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# GASOLINE ENGINE HOPPER SPREADER

INSTALLATION AND OPERATING INSTRUCTIONS



This manual is for Western Hopper Spreaders with the following serial numbers: (1737- )

**WESTERN®**  
**HOPPER SPREADER**  
**INSTALLATION AND OPERATING INSTRUCTIONS MANUAL**

**PREFACE**

Welcome to the growing family of WESTERN® Spreader owners.

This manual provides safety, operation, and maintenance information for your new WESTERN Spreader. We urge you to read this manual carefully and to follow its recommendations. To keep your spreader operating safely and efficiently, insist that this manual be read and understood by all operators and maintenance personnel.

When service is necessary, your local Western distributor knows your spreader best, and is interested in your complete satisfaction. Return your spreader to the distributor for maintenance, service, or any other assistance you may require. Always obtain original equipment service parts from your Western distributor. Never accept any substitute items as they could affect the performance and warranty of this product.

Before using your WESTERN Spreader, make sure your vehicle is equipped with all vehicle manufacturer's and Western's recommended options for spreading.

**N**OTE: 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.

**N**OTE: All reference to "Left" and "Right" sides relate to equipment as viewed from the rear, and facing the normal direction of vehicle travel.

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# SAFETY PROCEDURES



**SAFETY NOTE:** Whenever you see this symbol, it notes a **SAFETY WARNING**. To avoid serious injury to yourself or others, follow all warnings. Read this manual and spreader labels before using spreader.

**CAUTIONS:** Identify conditions or actions where equipment damage could occur.

**NOTES:** Identify tips, helpful hints, and maintenance information the reader should know.

Observe the following safety procedures before and during the use of the spreader. By following these rules and applying common sense, possible injury and potential damage to the machine may be avoided.



## WARNINGS:

- Check that all safety guards are in place before operating the spreader.
- Check that all personnel are clear of the spreader spray area before starting the spreader.
- Secure all loose fitting clothing and unrestrained hair before working with the spreader.
- Stop the spreader before leaving the vehicle to unclog, adjust, oil, or clean the spreader.
- Wait for all movement to stop before servicing the spreader.
- Keep hands, feet, and clothing away from power-driven parts.
- Do not climb on or allow others to climb on the spreader.

## CAUTIONS:

- Do not operate a spreader in need of maintenance.
- Before operating the spreader, reassemble any parts or hardware removed for cleaning or adjusting.
- Before operating the spreader, remove materials such as cleaning rags, brushes, and hand tools from the spreader.
- Use auxiliary warning lights, except when prohibited by law, when operating the spreader.

## ABBREVIATION KEY

A.R.	As Required	G	Grade	SPKT	Sprocket
ASSY	Assembly	HX	Hex	SQ	Square Head
CB	Carriage Bolt	HYD	Hydraulic	SS	Set Screw
CENTRIF	Centrifugal	LK	Lock	STD	Standard
CHMSL	Center High-Mounted Stoplight	MS	Machine Screw	STS	Stainless Steel
CONV	Conveyor	NYIS	Nylon Insert	T	Tooth
CPLG	Coupling	PT	Prevailing Torque	TY	Type
CS	Capscrew	REQ	Required	ZP	Zinc Plated
ELEC	Electric	SDTS	Self Drilling Tap Screw		
FL	Flat	SO	Socket Head		
		SP	Split		

# GENERAL INFORMATION



**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.

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

BODY SIDE LENGTH	OVERALL LENGTH (inches)	EMPTY WEIGHT (lbs.) (No Screen or Battery)	CAPACITY STRUCK (cubic yd.)	CAPACITY ROUNDED (cubic yd.)	WIDTH (inches)	HEIGHT (inches)	RECOMMENDED USE
8' 16 Gauge Stainless	113	624	1.8 *	2.1 *	50-3/4	32-1/2	3/4 or 1 ton pick-up trucks (above 8500# GVWR)
8' Mild Steel	113	820	1.8 **	2.1**	50-3/4	32-1/2	

\* Side extensions are not recommended for the 16 Gauge Stainless Spreader and will void all warranties.

\*\* 6" Side Extension adds 1/2 cu. yd. capacity, 12" Side Extension adds 1 cu. yd. capacity.

## Torque Chart

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

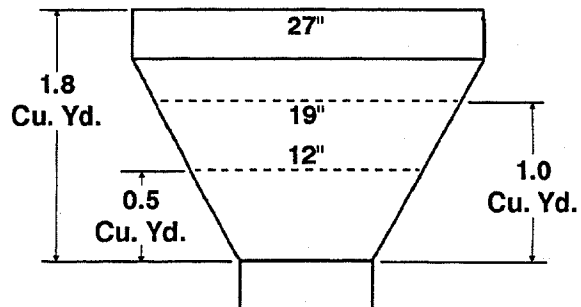
Recommended Fastener Torque			
Size	SAE Grade 2	SAE Grade 5	SAE Grade 8
1/4-20	6	9	13
5/16-18	11	18	28
3/8-16	19	31	46
3/8-24	24	46	68
7/16-14	30	50	75
1/2-13	45	75	115
9/16-12	66	110	165
5/8-11	93	150	225

Metric Grade 8.8 (Ft.-Lbs.)			
Size	Torque	Size	Torque
M 6	7	M 12	60
M 8	17	M 14	95

These torque values apply to mount assembly fasteners except those noted in the instruction.

MATERIAL WEIGHTS	
MATERIAL	WEIGHT (lbs. per cubic yd.)
# 1 Rock Salt	950
# 2 Rock Salt	1,215
Coarse Sand - Dry	2,565
Coarse Sand - Wet	3,240



# INSTALLATION INSTRUCTIONS

## Mounting the Spreader onto the Vehicle

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

1. Remove the tailgate from the truck.
2. Lift the spreader by hooking the loop (Mild Steel Spreader) or hole (16 Gauge Stainless Spreader) 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, 820 lbs. (8' Mild Steel Unit).

3. Place lengths of lumber under the side ribs of the spreader. By elevating the spreader off of 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.

**NOTE:** Pay special attention when drilling or clamping dissimilar metals to aluminum bodies. Galvanic corrosion can occur if not handled properly. Contact vehicle manufacturer for recommended attachment practices.

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 periodically through the snow season to make sure they are secure.

## Chute/Spinner Assembly

1. Loosely attach the Chute/Spinner Assembly using four 3/8" x 5/8" bolts, lock washers, and nuts, with the head of the bolt on the inside of the chute. Push the Chute/Spinner Assembly toward the front of the vehicle. DO NOT tighten the bolts.
2. Install the Roller Chain between the Spinner Shaft Sprocket and the Gear Case Sprocket. Check that the sprockets are in line. Check the set screw for tightness. Install the Master Link.
3. 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 2.
4. Install the chain guard using 1/4" x 3/4" long hex capscrews, lock washers, and nuts.

# INSTALLATION INSTRUCTIONS

## Cab Control and Wire Harness Installation

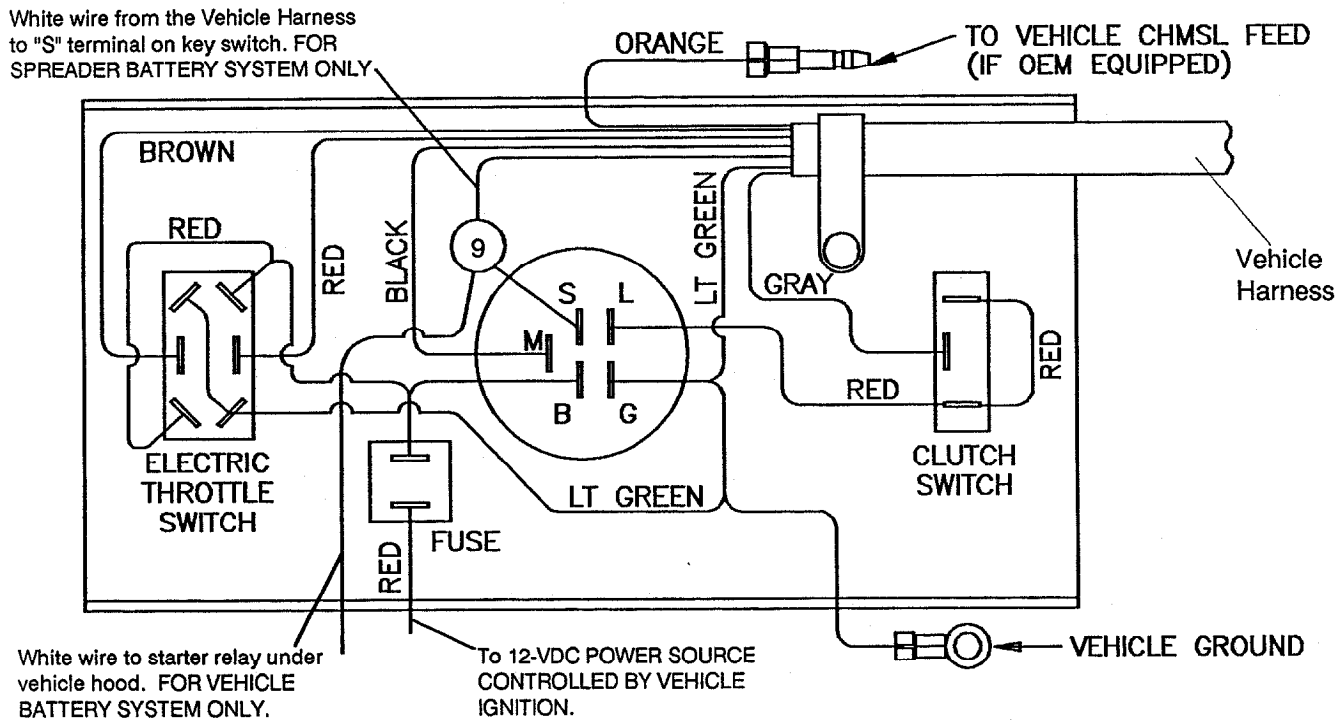
**NOTE:** Use Quaker State NYK-77 dielectric grease on all electrical connections.

