



# **Assembly & Installation Instructions**

**FOR  
SUBFRAME COMPONENTS PACKAGE 99100345  
AND  
SUBFRAME NOSE PIECE PACKAGE 96103002  
TO FIT**

**1984 - LATER JEEP CHEROKEE 4x4  
1984 - 1993 JEEP WAGONEER LTD 4x4  
1986 - 1992 JEEP COMANCHE 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

*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	9/32" & 7/16"
Impact Sockets	7/16" – 1-3/8"
Metric Sockets	10mm – 17mm
Wrenches	7/16" – 1-3/8"
Torque Wrench	
Center Punch and Hammer	
Clamping Device ("C", Bar, type device...)	
Rat Tail Pry Bar	
Hacksaw	
Torx Bits	T50 & T55

### 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 11 x 1-1/2" Cap Screws (#12).
5. It maybe necessary to relocate license plate holder. Check state and local laws for placement, if needed.

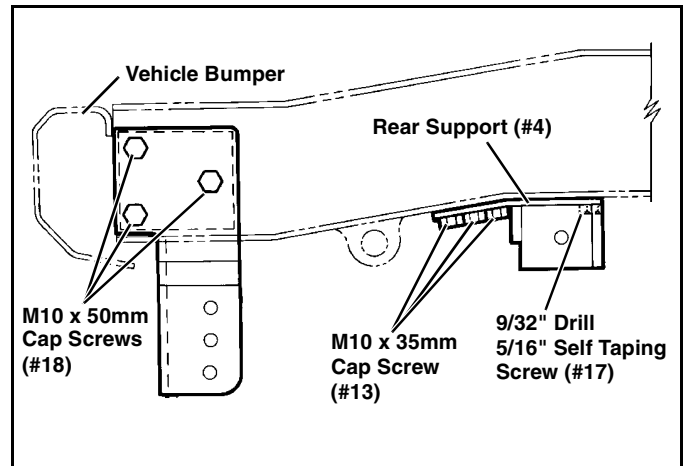
- Lock Washers (#14) and Flat Washers (#15). Re-install the emission canister.
5. Install the LH Rear Support (#4) under the left vehicle frame, immediately behind the sway bar mount. Remove two M10 screws from the underside of the frame rail (if so equipped), place the rear support under the frame and fasten with (3) M10 x 35mm Cap Screws (#13), Lock Washers (#14) and Flat Washers (#15) through the rear support, vehicle frame and weld nuts in the frame. It may be necessary to drill through the frame lip and use the metric nylock nuts (#20) provided.

### MOUNTING INSTRUCTIONS

1. Remove skid plate if so equipped.
2. Remove Vehicle front bumper. Retain hardware for use in step 4.

*NOTE: It will be necessary to remove emission canister hose during bumper removal. On some models it may be necessary to remove entire emission canister. Be sure to remount and return all emissions equipment to original operating condition.*

3. Remove tie down / tow hook brackets, if so equipped. Tow hooks are not reusable with Plow installation. Retain for future use if plow subframe is removed.
4. Install Front Crossmember (#2) between frame and bumper bracket. If required, place Shims (#5 & #23) between Front Crossmember and vehicle frame. Be sure to use the same type and number of shims on each side to keep front crossmember centered on the vehicle. Re-install the bumper brackets and the front bumper using (6) M10 x 60mm Cap Screws (#18),



## 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.**

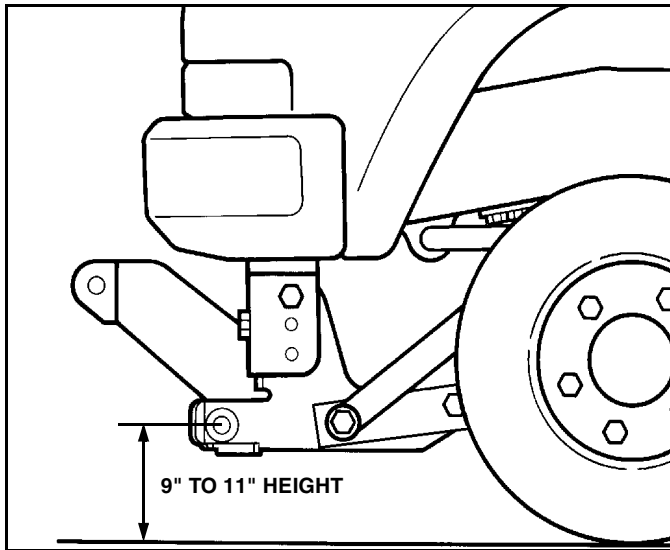
6. Using the rear hole in the Rear Support as a template, drill a 9/32" diameter hole through the bottom of the vehicle frame rail. Install (1) 5/16" x 1" Self-Tapping Screw (#17) and Flat Washer (#10) through the rear hole in the Rear Support and into the hole drilled in the frame rail.

