

SNO-WAY[®]

SNOW & ICE CONTROL EQUIPMENT

OWNER'S, INSTALLATION AND PARTS MANUAL

QUICK HITCH CONVERSION KIT

**CONVERTS ST TO 22 SERIES HITCH
FOR PLOW SERIAL NUMBERS AFTER
STD100000
STG100000**

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INTRODUCTION

This manual was written for the assembly, installation and maintenance of your new Sno-Way plow. Most importantly, this manual provides an operating plan for safe use. Refer to the Table of Contents for an outline of this manual.

Please keep this manual with your machine at all times as reference material and so it can be passed on to the next owner if the machine is sold.

We require that you read and understand the contents of this manual COMPLETELY, especially the chapter on SAFETY, before attempting any procedure contained in this manual.

We reserve the right to make changes or improve the design or construction of any part(s) without incurring the obligation to install such parts or make any changes on any unit previously delivered.



The Society of Automotive Engineers has adopted this SAFETY ALERT SYMBOL to pinpoint characteristics that, if NOT carefully followed, can create a safety hazard. When you see this symbol in this manual or on the machine itself, BE ALERT!, your personal safety and the safety of others, is involved.

• Defined in the next column, are the SAFETY ALERT messages and how they will appear in this manual.

	WARNING
FAILURE TO FOLLOW CAN RESULT IN INJURY OR DEATH	

	CAUTION
Information, that if not carefully followed, can cause injury or damage to equipment!	

NOTE: Additional information concerning the equipment or the procedure that may or may not be contained elsewhere in this manual.

BE AWARE! It is illegal to remove, deface or otherwise alter the safety decals mounted on this equipment.

SAFETY

BEFORE ATTEMPTING ANY PROCEDURE IN THIS BOOK, READ AND UNDERSTAND ALL THE SAFETY INFORMATION CONTAINED IN THIS SECTION. IN ADDITION, ENSURE ALL INDIVIDUALS WORKING WITH YOU ARE ALSO FAMILIAR WITH THESE SAFETY PRECAUTIONS.

For your safety Warning and Information Decals have been placed on this product to remind the operator to take safety precautions. It is important that these decals are in place and are legible before operation begins. New decals can be obtained from Sno-Way or your local dealer.

REMEMBER The careful operator is the best operator. Most accidents are caused by human error. Certain precautions must be observed to prevent the possibility of injury to operator or bystanders and/or damage to equipment.

NEVER operate plow when under the influence of alcohol, drugs or other medications that could hamper your judgement and reactions. An accident may result in serious injury or death to other persons or yourself.

ALWAYS operate vehicle in a well-ventilated area. The carbon monoxide in exhaust gas is highly toxic and can cause serious injury or death.

NEVER allow hands, hair or clothing to get near any moving parts such as fan blades, belts and pulleys. Never wear neckties or loose clothing when working on the vehicle.

NEVER wear wrist watches, rings or other jewelry when working on the vehicle or individual equipment. These things can catch on moving parts or cause an electrical short circuit that could result in personal injury.

ALWAYS wear safety goggles when working on the vehicle to protect your eyes from battery acid, gasoline, and dust or dirt from flying off of moving engine parts.

ALWAYS be aware of and avoid contact with hot surfaces such as engine, radiator, and hoses.

ALWAYS wear safety glasses with side shields when striking metal against metal! In addition, it is recommended that a softer (non-chipable) metal material be used to cushion the blow. Failure to heed could result in injury to the eye(s) or other parts of the body.

NEVER allow children or unauthorized person to operate this unit.

NEVER exceed 45 m.p.h. when snow plow is attached to vehicle. Braking distances may be reduced and handling characteristics may be impaired at speeds above 45 m.p.h.

ALWAYS lock the vehicle when unattended to prevent unauthorized operation of the plow.

ALWAYS check the job site for terrain hazards, obstructions and people.

NEVER exceed 10 m.p.h. when plowing. Excessive speed may cause serious injury and damage of equipment and property if an unseen obstacle is encountered while plowing.

ALWAYS position blade so it does not block path of headlamps beam. Do not change blade positions while traveling. An incorrect plow position blocking headlamp beam may result in an accident.

ALWAYS check surrounding area for hazardous obstacles before operating this unit.

ALWAYS inspect the unit periodically for defects. Parts that are broken, missing or plainly worn must be replaced immediately. The unit, or any part of it should not be altered without prior written approval of the manufacturer.

ALWAYS insert the cylinder lock when plow is not in use. If the cylinder lock is not installed, the plow blade could inadvertently drop and cause injury.

ALWAYS shut off the vehicle engine, place the transmission in Neutral or Park, turn the ignition switch to the "OFF" position, firmly apply the parking brake of the vehicle and turn "OFF" the plow controller before attaching or detaching the blade from the vehicle or when making adjustments to the blade.

ALWAYS inspect lift system bolts and pins whenever attaching or detaching the plow, and before traveling. Worn or damaged components could result in the plow dropping to the pavement while driving, causing an accident.

ALWAYS keep hands and feet clear of blade and A-Frame when attaching or detaching plow.

NEVER place fingers in A-frame or mount lug holes to check alignment when attaching snow plow. Sudden motion of the plow could severely injure a finger.

NEVER stand between the vehicle and blade or directly in front of blade when it is being raised, lowered or angled. Clearance between vehicle and blade decreases as blade is operated and injury or death can result from blade striking a body or dropping on hands or feet.

NEVER work on the vehicle without having a fully serviced fire extinguisher available. A 5 lb or larger CO² or dry chemical unit specified for gasoline, chemical or electrical fires, is recommended.

NEVER smoke while working on the vehicle. Gasoline and battery acid vapors are extremely flammable and explosive.

NEVER use your hands to search for hydraulic fluid leaks; escaping fluid under pressure can be invisible and can penetrate the skin and cause injury! If any fluid is injected into the skin, see a doctor at once! Injected fluid MUST be surgically removed by a doctor familiar with this type of injury or gangrene may result.