1. Attach the Spreader Harness to the side of the spreader using pre-drilled holes and number six clamp loops.
2. Plug the Vehicle Harness into the Spreader Harness.
3. Layout a path for routing the Vehicle Harness into the cab through the floor. Check that the Vehicle Harness avoids any hot or moving parts of the truck.

**CAUTION:** Before drilling any holes, check both sides of the material for any wires, fuel lines, fuel tanks, etc. that may be damaged by drilling.

4. Drill a 5/8" hole in the floor such that the Vehicle Harness can reach the desired Cab Control location. Insert the grommet into the hole and route the harness to the desired location.
5. Mount the Cab Control in a convenient location. Due to the variety of possible in-cab locations, a mounting bracket is not provided. A suitable bracket should be made and fastened to the cab.

### Cab Control Wiring Diagram



6. Connect the Vehicle Harness to the Spreader Cab Control according to the Cab Control Wiring Diagram.
7. Connect the light green wire from the Vehicle Harness to a known ground on the vehicle.
8. Connect the Power Wire - Red to an accessory wire/terminal that is controlled by the vehicle's ignition switch.
9. **For Spreader Battery System ONLY**  
Connect the white wire from the Vehicle Harness to the "S" terminal on the key switch. See the above diagram.

#### For Vehicle Battery System ONLY

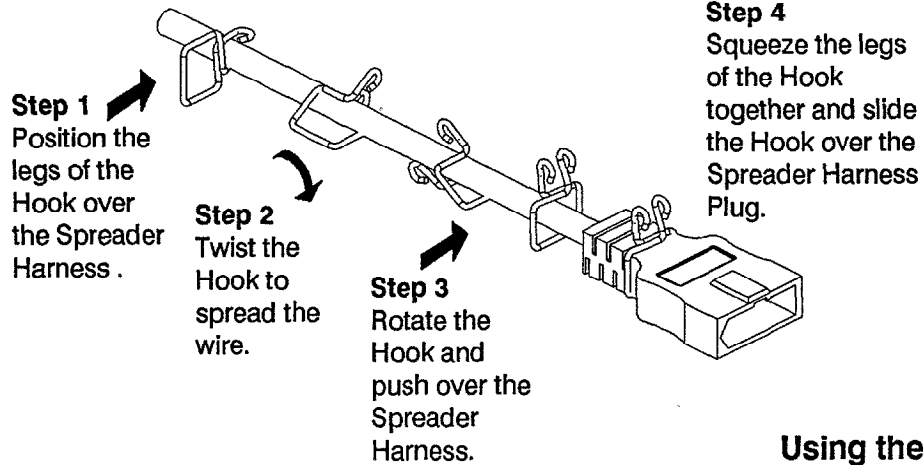
Connect the Relay Wire - White from the Starter Relay to the "S" terminal on the key switch. The white wire from the Vehicle Harness will not be used. See the above diagram.  
Also refer to the Vehicle Battery Kit Installation Instructions.

10. Install the Plug Cover and Hook according to the diagrams on page 5.

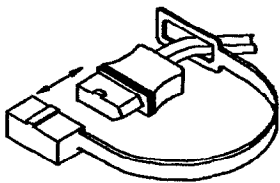
**NOTE:** The cab control wiring must be protected from abrasion and cutting from sharp edges during installation and operation. Tape, grommets, etc. should be used.

# INSTALLATION INSTRUCTIONS

## Hook Installation

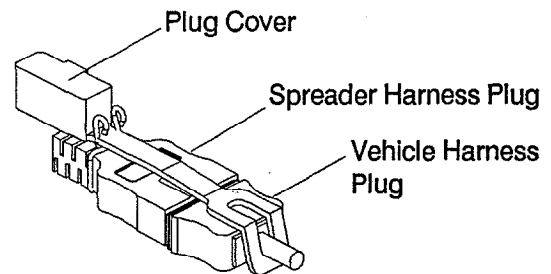


## Plug Cover Installation



After connecting the Spreader Harness Plug with the Vehicle Harness Plug, secure the Plug Cover into the legs of the Hook as shown.

## Using the Hook



## Battery Safety



**WARNING:** A charging battery gives off gases that can explode if touched by a spark or flame. Cover top of battery with electrically non-conductive material to keep sparks away from battery gases.

- Never lay tools or equipment on the battery. This could accidentally ground the POSITIVE (+) battery terminal, resulting in electrical shock or burns or damage to the vehicle or equipment.
- Avoid contact with battery acid. Battery acid can seriously burn eyes or skin, and burn holes in clothing.
- Always disconnect the battery before removing or replacing electrical components such as the starter relay or battery cables.



# INSTALLATION INSTRUCTIONS

## Battery Installation Options

Install either the Spreader Battery Kit or the Vehicle Battery Kit, and follow the corresponding instructions.

### Spreader Battery Kit Installation

1. Install a 12-volt battery with a minimum of 400 cold cranking amps rating. The Battery Box will accept any Group 65, 64, 27, 24, or 22 series Top Terminal battery.
2. Mount the Starter Relay to the Engine Mount using 1/4-20 fasteners. Connect the two green wires from the Spreader Harness to one of the Starter Relay mounting bolts.
3. Connect the Starter Cable from the starter to the Starter Relay.
4. Connect the Alternator Wire with Plug to the engine.
5. Connect the Alternator Wire with Plug and the Red Battery Cable to the unused terminal of the Starter Relay.
6. Connect the Red Battery Cable to the POSITIVE (+) terminal of the battery. Secure to the spreader with number 10 Clamp Loops.
7. Attach one end of the Black Battery Cable to the spreader battery tray using a 3/8" bolt, lock washer, and nut. Connect the other end to the NEGATIVE (-) terminal of the battery.
8. Connect the white wire from the Spreader Harness to the primary terminal of the Starter Relay.

### Vehicle Battery Kit Installation

1. Verify the vehicle battery is in good condition.
2. Disconnect the ground cable from the battery.
3. Locate the Starter Relay within 18" of the vehicle primary battery in an area protected from road splash. The mounting surface needs to be grounded.  

If a grounded surface is not available, install a wire (not supplied) between a known ground and the Starter Relay mounting flange after installation.

Using the Starter Relay Mounting Flange as a template, drill two 9/32" holes and fasten with two 1/4" x 3/4" bolts, flat washers, and lock nuts.
4. Install the Battery Cable 22" between the POSITIVE (+) battery terminal and to one of the secondary terminals of the Starter Relay. A Battery Cable Adapter Kit is provided for side terminal batteries.  

Check that the cable is protected or secured away from all sharp edges, and hot or moving parts.
5. Install and secure the Relay Wire - White between the Cab Control and the primary terminal of the Starter Relay. See the Cab Control Wiring Diagram to connect the Relay Wire - White to the Keyed Ignition Switch.  

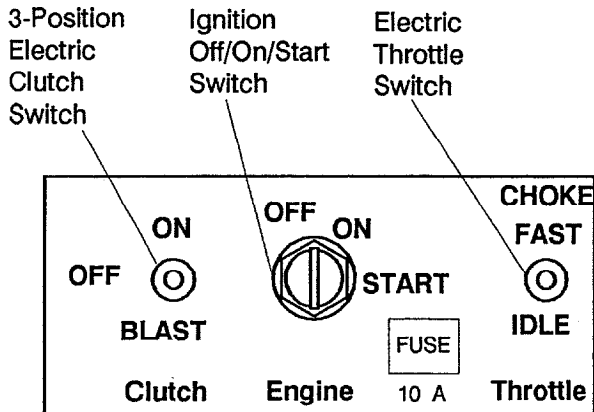
Check that the wire is protected or secured away from all sharp edges, and hot or moving parts.
6. At the rear of the spreader, feed the Spreader Cable up through the 1" grommet in the engine base used by the Spreader Harness.  

Connect the solid black wire of the cable to the engine mount along with the two green wires from the Spreader Harness using a 1/4-20 fastener.

Connect the red striped wire to the starter motor terminal.
7. Route the Spreader Cable alongside the Spreader Harness and secure to the side of the spreader with number 10 clamp loops. Use the fasteners that secure the Spreader Harness for securing the Spreader Cable.
8. Connect the Spreader Cable to the Vehicle Cable.  

Route the Vehicle Cable under the cab, into the vehicle engine compartment, and over to the spreader's Starter Relay.
9. Secure the Vehicle Cable to the vehicle avoiding sharp edges, and hot or moving parts. Check that the Vehicle Cable cannot drop onto the road when it is disconnected from the spreader
10. Connect the solid black wire of the Vehicle Cable to the vehicle engine ground. Connect the red striped wire to the unused secondary terminal of the Starter Relay.
11. Reconnect the ground cable to the battery.

## Cab Control Identification



### CAB CONTROL - ELECTRIC THROTTLE

**NOTE:** The conveyor and spinner will operate when the clutch switch is in the "ON" or the "BLAST" position.

## Starting the Engine

### Electric Throttle Spreaders

1. Turn the vehicle ignition to "ON".
2. Verify that the clutch switch is "OFF".
3. Turn the spreader ignition to "ON". (Labeled "Engine" on the Cab Control.)
4. Move the throttle switch to "IDLE" and hold for two seconds; release.
5. Turn the ignition switch to "START".
6. While the engine is cranking, move the throttle switch to "CHOKE/FAST".
7. Release the throttle switch when the engine starts to fire.
8. Release the ignition switch when the engine starts. If the engine does not start after 10 seconds of cranking, turn both ignition switches to "OFF" and see the Briggs & Stratton Owner's Manual which is shipped with the spreader.
9. After the engine starts, move the throttle switch to "IDLE" for 1/2 - 1 second to release the choke.
10. To control the engine speed:
  - To increase the engine speed, hold the throttle switch at "CHOKE/FAST".
  - To decrease the engine speed, hold the throttle switch at "IDLE".

**NOTE:** Maximum engine speed is obtained just prior to choking the engine.

## Stopping the Engine

1. Turn the spreader ignition switch to "OFF".

# OPERATION

## Clutch Operation

1. Start the engine and adjust the speed to slightly above idle.
2. Move the clutch switch to "ON".
3. Increase the engine speed to the desired RPM.

