

# **SNO-WAY<sup>®</sup>**

***SNOW & ICE CONTROL EQUIPMENT***

## **OWNER'S, INSTALLATION AND PARTS MANUAL**

### **V-BOX**

### **ELECTRIC 16 GAUGE**

### **SPREADER UNITS**

**FOR SERIAL NUMBERS AFTER**

**8MS VBE LF 100000**

**8SS VBE LF 100000**

### **IMPORTANT**

**MUST READ THIS MANUAL  
BEFORE OPERATING EQUIPMENT**

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# INTRODUCTION

This manual was written for the assembly, installation and maintenance of your new Sno-Way® V-BOX ELECTRIC SPREADER. 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 in the next column, are the SAFETY ALERT messages and how they will appear in this manual.

 <b>WARNING</b>
Information, that if not carefully followed, can cause personal injury or death!

 <b>CAUTION</b>
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.**

Record the Spreader Serial Number and Spreader Model Number, in the space provided below as a handy record for quick reference. The Serial Number is located under the motor cover. This plate contains information that your Dealer needs, to answer questions, to order replacement parts, or to complete warranty work, if needed, for your unit.

<b>NAME PLATE DATA</b>	
SPREADER MODEL NUMBER _____	
SPREADER SERIAL NUMBER _____ <small>(Located under Motor Cover)</small>	
(FILL IN)	

<b>DEALER</b>	
NAME _____	
ADDRESS _____	
CITY _____ STATE _____ ZIP _____	
PHONE (____) - _____	
(FILL IN)	

<b>ORIGINAL PURCHASER</b>	
NAME _____	
ADDRESS _____	
CITY _____ STATE _____ ZIP _____	
PHONE (____) - _____	
(FILL IN)	

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.

# 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.

**FIRST TIME OPERATION** When running for the first time or after the unit has not been used for a long period of time, run and inspect the conveyor system without spinner and chute assembly attached.

**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 injury or death.

**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** 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 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.

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

**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 CO<sup>2</sup> 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.

**ALWAYS** make sure that all safety guards are in place before operating the spreader.

**ALWAYS** shut off the vehicle and spreader engines, place the vehicle transmission in “Park”, turn the vehicle and spreader ignition switches to “OFF” position and firmly apply the parking brake of the vehicle before servicing or making any adjustments to the spreader.

**ALWAYS** wait for all movement to stop before servicing or adjusting the spreader.

**NEVER** climb on or allow others to climb on the spreader.

**ALWAYS** reassemble any parts or hardware removed for cleaning or adjusting before operating the spreader.

**ALWAYS** remove any tools and other materials from the spreader before operating the spreader

**ALWAYS** use auxiliary warning lights, except when prohibited by law, when operating the spreader.

**NEVER** allow hands, hair or clothing to get near any moving part of the spreader. Never wear neckties or loose clothing when working on the spreader or the vehicle.

**ALWAYS** be aware of and avoid contact with hot surfaces such as engine and exhaust.

**ALWAYS** inspect the unit periodically for defects. Parts that are broken, missing or plainly worn must be replaced immediately. Never operate the unit when in need of maintenance.

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

# GENERAL INFORMATION



## WARNING

**WARNING:** Check the vehicle's load rating certification sticker for the maximum vehicle capacity, and **DO NOT** overload beyond the vehicle GVWR or GAWR. Overloading could result in an accident, or damage to the vehicle.

**FAILURE TO HEED CAN RESULT IN INJURY OR DEATH.**

**IMPORTANT:** This spreader is designed to spread snow and ice control materials. Do not use the spreader for purposes other than those specified in this manual

Use the following tables to calculate the vehicle payload whenever you place material in the spreader

BODY SIDE LENGTH	WIDTH (inches)	HEIGHT (inches)	OVERALL LENGTH (inches)	EMPTY WEIGHT (Lbs.)(No Screen or Battery)	CAPACITY (cubic yd.)	RECOMMENDED USE
8'	48	33	115	685	2.0	FULL SIZE HD TRUCKS

Side extensions are not recommended for the S.T. Model Spreader and will void all warranties

## MATERIAL WEIGHTS

MATERIAL	LBS. PER CUBIC YD.	LBS. PER CUBIC FT.
# 1 Rock Salt	950	35
# 2 Rock Salt	1,215	45
Coarse Sand - Dry	2,565	95
Coarse Sand - Wet	3,240	120

*NOTE: All references to "Left" and "Right" sides relates to equipment as viewed from the rear, and facing the normal direction of vehicle travel.*

**IMPORTANT:** To help prevent a frozen conveyor chain, empty the spreader when not in use

## ABBREVIATION KEY

ABBREVIATION KEY							
AR	As Required	CPLG	Coupling	15 Inch Wide	15 Inch Wide Series Spreader	STD	Standard
ASSY	Assembly	ELEC	Electric	REQ	Required	SV	Small V-Box
CB	Carriage Bolt	EV	Electric V-Box	SPKT	Sprocket	V	Standard Larger V-Box
CHMSL	Center High Mounted Stop Lights	HV	Honda Powered V-Box	SS	Stainless Steel	ZP	Zinc Plated
CONV	Conveyer	I.D.	Inside Diameter	10 Inch Wide	10 Inch Wide Series Spreader		

# INSTALLATION

## Mounting the Spreader Onto the Vehicle

*NOTE: Refer to the Repair Parts Diagrams, which are in this manual, to help identify parts referenced in the following text.*

1. Remove the tailgate from the truck.
2. Lift the spreader by hooking the loop or hole located on the rear cross channel which is inside the hopper. The loop or hole is located at the approximate balance point of the spreader. The balance point may vary with engine fluid levels, battery, top screen, or any residual material in the hopper.



### WARNING

**Before lifting, check that the hopper is empty of material. The lifting device must be capable of supporting the spreader's weight. See charts for spreader weights.**

**FAILURE TO HEED CAN RESULT IN INJURY OR DEATH.**

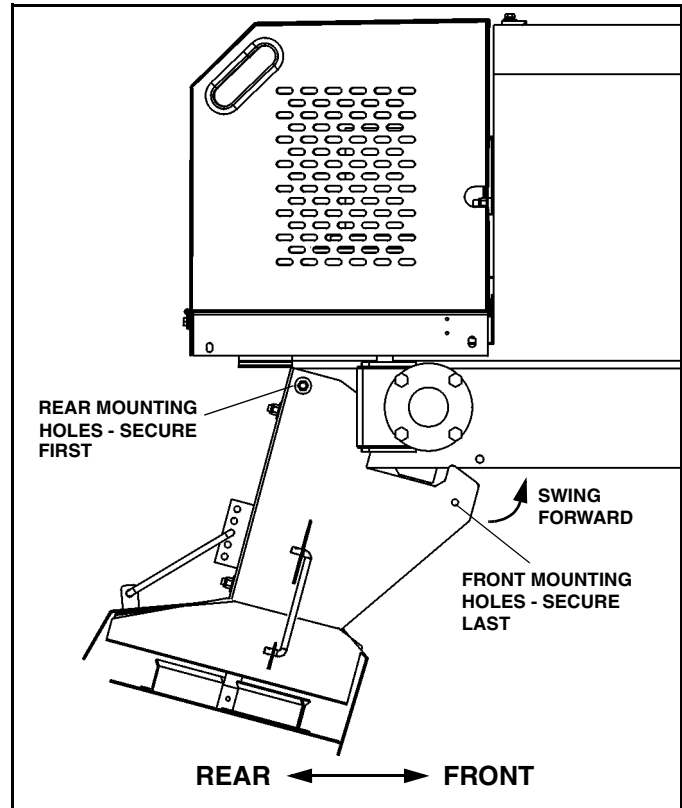
3. Place lengths of lumber under the side ribs of the spreader. By elevating the spreader off the vehicle, it is easier to remove excess material that accumulates under the spreader. Center the spreader on the vehicle with the end of the rails 14" to the rear of the nearest vertical obstruction (e.g., bumper, trailer hitch, etc.).

4. Bolt the spreader to the vehicle frame using the holes located at each lower support leg. Use 1/2" hardware as required by vehicle application.

5. Using the Tie-down Chains, secure the spreader to the vehicle using the tabs located at the corners of the spreader and the vehicle's factory installed anchor points.

*NOTE: Check the mounting devices every time the spreader is placed on the truck and loaded with material to make sure they are secure.*

## Spinner Chute Attachment and Chain Adjustment



**Figure 1-1**

1. Loosely attach the two rear mounting holes of the Chute/Spinner Assembly using two 3/8" x 7/8" bolts, flat washers, and nylock nuts, with the heads of the bolts on the inside of the chute. Allow the Chute Assembly to hang, as shown. Do not tighten the bolts. (See Figure 1-1).

2. Swing the Chute/Spinner Assembly toward the front of the vehicle, and secure the two front mounting holes using two 3/8" x 7/8" bolts, flat washers, and nylock nuts, with the heads of the bolts on the inside of the chute.

3. Install the Roller Chain between the Spinner Shaft Sprocket and the Gear Case Sprocket. Check that the sprockets are in line. Check the setscrew for tightness. Install the Master Link.

4. To adjust roller chain tension, loosen the Spinner Shaft Bearing Bolts and move the Spinner Shaft away from the Gear Case. Maintain vertical position of the shaft and alignment of sprockets when tightening bearing fasteners. After adjusting, correct chain tension should allow a 5/16" deflection midway between the sprockets. Additional chain tension may be applied by pulling the Chute/Spinner Assembly toward the rear. Tighten all fasteners according to the torque chart on page 16.

5. Install the chain guard using 1/4" x 3/4" long hex cap screws, lock washers, and nuts.

page 26).

## Wiring Harness and On/Off Control Installation

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

### Tool List

Safety Goggles	12 Volt Test Light
Wire Crimp Tool	Drill
Utility Knife	Drill Bit, 3/8"

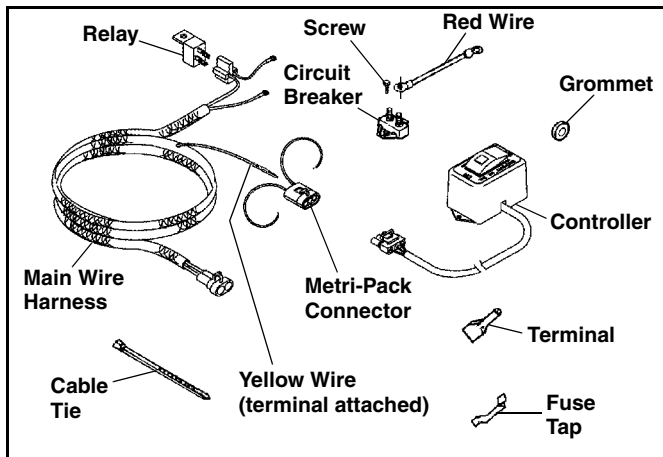


Figure 1-2

1. Locate the following parts:

- Controller
- Wire Harness, Main
- Circuit Breaker.
- Fuse Tap
- Terminal, Female
- Grommet
- Neoprene Seal
- Red Wire, Short
- Cable Tie, Plastic
- Self Tapping Screw
- Relay, 70A
- Metri-Pack Connector

(For reference to part numbers, see service parts listing

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

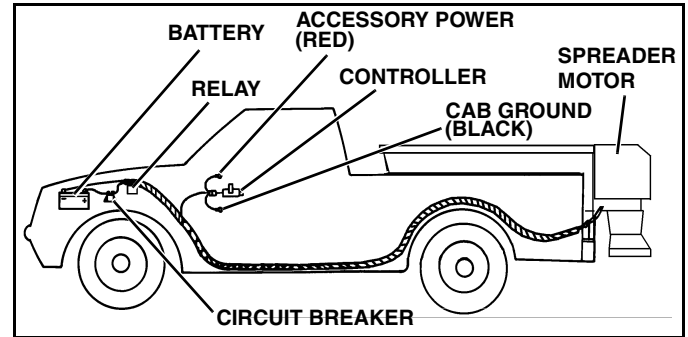


Figure 1-3

2. Uncoil the wiring harness and route the end of the harness with the short red and black wires (with ring terminals installed) from under the vehicle up into the engine compartment on the battery side.

