



**Assembly
&
Installation Instructions**

**FOR
SUBFRAME COMPONENTS PACKAGE 99100642
AND
SUBFRAME NOSE PIECE PACKAGE 96106849**

**TO FIT
2004- FORD F150 4x4**



1. **THINK SAFETY, ALWAYS WEAR SAFETY GLASSES WHEN PERFORMING THE OPERATIONS PRESCRIBED IN THESE INSTRUCTIONS**
2. **READ ALL INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING INSTALLATION**
3. **BEFORE BEGINNING WORK MAKE SURE TO SET PARKING BRAKE AND CHOCK WHEELS**



MINIMUM VEHICLE RECOMMENDATIONS

Heavy Duty Alternator
 Heavy Duty Battery
 Manufacturer's Snow Plow Package

NOTE: On some vehicles it may be necessary to use a form of load booster to decrease the vehicle's front suspension sag with the snow plow in place. This can be accomplished with the use of supplementary air bags, booster springs, or similar load boosting devices. Since there are different load boosting devices available, it will up to the customer/end user to decide and purchase the product to suit the application, and not the responsibility of Sno-Way International, Inc.

ASSEMBLY TOOLS NEEDED

Drill Bits	1/4" - 17/32"
Impact Sockets	7/16" - 1-3/8"
Wrenches	7/16" - 1-3/8"
Torque Wrench	
Rat Tail Pry Bar	
Center Punch and Hammer	
C-Clamp	
Hacksaw	
Screwdrivers	

INSTALLATION NOTES

1. **Unless otherwise specified, mount all Subframe components to vehicle before tightening any hardware.**
2. **It is recommended that LOCTITE®, or similar thread locking product, be used on ALL mounting hardware (i.e. Nuts, Cap Screws, Bolts, etc.).**
3. Vehicle should be parked on a level surface with a normal vehicle load on the FRONT suspension.
4. Items in parentheses () refer to quantity required for this step. Items in parentheses with a pound sign (#) indicate the part number as found in the parts list on the last page of this document.
 Example: (10) Washer, Lock, 1/2" (#8).
5. It maybe necessary to relocate license plate holder. Check state and local laws for placement, if needed.

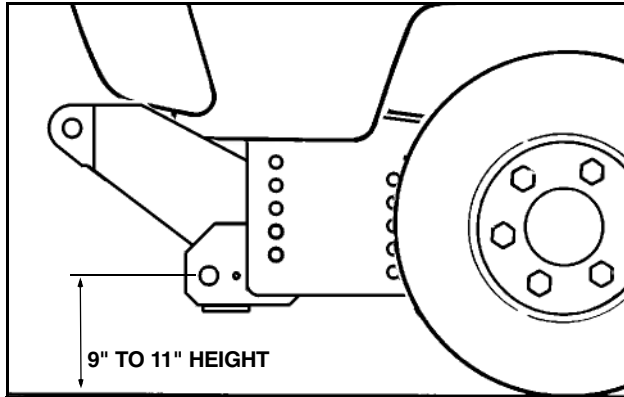
MOUNTING INSTRUCTIONS

1. Detach the rubber splash shield at the bottom edge of the bumper by removing three plastic fasteners. From the top of the bumper, remove the five cap screws. Remove tow hooks from the vehicle frame and retain hardware for Sub-Frame installation. Store tow hooks separately for reuse if Sub-Frame is removed.
2. If necessary, remove the skid plate and save parts for re-installation if the Subframe is removed from the vehicle. Disconnect fog lamp harness connectors if equipped.
3. Remove four nuts (two on each side) from back of the bumper brackets. Remove bumper.
4. Install Mounting Bracket, LH (#2):
 Align the tow hook bolt holes in the vehicle frame with the two front holes in the horizontal lip of the Mounting Bracket. Use the existing tow hook hardware to secure the Mounting Bracket loosely to the bottom of the vehicle frame. Verify that the Mounting Bracket is

tight against the vehicle frame by using a C-clamp to hold the front of the Mounting Bracket to the front of the frame. All of the holes and slots in the Mounting Bracket line up with holes currently in the vehicle frame, except the bottom hole in the rear vertical mounting tab that will be positioned at the inside of the frame rail. Using this hole as a template, drill a 17/32" hole through the inside of the vehicle frame rail. Insert (1) Spacer (#6) between the frame rail and the Mounting Bracket.

5. Install hardware in both holes of the rear vertical mounting tab:
 - In the upper slotted hole, install (1) 1/2"-13 x 1-1/2" Cap Screw (#7), (1) 1/2" Lock Washer (#8), (1) 1/2" Flat Washer (#10) into (1) Nut Plate Assembly (#4) inside the frame rail.
 - In the lower drilled hole, install (1) 1/2"-13 x 1-1/2" Cap Screw (#7) and (1) 1/2" Lock Washer (#8) into (1) Nut Plate Assembly (#4) inside the frame rail.
6. Secure the hole in the front vertical mounting tab with (1) 1/2"-13 x 1-1/2" Cap Screw (#7), (1) 1/2" Lock Washer (#8) into (1) Nut Plate Assembly (#5) inside the frame rail.
7. Secure the rear hole in the horizontal lip of the Mounting Bracket with (1) 1/2"-13 x 1-1/2" Cap Screw (#7), (1) 1/2" Lock Washer (#8) into (1) Nut Plate Assembly (#4) inside the frame rail.
8. Repeat procedure to install Mounting Bracket, RH (#3).
9. Attach Mounting Assembly (#1) to the Mounting Brackets (#2 and #3). Secure using (8) 1/2"-13 x 1-1/2" Cap Screws (#7), (2) 1/2" Lock Washer (#8) in threaded holes, and (6) 1/2" Nylock Nuts (#9).
10. With all components in place, tighten all hardware.
11. Using the Torque Specification Chart below, torque all cap screws.
12. Reinstall the bumper. Reconnect the fog lamp harness connectors if so equipped. The bumper will have to be cut in order to accommodate the Subframe

height.



