

FOOD PLOT SEEDERS

FP2204

FP2206

FP2208



PLOTMASTER™



A product of
Plotmaster Systems, LTD
&
Frontier Equipment



Introduction

To the dealer:

Assembly and proper installation of this product is the responsibility of the frontier dealer. Read manual instructions and safety rules. Make sure all items on dealer's pre-delivery and delivery check lists in the owner's/operator's manual are complete before releasing equipment to the owner.

To the owner:

Read this manual before operating your Frontier equipment. The information presented will prepare you to do a better and safer job. Keep this manual handy for ready reference. Require all operators to read this manual carefully and become acquainted with all the adjustment and operating procedures before attempting to operate. Replacement manuals can be obtained from your selling dealer.

The equipment you have purchased has been carefully engineered and manufactured to provide dependable and satisfactory use. Like all mechanical products, it will require cleaning and upkeep. Lubricate the unit as specified. Observe all safety information in this manual and safety decals on the equipment.

For service, your authorized Frontier dealer has trained mechanics, genuine Frontier service parts, and the necessary tools and equipment to handle all your needs.

Use only genuine Frontier service parts. Substitute parts will void the warranty and may not meet standards required for safe and satisfactory operation. Record the model number and serial number of your equipment in the spaces provided:

Model: _____

Date of purchase: _____

Serial Number:

(see Safety Decal section for location) _____

Provide this information to your dealer to obtain correct repair parts.

Throughout this manual, the term IMPORTANT is used to indicate that failure to observe can cause damage to equipment. The terms CAUTION, WARNING and DANGER are used in conjunction with the Safety-Alert Symbol, (a triangle with an exclamation mark), to indicate the degree of hazard for items of personal safety.

Special Messages

Your manual contains special messages to bring attention to potential safety concerns, machine damage as well as helpful operating and servicing information. Please read all the information carefully to avoid injury and machine damage.



CAUTION: Avoid injury! This symbol and text highlight potential hazards or death to the operator or bystanders that may occur if the hazards or procedures are ignored.

IMPORTANT: Avoid damage! This text is used to tell the operator of actions or conditions that might result in damage to the machine.



The machine safety decals shown in this section are placed in important areas on your machine to draw attention to potential safety hazards.

On your machine safety labels, the words **DANGER**, **WARNING**, and **CAUTION** are used with this safety-alert symbol. **DANGER** identifies the most serious hazards.

The operator's manual also explains any potential safety hazards whenever necessary in special safety messages that are identified with the word, **CAUTION**, and the safety-alert symbol.



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General Information

The purpose of this manual is to assist you in operating and maintaining your Plotmaster™ Food Plot Seeder. Read it carefully. It furnishes information and instructions that will help you achieve years of dependable performance.

These instructions have been compiled from field experience and engineering data. Some information may be general in nature, due to unknown and varying operating conditions. However, through experience and these instructions, you should be able to develop procedures suitable to your particular situation.

The illustrations and data used in this manual were current at the time of publishing. However, due to possible inline production changes, your machine may vary slightly in detail. We reserve the right to redesign and change the machine as may be necessary without notification.

Throughout this manual, references are made to right and left direction. These are determined by standing behind the tractor facing the direction of forward travel.

SAFETY & INSTRUCTIONAL DECALS


ATTENTION! Failure to follow these instructions could result in serious injury or death.

Replace decals immediately if damaged or worn.



Qty 1 – Serial Number Decal

⚠ WARNING



Falling off tractor can result in serious injury or death.

- Tractor must be equipped with ROPS (or ROPS CAB) and seat belt. Keep foldable ROPS systems in "locked up" position at all times.
- Buckle Up! Keep seat belt securely fastened.
- Allow no riders.

To avoid serious injury or death, do not go underneath implement.

- Never go underneath raised implement which can drop from equipment or tractor 3-point hitch hydraulic leak down, hydraulic system failures, movement of control levers, or mechanical linkage failures.
- Service work does not require going underneath implement. Read manual instructions.

Qty 1 – Falling Off Warning Decal

⚠ WARNING



To avoid serious injury or death from crushing and pinching hazards:

- Be extremely careful handling various parts of the machine. They are heavy and hands, fingers, feet, and other body parts could be crushed or pinched between tractor and implement.
- Operate tractor controls from tractor seat only.
- Do not stand between tractor and implement when tractor is in gear.
- Make sure parking brake is engaged before going between tractor and implement.
- Stand clear of machine while in operation or when it is being raised or lowered.

⚠ CAUTION

To Avoid Serious Injury:

- Read Operator's Manual before operating, servicing or repairing equipment. Follow all safety rules and instructions. (Manuals are available from your selling dealer.)
- Never allow riders.
- Keep bystanders away from equipment during operation.
- Operate from tractor seat only.
- Keep all shields in place and in good condition.
- Lower equipment to ground, stop engine, remove key and set brake before dismounting tractor.
- Never allow children or untrained persons to operate equipment.

Qty 1 – Crush/Pinch Warning Decal

Qty 1 – To Avoid Serious Injury Caution Decal

⚠ WARNING



Pinch point Hazard
Keep clear

Qty 2 – Pinch Point Warning Decal



SAFETY RULES



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by an operator's single careless act.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, judgement, and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.

It has been said "The best safety device is an informed, careful operator." We ask you to be that kind of operator.

TRAINING

- Safety instructions are important! Read all attachment and power unit manuals; follow all safety rules and safety decal information. (Replacement manuals are available from selling dealer.) Failure to follow instructions or safety rules can result in serious injury or death.
- If you do not understand any part of this manual and need assistance, see your dealer.
- Operators must be instructed in and be capable of the safe operation of the equipment, its attachments, and all controls. Do not allow anyone to operate this equipment without proper instructions.
- Never allow children or untrained persons to operate equipment.
- Train all new personnel and review instruction's frequently with existing workers. A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes himself and bystanders to possible serious injury or death.

PREPARATION

- Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy,

rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.

- Make sure attachment is properly secured, adjusted, and in good operating condition.
- Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in "locked up" position at all times.
- A minimum 20% of tractor and equipment weight must be on the tractor front wheels when attachments are in transport position. Without this weight, tractor could tip over, causing personal injury or death. The weight may be attained with a loader, front wheel weights, ballast in tires or front tractor weights. Weigh the tractor and equipment. Do not estimate.

TRANSPORTATION

- Always comply with all state and local laws governing highway safety and lighting and marking requirements.
- Never allow riders on power unit or attachment.
- Do not operate or transport on steep slopes.
- Use extreme care and reduce ground speed on slopes and rough terrain.
- Do not operate or transport equipment while under the influence of alcohol or drugs. Consult your doctor about operating this machine while taking prescription medications.

OPERATION

- Never go underneath equipment (lowered to the ground or raised) unless it is properly blocked and secured. Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak down, hydraulic system failures, mechanical failures, or movement of control levers can cause



SAFETY RULES



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

OPERATION (cont'd)

equipment to drop or rotate unexpectedly and cause severe injury or death.

