

PATRIOT™

Patriot 220 Seed Tender™

Owners Manual



Manufactured by
Minden Machine Shop Inc.
1302 K Road
Minden NE 68959
1-800 264-6587

Seed Tender	Trailer
Serial # _____ Date of Purchase _____	Serial # _____ Date of Purchase _____

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SAFETY AND OPERATION RULES

GENERAL SAFETY STATEMENTS

Safety precautions are essential when the use of any mechanical equipment is involved. These precautions are necessary when using, storing, and servicing mechanical equipment. Using this equipment with the respect and caution demanded will considerably lessen the possibilities of personal injury. If safety precautions are overlooked or ignored, personal injury or property damage may occur.

This unit was designed for specific applications. It should not be modified or/and used for any application other than which it was designed. If there are any questions regarding its application, write or call. Do not use this unit until you have been advised. For more information, call 1-800-264-6587.

Read this entire manual carefully - know your equipment. Consider the application, limitations, and the potential hazards specific to your unit. Occupational safety is of prime concern to us. This manual was written with the safety of the operator and others who come in contact with the equipment as our prime concern. The manual presents some of the day-to-day work problems encountered by the operator and other personnel. We wrote this manual to help you understand safe operating procedures for Patriot Seed Tenders. We want you as our partner in safety. A copy of this manual should be available to all persons who may operate this machine.

It is your responsibility as an owner or operator or supervisor, to know what specific requirements, precautions and work hazards exist and to make these known to all other personnel working with the equipment or in the area, so that they too may take any necessary safety precautions that may be required. Avoid any alterations of the equipment. Such alterations may create a dangerous situation where serious injury or death may occur.

Why is SAFETY important to you?

3 BIG REASONS

1	Accidents disable and kill
2	Accidents cost money
3	Accidents can be avoided

Signal Words

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

DANGER – An immediate and specific hazard, which will result in severe personal injury or death if proper precautions are not taken.

WARNING – A specific hazard or unsafe practice, which could result in severe personal injury or death if proper precautions are not taken.

CAUTION – Unsafe practices which could result in personal injury if proper precautions are not taken, or a reminder of good safety practices.

SAFETY ALERT SYMBOL



The Symbol Shown Above Is Used To Call Your Attention To Instructions Concerning Your Personal Safety. Watch This Symbol - It Points Out Important Safety Precautions. It Means ATTENTION! Become Alert! Your Personal Safety Is Involved! Read The Message That Follows And Be Alert To The Possibility Of Personal Injury Or Death.

Anyone who will operate or work around a Seed Tender shall first read this manual! This manual must be delivered with the equipment to its owner. Failure to read this manual and its safety instructions is a misuse of equipment.

SAFETY EQUIPMENT

Please, remember safety equipment provides important protection for persons around an auger that is in operation. Be sure ALL safety shields and protective devices are installed and properly maintained. If you find any shields or guards damaged or missing, contact Minden Machine Shop Inc. for the correct items.

SERIAL NUMBER

To ensure efficient and prompt service, please furnish us with the model and serial number of your Patriot Seed Tender in all correspondence or other contact. The Serial Number is located inside the front leg above the battery box.



SAFETY PROCEDURES

1. Use only lifting equipment with the proper capacity when loading or lifting bulk bags or lifting the Patriot Seed Tender. Forklifts with too little capacity may tip towards the front where the lifted weight is.
2. Do not use makeshift systems to handle seed or equipment as you may create an unsafe condition.
3. Do not attempt to raise the Patriot Seed Tender unit by hoist or forklift when it is loaded with product.
4. When the Patriot Seed Tender is mounted in pickup box it must be secured by bolting to bed or chained into all 4 corners. Carrying it loose could cause an accident.
5. Do not unhook your Patriot Seed Tender Trailer while it is full. Any incline or additional weight placed on the back could tip it over backwards.
6. When bulk bag is placed over the Patriot Seed Tender a danger exists when pulling open the pull cord. Hydraulics could fail or operator could make an error causing your arm to be pinned. Do not place a hand or arm into such a position. Extend the pull chord by tying a rope addition or string to lengthen it; this will allow you to pull the string without placing your arm or hand in danger.

7. Do not operate unit without safety shields or guards in place.
8. Do not allow any riders on the Patriot Seed Tender.
9. Do not enter the hoppers when it has product in it as suffocation could result. Do not enter the Patriot Seed Tender when motor is on as the auger could seriously injure.
10. Do not place flammable objects close to engine. This could cause a fire.
11. Never run engine in an enclosed area. As the exhaust is poisonous.
12. Avoid contact with the muffler. It becomes very hot during operation and remains hot for some time after the engine is turned off.
13. Refuel in a well-vented area with the engine turned off. Do not smoke or allow flames close to the refueling area.
14. Do not overfill gas tank and make sure the cap is properly closed.
15. In case of any defect or awareness of potential danger, please contact the plant at 1-800-264-6587 immediately.

LIGHTING AND MARKING

It is the responsibility of the customer to know the lighting and marking requirements of the local highway authorities and to install and maintain the equipment to provide compliance with the regulations. Add extra lights when transporting at night or during periods of limited visibility.



OPERATOR QUALIFICATIONS

Operation of this Seed Tender shall be limited to competent and experienced persons. In addition anyone who will operate or work around a Seed Tender must use good common sense. In order to be qualified, they must also know and meet all other requirements, such as:

1. Some regulations specify that no one under the age of 18 may operate power machinery. This includes Seed Tenders. It is your responsibility to know what these regulations are in your own area or situation.
2. Current OSHA regulations state in part: “At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee or user in the safe operation and servicing of all equipment with which the employee or user is, or will be involved.”
3. Unqualified persons are to stay out of the work area as shown in the work diagrams.
4. A person who has not read and understood all operating and safety instruction is not qualified to operate the machine.

SAFETY OVERVIEW

YOU are responsible for **SAFE** operation and maintenance of your Patriot Seed Tender.

YOU must ensure that you and anyone who is going to operate, maintain, or work around the seed tender must be familiar with the operating, maintenance, and safety information contained in the manual. This manual will take you step by step through your working day and alerts you to all good safety practices while operating the tender.

Remember YOU are the key to safety. GOOD PRACTICES protect not only you but also the people around you. Make these practices a working part of your safety program. Be certain EVERYONE operating this machine is familiar with the procedures recommended and follows safety precautions. Remember, most accidents can be prevented. Do not risk injury or death by ignoring any information addressed.

Tender owners must give operating instructions to operators before allowing them to operate the tender. They must be reviewed at least annually thereafter per OSHA regulation 1928.57.

The most important safety device on the equipment is a SAFE OPERATOR. It is the operator's responsibility to read and understand ALL instructions in the manual and to follow them. All accidents can be avoided!

Any person who has not read and understood all operation and safety instructions is not qualified to operate the seed tender. An untrained operator exposes himself and bystanders to possible serious injury or death.

Do not modify the equipment in any way. Unauthorized modifications may impair the functions and/or safety and could affect the life of the equipment.

SAFETY AFFIRMATION

I have read and understand the operator's manual and all safety signs before operation, maintenance, adjusting or unplugging the tender.

I will allow only trained persons to operate the Patriot Seed Tender. *An untrained operator is not qualified to operate this equipment.

I have access to a fire extinguisher.

I have all guards in place and will not operate the Patriot Seed Tender without them.

I will not allow riders on the Patriot Seed Tender.

I understand the danger of moving parts (PTO, auger flighting, and pinch points) and will stop engine before servicing.

I recognize the danger of the auger coming in contact with power lines.

I will unload the rear compartment first on two-compartment Patriot Seed Tenders.

I am aware of the need to secure the Patriot Seed Tender to its base, (truck box or trailer floor).

I understand the danger of working with bulk bags as they are placed over the Patriot Seed Tender.

I understand that any accidents that occur with the Patriot Seed Tender are my responsibilities.

I understand that Minden Machine Shop will not be held responsible of any accidents that involve the Patriot Seed Tender.

SIGN OFF SHEET (this must be signed annually as part of your safety program)

As a requirement of OSHA it is necessary for the employer to train the employee in the safe operation and safety procedures with this Seed Tender. We include this sign off sheet for your convenience and personal record keeping.

DATE	EMPLOYER SIGNATURE	EMPLOYEE SIGNATURE



MACHINE INSPECTION

After delivery of your new Seed Tender and/or completion of assembly, before each use, inspection of the machine is mandatory. This inspection should include, but not be limited to:

1. Check to see that all guards are in place, secured and functional.
2. Are all fasteners tight?
3. Check oil levels in the Engine, clutch and auger gearbox. (See Owners Manuals.)

SAFETY DECALS

1. Keep safety decals clear and legible at all times.
2. Replace decals and signs that are missing or have become unreadable.
3. Safety signs are available from your Dealer or the Manufacture.

How to install Safety Signs

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

INTRODUCTION

Model: 220 Seed Tender

Purpose:

The Patriot Seed Tender serves as a bulk transfer system for seed and other dry flowable products. It allows the user to move his product from point A to point B via the Patriot Seed Tender on a trailer. This process accelerates delivery and handling time. For example: a mini bulk bag weighing from 1000 to 3000 lbs, can be emptied into the Patriot Seed Tender in seconds, the equivalent when transferred in 50 lb bags. Bags would take 20 minutes. The Patriot Seed Tender also allows you to draw seed directly from bins.

The Patriot Seed Tender full of seed for example, is transferred to the field/site where the drill/planter is located. The user parks beside the planter/drill and moves the telescopic movable spout about the target. The tender uses a poly cupped auger powered by a gas motor with a clutch system. The auger is activated by the switch located at the end of the telescopic spout or near the motor depending on what your application is.

Features:

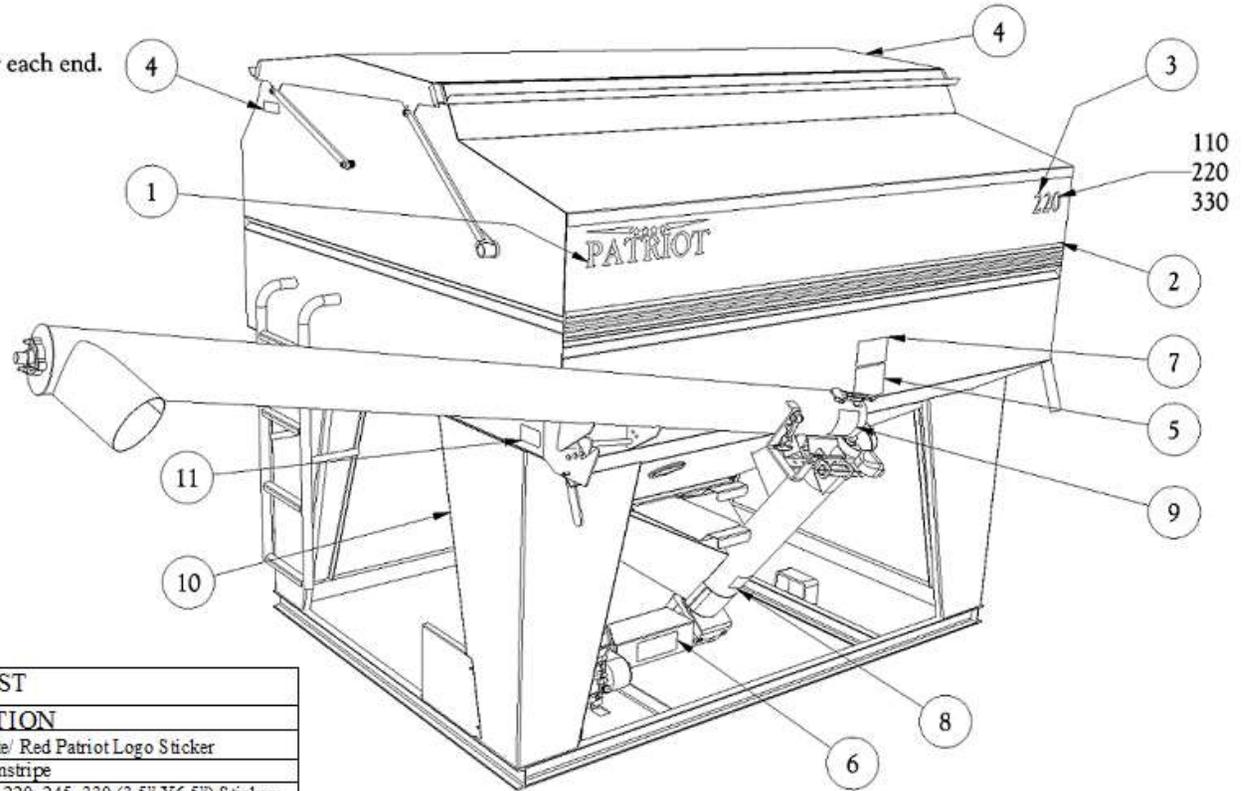
1. Hopper – Designed for flow-ability in cone and proper angle of repose on top. All Patriot Seed Tenders are sized to compliment bulk bags or other measuring used in bulk handling.
2. Ground Controlled Lid – This unique design protects the seed from moisture and is easily opened and closed from the ground
3. Transfer auger – The poly cupped auger delivers 400 lbs per minute and is very gentle on seed.
4. Ladders – Allows the user to look into the hopper and access seed boxes or seed bags.
5. Site glass – Allows you to monitor the product level within the tanks from eye level.
6. Telescopic spout – The 3-tier model allows extension of nearly 17 ft reach, with 15 ft lateral reach.
7. Throttle/Clutch control – The switch located at the end of the telescopic spout controls the variable speed actuator. It controls flow and stops and activates the flow without motor shutdown.
8. Shut off gate – The feature allows you to choose which hopper you want to empty and handle different varieties of seed on the same load.

Thank you for choosing the Patriot Seed Tender delivery system. This manual covers the operation and maintenance of the Patriot Seed Tender. All information in this manual is based on the latest production information available at the time of printing. For the latest version of this catalog please call 1-800-264-6587.

Minden Machine Shop Inc. reserves the right to make changes at any time without notice and without incurring any obligation.

Please become familiar with all safety, operating, maintenance and troubleshooting information. This will ensure your safety and long life for the system.

