

2017

INSTALLATION GUIDE FOR STAINLESS STEEL SPREADER CONVERSION KIT SNOWRATOR

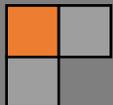




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1.0 SHIPPING CONTENTS

SRA-10020 CONVERSION KIT									
ITEM	QTY	P/N	DESCRIPTION	PICTURE	ITEM	QTY	P/N	DESCRIPTION	PICTURE
1	1	N/A	SPREADER, STAINLESS STEEL, 135LB		12	2	30679	KNOB	
2	1	N/A	IMPELLER ASSEMBLY		13	4	CB-1434SS	CARRIAGE BOLT, 1/4 x 3/4	
3	1	SM10325	MOTOR BRACKET		14	2	CB-51634SS	CARRIAGE BOLT, 5/16 x 3/4	
4	1	70024-C	SHAFT COUPLER		15	1	SHCS-14-20X38	SOCKET HEAD CAP SCREW, 1/4 x 3/8	
5	1	30732	SAFETY DECAL		16	4	HFSSC-1434	HEX FLANGE SCREW, 1/4 x 3/4	
6	1	N/A	CONTROL PANEL, AUX		17	1	SET-14-20X14	SCREW, SET, 1/4-20 x 1/4	
7	1	80238	ELECTRICAL HARNESS		18	4	FWSS-516	WASHER, 5/16	
8	1	N/A	SWITCH, ROCKER, RED		19	4	FWSS-14BBS	FLAT WASHER, 1/4	
9	2	SM10193	HOPPER MOUNTING LATCH		20	4	SSNNC-14	NYLOCK NUT, 1/4	
10	2	SC1-0500-SS	SPLIT SHAFT COLLAR, 1/2"		21	5	CTB-1550	15" CABLE TIE	
11	2	80748	QUICK RELEASE PIN, 3/8" x 1-1/2"		22	2	CSN-346	BUTT CONNECTOR, 10-12GA	

2.0 IMPORTANT INFORMATION

2.1 PURPOSE

The purpose of this Installation Guide is to provide step-by-step instructions on how to install the SRA-10020 135lb Stainless Steel Spreader Conversion Kit to your machine. This document is intended only for customers who already own the 120lb Spreader (70052-120) and wish to upgrade to the 135lb Stainless Steel Spreader, SR-Hopper Kit (135). This conversion kit will enable you to upgrade to the latest Snowrator spreader attachment by utilizing the Impeller Motor and Speed Control Unit from the 120lb Spreader which you already own.

2.2 OVERVIEW

This Installation Guide contains illustrated step-by-step instructions to detach your current 120lb Spreader from your machine and install the SRA-10020, 135lb Stainless Steel Spreader Conversion kit. Instructions to detach the Impeller Motor from the 120lb Spreader as well as the modification of the Speed Control Unit you already own are also included.

For more detailed information regarding your new purchase, please refer to:

- Snowrator Owner's Manual
- Snowrator 135lb Stainless Steel Spreader Owner's Manual (SR-Hopper Kit 135)

2.3 SAFETY

Safety is a primary concern in the design and manufacturing of all L. T. Rich Products. Unfortunately, our extensive efforts to provide safe equipment can be negated by a single careless act of an operator. In addition to the design and configuration of the 135lb Stainless Steel Spreader, hazard control and accident prevention are also dependent upon the awareness, condition, maintenance, and storage of the Snowrator and all optional attachments. Please refer to the Snowrator Owner's Manual for applicable safety information for the Snowrator.

2.3.1 Safety Equipment:

When using or performing maintenance on the 135lb Stainless Steel Spreader, it is recommended that the operator wear gloves and safety glasses.

2.3.2 Mounting and Dismounting:

Two people using proper lifting techniques are required to mount and dismount the 135lb. Stainless Steel Spreader. The risk of injury and/or damage to the unit is significantly increased if only one person is performing this activity.

2.3.3 Impeller:

Turn off the Impeller via the toggle switch on the Speed Control Unit before adjusting spread pattern settings. ALWAYS keep fingers, hands, loose clothing, etc. clear of this area when it is in use.

2.3.4 Operation

Always scan the environment to ensure the product being spread does not come into contact with other people and animals. Follow all guidelines provided in the Snowrator Owner's Manual.



3.0 INSTALLATION



WARNING



Before Working on This Machine

- Switch Engine to OFF



- Please note that this installation guide is for a **standard machine only**.
- The hose and electrical harness routing may be different depending on the attachments that may already be installed on your machine.
- A SNOWRATOR machine is shown for all assembly photos.
- For any questions please contact us at toll free (877) 482-204 Mon-Fri 8 a.m. to 4:30 p.m.



3.1 TOOLS & EQUIPMENT

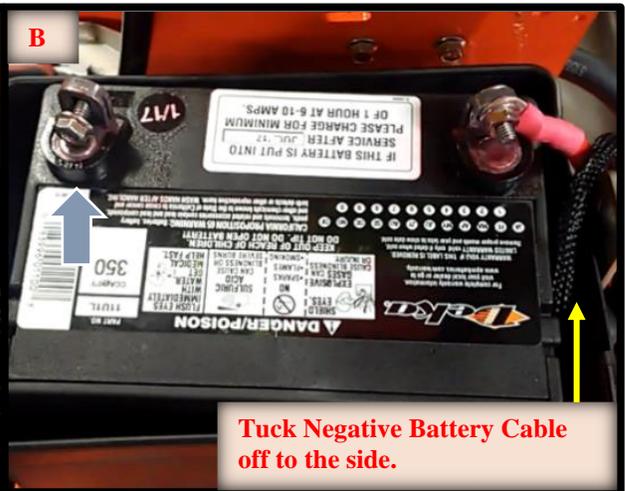
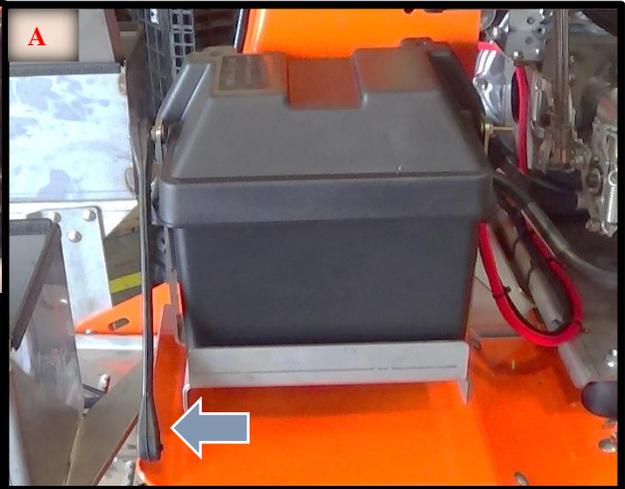
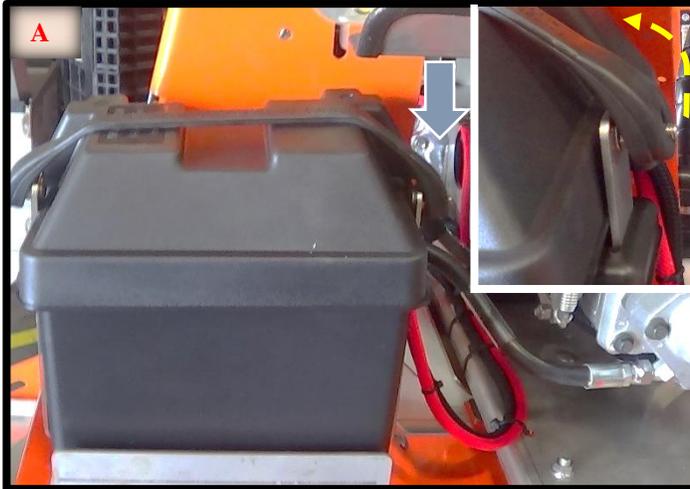
TOOLS			
ITEM	QTY	DESCRIPTION	PHOTO
1	1	RATCHET	
2	1	EXTENSION, SOCKET, 1-1/2"	
3	3	SOCKETS: 3/8", 7/16", 1/2"	
4	2	ALLEN WRENCH: 1/8", 3/16"	
5	1	PHILIPS SCREWDRIVER NO. 2	
6	1	WIRE CUTTERS	
7	1	WIRE STRIPPER/CRIMPER	
SAFETY EQUIPMENT			
ITEM	QTY	DESCRIPTION	PHOTO
1	1	GLOVES	
2	1	SAFETY GOGGLES	