*NOTE: Certain engine options have a dampener strut mounted to a bracket which use the same three holes as the RH Rear Support. If the vehicle has such a bracket, install the RH Rear Support between the vehicle's dampener bracket and the frame rail.*

7. Install the RH Rear Support (#3), under the right frame section, similar to the LH Rear Support installation. See steps 5 and 6.

**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)**

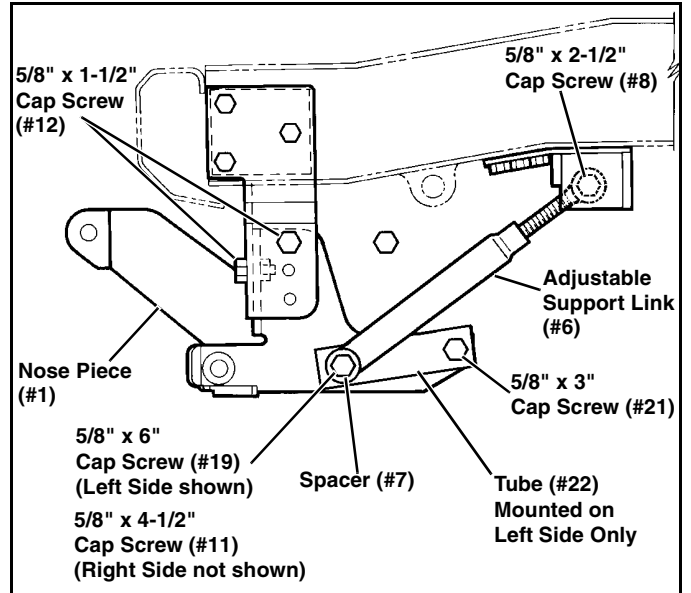
8. Raise and align the Sub-Frame Nose Piece (#1) with the mounting holes in the Front Crossmember. Secure using (4) 5/8" x 1-1/2" Cap Screws (#12), Flat Washers (#16) and Nylock Nuts (#9).



**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.**

9. Right Side Adjustment Link Mounting. Secure the Adjustment Link (#6) to the lower hole on the RH Rear Support (#3) using (1) 5/8" x 2-1/2" Cap Screw (#8) and (1) Nylock Nut (#9). Align the Adjustment Link with the center mounting location on the Nose Piece (#1). Place (1) spacer (#7) between the Adjustment Link and the Nose Piece, securing with (1) 5/8" x 4-1/2" Cap Screw (#11) and (1) Nylock Nut (#9).

10. Left Side Adjustment Link Mounting. Secure the Adjustment Link (#6) to the lower hole on the LH Rear Support (#4) using (1) 5/8" x 2-1/2" Cap Screw (#8) and (1) Nylock Nut (#9). Attach the Tube (#22) to the back hole on the Nose Piece (#1) with (1) 5/8" x 3" Cap Screw (#21) and (1) Nylock Nut (#9). Insert the 5/8" x 6" Cap Screw (#19) through the spacer (#7) and through the front Tube (#22) hole in the center mounting location on the Nose Piece, securing with (1) Nylock Nut (#9).

