



3-Pt. PTO Spreader

Owner's Manual



! WARNING: Read carefully and understand all ASSEMBLY AND OPERATION INSTRUCTIONS before operating. Failure to follow the safety rules and other basic safety precautions may result in serious personal injury.

Item #51447 & #51462

SAVE THESE INSTRUCTIONS

Thank you very much for choosing a Nortrac™ product!

For future reference, please complete the owner's record below.

Serial Number/Lot Date Code: _____

Purchase Date: _____

Save the receipt, warranty, and this manual. It is important that you read the entire manual to become familiar with this product before you begin using it.

This 3-Pt. PTO Spreader is designed for certain applications only. Northern Tool & Equipment is not responsible for issues arising from modification or improper use of this product such as an application for which it was not designed. We strongly recommend that this product not be modified and/or used for any application other than that for which it was designed.

For technical questions, please call **1-800-222-5381**.

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Intended Use

The Nortrac model #51447 3-Pt. PTO Spreader has a 6-bushel, 500 lb hopper capacity while the #51462 model has a 14-bushel, 1100 lb capacity. Both have a bottom seed gate with adjustable fins for a smooth flow and controlled pattern. The spreaders are constructed of a heavy-duty gearbox and PTO driveline with a tubular steel main frame. The spreaders fit category 0 and 1 hitches.

Important Safety Information

⚠ WARNING

- Read and understand all instructions. Failure to follow all instructions may result in serious injury or property damage.
- The warnings, cautions, and instructions in this manual cannot cover all possible conditions or situations that could occur. Exercise common sense and caution when using this spreader. Always be aware of the environment and ensure that the spreader is used in a safe and responsible manner.
- Do not allow persons to operate or assemble the spreader until they have read this manual and have developed a thorough understanding of how it works.
- Do not modify this spreader in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the spreader. There are specific applications for which the spreader was designed.
- Use the right tool for the job. DO NOT attempt to force small equipment to do the work of larger industrial equipment. There are certain applications for which this equipment was designed. You will be safer and the product will do a better job at the capacity for which it was intended. DO NOT use this spreader for a purpose for which it was not intended.
- Industrial or commercial applications must follow OSHA requirements.

⚠ WARNING

WORK AREA SAFETY

- Inspect the work area before each use. Keep work area clean, dry, free of clutter, and well lit. Cluttered, wet, or dark work areas can result in injury. Using the spreader in confined work areas may put you dangerously close to other cutting tools and rotating parts.
- Do not allow the spreader to come into contact with an electrical source. The spreader is not insulated and contact will cause electrical shock.
- Keep children and bystanders away from the work area while operating the spreader. Do not allow children to handle the product.
- Be aware of all power lines, electrical circuits, water pipes, and other mechanical hazards in your work area. Some of these hazards may be hidden from your view and may cause personal injury and/or property damage if contacted.

⚠ WARNING

PERSONAL SAFETY

- Stay alert, watch what you are doing, and use common sense when operating the spreader. Do not use the spreader while you are tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating the tool may result in serious personal injury.

- Dress properly. Do not wear loose clothing, dangling objects, or jewelry. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewelry, or long hair can be caught in moving parts. Air vents on the tool often cover moving parts and should be avoided.
- Wear the proper personal protective equipment when necessary. Use ANSI Z87.1 compliant safety goggles (not safety glasses) with side shields, or when needed, a face shield. Use a dust mask in dusty work conditions. Also use non-skid safety shoes, hardhat, gloves, dust collection systems, and hearing protection when appropriate. This applies to all persons in the work area.
- Do not overreach. Keep proper footing and balance at all times.
- Remove keys or wrenches before connecting the tool to an air supply, power supply, or turning on the spreader. A wrench or key that is left attached to a rotating part of the tool may cause personal injury.
- Secure the work with clamps or a vise instead of your hand when practical. This safety precaution allows for proper tool operation using both hands.