3.2 DISMOUNT 120LB SPREADER

3.2.1 Disconnect power

Tools:
Ratchet with 1/2" Socket

- A. Remove **Battery Cover** by unhooking strap.
- B. **Disconnect Negative Battery Cable** (black).

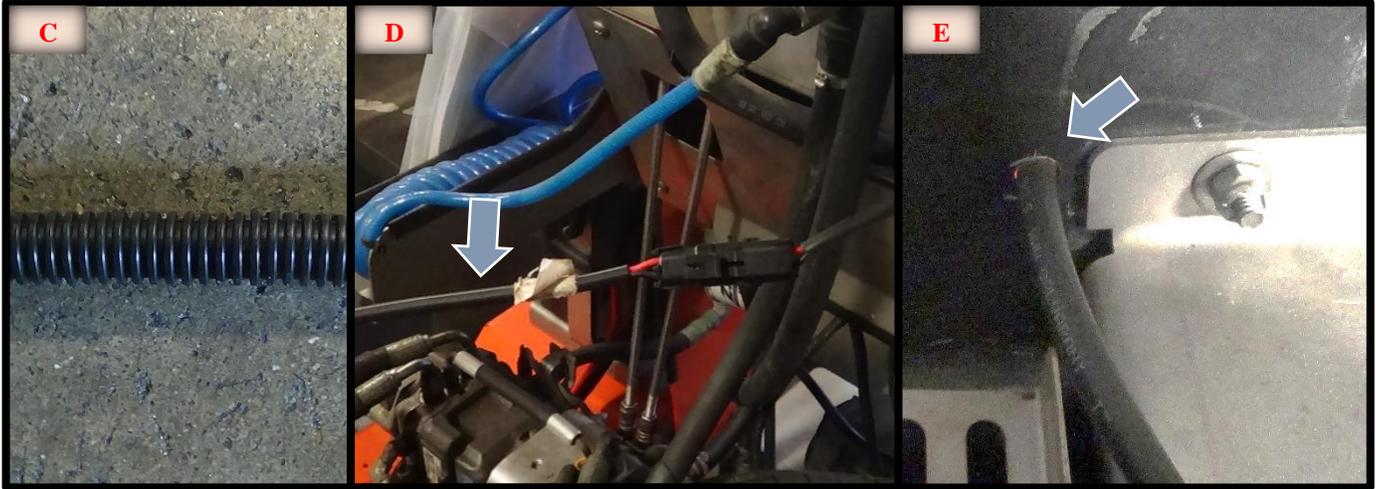


Tuck Negative Battery Cable off to the side.

3.2.2 Remove Impeller Motor

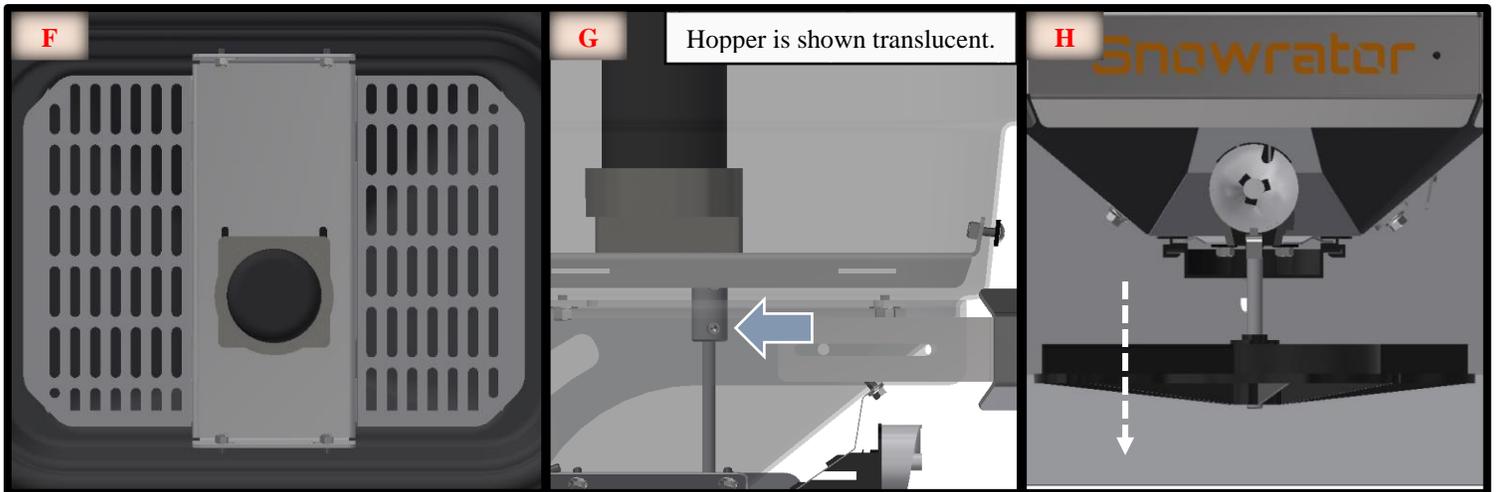
Tools:
Wire Cutters

- C. Remove **conduit** from Motor power wire.
- D. *Cut* the **power wire** 3" below the connector.
- E. *Pull* the **wire** through Hopper.



