

# PATRIOT™

## Patriot 200 4 Box Seed Tender™ Owner's Manual



Manufactured by  
Minden Machine Shop Inc.  
1302 K Road  
Minden, NE 68959  
308-832-0220  
[www.patriotequip.com](http://www.patriotequip.com)

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# INTRODUCTION

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: 1-308-832-0220 or visit [www.patriotequip.com](http://www.patriotequip.com)

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

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

## Purpose:

The Patriot Seed Tender serves as a bulk transfer system for seed and other dry flowable products. It allows the user to move their 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 1,000 to 3,000 lbs., can be emptied into the Patriot Seed Tender in seconds, the equivalent when transferred in 50 lb. 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, is transferred to the location where the drill/planter is located. The user parks beside the planter/drill and uses the telescopic movable spout to load the planter/drill. The tender uses a poly cupped auger powered by a gas motor with a clutch system to transfer the product. The auger is activated by a manual switch located at the end of the telescopic spout or remotely depending on the application.

## 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 the product.
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. The throttle can also be controlled remotely if desired.
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.

## Reference Numbers and Date of Purchase

Seed Tender
Serial Number: _____
Date of Purchase: _____
Trailer
Serial Number: _____
Date of Purchase: _____

# 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](mailto: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**

<b>QTY</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
<b>1</b>												
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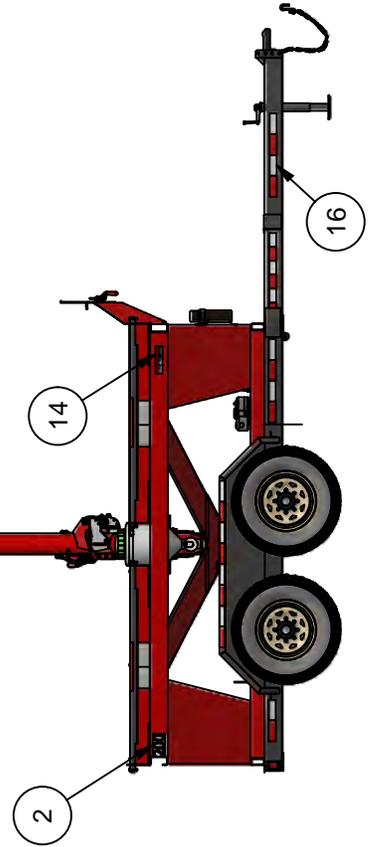
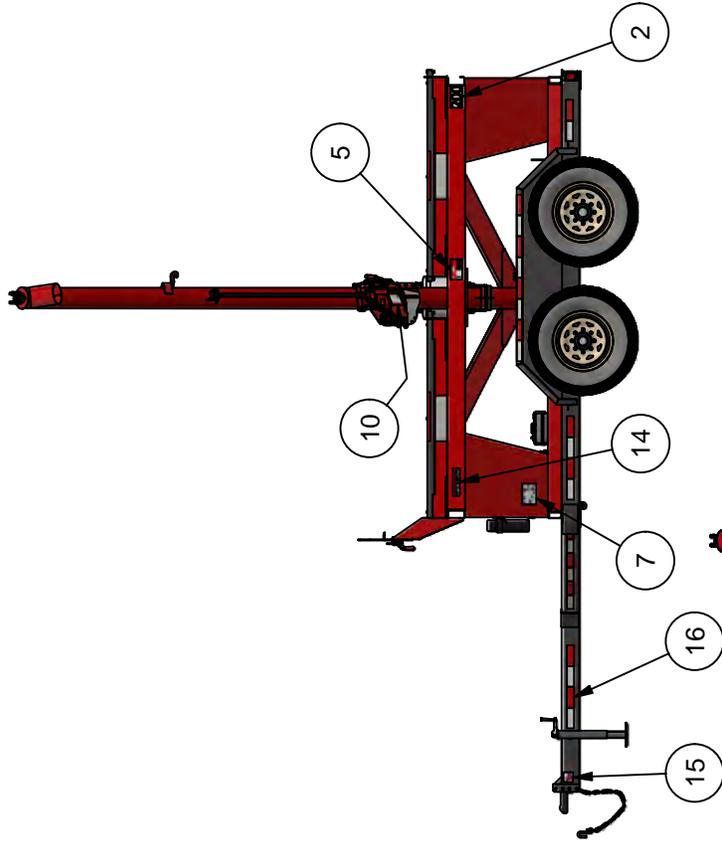
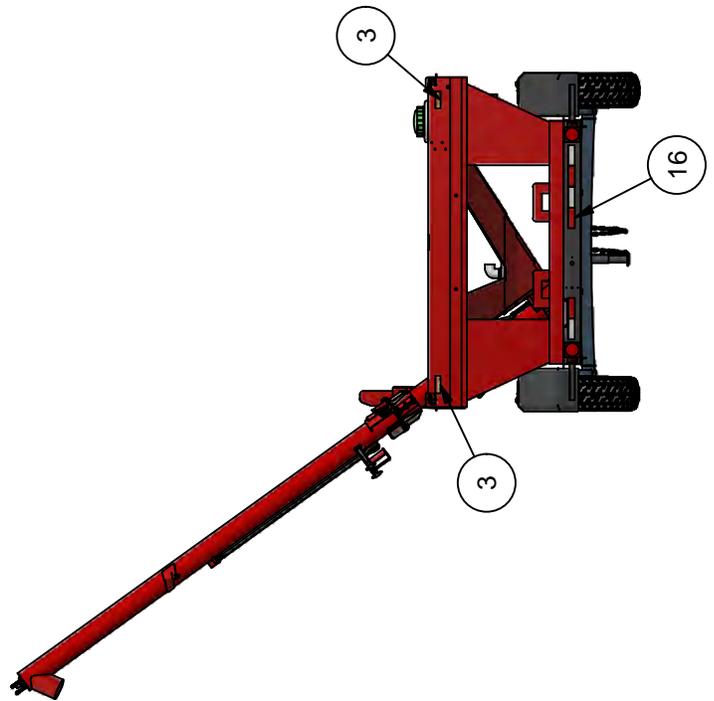
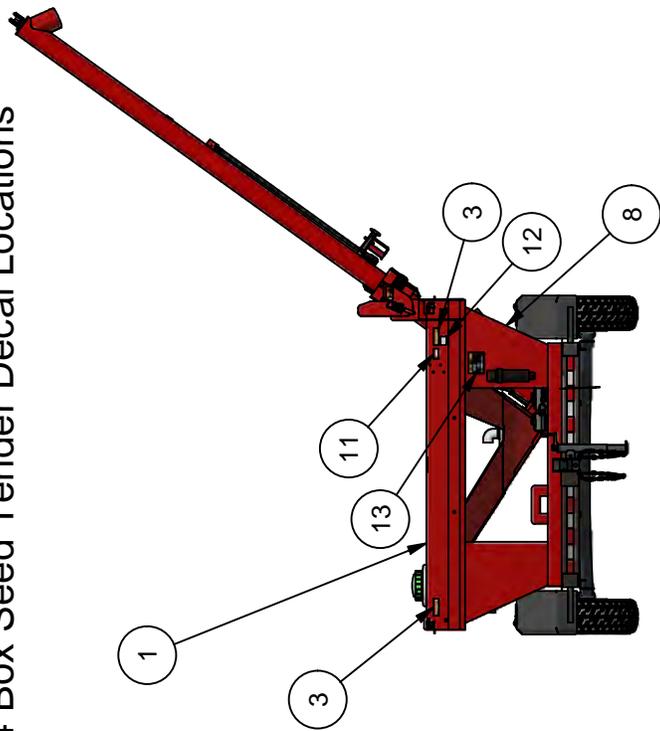
**Please return within 14 days of purchase**

