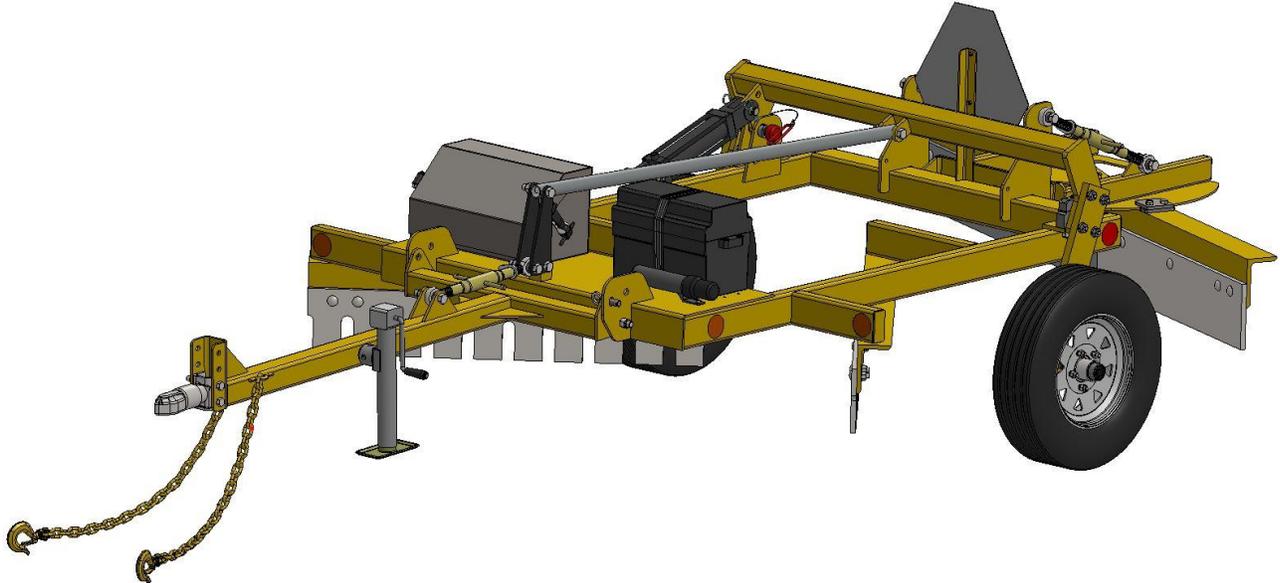




122 PERFECT LANE MAINTAINER MANUAL
Serial numbers 950-UP
REV 031720



**When ordering parts, please refer to the
Model and Serial Numbers of your Lane Maintainer.**

They are on the back cover of this manual.

Manual No. BON-000917

Manufactured, sold, and serviced by:

Bonnell Industries
1385 Franklin Grove Road
Dixon, IL 61021
800-851-9664

CAPICITIES & SPECIFICATIONS:.....	3
Model 122:.....	3
1. DIMENSIONAL DATA.....	6
1.1. 122 DIMENSIONAL DATA	6
2. GENERAL SAFETY INFORMATION.....	7
2.1. SAFETY ALERT SYMBOLS AND SIGNAL WORDS	7
2.2. MAJOR HAZARDS.....	7
Improper Sizing of the Perfect Lane Maintainer to the Tow Vehicle.	7
Driving Too Fast	8
Adjusting Driving Behavior to match Conditions	8
Perfect Lane Maintainer Not Properly Coupled to the Hitch	8
Proper Use of Safety Chains	9
Worn Tires, Loose Wheels, and Lug Nuts.....	9
Hazards From Modifying Your Perfect Lane Maintainer	10
Safety Warning Labels on Your Perfect Lane Maintainer	11
2.3. PERFECT LANE MAINTAINER TOWING GUIDE.....	12
2.4. SAFE PERFECT LANE MAINTAINER TOWING GUIDELINES.....	12
2.5. GENERAL SAFETY RELATED TO OPERATION OF THE MAINTAINER	12
3. TIRE SAFETY INFORMATION	13
3.1. TIRE SAFETY - EVERYTHING RIDES ON IT	13
Safety First–Basic Tire Maintenance.....	13
Checking Tire Pressure	13
Steps for Maintaining Proper Tire Pressure	13
Tire Size14	
Tire Tread	14
Tire Balance and Wheel Alignment	14
Tire Repair.....	14
Tire Safety Tips	14
4. COUPLING TO THE TOW VEHICLE.....	16
4.1. USE AN ADEQUATE TOW VEHICLE AND HITCH	16
4.2. COUPLING AND UNCOUPLING THE PERFECT LANE MAINTAINER	16
Rig the safety chains	17
5. GENERAL OPERATING INSTRUCTIONS.....	18
5.1. PRE-TOW CHECKLIST.....	18
5.2. MAKE REGULAR STOPS	18
5.3. SETUP AND ADJUSTMENT	18
5.4. TRANSPORT SAFETY PIN	19
5.5. PITCH ADJUSTMENT.....	21
5.6. FINISHING BLADE ADJUSTMENT	22
6. INSPECTION, SERVICE & MAINTENANCE.....	23
6.1. INSPECTION, SERVICE & MAINTENANCE SUMMARY CHARTS.....	23
6.2. INSPECTION AND SERVICE INSTRUCTIONS	24
Perfect Lane Maintainer Structure.....	24
Perfect Lane Maintainer Jack.....	24
Lights and Signals	24
Tires 24	
Wheel Rims	25
Wheels, Bearings and Lug Nuts.....	25
LUBRICATION	28
7. PART BREAKDOWNS.....	30
7.1. MAIN BODY BLADE ASSEMBLY.....	30
7.2. FINISHING BLADE ASSEMBLY.....	31

7.3.	122 TONGUE ACCESSORIES.....	32
7.4.	122 LIFT ASSEMBLY	33
7.5.	122 TOP LINK ASSEMBLY.....	34
7.6.	122 HUB & WHEEL ASSEMBLY	35
7.7.	MANUAL CANISTER AND SMV SIGN ASSEMBLY	36
7.8.	122 HYDRAULIC POWER ASSEMBLY	37
7.9.	122 HYDRAULIC POWER UNIT ELECTRICAL SYSTEM.....	38
7.10.	122 OPTIONS	39
8.	WARRANTY	40

CAPICITIES & SPECIFICATIONS:

MODEL 122:

Weight.....	1250 LBS
Overall Length.....	14'-10"
Overall Width.....	6'-6 – 7'-0
Overall Height	4'-0
Tires	ST175/80R13, Load Range C



SAFETY FIRST

Please read this manual before attempting to install or operate this equipment.



The symbol at left means ALERT. Any time you see this symbol, you are being warned that your safety is in danger! Please be careful!

GUIDELINES TO FOLLOW:

1. Turn off all power including truck engine when servicing or installing equipment.
2. Follow all recommended operation procedures.
3. Follow a regular maintenance schedule so that your equipment is kept in good operating condition at all times. Improper maintenance can lead to failure during operation, which makes for unsafe conditions.
4. Recognize and avoid hazardous situations during the installation, operation, maintenance, and servicing of equipment.
5. Please pay attention to, and respect, safety decals. They are there to protect you from injury.

AVOID ACCIDENTS

Most accidents, whether they occur in industry, on the farm, at home, or on the highway, are caused by failure of some individual to follow simple and fundamental safety rules or regulations. For this reason, most accidents can be prevented by recognizing the real cause and doing something about it before the accident occurs.

Regardless of the care used in the design and construction of any type of equipment, there are many conditions that cannot be completely safeguarded against without interfering with reasonable accessibility and efficient operation.

