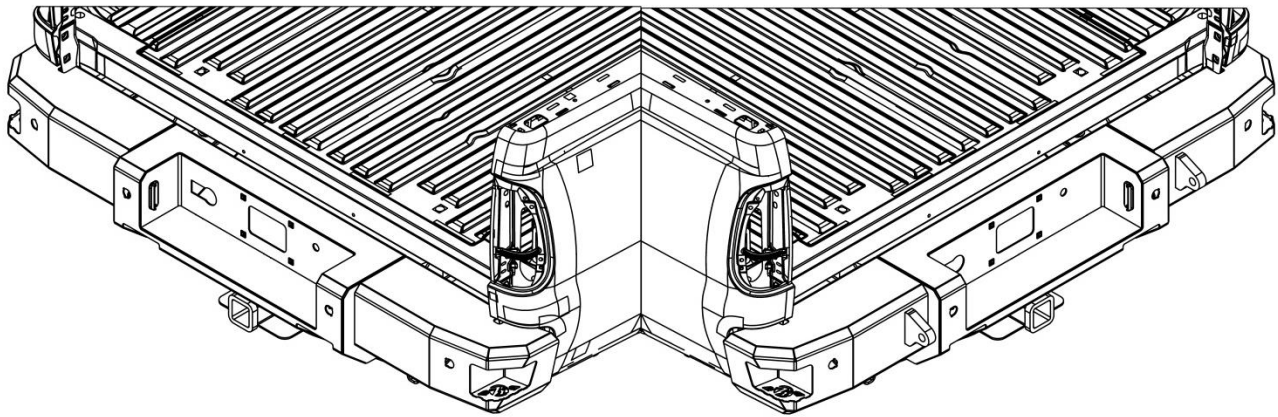




Bravo Series Rear Bumper Installation Manual

- 2008-2016 Ford Super Duty

Kelderman Bravo Series Rear Bumper



Smooth Hooks

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Kit Numbers

- This installation manual covers the following rear bumpers.

Kit Number	Description
KLM-402021008-101030000	F250 – Bravo – With Sensors
KLM-402021008-101030001	F250 – Bravo – With Sensors - Hooks
KLM-402021008-102030000	F250 – Bravo – No Sensors
KLM-402021008-102030001	F250 – Bravo – No Sensors - Hooks
KLM-402022008-101030000	F350 – Bravo – With Sensors
KLM-402022008-101030001	F350 – Bravo – With Sensors - Hooks
KLM-402022008-102030000	F350 – Bravo – No Sensors
KLM-402022008-102030001	F350 – Bravo – No Sensors - Hooks
KLM-402023008-101030000	F450 – Bravo – With Sensors
KLM-402023008-101030001	F450 – Bravo – With Sensors - Hooks
KLM-402023008-102030000	F450 – Bravo – No Sensors
KLM-402023008-102030001	F450 – Bravo – No Sensors - Hooks
KLM-402021011-101030000	F250 – Bravo – With Sensors
KLM-402021011-101030001	F250 – Bravo – With Sensors - Hooks
KLM-402021011-102030000	F250 – Bravo – No Sensors
KLM-402021011-102030001	F250 – Bravo – No Sensors - Hooks
KLM-402022011-101030000	F350 – Bravo – With Sensors
KLM-402022011-101030001	F350 – Bravo – With Sensors - Hooks
KLM-402022011-102030000	F350 – Bravo – No Sensors
KLM-402022011-102030001	F350 – Bravo – No Sensors - Hooks
KLM-402023011-101030000	F450 – Bravo – With Sensors
KLM-402023011-101030001	F450 – Bravo – With Sensors - Hooks
KLM-402023011-102030000	F450 – Bravo – No Sensors
KLM-402023011-102030001	F450 – Bravo – No Sensors - 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.

