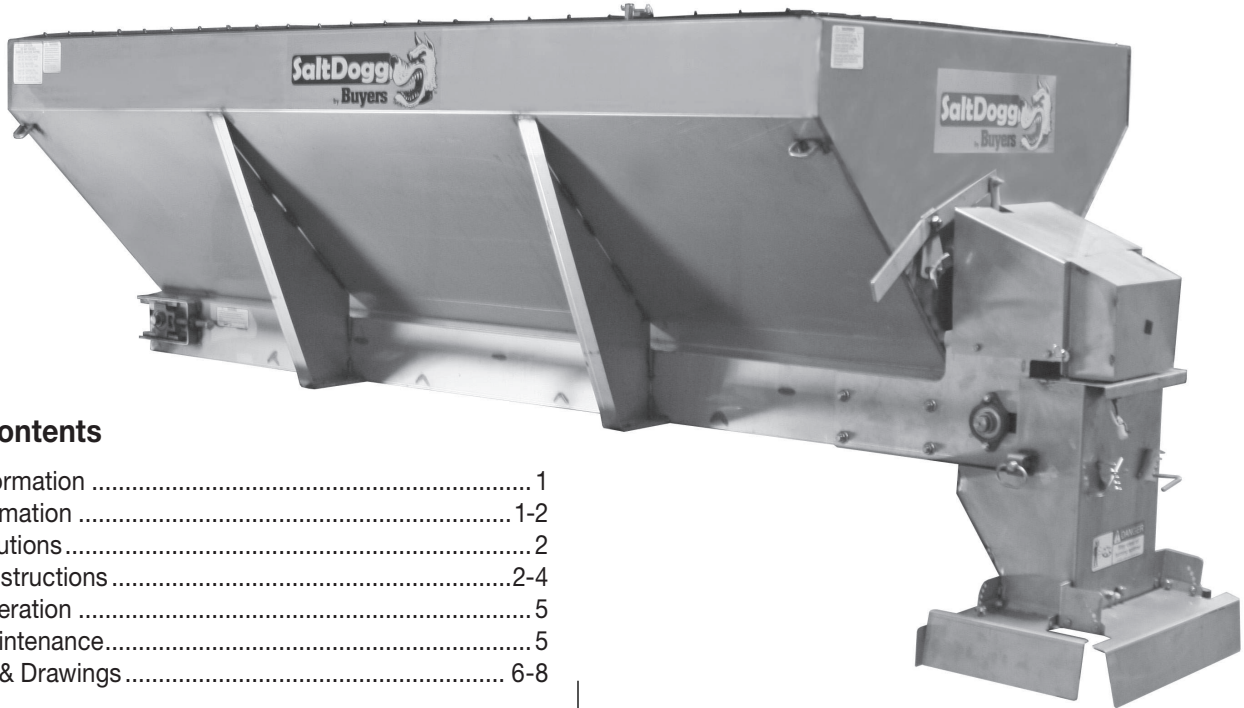


# Manual

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## 1400601SS, 1400701SS Self-Contained Stainless Steel Hopper Spreaders



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### General Information

#### 1. Recommended Vehicle Requirements:

- 3/4 or 1 ton Pick-up Truck Above 8500# GVWR

#### 2. Average Material Weights:

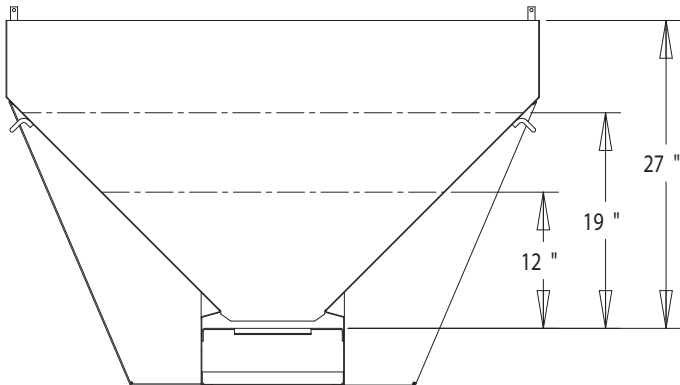
MATERIAL	WEIGHT (POUNDS PER CUBIC YARD)
#1 Rock Salt	950
#2 Rock Salt	1,215
Coarse Sand - Dry	2,565
Coarse Sand - Wet	3,240

**Note:** To calculate the total spreader weight (including ice control material); add the empty spreader weight plus the ice control material and spreader accessories.

### CAUTION

Do not overload vehicle beyond the vehicle's Gross Vehicle Weight Rating (GVWR) or Gross Axle Weight Ratings (GAWR). Check the vehicle's load rating certification sticker for maximum vehicle capacity.

