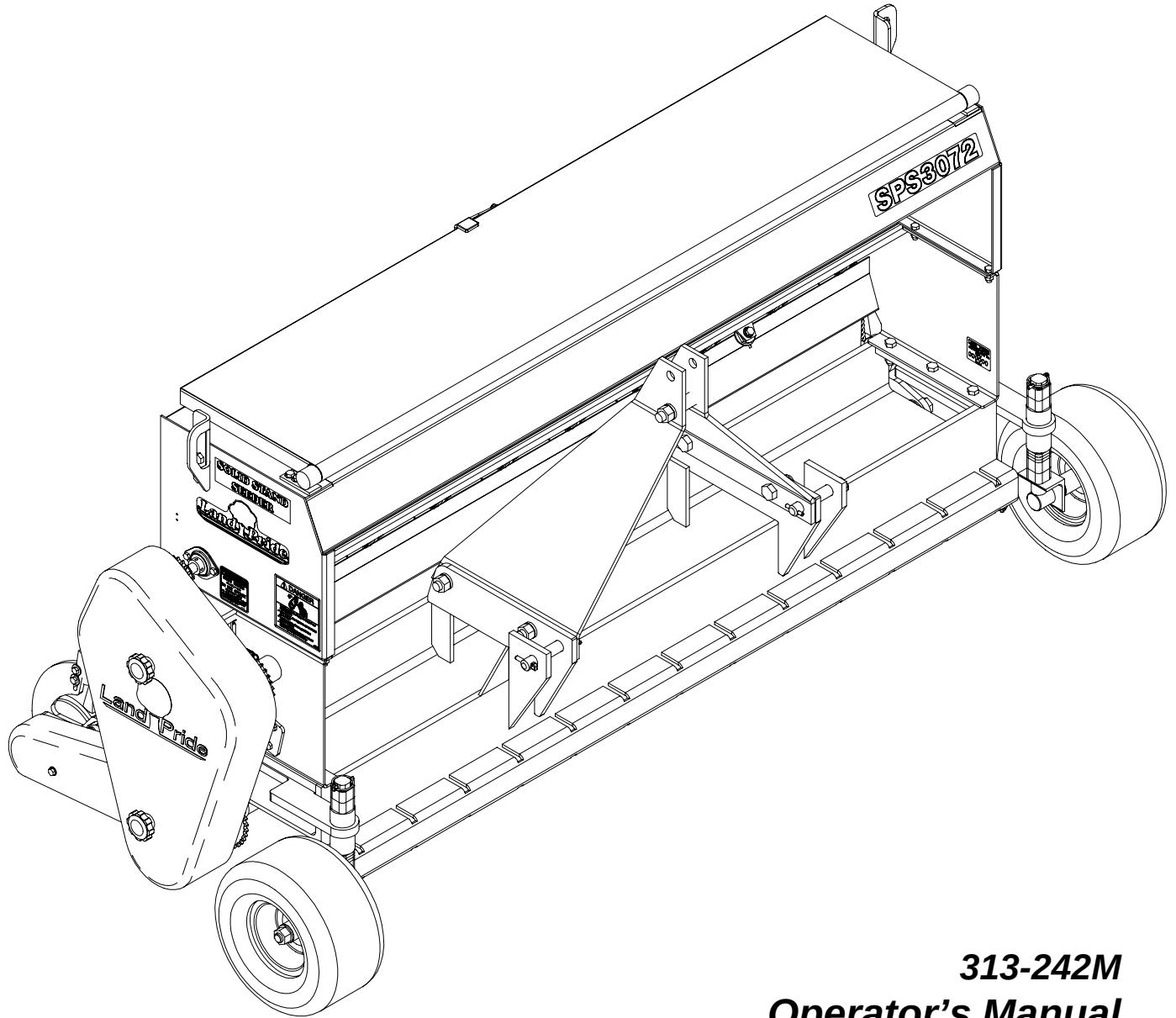


Pulverizer Seeders

SPS20 & SPS30 Series



313-242M **Operator's Manual**



Read the Operator's Manual entirely. When you see this symbol, the subsequent instructions and warnings are serious - follow without exception. Your life and the lives of others depend on it!



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7/14/08

Cover photo may show optional equipment not supplied with standard unit.

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Important Safety Information

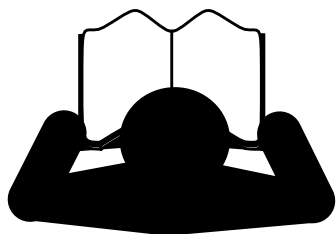
These are common practices that may or may not be applicable to the products described in this manual.

Safety at All Times

Thoroughly read and understand the instructions given in this manual before operation. Refer to the "Safety Label" section, read all instructions noted on them.

Do not allow anyone to operate this equipment who has not fully read and comprehended this manual and who has not been properly trained in the safe operation of the equipment.

- ▲ Operator should be familiar with all functions of the unit.
- ▲ Operate implement from the driver's seat only.
- ▲ Make sure all guards and shields are in place and secured before operating implement.
- ▲ Do not leave tractor or implement unattended with engine running.
- ▲ Dismounting from a moving tractor could cause serious injury or death.
- ▲ Do not stand between tractor and implement during hitching.
- ▲ Keep hands, feet, and clothing away from power-driven parts.
- ▲ Wear snug fitting clothing to avoid entanglement with moving parts.
- ▲ Watch out for wires, trees, etc., when raising implement. Make sure all persons are clear of working area.
- ▲ Turning tractor too tight may cause implement to ride up on wheels. This could result in injury or equipment damage.



Look For The Safety Alert Symbol



The SAFETY ALERT SYMBOL indicates there is a potential hazard to personal safety involved and extra safety precaution must be taken. When you see this symbol, be alert and carefully read the message that follows it. In addition to design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.

Be Aware of Signal Words

A Signal word designates a degree or level of hazard seriousness. The signal words are:

⚠ DANGER

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

⚠ WARNING

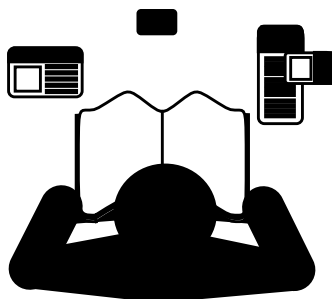
Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

⚠ CAUTION

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

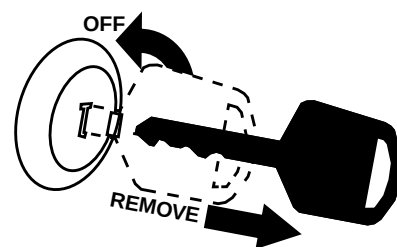
For Your Protection

- ▲ Thoroughly read and understand the "Safety Label" section, read all instructions noted on them.



Shutdown and Storage

- ▲ Lower machine to ground, put tractor in park, turn off engine, and remove the key.
- ▲ Detach and store implements in a area where children normally do not play. Secure implement by using blocks and supports.



Important Safety Information

These are common practices that may or may not be applicable to the products described in this manual.

Transporting the Loader and Attachment

- ▲ Always drive up the ramp with heavy end uphill. Engage parking brake.
- ▲ Secure loader and attachments using tiedowns and chains. Use towing vehicle and trailer of adequate capacity.

Getting On and Off Safely***Before leaving the operator's seat:***

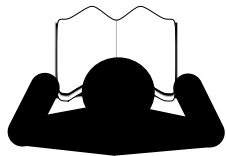
- ▲ Lower lift arms and put attachment flat on the ground.
- ▲ Stop the engine.
- ▲ Engage the parking brake.
- ▲ Raise seat bar and move controls until both lock.
- ▲ Remove the key to prevent unauthorized starting.
- ▲ Use the steps, grab-handles and skid-resistant surfaces when getting on or off the loader.

While Operating

- ▲ Start loader with steering levers and hydraulic controls in neutral.
Keep bystanders away.

Practice Safe Maintenance

- ▲ Understand procedure before doing work. Use proper tools and equipment, refer to Operator's Manual for additional information.
- ▲ Work in a clean dry area.
- ▲ Allow implement to cool completely.
- ▲ Do not grease or oil implement while it is in operation.
- ▲ Disconnect battery ground cable (-) before servicing or adjusting electrical systems or before welding on implement.
- ▲ Inspect all parts. Make sure parts are in good condition & installed properly.
- ▲ Remove buildup of grease, oil or debris.
- ▲ Remove all tools and unused parts from implement before operation.

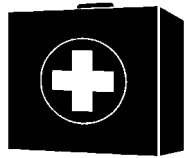


Important Safety Information

These are common practices that may or may not be applicable to the products described in this manual.

Prepare for Emergencies

- ▲ Be prepared if a fire starts.
- ▲ Keep a first aid kit and fire extinguisher handy.
- ▲ Keep emergency numbers for doctor, ambulance, hospital and fire department near phone.

**Wear Protective Equipment**

- ▲ Protective clothing and equipment should be worn.
- ▲ Wear clothing and equipment appropriate for the job. Avoid loose fitting clothing.
- ▲ Prolonged exposure to loud noise can cause hearing impairment or hearing loss. Wear suitable hearing protection such as earmuffs or earplugs.
- ▲ Operating equipment safely requires the full attention of the operator. Avoid wearing radio headphones while operating machinery.

**Avoid High Pressure Fluids Hazard**

- ▲ Escaping fluid under pressure can penetrate the skin causing serious injury.
- ▲ Avoid the hazard by relieving pressure before disconnecting hydraulic lines or performing work on the system.
- ▲ Make sure all hydraulic fluid connections are tight and all hydraulic hoses and lines are in good condition before applying pressure to the system.
- ▲ Use a piece of paper or cardboard, NOT BODY PARTS, to check for suspected leaks.
- ▲ Wear protective gloves and safety glasses or goggles when working with hydraulic systems.
- ▲ If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be treated within a few hours or gangrene may result.



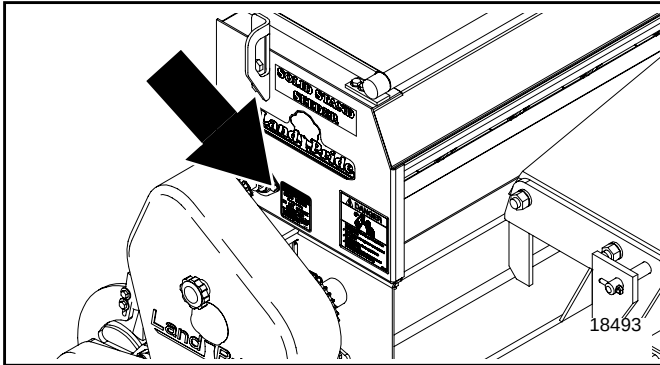
Important Safety Information

Safety Labels

1. Your pulverizer seeder comes equipped with all safety labels in place. They were designed to help you safely operate your pulverizer seeder. Read and follow their directions.
2. Keep all safety labels clean and legible.
3. Replace all damaged or missing labels. To order new labels go to your Land Pride dealer.
4. Some new equipment installed during repair requires safety labels to be affixed to the replaced component as specified by Land Pride. When ordering new components make sure

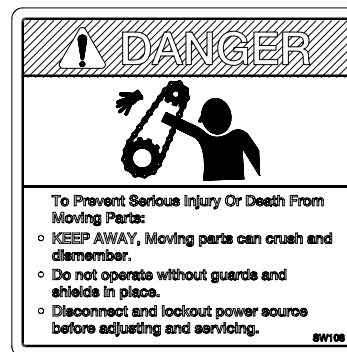
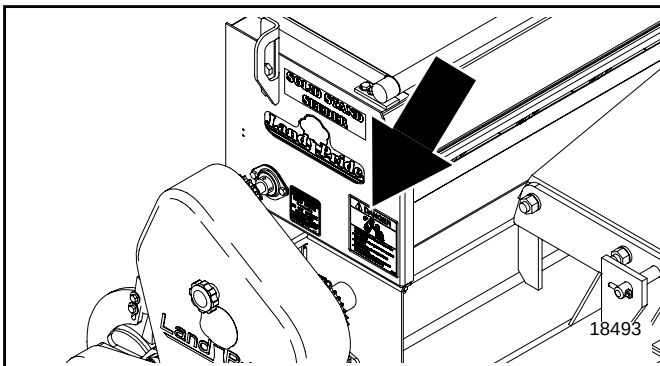
the correct safety labels are included in the request. To order new labels go to your Land Pride dealer.

5. Refer to this section for proper label placement. To install new labels:
 - a. Clean the area the label is to be placed.
 - b. Spray soapy water on the surface where the label is to be placed.
 - c. Peel backing from label. Press firmly onto the surface.
 - d. Squeeze out air bubbles with the edge of a credit card.



818-543C

Danger: Guard Missing
(Beneath Chain Guard)



838-111C

Danger: Keep Away

Introduction

Land Pride welcomes you to the growing family of new product owners.

This pulverizer seeder has been designed with care and built by skilled workers using quality materials. Proper assembly, maintenance, and safe operating practices will help you get years of satisfactory use from this pulverizer seeder.

Application

The SPS2048 and SPS3072 Pulverizer Seeders are designed and built by Land Pride to efficiently do the tasks of seedbed preparation and precision seeding. Both the 48" model and the 72" models are adapted for Category I 3-point hitch mounting. Seed metering is driven off of the rear mounted pulverizer roller making the metering rate directly proportional to forward ground speed and distance traveled.

Front mounted scarifier shanks open and loosen the soil, while seed cups drop the seed directly into the cultivated soil behind the scarifier shanks. The rear pulverizer roller immediately breaks up unwanted clods, levels the ground, and presses the seed into firm contact with the soil. When soil conditions are right, this can often be done in one highly efficient pass.

The Land Pride SPS2048 and SPS3072 Pulverizer Seeders are well suited for use by professional landscapers and rental yards. They have applications on sod farms, transportation right-of-ways, golf courses, park systems, athletic fields, construction sites, and housing developments. See **"Features and Benefits"**, **"Section 6"** for additional information.

Using This Manual

- This Operator's Manual is designed to help familiarize you with safety, assembly, operation, adjustments, troubleshooting, and maintenance. Read this manual and follow the recommendations to help ensure safe and efficient operation.
- The information contained within this manual was current at the time of printing. Some parts may change slightly to assure you of the best performance.
- To order a new Operator's or Parts Manual contact your authorized dealer. Manuals can also be downloaded, free-of-charge from our website at www.landpride.com or printed from the Land Pride Service & Support Center by your dealer.

Terminology

"Right" or "Left" as used in this manual is determined by facing the direction the machine will operate while in use unless otherwise stated.

Definitions

NOTE: A special point of information that the operator must be aware of before continuing.

IMPORTANT: A special point of information related to its preceding topic. Land Pride's intention is that this information should be read and noted before continuing.

