



**B31184**

**UNDERCARRIAGE KIT**

**Ford F-150**

**2004 - 08**

**Parts List & Installation Instructions**

**⚠ CAUTION**

Read this document before installing the snowplow.

**⚠ CAUTION**

See your BLIZZARD® outlet/Web site for specific vehicle application recommendations before installation. The Undercarriage Selection Guide has specific vehicle and snowplow requirements.

# SAFETY

## SAFETY DEFINITIONS

### ⚠ WARNING

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious personal injury.

### ⚠ CAUTION

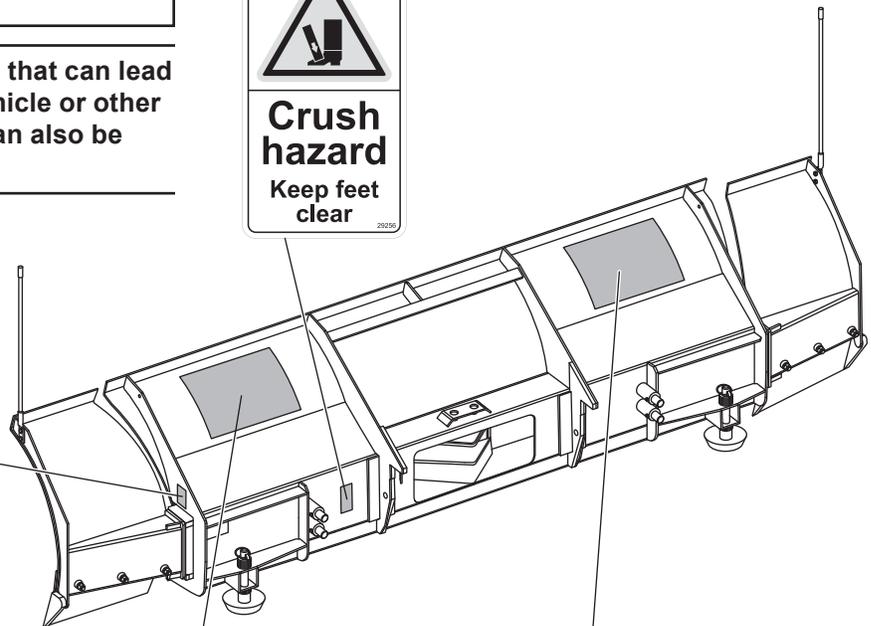
Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

**NOTE:** Indicates a situation or action that can lead to damage to your snowplow and vehicle or other property. Other useful information can also be described.

## WARNING/CAUTION & INSTRUCTION LABELS

Become familiar with and inform users about the warning and instruction labels on the back of the blade.

