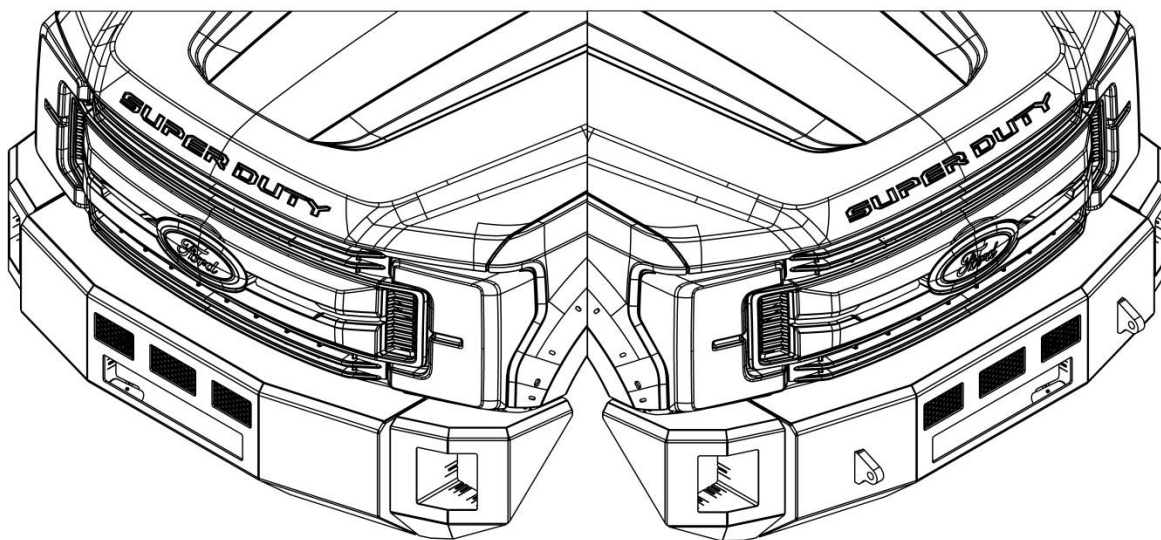




Bravo Series Front Bumper Installation Manual

- 2017 Ford Super Duty

Kelderman Bravo Series Front Bumper



Smooth

Hooks

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Kit Numbers

- This installation manual covers the following front bumpers.

Kit Number	Description
KLM-402021017-002030000	F250 – Bravo – No Sensors – Stock Width
KLM-402021017-002030001	F250 – Bravo – No Sensors – Stock Width - Hooks
KLM-402021017-002031500	F250 – Bravo – No Sensors – Wide Width
KLM-402021017-002031501	F250 – Bravo – No Sensors – Wide Width - Hooks
KLM-402022017-002030000	F350 – Bravo – No Sensors – Stock Width
KLM-402022017-002030001	F350 – Bravo – No Sensors – Stock Width - Hooks
KLM-402022017-002031500	F350 – Bravo – No Sensors – Wide Width
KLM-402022017-002031501	F350 – Bravo – No Sensors – Wide Width - Hooks
KLM-402023017-002031500	F450 – Bravo – No Sensors – Wide Width
KLM-402023017-002031501	F450 – Bravo – No Sensors – Wide Width - Hooks

Introduction

- **Important**

It is important that the entire installation instructions be read thoroughly before proceeding with bumper installation.

- **Product Installer Responsibilities**

Installer is responsible for installing this product in accordance with Kelderman Mfg. Inc. specifications and installation instructions.

Installer is responsible for providing proper installation of vehicle components and attachments as well as required or necessary clearance for suspension components, axles, wheels, tires, and other vehicle components to ensure a safe and sound installation and operation of this product.

- **Product Owner Responsibilities**

Owner is solely responsible for pre-operation inspection, periodic inspections, maintenance, and use of the product as specified by Kelderman Mfg. Inc. Of particular importance is the re-torque of fasteners. This re-torque must be performed within 90 days or 1000 miles of this product being put into service.

- **Definition of Terms**

- **Warning:** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
- **Caution:** A potential hazardous situation may result in property damage.
- **Note:** Provide information or suggestions that help correctly perform a task.
- **Torque:** When italicized "*torque*" alerts the installer to tighten fasteners to a specified value.

