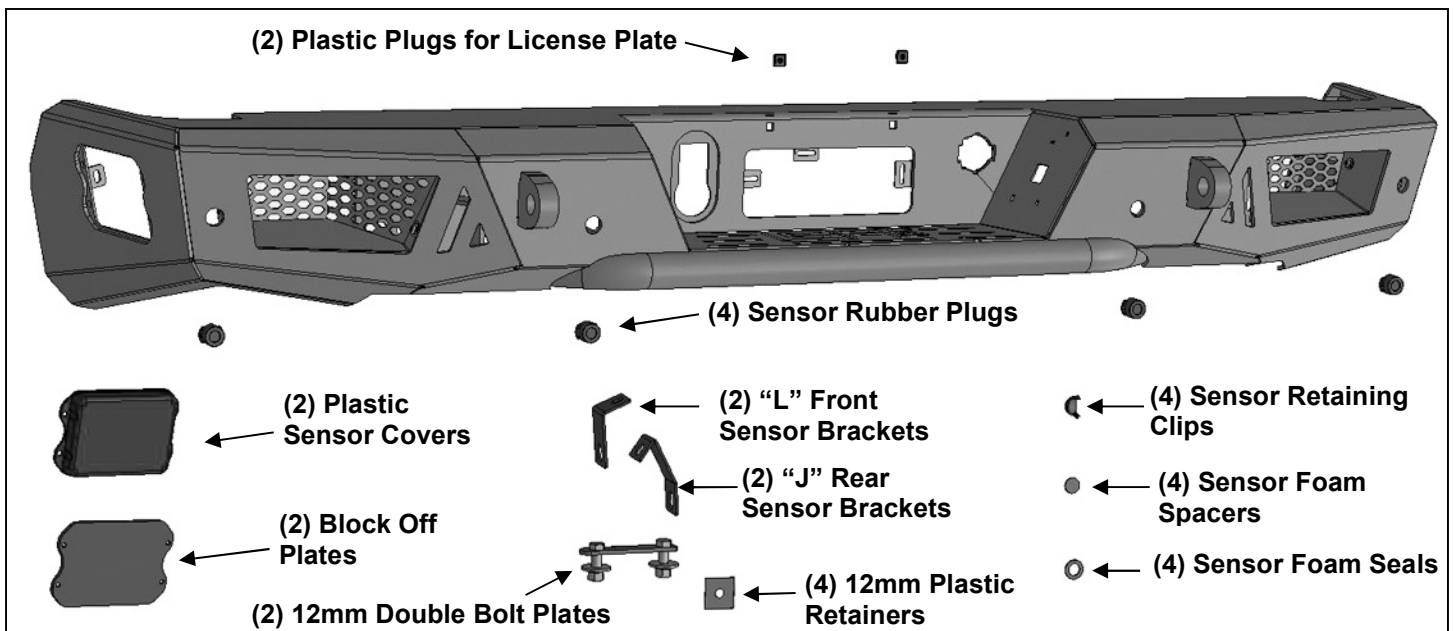


2018-2020 F150 AMBUSH SERIES REAR BUMPER (NON-WINCH) PART #GM-2966

PARTS LIST:

1	Ambush Rear Bumper	8	12mm x 37mm x 3mm Flat Washers
2	"L" Front Sensor Mounting Brackets	4	12mm Lock Washers
2	"J" Rear Sensor Mounting Brackets	4	12mm Hex Nuts
2	Plastic Sensor Covers	10	6-1.0mm x 20mm Button Head Bolts
2	Flat Block-off Covers	8	6-1.0mm x 20mm Hex Bolts
2	Plastic Plugs for License Plate	26	6mm x 18mm x 1.6mm Flat Washers
4	Sensor Rubber Plugs	18	6mm Lock Washers
4	Sensor Foam Seals	18	6mm Hex Nuts
4	Sensor Foam Spacers	8	4-0.75mm x 10mm Button Head Bolts
4	Sensor Retaining Clips	1	4mm Wrench
1	Sensor Cover Kit	1	2.5mm Wrench
4	12-1.75mm x 40mm Hex Bolts	10	Plastic Wire Ties
4	12mm Plastic Retainers		



PROCEDURE:

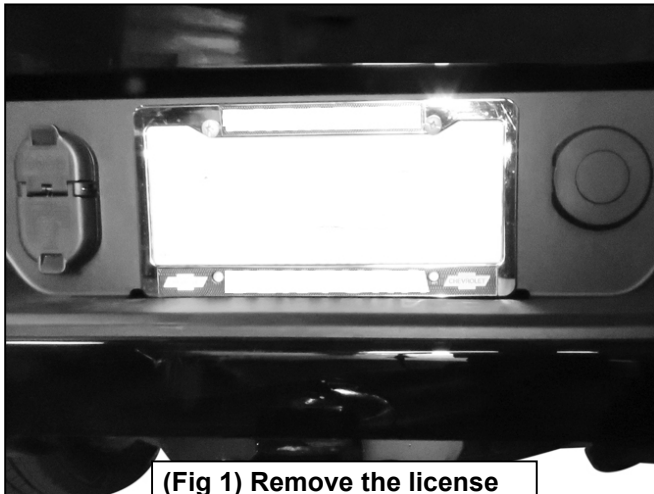
REMOVE CONTENTS FROM BOX. VERIFY ALL PARTS ARE PRESENT. READ INSTRUCTIONS CAREFULLY BEFORE STARTING INSTALLATION. BUMPER IS HEAVY, ASSISTANCE IS HIGHLY RECOMMENDED TO AVOID POSSIBLE INJURY OR DAMAGE TO THE VEHICLE.