Tools:
Allen Wrench, 3/16"

- F. Remove the **Hopper Screens** from the Hopper
- G. Remove the **bottom set screw** from the shaft coupler.
- H. *Detach* **Impeller** including shaft.



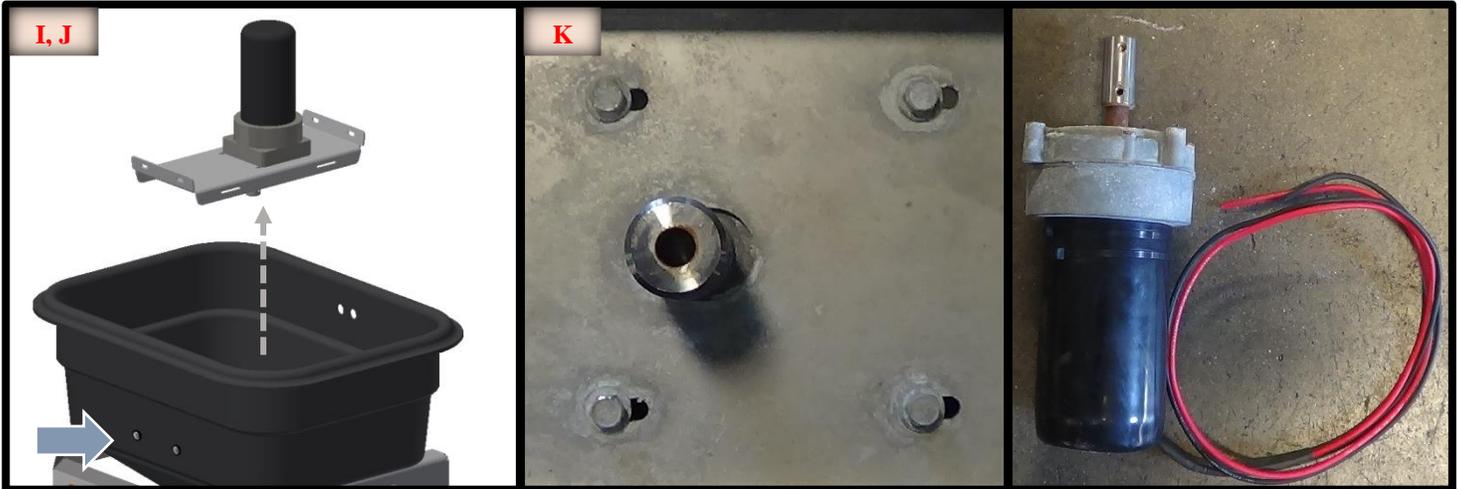
Use care when removing set screw
as it may be rusted/corroded.



Remove Impeller Motor Cont...

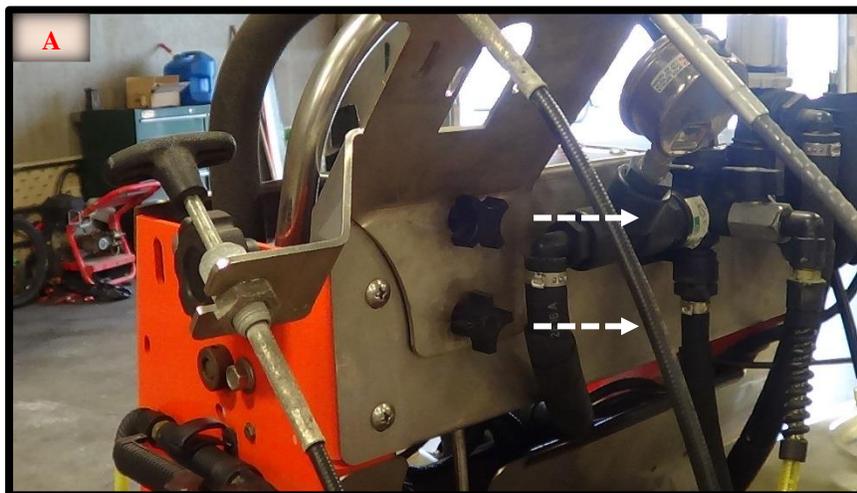
Tools:
 Phillips Screwdriver
 Ratchet
 3/8" Socket
 7/16" Socket

- I. Remove the screws on the front and rear of the Hopper.
- J. Lift the Motor Bracket from the Hopper.
- K. Remove Bolts connecting the Motor to the Bracket.



3.2.3 Detach Hopper Cable Bracket

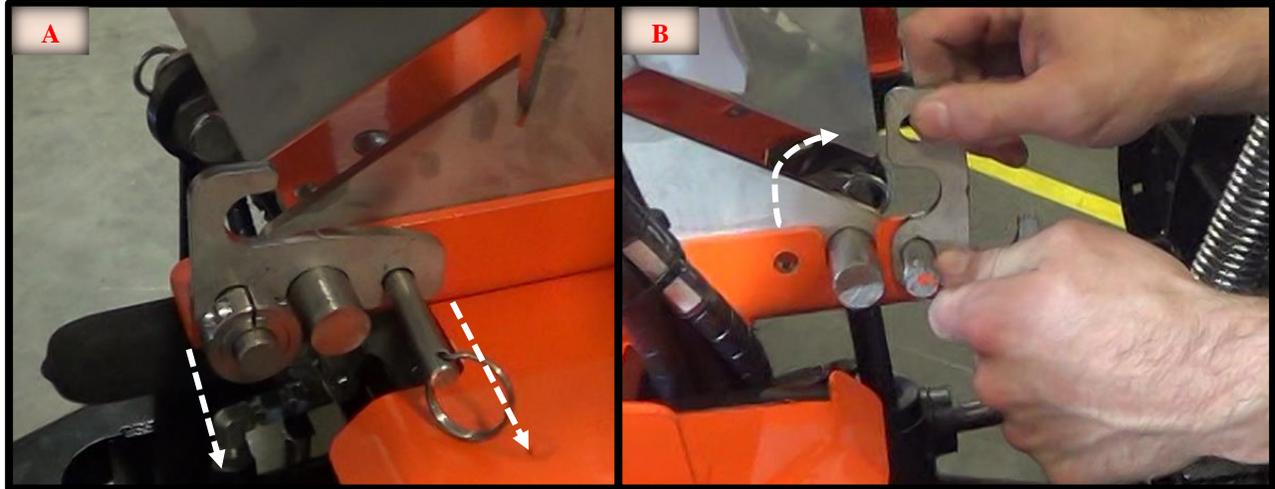
- A. Remove fastener's connecting the Hopper Cable Bracket to the frame.
- B. Set Hopper Cable Bracket and Cables inside Hopper (*not shown*).