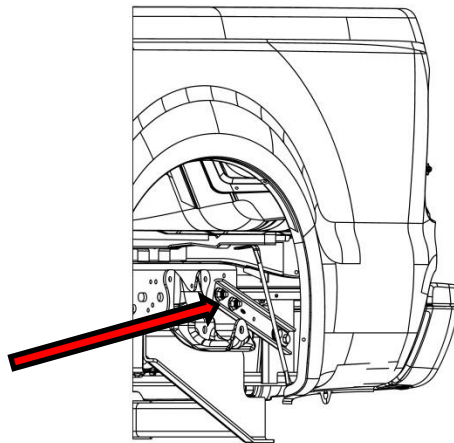
- **CAUTION: Trucks Equipped with Parking Sensors or Other Like Devices.**
Relocation of these devices will alter the field of view. It is the responsibility of the owner to understand how these changes affect the operation of these systems.

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

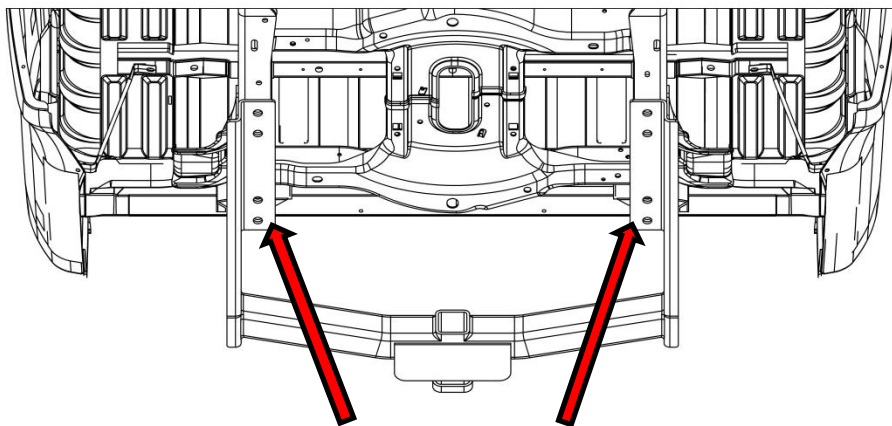
- **WARNING: Careless Installation Can Result in Serious Injury or Property Damage**
 - Wear eye protection.
 - Disconnect the battery before doing any work on the vehicle.
 - Work on flat level ground.
 - Ensure truck is properly supported by jack stands. Never work under a vehicle supported only by 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

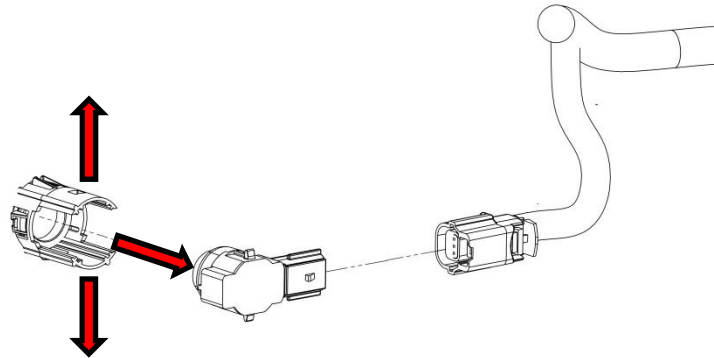
- 1:** Disconnect the wiring to any lights, sensors, or other accessories mounted to the stock bumper. **NOTE:** Lower the spare tire to make accessing electrical connectors easier.
- 2:** With the bumper supported remove the two bolts from each side that fasten the bumper bracket to the frame, these will be reused during installation. The bumper can now be removed.



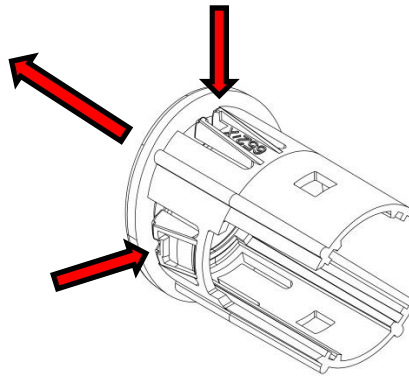
- 3:** Remove the four rear bolts that fasten the receiver hitch to the frame. Save these as they will be re-used later when installing the new brackets. **NOTE:** Complete removal of the hitch is not required.



- 4:** If equipped remove the parking sensors from the stock bumper **NOTE:** Keep track of location. Spread the ears on the sensor bezel and push the sensor thru the back of the bumper.



- 5:** Depress the tabs on the sensor bezel and push it thru the front of bumper.



