



HITCH INSTALLATION INSTRUCTIONS

MAKE:

YEARS:

MODEL/TRIM:

BMW

2023

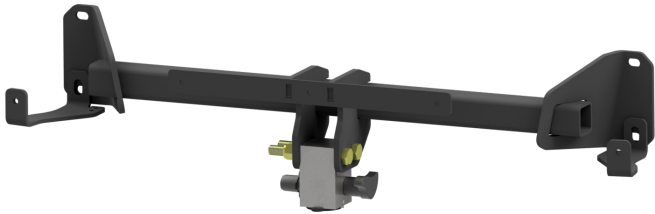
2 Series M240i

www.stealthhitches.com

833•694•4824

RACK RECEIVER KIT#: **SHR31042**

COMPATIBLE WITH TOW KIT: **SHT25002**



2" RACK RECEIVER MAXIMUM PAYLOAD: 350 LBS

MAXIMUM TOW RATING: 3500 LBS

MAXIMUM TONGUE WEIGHT: 350 LBS

UNDER VEHICLE TRIMMING:

HEAT SHIELD: **NO**

FASCIA: **NO**

GRAVEL GUARD TRIMMING: **YES**

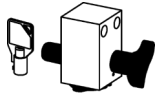


READ ALL INSTRUCTION WARNINGS AND LABELS



NO WELDING, METAL DRILLING OR VISIBLE TRIMMING REQUIRED

PARTS SUPPLIED WITH RACK RECEIVER KIT:



LATCH BLOCK & KEYS



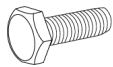
(2) BOLTS
5/8" - 11 x 5"



(2) 5/8"
NYLOCK NUTS



2" RACK
RECEIVER



(4) 5/16" X 1"
BOLTS



(4) 5/16" FLAT
WASHERS



(4) 5/16" SERRATED
FLANGE NUT



(2) EXHAUST
BRACKETS

ADDITIONAL PARTS FOR TOW KIT:



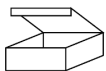
BALL MOUNT
7" RISE, SHORT



CHAIN HOOKS



2" BALL



PASSIVE WIRING
KIT BOX

TOOLS REQUIRED:



1/2" & 15/16"
OPEN END
WRENCH



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



TORQUE
WRENCH



CUTTING TOOL



SAFETY GLASSES



RATCHET



FLASHLIGHT



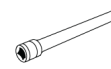
T20 TORX



PLASTIC
PRY TOOLS



90 DEGREE
PICK



SOCKET
EXTENSION

ADDITIONAL TOOLS FOR TOW KIT:



STRIPPER/
CRIMPING
TOOL



DRILL &
3/8" BIT



MULTIMETER



T40 TORX



SILICONE

RACK RECEIVER INSTALLATION: USE STEPS 1-15 & 31-35

TOW KIT INSTALLATION: USE STEPS 1-35

<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 the trunk. Remove the tail light trim next to each tail light with plastic pry tools. To begin, pry inward above the tail light to dislodge the plastic push rivet. To remove the trim, pry upward on the lower part of the trim.



10mm
SOCKET

2. Use a socket to remove (2) screws holding the top of the vehicle fascia.

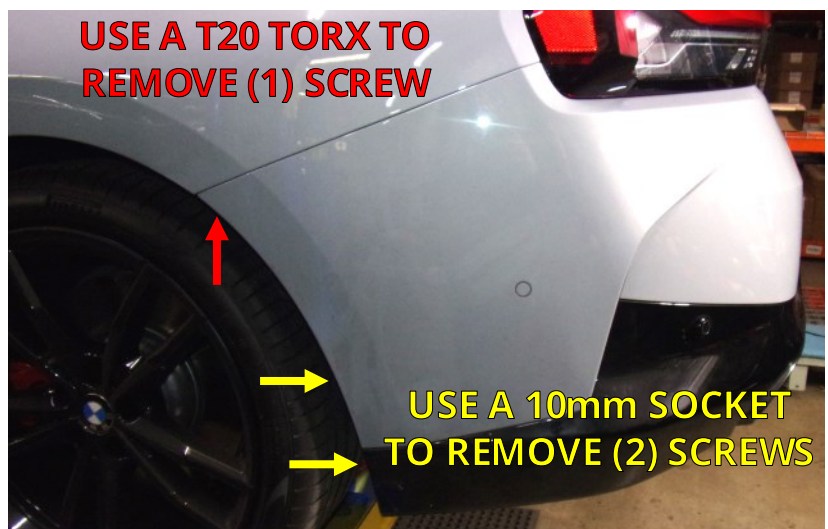


10mm
SOCKET



T20 TORX

3. Inside the wheel well, locate and remove (2) screws securing the wheel well liner (yellow arrows). Move the wheel well liner to gain access to (1) screw (red arrow). Use a Torx to remove the screw. Repeat on both sides of the vehicle.

