



Operator's Manual

Poly Fertilizer Spreaders

SSP-250 - SSP-400

R.E.I. POLY SPREADERS

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INTRODUCTION

Thank you for purchasing your Belco Resources Equipment fertilizer spreader. Your fertilizer spreader is design to be used on Cat. 1 tractors and at 540. It is important to properly maintain in keep in place all safety guards and shields that came with your spreader.

SAFETY

Read and understand this manual and all safety signs before operating and maintaining. Review the safety instructions and precautions annually.

TAKE NOTE! THIS SAFETY ALERT SYMBOL FOUND THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY AND THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.



THIS SYMBOL MEANS

**ATTENTION!
BECOME ALERT!
YOUR SAFETY IS INVOLVED!**



SAFETY SIGNAL WORDS

Note the use of the signal words DANGER, WARNING and CAUTION with the safety messages. The appropriate signal word for each has been selected using the following guidelines:



DANGER: Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations typically for machine components which, for functional purposes, cannot be guarded.



WARNING: Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.



CAUTION: Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.



GENERAL SAFETY GUIDELINES

Safety of the operator is one of the main concerns in designing and developing a new piece of equipment. Designers and manufacturers build in as many safety features as possible. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury, study the following precautions and insist those working with you, or for you, follow them.

Replace any CAUTION, WARNING, DANGER or instruction safety decal that is not readable or is missing. Location of such decals is indicated in this booklet.

Do not attempt to operate this equipment under the influence of drugs or alcohol.

Review the safety instructions with all users annually.

This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible adult familiar with farm machinery and trained in this equipment's operations. **Do not allow persons to operate or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works.**

To prevent injury or death, use a tractor equipped with a Roll Over Protective System (ROPS). Do not paint over, remove or deface any safety signs or warning decals on your equipment. Observe all safety signs and practice the instructions on them.

Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question - **DON'T TRY IT.**



SAFETY DECAL CARE

- Keep safety signs clean and legible at all times.
- Replace safety signs that are missing or have become illegible.
- Replaced parts that displayed a safety sign should also display the current sign.
- Safety signs are available from your Distributor or Dealer Parts Department or the factory.

How to Install Safety Signs:

- Be sure that the installation area is clean and dry.
- Decide on the exact position before you remove the backing paper.
- Remove the smallest portion of the split backing paper.
- Align the decal over the specified area and carefully press the small portion with the exposed sticky backing in place.
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.
- Small air pockets can be pierced with a pin and smoothed out using the piece of decal backing paper.



BEFORE OPERATION

- Carefully study and understand this manual.
- Do not wear loose-fitting clothing, which may catch in moving parts.
- Always wear protective clothing and substantial shoes.
- Assure that all tires are inflated evenly.
- Give the unit a visual inspection for any loose bolts, worn parts or cracked welds, and make necessary repairs. Follow the maintenance safety instructions included in this manual.
- Be sure that there are no tools lying on or in the equipment.
- Do not use the unit until you are sure that the area is clear, especially children and animals.
- Don't hurry the learning process or take the unit for granted. Ease into it and become familiar with your new equipment.
- Practice operation of your equipment and its attachments. Completely familiarize yourself and other operators with its operation before using.
- Use a tractor equipped with a Roll Over Protective System (ROPS) and fasten your seat belt prior to starting the engine.

- The manufacturer does not recommend usage of tractor with ROPS removed.
- Move tractor wheels to the widest recommended settings to increase stability.
- Securely attach to towing unit. Use a high strength, appropriately sized hitch pin with a mechanical retainer and attach safety chain.
- Do not allow anyone to stand between the tongue or hitch and the towing vehicle when backing up to the equipment.