- Always comply with all state and local laws governing highway safety and lighting and marking requirements.
- Operate only in daylight or good artificial light.
- Keep bystanders away from equipment.
- Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.
- Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in “locked up” position at all times.
- Never allow riders on power unit or attachment.
- Always sit in power unit seat when operating controls or starting engine. Securely fasten seat belt, place transmission in neutral, engage brake, and ensure all other controls are disengaged before starting power unit engine.
- Look down and to the rear and make sure area is clear before operating in reverse.
- Use extreme care when working close to fences, ditches, other obstructions, or on hillsides.
- Do not operate or transport on steep slopes.
- Do not stop, start, or change directions suddenly on slopes. Always operate down slopes; never across the face.
- Use extreme care and reduce ground speed on slopes and rough terrain.
- Keep alert and watch the front as well as the rear when operating.
- When making gang adjustments, be careful to keep hands and feet clear of sliding parts and possible pinch points.

- Stop power unit and equipment immediately upon striking an obstruction. Turn off engine, remove key, inspect, and repair any damage before resuming operation.

- Before leaving operator's seat, lower lift arms and put attachment on the ground. Engage brake, stop engine, remove key, and remove seat belt.

MAINTENANCE

- Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.

- Never go underneath equipment (lowered to the ground or raised) unless it is properly blocked and secured. Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death.

- When performing maintenance or repairs make sure the equipment is in the lowered position and both the mainframe and gangs are properly blocked and secured to prevent rolling. Failure to do so can cause serious injury or death.

- Make sure attachment is properly secured, adjusted, and in good operating condition.

- Before leaving operator's seat, lower lift arms and put attachment on the ground. Engage brake, stop engine, remove key, and remove seat belt.

- Never perform service or maintenance with engine running.



SAFETY RULES



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

MAINTENANCE(cont'd)

- Keep all persons away from operator control area while performing adjustments, service, or maintenance.
- Tighten all bolts, nuts, and screws to torque chart specifications. Check that all cotter pins are installed securely to ensure equipment is in a safe condition before putting unit into service.

STORAGE

- Block equipment securely for storage.
- Keep children and bystanders away from storage area.



CAUTION: Always operate with the machine nearly level, both in working and transport positions. Make sure that ALL tractor lights and markings are visible from the rear of the implement before transporting on public roadways. The tractor center link can be positioned in multiple holes on the tractor to vary the lift height.

Details about your Food Plot Seeder

- a. This Food Plot Seeder consists of a sturdy mainframe with various components and attachments that may be added or removed.
- b. The FP2204 comes with either a single-point or Cat I 3-point hitch, while the FP2206 and FP2208 come with a 3-point hitch only. The FP2204 drawbar is designed for a 2 inch (5 cm) ball hitch. The FP2206 and FP2208 are designed to fit Cat I or II hitches. All 3-point models are iMatch (Quick Hitch) compatible.
- c. The single-point hitch is designed to hook up with many types of pulling machines and vehicles. Examples are an ATV (500 CC or better), utility vehicles (Gators), and small tractors.
- d. The pull-type machine is equipped with an electric jack and attached wheel assembly. This is to give ground clearance during transporting of unit and allows you to adjust the depth of the cut by using the wheels as a depth gauge. If the electric jack should fail, a 3/16 in. (4.76 mm) allen wrench will remove the cover and a 1/4 in. (6.35 mm) allen wrench will turn motor shaft.

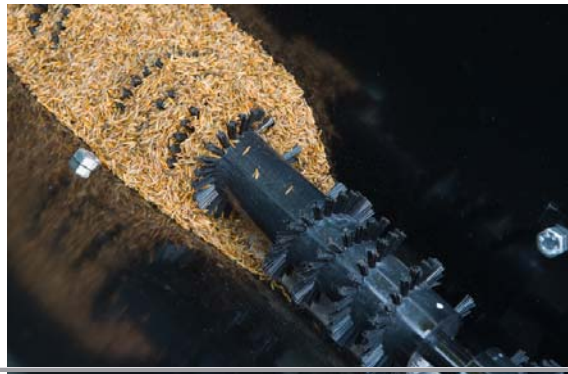


CAUTION: Avoid injury! Do NOT pull this unit on a public road or highway. The wheels on this machine are not intended for road use.

When coupling this unit to a utility vehicle, make certain the wire cable for the operating box has slack to allow for turns, but not enough to allow cable to become entangled with the disks.

Do not attempt to disconnect machine from vehicle with material remaining in the unit. Machine could become unstable causing injury.

- e. Each unit comes with an electric seeder to distribute and plant seeds (box is for seeds only/not fertilizer or lime). The flow control lever is attached directly to the seed gate. There are infinite settings that determine the opening of the seed drop hole in the bottom of the seeder. The seeder has a rotating brush (shown below) to aid in even seed distribution, including seed blends.
- f. The drag is used to level the soil and to cover large seeds.
- g. The roller is used to pack the soil after planting.



DEALER INSTRUCTIONS

Pre-assembly

All tractor units come completely assembled to the dealer, with the exception of the rear drag, which must be attached to the rear of the machine with the provided pins. Cut the banding and remove the unit from the pallet. Then remove any packing material and ensure that all hardware is tight. If you have a pull-type hitch model, remove machine from crate and install the single point hitch with supplied hardware. Then install the drag to the rear of the machine.

Dealer Checklist

Inspect the equipment thoroughly to be certain it is set up properly before delivering it to the customer. The following check list is a reminder of points to inspect.

Check off each item if it is found satisfactory or after proper adjustment is made.

___ Check that all safety decals are installed and in good condition. Replace if damaged.

___ Check all bolts to be sure they are tight.

___ Check that all cotter pins and safety pins are properly installed.

___ The disc gangs have been pre-assembled and mounted to the main frame at the factory. It is important for the dealer to visually check and make sure all parts are intact prior to delivery to customer.

___ Show customer the safe, proper procedures to be used when mounting, dismounting, and storing equipment.

___ For 3-point units, add wheel weights, ballast in front tires, and/or front tractor weight to enhance front end stability. A minimum 20% of tractor and equipment gross weight must be on front tractor wheels. When adding weight to attain 20% of tractor and equipment weight on front tractor wheels, you must not exceed the ROPS weight certification. Weigh the tractor and equipment. Do not estimate!

___ Show customer how to make adjustments.

___ Present Operator's Manual and request that customer and all operators read it before operating equipment. Point out the manual safety rules, explain their meanings and emphasize the increased safety hazards that exist when safety rules are not followed.

Dealer Checklist (continued)

___ **POINT OUT THE SAFETY DECALS.** Explain their meaning and the need to keep them in place and in good condition. Emphasize the increased safety hazards when instructions are not followed.

___ Explain to customer the potential crushing hazards of going underneath raised equipment. Instruct customer that service work does not require going underneath unit and never to do so.