# **WARRANTY CLAIM FILE**

**Please Describe the Defect:**



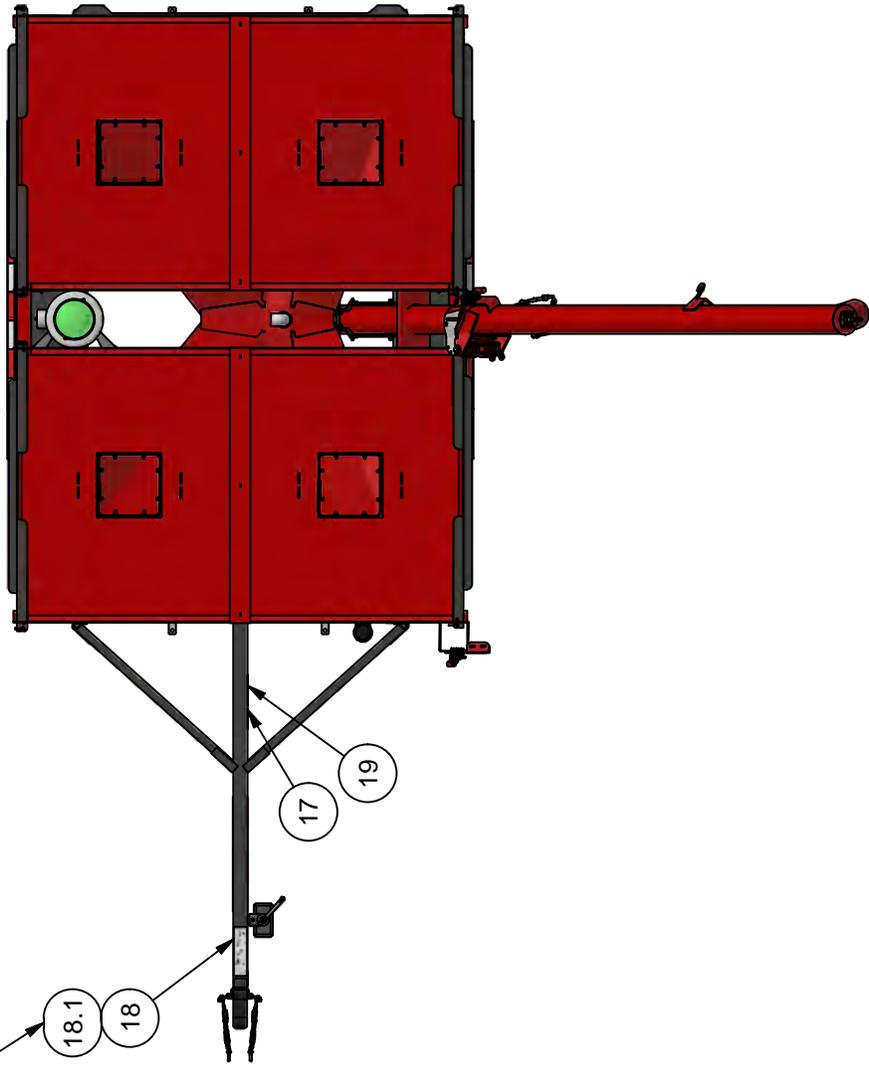
# 200 4 Box Seed Tender Decal Locations



Patriot Equipment  
 1302 K Road Minden, NE  
 308-832-0220

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Decal can vary depending upon hitch style used



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Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	ST-200D	4 Box Seed Tender Scaled Trailer Asm
2	2	TS6002	200 Decal
3	4	TS6009	Caution Loading Bags
4	1	TS6012	Danger Driveline
5	1	TS6013	Danger Auger in Electrical Lines
6	1	TS6014	Danger Rotating Flighting
7	1	TS6015	Receiver Power Switch
8	1	TS2003	Serial Number Decal
9	1	TS2012	Single Pinch Point
10	1	TS2013	Machine Operating Warning
11	1	TS2017	Read Manual Before Use
12	1	TS2018	P65 California Warning
13	1	TS6010	Caution Machine Operation
14	2	TS2004	Patriot Decal
15	1	NATM	NATM Supplied
16	27	DOT RW Strip	Cut from Bulk
17	1	Tire Information	Generated by MMSI
18	1	TS1005	Handle Lock Style Bumper Pull
18.1	1	TS1006	Slide Lock Style Bumper Pull
19	1	VIN GVWR	Generated by MMSI

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# 200

TS6002



TS6013



TS2012



TS6009



TS6014



TS2013



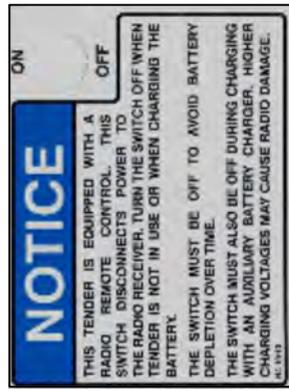
TS6010



TS2018



TS6012



TS6015



TS2017



NATM



TS2003

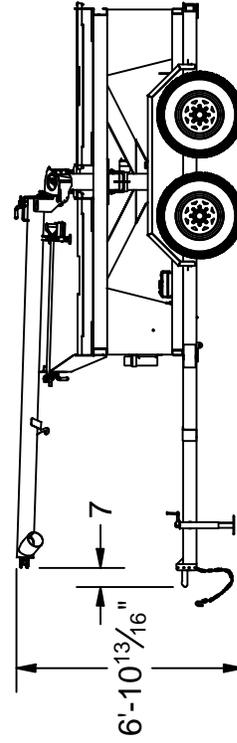
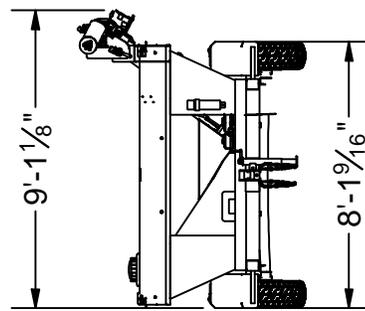
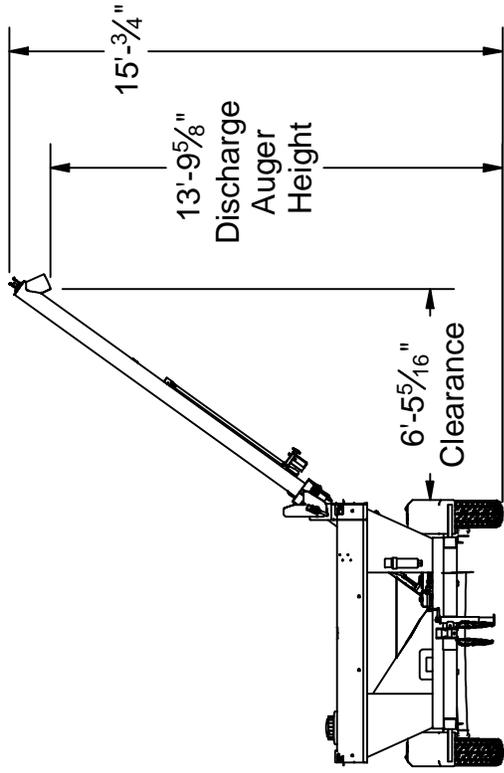
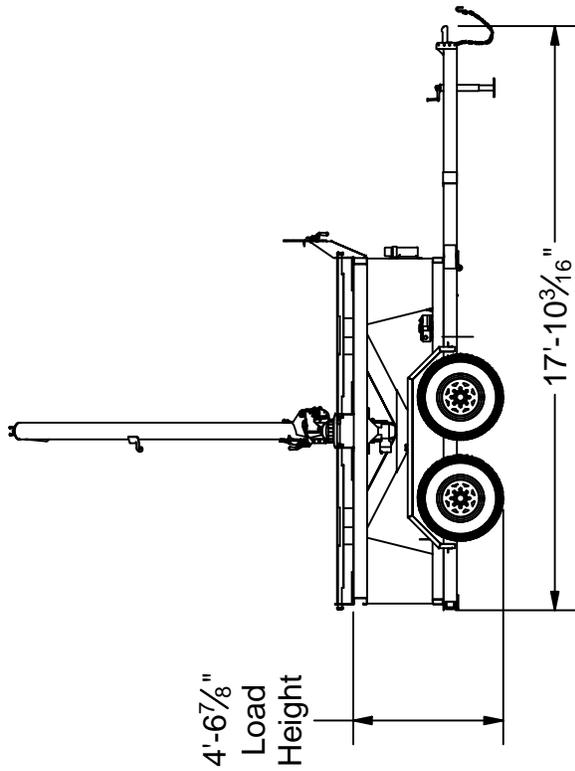
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# ST200 - 4 Box Seed Tender Dimensions

Empty Weight: 4,238 lbs.



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## 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.

### Bolt Torque for Standard Bolts

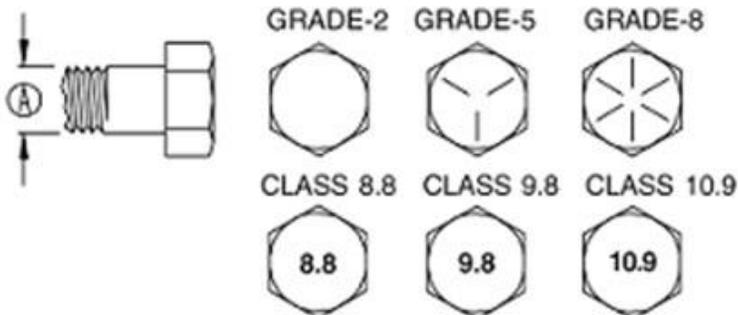
Bolt Size A	Grade 2		Grade 5		Grade 8	
	lb-ft	(N.m)	lb-ft	(N.m)	lb-ft	(N.m)
1/4"	6	8	9	12	12	16
5/16"	10	13	18	25	25	35
3/8"	20	27	30	40	45	60
7/16"	30	40	50	70	80	110
1/2"	45	60	75	100	115	155
9/16"	70	95	115	155	165	220
5/8"	95	130	150	200	225	300
3/4"	165	225	290	390	400	540
7/8"	170	230	420	570	650	880
1"	225	300	630	850	970	1310

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%.

