



# **VEHICLE UNDERCARRIAGE INSTALLATION INSTRUCTIONS**

**FORD F-150 (2004)**

**UNDERCARRIAGE PART NO.**

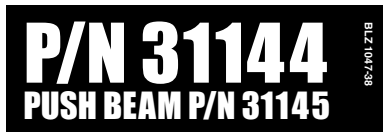
**31144**

**HARDWARE KIT PART NO.**

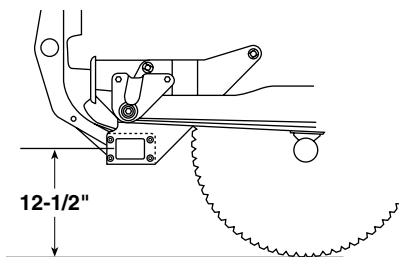
**61476**

**SEE REVERSE FOR ADDITIONAL INSTALLATION INSTRUCTIONS**

# UNDERCARRIAGE INSTALLATION INSTRUCTIONS



A label identifying the undercarriage assembly part number and push beam part number is applied to the rear of the push beam.



The recommended push beam height for this undercarriage assembly is 12-1/2" from the center of the push beam to level ground. DO NOT exceed 14-1/2" in height for this undercarriage.



**WARNING:** Always perform vehicle undercarriage installations with the keys removed from the vehicle's ignition. Properly tag the ignition switch to alert others work is being performed on the vehicle.

Most newer trucks are equipped with driver and passenger's side air bags. DO NOT remove, disable, or reposition any sensory equipment related to the safe operation of the air bags.

ALWAYS follow the vehicle manufacturer's recommendations for installing snowplowing equipment.