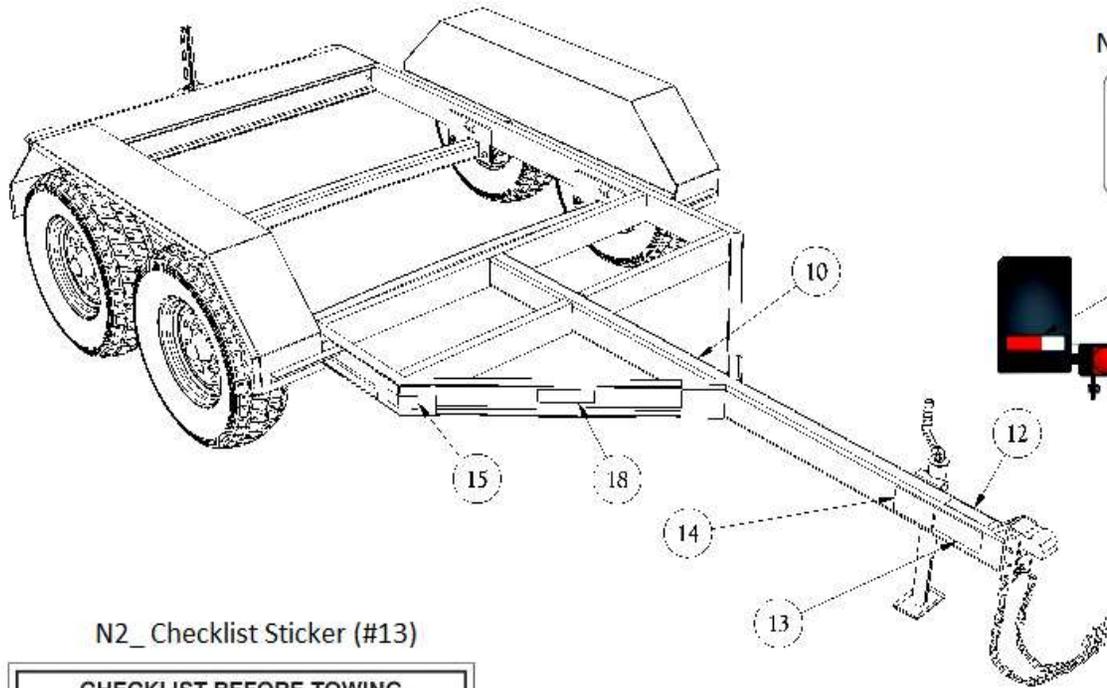
Item #4 -Sticker each end.



PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	PPT1155/ PPT1155-1	5" X 20" White/ Red Patriot Logo Sticker
2	2	00275065	1 1/2" White Pinstripe
3	2	White Part Number Sticker	100, 110, 200, 220, 245, 330 (3.5" X 6.5") Sticker
4	2	C1 Caution Overhang	Overhang Caution Sticker (1 1/2" X 5")
5	1	C2 Caution General	General Caution Safety Sticker (4 1/2" X 6")
6	1	C4 Rotating Driveline	Rotating Driveline Sticker (3" X 8")
7	1	D1 Danger Electrical Lines	Electrical Line Danger Sticker (3 1/2" X 6")
8	1	Danger Rotating Auger	Rotating Auger Sticker (4" X 3")
9	1	Warning Pinch Point	Pinch Point Sticker (4" X 4")
10	1	Serial Number Plate	Patriot Equipment Serial Number Plate
11	1	W3 Warning Pinch Point	Pinch Point Warning (4" X 2")







N1_ Notice Seed Tender Sticker (#12)



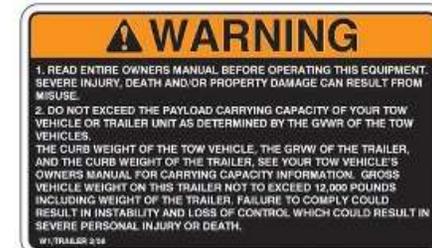
N2_ Checklist Sticker (#13)

CHECKLIST BEFORE TOWING	
<ul style="list-style-type: none"> ● READ ENTIRE OWNERS MANUAL BEFORE TOWING ● ALL PARTS, BOLTS AND NUTS ARE TIGHT ● LOAD IS PROPERLY SECURED IN/ON TRAILER ● TIRES ARE PROPERLY INFLATED ● TIRES ARE NOT OVERLOADED BRAKES ARE WORKING PROPERLY 	<ul style="list-style-type: none"> ● ELECTRICAL CONNECTIONS ARE WORKING ● SAFETY CHAINS IS SECURED ● HITCHING MECHANISMS ARE SECURED ● JACK IS RAISED TO ITS HIGHEST POSITION AND CRANK HANDLE IS SECURE ● INSPECT ALL WIRING AND ENSURE THAT IT IS PROPERLY SECURED

Serial Plate (#10)



W1_ Warning Trailer (#14)

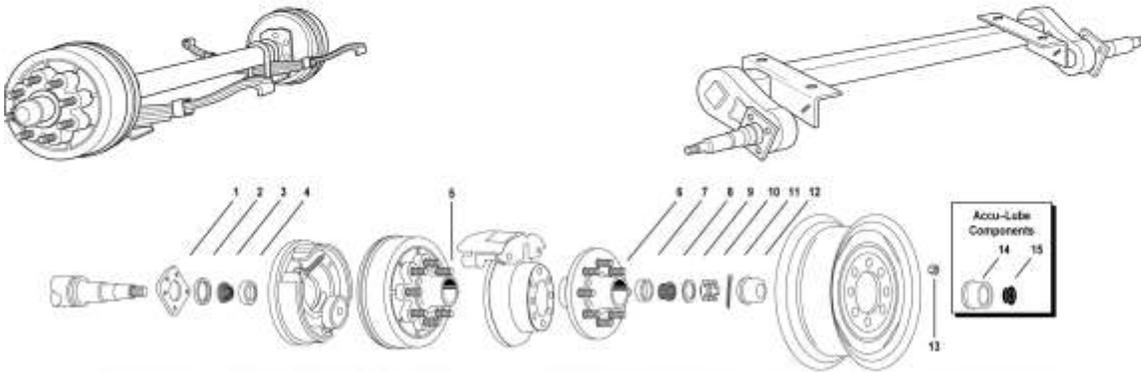


PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
10	1	Serial Number Plate	1 1/2" X 4" on tube drivers side
12	1	N1_ Notice Seed Tender Sticker	6 1/4" X 1 3/4"
13	1	N2_ Checklist Sticker	7" X 3" Checklist before Towing
14	1	W1_ Warning Trailer	3 1/2" X 6" Warning
15	2	DOT Trailer Corner Plate Sticker	5" X 2" Place on each front corner
16	2	DOT Trailer Rear Fender Sticker	9" OAL, Red 5 1/2" X White 3 1/2"
17	1	DOT Trailer Rear End Sticker	DOT 25" OAL, 7" White X 11" Red X 7" White
18	1	Small Patriot Logo Sticker	2" X 8" Patriot Logo



2" X 8" Patriot Logo (#1)

5.2, 6 & 7K Axle Assemblies



5,200, 6,000 AND 7,000 LB. COMPONENT PARTS

t #	Description	Diagram #	Part #	Description	Diagram #
T	Brake flange, 5-hole	1	14125A	Outer bearing, 1.25" ID (8 bolt)	–
33VB	Grease seal, single lip, 2.25"	2	4753	Spindle washer, 1"	9
33TBN	Grease seal, double lip, 2.25"	–	4754	Spindle nut, 1" – 14	10
80	Inner bearing, 1.75" ID	3	4755	Cotter pin, 1/8" x 2"	11
20	Inner race, 3.625" OD	4	21-1	Grease cap, 2.44" OD (8 bolt)	12
9-25-Z	Wheel stud, 1/2" – 20 x 2.5"	5	1605	Grease cap, 2.717" OD (8 bolt)	–
9-Z	Wheel stud, 1/2" – 20 x 1.8125"	6	4756	Cone wheel nut, 1/2" – 20 x 60"	13
45	Outer race, 2.441" OD (8 bolt)	7	21-1-AL*	Grease cap, Accu-Lube 2.44" OD	14
76	Outer race, 2.717" OD (8 bolt)	–	1605-AL*	Grease cap, Accu-Lube 2.717" OD	–
23	Outer bearing, 1.25" ID (8 bolt)	8	RP-100*	Rubber plug, Accu-Lube cap	15

* for Accu-Lube spindles

5,200, 6,000 AND 7,000 LB. HUBS/DRUMS

Complete Part #	Hub, Cupped & Studded Part #	Description	Bolt Pattern	Complete Hub Part #	Hub, Cupped & Studded Part #	Description	Bolt Pattern
55	82655-1	Idler hub	6 on 5 1/2"	92865A	92865A-1	Brake drum	8 on 6 1/2"
60	82660-1	Idler hub	6 on 6"	92865A-OB*	92865A-1OB	Brake drum	8 on 6 1/2"
65A	82865A-1	Idler hub	8 on 6 1/2"	9286T-OB**	9286T-1OB	Brake drum	8 on 6 1/2"
55	92655-1	Brake drum	6 on 5 1/2"	*Oil bath **Oil bath / 1/2" studs			

Cupped & studded hubs include the hub, wheel studs and inner & outer race/cups. Complete hubs include the cupped and studded hub, inner & outer bearings, seal, lug nuts and dust cap/grease cap.

Add "AL" to complete assembly part numbers for Acculube components.

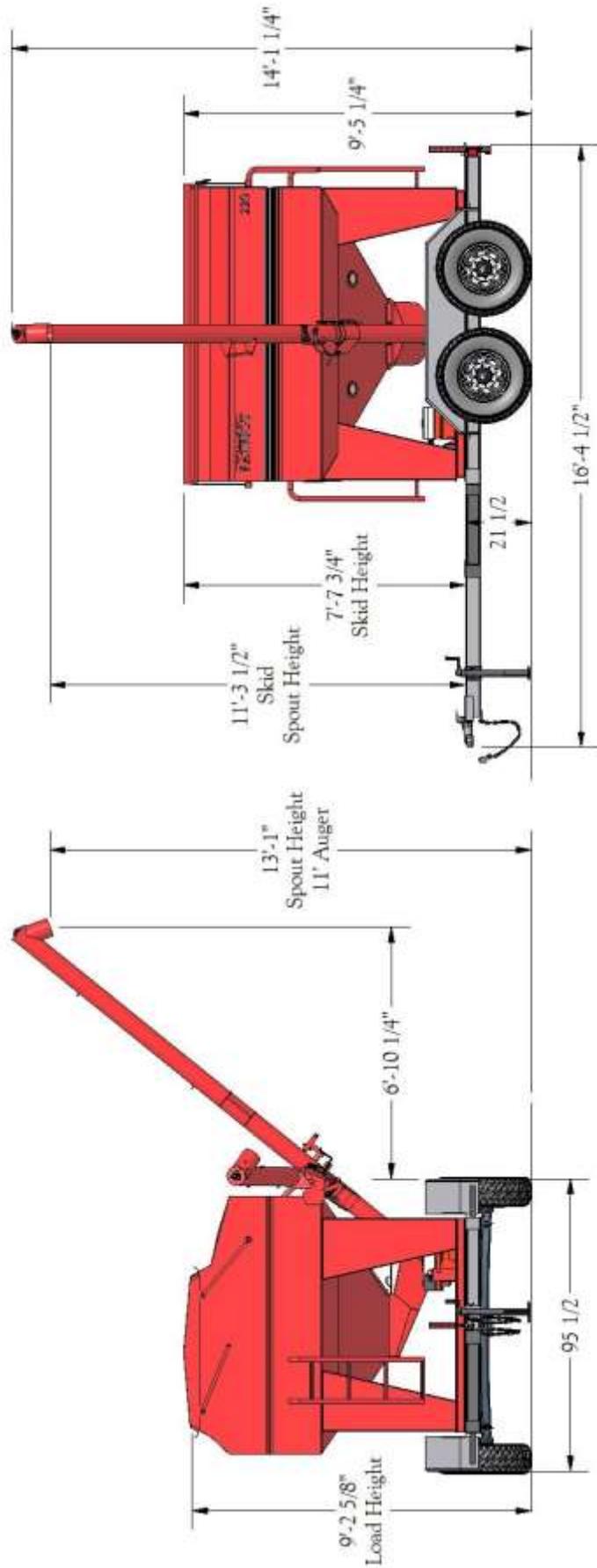
5,200, 6,000 AND 7,000 LB. BRAKES

t #	Description	Part #	Description
4-L	Electric, 12" X 2 1/4", left hand	44896	Hydraulic freebacking premier, 12" X 2 1/4", left hand
4-R	Electric, 12" X 2 1/4", right hand	44895	Hydraulic freebacking premier, 12" X 2 1/4", right hand
1-L	Hydraulic, 12" X 2 1/4", left hand	2/RCM-12	Hydraulic disc, 12", pair (8 bolt)
1-R	Hydraulic, 12" X 2 1/4", right hand	2/RCM-12E	Hydraulic disc, 12", E-coat, pair (8 bolt)
29	Hydraulic freebacking, 12" X 2 1/4", left hand	2/RCM-12-SB	Hydraulic disc, 12", bronze, pair (8 bolt)
28	Hydraulic freebacking, 12" X 2 1/4", right hand	2/RCM-13	Hydraulic disc, 13", pair (8 bolt)
64	Hydraulic premier, 12" X 2 1/4", left hand	2/RCM-13E	Hydraulic disc, 13", E-coat, pair (8 bolt)
63	Hydraulic premier, 12" X 2 1/4", right hand		

For brake replacement parts see pages C-4, C-13 thru C-14 and C-19.

It is not recommended to exceed axle capacity by spring capacity.

DIMENSIONS CHART



WIRELESS REMOTE INSTRUCTIONS

WIRELESS REPROGRAMMING INSTRUCTIONS

WARNING!!!!