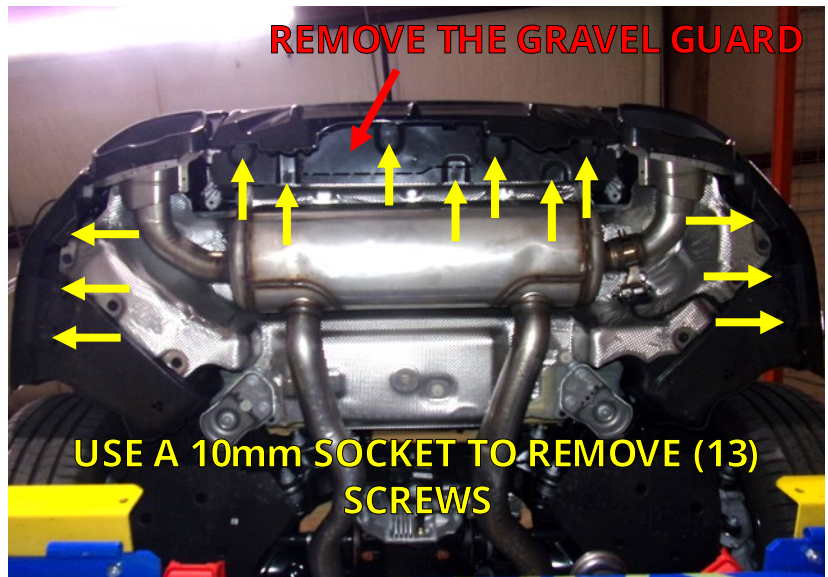


GAIN ACCESS TO MOUNTING AREA CONTINUED



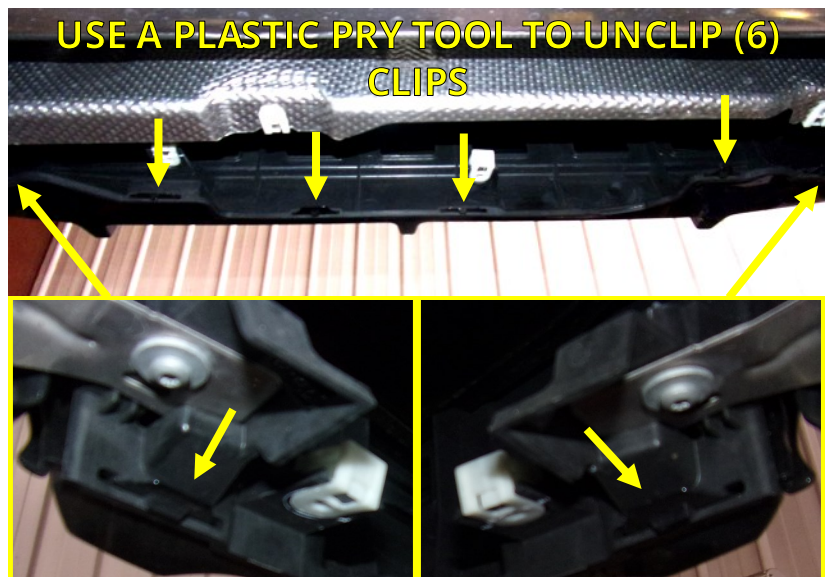
10mm
SOCKET

4. Under the rear of the vehicle, remove (13) screws securing the bottom of the fascia and gravel guard. Remove the gravel guard.



PLASTIC
PRY TOOLS

5. With the gravel guard removed, locate and unclip (6) clips on the bottom rear edge of the fascia with plastic pry tools.



PLASTIC
PRY TOOLS

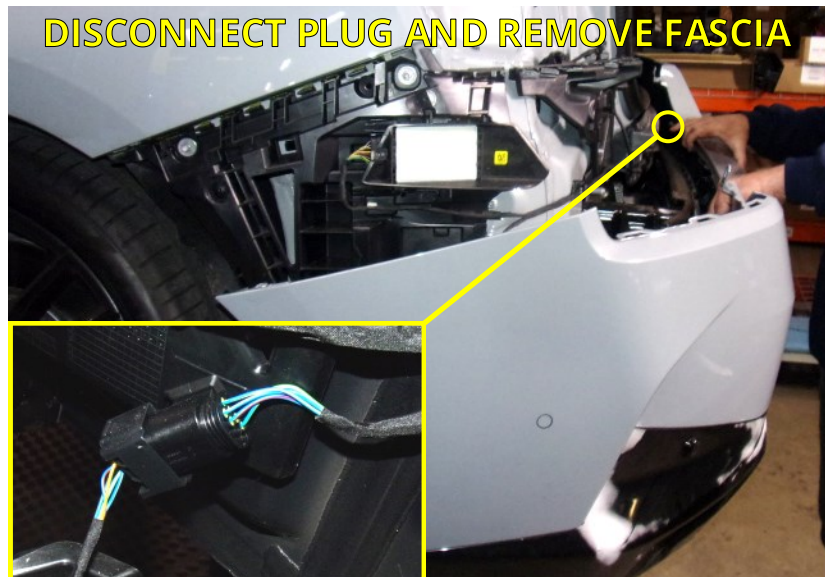
6. The rear fascia is clipped to the vehicle body behind the wheel wells. Pull outward on the top front of the rear fascia to expose a clip in the seam. With a plastic pry tool, push down on the exposed clip to disconnect. Continue to pull outward on the fascia and disconnect clips as they are exposed. Continue applying outward pressure until all the clips are released. Repeat on other side of vehicle.



GAIN ACCESS TO MOUNTING AREA CONTINUED

7. This step requires a partner. Pull fascia slightly away from the vehicle. Disconnect the wiring harness plug on the passenger side of the vehicle. Remove the fascia completely.

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



DISCONNECT PLUG AND REMOVE FASCIA



90 DEGREE PICK

8. Using a 90 degree pick tool remove the (6) rivets holding the plastic kick wand holder to the factory reinforcement beam. **Save** (2) rivets for later reinstallation.