### Bolt Torque for Metric Bolts

Bolt Size 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

Grade or Class value for bolts and capscrews are identified by their head markings.



# OPERATING PROCEDURES

## STARTUP AND BREAK-IN PROCEDURES



### Caution

It is essential to inspect your drive line before adding power and know how to shut it 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 the tube. When the flighting 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 startup 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 the designated work area before adding power.



### Caution

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

## BULK SEED TENDER INSTALLATION



### Caution

1. Because the center of gravity is much higher with a loaded tender on a truck bed, additional care has to be taken in the way the truck is driven and parked.
2. 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.
3. 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.
4. When transporting, keep in mind the auger extends forward, be aware of objects too 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. Due to the possibility that this equipment may be used in dry areas or in the presence of combustibles, special precautions should be taken to prevent fires and firefighting 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, clothing, and long hair 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 brakes, disengages the PTO and shut off the engine, and removes 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 most level 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 key fob 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 key fob 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**

### **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.

### **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 your 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.



## ALWAYS LOWER THE AUGER TO TRANSPORT

**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. Refer to the dimensions 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.

# 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 the 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.
  - a. Check the battery to see if it is fully charged.
  - b. Check electrical connections.
  - c. Check for any obstruction at the throttle lever.
  - d. Check that the throttle spring is properly adjusted.
  - e. 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.
  - a. Check that the battery is fully charged.
  - b. Check all wire connections and plugs.
  - c. Check the switch.



## Warning

1. The auger should be frequently checked and serviced to operate freely.
2. Keep all guards and shields in place. Replace any that are damaged or lost.
3. The Patriot 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 the equipment as well as any other machinery.
4. Any parts needing replacement should be replaced with parts of the same type and size.
5. Do not modify or alter any of the auger components.

# TROUBLE SHOOTING

## LOW CAPACITY

1. The auger may not be getting enough grain.
  - a. Check to see the intake has not “bridged over” restricting the flow.
  - b. Is the gate open to the auger?
2. The exposed flighting at the auger intake should be covered with seeds to achieve maximum capacity.
  - a. Is the gate open far enough? Adjust if needed.
  - b. Check the level of seed in the seed tender.
3. Check auger speed. A slow speed (below recommended speed) will result in low capacity.
  - a. Is the engine running fast or slow?
    - i. Adjust the engine speed as needed.
4. Did the auger connecting bolt break? See manual for part location and replace.

## AUGER PLUGS

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

## EXCESSIVE AUGER NOISE

1. Is the auger running full?
2. 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.

## MOTOR DOES NOT START

1. Check gas, old gas will lose octane power.
2. Is you fuel valve on the engine turned on? Check your manual for further advice.
3. 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 is 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.

# 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 the recommendations for lifting and supporting the unit. Check that the wheel and drum rotate freely.
2. Remove the adjusting access cover from the adjusting slot on the bottom of the brake backing plate.
3. With a flat blade 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 access cover and lower the wheel to the ground. Repeat the above procedure on all brakes.



Caution

Never get under the trailer unless it is resting on properly placed jack stands. Follow the 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).

## **Inspections**

- Inspect front hitch for wear, replace if wear prevents for correct coupling if ball hitch or oblong hole for trailer hitch pin.
- Check the trailer frame for cracks and/or deformities and have them repaired.
- Inspect lights and repair/replace if broken or damaged.
- Check wheel bearings. Repair or replace if loose or damaged.
- Inspect the suspension system for the trailer. Replace damaged or broken springs or axles.

See tire safety section for tire information.

## LUBRICATION & MAINTENANCE

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



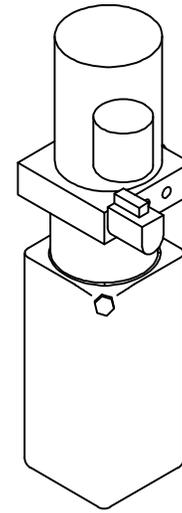
### Warning!

1. 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 operation.
10. After servicing, be sure all tools, parts and service equipment have been 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.

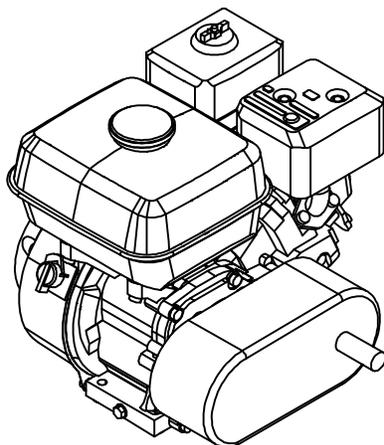
# Lubricants for Patriot Seed Tenders

## Seed Tender Lubricants

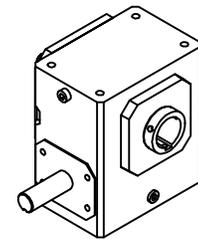
Equipment	Lubricant Type	Quantity
<b>Engines</b>		
Honda GX160	SAE 10W-30	0.63 quart
Honda GX270	SAE 10W-30	1.16 quarts
Kohler CH255	Kohler Pro 10W-50 Synthetic or SAE 10W-30	0.63 quart
Kohler CH395	Kohler Pro 10W-50 Synthetic or SAE 10W-30	1.16 quarts
<b>Reducing Gear</b>		
Honda 2:1	SAE 10W-30	17 ounces
Kohler 2:1	20W-40 or 20W-50	0.52 quart
Hydraulic Power Unit	ISO 32 Hydraulic Oil	3.0 quarts
<b>Gearbox</b>		
Dodge 4:1	Synthetic PAG460 Gear Lubricant	28 ounces



Hydraulic Power Unit  
(Conveyor Equipped Seed Tenders)



Engine and Reducing Gear  
(Honda or Kohler)

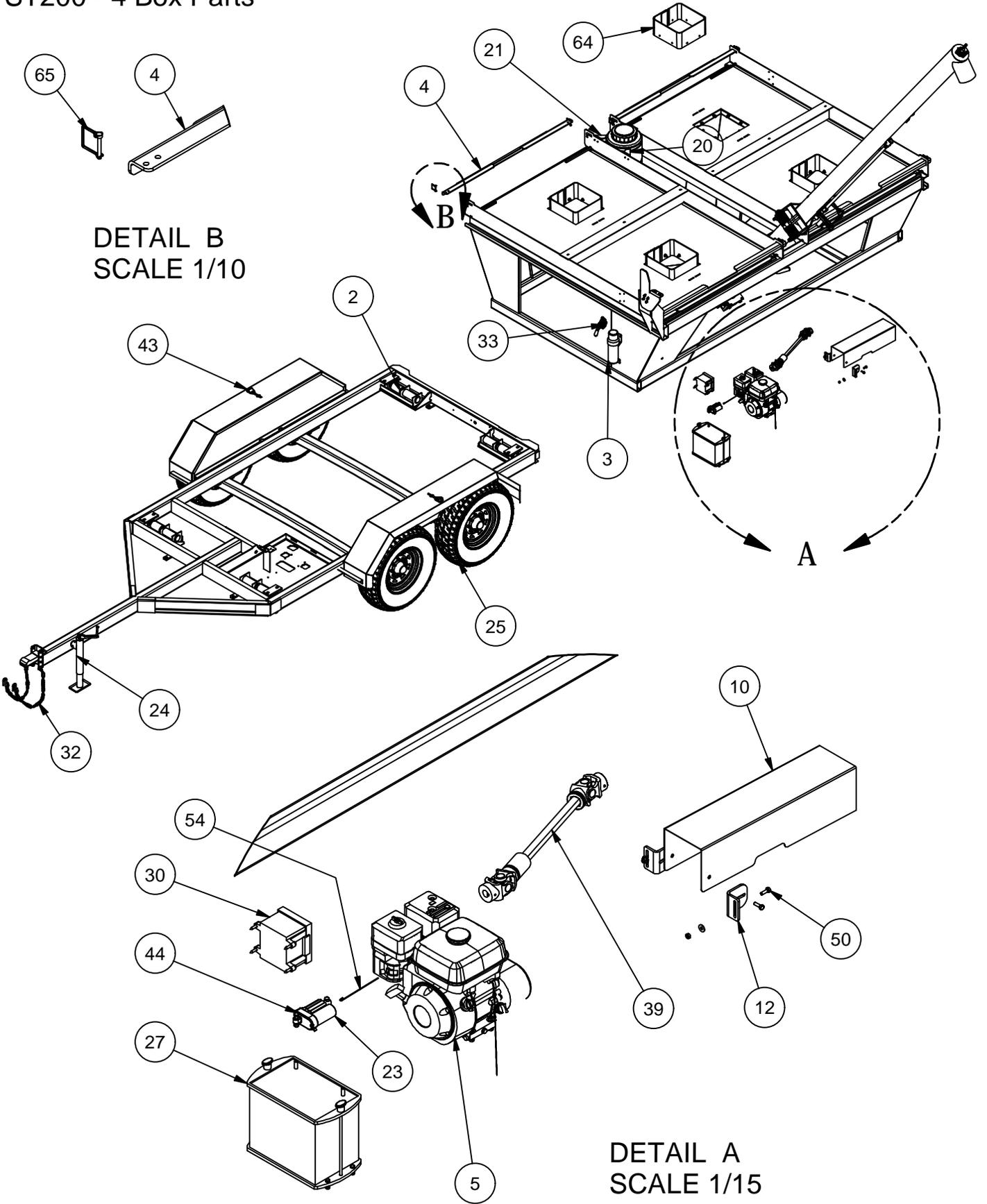


Gearbox  
(Auger Type Seed Tenders)

