



## **INSTALLATION INSTRUCTIONS**

**MESH EC1 MODULAR BULL BAR**

**2004-2023 FORD F150**

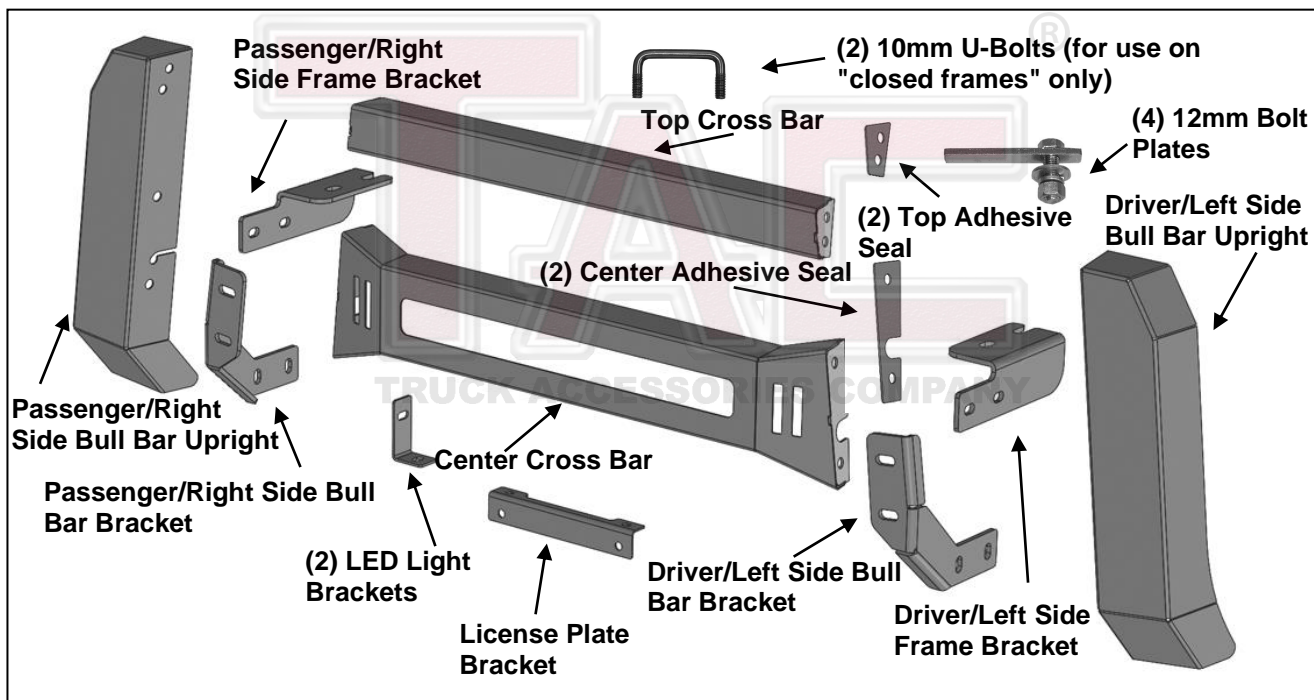
**(Excl. Heritage edition / all F150 Raptor models / 2020-2022 Diesel models)**

**2022-2023 F150 Lighting EV**

**PART# EC1-F100TM**

**PARTS LIST:**

1	Driver/Left Side Bull Bar Upright	4	10-1.5mm x 35mm Hex Bolts
1	Passenger/Right Side Bull Bar Upright	12	10-1.5mm x 25mm Hex Bolts
1	Top Cross Bar	16	10mm x 30mm x 3mm Flat Washers
1	Center Cross Bar	16	10mm x 20mm x 2mm Flat Washers
1	Driver/Left Side Frame Bracket	20	10mm Lock Washers
1	Passenger/Right Side Frame Bracket	16	10-1.5mm Hex Nuts
1	Driver/Left Side Bull Bar Bracket	4	10-1.5mm x 35mm Hex Bolts
1	Passenger/Right Side Bull Bar Bracket	4	8-1.25mm x 25mm Hex Bolts
1	Mesh Fill Panel	2	8-1.25mm x 16mm Hex Bolts
2	LED Light Brackets	8	8mm x 24mm x 2mm Flat Washers
1	License Plate Bracket	4	8mm Lock Washers
2	Black Rubber Self-Adhesive Top Seal	4	8mm Hex Nuts
2	Black Rubber Self-Adhesive Center Seal	2	6-1.0mm x 20mm Button Head Combo Bolts
4	12mm x 40mm Bolt Plates	2	6-1.0mm x 20mm Button Head Bolts
4	12mm x 32mm x 3mm Flat Washers	4	6mm x 18mm x 1.6mm Flat Washers
4	12mm Lock Washers	2	6mm Lock Washers
4	12-1.75mm Hex Nuts	2	6mm Hex Nuts
2	10mm U-Bolts (use on "closed frames" Only)	1	4mm Allen Wrench