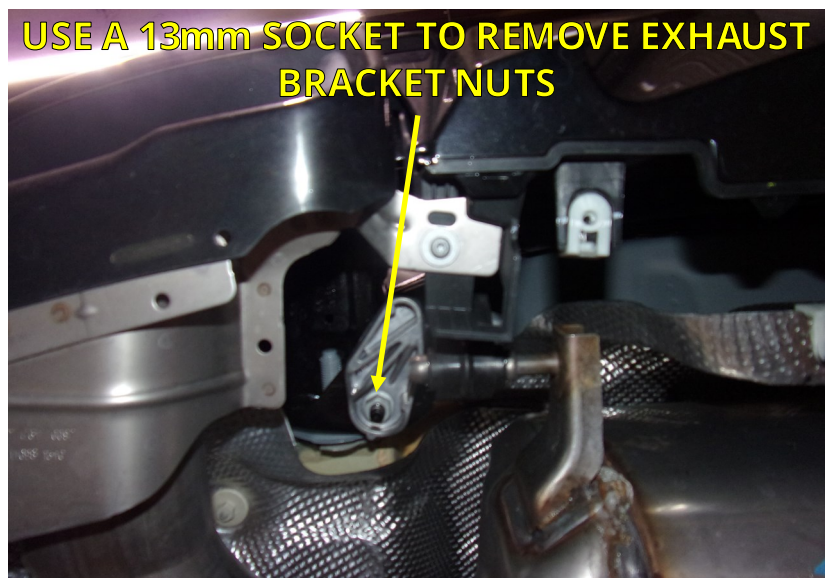


USE A 90 DEGREE PICK TO REMOVE (6) RIVETS



13mm SOCKET

9. 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.

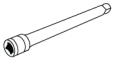


USE A 13mm SOCKET TO REMOVE EXHAUST BRACKET NUTS

GAIN ACCESS TO MOUNTING AREA CONTINUED



18mm
DEEP WELL
SOCKET



SOCKET
EXTENSION

10. Use a socket to remove (4) nuts securing the factory reinforcement beam to the vehicle then remove the reinforcement beam. **Save** (4) nuts and discard the factory reinforcement beam.

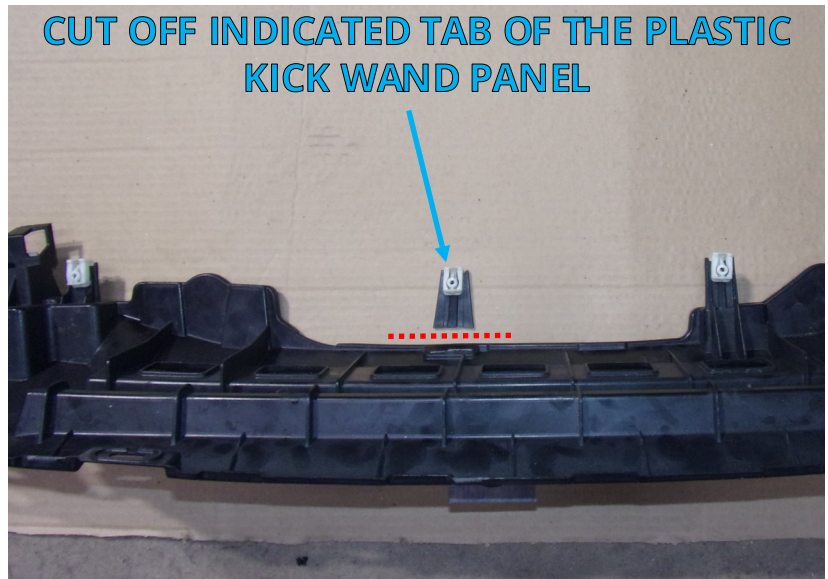


INSTALL STEALTH HITCH FRAME

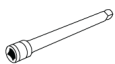


CUTTING TOOL

11. Use a cutting tool to cut off the indicated tab of the back of the plastic kick wand panel.



18mm
DEEP WELL
SOCKET



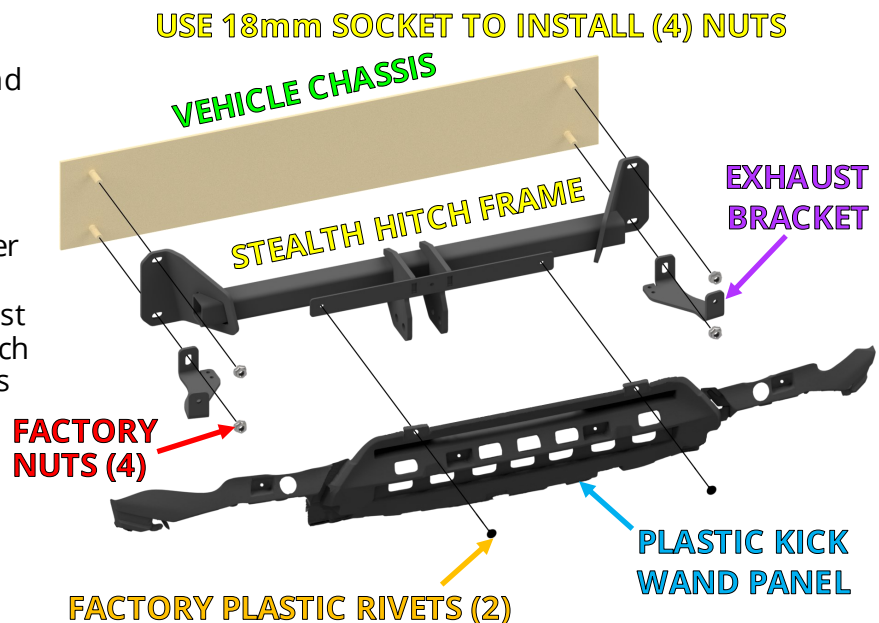
SOCKET
EXTENSION



TORQUE
WRENCH

12. Install Stealth hitch frame and exhaust brackets over the studs used for the factory reinforcement beam. The exhaust brackets will install on the bottom two studs over the hitch frame. Center the hitch frame. Level the exhaust brackets. Use a torque wrench to tighten the (4) factory nuts to 85 ft.-lbs.