### 3. Hopper Storage Capacity



HOPPER CAPACITIES		
	96"	72"
12"	.50 CU-YD	.36 CU-YD
19"	1.0 CU-YD	.77 CU-YD
27"	1.80 CU-YD	1.36 CU-YD

### 4. Recommended Fastener Torques:

Maintain all fastener torques as shown in the following table. Failure to do so may cause injury to persons.

	SAE GRADE 2 FT-LBS	SAE GRADE 5 FT-LBS
1/4-20	6	9
5/16-18	11	18
3/8-18	19	31
3/8-24	24	46
7/16-14	30	50
1/2-13	45	75
9/16-12	66	110
5/8-11	93	150

### Safety Precautions

#### WARNING

Observe the following Safety Precautions before, during and after operating this spreader. By following these precautions and common sense, possible injury to persons and potential damage to this machine may be avoided.

1. Read this entire Owner's Manual before operating this spreader.
2. Read all safety decals on the spreader before operating the spreader.
3. Check to make sure all safety guards are securely mounted into place before operating this spreader.

4. Make sure the motor cover is securely fastened to the spreader before operating the spreader.
5. Verify that all personnel are clear of the spreader spray area before starting or operating this spreader.
6. Keep all loose clothing, hair, jewelry and limbs clear of the spreader before starting or operating this spreader.
7. Do not over-load your vehicle beyond payload limits. If there are any questions, contact the vehicle manufacturer.
8. Do not adjust, clean, oil or unclog material jams without first turning off the spreader.
9. Do not climb on or in the spreader during operation. Do not ride on the spreader while the vehicle is in motion.
10. Make sure the spreader is securely fastened to the vehicle in accordance with this manual.
11. Do not operate a spreader that is in need of maintenance or repairs.
12. Always disconnect the wire harness before removing or replacing any electrical components.

### Installation Instructions

#### 1. Mounting the Spreader onto the Vehicle:

- A. Remove the tailgate from the vehicle.
- B. Lift the spreader by lifting loops on side of hopper.

#### WARNING

The lifting device must be adequately rated to lift a payload equal to or greater than the spreader weight. See page 1 for spreader weights. Empty spreader before lifting.

- C. Elevate the spreader off the vehicle with lumber. Place lumber under the side gussets of the spreader. This will help with removal of excess material that accumulates under the spreader.
- D. Center the spreader on the vehicle with the end of the gear mount 14" to the rear of the nearest vertical obstruction (bumper, trailer hitch, etc). Attach chute to spreader, check for interference between the vehicle and the Spinner/Chute Assembly.

**E.** Bolt the spreader to the vehicle frame through the lengths of lumber using the holes located in each of the four (4) side gussets. Use 1/2" SAE Grade 5 hardware as required by vehicle application.

**F.** In addition secure the spreader to the vehicle by attaching the four (4) tie-down eyes located at each corner of the spreader to the vehicle's factory installed anchor points using suitable tie-down devices.

- The spreader must be securely fastened to the frame of the vehicle.
- Verify with the vehicle's manufacturer that the factory installed anchor points are designed for tie-down of such load.
- Periodically check that the spreader mounting hardware is securely tightened, retighten if necessary.

## 2. Control Box and Vehicle Wiring Harness Installation

MAKE SURE YOU HAVE CONNECTED THE PROPER WIRE COLOR.

THIS IS A WIRE GROUND ELECTRICAL SYSTEM!  
NO CONNECTIONS TO TRUCK'S FRAME OR BODY ALLOWED!