3. Position the red and black wires (with terminals) near the battery and prepare to route the five foot section, with connector, into the vehicle operator compartment area.

4. Look for an existing hole, with rubber grommet, 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 3/8" hole is not available, look for an area to drill a 3/8" 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 saw then use the forward direction to continue drilling through the firewall, this should prevent "running" in the carpet.*


6. Using a drill, make a 3/8" hole through the vehicle firewall.

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

7. Install the grommet into the firewall.

8. Feed the yellow wire (with connector terminal attached) through the grommet into the cab.

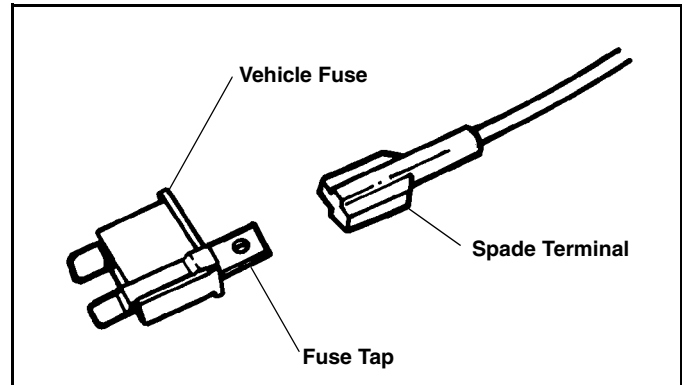
9. Inside the cab, insert the terminal on the yellow wire into the vacant slot in the back of the three-wire connector that has red and black wire leads already installed. Push the terminal fully into the connector until it locks in place.

	<b>WARNING</b>
<b>Mount the control box in an area that will not interfere with the legs during seat travel and that will not allow the knees to come in contact with it in an accident.</b>	
<b>FAILURE TO HEED CAN RESULT IN INJURY OR DEATH.</b>	

10. Use hook and loop strips (Velcro®) to mount the control in an appropriate location.

11. Connect the vehicle harness, inside the cab, to the control box connector.

12. Remove the accessory fuse from the vehicle fuse box.



**Figure 1-4**

13. Using a test probe, determine the fused "Dead/OFF" side of the fuse and attach the A.T.O. fuse tap to that side of the fuse. (See Figure 1-4).

*NOTE: Two fuse tap-ins are provided, one for standard (ATO/ATC) automotive blade fuses and one for mini-blade automotive fuses. Determine which type of fuse the vehicle uses. If the standard fuse is used, the fuse tap-in will require the provided 1/4" female spade terminal, if the mini-fuse is used, the fuse tap-in will require the provided 3/16" female spade terminal.*

**IMPORTANT: DO NOT use fuse designated for head lamp, tail lamp, stop lights, panel lights, or other critical fuses.**

*NOTE: If accessory fuse is not available in the fuse box use another fuse with a 10-15 amp designation, i.e. radio, lighter, etc.*

14. Cut end of "Red" wire to length, strip end and install the appropriate female spade terminal onto wire.

15. Attach female spade terminal to appropriate fuse tap-in and re-install fuse.

**IMPORTANT: The RED wire must be protected by a fuse. If it is not practical to attach this wire to a fused circuit in the vehicle fuse box an in line 10 amp fuse must be added to this wire.**

16. Attach the controller ground wire (black with ring terminal) to a grounding point inside the vehicle cab.



## WARNING

Disconnect vehicle NEG. (-) battery cable while performing Steps 17-24 to avoid serious bodily injury from fire or explosion.

**FAILURE TO HEED CAN RESULT IN INJURY OR DEATH.**

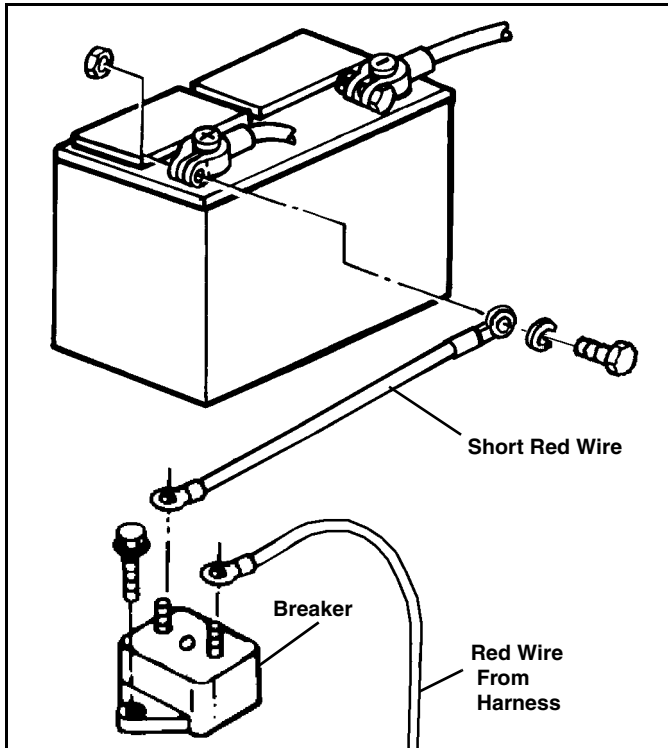


Figure 1-5

17. Locate short red wire (#96106728) with two ring terminals. Attach the small ring terminal to the copper colored post marked BAT on the breaker. Attach the other, large ring terminal to the battery positive terminal. (See Figure 1-5).

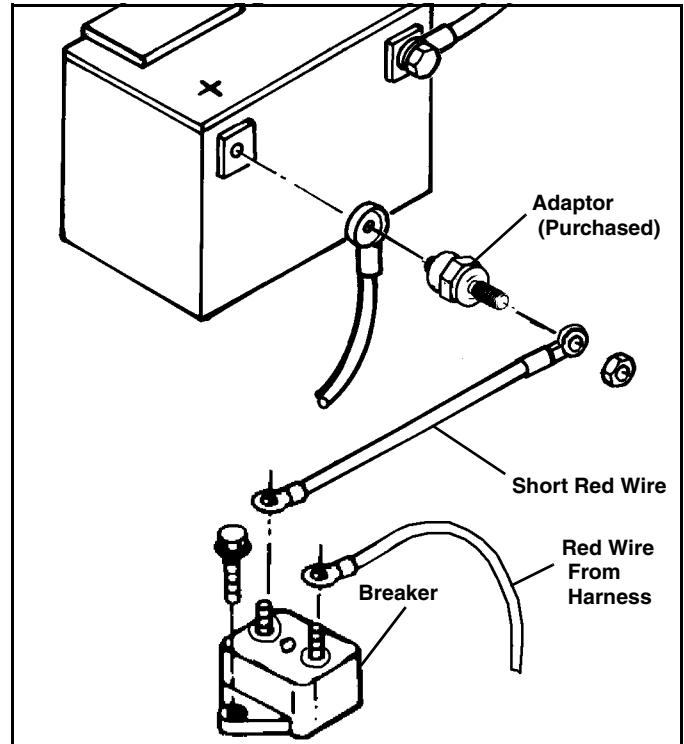


Figure 1-6

*NOTE: If the vehicle has a "side post" battery, it will be necessary to install adaptors (#96100773) to make connections at the vehicle battery (See Figure 1-6).*

**IMPORTANT: The circuit breaker must be placed in a location that will avoid excessive heat. DO NOT locate these parts near the engine exhaust manifold. A preferred location is one that will receive good air flow from the radiator fan, but be protected from excessive engine heat.**

18. Mount the circuit breaker with two (2) #10 x 1" self-tapping screws (#98100037).

19. Assemble the relay (from the bag of parts) onto the relay connector plug on the main wire harness. Mount the relay, using the mounting tab on the relay and a #10 x 1" self-tapping screw (#98100037) near the circuit breaker in a location that will avoid excessive heat.

20. Attach the ring terminal of the positive (RED) wire of the wiring harness to the other terminal of the circuit breaker.

21. Attach the black harness negative wire to the vehicle battery NEG (-) post.



## CAUTION

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

22. Route vehicle harness from engine compartment to rear bumper by the hitch receiver tube. Attach the harness assembly to the vehicle at different points in the cab and engine compartment and frame that will not allow the harness to come in contact with sharp edges, hot components and moving parts or mechanisms. Be sure the harness is supported and protected by the vehicle frame.

23. Fasten the main harness to the rear of the vehicle near the bumper. Leave enough slack in the harness so that the motor harness from the spreader can be connected easily and not be under tension.

24. Connect the motor harness from the spreader to the main wire harness.

## Battery Safety



## WARNING

- **Never lay tools or equipment on the battery. You could accidentally ground the POSITIVE (+) battery terminal, resulting in electrical shock, burns or damage to equipment.**

- **Always disconnect the battery before removing or replacing electrical components such as the starter relay or battery cables.**

**FAILURE TO HEED CAN RESULT IN INJURY OR DEATH.**

# OPERATION

## Freeing Up/Preventing Stuck Conveyor Chain

1. To help prevent a frozen conveyor chain, empty the spreader when not in use.
2. If the Conveyor Chain becomes “stuck” or “frozen”, remove the material from the hopper and free the chain, or move the spreader to a warm area to thaw the material.
3. Do not attempt to free the chain by using a pipe wrench or any other tool on the output shaft of the gear case. The gear case is designed to accept torque from the output shaft only. Attempts to turn the output shaft will strip the gears and void any warranty.

## Shield Adjustment

Spread pattern, and the amount of material dispensed, depends on engine RPM, gate position, and shield settings.

- *Decreasing* RPM, and/or gate-opening, will *decrease* the amount of material coming to the spinner.
- *Increasing* RPM, and/or gate opening, will *increase* the amount of material coming to the spinner.