⚠ CAUTION

PRODUCT USE AND CARE

- Do not force the spreader. Products are safer and do a better job when used in the manner for which they are designed. Plan your work and use the correct product for the job.
- Check for damaged parts before each use. Carefully check that the spreader will operate properly and perform its intended function. Replace damaged or worn parts immediately. Never operate the spreader with a damaged part.
- Store the spreader when it is not in use. Store it in a dry, secure place out of the reach of children. Inspect the spreader for good working condition prior to storage and before re-use.
- Use only accessories that are recommended by the manufacturer for use with your spreader. Accessories that may be suitable for one product may create a risk of injury when used with another tool. Never use an accessory that has a lower operating speed or operating pressure than the tool itself.
- Keep guards in place and in working order. Never operate the spreader without the guards in place.

Specific Operation Warning

⚠ WARNING

ENTANGLEMENT HAZARD

To prevent serious injury or death from rotating driveline:

- DO NOT operate without guards in place.
- DO NOT operate higher than 540 RPM.
- Keep hands, feet, clothing, and hair away from moving parts.
- DO NOT operate without driveline securely attached at both ends.
- DO NOT operate without driveline shields that turn freely on driveline.

To prevent serious injury or death:

- Read and understand this Owner's Manual before operating, servicing, or repairing the equipment.
- Stop the engine, remove the key, and set the brake before dismounting the tractor.
- Operate from the tractor seat only.

- Chemicals are toxic. Wear rubber gloves during operation. Seek medical attention immediately if chemicals are ingested.
- Keep bystanders at least 50 feet away while operating.
- DO NOT operate or transport on steep inclines.
- DO NOT exceed this implement's maximum speed of 5 MPH. Exceeding this speed may result in loss of control during transport or braking.
- DO NOT use if the implement is damaged. Repair before continuing use.
- Park and store on a hard, level surface.
- Store out of reach of children. Not for use by or around children.

ROTATING PARTS HAZARD

To prevent serious injury or death:

- Never allow riders on the tractor or equipment.
- Keep hands and feet clear from rotating paddles while operating.
- DO NOT stand on or near the implement at any time.
- DO NOT stand between the tractor and the implement.
- DO NOT operate with bystanders in the area.
- Turn the engine off and detach the implement before servicing.

Assembly Instructions

Tractor Requirements & Preparation

The 3-point mounted broadcast spreader with a PTO drive will fit most category 1 and some category 0 tractors. Larger category 2 tractors may also be used if the 3-point hitch lift arms will narrow to 26 inches. Bushings will be needed to fit the category 1 (7/8" dia.) lift pins.

Note: Some category 0 tractors have very short lift arms or 5/8" diameter (Cat. 0) lift arm ball ends. These tractors are not usually suitable.

Check the tractor's 3-point hitch. The hitch hydraulic system should be able to hold the lift arms at a set height.

Note: The #51447 spreader weighs 96 pounds and can hold up to 500 pounds of fertilizer. The #51462 model can hold up to 1100 pounds of fertilizer. The tractor needs to be large enough to handle this possible pound load safely. The tractor may have to be equipped with front end weights to be properly counter-balanced.

Check the shield over the PTO stub shaft. Make sure it is in good condition and bolted securely to the tractor. Purchase a new shield if the old shield is damaged or missing.

⚠ CAUTION

Be sure your tractor is in good condition. Read all the safety precautions and make sure all tractor operators are familiar with the safety rules of operation.

Packing

The spreader is shipped assembled, except for the PTO drive shaft.

Assembly & Mounting

Mount the spreader on your tractor by sliding the lift arm ball sockets over the spreader pull pins and secure with linch pins (not furnished). Attach the center link (not furnished) to the center link bracket

on the spreader using a center link pin (not furnished), and secure it with a suitable linch pin. Adjust the center link so that the spreader fan is parallel to the ground.

Note: Use stabilizer bars, adjustable sway chains, or sway blocks on your tractor lift arms to keep the spreader from swinging side to side. Adjust as tightly as practical for best performance.

PTO Installation

In some cases it may be necessary to shorten the PTO assembly to match your particular tractor. The following procedure should be used (Figure 1).

Raise the tractor's 3-point hitch so the input shaft of the spreader's gearbox is in line with the PTO shaft on the tractor.