Installation & Removal

Installing Pull-Type Machine on Utility Vehicle

1. Park ATV or Gator. (See SAFETY RULES section.)
2. Place the machine behind the vehicle.



FP2204 Drawbar Hitch

3. Place drawbar hitch onto vehicle 2 in. (5 cm) hitch ball. Close coupler and align the hitch pin holes. NOTE: For optimum performance, keep drawbar as level as possible during operation and transport (See Operating section).
4. Install hitch pin through holes in coupler.
5. Secure spring locking pin through hole in hitch pin.
6. Attach wiring clips to vehicle battery.

Installing 3-Point Machine on Tractor

1. Park tractor safely. (See SAFETY RULES section.)
2. Place the machine behind the tractor.



iMatch Hitch



3-Point Hitch

(Shown with optional grating kit.)

3. Engage three point pins onto tractor iMatch hitch or Quick-Coupler. Make sure proper bushings are in place. Close locking latches (A).
4. If tractor does not have an iMatch or Quick-Coupler, Install lower hitch pins (C) through holes in link arms and secure with spring locking pins (B). Then install top hitch pin (C) in tractor turnbuckle and secure with locking clip (B). Make sure proper bushings are in place.
5. Attach wiring clips to tractor battery.

Determining Correct Tractor Ballast



CAUTION: Front-end ballast may not always maintain the required stability if the tractor is driven too fast over rough ground with machine in raised position. Be safe and drive slowly under these conditions.

Install the proper amount of weight to the front of the tractor as recommended in the tractor operator's manual. For proper front end weighting, see the following implement code table.

NOTE: The implement code number represents the weight of the machine and how far rearward the weight is from the tractor.

			<u>Implement Code</u>
<u>FP2204</u>	English	Metric	
Weight, lb (kg)	660	300	48.4
CG distance, in (cm)	36.36	92.35	
<u>FP2206</u>			
Weight, lb (kg)	960	435.4	79.6
CG distance, in (cm)	45.94	116.69	
<u>FP2208</u>			
Weight, lb (kg)	1120	508	94.1
CG distance, in (cm)	46.99	119.35	
<u>FP2204 w/ seed</u>	English	Metric	
Weight, lb (kg)	802	363.8	61.5
CG distance, in (cm)	39.66	100.74	
<u>FP2206 w/ seed</u>			
Weight, lb (kg)	1174	532.5	102.6
CG distance, in (cm)	50.4	128.02	
<u>FP2208 w/ seed</u>			
Weight, lb (kg)	1397	633.7	124.2
CG distance, in (cm)	51.88	131.78	

Removing Pull-Type Machine from Utility Vehicle

1. Park unit safely. (See SAFETY RULES section.)



CAUTION: Avoid injury! Do not attempt to disconnect machine from vehicle with material remaining in the unit. Machine could become unstable.

2. Remove all material from seed box.



FP2204 Drawbar Hitch

3. Remove spring locking pin from hitch coupler.
4. Remove hitch pin. Open coupler.
5. Move machine off vehicle hitch ball.
6. Install hitch pin and spring locking pin on hitch coupler for storage.
7. Un-hook wiring clips from vehicle battery and store wires on machine.

Removing 3-Point Machine from Tractor

1. Park tractor safely. (See SAFETY RULES section.)



CAUTION: Avoid injury! Do not attempt to disconnect machine from tractor with material remaining in the unit. Machine could become unstable.

2. Remove all material from seed box.



iMatch Hitch



3-Point Hitch

(Shown with optional grating kit.)

3. Disconnect locking mechanisms (A) on iMatch or Quick Hitch and lower tractor 3-point hitch to disengage.
4. If attached directly to tractor 3-point hitch, remove spring locking pins (B) and hitch pins (C) from link arms and locking clip (B) and hitch pin (C) from turnbuckle.
5. Install hitch pins and locking pins and clips on hitch for storage.
6. Un-hook wiring clips from tractor battery and store wires on machine.

Operating the Food Plot Seeder

Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by an operator's single careless act.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, judgment, and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.

The operator is responsible for the safe operation of this equipment. The operator must be properly trained. Operators should be familiar with the equipment, the tractor, and all safety practices before starting operation. Read the safety rules and safety decals on pages 6-9.

Owner should check and tighten all hardware after the first hour of operation. The break in stage of your new Food Plot Seeder can cause minimal loosening of disc gangs and other hardware as the new paint wears. Please see Bolt Torque Chart (pages 40-41) for proper torque information.

When to Use the Food Plot Seeder

The best times to plant food plots are spring and fall. Grass should be less than 3 in. (76 mm) high for best tillage results.

Spring planting gives the seeds a chance to grow strong before summer takes its toll, while a fall treatment will allow the wildlife a fertile breeding ground.



CAUTION: Avoid injury! Keep hands and feet away from all moving parts. Never carry riders.

IMPORTANT: Avoid damage! Never exceed the weight capacity of the seed box.

Never operate with broken or worn out parts.

On Pull-Type model, engage wheels to transport position when crossing concrete or asphalt surfaces.

Always back carefully in a straight line to avoid jackknifing the machine.

Periodically remove debris build up that can restrict performance of or damage the S-tines.

Checking Tractor Ground Speed

1. Check ground speed in an open area.
2. Measure a test area that is 100 ft (30.5 m) in length.
3. Operate tractor at a consistent RPM. Operate tractor at a low speed and drive the test distance. Record the time needed to travel that distance.
4. Make three passes, recording the time for each pass. The average time should be 14 to 23 seconds to achieve the recommended operating speed range:
 - at 3 mph (4.8 km/h), the average time traveling the test distance should be 23 seconds.
 - at 5 mph (8 km/h), the average time traveling the test distance should be 14 seconds.
5. Adjust speed accordingly to achieve the recommended speed range.

Operating – Tillage Components

When to use the Tillage Components

The disks and S-tines will actively penetrate soil, allowing much needed air, water, and nutrients to enter the soil. It will also relieve soil compaction and manage weed populations.

Moderate soil moisture content is important for proper operation of the Food Plot Seeder. Penetration will not occur in extremely dry soil, and very wet conditions will cause the unit to "bog down," possibly causing product damage.

The tillage components should not be used when conditions are too wet or too dry. To determine condition, dig a small amount of your soil, about 3 in. (76 mm) deep:

If soil appears powdery and brittle, it is too dry. Wait until a later date, after a rainfall.

If soil appears damp, roll a small amount into a ball in the palm of your hand, if it forms a ball, then it is too wet. Ideally, the soil should fall apart when rolled in the palm of your hand. Wait till a later date for soil to dry. If soil is too wet, the S-tines will penetrate too deep and your tractor could lose traction, causing machine damage. If soil is too dry, the S-tines will not penetrate the soil properly.

Checking the Disks and S-Tines during Operation on a Tractor

Operation of the disk and S-tines will vary with soil type, condition, and amount of weight in the seed box. Make sure soil conditions are appropriate for operation. Do not exceed the seed box capacity to try and improve penetration in overly dry conditions.