3.2.4 Dismount 120lb Spreader

Tools:
Allen Wrench, 3/16"

- A. Remove the Quick Disconnect Pin and Shaft Collar on both sides.
- B. Remove the Latch on both sides.
- C. With two people, lift the 120lb Hopper off the Snowrator (*not shown*)

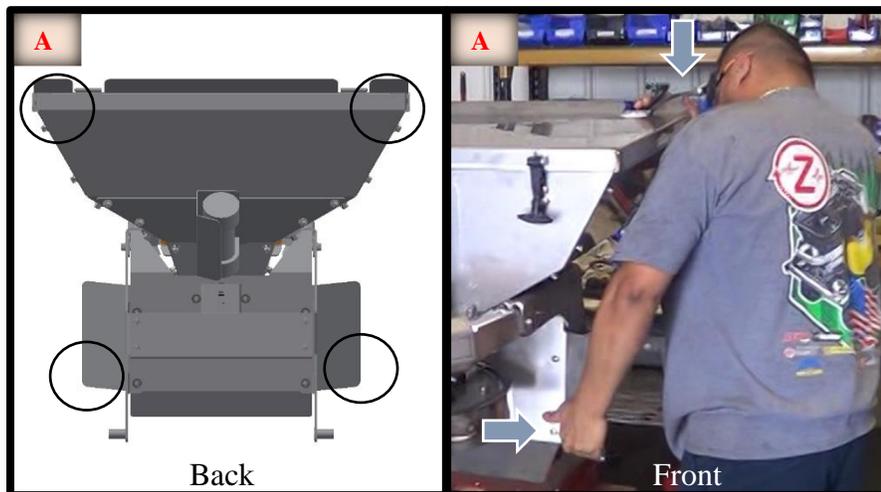


3.3 SPREADER

This section requires TWO people in order to install it safely. Always use safe lifting techniques. Take care not to pinch fingers or drop the spreader during installation.

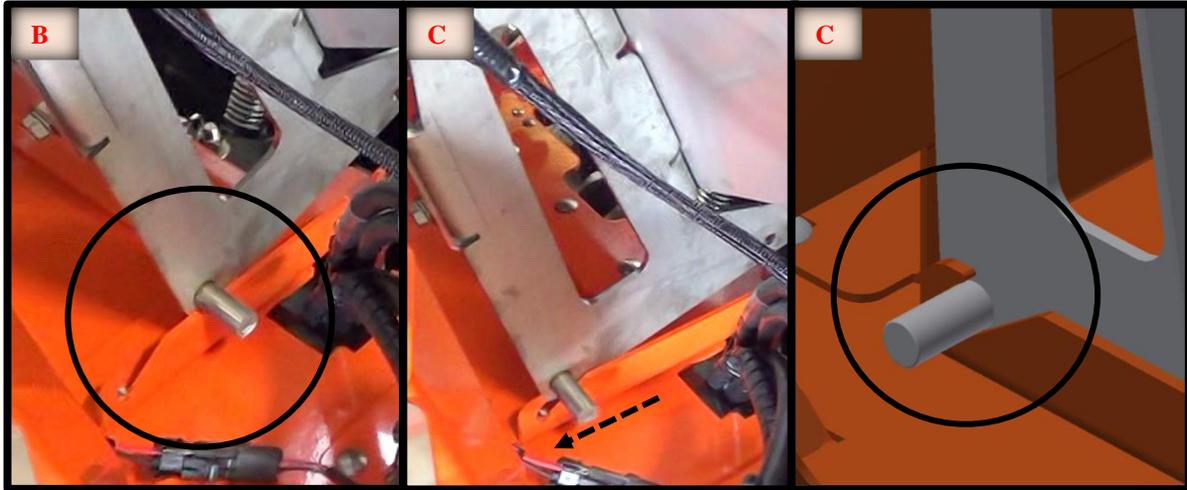
3.3.1 Mount 135lb Stainless Steel Spreader

- A. With one person on each side, *lift* the **135lb Stainless Steel Spreader** by the Back Shield and the rear of the Hopper.

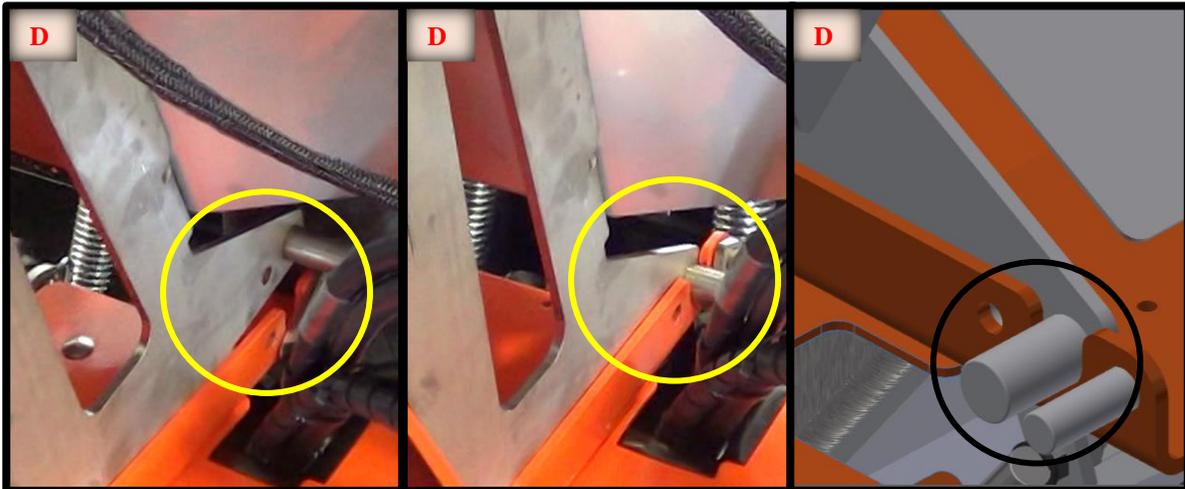


Mount Spreader Cont...

- B. Rest the **rear of base** on the Mounting plate with the front at a slightly elevated angle.
- C. Slide the **Hopper Hinge Rods** down into the rear Mounting Plate hooks.

