



**Assembly
&
Installation Instructions**

**FOR
SUBFRAME COMPONENTS PACKAGE 99100075
AND**

SUBFRAME NOSE PIECE PACKAGE 96103002

**TO FIT
1980 - 1991 FORD 4X4 F250, F350 PICKUP**



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
Mfrs. Snow Plow Package	Heavy Duty Front Springs

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	
Center Punch and Hammer	
Clamping Device ("C", Bar, type device...)	
Rat Tail Pry Bar	
Hacksaw	

INSTALLATION NOTES

1. Unless otherwise specified, mount all Sub-Frame 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: (2) 5/8" x 1-1/2" Cap Screws (#12)
5. It may be necessary to relocate license plate holder. Check state and local laws for placement, if needed.

frame, secure in place using (4) 1/2" Flat Washers (#17), (4) 1/2" Lock Washers (#16) and (4) 1/2" Nylock Nuts (#19). (See Install Notes #1, & #2.)

• Vehicles from 1987 - 1991

1. Remove front bumper from vehicle.
2. Mount (1) Front Crossmember (#2) over vehicle frame horns, align the mounting holes as close as possible to existing holes in the vehicle frame.
3. Raise and align front bumper mounting bracket holes with the mounting holes of the Front Crossmember (#2). Keeping the front face of the Front Crossmember perpendicular to the ground. Secure using (4) 1/2 x 2" Cap Screws (#13), and on the engine side of the frame, (4) 1/2" Flat Washers (#17) and (4) 1/2" Nylock Nuts (#19). (See Install Notes #1, & #2.)

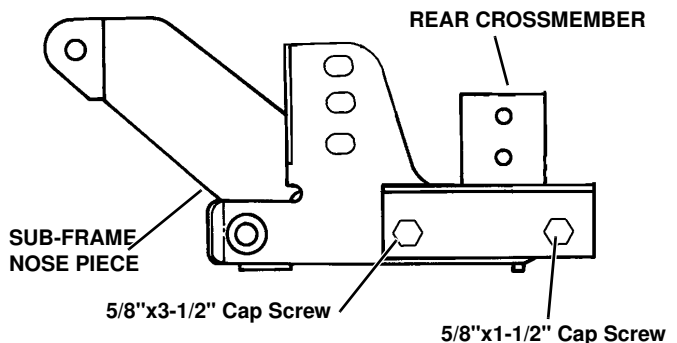
• Mounting Instructions for All Vehicles

1. Install (1) Rear Crossmember (#3) over rear of (1) Sub-Frame Nose Piece (#1) and secure in place as follows:
 - Rear Mounting: Use (2) 5/8 x 1-1/2" Cap Screws (#12), 5/8" Lock Washers (#21) and on the engine side (2) 5/8" Nylock Nuts (#20). (See Install Note #1.)
 - Front Mounting: Use (2) 5/8 x 3-1/2" Cap Screws (#14), 5/8" Lock Washers (#21) and on the engine side and (2) 5/8" Nylock Nuts (#20). (See Install Notes #1, & #2.)

MOUNTING INSTRUCTIONS

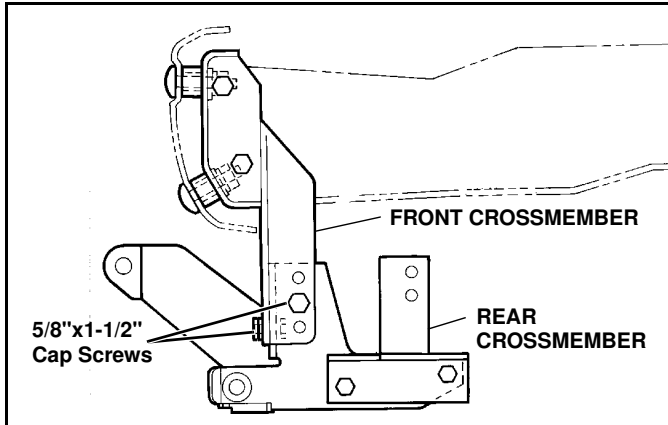
• Vehicles from 1980 - 1986

1. Remove front bumper from the vehicle.
2. Mount Front Crossmember (#2) over vehicle frame horns. Leaving approximately a 1/4" gap between the top of the frame and the inside top of the Front Crossmember, keeping the front face of the Front Crossmember perpendicular to the ground, clamp in place. Using the holes in the Front Crossmember as a template, center punch and drill (4) holes, through the vehicle frame rail, by first using a 1/4" and then a 21/32" drill bits. Secure in place using (4) 1/2 x 2" Cap Screws (#13), and on the engine side of the frame, (4) 1/2" Flat Washers (#17) and (4) 1/2" Nylock Nuts (#19). (See Install Notes #1, & #2.)
3. Reinstall front bumper by first placing (4) Spacer Tubes (#8) over the (4) 1/2 x 2-1/4" Carriage Bolts (#11), and inserting thorough bumper holes and the Front Crossmember (#2), on the engine side of the