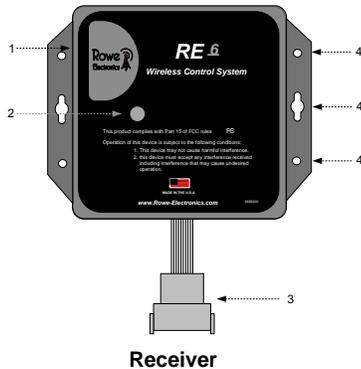
THE OPERATOR SHOULD NOT ATTEMPT TO REPAIR ANY RADIO CONTROLLER. IF ANY PRODUCT PERFORMANCE OR SAFETY CONCERNS ARE OBSERVED, THE EQUIPMENT SHOULD IMMEDIATELY BE TAKEN OUT OF SERVICE. DAMAGED AND INOPERABLE RADIO CONTROLLER EQUIPMENT SHOULD BE RETURNED TO PATRIOT EQUIPMENT FOR EVALUATION AND REPAIR. FAILURE TO FOLLOW THIS WARNING COULD RESULT IN DAMAGE TO EQUIPMENT.



NOTE: If your Patriot Seed Tender does not have the electric start option, the electric start on button and electric start off button on the remote transmitter will have no function.

Overview:

The RE6 wireless control is designed to provide highly dependable, consistent wireless performance. Aside from battery replacement, the units are practically maintenance free and built with quality components for durability and reliability.



- 1. Magnetic sensor learn area (side of box)
- 2. Power and status indicator light
- 3. Connector for wire harness
- 4. Mounting holes

Safety:

Ensure that the transmitter is not left unsupervised while the receiver is powered on.

Caution:

Tampering with or using the product in a fashion other than intended can result in product malfunctions leading to injuries or death. Misuse or evidence of tampering will void the warranty.

Power Management/Restrictions:

The RE6 may be used to directly control power to applications. The systems have a maximum current rating which needs to be observed. Individual outputs are rated at 2.5A each. The maximum, combined simultaneous output limit is RE6 7.5Amps. Exceeding the limit will result in damage to the unit. For applications requiring higher output amperages, the RF systems may be used in conjunction with relays.

Rx/Tx Communication/Learning:

When purchased, the communication between the transmitter(s) and the receiver unit will already be established. If communication is lost or additional transmitters are added, the learn procedure is completed by holding the bottom of the keyfob transmitter on the "learn" area. The indicator light on the receiver will turn solid red indicating it is ready to pair with the transmitter. Once the light is red, press a button on the transmitter and watch for the receiver indicator light to flash green indicating a successful pairing.

Power Supply:

An adequate power supply is essential for proper performance. The receiver draws a small amount of current when it is in stand-by mode and can discharge the battery over time. Always disconnect the RF unit when charging the battery or performing any electrical work. The receivers have an internal thermal fuse that will, in most cases, shut the unit down if it encounters overvoltage situations, but there are some conditions that it cannot protect against. If the thermal fuse does activate, the unit will shut down. Once the unit cools, the RF system will reset and function normally. Should the unit shut down in such a manner, inspect the electrical system that is powering the RF unit.

Rowe Electronics and Patriot Equipment Seed Tenders

Pull Start Engines

The Rowe controller will not start a pull start engine from the

Mounting:

Mount the unit with the electrical plug pointing down in an area that offers as much protection as possible and away from direct sources of high heat, moisture, vibration, and electromagnetic energy. Proper mounting and placement will ensure the best and long lasting performance.

Wiring:

The wire harness is specific to the wireless controller. It has a 7.5 amp fuse incorporated into the power lead going to the receiver. **DO NOT REPLACE WITH A HIGHER AMPERAGE FUSE – USE 7.5 AMP FUSE ONLY.** The wire harness should be inspected regularly for any damage.

Operation:

Once the unit is powered up by turning on the toggle switch, you are ready to operate. On both the receiver and transmitter unit there is an L.E.D. indicator. On power up, the receiver unit will flash four times. This indicates that the unit is getting power, and that it is ready to operate. The RE6 unit has a line of sight range of 100' feet. Keep in mind that battery condition, receiver mounting location, and multiple obstructions can reduce the effective range.

Battery Replacement:

The battery (#CR2032) in the key fob remotes should be changed annually prior to each operational season. If transmitter battery voltage has dropped below 2.85 vdc battery should be replaced. If inconsistent performance reduced range is observed, the remote battery should be changed. The battery can be changed by removing the screw on the back of the unit and splitting the transmitter. Once opened, slide the battery out of its holder, and replace. To prevent damage, do not use screwdrivers or other tools inside of the transmitter case. Upon reassembly, apply silicone around the keypad edge and make certain the keypad is properly seated in the sealing channel and the two caps are mated correctly. This will prevent water ingress.

Troubleshooting:

The majority of trouble shooting issues can be traced back to a power supply (battery) deficiency.

- 1. replace the remote battery
- 2. check the main power source for 12.4V
- 3. check the power and ground wire connections
- 4. check the fuse in the power wire

If you still are experiencing difficulties, a troubleshooting sheet can be found on our website www.rowe-electronics.com

Additionally, feel free to contact our customer support center at 515-981-5504.

*Rowe Electronics, Inc.
339 Hakes Drive
Norwalk, IA, 50211
515-981-5504*

key fob due to the pull start engine having no electric start installed.

Electric Start Engines

The electric start engines that Patriot Equipment uses on the seed tenders will also have a pull start for a backup in the event the electric start will not operate. Due to the electric start, the Rowe key fob can be used to start the engine.

To start the engine with the Rowe key fob, perform the following:

1. Rotate the key switch that is mounted to the engine to the "on" position.



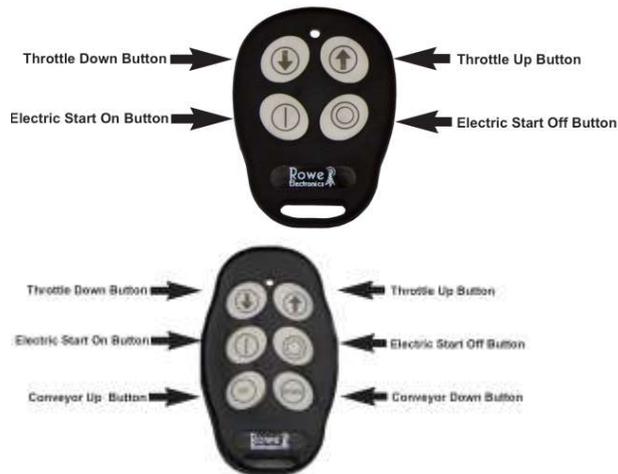
2. Turn the leg switch (located on the leg of the seed tender) to the "on" position.



3. Choke the engine as needed.
4. Depress the electric start on/start button on the key fob
5. The engine should begin to turn over and start
6. The key fob can be used to speed up and slow down the engine

To turn the engine off:

1. Depress the electric start off button on the Rowe key fob (the motor should stop)
Hold the button until the engine shuts down.
2. Locate the key switch on the engine and rotate the key switch to off

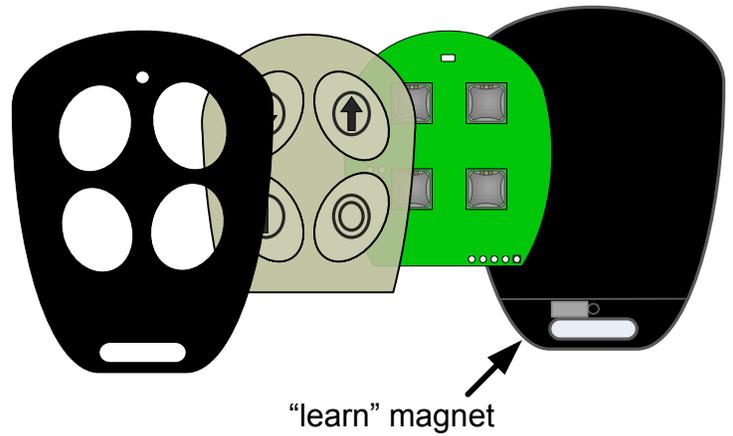


Scale Operation

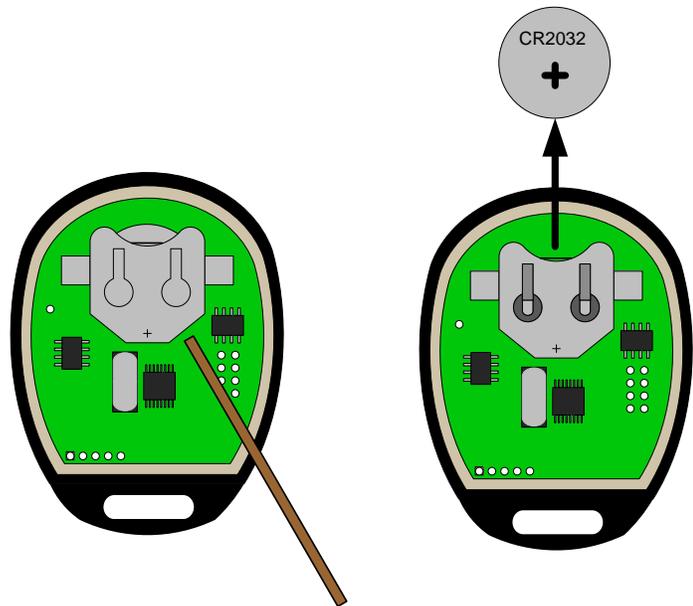
The Rowe system integrates with the scale to enable the user to dispense a predetermined amount of seed. To enable the automated dispensing, the toggle switch located next to the scale needs to be placed in the "auto" position. The "manual" position is for non-automated operation of the seed tender. Please refer to scale manual on the procedure to program the amount of weight of seed to dispense. Once programmed, the Rowe system will slow the engine down (stopping seed dispensing) when the predetermined amount of seed has been dispensed.



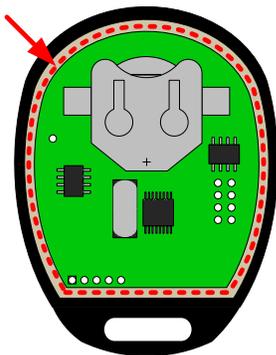
Remove the small screw on the backside of the case and carefully pry open the two halves of the case. There are four parts that fit together; front side case, membrane, pcb, and backside case. Be careful not to pull out the “learn” magnet.



The front side of the case, membrane and pcb will likely stay together. Use a non-metal object to push the battery out as shown. Using a metal object will damage the board. Insert a new battery carefully with the positive face up.



Add small bead of silicone around the rubber membrane edge before assembling the two halves of the case



MINDEN MACHINE – Dual Function System Operational Parameters (PN: RE3-MMDM)

This system has a dual momentary configuration; the two outputs (White and Gray wires) are controlled through operation of the remote. The control button configuration on the MINDEN MACHINE RE3-MMDM is as follows:

The wiring harness has four wires coming out of the RF receiver unit. The plug pin-out and wire colors are as follows:

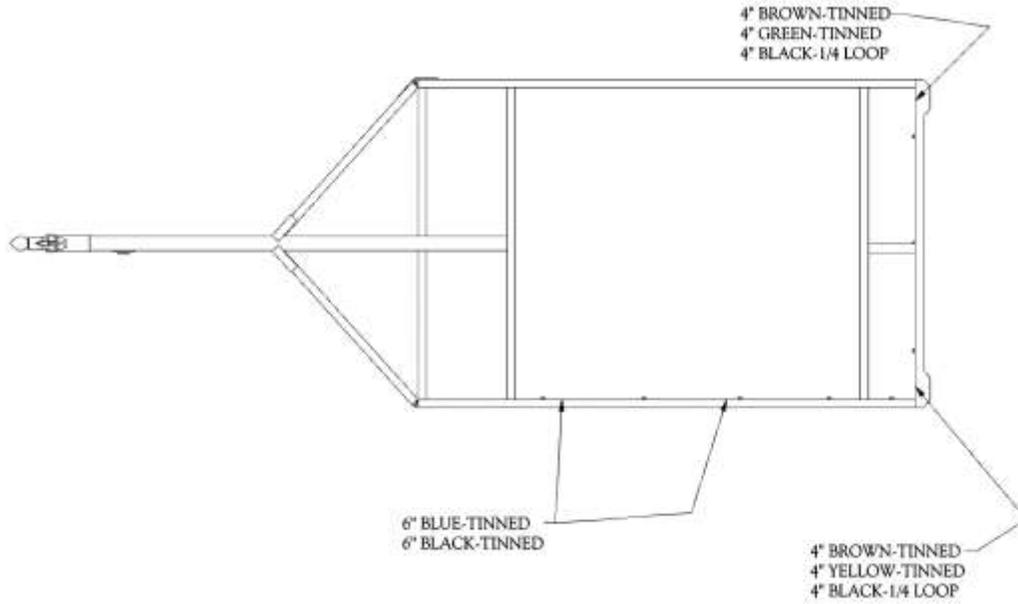
Pin 1 – Yellow - Power Lead (+12V IN)

Pin 5 – White – Output (+12V – momentary - while button 1 is depressed)

Pin 7 – Black – Ground Lead (connect to ground)

Pin 8 – Gray – Output (+12V – momentary - while button 1 is depressed)

TRAILER WIRING DIAGRAM



DESIGNATED WORK AREA

WORK AREA DIAGRAM

Before starting the Seed Tender, a designated work area should be established. The work area should be a perimeter in which no persons should be allowed that are not directly involved in the operation of the Seed Tender. Also all persons in the work area must have read and understand this manual.

RULES FOR SAFE WORK AREA

Under no circumstances should persons not involved in the operation be allowed to trespass into the work area. It shall be the duty of all operators to see that children and/or other persons stay out of the work area! Trespass into the work area by anyone not involved in the actual operation, or trespass into hazard area by anyone, shall result in immediate shut down by the operator. It shall be the responsibility of all operators to see that the work area has secure footing, is clean and free of all debris, and tools, which might cause tripping and/or falling. It shall also be their responsibility to keep the work area clean and orderly during the operation.

OPERATING PROCEDURES

STARTUP AND BREAK-IN PROCEDURES



It is essential to inspect your drive line before adding power and know how to shut down in an emergency. During the operation of your auger, one person shall be in a position to monitor the operation. Any auger when it is new or after it sets idle for a season should go through a “break-in” period. The auger should be run at partial capacity until several bushels of grain have been augered to polish the flighting assembly and tube. When the screw and the tube are polished and smooth the auger can be run full. Never operate the auger empty for any length of time, as excessive wear will result.