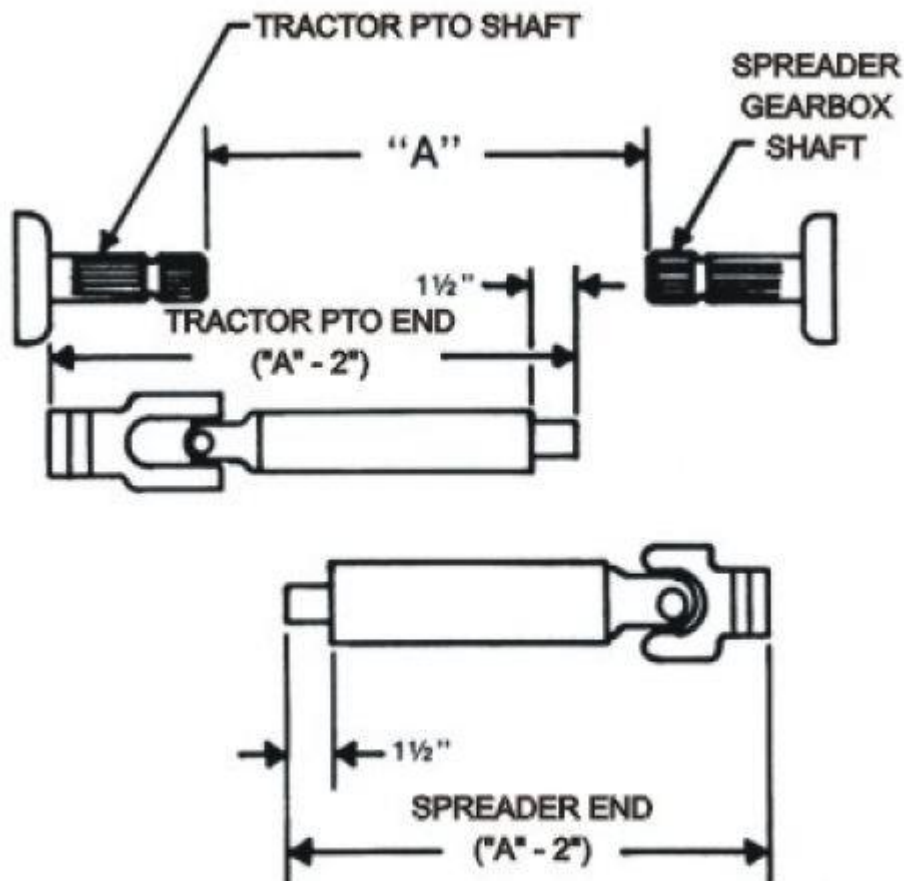


Figure 1

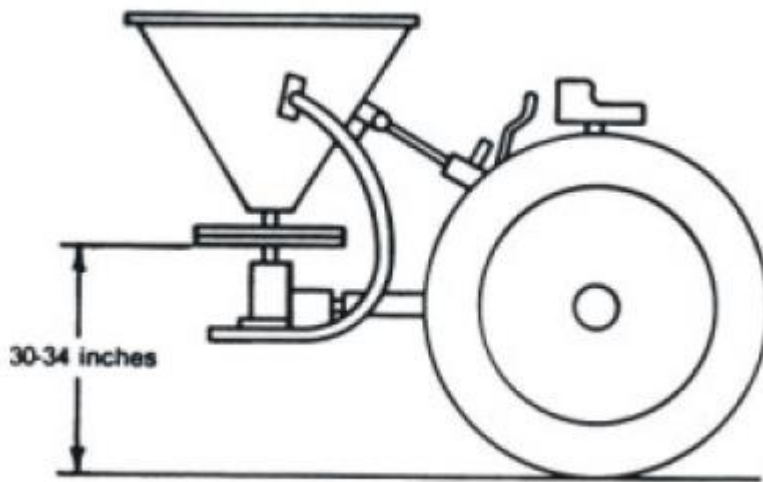


Figure 2

Measure the distance between the ends of the two shafts (dimension "A", Figure 1). Each half of the PTO should be equal to dimension "A" minus two (2) inches.

If the driveline must be cut to a shorter length, clamp the driveline in a well-padded vise to prevent damage to the shield (Figure 3). Cut the plastic shields 1-1/2" shorter than the shafts.



Figure 3

Repeat the procedure to the other driveline half. Remove all the burns and cuttings.

Apply multi-purpose grease to the inside of the outer (female) driveline section. Assemble the driveline and install on the tractor and the spreader. Pull on each driveline section to be sure the yokes lock into place. Make certain the driveline shielding is in place and in good condition.

