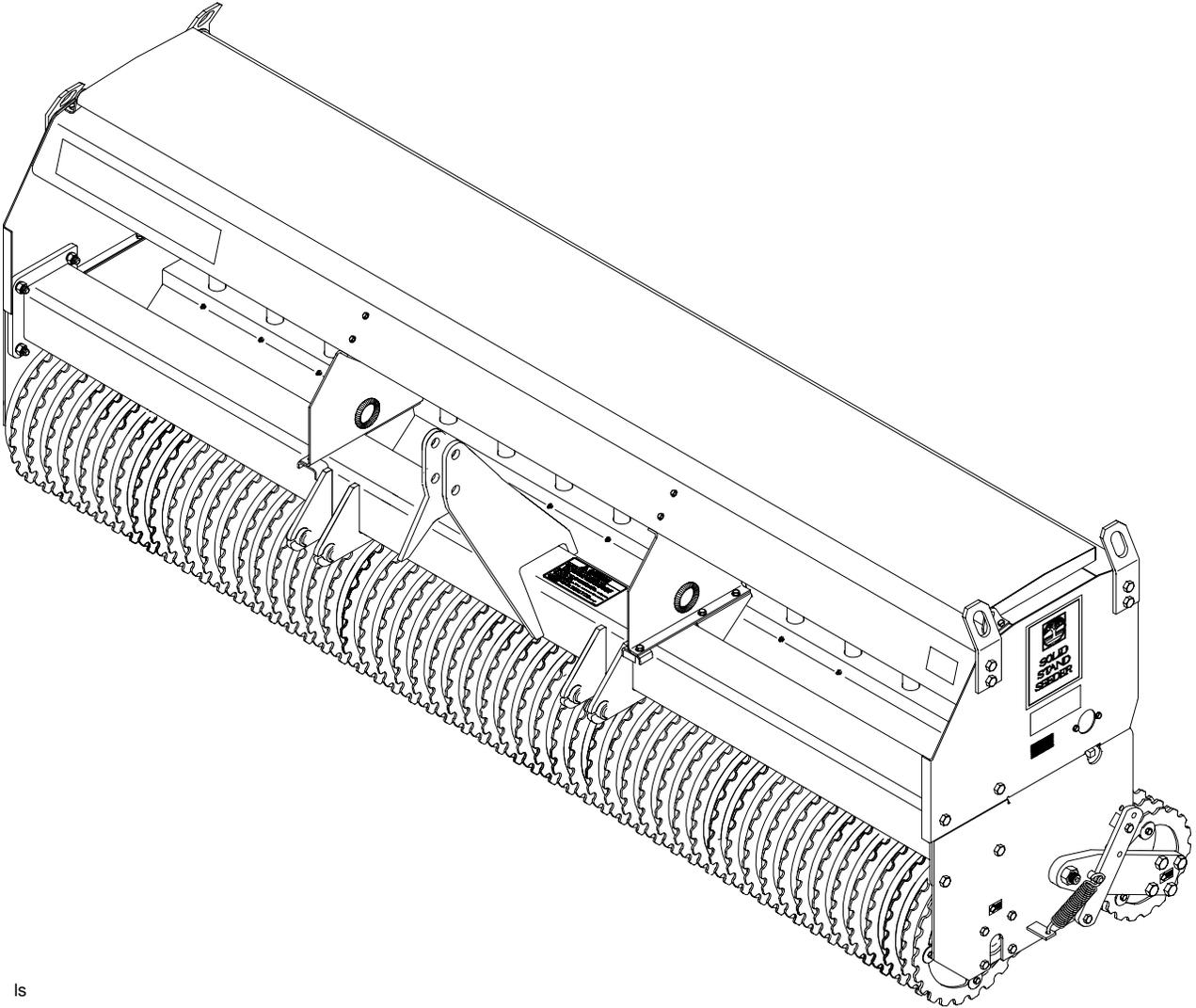


Primary Seeder

PS25120



Is

313-156M 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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Cover photo may show optional equipment not supplied with standard unit.

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Printed in the United States of America.

Important Safety Information

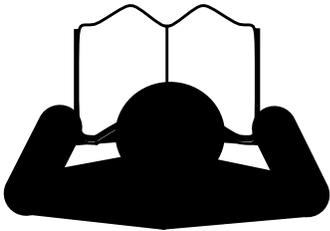
These are common practices that may or may not be applicable to the products described in this manual.

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 the 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 the 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

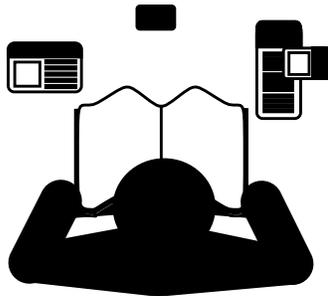
Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

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.

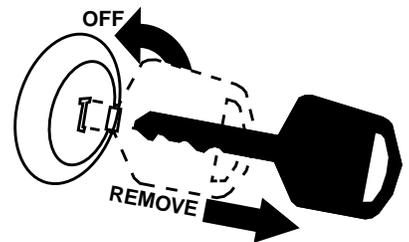
For Your Protection

- ▲ 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.

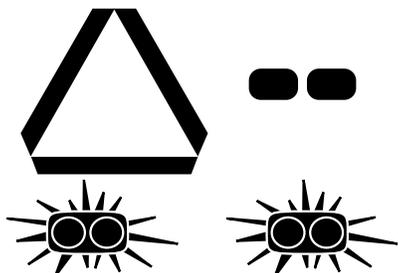


Important Safety Information

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

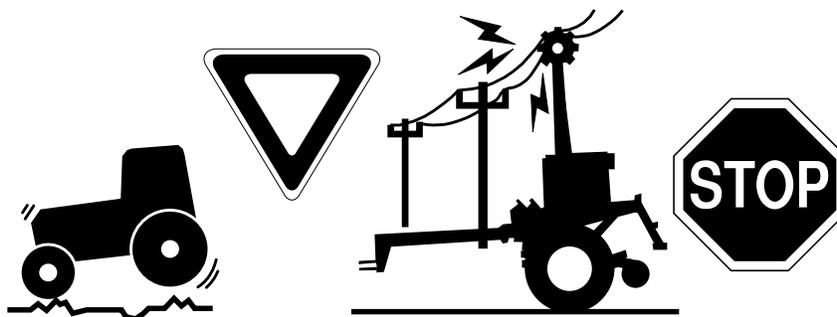
Use Safety Lights and Devices

- ▲ Slow moving tractors, self-propelled equipment, and towed implements can create a hazard when driven on public roads. They are difficult to see, especially at night.
- ▲ Flashing warning lights and turn signals are recommended whenever driving on public roads. Use lights and devices provided with implement.



Transport Machinery Safely

- ▲ Comply with state and local laws.
- ▲ Maximum transport speed for implement is 20 mph. **DO NOT EXCEED.** Never travel at a speed which does not allow adequate control of steering and stopping. Some rough terrain require a slower speed.
- ▲ Sudden braking can cause a towed load to swerve and upset. Reduce speed if towed load is not equipped with brakes.



- ▲ Use the following maximum speed - tow load weight ratios as a guideline:
20 mph when weight is less than or equal to the weight of tractor.
10 mph when weight is double the weight of tractor.
- IMPORTANT:** Do not tow a load that is more than double the weight of tractor.

Use A Safety Chain

- ▲ A safety chain will help control drawn machinery should it separate from the tractor drawbar.
- ▲ Use a chain with the strength rating equal to or greater than the gross weight of the towed machinery.
- ▲ Attach the chain to the tractor drawbar support or other specified anchor location. Allow only enough slack in the chain to permit turning.
- ▲ Do not use safety chain for towing.



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.
- ▲ Lower the implement to the ground, put tractor in park, turn off engine, and remove key before performing maintenance.
- ▲ Allow implement to cool completely.
- ▲ Do not grease or oil implement while it is in operation.
- ▲ 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.

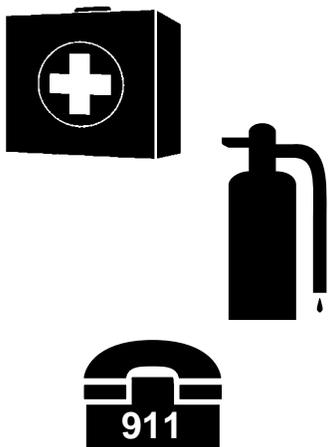


Important Safety Information

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.
- ▲ 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.



Keep Riders Off Machinery

- ▲ Riders obstruct the operator's view, they could be struck by foreign objects or thrown from the machine.
- ▲ Never allow children to operate equipment.



Important Safety Information

Safety Labels

Your Primary Seeder comes equipped with all safety labels in place. They were designed to help you safely operate your implement. Read and follow their directions.

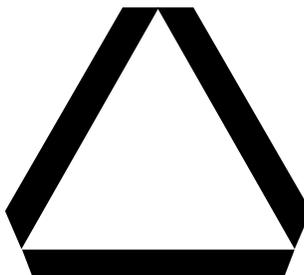
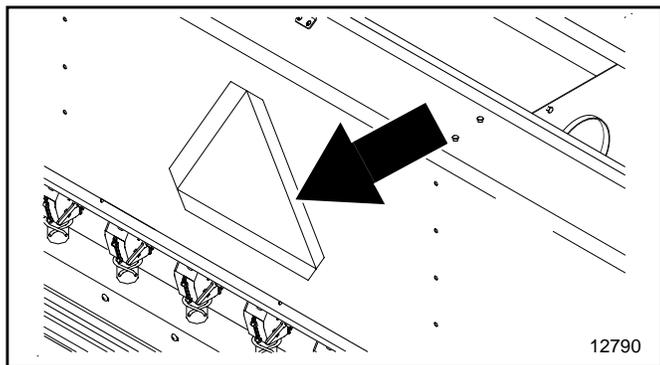
1. Keep all safety labels clean and legible.
2. Replace all damaged or missing labels. To order new labels go to your nearest Land Pride dealer or visit our dealer locator at landpride.com.
3. Some new equipment installed during repair requires safety labels to be affixed to the replaced component as

specified by Land Pride. When ordering new components make sure the correct safety labels are included in the request.

4. Refer to this section for proper label placement.

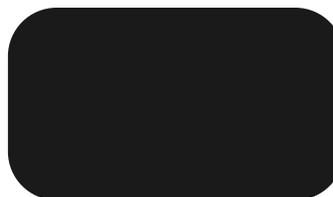
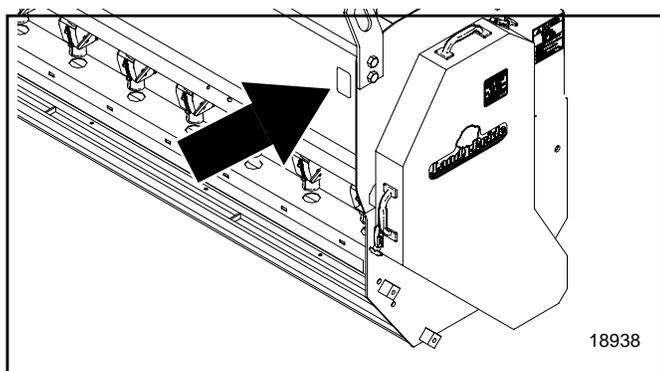
To install new labels:

- 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.



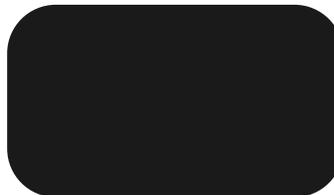
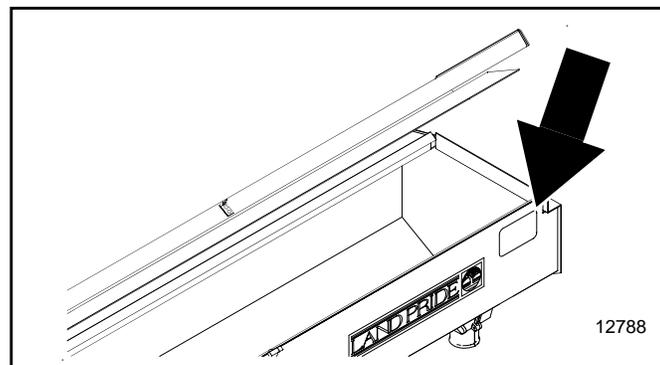
818-003C

Slow Moving Vehicle Label
(also found on Small Seeds Attachment)



818-230C

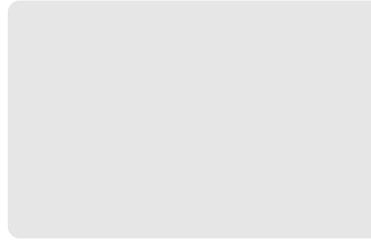
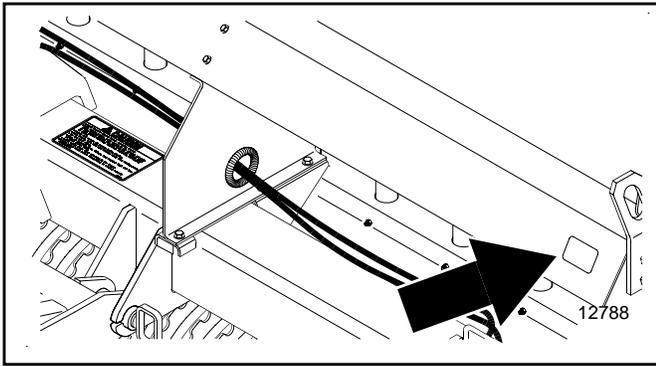
Red Reflector



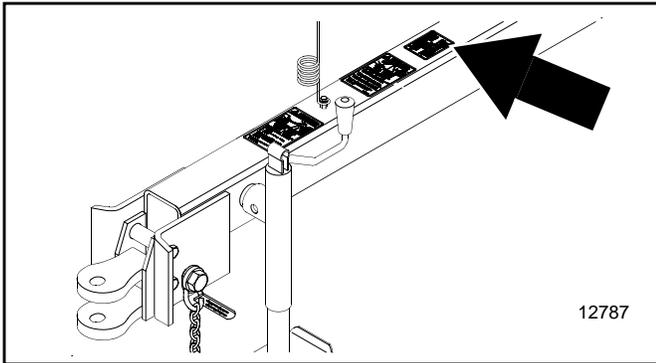
818-230C

Red Reflector
(also found on Walkboard)

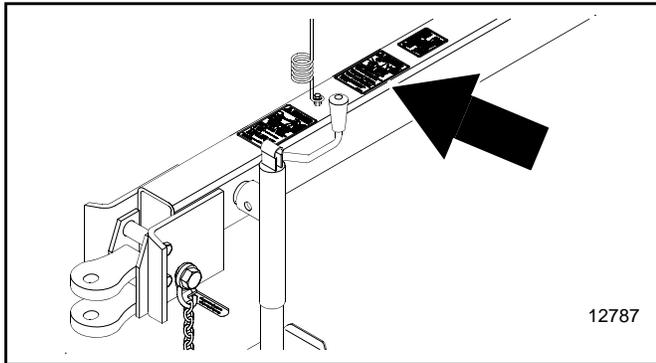
Important Safety Information



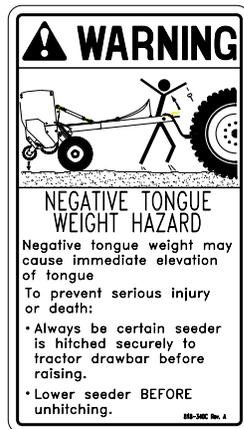
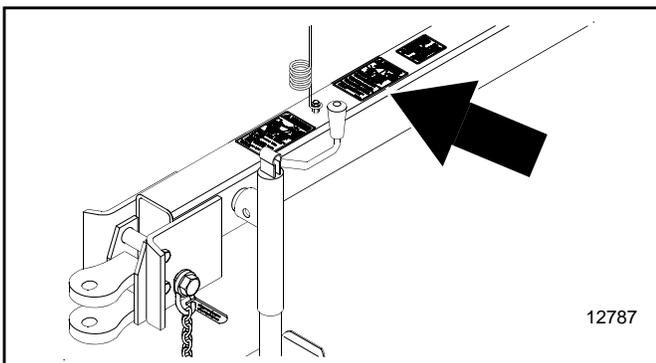
818-229C
Amber Reflector
(also found on
Walkboard)



818-337C
Excessive Speed Hazard

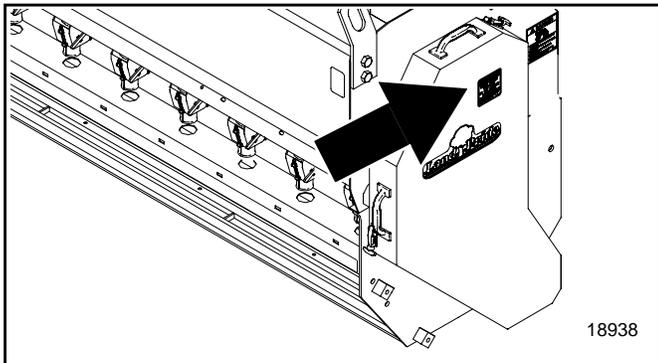


818-339C
High Pressure Fluid

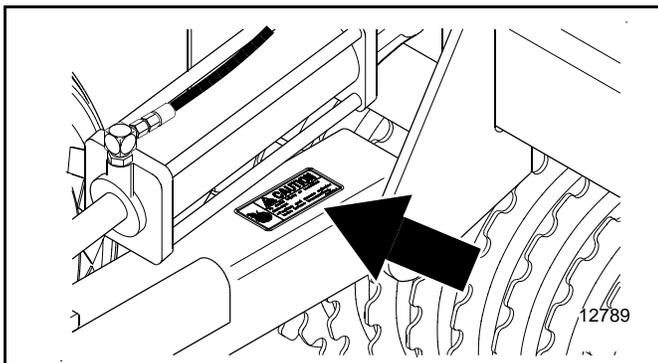


818-340C
Negative Tongue
Weight Hazard

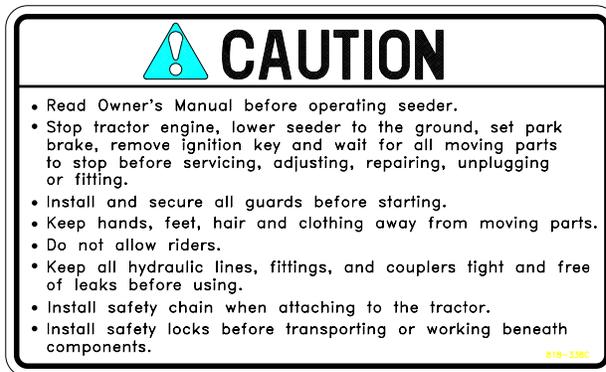
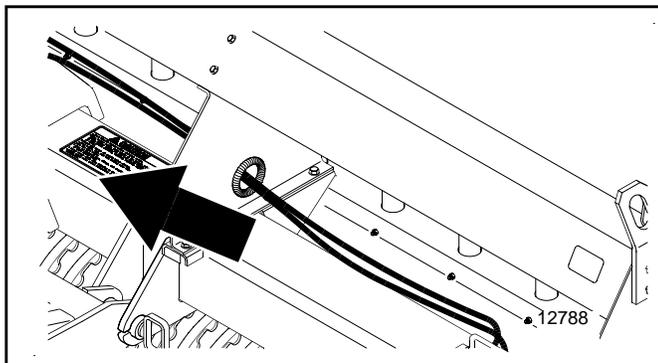
Important Safety Information



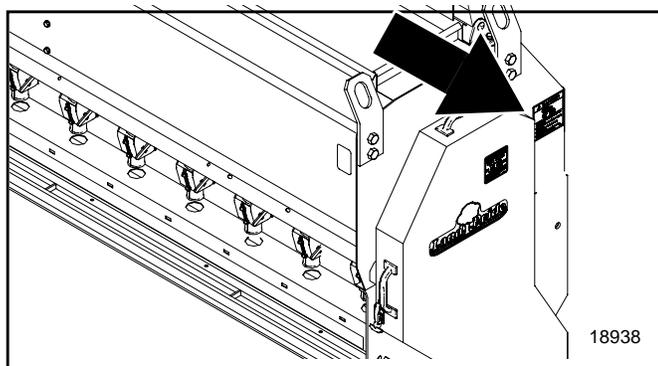
818-543C
Guard Missing
(Beneath Chain Guard)



818-336C
Caution Cylinder lock



818-338C
Caution General Safety



838-111C
Moving Parts

Introduction

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

This implement 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 the machine.

Application

The PS25120 Primary Seeder is perfect for wide open landscape seeding, turf farms, brome pastures, highway re-seeding and areas where moguls, undulations or depressions do not exist. The main seedbox, available in 15 and 30 bushel capacities, is equipped with our standard fluted seed cups and agitation to seed most turf type grasses, as well as a variety of other seeds from peas to alfalfa.

It is possible to seed two different types of seeds at different rates by utilizing the optional Small Seeds Box. The Small Seeds Box uses a smaller version of our fluted seed cup for seeds such as alfalfa, clover and many other types of small seeds.

See “**Section 6: Specifications & Capacities**” on page 44 and “**Section 7: Features & Benefits**” on page 46 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

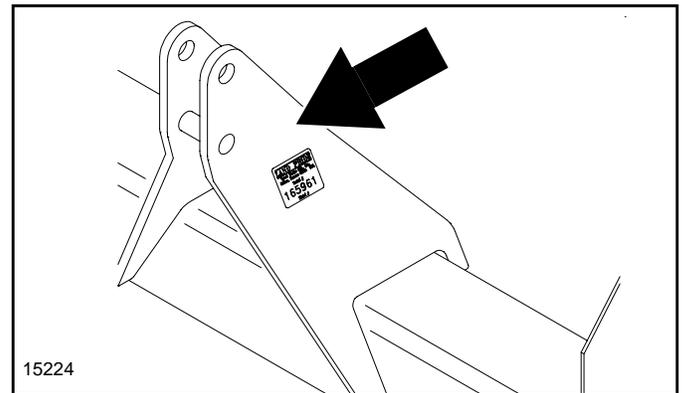
The Warranty Registration card should be filled out by the dealer at the time of purchase. This information is necessary to provide you with quality customer service.

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 seeder.

The parts on your Primary Seeder have been specially designed and should only be replaced with genuine Land Pride parts. Therefore, should your seeder 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.



**Serial Number Plate Location
Figure 1**

Further Assistance

Your dealer wants you to be satisfied with your new Primary Seeder. 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
1525 East North Street
 P.O. Box 5060
 Salina, Ks. 67402-5060

E-mail address
lp servicedept@landpride.com

Section 1: Assembly and Set-up

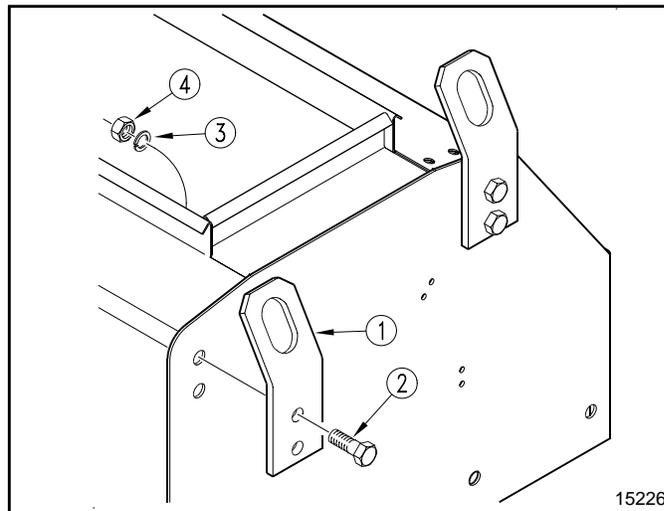
Before attempting to assemble the seeder use the following as a check list. Having all the needed parts and equipment readily at hand will speed up your assembly task and will make the job as safe as possible.

Pre-Assembly Checklist

Check	Reference
<input type="checkbox"/> Fasteners and pins that were shipped with the seeder. NOTE: All hardware from the factory has been installed in the location where it will be used. If a part or fastener is temporarily removed for assembly reasons, remember where it goes. Keep the parts separated.	Operator's Manual
<input type="checkbox"/> All working parts are moving freely, bolts are tight and cotter pins are spread.	Operator's Manual
<input type="checkbox"/> All grease fittings are in place and lubricated.	Section 5 Page 39
<input type="checkbox"/> Proper tension and alignment on all drive chains.	Operator's Manual
<input type="checkbox"/> Safety decals are correctly located and legible. Replace if damaged.	Important Safety Information
<input type="checkbox"/> Red and amber reflectors are correctly located and visible.	Important Safety Information
<input type="checkbox"/> "Slow moving vehicle" emblem is in place.	Important Safety Information
<input type="checkbox"/> Inflate tires to specified PSI air pressure. Tighten wheel bolts to specified torque.	Section 8 Page 48
<input type="checkbox"/> Have a minimum of 2 people at hand while assembling the drill.	Section 1
<input type="checkbox"/> Have a fork lift or loader along with chains and safety stands that are sized for the job ready for the assembly task.	Section 1
<input type="checkbox"/> Have a tractor with remote hydraulics ready to attach to the tongue. The tongue must be anchored to a large enough tractor to overcome the negative tongue weight that will be present if the unit is equipped with front wheels. CAUTION! Be familiar with the term NEGATIVE TONGUE WEIGHT . Be aware of the special precautions you should take when working with an implement that can develop Negative Tongue Weight.	Section 1 Page 15

Sling Brackets

After the unit is uncrated check to see if the sling brackets are installed, if not, install them now - two on each end of unit with hardware, refer to Figure 1-1.



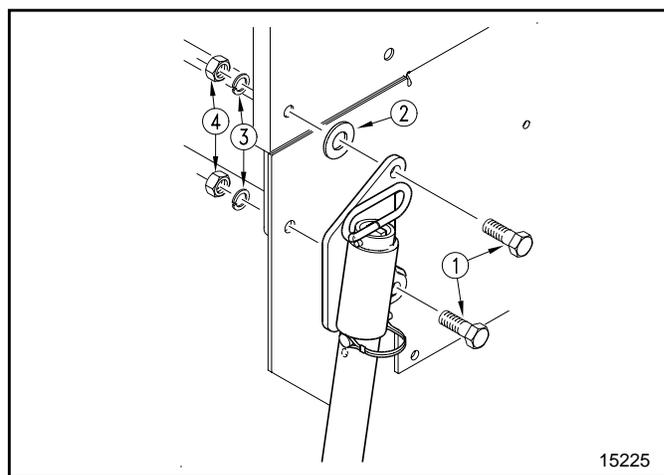
Sling Bracket Installation
Figure 1-1

The sling brackets allow points at each end to hook the chain for lifting of the unit. When hooking the chain to sling brackets, be certain to either use a spreader bar on the chain or use a long chain to prevent bending the sling brackets.