CAUTION: During the initial start up and break-in period, the operator shall be aware of any unusual vibrations or noises that would indicate a need for service or repair. Keep all safety shields and devices in place. Keep hands, feet and clothing away from moving parts. The operator should have a full view of the work area and check that all personnel are clear of designated work area before adding power.

SHUT OFF POWER AND LOCKOUT DRIVE TO ADJUST, SERVICE OR CLEAN.

BULK SEED TENDER INSTALLATION

Caution!

**Because the center of gravity is much higher with a loaded tender on a truck bed, much care should be taken in the way the truck is driven and parked.

**If the tender is to be used in hilly country, do not unhitch a load or partial load as it could roll away and cause it to flip.

The unit should sit evenly and squarely on the bed of the truck or trailer. It may be necessary to also block the base to keep it from moving around.

When transporting, keep in mind the auger extends forward, be aware of objects two tall in the towing vehicle. Use caution when passing oncoming traffic or going near obstructions like wires or doors.

OPERATING GUIDELINES

The Patriot Seed Tender is designed to safely and efficiently transport bulk seed to the field to be filled into your planter or drill. Following all safety and operating guidelines should ensure many years of safe and affordable use.

PRE-OPERATION CHECKLIST

When operating this unit for the first time and each time you use it, the following information should be reviewed.

1. Make sure the unit is secured to a base and will not slide or roll off.
2. Make sure lids are properly latched.
3. Make sure the shields are properly installed.
4. Make sure the auger is secure before transporting.
5. Make sure the throttle cable is free from tangles.
6. Make sure you understand the operation of the gas engine.
7. Carefully study and understand this manual.
8. Do not wear loose-fitting clothing which may catch in moving parts.
9. Always wear protective clothing and substantial shoes.
10. It is recommended that suitable protective hearing and (eye protection) sight protectors be worn.
11. The operator may come in contact with certain materials which may require specific safety equipment, relative to the handling of such materials (examples: extremely dusty, molds, fungus, bulk fertilizers, etc.).
12. Keep wheel lug nuts or bolts tightened to specified torque.
13. Assure that the tires are inflated evenly and to the proper PSI.
14. Give the unit a visual inspection for any loose bolts, worn part or cracked welds, and make necessary repairs. Follow the maintenance safety instructions included in this manual.
15. Be sure there are no tools lying on or in the equipment.
16. Do not use the unit until you are sure that the area is clear, especially of children and animals.
17. Because it is possible that this equipment may be used in dry areas or in the presence of combustibles, special precautions should be taken to prevent fires and fire fighting equipment should be readily available.
18. Don't hurry the learning process or take the unit for granted. Ease into it and become familiar with your new equipment.
19. Practice operation of your seed tender and its attachments. Completely familiarize yourself and other operators with its operation before using.
20. Do not allow anyone to stand between the tongue or hitch and the towing vehicle when backing up to the equipment.
21. Securely attach the unit to the towing vehicle using the appropriate ball with the proper rating and always use safety chains.

DURING OPERATION

1. Beware of bystanders, **PARTICULARLY CHILDREN!** Always look around to make sure it is safe to start the engine of the unit or the towing vehicle to move the seed tender.
2. **NO PASSENGERS ALLOWED-** Do not carry passengers anywhere on, or in, the equipment.
3. Keep hands and clothing clear of moving parts.
4. Do not clean, lubricate, or adjust your seed tender while the motor is running.
5. When halting operation, even periodically, set the towing vehicles breaks, disengage the PTO and shut off the engine, and remove the ignition key.
6. Be especially observant of the operating area and terrain – look for holes, rocks or other object that may cause you to trip and fall. Always inspect area prior to operation.
7. Pick the levellest possible route when transporting across fields. Avoid the edges of ditches or gullies and steep hillside.
8. Maneuver the Seed Tender at safe speeds.
9. Avoid overhead wires or other obstacles. Contact with overhead lines could cause serious injury or death.
10. Allow for the units length when making turns.
11. Do not walk under or work on raised components or attachment unless securely positioned and blocked.
12. Keep all bystanders, pets and livestock clear of the work area.
13. Never leave running equipment unattended.
14. As a precaution, always recheck the hardware on the equipment following every 100 hours of operation. Correct all problems. Follow the maintenance safety procedures.

OPERATING PROCEDURE

1. Start motor (see motor manual)
2. Throttle/Clutch control should be in neutral.
3. Move telescopic spout above target.
4. Activate auger by pushing the up arrow button on the keyfob at the end of the spout. This in turn will cause the gas motor to increase in speed engaging the centrifugal clutch attached to the motor. When the desired RPM has been attained let go of the green button.
5. Before container is completely filled, return engine to idle by pressing the down arrow button on the keyfob until the auger stops turning, as some product may be in spout.
6. Move to next target and repeat process.
7. When finished empty auger on last box, shut off engine and latch auger.
8. Put fuel lever in “off“ position prior to transporting the unit.

SHUTDOWN

A. NORMAL SHUTDOWN

When shutting down the auger to ready for transportation, make certain that the hopper and auger are empty before stopping the unit. Before folding the auger, the power source needs to be turned off.

B: EMERGENCY SHUTDOWN

If something happens that would cause a need for an emergency shutdown disengage the auger by slowing the motor to an idle by pressing the red switch at the end of the spout. If for some reason this does not work immediately turn the engine off. Investigate and determine the problem making sure not to put you or anyone in danger. Fix the problem and go through the startup and break-in procedure again.

LOCKOUT

The auger must be stopped and the power source turned off if the operator must leave the work area or whenever servicing or adjusting. Precaution should be made to prevent anyone from operating the auger when the operator is absent from the work area or inside the tender. Never operate the auger with the top auger not folded up or the cleanout door open.

HIGHWAY AND TRANSPORT OPERATIONS

1. Always drive at a safe speed relative to local conditions and ensure that hour speed is low enough for an emergency stop to be safe and secure. Keep speed to a minimum.
2. Reduce speed prior to turns to avoid the risk of overturning.
3. Avoid sudden uphill turns on steep slopes.
4. Always keep towing vehicle in gear to provide engine braking when going downhill. Do not coast.
5. Do not drink and drive.
6. Comply with state and local laws governing highway safety and movement of farm machinery on public roads.
7. Use approved accessory lighting, flags, and necessary warning devices to protect operators of other vehicles on the highway during daylight and nighttime transport.
8. The use of flashing amber lights is acceptable in most localities. However, some localities prohibit their use. Local laws should be checked for all highway lighting and marking requirements.
9. When driving the equipment on the road or highway under 20 MPH at night or during the day. Use flashing amber warning lights and slow moving vehicle (SMV) identification emblem.
10. Plan your route to avoid heavy traffic.
11. Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc.
12. Be observant of bridge load ratings. Do not cross bridges rated lower than the gross weight at which you are operating.
13. Watch for obstructions overhead and to the side while transporting.
14. Always operate equipment in a position to provide maximum visibility at all times. Make allowances for increased length and weight of the equipment when making turns, stopping the unit, etc.



TIRE SAFETY

1. Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death.
2. Do not attempt to mount a tire unless you have the proper equipment and experience to do the job
3. Inflating or servicing tires can be dangerous. Whenever possible, trained personnel should be called to service and/ or mount tires.
4. Always order and install tires and wheels with appropriate capacity to meet or exceed the anticipated weight to be placed on the equipment.

TRANSPORTING SEED TENDER



DANGER: Do not transport Seed Tender at speeds in excess of 50 MPH and comply with your state and local regulations governing marking, towing and maximum width. Observe safe driving and operation practices.



DANGER: Be alert to overhead obstructions and electrical wires. Failure to do so may result in electrocution. Always lower the auger into the stowed position before moving. Maintain at least ten (10) feet of clearance. See above chart showing the height of the auger in the up position. Check the chart to determine the height of you auger
Make certain everyone is clear of the work area before moving.

LUBRICATION & MAINTENANCE

For economical and efficient operation of your auger maintain regular and correct lubrication. Neglect leads to reduced efficiency, excessive wear and needless down time.



1. **WARNING** Keep all safety shields and devices in place. Never clean, adjust or lubricate a machine that is in operation.
2. Make sure there is plenty of ventilation. Never operate the engine in an enclosed building. The exhaust fumes may cause asphyxiation.
3. Always use the proper tools or equipment for the job at hand.
4. Honda engine – refer to manual for information on maintenance products and schedules.
5. Gearbox – refer to manual for information on maintenance products and schedules.
6. Cosmetic – any exposed metal where paint or powder has been chipped, gouged, scratched or worn should be lightly sanded, then primed and painted with good enamel paint. If color is hard to match contact Minden Machine Shop Inc.
7. To prevent stone chips on units being pulled by a truck, you should have a set of mud flaps large enough to remedy possible chipping.
8. Bearings should be examined annually for wear and tear.
9. Replace all shields and guards after servicing and before moving.
10. After servicing, be sure all tools, parts and service equipment are removed.
11. Do not allow grease or oil to build up on any step or platform.
12. Never replace hex bolts with less than grade five bolts unless otherwise specified. Refer to bolt torque chart for head identification markings.
13. Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. The

manufacturer will not claim responsibility for use of unapproved parts and/or accessories and other damages as a result of their use.

14. If equipment has been altered in any way from original design, the manufacture does not accept any liability for injury or warranty.
15. A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this or any equipment.

TROUBLE SHOOTING

LOW CAPACITY

The auger may not be getting enough grain. Check to see the intake has not “bridged over” restricting the flow. The exposed flighting at the auger intake should be covered with grain to achieve maximum capacity. Check auger speed. A slow speed (below recommended speed) will result in low capacity.

AUGER PLUGS

The auger may be getting too much grain and be “jamming” inside the housing. Reduce the amount of grain being fed into the auger. Is the auger free of any foreign material, such as sacks, tarp corners, etc. A plug of the discharge end will cause an auger plug.

EXCESSIVE AUGER NOISE

Damage could have occurred to the auger flighting, thus causing noise. Damage usually occurs because of foreign material having been run through the auger. It may be necessary to remove the flighting for inspection.

If at any time the auger begins to make excessive noise it could be that the belt may have become loose and may need to be tightened. Failure to do so promptly will cause the belt to fail prematurely.

MOTOR DOES NOT START

1. Check gas, old gas will loose octane power. Is you fuel valve on the engine turned on? Check your manual for further advice.
2. The unit may have been moved while the gas was not shut off, resulting in gas leaking into the oil. An oil change should fix this.

MOTOR VIBRATES ROUGHLY AT TOP SPEED

1. Motor may be running to fast. See Engine Manual for setting top speed.
2. PTO shaft not properly aligned or attached.

AUGER DOES NOT TURN

1. Check the throttle cable attachments for activate clutch.
2. Check for PTO slippage or condition.
3. Check to make sure bearings are not frozen.

4. Make sure auger is properly aligned.

OPERATING & ADJUSTMENT OF VARIABLE SPEED THROTTLE ACTUATOR

**The Throttle controller is simple to operate when you keep these few points in mind.
BEFORE STARTING THE ENGINE**

1. Always keep the battery fully charged. When storing the unit for an extended period of time such, as over winter, you should remove the battery and store it in a place where it can be trickle charged periodically to keep it on good condition. Note: the battery needs to be charged at the start of the season to ensure that you will not have problems when you are in the field.
2. Check operation of the actuator before starting the engine. To do this press the green and red buttons on the switch and watch the arm move left or right depending on which button is pressed. Make sure that the actuator arm is closest to the motor before starting engine. This will prevent the motor from being at full throttle and discharging product.
3. Make sure that there is no obstruction in the discharge tube.

AFTER STARTING THE ENGINE

1. Once the engine is started, let it warm up for a few minutes before operating the actuator. The engine should idle smoothly with the choke in the “off” position, once the engine has warmed up.
2. Press the green button on the switch.
3. The engine should increase in speed, and the auger should begin to operate.
4. To avoid premature wear of the auger, do not operate the unit empty unless cleaning out the auger.
5. To adjust top speed of the engine, adjust the top end RPM screw that the throttle lever comes against when at full throttle. If the motor has a rough bouncy top end RPM screw has been adjusted too much. Turn the top end RPM screw clockwise to get rid of the surging.

TROUBLE SHOOTING THROTTLE CONTROL

1. Engine does not come up to speed properly when you press the switch. Check the battery to see if it is fully charged. Check electrical connections. Check for any obstruction at the throttle lever. Check that the throttle spring is properly adjusted. If you are at a higher altitude you may have to adjust the carburetor (see engine manual).
2. Nothing happens when you press the switch. Check that the battery is fully charged. Check all wire connections and plugs. Check the switch.

IMPORTANT: An auger should be frequently checked and serviced to operate freely. Keep all guards and shields in place. Replace any that are damaged or lost. Our Seed Tenders are well made and we are proud of our line of equipment. We would like you, as our customer, to do your part in using caution and good judgment in using our equipment as well as any other machinery. Any parts needing replacement should be replaced with parts of the same type and size. Do not modify or alter any of the auger components.

GENERAL TRAILER MAINTENANCE

BRAKE ADJUSTMENT

Brakes should be adjusted (1) after the first 200 miles of operation when the brake shoes and drums have “seated,” (2) at 3000 mile intervals, (3) or as use and performance requires. The brakes should be adjusted in the following manner.

1. Jack up trailer and secure on adequate capacity jack stands. Follow trailer manufacturers’ recommendations for lifting and supporting the unit. Check that the wheel and drum rotate freely.
2. Remove the adjusting hole cover from the adjusting slot on the bottom of the brake backing plate.
3. With a screwdriver or standard adjusting tool, rotate the star wheel of the adjuster assembly to expand the brake shoes. Adjust the brake shoes out pressure of the linings against the drum makes the wheel very difficult to turn.

Note: With drop spindle axles, a modified adjusting tool with about an 80 degree angle should be used.

4. Then rotate the star wheel in the opposite direction until the wheel turns freely with a slight lining drag.
5. Replace the adjusting hole cover and lower the wheel to the ground. Repeat the above procedure on all brakes.