1. Remove the license plate and the (2) factory bolts behind the license plate, (**Figures 1 & 2**).
2. Unplug all wiring harnesses leading to the bumper including tire pressure monitoring system, (TPMS), and remote antenna, (**Figures 2 & 3**). Unplug the trailer plug, (**Figure 4**).
3. Place blocks or jack stands under the bumper to support it during mounting bolt removal. Assistance is highly recommended to remove the bumper. Starting on the passenger/right side, remove the factory bolt attaching the side of the bumper to the bumper support bracket, (**Figure 5**). Remove the (2) factory flange nuts attaching the bumper to the frame, (**Figure 6**). Repeat this Step to remove the factory hardware on the driver/left side. With assistance, pull bumper straight out from vehicle.

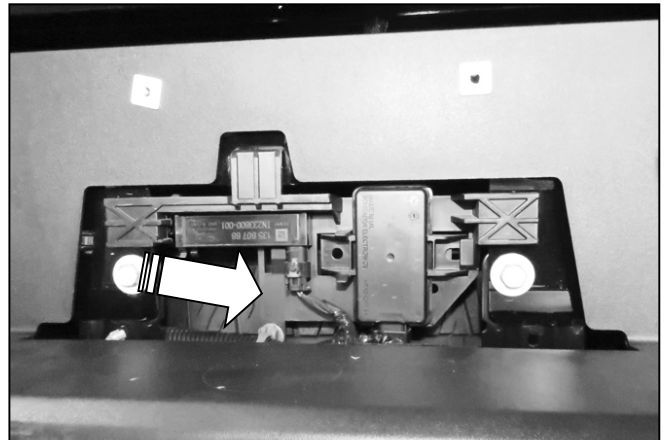
4. Move the OE rear bumper to clean and stable surface. Unplug and remove the sensors, (if equipped), trailer plug, license lights, remote antenna with TPMS assembly bracket & the spare tire access lock from the back of the bumper, **(Figures 7—9)**. Remove wire harness from bumper.
5. Determine if the vehicle is equipped with parking sensors, cross traffic sensors and remote antenna:
Models without bumper parking sensors:
 - a. Select the included (4) Rubber Plugs.
 - b. From behind bumper, push plugs into sensor mounting holes, **(Figure 10)**. 4mm Screws have been provided to lock the plugs in the sleeve. Use is optional.**Models with bumper mounted parking sensors:**
 - a. Remove the silicone seal from the end of the sensor. Slide the included Foam Washer over front of sensor, **(Figure 11)**.
 - b. Attach (1) Foam Spacer to (1) Retaining Clip, **(Figure 12)**.
 - c. Slide the sensor tabs into the sensor sleeve openings on the back of the Rear Bumper. Push and lock the Retaining Clip into the sensor sleeve holes, **(Figure 12)**.
 - d. Repeat the above steps for each rear sensor.**Models with Tire Pressure Monitoring System (TPMS):**
 - a. Select the factory remote antenna with TPMS assembly, **(Figure 13)**.
 - b. Push the (3) clips on the TPMS assembly into the slots in the mounting tabs on the Bumper, **(Figures 14 & 28)**.**Models without cross traffic sensors:**
 - a. Select (1) Steel Block Off Plate. Attach the Plate to the driver/left end of the Bumper with (4) 6mm Button Head Bolts, (4) 6mm Flat Washers, (4) 6mm Lock Washers and (4) 6mm Hex Nuts, **(Figure 15)**. Repeat to attach the remaining Plate on the passenger/right side of the Bumper.**Models with cross traffic alert sensors (CTA):**
 - a. Select (1) Plastic Cover. Attach the Plastic Cover to the end of the Bumper with (4) 6mm Button Head Bolts, (4) 6mm Flat Washers, (4) 6mm Lock Washers and (4) 6mm Hex Nuts, **(Figure 16)**.
 - b. Select (1) “L” Shaped Front Sensor Bracket, **(Figure 17)**. Attach the Bracket to the front facing side of the front mounting tab with the included (1) 6mm x 20mm Hex Bolt, (2) 6mm Flat Washers, (1) 6mm Lock Washer and (1) 6mm Hex Nut, **(Figure 17)**. Do not fully tighten hardware at this time.
 - c. Repeat previous Step to install (1) “J” Shaped Rear Sensor Bracket to the rear mounting tab, **(Figure 17)**. Do not fully tighten hardware at this time.
 - d. Select the passenger/right sensor. Attach the Sensor to the Brackets with the included (2) 6mm x 20mm Hex Bolts, (4) 6mm Flat Washers, (2) 6mm Lock Washers and (2) 6mm Hex Nuts, **(Figure 18)**. **IMPORTANT:** Do not overtighten hardware as damage to sensor may result.
 - e. Repeat previous Steps to attach the driver/left Plastic Cover, Brackets and sensor.
6. Select the passenger/right license plate light. Attach the license light to the mounting tab on the back of the bumper with (1) 6mm Button Head Bolt, (1) 6mm Flat Washer, (1) 6mm Lock Washer and (1) 6mm Hex Nut, **(Figures 19 & 20)**. Repeat this Step to install the driver/left license plate light.
7. Snap the trailer plug & spare tire access lock into the openings in the Rear Bumper. Insert the (2) Plastic Plugs to attach the license plate to the Bumper, **(Figures 21 & 28)**.
8. Attach the bumper wire harness to the Bumper. Plug the sensors, license lights & remote antenna with TPMS assembly back into the harness. **NOTE:** If necessary, cut the electrical tape on the wire harness to reach the outer sensors.
9. **LED light installation at ends of bumper (not included).**
 - a. Insert light into opening and up to mounting slots. Check for clearance between front and back of light. If necessary, remove the screen from the back of the opening for additional clearance or access to light, **(Figure 22)**.
 - b. Follow the light manufacturer’s instructions to attach light to slot in the top of the light opening.
 - c. Repeat the above steps for passenger side light installation.
 - d. Follow light manufacturer’s instructions to properly wire the light to the electrical system.