**FAILURE TO COMPLY WITH THE ABOVE WARNINGS MAY RESULT IN SERIOUS INJURY OR DEATH.**

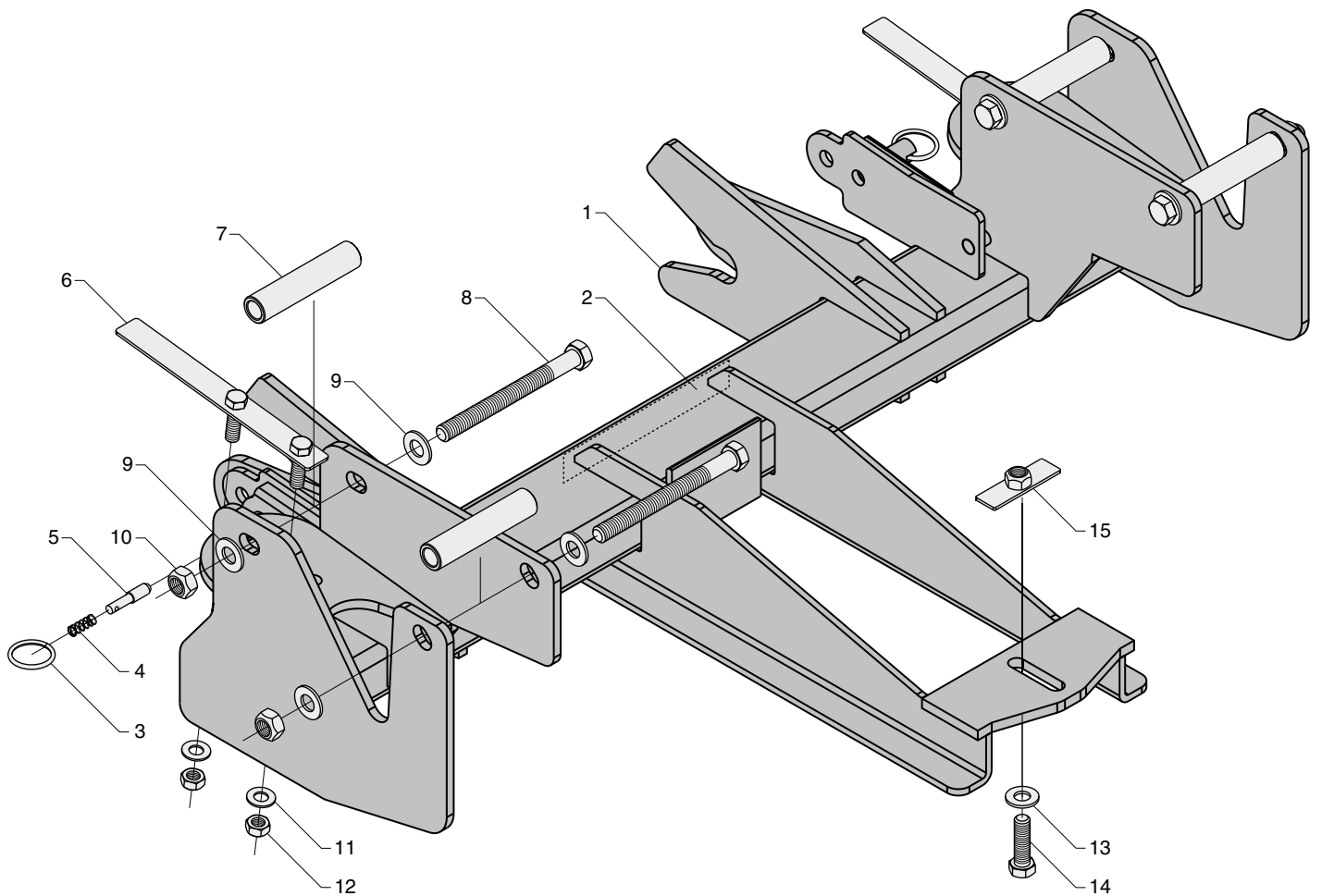


**CAUTION:** If your vehicle is equipped with oversize tires, they may come into contact with the undercarriage hanger plates when turning the vehicle.

The problem may be resolved by setting the steering stops on the vehicle. If this does not correct the problem, the original tires will need to be installed on the vehicle.

1. Begin the assembly by removing both tow hooks from the end of each truck frame rail. The tow hooks and mount bolts will not be reinstalled.
2. Install one 1/2"-13 nut with welded tab through the center access hole in the vehicle crossmember. This will secure the crossmember support arm (on the push beam weldment) to the frame when installed.
3. Next, position one double 7/16"-14 x 1-1/2" bolt with welded tab through the end of each truck frame rail and into the holes in the bottom of the frame rail (tow hook mount holes).
4. Position the 5/8" O.D. x 4-3/8" BUSHINGS through the holes located in the truck frame rail side walls. *Note: The bushings should rest on the frame rail walls while the push beam is secured to the frame.*
5. Align the mount holes in the PUSH BEAM WELDMENT with the tabbed bolts located in each truck frame rail. *Note: Use a hydraulic floor jack to help facilitate the installation procedure. Secure the bolts with 7/16" washers and top lock nuts. Finger tighten the fasteners until all undercarriage parts are in place. Note: The bumper fascia may need to be permanently notched to accommodate the undercarriage assembly.*
6. With the push beam weldment in place, use the 9/16"-12 x 6" bolts with 9/16" washers and top lock nuts to secure the push beam weldment to the frame. The bolts will locate through the bushings placed in the frame rail access holes.
7. Align the hole in the push beam weldment with the vehicle crossmember. Thread one 1/2"-13 x 1-3/4" bolt with 1/2" washer through the bottom of the crossmember support arm and into the tabbed nut.
8. Once the undercarriage has been positioned and all hardware is in place, proceed to tighten all top lock nuts. Reference the chart on page 4 for maximum bolt torque.
9. Position the LIGHT TOWER into the mount pockets on the push beam. Each pocket has a lock pin that secures both light tower arms. Pull out and twist each ring handle to temporarily unlock the pins. Place the light tower into the pockets and relock the pins. Mount each PLOW HEADLIGHT to the light tower with the hardware kit provided.