Safety

- **Your Safety and the Safety of Others is Very Important.**
Read and understand all safety precautions and instructions before installing this product.

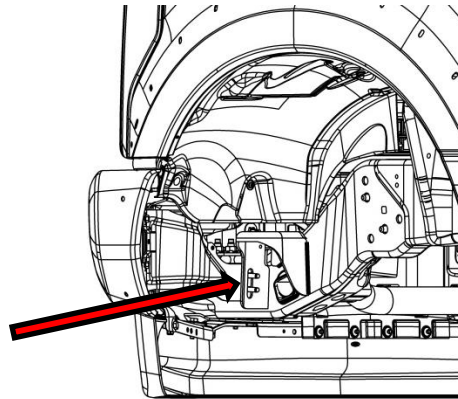
- **CAUTION: Trucks Equipped with Parking Sensors or Other Like Devices.**
Relocation of these devices will alter the field of view. It is the responsibility of the owner to understand how these changes affect the operation of these systems.

- **This Product is Intended for Off-Road Use**
All liability for installation and use rests with the owner.

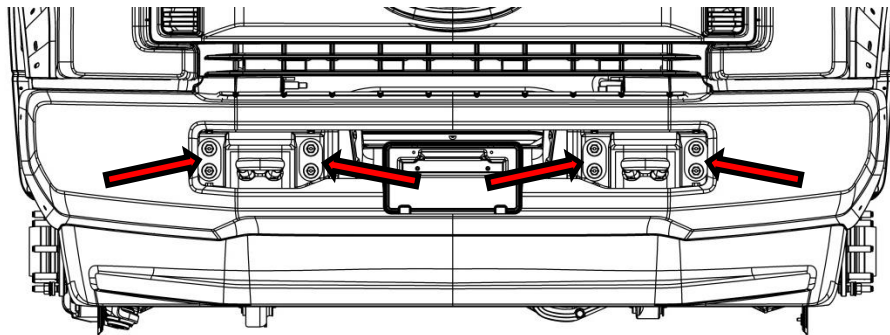
- **WARNING: Careless Installation Can Result in Serious Injury or Property Damage**
 - Wear eye protection.
 - Disconnect the battery before doing any work on the vehicle.
 - Work on flat level ground.
 - Ensure truck is properly supported by jack stands. Never work under a vehicle supported only by hydraulic jacks.
 - Take precautions when lifting product. Due to the size and weight of this product three people are recommended for installation.
 - Never work directly under the product until it has been securely fastened to the vehicle.
 - Avoid sharp, hot, and moving components when routing electrical cables.
 - If drilling inspect both sides of the surface and remove/relocate any objects located in the way.
 - Ensure all bolts are properly tightened before driving.

Bumper Removal

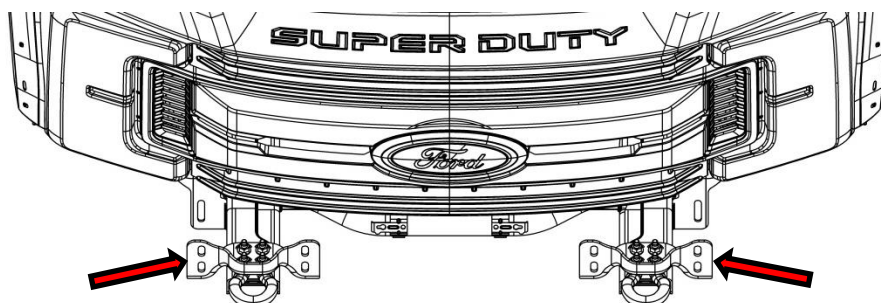
- 1: Disconnect the wiring to any lights, sensors, or other accessories mounted to the stock bumper. If equipped, remove the adaptive cruise control sensor located to the side of the license plate mount.
- 2: Remove the bolt tab from each side that fasten the corner support to the frame.



- 3: With the bumper supported remove the eight bolts located on either side of the two tow hooks. The bumper can now be removed.