10. Remove the bumper support brackets from the outside of the frame, **(Figure 23)**.
11. Select (2) 12mm x 40mm Hex Bolts and (2) 12mm Flat Washers. Insert the Hex Bolts with Washers up and into the back of the bracket on the driver/left side of the Bumper, **(Figure 24)**.
 - a. 1500 models, insert Hex Bolts into outer slots in mounting plate on Bumper, **(Figure 25)**.
 - b. 25-3500 models, insert Hex Bolts into inner slots in mounting plate on Bumper, **(Figure 26)**.
12. Thread the (2) 12mm Plastic Retainers onto the Hex Bolts to help hold in position in Bumper, **(Figures 25 & 26)**. Repeat to install (2) 12mm Hex Bolts with Flat Washers on the passenger/right side of the Bumper. Temporarily support the weight of the Bumper. **WARNING:** To avoid possible injury or damage to the vehicle, do not proceed until the Bumper is fully and safely supported.
13. With assistance, position the Bumper Assembly up to the frame. Attach the Bumper to the frame with the included (4) 12mm Flat Washers, (4) 12mm Lock Washers and (4) 12mm Hex Nuts, **(Figure 27)**. Do not fully tighten hardware at this time.
14. Level and adjust the bumper and fully tighten all hardware. Slowly open tailgate and check for clearance. Adjust as necessary.
15. Plug the bumper wire harness & trailer plug into the vehicle harness, **(Figure 28)**.
16. Do periodic inspections to the installation to make sure that all hardware is secure and tight.

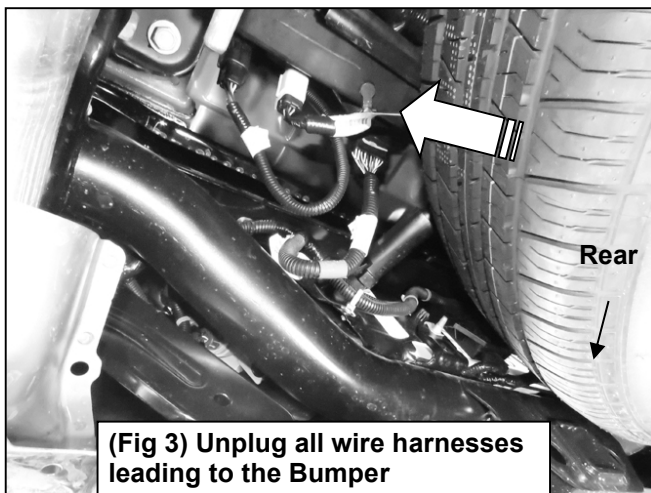
To protect your investment, Do not use any type of polish or wax that may contain abrasives that could damage the finish. Mild soap may be used to clean the Bumper assembly.



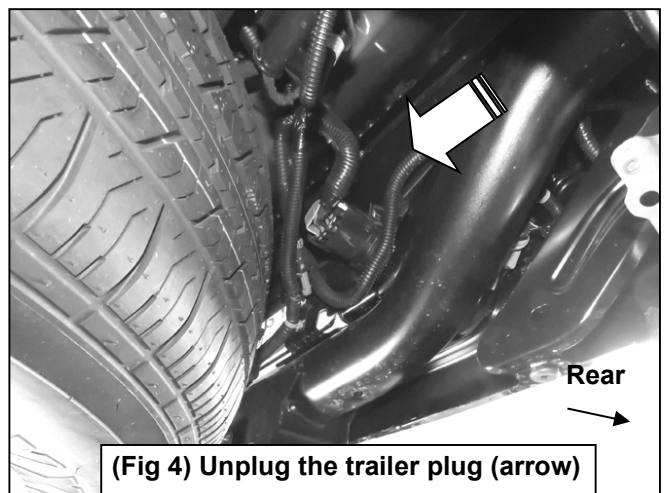
(Fig 1) Remove the license plate from the rear bumper