**NOTE:** If labels are missing or cannot be read, see your sales outlet.



### POWER PLOW™ & SPEEDWING™ Blades Only (both sides)

ATTACH	⚠ WARNING Keep fingers away from snowplow and truck attachment points. POWER HITCH™ 2 arm raises behind undercarriage pushbeam.	DETACH
<ol style="list-style-type: none"> <li>Slowly drive vehicle forward to engage mount adapter into A-frame.</li> <li>Move power switch to center or "OFF" position.</li> <li>Plug in electrical harnesses.</li> <li>Push and hold power switch RIGHT and push UP and hold arm/blade operation switch. Arm will engage mount adapter and pull snowplow toward vehicle.</li> <li>Rotate and release hitch pin. Hitch pin is fully engaged when pin handle is against the pin guide plate.</li> <li>Repeat Step 5 on passenger's side. Rotate and release hitch pin. Hitch pin is fully engaged when pin handle is against the pin guide plate.</li> <li>While holding power switch RIGHT, push DOWN and hold arm/blade operation switch. Arm will disengage mount adapter to relieve tension on the stand.</li> <li>Pull stand handle up. Stand will lift off ground. Put stand pin out. Rotate stand up until stand pin seats into upper hole. Pin must lock into upper A-frame hole.</li> <li>Repeat Step 8 on passenger's side. Pull stand handle up. Stand will lift off ground. Put stand pin out. Rotate stand up until stand pin seats into upper hole. Pin must lock into upper A-frame hole.</li> <li>Move power switch to left or "Plowing" position.</li> </ol>		<ol style="list-style-type: none"> <li>Lower snowplow into ground with blade straight. Turn snowplow control in cab OFF.</li> <li>Move power switch to center or "OFF" position.</li> <li>While holding the power switch RIGHT, push DOWN and hold the arm/blade operation switch. Arm will disengage mount adapter to relieve tension on the stand.</li> <li>Pull stand pin out. Rotate stand down until stand pin seats into lower A-frame hole. Push down on top of shoe. Shoe will be on the ground.</li> <li>Repeat Step 4 on passenger's side. Pull stand pin out. Rotate stand down until stand pin seats into lower A-frame hole. Push down on top of shoe. Shoe will be on the ground.</li> <li>Push and hold power switch RIGHT and push UP the arm/blade operation switch. Arm will engage mount adapter and pull snowplow tightly to vehicle.</li> <li>Rotate and pull hitch pin. Rotate hitch pin into retracted position.</li> <li>Repeat Step 7 on passenger's side. Rotate and pull hitch pin. Rotate hitch pin into retracted position.</li> <li>While holding power switch RIGHT, push DOWN and hold arm/blade operation switch to fully lower arm.</li> <li>Unplug electrical harnesses.</li> </ol>

Read Owner's Manual for complete instructions.

BLIZZARD

⚠ WARNING	<p>Lower blade when vehicle is parked.</p> <p>Do not exceed GVWR or GAWR including blade and ballast.</p>
⚠ CAUTION	<p>Read Owner's Manual before operating or servicing snowplow.</p> <p>Transport speed should not exceed 45 mph (72 km/h). Further reduce speed under adverse travel conditions.</p> <p>Plowing speed should not exceed 10 mph (16 km/h).</p> <p>See your sales outlet/Web site for specific vehicle application recommendations.</p>

# SAFETY

## SAFETY PRECAUTIONS

Improper installation and operation could cause personal injury and/or equipment and property damage. Read and understand labels and the Owner's Manual before installing, operating or making adjustments.

### **⚠ WARNING**

**Lower blade when vehicle is parked. Temperature changes could change hydraulic pressure, causing the blade to drop unexpectedly or damaging hydraulic components. Failure to do this could result in serious personal injury.**

### **⚠ WARNING**

**The driver shall keep bystanders clear of the blade when it is being raised, lowered or angled. Do not stand between the vehicle and the blade or within 8 feet of a moving blade. A moving or falling blade could cause personal injury.**

### **⚠ WARNING**

**Keep hands and feet clear of the blade and A-frame when mounting or removing the snowplow. Moving or falling assemblies could cause personal injury.**

### **⚠ WARNING**

**Do not exceed GVWR or GAWR including the blade and ballast. The rating label is found on the driver-side vehicle door cornerpost.**

### **⚠ WARNING**

**To prevent accidental movement of the blade, always turn the control OFF whenever the snowplow is not in use. The power indicator light will turn OFF.**

### **⚠ WARNING**

**Remove blade assembly before placing vehicle on hoist.**

### **⚠ CAUTION**

**Refer to the Undercarriage Selection Guide for minimum vehicle recommendations and ballast requirements.**

## PERSONAL SAFETY

- Remove ignition key and put the vehicle in park or in gear to prevent others from starting the vehicle during installation or service.
- Wear only snug-fitting clothing while working on your vehicle or snowplow.
- Do not wear jewelry or a necktie, and secure long hair.
- Wear safety goggles to protect your eyes from battery acid, gasoline, dirt and dust.
- Avoid touching hot surfaces such as the engine, radiator, hoses and exhaust pipes.
- Always have a fire extinguisher rated BC handy, for flammable liquids and electrical fires.

## FIRE AND EXPLOSION

### **⚠ WARNING**

**Gasoline is highly flammable and gasoline vapor is explosive. Never smoke while working on vehicle. Keep all open flames away from gasoline tank and lines. Wipe up any spilled gasoline immediately.**

Be careful when using gasoline. Do not use gasoline to clean parts. Store only in approved containers away from sources of heat or flame.