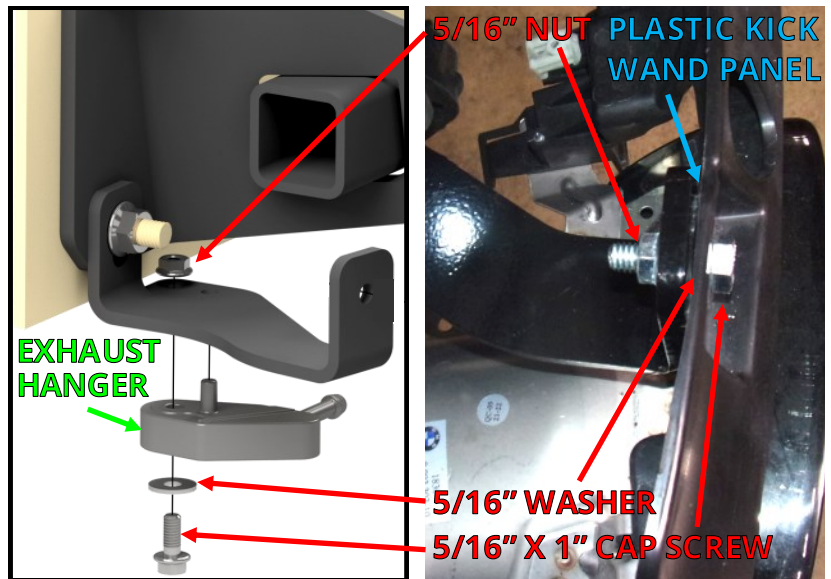
13. Attach the plastic kick wand panel as shown, using (2) saved plastic rivets.



INSTALL STEALTH HITCH FRAME CONTINUED



14. Using the supplied 5/16" cap screws, flat washers, and flange nuts, reattach the exhaust hangers and the plastic kick wand panel to the exhaust bracket as shown in the images. Repeat on both sides of the vehicle.



USE A 1/2" SOCKET TO INSTALL (2) CAP SCREWS, FLAT WASHERS AND NUTS

MOUNT LATCH BLOCK



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

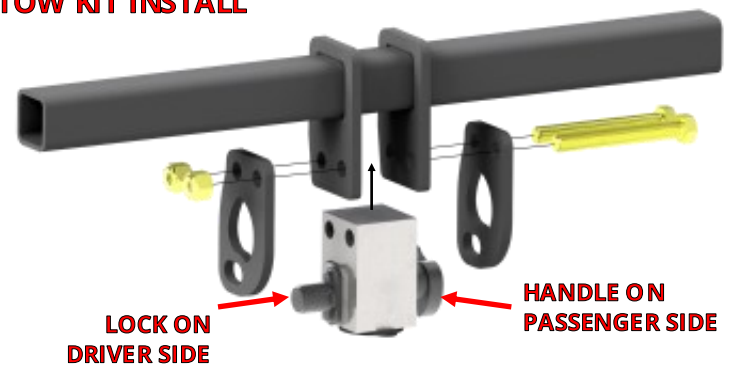
- **Rack Receiver Kit:** Install the latch block with (2) 5/8"-11 x 5" bolts and (2) 5/8" nylock nuts. Tighten each bolt to 150 ft.-lbs.
- **Tow Kit:** Install the latch block and (2) chain hooks with (2) 5/8"-11 x 5" bolts and (2) 5/8" nylock nuts. Tighten each bolt to 150 ft.-lbs.

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

RACK RECEIVER KIT INSTALL



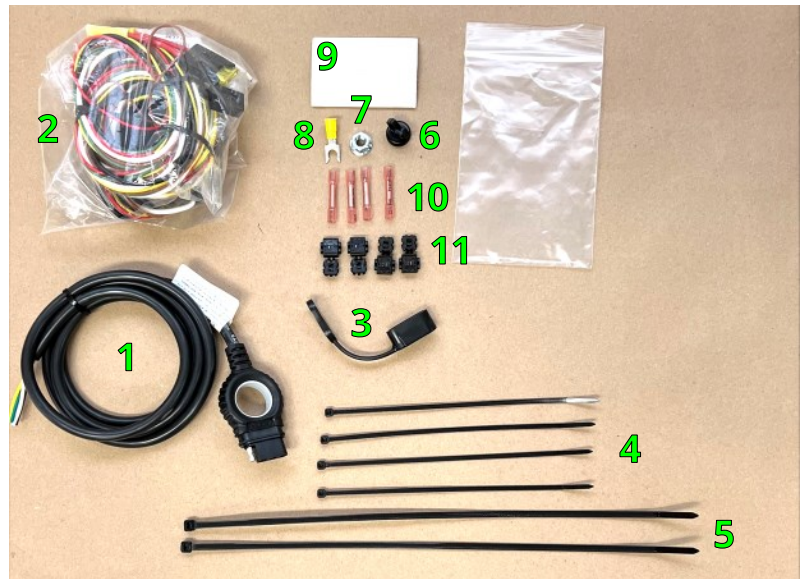
TOW KIT INSTALL



IF INSTALLING A RACK RECEIVER KIT, SKIP TO STEP 31.
IF INSTALLING A TOW KIT, CONTINUE TO STEP 16.