(Fig 2) Remove the (2) factory bolts from behind the license plate. Release the wiring harnesses leading to the sensor and antenna if equipped (arrow)



(Fig 3) Unplug all wire harnesses leading to the Bumper

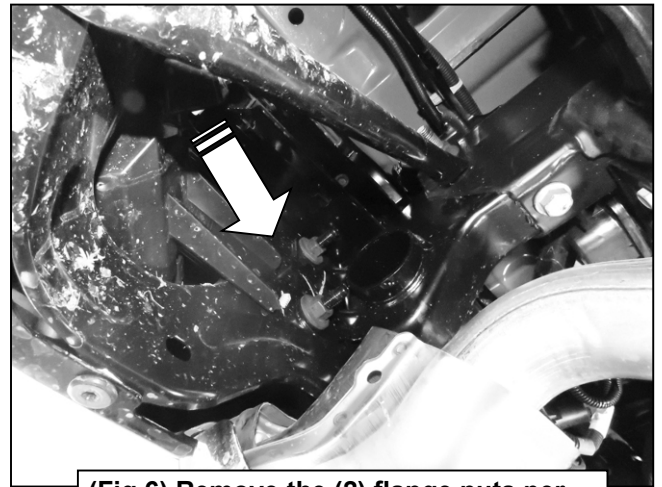


(Fig 4) Unplug the trailer plug (arrow)

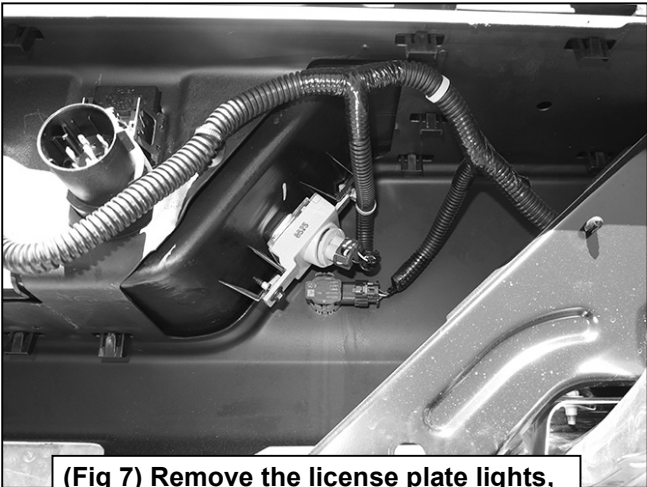


(Fig 5) Remove the bolts attaching the outer bumper supports to the bottom of the bumper (arrow)

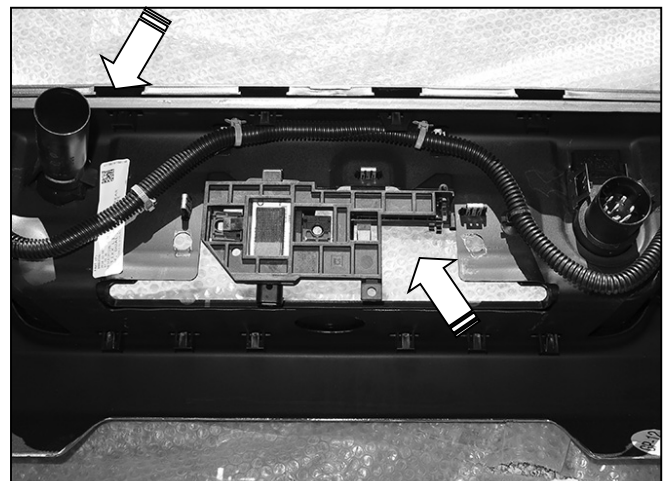
WARNING! Before removing hardware, fully support the weight of the bumper with blocks or stands to prevent injury or damage to the vehicle.



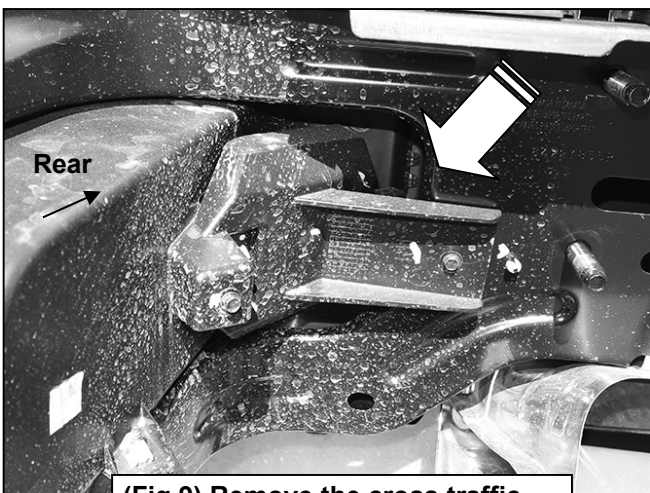
(Fig 6) Remove the (2) flange nuts per side attaching the bumper to the frame