**PROCEDURE:**

1. REMOVE CONTENTS FROM BOX. VERIFY ALL PARTS ARE PRESENT. READ INSTRUCTIONS CAREFULLY BEFORE STARTING INSTALLATION. CUTTING MAY BE REQUIRED. ASSISTANCE IS RECOMMENDED. INSTALLATION MAY INTERFERE WITH FRONT SENSOR/CAMERA OPERATION.
2. Determine if the vehicle is equipped with tow hooks, (Figure 1).
  - Vehicles with Factory Tow Hooks**
    - a. Remove each tow hook by removing the front bolt and only loosening the rear bolt, (Figure 2). Slide the tow hook off. Keep the factory double nut plate in the frame and aligned with the holes. **NOTE:** Tow hooks cannot be reinstalled.
    - b. Select the driver side Frame Bracket. Position the Bracket up to the bottom of the frame. Reuse the tow hook hardware to attach the Bracket to the bottom of the frame and factory double nut plate, (Figure 3).

- c. Skip to **Step 3**.

### All vehicles without Tow Hooks

Remove the lower plastic portion of the bumper to gain access to the ends of the frame rails, **(Figure 4)**. The lower bumper or splash guard will need to be cut out to allow the Mounting Brackets and end of Bull Bar to pass through. On some models, access to the mounting hardware is limited. For 2015-on model years with fog lights, entire bumper may need to be removed to remove splash guard. For access to hardware, first remove the plastic bumper pad from each side of the opening in the center of the bumper, **(Figure 5)**.

Remove splash guard and temporarily reinstall bumper.

### Vehicles without Tow Hooks and open end of frame

- a. Starting on the driver side of the vehicle, insert (1) 12mm Bolt Plate through the opening in the end of the frame and down through the rear hole in the bottom of the frame, **(Figures 6A & 6B)**. Repeat to install the 2nd Bolt Plate in the forward mounting hole.
- b. Attach the driver side Bracket to the (2) Bolt Plates with (12) 12mm Flat Washers, (2) 12mm Lock Washers and (2) 12mm Hex Nuts, **(Figure 8)**.
- c. Snug but do not tighten the hardware at this time.