Test operation of the disks and S-tines by driving the tractor forward about 10 ft. (3 m). Observe the operation. Check for uniform soil flow, levelness of the ground, and proper sizing of clods.

Adjust ground speed to achieve proper tillage results.

Periodically, check the S-tines for residue build-up. Remove any debris that might restrict or cause damage to the S-tines.

Grass should be less than 3 in. (76 mm) high for proper tillage action during food plot planting.

When in use, all S-tines on the Food Plot Seeder should deflect back and "flip" the soil backward. If disks or S-tines seem to drag, the unit is too low and should be raised. If all the

disks or S-tines stay in the free position, the unit should be lowered.

If the disks or S-tines are not moving through the full range of motion, make up or down adjustments as required.

Checking the Disks and S-Tines during Operation on a Utility Vehicle

NOTE: Make up or down adjustments by no more than 1/4 in. (6.4 mm) each time, until proper results are achieved.



FP2204 Pull-Type Machine

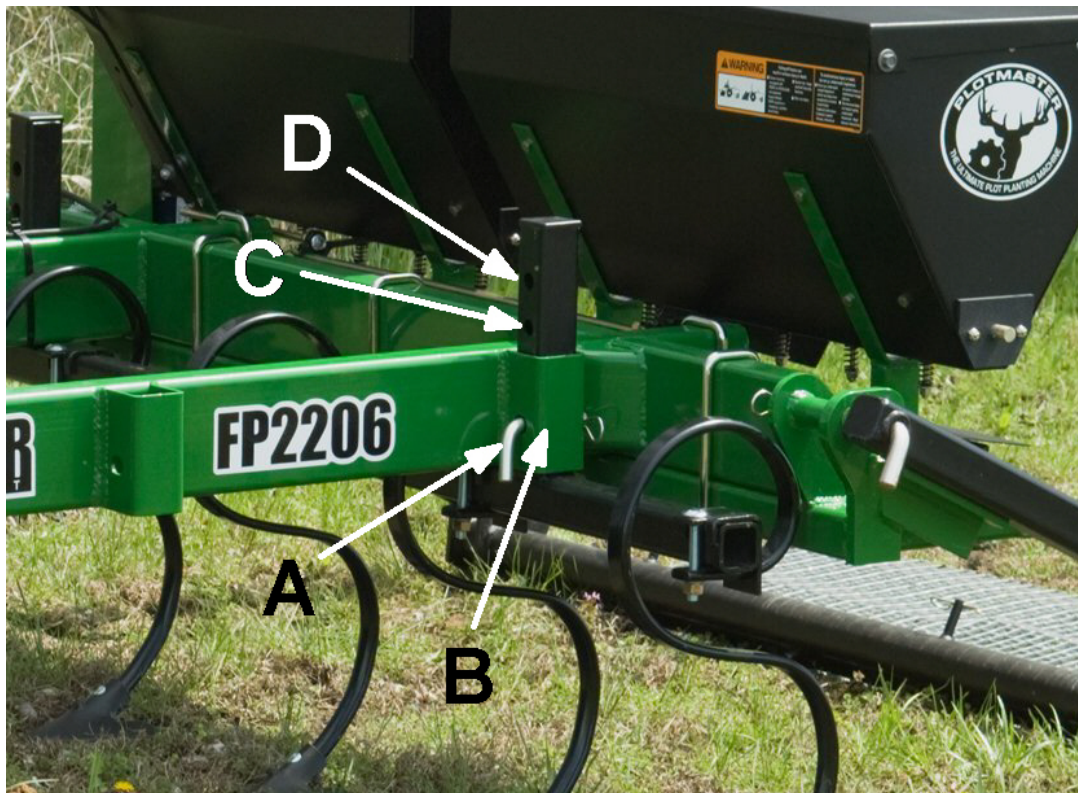
1. Adjust height of wheels with electric motor that comes with machine.
2. Place single-point hitch in center hole as a starting point.
3. Tow Food Plot Seeder to a level site and test depth of machine.
4. Raise or lower wheels to place disks and S-tine points at desired depth. Machine frame should be relatively level front-to-rear.
5. For deeper tillage, adjust single-point hitch to lowest hole. For shallower tillage or transport, adjust it to the top hole.

Selecting the Operating Positions of the S-Tines



CAUTION: Avoid injury! Do not make adjustments unless the machine is installed on a tractor or utility vehicle.

Keep hands and feet away from disks and S-tines when lowering to the ground.



Adjust S-tine toolbar up and down by sliding it within the frame receivers and locking it in place using pins (A) and locking clips.

TRANSPORT AND OPERATE HIGH (B) - Use bottom hole to raise S-tines out of the ground.

OPERATE MEDIUM (C) - Use middle hole for minimum S-tine penetration.

OPERATE LOW (D) - Use top hole for maximum S-tine penetration.

Operating the Disk Gangs



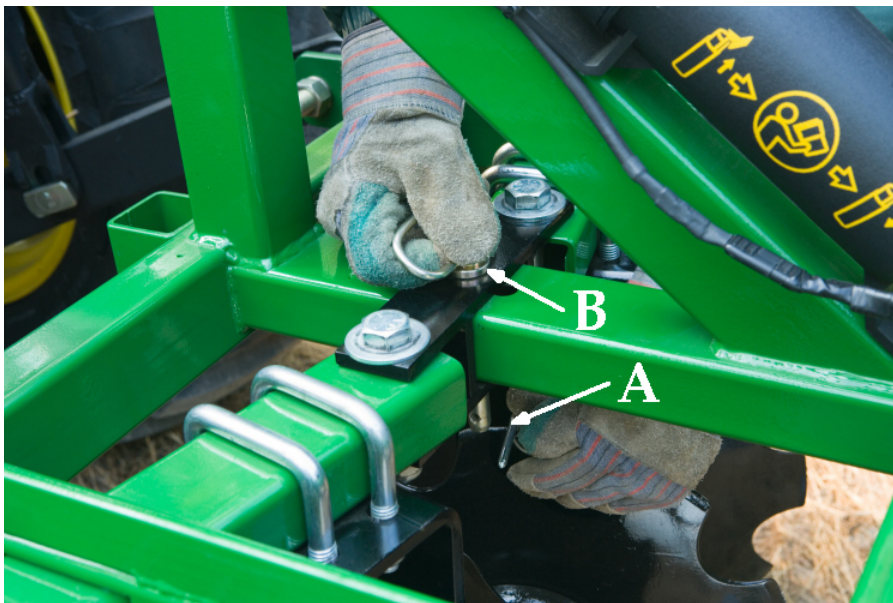
CAUTION: Avoid injury! Disk blades are sharp. Wear gloves and handle with care. Keep hands and feet away from all moving parts.

The disk gangs have three angle adjustments.

