Diamond

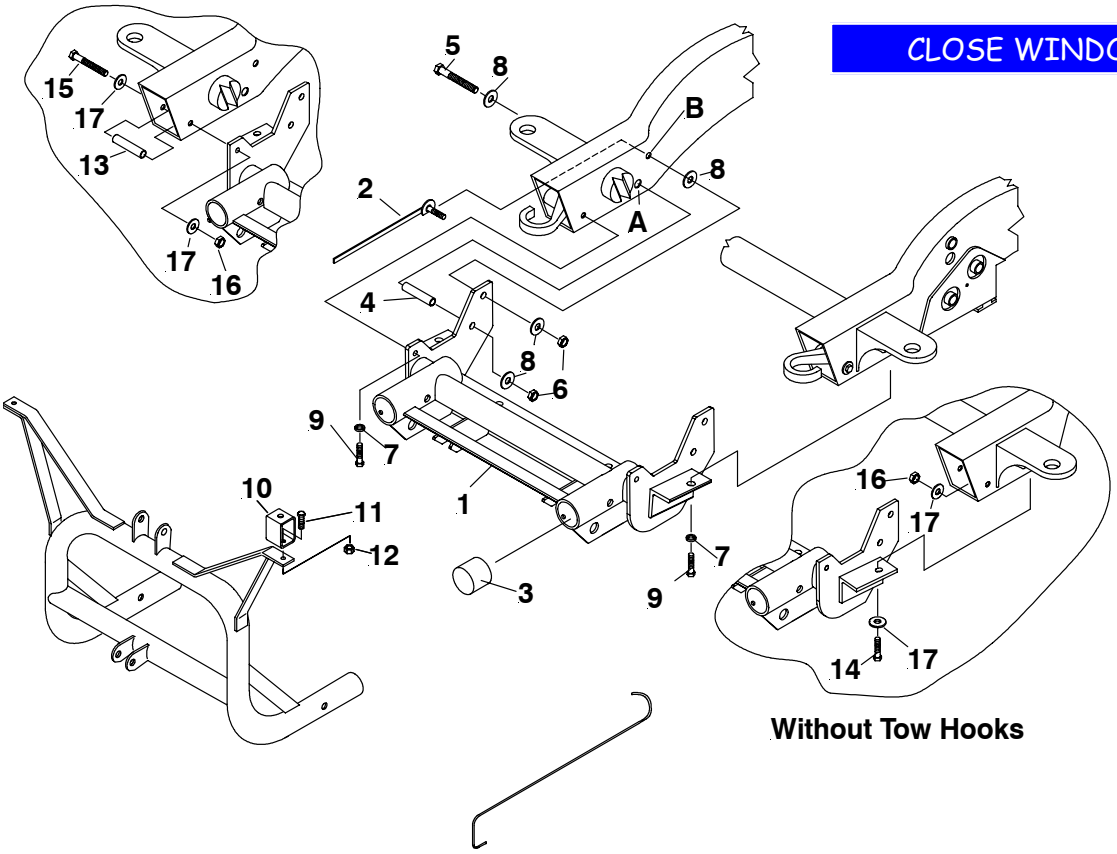
6-222R
April, 2002

FRAME ATTACHMENT KIT

1999 GMC C-2500 2WD

Note: Vehicles equipped without Tow Hooks will require an additional hardware bag part number 08776.

Without Tow Hooks



Without Tow Hooks

Parts List

Item	Part No.	Qty	Description
	81023		**Mounting Carton**
1	80373	1	Clevis Frame
2	22223	2	Handle Bolt w/ Washer
3	815000146	2	Reciever Tube Cap
	80392	**1**	**Hardware Bag**
4	11636	2	•Sleeve
5	20153	2	•Bolt H 5/8-11 x 5-1/2 Gr. 5
6	20309	4	•Locknut Esna 5/8-11
7	20355	4	•Flatwasher 1/2
8	20357	8	•Flatwasher 5/8
9	22182	4	•Bolt H M12 x 1.75 x 40mm
	08626	**1**	**Kit Light Elevation**
10	11368	2	•Bracket
11	20095	2	•Bolt H 1/2-13 x 1-1/2 Gr. 5
12	20307	2	•Locknut Esna 1/2-13
	08776	1	Hardware Bag **(Optional)**
13	11636	2	• Sleeve
14	20096	2	• Bolt H 1/2-13 x 1-3/4" Gr.5
15	20107	2	• Bolt H 1/2-13 x 5" Gr.5
16	20307	4	• Esna Nut 1/2-13
17	20355	8	• Flatwasher 1/2

Parts Indented are included in the carton, bag or assembly under which they are indented.

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IMPORTANT NOTICE

End user must be given this instruction sheet prior to delivery of this Snow Plow.