## CELL PHONES

A driver's first responsibility is the safe operation of the vehicle. The most important thing you can do to prevent a crash is to avoid distractions and pay attention to the road. Wait until it is safe to operate Mobile Communication Equipment such as cell phones, text messaging devices, pagers or two-way radios.

## VENTILATION

### **⚠ WARNING**

**Vehicle exhaust contains lethal fumes. Breathing these fumes, even in low concentrations, can cause death. Never operate a vehicle in an enclosed area without venting exhaust to the outside.**

# TORQUE SPECIFICATIONS

## NOISE

Airborne noise emission during use is below 70 dB(A) for the snowplow operator.

## VIBRATION

Operating snowplow vibration does not exceed 2.5 m/s<sup>2</sup> to the hand-arm or 0.5 m/s<sup>2</sup> to the whole body.

## TORQUE CHART

### CAUTION

Read instructions before assembling. Fasteners should be finger tight until instructed to tighten according to the torque chart. Use standard methods and practices when attaching snowplow including proper personal protective safety equipment.



Grade Identification for J429–Grade 5 Bolt



Grade Identification for J429–Grade 8 Bolt

SAE J429 Grade 5 Torque Values				SAE J429 Grade 8 Torque Values			
Nominal Thread Size	Clamp Loads (lb)	Tightening Torque		Nominal Thread Size	Clamp Loads (lb)	Tightening Torque	
		"Lubricated"	"Dry"			"Lubricated"	"Dry"
1/4-20	2,000	6 ft-lb	8 ft-lb	1/4-20	2,850	9 ft-lb	12 ft-lb
5/16-18	3,350	13 ft-lb	18 ft-lb	5/16-18	4,700	18 ft-lb	25 ft-lb
3/8-16	4,950	23 ft-lb	31 ft-lb	3/8-16	6,950	32 ft-lb	44 ft-lb
7/16-14	6,800	37 ft-lb	50 ft-lb	7/16-14	9,600	53 ft-lb	70 ft-lb
1/2-13	9,050	57 ft-lb	75 ft-lb	1/2-13	12,800	80 ft-lb	107 ft-lb
9/16-12	11,600	82 ft-lb	109 ft-lb	9/16-12	16,400	115 ft-lb	154 ft-lb
5/8-11	14,500	113 ft-lb	151 ft-lb	5/8-11	20,300	159 ft-lb	211 ft-lb
3/4-10	21,300	200 ft-lb	266 ft-lb	3/4-10	30,100	282 ft-lb	376 ft-lb
7/8-9	29,435	321 ft-lb	430 ft-lb	7/8-9	41,550	454 ft-lb	606 ft-lb
1-8	38,600	482 ft-lb	640 ft-lb	1-8	54,540	680 ft-lb	900 ft-lb