DURING OPERATION

- Children should not be allowed on the product.
- Clear the area of small children and bystanders before moving the feeder.
- If using a towing unit, securely attach feeder by using a hardened 3/4" pin, a metal retainer, and safety chains if required. Shift towing unit to a lower gear before going down steep downgrades, thus using the engine as a retarding force. Keep towing vehicle in gear at all times. Slow down for corners and rough terrain.
- Make sure you are in compliance with all local and state regulations regarding transporting equipment on public roads and highways. Lights and slow moving signs must be clean and visible by overtaking or oncoming traffic when feeder is transported.
- Beware of bystanders, **particularly children!** Always look around to make sure that it is safe to start the engine of the towing vehicle or move the unit. This is particularly important with higher noise levels and quiet cabs, as you may not hear people shouting.
- **NO PASSENGERS ALLOWED** - Do not carry passengers anywhere on, or in, the tractor or equipment, except as required for operation.
- Keep hands and clothing clear of moving parts.
- Do not clean, lubricate or adjust your equipment while it is moving.
- When halting operation, even periodically, set the tractor or towing vehicle brakes, disengage the PTO, shut off the engine and **remove the ignition key.**
- Be especially observant of the operating area and terrain - watch for holes, rocks or other hidden hazards. Always inspect the area prior to operation.
- **DO NOT** operate near the edge of drop-offs or banks.
- **DO NOT** operate on steep slopes as overturn may result.
- Operate up and down (not across) intermediate slopes. Avoid sudden starts and stops.



HIGHWAY AND TRANSPORT OPERATIONS

- Adopt safe driving practices:
 - ⇒ Keep the brake pedals latched together at all times. **NEVER USE INDEPENDENT BRAKING WITH MACHINE IN TOW AS LOSS OF CONTROL AND/OR UPSET OF UNIT CAN RESULT.**
 - ⇒ Always drive at a safe speed relative to local conditions and ensure that your speed is low enough for an emergency stop to be safe and secure. Keep speed to a minimum.
 - ⇒ Reduce speed prior to turns to avoid the risk of overturning.
 - ⇒ Avoid sudden uphill turns on steep slopes.
 - ⇒ Always keep the tractor or towing vehicle in gear to provide engine braking when going downhill. Do not coast.
 - ⇒ Do not drink and drive!
- Comply with state and local laws governing highway safety and movement of farm machinery on public roads.
- Use approved accessory lighting flags and necessary warning devices to protect operators of other vehicles on the highway during daylight and nighttime transport. Various safety lights and devices are available from your dealer.
- The use of flashing amber lights is acceptable in most localities. However, some localities prohibit their use. Local laws should be checked for all highway lighting and marking requirements.
- When driving the tractor and equipment on the road or highway under 40 kph (20 mph) at night or during the day, use flashing amber warning lights and a slow moving vehicle (SMV) identification emblem.
- Plan your route to avoid heavy traffic.
- Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc.
- Be observant of bridge loading ratings. Do not cross bridges rated lower than the gross weight as which you are operating.
- Watch for obstructions overhead and to the side while transporting.
- Always operate equipment in a position to provide maximum visibility at all times. Make allowances for increased length and weight of the equipment when making turns, stopping the unit, etc.
- Pick the levellest possible route when transporting across fields. Avoid the edges of ditches or gullies and steep hillsides.
- Be extra careful when working on inclines.
- Maneuver the tractor or towing vehicle at safe speeds.
- Avoid overhead wires or other obstacles. Contact with overhead lines could cause serious injury or death.
- Avoid loose fill, rocks and holes; they can be dangerous for equipment operation or movement.
- Allow for unit length when making turns.
- Operate the towing vehicle from the operator's seat only.
- Never stand alongside of unit with engine running or attempt to start engine and/or operate machine while standing alongside of unit.
- Never leave running equipment attachments unattended.
- As a precaution, always recheck the hardware on equipment following every 100 hours of operation. Correct all problems. Follow the maintenance safety procedures.