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# Parts Diagrams

# ST200 - 4 Box Parts



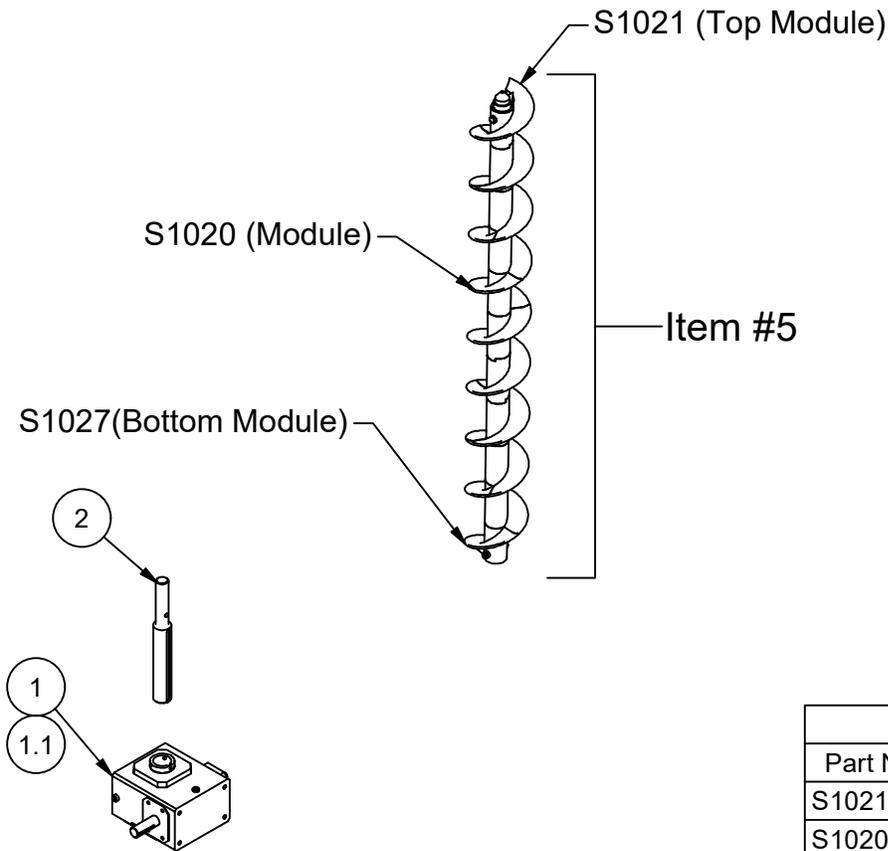
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ST200 4 Box Parts List				ST200 4 Box Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION	ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	ST-200T-A0000	4 Box Trailer Frame Scaled	42	1	ST-CP-A0004	24IN Round Handle Assembly
2	4	Scale System	See Scale Sheet	43	1	TR3002	Right Fender Light
3	1	TR1590	Manual Holder	43.1	1	TR3003	Left Fender Light
4	4	ST-200D-P0005	Lock Bar	44	8	B5/16x1.5	Hex Bolt
5	1	S4601	GX160 Honda Elec. Start	45	50	W5/16F	Plain Washer
5.1	1	S4600	GX160 Honda Pull Start	46	43	N5/16N	Hex Nut
5.2	1	S4607	Wet clutch	47	4	B1/4x1.0	Hex Bolt
6	1	ST-200D-A0001	4 Box Gate Handle Weldment	48	4	W1/4L	Lock Washer
				49	4	N1/4N	Hex Nut
7	1	ST-200D-A0003	4Box 2016 Gate Weldment	50	14	B5/16x1.0	Hex Bolt
8	1	ST-200D-P0031	Gate Arm	51	38	W5/16L	Lock Washer
9	1	ST-200D-P0030	Gate Arm LH	52	1	N5/16L	Lock Nut
10	1	ST-200D-A0012	PTO Cover	53	33	B5/16x1.25	Hex Bolt
12	2	ST-CP-P0001	PTO Shield Bolt Plate Outside	54	1	ST-CP-P0005	Throttle Linkage
				55	4	W3/8F	Plain Washer
13	1	ST-200D-A0002	ST-4B	56	4	W3/8L	Lock Washer
14	4	ST-200D-P0000	Trailer to Body Bolt Plate	57	4	B3/8x1.0	Hex Bolt
19	2	ST-200D-P0037	Dry Noc Bracket	58	6	B5/16x1CB	Carriage Bolt
20	1	ST-200D-P0038	Dry Not Upper Bracket RH	59	6	W5/16NY	Nylon Flat Washer
21	1	ST-200D-P0039	Dry Noc Upper Bracket LH	60	3	PR316x0.5L	Rivet
23	1	S4103	Actuator	62	3	ST-CP-P0158	Bottom Pad
24	1	TR1610	Top Wind Jack	63	3	ST-CP-P0160	Base Gusset
25	4	TR1085	16" Tire Rim 8 Bolt 10ply	64	4	S2038	Baler Belting
26	32	N1/2NY	Nylock Nut	65	8	S4813	5/16x 1.5 Lynch Pin
27	1	S4000	12V Battery				
28	1	TR3005	Left Tail Light				
29	1	TR3004	Right Tail Light				
30	1	TR1800	Breakaway Battery				
31	2	TR1595	Safety Chain				
33	2	S4803	Locking Clamp				
39	1	S4901	26" Driveshaft Assembly				

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# ST200 Lower Auger and Gearbox

6" Auger is 5" Diameter Module

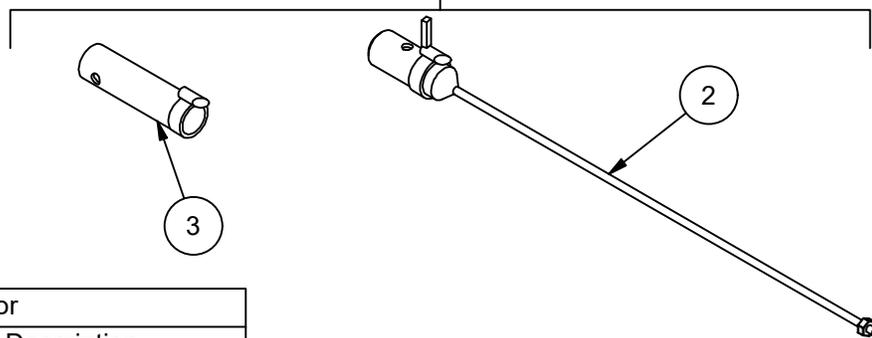


ST200 Lower Auger Parts		
Part Number	Qty	Description
S1021	1	Top Module
S1020	12	Module
S1027	1	Bottom Module

## Seed Tender Lower Augers and Gearboxes

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	S4700	Gearbox (Hub City)
1.1	1	S4710	Gearbox (Dodge)
2	1	ST-CP-P0032	Lower Auger Shaft Adapter
5	1	ST-CP-A0047	Lower Auger for 200 Seed Tender (4 Box) (58" Long)