## External Shield Configuration

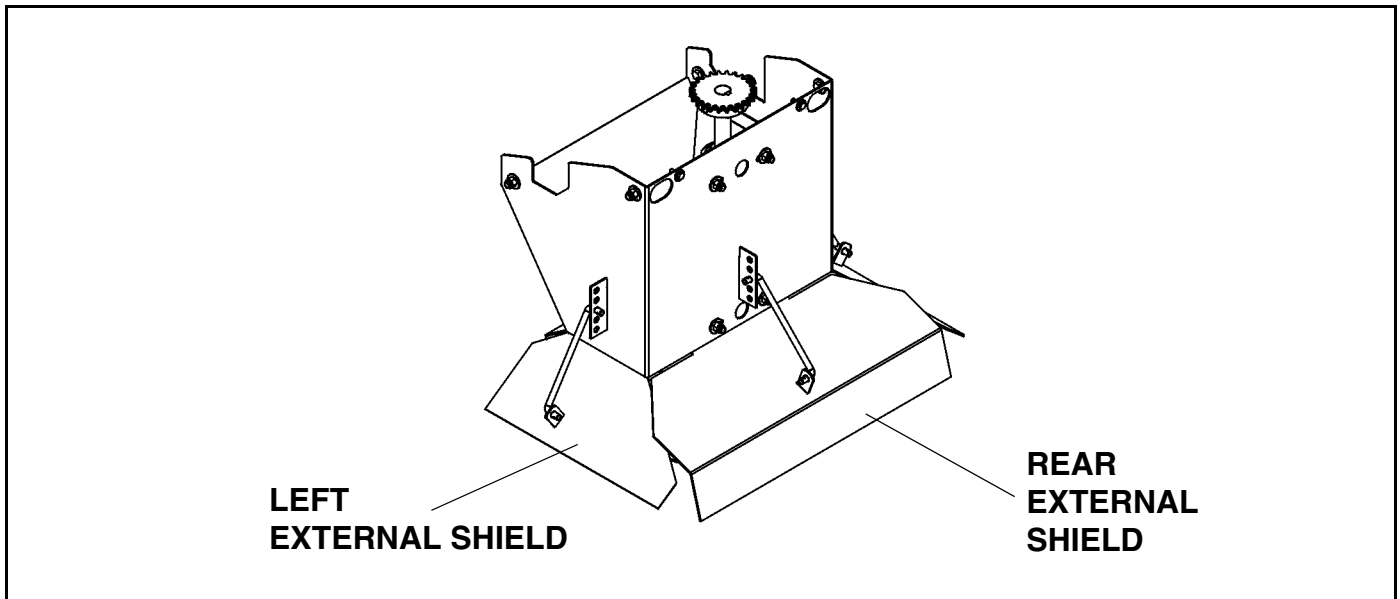


Figure 2-1

## External Shield Adjustment

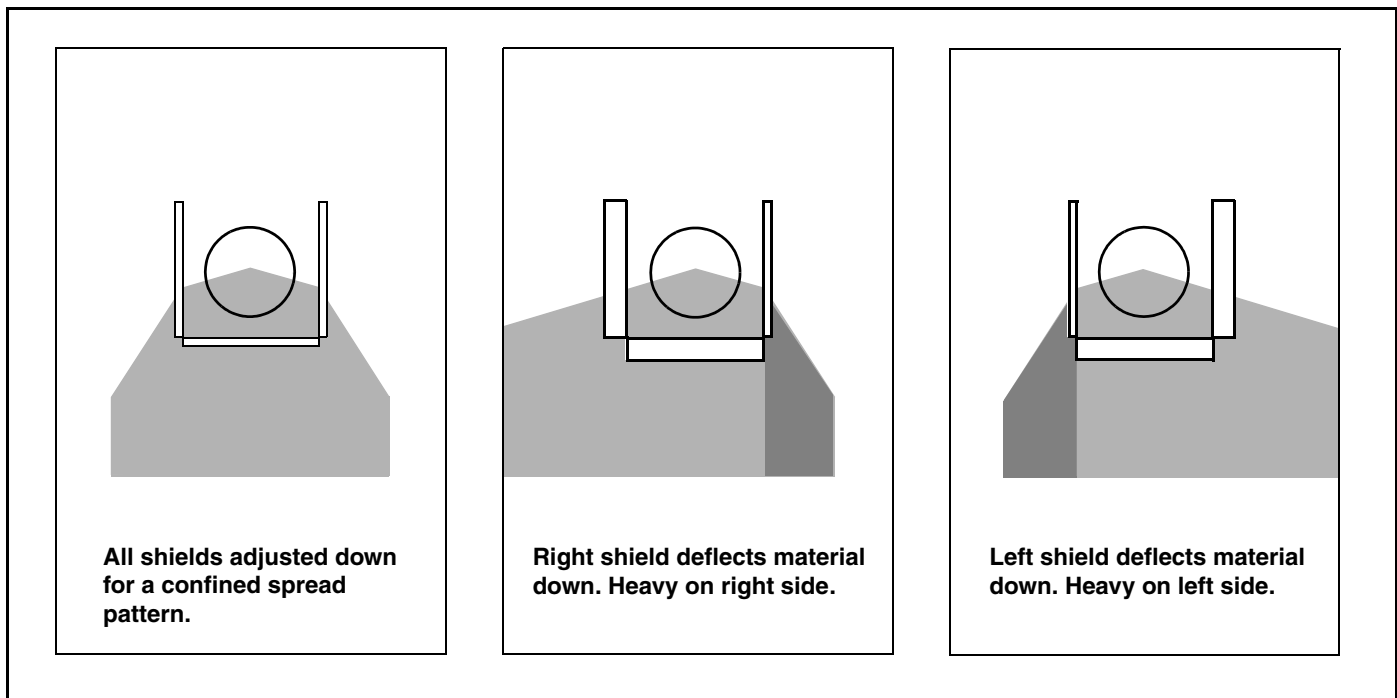



Figure 2-2

## Electric Spreader 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 salt spreader controller.

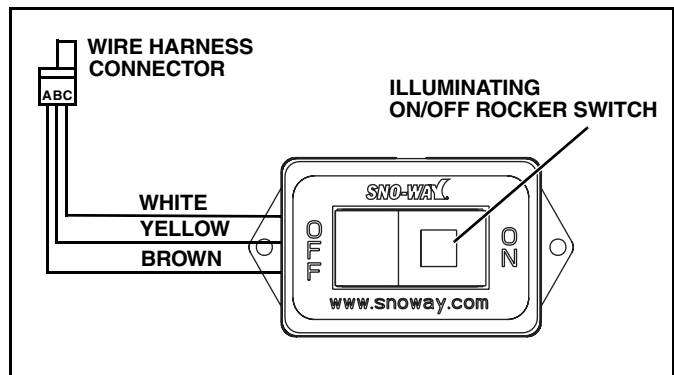


Figure 2-3

spinner drive motor.

Current is supplied by a control power lead (RED wire) from the vehicle fuse block and must be protected by a fuse no greater than 15 amps. This control power lead must also be connected to the fuse block so that the controller receives current **ONLY** when the vehicle ignition is in the ACC position or RUN position. (See "ON/OFF CONTROL - ELECTRIC SPREADER" on page 26.)

The spinner drive motor is protected by a 40 amp circuit breaker installed in the wiring system near the vehicle battery.

The following control and indicator is located on the face of the control box:

- Illuminating ON/OFF rocker switch—used to start or stop spinner motor. Switch is an illuminating, rocker type switch.

### Start:

The ON/OFF switch on the front of the control box is an illuminating rocker switch. When the ON side of the switch is depressed, current will be directed to the spinner drive motor and the indicator light behind the rocker switch will illuminate to indicate that power is ON to the spinner drive motor. Also, when the ON switch is depressed, the motor control will go to FULL.

The motor controller controls the speed of the spinner drive motor by supplying set voltage and current to the



## WARNING

**Make sure that the vehicle ignition switch is in the OFF position and key removed from the switch before inspecting the Spreader for cause of obstruction.**

**FAILURE TO HEED CAN RESULT IN INJURY  
OR DEATH.**

If the spinner drive motor stalls, press the OFF side of the ON/OFF switch to shut off the power to the spinner drive motor. Turn off the vehicle ignition and remove the key from the ignition switch. Inspect the hopper and the spinner drive to determine the cause of the obstruction.

Correct the problem and test to make sure everything is clear, then restart the spinner drive motor.

### **Disconnect Protection:**

The ground wire to the controller circuit must be connected to a good ground on the vehicle to insure proper controller function. In case the control ground is lost, by a disconnected ground wire or poor/improper ground, the controller will automatically shut down. If the ON/OFF switch is depressed (ON) and the switch **DOES NOT** illuminate, it will indicate an improper ground to the controller.

### **Ignition Switch Shutoff Procedures:**

If the vehicle ignition switch is turned OFF while the spreader control is in the ON position, the spinner drive will shut off. When the vehicle ignition switch is then turned ON, the spreader control switch must be manually depressed to the ON position to restart the spinner drive.

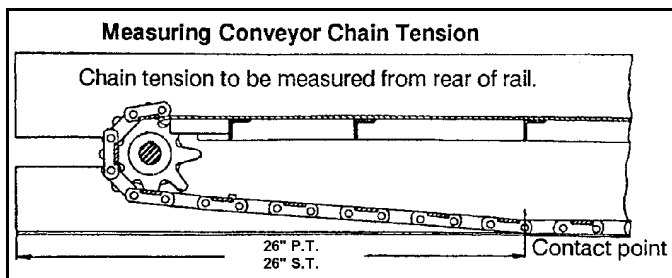
# MAINTENANCE

## General

- Use Quaker State NYK-77 dielectric grease, PN3329 or an equivalent grease, on all electrical connections at the beginning and end of each season, and as required during the season.
- Grease the idler bearings on the Idler Shaft, flanged bearings on the Drag Shaft, and spinner shaft bearings every 10 hours of operation.
- Grease the input shaft bearing on the Gear Case every 50 hours of operation.

*NOTE: Over-greasing may cause seal damage. The Gear Case must be filled to the oil level plug with SAE 90 gear-type lubricant. Keep the breather plug clean.*

- Check the Conveyor Chain slack periodically. Check the tension by measuring the distance between the end of the rear rail and the point where the chain contacts the lower flange on the rail. The correct distance for adjustment is 26" to 30". (See Figure 3-1).



**Figure 3-1**

- Maintain electric motor-to-gear case roller chain tension. Correct chain tension allows 5/16" deflection midway between the sprockets. Oil this chain often, and at the end of each season.
- Maintain spinner shaft-to-gear case roller tension. Correct chain tension allows 5/16" deflection midway between the sprockets. To increase chain tension, loosen the bearing mounting hardware and adjust chain tension with 5/16" adjusting bolts. After adjusting, re-tighten bearing hardware. Make sure the Spinner Shaft is vertical and the sprockets are in line before re-tightening the fasteners. Oil this chain often, and at the end of the season.

*NOTE: Over-tightening the roller chains may damage the bearings on the Gear Case, the electric motor, and the Spinner Shaft. Over-tightening will also shorten the life of the roller chain and of the sprockets.*

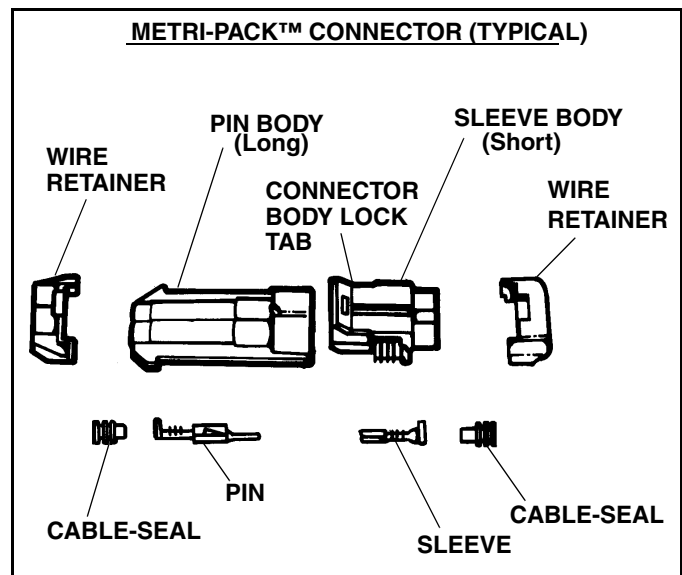
- Empty the spreader when it is not in use to prevent frozen conveyor chain.
- Wash out the spreader when it is not in use. At the end of the season, oil or paint all bare surfaces after washing and prior to storing the unit.

