Assembly
&
Installation Instructions

FOR
SUBFRAME COMPONENTS PACKAGE 99100074
AND
SUBFRAME NOSE PIECE PACKAGE 96103002

TO FIT

1984 - 1998 JEEP 4X4 CHEROKEE

1984 - 1998 JEEP 4X4 WAGONEER LTD.

1986 - 1992 JEEP 4X4 COMANCHE

97100242D

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: It will 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 suplementary air bags, booster springs, or similar load boosting devices.

ASSEMBLY TOOLS NEEDED

Drill Bits	1/4", 17/32"
Impact Sockets	7/16" – 1-3/8"
Metric Sockets	10 - 17 mm
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

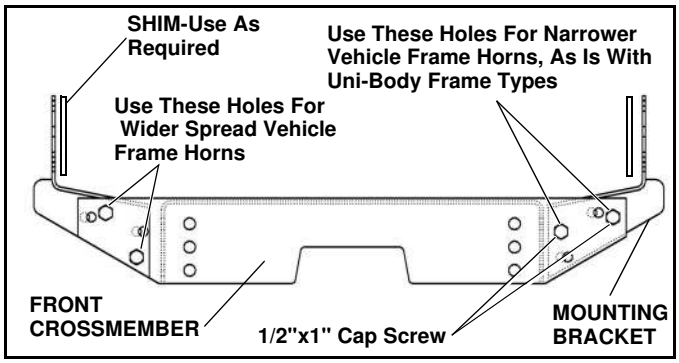
1. Unless otherwise specified, mount all Sub-Frame Components to vehicle before tightening any hardware.
2. It is recommended that LOCTITE®, or similar thread locking product, be used on ALL mounting hardware (i.e. Nuts, Cap Screws, Bolts, etc.).
3. Vehicle should be parked on a level surface with a 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 1-1/2" Cap Screws (#15)
5. It may be necessary to relocate license plate holder. Check state and local laws for placement, if needed.

MOUNTING INSTRUCTIONS

1. Remove skid plate if so equipped.
2. Remove Vehicle front bumper. Retain with hardware for re-installation if Sub-Frame is removed.

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.
4. Align Mounting Brackets (1) (#4)LH and (1) (#3) RH with mounting holes used to mount front bumper, loosely secure with existing hardware removed with front bumper.



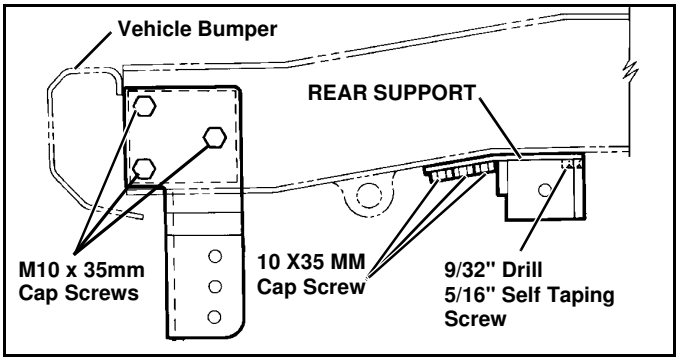
5. Raise (1) Front Crossmember (#2) and align with Mounting Brackets. Hold Mounting Brackets against vehicle frame in correct mounting position and select the holes in the Front Crossmember that line up the best with the holes in the Mounting Brackets.

NOTE: A space may develop between Mounting Brackets and vehicle frame when mounting Front Crossmember. DO NOT attempt to close this space by tightening the fasteners, severe bending of the vehicle frame may result.This space will be dealt with in the following steps.

6. Mount Front Crossmember to Mounting Brackets using (4) 1/2" x 1" Cap Screws (#13), and (4) 1/2" Nylock Nuts (#10).

NOTE: If a space exists between the Mounting Brackets and the vehicle frame determine how many Shim Plate (#7) are required to fill the space. Be sure to use same number of shims on each side to keep Front Crossmember centered on the vehicle.

7. Remove the Front Crossmember, with the Mounting brackets from the vehicle frame. Place Shim Plates, if required, between Mounting Brackets and vehicle frame. Re-install assembly between bumper mounting brackets, raise bumper and assembly to align with bumper mounting holes. Secure using (6) 10 mm x 35 mm Cap Screws (#16), (6) Flat Washers (#18), and (6) Lock Washers (#17).