### **WARNING**

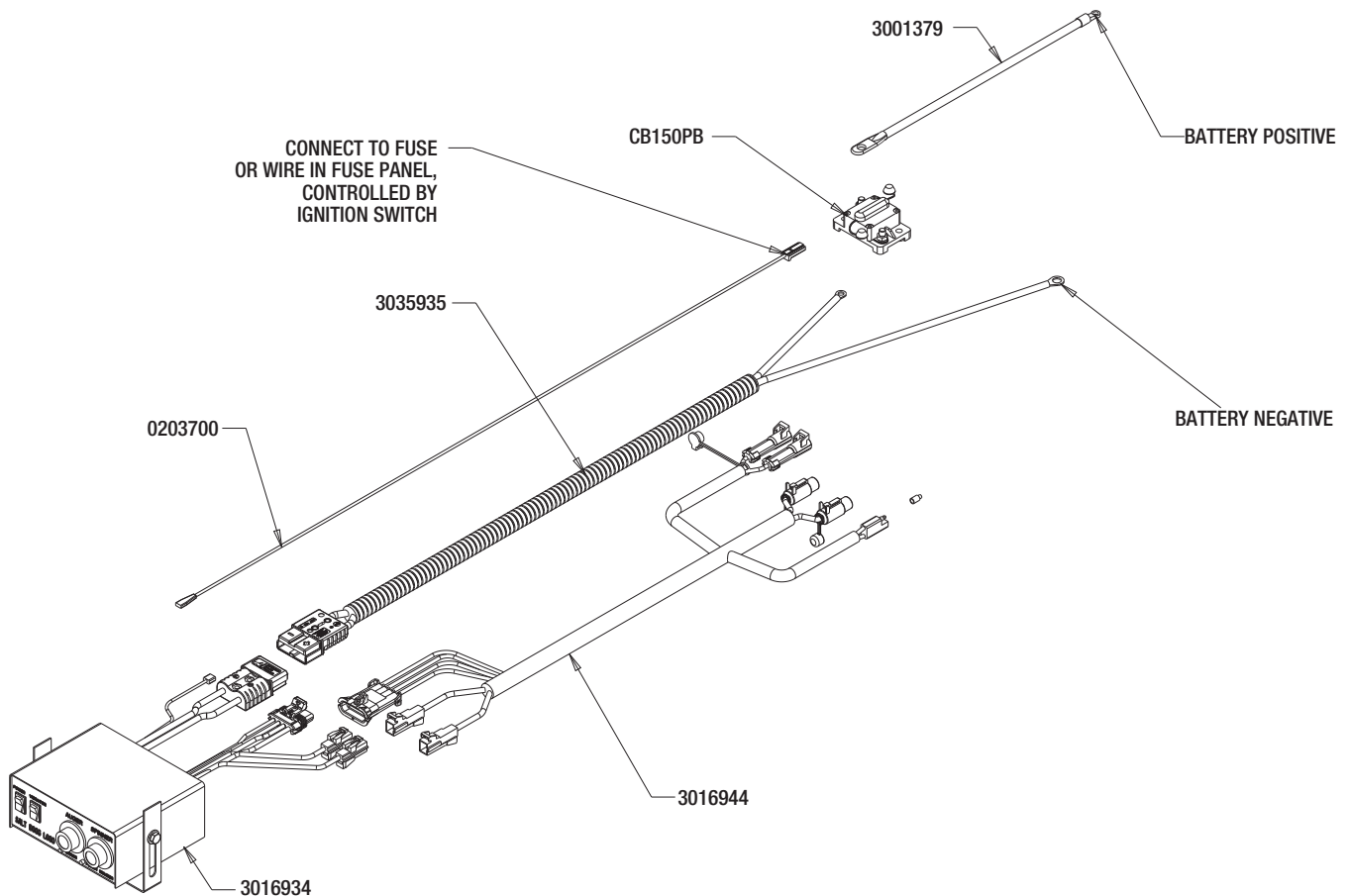
**WARNING!** Do not drill holes into fuel tanks, fuel lines, through electrical wiring, etc. that may be damaged by drilling. To insure good performance of your spreader, check the condition of truck's electrical system. Using digital voltmeter, check alternator and battery voltage. With engine running and head lights and heater fan ON good voltage reading should fall between 13.0 and 15.3 volts. If voltage reading falls out of this range, check and adjust your electric system.

**NOTE:** Always disconnect battery before attempting to install electrical components on your vehicle.

**A.** Mount the controller in a convenient location in the truck cab. It is recommended not to mount the controller directly in front of heat vents. Allow ample air space around controller.