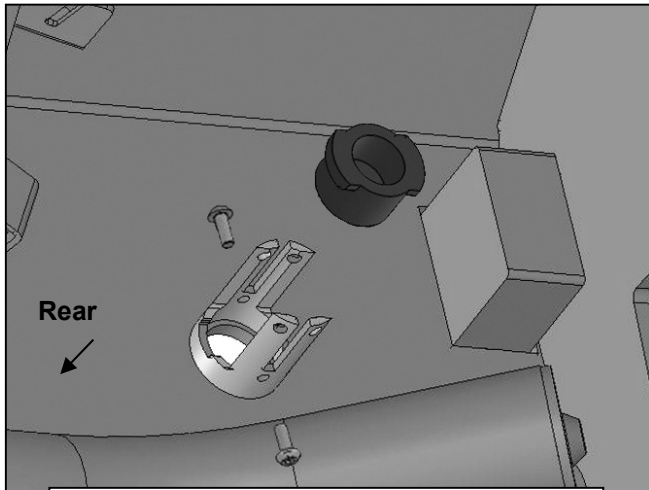
(Fig 7) Remove the license plate lights, the trailer plug and wiring harness



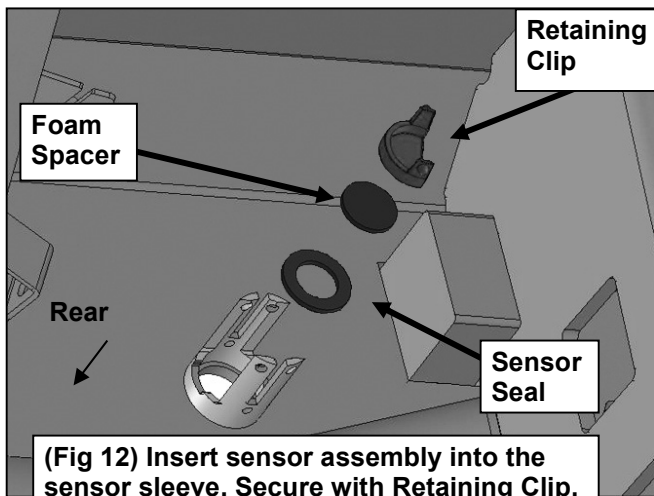
(Fig 8) Remove the sensors, remote antenna with TPMS assembly & spare tire access tube from the back of the bumper. Also remove wire harness.



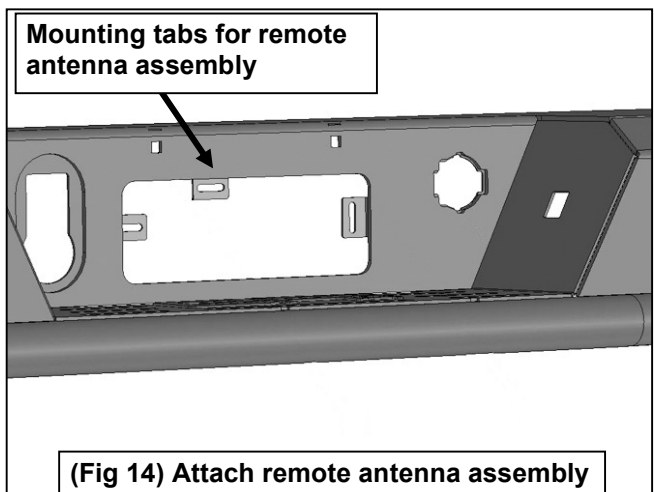
(Fig 9) Remove the cross traffic sensors if equipped (arrow)



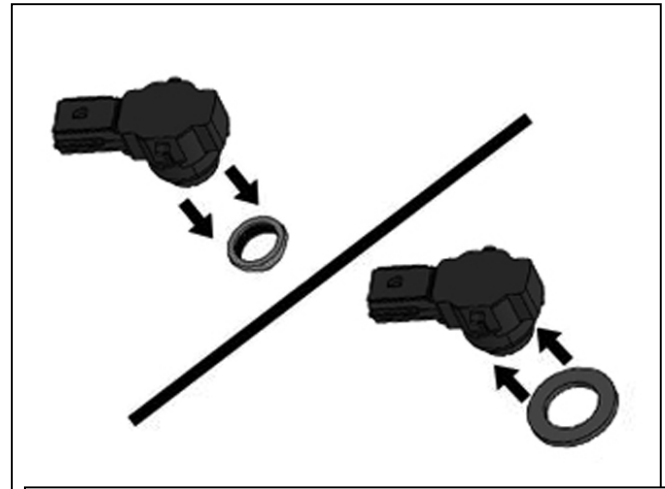
(Fig 10) Models without parking sensors, insert Rubber Plugs into sensor mounts



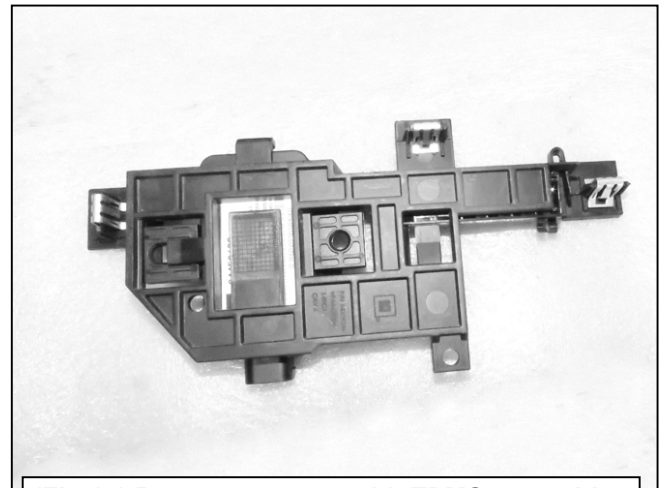
(Fig 12) Insert sensor assembly into the sensor sleeve. Secure with Retaining Clip.