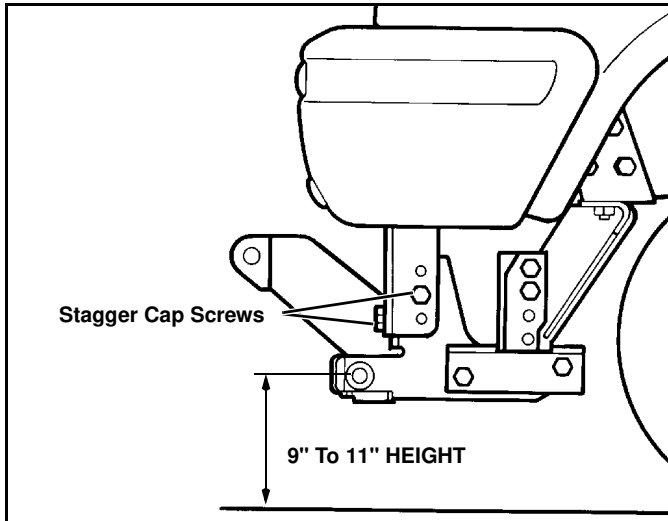


IMPORTANT: The Cap Screws securing the Sub-Frame to the Front Crossmember must be staggered with the front bolts being positioned in a lower set of holes than the side bolts. (Unless the holes are in the lowest possible position)

- Attach Sub-Frame assembly to Front Crossmember (#2) using (4) 5/8"x 1-1/2" Cap Screws (#12), (4) 5/8" Flat Washers (#18), and (4) 5/8" Nylock Nuts (#20), provided. (See Install Notes #1, & #2.)



IMPORTANT: Height from the center of the lower Plow Mounting holes on the Sub-Frame to the ground should be between 9" and 11" to insure proper operation.



NOTE: It may be necessary to use Shim Plate (#6) & (#7) between the Rear Crossmember (#3) and the Rear Mounting Brackets.

- Align the (1) Rear Mounting Brackets (#4) & (#5) adjustment holes with the holes in the Rear Cross-Member (#3) and form the engine side insert (4) 5/8 x 3-1/2" Cap Screws (#15) with (4) 5/8" Lock Washers (#22) into the holes. Clamp the Rear Mounting Brackets to the vehicle frame making sure the brackets are tight with the bottom and sides of the vehicle frame. Secure Mounting Brackets to Rear Cross-Member using (4) 5/8" Nylock Nuts (#21). (See Install Notes #1, & #2.)

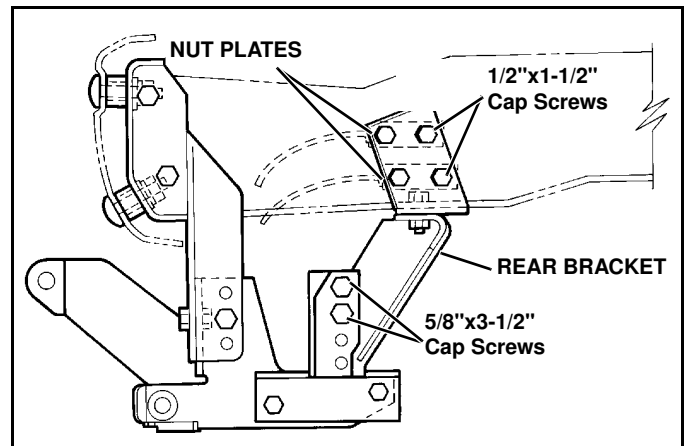


WARNING

Beware of brake and fuel lines secured to inside wall of frame rails when drilling holes in vehicle frame!

FAILURE TO HEED CAN RESULT IN SERIOUS INJURY OR DEATH.

- Using the (8) holes in the Rear Mounting Brackets (#4)LH & (#5)RH as a template center punch and drill (8) holes, through the vehicle frame rails, by first using a 1/4" and then a 17/32" drill bits. Remove clamps and secure Brackets using (8) 1/2 X 1-1/2" Cap Screws (#15) and (8) 1/2" Lock Washers (#16) and on the engine side of the frame rails using (1 set per side) Nut Plate Assembly (#10 LH & #9 RH). Wire Handles should face to the front of the vehicle. (See Install Notes #1, & #2.)



- Using the Torque Specification Chart below, torque all bolts **starting at the rear** and working forward.