FORWARD HOLE: Shallowest angle setting, use for light disking

MIDDLE HOLE: Medium angle setting, use for normal disking

REAR HOLE: Sharpest angle setting, use for aggressive disking



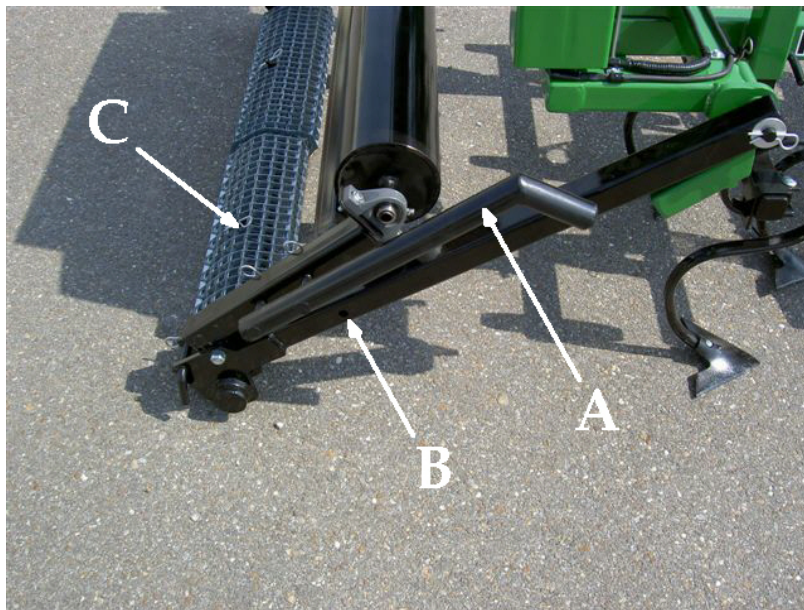
1. Remove spring lock pin (A) and pull out angle adjustment pin (B).
2. Push or pull disk gangs to desired position. Re-install pin (B) and (A).

Operating the Drag and Optional Roller

The drag and optional roller can be used individually, or in unison to achieve your desired task.

The drag will help level the soil and break up clods. Equip your machine with the optional roller to pack down freshly planted seed and improve seed-to-soil contact.

1. On the FP2206 and FP2208, use the leverage handle (A) to flip the roller over. The roller on the FP2204 does not come with a handle and can be flipped over by hand. When in the storage position, always keep the leverage handle pinned in the storage hole (B).



Rear Roller (Optional) with Leverage Handle

2. The roller can either be pinned in the working position, which places more down-pressure on the soil, or allowed to free-float depending on your requirements.

3. The drag can be rolled up when not needed. There are locking pins (C) to retain the drag in its storage position.

4. The roller can be placed on top of the drag to help break up hard clods.

Operating - Seeder



CAUTION: Avoid injury! Keep hands and feet away from all moving parts. Never carry riders.

1. Seed application rates can be affected by humidity and the amount of moisture in the material. Poor spreading results can occur if the material has been allowed to become wet or packed in the hopper.
2. Avoid stopping unit with seed box motor running, as material will continue to flow through seed box openings.

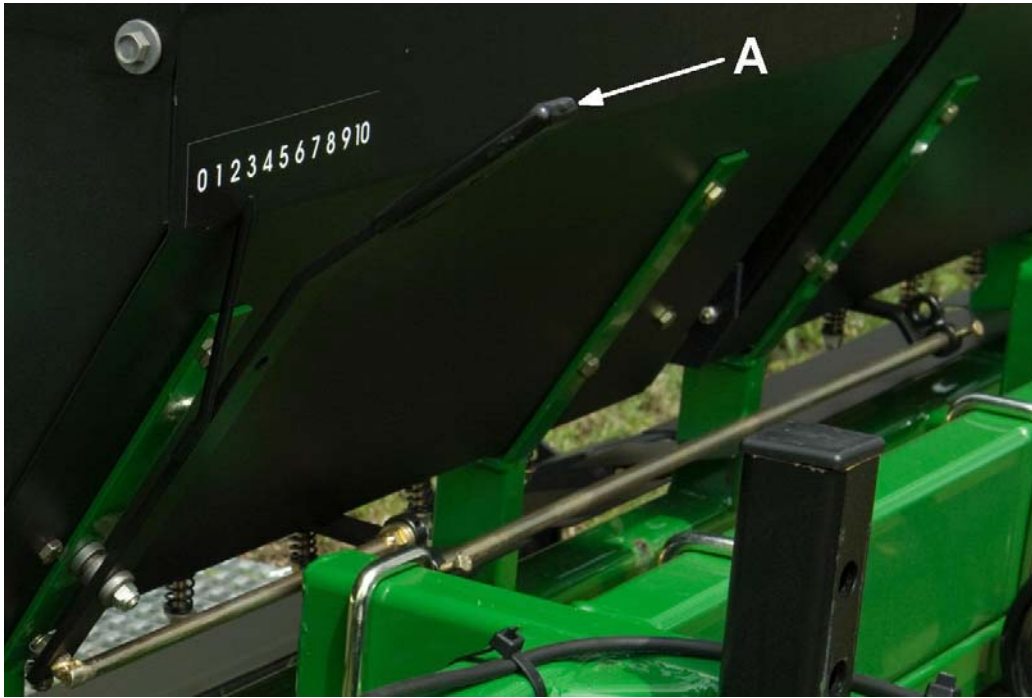
Selecting the Operating Positions



CAUTION: Avoid injury! Do not make adjustments unless the machine is installed on a tractor or utility vehicle.

Keep hands and feet away from discs and points when lowering to the ground.

1. Park tractor or utility vehicle safely. (See SAFETY RULES section.)
2. Install Food Plot Seeder to tractor or utility vehicle (See Installation & Removal section.)



Flow Control Lever

3. Move flow control lever (A) to the left (as shown) to shut off material flow. Move flow control lever to the right (as shown) to open seed box and allow material flow.
4. Engage the Food Plot Seeder in the ground and turn on seed motor as you start down the row to be planted.
5. Pull the Food Plot Seeder 3 to 5 mph (5 to 8 km/hr) for safe and effective operation.

Adjusting the Flow Rate

1. Set the flow control to 0 and add seeds not to exceed the weight capacity of the seed box.
2. Determine the correct flow rate setting for your spreading application using the chart below.

NOTE: Seed application rates as provided are affected by humidity and moisture content of the material. Minor setting adjustments may be necessary to compensate for these conditions.