Owner Assistance

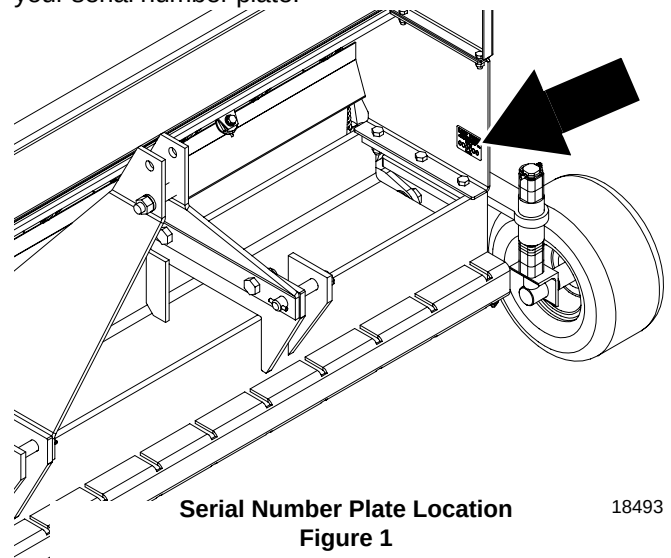
The Warranty Registration card should be filled out by the dealer at the time of purchase. This information is necessary to provide you with quality customer service.

If customer service or repair parts are required contact a Land Pride dealer. A dealer has trained personnel, repair parts and equipment needed to service the implement.

The parts on your Pulverizer Seeder have been specially designed and should only be replaced with genuine Land Pride parts. Therefore, should your pulverizer require replacement parts go to your Land Pride Dealer.

Serial Number Plate

For prompt service always use the serial number and model number when ordering parts from your Land Pride dealer. Be sure to include your serial and model numbers in correspondence also. Refer to Figure 1 for the location of your serial number plate.



Further Assistance

Your dealer wants you to be satisfied with your new pulverizer. If for any reason you do not understand any part of this manual or are not satisfied with the service received, the following actions are suggested:

1. Discuss the matter with your dealership service manager making sure he is aware of any problems you may have and that he has had the opportunity to assist you.
2. If you are still not satisfied, seek out the owner or general manager of the dealership, explain the problem and request assistance.
3. For further assistance write to:

Land Pride

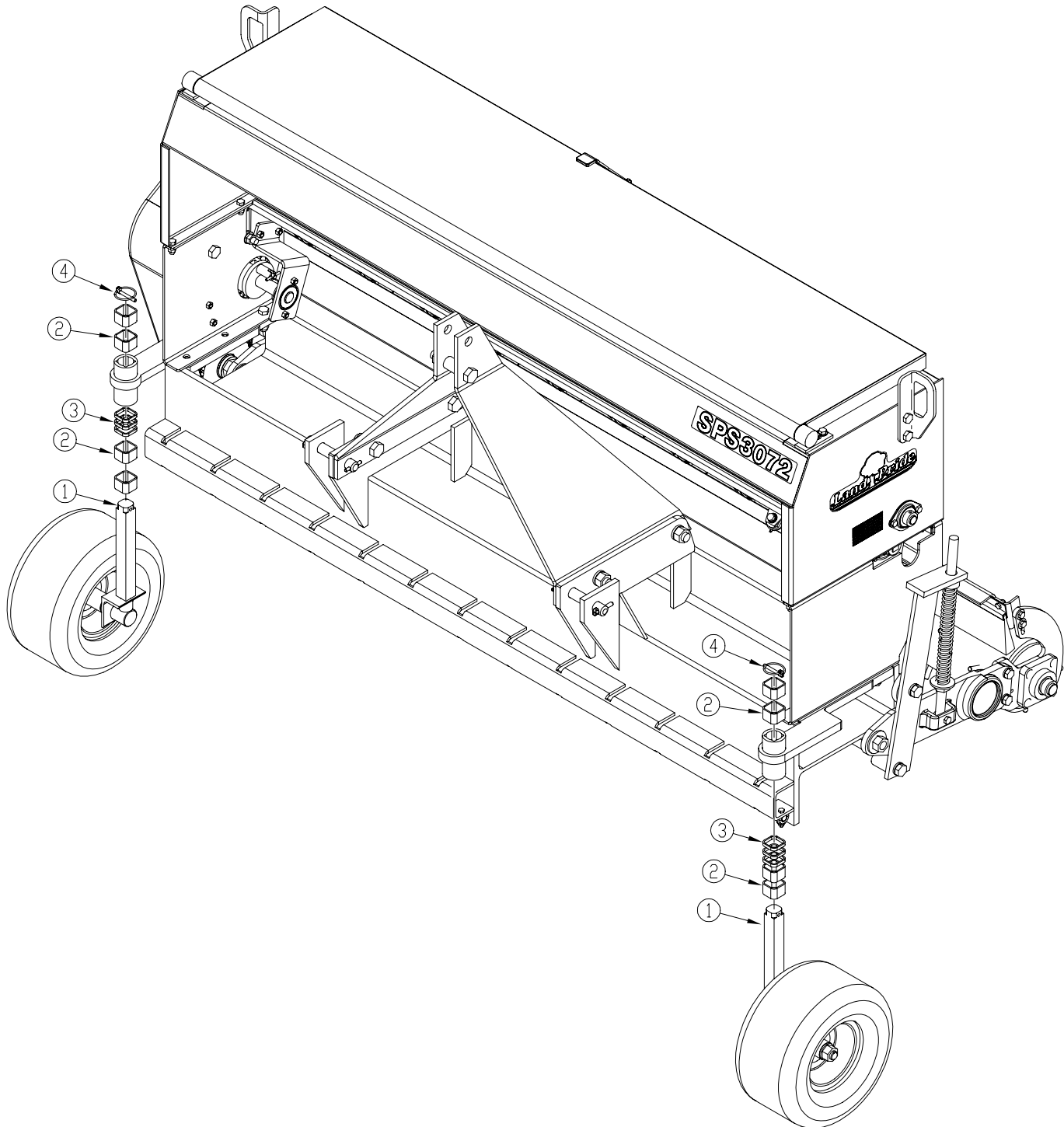
Service Department

P.O. Box 5060
Salina, KS 67402-5060

Section 1 Assembly and Set-Up**Gauge Wheel Assembly**

The gauge wheels are disassembled during shipping. They will need to be unbanded from the crate and reassembled.

1. Insert the gauge wheels (#1) through the gauge wheel arms as shown, placing the spacers (#2) and (#3) to the desired height.
2. Secure with pin (#4).



Dealer Gauge Wheel Assembly
Figure 1-1

18547

Section 2 Operating

Tractor Requirements

This Pulverizer Seeder is designed for tractors in the Category 1 class. Horsepower rating of the tractor should not exceed 40 HP.

Adequate front end weight is required on tractors for use with the seeder. Check tractor's 3-point lifting capacity. Refer to "**Section 5 Specifications and Capacities**" on Page 22 for seeder weight.

NOTE: In order to maintain steering control, ballast may have to be added to your tractor. To determine whether or not to add ballast, refer to your tractor operator's manual.

Operating Check List

In addition to design and configuration of equipment; hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training involved in its operation, transport, maintenance and storage of equipment. Before beginning to operate your Seeder, the following inspection should be performed.

Check	Reference
☐ Read and follow the " Safety Rules " carefully.	Important Safety Information Page 1-6
☐ Read all of the " Tractor Hook Up " and preparation instructions.	Section 2 page 7
☐ " Basic Operations " in this Manual	Operator's Manual
☐ Lubricate the seeder as needed. Refer to " Lubrication ".	Section 4 page 20
☐ Check the seeder initially and periodically for loose bolts & pins, " Torque Values Chart ".	Section 8 page 26
☐ Make sure all guards and shields are in place.	Operator's Manual
☐ Check initially and periodically for loose bolts, pins, and chains.	Operator's Manual
☐ Inspect the feed cups and seed tubes for foreign matter.	Section 7 page 25
☐ Set speed change sprocket for drive type desired.	Section 3 page 9
☐ Set seed rate. See " Seed Rate Charts ".	Section 3 page 12

Tractor 3-Point Hookup

- Back tractor up to seeder until 3-Point links are aligned with hitch clevises on seeder.
- Secure the tractor's 3-Point lower links to the lower hitch clevises using 7/8" diameter hitch pins on the SPS3072 and secure to the lower hitch pins on the SPS2048.
- Secure the tractor's top link to the seeder top hitch using a 1" diameter hitch pin. Adjust tractor top link in order to level the seeder.

Seeder Preparation and Use

Before proceeding with the first time setup, or before making any adjustments mentioned in this section, make every effort to obtain and hitch a tractor to the seeder.

- This seeder can be transported with a full box of seed. It is best not to do this unless necessary because the increased weight does increase the chances for problems on the road. Do not exceed 20 miles per hour.
- Calibrate your seeder for a proper rate based on the seed you are using. Calibration information is located on the inside of your box lid or on page 9.
- Make sure the feed cup door adjustment handle on each cup is set the same across the seeder.
- Never allow anyone to ride on the seeder.
- Maximum seeding speed will vary according to soil conditions.
- Check that all plugs and caps have been replaced properly.
- Be sure all bolts and nuts are tight.
- Be certain all guards are in place and secure.
- Clear the area to be seeded of rocks, branches and other foreign objects.
- To begin seeding lower unit to the ground.
- At first begin seeding at a slow forward speed and shift up until the desired speed is achieved.
- Periodically check that seed is being distributed through the feeder cups.

Transporting



CAUTION

When traveling on public roads whether at night or during the day, use accessory light and devices for adequate warning to operators of other vehicles. Comply with all federal, state and local laws.

- Select a safe ground travel speed when transporting from one area to another. When traveling on roadways, transport in such a way that faster moving vehicles may pass you safely.
- Reduce tractor ground speed when turning. Leave enough clearance so the seeder does not contact obstacles such as buildings, trees or fences.
- When traveling over rough or hilly terrain, shift tractor to a lower gear.

Section 2 Operating

Parking

The following steps should be done when preparing to store the seeder or unhitch it from the tractor. See also **"Section 4 Maintenance and Lubrication"** on Page 20 for additional information on long term storage of your seeder.

1. Park the seeder on a level, solid area.
2. Shut off tractor engine and engage parking brake.
3. Unhitch from tractor.

Drive System

Your Pulverizer Seeder uses standard no. 40 roller chain throughout its drive system. The drive system is simple and designed for low maintenance.

1. Check the drive idler arms to insure that they are taking up any excess chain slack.
2. Check each chain to insure that it is not over-tight.
3. Annually clean and lubricate chain with chain oil.

Operating Instructions

Prior to putting your Land Pride Pulverizer Seeder into service you must thoroughly review the Operator's Manual. You will also need to properly attach your seeder to the tractor, and completely and properly perform all functions identified in the Operator's Checklist. Once you have performed the tractor attachment and Checklist functions, you are ready to proceed with final seeder calibration and use.

In performing your Operator's Checklist functions, you should have already determined the proper seed rate setting for the seed you are applying. This will always be determined from the seed rate chart located either in your Operator's Manual or under the hopper lid of your seeder. You should have chosen the proper "speed rate sprocket selection", properly positioned the levers on your seed cups, and properly positioned your seed rate handle. In order to perform final calibration, you will need to raise the seeder off the ground, safely supporting the unit so the rear roller can rotate freely.

Engage the seeder drive clutch and rotate the rear roller to make sure the drive system is working properly. Make sure that the seed cups are free of foreign matter. Place a drop cloth under one end of the seeder to catch the seed that will be metered out for calibration purposes. Place several pounds of seed in the hopper directly over the last three seed cups at the outboard end you are monitoring. Make sure that no seed can flow from any other seed cups at this time.

If you have a 72" seeder, you will need to rotate the rear roller exactly 62 rotations to simulate 1,000 square feet of coverage. If you have a 48" seeder you will need to rotate the rear roller exactly 88 rotations to simulate 1000 square feet of coverage. Once you have completed the proper number of rotations, gather up the seed you have captured in your drop cloth and weigh it. Divide this number by three, which represents how much seed is coming out of each seed cup for 1,000 of coverage. Multiply that figure by the total number of seed cups on your seeder to determine how many pounds you are actually putting down for 1,000 square feet of coverage. If the results are not what you expect or do vary greatly from suggested settings on the chart, re-verify your settings and repeat the calibration process.

Once you are satisfied with your calibration settings, load the seed hopper and head for the planting site. You should have already removed any sizeable sticks, rocks, or extraneous debris from this area. Make sure the seeder drive clutch is engaged. It is best to start out slow to make sure that all systems are working properly. Seeding and pulverizing action will commence as soon as the rear roller touches the ground and begins to roll. You can increase your speed when you are confident that you are achieving the desired results. Seeding will stop when you lift the unit off of the ground.

If you need to increase or decrease the cultivating action of the scarifiers, you can do this by raising or lowering the front mounted pneumatic gage wheels. Down pressure of the rear pulverizing roller can be adjusted by the spring tensioners located at both ends of the roller. If you are getting a build-up on the either the gage wheels or the rear roller, seeding operations should be discontinued until the ground is dry enough to work. If the ground needs more cultivation than can be achieved in one pass, disengage the seeder drive clutch and make additional passes using the scarifier and pulverizer only.

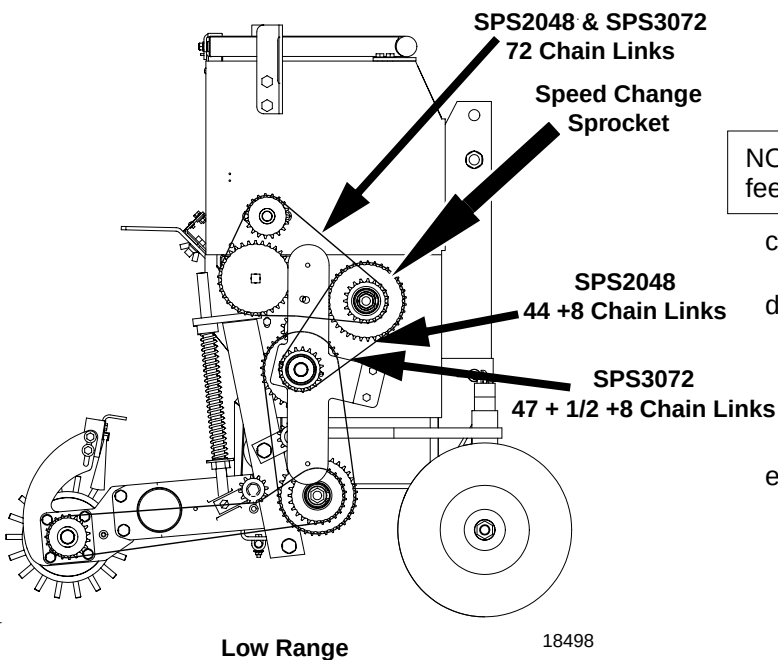
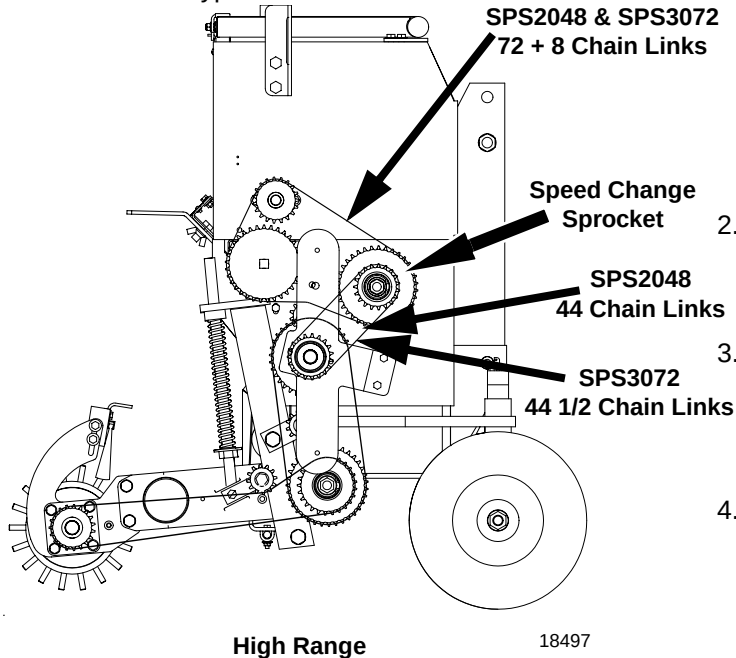
Once you are finished using your seeder, make sure you empty out the hopper, disengage the clutch, and clean out the seed cups. Park it on a dry and level surface and make it ready for the next use.