## Item #1



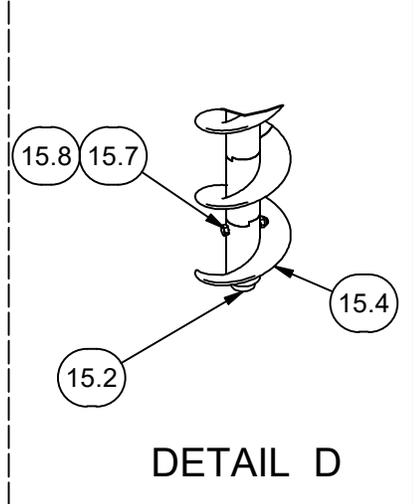
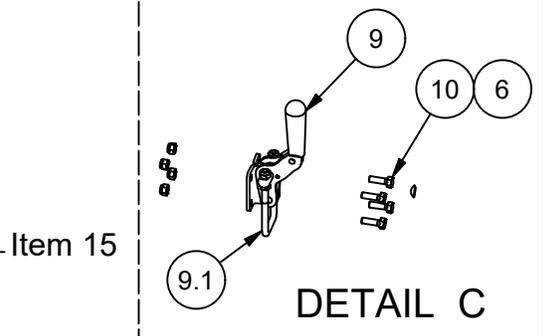
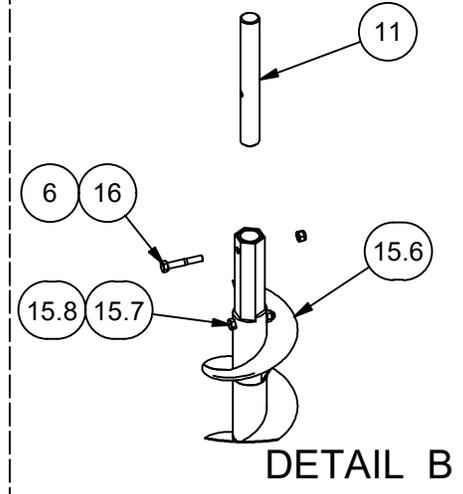
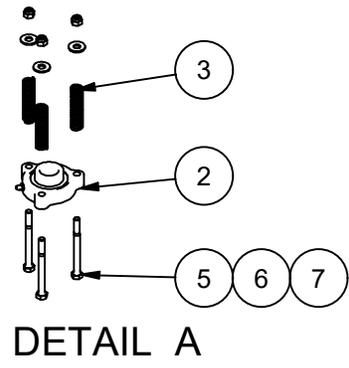
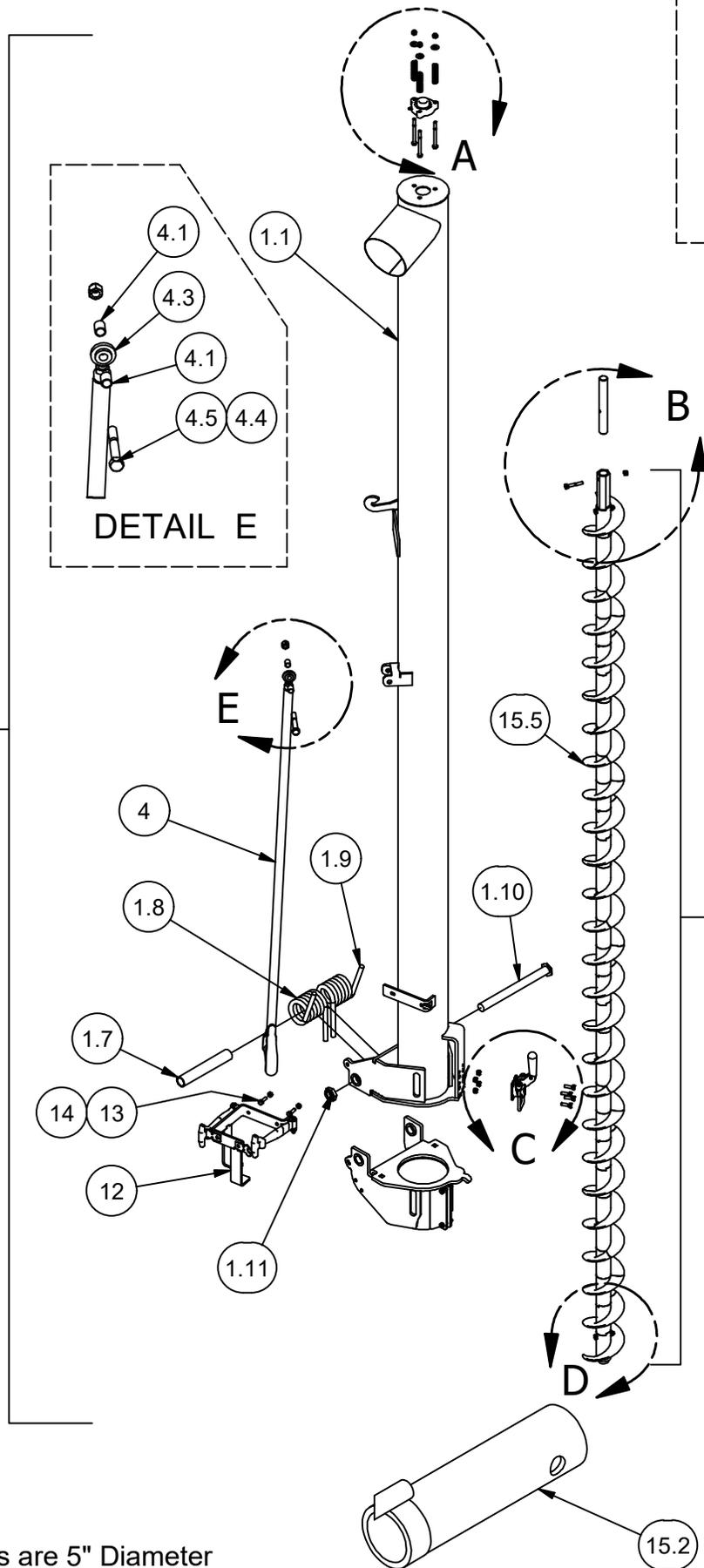
## Folding Connector

ITEM	Qty	Part Number	Description
1	1	S1000	Poly Auger Cable Assembly Male and Female
2	1	S1001	Male Connector with Cable
3	1	S1015	Female Folding Connector

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# Seed Tender 6" Upper Auger Assemblies