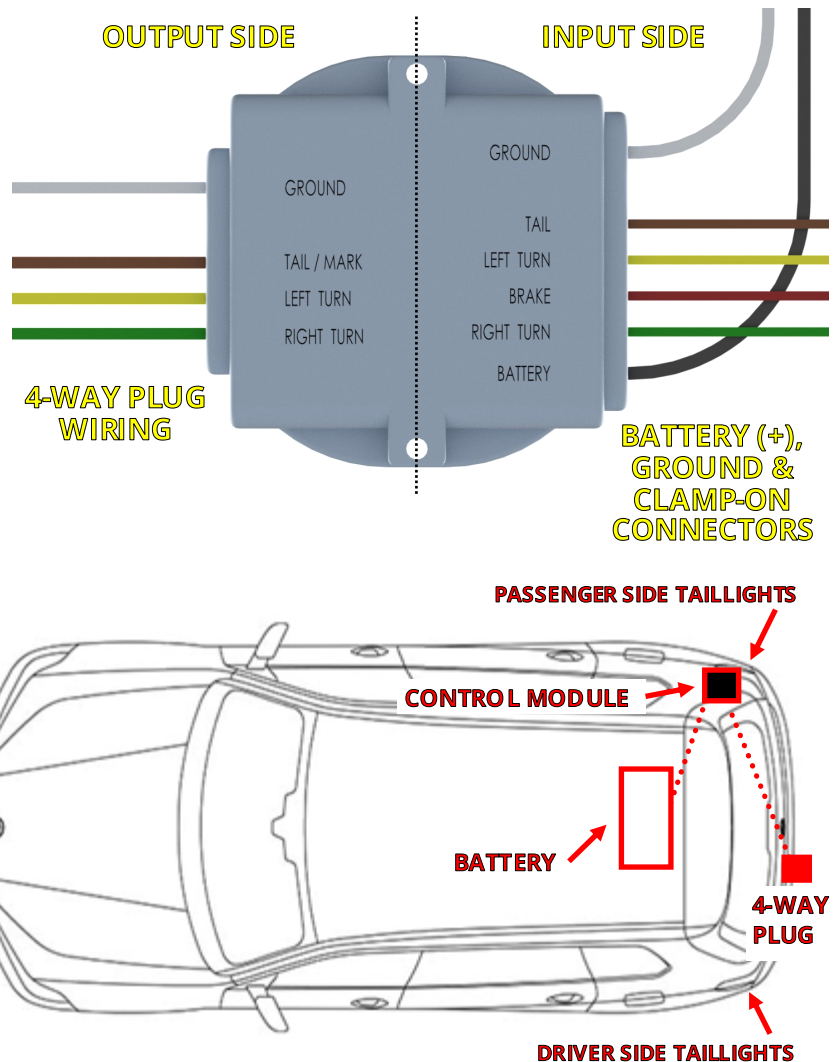
INSTALL WIRING KIT

#	DESCRIPTION	QTY
1	4-WAY CONNECTOR HARNESS	1
2	CONTROL MODULE	1
3	4-WAY CONNECTOR COVER	1
4	CABLE TIE - 8"	4
5	CABLE TIE - 14"	2
6	MAGNETIC CABLE HOLDER	1
7	M8 SERRATED FLANGE NUT	1
8	FORK TERMINAL	1
9	ADHESIVE FOAM STRIP	2
10	BUTT CONNECTOR (RED)	4
11	CLAMP-ON CONNECTORS	4



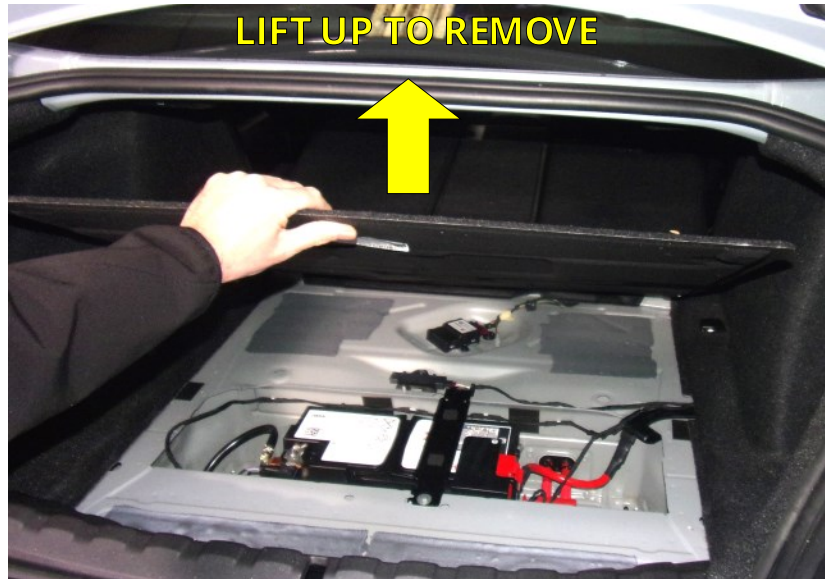
16. Locate the wiring kit box. Review the contents of the box against the list above to check for missing components. The passive wiring kit uses a control module to manage the functions of the trailer lighting. The module has an **"input"** side that receives power from the vehicle's battery and signals from the vehicle's taillights. The **"output"** side of the module delivers this information to the 4-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

17. Remove the trunk floor panel by lifting it up and out. Place the panel on blanket or safe area.

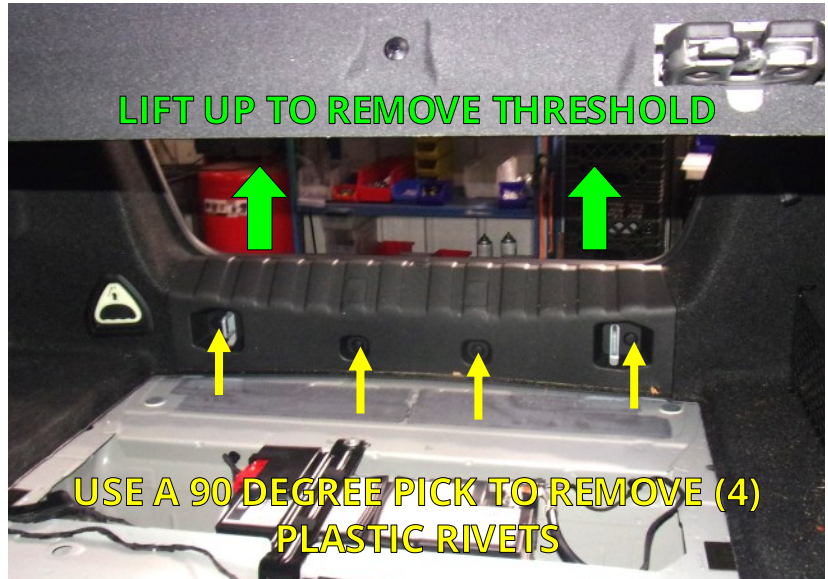


90 DEGREE PICK



PLASTIC PRY TOOLS

18. Remove the threshold in the rear cargo area, use a 90 degree pick to remove (4) plastic rivets. Use a pry tool to lift and remove the threshold.