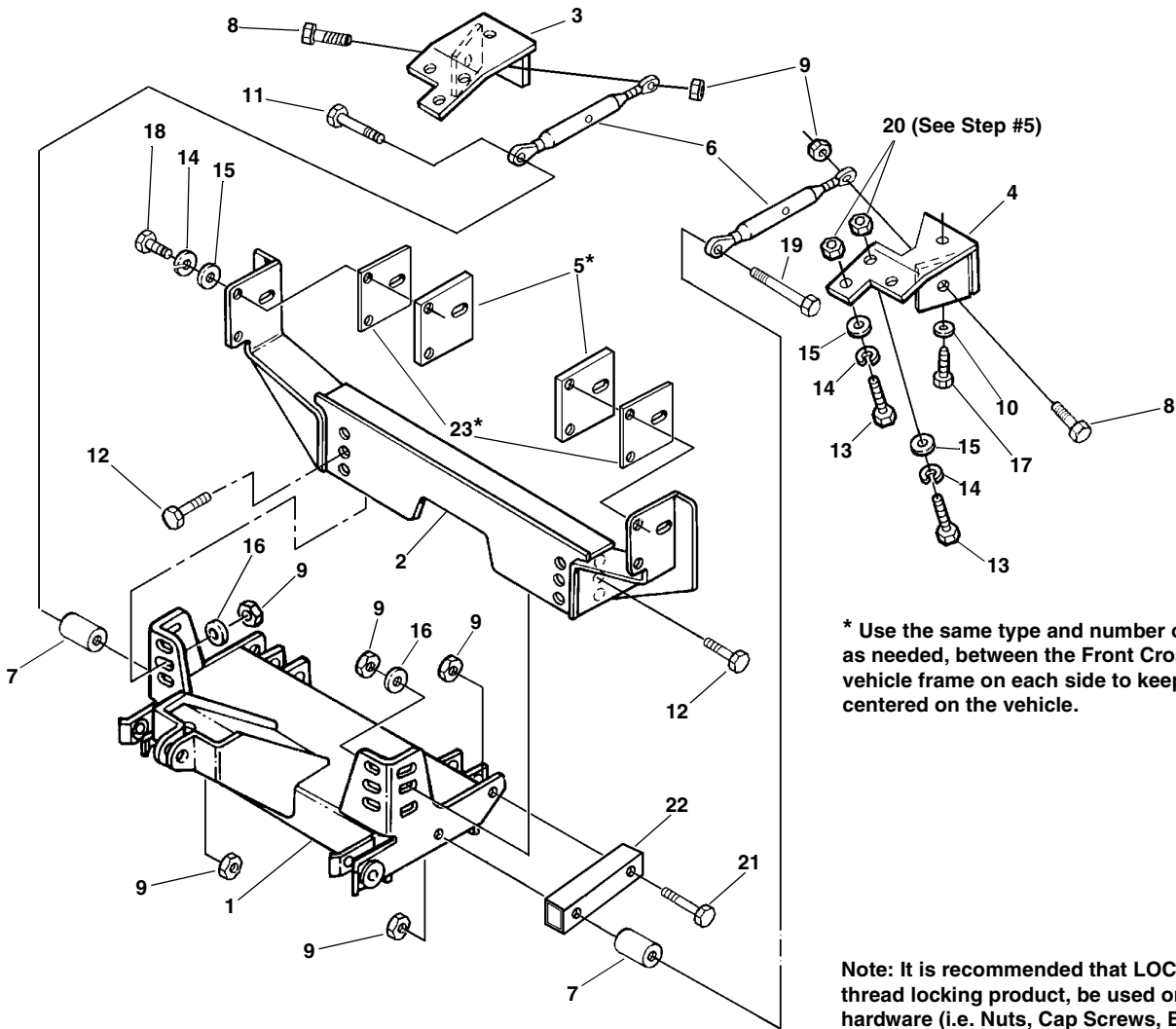


11. Using the Torque Specification Chart provided, first torque the Nose Piece (#1) to the Front Crossmember (#2). Start by torquing the two front Cap Screws (#12) and then the two side Cap Screws (#12). Then torque the remaining Cap Screws starting at the rear and working forward.

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		

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

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



\* Use the same type and number of shims (#5 & #23), as needed, between the Front Crossmember and vehicle frame on each side to keep the Nose Piece centered on the vehicle.

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	96103002	Sub-Frame, Nose Piece (96102896)	1
2	96100420	Crossmember, Front	1
3	96101580	Support, Rear R.H.	1
4	96103137	Support, Rear L.H.	1
5	96100474	Plate, Shim	6
6	96001831	Link, Adjustment	2
7	96100548	Spacer	2
8	98009259	Cap Screw, Hex Head, 5/8"-11 NC x 2-1/2"	2
9	98009038	Nut, Hex, Nylock, 5/8"-11 NC	9
10	98009230	Washer, Flat, 5/16"	2
11	98009111	Cap Screw, Hex Head, 5/8"-11 NC x 4-1/2"	1
12	98009115	Cap Screw, Hex Head, 5/8"-11 NC x 1-1/2"	4
13	98009060	Cap Screw, Hex Head, M10-1.50 x 35 mm	6
14	98009045	Washer, Lock, 7/16"	12
15	98009032	Washer, Flat, 3/8"	12
16	98009039	Washer, Flat, 5/8"	4
17	98009176	Screw, Hex Head Self-Tapping 5/16" x 1"	2
18	98100304	Cap Screw, Hex Head, M10-1.50 x 60 mm	6
19	98009197	Cap Screw, Hex Head, 5/8"-11 NC x 6"	1
20	98100199	Nut, Hex, Nylock, M10-1.50	4
21	98009217	Cap Screw, Hex Head, 5/8"-11 NC x 3"	1
22	96104295	Tube	1
23	96104296	Plate, Shim, 1/4"	2

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