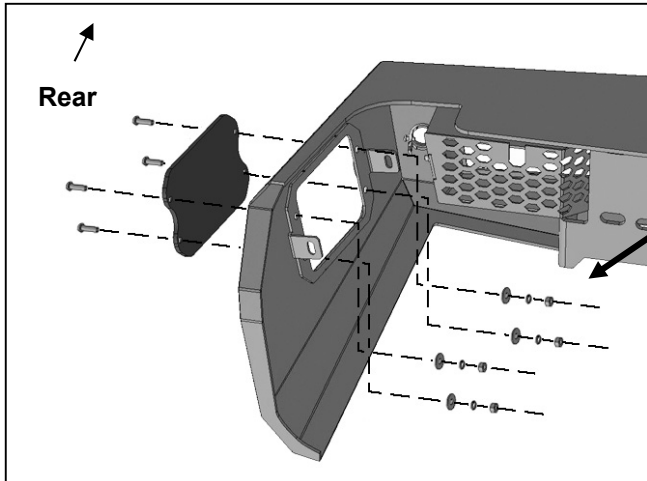
(Fig 14) Attach remote antenna assembly (Fig 13 & 28), to slots in mounting tabs



(Fig 11) Models with parking sensors, remove the silicone seal from sensor. Slide Foam Seal over end of sensor (arrow)

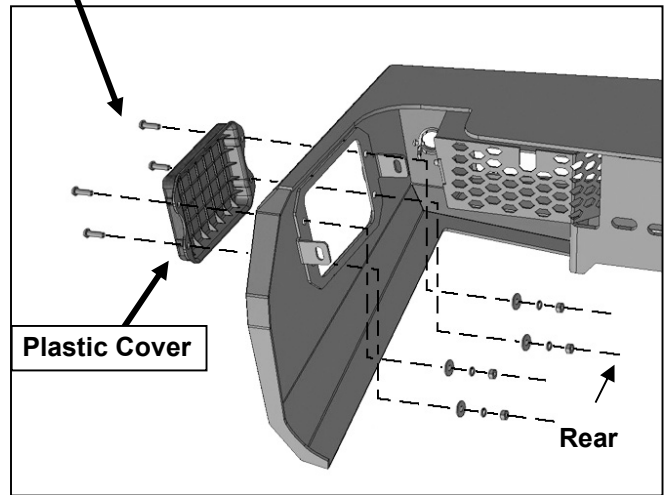


(Fig 13) Remote antenna with TPMS assembly

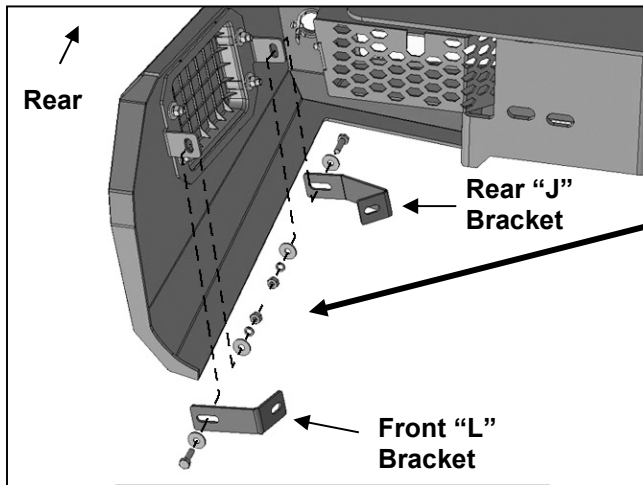


(Fig 15) Models without cross traffic alert sensors (CTA), attach Block Off Plates to Bumper

- (4) 6mm x 20mm Button Head Bolts
- (4) 6mm Flat Washers
- (4) 6mm Lock Washers
- (4) 6mm Hex Nuts

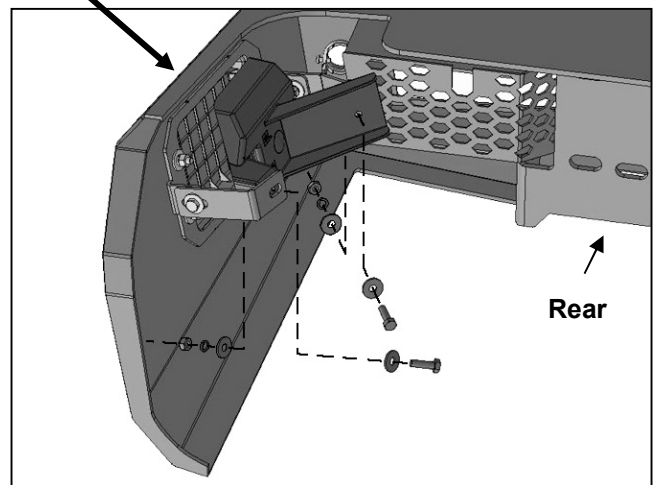


(Fig 16) Models with CTA sensors, attach Plastic Sensor Covers to outside of Bumper