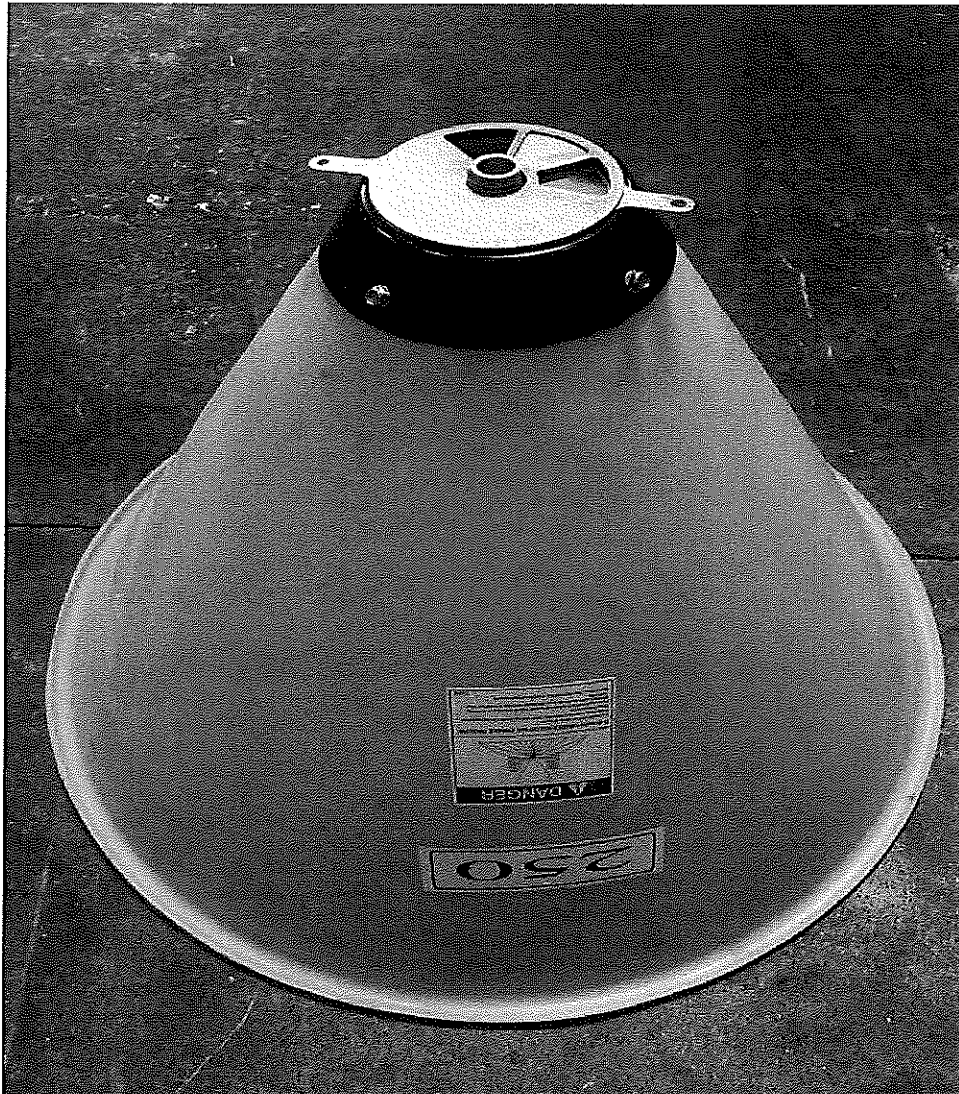
Assembly

Hopper

1. Secure the spreader hopper support pan to the bottom of the hopper with the 4 carriage head bolts and nuts.
2. With the hopper opening facing up, insert the Retainer Bushing through the center hole of the hopper. The bushing rim should be on the inside of the hopper against the metal bowl.
3. Turn the hopper upside down.
4. Slip the 2-hole (Top Shutter Plate Flow Control) Galvanized disc over the bushing and against the hopper bottom.
5. Do the same with the 3-hole (Bottom shutter Plate Directional Control) Galvanized disc. **Important: See photo to be sure the discs are flipped the proper way.**
6. Put the 4 3/8" washer over the Retainer bushing.