A careful operator is the best insurance against an accident. The complete observance of one simple rule would prevent many thousand serious injuries each year. That rule is:

***NEVER ATTEMPT TO CLEAN, OIL, OR ADJUST
A MACHINE WHILE IT IS IN MOTION.***

NATIONAL SAFETY COUNCIL

PLEASE, ALWAYS THINK SAFETY FIRST!

The purpose of this manual is to inform the person using the unit with the necessary information to properly install, operate, and maintain this unit. These instructions cannot replace the fundamental knowledge that a person must possess in order to safely and adequately operate this unit. The person must be qualified and possess the clear thinking necessary to install and operate this equipment. Since the life of any machine depends largely upon the care it is given, we suggest that this manual be read thoroughly and referred to regularly by anyone working on or around this unit. If for any reason you do not understand the instructions, please call your authorized service center or our office at (815) 284-3819. It has been our experience that by following these installation and maintenance instructions, and by observing the operation of this equipment, you will have sufficient understanding of how to troubleshoot and correct all normal problems that you may encounter during the life of the equipment.

THE NEED FOR SAFETY CANNOT BE STRESSED ENOUGH. WE URGE YOU TO MAKE SAFETY YOUR TOP PRIORITY WHEN OPERATING THIS UNIT OR ANY OTHER EQUIPMENT.