Application Rate Chart					
Seed	Rate		Gate Setting	Speed	
	lbs per acre	kg per hectare		mph	km/hr
Oats	128	144.0	5	4	6.4
Rye	168	189.0	6	2.5	4.0
Rye Grass	25	28.1	5	5.5	8.8
Soybean	70	78.8	4.5	4	6.4
Sorghum	30	33.8	4	5	8.0
Millet	10	11.3	2	4	6.4
Sunflowers	25	28.1	5.5	5.5	8.8
Clovers	10	11.3	1	4	6.4
Wheat/Triticale	80	90.0	4.5	4.5	7.2
Cow Pea	25	28.1	3	5.5	8.8
Alfalfa	18	20.3	4	7	11.2
Monster Mix	8	9.0	1	4	6.4
Buckbean	6.5	7.3	3	3	4.8
Ultra Forage	9	10.1	4	7	11.2
Bucks and Bosses	8	9.0	2	4	6.4
Chicory	3	3.4	3	5	8.0
Alfa-Feast	10	11.3	2	5	8.0
Max Attract 50/50	40	45.0	6	6	9.6
Pea Patch	20	22.5	5.5	7	11.2
Upland Gamebird	20	22.5	6	7	11.2
Lablab	20	22.5	5	6	9.6
Lablab Plus	20	22.5	5	6	9.6
Native Warm Season Grass Seed					
Blend: Little blue stem, big blue stem, indiagrass, switchgrass, and partridge pea	6	6.8	10	5	8.0

How to Calibrate the Food Plot Seeder

To determine the seeding rate for any type seed when using the Food Plot Seeder, you need to know two things: a) seed coverage area and b) the amount of seed used to cover this area.

To determine the seeding rate, you must do the following:

- 1) Weigh a small amount of the seed, in pounds (kg) you wish to plant.
- 2) Place the small amount of seed that you weighed into seeder hopper.

- 3) Open the seed gate until the first seed falls out (open until the first largest seed falls out if it is a seed blend). Note this seed setting for future reference.
- 4) Turn on seeder motor.
- 5) Plant seed at the desired depth using a constant speed, usually between 4- 8 mph (6.4-12.9 km/hr).
- 6) Once all the seed has been dispensed out of your seeder, you must now determine the distance, in feet (m), that you covered (planted) with that amount of seed.
- 7) You must also measure the planting width, in feet (m), of the seeder.

Use the following formulas to determine the seeding rate:

$$\text{Seeding Rate} = \frac{\text{Amount of Seed, lbs (kg)}}{\text{Coverage Area, acres (hectare)}}$$

$$\text{Coverage Area} = \text{Distance Covered, feet (m)} \times \text{Planting Width, feet (m)}$$

43,560 square feet in one acre (10,000 sq m in one hectare)

Example: Say you are using the FP2206, which has a 5-ft (1.5 m) planting width. You weigh 3 lbs (1.4 kg) of seed and place it in the seeder. You open the seed gate until first seed comes out (ex. setting #5 on the seeder). You travel at the constant speed of 4 mph (6.4 km/hr) for a distance of 700 ft (213 m) before the 3 lbs (1.4 kg) of seed is completely dispensed. What is your seeding rate?

$$\text{Coverage Area} = \text{Distance Covered, feet (m)} \times \text{Planting Width, feet (m)} = 700 \text{ feet} \times 5 \text{ feet} (213 \text{ m} \times 1.5 \text{ m}) = 3500 \text{ sq ft} (319.5 \text{ sq m})$$

Divide by 43,560 square feet in one acre (10,000 sq m in one hectare)

$$\text{Coverage Area} = .08 \text{ acres} (.03 \text{ hectare})$$

$$\text{Seeding Rate} = \frac{\text{Amount of Seed (lbs)}}{\text{Coverage Area (acres)}} = \frac{3 \text{ lbs}}{.08 \text{ acres}} = 37.5 \text{ lbs per acre}$$

$$\text{Seeding Rate} = \frac{\text{Amount of Seed (kg)}}{\text{Coverage Area (hectare)}} = \frac{1.4 \text{ kg}}{.03 \text{ hectare}} = 46.7 \text{ kg per hectare}$$

Note: You can increase your seeding rate by increasing the opening or seed setting on your seeder (ex. going from setting #5 to setting #6) or by decreasing your speed of travel, i.e. going from 4 to 3 mph (6.4 to 4.8 km/hr).

You can decrease your seeding rate by decreasing the opening or seed setting on your seeder (ex. going from setting #5 to setting #4) or by increasing your speed of travel, i.e. going from 4 to 5 mph (6.4 to 8 km/hr).

Each time you change the type of seed used, seeder settings and/or your speed of travel, you will change your seeding rate. Therefore, you must recalculate your seeding rate each time you change seed types, seeder settings and/or speed of travel.

Determining the Flow Control Setting (Alternative Method)

1. Determine from material bag, the amount of material to be spread over a designated area. Example: The contents of this bag, 25 lb (11.3 kg), will cover 5000 sq ft (465 sq m).

2. Determine the amount of material required to cover 100 sq ft (9.3 sq m) as follows:

Divide the contents, lbs (kg) by the coverage area, sq ft (sq m), then multiply by 100 sq ft (9.3 sq m). Example: 25 lb divided by 5000 sq ft, then multiplied by 100 sq ft = 0.5 lb of material for 100 sq ft (11.3 kg divided by 465 sq m, then multiplied by 9.3 sq m = .23 kg of material for 9.3 sq m). To convert this weight to ounces, multiply by 16 (16 oz/lb) or 35 (35 oz/kg).

Example: $0.5 \text{ lb} \times 16 = 8 \text{ oz}$ ($.23 \text{ kg} \times 35 = 8 \text{ oz}$).

3. Determine approximate Flow Control Setting by using the APPLICATION RATE CHART shown on page 27 for your type of seed.

4. Measure off a distance of 26.5 ft (8.1 m) in your yard for the FP2204, 17 ft (5.2 m) for the FP2206, or 12.5 ft (3.8 m) for the FP2208. This is the distance your seeder must travel in order to cover 100 sq ft (9.3 sq m).

5. Set the flow control lever at the approximate flow control setting.

6. Place 5 lb of material in hopper. Weigh the material before and after spreading 100 sq ft (9.3 sq m) to determine amount of material used.

7. Move unit to measured area, turn on seed box motor, and open the flow control lever. Drive the 30 ft (9.1 m) course, stop unit, and close the flow control lever.

8. Remove and weigh remaining material. Subtract this weight from 5 lb (2.3 kg) to determine material used. If too much material is used, set Flow Control ONE number LOWER and try again. If too little material is used, set Flow Control ONE number HIGHER and try again.

9. After determining proper setting always record the type of material and the setting for future use.

3. Set the flow control lever to the desired setting.

Using the control box for seed dispensing or raising wheels



The control box illustrated above is used with all tractor models. To engage the seeder motor(s), turn the switch on. This box can be connected directly to the tractor battery with the provided connectors. Wiring extensions also come with each machine and can be placed between the implement and control box or between the battery and control box.



The control box illustrated above is for the pull-type model and contains two switches, one to engage the seeder motor and the other to raise and lower the wheels for transport or to control the depth of tillage. This box can be connected directly to the utility vehicle battery with the provided connectors. Wiring extensions also come with each machine and can be placed between the implement and control box or between the battery and control box.

Service and Troubleshooting



CAUTION: Avoid injury! Disks and S-tines are sharp. Wear gloves and handle with care. Shield sharp parts during service work.