## Electric Motor Service

The electric motor is a non-service part, and is warranted for one year after the purchase of the spreader from a Dealer.

If the motor is not working properly, and all the harness connections have been checked thoroughly for good contact, a Sno-Way Dealer should check the spreader for service, and replace the motor if necessary.

## Metri-Pack™ Connector Repair

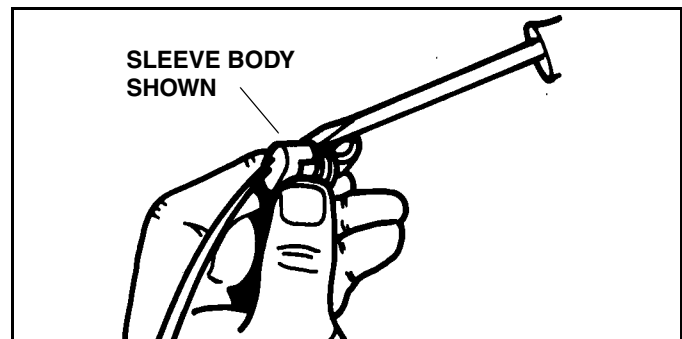


**Figure 3-2**

**IMPORTANT:** Identify wire number/color locations with connector terminal letters before disassembly.

### Terminal Removal

1. Lift connector body lock tab and pull to separate connector halves.



**Figure 3-3**

2. Remove wire retainer on sleeve body or pin body, as necessary, with a screwdriver and save for re-use (See Figure 3-3).

3. Push wire into connector as far as possible to release pressure on terminal locking tang.

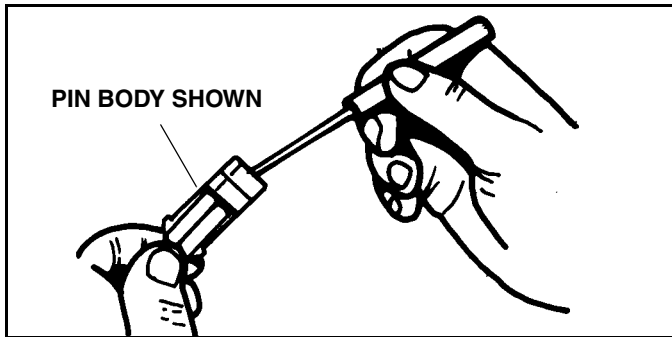


Figure 3-4

4. Locate the terminal lock tang in the connector cavity by looking into the connector from the mating end. Use Terminal Removal Tool (#96102499) to depress the lock tang and gently pull wire to remove wire and terminal from connector body. (See Figure 3-4).

### Terminal Replacement

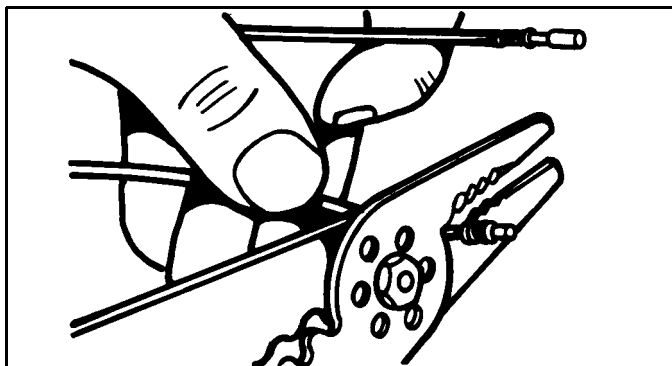


Figure 3-5

1. Cut wire as close as possible to old terminal and remove old cable seal. (See Figure 3-5).

**IMPORTANT: METRI PACK™ connectors are keyed A, B, C, etc. for proper contact mating. Be sure contacts and wire colors/numbers match and are in proper alignment.**

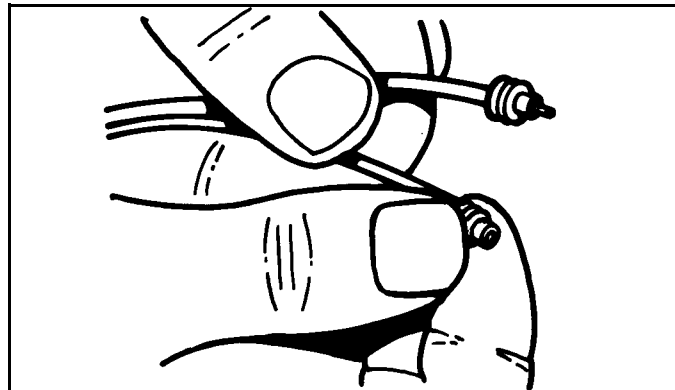


Figure 3-6

2. Install new correct size cable seal on wire.

Cable seals are available for three sizes of wire:

- Large - 1.0 mm (16 gauge) wire
- Medium - 0.8 mm (18 gauge) wire
- Small - 0.5 mm (20 gauge) wire

3. Strip insulation from wire to expose 6mm (1/4 in) and align cable seal with edge of insulation.

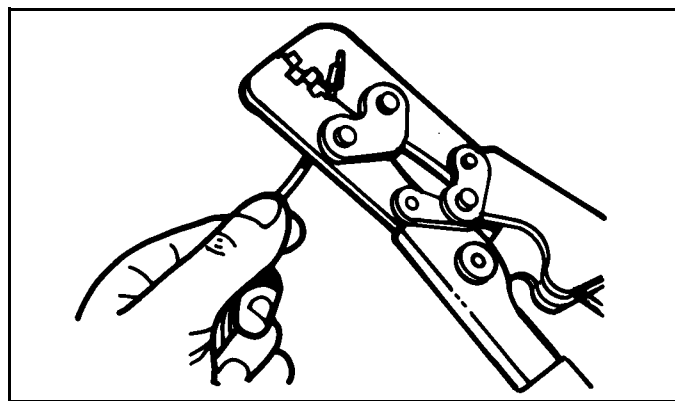


Figure 3-7

4. Place appropriate terminal on wire and use Crimper (#96102500) to secure contact in place with a “W” type crimp.

5. Use Crimper to secure cable seal to terminal.

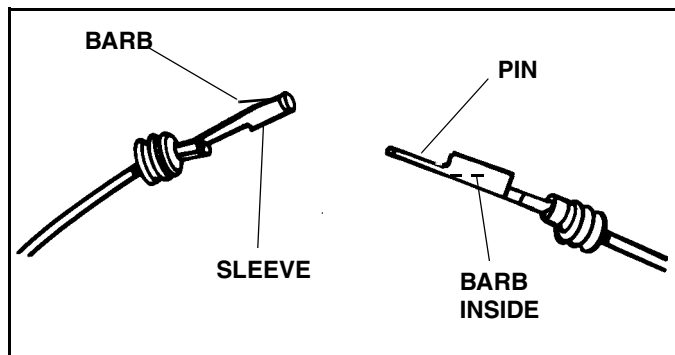
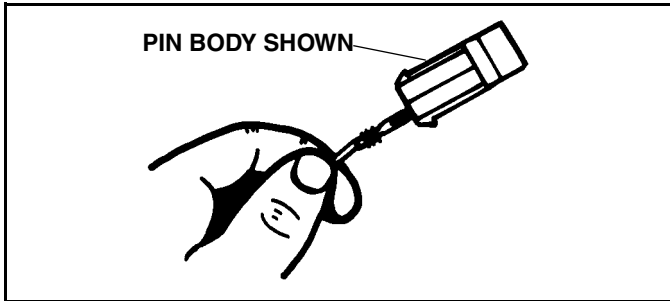


Figure 3-8

**IMPORTANT: Proper barb location and orientation**

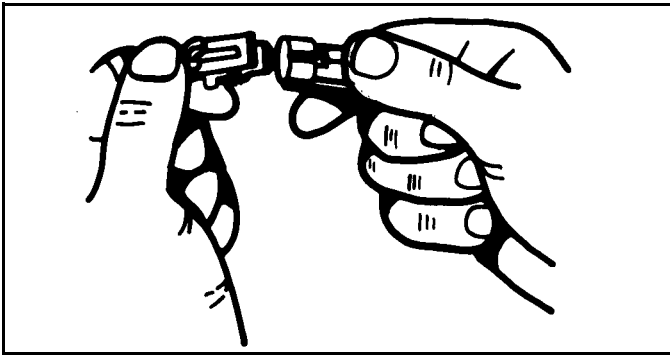
for installation of sleeve and pin is shown.

*NOTE: Connector bodies are keyed for proper terminal mating. Be sure terminals are in proper alignment.*



**Figure 3-9**












6. Push new terminal into connector body until fully seated.
7. Pull on wire slightly to be certain terminal is locked in place.
8. Install wire retainer.
9. Repeat as necessary to replace other terminals.



**Figure 3-10**

10. Close connector body.

# TORQUE SPECIFICATIONS

SAE Grade and Head Markings	1 or 2 No Marks 	5  5.1  5.2 	8  8.2 
	2 No Marks 	5  	8  

	Grade 1		Grade 2		Grade 5, 5.1 or 5.2		Grade 8 or 8.2	
	Lubricated <sup>a</sup>	Dry <sup>b</sup>	Lubricated <sup>a</sup>	Dry <sup>b</sup>	Lubricated <sup>a</sup>	Dry <sup>b</sup>	Lubricated <sup>a</sup>	Dry <sup>b</sup>
SIZE	lb-ft	lb-ft	lb-ft	lb-ft	lb-ft	lb-ft	lb-ft	lb-ft
10-24			21*	27*	32*	43*	45*	60*
1/4	2.8	3.5	4.5	5.5	7	9	10	12.5
5/16	5.5	7	9	11	15	18	21	26
3/8	10	13	16	20	26	33	36	46
7/16	16	20	26	32	41	52	58	75
1/2	25	31	39	50	63	80	90	115
9/16	36	45	56	70	90	115	130	160
5/8	50	62	78	100	125	160	160	225
<b>Metric Grade 8.8</b>								
SIZE	lb-ft		SIZE	lb-ft				
M6	7		M12	60				
M8	17		M14	95				

DO NOT use these values if a different torque value or tightening procedure is given for a specific application.

Fasteners should be replaced with the same or higher grade. If higher grade fasteners are used, these should only be tightened to the strength of the original.