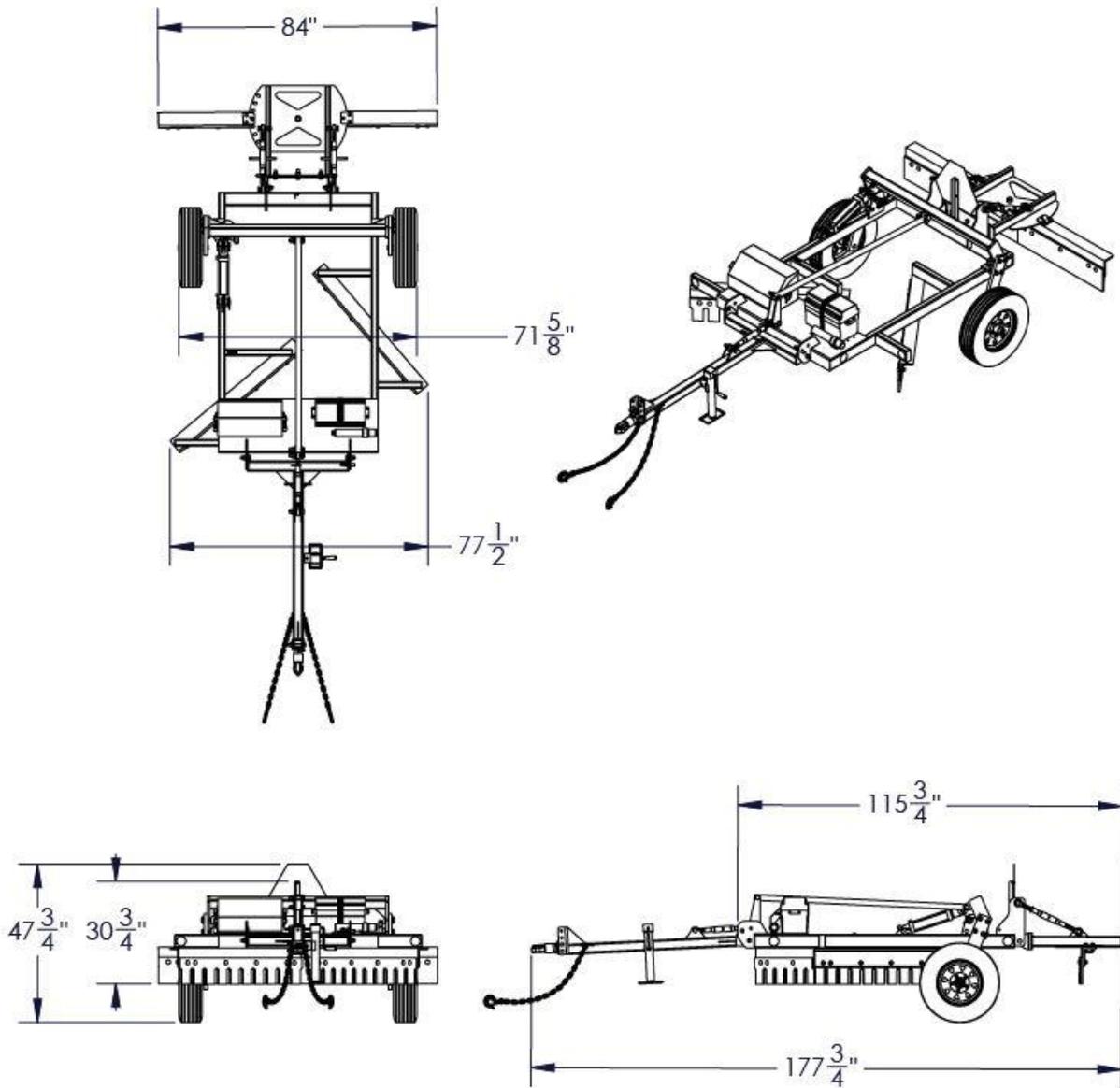
**ACCIDENTS HURT!
ACCIDENTS COST!
ACCIDENTS CAN BE AVOIDED!**

1. DIMENSIONAL DATA

1.1. 122 DIMENSIONAL DATA

FILE NAME	122 ASSEMBLIES
DWG NAME	DIMENSIONAL DATA

SHIPPING WEIGHT: 1300 LBS



CONFIDENTIAL: THIS DRAWING AND/OR INFORMATION CONTAINED HEREIN IS AND REMAINS THE SOLE PROPERTY OF, AND IS PROPRIETARY TO, BONNELL INDUSTRIES, INC. THIS DRAWING AND/OR INFORMATION SHALL BE KEPT CONFIDENTIAL AND MAY NOT BE REPRODUCED, COPIED, MODIFIED, DISCLOSED, TRANSFERRED, OR MADE AVAILABLE TO OTHERS, EXCEPT WITH THE EXPRESS WRITTEN CONSENT OF BONNELL INDUSTRIES, INC. IT IS LOANED IN CONFIDENCE FOR MUTUAL ASSISTANCE PURPOSES ONLY. BONNELL INDUSTRIES, INC. MAY AT ANY TIME, MODIFY THE DRAWING AND/OR INFORMATION CONTAINED HEREIN.

BONNELL
INDUSTRIES INC
TRUCK & ROAD EQUIPMENT

DIXON, ILLINOIS
PHONE: 800-851-9664

2. GENERAL SAFETY INFORMATION

2.1. SAFETY ALERT SYMBOLS AND SIGNAL WORDS

The safety information in this manual is denoted by the safety alert symbol: 
The level of risk is indicated by the following signal words.

 Danger
DANGER – Immediate hazards which WILL result in severe personal injury or death if the warning is ignored.
 WARNING
WARNING – Hazards or unsafe practices which COULD result in severe personal injury or death if the warning is ignored.
Caution
CAUTION – Practices that could result in damage to the Perfect Lane Maintainer or other property..

2.2. MAJOR HAZARDS

Loss of control of the Perfect Lane Maintainer or Perfect Lane Maintainer/tow vehicle combination can result in death or serious injury. The most common causes for loss of control of the Perfect Lane Maintainer are:

- Improper sizing the Perfect Lane Maintainer for the tow vehicle, or vice versa.
- Excessive Speed: Driving too fast for the conditions.
- Failure to adjust driving behavior when towing a Perfect Lane Maintainer.
- Improper or mis-coupling of the Perfect Lane Maintainer to the hitch.
- Improper braking and steering under sway conditions.
- Not maintaining proper tire pressure.
- Not keeping lug nuts tight.