Grade Identification for Metric–Grade 8.8 Bolt



Grade Identification for Metric–Grade 10.9 Bolt

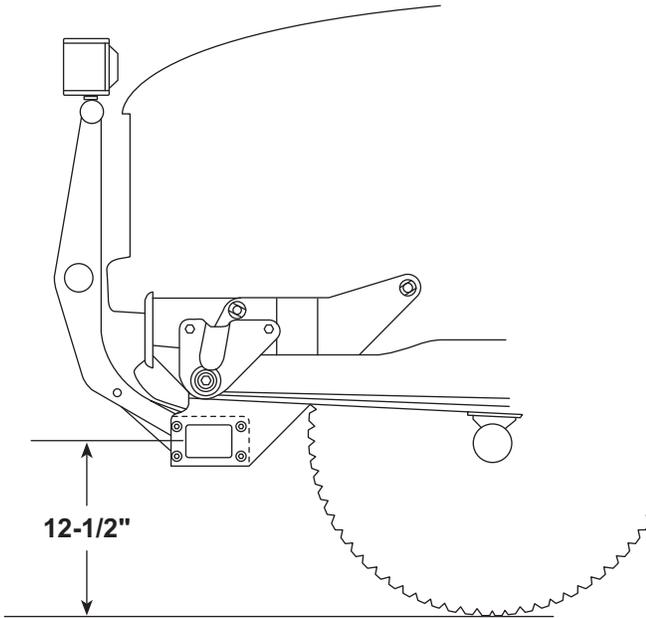
Metric Class 8.8 Torque Values				Metric Class 10.9 Torque Values			
Diameter (mm)	Clamp Loads (lb)	Tightening Torque		Diameter (mm)	Clamp Loads (lb)	Tightening Torque	
		"Lubricated"	"Dry"			"Lubricated"	"Dry"
5	1,389	3 ft-lb	5 ft-lb	5	1,987	5 ft-lb	7 ft-lb
6	1,965	6 ft-lb	8 ft-lb	6	2,812	8 ft-lb	11 ft-lb
7	2,826	10 ft-lb	13 ft-lb	7	4,044	14 ft-lb	19 ft-lb
8	3,579	14 ft-lb	19 ft-lb	8	5,121	20 ft-lb	27 ft-lb
10	5,672	28 ft-lb	37 ft-lb	10	8,116	40 ft-lb	53 ft-lb
12	8,243	49 ft-lb	65 ft-lb	12	11,796	70 ft-lb	92 ft-lb
14	11,246	77 ft-lb	103 ft-lb	14	16,092	111 ft-lb	148 ft-lb
16	15,882	125 ft-lb	167 ft-lb	16	21,970	173 ft-lb	231 ft-lb
18	19,423	172 ft-lb	229 ft-lb	18	26,868	238 ft-lb	317 ft-lb
20	24,784	244 ft-lb	325 ft-lb	20	34,284	338 ft-lb	450 ft-lb

# PUSHBEAM

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## PUSHBEAM HEIGHT

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



# UNDERCARRIAGE INSTALLATION

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**NOTE: For easier assembly and installation, vehicle and all snowplow components should be on a smooth, level, hard surface, such as concrete.**

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1. Remove the bumper. Disconnect the fog lights, if vehicle is so equipped.
2. Loosen the tow hooks.
3. Position the passenger-side hanger plate to align with the three holes in the truck frame. Position the driver-side hanger plate to align with the two holes in the truck frame.

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**NOTE: The third hole on the driver's side will be drilled later.**

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Fasten the hanger plates using 3/4" x 2" cap screws, washers, locknuts, and the 3 rods & nuts. Finger tighten the fasteners.

4. Mount the pushbeam square with the bottom edge of each hanger plate using eight 1/2" x 1-1/2" cap screws, sixteen washers and eight locknuts. Tighten the pushbeam hardware according to the torque chart.

5. Level the pushbeam with the floor and fully tighten the hanger plate hardware.
6. Using the front hole on the driver-side hanger plate as a guide, drill a 17/32" hole through the vehicle frame. Install a 1/2 x 1-1/2" cap screw, washer and locknut, and tighten according to the torque chart.