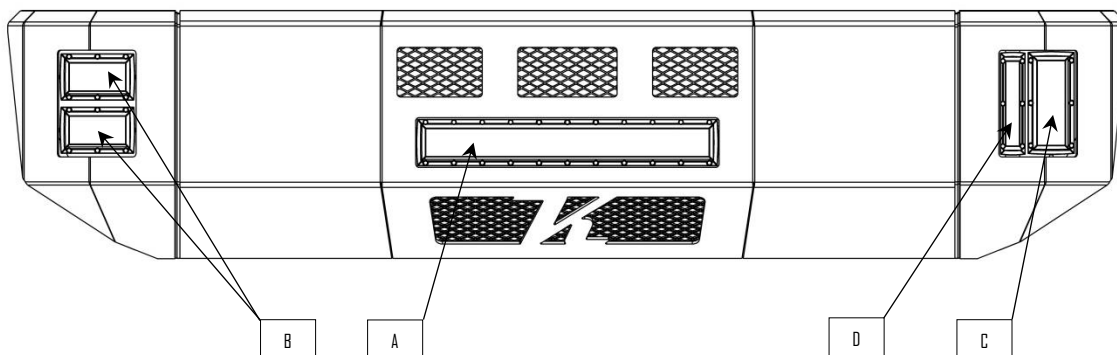


- 4: Remove the eight bolts that fasten the upper bumper brackets and tow hooks to the frame. Remove the four bolt tabs that fasten the lower bumper brackets to the frame. The four bolt tabs will be reused during installation.



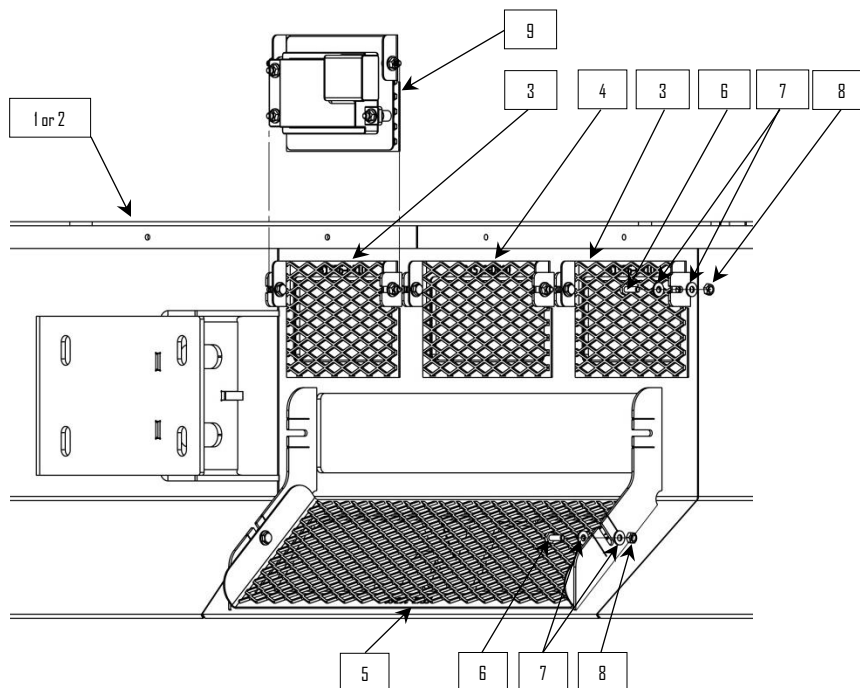
Bumper Preparation

- Before painting open every box and locate all parts. There are several smaller bushing pieces, screens, and bolt tabs that are packaged separately inside the main box.
- **CAUTION:** Kelderman Mfg. Inc. cannot guarantee correct out of the box fitment across all light brands and sizes. The installer is responsible for test fitting all lights into the bumper and making any required modifications before the bumper is sent to paint. This bumper has been designed to utilize the following Rigid Industries lights.
 - A) Rigid Industries E-Series 20 Inch Light (Center)
 - B) Rigid Industries E-Series 4 Inch Light (End Cap)
 - C) Rigid Industries E-Series 6 Inch Light (End Cap)
 - D) Rigid Industries SR-Series 6 Inch Light (End Cap)