Caution: Never crawl under your trailer unless it is resting on properly placed jack stands. Follow the trailer manufacturers’ recommendations for lifting and supporting the unit. Do not lift or place supports on any part of the suspension system.

BRAKE CLEANING AND INSPECTION

Your trailer brakes must be inspected and serviced at yearly intervals or more often as use and performance requires. Magnets and shoes must be changed when they become worn or scored, thereby preventing adequate vehicle braking.

Clean the backing plate, magnet arm, magnet and brake shoes.

Make certain that all the parts removed are replaced in the same brake and drum assembly.

Inspect the magnet arm for any loose or worn parts. Check shoe return springs, hold down springs, and adjust springs of stretch or deformation and replace if required.



Caution:

ASBESTOS DUST HAZARD!

Since some brake shoe friction materials contain asbestos, certain precautions need to be taken when servicing brakes:

1. Avoid creating or breathing dust.
2. Avoid machining, filing or grinding the brake linings.
3. Do not use compressed air or dry brushing for cleaning. (Dust can be removed with a damp brush).

BOLT TORQUE

TORQUE DATA FOR STANDARD NUTS, BOLTS, AND CAPSCREWS.

Tighten all bolts to torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt chart as guide. Replace hardware with same grade bolt.

NOTE: Unless otherwise specified, high-strength Grade 5 hex bolts are used throughout assembly of equipment.



Torque Specifications

Bolt Torque for Standard bolts *

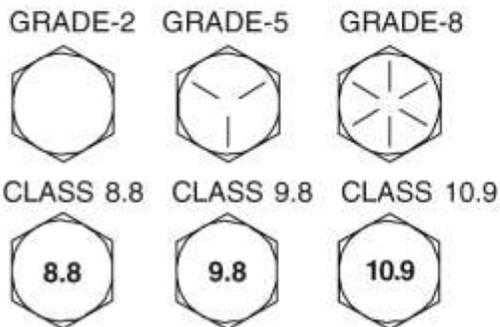
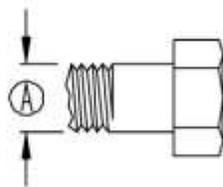
"A"	GRADE 2		GRADE 5		GRADE 8	
	lb-ft	(N.m)	lb-ft	(N.m)	lb-ft	(N.m)
1/4"	6	(8)	9	(12)	12	(16)
5/16"	10	(13)	18	(25)	25	(35)
3/8"	20	(27)	30	(40)	45	(60)
7/16"	30	(40)	50	(70)	80	(110)
1/2"	45	(60)	75	(100)	115	(155)
9/16"	70	(95)	115	(155)	165	(220)
5/8"	95	(130)	150	(200)	225	(300)
3/4"	165	(225)	290	(390)	400	(540)
7/8"	170	(230)	320	(570)	650	(880)
1"	225	(300)	330	(850)	970	(1310)

Bolt Torque for Metric bolts *

"A"	CLASS 8.8		CLASS 9.8		CLASS 10.9	
	lb-ft	(N.m)	lb-ft	(N.m)	lb-ft	(N.m)
6	9	(13)	10	(14)	13	(17)
7	15	(21)	18	(24)	21	(29)
8	23	(31)	25	(34)	31	(42)
10	45	(61)	50	(68)	61	(83)
12	78	(106)	88	(118)	106	(144)
14	125	(169)	140	(189)	170	(230)
16	194	(263)	216	(293)	263	(357)
18	268	(363)	--	--	364	(493)
20	378	(513)	--	--	515	(689)
22	516	(699)	--	--	702	(952)
24	654	(886)	--	--	890	(1206)

Torque figures indicated are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or capscrews unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

*GRADE or CLASS value for bolts and capscrews are identified by their head markings.



Reporting Safety Defects

If you believe that your vehicle has a defect which could cause a crash or could cause an injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Minden Machine Shop, Inc.

If NHTSA receives similar complaints, it may open an investigation and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or Minden Machine Shop, Inc.

To contact NHTSA, you may call the Auto Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153); go to <http://www.safercar.gov>; or Write to: NHTSA, US Department of Transportation, 1200 New Jersey SE, Washington, DC 20590. You can also obtain other information about motor vehicle safety from <http://www.safercar.gov>.

Tire Safety Information

This portion of the User's Manual contains tire safety information as required by 49 CFR 575.6.

Section 2.1 contains "Steps for Determining Correct Load Limit - Trailer".

Section 2.2 contains "Steps for Determining Correct Load Limit – Tow Vehicle".

Section 2.3 contains a Glossary of Tire Terminology, including "cold inflation pressure", "maximum inflation pressure", "recommended inflation pressure", and other non-technical terms.

Section 2.4 contains information from the NHTSA brochure entitled "Tire Safety – Everything Rides On It".

This brochure This brochure, as well as the preceding subsections, describes the following items;

- Tire labeling, including a description and explanation of each marking on the tires, and information about the DOT Tire Identification Number (TIN).
- Recommended tire inflation pressure, including a description and explanation of:
 - A. Cold inflation pressure.
 - B. Vehicle Placard and location on the vehicle.
 - C. Adverse safety consequences of under inflation (including tire failure).
 - D. Measuring and adjusting air pressure for proper inflation.
- Tire Care, including maintenance and safety practices.
- Vehicle load limits, including a description and explanation of the following items:
 - A. Locating and understanding the load limit information, total load capacity, and cargo capacity.
 - B. Calculating total and cargo capacities with varying seating configurations including quantitative examples showing / illustrating how the vehicles cargo and luggage capacity decreases as combined number and size of occupants' increases. This item is also discussed in Section 3.
 - C. Determining compatibility of tire and vehicle load capabilities.
 - D. Adverse safety consequences of overloading on handling and stopping on tires.

Steps for Determining Correct Load Limit – Trailer

Determining the load limits of a trailer includes more than understanding the load limits of the tires alone. On all trailers there is a Federal certification/VIN label that is located on the forward half of the left (road) side of the unit. This certification/VIN label will indicate the trailer's Gross Vehicle Weight Rating (GVWR). This is the most weight the fully loaded trailer can weigh. It will also provide the Gross Axle Weight Rating (GAWR). This is the most a particular axle can weigh. If there are multiple axles, the GAWR of each axle will be provided.

If your trailer has a GVWR of 10,000 pounds or less, there is a vehicle placard located in the same location as the certification label described above. This placard provides tire and loading information. In addition, this placard will show a statement regarding maximum cargo capacity. Cargo can be added to the trailer, up to the maximum weight specified on the placard. The combined weight of the cargo is provided as a single number. In any case, remember: the total weight of a fully loaded trailer can not exceed the stated GVWR.

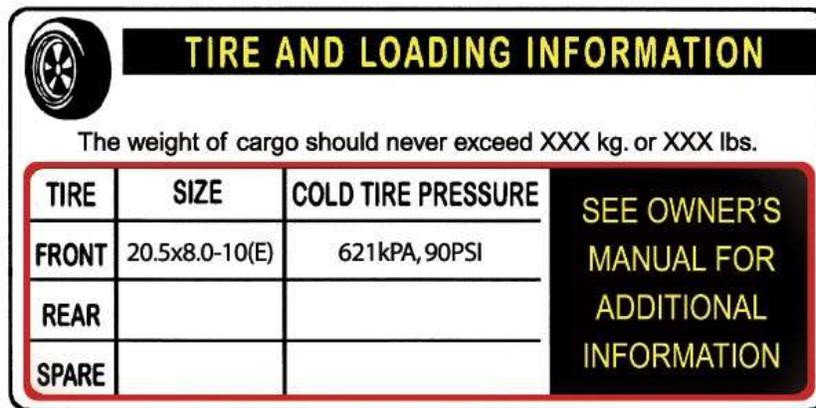
For trailers with living quarters installed, the weight of water and propane also need to be considered. The weight of fully filled propane containers is considered part of the weight of the trailer before it is loaded with cargo, and is not considered part of the disposable cargo load. Water however, is a disposable cargo weight and is treated as such. If there is a fresh water storage tank of 100 gallons, this tank when filled would weigh about 800 pounds. If more cargo is being transported, water can be off-loaded to keep the total amount of cargo added to the vehicle within the limits of the GVWR so as

not to overload the vehicle. Understanding this flexibility will allow you, the owner, to make choices that fit your travel needs.

When loading your cargo, be sure it is distributed evenly to prevent overloading front to back and side to side. Heavy items should be placed low and as close to the axle positions as reasonable. Too many items on one side may overload a tire. The best way to know the actual weight of the vehicle is to weigh it at a public scale. Talk to your dealer to discuss the weighing methods needed to capture the various weights related to the trailer. This would include the weight empty or unloaded, weights per axle, wheel, hitch or king-pin, and total weight.

Excessive loads and/or underinflation cause tire overloading and, as a result, abnormal tire flexing occurs. This situation can generate an excessive amount of heat within the tire. Excessive heat may lead to tire failure. It is the air pressure that enables a tire to support the load, so proper inflation is critical. The proper air pressure may be found on the certification/VIN label and/or on the Tire Placard. This value should never exceed the maximum cold inflation pressure stamped on the tire.

Trailers 10,000 Pounds GVWR or Less



The image shows a rectangular placard with a black background and yellow text. At the top left is a tire icon. The title "TIRE AND LOADING INFORMATION" is in yellow. Below it, a line of text reads "The weight of cargo should never exceed XXX kg. or XXX lbs." Below this is a table with three columns: "TIRE", "SIZE", and "COLD TIRE PRESSURE". The first row is for the "FRONT" tire, with size "20.5x8.0-10(E)" and pressure "621kPA, 90PSI". The "REAR" and "SPARE" rows are empty. To the right of the table, yellow text says "SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION".

TIRE	SIZE	COLD TIRE PRESSURE
FRONT	20.5x8.0-10(E)	621kPA, 90PSI
REAR		
SPARE		

Tire and Loading Information Placard – Figure 1-1

1. Locate the statement, “The weight of cargo should never exceed XXX kg or XXX lbs.,” on your vehicle’s placard. See figure 1-1.
2. This figure equals the available amount of cargo and luggage load capacity.
3. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage load capacity.

The trailer’s placard refers to the Tire Information Placard attached adjacent to or near the trailer’s VIN (Certification) label at the left front of the trailer.

Trailers Over 10,000 Pounds GVWR (Note: These trailers are not required to have a tire information placard on the vehicle)

1. Determine the empty weight of your trailer by weighing the trailer using a public scale or other means. This step does not have to be repeated.
2. Locate the GVWR (Gross Vehicle Weight Rating) of the trailer on your trailer’s VIN (Certification) label.
3. Subtract the empty weight of your trailer from the GVWR stated on the VIN label. That weight is the maximum available cargo capacity of the trailer and may not be safely exceeded.

Steps for Determining Correct Load Limit – Tow Vehicle

1. Locate the statement, “The combined weight of occupants and cargo should never exceed XXX lbs.,” on your vehicle’s placard.
2. Determine the combined weight of the driver and passengers who will be riding in your vehicle.
3. Subtract the combined weight of the driver and passengers from XXX kilograms or XXX pounds.
4. The resulting figure equals the available amount of cargo and luggage capacity. For example, if the “XXX” amount equals 1400 lbs. and there will be five 150 lb. passengers in your vehicle, the amount of available cargo and luggage capacity is 650 lbs. (1400-750 (5 x 150) = 650 lbs.).
5. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage capacity calculated in Step # 4.
6. If your vehicle will be towing a trailer, load from your trailer will be transferred to your vehicle. Consult the tow vehicle’s manual to determine how this weight transfer reduces the available cargo and luggage capacity of your vehicle.

Glossary Of Tire Terminology

Accessory weight

The combined weight (in excess of those standard items which may be replaced) of automatic transmission, power steering, power brakes, power windows, power seats, radio and heater, to the extent that these items are available as factory-installed equipment (whether installed or not).

Bead

The part of the tire that is made of steel wires, wrapped or reinforced by ply cords and that is shaped to fit the rim.

Bead separation

This is the breakdown of the bond between components in the bead.

Bias ply tire

A pneumatic tire in which the ply cords that extend to the beads are laid at alternate angles substantially less than 90 degrees to the centerline of the tread.

Carcass

The tire structure, except tread and sidewall rubber which, when inflated, bears the load.

Chunking

The breaking away of pieces of the tread or sidewall.

Cold inflation pressure

The pressure in the tire before you drive.

Cord

The strands forming the plies in the tire.

Cord separation

The parting of cords from adjacent rubber compounds.

Cracking

Any parting within the tread, sidewall, or inner liner of the tire extending to cord material.

CT

A pneumatic tire with an inverted flange tire and rim system in which the rim is designed with rim flanges pointed radially inward and the tire is designed to fit on the underside of the rim in a manner that encloses the rim flanges inside the air cavity of the tire.

Curb weight

The weight of a motor vehicle with standard equipment including the maximum capacity of fuel, oil, and coolant, and, if so equipped, air conditioning and additional weight optional engine.

Extra load tire

A tire designed to operate at higher loads and at higher inflation pressures than the corresponding standard tire.

Groove

The space between two adjacent tread ribs.

Gross Axle Weight Rating

The maximum weight that any axle can support, as published on the Certification / VIN label on the front left side of the trailer. Actual weight determined by weighing each axle on a public scale, with the trailer attached to the towing vehicle.

Gross Vehicle Weight Rating

The maximum weight of the fully loaded trailer, as published on the Certification / VIN label. Actual weight determined by weighing trailer on a public scale, without being attached to the towing vehicle.

Hitch Weight

The downward force exerted on the hitch ball by the trailer coupler.

Innerliner

The layer(s) forming the inside surface of a tubeless tire that contains the inflating medium within the tire.

Innerliner separation

The parting of the innerliner from cord material in the carcass.

Intended outboard sidewall

The sidewall that contains a white-wall, bears white lettering or bears manufacturer, brand, and/or model name molding that is higher or deeper than the same molding on the other sidewall of the tire or the outward facing sidewall of an asymmetrical tire that has a particular side that must always face outward when mounted on a vehicle.

Light truck (LT) tire

A tire designated by its manufacturer as primarily intended for use on lightweight trucks or multipurpose passenger vehicles.