Three-Point Primary Seeder

Your 3-Point 25 Series Primary Seeder is shipped to you almost completely assembled. Carefully follow the instructions below for final assembly.

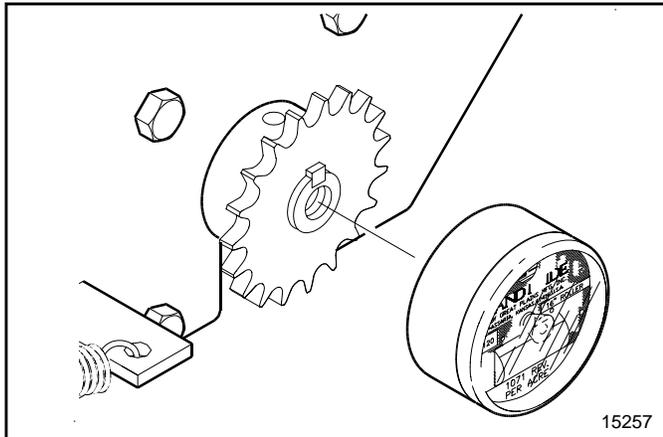
1. Remove the seeder from its crating.
2. Refer to Figure 1-2 for installation of parking stand. To install use the 5/8" x 2 1/4" long bolts (#1), a flat washer (#2), lock washers (#3), and nuts (#4) on the left end of the seeder frame as shown. Be sure to use the flat washer (#2) as shown to ensure proper installation of the parking stand.



Parking Stand Installation
Figure 1-2

Section 1: Assembly and Set-up

- Refer to Figure 1-3 for installation of the acremeter on to the right hand drive shaft.

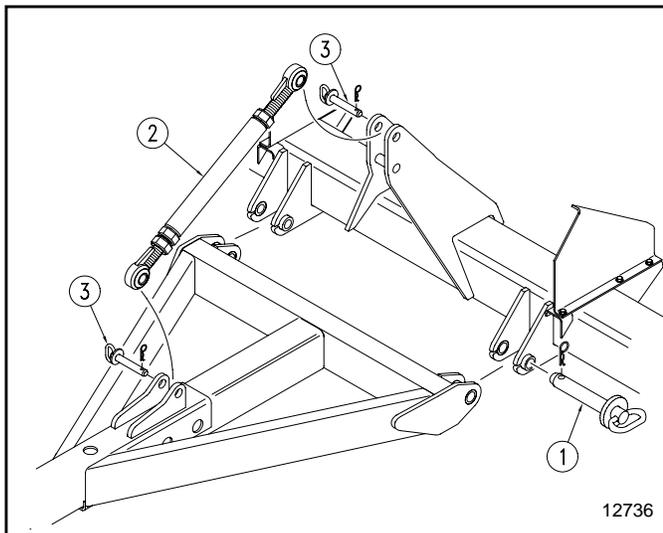


Acremeter Installation
Figure 1-3

- Check to see all nuts are tightened. See *Torque Values Chart* in “Section 9: Appendix” on page 48 for torque specifications.

Pull-Type Primary Seeder

- Remove the seeder and components from their crating.
- Attach the tongue to the seeder with hitch pins (#1). Attach the turnbuckle (#2) to the tongue and the top hitch of the seeder with hitch pins (#3), refer to Figure 1-4.



Tongue & Turnbuckle Assembly
Figure 1-4

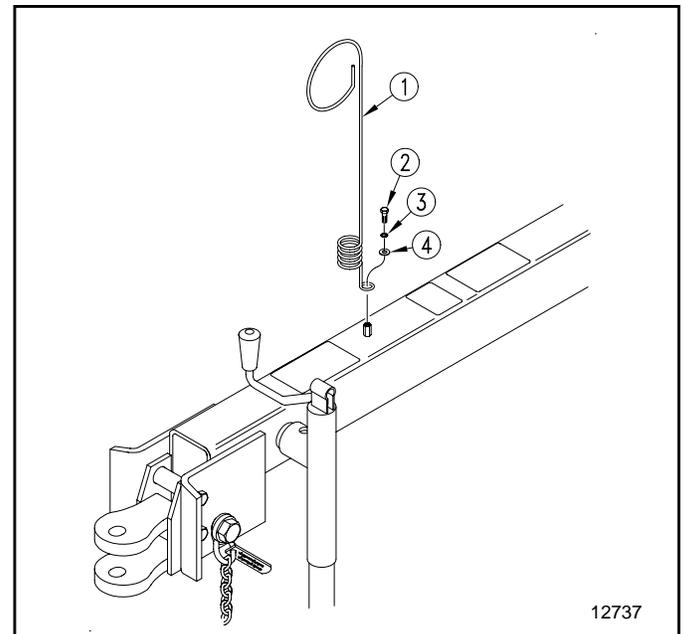
- Refer to Figure 1-3 for installation of the acremeter on to the right hand drive shaft.
- Check to see all nuts are tightened. See *Torque Values Chart* in “Section 9: Appendix” on page 48 for torque specifications.

Pull-Type Primary Seeder with End Wheels

! WARNING

Serious injury or death could result from escaping high pressure hydraulic fluid. Use paper or cardboard, NOT BODY PARTS, to check for suspected leaks.

- Remove the seeder and components from their crating.
- Follow steps 2 and 3 of the “Pull-type Primary Seeder” for assembly of tongue and acremeter.
- Install spring hose loop (#1) to tongue with 5/16" x 3/4" long bolts (#2), 5/16" lock washer (#3), and 5/16" USS flat washer (#4), Figure 1-5.



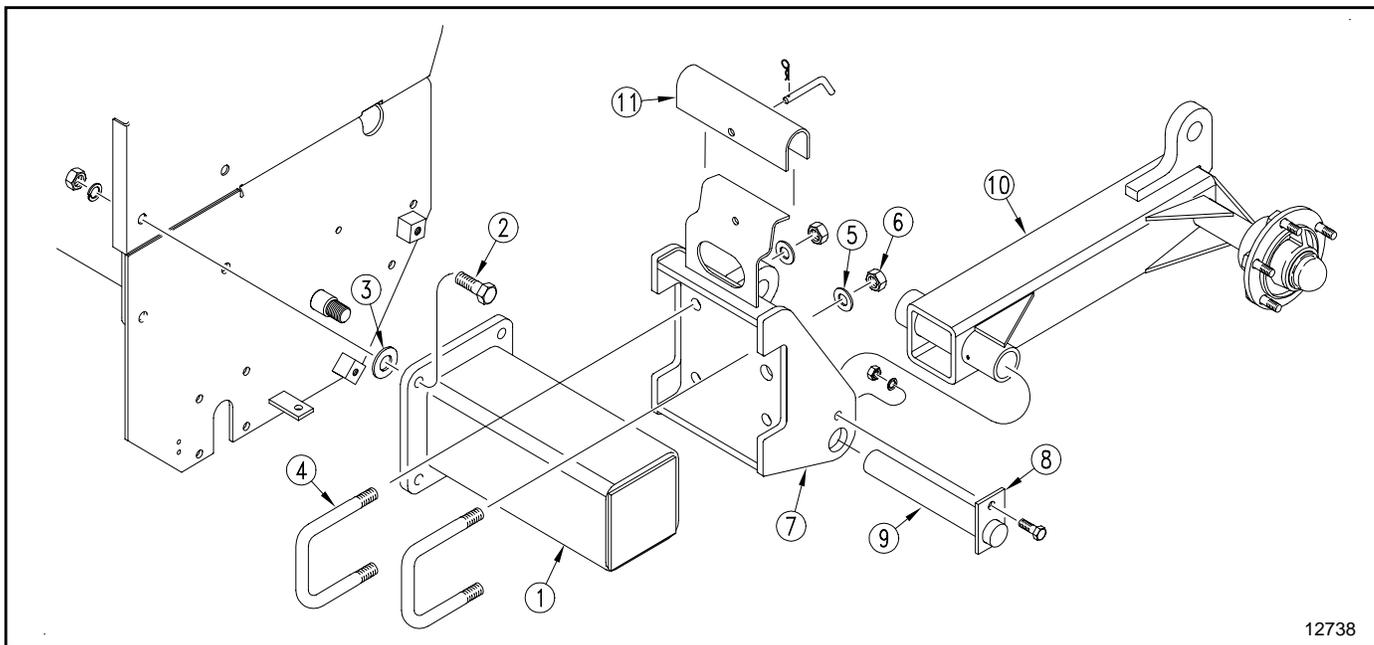
Spring Hose Loop Assembly
Figure 1-5

Refer to Figure 1-6:

- Starting with the left hand side of the seeder, remove the four 5/8" bolts and attach the end wheel mount (#1) to the seeder frame replacing the 5/8" bolts with 5/8" x 2 1/4" long bolts (#2). Flat washers (#3) are used between the end wheel mounts and the seed box for proper spacing.
- Install the wheel bracket using 3/4" u-bolts (#4), flat washers (#5) and nuts (#6).

NOTE: The wheel bracket (#7) should be facing the rear of the seeder. To determine the correct positioning for the wheel brackets, note the tab (#8) on the end of the wheel arm pivot (#9). This tab should be facing away from the seeder, as shown, so the wheel arm pivot can be easily removed.

Section 1: Assembly and Set-up



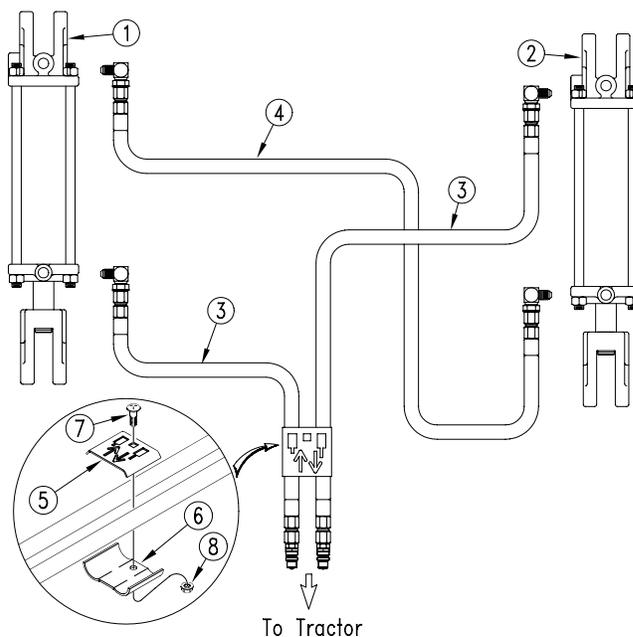
Wheel Bracket & Wheel Arm Assembly
Figure 1-6

- 6. Remove wheel arm pivot shaft from wheel bracket.
- 7. Position the wheel arm (#10) so that the wheel points away from the seeder with cylinder bracket up. Replace wheel arm pivot shaft.
- 8. Pin the cylinder lock (#11) in storage position.
- 9. Repeat steps 5-9 for the right hand side.

- 11. Check to see all nuts are tightened. See *Torque Values Chart* in “Section 9: Appendix” on page 48 for torque specifications.

Refer to Figure 1-7:

- 10. Install 3 1/4" x 8" x 1 1/4" hydraulic cylinder (#1) and 3 1/2" x 8" x 1 1/4" hydraulic cylinder (#2) and complete the plumbing as shown in Figure 1-7. Route the hydraulic hoses (#3) through the spring hose loop and along the tongue, behind the upper hitch and through the holes in the box supports, finishing with the hoses going around the frame end plates and through the hose retainers on the top of the wheel brackets. Route the hydraulic hose (#4) through the holes in the box supports, and finish with the hose going around the frame end plates and through the hose retainers on the top of the wheel brackets. Any excess hose should be coiled and tied with a plastic tie, placing the coil between the upper hitch. Position hose clamp (#5) & (#6) as shown and fasten together with 5/16" long carriage bolt (#7) and 5/16" flange nut (#8). Secure hoses to tongue using one of the plastic cable ties provided.



End Wheel Hydraulic Schematic
Figure 1-7

NOTE: Your End Wheel Seeder is equipped with rephasing hydraulic lift cylinders. The plumbing must be assembled correctly in order for the rephasing cylinders to function properly.

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Section 1: Assembly and Set-up

Pull-Type Primary Seeder with Front Wheels



WARNING

Serious injury or death could result from escaping high pressure hydraulic fluid. Use paper or cardboard, NOT BODY PARTS, to check for suspected leaks.

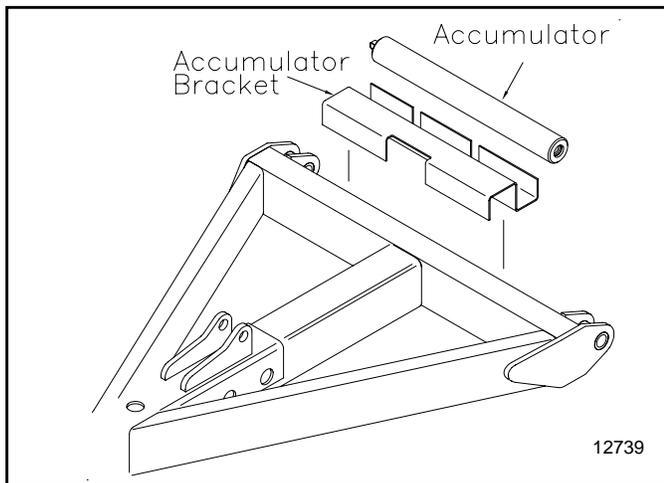
1. Remove the seeder and components from their crating.
2. Refer to Figure 1-3 on page 8 for installation of the acremeter on to the right hand drive shaft.
3. Install spring hose loop, Figure 1-5 on page 8.



CAUTION

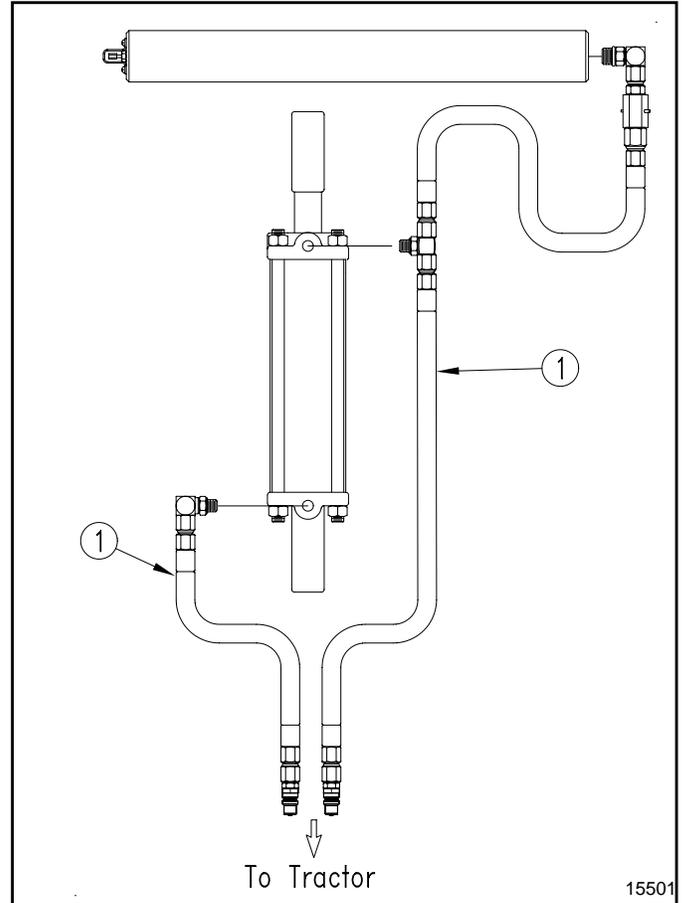
The Accumulator/Cylinder Package furnished with your front wheel option is provided for your protection. Lack of or improper installation may result in injury or in damage to your seeder because of the negative tongue weight involved with the front wheels.

4. Attach the tongue to the seeder with hitch pins.
5. Refer to Figure 1-8 and attach the accumulator bracket and accumulator to the rear of the tongue as shown, fastening with hose clamps provided.



Accumulator Assembly
Figure 1-8

6. Refer to Figure 1-10 and install hydraulic cylinder with single lug (#1) to tongue and top hitch as shown.
7. Complete the plumbing by following the schematic in Figure 1-9. The plumbing must be assembled correctly in order for the accumulator to function properly. Route the hydraulic hoses (#1) along the tongue. These hoses will be clamped together with the wheel cylinder hoses in step 13.



Accumulator Hydraulic Schematic
Figure 1-9

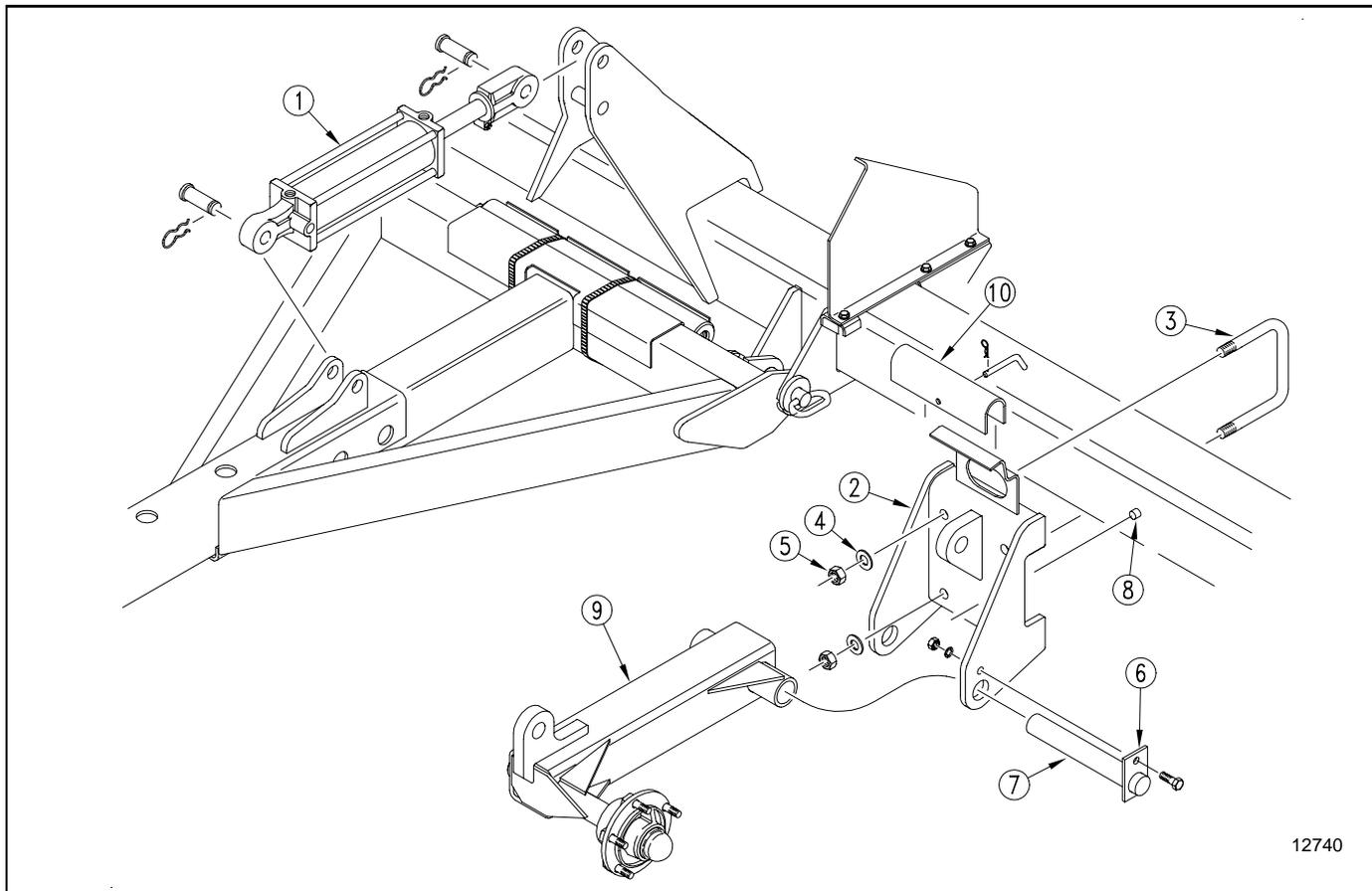
Refer to Figure 1-10:

8. Install the wheel bracket (#2) using 3/4" u-bolts (#3), flat washers (#4) and nuts (#5). The wheel bracket should be facing the front of the seeder. To determine the correct positioning for the wheel brackets, note the tab (#6) on the end of the wheel arm pivot (#7). This tab should be toward the outside of the seeder, as shown, so the wheel arm pivot can be easily removed.

NOTE: The corresponding wheel brackets must be positioned with the 1" hole over the front wheel locating stub (#8) on the frame as shown for proper distribution of seeder weight when in transport. Locating the brackets at any other place on the frame could result in damage to the seeder.

9. Remove wheel arm pivot shaft from wheel bracket.
10. Position the wheel arm (#9) so that the wheel points toward the outside of the seeder with cylinder bracket up. Replace wheel arm pivot shaft.
11. Pin the cylinder lock (#10) in storage position.
12. Repeat steps 9-11 for the right hand side.

Section 1: Assembly and Set-up

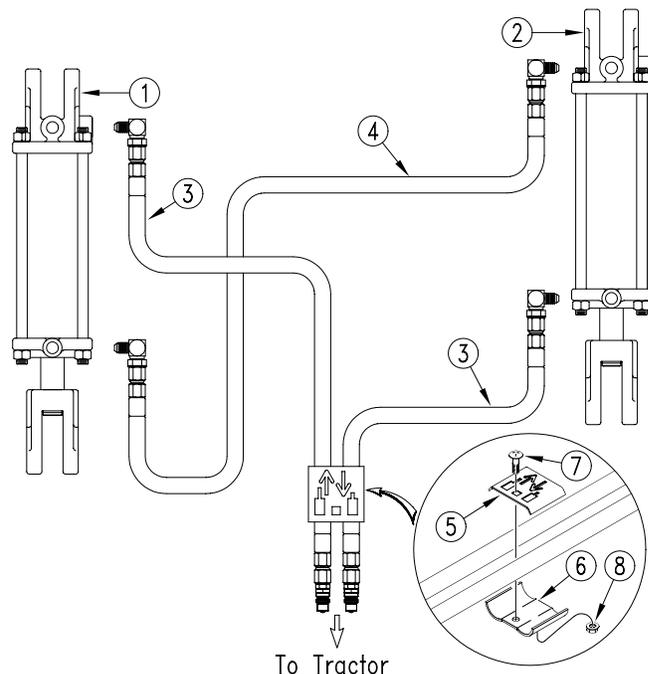


Cylinder, Wheel Bracket & Wheel Arm Assembly
Figure 1-10

Refer to Figure 1-11:

13. Install 3 1/2" x 8" x 1 1/4" hydraulic cylinder (#1) 3 1/4" x 8" x 1 1/4" hydraulic cylinder (#2) and complete the plumbing as shown. Route the hydraulic hoses (#3) through the spring hose loop and along the tongue, underneath the turnbuckle, behind the upper hitch and through the holes in the box supports, finishing with the hoses going through the hose retainers on the top of the wheel brackets. Route the hydraulic hose (#4) through the holes in the box supports, and finishing with the hose going through the hose retainers on the wheel brackets. Any excess hose should be coiled and tied with a plastic tie, placing the coil between the upper hitch. Position hose clamp (#5) & (#6) as shown and fasten together with 5/16" x 1 1/4" long carriage bolt (#7) and 5/16" flange nut (#8) adding the hoses from step 7. Secure hoses to tongue using one of the plastic cable ties provided.

NOTE: Your Front Wheel Seeder is equipped with rephasing hydraulic lift cylinders. The plumbing must be assembled correctly in order for the rephasing cylinders to function properly.



Front Wheel Hydraulic Schematic
Figure 1-11

14. Check to see all nuts are tightened. See *Torque Values Chart* in "**Section 9: Appendix**" on page 48 for additional torque specifications.

Section 2: Operating Instructions

General Description

The following information is a brief description of how this implement works. It is included to help you understand the operation of this seeder.

The power to drive the seeding function of this seeder comes from the ground speed of the tractor. The seed metering is powered by the front roller at a rate proportional to the distance driven. This ensures that the rate applied in pounds per acre or pounds per 1000 square feet remains constant as ground speed is varied. The power is transmitted via drive chains to the seed cups. This drive can be adjusted to a high or low range to broadcast more or less seed. The seed rate is adjustable using the seed rate lever located at the rear of the seeder. The seed is dropped between cast iron rollers. The front roller crushes clods, presses down small stones and forms a firm seedbed. The rear roller firms the soil around the seeds.

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 Primary Seeder, the following inspection should be performed.

Check	Reference
<input type="checkbox"/> Safety Rules	Page 1
<input type="checkbox"/> Operating Instructions	Page 13
<input type="checkbox"/> Tire Pressure	Page 48
<input type="checkbox"/> Lubricate seeder as needed.	Page 39
<input type="checkbox"/> Check for loose fasteners	Page 48
<input type="checkbox"/> Check for hydraulic leaks	Page 15
<input type="checkbox"/> Inspect the feed cups and seed tubes for foreign matter.	Page 47
<input type="checkbox"/> Set speed change sprocket for drive type desired.	Page 18
<input type="checkbox"/> Set seed rate.	Page 20

Tractor Requirements

Your PS25120 is designed for tractors in the Category 2 class. Horsepower rating of the tractor should not be less than 40 HP for a pull-type unit and not less than 50 HP for 3-Point, front wheel or end wheel units.