Observe the following recommendations:

- The electric clutch can be engaged or disengaged at any time, and at any engine RPM. However, since engagement time and thus torque are almost instantaneous, it is recommended that the electric clutch be engaged at the lowest possible RPM without stopping the engine. This will prevent premature spinner chain failure and chain tension loss.
- To help prevent a frozen conveyor chain, empty the spreader when not in use.
- 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.
- 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 input shaft only. Attempts to turn the output shaft will strip the gears and void any warranty.

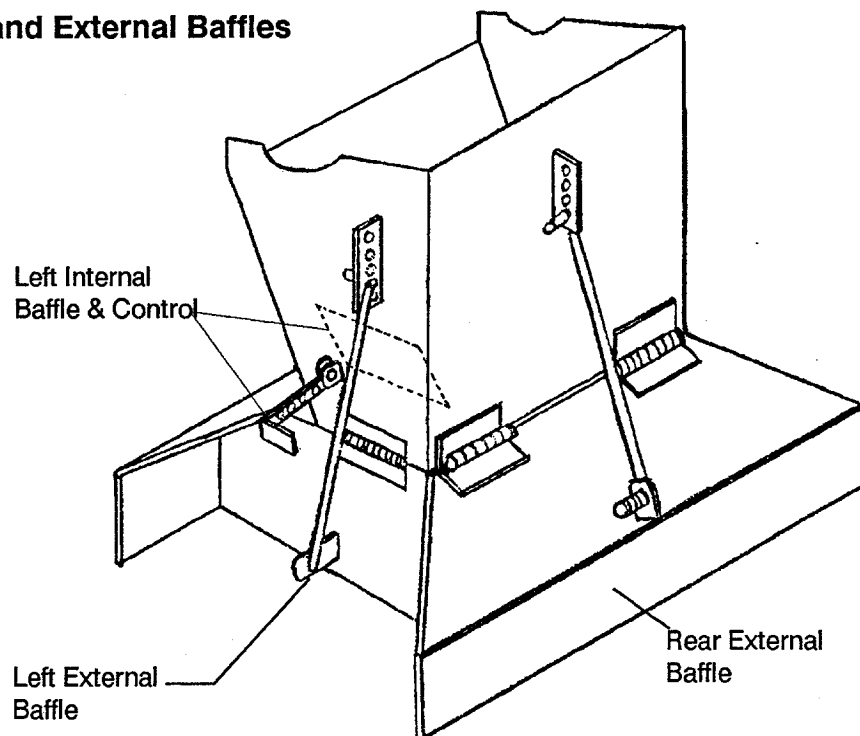
## Baffle Adjustment

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

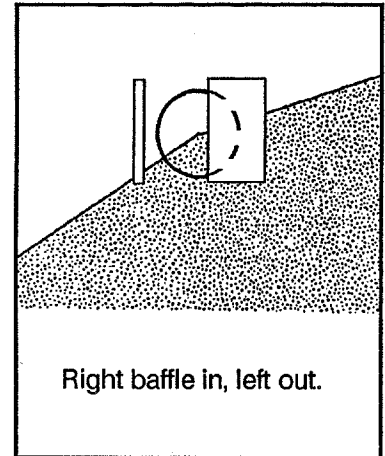
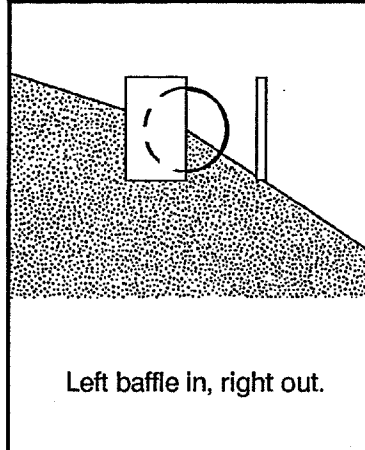
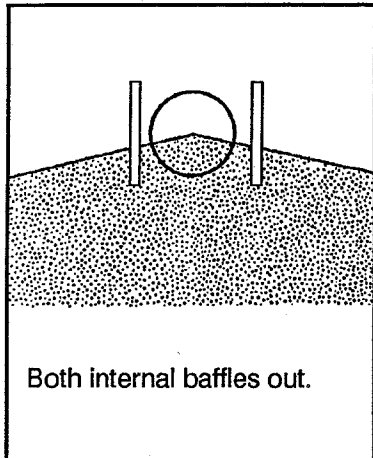
- *Decreasing* RPM, and/or gate-opening, will *decrease* the amount of material coming to the spinner.
- *Increasing* RPM, and/or gate-opening, will *increase* the amount of material coming to the spinner.

See the charts on page 9.

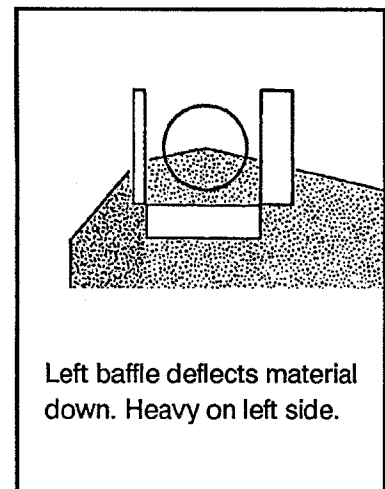
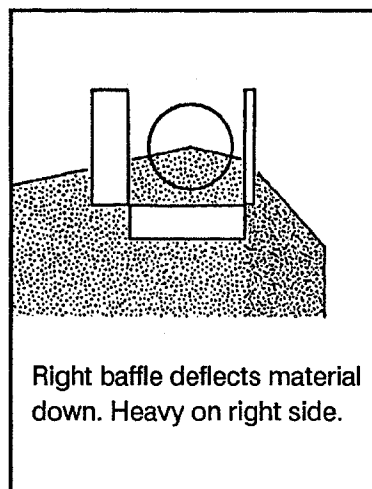
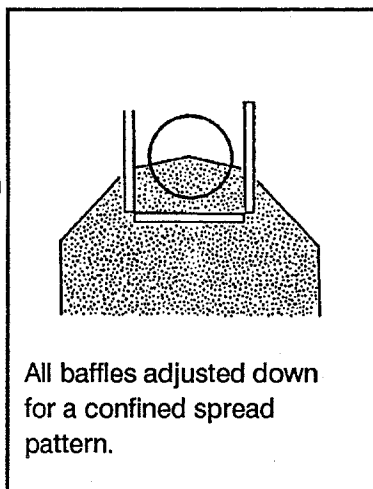
## Internal and External Baffles



**Internal Baffle Adjustment**



**External Baffle Adjustment**

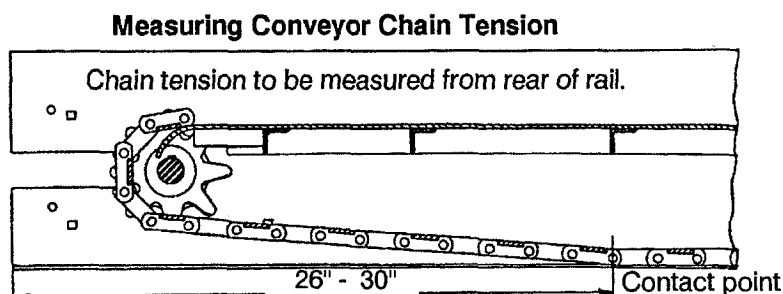


## MAINTENANCE

- Use Quaker State NYK-77 dielectric 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 the diagram below.



- Maintain engine-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 chain tension. Correct chain tension allows 5/16" deflection midway between the sprockets. To increase chain tension, loosen the bearing mounting hardware and pull the Spinner Shaft away from the Gear Case. 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 engine, 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 a 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.
- To minimize problems and extend the life of the Electric Clutch, the following procedures are recommended:
  - At the end of each snow season, remove and clean the clutch.
  - After cleaning the clutch, coat both mating surfaces of the clutch with oil or light grease.
  - Remove oil and grease prior to using the clutch again.

## Engine Service and Repair

Maintain the spreader engine according to the engine owner's manual which is shipped with the spreader. Engine warranty is covered by Briggs & Stratton and is described in the back of the Briggs & Stratton engine owner's manual.

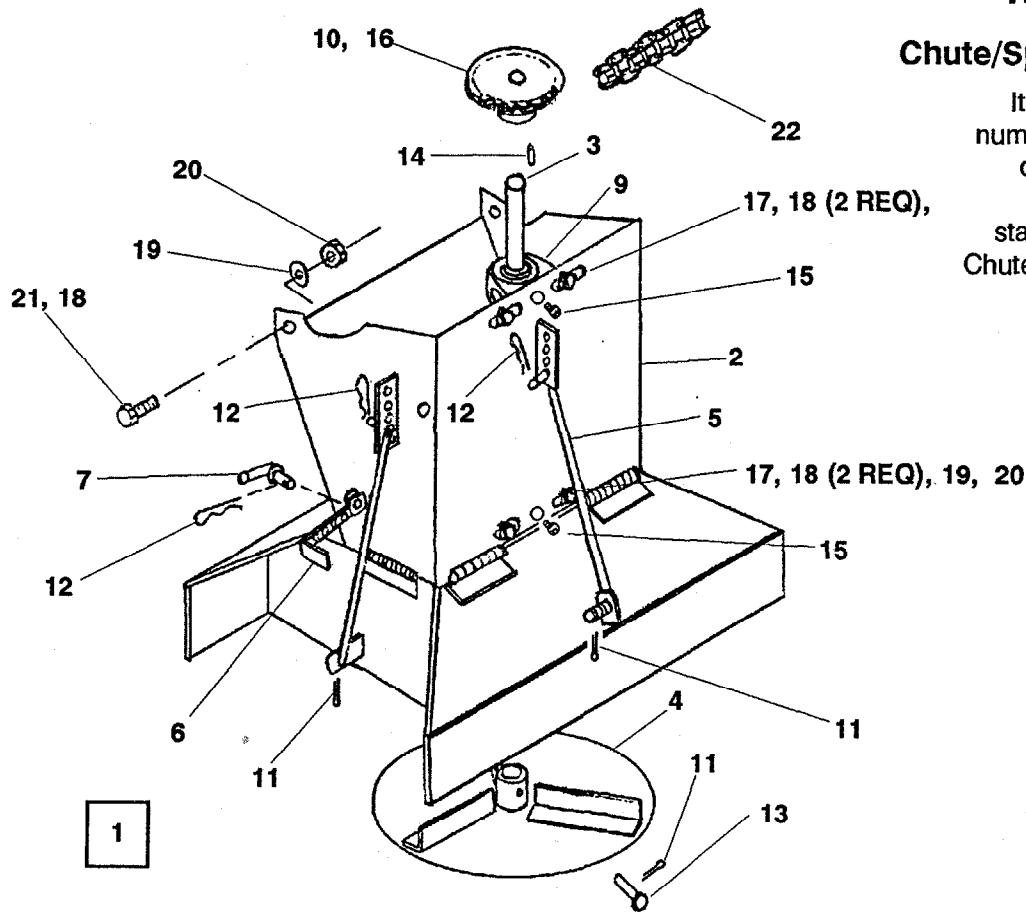
If service or repair is needed, contact an authorized Briggs & Stratton Service Center. To serve you promptly, the Service Center will need the model, type, and code number for your engine.