With a little practice you will achieve professional results from your Land Pride Pulverizer Seeder.

Section 3 Adjustments

Seed Rate Speed Change

The seed rate speed change is designed to give you two speeds for different types of seeds and rates. The two drive types are high range (fast speed) and low range (slow speed). To change the drive type and chain pitch changes, refer to Figure 3-1. Remove 5/8" nut, 5/8" lock washer and 5/8" flat washer. Flip speed change sprocket for desired drive type.



Speed Change & Chain Pitches
Figure 3-1

Seeding Adjustments

1. Using the seed rate charts, beginning on page 12, determine the seeding rate for the seed you will be planting and make the following adjustments.
 - a. Decide whether you need the slow or fast drive type. Change the speed change sprocket if necessary, to the desired drive type, see Figure 3-1 on page 9.
 - b. Locate the seed rate adjustment handle at the rear of the seeder and move it to the indicator number obtained from the charts, see page 10 Figure 3-2. For best results, first move adjustment handle all the way to the left. Then move the handle to the desired setting, moving from a lower to a higher number.
2. There are many factors which will affect seeding rates: seed treatment, weight of seed, surface condition of seed or roller slippage. Minor adjustments may be needed to compensate for these factors.
3. The seed rate charts are based on average size seed. This may differ from the seed you are using. Use the seed rate charts as a guide. For lighter than average seed, the setting should be increased. For heavier than average seed, the setting should be decreased.
4. Complete the following procedure to calibrate the rate for your specific seed.
 - a. Place several pounds of seed over three of the seed cups at the outboard end of the seeder.
 - b. Raise the seeder off the ground and support safely, leaving rear roller to rotate freely.

Rotate the rear roller to see that the drive system is working properly and the feed cups are free from foreign matter.

NOTE: Turn the rear roller clockwise for proper feeder cup rotation.

- c. Place a drop cloth under the seeder to gather the seed as it is metered.
 - d. Rotate the drive roller assembly. For 72" seeder: 62 rotations to get 1,000 sq. feet, or 680 rotations to get 1/4 acre. For 48" seeder: 88 rotations to get 1,000 square feet or 960 rotations to get 1/4 acre. Be sure to check the three feeder cups to make sure each cup has plenty of seed coming into it.
 - e. Weigh the seed which has been metered. Divide by three. This will give you the ounces/pounds metered by each feeder cup. Convert to pounds and multiply by the number of cups on your seeder to arrive at the total pounds per 1000 square feet your seeder would meter at that setting. If this figure is different than desired, set your feed cup adjustment lever accordingly.
5. You may want to repeat the calibration procedure if the results of your calibration vary greatly from the suggested settings on the chart.

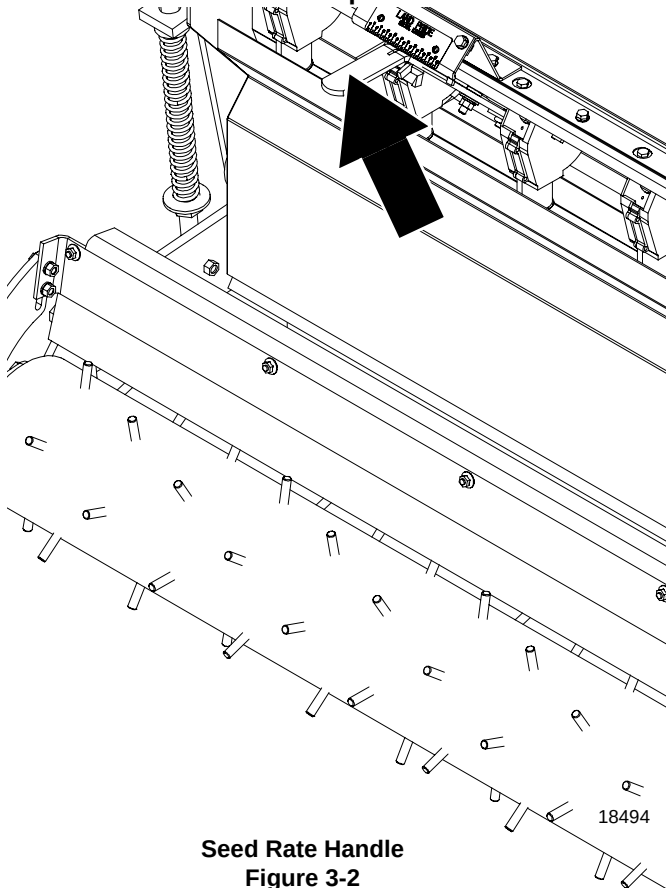
Section 3 Adjustments

NOTE: To determine seed rates for seeds not listed on the charts, compare weight and size to those listed and use a similar setting. Follow steps 4 and 5 to calibrate the seed rate.

IMPORTANT: Field conditions will affect seeding rates. When seeding check the amount of seed you are using by noting acres or square feet seeded, amount of seed added to seeder, and level of seed in the seed box. If you suspect that you are seeding more or less seed than desired, and you have accurately calibrated the seeder to your seed, you may need to adjust the seeding rate slightly to compensate for field conditions.

NOTE: This seeder is equipped with a four-position feed cup door on each feed cup. The highest handle position is for small seeds, the second and third positions are for larger seeds. For application with this seeder, you will only need to use the highest position. **MAKE SURE** all handles are in the same position before seeding. The wide open position will allow complete clean out of the feed cup.

DO NOT open the cup to the wide open position with seed in the box unless complete clean out is desired.



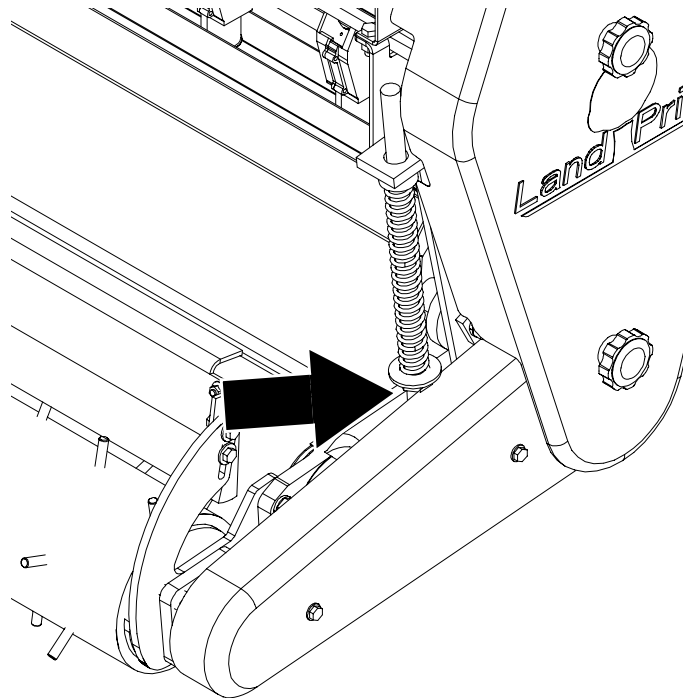
Seed Rate Handle
Figure 3-2

Roller Down Pressure

Refer to Figure 3-3:

Maintaining proper roller down pressure is important for consistent roller to soil contact. The feeder cups are driven off the roller. Adjusting nut up, which compresses spring and decreases dimension giving more pressure to roller. Adjusting nut down decreases roller pressure. Not enough down pressure may not compact the soil sufficiently for proper seed germination.

NOTE: For best results set both ends the same.



Down Pressure Adjustment
Figure 3-3

18494

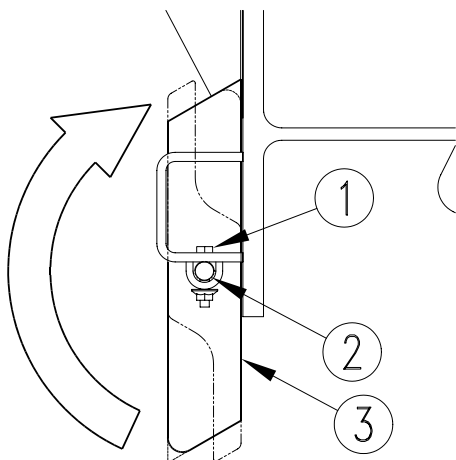
Section 3 Adjustments

Shanks

Refer to Figure 3-4:

Shanks can be removed & installed upside down to give dual life to shanks.

1. Remove bolt and nut (#1) from one end of pulverizer.
2. Pull rod (#2) from channel.
3. Flip shanks (#3) over and reinstall rod (#2)
4. Reinstall bolt and nut (#1).

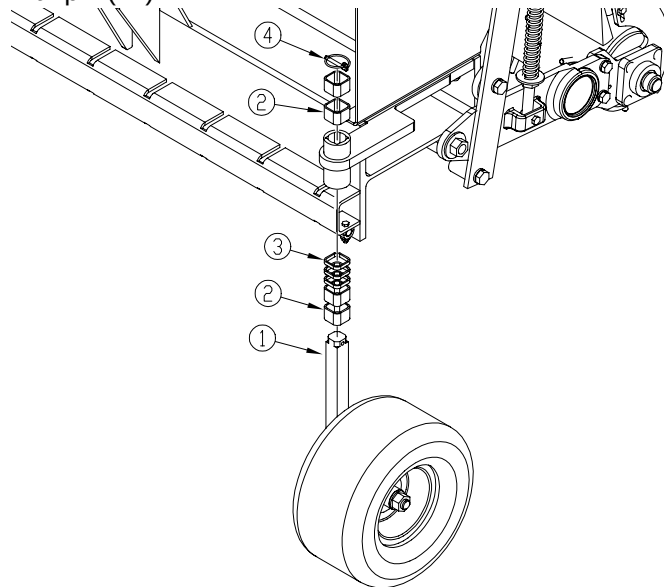


Shanks
Figure 3-4

Shank Working Depth

The working depth of the shanks can be adjusted by the gauge wheels.

Place spacers (#2) & (#3) at desired height and secure with pin (#4).

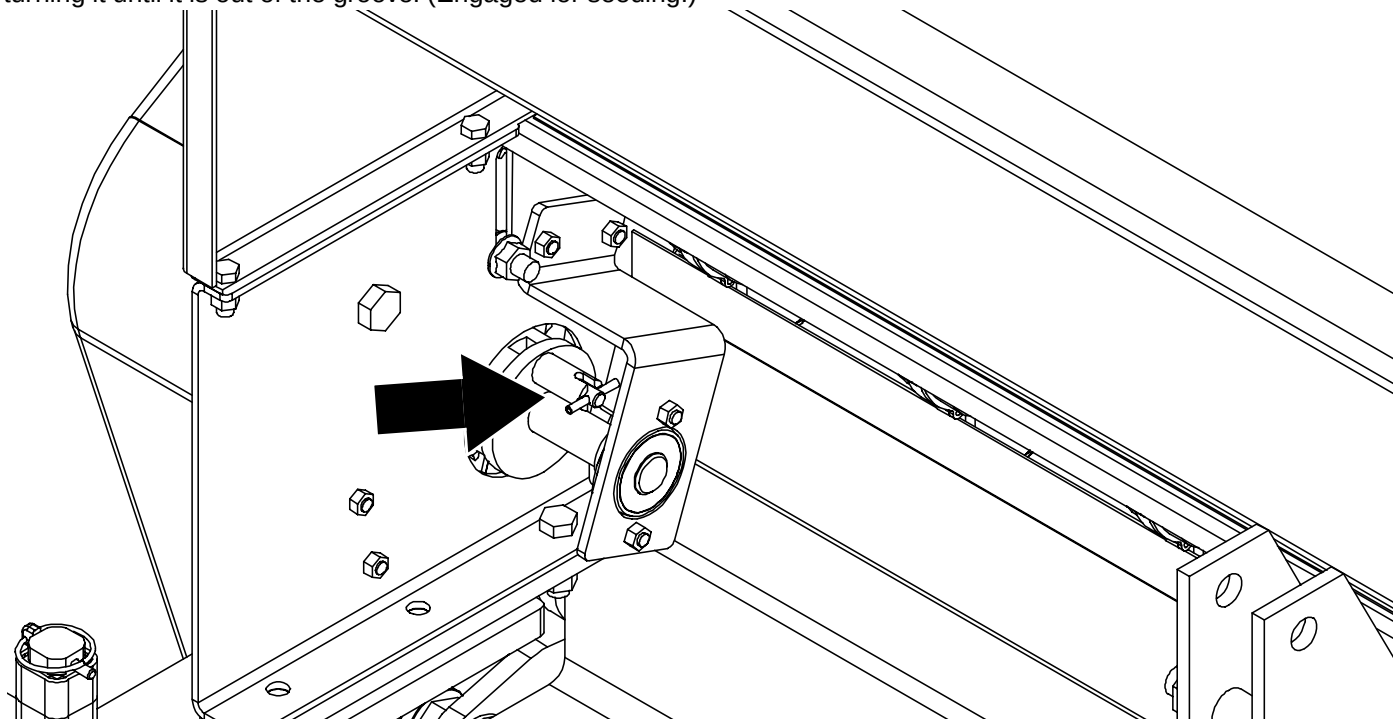


Shank Working Depth
Figure 3-5

18547

Clutch Engagement (Disengagement)

The Clutch can be engaged by turning the pin until the pin slides in the groove. Disengage by pulling out on the pin and turning it until it is out of the groove. (Engaged for seeding.)