### **CAUTION**

**DO NOT MOUNT CONTROLLER IN THE WAY OF AIR BAG DEPLOYMENT!**



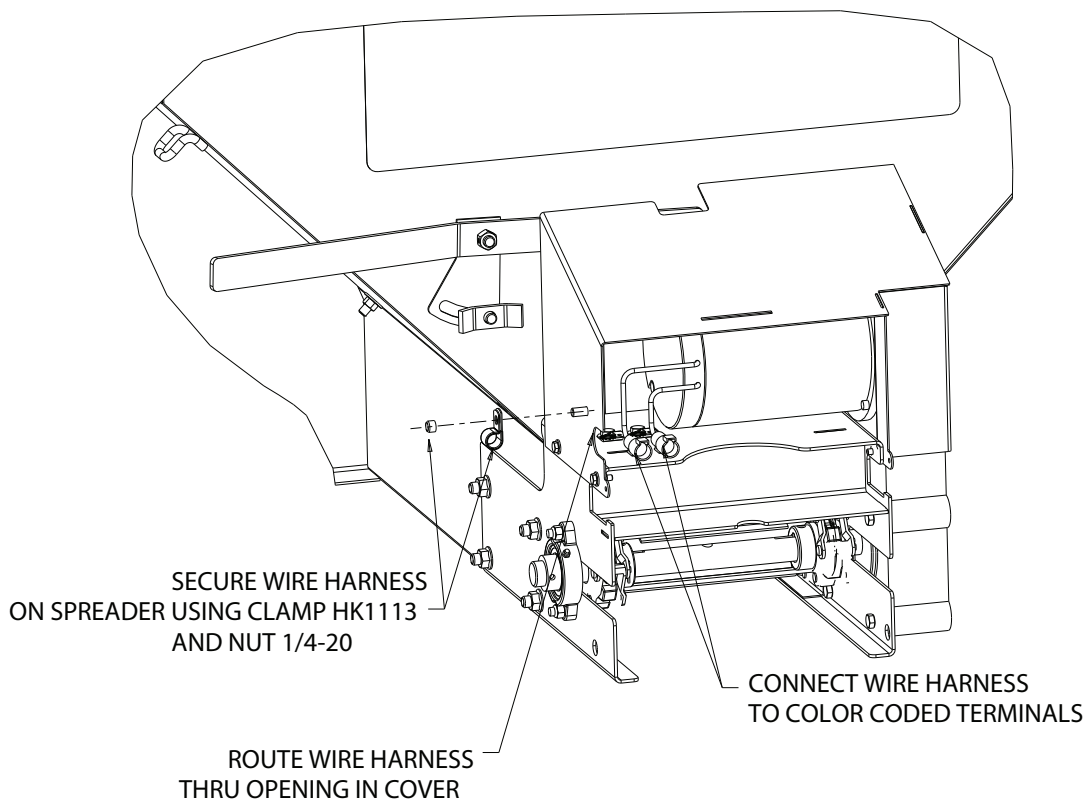
- B.** Route both wire harnesses into truck cab through firewall (it maybe necessary to drill holes). Insulate hole to avoid water leaks.
- C.** Insure no wires are nicked or damaged during installation.
- D.** Connect the 4-pin connector on the wire harness to the control box 4-pin connector.
- E.** Connect the 2-pin connector on the power cable to the control box mating connector.
- F.** Connect wire harness single connectors to control box connectors.
- G.** Connect fuse connector to the fuse terminal or ignition switch (5 AMP max).
- H.** Lay out a path for the power cable to the battery, use quick ties to secure power cable.  
DO NOT CONNECT TO BATTERY AT THIS TIME!
- I.** Lay out path for wire harness to the rear of the vehicle. It is recommended to stay clear of the exhaust system. Excess heat can damage the wire harnesses. Use quick ties to secure harness to underbody.
- J.** Connect the wire harness to the motor. Make sure wire colors on wire harness match colors on the motor.  
Thoroughly clean battery terminals. Make sure battery terminals

have no tarnish or corrosion. **DO NOT CONNECT WIRE HARNESS TO DAMAGED OR CORRODED TERMINALS! IT MAY RESULT IN OVERHEATING, LOST POWER AND POTENTIAL CONTROLLER DAMAGE!**

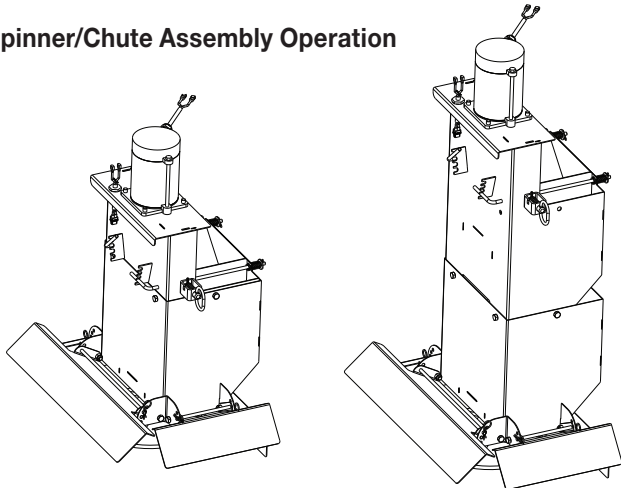
- K.** Connect the power cable directly to the battery.
- L.** Insure all functions of the controller are working properly.
- M.** Observe chain moving in proper direction. If direction is wrong reverse wires between Motor and Wire Harness.
- N.** Optional spot light (5 AMP max) can be installed on spreader. Remove cap from single white wire. Connect light to this wire and trucks frame.

**! IMPORTANT**

**IMPORTANT** Make sure all wires securely attached to vehicle or spreader. Use wire ties and/or wire clamps to attach wires. All excess wires must be rolled into bungles and attached to vehicle or spreader.



### 3. Spinner/Chute Assembly Operation



Attach chute to hopper assembly by inserting tabs into slots in chute motor plate. Then secure chute by engaging spring latches in respective holes. Chute heights can be adjusted by attaching lower chute weldment to the upper one using upper or lower set of holes. Two sets of holes are located on the bottom of upper chute weldment and under internal baffles selectors.

