

SNO-WAY®

SNOW & ICE CONTROL EQUIPMENT

INSTALLATION & OWNERS MANUAL

SWS 30 ON/OFF CONTROL

99101253

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INTRODUCTION

This manual was written for the assembly, installation and maintenance of your new SNO-WAY® SWS 30. 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.



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 below are the SAFETY ALERT messages and how they will appear in this manual.

	WARNING
FAILURE TO FOLLOW CAN RESULT IN DEATH OR INJURY.	

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

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

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.

Graphics and illustrations may be used which may show equipment and/or options not included in every installation without incurring the obligation to install such parts or make changes on units previously delivered.

DEALER	
NAME _____	
ADDRESS _____	
CITY _____ STATE _____ ZIP _____	
PHONE (____) _____	
(FILL IN)	

ORIGINAL PURCHASER	
NAME _____	
ADDRESS _____	
CITY _____ STATE _____ ZIP _____	
PHONE (____) _____	
(FILL IN)	

Sno-Way Service Parts Manuals are available on-line or at your authorized Sno-Way dealer. Request part number 97101915 for the SWS 30 Controllers.

Factory contact information is available at www.snoway.com.



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 exceed vehicle GVWR, GAWR or Vehicle Hitch Tongue Weight Rating.

NEVER operate spreader 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 or Spreader.

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 serious 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 serious injury to the eye(s) or other parts of the body.

NEVER allow children or unauthorized person to operate this spreader.

NEVER exceed 45 m.p.h. when loaded spreader is attached to vehicle. Braking distances may be increased and handling characteristics may be impaired at speeds above 45 m.p.h. It is strongly recommended to load the spreader at the job site and to dispense all of the materials at the job site. Transportation of a loaded spreader causes the material to become impacted and may cause spreader flow problems.

ALWAYS lock the vehicle when unattended to prevent unauthorized operation.

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

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 shut off the vehicle engine, place the transmission in Park, turn the ignition switch to the "OFF" position and firmly apply the parking brake of the vehicle before attaching or detaching the spreader from the vehicle or when making adjustments to the spreader gates and/or deflectors.

ALWAYS make sure personnel are clear of area being spread. Material is discharged from spreader at a high rate of speed and could injure bystanders.

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

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

NEVER use material in the spreader containing twigs, brush, plastics, cans or other trash. Foreign materials could plug drive and discharge and damage unit.

NEVER use wet materials in the spreader. This unit is not designed to handle wet materials. Use only dry free flowing materials.

NEVER leave materials in hopper for long periods of time. Remember salt is hygroscopic and will attract enough atmospheric moisture to cause it to "cake".

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 free up a jam or unclog spreader while it is plugged in. Always turn off vehicle and unplug spreader when working on it.

NEVER remove a spreader full of material, or even partially filled with material, from the vehicle. Always empty spreader prior to removal from the vehicle.

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

INSTALLATION

Introduction

The information contained in this section will instruct you on the proper installation and set up of the controller and wire harness.

REMEMBER After the SWS 30 is installed on the vehicle, the Pre-Delivery Check List and Delivery Check List must be completed.

Tool List

Safety Goggles	Drill
Wire Crimp Tool	Drill Bit, 3/8"
Utility Knife	

- Vehicle Power Harness
- Battery Power Harness
- Toggle Switch
- Female Terminal (2)
- 3/8" Ring Terminal
- Cable Ties
- 20A Fuse

2. Disconnect the NEG. (-) battery cable from the battery.

Installation

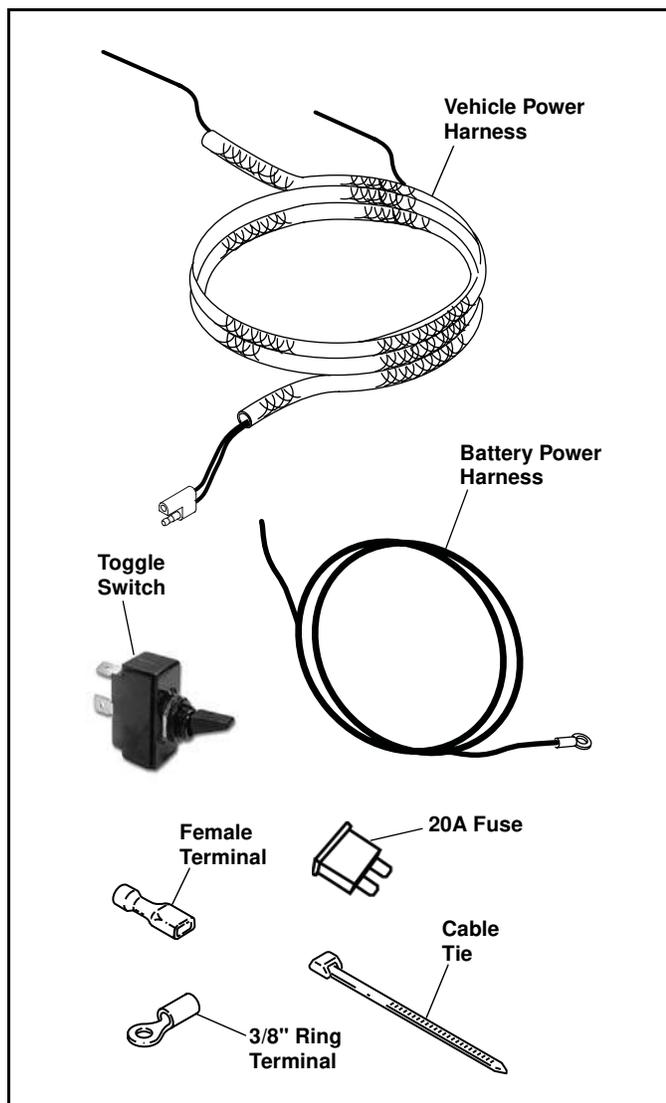


Figure 1-1

1. Locate the following parts:

**WARNING**

Disconnect the vehicle NEG. (-) battery cable while performing Steps 2 - 13 to avoid serious bodily injury from electrical shock, fire, or explosion. Do not re-connect battery cable until indicated in step 14.