Clutch Engagement
Figure 3-6

18492

Section 3 Adjustments

Seed Rate Chart for SPS2048

Cup Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Alfalfa (Pounds per Acre)																					
High Range	0	37.8	87.5	138.6	188.3	238.7	288.4	339.5	388.5	438.2	489.3	538.3	589.4	639.1	689.5	739.2	790.3	839.3	889.0	940.1	989.1
Low Range	0	11.9	28.0	44.1	59.5	75.6	91.7	107.8	123.2	138.6	154.7	170.8	186.9	202.3	218.4	234.5	250.6	266.0	281.4	297.5	313.6
Alfalfa (Pounds per 1000 Square Feet)																					
High Range	0.0	0.8	2.0	3.2	4.3	5.5	6.4	7.8	9.0	10.1	11.3	12.4	13.6	14.7	15.8	17.0	18.1	19.3	20.4	21.6	22.8
Low Range	0.0	0.3	0.6	1.0	1.4	1.8	2.1	2.5	2.8	3.2	3.6	3.9	4.3	4.6	5.0	5.4	5.7	6.1	6.4	6.9	7.2
Bent Grass (Pounds per Acre)																					
High Range	0	25.9	56.0	80.5	106.4	129.5	144.2	167.3	185.5	205.1	228.2	250.6	266.0	289.1	307.3	326.9	349.3	369.6	387.8	410.2	433.3
Low Range	0	11.9	20.3	29.4	37.8	46.2	53.9	62.3	69.3	77.0	85.4	91.7	98.0	104.3	111.3	117.6	122.5	128.8	133.7	138.6	143.5
Bent Grass (Pounds per 1000 Square Feet)																					
High Range	0.0	0.6	1.3	1.8	2.5	2.9	3.3	3.9	4.3	4.7	5.3	5.7	6.1	6.7	7.1	8.1	8.5	8.9	8.9	9.5	9.9
Low Range	0.0	0.3	0.5	0.7	0.8	1.1	1.3	1.4	1.6	1.8	2.0	2.1	2.2	2.4	2.5	2.7	2.8	2.9	3.1	3.2	3.3
Bermuda - Hulled (Pounds per Acre)																					
High Range	0	42.7	70.7	112.7	144.2	175.0	206.5	238.7	270.2	301.0	332.5	364.7	395.5	427.0	457.8	490.7	521.5	552.3	583.8	616.0	647.5
Low Range	0	13.3	22.4	35.7	45.5	55.3	65.1	75.6	85.4	95.2	105.0	115.5	125.3	135.1	144.9	155.4	165.2	175.0	184.8	195.3	205.1
Bermuda -Hulled (Pounds per 1000 Square Feet)																					
High Range	0.0	1.0	1.6	2.6	3.3	4.1	4.8	5.5	6.2	6.9	7.6	8.4	9.1	9.8	10.5	11.3	12.0	12.7	13.4	14.1	14.9
Low Range	0.0	0.3	0.5	0.8	1.1	1.3	1.5	1.8	2.0	2.2	2.7	2.7	2.9	3.1	3.4	3.6	3.8	4.0	4.3	4.5	4.7
Buffalo Grass Sharps Improved (Pounds per Acre)																					
High Range	0.00	0.0	0.0	15.4	36.4	53.2	74.2	91.0	111.3	129.5	149.1	168.7	181.3	205.1	224.7	246.4	259.7	276.5	291.9	301.0	303.8
Low Range	0.0	0.0	0.0	9.1	14.7	20.3	26.6	32.2	39.2	45.5	51.1	58.1	64.4	69.3	76.3	82.6	88.9	93.8	100.1	102.9	105.0
Buffalo Grass Sharps Improved (Pounds per 1000 Square Feet)																					
High Range	0.0	0.0	0.0	0.4	0.8	1.2	1.7	2.1	2.5	2.9	3.4	3.9	4.3	4.7	5.2	5.7	6.0	6.4	6.7	6.9	7.0
Low Range	0.0	0.0	0.0	0.2	0.4	0.5	0.6	0.8	0.9	1.1	1.2	1.3	1.5	1.6	1.8	1.9	2.0	2.2	2.3	2.4	2.5
Clover - Red (Pounds per Acre)																					
High Range	0.0	53.9	100.1	141.4	184.1	224.7	266.0	306.6	349.3	389.9	431.2	473.2	513.8	555.1	596.4	639.1	679.7	721.0	763.0	804.3	844.9
Low Range	0.0	16.8	31.5	44.8	58.1	71.4	84.0	97.3	110.6	123.9	136.5	149.8	163.1	175.7	189.0	202.3	215.6	228.2	242.2	254.8	268.1
Clover - Red (Pounds per 1000 Square Feet)																					
High Range	0.0	1.3	2.3	3.2	4.2	5.2	6.1	7.1	8.1	9.0	9.9	10.9	11.8	12.7	13.7	14.7	15.6	16.6	17.6	18.5	19.5
Low Range	0.0	0.4	0.7	1.1	1.3	1.6	2.0	2.2	2.5	2.9	3.2	3.4	3.8	4.1	4.3	4.6	5.0	5.3	5.5	5.9	6.2
Clover - White (Pounds per Acre)																					
High Range	0.0	53.9	105.7	156.8	207.9	260.4	310.8	361.9	414.9	464.8	515.9	568.4	618.8	669.9	722.4	772.8	823.9	876.4	926.8	977.9	1030
Low Range	0.0	16.8	33.6	49.7	65.8	82.6	98.7	114.8	130.9	147.7	163.8	179.9	196.0	213.1	228.9	245.0	261.1	277.9	294.0	310.1	326.2
Clover - White (Pounds per 1000 Square Feet)																					
High Range	0.0	1.3	2.5	3.6	4.8	6.0	7.1	8.3	9.5	10.7	11.8	13.1	14.2	15.4	16.6	17.8	19.0	20.2	21.3	22.5	23.7
Low Range	0.0	0.4	0.8	1.1	1.5	1.9	2.2	2.7	3.0	3.4	3.8	4.1	4.5	4.9	5.3	5.6	6.0	6.4	6.7	7.1	7.5
Fescue - Fine Blade, Turf Type (Pounds per Acre)																					
High Range	0	14	32.2	52.5	72.1	91.7	112.0	131.6	151.2	169.4	189.7	209.3	228.9	248.5	268.8	288.4	308.0	327.6	347.9	367.5	387.1
Low Range	0	4.2	10.5	16.8	23.1	29.4	35.7	42.0	48.3	53.9	60.2	66.5	72.8	79.1	85.4	91.7	98.0	103.6	109.9	116.2	122.5
Fescue - Fine Blade, Turf Type (Pounds per 1000 Square Feet)																					
High Range	0.0	0.4	0.8	1.2	1.7	2.1	2.6	3.0	3.5	3.9	4.3	4.8	5.3	5.7	6.25	6.7	7.1	7.6	8.0	8.5	8.9
Low Range	0.0	0.1	0.2	0.4	0.5	0.7	0.8	1.0	1.1	1.3	1.4	1.5	1.7	1.8	2.0	2.1	2.2	2.4	2.5	2.7	2.8
Fescue K-31 (Pounds per Acre)																					
High Range	0.0	0.0	14.7	35.0	58.1	79.1	98.0	115.5	130.2	156.1	170.1	190.4	213.5	229.6	248.5	267.4	285.6	303.1	307.3	315.0	317.8
Low Range	0.0	0.0	4.2	10.5	18.2	24.5	30.8	35.7	40.6	48.3	53.2	58.8	66.5	71.4	77.0	82.6	88.9	93.8	95.2	98.0	98.7
Fescue K-31 (Pounds per 1000 Square Feet)																					
High Range	0.0	0.0	0.4	0.8	1.3	1.8	2.2	2.7	3.0	3.6	3.9	4.4	4.9	5.3	5.7	6.2	6.6	7.0	7.1	7.2	7.3
Low Range	0.0	0.0	0.1	0.3	0.4	0.6	0.7	0.6	0.9	1.1	1.2	1.3	1.5	1.6	1.8	1.9	2.0	2.2	2.2	2.2	2.2
Kentucky Blue Grass (Pounds per Acre)																					
High Range	0.0	16.1	33.6	51.1	72.1	87.5	108.5	124.6	143.5	158.9	175.0	191.8	205.1	225.4	233.8	255.5	270.9	284.2	298.2	309.4	318.5
Low Range	0.0	5.6	11.2	16.8	23.8	28.7	35.7	40.6	46.9	51.8	57.4	63.0	67.2	74.2	76.3	83.3	88.9	93.1	98.0	101.5	104.3
Kentucky Blue Grass (Pounds per 1000 Square Feet)																					
High Range	0.0	0.4	0.8	1.2	1.7	2.0	2.5	2.9	3.3	3.6	4.0	4.4	4.7	5.2	5.4	5.9	6.2	6.5	6.9	7.1	7.4
Low Range	0.0	0.1	0.3	0.4	0.6	0.6	0.8	0.9	1.1	1.2	1.3	1.5	1.5	1.7	1.8	1.9	2.0	2.2	2.2	2.3	2.4

Section 3 Adjustments

Cup Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Lovegrass - Sand (Pounds per Acre)																					
High Range	0.0	62.3	98.0	133.7	169.4	205.1	240.1	275.8	311.5	347.2	382.9	418.6	454.3	490.0	525.7	561.4	596.4	647.5	683.9	720.3	756.7
Low Range	0.0	19.6	30.8	42.7	53.9	65.1	76.3	87.5	98.7	109.9	121.1	132.3	144.2	155.4	166.6	177.8	189.0	200.2	211.4	223.3	234.5
Lovegrass - Sand (Pounds per 1000 Square Feet)																					
High Range	0.0	1.4	2.2	3.1	3.9	4.7	5.5	6.4	7.1	8.0	8.8	9.6	10.4	11.3	12.1	12.9	13.7	14.9	15.8	16.6	17.4
Low Range	0.0	0.4	0.7	1.0	1.3	1.5	1.8	2.0	2.2	2.5	2.8	3.1	3.3	3.6	3.9	4.1	4.3	4.6	4.8	5.1	5.4
Lovegrass - Weeping (Pounds per Acre)																					
High Range	0.0	76.3	123.2	158.2	200.9	240.1	277.2	313.6	350.7	387.1	424.2	460.6	497.7	534.1	571.2	607.6	644.7	681.1	718.2	754.6	793.1
Low Range	0.0	24.5	39.2	50.4	63.7	76.3	87.5	99.4	111.3	122.5	134.4	146.3	157.5	169.4	181.3	192.5	204.4	215.6	227.5	239.4	251.3
Lovegrass - Weeping (Pounds per 1000 Square Feet)																					
High Range	0.0	1.8	2.8	3.6	4.6	5.5	6.4	7.2	8.1	8.9	9.7	10.6	11.4	12.3	13.1	14.0	14.8	15.7	16.5	17.4	18.2
Low Range	0.0	0.6	0.9	1.1	1.5	1.8	2.0	2.3	2.5	2.8	3.1	3.4	3.6	3.9	4.1	4.4	4.7	5.0	5.3	5.5	5.7
Orchard Grass (Pounds per Acre)																					
High Range	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Low Range	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Orchard Grass (Pounds per 1000 Square Feet)																					
High Range	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Low Range	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rye Grass - Annual (Pounds per Acre)																					
High Range	0.0	14.7	41.3	66.5	91.7	117.6	142.8	169.4	195.3	220.5	245.7	271.6	298.2	323.4	349.3	374.5	401.1	427.0	452.2	477.4	503.3
Low Range	0.0	4.9	13.3	21.0	29.4	37.1	45.5	53.9	61.6	70.0	77.7	86.1	94.5	102.9	110.6	119.0	127.4	135.1	143.5	151.2	159.6
Rye Grass - Annual (Pounds per 1000 Square Feet)																					
High Range	0.0	0.4	0.9	1.5	2.1	2.7	3.3	3.9	4.5	5.0	5.7	6.2	6.9	7.4	8.1	8.6	9.2	9.8	10.4	11.0	11.6
Low Range	0.0	0.1	0.3	0.5	0.7	0.8	1.1	1.3	1.4	1.6	1.8	2.0	2.2	2.4	2.5	2.7	2.9	3.1	3.3	3.5	3.6
Rye Grass - Perennial (Pounds per Acre)																					
High Range	0.0	25.2	53.9	80.5	109.2	137.2	163.8	192.5	220.5	247.1	275.8	303.8	332.5	359.1	387.1	415.8	442.4	470.4	499.1	525.7	553.7
Low Range	0.0	8.4	16.8	25.9	34.3	43.4	51.8	60.9	70.0	78.4	87.5	96.6	105.0	114.1	122.5	131.6	140.0	149.1	158.2	166.6	175.7
Rye Grass - Perennial (Pounds per 1000 Square Feet)																					
High Range	0.0	0.6	1.3	1.8	2.5	3.2	3.8	4.3	5.0	5.7	6.3	7.0	7.6	8.3	8.9	9.5	10.2	10.9	11.5	12.1	12.7
Low Range	0.0	0.2	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.5	2.6	2.8	3.0	3.2	3.4	3.6	3.9	4.1
Sudan Grass (Pounds per Acre)																					
High Range	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Low Range	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sudan Grass (Pounds per 1000 Square Feet)																					
High Range	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Low Range	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vetch (Pounds per Acre)																					
High Range	0.0	54.6	94.5	133.7	171.5	211.4	250.6	290.5	329.7	367.5	407.4	446.6	486.5	524.3	563.5	603.4	642.6	681.1	720.3	762.3	799.4
Low Range	0.0	14.7	26.6	39.2	51.1	63.0	75.6	87.5	99.4	111.3	123.9	135.8	147.7	159.6	172.2	184.1	196.0	208.6	220.5	233.1	245.0
Vetch (Pounds per 1000 Square Feet)																					
High Range	0.0	1.3	2.2	3.1	3.9	4.8	5.7	6.7	7.6	8.5	9.4	10.3	11.2	12.0	13.0	13.9	14.8	15.7	16.6	17.6	18.3
Low Range	0.0	0.4	0.6	0.9	1.2	1.5	1.8	2.0	2.3	2.6	2.9	3.2	3.4	3.6	3.9	4.2	4.5	4.8	5.0	5.3	5.6
Wheatgrass - Crested (Pounds per Acre)																					
High Range	0.0	15.4	25.2	35.7	46.9	56.7	66.5	77.7	87.5	97.3	107.1	119.0	128.8	138.6	149.8	159.6	169.4	180.6	191.1	200.9	210.7
Low Range	0.0	4.9	8.4	11.2	14.7	18.2	21.0	24.5	28.0	30.8	34.3	37.8	40.6	44.1	47.6	50.4	53.9	57.4	60.2	63.7	66.5
Wheatgrass - Crested (Pounds per 1000 Square Feet)																					
High Range	0.0	0.4	0.6	0.8	1.1	1.3	1.5	1.8	2.0	2.2	2.5	2.7	2.9	3.2	3.4	3.6	3.9	4.1	4.4	4.6	4.8
Low Range	0.0	0.1	0.2	0.3	0.4	0.4	0.5	0.6	0.6	0.7	0.8	0.8	0.9	1.0	1.1	1.2	1.3	1.3	1.4	1.5	1.5
Wheatgrass - Western (Pounds per Acre)																					
High Range	0.0	4.9	16.8	28.7	40.6	53.2	65.1	77.0	88.9	100.8	112.7	125.3	137.2	149.1	161.0	172.9	185.5	197.4	209.3	221.2	233.1
Low Range	0.0	1.4	5.6	9.1	13.3	16.8	20.3	24.5	28.0	32.2	35.7	39.9	43.4	46.9	51.1	54.6	58.8	62.3	66.5	70.0	74.2
Wheatgrass - Western (Pounds per 1000 Square Feet)																					
High Range	0.0	0.1	0.4	0.6	0.9	1.2	1.5	1.8	2.0	2.3	2.6	2.9	3.2	3.4	3.7	4.0	4.3	4.6	4.8	5.1	5.4
Low Range	0.0	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.3	1.5	1.5	1.6	1.7