## **▲ CAUTION**

**Use caution not to pinch, cut or drill through any wires or hoses running along the frame rails.**

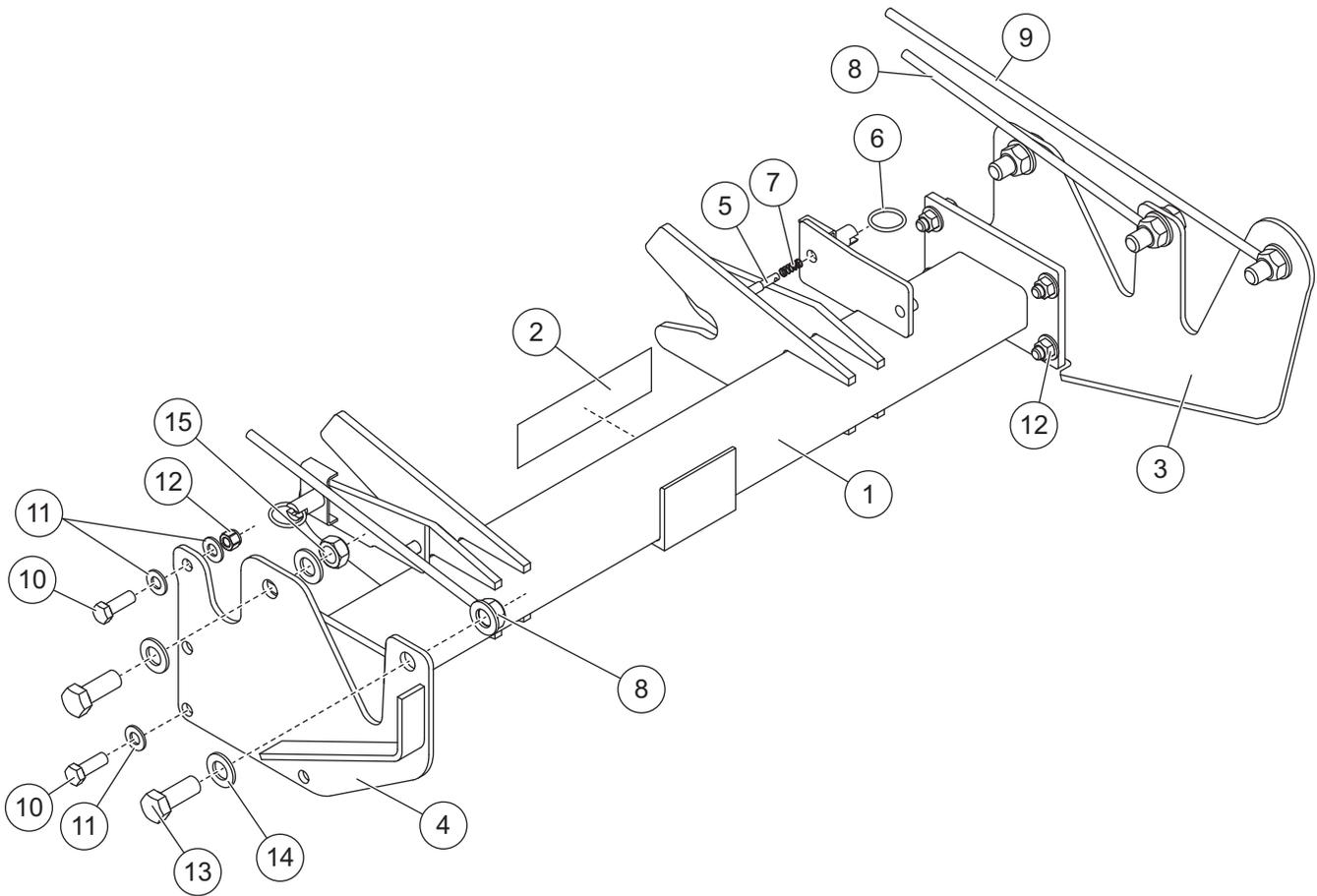
7. Reinstall the bumper and reconnect the fog light wiring, if so equipped. Fully tighten the tow hooks.

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**NOTE: After five to ten hours of snowplow usage, retorque all undercarriage assembly fasteners.**

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# UNDERCARRIAGE PARTS LIST



<b>B31184 Undercarriage Kit</b>							
Item	Part	Qty	Description	Item	Part	Qty	Description
1	B31185	1	Pushbeam	6	B61309	2	Split Ring, 1.25 OD
2	B63162	1	Label, Pushbeam	7	B61000	2	Compression Spring SS
3	B31187	1	Hanger Plate – PS	8	B31192	2	3/4-10 x 13-1/2 Rod and Nut
4	B31188	1	Hanger Plate – DS	9	B31191	1	3/4-10 x 21 Rod and Nut
5	B40079	2	A-Frame Latch Pin	ns	B61560	1	Hardware Kit
<b>B61560 Hardware Kit</b>							
10		9	1/2-13 x 1-1/2 Hex Cap Screw G8	13		5	3/4-10 x 2 Hex Cap Screw G5
11		18	1/2 Hardened Flat Washer	14		7	3/4 Hardened Flat Washer
12		9	1/2-13 Hex Locknut GC	15		2	3/4-10 Hex Locknut GB
ns = not shown				G = Grade			



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