IMPROPER SIZING OF THE PERFECT LANE MAINTAINER TO THE TOW VEHICLE.

Perfect Lane Maintainers that weigh too much for the towing vehicle can cause stability problems, which can lead to death or serious injury. Furthermore, the additional strain put on the engine and drive-train may lead to serious tow vehicle maintenance problems. For these reasons the maximum towing capacity of your towing vehicle should not be exceeded. The towing capacity of your tow vehicle, in terms of maximum Gross Perfect Lane Maintainer Weight (GTW) and maximum Gross Combined Weight Rating (GCWR) can be found in the tow vehicles Owner's Manual.

 Danger
Use of a hitch with a load rating less than the load rating of the Perfect Lane Maintainer can result in loss of control and may lead to death or serious injury.
Use of a tow vehicle with a towing capacity less than the load rating of the Perfect Lane Maintainer can result in loss of control, and may lead to death or serious injury.
Be sure your hitch and tow vehicle are rated for the Gross Vehicle Weight Rating (GVWR) of your Perfect Lane Maintainer.

DRIVING TOO FAST

With ideal road conditions, the maximum recommended speed for safely towing a Perfect Lane Maintainer is 45 mph. If you drive too fast, the Perfect Lane Maintainer is more likely to sway, thus increasing the possibility for loss of control. Also your tires may overheat, thus increasing the possibility of a blowout.

WARNING

Driving too fast for conditions can result in loss of control and cause death or serious injury.

ADJUSTING DRIVING BEHAVIOR TO MATCH CONDITIONS

When towing a Perfect Lane Maintainer, you will have decreased acceleration, increased stopping distance, and increased turning radius (which means you must make wider turns to keep from hitting curbs, vehicles, and anything else that is on the inside corner). Furthermore the Perfect Lane Maintainer will change the handling characteristics of your towing vehicle, making it more sensitive to steering inputs and more likely to be pushed around in windy conditions or when being passed by large vehicles. In addition, you will need a longer distance to pass, due to slower acceleration and increased length. With these caveats in mind:

Be alert for slippery conditions. You are more likely to be affected by slippery road surfaces when driving a tow vehicle with a Perfect Lane Maintainer, than driving a tow vehicle without a Perfect Lane Maintainer. Anticipate the Perfect Lane Maintainer “swaying.” Swaying can be caused by excessive steering, wind gusts, roadway edges, or by the Perfect Lane Maintainer reaction to the pressure wave created by passing trucks and busses.

When encountering sway take your foot off the gas, and steer as little as possible in order to stay on the road. Use small “trim-like” steering adjustments. Do not attempt to steer out of the sway; you’ll only make it worse. Also do not apply the tow vehicle brakes to correct swaying. Check rearview mirrors frequently to observe the Perfect Lane Maintainer and traffic. Use lower gear when driving down steep or long grades. Use the engine and transmission as a brake. Do not ride the brakes, as they can overheat and become ineffective.

PERFECT LANE MAINTAINER NOT PROPERLY COUPLED TO THE HITCH

It is critical that the Perfect Lane Maintainer be securely coupled to the tow vehicle and that the safety chains are correctly attached. Uncoupling may result in death or serious injury to you and to others.

 **WARNING**

Proper selection and condition of the coupler and hitch are essential to safely towing your Perfect Lane Maintainer. A loss of coupling may result in death or serious injury.

Be sure the hitch load rating is equal to or greater than the load rating of the coupler.

Be sure the hitch size matches the coupler size

Observe the hitch for wear, corrosion and cracks before coupling. Replace worn, corroded or cracked hitch components before coupling the Perfect Lane Maintainer to the tow vehicle.

Be sure the hitch components are tight before coupling the Perfect Lane Maintainer to the tow vehicle.

 **WARNING**

An improperly coupled Perfect Lane Maintainer can result in death or serious injury.