ITEM #1



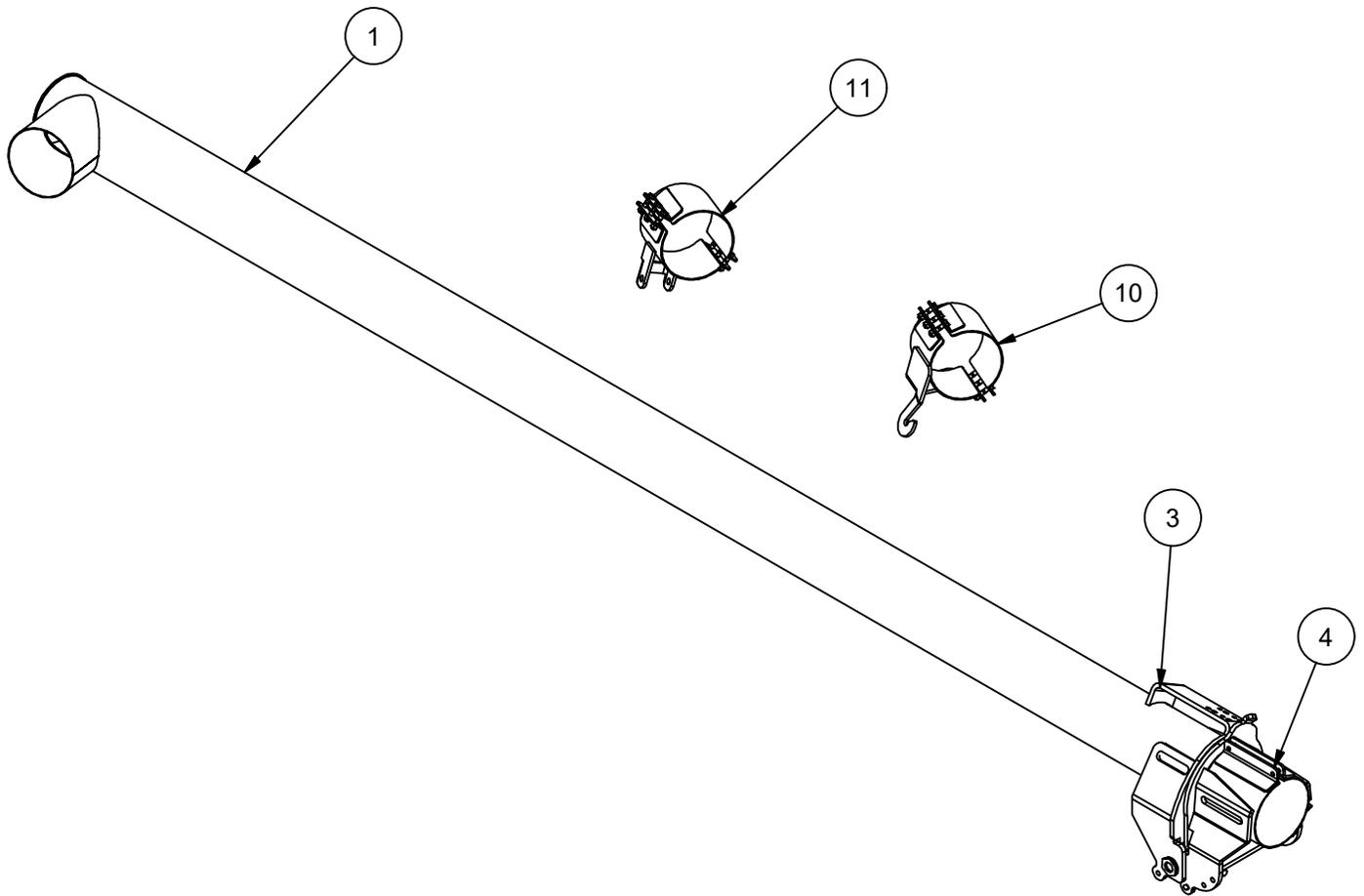
6" Modules are 5" Diameter

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Seed Tender 6" Upper Auger Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	OG ST-CP-A0011	6" Upper Auger
1.1	1	ST-CP-P0054	6IN Auger 11FT Tube
1.7	1	ST-CP-P0048	Auger Hinge Spring Tube
1.8	1	SP4003B	Auger Spring L Hand Black
1.81	1	SP4003R	Auger Spring L Hand Red
1.9	1	SP1060B	Auger Spring R Hand Black
1.91	1	SP1060R	Auger Spring L Hand Red
1.10	1	S1025-1	6" AUGER HINGE BOLT / DBL SPRING
1.11	1	N1NYLJ	1 Std NC Nylock Jam Nut
2	1	BR905	Auger Bearing
3	3	SP4007	Auger Bearing Spring
4	1	ST-CP-A0004	Push/Pull Handle 52" Long
4.1	2	S2035-4	Spacer for Push/Pull Handle
4.3	1	S2035-1	1/2 X 1/2-20 RH ROD END STEEL/MALE
4.4	1	N1/2NYL	1/2 Std NC Nylock Nut
4.5	1	B1/2x3.5	Hex Bolt
5	3	B5/16X3.5	Hex Bolt
6	10	N5/16NYL	Nylock Nut
7	3	W5/16F	Plain Washer
8	2	B5/16X1.5	Hex Bolt
9	1	S4803	Retaing Clamp
9.1	1	S4802	Replacement U-Bolt
10	4	B5/16X1.0	Hex Bolt
11	1	ST-CP-P0037	Upper Auger Top Shaft 1IN
12	1	ST-CP-A0054	Bolt on Auger Basket Weldment
13	2	B5/16X1.0	Hex Bolt
14	2	N5/16DL	Lock Nut
15	1	ST-CP-A0007	6IN 220 Upper Auger Flighting
15.2	1	S1015	FEMALE FOLDING CONNECTOR
15.4	1	S1022	Bottom of Top Module 6" Auger
15.5	29	S1020	Regular Module 6" Auger
15.6	1	S1027	Top of Top Module 6" Auger
15.7	2	B5/16x2.25	Hex Bolt
15.8	2	N5/16NYL	5/16 Std NC Nylock Nut
16	1	B5/16X2.0	Hex Bolt

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# Replacement 6" Dual Spring Upper Auger



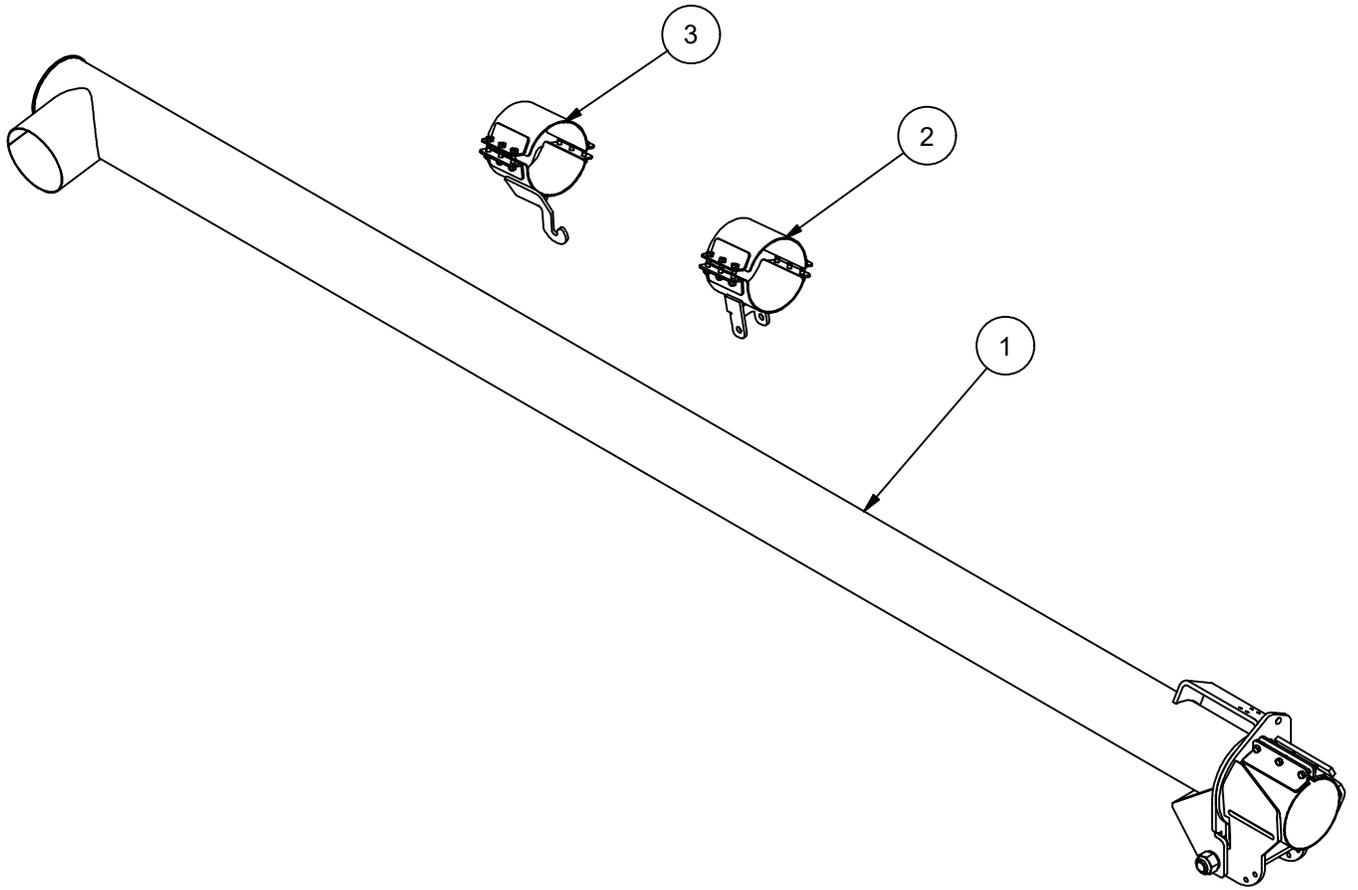
ST-CP-A0065R (Red)  
 ST-CP-A0065G (Green)  
 ST-CP-A0065B (Black)

ST-CP-A0065 Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	ST-CP-P0054	6IN Auger 11FT Tube
2	1	ST-CP-P0055	6IN Auger Top Cap
3	1	ST-CP-A0009	6IN Extended Top Hinge
4	1	ST-CP-A0010	6IN Extended Bottom Hinge Clamp
5	1	ST-CP-P0048	Auger Hinge Spring Tube
6	2	SP1060R	Auger Spring Red
7	2	SP1060B	Auger Spring Black
8	1	S1025-1	6" Auger Hinge Bolt/DBL Spring
9	1	N1NYL	Nylock Nut
10	1	ST-CP-A0064	Bolt On Hook Assembly
11	1	ST-CP-A0061	Push/Pull Clamp Assembly

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# Replacement 6" Single Spring Upper Auger



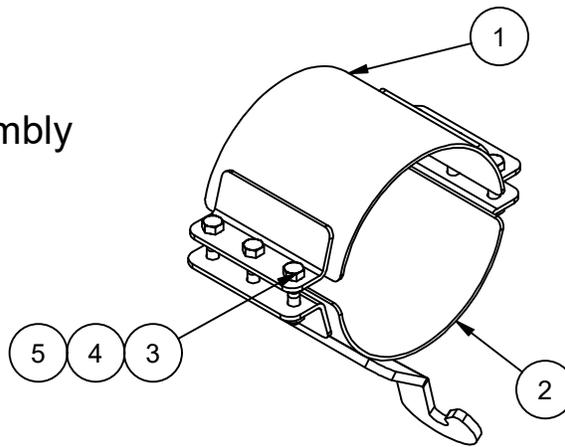
ST-CP-A0073R (Red)  
 ST-CP-A0073G (Green)  
 ST-CP-A0073B (Black)

ST-CP-A0073 Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	ST-CP-A0072	6 in Single Spring Auger Assembly
2	1	ST-CP-A0061	Push/Pull Clamp Assembly
3	1	ST-CP-A0064	Bolt On Hook Assembly

