. Pry from top of reflector to remove.



GAIN ACCESS TO MOUNTING AREA CONTINUED



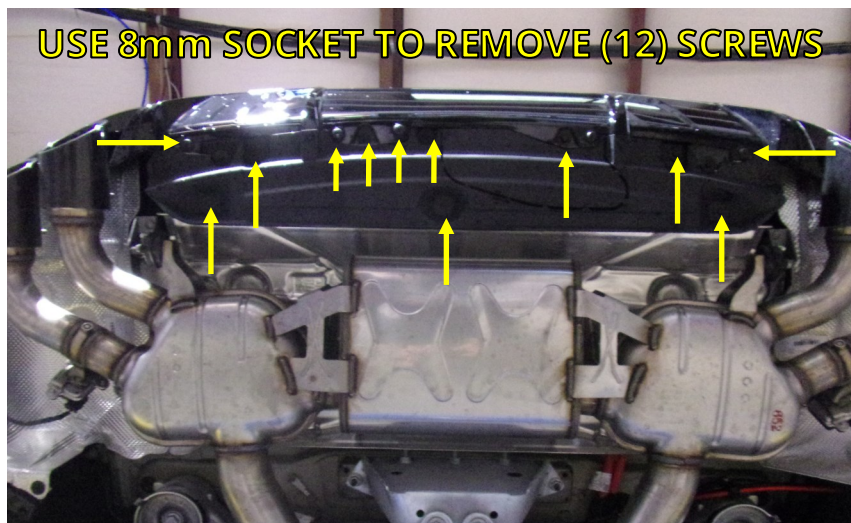
8mm
SOCKET

9. A screw, which is holding the fascia, will be exposed when the reflector is removed. Use a socket to remove the screw.



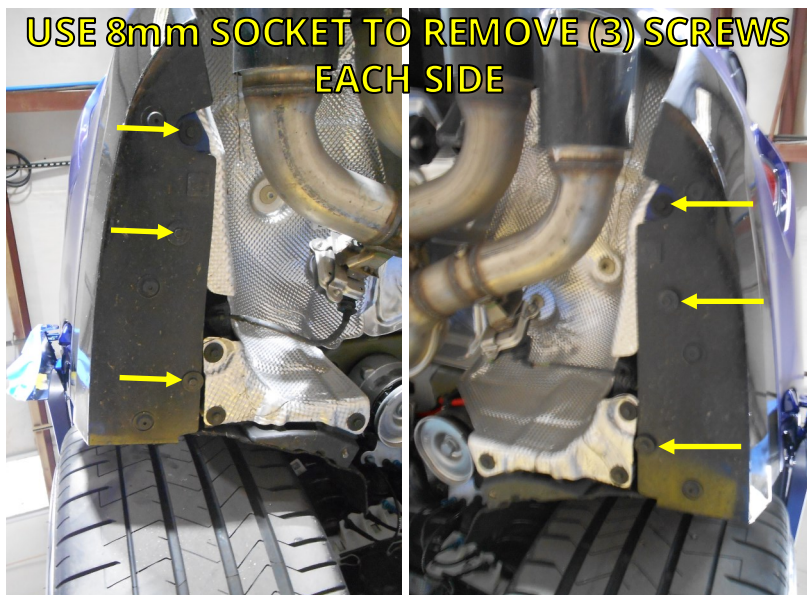
8mm
SOCKET

10. From underneath the vehicle, use a socket to remove (12) screws from the rear bottom of the fascia. And bottom cover plate.



8mm
SOCKET

11. Use a socket to remove (6) screws from the bottom side panels of the fascia.



GAIN ACCESS TO MOUNTING AREA CONTINUED



12. The fascia is clipped to the vehicle body directly behind the wheel wells. Pull outward on the fascia to expose the first clip in the seam. With a plastic pry tool, push down on the exposed clip to disconnect. Continue to pull outward on the fascia and disconnect clips as they are exposed.

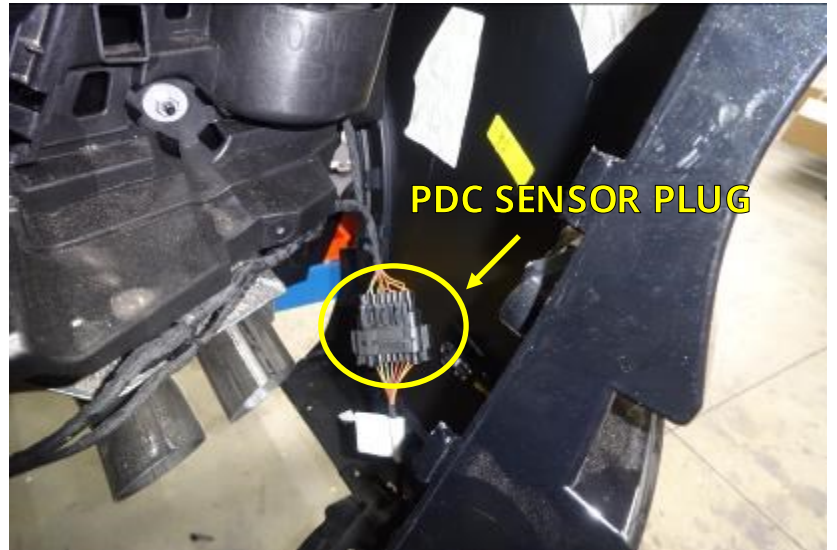
Continue applying outward and rearward pressure until all the clips except the four rear center clips are released.