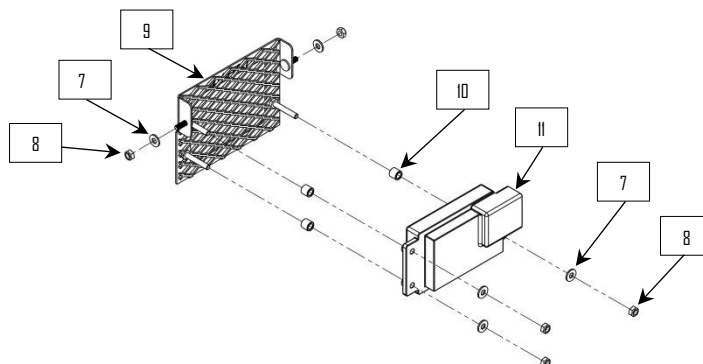


Bumper Assembly

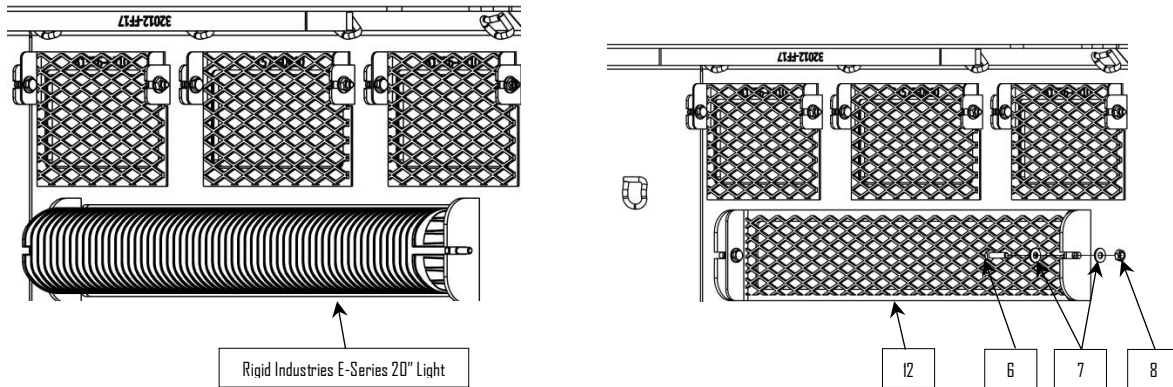
- On a clean flat non-scratching surface place the bumper center section (1 or 2) face down.



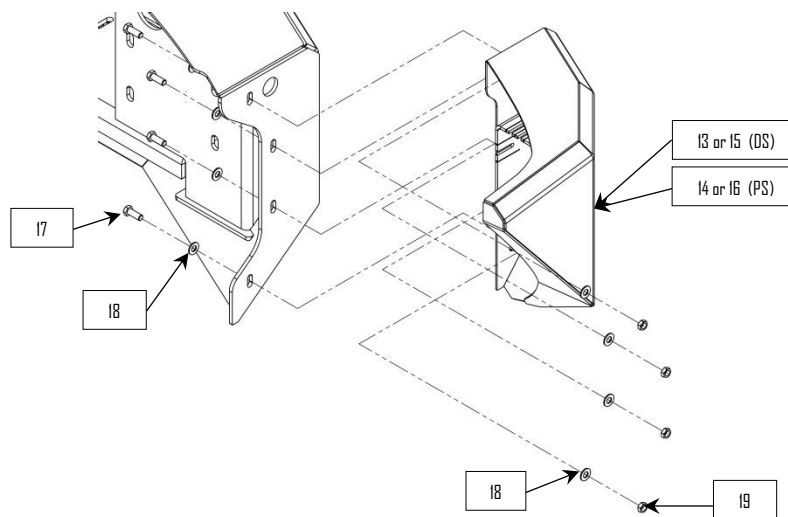
- Bolt the three upper screens (3 & 4) into the center section, using the supplied ¼" hardware (6, 7, & 8).
 - If your truck has an adaptive cruise control sensor install the optional adaptive cruise screen assembly (9) in place of the driver's side screen (3).