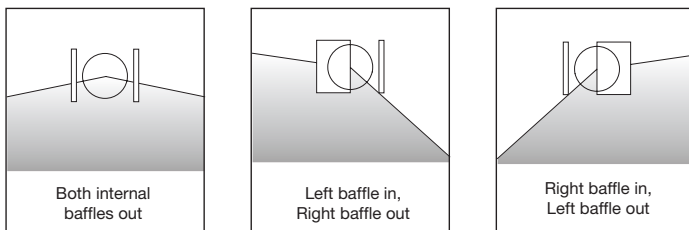
Adjustable shaft can be connected in two positions: upper and lower. Two sets of holes are located in upper and lower portions of coupler. Shaft to be secured by 5/16 cross bolt and nut.

**A.** The spread pattern and the amount of material dispensed is dependant on the following factors:

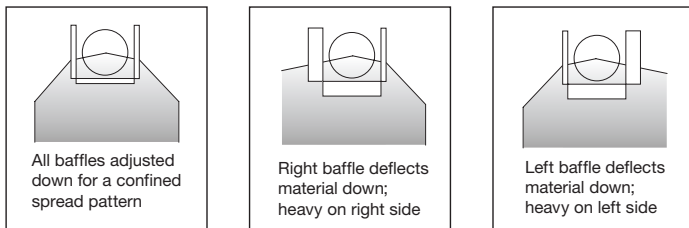
1. Gear Motor RPM
2. Feed gate position
3. Baffle settings
4. Spinner Motor RPM

Below are illustrations that show the baffles effect on the spread pattern as viewed from the top of the spinner disk.

#### Internal Baffle Adjustment



#### External Baffle Adjustment



### **CAUTION**

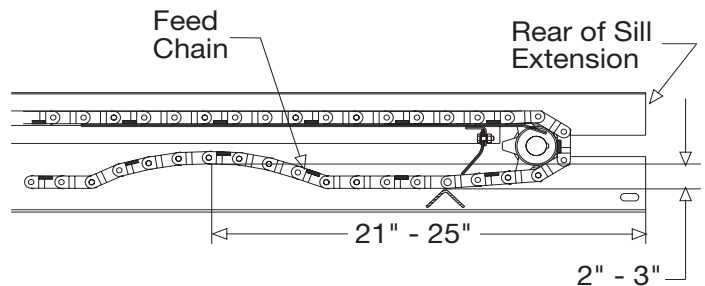
Always follow the following precautions so as not to cause damage to the spreader.

#### 4. Precautions

- A.** If the feed chain does not move because of dense material or a material jam, remove all material from the hopper and free the chain.
- B.** If the material in the hopper freezes, move the spreader into a warm area to thaw.
- C.** To prevent the feed chain from freezing, do not store material in the spreader.
- D.** The gearbox is designed to only accept torque from the electrical motor. Therefore, **DO NOT ATTEMPT TO FREE THE FEED CHAIN BY USING A PIPE OR SIMILAR TOOL TO MOVE OR DISLodge THE CHAIN.** If the feed chain is moved, the gears within the gearbox will strip. This action will void all warranties.

#### Spreader Maintenance

- 1.** Use dielectric grease on all electrical connections before an electrical connection is made or after a connector is disconnected.
- 2.** Grease the following:
  - Idler shaft bearings (2)
  - Bearing (1)
  - Spinner shaft bearing (1)
- 3.** Check the Feed Chain tension periodically.