90 DEGREE PICK

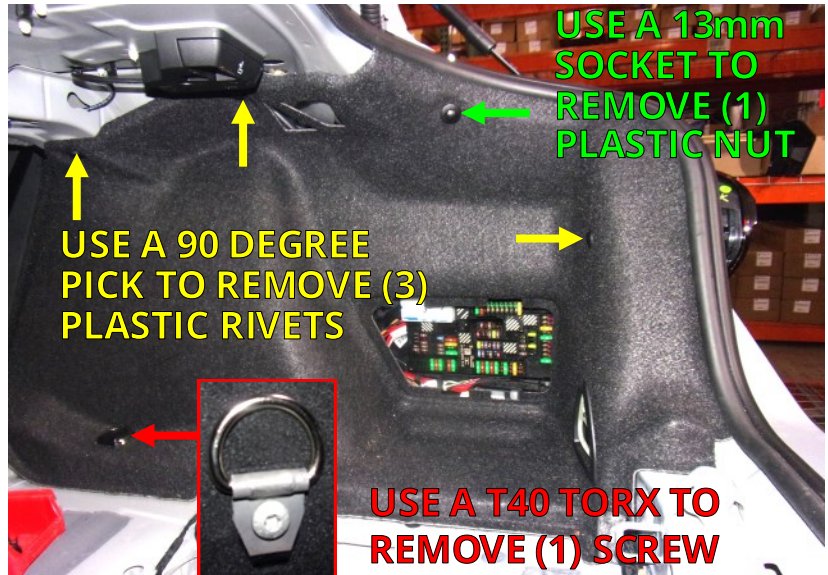


T40 TORX



13mm SOCKET

19. On the passenger side cargo area side panel, use a 90 degree pick tool to remove (3) rivets from the passenger side panel (yellow arrows). Use a 90 degree pick tool to open the cargo anchor cover (red arrow). Use a Torx to remove the cargo anchor. Use a socket to remove (1) plastic nut (green arrow).



INSTALL WIRING KIT CONTINUED



20. Locate the emergency trunk release handle. Remove the pull cable from the handle, then slide the cable through the hole into the area behind the panel. Dislodge the passenger side panel and pull it open to gain access to the area behind the panel. Retrieve the control module from the wiring kit box. Secure the control module to the floor of the passenger side cargo compartment with the supplied adhesive foam strips.



DRILL &
3/8" BIT

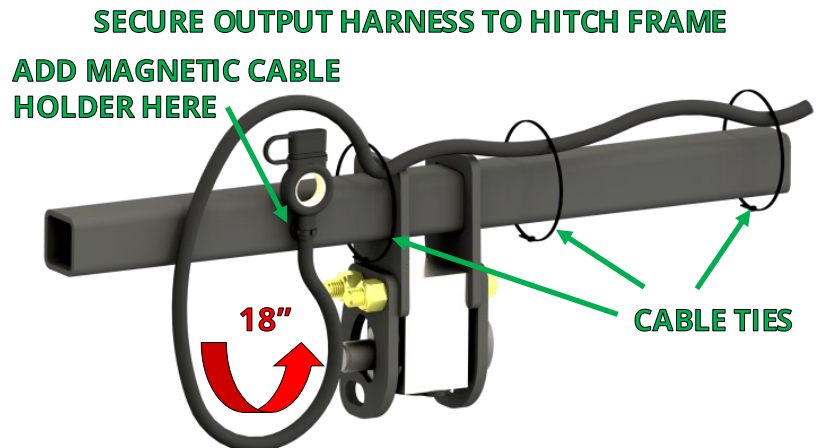
21. Locate rubber wiring harness grommet on the passenger side of the vehicle. Drill a 3/8" hole in the grommet. Make sure to drill through grommet only and not to damage harness.

NOTICE: Confirm that there is nothing inside vehicle behind grommet that can be damaged.

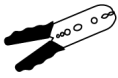
22. Feed the wires and black sheathing of the 4-way plug through the grommet from outside of the vehicle to the inside of the vehicle.



23. Secure harness to Stealth hitch frame with cable ties. Maintain an 18" loop from the cable tie to the 4-way plug. Add the magnetic cable holder and secure to the harness close to the 4-way plug, with a cable tie.