90 DEGREE PICK

13. This step requires a partner. Pull the fascia rearward enough to access the PDC sensor plug on the passenger side. Press down on the clips to unplug the PDC sensor plug. In some cases a 90 degree pick tool will be needed to disconnect the sensor plug. Remove the fascia completely.

NOTICE: Carefully remove the fascia and place on a blanket or pad.



13mm SOCKET



90 DEGREE PICK

14. Locate the two exhaust brackets under the rear of the vehicle, above the muffler. Use a socket to remove (1) exhaust bracket nut on each side of the vehicle. On the passenger side remove (1) plastic rivet from factory reinforcement beam, as shown.



VIEW LOOKING UNDER REAR OF VEHICLE

GAIN ACCESS TO MOUNTING AREA CONTINUED

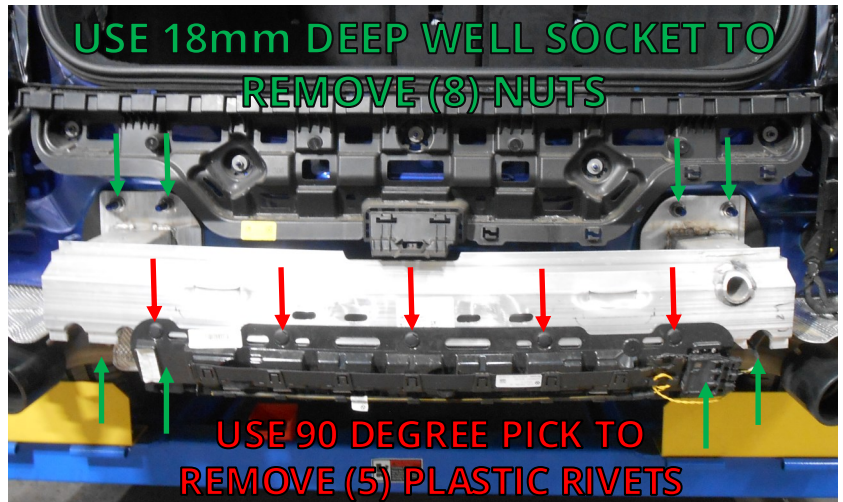


18mm
DEEP WELL
SOCKET



90 DEGREE
PICK

15. Remove the plastic kick wand panel (5) plastic rivets with a 90 degree pick. Save (3) plastic rivets for reinstallation. Unplug the wire harness connected to the panel and put aside. Remove the factory reinforcement beam (8) nuts with a socket and save for later reinstallation. Discard the factory reinforcement beam.



INSTALL STEALTH HITCH FRAME

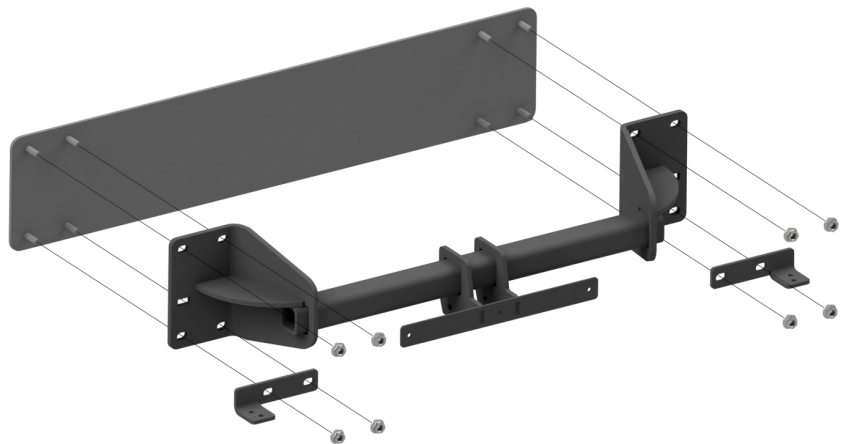


18mm
DEEP WELL
SOCKET



TORQUE
WRENCH

16. Install the Stealth hitch frame and the supplied exhaust brackets. (See Diagram) Center the hitch frame. Use a torque wrench to tighten the factory nuts to 85 ft.-lbs.