- **NEVER GO UNDERNEATH EQUIPMENT.** Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death.
- Service work does not require going underneath.
- Read the Operator's Manual for service instructions or have service performed by a qualified dealer.

To prevent or eliminate rust on disks and S-tines or other ground engaging parts, apply a light coat of oil on them after each use.

For rust appearing on any part of your machine, sand lightly and coat with enamel.

Grease each bearing assembly before each use.

Periodically check the disks and S-tines. Remove any debris that might build up and restrict their performance.

Periodically check tightness of all fasteners.

Be sure to remove all unused seed from seed box immediately after use and clean with water to prevent corrosion.

Troubleshooting

1. Unit not tracking or is fishtailing
 - A. Adjust top link to increase weight on the rear of the machine.
 - B. Decrease speed.
 - C. Reduce disk gang angle.
 - D. Machine assembled incorrectly. Ensure that S-tines are properly spaced.
 - E. Make sure that all points or sweeps are equally worn.

2. Unit skipping or jumping in untilled, hard soil
 - A. Decrease speed.
 - B. Reduce disk gang angle.
 - C. Reduce depth of cut by carrying on 3 point lift for the first pass.

NOTE: Some experimentation may be required by trial and error to arrive at proper solution.

3. Unit leaving an un-level soil profile.
 - A. Place optional roller on top of drag.
 - B. Reduce depth of S-tines.
 - C. Level the frame of the machine by adjusting tractor turnbuckle.
 - D. Any combination of the above.

4. Unit ridging on the outside of machine.
 - A. Decrease speed.
 - B. Reduce disk gang angle.
 - C. Level the frame of the machine by adjusting tractor turnbuckle.
 - D. Any combination of the above.

5. Blades and/or S-tines plugging with soil or trash.
 - A. Soil conditions not suitable for tillage due to excessive moisture.
 - B. Grass is too high. Mow with a rotary cutter before tillage.

Storage

Storing the Food Plot Seeder



CAUTION: Avoid injury! Disks and S-tine points are sharp. Wear gloves and handle with care. Store attachments so sharp parts are shielded from contact.

1. Park tractor or utility vehicle safely. (See SAFETY RULES section.)
2. Remove all material from the seed box.
3. Remove machine from tractor or utility vehicle (See Installation & Removal section).
4. Wash machine thoroughly, including inside seed box. Allow to dry completely.
5. Replace all worn, damaged, or missing parts.
6. Sand any rusted areas lightly and paint with enamel.
7. Lubricate moving parts.
8. Apply a light coverage of oil to all disks, S-tines, and points to prevent rust.
9. Reduce air pressure in tires on pull-type unit and raise wheels off the ground.
10. If storing inside, place machine in a dry area with disks and points on the floor.
11. If storing outside, block machine off the ground to prevent contact with moisture.
12. Place a waterproof cover over the machine if it must be stored outside.

Removing the Machine from Storage



CAUTION: Avoid injury! Disks and S-tine points are sharp. Wear gloves and handle with care. Store attachments so sharp parts are shielded from contact.

1. Wash the machine if necessary. Allow to dry completely.
2. Inspect tires for deterioration (pull-type machine).
3. Inflate tires to proper pressure (pull-type machine).
4. Make sure all parts are in place and hardware is secure.

Food Plot Seeder Specifications

	FP2204		FP2206		FP2208	
	English	Metric	English	Metric	English	Metric
Dimensions						
Working width, in. (cm)	42	106.7	60	152.4	82	208.3
Unit length, in. (cm)	62	157.5	77	195.6	77	195.6
Unit height, in. (cm)	43	109.2	41	104.1	41	104.1
Drag width, in. (cm)	45	114.3	80	203.2	106	269.2
Optional CultiPacker width, in. (cm)	48	121.9	72	182.9	96	243.8
Seeding width, in. (cm)	45	114.3	71	180.3	96	243.8
Weight						
Implement, lb (kg)	660-730	299.4-331.1	960	435.4	1120	508
Tractor compatibility						
Horsepower range (kW) 3-Point Type	30-50	22.4-37.3	45-75	33.6-55.9	60-100	44.7-74.6
Horsepower range (kW) Pull-Type	20-40	14.9-29.8	NA	NA	NA	NA
Blade						
Quantity	6	NA	8	NA	12	NA
Diameter, in. (cm)	16	40.6	18	45.7	18	45.7
Thickness, in. (mm)	0.118	3	0.138	3.5	0.138	3.5
Spacing, in. (cm)	8.25	21	7.5	19.1	7.5	19.1
Type	Notched	NA	Notched	NA	Notched	NA
Bearing						
Hanger	.375 in. (10 mm) formed plate w/ reinforcement, 2 each .625 in. (16 mm) u-bolts per hanger					
Type	1 in. (25 mm) square sealed					
Gang						
Axle	1 in. (25 mm) square					
Adjustment	Pinned					
Seed box						
Capacity, lb (kg)	45	20.4	63	28.6	93	42.2

Specifications (continued)

	FP2204		FP2206		FP2208	
	English	Metric	English	Metric	English	Metric
Hitch						
3-point type	Cat. 1	NA	Cat. 1, Cat. 2	NA	Cat. 1, Cat. 2	NA
iMatch compatible	Yes	NA	Yes	NA	Yes	NA
Quik-Coupler	No	NA	Cat. 2	NA	Cat. 2	NA
Pull-Type configuration	Optional	NA	No	NA	No	NA
Ground management system						
S-Tines (quantity)	3	NA	4	NA	5	NA
Reversible chisel point quantity, 1.75 in. (22.86 cm)	3	NA	4	NA	5	NA
Sweep quantity, 9 in. (22.86 cm)	3-Optional	NA	4-Optional	NA	5-Optional	NA
Turning point quantity	---	NA	---	NA	---	NA
Right	1-Optional	NA	2-Optional	NA	2-Optional	NA
Left	1-Optional	NA	2-Optional	NA	2-Optional	NA

Attachments

The Frontier Food Plot Seeder is adaptable to many uses and needs. The following attachments can be ordered to meet your specific needs.

Rear Cultipacker Roller Attachment

All models can be equipped with a smooth roller to complement the rear drag. The roller will increase seed-to-soil contact for improved plant emergence. A lifting handle (FP2206 and FP2208 only) comes with it so that you can flip it up into a storage position when not needed. It can also be used as a weight on top of the drag to help break up hard clods.



Rear Cultipacker Roller (shown on FP2204)



Rear Cultipacker Roller (shown on FP2206)

S-Tine Toolbar Attachment (3-point Units Only)

All machines come standard with only ONE toolbar equipped with S-Tines. For increased tillage action, any tractor 3-point machine can be equipped with a second toolbar attachment, which comes with one less S-tine and 9" (23 cm) sweep than what comes with the base machine. This second toolbar slides into the frame receivers that are in front of the existing toolbar. This attachment will NOT work on the pull-type machine because the wheel assembly mounts in these receivers.