### Vehicles without Tow Hooks, closed end of frame

- a. Starting on the driver side of the vehicle, locate the two holes on the bottom of the frame. Insert (1) 10mm U-Bolt into one hole and out the other, **(Figures 7A & 7B)**.
  - b. Attach the driver side Bracket to the U-Bolt with (2) 10mm x 30mm Flat Washers, (2) 10mm Lock Washers, and (2) 10mm Hex Nuts **(Figure 8)**.
  - c. Slowly tighten hardware evenly but do not fully tighten at this time.
3. Select the driver/left side Bull Bar Bracket. Attach the Bull Bar Bracket on the inside of the Frame Bracket with the included (2) 10mm x 35mm Hex Bolts, (4) 10mm x 30mm Flat Washers, (2) 10mm Lock Washers, and (2) 10mm Hex Nuts, **(Figure 9)**. Do not fully tighten hardware at this time.
  4. Repeat **Steps 2 & 3** to install the passenger/right side Brackets.
  5. Select the driver/left Bull Bar Upright and the Top Cross Bar **(Figure 10)**. Attach the Black Rubber Self-Adhesive Top Seal between the Upright and Top Cross Bar. Attach the Cross Bar to the Upright with the included (2) 10mm x 25mm Hex Bolts, (4) 10mm x 20mm Flat Washers, (2) 10mm Lock Washers and (2) 10mm Hex Nuts. Do not fully tighten hardware.
  6. Select the Center Cross Bar. Attach the longer Black Rubber Self-Adhesive Center Seal between the Upright and the Center Cross Bar. Repeat **Step 5** to attach the Center Cross Bar to the Upright, **(Figure 10)**. Do not fully tighten hardware.
  7. Repeat **Steps 5 & 6** to attach the passenger side Upright to the Top Cross Bar and Center Cross Bar. Place assembled Bull Bar face down on a clean flat surface and fully tighten Bull Bar assembly hardware only at this time.
  8. Relocation of front license plate may be necessary.
    - a. Attach the License Plate Bracket to bottom of Center Cross Bar with (2) 6mm Button Head Bolts, (4) 6mm Flat Washers, (2) 6mm Lock Washers and (2) 6mm Hex Nuts, **(Figure 11)**.
    - b. Attach license plate to Bracket with (2) 6mm Button Head Combo Bolts, **(Figure 11)**.
  9. LED light installation, (optional-light available separately).
    - a. Start at the driver/left side of the vehicle. Select (1) Light Bar Bracket. Attach the Bracket to the slot in the back of the Center Cross Bar with (1) 8mm x 25mm Hex Bolt, (2) 8mm Flat Washers, (1) 8mm Lock Washer and (1) 8mm Hex Nut, **(Figure 12)**. **NOTE:** Check for clearance between the Hex Bolt and the bottom of the Light. If necessary, insert the Hex Bolts down through the Brackets then through slots in the Cross Bar. Leave hardware loose at this time.
    - b. Repeat the previous **Step** to attach the passenger/right Light Bracket.
    - c. If needed, use the included (2) 8mm x 16mm Hex Bolts, (2) 8mm Lock Washers and (2) 8mm Flat Washers to attach the LED light bar to the Brackets, **(Figure 12)**.
    - d. Follow light manufacturer's instructions to properly wire the light bar to the electrical system.
    - e. Proceed to **Step 11**.

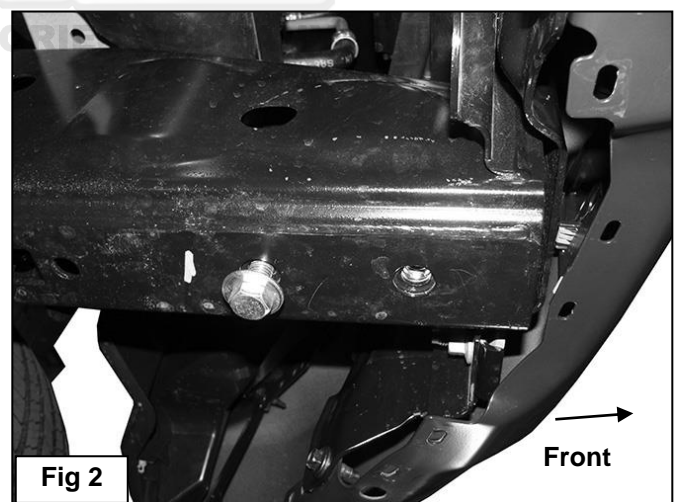
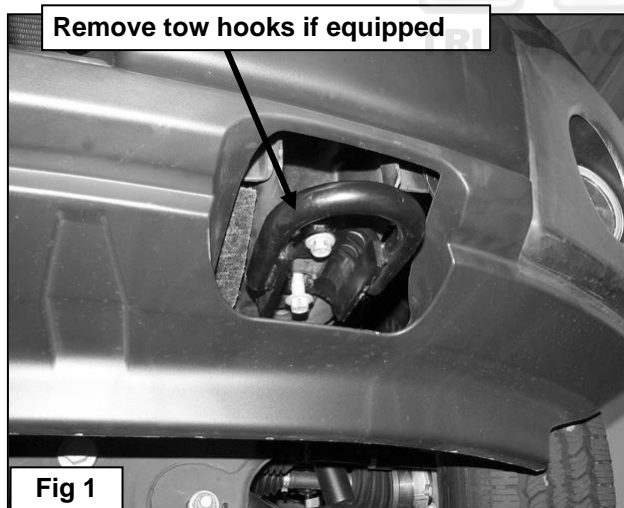
10. Center Screen Fill Panel Installation, (cannot be installed with LED light).
  - a. Select (1) "L" Light Bar Bracket. Attach the Bracket to the outside of the tab on the Center Screen Fill Panel with (1) 8mm x 25mm Hex Bolt, (2) 8mm Flat Washers, (1) 8mm Lock Washer and (1) 8mm Hex Nut, **(Figure 13)**. **NOTE:** Insert the Hex Bolt through the tab on the Panel and out through the Bracket. Repeat to attach the remaining Bracket to the other end of the Fill Panel. Leave hardware loose at this time.
  - b. Attach the Fill Panel with Brackets to the slots in the back of the Center Cross Bar with (2) 8mm x 25mm Hex Bolts, (4) 8mm 24mm Flat Washers, (2) 8mm Lock Washers and (2) 8mm Hex Nuts, **(Figure 13)**. **NOTE:** Insert the Hex Bolts up through the bottom of the Cross Bar and then through the Brackets.
  - c. Push the Fill Panel up tight against the inside of the opening and fully tighten hardware.
11. With assistance, hold the assembled Bull Bar up to the Brackets. Attach the Brackets to the (2) bottom holes in each Upright on the Bull Bar assembly with (4) 10mm x 25mm Hex Bolts, (4) 10mm Lock Washers and (4) 10mm x 30mm Large Flat Washers, **(Figure 14 & 15)**.
12. Level and adjust the Bull Bar properly and tighten all hardware.