- 6:** Remove the license plate, trailer light plug, and the spare tire lock.

Bumper Preparation

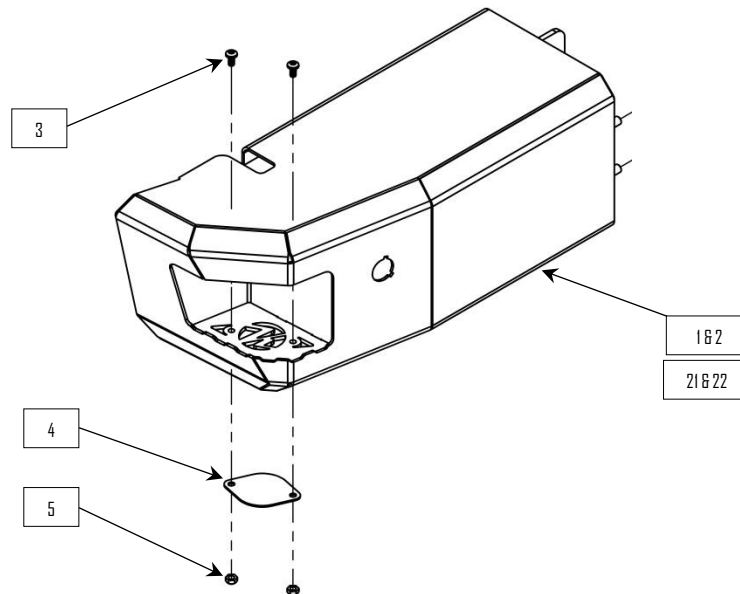
- Before painting open every box and locate all parts. There are several smaller bushing pieces, screens, and bolt tabs that are packaged separately inside the main box.

- **CAUTION:** This bumper has been designed to utilize a standard receiver pin. If you are using a locking pin or some other aftermarket pin check clearance with the bumper and make any necessary modifications before painting.

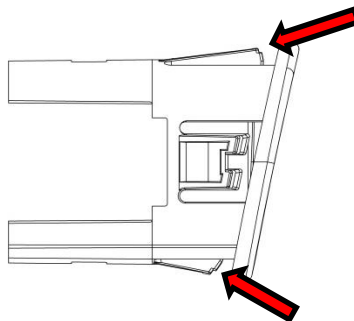
- **CAUTION:** Kelderman Mfg. Inc. cannot guarantee correct out of the box fitment across all light brands and sizes. The installer is responsible for test fitting all lights into the bumper and making any required modifications before the bumper is sent to paint. This bumper has been designed to utilize the following lights.
 - Rigid Industries E-Series 4 Inch Light
 - Hella 2KA-001-378-041 12V Incandescent License Plate Light
 - Hella 2KA-010-278-311 12V LED License Plate Light

Bumper Assembly

- On a clean flat non-scratching surface place the bumper end caps (1 & 2) or (21 & 22) face down.