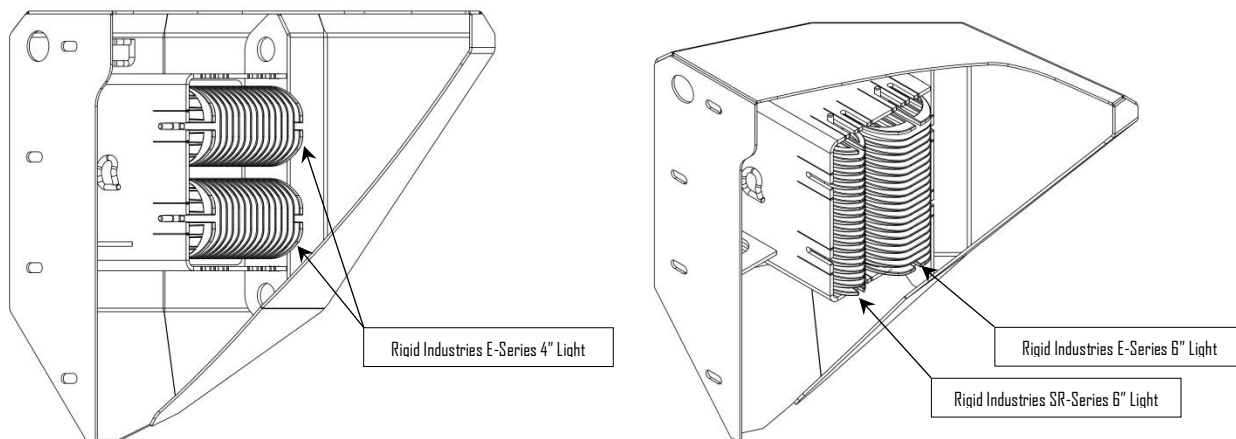
- Bolt the lower screen (5) into the center section, using the supplied ¼" hardware (6, 7, & 8).



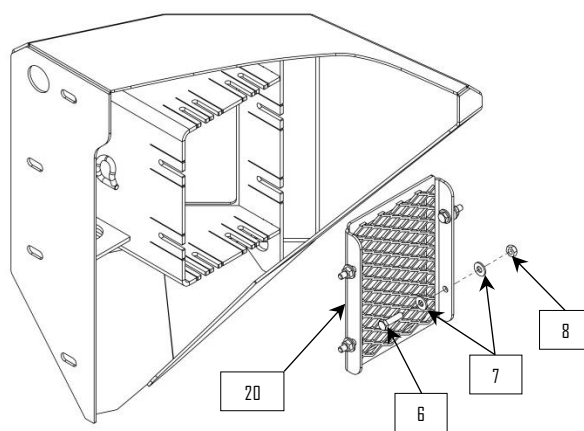
- Install the Rigid Industries E-Series 20 inch light bar (or similar light) into the center cut out using the hardware supplied with the light.
- Or if optional install the Kelderman center light delete screen (12) using the hardware supplied with the light delete kit.



- Bolt the end caps onto the center section using the supplied hardware. Position the tops flush with the center section. Re-positioning may be required after bumper is installed onto truck. **NOTE:** while positioning use masking tape to protect painted surfaces that come into contact.
- Install the lights into each end cap.