REMEMBER it is the owner's responsibility for communicating information on the safe use and proper maintenance of this machine.

INSTALLATION INSTRUCTIONS

Component Installation

1. Place blocking under rear of A-frame.
2. Remove plow lights and set aside to use later.
3. Remove upper light bar, lift link and jack stand.
4. Cut the light bar brackets and lugs off of the A-frame. Grind smooth. (See Figure 1-1)

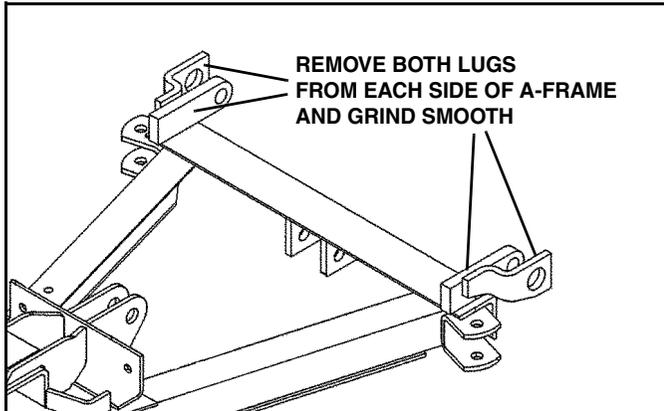


Figure 1-1



WARNING

Welding of the lugs to the A-Frame should be performed by an ASME or AWS certified welder only.

Failure to make the welds exactly as shown, or failure to use a certified welder, can cause the weld to fail.

Failure of the weld will cause the plow to separate from the truck and cause an accident and injury.

FAILURE TO FOLLOW CAN RESULT IN INJURY OR DEATH

5. Weld new lugs to A-Frame. (See Figure 1-2). Use ER805-02 or equivalent wire.

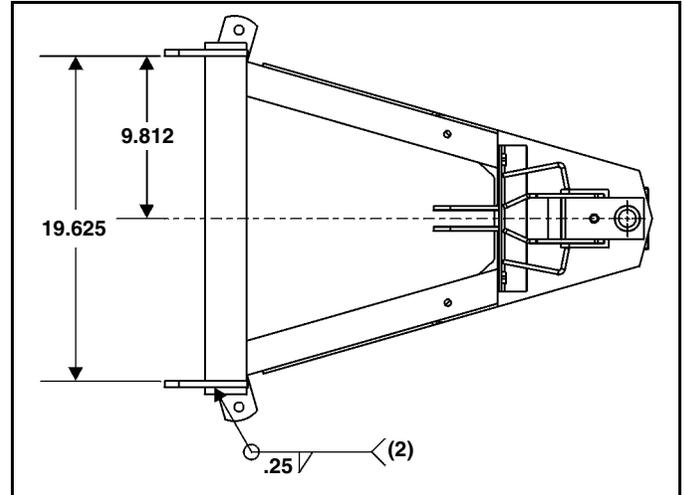


Figure 1-2

6. Place light/lift bar over A-frame lugs. (See Figure 1-3)

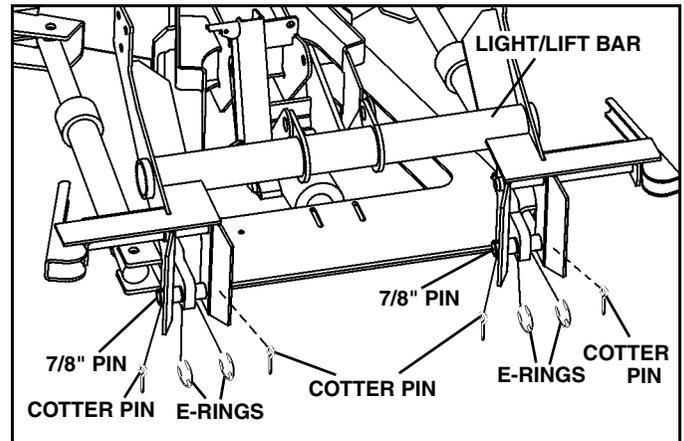


Figure 1-3

7. Insert the 7/8" pin from mounting parts bag through the light/lift bar and A-frame lug. (See Figure 1-3)
8. Insert the E-rings to hold center A-Frame lug. (See Figure 1-3). Insert cotter pins on each end of pin to hold pin in place. Bend cotter pins (See Figure 1-3) to ensure that pins do not work loose.
9. Position lift link for connection to light/lift bar. Make sure that the gusset is up and the offset side plate holes are oriented properly to align with jackstand: (See Figure 1-4)
 - Upper hole offset to rear (vehicle side).
 - Lower hole offset to front (plow side).

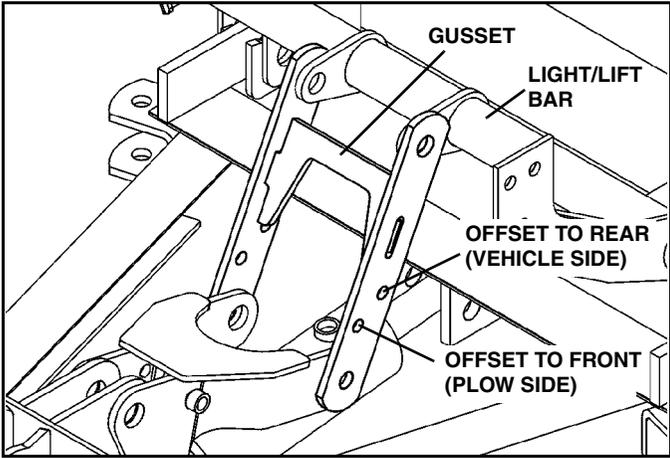


Figure 1-4

10. Pin lift link to light/lift bar, using the 5/8" x 5-1/4" clevis pin from the parts bag. Place a washer over the end and secure with a cotter pin. (See Figure 1-5)