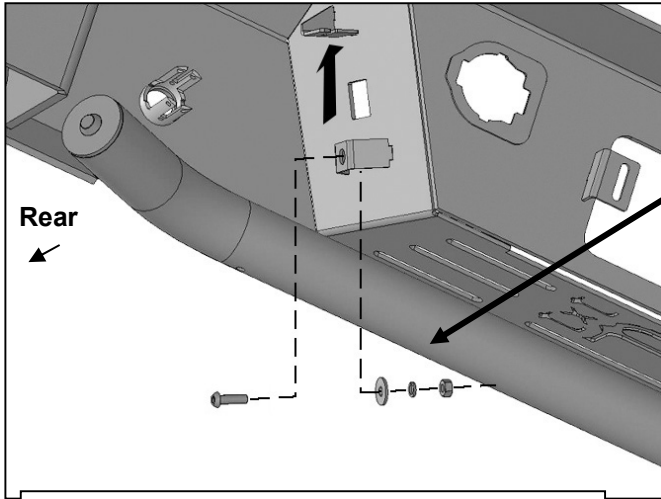


(Fig 17) Attach CTA Brackets to tabs on inside of Bumper

- (2) 6mm x 20mm Hex Bolts
- (4) 6mm Flat Washers
- (2) 6mm Lock Washers
- (2) 6mm Hex Nuts