Do not move the Maintainer until:

The coupler is secured and locked to hitch;

The safety chains are secured to the tow vehicle; and

The Maintainer jack is fully retracted.

Do not tow the Maintainer on the road until:

Tires and wheels are checked;

The Maintainer lights are connected and checked.

PROPER USE OF SAFETY CHAINS

If your Perfect Lane Maintainer comes loose from the hitch for any reason, we have provided safety chains so that control of the Perfect Lane Maintainer can still be maintained.

 **WARNING**

Improper rigging of the safety chains can result in loss of control of the Perfect Lane Maintainer and tow vehicle, leading to death or serious injury, if the Perfect Lane Maintainer uncouples from the tow vehicle.

Fasten chains to frame of tow vehicle. Do not fasten chains to any part of the hitch unless the hitch has holes or loops specifically for that purpose.

Cross chains underneath hitch and coupler with enough slack to permit turning and to hold tongue up, if the Perfect Lane Maintainer comes loose.

WORN TIRES, LOOSE WHEELS, AND LUG NUTS

As with any vehicle, the Perfect Lane Maintainer tires and wheels are important safety items. Therefore, it is essential to inspect the Perfect Lane Maintainer tires before each tow.

If a tire has a bald spot, bulge, cut, cracks, or is showing any cords, replace the tire before towing. If a tire has uneven tread wear, take the Perfect Lane Maintainer to a dealer service center for diagnosis. Uneven tread wear can be caused by tire imbalance, axle misalignment or incorrect inflation.

Tires with too little tread will not provide adequate frictional forces on wet roadways and can result in loss of control, leading to death or serious injury.

Improper tire pressure causes increased tire wear and may reduce Perfect Lane Maintainer stability, which can result in a tire blowout or possible loss of control. Therefore, before each tow you must also check the tire pressure. Allow 3 hours cool-down after driving as much as 1 mile at 40 mph before checking tire pressure.

 **WARNING**

Improper tire pressure can result in a blowout and loss of control, which can lead to death or serious injury.

Be sure tires are inflated to pressure indicated on sidewall before towing Perfect Lane Maintainer.

The tightness of the lug nuts is very important in keeping the wheels properly seated to the hub. Before each tow, check to make sure they are tight.

 **WARNING**

Metal creep between the wheel rim and lug nuts will cause rim to loosen and could result in a wheel coming off, leading to death or serious injury.

Tighten lug nuts before each tow.

The proper tightness (torque) for lug nuts is listed in Section 6.2.1.4 in the “Inspection, Service, and Maintenance” chapter of this manual. Use a torque wrench to tighten the lug nuts, use the crisscross star pattern on page 26. If you do not have a torque wrench, use a lug wrench (from your tow vehicle) and tighten the nuts as much as you can. At the first opportunity, have a service garage or Perfect Lane Maintainer dealer tighten the lug nuts to the proper torque.

 **WARNING**

Lug nuts are prone to loosen after initial installation, which can lead to death or serious injury.

Check lug nuts for tightness on a new Perfect Lane Maintainer or when wheel(s) have been remounted after the first 5, 10 and 25 miles of operation.

 **WARNING**

Improper lug nut torque can cause a wheel separating from the Perfect Lane Maintainer, leading to death or serious injury. Be sure lug nuts are tight before each tow.