Section 3 Adjustments

Seed Rate Chart (Metric Units) for SPS2048

Cup Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Alfalfa (Kilograms per Hectare)																					
High Range	0.0	42.3	97.9	155.1	210.7	267.1	322.7	379.8	434.7	490.3	547.4	602.3	659.4	715.0	771.4	827.0	884.2	939.0	994.6	1052	1106.6
Low Range	0.0	13.3	31.3	49.3	66.6	84.6	102.6	120.6	137.8	155.1	173.1	191.1	209.1	226.3	244.3	262.4	280.4	297.6	314.8	332.8	350.9
Alfalfa (Kilograms per 1000 Square Meters)																					
High Range	0.0	4.1	9.9	15.4	21.2	26.7	31.4	37.9	43.7	49.2	55.0	60.5	66.3	71.8	77.2	83.1	88.5	94.3	99.8	105.6	111.1
Low Range	0.0	1.4	3.1	4.8	6.8	8.5	10	12	13	15	17.4	19.1	20.8	22.6	24.6	26.3	28.0	29.7	31.4	33.5	35.2
Bent Grass (Kilograms per Hectare)																					
High Range	0.0	29.0	62.7	90.1	119.0	144.9	161.3	187.2	207.5	229.5	255.3	280.4	297.6	323.4	343.8	365.7	390.8	413.5	433.9	458.9	484.8
Low Range	0.0	13.3	22.7	32.9	42.3	51.7	60.3	69.7	77.5	86.1	95.5	102.6	109.6	116.7	124.5	131.6	137.1	144.1	149.6	155.1	160.5
Bent Grass (Kilograms per 1000 Square Meters)																					
High Range	0.0	2.7	6.2	8.9	12.0	14.4	16.1	18.8	20.8	22.9	25.6	28.0	29.7	32.5	34.5	39.3	41.4	43.4	43.4	46.1	48.5
Low Range	0.0	1.4	2.4	3.4	4.1	5.1	6.2	6.8	7.9	8.5	9.6	10.3	10.9	11.6	12.3	13.3	13.7	14.4	15.0	15.4	16.1
Bermuda - Hulled (Kilograms per Hectare)																					
High Range	0.0	47.8	79.1	126.1	161.3	195.8	231.0	267.1	302.3	336.8	372.0	408.0	442.5	477.7	512.2	549.0	583.5	617.9	653.2	689.2	724.4
Low Range	0.0	14.9	25.1	39.9	50.9	61.9	72.8	84.6	95.5	106.5	117.5	129.2	140.2	151.2	162.1	173.9	184.8	195.8	206.8	218.5	229.5
Bermuda - Hulled (Kilograms per 1000 Square Meters)																					
High Range	0.0	4.8	7.9	12.6	16.1	19.8	23.2	26.7	30.4	33.8	37.3	41.0	44.4	47.9	51.3	55.0	58.4	61.9	65.6	69.0	72.8
Low Range	0.0	1.4	2.4	4.1	5.1	6.2	7.2	8.5	9.6	10.6	13.0	13.0	14.0	15.0	16.4	17.4	18.5	19.5	20.8	21.9	22.9
Buffalo Grass - Sharps Improved (Kilograms per Hectare)																					
High Range	0.0	0.0	0.0	17.2	40.7	59.5	83.0	101.8	124.5	144.9	166.8	188.7	202.8	229.5	251.4	275.7	290.7	309.3	326.6	336.8	339.9
Low Range	0.0	0.0	0.0	10.2	16.4	22.7	29.8	36.0	43.9	50.9	57.2	65.0	72.1	77.5	85.4	92.4	99.5	104.9	112.0	115.1	117.5
Buffalo Grass - Sharps Improved (Kilograms per 1000 Square Meters)																					
High Range	0.0	0.0	0.0	1.7	4.1	5.8	8.2	10.3	12.3	14.4	16.7	18.8	21.2	22.9	25.3	27.7	29.1	31.1	32.8	33.8	34.2
Low Range	0.0	0.0	0.0	1.0	1.7	2.4	3.1	3.8	4.4	5.1	5.8	6.5	7.2	7.9	8.5	9.2	9.9	10.6	11.3	11.6	12.0
Clover - Red (Kilograms per Hectare)																					
High Range	0.0	60.3	112.0	158.2	206.0	251.4	297.6	343.0	390.8	436.2	482.4	529.4	574.8	621.0	667.3	715.0	760.5	806.7	853.6	899.9	945.3
Low Range	0.0	18.8	35.2	50.1	65.0	79.9	94.0	108.9	123.7	138.6	152.7	167.6	182.5	196.6	211.5	226.3	241.2	255.3	271.0	285.1	300.0
Clover - Red (Kilograms per 1000 Square Meters)																					
High Range	0.0	6.2	11.3	15.7	20.5	25.3	29.7	34.5	39.3	43.7	48.5	53.0	57.8	62.2	67.0	71.8	76.2	81.0	85.8	90.2	95.0
Low Range	0.0	2.1	3.4	5.1	6.5	7.9	9.6	10.9	12.3	14.0	15.4	16.7	18.5	19.8	21.2	22.6	24.3	25.6	27.0	28.7	30.01
Clover - White (Kilograms per Hectare)																					
High Range	0.0	60.3	118.3	175.4	232.6	291.3	347.7	404.9	463.6	520.0	577.2	635.9	692.3	749.5	808.2	864.6	921.8	980.5	1036	1094	1152
Low Range	0.0	18.8	37.6	55.6	73.6	92.4	110.4	128.4	146.5	165.2	183.3	201.3	219.3	237.3	256.1	274.1	292.1	310.9	328.9	346.9	365.0
Clover - White (Kilograms per 1000 Square Meters)																					
High Range	0.0	6.2	12.0	17.8	23.2	29.1	34.9	40.7	46.5	52.3	57.8	63.9	69.4	75.2	81.0	86.8	92.6	98.4	103.9	109.7	115.5
Low Range	0.0	2.1	3.8	5.5	7.5	9.2	10.9	13.0	14.7	16.4	18.5	20.2	21.9	23.9	25.6	27.3	29.4	31.1	32.8	34.9	36.6
Fescue - Fine Blade, Turf Type (Kilograms per Hectare)																					
High Range	0.0	15.7	36.0	58.7	80.7	102.6	125.3	147.2	169.2	189.5	212.2	234.2	256.1	278.0	300.7	322.7	344.6	366.5	389.2	411.2	433.1
Low Range	0.0	4.7	11.7	18.8	25.8	32.9	39.9	47.0	54.0	60.3	67.4	74.4	81.4	88.5	95.5	102.6	109.6	115.9	123.0	130.0	137.1
Fescue - Fine Blade, Turf Type (Kilograms per 1000 Square Meters)																					
High Range	0.0	1.7	3.8	5.8	8.2	10.3	12.6	14.7	17.1	19.1	21.2	23.6	25.6	28.0	30.1	32.5	34.5	36.9	39.0	41.4	43.4
Low Range	0.0	0.3	1.0	1.7	2.4	3.4	4.1	4.8	5.5	6.2	6.8	7.5	8.2	8.9	9.6	10.3	10.9	11.6	12.3	13.0	13.7
Fescue K-31 (Kilograms per Hectare)																					
High Range	0.0	.0	16.4	39.2	65.0	88.5	109.6	129.2	145.7	174.6	190.3	213.0	238.9	256.9	278.0	299.2	319.5	339.1	343.8	352.4	355.6
Low Range	0.0	0.0	4.7	11.7	20.4	27.4	34.5	39.9	45.4	54.0	59.5	65.8	74.4	79.9	86.1	92.4	99.5	104.9	106.5	109.6	110.4
Fescue K-31 (Kilograms per 1000 Square Meters)																					
High Range	0.0	0.0	1.7	3.8	6.5	8.9	10.9	13.0	14.7	17.4	19.1	21.5	23.9	25.6	28.0	30.1	32.1	34.2	34.5	35.2	35.5
Low Range	0.0	0.0	0.3	1.4	2.1	2.7	3.4	4.1	4.4	5.5	5.8	6.5	7.5	7.9	8.5	9.2	9.9	10.6	10.6	10.9	10.9
Kentucky Blue Grass (Kilograms per Hectare)																					
High Range	0.0	18.0	37.6	57.2	80.7	97.9	121.4	139.4	160.5	177.8	195.8	214.6	229.5	252.2	261.6	285.9	303.1	318.0	333.6	346.2	356.3
Low Range	0.0	6.3	12.5	18.8	26.6	32.1	39.9	45.4	52.5	58.0	64.2	70.5	75.2	83.0	85.4	93.2	99.5	104.2	109.6	113.6	116.7
Kentucky Blue Grass (Kilograms per 1000 Square Meters)																					
High Range	0.0	1.7	3.8	5.8	8.2	9.9	12.3	14.0	16.1	17.8	19.5	21.5	22.9	25.3	26.3	28.7	30.4	31.8	33.5	34.5	35.9
Low Range	0.0	0.7	1.4	1.7	2.7	3.1	4.1	4.4	5.1	5.8	6.5	7.2	7.5	8.2	8.5	9.2	9.9	10.6	10.9	11.3	11.6

Section 3 Adjustments

Cup Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Lovegrass - Sand (Kilograms per Hectare)																					
High Range	0.0	69.7	109.6	149.6	189.5	229.5	268.6	308.6	348.5	388.4	428.4	468.3	508.3	548.2	588.2	628.1	677.3	724.4	765.2	805.9	846.6
Low Range	0.0	21.9	34.5	47.8	60.3	72.8	85.4	97.9	110.4	123.0	135.5	148.0	161.3	173.9	186.4	198.9	211.5	224.0	236.5	249.8	262.4
Lovegrass - Sand (Kilograms per 1000 Square Meters)																					
High Range	0.0	6.8	10.9	15.0	19.1	22.9	27.0	31.1	34.9	39.0	43.1	46.8	50.9	55.0	59.1	62.9	67.0	72.8	76.9	81.0	85.1
Low Range	0.0	2.1	3.4	4.8	6.2	7.2	8.5	9.9	10.9	12.3	13.7	15.0	16.1	17.4	18.8	19.8	21.2	22.6	23.6	25.0	26.3
Lovegrass - Weeping (Kilograms per Hectare)																					
High Range	0.0	85.4	137.8	177.0	224.8	268.6	310.1	350.9	392.4	433.1	474.6	515.3	556.8	597.6	639.1	679.8	721.3	762.0	803.5	844.3	887.3
Low Range	0.0	27.4	43.9	56.4	71.3	85.4	97.9	111.2	124.5	137.1	150.4	163.7	176.2	189.5	202.8	215.4	228.7	241.2	254.5	267.8	281.2
Lovegrass - Weeping (Kilograms per 1000 Square Meters)																					
High Range	0.0	8.5	13.7	17.8	22.6	27.0	31.1	35.2	39.3	43.4	47.5	51.6	55.7	59.8	63.9	68.4	72.5	76.6	80.7	84.8	88.9
Low Range	0.0	2.7	4.4	5.5	7.2	8.5	9.9	11.3	12.3	13.7	15.0	16.4	17.8	19.1	20.2	21.5	22.9	24.3	25.6	26.7	28.0
Orchard Grass (Kilograms per Hectare)																					
High Range	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Low Range	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Orchard Grass (Kilograms per 1000 Square Meters)																					
High Range	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Low Range	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rye Grass - Annual (Kilograms per Hectare)																					
High Range	0.0	16.4	46.2	74.4	102.6	131.6	159.8	189.5	218.5	246.7	274.9	303.9	333.6	361.8	390.8	419.0	448.8	477.7	505.9	534.1	563.1
Low Range	0.0	5.5	14.9	23.5	32.9	41.5	50.9	60.3	68.9	78.3	86.9	96.3	105.7	115.1	123.7	133.1	142.5	151.2	160.5	169.2	178.6
Rye Grass - Annual (Kilograms per 1000 Square Meters)																					
High Range	0.0	1.7	4.4	7.5	10.3	13.3	16.1	19.1	21.9	24.6	27.7	30.4	33.5	36.2	39.3	42.0	45.1	47.9	50.9	53.7	56.4
Low Range	0.0	0.7	1.4	2.4	3.4	4.1	5.1	6.2	6.8	7.9	8.9	9.6	10.6	11.6	12.3	13.3	14.4	15.0	16.1	17.1	17.8
Rye Grass - Perennial (Kilograms per Hectare)																					
High Range	0.0	28.2	60.3	90.1	122.2	153.5	183.3	215.4	246.7	276.5	308.6	339.9	372.0	401.8	433.1	465.2	495.0	526.3	558.4	588.2	619.5
Low Range	0.0	9.4	18.8	29.0	38.4	48.6	58.0	68.1	78.3	87.7	97.9	108.1	117.5	127.7	137.1	147.2	156.6	166.8	177.0	186.4	196.6
Rye Grass - Perennial (Kilograms per 1000 Square Meters)																					
High Range	0.0	2.7	6.2	8.9	12.3	15.4	18.5	21.2	24.6	27.7	30.8	34.2	37.3	40.3	43.4	46.5	49.6	53.0	56.1	59.1	62.2
Low Range	0.0	1.0	2.1	2.7	3.8	4.8	5.8	6.8	7.9	8.9	9.9	10.9	12.0	12.6	13.7	14.7	15.7	16.7	17.8	18.8	19.8
Sudan Grass (Kilograms per Hectare)																					
High Range	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Low Range	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sudan Grass (Kilograms per 1000 Square Meters)																					
High Range	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Low Range	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vetch (Kilograms per Hectare)																					
High Range	0.0	61.1	105.7	149.6	191.9	236.5	280.4	325.0	368.9	411.2	455.8	499.7	544.3	586.6	630.4	675.1	718.9	762.0	805.9	852.9	894.4
Low Range	0.0	16.4	29.8	43.9	57.2	70.5	84.6	97.9	111.2	124.5	138.6	151.9	165.2	178.6	192.7	206.0	219.3	233.4	246.7	260.8	274.1
Vetch (Kilograms per 1000 Square Meters)																					
High Range	0.0	6.2	10.6	15.0	19.1	23.6	28.0	32.5	36.9	41.4	45.8	50.2	54.7	58.8	63.2	67.7	72.1	76.6	81.0	85.8	89.5
Low Range	0.0	1.7	3.1	4.4	5.8	7.2	8.5	9.9	11.3	12.6	14.0	15.4	16.7	17.8	19.1	20.5	21.9	23.6	24.6	26.0	27.3
Wheatgrass - Crested (Kilograms per Hectare)																					
High Range	0.0	17.2	28.2	39.9	52.5	63.4	74.4	86.9	97.9	108.9	119.8	133.1	144.1	155.1	167.6	178.6	189.5	202.1	213.8	224.8	235.7
Low Range	0.0	5.5	9.4	12.5	16.4	20.4	23.5	27.4	31.3	34.5	38.4	42.3	45.4	49.3	53.3	56.4	60.3	64.2	67.4	71.3	74.4
Wheatgrass - Crested (Kilograms per 1000 Square Meters)																					
High Range	0.0	1.7	2.7	4.1	5.1	6.5	7.5	8.9	9.9	10.9	12.0	13.3	14.4	15.4	16.7	17.8	19.1	20.2	21.5	22.6	23.6
Low Range	0.0	0.7	1.0	1.4	1.7	2.1	2.4	2.7	3.1	3.4	3.8	4.1	4.4	4.8	5.5	5.8	6.2	6.5	6.8	7.2	7.5
Wheatgrass - Western (Kilograms per Hectare)																					
High Range	0.0	5.5	18.8	32.1	45.4	59.5	72.8	86.1	99.5	112.8	126.1	140.2	153.5	166.8	180.1	193.4	207.5	220.9	234.2	247.5	260.8
Low Range	0.0	1.6	6.3	10.2	14.9	18.8	22.7	27.4	31.3	36.0	39.9	44.6	48.6	52.5	57.2	61.1	65.8	69.7	74.4	78.3	83.0
Wheatgrass - Western (Kilograms per 1000 Square Meters)																					
High Range	0.0	0.7	1.7	3.1	4.4	5.8	7.2	8.5	9.9	11.3	12.6	14.0	15.4	16.7	18.1	19.5	20.8	22.2	23.6	25.0	26.3
Low Range	0.0	0.0	0.7	1.0	1.4	1.7	2.4	2.7	3.1	3.4	4.1	4.4	4.8	5.1	5.8	6.2	6.5	7.2	7.5	7.9	8.2