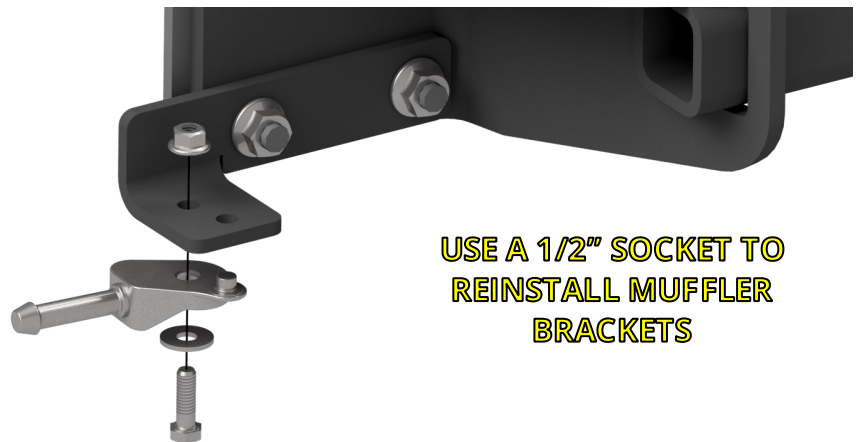


**USE 18mm DEEP WELL SOCKET
TO INSTALL NUTS**



1/2"
SOCKET

17. Reinstall the exhaust brackets removed in Step 14. Use (2) supplied bolts, washers and nuts.



**USE A 1/2" SOCKET TO
REINSTALL MUFFLER
BRACKETS**

MOUNT LATCH BLOCK



15/16"
SOCKET



15/16" OPEN
END WRENCH



TORQUE
WRENCH

18. Installation of the latch block varies depending on which kit you are installing.

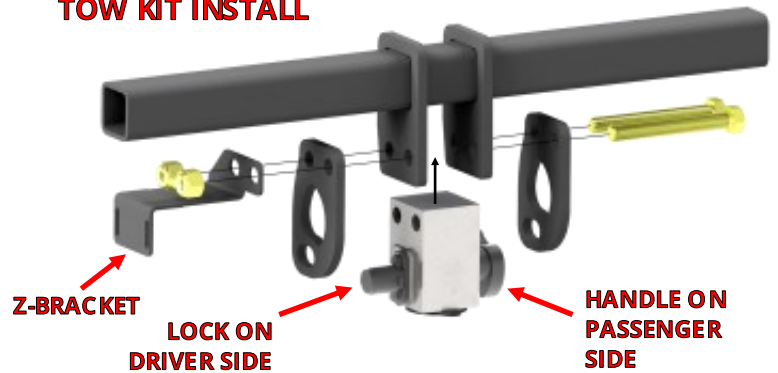
- **Rack Receiver Kit:** Install the latch block with (2) 5/8"-11 x 5" bolts and (2) 5/8" nylock nuts. Tighten each bolt to 150 ft.-lbs.
- **Tow Kit:** Retrieve Z-bracket from wiring harness kit box. Install the latch block, (2) chain hooks, and Z-bracket with (2) 5/8"-11 x 5" bolts and (2) 5/8" nylock nuts. Tighten each bolt to 150 ft.-lbs.

NOTICE: Keys are packaged within the latch block, remove keys and store in safe location.

RACK RECEIVER KIT INSTALL



TOW KIT INSTALL



IF INSTALLING A RACK RECEIVER KIT, SKIP TO STEP 37.
IF INSTALLING A TOW KIT, CONTINUE TO STEP 19.

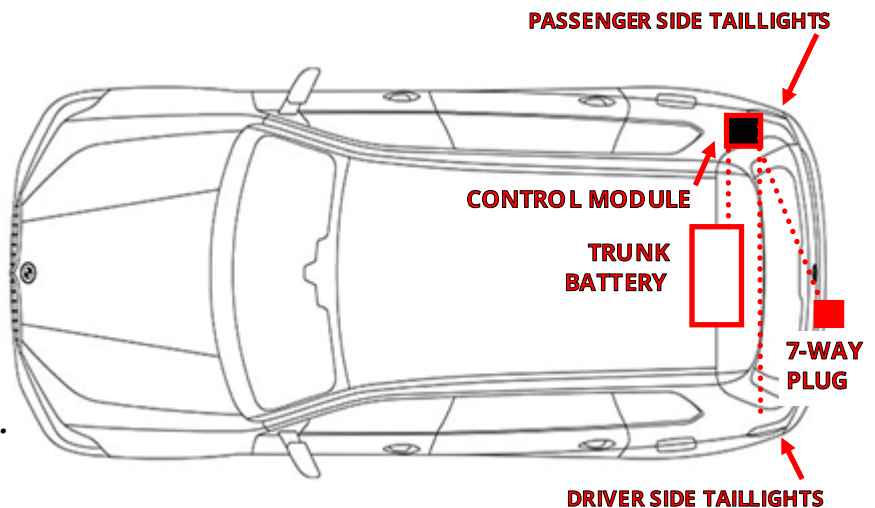
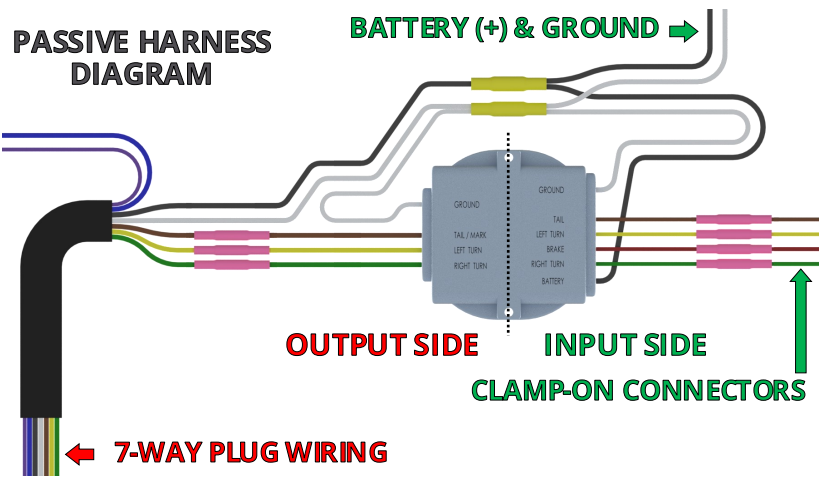
INSTALL PASSIVE WIRING KIT

| # | DESCRIPTION | QTY |
|----|--|-----|
| 1 | 7-WAY WIRING HARNESS • FUSE HOLDER & FUSE • CONTROL MODULE & WIRES | 1 |
| 2 | ADHESIVE FOAM STRIP | 2 |
| 3 | FORK TERMINAL | 1 |
| 4 | CLAMP-ON CONNECTORS | 5 |
| 5 | 5/8" LONG PHILLIPS SCREWS | 4 |
| 6 | #10 LOCK NUT | 4 |
| 7 | CABLE TIE - 8" | 4 |
| 8 | CABLE TIE - 14" | 3 |
| 9 | Z-BRACKET | 1 |
| 10 | MOUNTING BRACKET | 1 |
| 11 | 7-POLE HOUSING | 1 |
| 12 | 7-POLE TO 4-POLE ADAPTER | 1 |



19. Locate the wiring kit box. Review the contents of the box against the list above to check for missing components. The passive wiring kit uses a control module to manage the functions of the trailer lighting. The module has an "input" side that receives power from the vehicle's battery and signals from the vehicle's taillights. The "output" side of the module delivers this information to the 7-way plug. The control module is connected to the vehicle's battery and taillight wiring as outlined in the next steps.