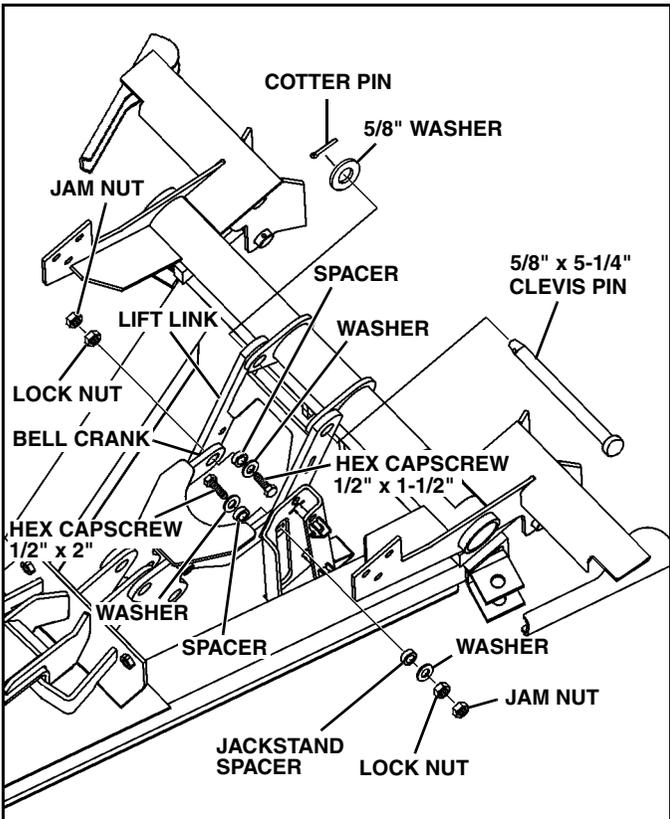


Figure 1-5

11. Bolt the lift link to the bell crank, using new hardware from the parts bag:
 On the passenger's side, use a 1/2" x 1-1/2" bolt, special washer, long bushing, lock nut and jam nut. Coat the long bushing with anti-seize compound and insert it into the bell crank. Slide a special washer over the bolt and insert it from the bell crank side. Secure the bolt on the lift link side with a lock nut and jam nut. (See Figure 1-5)
 On the driver's side, use a 1/2" x 2" bolt, special washer,

long bushing, short bushing, special washer, lock nut and jam nut. Coat the long bushing with anti-seize compound and insert it into the bell crank. Slide a special washer over the bolt and insert it from the bell crank side. On the lift link side, place the jack stand over the bolt and coat the short bushing with anti-seize compound and insert it into the jack stand.

Secure jack stand with a special washer, lock nut and jam nut. (See Figure 1-5)

NOTE: Special washers are hardened. Using standard washers will cause severe bushing and bell crank wear.

12. Attach plow to truck. (See "Mounting Snow Plow To Vehicle" on page 6)

13. Remove left and right light bar supports from package. Secure each light bar support to light/lift bar with (3) 3/8" x 1" screws, washers and lock nuts from the light bar parts bag. Do not tighten at this time. (See Figure 1-6)

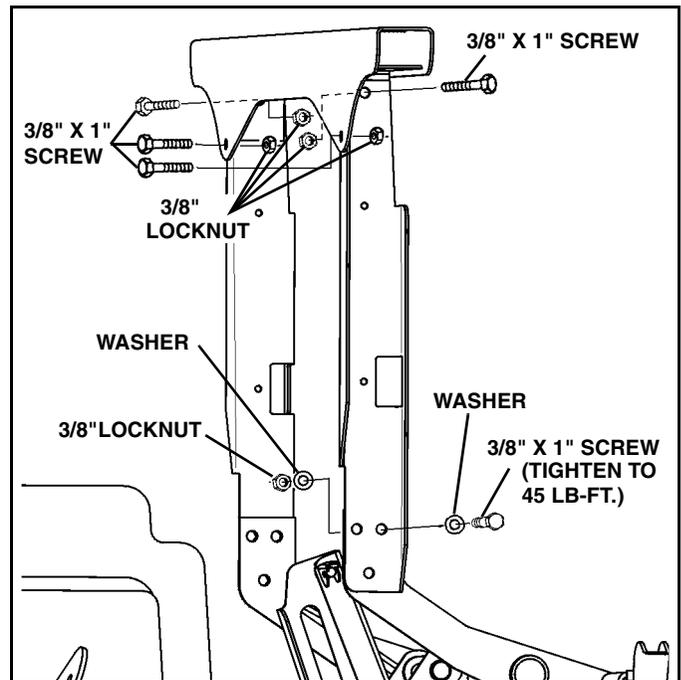


Figure 1-6

14. Secure the light bar to the light bar supports with (4) 3/8" x 1" screws and lock nuts. Align light bar supports to vertical position and tighten all light bar hardware. Tighten six lower screws to 45 lb-ft. (See Figure 1-6)

15. Mount lamps on light bar using supplied 1/2" lock washers and nuts. Route the harness through the light bar, through the access hole, and down the inside of the light bar supports. (See Figure 1-7)

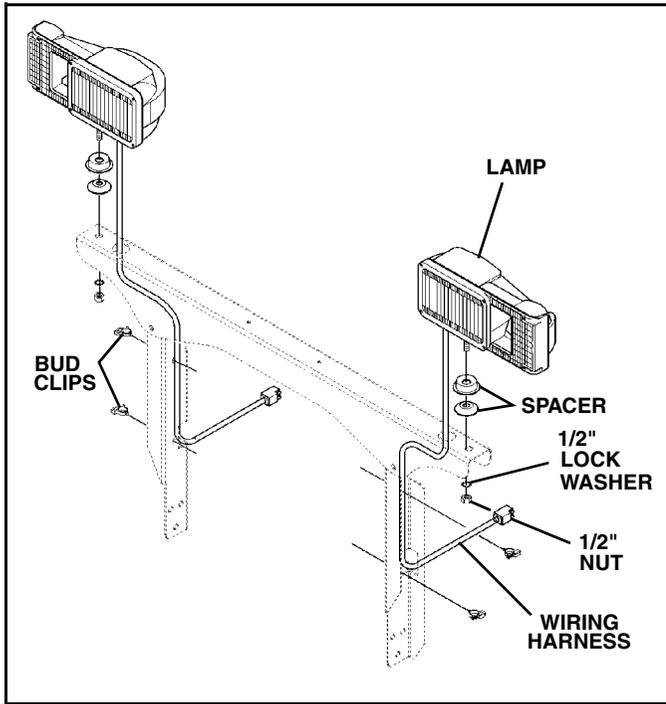


Figure 1-7

16. Check for proper light operation and aim plow lights with plow in UP position.

NOTE: In order to conform to Federal Motor Vehicle Safety Standards a SAE J602 approved aiming device must be used to aim plow lights.