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

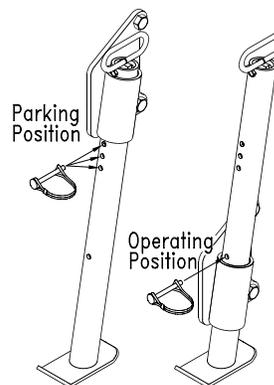
Adequate front end weight is required on tractors for use with a 3-point seeder. Check tractor's 3-point lifting capacity. Refer to "Section 6: Specifications & Capacities" on page 44 for seeder weight.

Front Wheel Pull-Type

With the seeder loaded and raised for transport, certain drawbar capacities could be exceeded by negative tongue weight, see "Tractor Drawbar Hook-Up" on page 14.

Tractor 3-Point Hook-Up

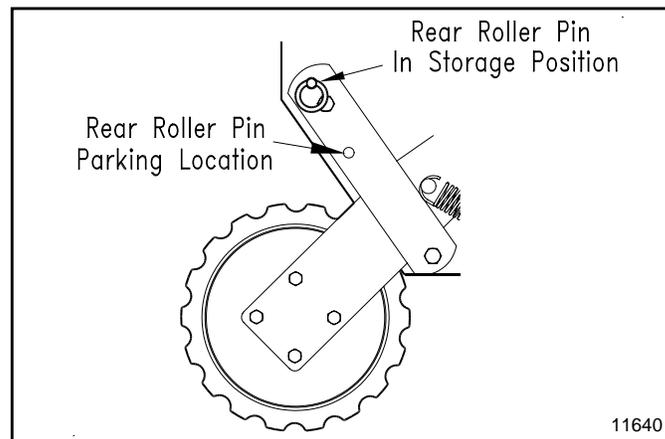
1. Back tractor up to seeder until 3-Point links are aligned with hitch clevises on seeder.
2. Secure the tractor's 3-Point lower links to the lower hitch clevises using 1 1/8" diameter hitch pins.
3. Secure the tractor's top center link to the seeder top hitch using a 1" diameter hitch pin. With the seeder resting on level ground, adjust the tractor's top link until the seeder is level.
4. Move parking stand to operating position. Refer to Figure 2-1.



Parking Stand Positions
Figure 2-1

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5. Remove rear roller lock pin from parking position and place in storage position. Refer to Figure 2-2.



Rear Roller in Storage Position
Figure 2-2

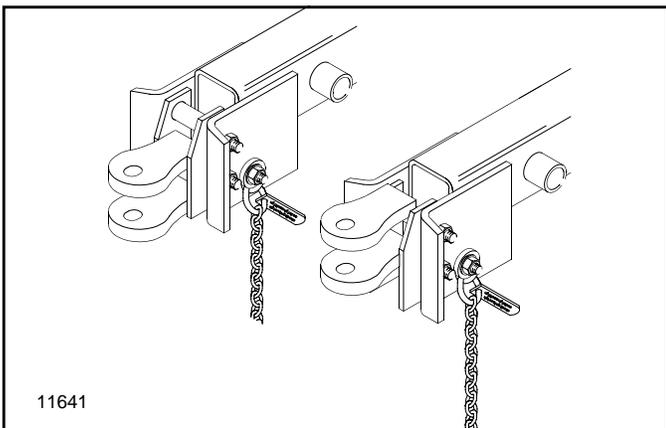
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Section 2: Operating Instructions

Tractor Drawbar Hook-Up

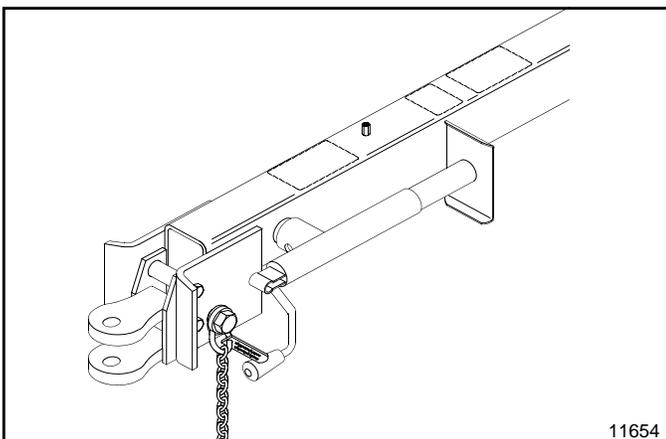
PS25120 pull-type units are equipped with a clevis style hitch. For proper field operation, the seeder box should be level in field position.

1. The mounting holes in the clevis hitch have been offset so the hitch can be turned over and bolted at two different hitch heights, Figure 2-3.
2. Back the tractor draw bar up to the seeder hitch to determine the proper hitch position.
3. Connect the hitch to the tractor using a pin of adequate strength (minimum 1" diameter). For the Front Wheel Pull-type option you must install a retaining clip on the hitch pin to prevent it from working up as the seeder changes from positive to negative tongue weight.
4. Your pull-type seeder is equipped with a hitch safety chain. The safety chain should be securely attached to the seeder hitch and tractor draw bar support.



Clevis Style Hitch Height Adjustments
Figure 2-3

5. Retract the jack until the weight of the tongue is resting on the tractor draw bar.
6. Unpin the tongue jack and pin in storage position, Figure 2-4.

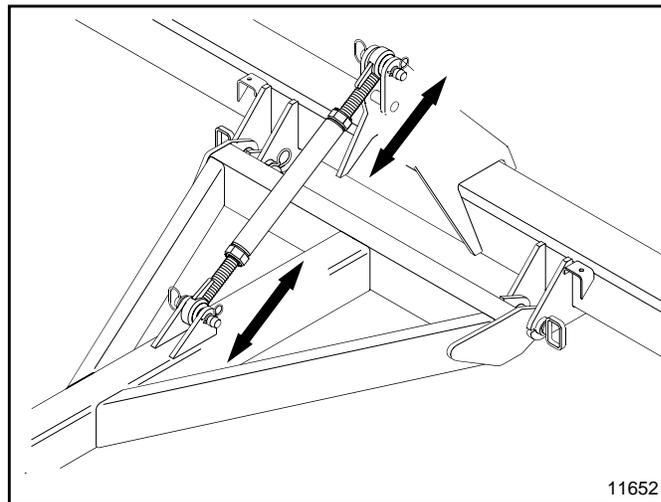


Jack in Storage Position
Figure 2-4

7. All pull-type, end wheel and front wheel units should be properly transported with the seed box level front to back.

Pull-Type and End Wheel Units

Adjust the turnbuckle to level the seeder, Figure 2-5, by loosening the jam nuts and turning center section. Retighten jam nut when level.



Turnbuckle Adjustment
Figure 2-5

Front Wheel Units

Use the tongue hydraulic cylinder to level the seed box.

! WARNING

Front wheel pull-type seeders have negative tongue weight when in transport position. Negative tongue weight may cause immediate elevation of tongue. Always be certain seeder is hitched securely to tractor drawbar and safety chain attached before raising. Lower seeder before unhitching.

NOTE: The negative tongue force imposed by the seeder with the front wheel in the raised position when seeder is:

- empty
15 bushel box can be as high as 900 lbs.
30 bushel box can be as high as 1000 lbs.
- loaded
15 bushel box can be as high as 1200 lbs.
30 bushel box can be as high as 1500 lbs.

Section 2: Operating Instructions

Tractor Hydraulic Hook-Up



WARNING

Serious injury or death could result from escaping high pressure hydraulic fluid. Use paper or cardboard, NOT BODY PARTS, to check for suspected leaks.

For pull-type seeders equipped with front or end wheels, route all hydraulic hoses along the tongue and through the hose loop on the front of the tongue as described in the assembly instruction section. Connect the hoses to the tractor remote outlets.

Bleeding Hydraulic System

The Front and End Wheel Pull-Type Seeders are equipped with rephasing type lift hydraulic cylinders that require a special procedure for bleeding air from the hydraulic circuits. If your dealer has not already prepared the cylinders for transport use, read the following information carefully. The rephasing type cylinders will not function properly if this procedure is not followed.



CAUTION

Do not crack hose fittings in order to bleed air from this system.

NOTE: Check the hydraulic fluid in the tractor reservoir and fill to the proper level before starting this procedure. If the bleeding is performed with a low reservoir supply, there is a chance of drawing air into the system causing jerky or uneven cylinder movements.

1. Put the tractor in park and activate its parking brake. If the tractor does not have these features, block 2 or 3 of its wheels to positively prevent the tractor from rolling during this bleeding operation.
2. Jack up and support the front of the seeder at a point close to each wheel to take the weight off of the cylinders. If the wheel cylinders have previously been engaged, they may be used to assist in raising the frame.
3. With the seeder blocked and supported, unpin both ends of the cylinders. Remove and safely position the cylinders so the base end of the cylinder is lower than the rod end port. Also, make sure there is enough room for the rods of each cylinder to fully extend without contacting anything.

NOTE: In order to prevent trapped air pockets, the port on the rod end must be higher than any other part of the cylinder during the bleeding operation.

4. With the tractor at idle, hold the remote lever on to put fluid into the lifting circuit. When the slave cylinder has been completely extended, hold the remote lever on for one minute.

5. Retract the cylinder rods. Extend the rods again and hold the remote lever on for one more minute. Repeat this step two more times to completely bleed the system.
6. Retract and reattach the hydraulic cylinders. If air is trapped in either cylinder, the affected cylinder will have a spongy, erratic movement and the seeder will not raise evenly.
7. Add oil to the tractor's hydraulic reservoir to fill it to the proper level.

After the seeder is raised, a slight settling will occur due to the action of the rephasing cylinders.

Operating Hydraulic Lift System

The lift cylinders may after a period of time get out of time or phase. The effects of this can be seen when one wheel of the seeder is higher than the other because its lift cylinder is over retracted compared to the other lift cylinder.

To rephase the cylinders, raise the seeder completely up and hold the tractor hydraulic lever on for a few seconds to give the cylinders time to rephase. This should be done each time the seeder is raised. Momentarily reversing the hydraulic lever immediately after rephasing to allow the cylinders to retract about 1/2" will help in maintaining a level seeder during transport.

NOTE: Understand that having the cylinders become gradually out of time is different than having air trapped in the system from improper bleeding. Each condition is corrected differently.

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.

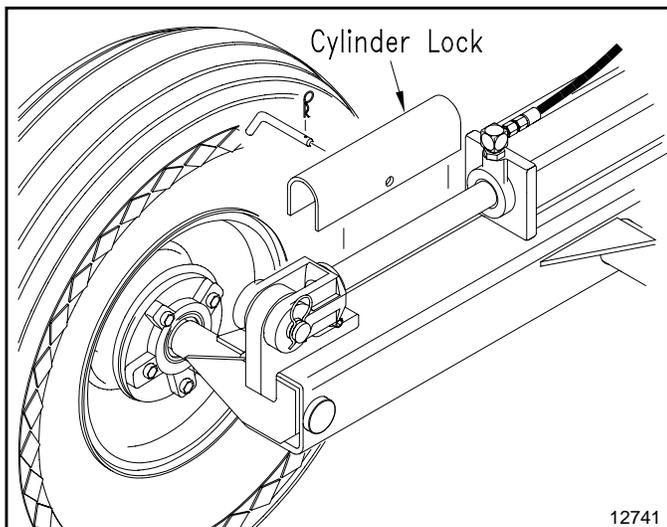
1. Select a safe ground travel speed when transporting from one area to another. When traveling on roadways, transport in such a way that faster moving vehicles may pass you safely.
2. Reduce tractor ground speed when turning. Leave enough clearance so the seeder does not contact obstacles such as buildings,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

Pull-Type, Front, or End Wheel Seeders

1. For Pull-Type Seeder with or without wheels, make sure the seeder is securely attached to the tractor draw bar and the hitch safety chain has been securely attached.

Section 2: Operating Instructions

- The Front Wheel and End Wheel Pull-Type Seeder is equipped with a transport cylinder lock. Raise the seeder. Remove pin and cylinder lock from storage position on wheel bracket. Place lock over cylinder rod and pin to secure in place, Figure 2-6. This procedure should be done to safeguard against mechanical or hydraulic failure.



Cylinder Lock
Figure 2-6

- For seeders with wheel options, check to see that the transport tires have the proper inflation, see *Tire Inflation Chart* in “Section 9: Appendix” on page 48.
- Transport Pull-Type Seeder without wheels at field speed only.

CAUTION

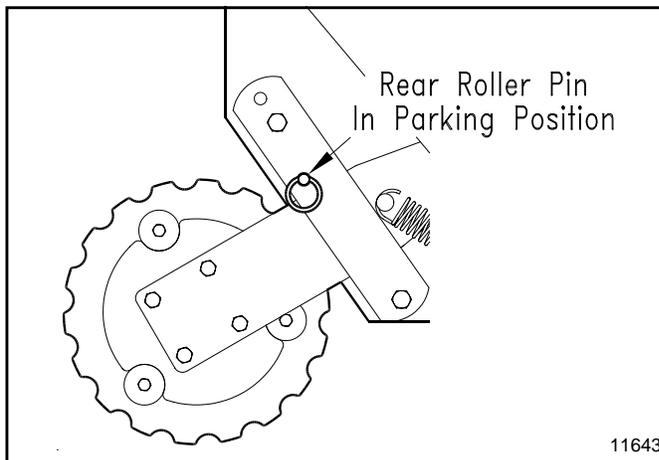
Pull-Type seeders with wheel options should never be pulled faster than 20 miles per hour!

Parking

The following steps should be done when preparing to store the seeder or unhitch it from the tractor. See also “Storage” on page 39 for additional information on long term storage of your seeder.

3-Point Seeders

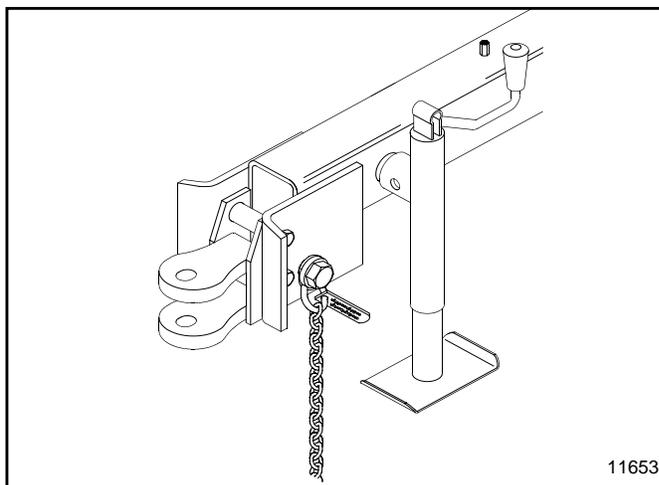
- Park the seeder on a level, solid area.
- To prevent the seeder from tipping backward, remove rear roller lock pin from storage position and place in parking position. Refer to Figure 2-7.
- Lower parking stand, and pin in park position. Refer to Figure 2-1 on page 13.
- Unhitch from tractor.



Rear Roller Lock Pin in Parking Position
Figure 2-7

Pull-Type, Front or End Wheel Seeders

- Park the seeder on a level, solid area.
- Lower the seeder to the ground if equipped with front or end wheels. Shut off tractor engine, engage parking brake, and remove all hydraulic pressure from seeder lift cylinders.
- Remove the jack from its storage position and place it in the parking position located on the left side of the tongue. Refer to Figure 2-8.



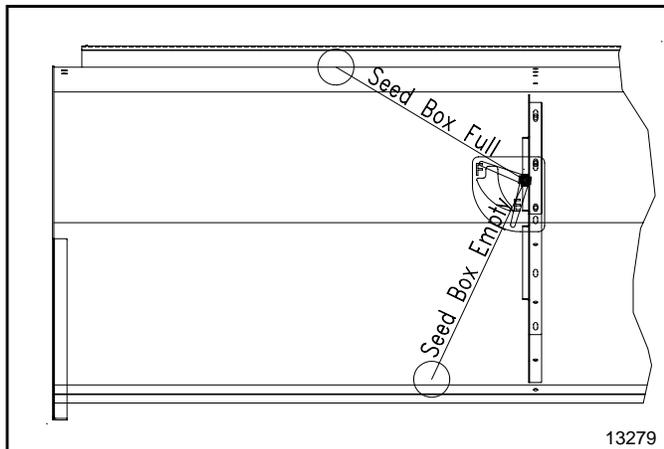
Jack in Parking Position
Figure 2-8

- If the ground is soft, place a board or plate under the jack to increase the ground contact area.
- Extend the jack until the weight of the tongue is on the jack and has been removed from the tractor drawbar.
- If equipped with front or end wheels, unplug the hydraulic lines from the tractor.
- Remove the hitch pin and safety chain from the tractor draw bar.
- Unhitch from tractor.

Section 2: Operating Instructions

Seed Level Indicator

Be sure your Seed Level Indicator is adjusted so the foam float will be above the see box rim with box lid open to allow for filling the box, and the gauge will show empty (E) with the box lid closed, refer to Figure 2-9.



Seed Level Indicator
Figure 2-9

Agitator Attachment (Optional)

General Operating Instructions

1. The Agitator Attachment can be effective:
 - a. for large, fluffy, hard-to-plant seeds.
 - b. if uneven seeding occurs because of bridging in the seed box.
2. When using the agitator, move the seed broadcasting handle to the left, see “**Seed Broadcasting System**” on page 18. In doing so, the seed will have a larger area to fall through to avoid plugging.
3. A large amount of stems or leaves mixed in with the seeds can cause bridging in the feed cups. Always use clean seeds if possible.
4. It will be necessary to calibrate your seed rate after connecting the agitator. See “**Calibrating & Adjusting Seeding Rate**” on page 20 for detailed instructions. While running the calibration, check to make sure the seed is not bridging in the feed cups.

NOTE: If you are not seeding large, fluffy seeds, or the agitator is not needed to eliminate bridging, the agitator sprocket should be disconnected. Failure to do so will shorten the chain life.

Section 3: Adjustments

Drive System

Your Primary 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 to insure that it is 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.

Roller Packing Wheels

The front and rear roller packing wheels should turn freely. In field position, the rear roller assembly should be free to float up and down to follow the terrain of your field. See Figure 2-2.

Seed Broadcasting System

The seed broadcasting system gives you an even distribution of seeds. At the rear of your seeder, beneath the feed cups, is the seed broadcasting handle. For most seeds this handle should be set to the standard setting, see Figure 3-2.

Seed Rate Speed Change

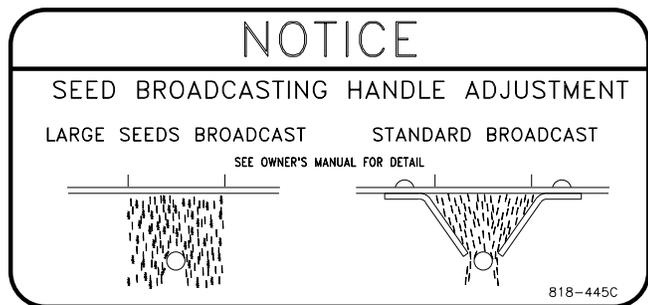
The seed rate speed change is designed to give you two speeds for different types of seeds and rates. The two drive types are high range (fast speed) and low range (slow speed).

15 Bushel Speed Change

To change the drive type, loosen the drive idler arm nut. Remove the nut in the center of the hub, and turn sprocket hub over. The chains should remain on the same sprockets. Reassemble sprocket hub and install drive chains. Adjust the drive idler to snug up the chains, Figure 3-3 on page 19. Replace chain guard.

30 Bushel Speed Change

To change the drive type, loosen the idler arm nut. Remove the chains and the nut in the center of sprocket hub. Turn sprocket hub over and reassemble. Install drive chains then adjust the drive idler to snug up the chains. Figure 3-3 on page 19. Replace chain guard.

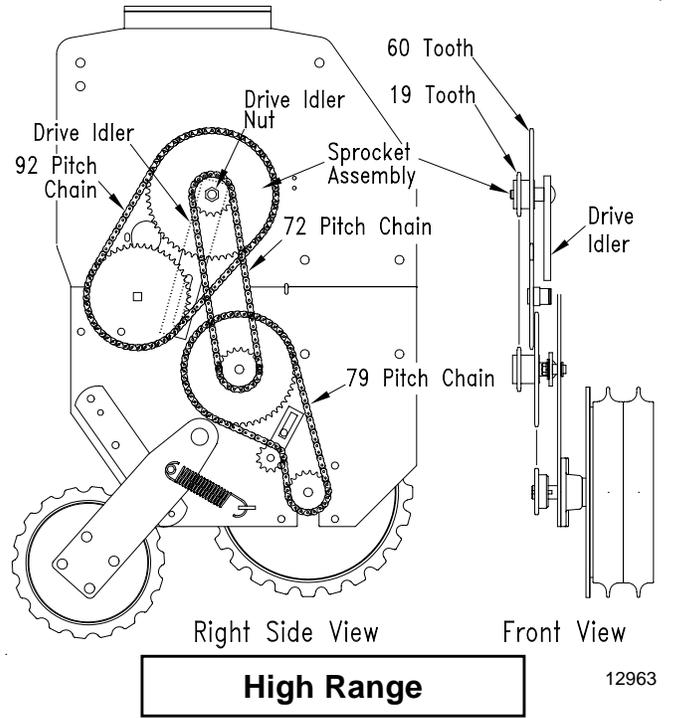
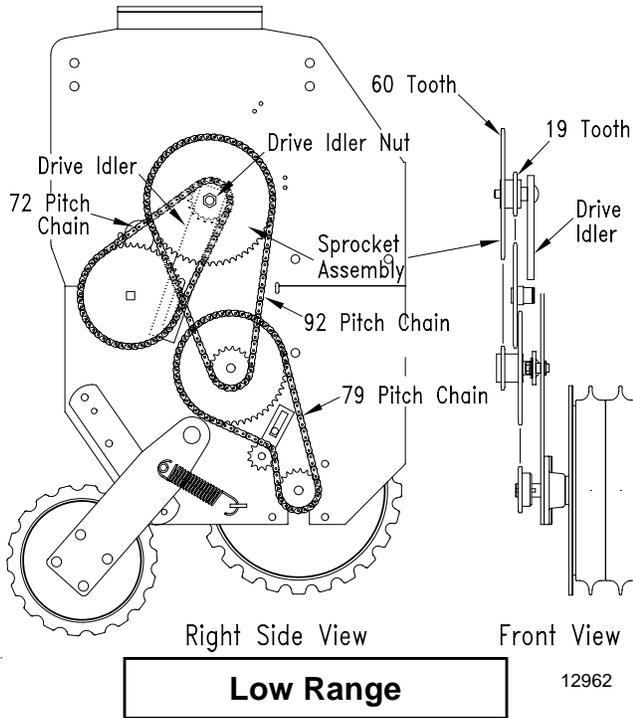


Seed Broadcasting Handle Adjustments
Figure 3-2

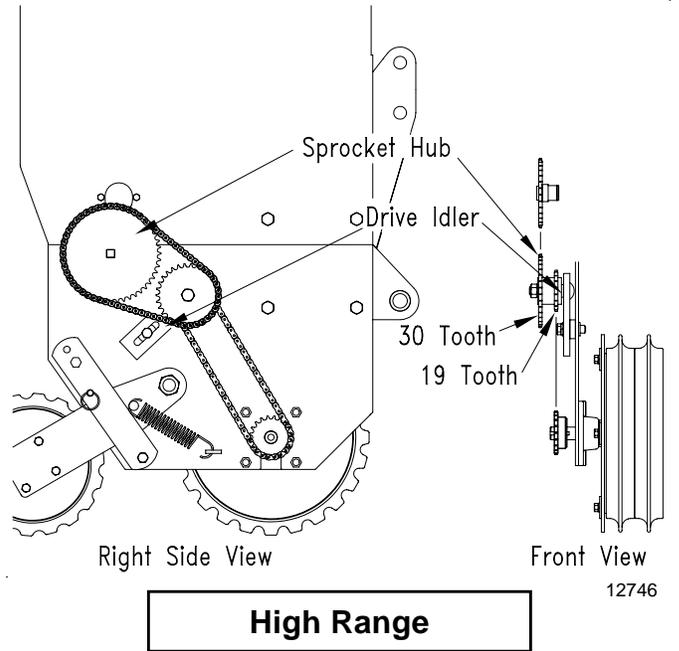
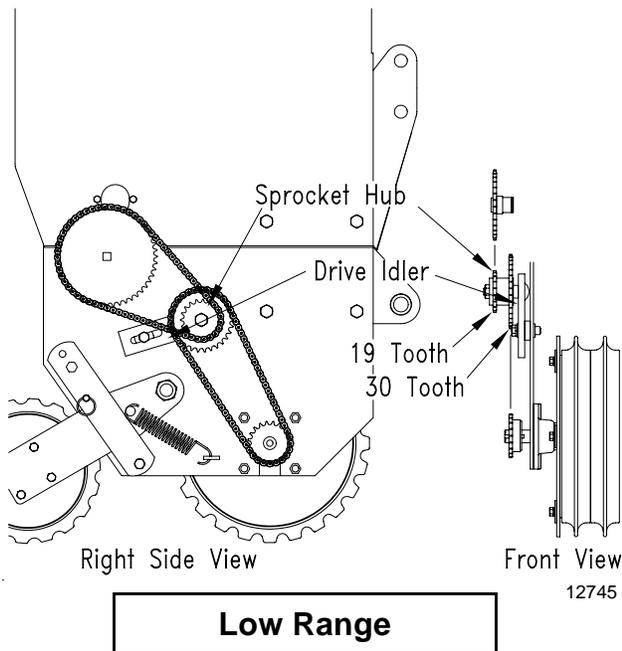
Using the standard setting for seed broadcasting large, fluffy seeds will have a tendency to bridge. This results in plugging. Therefore; it is necessary to adjust the seed broadcasting handle to the LARGE SEEDS BROADCAST position, Figure 3-2. This gives the seeds a larger area to fall through to help eliminate plugging.

NOTE: The agitator option can be used when seeding large, fluffy seeds to prevent bridging in the seed box. However, bridging may still occur in the feed cups if there are stems or leaves mixed in with the seeds.