Secure everything in place with the snap ring.

IMPORTANT: Make sure both holes can be exposed after the discs are assembled. If not assembled correctly, the openings will not line up when the gates are supposed to be open.



Frame

1. Install the spin disc on the gearbox output shaft. Secure it in place with the 8mm roll pin in the lower most hole, which is closest to the gearbox housing.
2. Install the deflector shield on the inside of the frame. Bolt it to the tabs welded in front of the lower hitch pins on the frame. Secure it in place with the 10 x 25mm bolts, flat washers, and Hex nuts.
3. Secure the Fixed Pivot to the deflector shield with an 8mm nut and flat washer.
4. Loosely attach the left and right hopper support arms to the frame using the M10 x 25mm bolts, lock washers and Hex nuts. The

notch end goes on the frame. Do not tighten.

5. **Attaching the adjustment spreader lever.** Slip the adjustment lever through the scaled slot. Put the spring over the 10 x 70mm bolt. Insert the bolt through the spreader lever and put the fiber spacer next to the lever. Put the bolt through the frame and secure in place with the 10mm lock nut. Compress the spring by tightening the bolt and nut until there is resistance in moving the handle up and down.

6. **Installing the Threaded Adjustment Block.** Slip the wing bolt through the indication gauge and then through the scaled slot on the frame. Thread the wing bolt through the solid block to secure it to the frame.

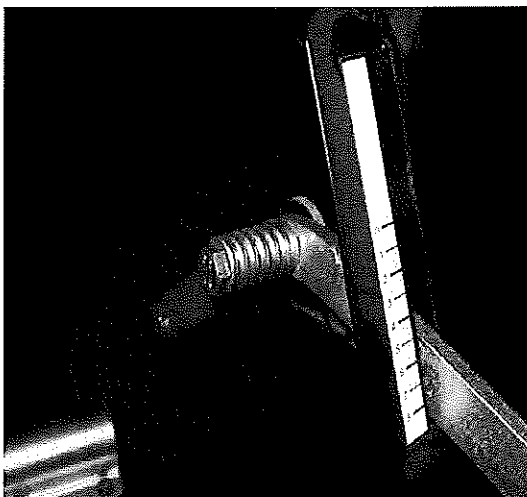
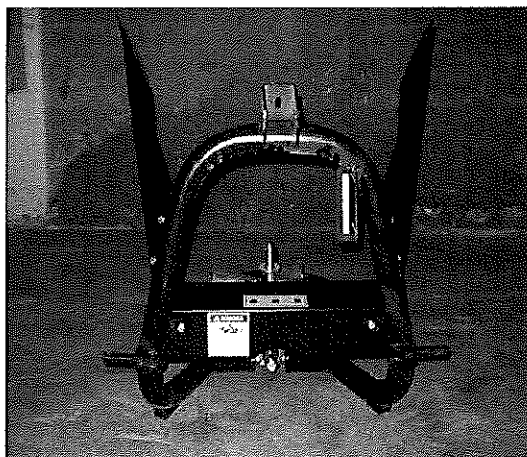
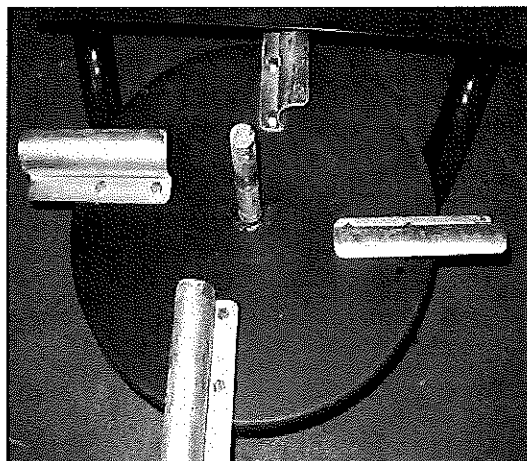
7. Flip the hopper right side up, and position it over the frame. Slide center hole over the gearbox output shaft. Secure the back of the hopper in place by slipping the large washer over a 10 x 35mm bolt and sliding it through hopper and then through the frame near the top hitch. Secure it in place with a 10mm flat washer, lock washer and hex nut. Insert the support bar and bolt it in place with the 10 x 25mm bolts. The flat washers, lock washers and hex nuts are tightened against the hopper supports.