⚠WARNING

Do not operate this equipment without shields properly installed. This is for your protection. The manufacturer recommends the use of these shields at all times.

⚠WARNING

- When attaching the PTO yoke to the tractor PTO shaft, it is important that the spring-activated, locking pin slides freely and is seated in the groove of the PTO shaft. A loose shaft could slip off and result in personal injury or damage to the equipment.
- If your tractor has extra-long lift arms, it may be necessary to use a PTO extension so that you can use the PTO shaft assembly provided. Be sure the PTO assembly does not close too far (bottom out) if you use a PTO extension.
- Never raise or lower the spreader so that the PTO shaft assembly will come apart.

⚠CAUTION

A heavy load can cause instability in driving a tractor. Make sure the front of the tractor is properly counter-balanced with weights. Always drive slowly, especially around turns. An unstable tractor could steer badly and possibly tip over, causing injury or death.



Figure 4

Fertilizers will vary as to weight and quality, which may require additional adjustments by moving the individual fan blades. Moving the blade tips forward will carry more material to the left side. Moving the fan blade tips backward will allow more material to be spread to the right. Make small adjustment moves and check the spread after each adjustment.

Note: The gearbox is filled with lubricant and sealed at the factory. If operated and stored properly, the gearbox will provide a long, trouble-free service life. If disassembled, ensure that the box is re-filled with a good, quality grease and that the box halves are resealed with a silicone adhesive.

Operating Instructions

1. Right-hand or left-hand reference is determined by standing at the rear of the spreader and facing the travel direction of the tractor.
2. Check the register of the control lever indicator with the seed gate (material gate). With the seed gate closed, the control lever should be in its fully raised position. Control lever settings listed on the spread charts are to the adjustable pointer/stop below the control lever.
3. DO NOT FILL THE HOPPER (especially with fertilizer) and transport over long distances, as it may result in packing, causing poor or erratic discharge.
4. FOR BEST RESULTS use pelletized fertilizer, as it has little tendency to lump and causes little or no dust.
5. Be sure to sift or break up lumps found in some types of granular fertilizer before filling hopper.

6. Do not use on windy days, especially when spreading fine grass seed.
7. Be extremely careful if you are spreading herbicides, as there is the possibility of wind drift or overthrow into areas where serious crop or shrub damage could occur. Always follow instructions on the chemical package.
8. Raise the spreader up so the spreader fan is 30-34 inches above the ground. This will give you the best spreading performance. It is also best if the spreader is tilted slightly forward so that the spreader fan throws slightly upward. (Use the top link to make this adjustment.) The PTO shaft assembly should not be at a sharp angle. It should operate fairly straight or level.
9. Adjust the tension on the control handle so it moves with some resistance, but will remain where you set it. Adjust the control handle stop so that at the end of the field you can shut the seed gate and, after your turn, re-open to the exact setting.
10. If the agitator becomes jammed, open the feed gate all the way. By sticking a small rod through the feed gate, the material jamming the agitator can be loosened and removed. After the jam is cleared, reset the feed gate and proceed. Always stop the tractor and disengage the PTO before dislodging any material.

⚠WARNING

Do not attempt to use your fingers to clear a jam. An accidental closing of the feed gate could shear a finger off. Leaving the PTO engaged could rotate the agitator, which could pinch or amputate a finger. Be sure that the tractor engine is shut off and the PTO clutch is disengaged before doing any adjustment or repair.

11. When broadcasting the fertilizer, always start the vehicle in motion before opening the feed gate. (Do not allow the vehicle to sit in stationary with the feed gate open.) If the fertilizer is accidentally deposited too heavily in a small area, soak it thoroughly with a garden hose or a sprinkler to prevent burning.

Spreading Instructions

1. The opening in the hopper bottom is regulated by the control handle. The size of the opening is determined by the calibrated scale. Place the control lever at the desired setting.
2. The spread chart in this manual is an approximate guide based on various forward speeds (from 4 mph to 7.5 mph). For accurate spreading, calibrate your tractor to operate at the desired speed. A calibrated speedometer is the best and most accurate.