Section 3: Adjustments



Ag Drive



Turf Drive

Speed Change
Figure 3-3

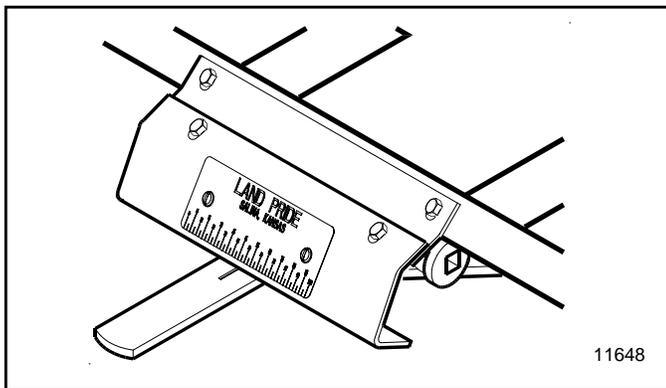
Section 3: Adjustments

Calibrating & Adjusting Seeding Rate

NOTE: Seeding rates will vary greatly with variations in sizes of seeds, although the seeding rates listed in this manual are based on an average seed size, we recommend that you test and adjust your primary seeder using the procedures listed below to help insure an accurate seeding rate.

IMPORTANT: The bold italic areas on the seed rate charts are settings which may result in inconsistent rates or damage to feed cups.

1. Using the seeding rate charts, beginning on page 21 to determine the seeding rate for the seed you will be planting and make the following adjustments.
 - c. On the right hand side of your seeder is the drive system. Change the speed change sprocket, if necessary, to the desired drive type, and adjust the drive idler, see Figure 3-3 on page 19.
 - d. Locate seed rate adjustment handle, Figure 3-4, at the rear of the seeder, and move it to the indicator number obtained from the seeding rate charts. For best results, first move seed rate adjustment handle all the way to the left. Then move the handle to the desired setting, moving from a lower to a higher number.



Seed Rate Adjustment
Figure 3-4

2. Secure the seed broadcasting handle at the rear of the seeder to the proper setting, Figure 3-2 on page 18.
3. There are many factors which will affect seeding rates: seed treatment, weight of seed, surface condition of seed, and roller wheel slippage. Minor adjustments will probably be needed to compensate for the above factors.
4. 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.

5. 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 and support the seeder so the drive roller assembly will rotate.
 - c. Rotate the drive roller assembly to see that the drive system is working properly and that feed cups are free from foreign matter.
 - d. Place a container under the three feed cups to gather the seed as it is metered.
 - e. Rotate the drive roller assembly 25 rotations to get 1000 square feet. To get on acre rotate drive roller assembly until one acre has been tallied on the acremeter or approximately 1071 rotations. Check the three feed cups to make sure each cup has plenty of seed coming into it.
 - f. Weigh the seed which has been metered. Divide by three. This will give you the ounces/pounds metered by each feed cup. Multiply by the number of cups on your seeder to arrive at the total pounds per 1000 square feet or total pounds per acre that your seeder would meter at the setting. If this figure is different than desired, set your feed cup adjustment handle accordingly.
6. You may want to repeat the calibration procedure if the results of your calibration vary greatly from the suggested settings on the chart.

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 5 and 6 to calibrate the seed rate.

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.

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.

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

Section 3: Adjustments

Seed Rate Charts for Ag Drive

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	30	46	68	96	129	166	207	251	298	348	398	450	501	553	603	652	699	743	783	820
Low Range	0	1	4	8	12	17	22	27	33	39	44	49	55	60	64	68	72	75	77	79	80
Alfalfa (Pounds per 1000 Square Feet)																					
High Range	0.0	0.7	1.0	1.6	2.2	2.9	3.8	4.8	5.8	6.9	8.0	9.1	10.3	11.5	12.7	13.8	15.0	16.0	17.0	18.0	18.8
Low Range	0.0	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.8	0.9	1.0	1.1	1.3	1.4	1.5	1.6	1.7	1.7	1.8	1.8	1.8
Bent Grass (Pounds per Acre)																					
High Range	0	20	33	49	66	85	105	126	148	171	193	216	239	261	283	303	323	341	357	371	383
Low Range	0	3	4	5	7	9	11	14	16	19	22	25	28	31	34	36	38	40	42	44	45
Bent Grass (Pounds per 1000 Square Feet)																					
High Range	0.0	0.4	0.8	1.1	1.5	1.9	2.4	2.9	3.4	3.9	4.4	5.0	5.5	6.0	6.5	7.0	7.4	7.8	8.2	8.5	8.8
Low Range	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.6	0.6	0.7	0.8	0.8	0.9	0.9	1.0	1.0	1.0
Bermuda (Pounds per Acre)																					
High Range	0	16	35	55	75	96	117	138	160	183	206	230	254	279	304	330	356	383	410	438	467
Low Range	0	6	7	8	10	12	15	17	20	24	27	30	34	37	40	44	47	50	52	54	56
Bermuda (Pounds per 1000 Square Feet)																					
High Range	0.0	0.4	0.8	1.3	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.3	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.1	10.7
Low Range	0.0	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.5	0.6	0.7	0.8	0.9	0.9	1.0	1.1	1.1	1.2	1.2	1.3
Buffalo Grass (Pounds per Acre)																					
High Range	0	17	23	32	43	56	70	86	102	119	137	154	171	187	202	215	227	237	244	249	251
Low Range	0	2	3	4	5	6	8	10	12	14	16	18	20	22	23	25	26	28	28	29	29
Buffalo Grass (Pounds per 1000 Square Feet)																					
High Range	0.0	0.4	0.5	0.7	1.0	1.3	1.6	2.0	2.3	2.7	3.1	3.5	3.9	4.3	4.6	4.9	5.2	5.4	5.6	5.7	5.8
Low Range	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7
Clover - Ladino (Pounds per Acre)																					
High Range	0	33	47	66	91	122	156	195	236	281	327	375	423	472	520	567	613	656	697	734	767
Low Range	0	6	7	8	12	15	20	25	31	38	45	52	60	67	74	81	87	93	97	102	105
Clover - Ladino (Pounds per 1000 Square Feet)																					
High Range	0.0	0.8	1.1	1.5	2.1	2.8	3.6	4.5	5.4	6.4	7.5	8.6	9.7	10.8	11.9	13.0	14.1	15.1	16.0	16.8	17.6
Low Range	0.0	0.1	0.2	0.2	0.3	0.3	0.5	0.6	0.7	0.9	1.0	1.2	1.4	1.5	1.7	1.8	2.0	2.1	2.2	2.3	2.4
Clover - Red (Pounds per Acre)																					
High Range	0	55	67	87	114	148	187	231	279	329	382	435	488	541	592	641	685	726	761	790	812
Low Range	0	8	8	10	13	17	22	28	34	41	48	56	63	70	77	84	89	94	98	101	102
Clover - Red (Pounds per 1000 Square Feet)																					
High Range	0.0	1.3	1.5	2.0	2.6	3.4	4.3	5.3	6.4	7.6	8.8	10.0	11.2	12.4	13.6	14.7	15.7	16.7	17.5	18.1	18.7
Low Range	0.0	0.2	0.2	0.2	0.3	0.4	0.5	0.6	0.8	0.9	1.1	1.3	1.4	1.6	1.8	1.9	2.0	2.2	2.2	2.3	2.3
Clover - White (Pounds per Acre)																					
High Range	0	48	62	83	110	143	180	221	265	312	360	409	457	505	551	595	635	672	703	729	749
Low Range	0	4	5	8	11	15	20	25	31	38	44	51	57	63	69	75	80	85	89	92	94
Clover - White (Pounds per 1000 Square Feet)																					
High Range	0.0	1.1	1.4	1.9	2.5	3.3	4.1	5.1	6.1	7.2	8.3	9.4	10.5	11.6	12.7	13.7	14.6	15.4	16.1	16.7	17.2
Low Range	0.0	0.1	0.1	0.2	0.3	0.3	0.5	0.6	0.7	0.9	1.0	1.2	1.3	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.1
Fescue - Fine Blade, Turf Type (Pounds per Acre)																					
High Range	0	17	24	35	48	63	81	100	120	141	162	184	206	227	247	267	284	300	314	325	333
Low Range	0	2	3	4	5	7	9	11	13	16	19	21	24	27	29	31	33	35	36	37	37
Fescue - Fine Blade, Turf Type (Pounds per 1000 Square Feet)																					
High Range	0.0	0.4	0.6	0.8	1.1	1.5	1.9	2.3	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.1	6.5	6.9	7.2	7.5	7.7
Low Range	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.8	0.9

NOTE: Seed rates shown in **bold italics** may be inconsistent

Section 3: Adjustments

Seed Rate Charts for Ag Drive (Continued)

Cup Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Fescue K-31 (Pounds per Acre)																					
High Range	0	26	28	34	44	56	71	88	106	126	146	167	188	208	228	247	264	279	292	301	308
Low Range	0	3	3	4	5	6	8	10	12	14	16	18	21	23	25	27	29	31	32	33	34
Fescue K-31 (Pounds per 1000 Square Feet)																					
High Range	0.0	0.6	0.6	0.8	1.0	1.3	1.6	2.0	2.4	2.9	3.4	3.8	4.3	4.8	5.2	5.7	6.1	6.4	6.7	6.9	7.1
Low Range	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.8	0.8
Kentucky Blue Grass (Pounds per Acre)																					
High Range	0	21	21	25	34	46	62	80	101	123	146	170	193	216	237	257	274	288	299	306	308
Low Range	0	3	3	3	4	5	6	8	10	12	14	16	19	21	23	26	28	30	32	33	35
Kentucky Blue Grass (Pounds per 1000 Square Feet)																					
High Range	0.0	0.5	0.5	0.6	0.8	1.1	1.4	1.8	2.3	2.8	3.4	3.9	4.4	4.9	5.4	5.9	6.3	6.6	6.9	7.0	7.1
Low Range	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.8
Lovegrass - Sand (Pounds per Acre)																					
High Range	0	16	41	65	88	111	133	154	176	198	221	244	269	295	322	351	382	415	451	489	531
Low Range	0	1	4	7	10	13	16	19	23	26	29	32	35	39	42	45	48	51	54	56	59
Lovegrass - Sand (Pounds per 1000 Square Feet)																					
High Range	0.0	0.4	0.9	1.5	2.0	2.5	3.0	3.5	4.0	4.6	5.1	5.6	6.2	6.8	7.4	8.1	8.8	9.5	10.4	11.2	12.2
Low Range	0.0	0.0	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.6	0.7	0.7	0.8	0.9	1.0	1.0	1.1	1.2	1.2	1.3	1.4
Lovegrass - Weeping (Pounds per Acre)																					
High Range	0	36	57	83	116	153	195	239	286	335	385	435	484	531	576	619	657	690	718	740	754
Low Range	0	5	7	9	13	17	23	29	35	42	50	57	64	71	78	84	90	95	99	102	103
Lovegrass - Weeping (Pounds per 1000 Square Feet)																					
High Range	0.0	0.8	1.3	1.9	2.7	3.5	4.5	5.5	6.6	7.7	8.8	10.0	11.1	12.2	13.2	14.2	15.1	15.8	16.5	17.0	17.3
Low Range	0.0	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8	1.0	1.1	1.3	1.5	1.6	1.8	1.9	2.1	2.2	2.3	2.3	2.4
Orchard Grass (Pounds per Acre)																					
High Range	0	10	11	13	17	23	30	39	49	60	72	85	98	112	127	141	156	171	185	199	213
Low Range	0	1	1	2	3	3	4	5	7	8	10	11	13	14	16	17	19	20	22	22	23
Orchard Grass (Pounds per 1000 Square Feet)																					
High Range	0.0	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.4	1.6	1.9	2.3	2.6	2.9	3.2	3.6	3.9	4.2	4.6	4.9
Low Range	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5
Rye Grass - Annual (Pounds per Acre)																					
High Range	0	24	34	47	62	80	98	119	140	163	186	210	233	257	280	303	325	346	365	382	398
Low Range	0	4	4	5	7	8	10	12	14	17	19	22	25	28	30	33	36	39	41	44	46
Rye Grass - Annual (Pounds per 1000 Square Feet)																					
High Range	0.0	0.5	0.8	1.1	1.4	1.8	2.3	2.7	3.2	3.7	4.3	4.8	5.4	5.9	6.4	7.0	7.5	7.9	8.4	8.8	9.1
Low Range	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.6	0.6	0.7	0.8	0.8	0.9	0.9	1.0	1.1
Rye Grass - Perennial (Pounds per Acre)																					
High Range	0	27	38	53	72	94	119	145	173	203	232	262	291	319	346	370	392	411	426	437	443
Low Range	0	3	4	6	8	10	13	16	19	23	26	29	33	36	39	42	44	46	48	50	51
Rye Grass - Perennial (Pounds per 1000 Square Feet)																					
High Range	0.0	0.6	0.9	1.2	1.7	2.2	2.7	3.3	4.0	4.7	5.3	6.0	6.7	7.3	7.9	8.5	9.0	9.4	9.8	10.0	10.2
Low Range	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.6	0.7	0.7	0.8	0.9	1.0	1.0	1.1	1.1	1.1	1.2
Sudan Grass (Pounds per Acre)																					
High Range	0	34	50	72	100	133	170	211	255	302	349	398	448	496	544	590	633	674	710	742	769
Low Range	0	7	8	9	11	14	18	22	28	34	40	47	54	60	67	73	78	83	87	89	91
Sudan Grass (Pounds per 1000 Square Feet)																					
High Range	0.0	0.8	1.1	1.7	2.3	3.1	3.9	4.9	5.9	6.9	8.0	9.1	10.3	11.4	12.5	13.5	14.5	15.5	16.3	17.0	17.7
Low Range	0.0	0.2	0.2	0.2	0.2	0.3	0.4	0.5	0.6	0.8	0.9	1.1	1.2	1.4	1.5	1.7	1.8	1.9	2.0	2.1	2.1

Section 3: Adjustments

Seed Rate Charts for Ag Drive (Continued)

Cup Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Vetch (Pounds per Acre)																					
High Range	0	45	59	78	103	132	164	200	237	276	316	356	395	433	469	501	530	555	575	589	596
Low Range	0	1	5	8	12	16	20	24	27	31	35	39	43	48	52	56	60	65	69	73	78
Vetch (Pounds per 1000 Square Feet)																					
High Range	0.0	1.0	1.3	1.8	2.4	3.0	3.8	4.6	5.4	6.3	7.3	8.2	9.1	9.9	10.8	11.5	12.2	12.7	13.2	13.5	13.7
Low Range	0.0	0.0	0.1	0.2	0.3	0.4	0.5	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8
Wheatgrass - Crested (Pounds per Acre)																					
High Range	0	23	23	26	32	41	51	63	76	90	105	121	137	152	167	181	194	206	215	223	228
Low Range	0	2	3	3	4	5	6	7	9	10	11	13	15	17	19	21	23	25	28	31	33
Wheatgrass - Crested (Pounds per 1000 Square Feet)																					
High Range	0.0	0.5	0.5	0.6	0.7	0.9	1.2	1.4	1.7	2.1	2.4	2.8	3.1	3.5	3.8	4.2	4.5	4.7	4.9	5.1	5.2
Low Range	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.8
Wheatgrass - Western (Pounds per Acre)																					
High Range	0	14	16	19	25	33	43	55	68	82	97	112	126	140	153	165	174	182	186	188	190
Low Range	0	1	2	2	3	4	6	7	9	11	12	14	16	17	19	21	22	23	24	25	26
Wheatgrass - Western (Pounds per 1000 Square Feet)																					
High Range	0.0	0.3	0.4	0.4	0.6	0.8	1.0	1.3	1.6	1.9	2.2	2.6	2.9	3.2	3.5	3.8	4.0	4.2	4.3	4.3	4.4
Low Range	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6

For large, fluffy seeds change Seed Broadcasting Handle to LARGE SEEDS BROADCAST (refer to “Seed Broadcasting System” on page 18 for detailed instructions).

To prevent bridging in the seed box, the Agitator Option may also be used.

To prevent bridging in the feed cups, be sure to use clean seeds that are free from stems and leaves.

Follow instructions 3 through 6 on page 20 to calibrate seed rates, using the Brome Grass Seed rates listed below as a guide.

Brome Grass Seed Rate Chart

Cup Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Brome (Pounds Per Acre)																					
High Range	0.0	2.0	1.0	0.6	0.7	1.3	2.4	4.0	6.1	8.6	11.6	15.0	18.8	23.0	27.6	32.6	38.0	43.7	49.7	56.1	62.8
Low Range	0.0	0.2	0.1	0.1	0.1	0.1	0.3	0.4	0.7	0.9	1.3	1.6	2.1	2.5	3.0	3.6	4.2	4.8	5.4	6.1	6.9
Brome (Pounds Per 1000 Square Feet)																					
High Range	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.9	1.0	1.1	1.3	1.4
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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2

NOTE: Seed rates for Brome Grass may be inconsistent, especially at lower setting. It is not recommended to use settings under 50.

Section 3: Adjustments

Metric Seed Rate Charts for Ag Drive

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	33	51	76	107	144	186	232	282	334	390	446	504	562	619	676	730	783	832	878	919
Low Range	0	1	4	9	14	19	25	31	37	43	49	55	61	67	72	77	81	84	87	89	89
Alfalfa (Kilograms per 1000 Square Meters)																					
High Range	0	3.3	5.1	7.6	10.7	14.4	18.6	23.2	28.2	33.4	38.9	44.6	50.4	56.2	61.9	67.6	73.0	78.3	83.2	87.8	91.9
Low Range	0	0.1	0.4	0.9	1.4	1.9	2.5	3.1	3.7	4.3	4.9	5.5	6.1	6.7	7.2	7.7	8.1	8.4	8.7	8.8	8.9
Bent Grass (Kilograms per Hectare)																					
High Range	0	22	37	54	74	95	118	141	166	191	217	242	268	293	317	340	362	382	400	416	429
Low Range	0	4	5	6	8	10	12	15	18	21	25	28	31	34	38	40	43	45	47	49	50
Bent Grass (Kilograms per 1000 Square Meters)																					
High Range	0	2.2	3.7	5.4	7.4	9.5	11.8	14.1	16.6	19.1	21.7	24.2	26.8	29.3	31.7	34.0	36.2	38.2	40.0	41.6	42.9
Low Range	0	0.4	0.5	0.6	0.8	1.0	1.2	1.5	1.8	2.1	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.5	4.7	4.9	5.0
Bermuda (Kilograms per Hectare)																					
High Range	0	18	40	61	84	107	131	155	180	205	231	258	285	313	341	370	399	429	460	491	523
Low Range	0	6	7	9	11	13	16	19	23	26	30	34	38	42	45	49	52	56	58	61	63
Bermuda (Kilograms per 1000 Square Meters)																					
High Range	0	1.8	4.0	6.1	8.4	10.7	13.1	15.5	18.0	20.5	23.1	25.8	28.5	31.3	34.1	37.0	39.9	42.9	46.0	49.1	52.3
Low Range	0	0.6	0.7	0.9	1.1	1.3	1.6	1.9	2.3	2.6	3.0	3.4	3.8	4.2	4.5	4.9	5.2	5.5	5.8	6.1	6.3
Buffalo Grass (Kilograms per Hectare)																					
High Range	0	19	26	36	48	63	79	96	115	134	153	172	191	209	226	241	254	265	274	279	281
Low Range	0	2	3	4	5	7	9	11	13	15	18	20	22	24	26	28	30	31	32	32	33
Buffalo Grass (Kilograms per 1000 Square Meters)																					
High Range	0	1.9	2.6	3.6	4.8	6.2	7.9	9.6	11.5	13.4	15.3	17.2	19.1	20.9	22.6	24.1	25.4	26.5	27.4	27.9	28.1
Low Range	0	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.3	1.5	1.8	2.0	2.2	2.4	2.6	2.8	2.9	3.1	3.2	3.2	3.3
Clover - Ladino (Kilograms per Hectare)																					
High Range	0	37	52	74	102	136	175	218	265	315	367	420	474	529	583	636	687	735	781	822	859
Low Range	0	7	8	9	12	17	22	28	35	43	50	58	67	75	83	90	97	104	109	114	117
Clover - Ladino (Kilograms per 1000 Square Meters)																					
High Range	0	3.7	5.2	7.4	10.2	13.6	17.5	21.8	26.5	31.5	36.7	42.0	47.4	52.9	58.3	63.6	68.7	73.5	78.1	82.2	85.9
Low Range	0	0.7	0.7	0.9	1.2	1.7	2.2	2.8	3.5	4.3	5.0	5.8	6.7	7.5	8.3	9.0	9.7	10.4	10.9	11.4	11.7
Clover - Red (Kilograms per Hectare)																					
High Range	0	61	75	97	128	166	210	259	313	369	428	488	547	606	664	718	768	814	853	886	911
Low Range	0	9	9	11	15	19	25	31	38	46	54	63	71	79	86	94	100	105	110	113	115
Clover - Red (Kilograms per 1000 Square Meters)																					
High Range	0	6.1	7.5	9.7	12.8	16.6	21.0	25.9	31.3	36.9	42.8	48.7	54.7	60.6	66.4	71.8	76.8	81.4	85.3	88.6	91.0
Low Range	0	0.9	0.9	1.1	1.5	1.9	2.5	3.1	3.8	4.6	5.4	6.2	7.1	7.9	8.6	9.4	10.0	10.5	11.0	11.3	11.5
Clover - White (Kilograms per Hectare)																					
High Range	0	54	69	93	123	160	202	248	297	350	403	458	513	566	618	667	712	753	788	817	839
Low Range	0	4	6	9	12	17	22	29	35	42	49	57	64	71	78	84	90	95	99	103	105
Clover - White (Kilograms per 1000 Square Meters)																					
High Range	0	5.4	6.9	9.3	12.3	16.0	20.2	24.8	29.7	35.0	40.3	45.8	51.2	56.6	61.8	66.7	71.2	75.3	78.8	81.7	83.9
Low Range	0	0.4	0.6	0.9	1.2	1.7	2.2	2.8	3.5	4.2	4.9	5.7	6.4	7.1	7.8	8.4	9.0	9.5	9.9	10.3	10.5
Fescue - Fine Blade, Turf Type (Kilograms per Hectare)																					
High Range	0	19	27	39	54	71	91	112	134	158	182	206	231	255	277	299	319	337	352	364	374
Low Range	0	2	3	4	6	8	10	12	15	18	21	24	27	30	33	35	37	39	41	41	42
Fescue - Fine Blade, Turf Type (Kilograms per 1000 Square Meters)																					
High Range	0	1.9	2.7	3.9	5.4	7.1	9.0	11.2	13.4	15.8	18.2	20.6	23.1	25.4	27.7	29.9	31.9	33.6	35.2	36.4	37.3
Low Range	0	0.2	0.3	0.4	0.6	0.7	1.0	1.2	1.5	1.8	2.1	2.4	2.7	3.0	3.3	3.5	3.7	3.9	4.0	4.1	4.2

NOTE: Seed rates shown in **bold italics** may be inconsistent

Section 3: Adjustments

Metric Seed Rate Charts for Ag Drive (Continued)

Cup Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Fescue K-31 (Kilograms per Hectare)																					
High Range	0	29	31	38	49	63	79	98	119	141	164	187	211	234	256	277	296	313	327	338	345
Low Range	0	3	3	4	5	7	9	11	13	15	18	21	23	26	28	30	32	34	36	37	38
Fescue K-31 (Kilograms per 1000 Square Meters)																					
High Range	0	2.9	3.1	3.8	4.9	6.3	7.9	9.8	11.9	14.1	16.4	18.7	21.1	23.4	25.6	27.7	29.6	31.3	32.7	33.8	34.5
Low Range	0	0.3	0.3	0.4	0.5	0.7	0.9	1.1	1.3	1.5	1.8	2.0	2.3	2.6	2.8	3.0	3.2	3.4	3.6	3.7	3.8
Kentucky Blue Grass (Kilograms per Hectare)																					
High Range	0	24	23	28	38	52	69	90	113	138	164	190	216	242	266	288	307	323	335	343	346
Low Range	0	3	3	4	4	6	7	9	11	13	16	18	21	24	26	29	31	34	36	37	39
Kentucky Blue Grass (Kilograms per 1000 Square Meters)																					
High Range	0	2.4	2.3	2.8	3.8	5.2	6.9	9.0	11.3	13.8	16.4	19.0	21.6	24.2	26.6	28.8	30.7	32.3	33.5	34.3	34.6
Low Range	0	0.3	0.3	0.4	0.4	0.6	0.7	0.9	1.1	1.3	1.6	1.8	2.1	2.4	2.6	2.9	3.1	3.4	3.6	3.7	3.9
Lovegrass - Sand (Kilograms per Hectare)																					
High Range	0	18	46	73	99	124	149	173	197	222	248	274	301	330	361	393	428	465	505	548	595
Low Range	0	1	4	7	11	15	18	22	25	29	33	36	40	43	47	50	54	57	60	63	66
Lovegrass - Sand (Kilograms per 1000 Square Meters)																					
High Range	0	1.8	4.6	7.3	9.9	12.4	14.9	17.3	19.7	22.2	24.8	27.4	30.1	33.0	36.1	39.3	42.8	46.5	50.5	54.8	59.5
Low Range	0	0.1	0.4	0.7	1.1	1.4	1.8	2.2	2.5	2.9	3.2	3.6	4.0	4.3	4.7	5.0	5.4	5.7	6.0	6.3	6.6
Lovegrass - Weeping (Kilograms per Hectare)																					
High Range	0	41	63	93	130	172	218	268	321	376	431	487	542	595	646	693	736	774	805	829	845
Low Range	0	6	7	10	14	19	25	32	40	47	56	64	72	80	87	94	101	106	111	114	116
Lovegrass - Weeping (Kilograms per 1000 Square Meters)																					
High Range	0	4.0	6.3	9.3	13.0	17.2	21.8	26.8	32.1	37.6	43.1	48.7	54.2	59.5	64.6	69.3	73.6	77.3	80.5	82.9	84.5
Low Range	0	0.6	0.7	1.0	1.4	1.9	2.5	3.2	4.0	4.7	5.5	6.4	7.2	8.0	8.7	9.4	10.1	10.6	11.1	11.4	11.6
Orchard Grass (Kilograms per Hectare)																					
High Range	0	11	12	15	19	25	34	43	55	67	81	95	110	126	142	158	175	191	207	223	238
Low Range	0	2	2	2	3	4	5	6	8	9	11	12	14	16	18	20	21	23	24	26	
Orchard Grass (Kilograms per 1000 Square Meters)																					
High Range	0	1.1	1.2	1.4	1.9	2.5	3.4	4.3	5.5	6.7	8.0	9.5	11.0	12.6	14.2	15.8	17.5	19.1	20.7	22.3	23.8
Low Range	0	0.1	0.2	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.9	1.1	1.2	1.4	1.6	1.8	2.0	2.1	2.3	2.4	2.6
Rye Grass - Annual (Kilograms per Hectare)																					
High Range	0	27	38	53	70	89	110	133	157	183	208	235	262	288	314	340	364	387	409	429	446
Low Range	0	4	5	6	7	9	11	14	16	19	22	25	28	31	34	37	40	43	46	49	52
Rye Grass - Annual (Kilograms per 1000 Square Meters)																					
High Range	0	2.7	3.8	5.3	7.0	8.9	11.0	13.3	15.7	18.2	20.8	23.5	26.1	28.8	31.4	34.0	36.4	38.7	40.9	42.9	44.6
Low Range	0	0.4	0.5	0.6	0.7	0.9	1.1	1.4	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9	5.2
Rye Grass - Perennial (Kilograms per Hectare)																					
High Range	0	30	43	60	81	105	133	163	194	227	260	294	326	358	388	415	439	460	477	489	496
Low Range	0	3	5	6	9	12	15	18	22	25	29	33	36	40	44	47	50	52	54	56	57
Rye Grass - Perennial (Kilograms per 1000 Square Meters)																					
High Range	0	3.0	4.3	6.0	8.1	10.5	13.3	16.3	19.4	22.7	26.0	29.4	32.6	35.8	38.8	41.5	43.9	46.0	47.7	48.9	49.6
Low Range	0	0.3	0.4	0.6	0.9	1.2	1.5	1.8	2.2	2.5	2.9	3.3	3.6	4.0	4.3	4.7	5.0	5.2	5.4	5.6	5.7
Sudan Grass (Kilograms per Hectare)																					
High Range	0	39	56	81	112	149	191	237	286	338	392	446	502	556	610	661	710	755	796	832	862
Low Range	0	8	9	10	12	15	20	25	31	38	45	53	60	68	75	81	87	93	97	100	102
Sudan Grass (Kilograms per 1000 Square Meters)																					
High Range	0	3.8	5.6	8.1	11.2	14.9	19.1	23.7	28.6	33.8	39.2	44.6	50.1	55.6	61.0	66.1	71.0	75.5	79.6	83.2	86.2
Low Range	0	0.8	0.9	1.0	1.2	1.5	2.0	2.5	3.1	3.8	4.5	5.3	6.0	6.8	7.5	8.1	8.7	9.3	9.7	10.0	10.2