INSTALL WIRING KIT CONTINUED

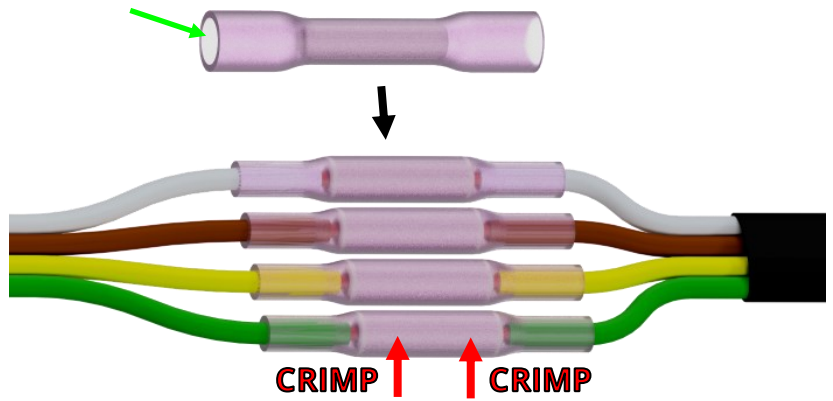


STRIPPER/
CRIMPING
TOOL

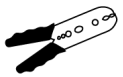
24. Locate the tail of the 4-way connector wire and the output side wires of the control module. Attach each similar color wire to each other using a red butt connector and crimping tool.

NOTICE (OPTIONAL): The butt connectors are heat shrink connectors. Apply heat to waterproof the connectors after crimping.

RED BUTT CONNECTOR WITH HEAT SHRINK ENDS



MATCH THE WIRE COLORS AND CRIMP EACH WIRE INTO THE SIDE OF EACH BUTT CONNECTOR. APPLY HEAT TO WATERPROOF AFTER CRIMPING



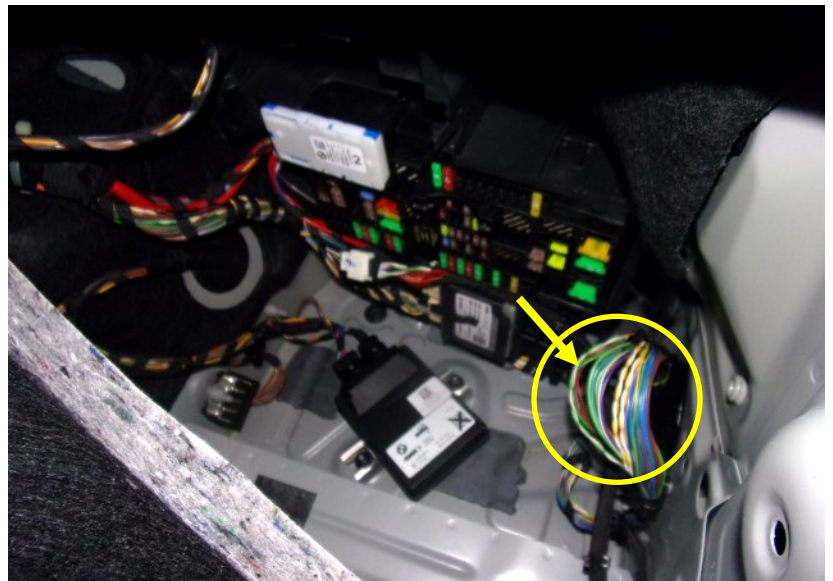
STRIPPER/
CRIMPING
TOOL












MULTIMETER

25. The wires on the input side of the module need to be attached to the vehicle wiring. Inside the passenger side vehicle compartment, locate the indicated part of the vehicle wiring harness. Use clamp-on connectors to connect to vehicle wiring harness. (As shown in reference table below.)

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



CLAMP-ON CONNECTOR COLOR REFERENCE TABLE

SIGNAL INPUT WIRES			POWER & GROUND WIRES		
FUNCTION	HARNESS	VEHICLE			
LEFT TURN	 YELLOW	 GREEN/BLUE	12V+ (POWER)	 BLACK	BATTERY (+)
RIGHT TURN	 GREEN	 GREEN/GRAY	GROUND	 WHITE	GROUND STUD
MARKER	 BROWN	 PURPLE/RED			
BRAKE	 RED	NOT USED			

NOTICE: 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.

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

INSTALL WIRING KIT CONTINUED



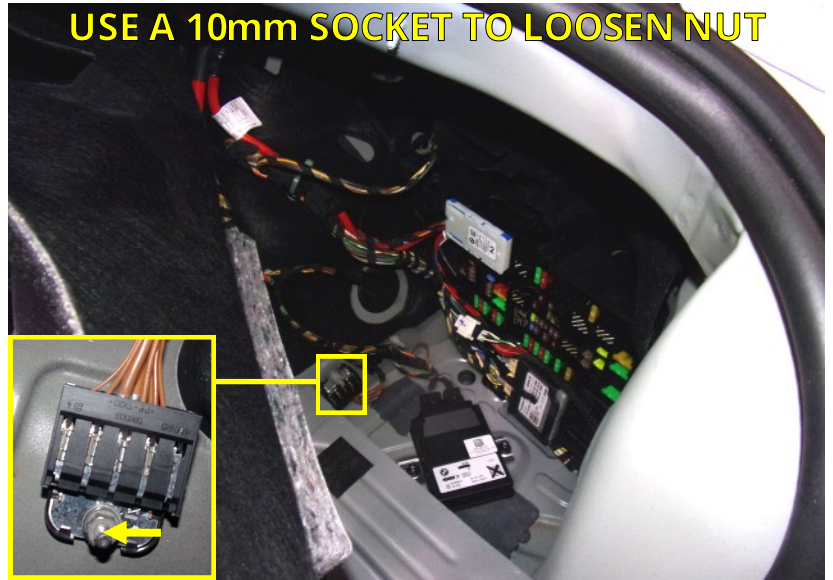
10mm
SOCKET



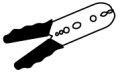
STRIPPER/
CRIMPING
TOOL

26. Locate the ground stud inside the passenger side cargo compartment. Trim the white ground wire so it will reach the stud without excess wire. Crimp the supplied fork terminal to the ground wire with a crimping tool. Loosen the ground stud and secure the fork to the stud.