The equipment you have just purchased should only be used on vehicles equipped with the Manufacturer's Snow Plow Preparation Packages. Snow Plowing without the original Snow Plow Preparation Package may damage your vehicle and the added weight to the equipment may impair the operation and control of the vehicle . Snow Plowing with a vehicle that the manufacturer does not recommend for that purpose may void your new vehicle warranty. If your vehicle is not originally equipped with the Snow Plow Package, additional parts may be necessary before snow plowing. Owners of these vehicles should consult their dealers before purchase or installation of such parts. CAUTION: the installation, on any vehicle , of these parts is not a full substitute for the original equipment Snow Plow Preparation Package.

Warning: Lift Arm extends beyond bumper of vehicle. To minimize damage from a front-end collision, Lift Arm should be removed from vehicle when Snow Plow is removed.

GENERAL INSTRUCTIONS:

Disconnect the vehicle battery or batteries before beginning installation. (Reconnect after installation is complete.) Do not burn holes into or weld pieces onto the vehicle frame. Use extreme caution when drilling any holes in the vehicle to prevent damage to brake lines, fuel lines, wiring, or any other vehicle components. Assemble parts and fasteners "finger tight" until instructions indicate final tightening. After first usage and periodically thereafter, re-tighten all fasteners to correct torque.

1. **Remove Air Dam:** Retain all hardware. The air dam may be reinstalled.

2. **Remove tow hook bolts:** from the bottom flange and inside of the frame rail on both driver and passenger sides. Retain hardware. They will not be reused.

3. **Position Clevis Frame** (1) between frame rails and align to where tow hook bolts were removed. Attach Clevis Frame using M12 x 1.75 x 40mm bolts (9), washers (7). Do not tighten at this time.

   Without Tow Hooks

   Position clevis frame (1) between frame rails and align to where tow hook bolts would be. See Illustration. Attach clevis frame to front of vehicle frame using 1/2-13 x 5" bolt (15), Sleeve (13), washers (17) and locknut (16). Attach clevis frame (1) to the bottom of vehicle frame using 1/2-13 x 1-3/4" bolt (14), washers (17) and locknut (16). **Do not tighten at this time.**

4. Using the Clevis Frame (1) as a template: drill a 21/32" hole all the way through the frame rails at hole "A". At hole "B" drill a 21/32" hole through the **inside section of the frame rail only.**

5. Remove clevis and re-drill only the inside section of the frame rails at hole "A" with a 27/32" bit. This will allow for the installation of sleeve (4).

6. Reposition the Clevis Frame (1) between the vehicle frame rails and reattach using M12 x 1.75 x 40mm bolts (9) and washers (7).

   Without Tow Hooks

   Reposition clevis frame (1) between frame rails. Re-attach clevis frame to front of vehicle frame using 1/2-13 x 5" bolt (15), Sleeve (13), washers (17) and locknut (16). Attach clevis frame (1) to the bottom of vehicle frame using 1/2-13 x 1-3/4" bolt (14), washers (17) and locknut (16). See Illustration. **Do not tighten at this time.**

7. **Attach Clevis Frame** (1) at hole "A" using 5/8-11 x 5-1/2 bolt (5), sleeve (4), washer (8) and locknut (6), see illustration. Do not tighten at this time.

8. Guide Handle Bolt w/washer (2) through vehicle frame pushing bolt out the top hole in clevis frame. Attach using washers (8) and locknuts (6) per illustration.

9. Tighten all fasteners to their proper torque. Tighten bolts in the same order they were assembled to the vehicle.

10. Reinstall air dam if desired, notch out around Clevis Frame as needed.

11. **LIFT FRAME:** Clean paint and burrs from the outside tube ends of the lift frame and the inside surfaces of the receiver tubes of the front mounting frame (1).

Items found in the Common Attachment Kit 81500:

SPECIAL NOTE: Liberally coat the entire tube ends of the lift frame, the inside surfaces of the receiving tubes and threads of the slack adjusting bolts on the receiver tubes with chassis grease or anti-seize lubricant.

Back off the slack adjusting bolts on the receiver tubes until they no longer protrude inside the tubes. Slide the lift frame into the receiver tubes of the front mounting frame (1) until the fastening holes line up. Tighten the slack adjusting bolts on the receiver tubes until the lift frame will just slide in and out of the receiver tubes. Secure the lift frame to the front mounting frame using 5/8" hinge pins (26) and hair pin cotters (27).

7. **LIFT ARM:** Install the lift arm (24) and lift cylinder or electric hydraulic unit onto the lift frame using the 5/8"-11 X 5-1/2" capscrew (25) through the upper lift frame ears and the rear lift arm hole. Place a 5/8"-11 X 4-3/4" capscrew through the front lift arm hole and the ram end of the lift cylinder or electric hydraulic unit. Place a 5/8"-11 X 3-1/4" capscrew

through the lower lift frame ears and stationary end of the lift cylinder or electric hydraulic unit. Fasten the three 5/8"-11 capscrews using three 5/8-11 locknuts (32).