Section 3: Adjustments

Metric Seed Rate Charts for Ag Drive (Continued)

Cup Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Vetch (Kilograms per Hectare)																					
High Range	0	50	66	87	115	148	184	224	266	310	354	399	443	485	525	562	594	622	644	660	668
Low Range	0	1	5	9	13	18	22	26	31	35	40	44	49	53	58	63	67	72	77	82	87
Vetch (Kilograms per 1000 Square Meters)																					
High Range	0.0	5.0	7.0	9.0	12.0	15.0	18.0	22.0	27.0	31.0	35.0	40.0	44.0	49.0	53.0	56.0	59.0	62.0	64.0	66.0	67.0
Low Range	0.0	0.0	1.0	1.0	1.0	2.0	2.0	3.0	3.0	4.0	4.0	4.0	5.0	5.0	6.0	6.0	7.0	7.0	8.0	8.0	9.0
Wheatgrass - Crested (Kilograms per Hectare)																					
High Range	0	25	26	30	36	45	57	70	85	101	118	135	153	170	187	203	217	230	241	250	256
Low Range	0	2	3	4	5	6	7	8	10	11	13	15	17	19	21	23	26	29	31	34	37
Wheatgrass - Crested (Kilograms per 1000 Square Meters)																					
High Range	0	2.5	2.6	3.0	3.6	4.5	5.7	7.0	8.5	10.1	11.8	13.5	15.3	17.0	18.7	20.3	21.7	23.0	24.1	25.0	25.6
Low Range	0	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.1	1.3	1.5	1.7	1.9	2.1	2.3	2.6	2.8	3.1	3.4	3.7
Wheatgrass - Western (Kilograms per Hectare)																					
High Range	0	16	18	21	28	37	48	62	77	92	109	125	142	157	172	184	195	204	209	211	213
Low Range	0	1	2	3	4	5	6	8	10	12	14	16	18	20	21	23	25	26	27	28	29
Wheatgrass - Western (Kilograms per 1000 Square Meters)																					
High Range	0	1.6	1.8	2.1	2.8	3.7	4.8	6.2	7.7	9.2	10.9	12.5	14.2	15.7	17.2	18.4	19.5	20.3	20.9	21.1	21.3
Low Range	0	0.1	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.4	1.6	1.8	1.9	2.1	2.3	2.5	2.6	2.7	2.8	2.9

For large, fluffy seeds change Seed Broadcasting Handle to LARGE SEEDS BROADCAST (refer to “Seed Broadcasting System” on page 18 for detailed instructions).

To prevent bridging in the seed box, the Agitator Option may also be used.

To prevent bridging in the feed cups, be sure to use clean seeds that are free from stems and leaves.

Follow instructions 3 through 6 on page 20 to calibrate seed rates, using the Brome Grass Seed rates listed below as a guide.

Metric Brome Seed Rate Chart

Cup Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Brome (Kilograms per Hectare)																					
High Range	0.0	2.2	1.1	0.7	0.8	1.5	2.7	4.5	6.8	9.6	13.0	16.8	21.1	25.8	30.9	36.5	42.6	49.0	55.7	62.9	70.4
Low Range	0.0	0.2	0.1	0.1	0.1	0.1	0.3	0.4	0.8	1.0	1.5	1.8	2.4	2.8	3.4	4.0	4.7	5.4	6.1	6.8	8.0
Brome (Kilograms per 1000 Square Meters)																					
High Range	0.0	0.2	0.1	0.1	0.1	0.2	0.3	0.5	0.7	1.0	1.3	1.7	2.1	2.6	3.1	3.7	4.3	4.9	5.6	6.3	7.7
Low Range	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.5	0.6	0.7	0.8

Note: Seed rates for Brome Grass may be inconsistent, especially at lower setting. It is not recommended to use settings under 50.

Section 3: Adjustments

Seed Rate Charts for Turf Drive

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	66	102	146	196	251	311	376	443	514	585	658	731	804	875	944	1010	1072	1130	1183
Low Range	0	8	17	41	65	91	116	143	169	197	225	253	282	311	341	372	403	434	467	499	532
Alfalfa (Pounds per 1000 Square Feet)																					
High Range	0	0.8	1.5	2.3	3.3	4.5	5.8	7.1	8.6	10.2	11.8	13.4	15.1	16.8	18.4	20.1	21.7	23.2	24.6	25.9	27.2
Low Range	0.0	0.2	0.4	0.9	1.5	2.1	2.7	3.3	3.9	4.5	5.2	5.8	6.5	7.1	7.8	8.5	9.2	10.0	10.7	11.5	12.2
Bent Grass (Pounds per Acre)																					
High Range	0	26	47	72	99	128	160	194	228	264	300	335	371	405	438	470	499	525	549	569	585
Low Range	0	13	20	28	38	49	61	75	88	102	117	131	146	159	173	185	197	207	216	223	229
Bent Grass (Pounds per 1000 Square Feet)																					
High Range	0.0	0.6	1.1	1.6	2.3	2.9	3.7	4.4	5.2	6.1	6.9	7.7	8.5	9.3	10.1	10.8	11.4	12.1	12.6	13.1	13.4
Low Range	0.0	0.3	0.5	0.6	0.9	1.1	1.4	1.7	2.0	2.4	2.7	3.0	3.3	3.7	4.0	4.3	4.5	4.8	5.0	5.1	5.3
Bermuda (Pounds per Acre)																					
High Range	0	60	75	95	118	145	175	207	242	278	316	354	393	432	471	508	545	580	612	642	670
Low Range	0	14	25	36	48	60	72	85	98	111	124	138	151	165	179	193	208	222	237	252	267
Bermuda (Pounds per 1000 Square Feet)																					
High Range	0.0	1.4	1.7	2.2	2.7	3.3	4.0	4.8	5.6	6.4	7.2	8.1	9.0	9.9	10.8	11.7	12.5	13.3	14.1	14.7	15.4
Low Range	0.0	0.3	0.6	0.8	1.1	1.4	1.7	1.9	2.2	2.5	2.8	3.2	3.5	3.8	4.1	4.4	4.8	5.1	5.4	5.8	6.1
Buffalo Grass (Pounds per Acre)																					
High Range	0	28	33	43	57	74	95	118	143	168	195	221	246	271	293	313	329	342	350	354	363
Low Range	0	10	13	18	25	32	40	50	59	69	80	90	100	109	118	126	133	139	143	146	147
Buffalo Grass (Pounds per 1000 Square Feet)																					
High Range	0.0	0.6	0.7	1.0	1.3	1.7	2.2	2.7	3.3	3.9	4.5	5.1	5.7	6.2	6.7	7.2	7.6	7.8	8.0	8.1	8.3
Low Range	0.0	0.2	0.3	0.4	0.6	0.7	0.9	1.1	1.4	1.6	1.8	2.1	2.3	2.5	2.7	2.9	3.1	3.2	3.3	3.3	3.4
Clover - Ladino (Pounds per Acre)																					
High Range	0	48	71	102	141	186	237	293	352	415	480	546	613	680	745	808	869	925	977	1024	1064
Low Range	0	20	27	39	54	73	95	120	147	176	206	238	270	302	334	366	397	427	455	480	504
Clover - Ladino (Pounds per 1000 Square Feet)																					
High Range	0.0	1.1	1.6	2.4	3.2	4.3	5.4	6.7	8.1	9.5	11.0	12.5	14.1	15.6	17.1	18.6	19.9	21.2	22.4	23.5	24.4
Low Range	0.0	0.5	0.6	0.9	1.2	1.7	2.2	2.8	3.4	4.0	4.7	5.5	6.2	6.9	7.7	8.4	9.1	9.8	10.4	11.0	11.6
Clover - White (Pounds per Acre)																					
High Range	0	62	92	129	173	223	277	336	399	464	531	599	667	735	801	866	927	985	1039	1087	1129
Low Range	0	35	40	50	65	84	106	131	159	188	219	250	281	312	341	369	394	417	436	452	462
Clover - White (Pounds per 1000 Square Feet)																					
High Range	0.0	1.4	2.1	3.0	4.0	5.1	6.4	7.7	9.1	10.6	12.2	13.7	15.3	16.9	18.4	19.9	21.3	22.6	23.8	25.0	25.9
Low Range	0.0	0.8	0.9	1.1	1.5	1.9	2.4	3.0	3.6	4.3	5.0	5.7	6.4	7.2	7.8	8.5	9.1	9.6	10.0	10.4	10.6
Fescue - Fine Blade, Turf Type (Pounds per Acre)																					
High Range	0	35	41	52	70	91	117	146	177	210	244	279	313	345	376	404	429	449	465	475	478
Low Range	0	10	14	21	29	38	49	61	74	87	101	115	128	141	154	165	175	184	191	196	199
Fescue - Fine Blade, Turf Type (Pounds per 1000 Square Feet)																					
High Range	0.0	0.8	0.9	1.2	1.6	2.1	2.7	3.3	4.1	4.8	5.6	6.4	7.2	7.9	8.6	9.3	9.8	10.3	10.7	10.9	11.0
Low Range	0.0	0.2	0.3	0.5	0.7	0.9	1.1	1.4	1.7	2.0	2.3	2.6	2.9	3.2	3.5	3.8	4.0	4.2	4.4	4.5	4.6
Fescue K-31 (Pounds per Acre)																					
High Range	0	36	40	50	64	82	104	129	156	185	215	245	276	306	334	361	386	407	425	439	448
Low Range	0	5	9	14	20	27	35	44	53	63	74	85	96	107	118	129	140	151	161	171	179
Fescue K-31 (Pounds per 1000 Square Feet)																					
High Range	0.0	0.8	0.9	1.1	1.5	1.9	2.4	3.0	3.6	4.2	4.9	5.6	6.3	7.0	7.7	8.3	8.9	9.4	9.8	10.1	10.3
Low Range	0.0	0.1	0.2	0.3	0.5	0.6	0.8	1.0	1.2	1.5	1.7	1.9	2.2	2.5	2.7	3.0	3.2	3.5	3.7	3.9	4.1

NOTE: Seed rates shown in **bold italics** may be inconsistent

Section 3: Adjustments

Seed Rate Charts for Turf Drive (Continued)

Cup Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Kentucky Blue Grass (Pounds per Acre)																					
High Range	0	15	21	30	43	60	79	101	125	151	179	207	237	267	297	326	355	383	410	435	457
Low Range	0	9	11	15	20	27	34	42	51	61	72	83	94	106	118	131	143	155	167	178	190
Kentucky Blue Grass (Pounds per 1000 Square Feet)																					
High Range	0.0	0.3	0.5	0.7	1.0	1.4	1.8	2.3	2.9	3.5	4.1	4.8	5.4	6.1	6.8	7.5	8.2	8.8	9.4	10.0	10.5
Low Range	0.0	0.2	0.3	0.3	0.5	0.6	0.8	1.0	1.2	1.4	1.6	1.9	2.2	2.4	2.7	3.0	3.3	3.6	3.8	4.1	4.4
Lovegrass - Sand (Pounds per Acre)																					
High Range	0	88	92	105	125	154	189	230	276	326	380	436	495	554	614	674	733	789	843	893	939
Low Range	0	12	27	42	57	71	85	99	113	127	142	157	173	190	208	228	249	271	295	321	349
Lovegrass - Sand (Pounds per 1000 Square Feet)																					
High Range	0.0	2.0	2.1	2.4	2.9	3.5	4.3	5.3	6.3	7.5	8.7	10.0	11.4	12.7	14.1	15.5	16.8	18.1	19.4	20.5	21.6
Low Range	0.0	0.3	0.6	1.0	1.3	1.6	1.9	2.3	2.6	2.9	3.3	3.6	4.0	4.4	4.8	5.2	5.7	6.2	6.8	7.4	8.0
Lovegrass - Weeping (Pounds per Acre)																					
High Range	0	64	95	135	183	238	299	364	433	504	576	648	719	788	854	915	970	1018	1059	1090	1111
Low Range	0	11	26	45	66	90	116	144	173	203	234	265	296	326	355	383	409	433	454	471	486
Lovegrass - Weeping (Pounds per 1000 Square Feet)																					
High Range	0.0	1.5	2.2	3.1	4.2	5.5	6.9	8.4	9.9	11.6	13.2	14.9	16.5	18.1	19.6	21.0	22.3	23.4	24.3	25.0	25.5
Low Range	0.0	0.3	0.6	1.0	1.5	2.1	2.7	3.3	4.0	4.7	5.4	6.1	6.8	7.5	8.2	8.8	9.4	9.9	10.4	10.8	11.2
Orchard Grass (Pounds per Acre)																					
High Range	0	16	18	20	25	34	45	59	75	92	111	130	150	171	191	210	229	246	261	275	286
Low Range	0	5	6	9	13	17	22	27	33	40	47	54	61	69	77	85	92	100	108	115	122
Orchard Grass (Pounds per 1000 Square Feet)																					
High Range	0.0	0.4	0.4	0.5	0.6	0.8	1.0	1.3	1.7	2.1	2.5	3.0	3.5	3.9	4.4	4.8	5.3	5.6	6.0	6.3	6.6
Low Range	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	0.9	1.1	1.2	1.4	1.6	1.8	1.9	2.1	2.3	2.5	2.6	2.8
Rye Grass - Annual (Pounds per Acre)																					
High Range	0	48	57	71	89	110	135	162	191	221	253	285	318	350	381	411	439	465	488	508	524
Low Range	0	20	23	28	35	43	54	65	78	91	106	120	135	150	165	179	193	205	217	227	235
Rye Grass - Annual (Pounds per 1000 Square Feet)																					
High Range	0.0	1.1	1.3	1.6	2.0	2.5	3.1	3.7	4.4	5.1	5.8	6.5	7.3	8.0	8.7	9.4	10.1	10.7	11.2	11.7	12.0
Low Range	0.0	0.5	0.5	0.6	0.8	1.0	1.2	1.5	1.8	2.1	2.4	2.8	3.1	3.4	3.8	4.1	4.4	4.7	5.0	5.2	5.4
Rye Grass - Perennial (Pounds per Acre)																					
High Range	0	24	46	73	105	141	179	220	263	307	352	396	439	480	519	555	588	615	638	655	666
Low Range	0	22	25	31	41	53	68	84	102	121	141	160	179	198	215	231	245	256	264	269	271
Rye Grass - Perennial (Pounds per 1000 Square Feet)																					
High Range	0.0	0.5	1.1	1.7	2.4	3.2	4.1	5.1	6.0	7.1	8.1	9.1	10.1	11.0	11.9	12.7	13.5	14.1	14.7	15.0	15.3
Low Range	0.0	0.5	0.6	0.7	0.9	1.2	1.6	1.9	2.3	2.8	3.2	3.7	4.1	4.5	4.9	5.3	5.6	5.9	6.1	6.2	6.2
Sudan Grass (Pounds per Acre)																					
High Range	0	34	67	105	150	199	253	311	372	435	500	566	633	699	764	828	889	948	1002	1053	1098
Low Range	0	26	31	42	57	76	99	125	153	183	214	245	277	308	337	365	391	414	433	448	458
Sudan Grass (Pounds per 1000 Square Feet)																					
High Range	0.0	0.8	1.5	2.4	3.4	4.6	5.8	7.1	8.5	10.0	11.5	13.0	14.5	16.0	17.5	19.0	20.4	21.8	23.0	24.2	25.2
Low Range	0.0	0.6	0.7	1.0	1.3	1.7	2.3	2.9	3.5	4.2	4.9	5.6	6.4	7.1	7.7	8.4	9.0	9.5	9.9	10.3	10.5
Vetch (Pounds per Acre)																					
High Range	0	50	90	133	178	226	276	328	381	435	490	546	601	656	711	765	818	870	920	968	1013
Low Range	0	12	26	42	59	77	96	117	138	160	183	206	229	253	276	299	322	344	366	387	407
Vetch (Pounds per 1000 Square Feet)																					
High Range	0.0	1.1	2.1	3.0	4.1	5.2	6.3	7.5	8.7	10.0	11.3	12.5	13.8	15.1	16.3	17.6	18.8	20.0	21.1	22.2	23.3
Low Range	0.0	0.3	0.6	1.0	1.3	1.8	2.2	2.7	3.2	3.7	4.2	4.7	5.3	5.8	6.3	6.9	7.4	7.9	8.4	8.9	9.3

Section 3: Adjustments

Seed Rate Charts for Turf Drive (Continued)

Cup Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Wheatgrass - Crested (Pounds per Acre)																					
High Range	0	34	34	39	48	60	76	93	113	135	157	180	204	227	249	270	289	307	321	333	341
Low Range	0	6	10	15	21	27	34	41	49	57	65	74	83	92	101	110	118	127	136	144	152
Wheatgrass - Crested (Pounds per 1000 Square Feet)																					
High Range	0.0	0.8	0.8	0.9	1.1	1.4	1.7	2.1	2.6	3.1	3.6	4.1	4.7	5.2	5.7	6.2	6.6	7.0	7.4	7.6	7.8
Low Range	0.0	0.1	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.3	1.5	1.7	1.9	2.1	2.3	2.5	2.7	2.9	3.1	3.3	3.5
Wheatgrass - Western (Pounds per Acre)																					
High Range	0	9	16	25	36	49	64	80	97	115	133	152	171	189	206	223	239	253	266	276	285
Low Range	0	7	9	12	16	22	28	36	44	53	62	71	80	89	98	107	115	122	128	133	137
Wheatgrass - Western (Pounds per 1000 Square Feet)																					
High Range	0.0	0.2	0.4	0.6	0.8	1.1	1.5	1.8	2.2	2.6	3.1	3.5	3.9	4.3	4.7	5.1	5.5	5.8	6.1	6.3	6.5
Low Range	0.0	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.3	2.4	2.6	2.8	2.9	3.1	3.1

Metric Seed Rate Charts for Turf Drive

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	41	73	114	163	219	281	349	421	497	576	656	738	819	901	980	1057	1132	1201	1266	1326
Low Range	0	9	19	46	73	102	130	160	190	220	252	284	316	349	383	417	451	487	523	559	597
Alfalfa (Kilograms per 1000 Square Meters)																					
High Range	0.0	4.1	7.3	11.4	16.3	21.9	28.1	34.9	42.1	49.7	57.5	65.6	73.8	81.9	90.1	98.0	105.7	113.1	120.1	126.6	132.6
Low Range	0.0	0.9	1.8	4.6	7.3	10.1	13.0	16.0	19.0	22.0	25.2	28.3	31.6	34.9	38.2	41.7	45.1	48.7	52.3	55.9	59.7
Bent Grass (Kilograms per Hectare)																					
High Range	0	29	53	80	111	144	180	217	256	296	336	376	415	454	491	526	559	589	615	637	655
Low Range	0	14	22	32	43	55	69	84	99	115	131	147	163	179	194	208	220	232	242	250	256
Bent Grass (Kilograms per 1000 Square Meters)																					
High Range	0.0	2.9	5.3	8.0	11.1	14.4	17.9	21.7	25.6	29.6	33.6	37.6	41.5	45.4	49.1	52.6	55.9	58.9	61.5	63.7	65.5
Low Range	0.0	1.4	2.2	3.1	4.3	5.5	6.9	8.3	9.9	11.5	13.1	14.7	16.3	17.9	19.3	20.8	22.0	23.2	24.2	25.0	25.6
Bermuda (Kilograms per Hectare)																					
High Range	0	67	84	106	133	163	196	232	271	312	354	397	441	484	527	570	610	649	686	720	751
Low Range	0	16	28	41	54	67	81	95	110	124	139	154	169	185	201	217	233	249	266	282	299
Bermuda (Kilograms per 1000 Square Meters)																					
High Range	0.0	6.7	8.4	10.6	13.3	16.3	19.6	23.2	27.1	31.2	35.4	39.7	44.0	48.4	52.7	57.0	61.0	64.9	68.6	72.0	75.1
Low Range	0.0	1.6	2.8	4.1	5.4	6.7	8.1	9.5	10.9	12.4	13.9	15.4	16.9	18.5	20.1	21.7	23.3	24.9	26.6	28.2	29.9
Buffalo Grass (Kilograms per Hectare)																					
High Range	0	31	37	48	63	83	106	132	160	189	218	247	276	303	328	350	369	383	393	396	407
Low Range	0	11	15	20	28	36	45	56	66	78	89	101	112	122	132	141	149	155	160	163	164
Buffalo Grass (Kilograms per 1000 Square Meters)																					
High Range	0.0	3.1	3.7	4.8	6.3	8.3	10.6	13.2	16.0	18.9	21.8	24.7	27.6	30.3	32.8	35.0	36.9	38.3	39.2	39.6	40.7
Low Range	0.0	1.0	1.5	2.0	2.8	3.6	4.5	5.6	6.6	7.8	8.9	10.1	11.2	12.2	13.2	14.1	14.9	15.5	16.0	16.3	16.4
Clover - Ladino (Kilograms per Hectare)																					
High Range	0	54	80	115	158	209	266	328	395	465	538	612	687	762	835	906	974	1037	1095	1147	1193
Low Range	0	23	31	44	61	82	107	134	165	197	231	266	302	339	375	410	445	478	509	538	564
Clover - Ladino (Kilograms per 1000 Square Meters)																					
High Range	0.0	5.4	8.0	11.5	15.8	20.9	26.5	32.8	39.5	46.5	53.8	61.2	68.7	76.2	83.5	90.6	97.3	103.7	109.5	114.7	119.3
Low Range	0.0	2.3	3.1	4.4	6.1	8.2	10.7	13.4	16.4	19.7	23.1	26.6	30.2	33.9	37.5	41.0	44.5	47.8	50.9	53.8	56.4

NOTE: Seed rates shown in **bold italics** may be inconsistent

Section 3: Adjustments

Metric Seed Rate Charts for Turf Drive (Continued)