HAZARDS FROM MODIFYING YOUR PERFECT LANE MAINTAINER

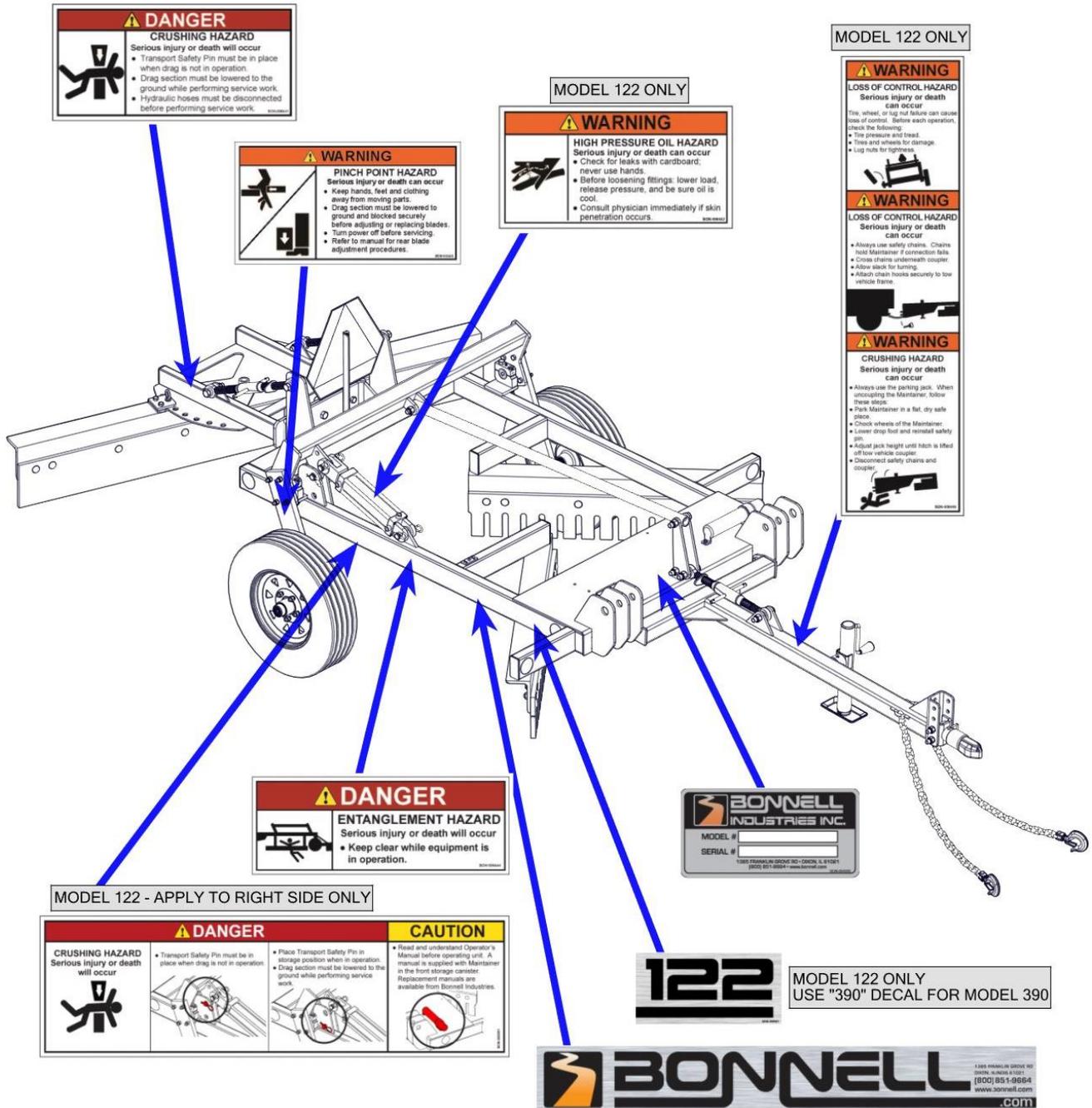
Essential safety items can be damaged by altering your Perfect Lane Maintainer. Before making any alteration to your Perfect Lane Maintainer, contact your dealer or Bonnell Industries, Inc. at 800-851-9664 and describe the alteration you are contemplating. Alteration of the Perfect Lane Maintainer structure or modification of mechanical, electrical, or other systems on your Perfect Lane Maintainer must be performed only by qualified technicians who are familiar with the system installed on your Perfect Lane Maintainer.