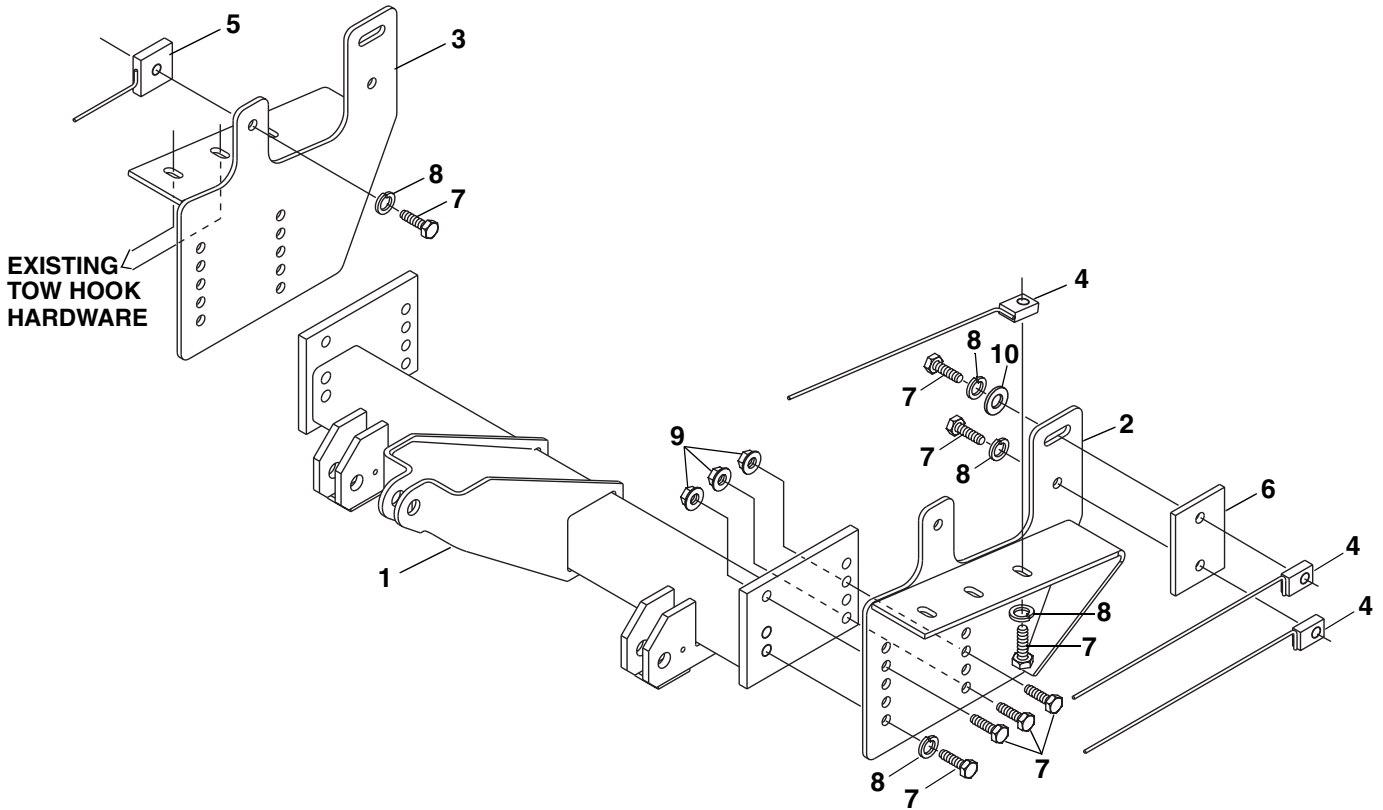
IMPORTANT: Height from the center of the lower plow mounting holes on the Subframe to the ground should be between 9" and 11" to insure proper operation.

TORQUE SPECIFICATIONS FOR STANDARD MACHINE HARDWARE					
Bolt Size	GR.2 Dry	GR.5 Dry	GR.8 Dry	Metric Size	GR.8.8 Dry
1/4"	66*	9	12	M8	17
5/16"	11	17	25	M10	35
3/8"	20	30	45	M12	60
7/16"	32	50	70	M14	95
1/2"	50	75	110	M16	155
9/16"	70	110	150		
5/8"	100	150	220		
3/4"	175	260	380		
7/8"	170	430	600		
1"	250	640	900		

Note: These torque values are to be used for all hardware. Unless otherwise specified, all torque values must meet this specification.
 Note: All torque values are in Ft.-Lbs unless otherwise stated
 Note: *In-Lbs

REMEMBER After 5 to 10 hours of snowplow usage, re-torque all Cap Screws!

PARTS LIST



Note: It is recommended that LOCTITE®, or similar thread locking product, be used on ALL mounting hardware (i.e. Nuts, Cap Screws, Bolts, etc.).

ITEM	PART NO.	DESCRIPTION	QTY.
1		Assembly, Mounting	1
2		Bracket, Mounting, LH.....	1
3		Bracket, Mounting, RH	1
4		Assembly, Nut Plate	6
5		Assembly, Nut Plate	2
6		Spacer	2
7		Cap Screw, Hex Head, 1/2"-13 x 1-1/2"	16
8		Washer, Lock, 1/2"	10
9		Nut, Hex, Nylock 1/2"-13.....	6
10		Washer, Flat, 1/2"	2
11	96107077	Kit, HDWE (Includes Items 7-10) (Not Shown)	1

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