Your nearest service center is listed in the "Yellow Pages" under "Engines, Gasoline" or "Gasoline Engines."

# REPAIR PARTS

## Chute/Spinner Assembly

Items with a single part number or description are common to mild steel, 16 gauge stainless, standard, and extended Chute/Spinner Assemblies.

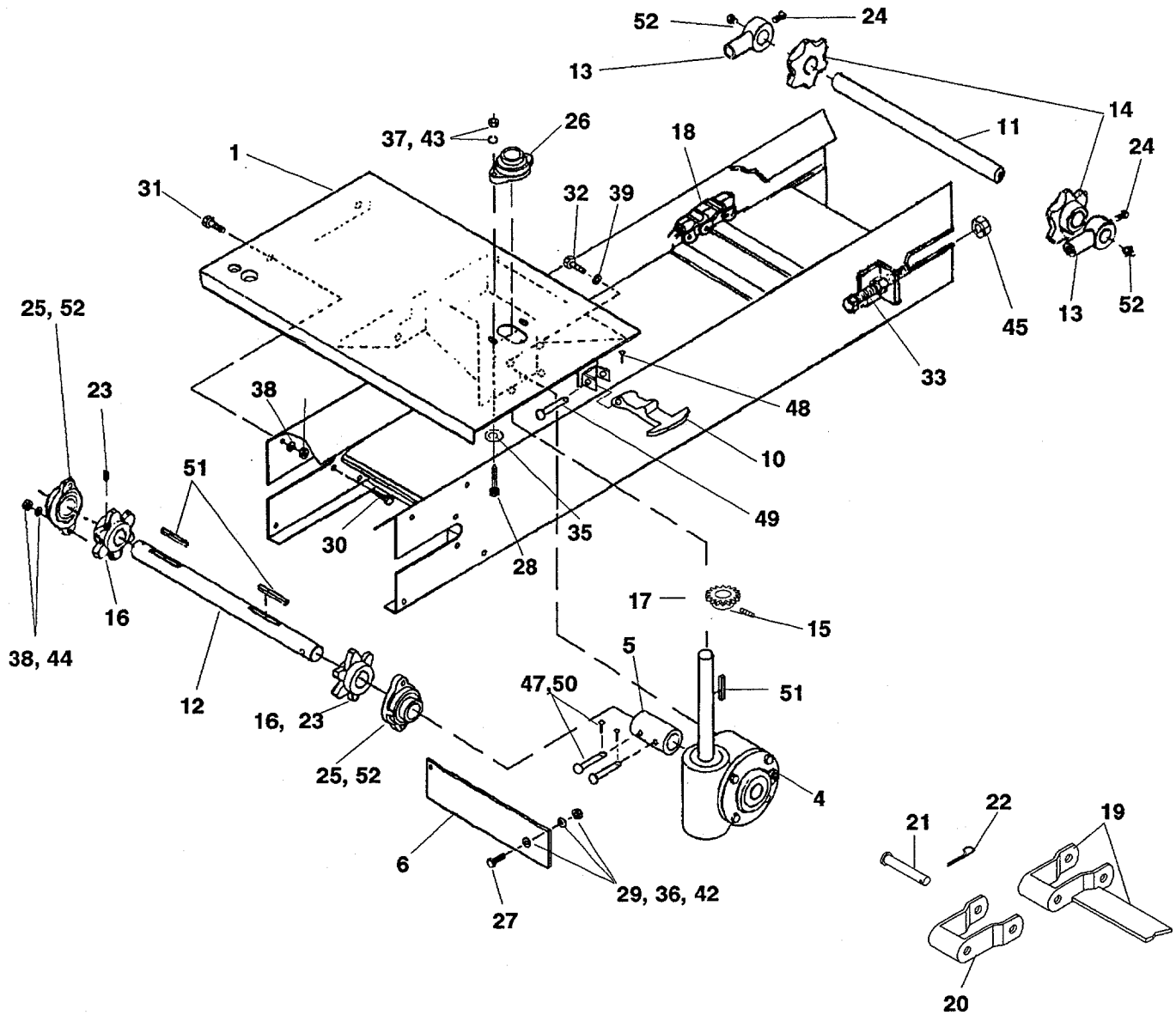


ITEM	PART No	QTY.	DESCRIPTION	ITEM	PART No	QTY.	DESCRIPTION
1	65198	1	STD CHUTE/SPINNER ASSY	17	90040	4	3/8-16X1-1/4 HX CS G5 ZP
1	65125	1	STD CHUTE/SPINNER ASSY - STS	17	.	4	3/8-16X1-1/4 HX CS G5 STS
1	65244	1	12" EXTENDED CHUTE/SPINNER ASSY	18	91103	8	3/8 PLAIN WASHER TY A STD ZP
1	65126	1	12" EXTENDED CHUTE/SPINNER ASSY - STS	18	.	8	3/8 PLAIN WASHER TY A STD STS
2	65119	1	STD CHUTE HOUSING	19	91203	4	3/8 SP LK WASHER ZP
2	65385	1	STD CHUTE HOUSING - STS	19	.	4	3/8 SP LK WASHER STS
2	65121	1	12" EXT CHUTE HOUSING	20	91413	4	3/8-16 HX NUT ZP
2	65386	1	12" EXT CHUTE HOUSING - STS	20	.	4	3/8-16 HX NUT STS
3	65196	1	STD SHAFT	18	91103	4	3/8 PLAIN WASHER TY A STD ZP
3	65243	1	12" EXT SHAFT	18	.	4	3/8 PLAIN WASHER TY A STD STS
4	65201	1	SPINNER DISK	19	91203	4	3/8 SP LK WASHER ZP
4	65388	1	SPINNER DISK - STS	19	.	4	3/8 SP LK WASHER STS
5	65199	3	CONTROL ROD - 10"	20	91413	4	3/8-16 HX NUT ZP
6	65203	2	GATE HANDLE	20	.	4	3/8-16 HX NUT STS
6	65395	2	GATE HANDLE - STS	21	90038	4	3/8-16X3/4 HX CS G5 ZP
7	65206	2	ADJUSTMENT PIN	21	.	4	3/8-16X3/4 HX CS G5 STS
9	65197	2	PILLOW BLOCK BEARING - 3/4"	22	65194	1	NO. 40 CHAIN, 38"
10	65193	1	SPROCKET, 24 T				
11	.	4	1/8X3/4 COTTER PIN				
12	91959	5	3/32X2-1/4 HAIRPIN COTTER ZP				
13	92996	1	5/16X1-3/4 CLEVIS SHEAR PIN				
14	65195	1	KEY, 3/16" SQ X 1" LG				
15	.	2	GREASE FITTING LINCOLN #5000				
16	90512	1	1/4-20X1/2 SO SS				

Indented parts are included in the assembly under which they are listed. Quantities shown are included with the assembly.

# REPAIR PARTS

## Conveyor Drive and Idler



**Note:** Assemble chain link and pin to chain bar as shown.

# REPAIR PARTS

## Conveyor Drive and Idler

Items with a single part number or description are common to both mild steel and 16 gauge stainless spreaders.