Second S-Tine Toolbar

Native Warm Season Grass (NWSG) Kit

For planting Native Warm Season Grasses and other light, fluffy seeds, this kit will give you excellent seedbed preparation and seed scatter control. The kit includes a seed curtain with attachment brackets and weights, as well as a seedbed leveler for leveling and firming the seedbed in front of the drop zone. The curtain attaches to the back side of the food plot seeder to eliminate fluffy grass seed from blowing outside of the desired planting zone. The seedbed leveler attaches to the rear S-tines.



NWSG Curtain



NWSG Seedbed Leveler

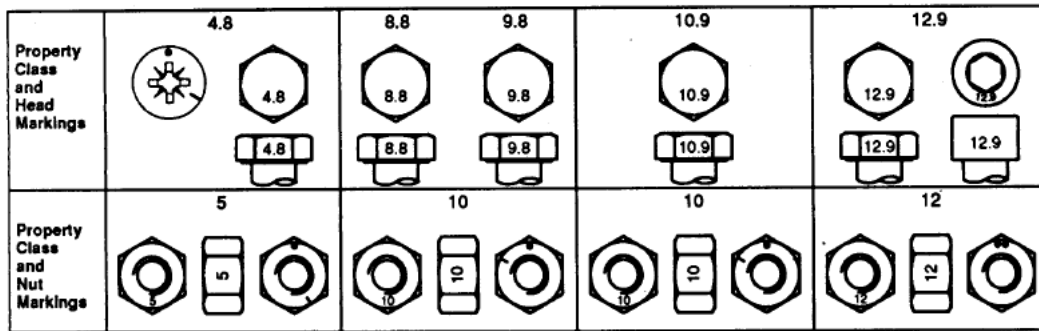
Frame Grating Kit (FP2206 and FP2208 Only)

Brackets can be added to the framework of the FP2206 and FP2208 to attach two metal grates. These are very handy to haul seed, tillage components, weight, etc. on the Food Plot Seeder. Always secure whatever you are hauling with heavy straps.



Metal Grates (2)

METRIC BOLT AND CAP SCREW TORQUE VALUES



Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Lubricated ^a		Dry ^a		Lubricated ^a		Dry ^a		Lubricated ^a		Dry ^a		Lubricated ^a		Dry ^a	
	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft
M6	4.8	3.5	6	4.5	9	6.5	11	8.5	13	9.5	17	12	15	11.5	19	14.5
M8	12	8.5	15	11	22	16	28	20	32	24	40	30	37	28	47	35
M10	23	17	29	21	43	32	55	40	63	47	80	60	75	55	95	70
M12	40	29	50	37	75	55	95	70	110	80	140	105	130	95	165	120
M14	63	47	80	60	120	88	150	110	175	130	225	165	205	150	260	190
M16	100	73	125	92	190	140	240	175	275	200	350	255	320	240	400	300
M18	135	100	175	125	260	195	330	250	375	275	475	350	440	325	560	410
M20	190	140	240	180	375	275	475	350	530	400	675	500	625	460	800	580
M22	260	190	330	250	510	375	650	475	725	540	925	675	850	625	1075	800
M24	330	250	425	310	650	475	825	600	925	675	1150	850	1075	800	1350	1000
M27	490	360	625	450	950	700	1200	875	1350	1000	1700	1250	1600	1150	2000	1500
M30	675	490	850	625	1300	950	1650	1200	1850	1350	2300	1700	2150	1600	2700	2000
M33	900	675	1150	850	1750	1300	2200	1650	2500	1850	3150	2350	2900	2150	3700	2750
M36	1150	850	1450	1075	2250	1650	2850	2100	3200	2350	4050	3000	3750	2750	4750	3500

DO NOT use these values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only. Check tightness of fasteners periodically.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical property class.

Fasteners should be replaced with the same or higher property class. If higher property class fasteners are used, these should only be tightened to the strength of the original.









^a "Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings. "Dry" means plain or zinc plated without any lubrication.

Make sure fasteners threads are clean and that you properly start thread engagement. This will prevent them from failing when tightening.

Tighten plastic insert or crimped steel-type lock nuts to approximately 50 percent of the dry torque shown in the chart, applied to the nut, not to the bolt head. Tighten toothed or serrated-type lock nuts to the full torque value.

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UNIFIED INCH BOLT AND CAP SCREW TORQUE VALUES

SAE Grade and Head Markings	NO MARK	1 or 2 ^b 	5 5.1 5.2 	8 8.2 
SAE Grade and Nut Markings	NO MARK	2 	5  	8  

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Size	Grade 1				Grade 2 ^b				Grade 5, 5.1, or 5.2				Grade 8 or 8.2			
	Lubricated ^a		Dry ^a		Lubricated ^a		Dry ^a		Lubricated ^a		Dry ^a		Lubricated ^a		Dry ^a	
	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft
1/4	3.7	2.8	4.7	3.5	6	4.5	7.5	5.5	9.5	7	12	9	13.5	10	17	12.5
5/16	7.7	5.5	10	7	12	9	15	11	20	15	25	18	28	21	35	26
3/8	14	10	17	13	22	16	27	20	35	26	44	33	50	36	63	46
7/16	22	16	28	20	35	26	44	32	55	41	70	52	80	58	100	75
1/2	33	25	42	31	53	39	67	50	85	63	110	80	120	90	150	115
9/16	48	36	60	45	75	56	95	70	125	90	155	115	175	130	225	160
5/8	67	50	85	62	105	78	135	100	170	125	215	160	240	175	300	225
3/4	120	87	150	110	190	140	240	175	300	225	375	280	425	310	550	400
7/8	190	140	240	175	190	140	240	175	490	360	625	450	700	500	875	650
1	290	210	360	270	290	210	360	270	725	540	925	675	1050	750	1300	975
1-1/8	400	300	510	375	400	300	510	375	900	675	1150	850	1450	1075	1850	1350
1-1/4	570	425	725	530	570	425	725	530	1300	950	1650	1200	2050	1500	2600	1950
1-3/8	750	550	950	700	750	550	950	700	1700	1250	2150	1550	2700	2000	3400	2550
1-1/2	1000	725	1250	925	990	725	1250	930	2250	1650	2850	2100	3600	2650	4550	3350

DO NOT use these values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only. Check tightness of fasteners periodically.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

^a "Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings. "Dry" means plain or zinc plated without any lubrication.

^b Grade 2 applies for hex cap screws (not hex bolts) up to 152 mm (6-in.) long. Grade 1 applies for hex cap screws over 152 mm (6-in.) long, and for all other types of bolts and screws of any length.

Fasteners should be replaced with the same or higher grade. If higher grade fasteners are used, these should only be tightened to the strength of the original.

Make sure fasteners threads are clean and that you properly start thread engagement. This will prevent them from failing when tightening.

Tighten plastic insert or crimped steel-type lock nuts to approximately 50 percent of the dry torque shown in the chart, applied to the nut, not to the bolt head. Tighten toothed or serrated-type lock nuts to the full torque value.

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