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ST-CP-A0064

Clamp Hook Assembly

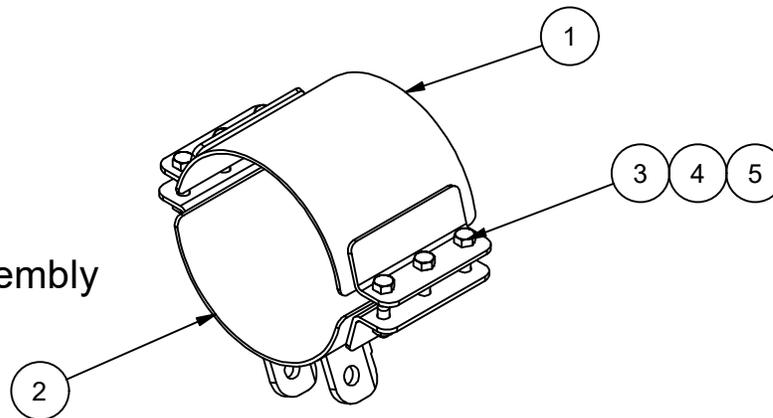


6" Clamp Hook and Push/Pull Clamp Assemblies

ST-CP-A0064 Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	ST-CP-A0060	Band Clamp Assembly
2	1	ST-CP-A0063	Bolt On Clamp Hook
3	6	B5/16x1.5	Hex Bolt
4	6	N5/16N	Hex Nut
5	6	W5/16L	Lock Washer

ST-CP-A0061

Push/Pull Clamp Assembly



ST-CP-A0061 Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	ST-CP-A0060	Band Clamp Assembly
2	1	ST-CP-A0062	Push/Pull Bottom Clamp Assembly
3	6	N5/16N	Hex Nut
4	6	B5/16x1.5	Hex Bolt
5	6	W5/16L	Lock Washer

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# Seed Tender Flexible Spout Options

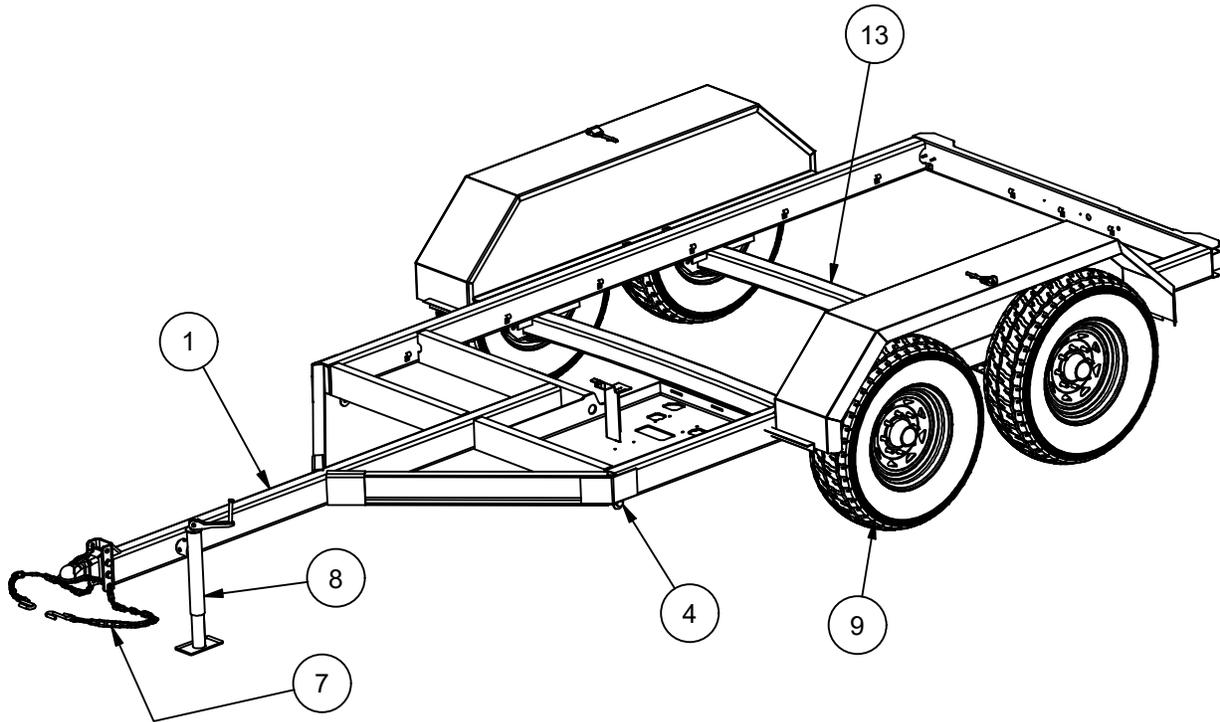
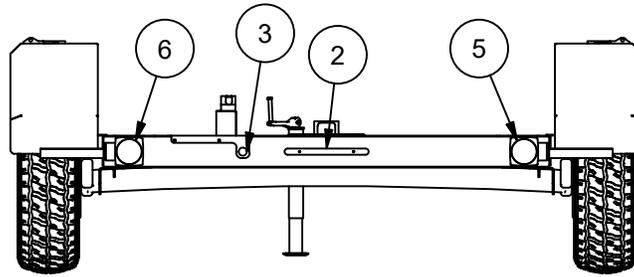


6" Flexible Poly Spouts		
Part Number	Length	Description
S5002	4'	Standard spout
S5001	4'10"	Spout with no handle
S5014	4'10"	Spout with handle for Rowe
S5000	7'19"	Spout with no handle
S5012	7'19"	Spout with handle for Rowe

7" Flexible Poly Spouts		
Part Number	Length	Description
S5502	4'	Standard spout
S5501	4'10"	Spout with no handle
S5514	4'10"	Spout with handle for Rowe
S5500	6'16"	Spout with no handle
S5512	6'16"	Spout with handle for Rowe

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# ST-200 TRAILER PARTS

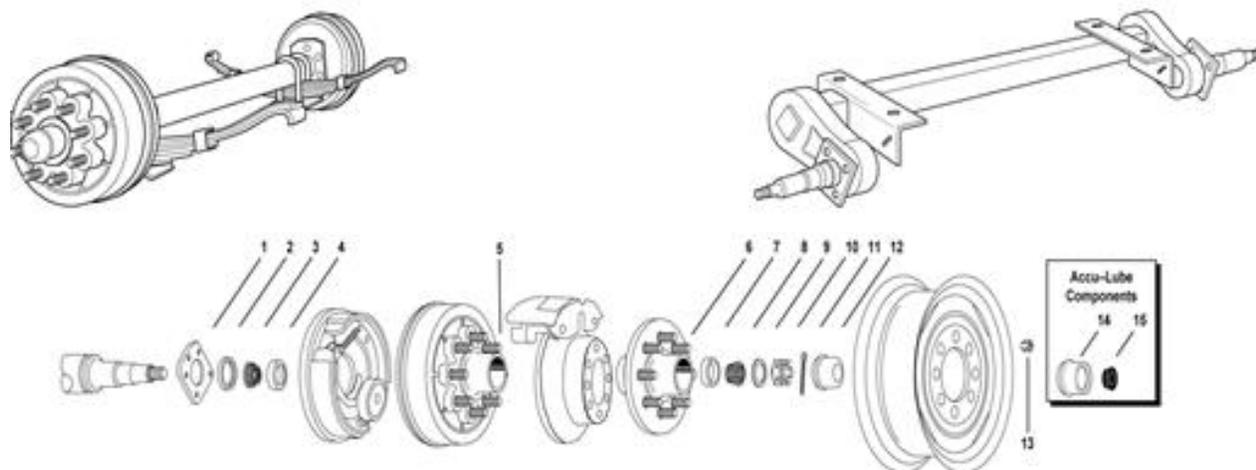


## Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	ST-200T-A0000	4 Box Trailer Frame Scaled Weldment
2	1	TR3007	Rear Triple Light
3	1	TR3008	License Plate Light
4	2	TR3000	Side Marker Orange Light
5	1	TR3005	Driver Side Tail Light
6	1	TR3004	Curb Side Tail Light
7	2	TR1595	Safety Chain
8	1	TR1610	15" 2K Topwind Jack
9	4	TR1085	235/80R16 10 Ply Tire on 8 on 6.5 White Spoke Rim
10	1	TR3002	Red/Amber Fender Light RH
11	1	TR3003	Red/Amber Fender Light LH
12	1	TR1135	2-5/16" Ball Coupler 14K
13	2	TR1074	7K Axle