### Parts List

ITEM	PART No.	QTY.	DESCRIPTION	ITEM	PART No.	QTY.	DESCRIPTION
1	65358	1	ENGINE BASE, 1994 AND LATER	30	90061	4	3/8-16X1-1/2 HX CS G5 ZP
1	65387	1	ENGINE BASE, 1994 AND LATER - STS	30		4	3/8-16X1-1/2 HX CS STS
4	65178	1	GEAR CASE, CONVEYOR 1.125" (DURST)	31	90039	4	3/8-16X1 HX CS G5 ZP
4		1	GEAR CASE, CONVEYOR, 1.250" (SUPERIOR***)	31		4	3/8-16X1 HXCS STS
5	65177	1	CPLG, DRAG SHAFT 1.125" (DURST)	32	90098	4	1/2-13X1 HX CS G5 ZP
5	65145	1	CPLG, DRAG SHAFT, 1.125"-1.250" (SUPERIOR)	32		4	1/2-13X1 HX CS STS
6	65175	1	WIPER, BELT	33	65608	2	5/8-11X6 WELDMENT ZP
10	65224	2	STRAP, RUBBER HOLD DOWN	33	65609	2	5/8-11X6 WELDMENT STS
11	65191	1	IDLER SHAFT, 1"	35	91132	2	5/16 PLAIN WASHER TY A STD ZP
12	65173	1	DRAG SHAFT, 1.125"	35	91099	2	5/16 PLAIN WASHER TY A STD STS
13	65188	2	ROD END	36	91201	2	1/4 SP LK WASHER ZP
14	65189	2	IDLER SPROCKET, 6TX1.0" I.D.	36		2	1/4 SP LK WASHER STS
15	90521	1	5/16-18 X 3/8 SO SS	37	91202	2	5/16 SP LK WASHER ZP
16	65172	2	DRAG SPROCKET, 6TX1.125" I.D.	37	91276	2	5/16 SP LK WASHER STS
17	65181	1	SPROCKET, 16TX1.0" I.D.	38	91203	8	3/8 SP LK WASHER ZP
18	65183	1	CONVEYOR CHAIN - 8'***	38		8	3/8 SP LK WASHER STS
19	. 65187	A.R.	WELDMENT-CHAIN BAR	39	91205	4	1/2 SP LK WASHER ZP
20	. 65184	A.R.	LINK - CONVEYOR CHAIN	39		4	1/2 SP LK WASHER STS
21	. 65186	A.R.	PIN - CONVEYOR CHAIN	42	91411	2	1/4-20 HX NUT ZP
22	.	A.R.	3/32X1/2 COTTER PIN ZP	42		2	1/4-20 HX NUT STS
23	90512	2	1/4-20 X 1/2 SO SS	43	91412	2	5/16-18 HX NUT ZP
24	90804	2	5/16-18X3/4 SQ SS	43	91430	2	5/16-18 HX NUT STS
25	65171	2	1-1/8" FLANGED BEARING	44	91413	8	3/8-16 HX NUT ZP
26	65182	1	1" FLANGED BEARING	44		8	3/8-16 HX NUT STS
27	90002	2	1/4-20X3/4 HX CS G5 ZP	45	91416	2	5/8-11 HX NUT ZP
27		2	1/4-20X3/4 HX CS STS	45		2	5/8-11 HX NUT STS
28	90022	2	5/16-18X1-1/2 HX CS G5 ZP	47		2	1/8X1 COTTER PIN ZP
28	90553	2	5/16-18X1-1/2 HX CS STS	48		2	1/16X1/2 COTTER PIN ZP
29	91101	2	1/4 PLAIN WASHER TY A STD ZP	49	93000	2	3/16X1-1/4 CLEVIS PIN
29		2	1/4 PLAIN WASHER TY A STD STS	50	92998	2	3/8X2 CLEVIS SHEAR PIN
				51	65174	3	KEY, .25" SQ X1-1/2
				52		4	GREASE FITTING LINCOLN #5000
				*	65301	4	TIE-DOWN CHAIN
				*	65306	4	TIE-DOWN LINK

\* Not Shown

\*\* Modify as required for lengths other than 8 ft..

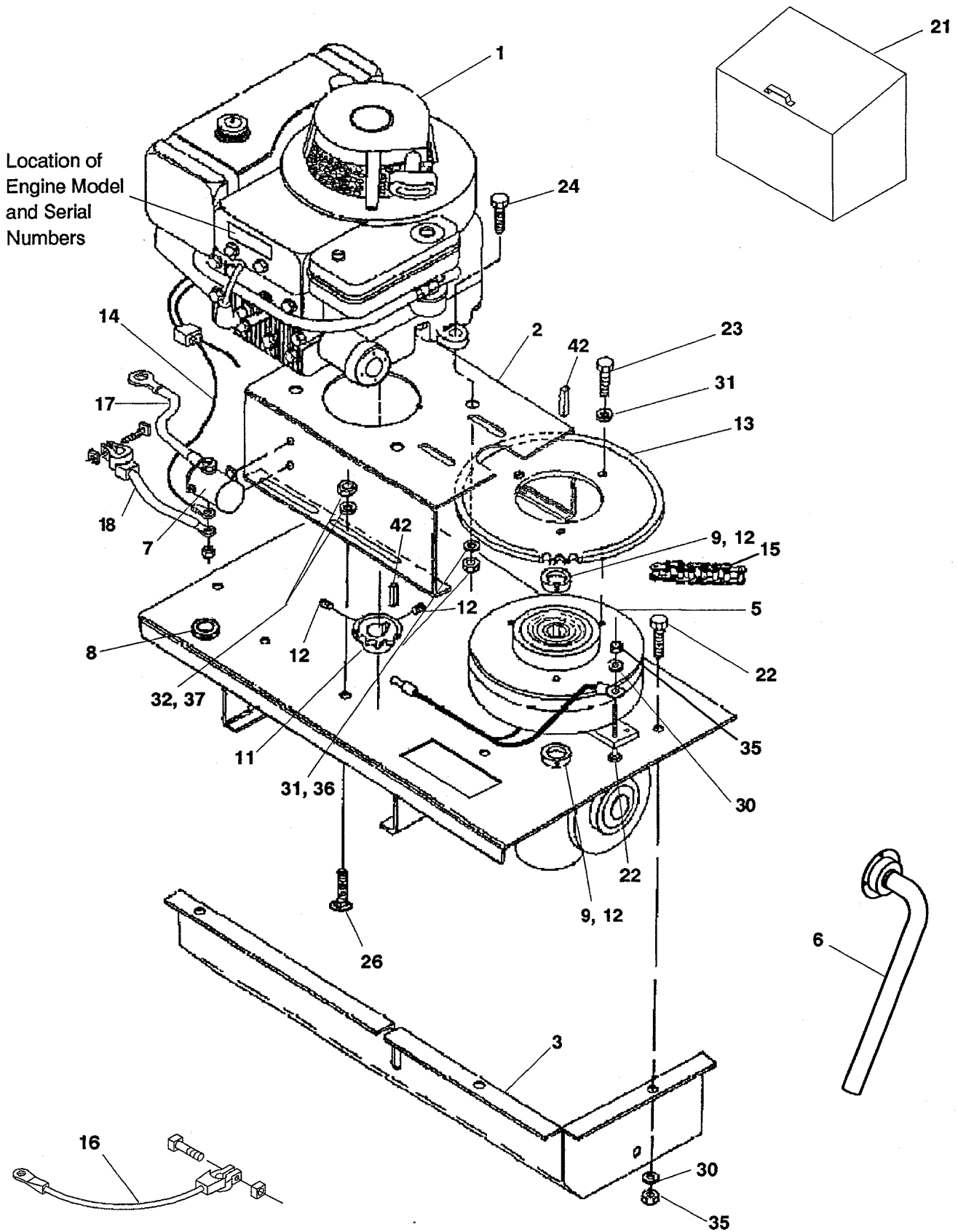
\*\*\* Replace Superior gear case & coupling with Durst #65178 & #65177

Indented parts are included in the assembly under which they are listed. Quantities shown are included with the assembly.



# REPAIR PARTS

## Engine Drive with Clutch



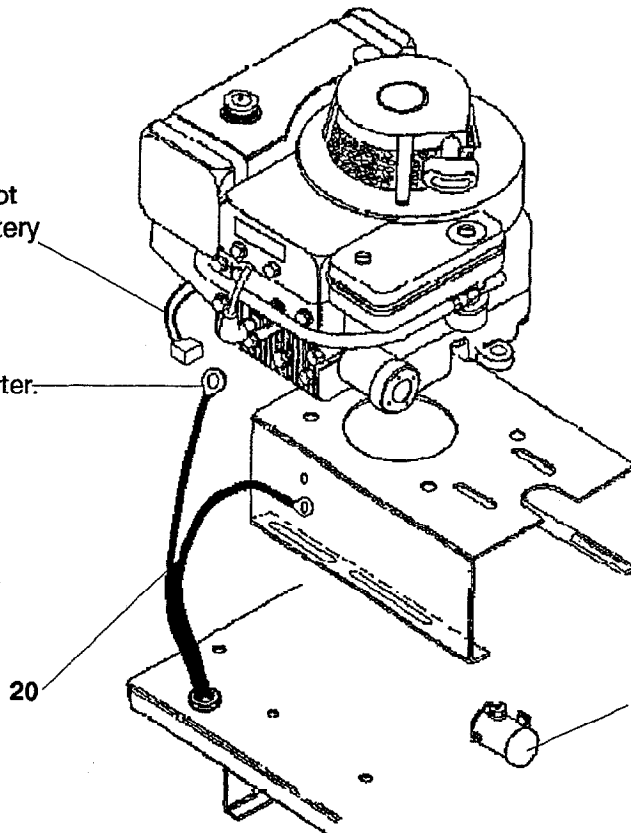
# REPAIR PARTS

## Engine Drive with Clutch

Items with a single part number or description are common to both mild steel and 16 gauge stainless spreaders.

Alternator wires are not used with Vehicle Battery System.

Connect to starter.



7 — Located in the vehicle engine compartment for the Vehicle Battery System.

### Parts List

ITEM	PART No	QTY.	DESCRIPTION	ITEM	PART No	QTY.	DESCRIPTION
1	65103	1	8.0 H.P. ENGINE	22	90002	4	1/4-20X3/4 HX CS G5 ZP
1	65112	1	8.5 H.P. ENGINE	22		4	1/4-20X3/4 HX CS STS
2	65356	1	ENGINE MOUNT	23		3	5/16-18X5/8 HX CS G5 ZP
3	65213	1	CHAIN GUARD	24	90022	4	5/16-18X1-1/2 HX CS G5 ZP
3	65390	1	CHAIN GUARD - STS	26	90201	4	3/8-16X1 CB G5 ZP
*	65251**	1	BATTERY CASE W/STRAP	26		4	3/8-16X1 CB STS
5	65212	1	ELEC CLUTCH	30	91201	4	1/4 SP LK WASHER ZP
6	65369	1	TUBULAR EXHAUST EXTENSION	30		4	1/4 SP LK WASHER STS
7	65357	1	STARTER RELAY	31	91202	7	5/16 SP LK WASHER ZP
8	65216	1	RUBBER GROMMET, 1"	32	91203	4	3/8 SP LK WASHER ZP
9	65211	2	LOCKING COLLAR, 1" — Elec Clutch	32		4	3/8 SP LK WASHER STS
11	65214	1	ENGINE SPKT, 12 T	35	91411	4	1/4-20 HX NUT ZP
12	90521	4	5/16-18 X 3/8 S0 SS	35		4	1/4-20 HX NUT STS
13	65209	1	ELEC CLUTCH SPKT, 52 T	36	91412	4	5/16-18 HX NUT ZP
14	65380	1	ALTERNATOR WIRE WITH PLUG	37	91413	4	3/8-16 HX NUT ZP
15	65215	1	NO. 40 CHAIN, 39"	37		4	3/8-16 HX NUT STS
16	65249**	1	BLACK BATTERY CABLE (NEG)	42	65174	2	KEY, .25 SQ X 1-1/2" LG
17	65247**	1	STARTER CABLE				
18	65246**	1	RED BATTERY CABLE (POS)				
*	65573***	1	VEHICLE CABLE				
20	65574***	1	SPREADER CABLE				
*	22511***	1	BATTERY CABLE 22"				
21	65264	1	ENGINE COVER				
21	65391	1	ENGINE COVER - STS				