NOTICE: Do not allow electrical system to become disconnected from power or ground. Doing so may interrupt electrical systems.

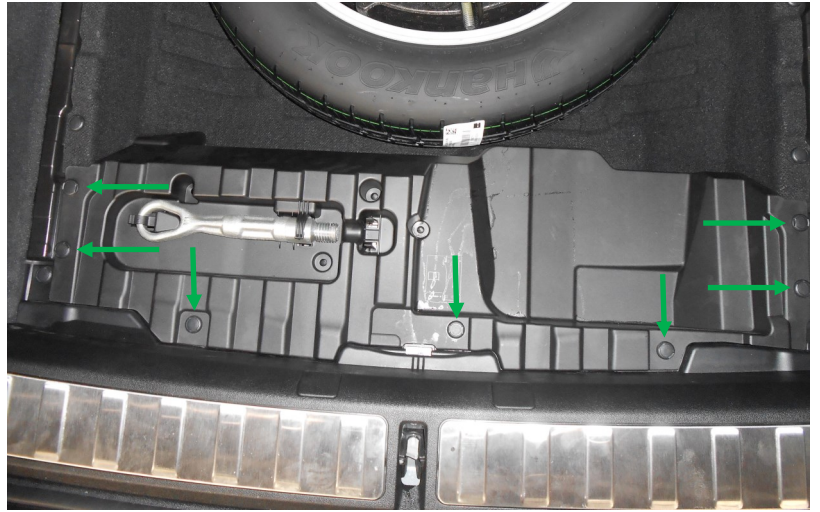


INSTALL WIRING KIT CONTINUED



90 DEGREE
PICK

20. Under the rear floor panel remove (7) plastic rivets from battery cover to gain access to the battery compartment.



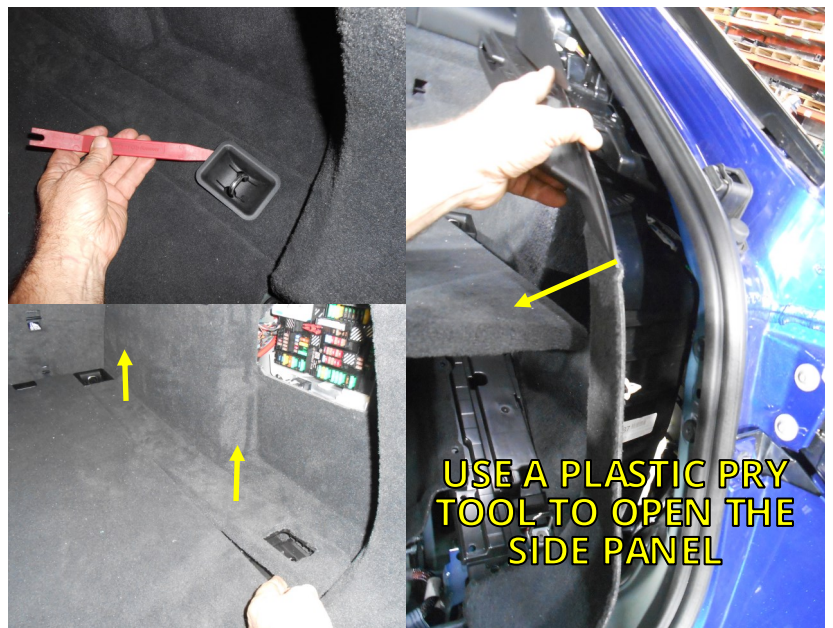
T20 TORX

21. Remove the threshold in the rear cargo area. Use a T20 socket to remove (3) screws. Lift up to remove threshold.



PLASTIC
PRY TOOLS

22. On the passenger side of the vehicle cargo area, use a pry tool to lift and remove the (2) plastic anchor covers. Lift the passenger side floor piece and remove.
23. Use a pry tool to dislodge the passenger side panel to gain access to the passenger side compartment for routing the trailer wiring. Retrieve the wiring harness and controller and place inside the passenger side compartment.