8. Install the nylon dust washer over the gearbox output shaft and slide it down until it rests against the bottom of the hopper. Install the agitator with the 8 x 50mm bolt and lock nut.

9. Attach the Tie Rod to the Top Shutter Plate and secure it with R clips and 2 - 10mm flat washers.

10. Install the Directional lever to the Bottom Shutter Plate and secure the end to directional disc with 2mm cotter pin and 8mm flat washer and the R clip to the Fixed Pivot bolted to the deflector shield.

Tighten all hardware.



Operation

Attaching to the tractor

1. With the Fertilizer Spreader on a level surface, back the Cat. 1 tractor so the tractor lift arms are even with the fertilizer spreader lower hitch pins. Lower or raise the tractor hitch arms until the 7/8" bushing in the arm is level with the hitch pins. **Be sure nothing is between the tractor and the cutter before backing up.**
2. Insert the lower link hitch hole of the tractor's lift arm over the implement's hitch pin.
3. Secure the lift arm in place by using a 7/16" lynch pin or other fastener.
4. Repeat with the other arm.
5. Connect the driveline to the tractor's PTO output shaft. Secure it in place with the bolt supplied with the driveline.
6. Connect the tractor top link to the upper pivot hitch of the fertilizer spreader.
7. Start the tractor and slowly raise the fertilizer spreader. Check for drawbar interference. Be sure that the PTO driveline does not bottom out when lifting the fertilizer spreader to its maximum height. If it does appear that it could bottom out, it is necessary to shorten the PTO driveline. (See Shortening a PTO Driveline section). Ensure that in the working position there is an overlap of a minimum of 1/3 the length of each profile.

Shortening a PTO Driveline

1. With the implement attached to the tractor's three point hitch, and the PTO driveline not installed, separate the PTO driveline. Attach the implement end to the implement and the other end to the tractor PTO input shaft.
2. Raise the implement by using the tractor's hydraulic 3-point hitch to its maximum lift height.
3. Hold the half shafts next to each other and mark them so each end is approximately 1/2" from hitting the end of the telescopic profiles.
4. Shorten the inner and out guard tubes equally.
5. Shorten the inner and outer profiles by the same length as the guard tubes. Using a rattail file, round off all sharp edges and burrs. Grease the telescopic profile generously before reassembling.



Do not shorten too much, the proper overlap is a minimum of 1/3 the length of each profile.

Spreading Height

Before operating the spreader, make sure that the spreading disc is set to the horizontal position and it is about 30" from ground level.

Spreading with revolving vanes.

Since fertilizers vary with respect to weights and density, in order to obtain a perfect spreading it may be necessary to adjust the vanes in order to compensate for these differences. The vanes are usually set to the center position. By moving the vanes forward, distribution is increased towards the left side of the tractor operator, moving them backwards causes distribution to be increased towards the right.

Left- Center - Right Spreader pattern

A simple adjustment of the lower lever allows directioning of the spreader pattern towards the right, center or left of the tractor

Removal and Storage

After finishing, remove the spreader from the tractor.

1. Put the PTO driveline in a safe location so it will not become damaged.
- Wash out the spreader, removing all fertilizer or other material.



FOLLOWING OPERATION

- Following operation, or when unhitching, stop the tractor or towing vehicle, set the brakes, disengage the PTO and all power drives, shut off the engine and **remove the ignition keys**.
- Store the unit in an area away from human activity.
- Do not park equipment where it will be exposed to livestock for long periods of time. Damage and livestock injury could result.
- Do not permit children to play on or around the stored unit.
- Make sure all parked machines are on a hard, level surface and engage all safety devices.
- Wheel chocks may be needed to prevent unit from rolling.

- Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.
- Make sure there is plenty of ventilation. Never operate the engine of the towing vehicle in a closed building. The exhaust fumes may cause asphyxiation.
- Be certain all moving parts on attachments have come to a complete stop before attempting to perform maintenance.
- Always use the proper tools or equipment for the job at hand.
- Use extreme caution when making adjustments.
- Never replace hex bolts with less than grade five bolts unless otherwise specified.
- After servicing, be sure all tools, parts and service equipment are removed.
- Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. The manufacturer will not claim responsibility for use of unapproved parts and/or accessories and other damages as a result of their use.
- If equipment has been altered in any way from original design, the manufacturer does not accept any liability for injury or warranty.

MAINTENANCE

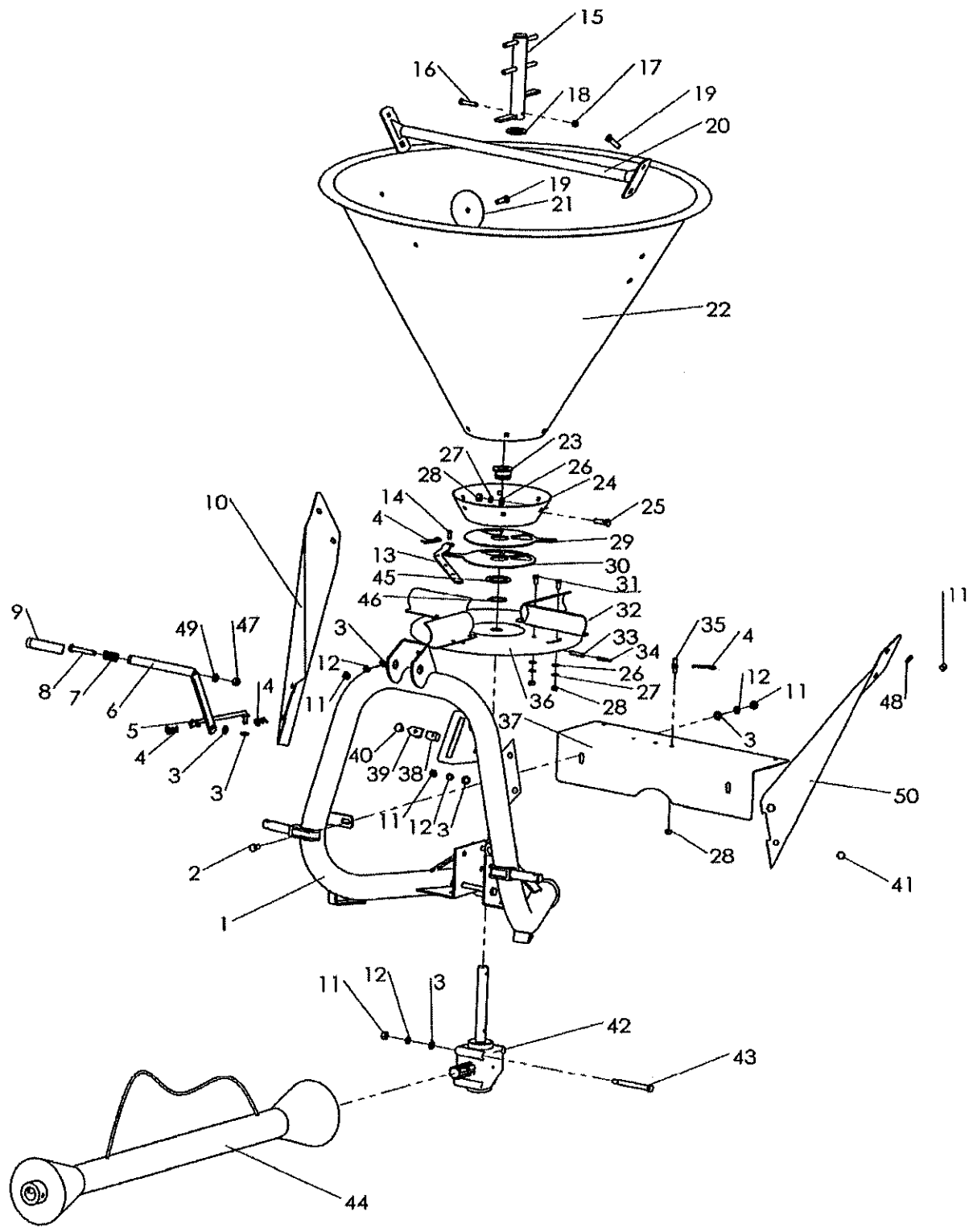
Although the hopper of your spreader is fabricated with polypropylene, and therefore impervious to rust and corrosion, it is very important that the other parts of the spreader be kept clean due to the corrosive properties of fertilizers.