\* Not Shown

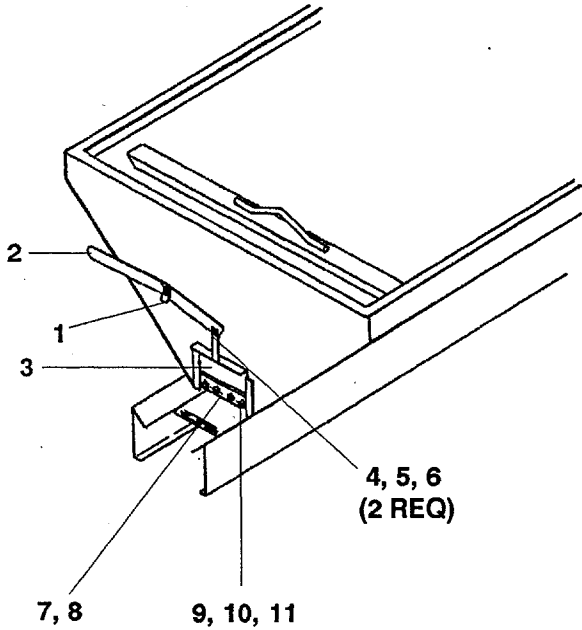
\*\*Spreader Battery System only.

\*\*\*Vehicle Battery System only.

# REPAIR PARTS

## FEED GATE

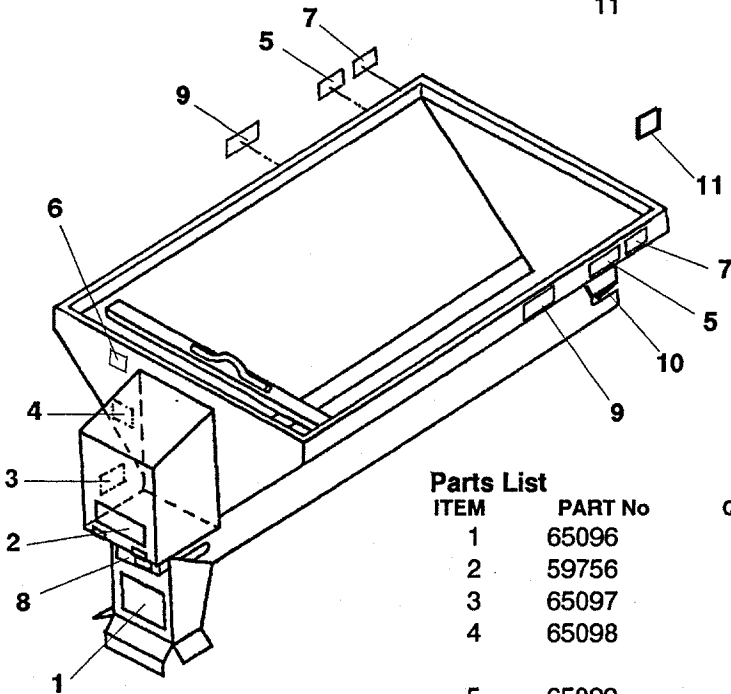
Items with a single part number or description are common to both mild steel and 16 gauge stainless spreaders.



### Parts List

ITEM	PART No	QTY.	DESCRIPTION
1	65218	1	WING NUT
1	65392	1	WING NUT - STS
2	65219	1	LEVER
2	65393	1	LEVER - STS
3	65221	1	FEED GATE
3	65394	1	FEED GATE - STS
4	90040	1	3/8-16X1-1/4 HX CS G5 ZP
4		1	3/8-16X1-1/4 HX CS STS
5	91333	1	3/8-16 PT HX LK NUT NYIS ZP
5		1	3/8-16 PT HX LK NUT NYIS STS
6	91103	2	3/8 PLAIN WASHER TY A STD ZP
6		2	3/8 PLAIN WASHER TY A STD STS
7	65222	1	RUBBER FEEDER BAR
8	65223	1	FEED BAR BRACKET
8	65396	1	FEED BAR BRACKET STS
9		4	1/4-20X1 FL MS ZP
9		4	1/4-20X1 FL MS STS
10	91411	4	1/4-20 HX NUT ZP
10		4	1/4-20 HX NUT STS
11	91201	4	1/4 SP LK WASHER ZP
11		4	1/4 SP LK WASHER STS

## LABELS



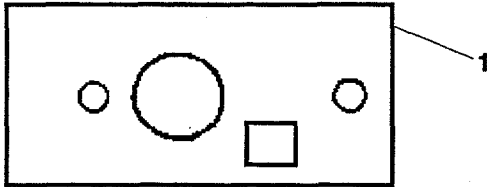
### Parts List

ITEM	PART No	QTY.	DESCRIPTION
1	65096	1	LABEL - INFORMATION - Flying Material
2	59756	1	LABEL - IDENTITY - WESTERN®
3	65097	1	LABEL - INFORMATION - Fire Hazard
4	65098	1	LABEL - INFORMATION - Read Instruction Manual
5	65099	2	LABEL - INFORMATION - Material to be Spread
6		1	LABEL - SERIAL - Serial No.
7	65095	2	LABEL - INFORMATION - Stay Out of Box
8	65122	1	LABEL - INFORMATION - Guard is for Your Protection
9	23769	2	LABEL - IDENTITY - WESTERN® (Small)
10	65160	2	LABEL - INFORMATION - Feed Chain
11	65397	1	LABEL - INFORMATION - Cab Control Wiring

# REPAIR PARTS

## Cab Control

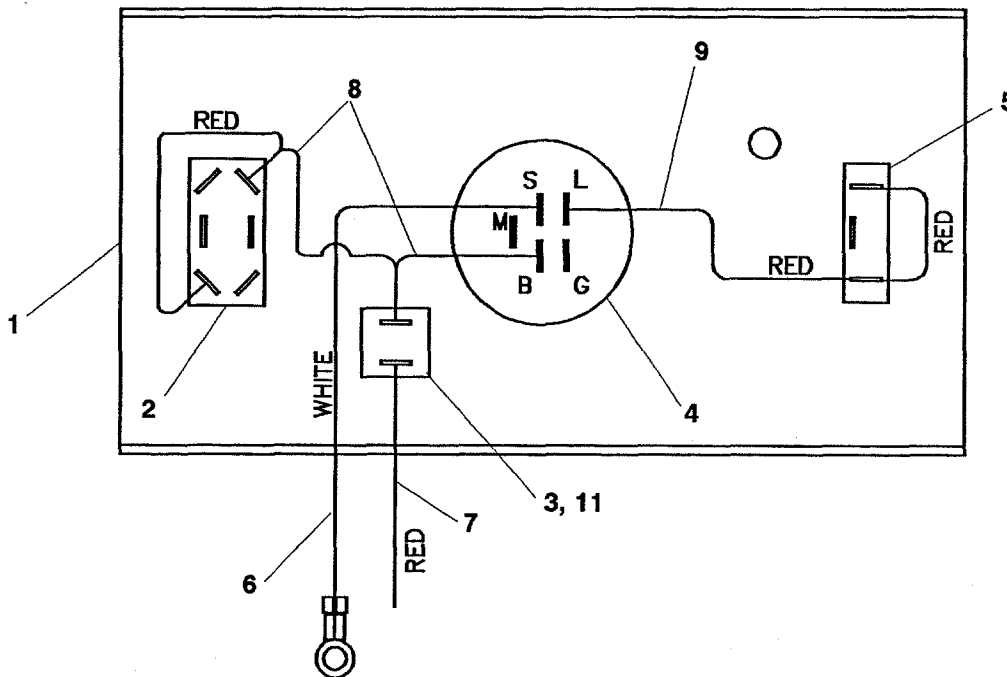
FRONT VIEW



Electric Throttle

## Cab Control

BACK VIEW

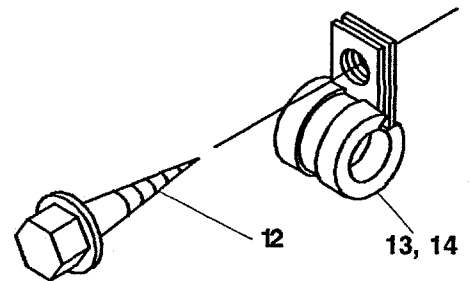


### Parts List

ITEM	PART No	QTY.	DESCRIPTION
1	65317	1	CAB CONTROL - ELECTRIC THROTTLE
2	65354	1	ELECTRIC THROTTLE SWITCH
3	65313	1	FUSE BLOCK
4	65367	1	KEYED IGNITION SWITCH
5	65353	1	CLUTCH SWITCH
6	65384	1	RELAY WIRE - WHITE (Vehicle Battery System ONLY)
7	65381	1	POWER WIRE - RED
8	65382	1	JUMPER WIRE - RED - 4 TERMINAL
9	65383	1	JUMPER WIRE - RED - 3 TERMINAL
11	65366	1	FUSE 3 AG - 10 AMP
12	93148	7	1/4X3/4 HX SDTS ZP
13	65340	6	CLAMP LOOP #10
14	65190	7	CLAMP LOOP #6
*	66130	1	5/8 RUBBER GROMMET

\* Not shown.