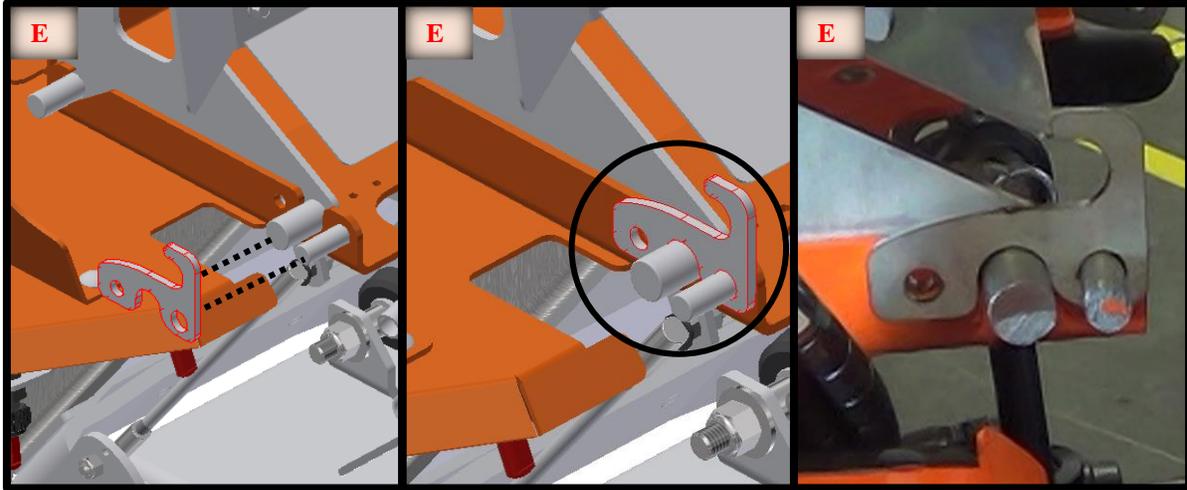


- D. Set the **front of base** down so the Hopper Latch Rods are in the front Mounting Plate Hook.



Mount Spreader Cont...

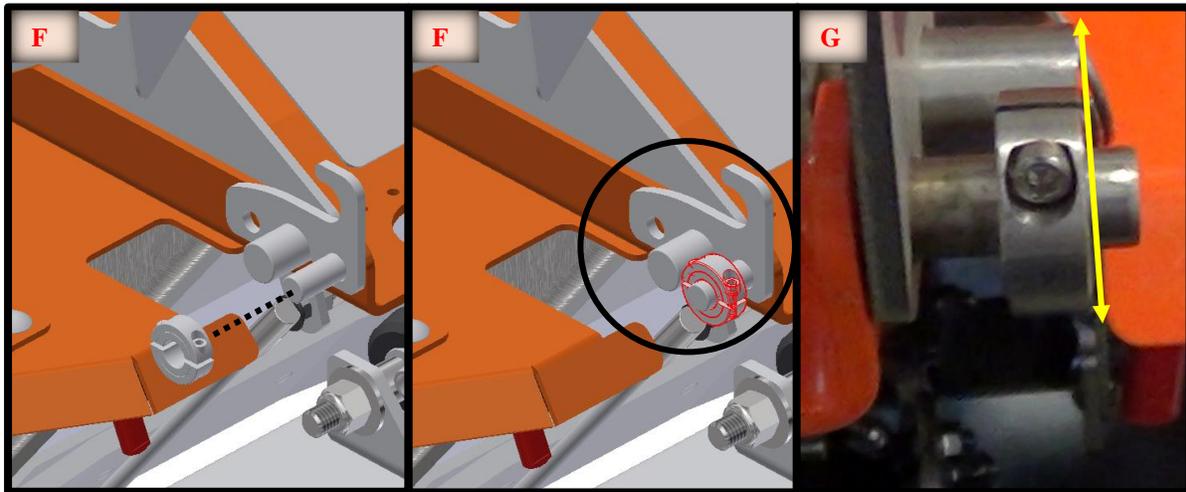
E. Attach **Latches** to the Hopper Latch Mounting Rods.



F. Secure both **Latches** with a 1/2" Split Shaft Collar.

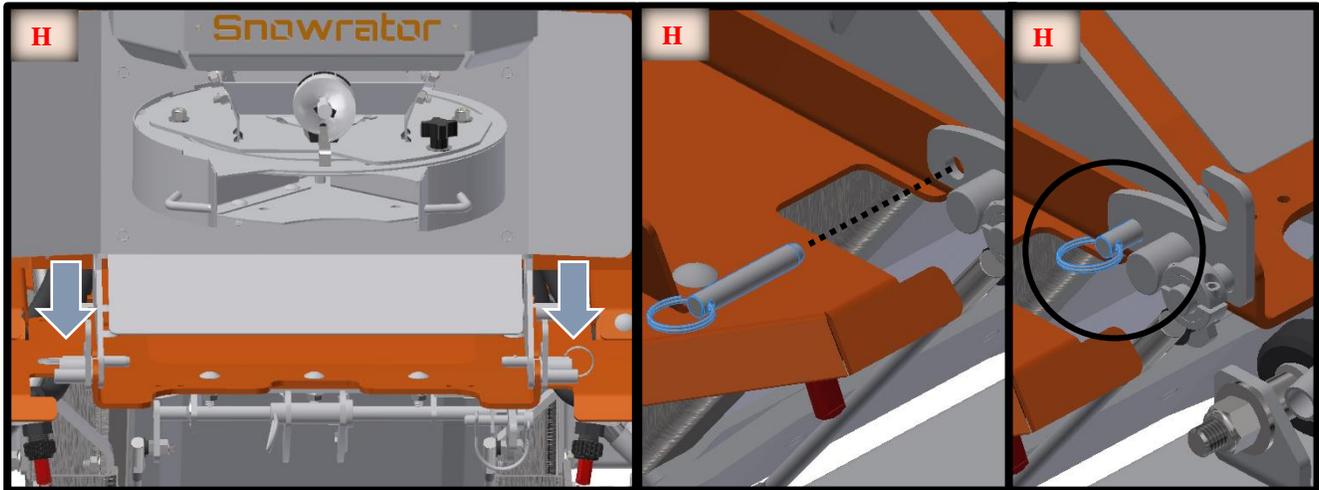
G. **Align 1/2" Split Shaft Collar** so it is flush with the outer edge of the Hopper Latch Rod and tighten.

Tools:
Allen Wrench, 1/8"



Mount Spreader Cont...

- H. Insert **Quick Release Pin** through Hopper Latch, Base and Mounting Plate on both sides of the Hopper Base.
- I. Set the **Hopper Cable, Agitator Connector and Impeller Motor Connector** off to the side (*Not shown*). These will be connected in the following sections.



3.3.2 Motor Mount

- A. Fasten the Hopper Motor to the new Motor Bracket with (4) four 1/4" x 3/4" Hex Flange Bolts.
- B. Attach the new Shaft Coupler to the Motor Shaft with 1/4" x 3/8" Black Oxide Socket Head Cap Screw.
- C. Insert Set Screw halfway in the remaining hole.