Item	Interval
PTO shaft grease zerks	Grease weekly
PTO shaft telescopic tubing	Grease every 40 hours
Clean spreader	After each use.

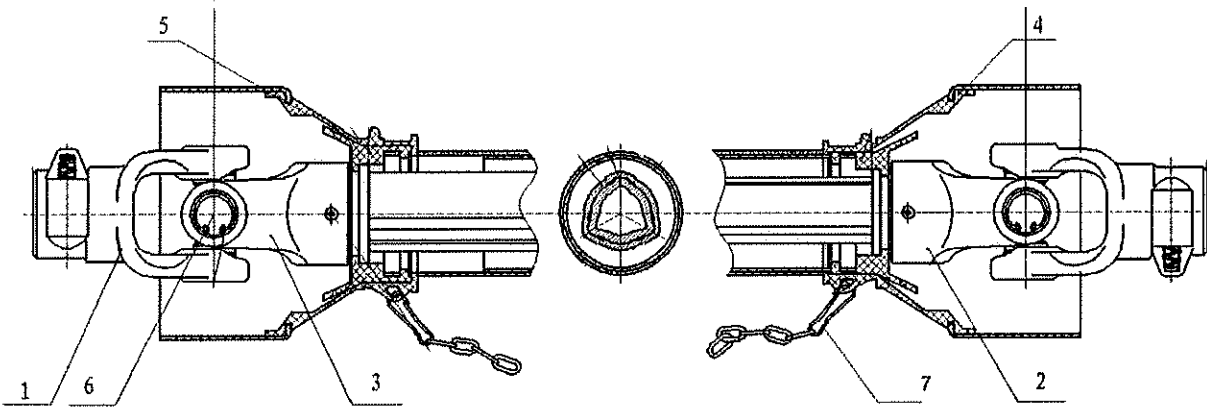
gearbox is sealed and filled with grease so not maintenance is necessary.

Spreading Charts

Fertilizer Type	Spread Width	MPH	Gate setting											
			1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7
Granular Fertilizer	39	1	174	285	484	815	1052	1326	1554	1870	2105	2414	2622	2919
		2.5	84	121	202	336	435	545	640	762	854	987	1071	1172
		5	46	60	106	176	222	277	320	392	436	494	535	596
		7.5	29	40	92	121	151	191	216	260	294	336	365	400
		10	17	30	52	86	113	136	166	197	231	253	279	295
Medium Crystalline Fertilizer	26	1	330	546	1007	1632	2019	2587	3024	3603	4033	4476	4908	5407
		2.5	115	219	412	661	816	1053	1221	1446	1621	1801	1973	2174
		5	68	112	209	329	416	534	614	730	821	907	989	1092
		7.5	44	76	140	223	280	364	415	490	546	606	664	728
Calcium Cyanamid & Similar	32	1	275	750	1104	1636	2020	1844	2868	3345	4289			
		2.5	109	300	453	662	809	994	1158	1343	1508			
		5	58	149	229	297	407	495	584	672	755			
		7.5	37	99	148	218	272	333	388	449	502			
Ammonium Sulph. (CR)	10	1	142	565	924	1391	1779	2199	2607	3061	3355	3767	4039	4521
		2.5	61	224	373	557	716	886	1040	1228	1347	1512	1621	1810
		5	28	114	188	281	362	444	519	615	671	757	809	909
		7.5	23	73	122	189	241	295	348	418	451	508	544	607
		10	15	58	94	143	180	222	262	308	336	378	410	453
Thomas Metal	20	1				2262	5037	6670	6929					
		4				572	1277	1685	1736					
		7				290	537	843	869					
		12				195	427	297	583					