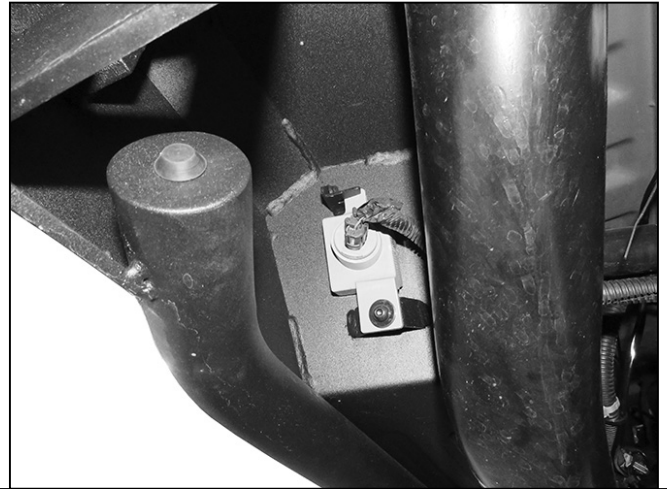


(Fig 18) Attach sensor to Brackets on Bumper

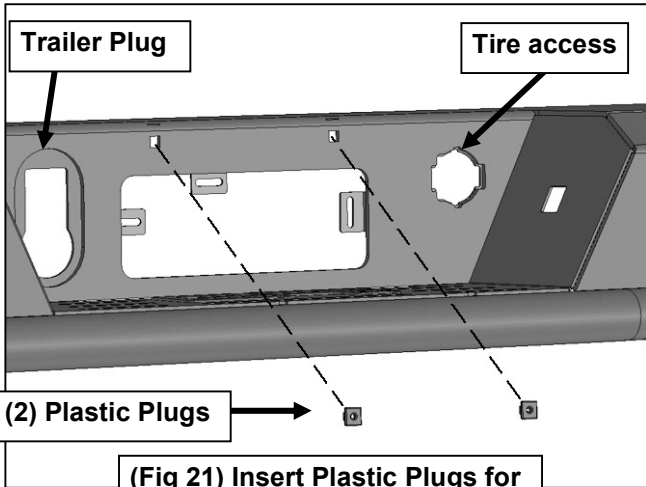


6mm x 20mm Button Head Bolt
6mm Flat Washer
6mm Lock Washer
6mm Hex Nut

(Fig 19) Attach factory license plate lights

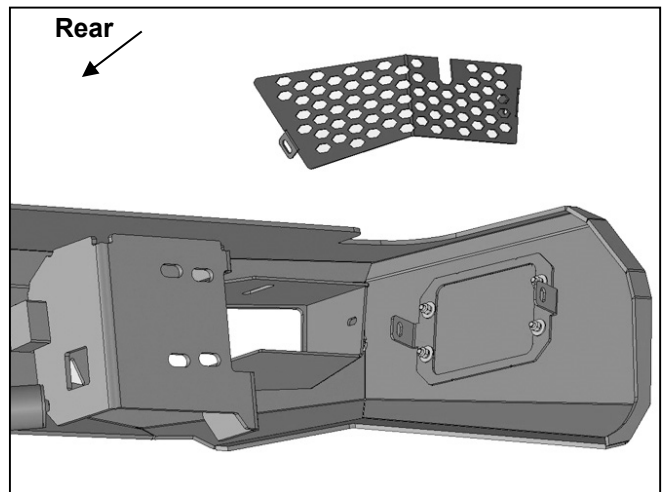


(Fig 20) Passenger/right license plate light installed



(2) Plastic Plugs

(Fig 21) Insert Plastic Plugs for license plate, also see Fig 28

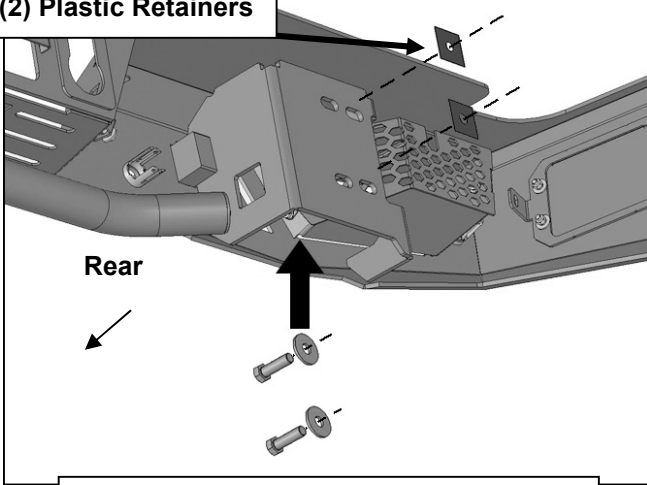


(Fig 22) Remove screens for light clearance before installing Bumper

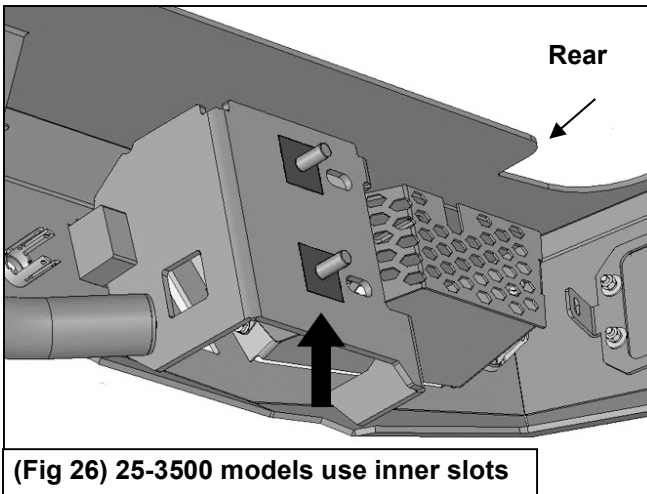


(Fig 23) Remove the outer bumper supports from both sides of the frame (arrow)

(2) Plastic Retainers

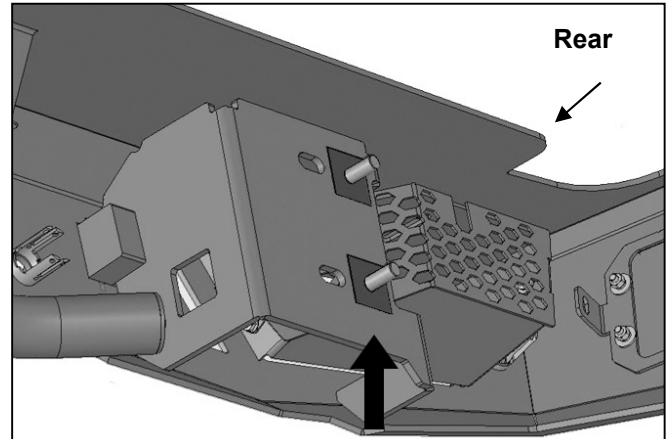


(Fig 24) Insert (2) 12mm Hex Bolts with (2) 12mm Flat Washers into Bumper



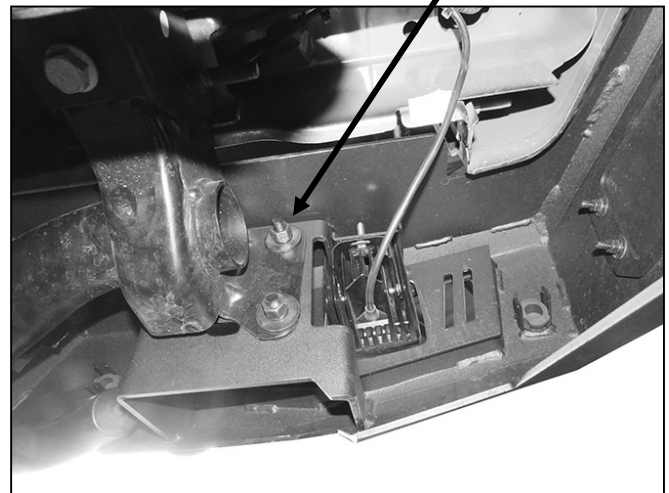
(Fig 26) 25-3500 models use inner slots

WARNING! Fully support the weight of the bumper with blocks or stands to prevent injury or damage to the vehicle.



(Fig 25) 1500 models use outer slots

- (2) 12mm x 40mm Hex Bolts
- (2) Plastic Retainers
- (4) 12mm Flat Washers
- (2) 12mm Lock Washers
- (2) 12mm Hex Nuts



(Fig 27) Attach driver/left side of Bumper to frame



(Fig 28) Trailer plug, spare tire lock, license plate plugs and TPMS antenna installed