8. **LIFT CHAIN:** Attach each end of the lift chain (40) to the two holes in each of the diagonal braces of the push frame using 7/16"-14 "U" bolts (41), 7/16" lockwashers (43),and 7/16"-14 nuts (42).

9. **PUSH FRAME:** Install the push frame onto the plow blade with the upper and lower pivot holes lined up with the pivot holes in the back of the plow blade. Insert the shorter pivot pin (36) down through the upper pivot holes. Insert the longer pivot pin (39) down through the lower pivot holes. Secure the pivot pins (36),(39) using 1/4" X 2" cotter pins (23).

10. **ANGLE CYLINDERS:** Install the angle cylinders between the push frame and the ears on the back side of the plow blade with the rod end of the cylinders toward the plow blade. The elbows in the ports of the angle cylinders should be between the angle cylinders and the push frame.

NOTE: When installing the angle cylinders on 8' and 8-1/2' plow blades, place four 1-1/4" flatwashers (30) between each lower push frame ear and the stationary end of each angle cylinder.

Attach the stationary end of the angle cylinders to the push frame using the two shorter cylinder pins (22). Attach the rod ends of the angle cylinders to the back side of the plow blade using the two longer cylinder pins (44). Secure the cylinder pins using 1/4" X 2" cotter pins (23).

11. **PLOW MARKERS:** Attach each plow marker (33) to the two holes in the upper outer surface of each end rib of the plow blade using two 5/16"-18 X 1" capscrews (35), 5/16" lockwashers (37), and 5/16"-18 nuts (38).

12. **HOOK UP PINS:** Compress each hook up pin spring (50) slightly and place them between the inner most ear and the center ear on each side of the push frame with the hole through the center of each spring lined up with the pin holes in the push frame ears. Insert each hook up pin (48) through the pin hole in each inner most ear of the push frame, through the center of the springs (50), and out through the center and outside ears on each side of the push frame. Compress the hook up pin springs (50) slightly and secure the hook up pins (48) using a 1" snap ring (49) in the snap ring groove of each hook up pin (48). **(The snap rings should be between the end of the spring and the inner surface of each of the center ears on the push frame.)**

13. **PLOW TO VEHICLE ATTACHING:** Pull back and lock the spring loaded hook up pins (48) on each side of the push frame. Attach the lift chain to the lift arm hooks and lift the back end of the push frame up level using the vehicle hydraulics. Line up the spring loaded hook up pins with the corresponding set of holes in the lower part of the mounting frame. Unlock the spring loaded hook up pins so that they go completely through the holes in the mounting frame and the push frame ears. Adjust the lift chain at the lift chain hooks on the lift arm so that the plow blade will lift fully and also be able to follow the ground contour while plowing.

NOTE: If the lift chain does not pull evenly, shorten the longer side by attaching at a different link or at half a link where the chain is attached to the pushframe with the 7/16" "U" bolts.

14. **PUSH FRAME STOP BOLTS:** Screw a 5/8"-11 jam nut (29) all the way onto each of the 5/8"-11 x 3" full thread capscrews (28). Place the capscrew/ jam nut assemblies up through the ears on each side of the lower lift frame with the heads of the capscrews down. Fasten with a 5/8" lockwasher (31) and jam nut (29). Adjust the 5/8"-11 X 3" full thread capscrews (28) with the jam nuts (29) so that the heads of the capscrews (28) contact the push frame before the upper pivot section of the push frame contacts the lift arm or the lift cylinder / out front electric hydraulic unit while lifting plow or stacking snow.

NOTE: If the push frame is attached to a different set of connecting holes on the mounting frame, the push frame stop bolts should be checked and may need to be readjusted to prevent the push frame from contacting the lift arm, or the lift cylinder/out front electric hydraulic unit while lifting plow or stacking snow.

CAUTION: CHECK THE TRIPEDGE ADJUSTMENT AT THIS TIME.

A. THE SPRINGS ARE PROPERLY ADJUSTED WHEN A PIECE OF PAPER CAN BE PLACED BETWEEN THE COILS.

B. IF THE TRIPEDGE SPRINGS NEED ADJUSTMENT, LOOSEN THE BOTTOM LOCK NUT ON BOTH SPRING ASSEMBLIES. ROTATE THE TOP NUT UNTIL THE SPRINGS ARE PROPERLY ADJUSTED.

C. BE SURE TO TIGHTEN THE BOTTOM LOCK NUT SECURELY ON BOTH ASSEMBLIES TO THE TOP NUT TO PREVENT LOOSENING OF THE ASSEMBLIES.

TORQUE CHART FOOT LBS.

Bolt Nut Size	Gr. 2	Gr. 5	Gr. 8
1/4 - 20	4 - 5		
5/16 - 18	9 - 11		
3/8 - 16	17 - 20	26 - 29	
7/16 - 14		42 - 46	60 - 66
1/2 -13		64 - 72	90 - 100
5/8 - 11		127 - 141	179 - 198
3/4 - 10		227 - 251	