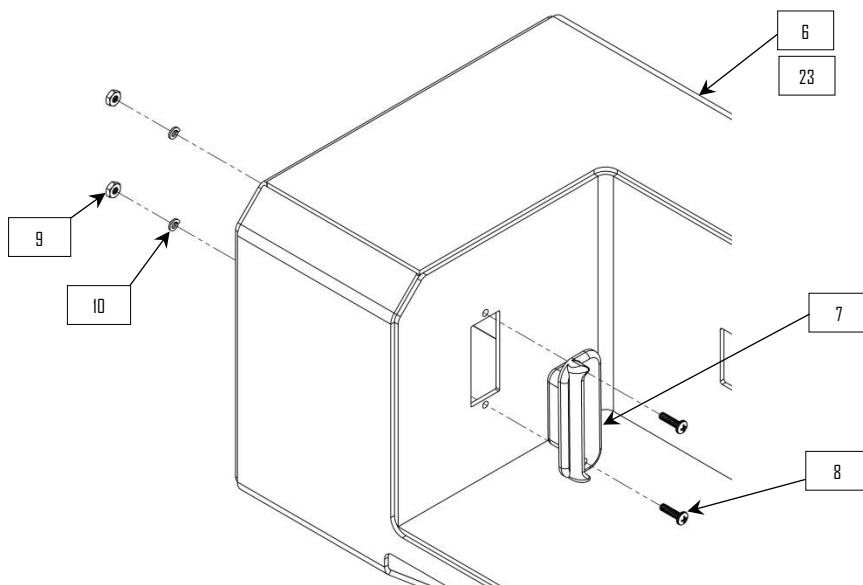


- Use the ¼" pan head torx bolts (3) and ¼" nuts (5) to attach the step accent plate (4) to the underside of the corner step opening.
- If equipped install the sensors into the end caps by reversing the process from steps four and five. Be sure to install them back in the correct location. **NOTE:** If bezels will not snap into place file the tabs down a little at a time until they will catch.

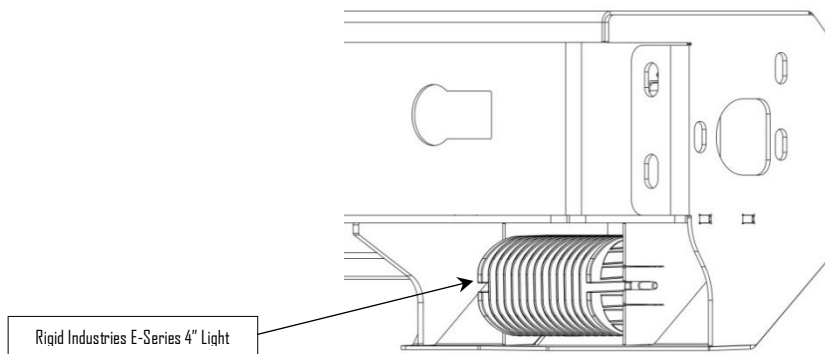


- On a clean flat non-scratching surface place the bumper center section (6) or (23) face down.

- Install the Hella license plate lights (7) using the provided #8 hardware. **NOTE:** don't forget to install the bulb.

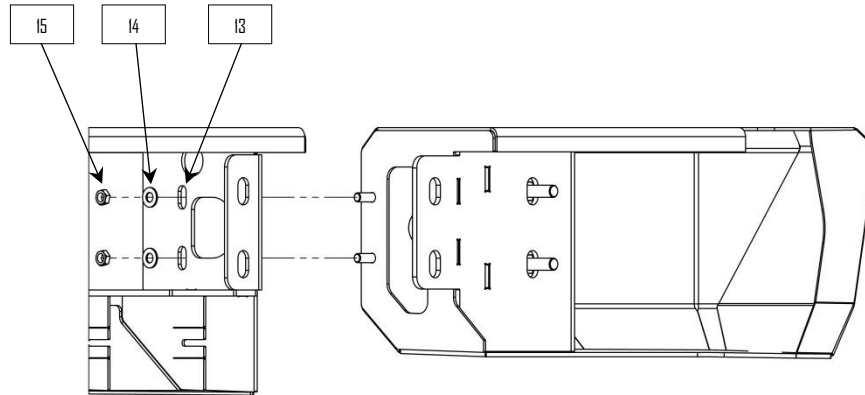


- If optioned, install the reverse lights into the center section.