Cup Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Clover - White (Kilograms per Hectare)																					
High Range	0	70	103	145	194	249	311	377	447	520	595	671	748	824	898	970	1039	1104	1164	1218	1265
Low Range	0	39	45	56	73	94	119	147	178	211	245	280	315	349	382	413	442	468	489	506	518
Clover - White (Kilograms per 1000 Square Meters)																					
High Range	0.0	7.0	10.3	14.5	19.4	24.9	31.1	37.7	44.7	52.0	59.5	67.1	74.8	82.4	89.8	97.0	103.9	110.4	116.4	121.8	126.5
Low Range	0.0	3.9	4.4	5.6	7.2	9.4	11.9	14.7	17.8	21.1	24.5	28.0	31.5	34.9	38.2	41.3	44.2	46.7	48.9	50.6	51.8
Fescue - Fine Blade, Turf Type (Kilograms per Hectare)																					
High Range	0	40	46	59	78	102	131	163	199	236	274	312	350	387	421	453	481	503	521	532	536
Low Range	0	11	16	23	32	43	55	68	83	98	113	128	144	158	172	185	196	206	214	220	223
Fescue - Fine Blade, Turf Type (Kilograms per 1000 Square Meters)																					
High Range	0.0	4.0	4.6	5.9	7.8	10.2	13.1	16.3	19.9	23.6	27.4	31.2	35.0	38.7	42.1	45.3	48.0	50.3	52.1	53.2	53.6
Low Range	0.0	1.1	1.6	2.3	3.2	4.3	5.5	6.8	8.3	9.8	11.3	12.8	14.3	15.8	17.2	18.5	19.6	20.6	21.4	22.0	22.3
Fescue K-31(Kilograms per Hectare)																					
High Range	0	40	45	56	71	92	116	144	174	207	240	275	309	342	375	405	432	457	477	492	502
Low Range	0	6	10	16	22	30	39	49	60	71	83	95	107	120	133	145	157	169	180	191	201
Fescue K-31 (Kilograms per 1000 Square Meters)																					
High Range	0.0	4.0	4.5	5.5	7.1	9.2	11.6	14.4	17.4	20.7	24.0	27.5	30.9	34.2	37.5	40.5	43.2	45.6	47.7	49.2	50.2
Low Range	0.0	0.6	1.0	1.6	2.2	3.0	3.9	4.9	6.0	7.1	8.3	9.5	10.7	12.0	13.3	14.5	15.7	16.9	18.0	19.1	20.1
Kentucky Blue Grass (Kilograms per Hectare)																					
High Range	0	17	23	34	48	67	89	113	140	169	200	233	266	299	333	366	398	430	459	487	513
Low Range	0	10	12	17	23	30	38	47	58	69	81	93	106	119	133	146	160	174	187	200	213
Kentucky Blue Grass (Kilograms per 1000 Square Meters)																					
High Range	0.0	1.7	2.3	3.4	4.8	6.7	8.8	11.3	14.0	16.9	20.0	23.2	26.5	29.9	33.3	36.6	39.8	43.0	45.9	48.7	51.2
Low Range	0.0	1.0	1.2	1.7	2.3	3.0	3.8	4.7	5.8	6.9	8.1	9.3	10.6	11.9	13.3	14.6	16.0	17.4	18.7	20.0	21.3
Lovegrass - Sand (Kilograms per Hectare)																					
High Range	0	99	103	117	141	172	211	257	309	365	425	489	554	621	689	755	821	884	945	1001	1053
Low Range	0	13	31	48	64	80	95	111	126	142	159	176	194	213	233	255	279	304	331	360	392
Lovegrass - Sand (Kilograms per 1000 Square Meters)																					
High Range	0.0	9.9	10.3	11.7	14.0	17.2	21.1	25.7	30.9	36.5	42.5	48.9	55.4	62.1	68.9	75.5	82.1	88.4	94.5	100.1	105.3
Low Range	0.0	1.3	3.1	4.8	6.4	7.9	9.5	11.1	12.6	14.2	15.9	17.6	19.4	21.3	23.3	25.5	27.8	30.4	33.1	36.0	39.1
Lovegrass - Weeping (Kilograms per Hectare)																					
High Range	0	72	106	151	205	266	335	408	485	564	645	726	806	883	957	1025	1087	1141	1186	1221	1245
Low Range	0	13	29	50	74	101	130	161	194	228	262	297	332	365	398	429	458	485	508	528	545
Lovegrass - Weeping (Kilograms per 1000 Square Meters)																					
High Range	0.0	7.2	10.6	15.1	20.5	26.6	33.4	40.8	48.5	56.4	64.5	72.6	80.6	88.3	95.7	102.5	108.7	114.1	118.6	122.1	124.5
Low Range	0.0	1.3	2.9	5.0	7.4	10.1	13.0	16.1	19.4	22.8	26.2	29.7	33.2	36.5	39.8	42.9	45.8	48.5	50.8	52.8	54.5
Orchard Grass (Kilograms per Hectare)																					
High Range	0	18	20	22	28	38	51	66	84	103	124	146	169	191	214	236	256	276	293	308	320
Low Range	0	5	7	10	14	19	24	31	37	45	52	60	69	77	86	95	104	112	121	129	137
Orchard Grass (Kilograms per 1000 Square Meters)																					
High Range	0.0	1.8	2.0	2.2	2.8	3.8	5.0	6.6	8.4	10.3	12.4	14.6	16.9	19.1	21.4	23.6	25.6	27.6	29.3	30.8	32.0
Low Range	0.0	0.5	0.7	1.0	1.4	1.9	2.4	3.1	3.7	4.5	5.2	6.0	6.9	7.7	8.6	9.5	10.4	11.2	12.1	12.9	13.7
Rye Grass - Annual (Kilograms per Hectare)																					
High Range	0	54	64	80	100	124	152	181	214	248	284	320	356	392	427	461	492	521	547	570	588
Low Range	0	23	26	31	39	49	60	73	87	103	119	135	152	168	185	201	216	230	243	254	264
Rye Grass - Annual (Kilograms per 1000 Square Meters)																					
High Range	0.0	5.4	6.4	8.0	10.0	12.4	15.1	18.1	21.4	24.8	28.3	32.0	35.6	39.2	42.7	46.1	49.2	52.1	54.7	57.0	58.8
Low Range	0.0	2.3	2.6	3.1	3.9	4.8	6.0	7.3	8.7	10.2	11.8	13.5	15.2	16.8	18.5	20.1	21.6	23.0	24.3	25.4	26.4

NOTE: Seed rates shown in **bold italics** may be inconsistent

Section 3: Adjustments

Metric Seed Rate Charts for Turf Drive (Continued)

Cup Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rye Grass - Perennial (Kilograms per Hectare)																					
High Range	0	27	51	82	118	158	201	247	295	344	394	443	492	538	582	622	658	690	715	735	747
Low Range	0	24	28	35	46	60	76	95	115	136	157	179	201	222	241	259	274	287	296	302	303
Rye Grass - Perennial (Kilograms per 1000 Square Meters)																					
High Range	0.0	2.7	5.1	8.2	11.8	15.8	20.1	24.7	29.5	34.4	39.4	44.3	49.2	53.8	58.2	62.2	65.8	69.0	71.5	73.5	74.7
Low Range	0.0	2.4	2.8	3.5	4.6	6.0	7.6	9.4	11.5	13.6	15.7	17.9	20.1	22.2	24.1	25.9	27.4	28.7	29.6	30.2	30.3
Sudan Grass (Kilograms per Hectare)																					
High Range	0	38	75	118	168	223	284	349	417	488	561	635	709	783	857	928	997	1062	1123	1180	1231
Low Range	0	29	35	47	64	85	111	140	171	205	239	275	310	345	378	409	438	463	485	502	513
Sudan Grass (Kilograms per 1000 Square Meters)																					
High Range	0.0	3.8	7.5	11.8	16.8	22.3	28.4	34.9	41.7	48.8	56.1	63.5	70.9	78.3	85.7	92.8	99.7	106.2	112.3	118.0	123.1
Low Range	0.0	2.9	3.5	4.7	6.4	8.5	11.1	14.0	17.1	20.5	23.9	27.5	31.0	34.5	37.8	40.9	43.8	46.3	48.5	50.2	51.3
Vetch (Kilograms per Hectare)																					
High Range	0	56	100	149	200	254	310	368	427	488	549	611	674	736	797	858	917	975	1031	1085	1136
Low Range	0	14	29	47	66	86	108	131	155	180	205	231	257	283	309	335	361	386	410	433	456
Vetch (Kilograms per 1000 Square Meters)																					
High Range	0	6	10	15	20	25	31	37	43	49	55	61	67	74	80	86	92	98	103	108	114
Low Range	0	1	3	5	7	9	11	13	15	18	20	23	26	28	31	34	36	39	41	43	46
Wheatgrass - Crested (Kilograms per Hectare)																					
High Range	0	38	39	44	54	68	85	105	127	151	176	202	228	254	279	303	324	344	360	373	382
Low Range	0	7	11	17	23	30	38	46	54	64	73	83	93	103	113	123	133	143	152	162	170
Wheatgrass - Crested (Kilograms per 1000 Square Meters)																					
High Range	0.0	3.8	3.9	4.4	5.4	6.8	8.5	10.5	12.7	15.1	17.6	20.2	22.8	25.4	27.9	30.2	32.4	34.3	36.0	37.3	38.2
Low Range	0.0	0.7	1.1	1.7	2.3	3.0	3.8	4.6	5.4	6.3	7.3	8.3	9.3	10.3	11.3	12.3	13.3	14.3	15.2	16.1	17.0
Wheatgrass - Western (Kilograms per Hectare)																					
High Range	0	10	18	28	41	55	72	90	109	129	150	170	191	212	231	250	268	284	298	310	319
Low Range	0	8	10	13	18	24	32	40	49	59	69	79	90	100	110	120	128	136	143	149	153
Wheatgrass - Western (Kilograms per 1000 Square Meters)																					
High Range	0.0	1.0	1.8	2.8	4.1	5.5	7.2	9.0	10.9	12.9	15.0	17.0	19.1	21.1	23.1	25.0	26.8	28.4	29.8	31.0	31.9
Low Range	0.0	0.8	1.0	1.3	1.8	2.4	3.2	4.0	4.9	5.9	6.9	7.9	9.0	10.0	11.0	11.9	12.8	13.6	14.3	14.9	15.3

Section 3: Adjustments

Small Grass Seeds Attachment (Optional)

Seed Rate Speed Change

On the left hand side of your seeder is the small grass seeds drive system. This system 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).

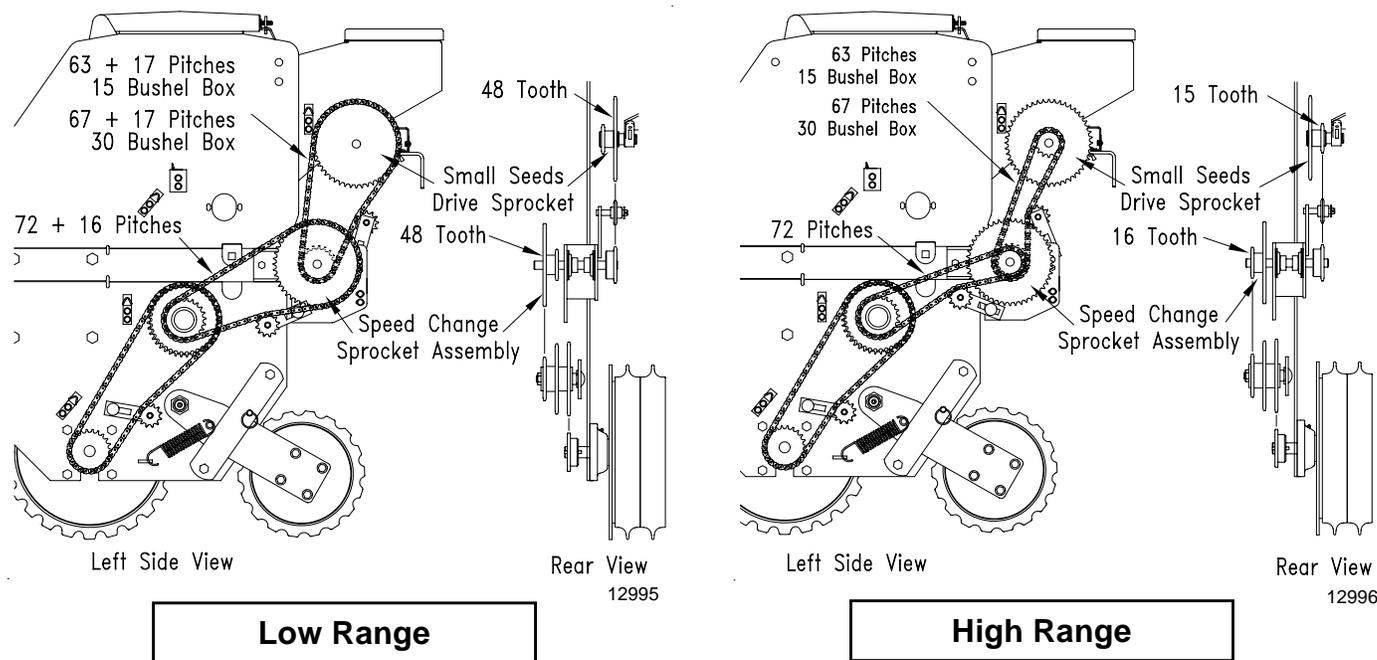
To change the drive type on your small seeds drive, loosen the two set screws on the speed change sprocket, turn sprocket over and reassemble. Then remove the bolt on the small seeds drive sprocket, turn sprocket over and reassemble. If you will be using the low range, you will need to add links supplied with the kit as shown in Figure 3-5. Install chains. Adjust idlers to snug up chains.

NOTE: The 38 tooth sprocket on the three sprocket assembly is used only for the Agitator Option.

Calibrating & Adjusting Seeding Rate

Locate the seed rate adjustment handle at the rear of the small seeds box, and move it to the indicator number obtained from the seed rate charts, see page 33. For best results, first move seed rate adjustment handle all the way to the left. Then move the handle to the desired setting, moving from a lower to a higher number.

For further instructions follow directions 2 through 6, "Calibrating & Adjusting Seeding Rate" on page 20.



Small Grass Seeds Seed Rate Adjustment
Figure 3-5

Section 3: Adjustments

Small Grass Seeds Attachment Seed Rates

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	14	22	24	27	32	38	46	54	64	75	86	99	111	124	138	151	165	178	192	205
Low Range	0	0	1	2	3	4	5	6	7	8	10	11	12	13	14	15	16	17	18	19	20
Alfalfa (Pounds per 1000 Square Feet)																					
High Range	0.0	0.3	0.5	0.5	0.6	0.7	0.9	1.1	1.3	1.5	1.7	2.0	2.3	2.6	2.9	3.2	3.5	3.8	4.1	4.4	4.7
Low Range	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5
Bent Grass (Pounds per Acre)																					
High Range	0	0	5	11	16	22	27	33	38	44	49	55	60	65	70	74	79	83	87	90	93
Low Range	0	1	1	1	1	2	2	2	3	3	4	4	5	5	6	7	8	9	10	11	12
Bent Grass (Pounds per 1000 Square Feet)																					
High Range	0.0	0.0	0.1	0.2	0.4	0.5	0.6	0.8	0.9	1.0	1.1	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.1
Low Range	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3
Bermuda (Pounds per Acre)																					
High Range	0	4	8	16	24	31	38	44	50	55	61	67	73	79	85	92	100	108	117	126	137
Low Range	0	1	1	1	2	3	3	4	6	7	8	10	11	12	14	15	17	18	20	21	22
Bermuda (Pounds per 1000 Square Feet)																					
High Range	0.0	0.1	0.2	0.4	0.6	0.7	0.9	1.0	1.1	1.3	1.4	1.5	1.7	1.8	2.0	2.1	2.3	2.5	2.7	2.9	3.1
Low Range	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5
Bird's-foot Trefoil (Pounds per Acre)																					
High Range	0	1	11	20	29	39	48	57	67	77	87	97	107	118	128	139	151	162	175	187	200
Low Range	0	0	1	2	3	4	5	7	8	9	10	12	13	14	16	17	18	20	21	22	24
Bird's-foot Trefoil (Pounds per 1000 Square Feet)																					
High Range	0.0	0.0	0.2	0.5	0.7	0.9	1.1	1.3	1.5	1.8	2.0	2.2	2.5	2.7	2.9	3.2	3.5	3.7	4.0	4.3	4.6
Low Range	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5
Canary Grass (Pounds per Acre)																					
High Range	0	1	7	15	22	30	38	45	53	61	68	76	84	92	99	107	115	123	130	138	146
Low Range	0	1	1	2	3	4	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19
Canary Grass (Pounds per 1000 Square Feet)																					
High Range	0.0	0.0	0.2	0.3	0.5	0.7	0.9	1.0	1.2	1.4	1.6	1.7	1.9	2.1	2.3	2.5	2.6	2.8	3.0	3.2	3.3
Low Range	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4
Clover - Ladino (Pounds per Acre)																					
High Range	0	1	10	21	32	44	56	69	82	96	109	123	136	149	162	174	185	196	206	214	222
Low Range	0	0	1	2	4	5	7	8	10	11	13	14	16	17	19	21	23	25	27	30	32
Clover - Ladino (Pounds per 1000 Square Feet)																					
High Range	0.0	0.0	0.2	0.5	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.5	4.7	4.9	5.1
Low Range	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.7
Clover - Red (Pounds per Acre)																					
High Range	0	10	15	23	32	42	53	65	78	92	106	120	135	149	164	178	192	205	218	230	240
Low Range	0	0	1	2	4	5	7	8	10	11	12	14	15	17	18	20	21	23	25	27	29
Clover - Red (Pounds per 1000 Square Feet)																					
High Range	0.0	0.2	0.4	0.5	0.7	1.0	1.2	1.5	1.8	2.1	2.4	2.8	3.1	3.4	3.8	4.1	4.4	4.7	5.0	5.3	5.5
Low Range	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.7
Clover - Sweet (Pounds per Acre)																					
High Range	0	4	9	19	30	40	51	62	73	85	97	110	123	136	150	164	179	195	212	229	247
Low Range	0	0	1	2	4	5	6	7	8	10	11	12	14	15	17	19	20	22	24	27	29
Clover - Sweet (Kilograms per 1000 Square Meters)																					
High Range	0.0	0.1	0.2	0.4	0.7	0.9	1.2	1.4	1.7	2.0	2.2	2.5	2.8	3.1	3.4	3.8	4.1	4.5	4.9	5.3	5.7
Low Range	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.7

Section 3: Adjustments

Small Grass Seeds Attachment Seed Rates (Continued)

Cup Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Fescue K-31 (Kilograms per Hectare)																					
High Range	0	0	0	4	7	10	13	16	19	23	26	30	34	38	42	47	52	58	64	70	77
Low Range	0	0	0	0	1	1	1	2	2	3	3	3	4	4	5	5	6	6	7	7	7
Fescue K-31 (Pounds per 1000 Square Feet)																					
High Range	0.0	0.0	0.0	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.5	1.6	1.8
Low Range	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
Kentucky Blue Grass (Pounds per Acre)																					
High Range	0	2	4	7	10	13	16	19	22	25	28	31	34	37	40	43	46	48	51	54	56
Low Range	0	0	0	0	1	1	1	1	2	2	2	3	3	4	4	4	5	5	6	6	6
Kentucky Blue Grass (Pounds per 1000 Square Feet)																					
High Range	0.0	0.0	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.6	0.6	0.7	0.8	0.8	0.9	1.0	1.0	1.1	1.2	1.2	1.3
Low Range	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Lespedeza- Unhulled (Kilograms per Hectare)																					
High Range	0	14	26	39	51	64	78	91	105	120	134	150	165	181	197	214	231	248	266	285	303
Low Range	0	0	1	1	2	3	4	5	6	8	9	10	11	13	14	15	17	18	19	20	21
Lespedeza - Unhulled (Kilograms per 1000 Square Meters)																					
High Range	0.0	0.3	0.6	0.9	1.2	1.5	1.8	2.1	2.4	2.7	3.1	3.4	3.8	4.2	4.5	4.9	5.3	5.7	6.1	6.5	7.0
Low Range	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5
Millet (Kilograms per Hectare)																					
High Range	0	4	8	19	31	43	56	70	83	97	111	125	138	152	166	179	192	204	216	227	238
Low Range	0	0	1	1	2	3	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Millet (Pounds per 1000 Square Feet)																					
High Range	0.0	0.1	0.2	0.4	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.9	3.2	3.5	3.8	4.1	4.4	4.7	5.0	5.2	5.5
Low Range	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4
Red Top (Kilograms per Hectare)																					
High Range	0	1	6	11	15	20	24	29	33	37	41	45	49	54	58	62	66	70	74	78	82
Low Range	0	1	1	1	2	2	2	3	4	4	5	6	6	7	8	8	9	10	10	11	11
Red Top (Kilograms per 1000 Square Meters)																					
High Range	0.0	0.0	0.1	0.2	0.4	0.5	0.6	0.7	0.8	0.9	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9
Low Range	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3
Rye Grass - Perennial (Kilograms per Hectare)																					
High Range	0	1	2	7	12	16	20	24	28	32	36	40	43	47	51	55	59	64	68	73	78
Low Range	0	0	0	1	1	2	3	3	4	5	5	6	7	7	8	8	9	10	10	10	11
Rye Grass - Perennial (Pounds per 1000 Square Feet)																					
High 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	1.4	1.5	1.6	1.7	1.8
Low Range	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Sudan Grass (Kilograms per Hectare)																					
High Range	0	2	4	14	23	33	42	52	62	72	83	95	109	123	139	156	175	196	219	244	272
Low Range	0	0	1	2	3	4	5	6	8	9	10	12	13	14	16	17	19	20	21	23	24
Sudan Grass (Kilograms per 1000 Square Meters)																					
High Range	0.0	0.0	0.1	0.3	0.5	0.7	1.0	1.2	1.4	1.7	1.9	2.2	2.5	2.8	3.2	3.6	4.0	4.5	5.0	5.6	6.2
Low Range	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.6
Timothy (Kilograms per Hectare)																					
High Range	0	0	6	12	19	26	33	40	48	55	63	71	78	86	94	101	108	115	122	128	134
Low Range	0	0	0	1	2	3	4	5	6	7	8	9	10	11	13	14	15	17	19	21	23
Timothy (Kilograms per 1000 Square Meters)																					
High Range	0.0	0.0	0.1	0.3	0.4	0.6	0.8	0.9	1.1	1.3	1.4	1.6	1.8	2.0	2.1	2.3	2.5	2.6	2.8	2.9	3.1
Low Range	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5

Section 3: Adjustments

Small Grass Seeds Attachment Metric Seed Rates

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	16	25	27	30	36	43	51	61	72	84	97	110	125	139	154	170	185	200	215	229
Low Range	0	0	1	2	3	5	6	7	8	9	11	12	13	14	16	17	18	19	20	22	23
Alfalfa (Kilograms per 1000 Square Meters)																					
High Range	0.0	1.6	2.5	2.7	3.0	3.6	4.3	5.1	6.1	7.2	8.4	9.7	11.0	12.5	13.9	15.4	17.0	18.5	20.0	21.5	22.9
Low Range	0.0	0.0	0.1	0.2	0.3	0.5	0.6	0.7	0.8	0.9	1.1	1.2	1.3	1.4	1.6	1.7	1.8	1.9	2.0	2.2	2.3
Bent Grass (Kilograms per Hectare)																					
High Range	0	0	6	12	18	24	31	37	43	49	55	61	67	73	78	83	88	93	97	101	105
Low Range	0	1	1	1	2	2	2	3	3	4	4	5	5	6	7	8	9	10	11	12	13
Bent Grass (Kilograms per 1000 Square Meters)																					
High Range	0.0	0.0	0.6	1.2	1.8	2.4	3.1	3.7	4.3	4.9	5.5	6.1	6.7	7.3	7.8	8.3	8.8	9.3	9.7	10.1	10.5
Low Range	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3
Bermuda (Kilograms per Hectare)																					
High Range	0	5	9	18	27	35	42	49	56	62	68	75	81	88	95	103	112	121	131	142	154
Low Range	0	1	1	2	2	3	4	5	6	8	9	11	12	14	16	17	19	21	22	24	25
Bermuda (Kilograms per 1000 Square Meters)																					
High Range	0.0	0.5	0.9	1.8	2.7	3.5	4.2	4.9	5.6	6.2	6.8	7.5	8.1	8.8	9.5	10.3	11.2	12.1	13.1	14.2	15.4
Low Range	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	0.9	1.1	1.2	1.4	1.6	1.7	1.9	2.1	2.2	2.4	2.5
Bird's-foot Trefoil (Kilograms per Hectare)																					
High Range	0	2	12	22	33	43	54	64	75	86	97	108	120	132	144	156	169	182	196	209	224
Low Range	0	0	1	2	3	5	6	7	9	10	12	13	15	16	18	19	21	22	24	25	26
Bird's-foot Trefoil (Kilograms per 1000 Square Meters)																					
High Range	0.0	0.2	1.2	2.2	3.3	4.3	5.4	6.4	7.5	8.6	9.7	10.8	12.0	13.2	14.4	15.6	16.9	18.2	19.6	20.9	22.4
Low Range	0.0	0.0	0.1	0.2	0.3	0.5	0.6	0.7	0.9	1.0	1.2	1.3	1.5	1.6	1.8	1.9	2.1	2.2	2.4	2.5	2.6
Canary Grass (Kilograms per Hectare)																					
High Range	0	1	8	17	25	34	42	51	59	68	77	85	94	103	111	120	129	137	146	155	163
Low Range	0	1	1	2	3	4	5	6	7	8	9	10	12	13	14	15	17	18	19	20	22
Canary Grass (Kilograms per 1000 Square Meters)																					
High Range	0.0	0.1	0.8	1.7	2.5	3.4	4.2	5.1	5.9	6.8	7.7	8.5	9.4	10.3	11.1	12.0	12.9	13.7	14.6	15.5	16.3
Low Range	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.3	1.4	1.5	1.7	1.8	1.9	2.0	2.2
Clover - Ladino (Kilograms per Hectare)																					
High Range	0	1	12	23	36	49	63	78	92	107	123	138	152	167	181	195	208	219	230	240	249
Low Range	0	0	1	3	4	6	8	9	11	12	14	16	17	19	21	23	25	28	30	33	36
Clover - Ladino (Kilograms per 1000 Square Meters)																					
High Range	0.0	0.1	1.2	2.3	3.6	4.9	6.3	7.8	9.2	10.7	12.3	13.8	15.2	16.7	18.1	19.5	20.8	21.9	23.0	24.0	24.9
Low Range	0.0	0.0	0.1	0.3	0.4	0.6	0.8	0.9	1.1	1.2	1.4	1.6	1.7	1.9	2.1	2.3	2.5	2.8	3.0	3.3	3.6
Clover - Red (Kilograms per Hectare)																					
High Range	0	11	17	26	35	47	59	73	87	103	118	135	151	167	184	200	215	230	244	257	269
Low Range	0	1	1	3	4	6	8	9	11	12	14	15	17	19	20	22	24	26	28	30	33
Clover - Red (Kilograms per 1000 Square Meters)																					
High Range	0.0	1.1	1.7	2.6	3.5	4.7	5.9	7.3	8.7	10.3	11.8	13.5	15.1	16.7	18.4	20.0	21.5	23.0	24.4	25.7	26.9
Low Range	0.0	0.1	0.1	0.3	0.4	0.6	0.8	0.9	1.1	1.2	1.4	1.5	1.7	1.9	2.0	2.2	2.4	2.6	2.8	3.0	3.3
Clover - Sweet (Kilograms per Hectare)																					
High Range	0	5	10	22	33	45	57	70	82	95	109	123	137	152	168	184	201	219	237	256	276
Low Range	0	1	1	3	4	5	7	8	9	11	12	14	15	17	19	21	23	25	27	30	32
Clover - Sweet (Kilograms per 1000 Square Meters)																					
High Range	0.0	0.5	1.0	2.2	3.3	4.5	5.7	7.0	8.2	9.5	10.9	12.3	13.7	15.2	16.8	18.4	20.1	21.9	23.7	25.6	27.6
Low Range	0.0	0.1	0.1	0.3	0.4	0.5	0.7	0.8	0.9	1.1	1.2	1.4	1.5	1.7	1.9	2.1	2.3	2.5	2.7	3.0	3.2