17. Inspect entire plow. Lubricate all pivot points and apply dielectric grease to all electrical connections. Replace worn parts as needed.

18. Cycle plow up, down, left and right. Check to make sure hoses or electrical wires are not pinched.

Mounting Snow Plow To Vehicle

1. Drive truck into plow. Align light/lift bar frame outside of subframe lugs. Pins should fit inside slots cut into subframe lugs. (See Figure 1-8).

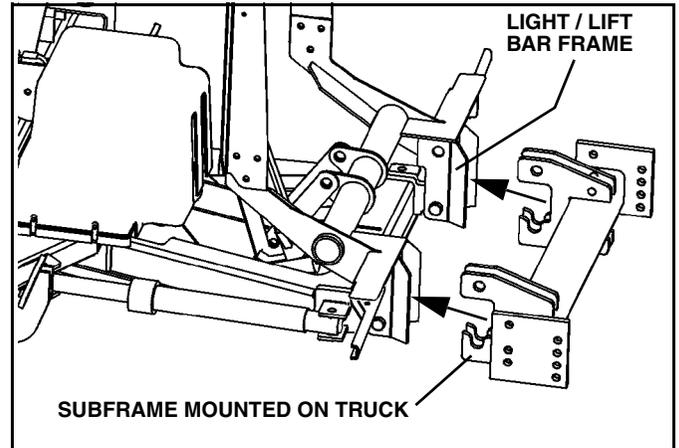


Figure 1-8

NOTE: If pins are too high or low to fit into slots on subframe, adjust the height by plugging in the plow and hand held controller. For Down Pressure Plows - To lower the pins, turn on down pressure and press down. To raise the pins, press up. For Gravity Plows - To lower the pins, place plow in float and push up on light bar. To raise the pins, press up.



WARNING

When using the hand held controller to raise or lower the plow A-frame for mounting the plow to the vehicle, be especially careful of the movement of the light bar. This movement will occur when raising or lowering the A-frame or jack stand.

FAILURE TO FOLLOW CAN RESULT IN INJURY OR DEATH



WARNING

Pressing the blade angle functions will result in the A-frame swinging if it is not secured to the truck. Do not press the angle function during plow installation.

FAILURE TO FOLLOW CAN RESULT IN INJURY OR DEATH

2. Plug in power harness and remove controller from truck cab. Plug controller into plow.



WARNING

The power cable in front of the truck is wired directly to the battery. The power cable is always energized, even if the truck is turned off. Always replace the protective cap after disconnecting the plow power cable. Allowing an unprotected plug to contact metal parts of the truck may cause electrical component damage. Never use a metal object to clean the plug contacts.

FAILURE TO FOLLOW CAN RESULT IN INJURY OR DEATH

3. Rotate light/lift bar into position by turning on down pressure and pressing the lower button. (See Figure 1-9).

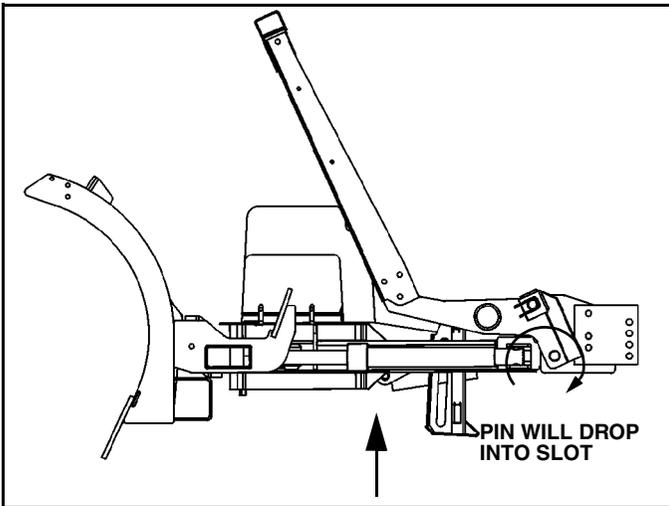


Figure 1-9

NOTE: If your plow is not equipped with down pressure hydraulics you will have to manually rotate the light lift bar into position by placing plow in float mode and pushing on the light bar.

4. Put plow into float position by turning down pressure off. Rotate pin handles forward to lock upper hitch pins in place. (See Figure 1-10).



WARNING

Make sure that upper hitch pins are engaged before moving truck. Hitch pins not fully engaged could result in the plow separating from the truck.

FAILURE TO FOLLOW CAN RESULT IN INJURY OR DEATH

NOTE: Upper hitch pins are fully engaged when pin handle is tight against pin bracket and you cannot see the upper hitch pin between the pin bracket and pin handle.

If upper hitch pins are not fully engaged:

A. Raise plow an inch off the ground, then lower. Or, B. Turn Down Pressure ON and then OFF. Upper hitch pins will snap into place.