INSTALL WIRING KIT CONTINUED



DRILL &
3/8" BIT

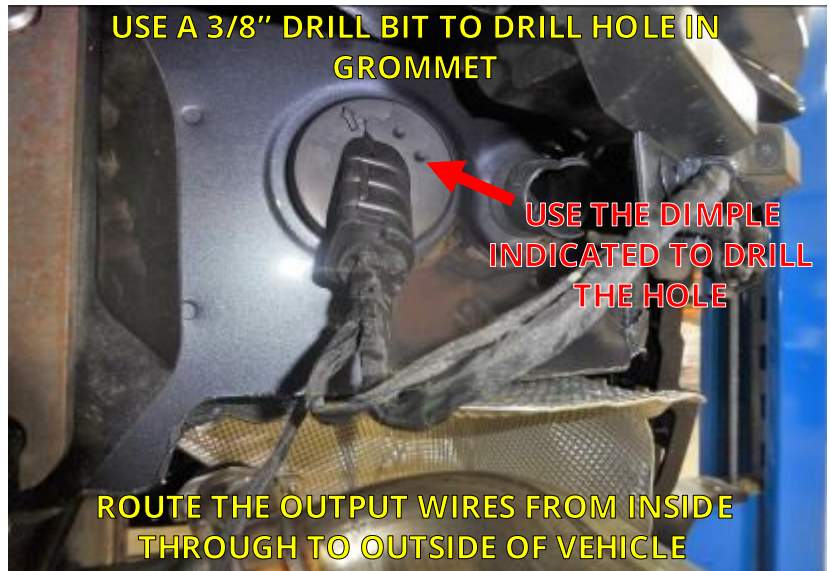


SILICONE

24. On the passenger side of the vehicle locate the factory grommet to the right of Stealth hitch frame. Drill a 3/8" hole in the grommet where indicated.

NOTICE: Check for obstructions on other side of grommet before drilling. Use caution when drilling.

25. Feed output wires and black sheathing through grommet from inside vehicle to outside of vehicle.



26. From the passenger side of the vehicle, route the yellow input wire to the driver side of the vehicle through the battery compartment using an existing wire harness as a guide.



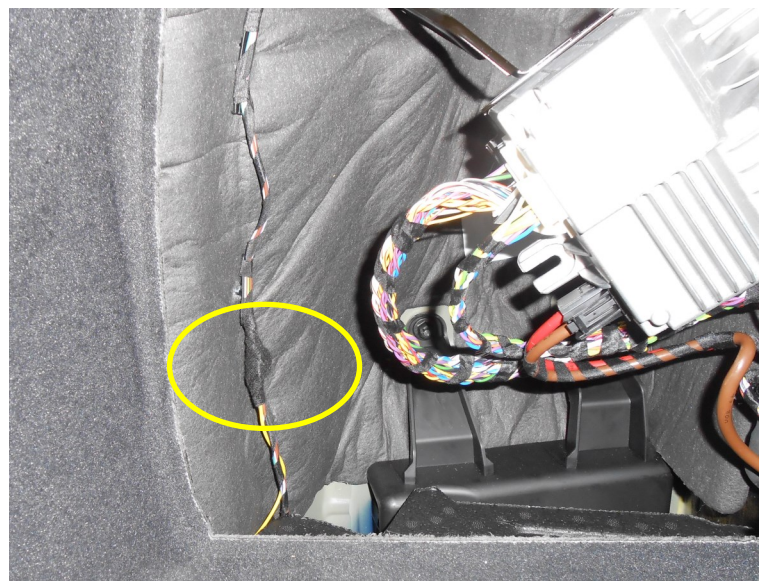
PLIERS



MULTIMETER

27. The wires on the input side of the wiring module need to be attached to the vehicle wiring. On the driver side use a clamp-on connector to clamp the yellow wire to the left turn signal wire, behind taillight. (See reference table on next page.)

Note: Vehicles may have different wire colors than those shown. Verify circuits (wire colors) with multimeter.



INSTALL WIRING KIT CONTINUED

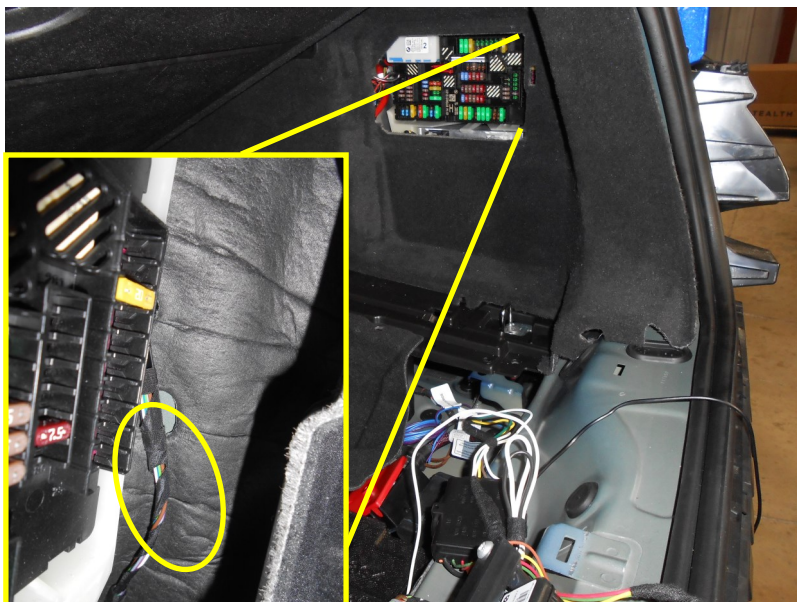


PLIERS














MULTIMETER

28. Inside the passenger side compartment, use clamp-on connectors to clamp the green and brown wires to the right turn and marker signal wires behind taillight. (See reference table below.)