Complete the assembly by plugging the connectors from the snowplow headlights into the connectors on the vehicle wire harness. Adjust both lights with the plow in the raised position.



### UNDERCARRIAGE PARTS LIST

Ref. No.	Part No.	Qty.	Part Description
<b>N/A</b>	<b>31144</b>	<b>1</b>	<b>Assembly, Undercarriage: Nos. 1-15</b>
1	31145	1	Push Beam Weldment
2	61128	1	Decal, Push Beam, 1-1/2" x 9"
3	61309	2	Ring, Standard Split, 1-1/4" O.D., 1-1/16" I.D., SS
4	61000	2	Spring, Compression, 0.94" O.A.F.L. x 0.36" O.D., 0.029" Wire DIA., SS
5	40079	2	Pin, 3/8" DIA. x 1-3/4", SS
6	31157	2	Screw, Hex Head Cap, (2) 7/16"-14 x 1-1/2" Grade 8, YZ with Welded Tab
7	31154	4	Bushing, 5/8" I.D., 15/16" O.D. x 4-3/8"
8	61475	4	Screw, Hex Head Cap, 9/16"-12 x 6" Grade 8, YZ
9	61059	8	Washer, SAE Mil-Carb, High-Strength, 9/16", 1-3/16" I.D., 19/32" O.D., YZ
10	61058	4	Nut, Top Lock, 9/16"-12 Grade C, Z
11	61162	4	Washer, SAE Mil-Carb High-Strength, 7/16", 59/64" O.D., 15/32" I.D., YZ
12	61154	4	Nut, Top Lock, 7/16"-14 Grade C, Z
13	61026	1	Washer, SAE Mil-Carb High-Strength, 1/2", 1-1/16" O.D., 17/32" I.D., YZ
14	61150	1	Screw, Hex Head Cap, 1/2"-13 x 1-3/4" Grade 8, YZ
15	31155	1	Nut, Top Lock, 1/2"-13 Grade C, Z with Welded Tab
<b>N/A</b>	<b>61476</b>	<b>1</b>	<b>Kit, Hardware - Undercarriage P/N 31144: Nos. 6-15</b>

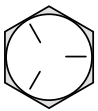
Note: The reference numbers listed identify parts shown in the illustration above. These numbers are specific to this illustration only. Always review the part number given for proper component identification. Blizzard Corporation reserves the right, under its Continuous Improvement Policy, to change construction or design details and furnish equipment when so altered without reference to illustrations or specifications.

# HEADLIGHT ADAPTER KIT GUIDE

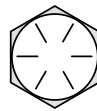
VEHICLE APPLICATION	HEADLIGHT CONNECTOR(S)	HEADLIGHT DESCRIPTION	HEADLIGHT NUMBERS	HEADLIGHT ADAPTER KIT
2004 FORD F-150	H13	DUAL ROUND HALOGEN LAMP	9008	62052

Note: Headlight adapter kits are not included with vehicle undercarriage mounts. All headlight adapter kits sold separately.

## TORQUE SPECIFICATIONS



- Grade Identification Marking for J429 - Grade 5 Bolt**
- Material: Medium carbon steel: quenched and tempered
  - Minimum Proof Strength: 85,000 psi
  - Minimum Tensile Strength: 120,000 psi
  - Core Hardness Rockwell (min.): C25, (max.): C34
  - Minimum Yield Strength: 92,000 psi

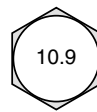


- Grade Identification Marking for J429 - Grade 8 Bolt**
- Material: Medium carbon alloy steel: quenched and tempered
  - Minimum Proof Strength: 120,000 psi
  - Minimum Tensile Strength: 150,000 psi
  - Core Hardness Rockwell (min.): C33, (max.): C39
  - Minimum Yield Strength: 130,000 psi