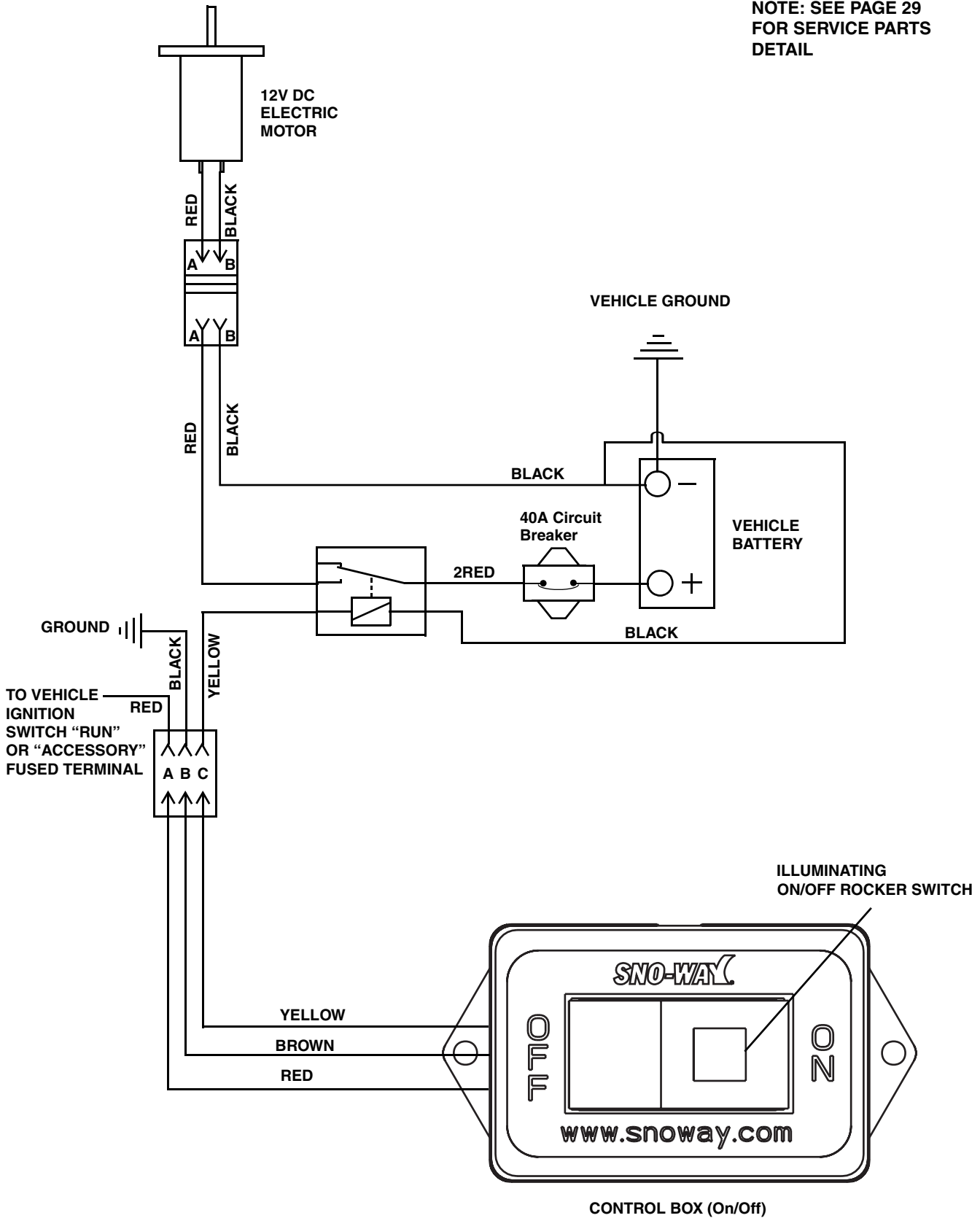
<sup>a</sup> "Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings.

<sup>b</sup> "Dry" means plain or zinc plated without any lubrication

\* Values with asterisk are in lb-in.

# WIRING SCHEMATIC - ELECTRIC SPREADER (On/Off Control)

**NOTE: SEE PAGE 29  
FOR SERVICE PARTS  
DETAIL**



# 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

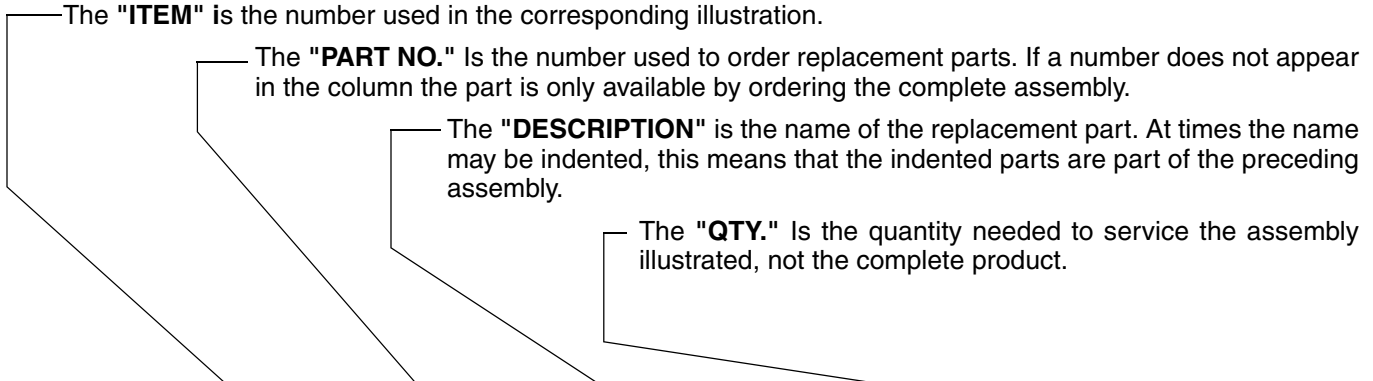
Below is parts listing with four columns. The first column is the "ITEM", the second is the "PART NUMBER", The third is the "DESCRIPTION" and the fourth is the "QUANTITY".

The **"ITEM"** is the number used in the corresponding illustration.

The **"PART NO."** Is the number used to order replacement parts. If a number does not appear in the column the part is only available by ordering the complete assembly.

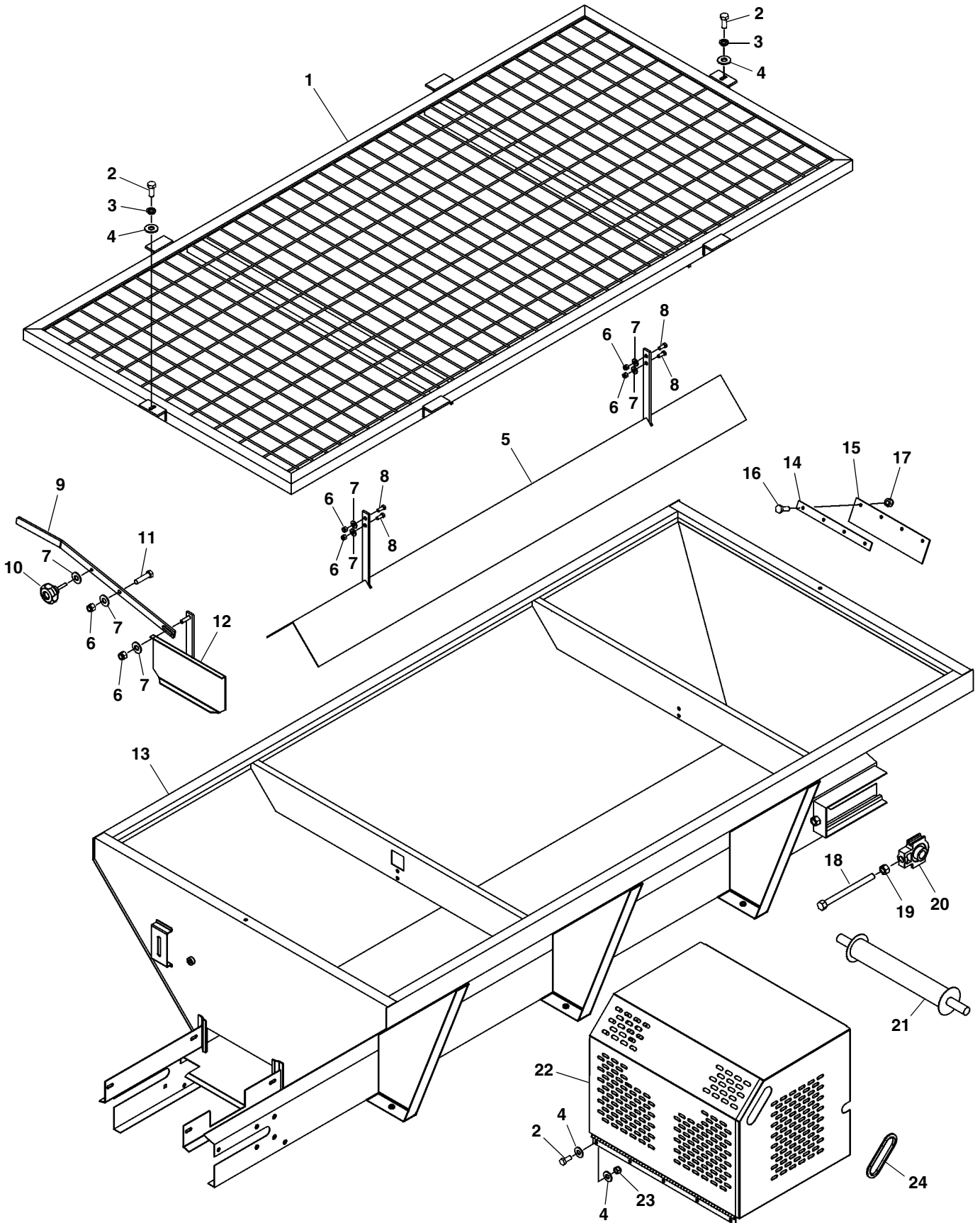
The **"DESCRIPTION"** is the name of the replacement part. At times the name may be indented, this means that the indented parts are part of the preceding assembly.

The **"QTY."** Is the quantity needed to service the assembly illustrated, not the complete product.



ITEM	PART NO.	DESCRIPTION	QTY.
1	96100083	O-ring	1
2	96001529	Elbow	3
3	98100036	Capscrew, Hex., 3/8"-16NC x 7/8"	9