CLAMP-ON CONNECTOR COLOR REFERENCE TABLE

| SIGNAL INPUT WIRES | | | POWER & GROUND WIRES | | |
|-----------------------|--|---|----------------------|--|-------------|
| FUNCTION | HARNESS | VEHICLE | | | |
| <u>LEFT TURN</u> |  YELLOW |  GREEN/BLUE | <u>12V+ (POWER)</u> |  BLACK | BATTERY (+) |
| <u>RIGHT TURN</u> |  GREEN |  GREEN/BLUE | <u>GROUND</u> |  WHITE | GROUND STUD |
| <u>MARKER</u> |  BROWN |  GREY/PURPLE | | | |
| <u>BRAKE</u> |  RED | <i>Do not connect the red brake wire. This vehicle does not utilize a separate brake circuit. The brake signal is sent down the left and right turn circuits simultaneously.</i> | | | |
| <u>REVERSE</u> |  PURPLE | For use with trailer reverse lights or to disable the trailer brakes when backing with surge brakes. To connect, isolate vehicle's reverse light circuit and connect the purple wire from the trailer wiring harness to vehicle reverse light circuit. <i>Trailers rarely have reverse lights or surge brakes.</i> | | | |
| <u>ELECTRIC BRAKE</u> |  BLUE | Only used when a hard wired brake controller is mounted inside the vehicle and your trailer has electric brakes. See brake controller instructions for this wire. | | | |

NOTE: If two colors are listed, the first color is the dominant color.



10mm
SOCKET



STRIPPER/
CRIMPING
TOOL

29. Locate the ground stud in the battery compartment. Trim white ground wire so it will reach stud without excess wire. Crimp supplied fork terminal to the ground wire with a crimping tool. Loosen the ground stud and secure the fork to the terminal.

NOTICE: Loosen ground stud just enough to install fork terminal, so vehicle wiring does not lose ground.



USE A 10mm SOCKET

INSTALL WIRING KIT CONTINUED



10mm
SOCKET



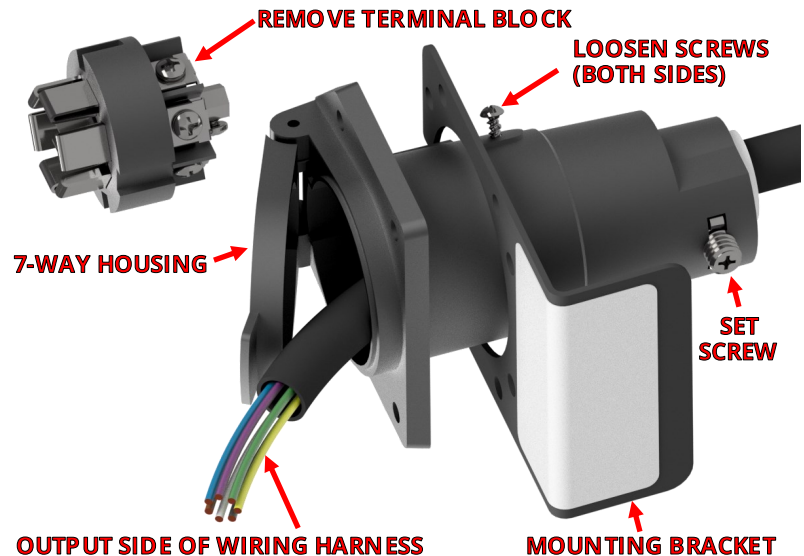
STRIPPER/
CRIMPING
TOOL

30. Locate the fuse holder supplied in the wiring kit box. Remove the fuse from fuse holder. Trim excess wire length. Crimp fuse lead to power wire. Connect fuse ring terminal to the positive battery terminal (+).



PHILLIPS HEAD
SCREWDRIVER

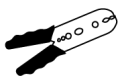
31. Locate the 7-way housing. Use a screwdriver to loosen (2) screws. Remove 7-way round terminal block. Place the mounting bracket onto the 7-way housing as shown. Use a screwdriver to loosen the set screw at the bottom of the 7-way housing. Route output side wires of the wiring harness through the 7-way housing.



Please follow instructions below very carefully. Incorrect wiring of the 7-way receptacle causes the vast majority of wiring problems.



PHILLIPS HEAD
SCREWDRIVER

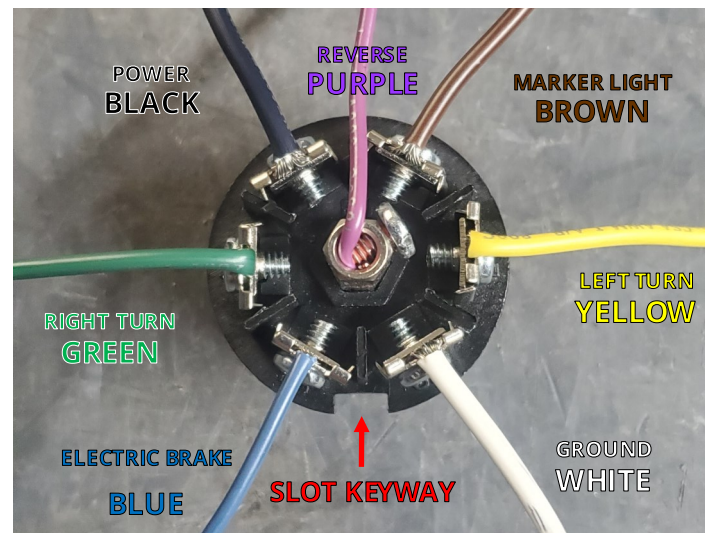


STRIPPER/
CRIMPING
TOOL

32. Locate the slot keyway. Starting from the keyway going **clockwise**, attach the wires as follows:

- Blue
- Green
- Black
- Brown
- Yellow
- White
- Purple (middle)

NOTICE: Markings on the receptacle may not match the correct wire configuration. Please disregard and follow the instruction above.