Nominal Thread Size	SAE J429 - Grade 5			Nominal Thread Size	SAE J429 - Grade 8		
	Clamp Loads (lbs.)	Tightening Torque			Clamp Loads (lbs.)	Tightening Torque	
		“Lubricated”	“Dry”			“Lubricated”	“Dry”
1/4-20	2,000	75 in-lbs	100 in-lbs	1/4-20	2,850	107 in-lbs	143 in-lbs
5/16-18	3,350	157 in-lbs	210 in-lbs	5/16-18	4,700	220 in-lbs	305 in-lbs
3/8-16	4,950	23 ft-lbs	31 ft-lbs	3/8-16	6,950	32.5 ft-lbs	44 ft-lbs
7/16-14	6,800	37 ft-lbs	50 ft-lbs	7/16-14	9,600	53 ft-lbs	70 ft-lbs
1/2-13	9,050	57 ft-lbs	75 ft-lbs	1/2-13	12,800	80 ft-lbs	107 ft-lbs
9/16-12	11,600	82 ft-lbs	109 ft-lbs	9/16-12	16,400	115 ft-lbs	154 ft-lbs
5/8-11	14,500	113 ft-lbs	151 ft-lbs	5/8-11	20,300	159 ft-lbs	21 ft-lbs
3/4-10	21,300	200 ft-lbs	266 ft-lbs	3/4-10	30,100	282 ft-lbs	376 ft-lbs
7/8-9	29,435	321 ft-lbs	430 ft-lbs	7/8-9	41,550	454 ft-lbs	606 ft-lbs
1-8	38,600	482.5 ft-lbs	640 ft-lbs	1-8	54,540	680 ft-lbs	900 ft-lbs



- Grade Identification Marking for Metric - Grade 8.8 Bolt**
- Material: Medium carbon steel: quenched and tempered
  - Minimum Proof Strength: 580 MPa
  - Minimum Tensile Strength: 800 MPa
  - Core Hardness Rockwell (min.): C22, (max.): C32
  - Minimum Yield Strength: 640 MPa



- Grade Identification Marking for Metric - Grade 10.9 Bolt**
- Material: Low carbon alloy steel: quenched and tempered
  - Minimum Proof Strength: 830 MPa
  - Minimum Tensile Strength: 1040 MPa
  - Core Hardness Rockwell (min.): C32, (max.): C39
  - Minimum Yield Strength: 940 MPa

Diameter (millimeters)	Metric Class 8.8			Diameter (millimeters)	Metric Class 10.9		
	Clamp Loads (Newton)	Tightening Torque			Clamp Loads (Newton)	Tightening Torque	
		“Lubricated”	“Dry”			“Lubricated”	“Dry”
5	6177	4.63 N-m	6.18 N-m	5	8840	6.63 N-m	8.84 N-m
6	8743	7.87 N-m	10.5 N-m	6	12512	11.3 N-m	15.0 N-m
7	12570	13.2 N-m	17.6 N-m	7	17990	18.9 N-m	25.2 N-m
8	15921	19.1 N-m	25.5 N-m	8	22784	27.3 N-m	36.5 N-m
10	25230	37.8 N-m	50.5 N-m	10	36105	54.1 N-m	72.2 N-m
12	36670	66.0 N-m	88.0 N-m	12	52475	94.5 N-m	125 N-m
14	50025	105 N-m	140 N-m	14	71587	150 N-m	200 N-m
16	70650	170 N-m	226 N-m	16	97732	235 N-m	313 N-m
18	86400	233 N-m	311 N-m	18	119520	323 N-m	430 N-m
20	110250	330 N-m	441 N-m	20	152513	458 N-m	610 N-m

**Disclaimer:** All torque values included in the charts above are advisory only, and their use by anyone is entirely voluntary. Reliance on the contents for any purpose by anyone is the sole risk of that person and Blizzard Corporation is not responsible for any loss, claim or damages arising therefrom. Blizzard Corporation has made an effort to present the above contents accurately, but we do not guarantee its completeness or validity. This information is subject to change at any time, without notice. Blizzard Corporation makes no representations or warranties, express or implied, in connection with the information.