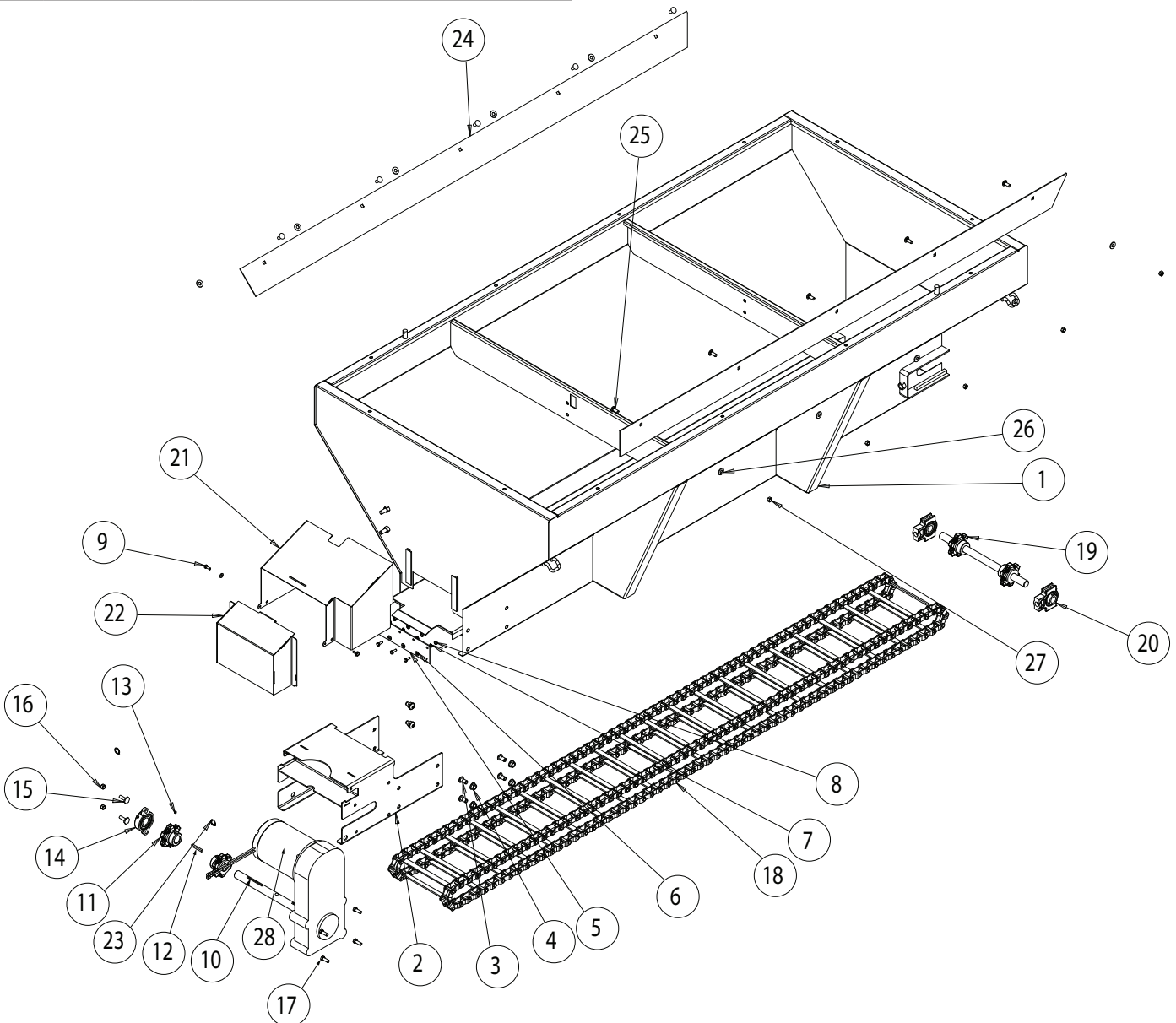
To check the tension, measure in 21"-25" from the rear edge of the gear box mount. Push up on the chain with your hand. The conveyor chain should lift up 2"-3" off the conveyor chain guide or cross angles.

- 4.** Empty the spreader of all ice control material when not in use to prevent a frozen feed chain.
- 5.** Wash out the spreader when it is not in use. At the end of the season wash out the spreader to remove all ice control materials. Thoroughly dry all metal surfaces. Paint and oil all bare metal surfaces and chains to protect from rust. Properly store the spreader for the next season.

## Repair Parts - Drive Subassembly

ITEM	PART NO.	QTY.	DESCRIPTION
1	3015108	1	HOPPER WELDMNT 72 SST
1	3014321	1	HOPPER WELDMNT 96 SST
2	3013875	1	MOUNT GEAR MOTOR SHE096SS
3	-	8	SCREW, BTN HD SOC CAP 1/2-13 X 1 SST
4	-	8	NUT, HX FLNG 1/2-13 X 1 SST
5	1410241	1	WIPER BELT, HOPPER
6	-	8	WASHER, FLAT 1/4 SAE, SST
7	-	5	WASHER, 1/4" SPRING LOCK SST
8	-	5	NUT, HEX 1/4-20 SST
9	-	8	SCREW, CAP 1/4-20 X 3/4 SST
10	3013821	1	GEAR MOTOR CONVEYOR 12 VDC
11	1410250	2	SPROCKET, 6 TOOTH PINTLE CHAIN
12	KS402	2	KEY, 1/4 X 1/4 X 2
13	-	1	SCREW, SET 1/4-20 X 1/4 CUP POINT
14	1410200	1	BEARING, FLANGED 1-1/8"
15	-	2	BOLT, 3/8 X 1 1/4, LOW HEAD