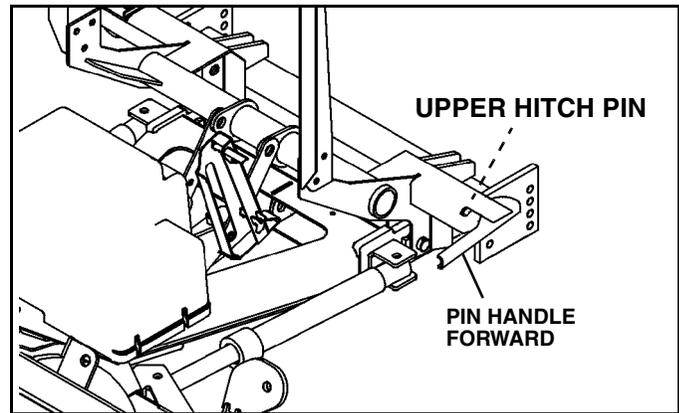


Figure 1-10

5. Unplug plow from control.

6. Disengage both jack stand pins by pulling on handles. Raise the jack stand and engage the bottom pin by pushing on the handle. Make sure pin is engaged in hole by rotating jack stand back and forth. (See Figure 1-11).

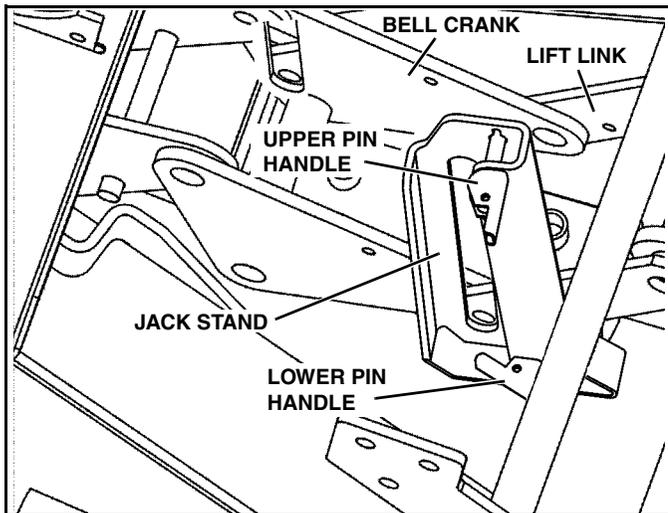


Figure 1-11

7. Unplug light harness connectors on truck, and disconnect plow light connectors, which had been plugged together for corrosion protection during storage (See Figure 1-12).

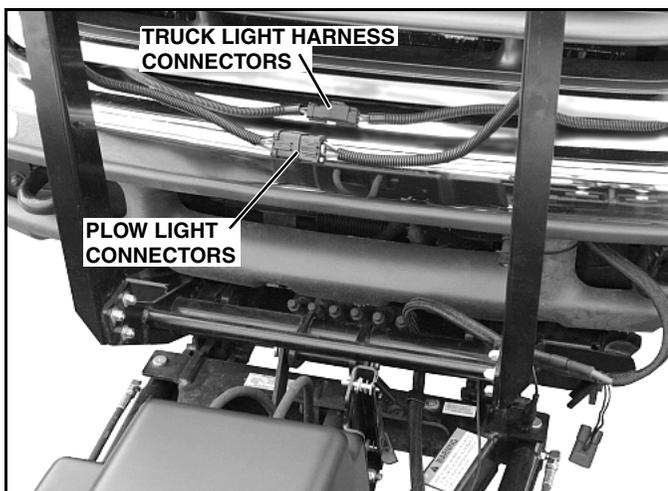


Figure 1-12

8. Plug plow light connectors into mating connectors on truck light harness (See Figure 1-13).

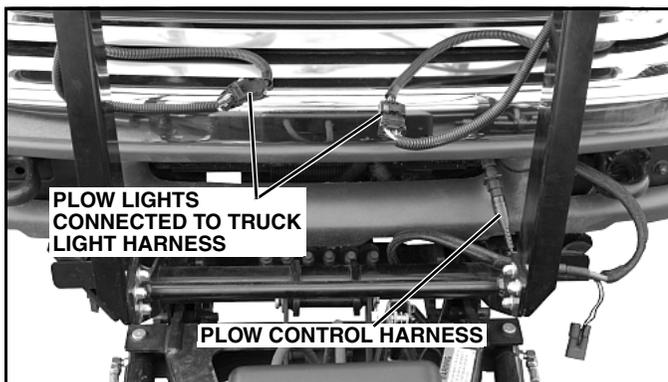


Figure 1-13



WARNING

Failure to properly connect plow lights to vehicle light harness will prevent plow lights from functioning. Follow proper procedure to connect light harnesses and test lights before operating.

FAILURE TO FOLLOW CAN RESULT IN INJURY OR DEATH

9. Plug control harness on plow into truck. Plug plow control inside truck cab.
10. Raise, Lower and angle plow to make sure no hoses or wires pinch in the plow mechanism.

Installing The Cylinder Lock Clamp



WARNING

Always install the cylinder lock clamp when the plow blade is raised and the operator is not engaged in plowing operations. Equipment failure or inadvertent operation of the plow control while driving could allow the plow blade to fall, resulting in injury.

FAILURE TO FOLLOW CAN RESULT IN INJURY OR DEATH

1. Raise the plow to the full UP position.
2. Turn the ignition OFF and apply the parking brake.
3. Turn OFF the hand-held controller.
4. Remove the pin from the cylinder lock clamp.
5. Position the cylinder lock clamp around the exposed (chrome) portion of the lift cylinder with the open side of the cylinder lock up. Install the pin. (See Figure 1-14).

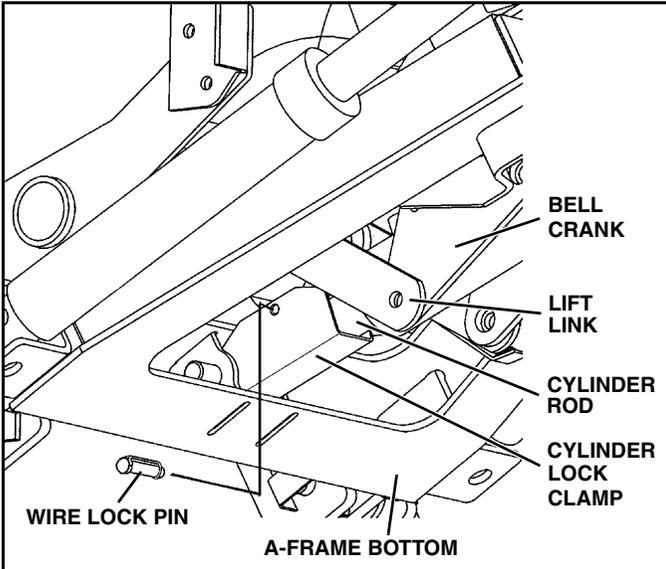


Figure 1-14

6. Lower the plow so that cylinder lock clamp is tight against cylinder.

WARNING

Failure to lower plow onto clamp could block headlights resulting in an accident.