Section 3 Adjustments

Seed Rate Chart for SPS3072

Cup Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Alfalfa (Pounds per Acre)																					
High Range	0	54	125	198	269	341	412	485	555	626	699	769	842	913	985	1056	1129	1199	1270	1343	1413
Low Range	0	17	40	63	85	108	131	154	176	198	221	244	267	289	312	335	358	380	402	425	448
Alfalfa (Pounds per 1000 Square Feet)																					
High Range	0.0	1.2	2.9	4.5	6.2	7.8	9.2	11.1	12.8	14.4	16.1	17.7	19.4	21	22.6	24.3	25.9	27.6	29.2	30.9	32.5
Low Range	0.0	0.4	0.9	1.4	2	2.5	3	3.5	4	4.6	5.1	5.6	6.1	6.6	7.2	7.7	8.2	8.7	9.2	9.8	10.3
Bent Grass (Pounds per Acre)																					
High Range	0	37	80	115	152	185	206	239	265	293	326	358	380	413	439	467	499	528	554	586	619
Low Range	0	17	29	42	54	66	77	89	99	110	122	131	140	149	159	168	175	184	191	198	205
Bent Grass (Pounds per 1000 Square Feet)																					
High Range	0.0	0.8	1.8	2.6	3.5	4.2	4.7	5.5	6.1	6.7	7.5	8.2	8.7	9.5	10.1	11.5	12.1	12.7	13.5	14.2	14.2
Low Range	0.0	0.4	0.7	1	1.2	1.5	1.8	2	2.3	2.5	2.8	3	3.2	3.4	3.6	3.9	4	4.2	4.4	4.5	4.7
Bermuda - Unhulled (Pounds per Acre)																					
High Range	0	61	101	161	206	250	295	341	386	430	475	521	565	610	654	701	745	789	834	880	925
Low Range	0	19	32	51	65	79	93	108	122	136	150	165	179	193	207	222	236	250	264	279	293
Bermuda - Unhulled (Pounds per 1000 Square Feet)																					
High Range	0.0	1.4	2.3	3.7	4.7	5.8	6.8	7.8	8.9	9.9	10.9	12	13	14	15	16.1	17.1	18.1	19.2	20.2	21.3
Low Range	0.0	0.4	0.7	1.2	1.5	1.8	2.1	2.5	2.8	3.1	3.8	3.8	4.1	4.4	4.8	5.1	5.4	5.7	6.1	6.4	6.7
Buffalo Grass Sharps Improved (Pounds per Acre)																					
High Range	0	0	0	22	52	76	106	130	159	185	213	241	259	293	321	352	371	395	417	430	434
Low Range	0	0	0	13	21	29	38	46	56	65	73	83	92	99	109	118	127	134	143	147	150
Buffalo Grass Sharps Improved (Pounds per 1000 Square Feet)																					
High Range	0.0	0	0	0.5	1.2	1.7	2.4	3	3.6	4.2	4.9	5.5	6.2	6.7	7.4	8.1	8.5	9.1	9.6	9.9	10
Low Range	0.0	0	0	0.30	0.5	0.7	0.9	1.1	1.3	1.5	1.7	1.9	2.1	2.3	2.5	2.7	2.9	3.1	3.3	3.4	3.5
Clover - Red (Pounds per Acre)																					
High Range	0	77	143	202	263	321	380	438	499	557	616	676	734	793	852	913	971	1030	1090	115	121
Low Range	0	24	45	64	83	102	120	139	158	177	195	214	233	251	270	289	308	326	346	364	383
Clover - Red (Pounds per 1000 Square Feet)																					
High Range	0.0	1.8	3.3	4.6	6	7.4	8.7	1.1	11.5	12.8	14.2	15.5	16.9	18.2	19.6	21	22.3	23.7	25.1	26.4	27.8
Low Range	0.0	0.6	1	1.5	1.9	2.3	2.8	3.2	3.6	4.1	4.5	4.9	5.4	5.8	6.2	6.6	7.1	7.5	7.9	8.4	8.8
Clover - White (Pounds per Acre)																					
High Range	0	77	151	224	297	372	444	517	592	664	737	812	884	957	1032	1104	1177	1252	1324	1397	1472
Low Range	0	24	48	71	94	118	141	164	187	211	234	257	280	303	327	350	373	397	420	443	466
Clover - White (Pounds per 1000 Square Feet)																					
High Range	0.0	1.8	3.5	5.2	6.8	8.5	10.2	11.9	13.6	15.3	16.9	18.7	20.3	22	23.7	25.4	27.1	28.8	30.4	32.1	33.8
Low Range	0.0	0.6	1.1	1.6	2.2	2.7	3.2	3.8	4.3	4.8	5.4	5.9	6.4	7	7.5	8	8.6	9.1	9.6	10.2	10.7
Fescue - Fine Blade, Turf Type (Pounds per Acre)																					
High Range	0	20	46	75	103	131	160	188	216	242	271	299	327	355	384	412	440	468	497	525	553
Low Range	0	6	15	24	33	42	51	60	69	77	86	95	104	113	122	131	140	148	157	166	175
Fescue - Fine Blade, Turf Type (Pounds per 1000 Square Feet)																					
High Range	0.0	0.5	1.1	1.7	2.4	3	3.7	4.3	5	5.6	6.2	6.9	7.5	8.2	8.8	9.5	10.1	10.8	11.4	12.1	12.7
Low Range	0.0	0.1	0.3	0.5	0.7	1	1.2	1.4	1.6	1.8	2	2.2	2.4	2.6	2.8	3	3.2	3.4	3.6	3.8	4
Fescue K-31 (Pounds per Acre)																					
High Range	0	0	21	50	83	113	140	165	186	223	243	272	305	328	355	382	408	433	439	450	454
Low Range	0	0	6	15	26	35	44	51	58	69	76	84	95	102	110	118	127	134	136	140	141
Fescue K-31 (Pounds per 1000 Square Feet)																					
High Range	0.0	0.0	0.5	1.1	1.9	2.6	3.2	3.8	4.3	5.1	5.6	6.3	7	7.5	8.2	8.8	9.4	10	10.1	10.3	10.4
Low Range	0.0	0.0	0.1	0.4	0.6	0.8	1	1.2	1.3	1.6	1.7	1.9	2.2	2.3	2.5	2.7	2.9	3.1	3.1	3.2	3.2
Kentucky Blue Grass (Pounds per Acre)																					
High Range	0	23	48	73	103	125	155	178	205	227	250	274	293	322	334	365	387	406	426	442	455
Low Range	0	8	16	24	34	41	51	58	67	74	82	90	96	106	109	119	127	133	140	145	149
Kentucky Blue Grass (Pounds per 1000 Square Feet)																					
High Range	0.0	0.5	1.1	1.7	2.4	2.9	3.6	4.1	4.7	5.2	5.7	6.3	6.7	7.4	7.7	8.4	8.9	9.3	9.8	10.1	10.5
Low Range	0.0	0.2	0.4	0.5	0.8	0.9	1.2	1.3	1.5	1.7	1.9	2.1	2.2	2.4	2.5	2.7	2.9	3.1	3.2	3.3	3.4

Section 3 Adjustments

Cup Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Lovegrass - Sand (Pounds per Acre)																					
High Range	0	89	140	191	242	293	343	394	445	496	547	598	649	700	751	802	852	925	977	1029	1081
Low Range	0	28	44	61	77	93	109	125	141	157	173	189	206	222	238	254	270	286	302	319	335
Lovegrass - Sand (Pounds per 1000 Square Feet)																					
High Range	0.0	2	3.2	4.4	5.6	6.7	7.9	9.1	10.2	11.4	12.6	13.7	14.9	16.1	17.3	18.4	19.6	21.3	22.5	23.7	24.9
Low Range	0.0	0.6	1	1.4	1.8	2.1	2.5	2.9	3.2	3.6	4	4.4	4.7	5.1	5.5	5.8	6.2	6.6	6.9	7.3	7.7
Lovegrass - Weeping (Pounds per Acre)																					
High Range	0	109	176	226	287	343	396	448	501	553	606	658	711	763	816	868	921	973	1026	1078	1133
Low Range	0	35	56	72	91	109	125	142	159	175	192	209	225	242	259	275	292	308	325	342	359
Lovegrass - Weeping (Pounds per 1000 Square Feet)																					
High Range	0.0	2.5	4	5.2	6.6	7.9	9.1	10.3	11.5	12.7	13.9	15.1	16.3	17.5	18.7	20	21.2	22.4	23.6	24.8	26
Low Range	0.0	0.8	1.3	1.6	2.1	2.5	2.9	3.3	3.6	4	4.4	4.8	5.2	5.6	5.9	6.3	6.7	7.1	7.5	7.8	8.2
Orchard Grass (Pounds per Acre)																					
High Range	0	4	6	10	15	20	27	34	41	49	58	66	75	85	94	103	112	121	130	138	146
Low Range	0	1	2	3	5	7	9	12	15	18	22	25	29	33	36	40	44	48	51	55	58
Orchard Grass (Pounds per 1000 Square Feet)																					
High Range	0.0	0.1	0.1	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.3	1.5	1.7	1.9	2.2	2.4	2.6	2.8	3.0	3.2	3.3
Low Range	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.3
Rye Grass - Annual (Pounds per Acre)																					
High Range	0	21	59	95	131	168	204	242	279	315	351	388	426	462	499	535	573	610	646	682	719
Low Range	0	7	19	30	42	53	65	77	88	100	111	123	135	147	158	170	182	193	205	216	228
Rye Grass - Annual (Pounds per 1000 Square Feet)																					
High Range	0.0	0.5	1.3	2.2	3	3.9	4.7	5.6	6.4	7.2	8.1	8.9	9.8	10.6	11.5	12.3	13.2	14	14.9	15.7	16.5
Low Range	0.0	0.2	0.4	0.7	1	1.2	1.5	1.8	2	2.3	2.6	2.8	3.1	3.4	3.6	3.9	4.2	4.4	4.7	5	5.2
Rye Grass - Perennial (Pounds per Acre)																					
High Range	0	36	77	115	156	196	234	275	315	353	394	434	475	513	553	594	632	672	713	751	791
Low Range	0	12	24	37	49	62	74	87	100	112	125	138	150	163	175	188	200	213	226	238	251
Rye Grass - Perennial (Pounds per 1000 Square Feet)																					
High Range	0.0	0.8	1.8	2.6	3.6	4.5	5.4	6.2	7.2	8.1	9	10	10.9	11.8	12.7	13.6	14.5	15.5	16.4	17.3	18.2
Low Range	0.0	0.3	0.6	0.8	1.1	1.4	1.7	2	2.3	2.6	2.9	3.2	3.5	3.7	4	4.3	4.6	4.9	5.2	5.5	5.8
Sudan Grass (Pounds per Acre)																					
High Range	0	35	68	103	141	179	220	262	306	352	398	446	495	545	596	648	701	754	808	862	916
Low Range	0	18	28	41	55	71	89	107	127	147	168	189	210	231	252	271	290	308	325	339	352
Sudan Grass (Pounds per 1000 Square Feet)																					
High Range	0.0	0.8	1.6	2.4	3.2	4.1	5.1	6.0	7.0	8.1	9.1	10.2	11.4	12.5	13.7	14.9	16.1	17.3	18.5	19.8	21.0
Low Range	0.0	0.4	0.6	0.9	1.3	1.6	2.0	2.5	2.9	3.4	3.9	4.3	4.8	5.3	5.8	6.2	6.7	7.1	7.5	7.8	8.1
Vetch (Pounds per Acre)																					
High Range	0	78	135	191	245	302	358	415	471	525	582	638	695	749	805	862	918	973	1029	1089	1142
Low Range	0	21	38	56	73	90	108	125	142	159	177	194	211	228	246	263	280	298	315	333	350
Vetch (Pounds per 1000 Square Feet)																					
High Range	0.0	1.8	3.1	4.4	5.6	6.9	8.2	9.5	10.8	12.1	13.4	14.7	16	17.2	18.5	19.8	21.1	22.4	23.7	25.1	26.2
Low Range	0.0	0.5	0.9	1.3	1.7	2.1	2.5	2.9	3.3	3.7	4.1	4.5	4.9	5.2	5.6	6	6.4	6.9	7.2	7.6	8
Wheatgrass - Crested (Pounds per Acre)																					
High Range	0	22	36	51	67	81	95	111	125	139	153	170	184	198	214	228	242	258	273	287	301
Low Range	0	7	12	16	21	26	30	35	40	44	49	54	58	63	68	72	77	82	86	91	95
Wheatgrass - Crested (Pounds per 1000 Square Feet)																					
High Range	0.0	0.5	0.8	1.2	1.5	1.9	2.2	2.6	2.9	3.2	3.5	3.9	4.2	4.5	4.9	5.2	5.6	5.9	6.3	6.6	6.9
Low Range	0.0	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	1.1	1.2	1.3	1.4	1.6	1.7	1.8	1.9	2	2.1	2.2
Wheatgrass - Western (Pounds per Acre)																					
High Range	0	7	24	41	58	76	93	110	127	144	161	179	196	213	230	247	265	282	299	316	333
Low Range	0	2	8	13	19	24	29	35	4	46	51	57	62	67	73	78	84	89	95	100	106
Wheatgrass - Western (Pounds per 1000 Square Feet)																					
High Range	0.0	0.2	0.5	0.9	1.3	1.7	2.1	2.5	2.9	3.3	3.7	4.1	4.5	4.9	5.3	5.7	6.1	6.5	6.9	7.3	7.7
Low Range	0.0	0	0.2	0.3	0.4	0.5	0.7	0.8	0.9	1	1.2	1.3	1.4	1.5	1.7	1.8	1.9	2.1	2.2	2.3	2.4