**Models without openings in lower bumper or splash guard for tow hooks.**

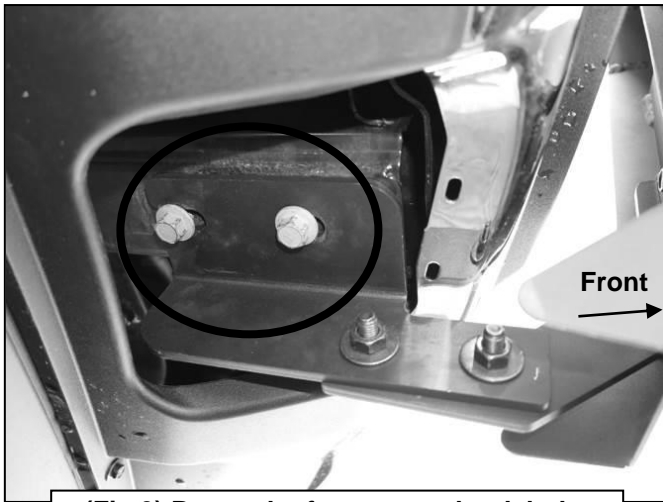
  - a. Hold the splash guard up to the bottom of the bumper and bull bar brackets.
  - b. Trace the location of both Brackets onto the back of the cover. Temporarily remove the Bull Bar with Mounting Brackets only.
  - c. Cut openings in the cover to clear the Frame Brackets and end of Bull Bar Brackets as necessary, **(Figure 16)**. For best results, start with a small slot and slowly enlarge the opening to clear the Brackets.
  - d. Once cover is properly fit to the Brackets, remove bumper, reattach the splash guard to the bumper. Reinstall the bumper assembly and Bull Bar assembly as previously described.
13. Do periodic inspections to the installation to make sure that all hardware is secure and tight.

**To protect your investment**, wax this product after installing. Regular waxing is recommended to add a protective layer over the finish. 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 Bull Bar.

### Driver Side Installation Pictured



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(Fig 3) Reuse the factory tow hook bolts



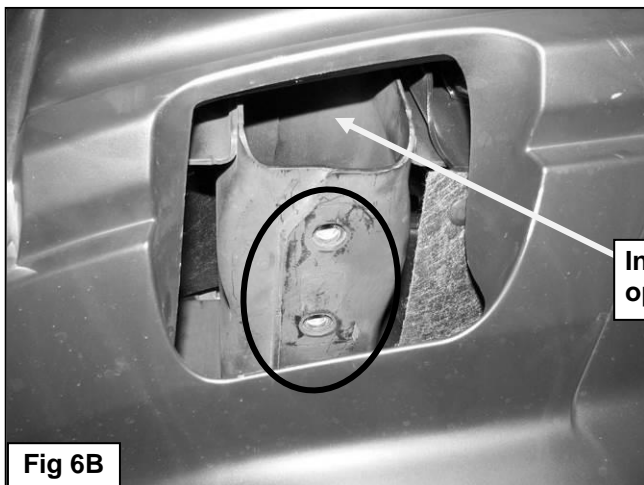
(Fig 4) Models without tow hooks, temporarily remove the splash guard