Section 3: Adjustments

Small Grass Seeds Attachment Metric Seed Rates (Continued)

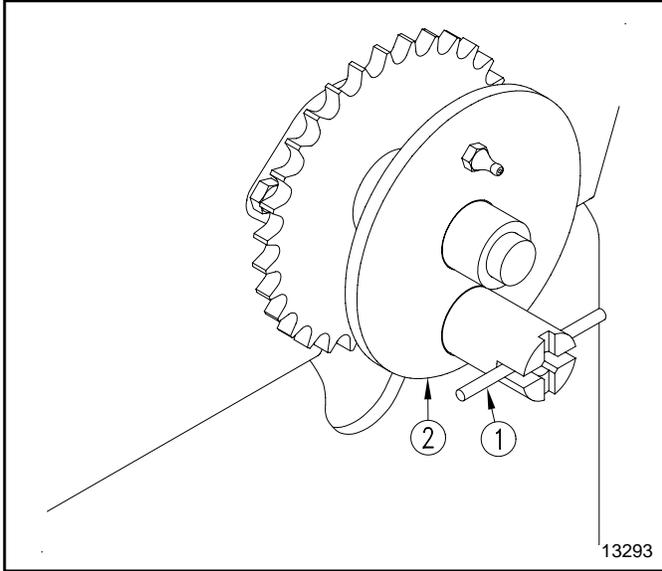
Cup Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Fescue K-31 (Kilograms per Hectare)																					
High Range	0	0	0	4	8	11	15	18	22	25	29	33	38	42	47	53	58	65	71	79	87
Low Range	0	0	0	0	1	1	1	2	2	3	3	4	4	5	6	6	7	7	7	8	8
Fescue K-31 (Kilograms per 1000 Square Meters)																					
High Range	0.0	0.0	0.0	0.4	0.8	1.1	1.5	1.8	2.2	2.5	2.9	3.3	3.8	4.2	4.7	5.3	5.8	6.5	7.1	7.9	8.7
Low Range	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.6	0.6	0.7	0.7	0.7	0.8	0.8
Kentucky Blue Grass (Kilograms per Hectare)																					
High Range	0	2	5	8	11	14	17	21	24	28	31	34	38	41	45	48	51	54	57	60	63
Low Range	0	0	0	0	1	1	1	2	2	2	3	3	4	4	5	5	5	6	6	7	7
Kentucky Blue Grass (Kilograms per 1000 Square Meters)																					
High Range	0.0	0.2	0.5	0.8	1.1	1.4	1.7	2.1	2.4	2.8	3.1	3.4	3.8	4.1	4.5	4.8	5.1	5.4	5.7	6.0	6.3
Low Range	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.7	0.7
Lespedeza- Unhulled (Kilograms per Hectare)																					
High Range	0	16	30	43	58	72	87	102	118	134	151	168	185	203	221	240	259	278	298	319	340
Low Range	0	0	1	2	2	3	5	6	7	8	10	11	13	14	16	17	19	20	21	23	24
Lespedeza - Unhulled (Kilograms per 1000 Square Meters)																					
High Range	0.0	1.6	3.0	4.3	5.8	7.2	8.7	10.2	11.8	13.4	15.1	16.8	18.5	20.3	22.1	24.0	25.9	27.8	29.8	31.9	34.0
Low Range	0.0	0.0	0.1	0.2	0.2	0.3	0.5	0.6	0.7	0.8	1.0	1.1	1.3	1.4	1.6	1.7	1.9	2.0	2.1	2.3	2.4
Millet (Kilograms per Hectare)																					
High Range	0	4	9	21	35	49	63	78	93	109	124	140	155	171	186	200	215	229	242	254	266
Low Range	0	0	1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	19
Millet (Kilograms per 1000 Square Meters)																					
High Range	0.0	0.4	0.9	2.1	3.5	4.9	6.3	7.8	9.3	10.9	12.4	14.0	15.5	17.1	18.6	20.0	21.5	22.9	24.2	25.4	26.6
Low Range	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.8	1.9
Red Top (Kilograms per Hectare)																					
High Range	0	1	6	12	17	22	27	32	37	42	46	51	55	60	64	69	74	78	83	88	92
Low Range	0	1	1	1	2	2	3	3	4	5	6	6	7	8	9	10	10	11	11	12	12
Red Top (Kilograms per 1000 Square Meters)																					
High Range	0.0	0.1	0.6	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.6	5.1	5.5	6.0	6.4	6.9	7.4	7.8	8.3	8.8	9.2
Low Range	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.6	0.7	0.8	0.9	1.0	1.0	1.1	1.1	1.2	1.2
Rye Grass - Perennial (Kilograms per Hectare)																					
High Range	0	1	3	8	13	18	23	27	31	36	40	44	49	53	57	62	67	71	76	82	87
Low Range	0	0	0	1	2	2	3	4	4	5	6	7	7	8	9	9	10	11	11	12	12
Rye Grass - Perennial (Kilograms per 1000 Square Meters)																					
High Range	0.0	0.1	0.3	0.8	1.3	1.8	2.3	2.7	3.1	3.6	4.0	4.4	4.9	5.3	5.7	6.2	6.7	7.1	7.6	8.2	8.7
Low Range	0.0	0.0	0.0	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.6	0.7	0.7	0.8	0.9	0.9	1.0	1.1	1.1	1.2	1.2
Sudan Grass (Kilograms per Hectare)																					
High Range	0	2	4	15	26	36	47	58	69	81	93	107	122	138	156	175	196	220	245	274	305
Low Range	0	0	1	2	3	5	6	7	9	10	12	13	15	16	18	19	21	22	24	26	27
Sudan Grass (Kilograms per 1000 Square Meters)																					
High Range	0.0	0.2	0.4	1.5	2.6	3.6	4.7	5.8	6.9	8.1	9.3	10.7	12.2	13.8	15.6	17.5	19.6	22.0	24.5	27.4	30.5
Low Range	0.0	0.0	0.1	0.2	0.3	0.5	0.6	0.7	0.9	1.0	1.2	1.3	1.5	1.6	1.8	1.9	2.1	2.2	2.4	2.6	2.7
Timothy (Kilograms per Hectare)																					
High Range	0	0	7	14	21	29	37	45	54	62	71	79	88	96	105	113	121	129	136	143	150
Low Range	0	0	0	1	2	3	4	5	6	7	9	10	11	13	14	16	17	19	21	23	26
Timothy (Kilograms per 1000 Square Meters)																					
High Range	0.0	0.0	0.7	1.4	2.1	2.9	3.7	4.5	5.4	6.2	7.1	7.9	8.8	9.6	10.5	11.3	12.1	12.9	13.6	14.3	15.0
Low Range	0.0	0.0	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.9	1.0	1.1	1.3	1.4	1.6	1.7	1.9	2.1	2.3	2.6

Section 3: Adjustments

**Agitator Attachment (Optional)
Engaging & Disengaging the Agitator
Sprocket**

Refer to Figure 3-6:

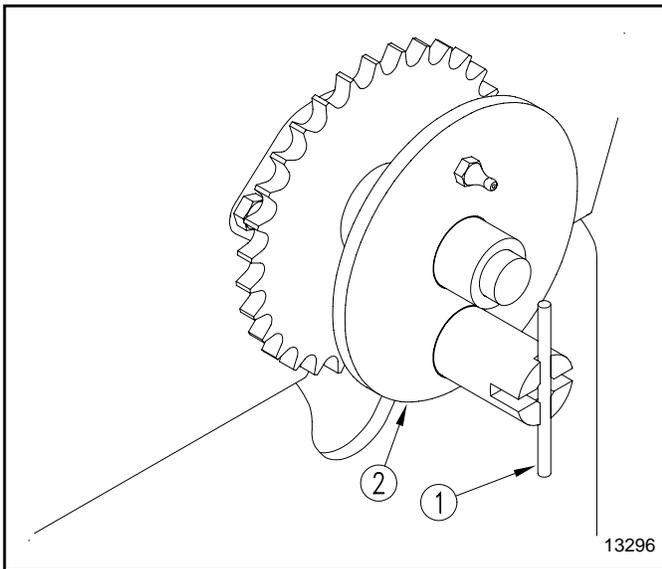
To engage agitator pull spring-loaded pin (#1) and place in Position 1 making sure the sprocket is connected by rotating the lockout hub (#2) clockwise until it is locked.



**Position 1
Figure 3-6**

Refer to Figure 3-7:

To disengage the agitator, pull spring-loaded pin (#1) and place in Position 2 making sure the lockout hub (#2) turns freely.



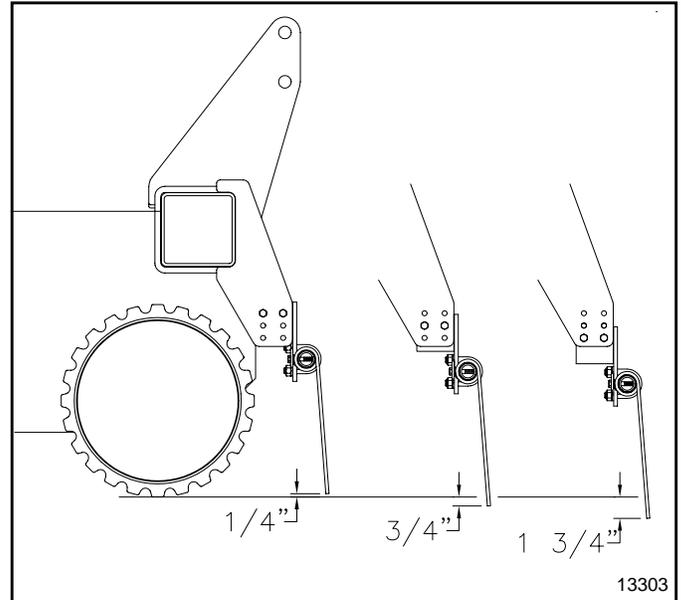
**Position 2
Figure 3-7**

Calibrating and Adjusting Seed Rate

Follow directions see “Calibrating & Adjusting Seeding Rate” on page 20 and Seed Rate Charts on page 25 and page 28.

**Coil Tines (Optional)
Height Adjustment**

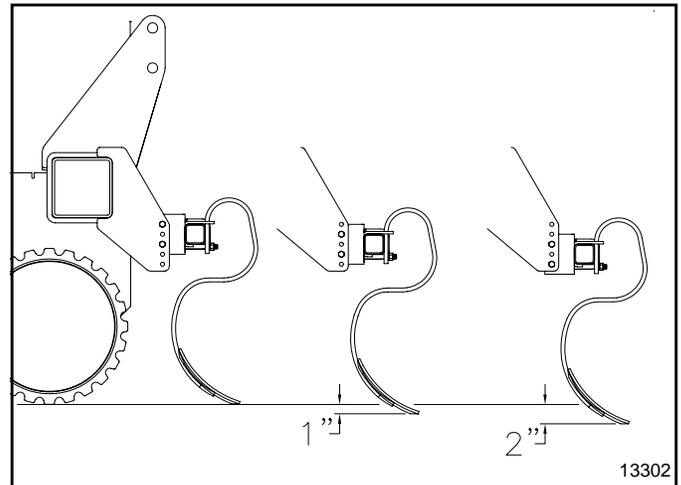
Adjust height as needed, see Figure 3-8.



**Coil Tines Height Adjustment
Figure 3-8**

**Danish Tines (Optional)
Height Adjustment**

Adjust height as needed, see Figure 3-9.



**Danish Tines Height Adjustment
Figure 3-9**

Section 3: Adjustments

Walkboard (Optional)

Adjustment w/ Small Grass Seeds Attach

If you install a Small Grass Seeds Attachment you will need to relocate the Walkboard as shown in Figure 3-10 & Figure 3-11.

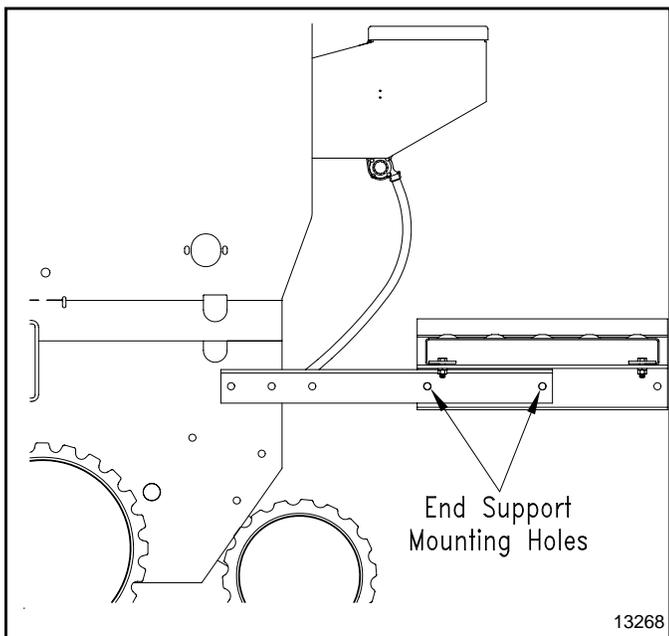


Figure 3-10

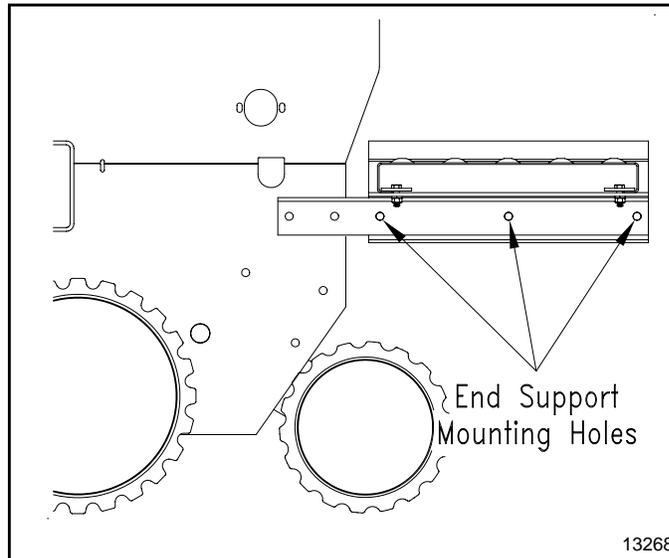


Figure 3-12

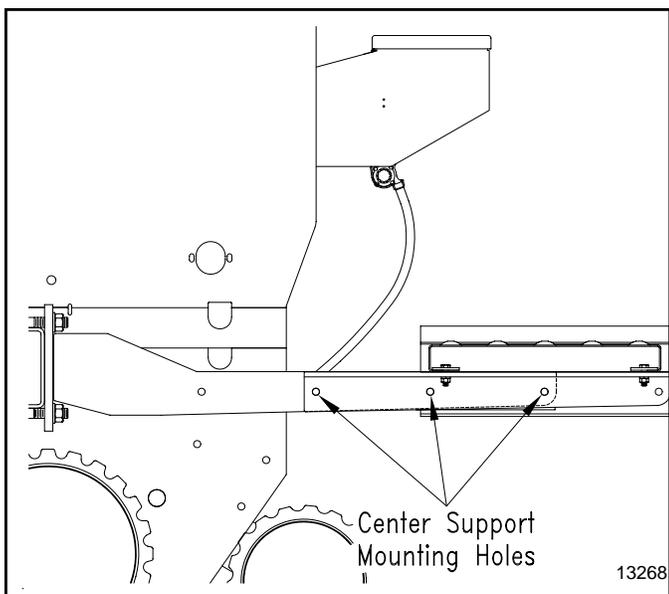


Figure 3-11

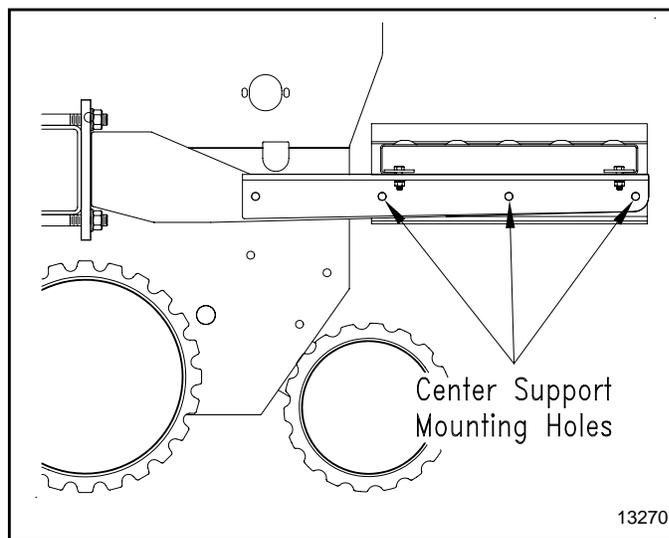


Figure 3-13

Section 4: Maintenance and Lubrication

Maintenance

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

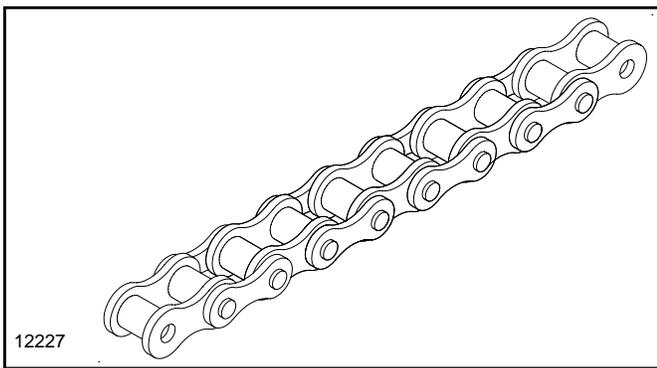
7. After using your seeder for several hours, check all bolts to be sure they are tight.
8. Lubricate areas noted in the “**Lubrication**” section.
9. Adjust idlers to remove excess slack from chains. Clean and use chain lube on all roller chains as needed.
10. Feed cup drive sprocket should be oiled in its square bore. Move feed cup adjustment lever away from sprocket as far as possible in order to get oil back into square.
11. Always maintain proper air pressure in tires.
12. Replace any worn, damaged or illegible safety labels by obtaining new labels from your Land Pride Dealer.
13. Inspect safety chain and hardware for wear or other damage.

Storage

1. At the end of the working season or when your Primary 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 seed box 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 in the following illustrations.
5. When in storage, lower the seeder with rollers on a board or hard surface and adjust the parking stand or tongue jack.
6. For seeders with front or end wheels, apply a light coat of oil to exposed cylinder rods.
7. Repaint parts where paint is worn or scratched to prevent rust.
8. Store the seeder inside if possible. Inside storage will reduce maintenance and make for a longer seeder life.

Lubrication

Lubrication Legend	Multi-purpose spray lube	Multi-purpose grease lube	Multi-purpose oil lube	50 Intervals in hours at which lubrication is required



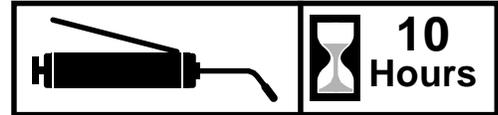
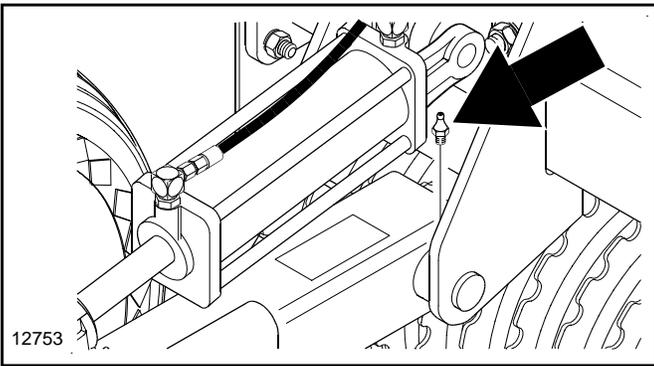
	As Required
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Roller Chains

Type of Lubrication: Chain Lube

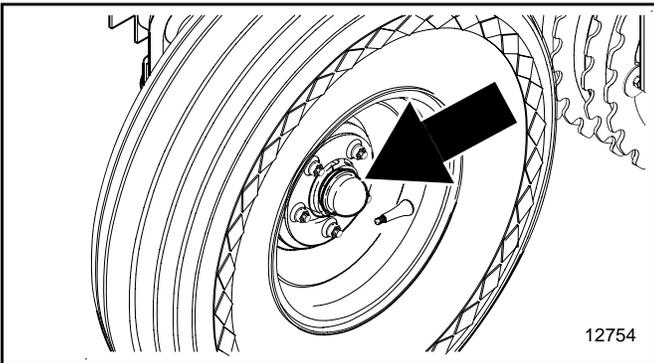
Quantity = As required. Do not overlubricate.

Section 4: Maintenance and Lubrication



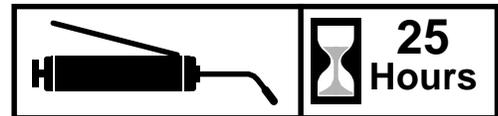
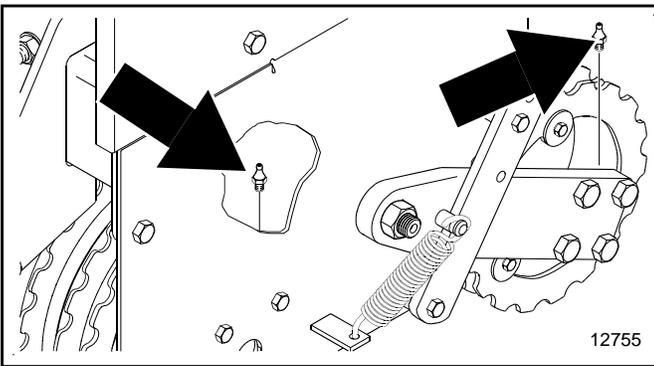
Wheel Arm Pivot Shafts

Type of Lubrication: Multi-Purpose



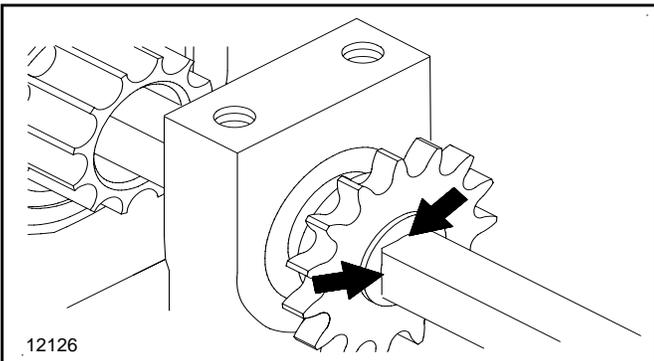
Wheel Bearings

Type of Lubrication: Wheel Bearing Grease
Quantity = Repack



Front and Rear Roller Bearings

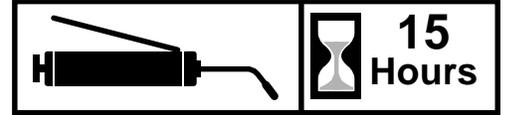
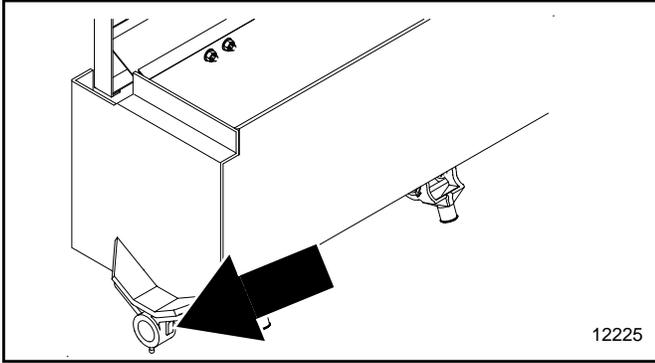
Type of Lubrication: Multi-Purpose



Feeder Cup Drive Sprocket

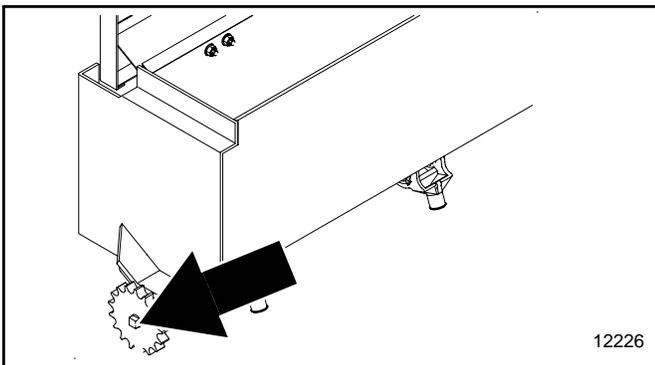
Type of Lubrication: Oil

Section 4: Maintenance and Lubrication



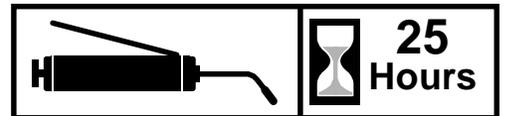
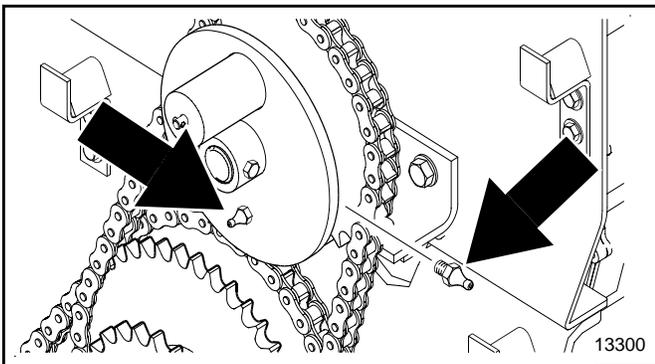
**Drive Sprocket Hanger Bearing
(Small Grass Seeds Attachment)**

Type of Lubrication: Multi-Purpose



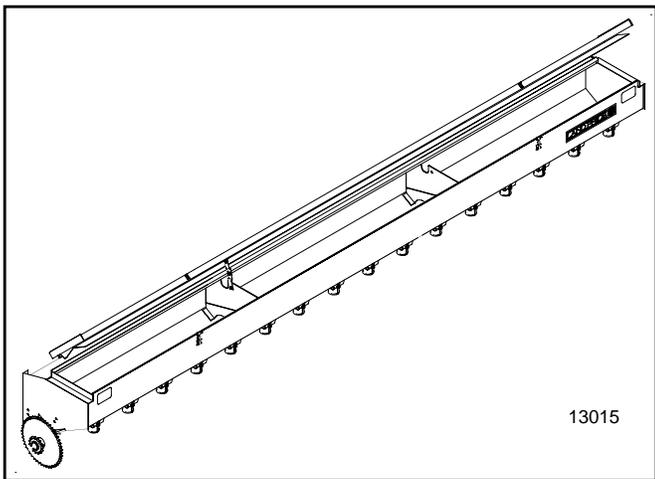
**Feeder Cup Drive Sprocket
(Small Grass Seeds Attachment)**

Type of Lubrication: Oil



Agitator Lockout (Agitator Attachment)

Type of Lubrication: Multi-Purpose



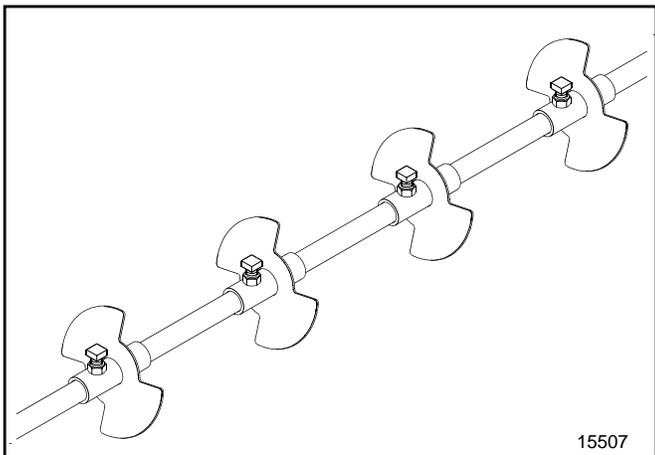
13015

Small Seeds Attachment 313-113A

The Small Seeds Attachment is designed to seed various small seeds. It is driven independently of the main seed box with a high range (fast speed) or low range (slow speed). The small seeds box features a 0.42 bushel/foot (48.6 liters/meter) profile for a total 4 bushel (141 liters) capacity.