SPREADING CHART FOR FERTILIZERS

FERTILIZER TYRE	PTO SPEED (RPM)	SPREAD WIDTH IN FEET	TRACTOR SPEED (MPH)	QUANTITY TO BE SPREAD, IN POUNDS PER ACRE AT CONROL LEVEL SETTING INDICATED								
				0.5	1	1.5	2.0	2.5	3.0	3.5	4.0	4.5
Coarse Grain Fertilizers	540	40	2.5 5 7.5		97 48 37	139 69 53	246 129 85	414 204 139	516 260 175	640 320 218	789 392 260	935 472 323
Medium Grain Fertilizers	540	34	2.5 5 7.5	85 51 43	122 73 62	175 105 73	329 170 113	467 236 163	597 303 198	739 376 253	825 417 286	945 478 325
Fine Grain Fertilizers	540	26	2.5 5 7.5	60 32 21	85 46 30	122 61 41	204 108 93	340 178 122	440 224 153	551 280 193	647 324 220	770 396 263
Ammonium Nitrate	540	33	2.5 5 7.5		61 28 23	226 116 74	377 190 124	563 284 191	724 366 244	896 448 298	1052 525 352	1242 622 422
Urea (Carbamide)	540	26	2.5 5 7.5	77 41 26	110 59 37	303 150 100	458 231 150	669 300 221	818 411 275	1004 500 336	1171 590 392	

SPREADING CHART FOR SEED

MATERIAL	SPREAD WIDTH IN FEET	TRACTOR SPEED (MPH)	POUNDS PER ACRE(APPROXIMATE) AT CONTROL LEVEL SETTING INDICATED									
			0.25	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	
Alfalfa & Clover	26	4 5 6 7.5	14 11 9 7.5	48 39 32 26	118 95 79 63							
Barley	28	4 5 6 7.5					90 72 60 48	107 86 71 57	151 121 100 81	186 149 124 99		
Bluegrass & Bermude Grass	18	4 5 6 7.5			20.5 16.5 13.5 11	72 45 36 24						
Brome Grass	10	4 5 6 7.5			7 6 5 4	12 9.5 8 6	19 15 12 10					
Fescue & Ryegrass	18	4 5 6 7.5			11 9 7.5 6	34 27 22 18	74 59 49 39					
Lespedeza	32	4 5 6 7.5	5 3.5 3 2.4	11 9 7.5 6	22 18 15 12							
Oats	28	4 5 6 7.5				45 36 30 24	71 57 48 38	131 105 87 70				
Orchard Grass	12	4 5 6 7.5			14 11 9 7	21 17 14 11						
Rice	33	4 5 6 7.5				87 70 58 47	140 112 93 75	253 203 169 135				
Rye	33	4 5 6 7.5					86 69 57 46	135 109 90 72	186 149 124 99	227 182 151 121		
Sudan Grass	33	4 5 6 7.5			37 30 25 20	58 47 39 31	92 74 61 49					
Soybeans	40	4 5 6 7.5						127 102 85 68	150 120 100 80	170 136 113 90	200 160 133 106	
Wheat	33	4 5 6 7.5				70 56 46 37	111 89 74 59	151 121 100 80	198 159 147 106			

3. If your tractor does not have a speedometer, or its accuracy is questionable, then you may calibrate in the following manner:
 - a) Set out two markers 88 feet apart.
 - b) Select the proper gear and adjust the throttle speed to give the following travel time as shown between the markers.

NOTE: You cannot adjust the throttle much, as you need to maintain 540 RPM PTO speed. (A plus or minus 20 RPM could be tolerated.)

- 1 MPH will travel 88 feet in 60 seconds
- 4 MPH will travel 88 feet in 15 second

- 5 MPH will travel 88 feet in 12 seconds
 - 6 MPH will travel 88 feet in 10 seconds
 - 7.5 MPH will travel 88 feet in 8 seconds
- c) After selecting the gear and throttle setting to give the desired speed, mark the throttle position in some convenient manner. Check the PTO speed to make sure it is near 540 RPM.
- d) Check the rate chart for suggested setting for the material type to be spread.
4. You are now ready to make a trial run. To assure accurate results, close the feed gates and put in a pre-determined amount of material to be spread. Spread it and check the results. Make the final adjustments to obtain the desired results.