Section 3 Adjustments

Seed Rate Chart (Metric) for SPS3072

Cup Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Alfalfa (Kilograms per Hectare)																					
High Range	0	60	140	222	301	382	461	543	621	700	782	860	942	1021	1102	1181	1263	1341	1421	1503	1581
Low Range	0	19	45	70	95	121	147	172	197	222	247	273	299	323	349	375	41	425	450	475	501
Alfalfa (Kilograms per 1000 Square Meters)																					
High Range	0	6	14	22	30	38	45	54	62	70	79	86	95	103	110	119	126	135	143	151	159
Low Range	0	2	4	7	10	12	15	17	20	22	25	27	30	32	35	38	40	42	45	48	50
Bent Grass (Kilograms per Hectare)																					
High Range	0	41	90	129	170	207	230	267	296	328	365	401	425	462	491	522	558	591	620	656	693
Low Range	0	19	32	47	60	74	86	100	111	123	136	147	157	167	178	188	196	206	214	222	229
Bent Grass (Kilograms per 1000 Square Meters)																					
High Range	0	4	9	13	17	21	23	27	30	33	37	40	42	46	49	56	59	62	62	66	69
Low Range	0	2	3	5	6	7	9	10	11	12	14	15	16	17	18	19	20	21	21	22	23
Bermuda (Kilograms per Hectare)																					
High Range	0	68	113	180	230	280	330	382	432	481	531	583	632	682	732	784	834	883	933	985	1035
Low Range	0	21	36	57	73	88	104	121	136	152	168	185	200	216	232	248	264	280	295	312	328
Bermuda (Kilograms per 1000 Square Meters)																					
High Range	0	7	11	18	23	28	33	38	43	48	53	59	63	68	73	79	83	88	94	99	104
Low Range	0	2	3	6	7	9	10	12	14	15	19	19	20	21	23	25	26	28	30	31	33
Buffalo Grass (Kilograms per Hectare)																					
High Range	0	0	0	25	58	85	119	145	178	207	238	270	290	328	359	394	415	442	467	481	486
Low Range	0	0	0	15	23	32	43	51	63	73	82	93	103	111	122	132	142	150	160	164	168
Buffalo Grass (Kilograms per 1000 Square Meters)																					
High Range	0	0	0	2	6	8	12	15	18	21	24	27	30	33	36	40	42	44	47	48	49
Low Range	0	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	17
Clover - Red (Kilograms per Hectare)																					
High Range	0	86	160	226	294	359	425	490	558	623	689	756	821	887	953	1021	1086	1152	1219	1286	1350
Low Range	0	27	50	72	93	114	134	156	177	198	218	239	261	281	302	323	345	365	387	407	429
Clover - Red (Kilograms per 1000 Square Meters)																					
High Range	0	9	16	22	29	36	42	49	56	62	69	76	83	89	96	103	109	116	123	129	136
Low Range	0	3	5	7	9	11	14	16	18	20	22	24	26	28	30	32	35	37	39	41	43
Clover - White (Kilograms per Hectare)																					
High Range	0	86	169	251	332	416	497	578	662	743	825	908	989	1071	1155	1235	1317	1401	1481	1563	1647
Low Range	0	27	54	79	105	132	158	183	209	236	262	288	313	339	366	392	417	444	470	496	521
Clover - White (Kilograms per 1000 Square Meters)																					
High Range	0	9	17	25	33	42	50	58	66	75	83	91	99	107	116	124	132	141	148	157	165
Low Range	0	3	5	8	11	13	16	19	21	23	26	29	31	34	37	39	42	44	47	50	52
Fescue - Fine Blade, Turf Type (Kilograms per Hectare)																					
High Range	0	22	51	84	115	147	179	210	242	271	303	335	366	397	430	461	492	524	556	587	619
Low Range	0	7	17	27	37	47	57	67	77	86	96	106	116	126	136	147	157	166	176	186	196
Fescue - Fine Blade, Turf Type (Kilograms per 1000 Square Meters)																					
High Range	0	2	5	8	12	15	18	21	24	27	30	34	37	40	43	46	49	53	56	59	62
Low Range	0	0	1	2	3	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Fescue K-31 (Kilograms per Hectare)																					
High Range	0	0	23	56	93	126	157	185	208	249	272	304	341	367	397	427	456	484	491	503	508
Low Range	0	0	7	17	29	39	49	57	65	77	85	94	106	114	123	132	142	150	152	157	158
Fescue K-31 (Kilograms per 1000 Square Meters)																					
High Range	0	0	2	5	9	13	16	19	21	25	27	31	34	37	40	43	46	49	49	50	51
Low Range	0	0	0	5	3	4	5	6	6	8	8	9	11	11	12	13	14	15	15	16	16
Kentucky Blue Grass (Kilograms per Hectare)																					
High Range	0	26	54	82	115	140	173	199	229	254	280	307	328	360	374	408	433	454	477	495	509
Low Range	0	9	18	27	38	46	57	65	75	83	92	101	107	119	122	133	142	149	157	162	167
Kentucky Blue Grass (Kilograms per 1000 Square Meters)																					
High Range	0	2	5	8	12	14	18	20	23	25	28	31	33	36	38	41	43	45	48	49	51
Low Range	0	1	2	2	4	4	6	6	7	8	9	10	11	12	12	13	14	15	16	16	17

Section 3 Adjustments

Cup Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Lovegrass - Sand (Kilograms per Hectare)																					
High Range	0	100	157	214	271	328	384	441	498	555	612	669	726	783	840	897	953	1035	1093	151	1209
Low Range	0	31	49	68	86	104	122	140	158	176	194	211	230	248	266	284	302	320	338	357	375
Lovegrass - Sand (Kilograms per 1000 Square Meters)																					
High Range	0	10	16	21	27	33	39	44	50	56	62	67	73	79	84	90	96	104	110	116	122
Low Range	0	3	5	7	9	10	12	14	16	18	20	21	23	25	27	28	30	32	34	36	38
Lovegrass - Weeping (Kilograms per Hectare)																					
High Range	0	122	197	253	321	384	443	501	561	619	678	736	795	854	913	971	1030	1089	1148	1206	1268
Low Range	0	39	63	81	102	122	140	159	178	196	215	234	252	271	290	308	327	345	364	383	402
Lovegrass - Weeping (Kilograms per 1000 Square Meters)																					
High Range	0	12	20	25	32	39	44	50	56	62	68	74	80	85	91	98	104	109	15	121	127
Low Range	0	4	6	8	10	12	14	16	18	20	21	23	25	27	29	31	33	35	37	38	40
Orchard Grass (Kilograms per Hectare)																					
High Range	0	4	7	11	17	23	30	38	46	55	65	74	84	95	105	115	126	136	145	155	164
Low Range	0	1	2	4	5	8	10	14	17	20	24	28	32	37	41	45	49	53	57	61	65
Orchard Grass (Kilograms per 1000 Square Meters)																					
High Range	0	0	1	1	2	2	3	4	5	6	6	7	8	9	11	12	13	14	15	15	16
Low Range	0	0	0	0	1	1	1	1	2	2	2	3	3	4	4	5	5	5	6	6	6
Rye Grass - Annual (Kilograms per Hectare)																					
High Range	0	23	66	106	147	188	228	271	312	352	393	434	477	517	558	599	641	682	723	763	804
Low Range	0	8	21	34	47	59	73	86	98	112	124	138	151	164	177	190	204	216	229	242	255
Rye Grass - Annual (Kilograms per 1000 Square Meters)																					
High Range	0	2	6	11	15	19	23	27	31	35	40	43	48	52	56	60	64	68	73	77	81
Low Range	0	1	2	3	5	6	7	9	10	11	13	14	15	17	18	19	21	21	23	24	25
Rye Grass - Perennial (Kilograms per Hectare)																					
High Range	0	40	86	129	175	219	262	308	352	395	441	486	531	574	619	665	707	752	798	840	885
Low Range	0	13	27	41	55	69	83	97	112	125	140	154	168	182	196	210	224	238	253	266	281
Rye Grass - Perennial (Kilograms per 1000 Square Meters)																					
High Range	0	4	9	13	18	22	26	30	35	40	44	49	53	58	62	66	71	76	80	84	89
Low Range	0	1	3	4	5	7	8	10	11	13	14	16	17	18	20	21	22	24	25	27	28
Sudan Grass (Kilograms per Hectare)																					
High Range	0	39	77	116	157	201	247	294	343	394	446	500	555	611	668	726	785	845	905	966	1027
Low Range	0	20	32	46	62	80	99	120	142	165	188	212	236	259	282	304	325	345	364	380	395
Sudan Grass (Kilograms per 1000 Square Meters)																					
High Range	0	4	8	12	16	20	25	29	34	39	45	50	56	61	67	73	79	84	91	97	103
Low Range	0	2	3	5	6	8	10	12	14	16	19	21	24	26	28	30	33	35	36	38	39
Vetch (Kilograms per Hectare)																					
High Range	0	87	151	214	274	338	401	464	527	587	651	714	778	838	901	964	1027	1089	1151	1218	1278
Low Range	0	23	43	63	82	101	121	140	159	178	198	217	236	255	275	294	313	333	352	373	392
Vetch (Kilograms per 1000 Square Meters)																					
High Range	0	9	15	21	27	34	40	46	53	59	65	72	78	84	90	97	103	109	116	123	128
Low Range	0	2	4	6	8	10	12	14	16	18	20	22	24	25	27	29	31	34	35	37	39
Wheatgrass - Crested (Kilograms per Hectare)																					
High Range	0	25	40	57	75	91	106	124	140	156	171	190	206	222	239	255	271	289	305	321	337
Low Range	0	8	13	18	23	29	34	39	45	49	55	60	65	70	76	81	86	92	96	102	106
Wheatgrass - Crested (Kilograms per 1000 Square Meters)																					
High Range	0	2	4	6	7	9	11	13	14	16	17	19	21	22	24	25	27	29	31	32	34
Low Range	0	1	1	2	2	3	3	4	4	5	5	6	6	7	8	8	9	9	10	10	11
Wheatgrass - Western (Kilograms per Hectare)																					
High Range	0	8	27	46	65	85	104	123	142	161	180	200	219	238	257	276	296	316	335	354	373
Low Range	0	2	9	15	21	27	32	39	45	51	57	64	69	75	82	87	94	100	106	112	119
Wheatgrass - Western (Kilograms per 1000 Square Meters)																					
High Range	0	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38
Low Range	0	0	1	1	2	2	3	4	4	5	6	6	7	7	8	9	9	10	11	11	12

Section 4 Maintenance and Lubrication

Maintenance

Proper servicing and adjustment can increase the life of any implement. With careful and systematic inspection, you can avoid costly maintenance, time and repair.

1. After using your seeder for several hours, check all bolts to be sure they are tight.
2. After transporting your seeder for several hours, check all wheel lugs, bolts and nuts to be sure they are tight. Always maintain proper air pressure in the tires.

Storage

1. At the end of the working season or when your Pulverizer Seeder will not be used for a long period, it is good practice to clean off any dirt or grease that may have accumulated on the seeder and any of the moving parts.
2. Be sure that the seedbox is completely cleaned before storing.

3. The square bore of the feed cup drive sprocket hub should be oiled to prevent seizing. Squirt oil on to the square feed cup shaft and move feed cup adjustment lever back and forth in order to get the oil back into the square.
4. Lubricate all fittings as indicated.
5. When in storage, lower the seeder with rollers on a board or hard surface and adjust gauge wheels.
6. Repaint parts where paint is worn or scratched to prevent rust.
7. Replace all damaged or missing decals.
8. Store the seeder inside if possible. Inside storage will reduce maintenance and make for a longer seeder life.
9. Inspect the pulverizer seeder for loose, damaged or worn parts and adjust or replace if needed.

Lubrication

Lubrication Legend



Multi-purpose
spray lube



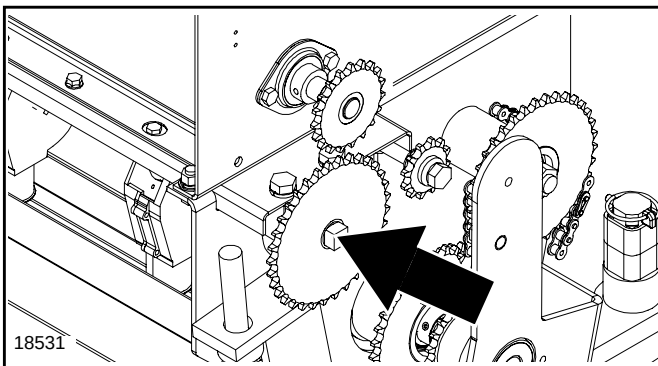
Multi-purpose
grease lube



Multi-purpose
oil lube



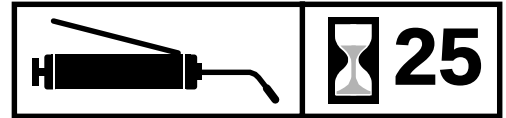
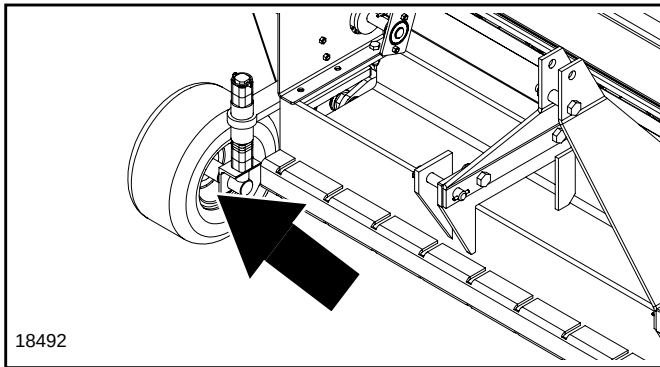
Intervals at which
lubrication is required



Feed Cup Drive Shaft

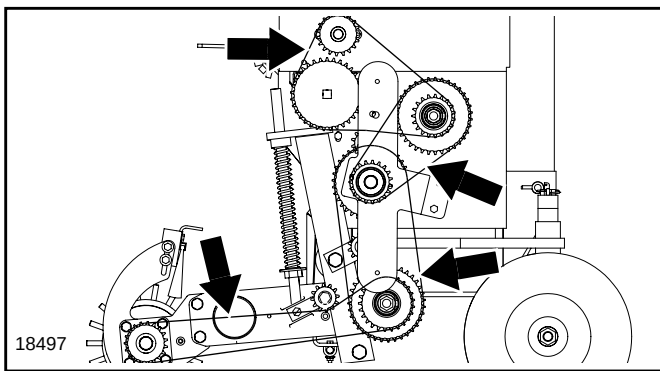
Type of Lubrication: Oil
Quantity = Generously