(Fig 5) Remove bumper pads to access splash guard hardware if necessary. 2017 F150 pictured



(Fig 6A) 12mm x 40mm Bolt Plates



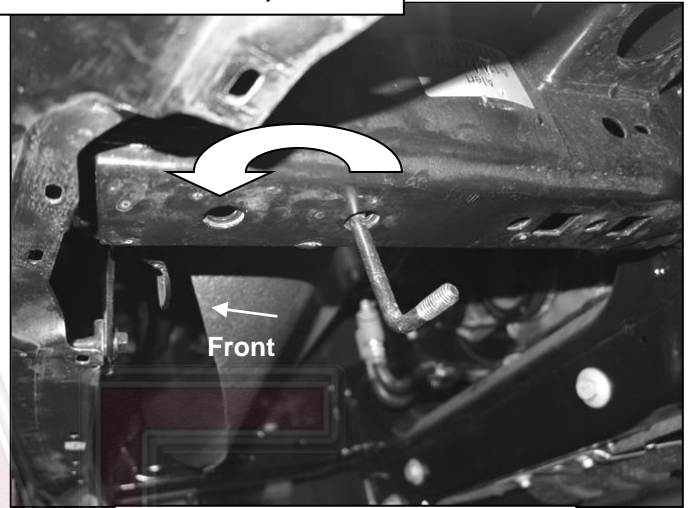
Insert Bolt Plates through open end of frame

Fig 6B

### Driver Side Installation Pictured

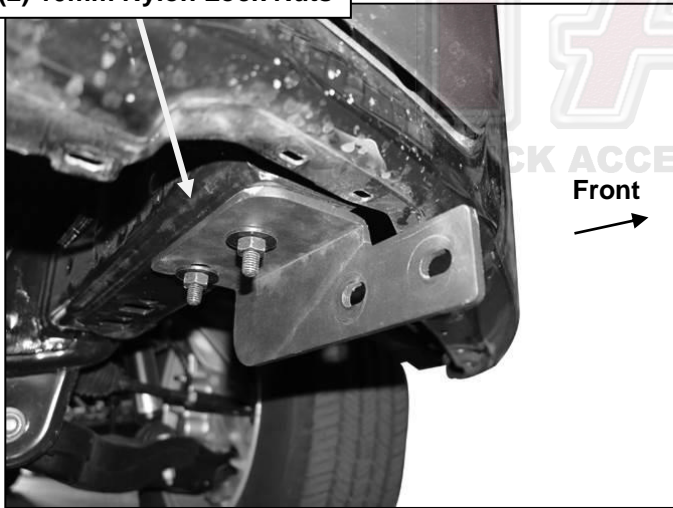


Insert 10mm U-Bolt into one hole and out the other. (U-Bolt is only used on vehicles with "closed end frames")

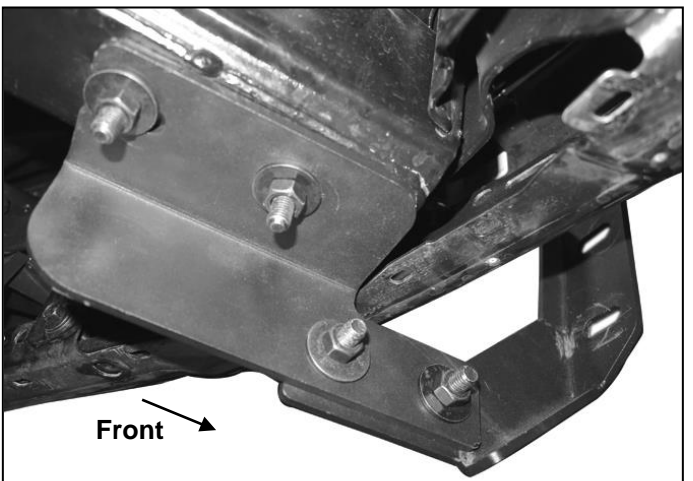


(Fig 7B) Example of a "closed end of frame" installation pictured

10mm U-Bolt  
(2) 10mm Flat Washers  
(2) 10mm Nylon Lock Nuts



(Fig 8) Example of a "closed end of frame"