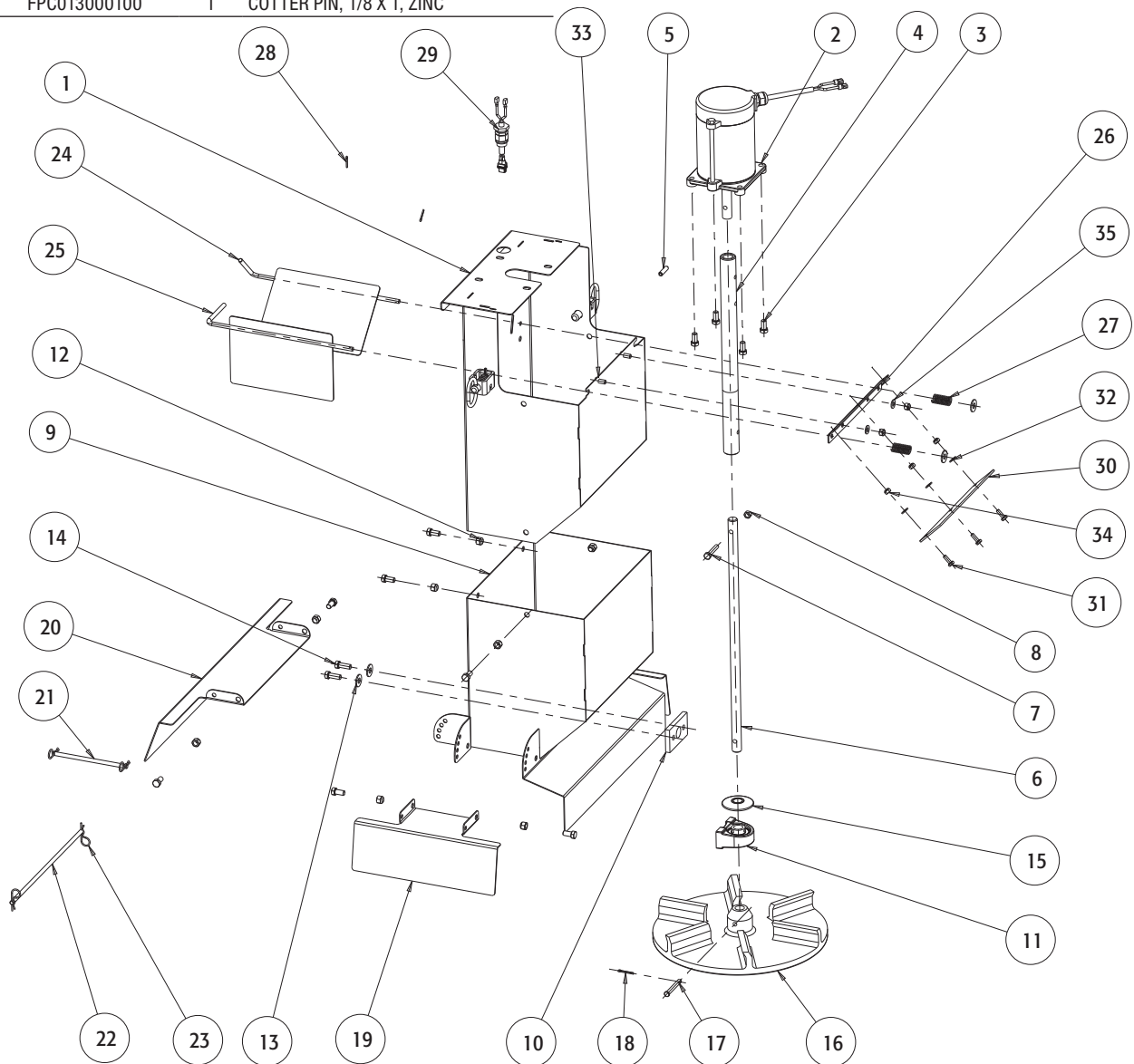
ITEM	PART NO.	QTY.	DESCRIPTION
16	-	2	NUT, NYLOCK 3/8-16 X 7/16 SST
17	-	4	SCREW, HHC 3/8-16 X 1 304 SST
18	1401300	1	CHAIN, CONVEYOR, 93 LINKS
18	1401100P	1	CHAIN ASSY D662 122 LINKS
19	3008571	1	SHAFT IDLER, ASSEMBLY
20	1411001	2	BEARING, IDLER TAKE UP
21	3013898	1	SHROUD GEAR MOTOR
22	3014275	1	COVER REMOVABLE
23	3014744	2	CIRCLE COTTER 1 X .060SST
24	3014949	2	SHIELD, CHAIN, 96"
24	3014959	10	SHIELD, CHAIN 72"
25	-	10	BOLT, 3/8-16 X 1 CARRIAGGE SHORT NECK SST
26	-	10	WASHER, FLAT 3/8 USS SST
27	-	5	NUT, 3/8-16 HEX SST
28	3014778	1	MOTOR REPLACEMENT FOR 3013821