For additional information refer to:

- “Important Safety Information” on page 1
- “Section 3: Adjustments” on page 18
- “Section 4: Maintenance and Lubrication” on page 39



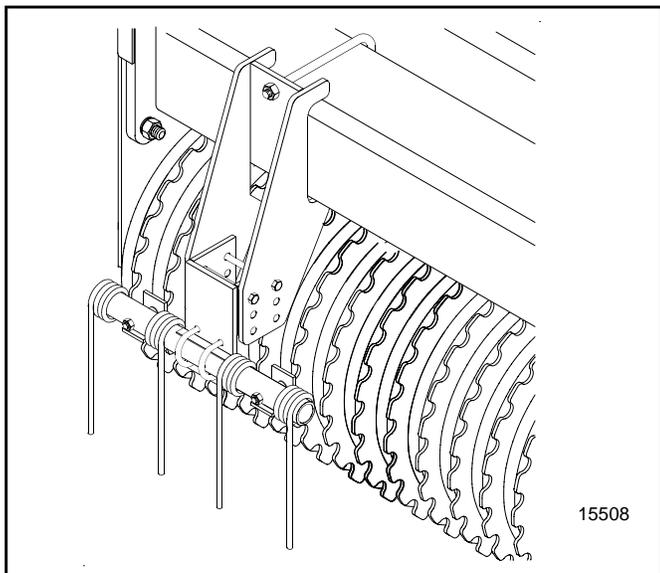
15507

Agitator Attachment 313-079A

The Agitator Attachment is used with fluffy, hard to plant seeds, such as brome.

For additional information refer to:

- “Important Safety Information” on page 1
- “Section 2: Operating Instructions” on page 13
- “Section 3: Adjustments” on page 18
- “Section 4: Maintenance and Lubrication” on page 39



15508

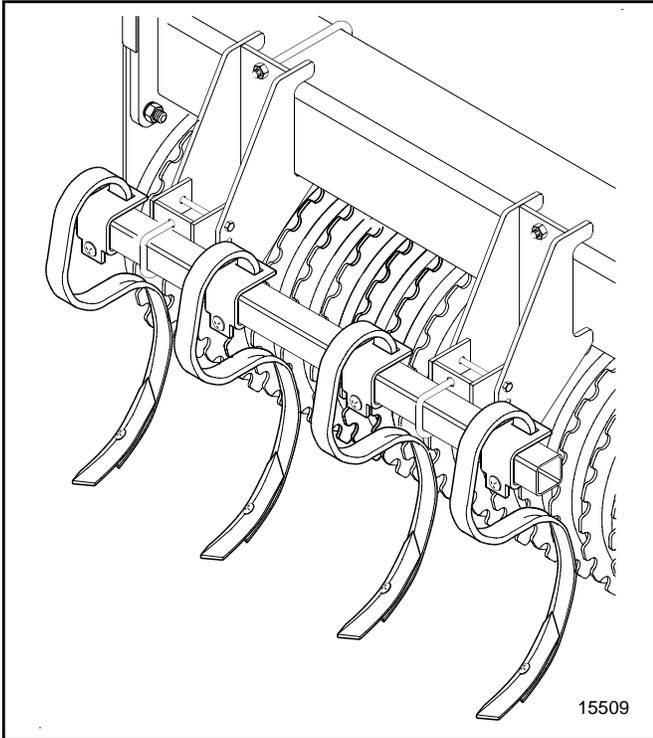
Coil Tine Track Removers 313-078A

Spring loaded tines help eliminate tractor tire tracks.

For additional information refer to:

- “Section 3: Adjustments” on page 18

Section 5: Options

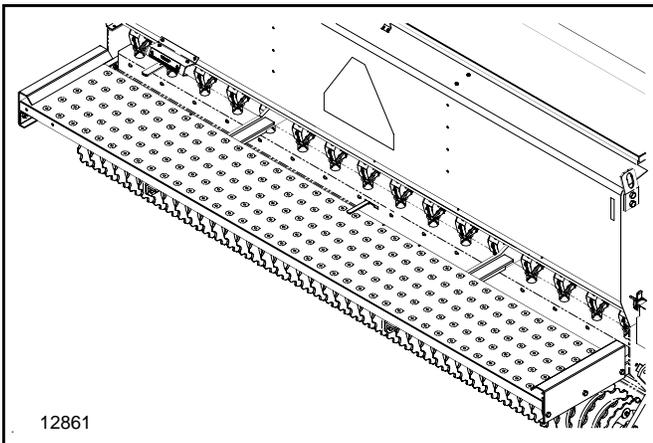


Danish Tine Track Removers 313-077A

Tines help eliminate tractor tire tracks and work the soil.

For additional information refer to:

- “Section 3: Adjustments” on page 18



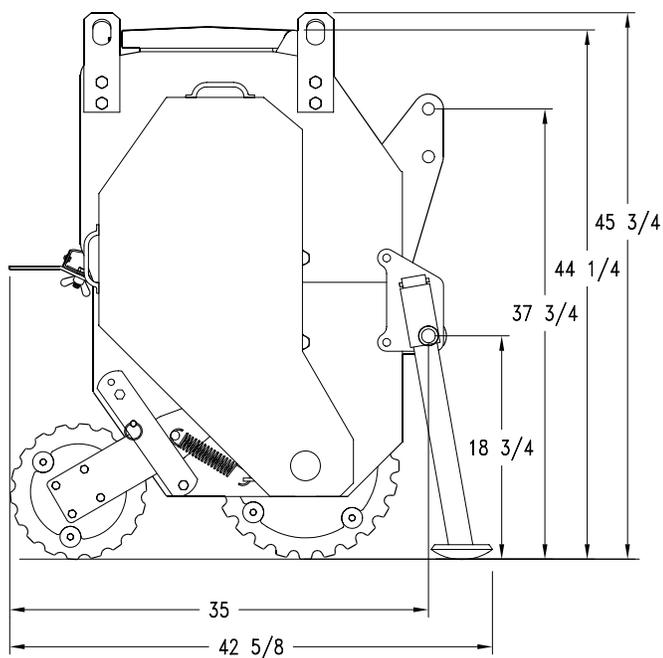
Walkboard 313-130A

The PS25120 Walkboard is designed for easier access to the seedbox.

For additional information refer to:

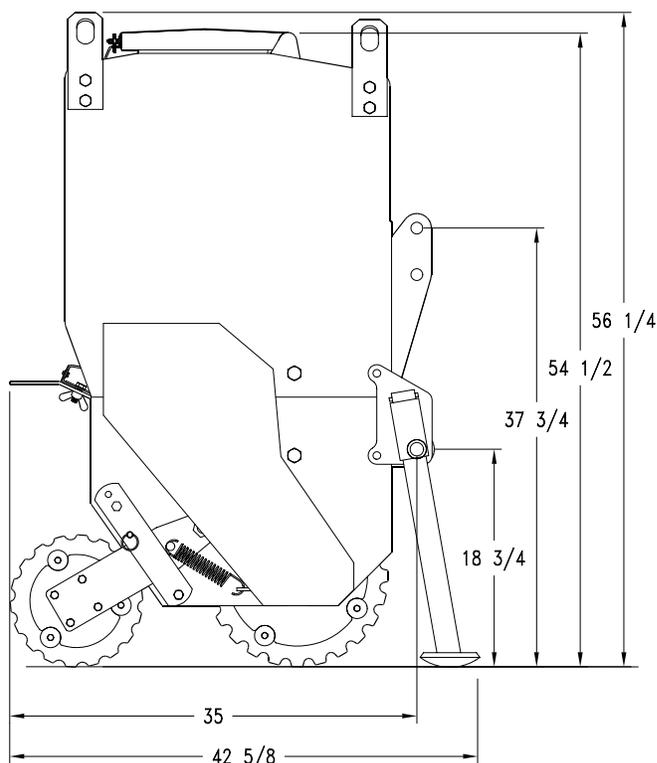
- “Important Safety Information” on page 1
- “Section 3: Adjustments” on page 18

PS25 Series Primary Seeder	
	Model PS25120 Primary Seeder
Transport Width	10' 6"
Transport Width with End Wheels	13' 6"
Box Width	10'
Seeding Width (Broadcast)	10'
Weight (approximate) 3-Point	15 Bushel Seeder = 2850 lbs. 30 Bushel Seeder = 2940 lbs.
Weight (approximate) Tongue	200 lbs.
Weight (approximate) Wheels (each)	190 lbs.
Hitch Type	Category 2, Quick Hitch Adaptable
Tire Size	9.5L x 15 8-Ply
Box Capacity	3 bushel per foot
Feed Cup Drive	Chain driven from right side of front roller
Front Roller Wheels	15 5/8" notched, cast iron, each free floating
Front Roller Bearings	1 1/2" Sealed, greaseable
Front Roller Mounting Tube	12 3/4" OD x 1/4" wall
Front Roller Bearings	1 1/2" sealed, greaseable
Rear Roller Wheels	52-11 3/8" notched, cast iron, each free floating
Rear Roller Bearings	1 1/4" sealed, greaseable



12965

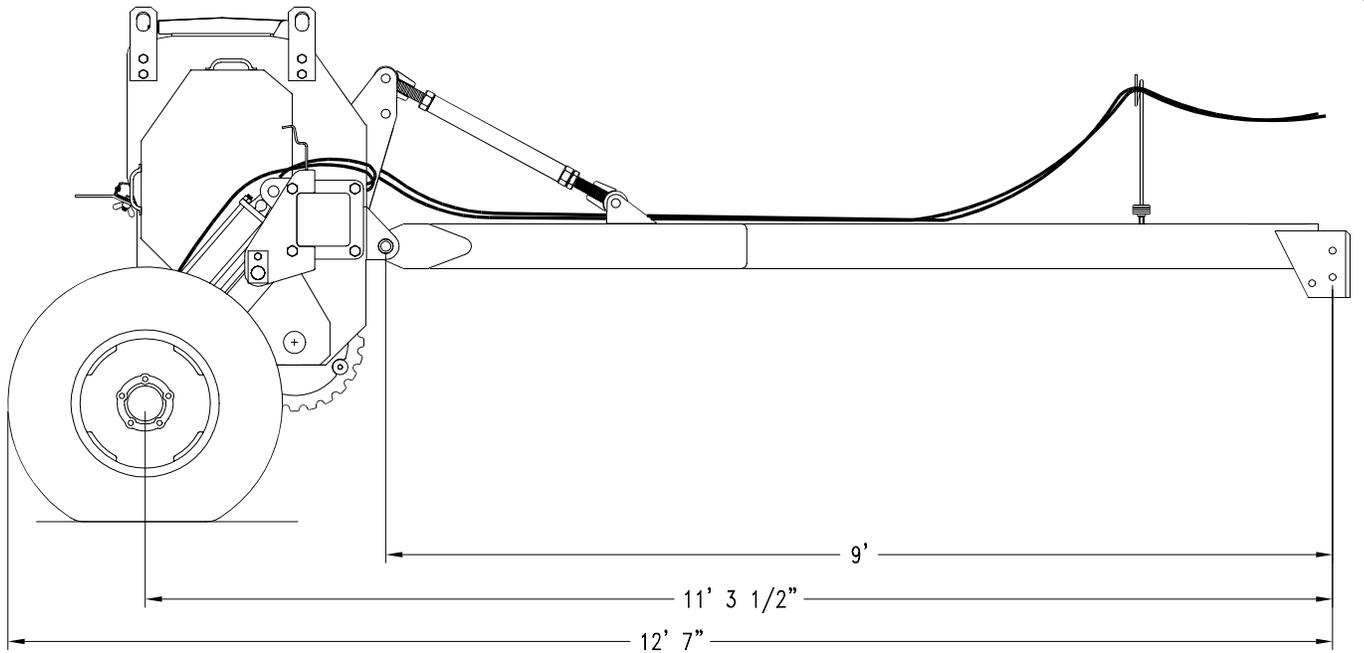
15 Bushel Seeders



12743

30 Bushel Seeders

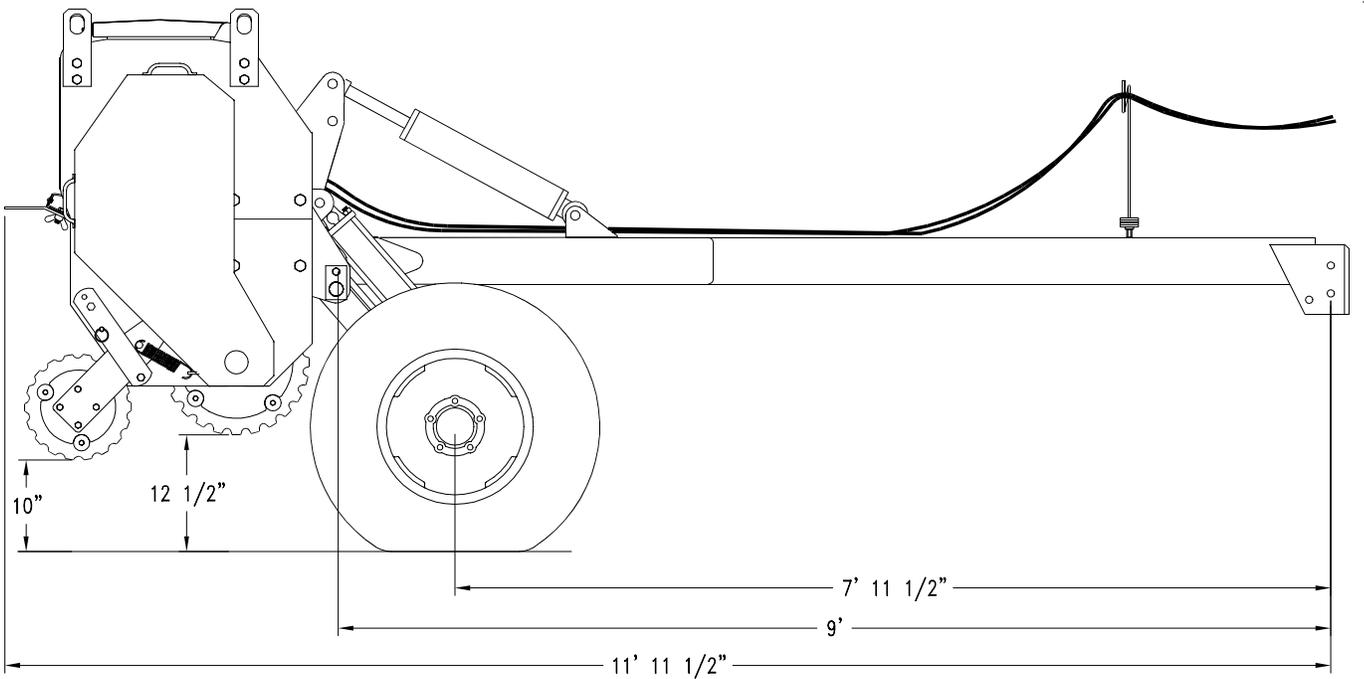
Section 6: Specifications & Capacities



12966

15 Bushel and 30 Bushel Seeders

Pull-Type with End Wheels



12967

15 Bushel and 30 Bushel Seeders

Pull-Type with Front Wheels



PS25 Series Primary Seeder

Features	Benefits
Cat. 2 3-Point Quick hitch adaptable	Cat. 2 3-Point for larger tractors to handle the weight, or Pull-type for smaller tractors. Quick hitch allows for easy connecting and disconnecting.
Machine weight	2,940 lbs. (3-point)
Front mounted wheels - Pull-type	Front mounted wheels narrow the unit up for transport or going through gates.
Side mounted wheels - Pull-type	Side mounted wheels gives a smoother transport, and lowers the negative tongue weight.
15 or 30 Bushel seed capacity	30 Bushel is ideal for the sod farmer and grain growers.
Seed level indicator	Check seedbox level from the tractor seat.
All welded weatherproof seedbox	Keeps rain and rodents out, and gives rigidity to seedbox.
Heavy-duty lock-up lid	Lids are precision fit to keep seeds dry and rodents out and they won't buckle or slam shut in high winds.
Lift hooks	For easy loading on to trailers
Transport locks - Pull-Type	Keeps wheels in transport position if cylinders were to fail during transport.
Vacuum sealed acremeter	Vacuum sealed to keep dirt out. Acremeter to plan seed requirements.
Fluted sprocket seed cups	The right amount of seed is picked up by the fluted sprockets every time.
Powder metal in the fluted sprocket	Powder metal in the seed cup sprockets helps dissipate heat caused by the friction between the sprocket and housing.
Adjustable seed opening	Seed opening can be 'enlarged' by sliding a lever. Larger opening for fluffy seed allows for easier flow.
Removable tongue on Pull-type	Tongue is easy to remove. Convenient for storage or when loaded on a trailer.
Cast iron packer wheels	15 5/8" diameter front rings and 11 3/8" diameter rear rings are used to crush the clods and pack the seed in to promote seed to soil contact.
Spring mounted rear packers	Rear packer wheels are spring loaded for additional down pressure, and to stay in contact with the ground.
Notched spacers for rear roller (optional)	Spacer fits between each packer wheel for additional packing capabilities.
Agitator (optional)	Eliminates bridging with fluffy seed above seed cup opening.
Walkboard (optional)	Convenient for filling the tall 30 bushel box.
4 Bushel Small Seeds Box (optional)	Small Seeds Box for simultaneously seeding two types of seeds. By dividing them, it keeps from the two separating in one box.
Tire track removers (optional)	Tire track removers scrape the dirt up behind the tractor tires to ensure seed-to-soil contact. Not compatible with front mounted wheels.
#40 Roller chain	All drives utilize #40 roller chain for smooth running.



Section 8: Troubleshooting

Problem	Solution
<p>Uneven seed spacing or uneven stand</p>	<p>Check for plugging in feed cup</p>
	<p>Check to see if seed tubes are plugged</p>
	<p>Check for plugging in seed broadcasting channel</p>
	<p>Reduce ground speed</p>
	<p>Check for trash or mud build up on rollers</p>
<p>Actual seeding rate is different than desired</p>	<p>Seed treatment will affect seeding rate if the chemicals build up in feed cup. Unless cleaned regularly, this build up can cause breakage of the feeder cup shaft.</p>
	<p>Check speed change sprocket</p>
	<p>See manual for instructions on calculating seed rate</p>
<p>Acrometer doesn't measure accurately</p>	<p>Check planting operation for excessive overlap or gaps between passes</p>
	<p>Loose soil conditions and slippage of front roller will cause variations in acres registered</p>
<p>Raising and lowering seeder is rough or uneven on front or end wheel seeders</p>	<p>Lubricate wheel arm pivot shaft</p>
	<p>Check hydraulic fittings for leaks. Refer to “Tractor Hydraulic Hook-Up” on page 15.</p>
	<p>Rephasing cylinders not properly bled. Refer to “Tractor Hydraulic Hook-Up” on page 15.</p>
	<p>When raising seeder, the cylinders should be fully extended to insure that they are always rephased.</p>
<p>Feed cup sprocket locked up or twisted seed cup drive shaft</p>	<p>Check for foreign matter lodged in feed cup sprocket</p>
<p>Rollers not turning freely</p>	<p>Check for trash or mud build up on roller ends</p>

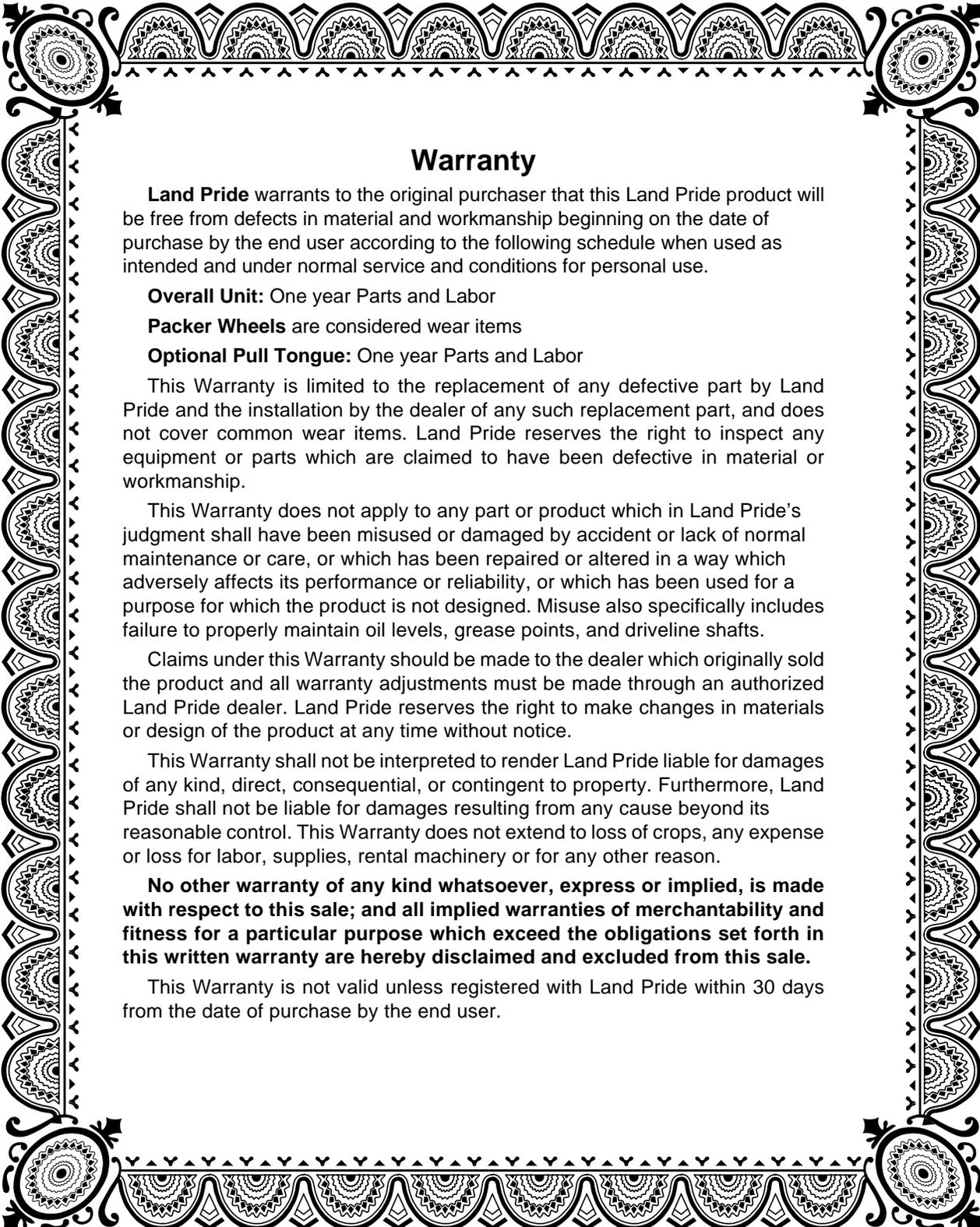


Torque Values Chart													
Bolt Size (Inches) in-tpi ¹	Bolt Head Identification						Bolt Size (Metric) mm x pitch	Bolt Head Identification					
	Grade 2		Grade 5		Grade 8			Class 5.8		Class 8.8		Class 10.9	
	N · m	ft-lb ³	N · m	ft-lb	N · m	ft-lb		N · m	ft-lb	N · m	ft-lb	N · m	ft-lb
1/4" - 20	7.4	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 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							

¹ in-tpi = nominal thread diameter in inches-threads per in.
² N·m = newton-meters
³ ft-lb= foot pounds
⁴ mm x pitch = nominal thread diameter in millimeters x thread pitch

Torque tolerance + 0%, -15% of torquing values. Unless otherwise specified use torque values listed above.

Tire Inflation Chart	
Tire Size	Inflation PSI
9.5L x 15" 8-Ply Rib Implement	44



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

Packer Wheels are considered wear items

Optional Pull Tongue: One year Parts and Labor

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. 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 should be made to the dealer which originally sold the product and all warranty adjustments must be made through an authorized Land Pride 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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