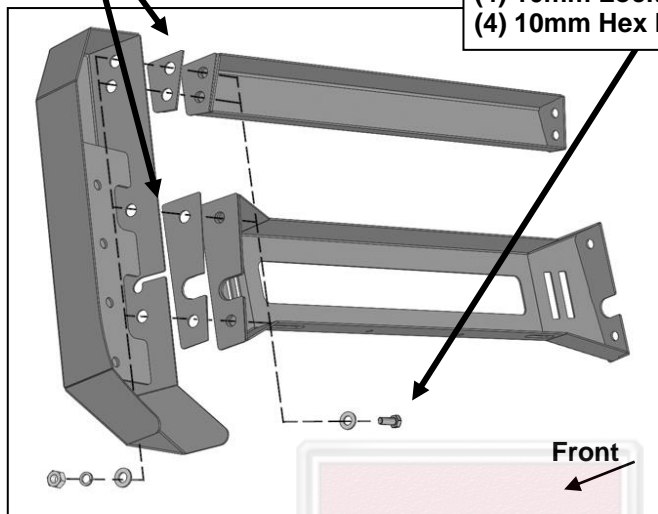
(Fig 9) Driver side Frame Bracket attached to Bull Bar Bracket Pictured

**Driver Side Installation Pictured**

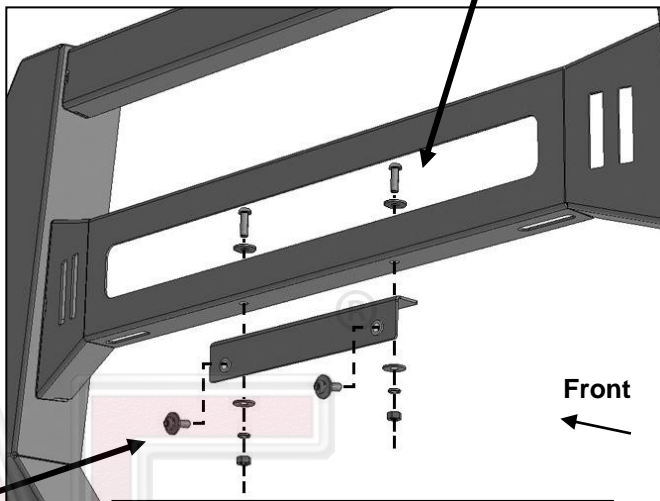
Insert Adhesive Backer  
 Rubber Seals between  
 Uprights and Top and  
 Center Cross Bars

- (4) 10mm x 25mm Hex Bolts
- (8) 10mm x 20mm Flat Washers
- (4) 10mm Lock Washers
- (4) 10mm Hex Nuts

- (2) 6mm Button Head Bolts
- (4) 6mm Flat Washers
- (2) 6mm Lock Washers
- (2) 6mm Hex Nuts



(Fig 10) Driver/Left Side Bull Bar Upright attached to Top and Center Cross Bars



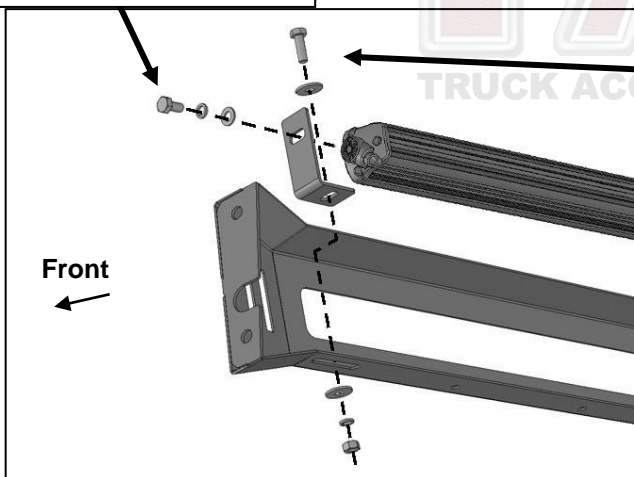
(Fig 11) Attach License Plate Bracket to bottom of Center Cross Bar