## Repair Parts - Spinner/Chute Assembly

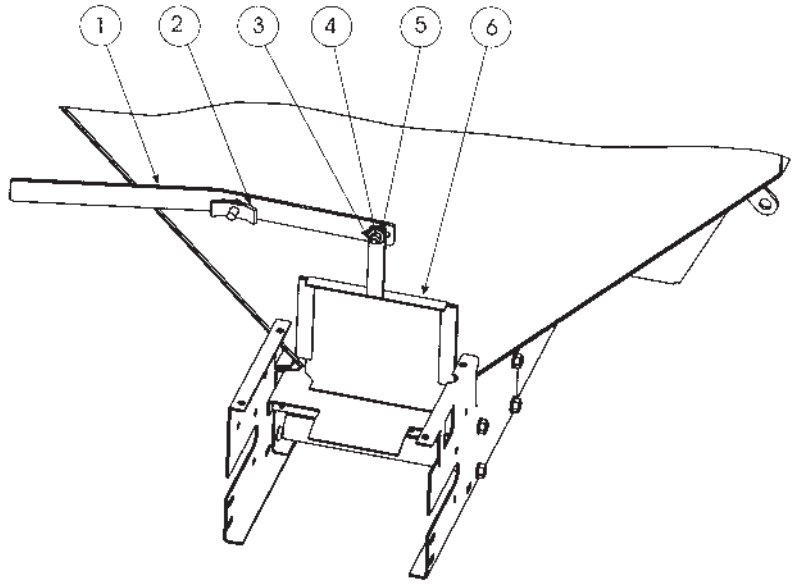
ITEM	PART NO.	QTY.	DESCRIPTION
1	3017969	1	CHUTE UPPER WELDMENT
2	3016309	1	MOTOR 12 VDC, .5 HP SPINNER
3	FCS038016075SS	14	SCREW, HHC-3/8-16 X 3/4 SST
4	3017974	1	COUPLER SHAFT ADJUSTABLE
5	3018190	1	PIN SPRING 5/16 X 1.25 SST
6	3018106	1	SHAFT CHUTE ADJUSTABLE
7	FCS031018175SS	1	SCREW, HHC 5/16-18 X 1 3/4 SS
8	FNE031018034SS	3	NUT, NYLOCK 5/16-18 SS
9	3017970	1	CHUTE LOWER WELDMENT
10	3030680	1	SPACER BEARING, LOWER CHUTE
11	1420101	1	BEARING, SPINNER SHAFT
12	FNE038016044SS	10	NUT, NYLOCK 3/8-16 X 7/16 SST
13	FWF038100007SS	4	WASHER, FLAT 3/8 USS SST
14	FCS038016100SS	2	SCREW, HHC 3/8-16 X 1 304 SST
15	3027439	1	3/4 IN SHAFT SLINGER
16	3012393	1	SPINNER, 14" POLY CW
17	3007113	1	PIN, CLEVIS, 5/16 X 2-1/2, .141 HOLE ZN
18	FPC013000100	1	COTTER PIN, 1/8 X 1, ZINC

ITEM	PART NO.	QTY.	DESCRIPTION
19	3013840	2	DEFLECTOR SIDE SST
20	3018114	1	DEFLECTOR REAR SST
21	3018192	2	PIN, SIDE DEFLECTOR
22	3018193	1	PIN, REAR DEFLECTOR
23	3001257	6	PIN, HAIR COTTER STAINLESS STL
24	3018119	1	INNER BAFFLE PASS SIDE WELDMENT
25	3018120	1	INNER BAFFLE DRVR SIDE WELDMENT
26	3018189	1	RETAINER, INTERNAL BAFFLES
27	3008853	2	SPRING, SPINNER CHUTE BAFFLE
28	FPC009000075SS	2	PIN, COTTER 3/32 X 3/4 STAINLESS
29	3006753	1	WIRE HARNESS, CHUTE
30	3024533	1	WIPER BELT, CHUTE
31	FCS025020075SS	3	SCREW, CAP 1/4-20 X 3/4 SST
32	FWF025063007SS	3	WASHER, FLAT 1/4 SAE SS
33	FCS031018063SS	2	SCREW, HHC 5/16-18 X 5/8 SST
34	FNE025020031SS	3	NUT, NYLON INSERT 1/4-20 SST
35	FWF031075006SS	2	WASHER, 5/16 SAE SST



**Repair Parts - Feed Gate Assembly**

ITEM	PART NO.	QTY.	DESCRIPTION
1	1410108SS	1	FEED GATE LEVER, SST
2	1410109SS	1	LEVER NUT, SST
3		1	BOLT CARRIAGE 3/8-16 X 1-1/4" SST
4		2	3/8 FLAT WASHER SST
5		1	3/8-16 HEX LOCKNUT SST
6	141010WSS	1	FEED GATE PANEL WELDMNT, SST



**Repair Parts**

ITEM	PART NO.	QTY.	DESCRIPTION
1	30015853	1	Spreader 72" SST Unfinished
1	3013819	1	Spreader 96" SST Unfinished
2	3017966	1	Chute Adjustable
3	3018351	1	Hardware Box 1400601SS, 1400701SS
4	1499500SS	1	Vee, Assy Inverted w/HDW SST
4	1499700SS	1	VEE Inverted 96"
5	3007349	1	Screen Top, WELDM
5	3007568	1	Screen, Welded Top, SCH096
6	66050	2	Snapper Pin, 1/4 x 2, Ylw ZN