FAILURE TO FOLLOW CAN RESULT IN INJURY OR DEATH.

NOTE: Take the extra time needed to plan the routing of the wiring harness before drilling any holes or fastening the harness or toggle switch in place. Read all the instructions carefully to ensure all the required conditions are met for a safe and professional installation.

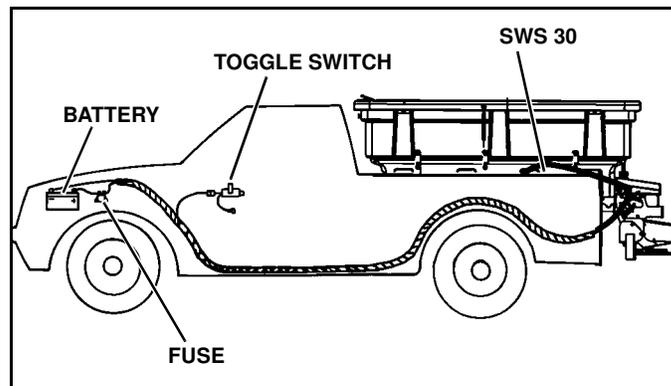


Figure 1-2

3. Uncoil the Battery Power Harness and attach it to the Positive (+) terminal on the battery.

4. Look for an existing hole in the vehicle firewall. The hole must be 3/8" or larger.



CAUTION

DO NOT drill any holes until a thorough visual inspection is performed to determine that the area around the hole to be drilled, on both sides of the firewall, is clear of any obstacles such as brake lines, linkage or vehicle wiring.

5. If an existing hole is not available, look for an area to drill the hole that satisfies these conditions:

- Hole should be drilled on the same side of the vehicle firewall (left or right) as the vehicle battery.
- DO NOT put a hole in such a spot that will force the wiring harness, when installed, to interfere or be routed behind accelerator pedal, brake pedal, clutch pedal, parking brake or associated linkage.
- DO NOT drill any holes until a thorough visual inspection is performed to determine that the area around the hole to be drilled, on both sides of the firewall, is clear of any obstacles such as brake lines, linkage or vehicle wiring.

NOTE: If the hole has to be drilled through carpeting or insulation, reverse the direction of the drill until the carpet has been penetrated, remove the carpet from the hole, then use the forward direction to continue drilling through the firewall, this should prevent "running" in the carpet.

6. Using a twist drill or hole saw, as necessary, drill a hole through the vehicle firewall.



CAUTION

Keep wiring harness away from moving parts, sharp edges and areas of extreme heat to avoid electrical failure and fire.

7. Insert wiring harness into firewall.

8. Find a location to mount the Toggle Switch that the wires harness can reach. The drilled hole must be 15/32" in diameter and in a panel no thicker than 1/8" thick. Use the nut with the Toggle Switch to fasten it into place.

9 Uncoil the Vehicle Power Harness. Determine a route from SWS to the bumper of the vehicle, along the frame rails, and through the vehicle engine compartment to the battery. Make sure to leave enough harness length at the back bumper to reach the SWS. Use the supplied Cable Ties to route the harness.

10. Locate the red power wire within the loom of the Vehicle Power Harness and insert it through the same hole in the firewall as the Battery Power Harness. Then route it to the Toggle Switch.



CAUTION

Keep wiring harness away from moving parts, sharp edges and areas of extreme heat to avoid electrical failure and fire.

11. Cut off any excess wire that isn't needed to reach the Toggle Switch on either harness. Then strip the ends of the wire and crimp on the Female Terminals.

12. Push the Female Terminals onto the Toggle Switch.

13. Cut off any excess black wire that isn't needed to reach the battery on the Vehicle Power Harness. Then strip the end of the wire and crimp on the 3/8" Ring Terminal.

14. Attach the Vehicle Power Harness black wire to the Negative (-) terminal on the battery and re-connect the negative battery terminal.

15. Remove the fuse holder cap from the Battery Power Harness, install the 20A Fuse, and fasten the fuse holder cap onto the connector.

16. Plug the SWS 30 to the installed harness. Determine which direction is ON and OFF for the Toggle Switch, then label it.

OPERATION

Theory of Operation

The ON/OFF switch only has one speed. Turn the switch ON and the pump motor turns on full spraying speed. Turn the switch OFF and the motor turns off and the unit stops spraying. Since the units spraying speed is not variable, its best to only use the system when the spreader's auger speed is at or near it's max.

On/Off Motor Controller Operation



CAUTION

The controller input voltage must be a minimum of 11 volts DC for proper operation. Be sure the vehicle battery and alternator are in good operating condition and adequate to provide 11 volts DC to the controller.

The pump is protected by a 20 amp fuse installed in the wiring system near the vehicle battery.

Start:

When the ON side of the switch is selected, current will be directed to the SWS pump motor. When the OFF side of the switch is selected, current to the system end.

IMPORTANT: If ignition switch is turned off at any time during operation the pump will not stop running. This can drain the battery power and destroy the SWS pump if left running for hours.

Wiring Schematics

An On/Off Control system schematic diagram is located in your SWS Installation & Owner's Manual.

SNO-WAY[®] INTERNATIONAL, INC.

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SNOW & ICE CONTROL EQUIPMENT

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