TEST 7-WAY HARNESS WIRING



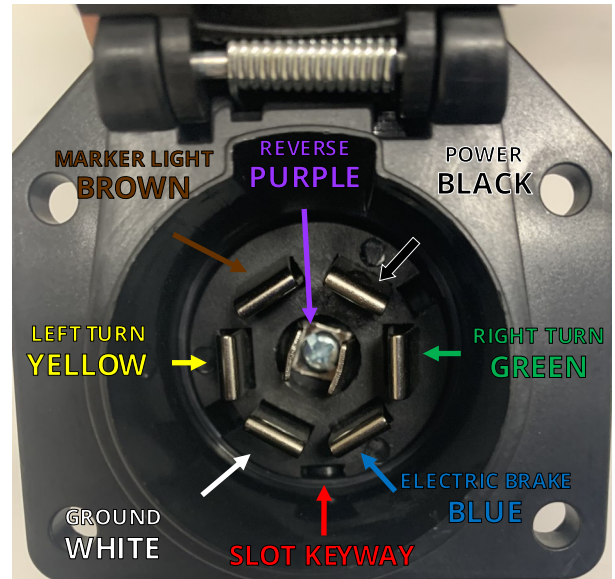
PHILLIPS HEAD
SCREWDRIVER



MULTIMETER

33. Put the 7-way receptacle back together. While everything is still accessible, you should test the wiring to make sure everything is connected properly and in working order. **Replace the 20 Amp fuse into the fuse holder located near the battery.**

NOTE: *Taillights will need to be temporarily plugged in during testing.*



- Start by connecting the multimeter negative probe to the ground blade on the 7-way receptacle.
- Next, connect the multimeter positive probe to the power blade on the 7-way receptacle and check for 12 volts.
- Once that is confirmed, move the positive probe to the left turn blade on the 7-way receptacle and check for 12 volts when the vehicle left turn blinker is active. You should see it pulse.
- Next, move the positive probe to the right turn blade and check for 12 volts when the right turn blinker is active. You should see it pulse.
- Next, move the positive probe to the marker/taillights. With the vehicle lights on you should see 12 volts constant.
- Lastly, with the brake depressed, move the positive probe to the left turn blade where you should see 12 volts constant. Move the probe to the right turn blade where you should also see 12 volts constant.



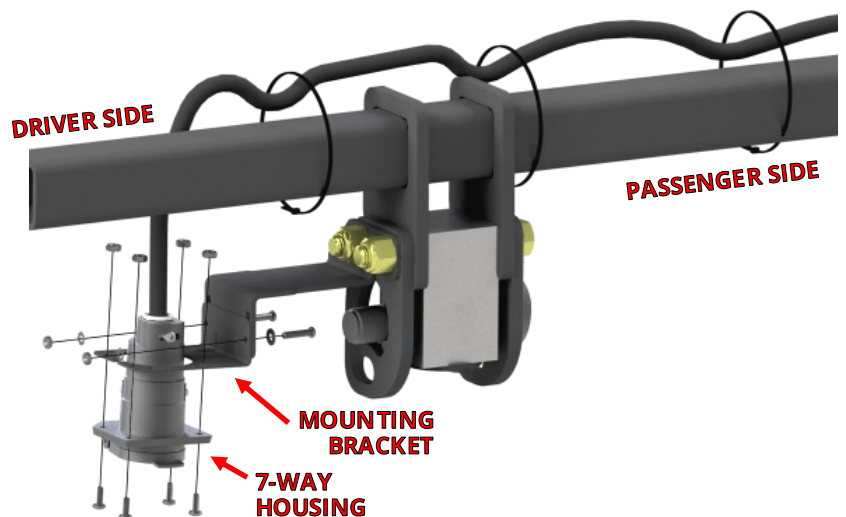
PHILLIPS HEAD
SCREWDRIVER



SILICONE

34. Attach the mounting bracket and 7-way housing to the stealth hitch frame as shown. Secure harness to Stealth hitch frame with cable ties.

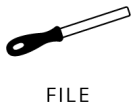
35. Secure all wires and wiring components. Use the remaining cable ties to secure wiring so that it is not loose and will not interfere with replacement of the fascia. Wiring should not be visible once the vehicle is reassembled.



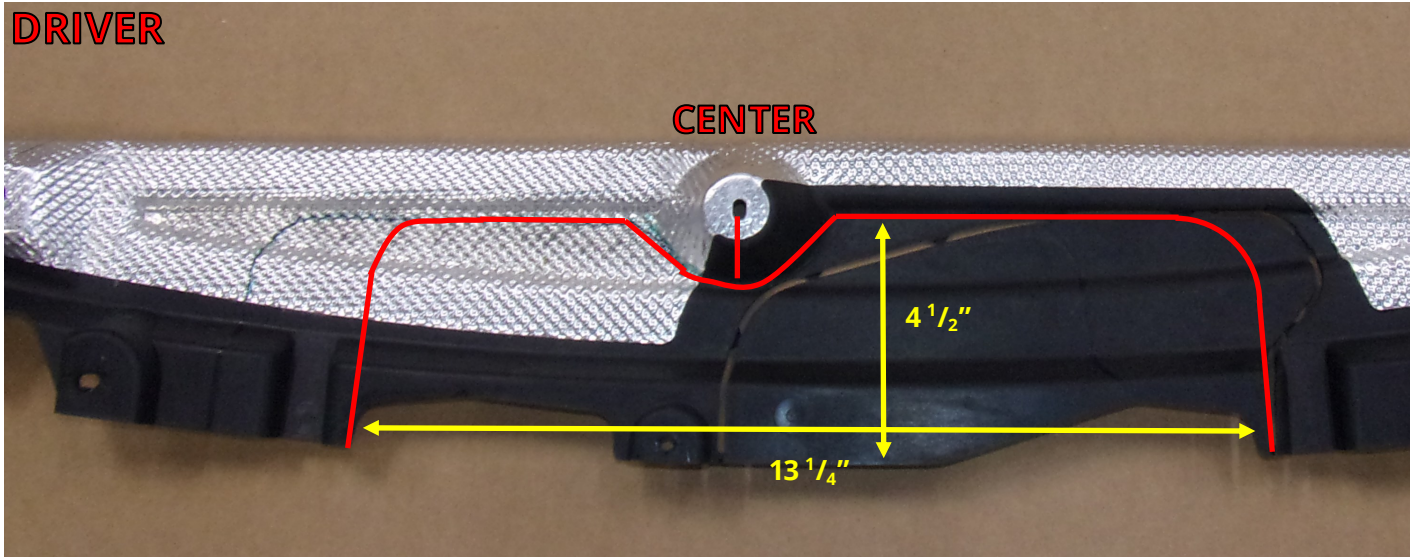
36. Use the provided adhesive foam strips to secure the control module to an inside body panel. Use silicone to waterproof the grommet.