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	SM10325 Bracket, Motor, SR SS Hopper, 0.120SS
2	1	70028 MOTOR, IMPELLER, 12V
3	1	70024-C COUPLER, SS, 1"
4	1	30732 DECAL, HOPPER, SMALL, SR
5	4	HFSSC-1434 SCREW, HEX, FLANGE - SS, 1/4-20 x 3/4
6	1	80790 SET SCREW, 1/4-20
7	1	SHCS-14-20X38 SCREW, CAP, SOCKET HEAD - 1/4-20 x 3/8

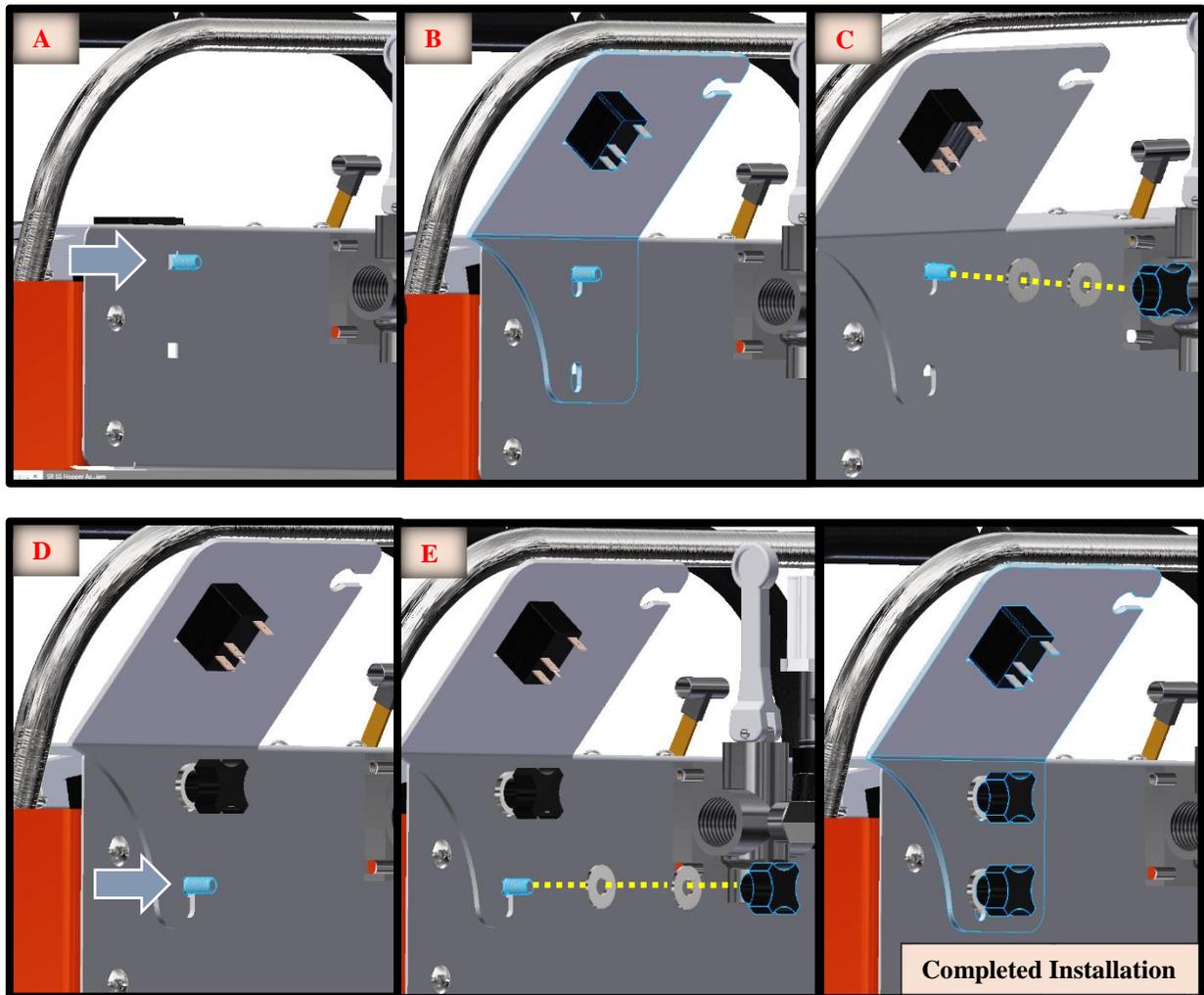
→ AFFIX DECAL (30732) TO FRONT OF MOTOR

DRAWN	AES	10/23/2017	L. T. RICH PRODUCTS, INC.	
CHECKED			TITLE	
QA			ASS'Y, IMPELLER MOTOR MOUNT, SR, SS	
NFG			HOPPER	
APPROVED			SIZE	DWG NO
			C	N/A
			SCALE	REV
				1
				SHEET 1 OF 1

3.4 AUX CONTROL PANEL

3.4.1 Aux Control Panel, Mechanical

- A. *Insert* (1) 5/16" x 3/4" **Carriage Bolt** in the top Aux Control Panel mounting location.
- B. *Position* the **Aux Control Panel** on the bolt.
- C. *Fasten* with (2) 5/16" **Washers** and (1) **Hand Knob**.
- D. *Insert* (1) 5/16" x 3/4" **Carriage Bolt** in the bottom Aux Control Panel mounting location.
- E. *Fasten* with (2) 5/16" **Washers** and (1) **Hand Knob**.



3.4.2 Aux Control Panel, Electrical

A. Switch Connector

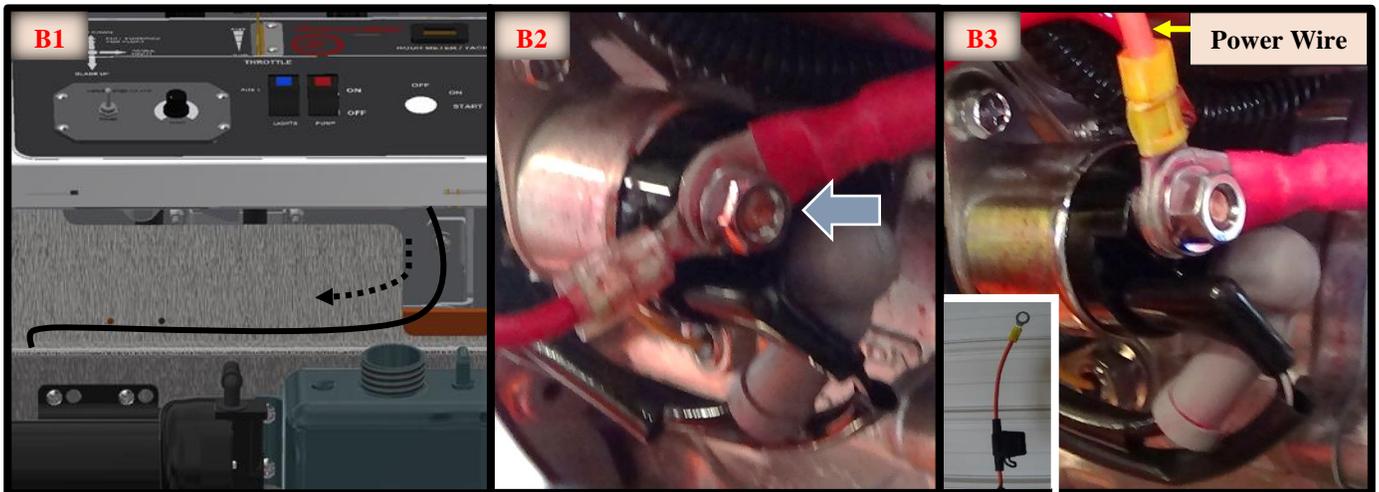
1. Connect the **Switch Connector** on the Electrical Harness to the connector on the back of the Agitator Switch.