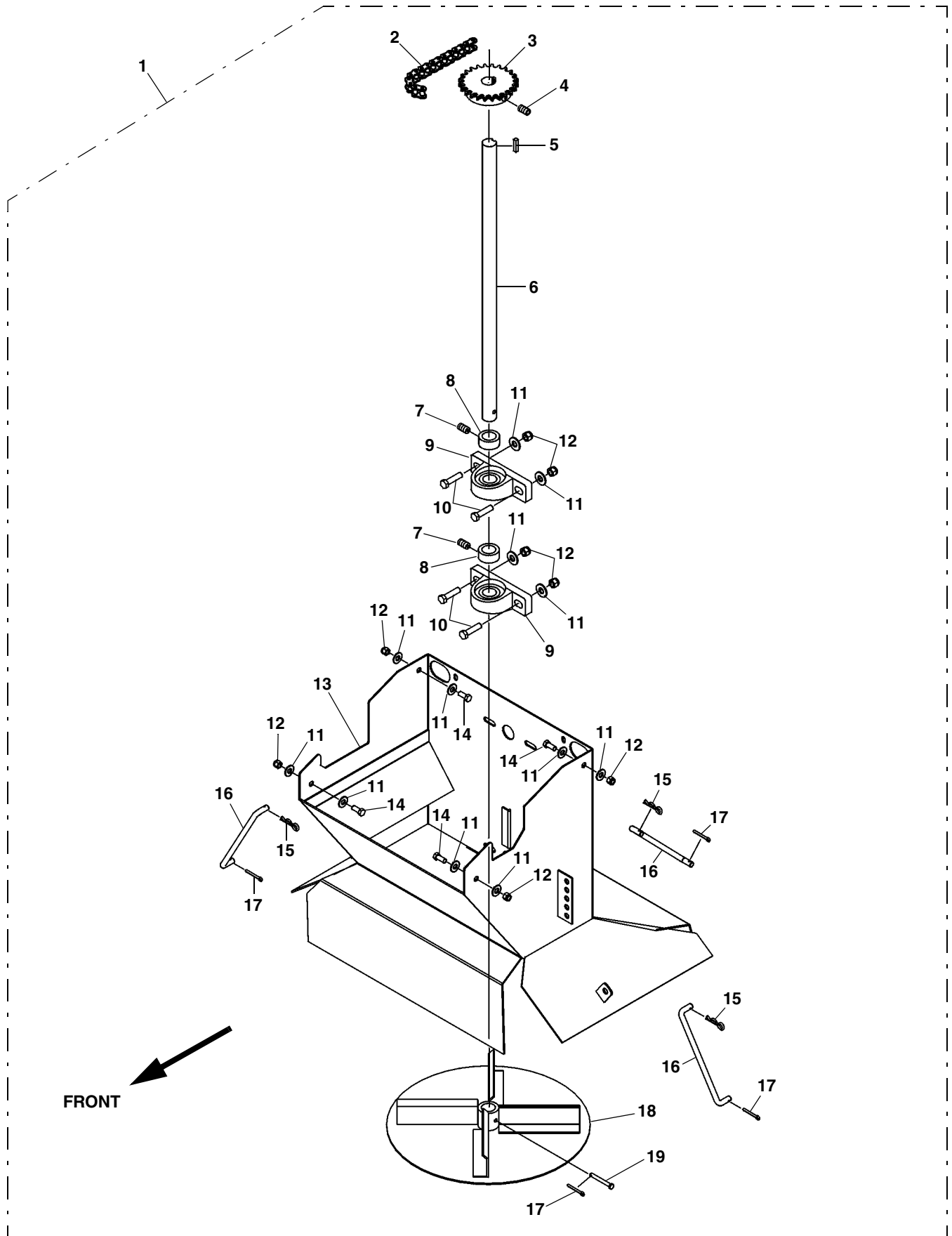
# SPREADER BODY



# SPREADER BODY

ITEM	PART NO.	DESCRIPTION	QTY.
1	99100429	Top Screen, 8 FT Welded Rod. . . . .	1
2	98100112	Cap Screw, Hex Head, 5/16-18 x 3/4, SS . . . . .	7
3	98100331	Washer, Lock, 5/16, SS . . . . .	2
4	98100123	Washer, Plain, 5/16, SS . . . . .	12
5	99100457	Inverted- Vee, 8 FT, MS . . . . .	1
	99100461	Inverted- Vee, 8 FT, SS . . . . .	1
6	98100235	Nut, Nylon Insert, 3/8-16, SS . . . . .	6
7	98100124	Washer, 3/8, SS . . . . .	7
8	98100357	Cap Screw, Hex head, 3/8-16 x 7/8, SS . . . . .	4
9	96104747	Handle, Feed Gate, 15" Wide . . . . .	1
	96104748	Handle, Feed Gate, 15" Wide, SS . . . . .	1
10	96104746	Knob, Locking . . . . .	1
11	98100213	Cap Screw, Hex Head, 3/8-16 x 1-1/2, SS . . . . .	1
12	96110360	Feed Gate, 15" Wide, MS . . . . .	1
	96110359	Feed Gate, 15" Wide, SS . . . . .	1
13		Main Hopper Frame (not available separately) . . . . .	1
14	96104749	Plate, Mount, Wiper . . . . .	1
15	96104750	Wiper, Rubber, 15" Wide . . . . .	1
16	98100334	Cap Screw, Hex Head, 1/4-20 x 3/4, SS . . . . .	4
17	98100119	Nut, Nylon Insert, 1/4-20, SS . . . . .	4
18	98100237	Cap Screw, Hex Head, 5/8-11 x 6", SS . . . . .	2
19	98100220	Nut, Hex, 5/8-11, SS . . . . .	2
20	96104762	Bearing, Take Up, 1" ID . . . . .	2
21	96104751	Roller, Return, 15" Wide . . . . .	1
22	96104744	Cover, MS, 15" Wide . . . . .	1
	96104745	Cover, SS, 15" Wide . . . . .	1
23	98100118	Nut, Nylon Insert, 5/16-18, SS . . . . .	5
24	96109186	Handle, Hood, V-Box . . . . .	2

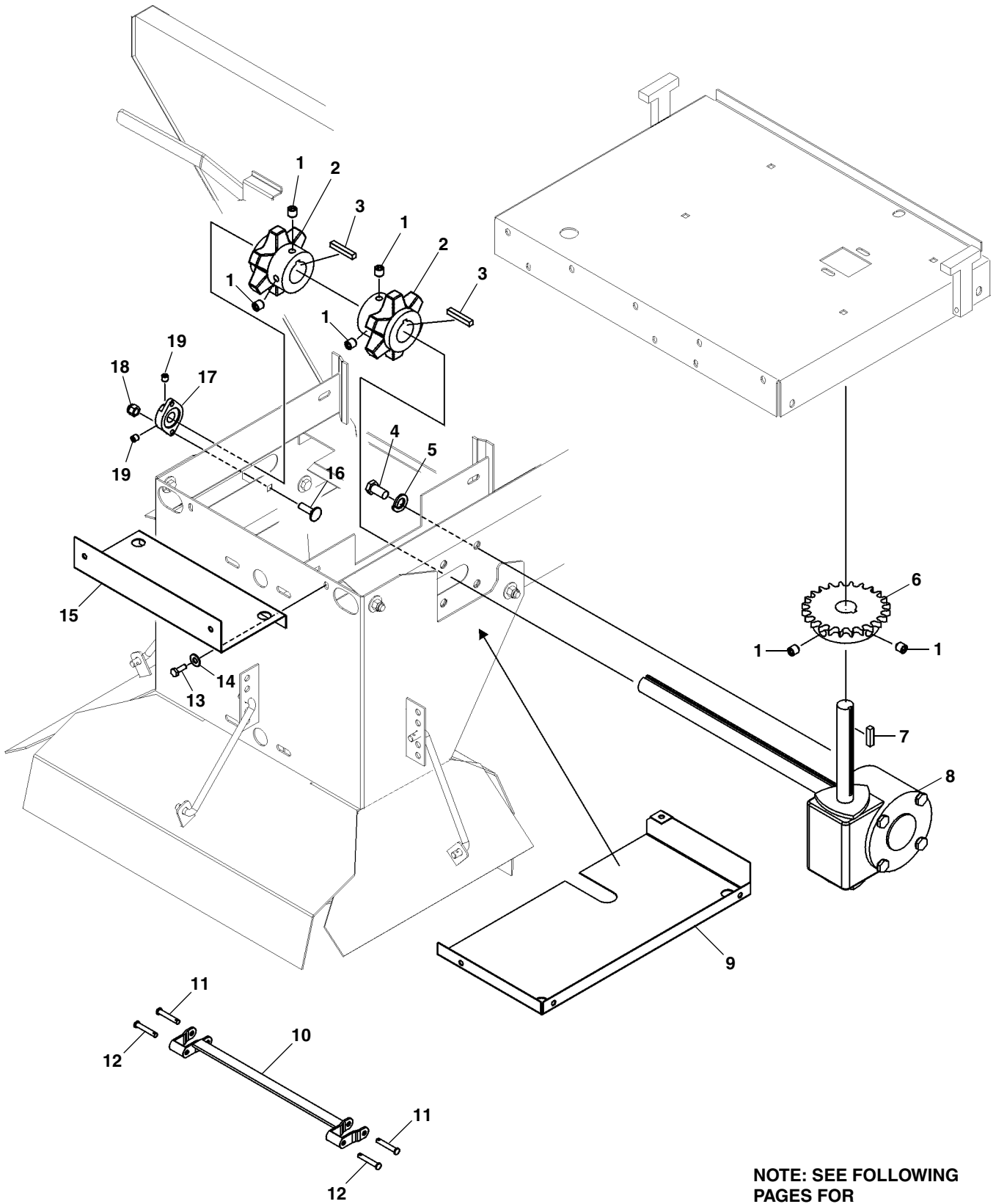
# CHUTE/SPINNER ASSEMBLY



# CHUTE/SPINNER ASSEMBLY

ITEM	PART NO.	DESCRIPTION	QTY.
1	99100904	PKG, Chute, Short, MS, LGS	1
	99100906	PKG, Chute, Long, MS, LGS	1
	99100905	PKG, Chute, Short, SS, LGS	1
	99100907	PKG, Chute, Long, SS, LGS	1
2	96110353	Chain, #40, 68 Links (34 pairs)	1
3	96104634	Sprocket, 24 Tooth	1
4	98100354	Set Screw, Sprocket, 5/16-18 x 1/4	2
5	98100236	Keyway, 1/4 x 1/4 x 1	1
6	96109204	Shaft, Spinner, 24", Short Chute	1
	96109223	Shaft, Spinner, 36", Long Chute	1
7	98100355	Set Screw, Bearing, 1/4-28 x 1/4	4
8	96109191	Collar, Bearing, 1" I.D.	2
9	96104633	Bearing, Pillow Block, 1" I.D.	2
10	98100213	Cap screw, Hex Head, 3/8-16 x 1-1/2, SS	4
11	98100124	Washer, Plain, 3/8, SS	12
12	98100235	Nut, Hex Nylon Insert, 3/8-16, SS	8
13	96109224	Chute, SS, Short	1
	96109225	Chute, MS, Short	1
	96109226	Chute, SS, Long	1
	96109227	Chute, SS, Long	1
14	98100357	Cap Screw, Hex Head, 3/8-16 x 7/8, SS	4
15	98100205	Pin, Cotter, 3/32" x 2-1/4"	3
16	96104629	Rod, Control, Shield	3
17	98009159	Pin, Cotter, 3/32" x 1"	4
18	96104627	Spinner, Disk, MS	1
	96104628	Spinner, Disk, SS	1
19	98100230	Pin, Clevis, 1/4" x 2" (Spinner Retainer)	1