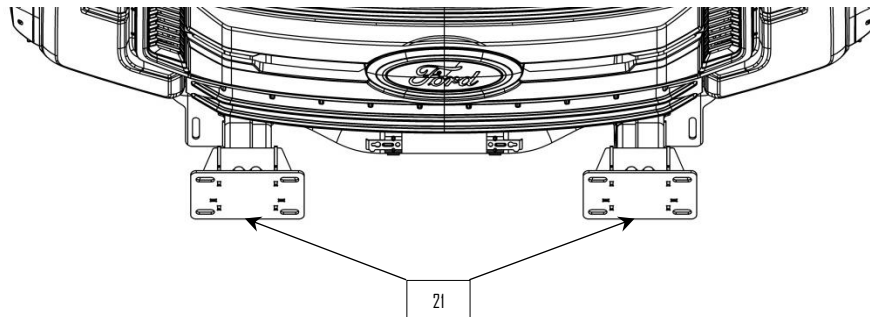
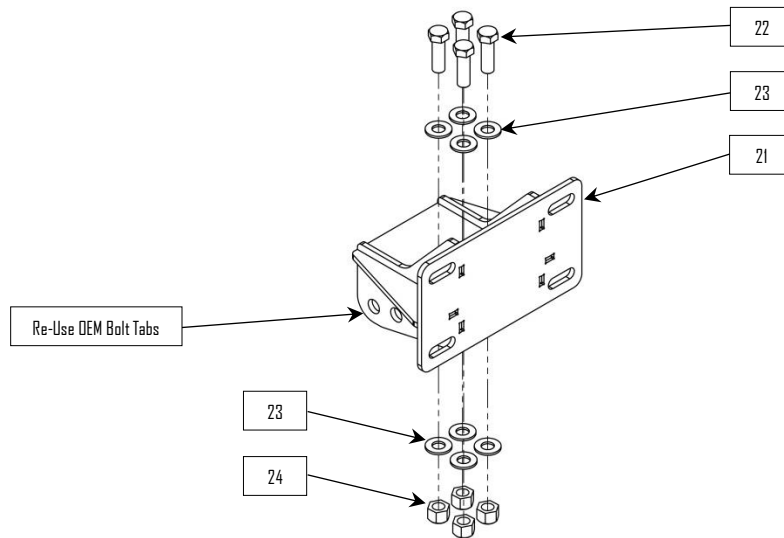


- Install horizontally two Rigid Industries 4 inch E-Series light (*or similar light*) into each end cap using the hardware supplied with the light.
- Or install vertically one Rigid Industries 6 inch E-Series (*or similar light*) and one Rigid Industries 6 inch SR-Series (*or similar light*) into each end cap using the hardware supplied with the light.
 - **NOTE:** The light mounting ears will deform and draw up tight to the light as they are tightened.

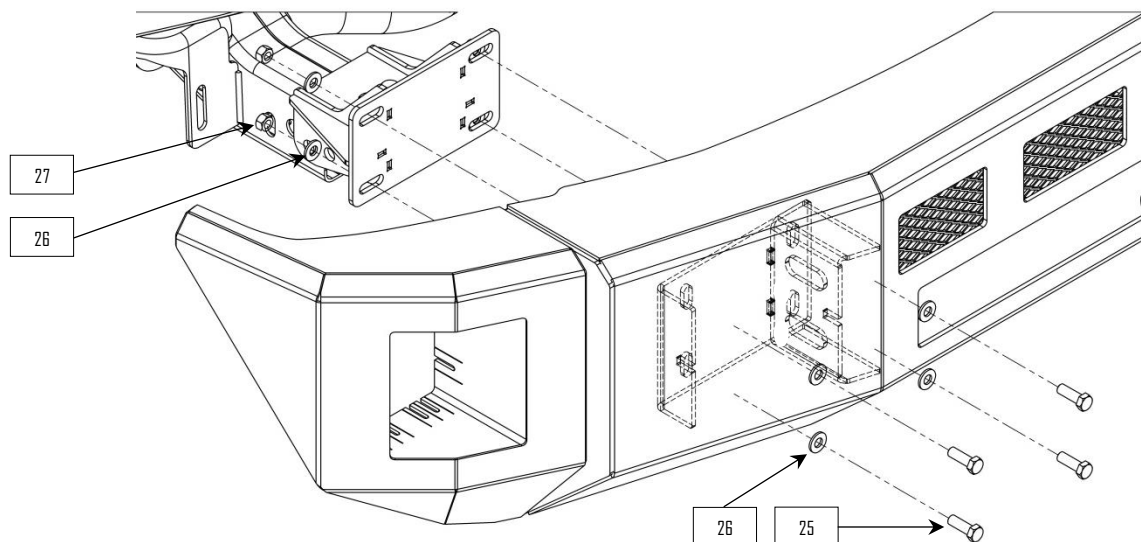


- Or if optional, install the Kelderman end cap light delete screen (*20*) using the hardware supplied with the light delete kit.
- Zip tie wiring to the tie downs welded inside the bumper.
- The Bumper is now ready for installation.