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

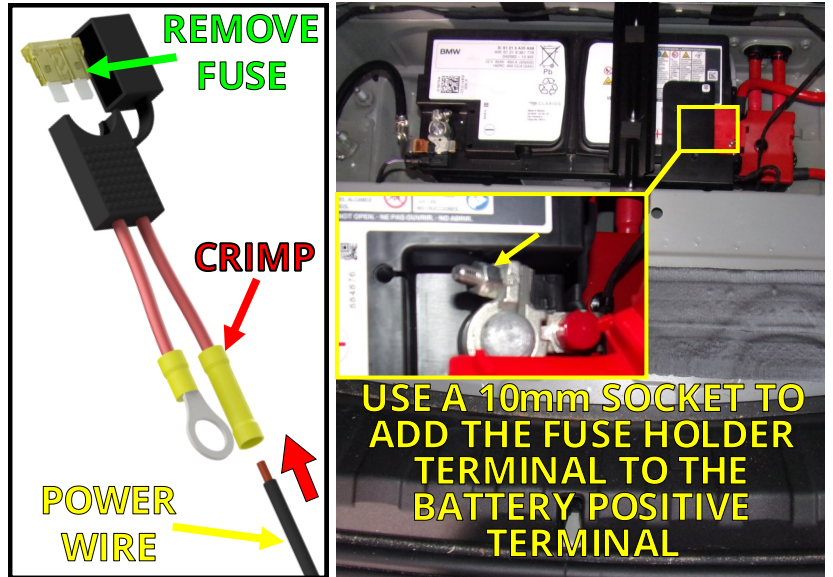


10mm
SOCKET



STRIPPER/
CRIMPING
TOOL

27. Locate the fuse holder supplied in the wiring kit box. Remove the fuse from fuse holder. Trim black power wire so it will reach the positive battery terminal (+) without excess. Crimp fuse holder lead to power wire. Connect fuse ring terminal to the positive battery terminal (+) using the provided M8 nut.



SILICONE



MULTIMETER

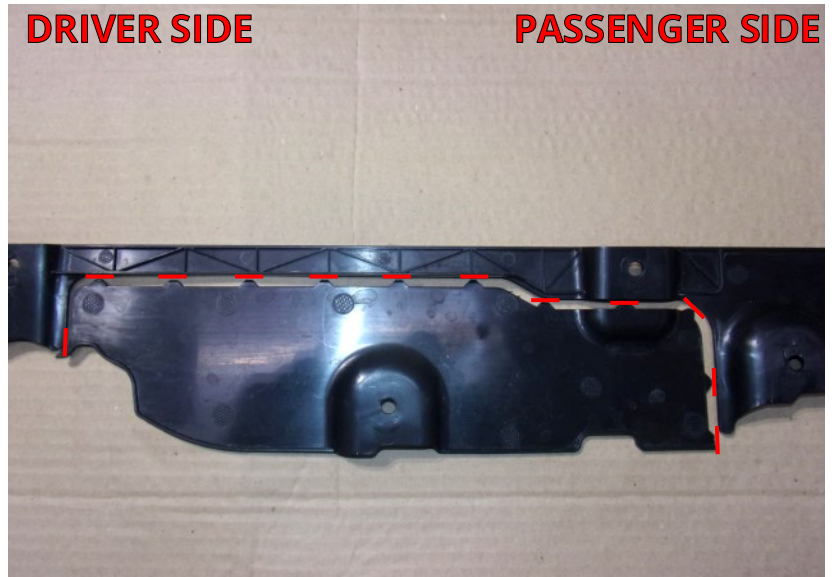
28. Reinstall the 20 Amp fuse in the fuse holder. Test the 4-way plug using a multimeter or connect the plug to a trailer and verify that the lights and brakes work correctly.
29. Use silicone to waterproof the grommet with the 3/8" hole drilled through it.
30. Secure all wires and wiring components. 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.

CUT ACCESS TO LATCH BLOCK



CUTTING TOOL

31. Use a cutting tool to cut the gravel guard along the factory gap as shown in the image.



REINSTALL VEHICLE COMPONENTS

32. Reattach and secure the fascia, underbody panels and other vehicle components in reverse order. Refer to Steps 1-7.

NOTICE: Remember to plug in the sensor plug in Step 7 before reinstalling the fascia.

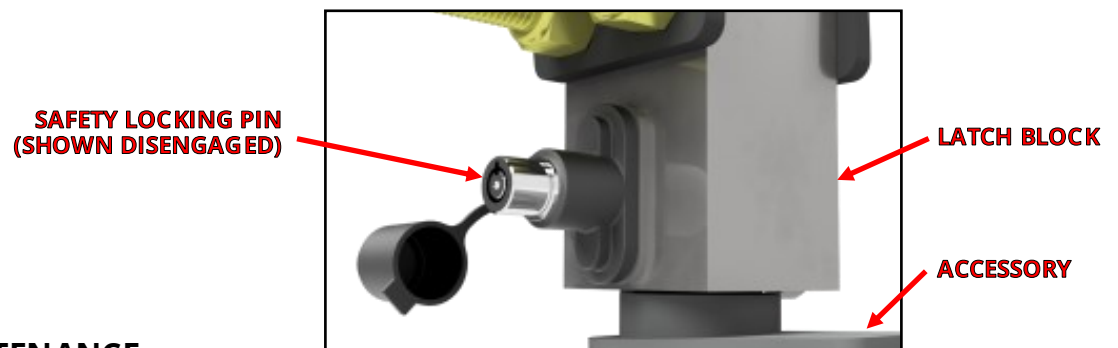


33. Finished view.



FINAL VEHICLE EXAMINATION

34. Examine the body panels to ensure that they are in a pre-installation condition. Test the electronic functions of the vehicle. Correct any inconsistencies.
35. 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.

SHR31042_(pn 2120-31042-2) 02 03 2023