# CONVEYOR DRIVE AND IDLER

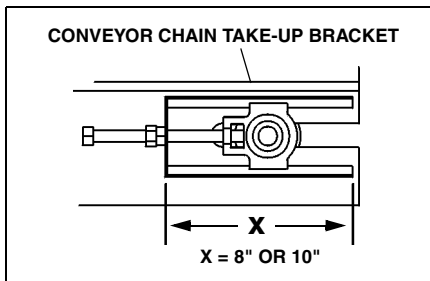


NOTE: SEE FOLLOWING PAGES FOR MOTOR DRIVE DETAIL

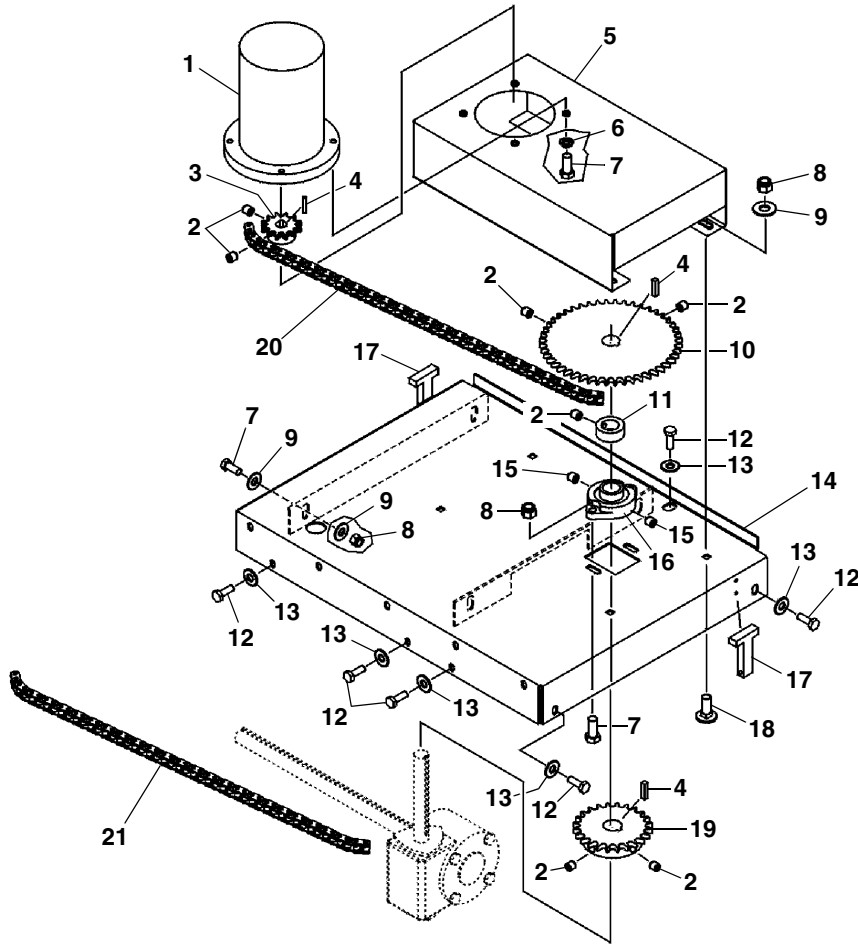
# CONVEYOR DRIVE AND IDLER

ITEM	PART NO.	DESCRIPTION	QTY.
1	98100354	Set Screw, 5/16-18 x 1/4 . . . . .	6
2	96104644	Sprocket, 6 Tooth, Drag Chain . . . . .	2
3	98100224	Keyway, 1/4 x 1/4 x 1-1/2 . . . . .	2
4	98100362	Bolt, Hex, 1/2-13 x 3/4, SS . . . . .	4
5	98009012	Washer, Lock, 1/2, SS . . . . .	4
6	96104634	24 Tooth Sprocket . . . . .	1
7	98100236	Keyway, 1/4 x 1/4 x 1.00. . . . .	1
8	96108602	Gear Box, 50:1, 15" Wide . . . . .	1
9	96109209	Guard, Gear Box . . . . .	1
10	96106838	Link, Drag Chain . . . . .	1
11	96109228	Pin, Chain, Keyed. . . . .	2
12	96109229	Pin, Chain, No Key. . . . .	2
13	98100334	Bolt, Hex, 1/4-20 x 3/4, SS . . . . .	2
14	98100122	Washer, 1/4, SS . . . . .	2
15	96109210	Guard, Chain . . . . .	1
16	98100356	Bolt, Carriage, 3/8-16 x 1-1/4" . . . . .	2
17	96104651	Bearing, Flanged, 1-1/8 ID . . . . .	1
18	98100235	Nut, Nylock, 3/8-16, SS . . . . .	2
19	98100355	Set Screw, 1/4-28 x 1/4 . . . . .	2
20*	96108750	Drag Chain, 8', 15" Wide, 119 Links, X=10". . . . .	1

\* Not Shown

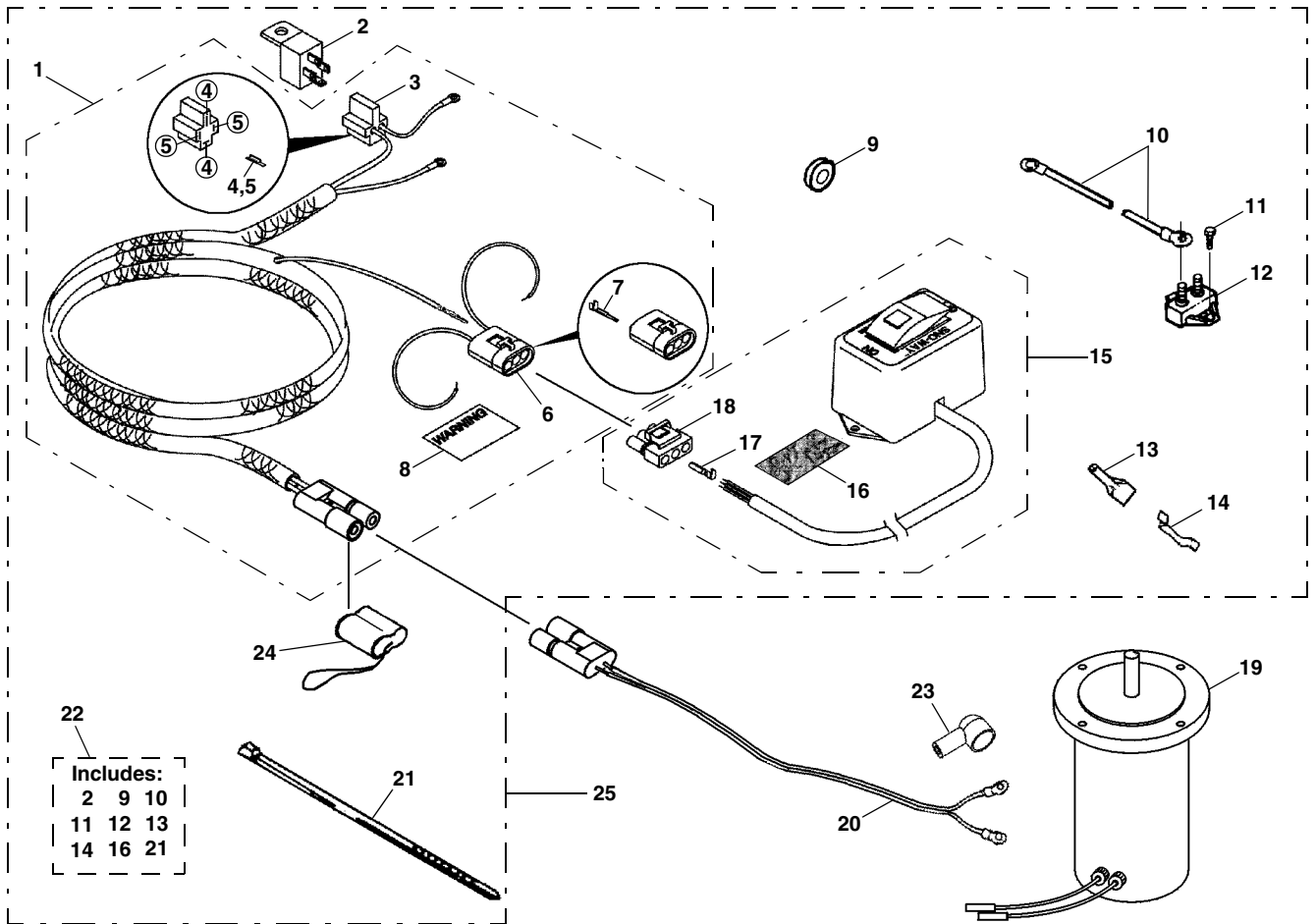


# MOTOR PLATE & DRIVE - ELECTRIC SPREADER



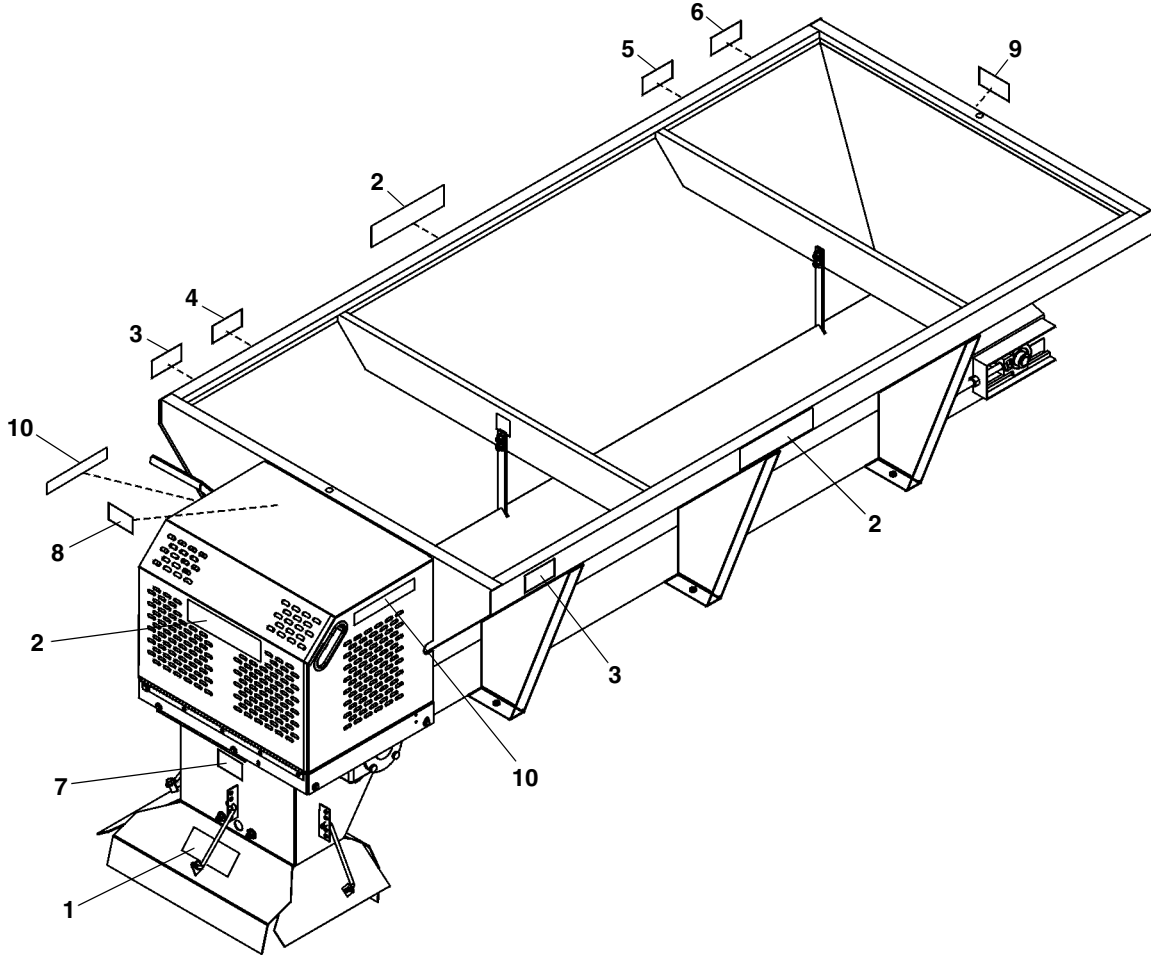
ITEM	PART NO.	DESCRIPTION	QTY.
1	96106598	Motor, Electric, .5 HP (See page 26 for brush kits)	1
2	98100354	Set Screw, 5/16-18 x 1/4	7
3	96106732	12 Tooth Sprocket	1
4	98100236	Keyway, 1/4 x 1/4 x 1.00	3
5	96110357	Electric Motor Mount	1
6	98100331	Washer, Lock, 3/8, SS	4
7	98100357	Capscrew, Hex Head, 3/8-16 x 7/8, SS	10
8	98100235	Nut, Nylock, 3/8-16, SS	10
9	98100124	Washer, 3/8, SS	12
10	96110352	60 Tooth Sprocket	1
11	96104668	Collar, 1.00 ID	1
12	98100334	Cap Screw, Hex, 1/4-20 x 3/4, SS	6
13	98100122	Washer, 1/4, SS	6
14	96107276	Electric Motor Base, MS, 15" Wide	1
	96107277	Electric Motor Base, SS, 15" Wide	1
15	98100355	Set Screw, 1/4- 28 x 1/4	2
16	96104652	Flange Bearing, 1.00 ID	1
17	96104641	Rubber Hold Down Latch, Hood	2
18	98100359	Bolt, Carriage, 3/8-16 x 1, SS	4
19	96104634	24 Tooth Sprocket	1
20	96110354	Chain, Motordrive, 72 Links (36 pairs)	1
21	96110353	Chain, #40, 68 Links (34 pairs)	1