FAILURE TO FOLLOW CAN RESULT IN INJURY OR DEATH

Removing Snow Plow From Vehicle

Choose a location for the plow storage, which will allow the plow to be removed from the vehicle and not be moved after removal. Also, choose a location that will not allow the plow stand to sink into the ground. A dry, protected area is recommended.

1. Lower plow to the ground, put vehicle in park, turn off the engine and set the parking brake.
2. Disconnect the plow lights from the truck light harness (See Figure 1-15). Disconnect the plow control harness and replace the protective cap.

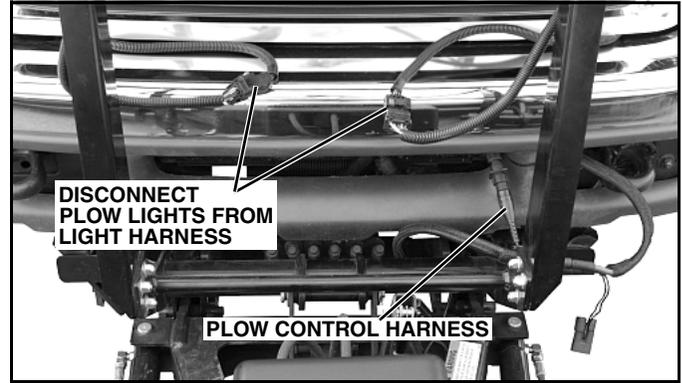


Figure 1-15

3. To prevent corrosion on the contacts, plug the male and female connectors on the plow together (See Figure 1-16).

4. To make the truck lights operable, plug the male and female connectors on the truck light harness together (See Figure 1-16).

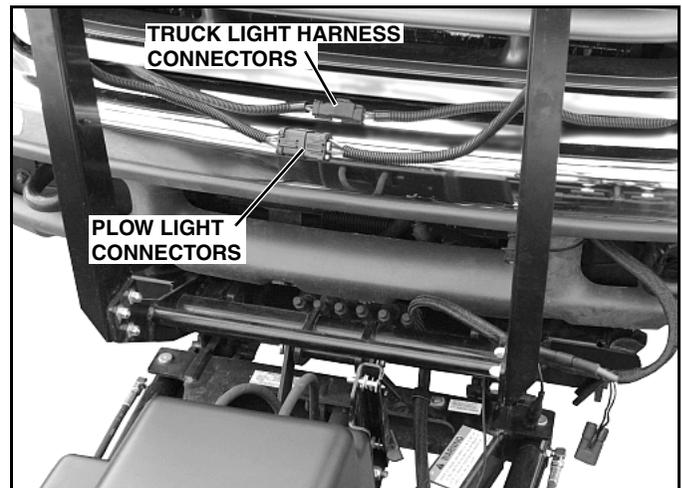


Figure 1-16

WARNING

Failure to reconnect the main light harness on the truck when removing plow will cause truck lights to not operate, which could cause an accident. Test lights before operating.

FAILURE TO FOLLOW CAN RESULT IN INJURY OR DEATH



CAUTION

When disconnecting the plow control harness, turn only the locking nut at the end of the connector. Do not turn the threaded boot. Turning the threaded boot will break the wires in the harness and cause the controller to stop functioning. (See Figure 1-17).

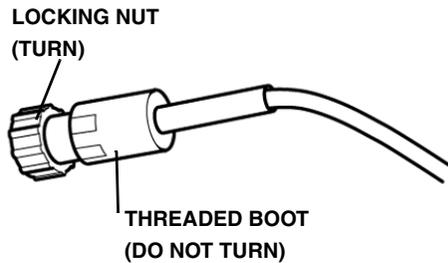


Figure 1-17

5. Turn Down Pressure ON and then OFF.
6. Push pin handles toward truck to unlock main pins. (See Figure 1-18).

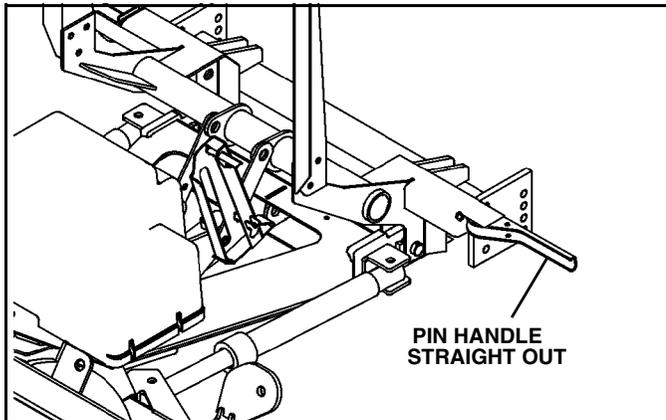


Figure 1-18

7. Disengage lower jack stand pin by pulling on handle. Lower the jack stand and engage the top pin by pushing on the handle. Make sure pin is engaged in hole by rotating jack stand back and forth.