### Clamp Loops

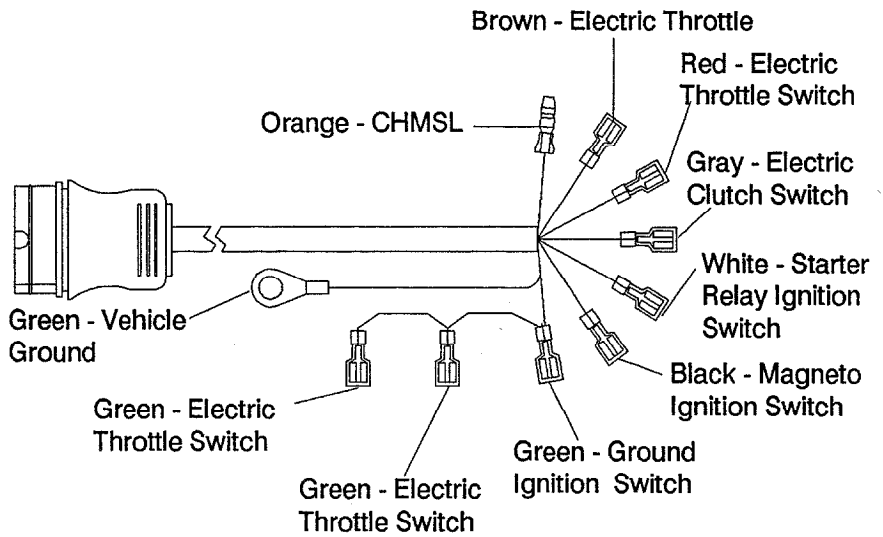
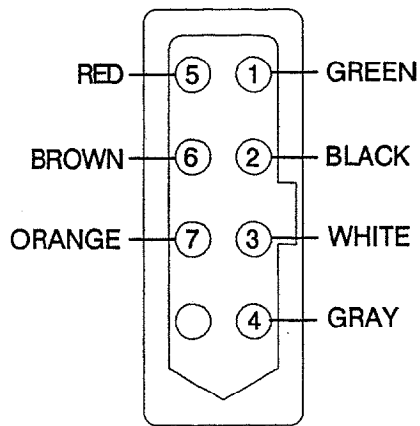


Used to secure Spreader Harness and Spreader Cable to the spreader and the Cab Control.

# REPAIR PARTS

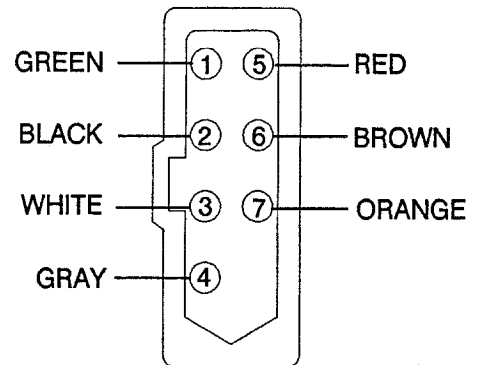
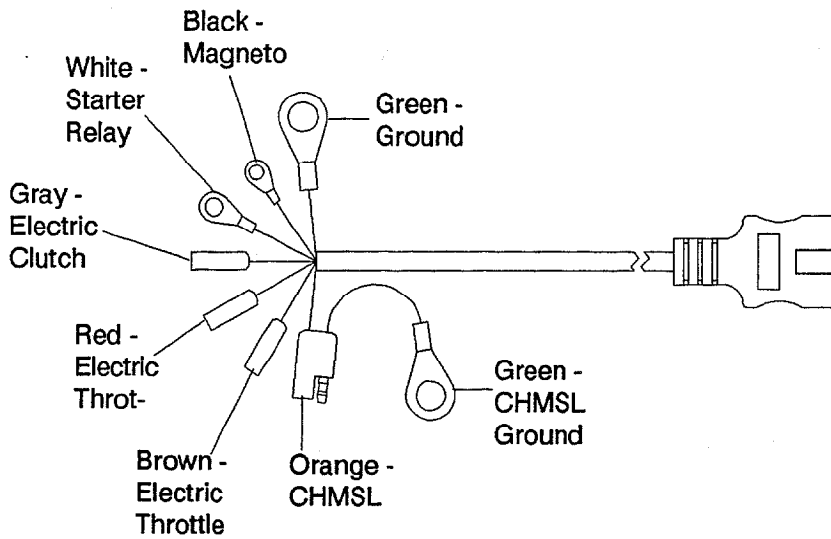
## Vehicle Harness

Part Number: 65571



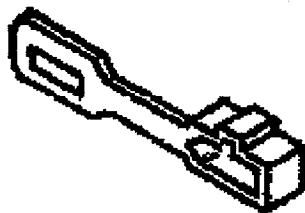
## Spreader Harness

Part Number: 65572



## Plug Cover

Part Number: 61548

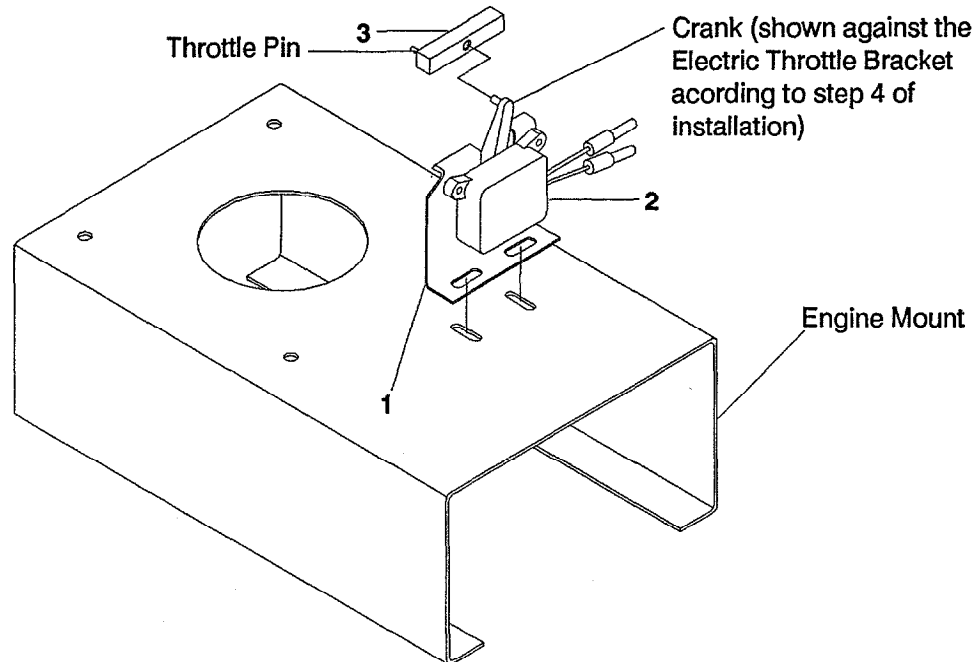


## Hook

Part Number: 62057



## Electric Throttle Replacement Instructions



**NOTE:** Improper installation can result in damage to the engine choke/throttle linkage.

### Parts List

ITEM	PART No	QTY.	DESCRIPTION
1	65372	1	ELECTRIC THROTTLE BRACKET
2	65374	1	ELECTRIC THROTTLE MOTOR
3	65375	1	ELECTRIC THROTTLE ARM
*		3	6-32X5/8 PN MS ZP
*		3	6-32 PT HX LK NUT NYIS ZP
*	90002	2	1/4-20X3/4 HX CS G5 ZP
*	91101	4	1/4 PLAIN WASHER TY A STD ZP
*	91331	2	1/4-20 PT HX LK NUT NYIS ZP

\* Not shown

### Replacement Instructions

#### Removal

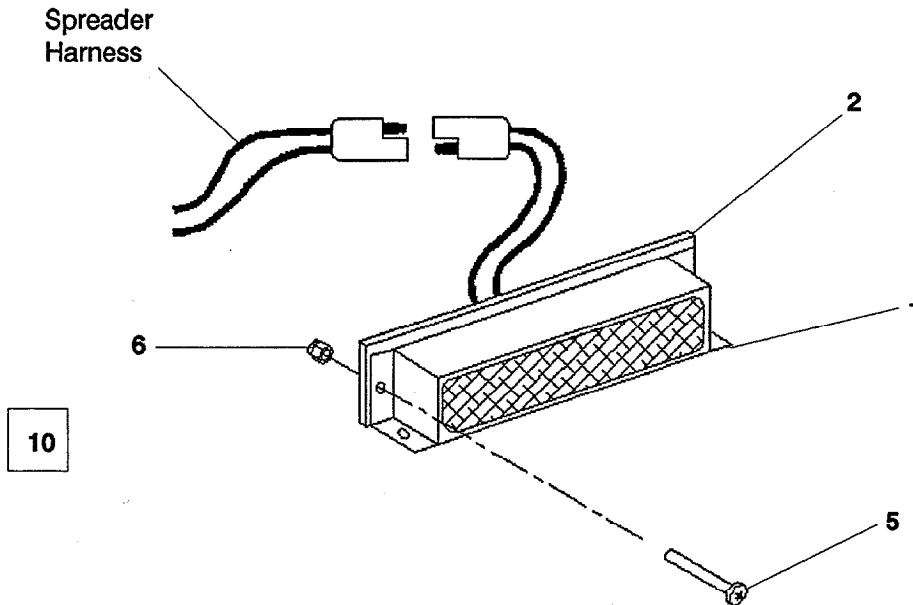
- Carefully observe the existing installation. Mark the bracket position on the Engine Mount.
- Disconnect the electric wires.
- Remove 1/4-20 fasteners that hold the Electric Throttle Bracket to the Engine Mount.
- Remove the 6-32 fasteners holding the Electric Throttle Motor to the bracket. Remove the motor.

#### Installation

- Connect the electric wires matching colors, brown to brown, and red to red.
- Using the Electric Throttle Control, run the new motor until the Crank reaches the 12 o'clock position. A 9-volt battery can be a substitute for the control.
- Fasten the Electric Throttle Motor to the bracket using the existing hardware.