B. Power and Ground Wires

1. Route **Power and Ground Wires** to lower section of left upright.
2. Remove **Nut** on Solenoid.
3. Connect **Power Wire** to Solenoid Post and *fasten* nut.

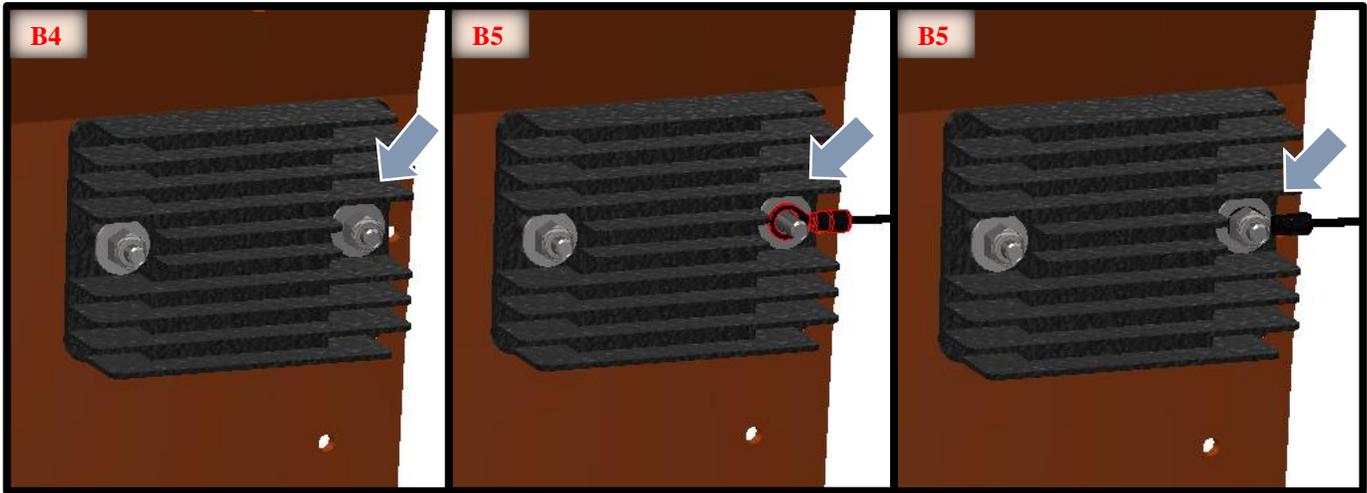
Tools:
Ratchet with 3/8" Socket
7/16" Socket



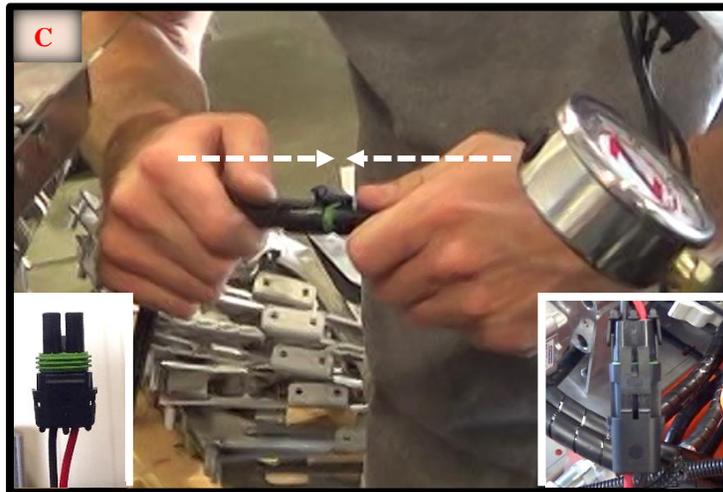
Some parts not shown for clarity

Aux Control Panel, Electrical, Cont...

4. Remove **Nut** from right side of Rectifier.
5. Connect **Ground Wire** to Rectifier Bolt and fasten nut.

**C. Agitator Switch Connector**

1. Connect the **Agitator Switch Connector** from the Aux Electrical Harness to the Agitator motor.

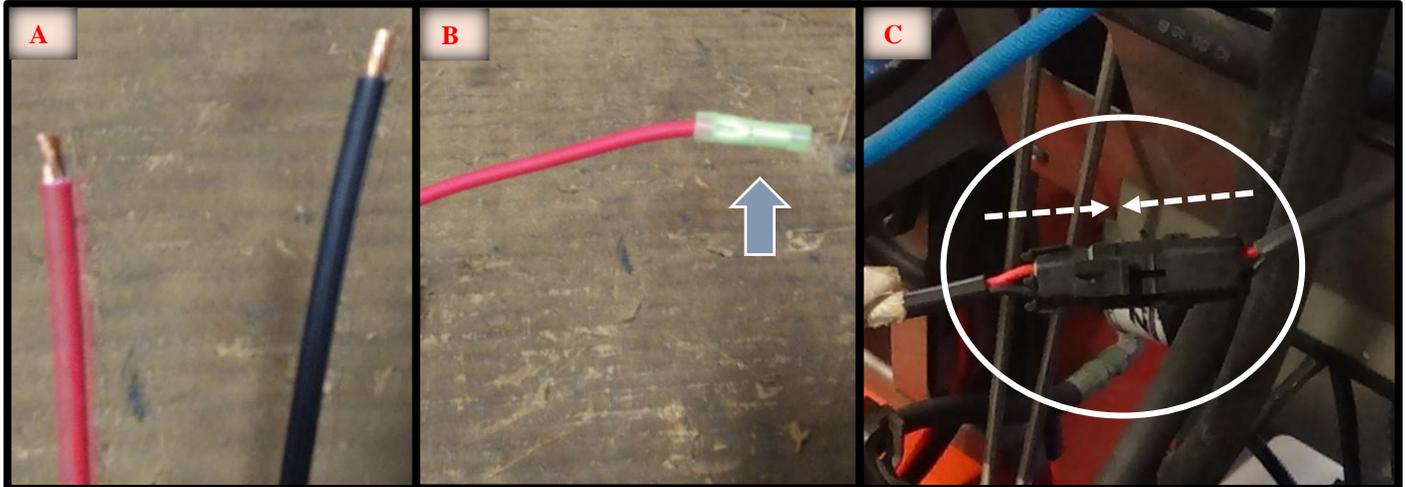




3.5 SPEED CONTROL UNIT

Tools:
Wire Cutters
Wire Crimpers

- A. Strip 1/4" inch of **insulation** from the red and black wires from the Hopper Motor and the connector from section 3.2.2.
- B. *Crimp* wires together.
- C. *Plug* the **Hopper Motor Connector** into the Speed Control Unit.