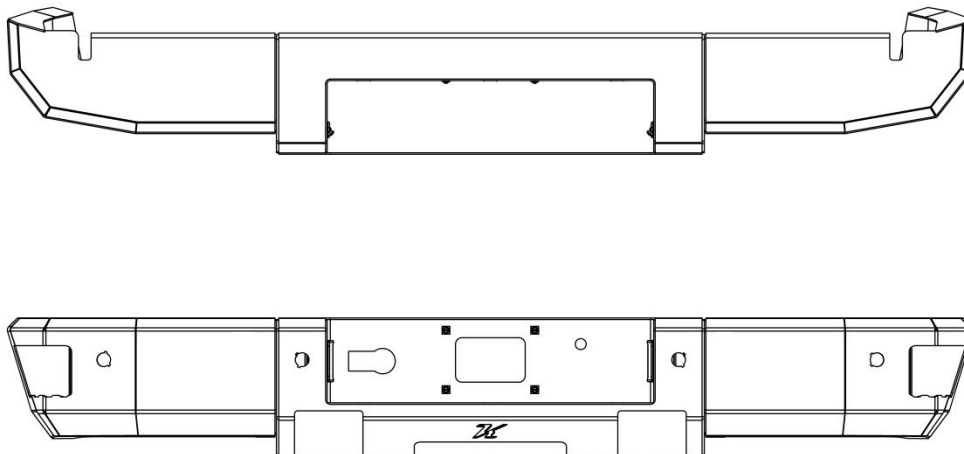


- Install two Rigid Industries 4 inch E-Series light (*or similar light*) using the hardware supplied with the light.
 - **NOTE:** The light mounting ears will deform and draw up tight to the light as they are tightened.
- Install trailer light plug from step six.

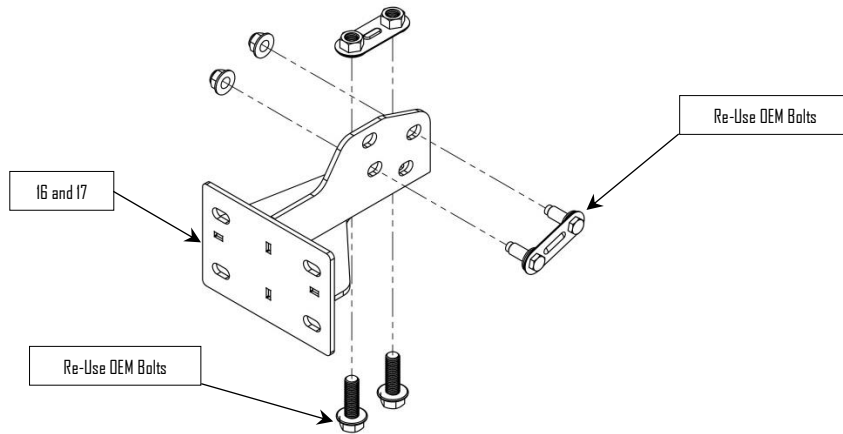
- Bolt the end caps onto the center section using the supplied 3/8" hardware. Position the tops flush with the center section. **NOTE:** While positioning use masking tape to protect painted surfaces that come into contact.



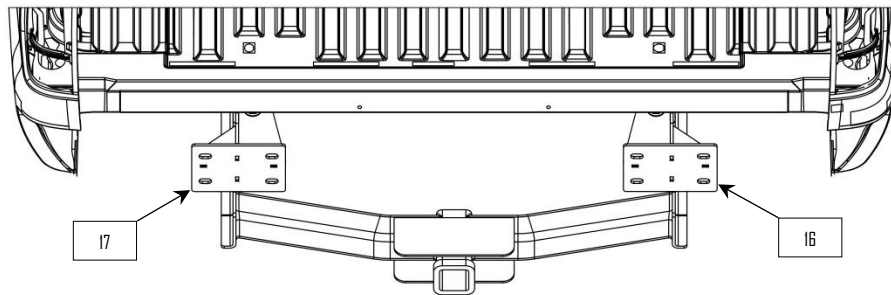
- Zip tie wiring to the tie downs welded inside the bumper.
- The Bumper is now ready for installation.