8. Install (1) Rear Support (#6) LH under the left vehicle frame, immediately behind the sway bar mount. Remove two 10 mm screws from the underside of the frame rail (if so equipped), place the support under the frame and fasten with (3) 10 x 35 mm Cap Screws (#16), Flat Washers (#18), and Lock Washers (#17) through the support, vehicle frame and weld nuts in the frame.

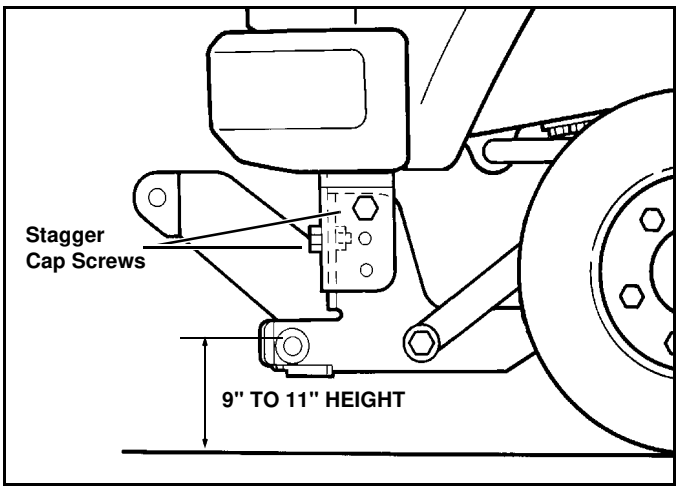
WARNING

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

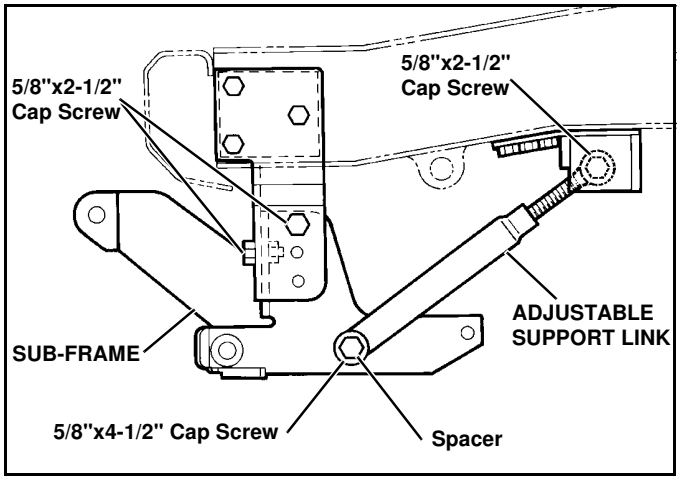
FAILURE TO HEED CAN RESULT IN SERIOUS INJURY OR DEATH.

9. Using the rear hole in the Rear Support as a template, drill a 9/32" dia. hole through the bottom of the vehicle frame rail. Install (1) 5/16" x 1" Self Tapping Screw (#20) and (1) 5/16" Flat Washer (#12) through the rear hole in the Rear Support and into the hole drilled in the frame rail.
10. Install (1) Rear Support (#5) RH, under the right frame section, similar to the left Rear Support installation. See step #8 and step #9.

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



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.



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)