3.6 TEST

Connect the Negative (black) Battery Cable before testing.

3.6.1 Agitator

Verify the electrical connections have been made properly.

- A. Turn on the Agitator. Listen for vibration.
- B. Turn off the Agitator.

3.6.2 Speed Control Unit

Verify the electrical connections have been made properly.

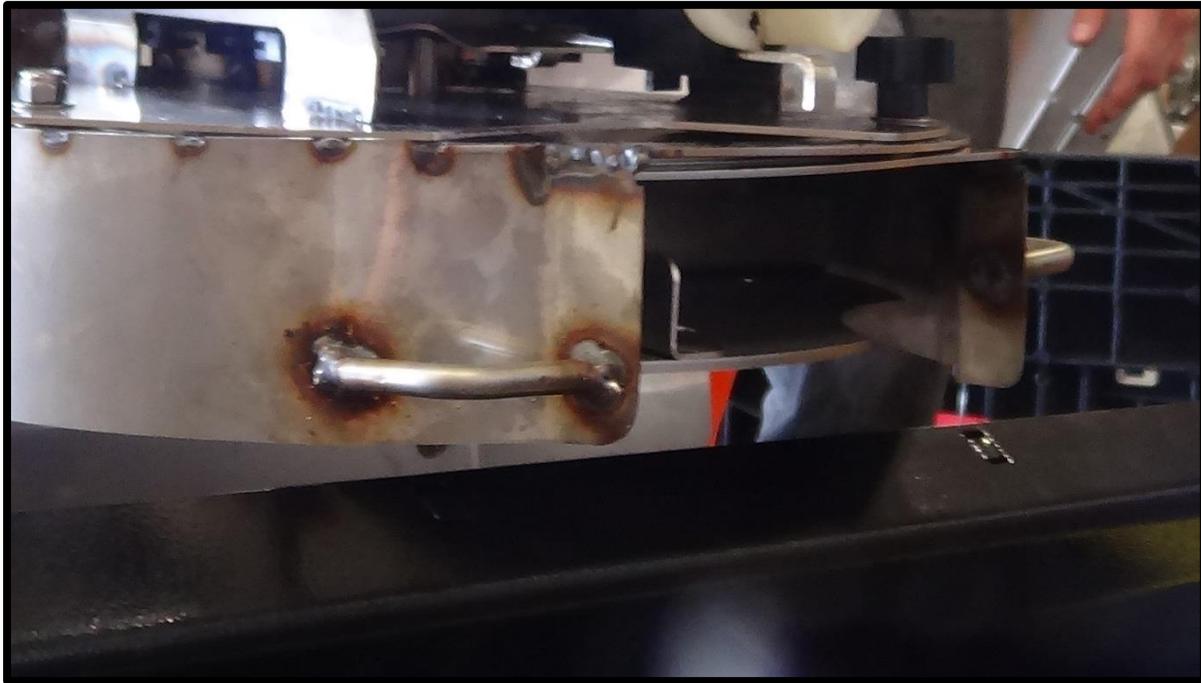
- A. Put the toggle switch in the downward position to start the impeller.
- B. Put the toggle switch in the middle position to turn off the impeller.



3.6.3 Plow Clearance

Check for clearance between the plow and the Directional Control after each step. The plow should have clearance when the Directional Control is open at its minimum and maximum positions. Refer to the Snowrator Owner's Manual for more information.

- A. Adjust the plow to its maximum upward position.
- B. Adjust the plow all the way to the left.
- C. Adjust the plow all the way to the right.
- D. Return the plow to the center position.





4.0 PARTS LIST

SR-HOPPER KIT (135)							
ITEM	P/N	DESCRIPTION	PHOTO	ITEM	P/N	DESCRIPTION	PHOTO
1	SM10326-W	FRAME UPRIGHT, RIGHT		26	70022	DIAL, HOLDER	
2	SM10326-WL	FRAME UPRIGHT, LEFT		27	70040	GUIDE, SLIDE DOOR	
3	SM10202	BUMPER BACKPLATE		28	70041	DIAL, FOLLOWER	
4	SM10323	BUMPER		29	80316	FLANGE BEARING, 3/8"	
5	SM10327	UPRIGHT SUPPORT BRACKET		30	70014-B	BALL JOINT	
6	SM10328	BACKSHIELD		31	70019-A	PINE TREE CLIP	
7	SM10329	HOPPER CABLE BRACKET		32	SM10338	IMPELLER	
8	SM10319-W	SHELL, RIGHT		33	SM10339	THROW ANGLE BRACKET	
9	SM10319-WL	SHELL, LEFT		34	SM10325	IMPELLER MOTOR MOUNTING BRACKET	
10	SM10317	SHELL, REAR		35	70023-S	IMPELLER MOTOR SHAFT	
11	SM10318	SHELL, FRONT		36	70024-C	SHAFT COUPLER, 1"	
12	SM10320	SHELL, LID		37	70038	SPEED CONTROL UNIT	
13	SM10321	AGITATOR MOUNTING BRACKET		38	70028	IMPELLER MOTOR	
14	SM10322	AGITATOR, HEAT SHIELD		39	30732	IMPELLER SAFETY DECAL	
15	90121	HOPPER LID LATCH		40	SM10344	AUX CONTROL PANEL	
16	90214	HOPPER LID HINGE		41	70014	HOPPER CABLE	N/A
17	90136	SNOWRATOR LOGO DECAL		42	80243	SWITCH, ROCKER, SR	
18	90135	MOTOR, AGITATOR, 12V 10A		43	80245	LENS, RED, SR	
19	SM10331-W	DIRECTIONAL CONTROL MOUNTING PLATE		44	80238	ELECTRICAL HARNESS	
20	SM10334-W	DIRECTIONAL CONTROL, BOTTOM		45	90137	AUX CONTROL PANEL DECAL	
21	SM10336-W	DIRECTIONAL CONTROL, MIDDLE		46	30679	KNOB	
22	30679	KNOB		47	SM10193	HOPPER MOUNTING LATCH	
23	SM10324	BOTTOM		48	SC1-0500-SS	SPLIT SHAFT COLLAR, 1/2"	
24	SM10330	HOPPER DOOR		49	80748	QUICK RELEASE PIN, 3/8" x 1-1/2"	
25	70019	DIAL, SELECTOR		50	90148	BRONZE BUSHING, 3/8" ID	

5.0 AUX ELECTRICAL HARNESS WIRING DIAGRAM