Section 4 Maintenance and Lubrication

**Wheel Bearings**

Type of Lubrication: Multi-Purpose

Quantity = Coat Generously

**Roller Chains (4 chains)**

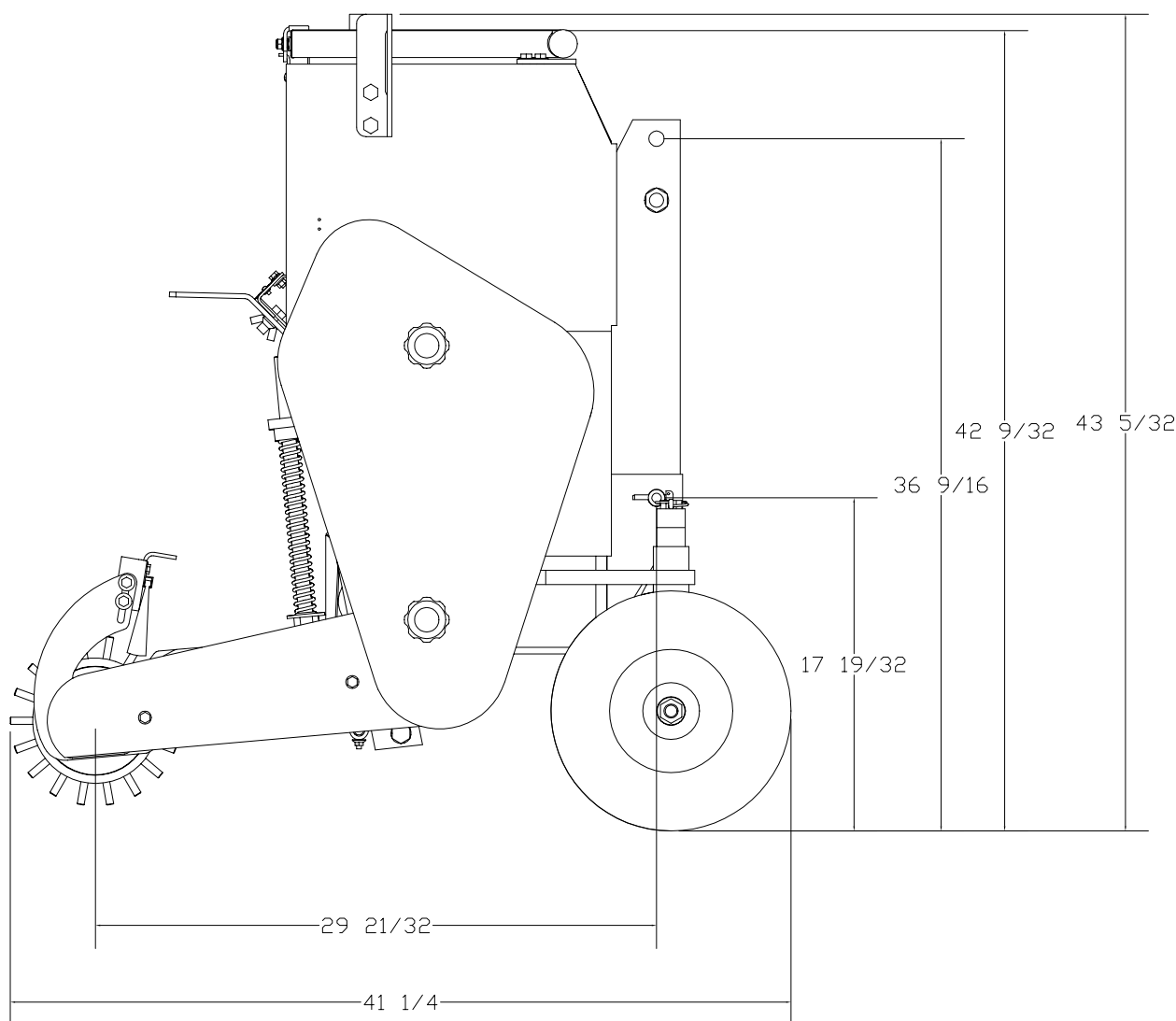
Type of Lubrication: Chain Lubricant

Quantity = Generously

Section 5 Specifications and Capacities

SPS20 Series

	SPS20 Pulverizer Seeders
Width	90" overall
Seeding Width (Broadcast)	72"
Weight (Approximate Pounds)	1150#
Seed Capacity	1 Bushel/Foot (6 bushel)
Feeder Cup Drive (Roller Drive)	Chain Driven from right side of rear roller with paddle type agitator above seed cups
Reversible scarifier shank	Wide or Narrow
Soil Pulverizer-Front	25 reversible scarifier shanks for loosening soil
Bed Forming Rollers - Rear	6 5/8" Dia. spiked roller with clean brush. 1" sealed bearing mounted on pivoting spring loaded arms
Hitch	Category I

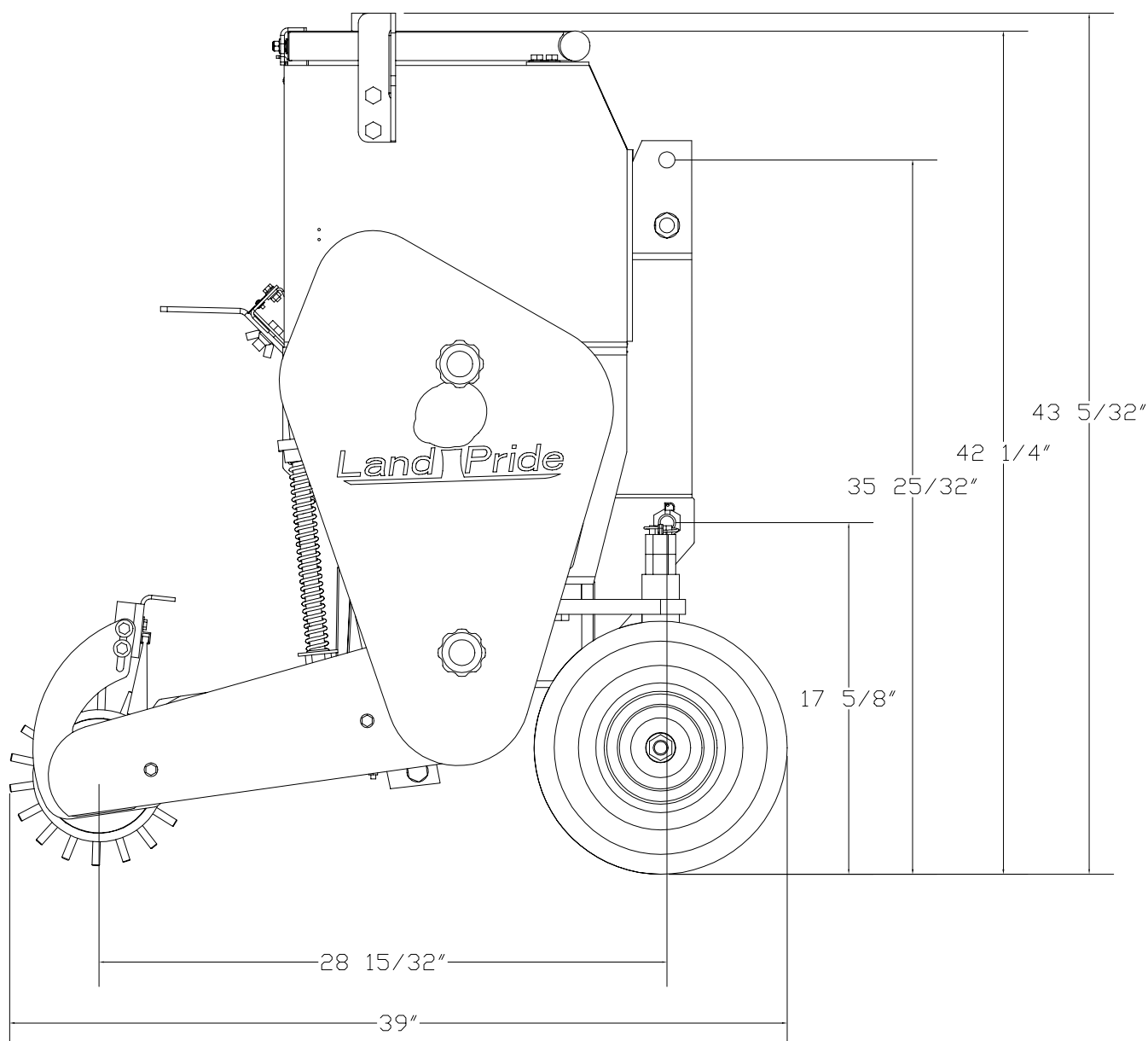


SPS3072 Specification Drawing
Figure 7-1

11042

Section 5 Specifications and Capacities

	SPS2048 Pulverizer Seeders
Width	69 5/16" overall
Seeding Width (Broadcast)	50 7/8"
Weight (Approximate Pounds)	950#
Seed Capacity	1 Bushel/Foot (6 bushel)
Feeder Cup Drive (Roller Drive)	Chain Driven from right side of rear roller with paddle type agitator above seed cups
Reversible scarifier shank	Wide or Narrow
Soil Pulverizer-Front	17 reversible scarifier shanks for loosening soil
Bed Forming Rollers - Rear	6 5/8" Dia. spiked roller with clean brush. 1" sealed bearing mounted on pivoting spring loaded arms
Hitch	Category I



SPS2048 Specification Drawing
Figure 7-2

18500

Section 6 Features and Benefits

SPS20 & SPS30 Series Pulverizer Seeder

Features	Benefits
Working widths	20 Series: 60", 72"; 30 Series: 72", 84"
HP Range	20 Series: 25-35 HP; 30 Series: 30-50 HP
Replaceable heat-treated sleeves	Heat-treated replaceable sleeves on roller protect spike. Easily replace the sleeve when worn vs. replacing entire spike.
3/8" Steel spikes welded to the roller's surface	Spikes are welded to the roller's surface rather than to a hole. Damaged spikes can be cut off and replaced.
Self-aligning bearings with double lip seals on rear roller	Self-aligning bearings conform to the roller and shafts.
1" Diameter shaft in roller	Heavy shaft can handle the shock loads from the roller.
Roller has most number of steel spikes on it	Better pulverization
H Beam	20 Series: H Beam-10"; 30 Series: H Beam-12"
10 1/2" x 2" x 1/2" Scarifier teeth	Scarifier teeth are heat-treated for long life and can be reversed when one side wears down.

Section 7 Troubleshooting

Problem	Solution
Uneven seed spacing or uneven stand.	Check for plugging in feed cup.
	Reduce ground speed.
	Check for trash or mud buildup on roller.
Actual seeding rate is different than desired.	Seed treatment will affect seeding rate if the chemicals buildup in feed cup. Unless cleaned regularly, this buildup can cause breakage of the feed cup shaft.
Feed cup sprocket locked up or twisted feed cup drive shaft.	Check for foreign matter lodged in feed cup sprocket.
Rollers not turning freely.	Check for trash or mud buildup on roller end.
Seed does not meter.	Clutch not engaged. See Clutch Engagement (Disengagement) page 11 Figure 3-6
Shanks bending sideways	Lift shanks out of ground when turning

Section 8 Appendix

Torque Values Chart for Common Bolt Sizes

Bolt Size (Inches)	Bolt Head Identification						Bolt Size (Metric)	Bolt Head Identification					
	 Grade 2		 Grade 5		 Grade 8			 Class 5.8		 Class 8.8		 Class 10.9	
in-tpi ¹	N·m ²	ft-lb ³	N·m	ft-lb	N·m	ft-lb	mm x pitch ⁴	N·m	ft-lb	N·m	ft-lb	N·m	ft-lb
1/4" - 20	7.4	5.6	11	8	16	12	M 5 X 0.8	4	3	6	5	9	7
1/4" - 28	8.5	6	13	10	18	14	M 6 X 1	7	5	11	8	15	11
5/16" - 18	15	11	24	17	33	25	M 8 X 1.25	17	12	26	19	36	27
5/16" - 24	17	13	26	19	37	27	M 8 X 1	18	13	28	21	39	29
3/8" - 16	27	20	42	31	59	44	M10 X 1.5	33	24	52	39	72	53
3/8" - 24	31	22	47	35	67	49	M10 X 0.75	39	29	61	45	85	62
7/16" - 14	43	32	67	49	95	70	M12 X 1.75	58	42	91	67	125	93
7/16" - 20	49	36	75	55	105	78	M12 X 1.5	60	44	95	70	130	97
1/2" - 13	66	49	105	76	145	105	M12 X 1	90	66	105	77	145	105
1/2" - 20	75	55	115	85	165	120	M14 X 2	92	68	145	105	200	150
9/16" - 12	95	70	150	110	210	155	M14 X 1.5	99	73	155	115	215	160
9/16" - 18	105	79	165	120	235	170	M16 X 2	145	105	225	165	315	230
5/8" - 11	130	97	205	150	285	210	M16 X 1.5	155	115	240	180	335	245
5/8" - 18	150	110	230	170	325	240	M18 X 2.5	195	145	310	230	405	300
3/4" - 10	235	170	360	265	510	375	M18 X 1.5	220	165	350	260	485	355
3/4" - 16	260	190	405	295	570	420	M20 X 2.5	280	205	440	325	610	450
7/8" - 9	225	165	585	430	820	605	M20 X 1.5	310	230	650	480	900	665
7/8" - 14	250	185	640	475	905	670	M24 X 3	480	355	760	560	1050	780
1" - 8	340	250	875	645	1230	910	M24 X 2	525	390	830	610	1150	845
1" - 12	370	275	955	705	1350	995	M30 X 3.5	960	705	1510	1120	2100	1550
1-1/8" - 7	480	355	1080	795	1750	1290	M30 X 2	1060	785	1680	1240	2320	1710
1 1/8" - 12	540	395	1210	890	1960	1440	M36 X 3.5	1730	1270	2650	1950	3660	2700
1 1/4" - 7	680	500	1520	1120	2460	1820	M36 X 2	1880	1380	2960	2190	4100	3220
1 1/4" - 12	750	555	1680	1240	2730	2010	¹ in-tpi = nominal thread diameter in inches-threads per inch ² N·m = newton-meters ³ ft-lb= foot pounds ⁴ mm x pitch = nominal thread diameter in millimeters x thread pitch						
1 3/8" - 6	890	655	1990	1470	3230	2380							
1 3/8" - 12	1010	745	2270	1670	3680	2710							
1 1/2" - 6	1180	870	2640	1950	4290	3160							
1 1/2" - 12	1330	980	2970	2190	4820	3560							
Torque tolerance + 0%, -15% of torquing values. Unless otherwise specified use torque values listed above.													

Tire Inflation Chart

Tire Size	Inflation PSI
13" x 6" 4- Ply	28

Warranty

Land Pride warrants to the original purchaser that this Land Pride product will be free from defects in material and workmanship beginning on the date of purchase by the end user according to the following schedule when used as intended and under normal service and conditions for personal use.

Overall Unit: One year Parts and Labor

Ripper shanks and roller studs are considered wear items

This Warranty is limited to the replacement of any defective part by Land Pride and the installation by the dealer of any such replacement part, and does not cover common wear items such as blades, belts, tines, etc. Land Pride reserves the right to inspect any equipment or parts which are claimed to have been defective in material or workmanship.

This Warranty does not apply to any part or product which in Land Pride's judgment shall have been misused or damaged by accident or lack of normal maintenance or care, or which has been repaired or altered in a way which adversely affects its performance or reliability, or which has been used for a purpose for which the product is not designed. Misuse also specifically includes failure to properly maintain oil levels, grease points, and driveline shafts.

Claims under this Warranty must be made to the dealer which originally sold the product and all warranty adjustments must be made through such dealer. Land Pride reserves the right to make changes in materials or design of the product at any time without notice.

This Warranty shall not be interpreted to render Land Pride liable for damages of any kind, direct, consequential, or contingent to property. Furthermore, Land Pride shall not be liable for damages resulting from any cause beyond its reasonable control. This Warranty does not extend to loss of crops, any expense or loss for labor, supplies, rental machinery or for any other reason.

No other warranty of any kind whatsoever, express or implied, is made with respect to this sale; and all implied warranties of merchantability and fitness for a particular purpose which exceed the obligations set forth in this written warranty are hereby disclaimed and excluded from this sale.

This Warranty is not valid unless registered with Land Pride within 30 days from the date of purchase by the end user.



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