# ON/OFF CONTROL - ELECTRIC SPREADER



ITEM	PART NO.	DESCRIPTION	QTY
1	96106630	Harness, On/Off Control . . . . .	1
2	96105891	Relay, 70A . . . . .	1
3	96105946	Connector, Harness Relay . . . . .	1
4	96105947	Terminal, Female, 10-12 AWG, Relay . . . . .	2
5	96105948	Terminal, Female, 12-16 AWG, Relay . . . . .	2
6	96105940	Connector, Male . . . . .	1
7	96105942	Terminal, Male Pin. . . . .	3
8	97100034	Decal, Warning . . . . .	1
9	96104893	Grommet, 1/2" dia. . . . .	1
10	96106728	Wire, Power . . . . .	1
11	98100037	Screw, Self Tapping #10 x 1" . . . . .	2
12	96102344	Breaker, Circuit, 40A . . . . .	1
13	96002085	Terminal, 1/4", Female Push-On . . . . .	1
14	96101845	Connector, Female . . . . .	1
15	96002083	Tap, 1/4", ATC/ATO Fuse. . . . .	1
16	96101832	Tap, 1/4", Mini Fuse. . . . .	1
17	96105793	Controller, On/Off . . . . .	1
18	96105945	Strip, Hook and Loop Fastener . . . . .	1
19	96105943	Terminal, Female. . . . .	2
20	96105941	Connector, Female . . . . .	1
21	96106598	Motor, 12VDC . . . . .	1
22	96111355	Kit, Brush, Leeson Motor (Two (2) brushes in kit)	
23	96109925	Kit, Brush, Canimex Motor (One (1) brush in kit)	
24	96106628	Harness, Motor . . . . .	1
25	96001227	Tie, Cable . . . . .	5
26	96106729	Bag of Parts (On/Off Control) . . . . .	1
27	96106374	Boot, Cable (use with ring terminal connection) . . . . .	1
28	96105082	Cap Cover, Harness End . . . . .	1
29	99100621	Package, Electric Spreader Harness . . . . .	1

# DECAL AND DECAL LOCATION



ITEM	PART NO.	DESCRIPTION	QTY.
1	97100684	Decal, Warning . . . . .	1
2	97100882	Decal, "Sno-Way" . . . . .	3
3	97100697	Decal, Warning . . . . .	2
4	97100680	Decal, Important . . . . .	1
5	97100678	Decal, Warning . . . . .	1
6	97100679	Decal, Warning . . . . .	1
7	97100683	Decal, Warning . . . . .	1
8	.....	Plate, Serial No. . . . .	1
9	97100681	Decal, Warning . . . . .	1
10	97101152	Decal, Quiet Electric Power . . . . .	2
11*	96107040	Decal Kit, Electric. . . . .	2

\* Not Shown

# NUMERICAL INDEX

PART NO.	PAGE	ITEM	PART NO.	PAGE	ITEM	PART NO.	PAGE	ITEM
96001227	26	21	96109186	20	24	98100236	22	5
96002083	26	14	96109191	22	8		24	7
96002085	26	13	96109204	22	6		25	4
96101832	26	14	96109209	24	9	98100237	20	18
96101845	26	13	96109210	24	15	98100331	20	3
96102344	26	12	96109223	22	6		25	6
96104627	22	18	96109224	22	13	98100334	20	16
96104628	22	18	96109225	22	13		24	13
96104629	22	16	96109226	22	13		25	12
96104633	22	9	96109227	22	13	98100354	22	4
96104634	22	3	96109228	24	11		24	1
	24	6	96109229	24	12		25	2
	25	19	96109925	26	19	98100355	22	7
96104641	25	17	96110352	25	10		24	19
96104644	24	2	96110353	22	2		25	15
96104651	24	17		25	21	98100356	24	16
96104652	25	16	96110354	25	20	98100357	20	8
96104668	25	11	96110357	25	5		22	14
96104744	20	22	96110359	20	12		25	7
96104745	20	22	96110360	20	12	98100359	25	18
96104746	20	10	96111355	26	19	98100362	24	4
96104747	20	9	97100034	26	8	99100429	20	1
96104748	20	9	97100678	27	5	99100457	20	5
96104749	20	14	97100679	27	6	99100461	20	5
96104750	20	15	97100680	27	4	99100621	26	25
96104751	20	21	97100681	27	9	99100904	22	1
96104762	20	20	97100683	27	7	99100905	22	1
96104893	26	9	97100684	27	1	99100906	22	1
96105082	26	24	97100697	27	3	99100907	22	1
96105793	26	15	97100882	27	2			
96105891	26	2	97101152	27	10			
96105940	26	6	98009012	24	5			
96105941	26	18	98009159	22	17			
96105942	26	7	98100037	26	11			
96105943	26	17	98100112	20	2			
96105945	26	16	98100118	20	23			
96105946	26	3	98100119	20	17			
96105947	26	4	98100122	24	14			
96105948	26	5		25	13			
96106374	26	23	98100123	20	4			
96106598	25	1	98100124	20	7			
	26	19		22	11			
96106628	26	20		25	9			
96106630	26	1	98100205	22	15			
96106728	26	10	98100213	20	11			
96106729	26	22		22	10			
96106732	25	3	98100220	20	19			
96106838	24	10	98100224	24	3			
96107040	27	11*	98100230	22	19			
96107276	25	14	98100235	20	6			
96107277	25	14		22	12			
96108602	24	8		24	18			
96108750	24	20*		25	8			

## **SNO-WAY® V-BOX ELECTRIC SPREADER LIMITED ONE-YEAR WARRANTY**

SNO-WAY® Warrants to the original retail purchaser for a period of one (1) year from the date of delivery from an authorized SNO-WAY® Dealer that your new SNO-WAY® V-BOX ELECTRIC SPREADER is free from defects in materials and workmanship if properly set up and operated in accordance with the recommendations set forth in SNO-WAY'S® Owner's, Installation and Parts Manuals. This warranty does not cover paint or normal wear items such as bearings and belts.

SNO-WAY® V-BOX ELECTRIC SPREADER used by a dealer as a demonstrator shall be warranted only for the period of one (1) year from the date of delivery to said dealer and the first subsequent purchaser shall be entitled to the remaining warranty protection.

This warranty shall not apply to any item of equipment which has been repaired or altered outside the SNO-WAY® factory or authorized SNO-WAY® dealership or which has been subject to misuse, negligence or accident; nor shall it apply to equipment which has not been operated in accordance with SNO-WAY® printed instructions or has been operated beyond SNO-WAY'S® recommended V-BOX ELECTRIC SPREADER operating parameters.

To validate this warranty, your dealer and you must complete the enclosed Warranty Registration Card at time of purchase of the SNO-WAY® V-BOX ELECTRIC SPREADER and return the Factory copy to SNO-WAY® International, Inc. within ten (10) days following delivery of your new SNO-WAY® V-BOX ELECTRIC SPREADER.

To obtain warranty service, promptly return your SNO-WAY® V-BOX ELECTRIC SPREADER or any defective part at your expense to any authorized SNO-WAY® dealer during the warranty period. Replacement or repair of defective or inadequate parts shall be performed without charge for labor or materials by such dealer at his regular place of business during regular business hours after inspection and determination that the warranty applies.

### **EXCLUSIONS OF WARRANTY**

Except as otherwise expressly stated herein, SNO-WAY® makes no representation of warranty of any kind expressed or implied, including merchantability or fitness for particular purpose in respect to the equipment.

SNO-WAY® shall not be liable for incidental or consequential damages for any breach of warranty, including but not limited to loss of use, inconvenience, rental or replacement equipment, loss of profits or other commercial loss.

No agent, employee or representative of SNO-WAY® has any authority to bind SNO-WAY® to any affirmation, representation or warranty concerning its equipment except as specifically set forth herein.

Certain limitations expressed herein are excludable in accordance with provisions of local law. Such limitations shall be deemed struck if such local law is applicable. All other limitations and provisions shall continue to apply.

**SNO-WAY® INTERNATIONAL, INC.**

**Hartford, WI 53027 USA**

**[www.snoway.com](http://www.snoway.com)**

**SNO-WAY® INTERNATIONAL, INC.**

**SNO-WAY®**  
**SNOW & ICE CONTROL EQUIPMENT**

Hartford, WI 53027 USA  
Website: [www.snoway.com](http://www.snoway.com)  
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# DEALER PRE-DELIVERY CHECKLIST

The following inspections **MUST** be accomplished prior to delivering the SNO-WAY® V-BOX ELECTRIC SPREADER to the customer. Place an X ☒ in the box after accomplishing each item on the checklist.

## CHECK THAT

- Parts have not been damaged in shipment. Repair or replace items that are loose, dented or missing.
- All covers, guards and decals are in place and attached securely.
- The drive chain and the conveyor chains are at the proper tension.
- Baffles can be adjusted to all positions.
- Controller and electrical wiring is properly installed.
- Electric drive motor is operating properly.
- Inverted V is installed properly (All Electric V-Box (EV) models).
- Chute has been lined up and spinner shaft - coupling interface mates properly.

Start the vehicle engine and place an X ☒ in the box after accomplishing each item.

## CHECK THAT

- Unit does not start until **START** switch is depressed.
- Drive shaft and spinner rotate freely.
- Drive rotation is correct (clockwise from top of hopper).
- Listen for abnormal noises or vibrations; Repair or replace as necessary.
- Ignition switch safety shutoff functions correctly.

# DELIVERY CHECKLIST

The following checklist is to be accomplished with the customer present, place an X ☒ in the box after accomplishing each item.

- After giving the customer his operating manual, instruct him to read it **PRIOR** to operating the spreader. If he has any questions or does not understand part(s) of the manual, ask him to contact the dealer for answers or explanations **BEFORE** operating the unit.
- Record the spreader serial numbers, date of purchase, purchaser's name and address, and the dealers name, address and phone number in the space provided on page 1 of the owner's manual.
- Explain spreader connect and disconnect procedures.
- Demonstrate controller operation and burst function.
- Fill out Warranty Registration Card and mail COPY 1 to the factory to validate Warranty. NO Warranty claims can be honored if the Warranty Card is not on file at the factory.

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