⚠CAUTION

Keep all persons away from the rotating spreader fan and the PTO shaft! Never operate when anyone is within 50 feet of spreader

Maintenance

1. The hopper should be washed after use, especially after using a corrosive material such as fertilizer, salt, or ice melting compounds.
2. The gearbox is filled with a lubricant and sealed at the factory. If operated and stored properly, the gearbox will provide a long, trouble-free service life. If disassembly of the gearbox should ever be required, it is important that the box be re-filled with a good quality grease and that the box halves are resealed with a silicone adhesive.
3. Grease the PTO universal joints after every 8 hours of operation. Lubricate the steel tube and shaft so they telescope freely.
4. Always store the spreader in a clean, dry place.
5. Before using the spreader, check to make sure all nuts and bolts are tight.
6. Paint any bare metal or rusty spots for a longer life.

Troubleshooting

1. Not Feeding Evenly

- A. The seed gate opening may be set too closely for the material being spread. To adjust, set the opening wider and drive faster to obtain the same spread rate.
- B. Check the material for any foreign matter.
- C. Check the agitator drive shear pin.

2. Poor Spread

- A. There is too much speed (over 560 PTO RPM) which can cause uneven spread.
- B. The PTO speed is too slow (PTO RPM under 520 RPM) and will result in a narrow spread.
- C. There are bent fan blades.
- D. Drive shear pin or missing on fan hub.
- E. Too windy for material being spread.
- F. There are agitator problems. See the 'Not Feeding Evenly' section above.

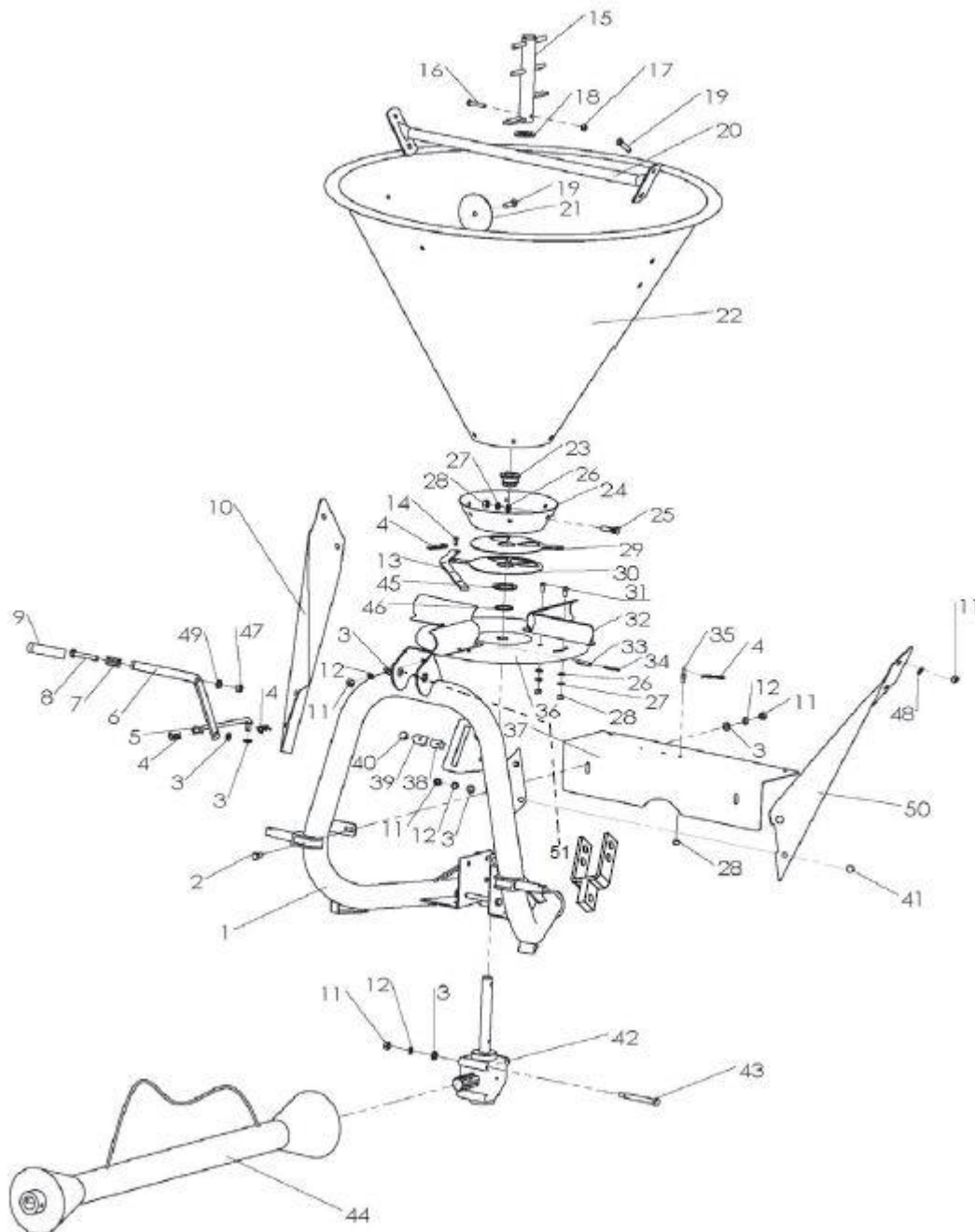
G. The operator is not spacing the spread runs properly for the correct overlap.