Part No.	Part #	Description	Qty
1	5SB16153	Base Assembly	1
2	5SB3016	Bolt, Hex Head M10x20,Zinc	2
3	5SB07015	Flat Washer Zinc Plated 10mm	5
4	5SB12048	R Clips	4
5	5SB19287	Tie Rod	1
6	5SB19286	Lever	1
7	5SB19306	Spreader Spring	1
8	5SB06099	Bolt, Hex Head M10x70,Zinc	1
10	5SB19312	Hopper Support Arm (Right Side)	1
11	5SB11005	Hex Head Nut 10 x 1.5	14
12	5SB07001	Split Type 10mm Lockwasher	10
13	5SB19299	Directional Lever	1
14	5SB06103	Shutter Adjustment Pivot Joint	1
15	5SB19297	Agitator	1
16	5SB06097	Hex Head Bolt 8 x 2.5 x 45	1
17	5SB11056	8mm Nylon Locking Nut	1
18	5SB07090	25 x 60 x 3.0 Nylon Washer	1
19	5SB06112	Bolt, Carridge, M10x25, Zinc	5
20	5SB19227	Bar - Hopper reinforcement	1
21	5SB07073	Hopper Support Washer	1
22	5SB19394	Hopper	1
23	5SB04131A	Retainer Bushing	1
24	5SB16152	Hopper Support Pan	1
25	5SB3010	Bolt Carridge,M8x25, Zinc	6
26	5SB07075	8mm Flat Washer Zinc Plated	14
27	5SB3012	Washer,Lock,8mm, Zinc	14
28	5SB11045	Hex Head Nut 8 x 1.25	15
29	5SB19300	Top Shutter Plate (Flow Control)	1
30	5SB19301	Bottom Shutter Plate (Directional)	1
31	5SB06095	Hex Head Bolt 8 x 1.25 x 16	8
32	5SB19291	Distributor Vane	4
33	5SB3013	Roll Pin,ø8*40,	1
34	5SB3014	Roll Pin,ø6*40,	1
35	5SB12055	Lever, Fixed Pivot	1
36	5SB19292	Spreader Disc	1
37	5SB19296	Front Shield	1
38	5SB19307	Threaded Adj. Block	1
39	5SB19308	Gauge Pointer	1
40	5SB06094	Thumb Screw	1
41	5SB06063	Bolt Hex Head M10x25, Zinc	4
42	5SB01429	Gearbox	1
43	5SB06096	Hex Bolt 10 x 1.5 x 110	3
44	5SB3000	PTO Assembly (complete)	1
45	5SB07079A	Flat Washer - Hardened	1
46	5SB21036	Snap Ring	1
47	5SB11019	M10 Lock Nut	1
48	5SB3015	Washer,Lock	4
49	5SB10129	Adjustment Lever Washer, Bakelite	1
50	5SB19294	Hopper Support Arm (Left Side)	1



Position	Part #	Description	Qty
1	5SB3001	Yoke	2
2	5SB3002	Inner Yoke complete	1
3	5SB3003	Outer Yoke complete	1
4	5SB3004	Inner PTO Guard Complete	1
5	5SB3005	Outer PTO Guard Complete	1
6	5SB3006	Cross & Bearing	2
7	5SB3007	Safety Chain	2
	5SB3000	PTO Shaft Complete	