8. Remove controller from truck cab and plug into plow control harness.

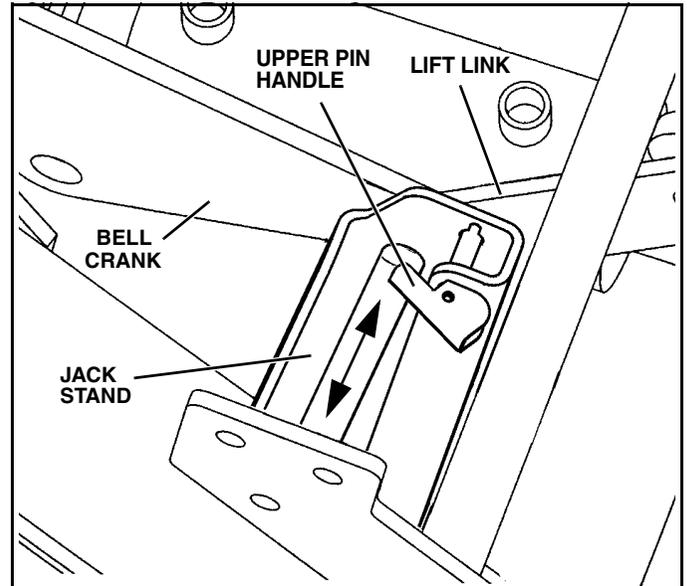


Figure 1-19

9. Rotate jack stand down and raise A-frame by pressing the up button. (See Figure 1-20).

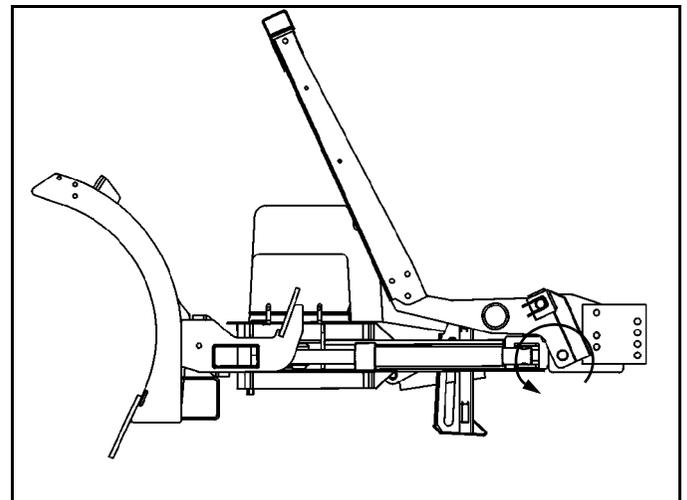


Figure 1-20

10. Disconnect power harness, replace protective caps and back truck away from plow.

PARTS LIST INTRODUCTION

Our dealership network stands by to provide you with any assistance you may require, including genuine Sno-Way service parts. All parts should be obtained from or ordered through your dealer. Give complete information about the part as well as the Model Number and Serial Number of your machine.

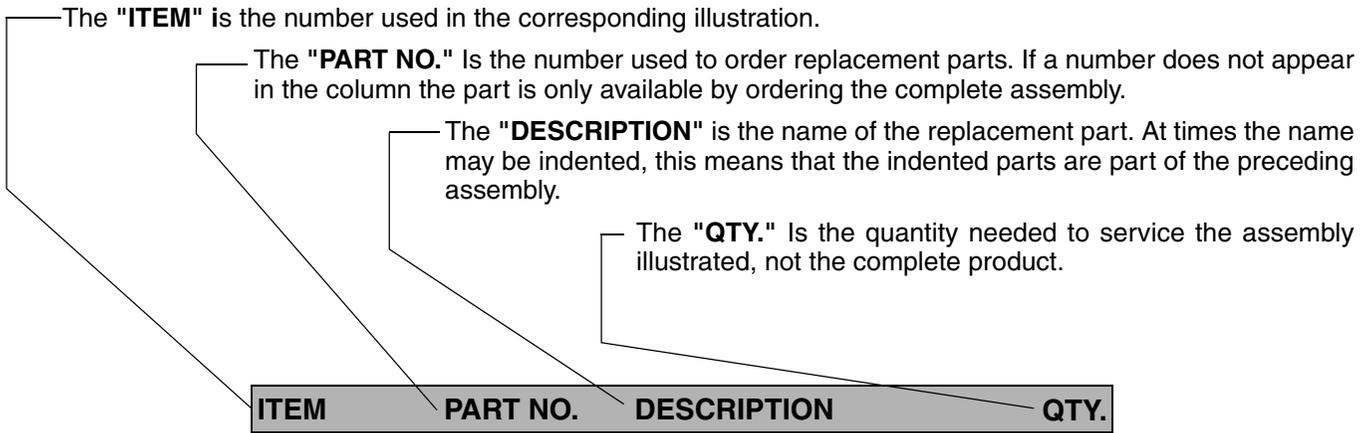
Record the Serial Number in the space provided in your Owner's Manual for quick reference. The Serial Number for the unit is on a plate located on the left frame gusset of the Hopper Frame.

"Right" and "Left" are determined from a position sitting on the Operators Seat of the vehicle.

We reserve the right to make changes or improvements in the design or construction of any part without incurring the obligation to install such changes in any unit previously delivered.