Load rating

The maximum load that a tire is rated to carry for a given inflation pressure.

Maximum load rating

The load rating for a tire at the maximum permissible inflation pressure for that tire.

Maximum permissible inflation pressure

The maximum cold inflation pressure to which a tire may be inflated.

Maximum loaded vehicle weight

The sum of curb weight, accessory weight, vehicle capacity weight, and production options weight.

Measuring rim

The rim on which a tire is fitted for physical dimension requirements.

Pin Weight

The downward force applied to the 5th wheel or gooseneck ball, by the trailer kingpin or gooseneck coupler.

Non-pneumatic rim

A mechanical device which, when a non-pneumatic tire assembly incorporates a wheel, supports the tire, and attaches, either integrally or separably, to the wheel center member and upon which the tire is attached.

Non-pneumatic spare tire assembly

A non-pneumatic tire assembly intended for temporary use in place of one of the pneumatic tires and rims that are fitted to a passenger car in compliance with the requirements of this standard.

Non-pneumatic tire

A mechanical device which transmits, either directly or through a wheel or wheel center member, the vertical load and tractive forces from the roadway to the vehicle, generates the tractive forces that provide the directional control of the vehicle and does not rely on the containment of any gas or fluid for providing those functions.

Non-pneumatic tire assembly

A non-pneumatic tire, alone or in combination with a wheel or wheel center member, which can be mounted on a vehicle.

Normal occupant weight

This means 68 kilograms (150 lbs.) times the number of occupants specified in the second column of Table I of 49 CFR 571.110.

Occupant distribution

The distribution of occupants in a vehicle as specified in the third column of Table I of 49 CFR 571.110.

Open splice

Any parting at any junction of tread, sidewall, or innerliner that extends to cord material.

Outer diameter

The overall diameter of an inflated new tire.

Overall width

The linear distance between the exteriors of the sidewalls of an inflated tire, including elevations due to labeling, decorations, or protective bands or ribs.

Ply

A layer of rubber-coated parallel cords.

Ply separation

A parting of rubber compound between adjacent plies.

Pneumatic tire

A mechanical device made of rubber, chemicals, fabric and steel or other materials, that, when mounted on an automotive wheel, provides the traction and contains the gas or fluid that sustains the load.

Production options weight

The combined weight of those installed regular production options weighing over 2.3 kilograms (5 lbs.) in excess of those standard items which they replace, not previously considered in curb weight or accessory weight, including heavy duty brakes, ride levelers, roof rack, heavy duty battery, and special trim.

Radial ply tire

A pneumatic tire in which the ply cords that extend to the beads are laid at substantially 90 degrees to the centerline of the tread.

Recommended inflation pressure

This is the inflation pressure provided by the vehicle manufacturer on the Tire Information label and on the Certification / VIN tag.

Reinforced tire

A tire designed to operate at higher loads and at higher inflation pressures than the corresponding standard tire.

Rim

A metal support for a tire or a tire and tube assembly upon which the tire beads are seated.

Rim diameter

This means the nominal diameter of the bead seat.

Rim size designation

This means the rim diameter and width.

Rim type designation

This means the industry of manufacturer's designation for a rim by style or code.

Rim width

This means the nominal distance between rim flanges.

Section width

The linear distance between the exteriors of the sidewalls of an inflated tire, excluding elevations due to labeling, decoration, or protective bands.

Sidewall

That portion of a tire between the tread and bead.

Sidewall separation

The parting of the rubber compound from the cord material in the sidewall.

Special Trailer (ST) tire

The "ST" is an indication the tire is for trailer use only.

Test rim

The rim on which a tire is fitted for testing, and may be any rim listed as appropriate for use with that tire.

Tread

That portion of a tire that comes into contact with the road.

Tread rib

A tread section running circumferentially around a tire.

Tread separation

Pulling away of the tread from the tire carcass.

Treadwear indicators (TWI)

The projections within the principal grooves designed to give a visual indication of the degrees of wear of the tread.

Vehicle capacity weight

The rated cargo and luggage load plus 68 kilograms (150 lbs.) times the vehicle's designated seating capacity.

Vehicle maximum load on the tire

The load on an individual tire that is determined by distributing to each axle its share of the maximum loaded vehicle weight and dividing by two.

Vehicle normal load on the tire

The load on an individual tire that is determined by distributing to each axle its share of the curb weight, accessory weight, and normal occupant weight (distributed in accordance with Table I of CRF 49 571.110) and dividing by 2.

Weather side

The surface area of the rim not covered by the inflated tire.

Wheel center member

In the case of a non-pneumatic tire assembly incorporating a wheel, a mechanical device which attaches, either integrally or separably, to the non-pneumatic rim and provides the connection between the non-pneumatic rim and the vehicle; or, in the case of a non-pneumatic tire assembly not incorporating a wheel, a mechanical device which attaches, either integrally or separably, to the non-pneumatic tire and provides the connection between tire and the vehicle.

Wheel-holding fixture

The fixture used to hold the wheel and tire assembly securely during testing.

Tire Safety - Everything Rides On It

The National Traffic Safety Administration (NHTSA) has published a brochure (DOT HS 809 361) that discusses all aspects of Tire Safety, as required by CFR 575.6. This brochure is reproduced in

part below. It can be obtained and downloaded from NHTSA, free of charge, from the following web site:

http://www.nhtsa.dot.gov/cars/rules/TireSafety/ridesonit/tires_index.html

Studies of tire safety show that maintaining proper tire pressure, observing tire and vehicle load limits (not carrying more weight in your vehicle than your tires or vehicle can safely handle), avoiding road hazards, and inspecting tires for cuts, slashes, and other irregularities are the most important things you can do to avoid tire failure, such as tread separation or blowout and flat tires. These actions, along with other care and maintenance activities, can also:

- Improve vehicle handling
- Help protect you and others from avoidable breakdowns and accidents
- Improve fuel economy
- Increase the life of your tires.

This booklet presents a comprehensive overview of tire safety, including information on the following topics:

- Basic tire maintenance
- Uniform Tire Quality Grading System
- Fundamental characteristics of tires
- Tire safety tips.

Use this information to make tire safety a regular part of your vehicle maintenance routine. Recognize that the time you spend is minimal compared with the inconvenience and safety consequences of a flat tire or other tire failure.

Safety First—Basic Tire Maintenance

Properly maintained tires improve the steering, stopping, traction, and load-carrying capability of your vehicle. Underinflated tires and overloaded vehicles are a major cause of tire failure. Therefore, as mentioned above, to avoid flat tires and other types of tire failure, you should maintain proper tire pressure, observe tire and vehicle load limits, avoid road hazards, and regularly inspect your tires.

Finding Your Vehicle's Recommended Tire Pressure and Load Limits

Tire information placards and vehicle certification labels contain information on tires and load limits. These labels indicate the vehicle manufacturer's information including:

- Recommended tire size
- Recommended tire inflation pressure
- Vehicle capacity weight (VCW—the maximum occupant and cargo weight a vehicle is designed to carry)
- Front and rear gross axle weight ratings (GAWR—the maximum weight the axle systems are designed to carry).

Both placards and certification labels are permanently attached to the trailer near the left front.

Understanding Tire Pressure and Load Limits

Tire inflation pressure is the level of air in the tire that provides it with load-carrying capacity and affects the overall performance of the vehicle. The tire inflation pressure is a number that indicates the amount of air pressure—measured in pounds per square inch (psi)—a tire requires to be properly

inflated. (You will also find this number on the vehicle information placard expressed in kilopascals (kpa), which is the metric measure used internationally.)

Manufacturers of passenger vehicles and light trucks determine this number based on the vehicle's design load limit, that is, the greatest amount of weight a vehicle can safely carry and the vehicle's tire size. The proper tire pressure for your vehicle is referred to as the "recommended cold inflation pressure." (As you will read below, it is difficult to obtain the recommended tire pressure if your tires are not cold.)

Because tires are designed to be used on more than one type of vehicle, tire manufacturers list the "maximum permissible inflation pressure" on the tire sidewall. This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.

Checking Tire Pressure

It is important to check your vehicle's tire pressure at least once a month for the following reasons:

- Most tires may naturally lose air over time.
- Tires can lose air suddenly if you drive over a pothole or other object or if you strike the curb when parking.
- With radial tires, it is usually not possible to determine underinflation by visual inspection.

For convenience, purchase a tire pressure gauge to keep in your vehicle. Gauges can be purchased at tire dealerships, auto supply stores, and other retail outlets.

The recommended tire inflation pressure that vehicle manufacturers provide reflects the proper psi when a tire is cold. The term cold does not relate to the outside temperature. Rather, a cold tire is one that has not been driven on for at least three hours. When you drive, your tires get warmer, causing the air pressure within them to increase. Therefore, to get an accurate tire pressure reading, you must measure tire pressure when the tires are cold or compensate for the extra pressure in warm tires.

Steps for Maintaining Proper Tire Pressure

- Step 1: Locate the recommended tire pressure on the vehicle's tire information placard, certification label, or in the owner's manual.
- Step 2: Record the tire pressure of all tires.
- Step 3: If the tire pressure is too high in any of the tires, slowly release air by gently pressing on the tire valve stem with the edge of your tire gauge until you get to the correct pressure.
- Step 4: If the tire pressure is too low, note the difference between the measured tire pressure and the correct tire pressure. These "missing" pounds of pressure are what you will need to add.
- Step 5: At a service station, add the missing pounds of air pressure to each tire that is underinflated.
- Step 6: Check all the tires to make sure they have the same air pressure (except in cases in which the front and rear tires are supposed to have different amounts of pressure).

If you have been driving your vehicle and think that a tire is underinflated, fill it to the recommended cold inflation pressure indicated on your vehicle's tire information placard or certification label. While your tire may still be slightly underinflated due to the extra pounds of pressure in the warm tire, it is safer to drive with air pressure that is slightly lower than the vehicle manufacturer's recommended cold inflation pressure than to drive with a significantly underinflated tire. Since this is a temporary fix, don't forget to recheck and adjust the tire's pressure when you can obtain a cold reading.

Tire Size

To maintain tire safety, purchase new tires that are the same size as the vehicle's original tires or another size recommended by the manufacturer. Look at the tire information placard, the owner's

P

The "P" indicates the tire is for passenger vehicles.

Next number

This three-digit number gives the width in millimeters of the tire from sidewall edge to sidewall edge. In general, the larger the number, the wider the tire.

Next number

This two-digit number, known as the aspect ratio, gives the tire's ratio of height to width. Numbers of 70 or lower indicate a short sidewall for improved steering response and better overall handling on dry pavement.

R

The "R" stands for radial. Radial ply construction of tires has been the industry standard for the past 20 years.

Next number

This two-digit number is the wheel or rim diameter in inches. If you change your wheel size, you will have to purchase new tires to match the new wheel diameter.

Next number

This two- or three-digit number is the tire's load index. It is a measurement of how much weight each tire can support. You may find this information in your owner's manual. If not, contact a local tire dealer. Note: You may not find this information on all tires because it is not required by law.

M+S

The "M+S" or "M/S" indicates that the tire has some mud and snow capability. Most radial tires have these markings; hence, they have some mud and snow capability.

Speed Rating

The speed rating denotes the speed at which a tire is designed to be driven for extended periods of time. The ratings range from 99 miles per hour (mph) to 186 mph. These ratings are listed below.

Note: You may not find this information on all tires because it is not required by law.

Letter Rating	Speed Rating
Q	99 mph
R	106 mph
S	112 mph
T	118 mph
U	124 mph
H	130 mph
V	149 mph
W	168* mph
Y	186* mph

* For tires with a maximum speed capability over 149 mph, tire manufacturers sometimes use the letters ZR. For those with a maximum speed capability over 186 mph, tire manufacturers always use the letters ZR.

U.S. DOT Tire Identification Number

This begins with the letters "DOT" and indicates that the tire meets all federal standards. The next two numbers or letters are the plant code where it was manufactured, and the last four numbers represent the week and year the tire was built. For example, the numbers 3197 means the 31st week of 1997. The other numbers are marketing codes used at the manufacturer's discretion. This information is used to contact consumers if a tire defect requires a recall.

Tire Ply Composition and Materials Used

The number of plies indicates the number of layers of rubber-coated fabric in the tire. In general, the greater the number of plies, the more weight a tire can support. Tire manufacturers also must indicate the materials in the tire, which include steel, nylon, polyester, and others.

Maximum Load Rating

This number indicates the maximum load in kilograms and pounds that can be carried by the tire.

Maximum Permissible Inflation Pressure

This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.

UTQGS Information

Treadwear Number

This number indicates the tire's wear rate. The higher the treadwear number is, the longer it should take for the tread to wear down. For example, a tire graded 400 should last twice as long as a tire graded 200.

Traction Letter

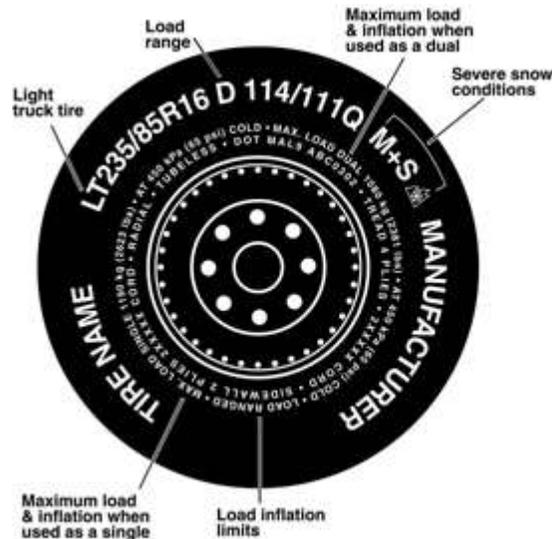
This letter indicates a tire's ability to stop on wet pavement. A higher graded tire should allow you to stop your car on wet roads in a shorter distance than a tire with a lower grade. Traction is graded from highest to lowest as "AA", "A", "B", and "C".

Temperature Letter

This letter indicates a tire's resistance to heat. The temperature grade is for a tire that is inflated properly and not overloaded. Excessive speed, underinflation or excessive loading, either separately or in combination, can cause heat build-up and possible tire failure. From highest to lowest, a tire's resistance to heat is graded as "A", "B", or "C".