For best results, cover the area twice over at one half recommended material usage rate. The second time over, run halfway between the first spreading width or in a crisscross pattern. This method allows the most complete and even coverage, as well as giving the operator a chance to adjust the gate setting to compensate for too thin or too heavy of a covering the first time over.

H. Spreader should run level or tilted slightly forward. Make sure the lift arms on the tractor are adjusted so one side is not lower than the other.

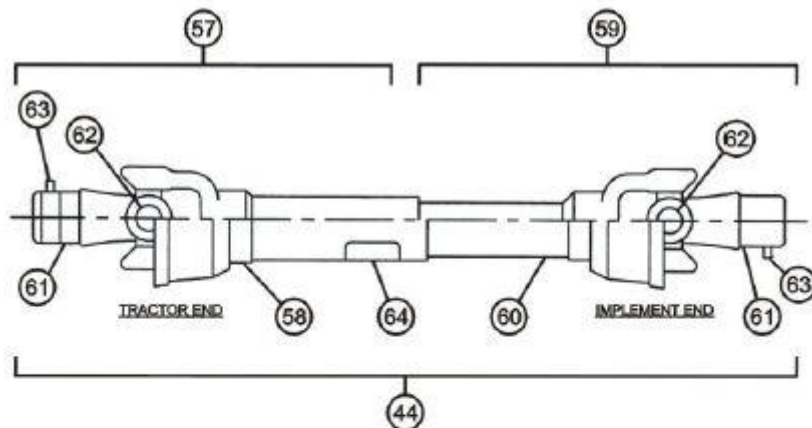
I. Running the agitator when not spreading can result in material being ground up and possibly packing over the control gate opening. You can 'over-agitate' material.

Parts Diagram



Parts List

PART#	Description	QTY
1	Frame	1
2	Bolt, Hex Head M10x20, Zinc	2
3	Washer, Flat, 10mm, Zinc	5
4	Hair Pin	4
5	Rod, Flow Adjustment	1
6	Lever, Adjustment	1
7	Spring, Pressure	1
8	Bolt, Hex Head M10x70, Zinc	1
9	Handle, Rubber, 8x20	1
10	Brace, Left	1
11	Nut, Hex M10, Zinc	14
12	Washer, Lock, 10mm, Zinc	10
13	Rod, Selector, RX-LX	1
14	Pin, Connection, ø6*16	1
15	Agitator	1
16	Bolt, Hex Head M8x45, Zinc	1
17	Lock Nut, M8	1
18	Washer, Nylon, 25mm	1
19	Bolt, Carriage, M10x25, Zinc	5
20	Bar, Hopper Reinforcement	1
21	Washer, Flat, 10.5mm, Zinc	1
22	Hopper	1
23	Retainer Bushing	1
24	Hopper Support Pan	1
25	Bolt, Carriage, M8x25, Zinc	6
26	Washer, Flat, 8mm, Zinc	14
27	Washer, Lock, 8mm, Zinc	14
28	Nut, Hex M8, Zinc	15
29	Seed Disc, Upper (2 holes)	1
30	Distribution Disc, Lower (3 holes)	1
31	Bolt, Hex Head M8x16, Zinc	8
32	Vane, Fan	4
33	Roll Pin, ø8*40,	1
34	Roll Pin, ø6*40,	1
35	Pin, Adjustment	1
36	Spreading Disc (Spinner)	1
37	Guard	1
38	Block, Fixing	1
39	Indicator	1
40	Screw Wing, M6x16	1
41	Bolt, Hex Head M10x30, Zinc	4
42	Gearbox, 3 hole (complete)	1
43	Bolt, Hex Head M10x110, Zinc	3
44	PTO Assembly (complete)	1
45	Washer, Flat, 32mm, Zinc	1
46	Snap Ring, ø38	1
47	Lock Nut, M10	1
48	Washer, Special	4
49	Washer, Nylon, 10mm	1
50	Brace, Right	1
51	Adapter	1