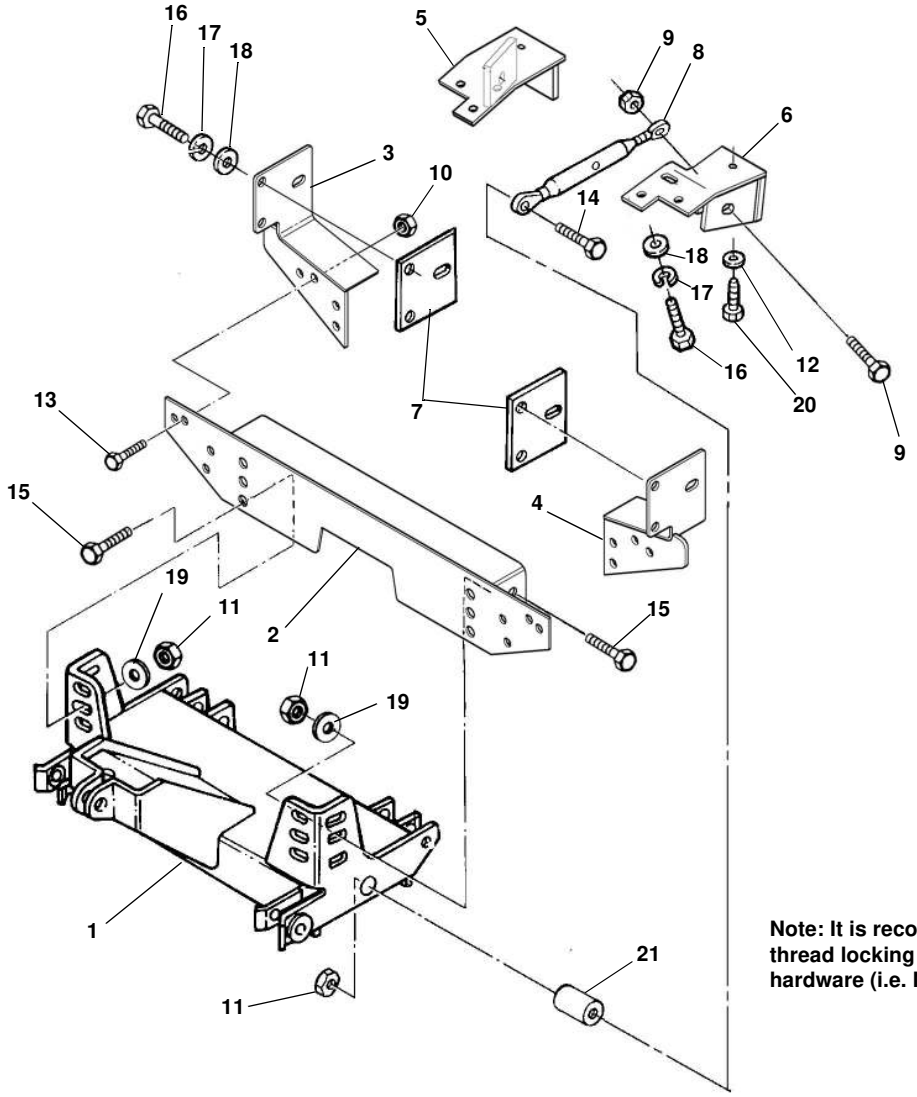
11. Raise and align (1) Sub-Frame (#1) with the mounting holes in the Front Mounting Bracket. Secure using (4) 5/8" x 1-1/2" Cap Screws (#15), (4) Flat Washers (#19), and (4) Nylock Nuts (#11).
12. Install (2) Adjustable Support Links (#8) to Rear Mounting Brackets and center mounting location on Sub-Frame Assembly as shown. Place (2) Spacer (#21) between Support Links and Sub-Frame and secure using (2) 5/8" x 4" Cap Screws (#14) and (2) Nylock Nuts (#11). Secure Support Link to lower hole on Rear Brackets using (2) 5/8" x 2-1/2" Cap Screws (#9) and (2) Nylock Nuts (#11).
13. 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 Cap Screw!***



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	96103082	Crossmember, Front	1
3	96103084	Bracket, Mounting, RH	1
4	96103083	Bracket, Mounting, LH	1
5	96101580	Support, Rear R.H.	1
6	96101585	Support, Rear L.H.	1
7	96100474	Plate, Shim	4
8	96001831	Link, Adjustment	2
9	98009259	Cap Screw, Hex Head, 5/8"-11 NC x 2-1/2"	2
10	98009013	Nut, Hex, Nylock, 1/2"-13 NC	4
11	98009038	Nut, Hex, Nylock, 5/8"-11 NC	8
12	98009230	Washer, Flat, 5/16"	2
13	98100174	Cap Screw, Hex Head, 1/2"-13 NC x 1"	4
14	98009111	Cap Screw, Hex Head, 5/8"-11 NC x 4-1/2"	2
15	98009115	Cap Screw, Hex Head, 5/8"-11 NC x 1-1/2"	4
16	98009060	Cap Screw, Hex Head, 10 mm x 35 mm	12
17	98009045	Washer, Lock, 7/16"	12
18	98009032	Washer, Flat, 3/8"	12
19	98009039	Washer, Flat, 5/8"	4
20	98019176	Screw, Hex Head Self-Tapping 5/16" x 1"	2
21	96100548	Spacer	2