Additional Information on Light Truck Tires

Please refer to the following diagram.



Tires for light trucks have other markings besides those found on the sidewalls of passenger tires.

LT

The "LT" indicates the tire is for light trucks or trailers.

ST

An "ST" is an indication the tire is for trailer use only.

Max. Load Dual kg (lbs) at kPa (psi) Cold

This information indicates the maximum load and tire pressure when the tire is used as a dual, that is, when four tires are put on each rear axle (a total of six or more tires on the vehicle).

Max. Load Single kg (lbs) at kPa (psi) Cold

This information indicates the maximum load and tire pressure when the tire is used as a single.

Load Range

This information identifies the tire's load-carrying capabilities and its inflation limits.

Tire Safety Tips

Preventing Tire Damage

- Slow down if you have to go over a pothole or other object in the road.
- Do not run over curbs or other foreign objects in the roadway, and try not to strike the curb when parking.

Tire Safety Checklist

- Check tire pressure regularly (at least once a month), including the spare.
- Inspect tires for uneven wear patterns on the tread, cracks, foreign objects, or other signs of wear or trauma.
- Remove bits of glass and foreign objects wedged in the tread.
- Make sure your tire valves have valve caps.
- Check tire pressure before going on a long trip.
- Do not overload your vehicle. Check the Tire Information and Loading Placard or User's Manual for the maximum recommended load for the vehicle.

Minden Machine Shop Inc

LIMITED WARRANTY

Minden Machine Shop Inc warrants all products manufactured by it to be free of defect in material and workmanship for a period of one (1) year from the date of purchase.

This Minden Machine Shop Inc. warranty does not cover:

1. Parts and accessories supplied by Minden Machine Shop Inc. but manufactured by others. Minden Machine Shop Inc. will facilitate the other manufacturer warranty for the benefit of the purchaser but will not be bound thereby (example: augers, motors, trailers, tanks, etc.).
2. Products that have been altered by anyone other than a Minden Machine Shop Inc. employee or are used by the purchaser, for purposes other than what was intended at time of manufacture or used in excess of the “built specifications”.
3. Products that are custom manufactured by Minden Machine Shop Inc. utilizing the purchaser’s design which deviates from Minden Machine Shop Inc. normal production line manufactured or customized features of the products.
4. Malfunctions or damages to the product from misuse, negligence, customer alteration, accidents or product abuse due to incoming material or poor material flow ability or lack of required performance or required maintenance (e.g., poor material flow ability caused by incoming wet fertilizer or hot soybean meal, etc).
5. Loss of time, inconvenience, loss of material, down time or any other consequential damage.
6. Product use for a function that is different than designed intent (e.g., storing soybean meal in grain bin, unacceptable material in the bin such as hot bean meal when product originally designed for other application, etc).
7. Minden Machine Shop Inc is not responsible for any equipment that this product is attached to or mounted on.

To activate this warranty, the purchaser must make contact in writing with Minden Machine Shop Inc. within one (1) year of date of purchase. After contact, Minden Machine Shop Inc. has the right to determine the cause and qualify the legitimacy of the claim. Minden Machine Shop Inc., upon acceptance of a warranty claim, shall have a reasonable time to plan any repair or replacement and may affect repair or replacement out of its factory or through contract with a local repair service. If a purchaser after warranty notice is made, chooses to make the repair itself, Minden Machine Shop Inc. must approve any expenses before they are incurred to be responsible for customer reimbursement. Minden Machine Shop Inc. shall be liable on a warranty claim for repair or replacement of any defective products and this is the purchaser’s sole and exclusive remedy. Minden Machine Shop Inc. will not be liable for any other or further remedy including claims for personal injury, property damage or consequential damage. The law of the State of Nebraska shall govern and any such claim and any issues with regard to the same shall be resolved in the Nebraska District Court for the county of Kearney.

RETURN OF MERCHANDISE

Merchandise may not be returned without written approval from the factory. All returns must have a return authorization number. Obtain this number before the return and show it on all return items. A 15% restocking charge is made on merchandise returned. Returned merchandise must be shipped pre-paid.

RECEIVING MERCHANDISE AND FILING CLAIMS

When receiving merchandise it is important to check both the number of parts and their description with packing slip. The consignee must make all claims for freight damage or shortage within 10 days from the date of delivery.

When the material leaves the factory it becomes the property of the consignee. It is the responsibility of the consignee to file a claim on any possible damage or loss. Please list your preferred routing on purchase orders.

MODIFICATIONS

It is the policy of Minden Machine Shop Inc. to improve its products whenever possible and practical to do so. We reserve the right to make changes, improvements and modifications at any time without incurring the obligation to make such changes, improvements and modifications on any equipment sold previously.

WARRANTY REGISTRATION

To register equipment, or file a claim, fill out the appropriate information completely, copy and email it to larry@mindenmachine.com with the subject as EQUIPMENT WARRANTY, or fill it out and fax it to 308-832-1340 or fill the form out and mail to:

Minden Machine Shop, Inc
PO Box 356
Minden, NE 68959

Dealer Information: Not Applicable, check here: []

Dealer Name:

Address:

City:

State:

Zip Code:

Phone #:

Email:

End User Information:

Purchaser:

Address:

City:

State:

Zip Code:

Phone #:

Email:

Equipment:

Serial #:

Date Of Purchase: / /

Equipment:

Trailer Model Number:

Trailer VIN Number:

Date Of Purchase: / /

Dealer Name:

Please fill out the table below with the tire identification numbers located on the tires on the purchased trailer. The tire identification number is the US DOT Tire Identification Number (see pages 41 and 43 of this manual for location of number on the tire).

TIRE IDENTIFICATION NUMBERS

QTY	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												

Please return within 14

days of purchase

CLAIM FILE

Defect:

PATRIOT™

Patriot Seed Treater

Owners Manual



**Manufactured by
Minden Machine Shop Inc.
1302 K Road
Minden NE 68959
1-800-264-6587**

Seed Treater
Serial # _____
Date of Purchase _____

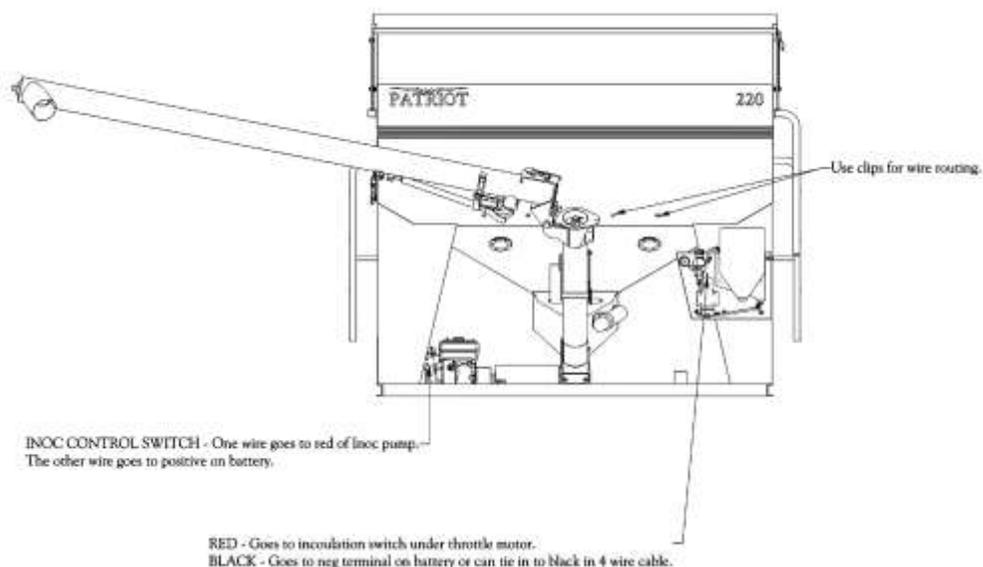
YOUR SEED TREATER COMES WITH A METERING DISC THAT WILL HELP REGULATE THE AMOUNT OF INOCULANT YOU WILL BE APPLYING TO YOUR SEED.

USE THIS GUIDE TO HELP YOU DETERMINE THE PRESSURE YOUR TREATER SHOULD BE RUNNING AT.

SEED TREATMENT GUIDE

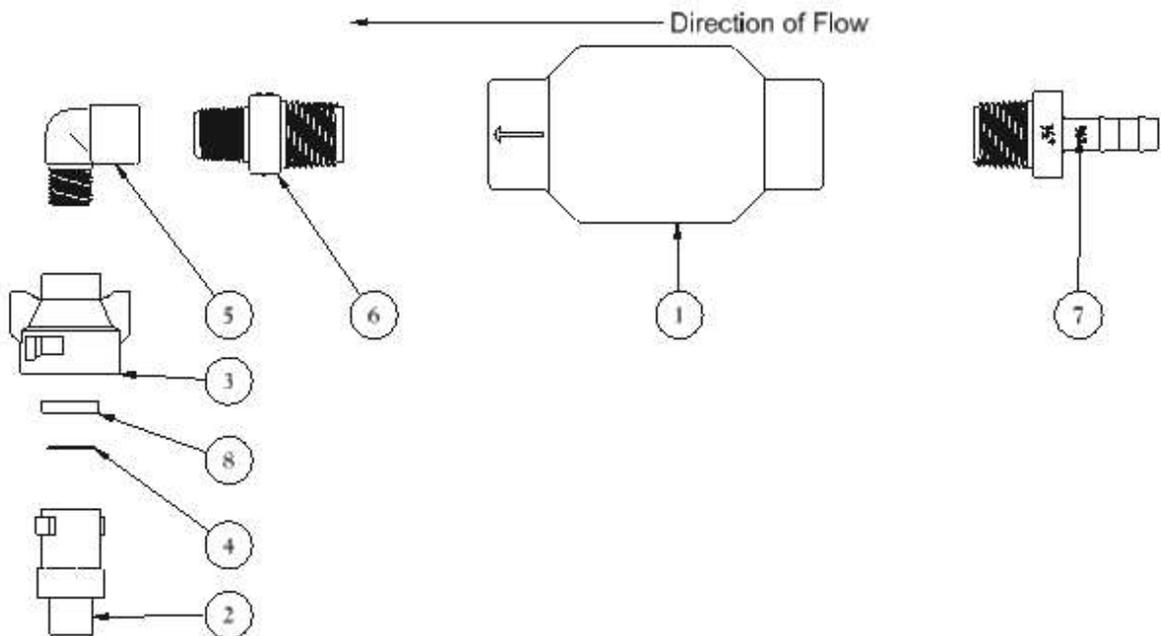
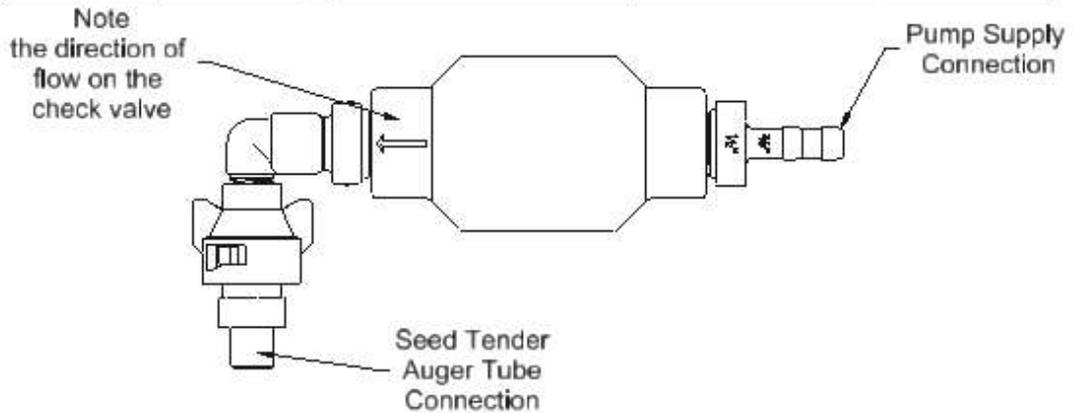
IF YOU NEED THIS OZ PER 50 LBS	TOTAL OZ PER MINUTE OF LIQUID AT 400 LB PER MINUTE OF SEED FLOW	SET PRESSURE GUAGE AT THIS PSI USING A CP4916-39
1	8	4.4
1.1	8.8	5.3
1.2	9.6	6.3
1.3	10.4	7.4
1.4	11.2	8.5
1.5	12	9.8
1.6	12.8	11.1
1.7	13.6	12.6
1.8	14.4	14.1
1.9	15.2	15.7
2	16	17.4
2.1	16.8	19.2
2.2	17.6	21.1
2.3	18.4	23.0
2.4	19.2	25.1
2.5	20	27.2

This chart is only to be used as a guide line, manual calibration must be done to insure that the bushels per minute from the auger are known exactly and ounces per minute from the treater are known exactly.