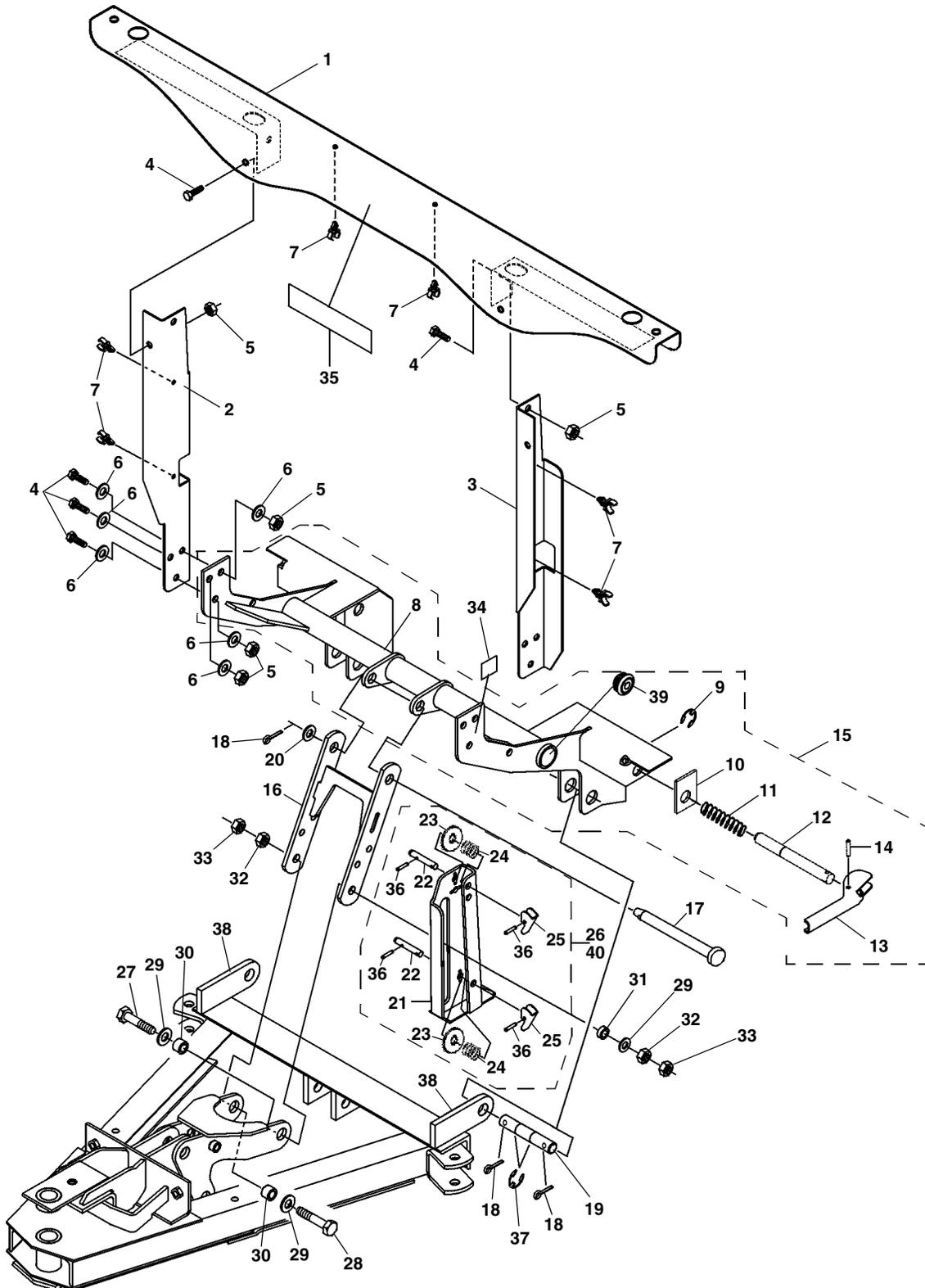
USING THIS PARTS LIST

Below is parts listing with four columns. The first column is the "ITEM", the second is the "PART NUMBER", The third is the "DESCRIPTION" and the fourth is the "QUANTITY".



ITEM	PART NO.	DESCRIPTION	QTY.
196100083	O-ring	1	
296001529	Elbow	3	
398100036	Capscrew, Hex.,3/8"-16NC x 7/8"9		

QUICK-HITCH CONVERSION KIT



QUICK-HITCH CONVERSION KIT

ITEM	PART NO.	DESCRIPTION	QTY
1	96108030	Assy., Light Bar, Straight Blade.....	1
2	96106989	Support, Light Bar, RH.....	1
3	96106988	Support, Light Bar, LH.....	1
4	98009022	Capscrew, Hex, 3/8"-16 x 1".....	10
5	98009009	Nut, Hex, Nylock, 3/8"-16.....	10
6	98009032	Washer, Flat, 3/8".....	12
7	96100440	Clip, Rosebud.....	6
8	96106940	Light / Lift Bar, Quick Attach.....	1
9	98100312	E-Ring.....	2
10	96107364	Plate, Bearing, Polyethylene.....	2
11	96107130	Spring, SS.....	2
12	96107128	Pin, Quick Attach, Upper.....	2
13	96107129	Handle, Quick Release.....	2
14	98100313	Pin, Roll, 1/4" x 1-3/8", SS.....	2
15	96107550	Assembly, Light / Lift bar, Quick Attach (includes items 8, 9, 10, 11, 12, 13, 14).....	1
16	96108745	Lift Link.....	1
17	98100321	Pin, Clevis, 5/8" x 5-1/4".....	1
18	98009085	Pin, Cotter, 5/32" x 1-1/2".....	5
19	96106958	Pin, Quick Attach, Lower.....	2
20	98009039	Washer, Flat, 5/8".....	1
21	96106986	Jackstand.....	1
22	96106685	Pin, Latch.....	2
23	98009032	Washer, Flat, 3/8".....	2
24	96106654	Spring, Latch.....	2
25	96106540	Cam, Jackstand.....	2
26	96107532	Assy., Jackstand (includes items 22, 23, 24, 25, 26, 37).....	1
27	98100010	Cap Screw, Hex, 1/2"-13 x 2".....	1
28	98009010	Cap Screw, Hex, 1/2"-13 x 1-1/2".....	1
29	98100176	Washer, Special, Hardened.....	3
30	96104924	Spacer, Lift Link.....	2
31	96106987	Spacer, Stand.....	1
32	98009013	Nut, Nylock, 1/2"-13.....	2
33	98100172	Nut, Hex, Jam, 1/2"-13.....	2
34	97100400	Decal, Warning.....	1
35	97100882	Decal, Sno-Way.....	1
36	98100302	Roll Pin, 5/32" x 7/8".....	4
37	98100326	E-Ring, 7/8".....	4
38	96108735	Lug, ST-22.....	2
39	96108875	End Cap, 1-1/2".....	2
40	96107711	Kit, Jackstand Hardware (includes one each items 22, 23, 24, 25, two item 36).....	1

SNO-WAY[®] INTERNATIONAL, INC.

SNO-WAY[®]
SNOW & ICE CONTROL EQUIPMENT

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