PTO COMPONENTS

PART NO.	DESCRIPTION	NO. REQ.
44	PTO Assembly, complete	1
57	PTO Half, tractor end	1
58	Plastic Shield Assembly, outer	1
59	PTO Half, Implement end	1
60	Plastic Shield Assmbly, inner	1
61	Yoke, 1-3/8-6B spline	2
62	PTO Cross Kit	2
63	Push Pin Kit, yoke	2
64	Decal, Driveline Entanglement	1

Replacement Parts

- For replacement parts and technical questions, please call Customer Service at **1-800-222-5381**.
- Not all product components are available for replacement. The illustrations provided are a convenient reference to the location and position of parts in the assembly sequence.
- When ordering parts, the following information will be required: item description, item model number, item serial number/item lot date code, and the replacement part reference number.
- The distributor reserves the rights to make design changes and or improvements to product lines and manuals without notice.

Limited Warranty

Northern Tool and Equipment Company, Inc. ("We" or "Us") warrants to the original purchaser only ("You" or "Your") that the Nortrac product purchased will be free from material defects in both materials and workmanship, normal wear and tear excepted, for a period of one year from date of purchase. The foregoing warranty is valid only if the installation and use of the product is strictly in accordance with product instructions. There are no other warranties, express or implied, including the warranty of merchantability or fitness for a particular purpose. If the product does not comply with this limited warranty, Your sole and exclusive remedy is that We will, at our sole option and within a commercially reasonable time, either replace the product or product component without charge to You or refund the purchase price (less shipping). This limited warranty is not transferable.

Limitations on the Warranty

This limited warranty does not cover: (a) normal wear and tear; (b) damage through abuse, neglect, misuse, or as a result of any accident or in any other manner; (c) damage from misapplication, overloading, or improper installation; (d) improper maintenance and repair; and (e) product alteration in any manner by anyone other than Us, with the sole exception of alterations made pursuant to product instructions and in a workmanlike manner.

Obligations of Purchaser

You must retain Your product purchase receipt to verify date of purchase and that You are the original purchaser. To make a warranty claim, contact Us at 1-800-222-5381, identify the product by make and model number, and follow the claim instructions that will be provided. The product and the purchase receipt must be provided to Us in order to process Your warranty claim. Any returned product that is replaced or refunded by Us becomes our property. You will be responsible for return shipping costs or costs related to Your return visit to a retail store.

Remedy Limits

Product replacement or a refund of the purchase price is Your sole remedy under this limited warranty or any other warranty related to the product. We shall not be liable for: service or labor charges or damage to Your property incurred in removing or replacing the product; any damages, including, without limitation, damages to tangible personal property or personal injury, related to Your improper use, installation, or maintenance of the product or product component; or any indirect, incidental or consequential damages of any kind for any reason.

Assumption of Risk

You acknowledge and agree that any use of the product for any purpose other than the specified use(s) stated in the product instructions is at Your own risk.

Governing Law

This limited warranty gives You specific legal rights, and You also may have other rights which vary from state to state. Some states do not allow limitations or exclusions on implied warranties or incidental or consequential damages, so the above limitations may not apply to You. This limited warranty is governed by the laws of the State of Minnesota, without regard to rules pertaining to conflicts of law. The state courts located in Dakota County, Minnesota shall have exclusive jurisdiction for any disputes relating to this warranty.



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www.northerntool.com

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