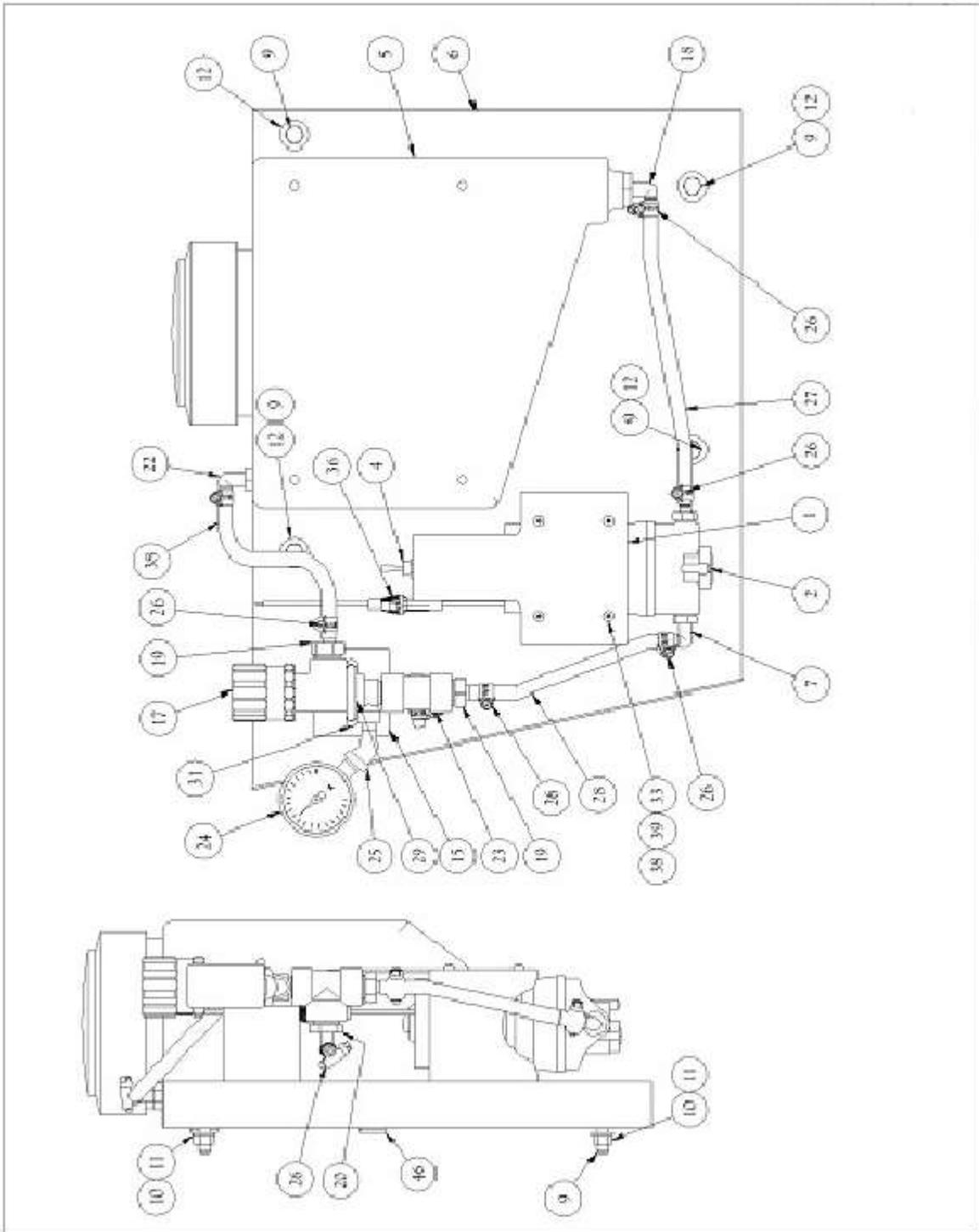


Wet Inoculation

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	210-303 12 FPT Check Valve	PVC Check Valve
2	1	Quick TJ Nozzle Body_25 MPT_QJ1_4TT-NYB	#QJ 1/4TT-NYB - 1/4" Male NPT
3	1	Tee Jet Adapter Cap QJ4676-1_4-NYR	#QJ4676-1/4-NYR
4	1	Orifice Plate CP4916_12	Tee Jet Orifice Plate #CP4916_12
5	1	SL025-90	1/4" Street Elbow
6	1	RN050-025	1/2" to 1/4" Reducing Nipple
7	1	HB050-038	1/2" NPT THREAD X 3/8" HOSE BARB
8	1	Gasket CP19438_EPR	Rubber Gasket # CP19438-EPR



Minden Machine Shop Inc.
 1302 K Road Minden, NE
 800-264-6587 / 308-832-0220



PARTS LIST

ITEM	QTY	PART NUMBER	DESCRIPTION	ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	Pump Switch Bracket	Plas Out #17152-14 ga	22	1	Nozzle Elbow	#NYNTL38 Nozzle Elbow X 3/8HB w/B12 Nut
2	1	12 Volt Pump	#8000-543-250 Shurflo pump 12 Volt, 45 PSI	23	1	Female Tee	#NYTT12 Tee 1/2"NPT Female
3	1	Toggle- Nut	Toggle Nut	24	1	Wika 213-40_212_XXXXpsi_1-4LM	Hydro Pressure Gauge, Liquid Filled, 2.5" Face, 60psi, 1/4"NPT, L.M.No Flange
4	1	Switch On/Off	2FA54-73 Switch Carling switch ESB523 Toggle Switch	25	1	Street 45 Elbow-1/4	#NYSE1445 Street Elbow 45deg. 1/4"MPT X 1/4"FPT
5	1	3 Gal. Tank	3 Gal Cone Bottom Inoc Tank 3/4 FPT fitting	26	7	Hose Clamp Size 16	3/8" dia Hose Clamp
6	1	17151 Inoc 3 Gal Angled to Match Leg Base Bracket		27	1	3/8 Sprayer Hose	3/8" Sprayer Hose X 10 3/4"
7	1	Elbow 3/8 MPT X 3/8 HB	#NYEL38 Elbow 3/8"MPT X 3/8" HB	28	1	3/8 Sprayer Hose	3/8" Sprayer Hose 7"
8	1	3 Gal Rect Tank Lid		29	1	5/16 UBolt	5/16 X 1 3/8 X 2 3/16 U-Bolt
9	4	3/8" X 1" Bolt	ANSI B18.2.1-3/8-16 UNC-1	30	2	5/16" Nut	ANSI B18.2.2-5/16-18 Hex Nut
10	4	3/8" Nut	ANSI B18.2.2-3/8-16	31	2	5/16" Flat Washer	ANSI B18.22.1-5/16-narrow-Type A
11	4	3/8" Lock Washer	ASME B18.21.1-3/8 Regular Carbon Steel	32	1	Hose Barb 3/8" MPT	#NYA38 3/8"MPT X 3/8"HB
12	4	3/8" Flat Washer	ANSI B18.22.1-3/8-wide-Type A	33	4	Cross Recessed Pan Head Machine Screw-Type 1A	ANSI B18.63-No.10-24-1 1/4
15	1	14ga 10 7/8" X 2 1/2" Plas Out	17xxx Inoc Plumbing Mounting Plate	34	4	Washer A	ANSI B18.22.1-No.10-Type A
16	1	Ace Roro Mold 5 Gal Cone Bottom Tank		35	4	Hex Machine Screw Nut	ANSI B18.63-10-32
17	1	Pressure Relief Valve	23120A-1/2-PP Pressure Relief Valve w/Viton	36	1	Fuse Link Top	IHG-12
18	1	Elbow 3/4" MPT	#NYEL3438 3/4"MPT X 3/8" HB	37	1	01 Fuse Body	#AG C 7.5 Amp Auto Fuse
19	2	Elbow 1/2" MPT	#NYA1238 1/2"MPT X 3/8"HB	38	1	3/8 Sprayer Hose	3/8" Sprayer Hose X 10"
20	1	Hose Barb 1/2" MPT	#NYEL 1238 1/2"MPT X 3/8" HB	39-45		1-7 On Previous Page	
21	1	1 1/16 Nozzle Nut Nylon		46	8	5/16 Flat Washer	ANSI B18.22.1-5/16-wide-Type A

Electric Folding Auger Installation Instructions

Parts Needed:

- ACTUATOR
- WIRING HARNESS
- 4 - 3/8 X 1 BOLTS
- LOWER ACTUATOR MOUNTS (1 LEFT AND 1 RIGHT)
- TOP ACTUATOR MOUNTS (1 INNER AND 1 OUTER)
- 4 - 3/8 LOCKS
- 4 - 3/8 NUTS
- 2 - 1/2 X 2 1/2 BOLTS
- 2 - NYLOCKS
- 3 - 5/16 X 3 (BOTTOM)
- 3 - 5/16 X 2 1/2 (TOP)
- 6 - 5/16 LOCKS
- 6 - 5/16 NUTS



Step 1: Drill a 1/2" hole next to the on/off switch hole.



Step 2: Install the actuator switch in the hold and tighten.



Step 3: Install the lower actuator bracket. The first bracket will be installed next to the hopper body. The bracket should be installed so the bend is towards the center line of the auger tube.

Attach using 2 – 3/8” bolts, 1- 1/2” bolts, 2 – 3/8” nuts and 2 – 3/8” lock washers. Tighten all fasteners.



Step 4: Install the lower actuator bracket. The second bracket will be placed towards the outside of the trailer and the bend angle is towards the center line of the auger tube. Attach using 2 – 3/8” x 1- 1/2” bolts, 2- 3/8” lock washers and 2 – 3/8” nuts. Tighten all fasteners. Make sure actuator mounting holes align.



Step 5: Install the actuator into the pair of lower actuator mounts. Use a 1/2" x 2-1/2" bolt and a 1/2" nylock nut to fasten the actuator on. Make sure to install the bolt and nut with the nut to the outside of the tender. The nut should be facing away from the hopper to prevent any interference.



Step 6: Rotate the actuator up to get an idea of where to place the Top Actuator Bracket assembly. Use 1 - 5/16" x 2-1/2" bolt, 1 - 5/16" lock washer, 1 - 5/16" nut to hold the two sides of

the Top Actuator assembly together. Make sure to place all nuts towards the outside of the tender.



Step 7: Once placement of the Top Actuator Bracket assembly is correct, install the actuator to the bottom of the bracket assembly by using a 1/2" x 2-1/2" bolt and a 1/2" nylock nut (make sure nut is facing to outside of the assembly). Then install the 3 - 5/16" x 3" bolts, 3 - 5/16" lock washers, and 3 - 5/16" nuts into the bottom side of the bracket assembly and install the remaining 2 - 5/16" x 2-1/2" bolts, 2 - 5/16" lock washers, and 2 - 5/16" nuts on the top side of the bracket assembly.

Tighten all fasteners.



Step 8: Connect the weather pack connectors together.
Leave some slack in the harness and route the harness along

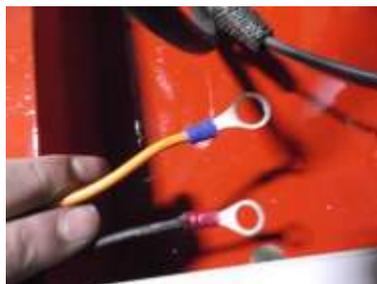
the side of the tender. Keep harness in place using wire ties.



Step 9: Use a single zip tie to hold the cord to the actuator motor.



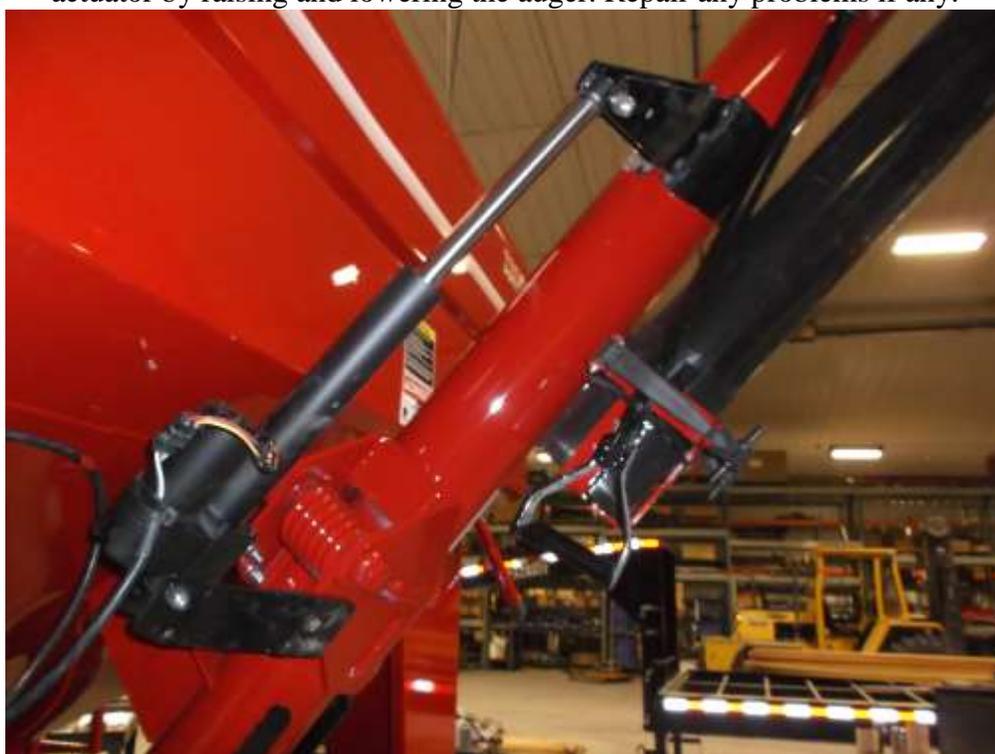
Step 10: Cut the eyelet connectors off of the positive and negative battery wires. Replace the positive fuse wire with a 3/8" eyelet connector (crimp in place) and replace the negative wire with a 5/16" eyelet connector (crimp in place).



Step 11: Connect the positive fused wire to the positive terminal on the battery. Connect the negative wire to the negative side of the battery. Tighten the connections.



Step 12: Unlatch the auger hold down so the auger is free to move. Make sure all fasteners are tight, no leaks, and that the wiring harness will not be pinched during raising and lowering. Test the actuator by raising and lowering the auger. Repair any problems if any.



WARRANTY REGISTRATION

To register equipment, or file a claim, fill out the appropriate information completely, copy and email it to larry@mindenmachine.com with the subject as EQUIPMENT WARRANTY, or fill it out and fax it to 308-832-1340 or fill the form out and mail to:

Minden Machine Shop, Inc
PO Box 356
Minden, NE 68959

Dealer Information: Not Applicable, check here: []

Dealer Name:

Address:

City:

State:

Zip Code:

Phone #:

Email:

End User Information:

Purchaser:

Address:

City:

State:

Zip Code:

Phone #:

Email:

Equipment:

Serial #:

Date Of Purchase: / /

Equipment:

Trailer Model Number:

Trailer VIN Number:

Date Of Purchase: / /

Dealer Name:

Please fill out the table below with the tire identification numbers located on the tires on the purchased trailer. The tire identification number is the US DOT Tire Identification Number (see pages 41 and 43 of this manual for location of number on the tire).

TIRE IDENTIFICATION NUMBERS

QTY	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												

Please return within 14 days of purchase