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# Axle Parts



Axle Parts

Axle Size	Axle PN	Hub	Grease Seal	Inner Bearing	Inner Race	Outer Race	Outer Bearing
3500#	TR1040	5 on 4.5	171255TB	L-68149	L-68111	L-44610	L-44649
6000#	TR1060	8 on 6.5	2233TBN	25580	25520	14276	14125A
7000#	TR1074	8 on 6.5	22333TBN	25580	25520	14276	14125A
8000#	TR1095	8 on 6.5	22333TBN	25580	25520	02420	02475
10000#	TR1096	8 on 6.5	CR27438	28580	28521	25520	25580
12000#	TR1080	8 on 6.5	CR31281	39590	39520	JM205110	JM205149
16000#	TR1092	8 on 275 mm	CR31281	39590	39520	JM205110	JM205149

Axle Parts

Axle Size	Spindle Washer	Spindle Nut	Cotter Pin	Grease Cap	EZ Lube Cap	Rubber Plug	Cone Wheel Nut
3500#	4753	TR1045	4755	TR1041	TR1044	RP-100	4756
6000#	4753	TR1065	TR1070	TR1064	TR1072	TR1072-1	4756
7000#	4753	4754-12	4755	1605-PL	-	RP-100	4756
8000#	4753	4754-12	4755	1605-PL	-	RP-100	4756-1
10000	4798	4797	CP-3	12011-1	-	-	568216
12000#	47128	47127	CP-3	12011-1	-	-	568216
16000#	47128	47127	CP-3	12011-1	-	-	WN7516PTFEC

Axle Parts

Axle Size	Brake Drum Back Plate	Brake Drum w/ Bearings/Seal	Brake Set Up
3500#	TR1042 (L, R, 2-1/4")	TR1043	-
6000#	TR1062 (L or R)	TR1063	TR1061
7000#	4704-L/4704-R	92865A-1	-
8000#	4739-L/4739-R	90865-GP	-
10000#	4739-L/4738-R	99865-OBE	-
12000#	4741-L/4741-R	912865-OBE	-
16000#	4741-L/4741-R	916810-OBE	-

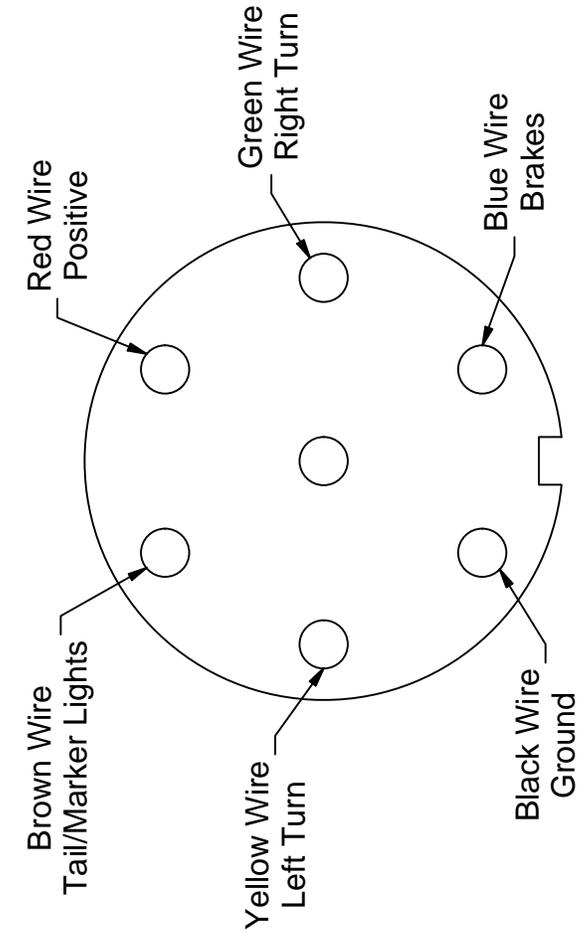
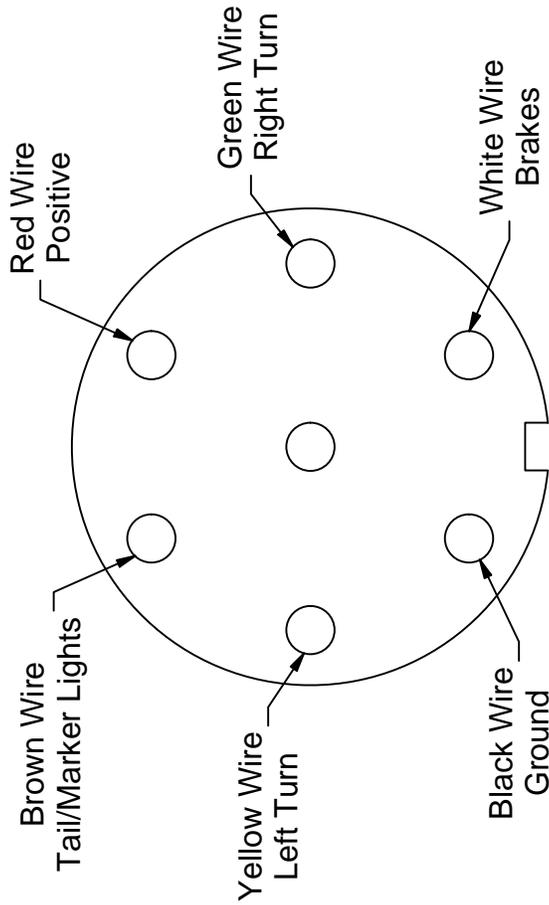
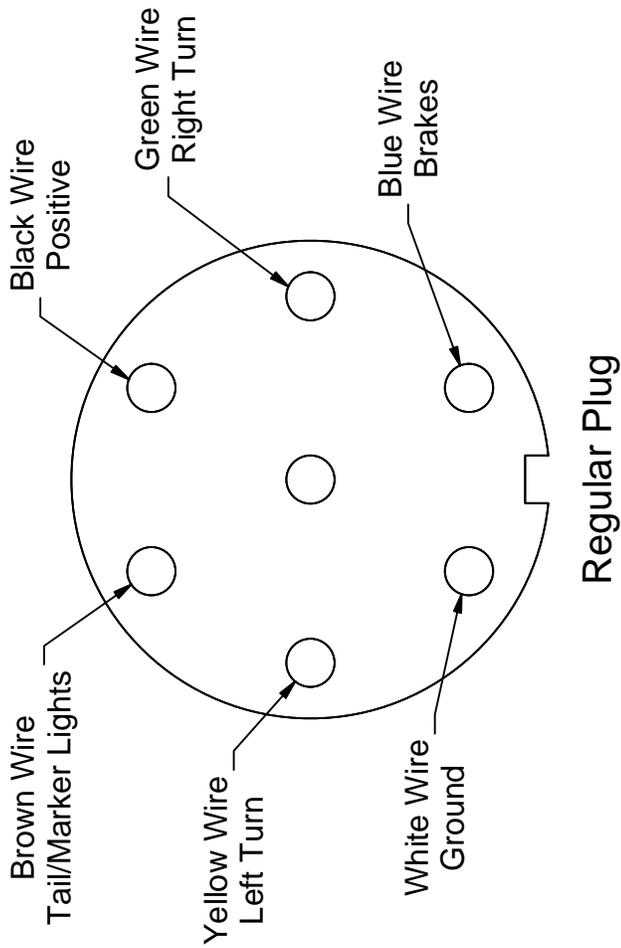
Axle Parts

Axle Parts		Axle Parts	
Description	Part Number	Description	Part Number
1/2" Stud 6k Axle	TR1073	9/16-18 Lug Nut	TR1076
9/16" Stud 6K Axle	TR1074	1/2 Stud & Nut	TR1085-1
1/2-20 Lug Nut	TR1075	12 x 2" Brake Pad	TR1071

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# ELECTRONICS

## Trailer Plug Wiring



View is looking at the rear of the trailer plug

Match the color of the wiring on the trailer with the color of the wiring on the trailer plug

Trailer plugs are detailed to reflect wire that is available at time of manufacture.

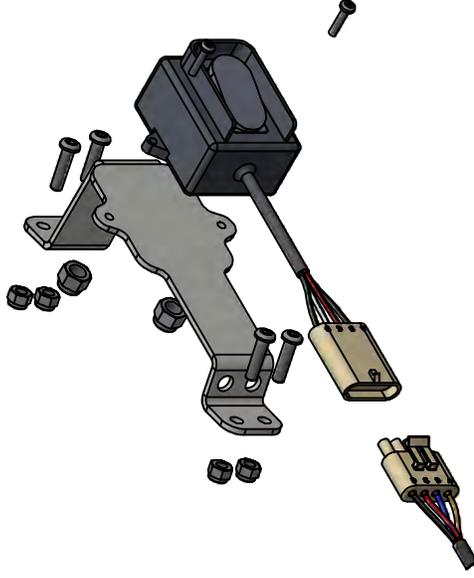
Patriot Equipment  
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# Manual Switch Wire Harness



## DETAIL B



Current Assembly P/N: THC50708 Assembly with  
P1200-PR-MOM-14AWG (Switch)

## DETAIL A

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