- 8mm x 16mm Hex Bolt
- 8mm Lock Washer
- 8mm Flat Washer

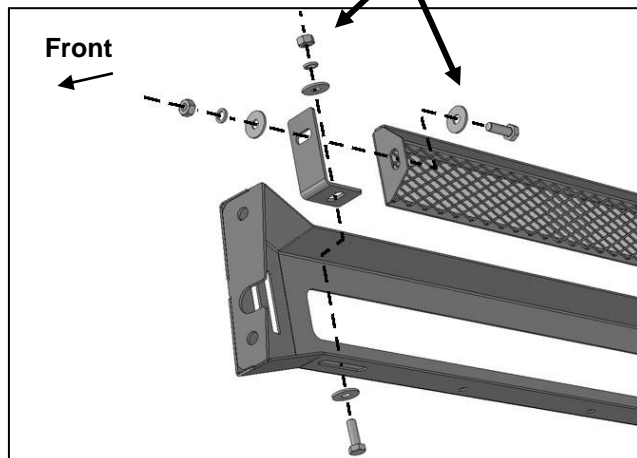
- (2) 6mm Button Head Combo Bolts

- 8mm x 25mm Hex Bolt
- (2) 8mm Flat Washers
- 8mm Lock Washer
- 8mm Hex Nuts

- 8mm x 25mm Hex Bolt
- (2) 8mm Flat Washers
- 8mm Lock Washer
- 8mm Hex Nut

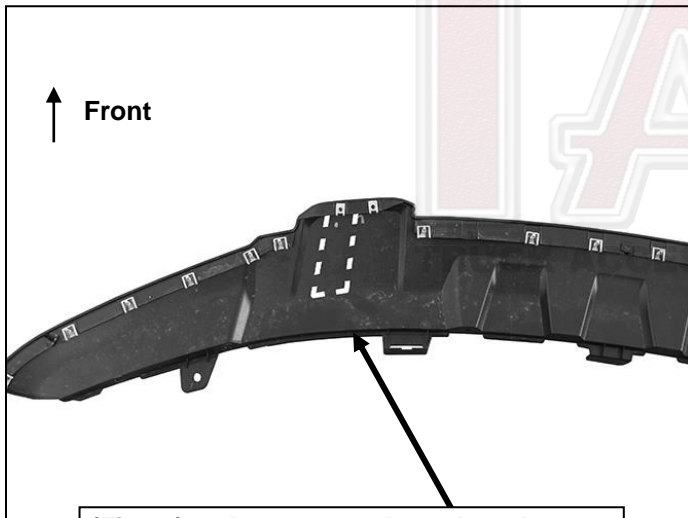
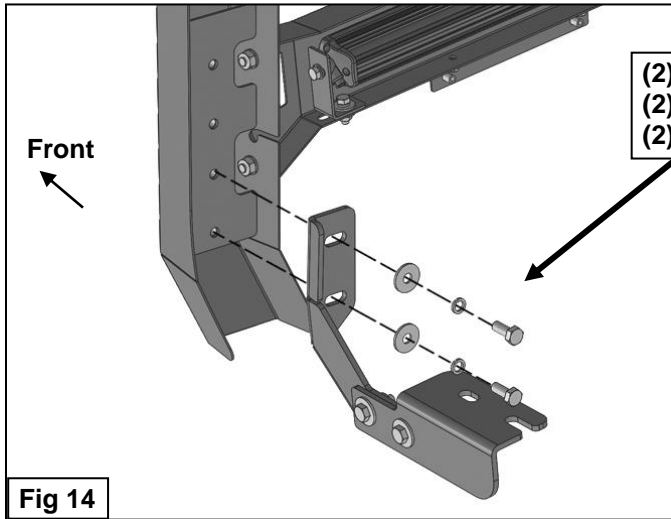


(Fig 12) Attach "L" Light Brackets to slots in bottom of Center Cross Bar. Attach LED Bar light to Brackets. NOTE: Optional LED light available separately.



(Fig 13) Attach Center Fill Panel to "L" Brackets

### Driver Side Installation Pictured



Hold the splash guard up to the bottom of the Brackets. Trace the location of the Brackets onto the inside of the splash guard. Use a sharp knife or hacksaw blade to cut out the plastic cover. Only cut enough to clear the Brackets, do not cut through the front or rear edges of the cover.