REINSTALL VEHICLE COMPONENTS

37. Reattach the plastic kick wand holder with (3) rivets to the hitch beam bracket. Reattach the wiring harness, unplugged in Step 15 to the plastic kick wand panel.



38. Cut out the gravel guard with Dremel tool. Use a file to smooth edges of the cut, as shown below.



REINSTALL VEHICLE COMPONENTS CONTINUED

39. While holding the fascia close to the vehicle, plug in the PDC sensor plug, before replacing the fascia to vehicle.

NOTICE: It's important to remember to plug in the PDC sensor plug before you completely install the fascia.

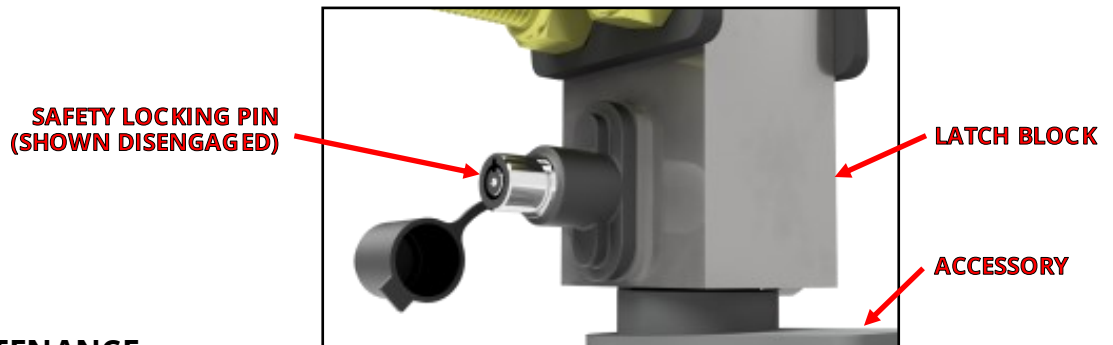


40. Reattach and secure the fascia, taillights, and other vehicle components in reverse order. Refer to Steps 1-12.



FINAL VEHICLE EXAMINATION

41. Examine the body panels to ensure that they are in a pre-installation condition. Test the electronic functions of the vehicle. Correct any inconsistencies.
42. Ensure that hitch components work properly.
 - **Verify that the lock works correctly.** Push in the safety lock on the latch block then unlock with key. The lock should slide back out with the key when unlocked.
 - **Verify that each accessory can be installed correctly.** Use the following steps to install and remove each accessory that will be used with the hitch. (*Rack Receiver* and *Ball Mount* if purchased.)
 1. Prepare latching mechanism. Turn handle clockwise if needed.
 2. Firmly insert "post" of accessory into latch block until handle releases indicating that the accessory is latched.
 3. Push in the safety locking pin until it fully engages. The locking pin prevents the handle from turning when pushed in, and confirms that the block is securely latched onto the accessory. The safety locking pin will not depress if the accessory is not fully latched.
 4. Use key to release safety locking pin.
 5. While holding on to the accessory, rotate handle clockwise to release and remove the accessory.
 - **Verify that no part of the accessories come into contact with the body of the vehicle.**



PRODUCT USE AND MAINTENANCE

NOTICE: If the hitch is being installed by a professional, the installer is responsible for training the end user in the use and maintenance of the product.

- **Accessory installation procedure:**
 1. Prepare latching mechanism. Turn handle clockwise if needed.
 2. Firmly insert "post" of accessory into latch block until handle spins counter-clockwise indicating that the accessory is latched.
 3. Always depress the safety locking pin and check that it has fully engaged.
- **Never use any accessory with the safety lock disengaged.** Until the safety locking pin is engaged, the handle is able to turn. A fully engaged safety locking pin is confirmation that the accessory is properly latched into the latch block.
- **Never use the rack receiver for towing.** The rack receiver accessory is only to be used with payload carrying products, such as bike racks or luggage racks.
- **Before each use, give the post of the accessory a light coating of lithium based grease.**
- **Before each use, inspect the hitch to ensure that all bolted connections are secure and that no cracks or damage are present.** Do not tow with the hitch if cracks or damage outside of normal wear is found.
- **Remove the Stealth accessories from the latch block after each use.** Do not leave accessories plugged in for extended periods of time.