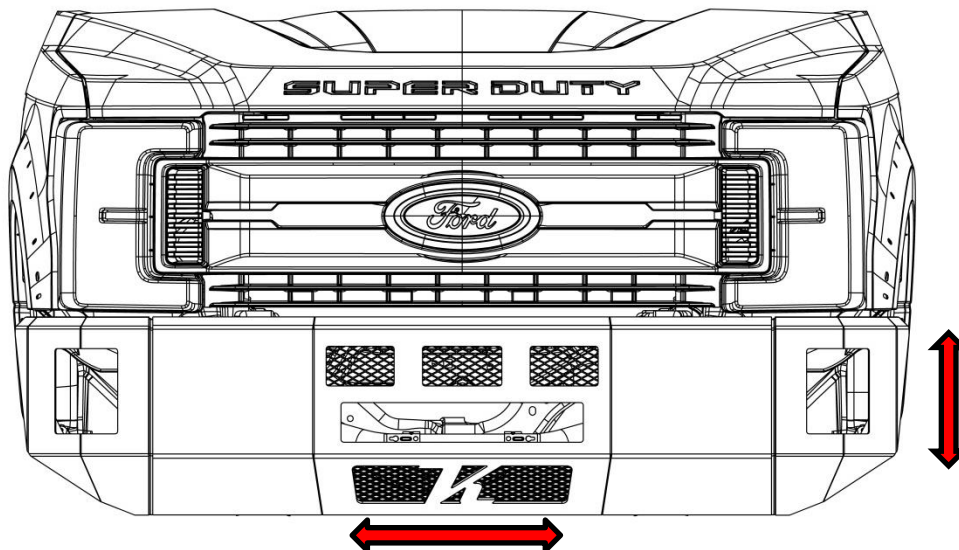
Bumper Installation



- 5:** Install the bumper frame brackets (21). Use the provided 9/16" bolts (22) and nuts (24) to bolt thru the top of the frame. Re-use the bolt tabs from step 4 to bolt thru the sides of the frame.



- 6:** Use bolts (25) to position the bumper on the frame brackets (21) Use washer (26) and nut (27) to fasten the bumper to the mount.
- 7:** Align the bumper on the truck and tighten the mounting hardware. **NOTE:** the end caps can be re-adjusted at this point if required.



- 8:** Torque all fasteners according to the chart below.

Bolt Size	Torque
1/4"-20	70 in-lb
3/8"-16	20 ft-lb
1/2"-20	50 ft-lb
9/16"-18	70 ft-lb
7/8"-9	250 ft-lb

- 9:** Finish wiring all lights and accessories.

Parts Key

Item Number	Part Number	Description
1	32070	Center Section - Smooth
2	32070	Center Section - Hooks
3	31577	Outer Screen
4	31579	Inner Screen
5	32058	Lower Screen
6	12108	Bolt: ¼"-20 X ¾"
7	13000	Flat Washer: ¼"
8	13100	Lock Nut: ¼"-20
9	32144	Adaptive Cruise Screen (<i>Optional</i>)
10	32043	Adaptive Cruise Standoff Bushing
11		Ford Adaptive Cruise Sensor
12	31569	Light Delete Screen Center (<i>Optional</i>)
13	32024	End Cap (DS) Stock Width
14	32025	End Cap (PS) Stock Width
15	32026	End Cap (DS) Wide Width
16	32027	End Cap (PS) Wide Width
17	12210	Bolt: 3/8"-24 X 1-1/4"
18	13002	Flat Washer: 3/8"
19	13102	Lock Nut: 3/8"-24
20	31566	Light Delete Screen End Cap (<i>Optional</i>)
21	32020	Bumper Frame Mount
22	12307	Bolt: 9/16"-18 X 1-3/4"
23	13005	Flat Washer: 9/16"
24	13125	Lock Nut: 9/16"-18
25	12007	Bolt: ½"-20 X 1-1/2"
26	13004	Flat Washer: ½"
27	13124	Lock Nut: ½"-20

Notes

Notes

Contact Information

- Kelderman Manufacturing appreciates your business. We strive to meet the needs of our customers by providing the highest quality products. If you have any questions concerning our products please call or email us at the following:

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Oskaloosa, Iowa 52577**

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