- Using the Electric Throttle Control, run the new Electric Throttle Motor until the Crank is against the bracket as shown in the above diagram.
- Place the Electric Throttle Arm on the Crank as shown in the above diagram.
- Place the Electric Throttle Assembly onto the Engine Mount inserting the Throttle Pin into the engine choke/throttle linkage plastic slider.
- Loosely bolt the Electric Throttle Assembly to the engine mount with the existing hardware.
- Keeping the Electric Throttle Arm parallel to and against the carburetor, move the Electric Throttle Bracket forward putting the engine throttle into the full choke position. Tighten the fasteners according to the Torque Chart on page 2.
- Check that the crank is stopped in both directions by the bracket, not the carburetor linkage.

# CENTER HIGH-MOUNTED STOPLIGHT (CHMSL) KIT



## Parts List

ITEM	PART No	QTY.	DESCRIPTION
10	65360	1	COMPLETE STOPLIGHT KIT
1	. 65361	1	LIGHT WITH GASKET
2	. 65362	1	MOUNTING GASKET
*	. 65363	1	CHMSL HARNESS
*	. 65364	1	PROTECTIVE PLUG
5	. 90322	2	6-32 X3/4 PH PN MS STS
6	. 91398	2	6-32 PT HX LK NUT NYIS STS
*	. 59223	10	TIE WRAP
*	. 56099	1	DIELECTRIC GREASE
*	. 49301	1	BOX 3.5 X 3.5 X 13.5
*	. 55983	1	BAG 4 X 4
*	. 65365	1	BAG ASSY
*	. 13654	1	INSTRUCTION MANUAL
*	. 61592	1	BUTT SPLICE

Indented parts are included in the assembly under which they are listed. Quantities shown are included with the assembly.

\* Not shown

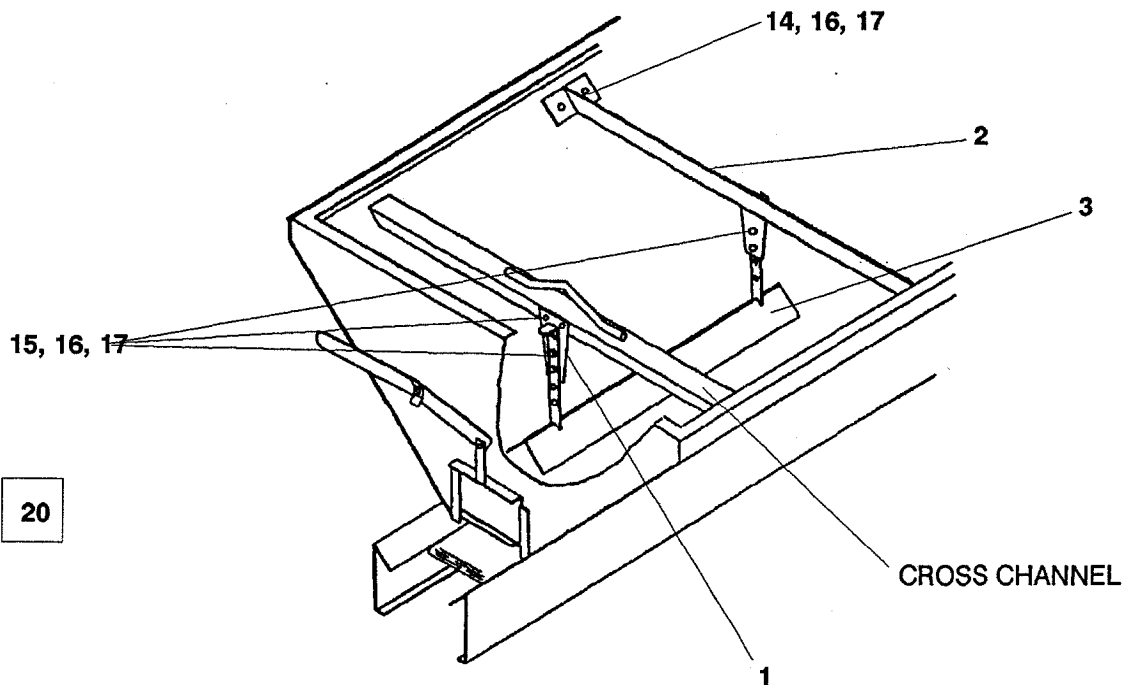
## INSTALLATION INSTRUCTIONS

Use the CHMSL manual supplied with the kit for installation with the following exceptions:

- The CHMSL Harness and the Protective Plug (supplied with the CHMSL kit) are NOT used. The CHMSL plugs into the SAE two-pin connector included as part of the Spreader Harness.
- The orange CHMSL feedwire from the Cab Control is connected to the Vehicle CHMSL Signal. See Cab Control and Wire Harness Installation.

# INVERTED VEE ASSEMBLY

## Mild Steel Spreader



### Parts List

ITEM	PART No	QTY.	DESCRIPTION
20	65138	1	INVERTED VEE 8' KIT
1	. 65326	1	MOUNTING PLATE (TRAPEZOID)
2	. 65327	1	INVERTED VEE FRONT SUPPORT
3	.	1	INVERTED VEE 8'
14	.	4	3/8-16X3/4 HX CS G5 ZP
15	. 90039	6	3/8-16X1 HX CS G5 ZP
16	. 91203	10	3/8 SP LK WASHER ZP
17	. 91413	10	3/8-16 HX NUT ZP

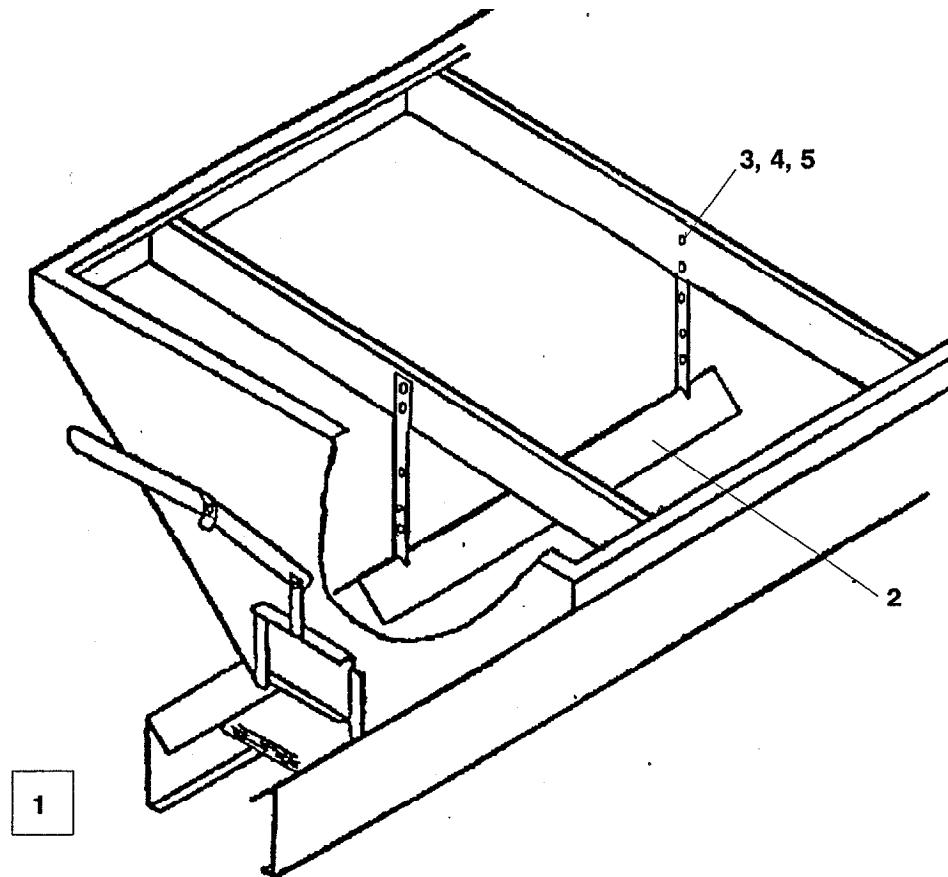
### Installation Instructions

1. Center the Mounting Plate on the engine side of the cross channel. The wide end of the bracket should be facing up.
2. Using the two holes at the wide end as a template, drill two 7/16" diameter holes through one leg of the cross channel support. Assemble with two 3/8" x 1" hex head cap screws, lock washers, and nuts.
3. Assemble the Inverted Vee to the Inverted Vee Front Support and to the Mounting Plate installed in step 1 with four 3/8" x 1" hex head cap screws, lock washers, and nuts.
4. Install item two, Inverted Vee Front Support, parallel to the top of the hopper. Using the two holes in the end plates of the support as a guide, drill two 7/16" holes through each side of the spreader. Fasten a 3/8" x 3/4" hex head cap screw, lock washer, and nut in each hole as it is drilled. This will hold the support in place as you drill your next hole.
5. Adjust the height of the Inverted Vee for the material being spread:
  - For salt and dry sand, adjust the vee as close to the bottom of the hopper as possible.
  - For salt/sand mix, adjust the vee to the middle mounting holes.
  - For wet sand, adjust the vee to the highest position.
6. Tighten all fasteners according to the Torque Chart on page 2.



# INVERTED VEE ASSEMBLY

## Stainless Steel Spreader



### Parts List

ITEM	PART No	QTY.	DESCRIPTION
1	65351	1	INVERTED VEE - 8' LT - STS KIT
2	.	1	INVERTED VEE - 8' LT - STS
3	.	4	3/8-16X1 HX CS STS
4	.	4	3/8 SP LK WASHER STS
5	.	4	3/8-16 HX NUT STS

### Installation Instructions

1. Select the height for the Inverted Vee for the material being spread:
  - For salt and dry sand, adjust the vee as close to the bottom of the hopper as possible.
  - For salt/sand mix, adjust the vee to the middle mounting holes.
  - For wet sand, adjust the vee to the highest position.
2. Attach the Inverted Vee to the Cross Channels with the provided fasteners according to the Torque Chart on page 2.



Western Products  
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Milwaukee, WI 53224-9538  
[www.westernplows.com](http://www.westernplows.com)



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