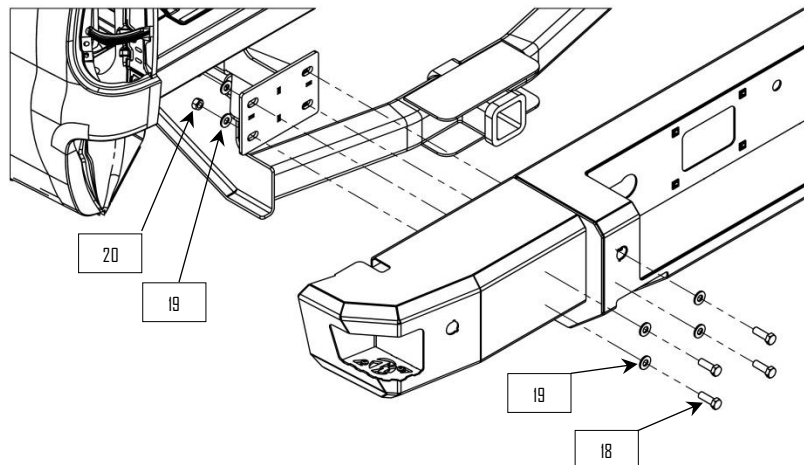
Bumper Installation



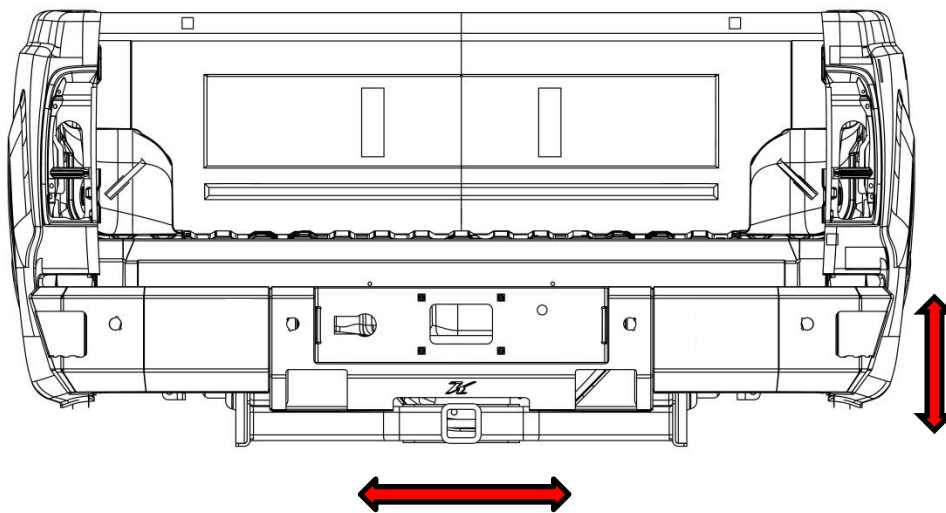
- 7:** Install the bumper frame brackets (16 & 17). Re-use the hardware removed in steps four and five.



- 8:** Use ½" bolts (18) to position the bumper on the frame brackets (16 & 17). Use washer (19) and nut (20) to fasten the bumper to the mount.



9: Align the bumper on the truck and tighten the mounting hardware. **NOTE:** The frame brackets may need to be re-adjusted to get the depth correct.

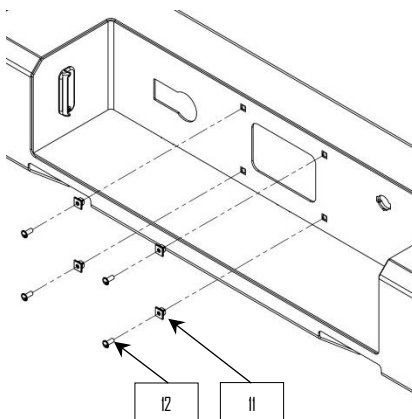


10: Torque all fasteners according to the chart below.

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

11: Finish wiring accessories.

12: Press sq. nylon nuts (11) into bumper and install license plate using 1/4" screws (12).



Parts Key

Item Number	Part Number	Description
1	31778	End Cap – With Sensor (PS)
2	31779	End Cap – With Sensor (DS)
3	14009	Pan Head Torx Machine Screw – ¼”-20 x ½”
4	32088	Step Accent Plate
5	13100	Lock Nut – ¼”-20
6	31871	Center Section – With Sensor
7	80042	Hella License Plate Light
8	14058	Phillips Screw: #8-32 X 5/8”
9	14052	Lock Nut: #8-32
10	14054	Flat Washer: #8
11	80054	Sq. Nylon Nut
12	14019	Slotted Screw: - 1/4”-20 X 5/8”
13	13002	Flat Washer: 3/8”
14	13046	Lock Washer: 3/8”
15	13142	Nut: 3/8”-16
16	31876	Bumper Bracket (PS)
17	31877	Bumper Bracket (DS)
18	12007	Bolt: 1/2”-20 X 1-1/2”
19	13004	Flat Washer: 1/2”
20	13124	Lock Nut: 1/2”-20
21	10007924	End Cap – No Sensor – (PS)
22	10007927	End Cap – No Sensor – (DS)
23	31870	Center Section – No Sensor

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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