TORQUE SPECIFICATIONS FOR STANDARD MACHINE HARDWARE

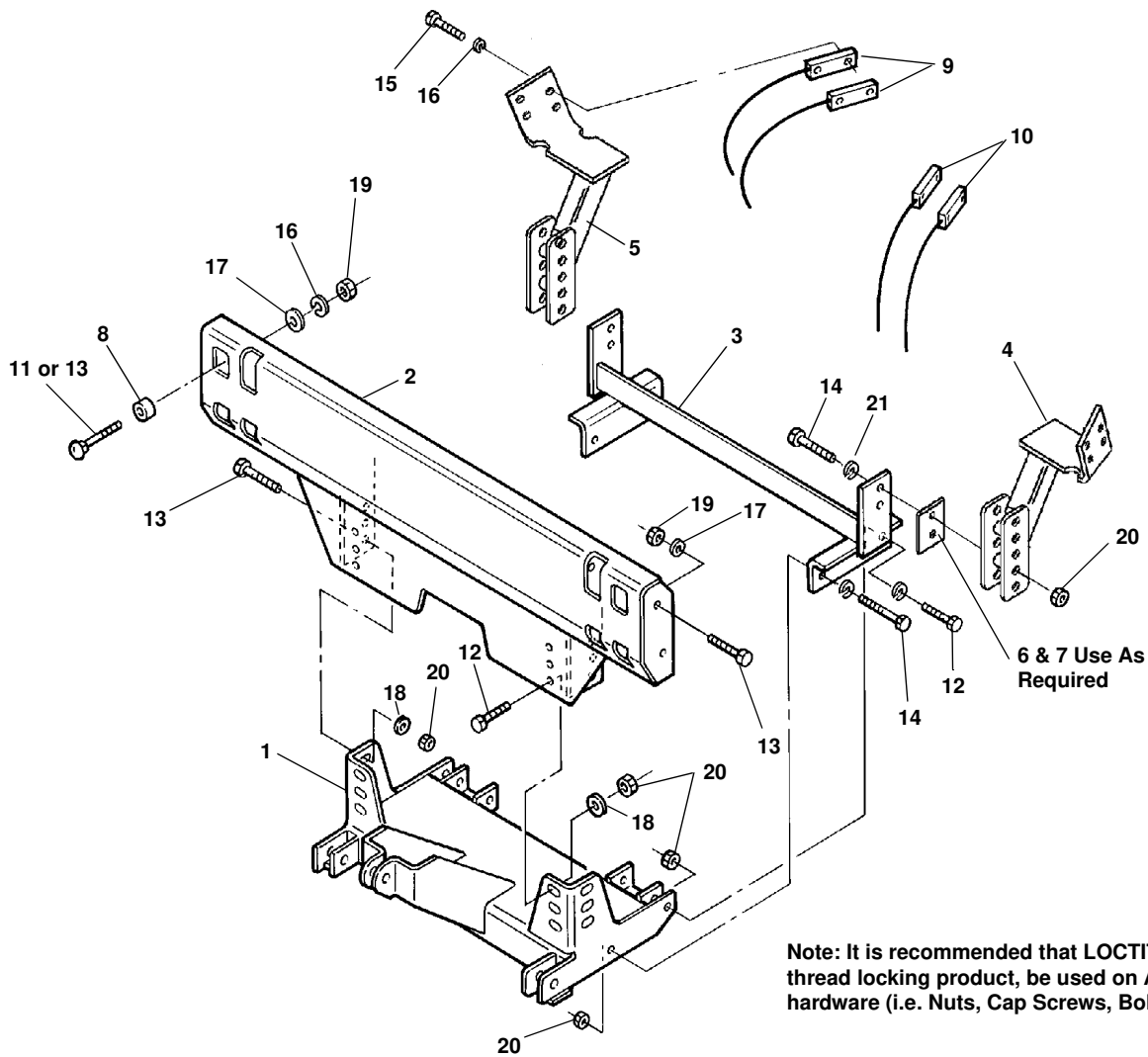
Bolt Size	GR.2 Dry	GR.5 Dry	GR.8 Dry	Metric Size	GR.8.8 Dry
1/4"	66*	9	12	M8	17
5/16"	11	17	25	M10	35
3/8"	20	30	45	M12	60
7/16"	32	50	70	M14	95
1/2"	50	75	110	M16	155
9/16"	70	110	150		
5/8"	100	150	220		
3/4"	175	260	380		
7/8"	170	430	600		
1"	250	640	900		

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 Hardware!



ITEM	PART NO.	DESCRIPTION	QTY.
1	96103002	Sub-Frame, Nose Piece (96102896).....	1
2	96101402	Crossmember, Front	1
3	96101460	Crossmember, Rear	1
4	96103070	Bracket, Rear Mounting, LH.....	1
5	96103071	Bracket, Rear Mounting, RH	1
6	96102214	Plate, Shim, 1/8".....	2
7	96103075	Plate, Shim, 1/4".....	2
8	96101465	Tube Spacer.....	4
9	96100938	Plate Assembly, Nut RH.....	2
10	96100939	Plate Assembly, Nut LH.....	2
11	98100067	Bolt, Carriage, 1/2"-13NC x 2-1/4".....	4
12	98009115	Cap Screws, Hex Head, 5/8" -11NC x 1-1/2".....	4
13	98100010	Cap Screws, Hex Head, 1/2" -13NC x 2".....	4
14	98009042	Cap Screws, Hex Head, 5/8" -11NC x 3-1/2".....	6
15	98009010	Cap Screws, Hex Head, 1/2" -13NC x 1- 1/2".....	8
16	98009012	Washer, Lock, 1/2".....	12
17	98009011	Washer, Flat, 1/2".....	8
18	98009039	Washer, Flat, 5/8".....	4
19	98009013	Nut, Hex, 1/2"-13NC Nylock.....	8
20	98009038	Nut, Hex, 5/8"-11NC Nylock.....	12
21	98009062	Washer, Lock, 5/8".....	8

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