SAFETY WARNING LABELS ON YOUR PERFECT LANE MAINTAINER

Below are illustrations of the safety decals applied to your machine. Familiarize yourself with their locations & importance. To protect you and others against death or serious injury, all of the labels shown below must be on the Perfect Lane Maintainer and must be legible. If any of these labels are missing or cannot be read, call Bonnell Industries, Inc. at 800-851-9664 for replacement labels.

MODEL 122 DECAL PLACEMENT DIAGRAM (MODEL 390 SIMILAR)

REV 071414 122 ASSEMBLIES.SMG



2.3. PERFECT LANE MAINTAINER TOWING GUIDE

Driving a vehicle with a Perfect Lane Maintainer in tow is vastly different from driving the same vehicle without a Perfect Lane Maintainer in tow. Acceleration, maneuverability and braking are all diminished with a Perfect Lane Maintainer in tow. It takes longer to get up to speed; you need more room to turn and pass, and more distance to stop when towing a Perfect Lane Maintainer. You will need to spend time adjusting to the different feel and maneuverability of the tow vehicle with a loaded Perfect Lane Maintainer. Because of the significant differences in all aspects of maneuverability when towing a Perfect Lane Maintainer, the hazards and risks of injury are also much greater than when driving without a Perfect Lane Maintainer. You are responsible for keeping your vehicle and Perfect Lane Maintainer in control, and for all the damage that is caused if you lose control of your vehicle and Perfect Lane Maintainer.

Before you start towing the Perfect Lane Maintainer, you must follow all of the instructions for inspection, testing, and coupling. Also, before you start towing, adjust the mirrors so you can see the Perfect Lane Maintainer as well as the area to the rear of it.

Drive slowly at first, 5 mph or so, and turn the wheel to get the feel of how the tow vehicle and Perfect Lane Maintainer combination responds. Next, make some right and left hand turns. Watch in your side mirrors to see how the Perfect Lane Maintainer follows the tow vehicle. Turning with a Perfect Lane Maintainer attached requires more room.

2.4. SAFE PERFECT LANE MAINTAINER TOWING GUIDELINES

- Before towing, check coupling, safety chain, tires, wheels and lights.
- Check the lug nuts or bolts for tightness.
- Check coupler tightness after operating 1 hour.
- Use your mirrors to verify that you have room to change lanes or pull into traffic.
- Use your turn signals well in advance.
- Allow plenty of stopping space for your Perfect Lane Maintainer and tow vehicle.
- Do not drive so fast that the Perfect Lane Maintainer begins to sway due to speed. Generally never drive faster than 45 m.p.h.
- Shift your automatic transmission into a lower gear for city driving.
- Use lower gears for climbing and descending grades.
- Do not ride the brakes while descending grades, they may get so hot that they stop working. Then you will potentially have a runaway tow vehicle and Perfect Lane Maintainer.
- To conserve fuel, don't use full throttle to climb a hill. Instead, build speed on the approach.
- Slow down for bumps in the road. Take your foot off the brake when crossing the bump.
- Do not brake while in a curve unless absolutely necessary. Instead, slow down before you enter the curve.
- Do not apply the tow vehicle brakes to correct extreme Perfect Lane Maintainer swaying. Instead, lightly apply the Perfect Lane Maintainer brakes with the hand controller.
- Make regular stops, about once each hour. Confirm that:
 - The coupler is secure to the hitch and is locked,
 - There is appropriate slack in the safety chains,
 - The tires are not visibly low on pressure

2.5. GENERAL SAFETY RELATED TO OPERATION OF THE MAINTAINER

- Review safety items with all relevant personal at regular intervals.
- Ensure all operators are familiar with this manual before operating.
- Ensure your operation is in compliance with all applicable codes and regulations.
- Before operating machine, do a safety inspection.
- Inspect work area before operating machine. Inspect for heavy debris, such as bricks, rocks, or glass bottles.
- Ensure all pedestrians and operators are clear of the work area.
- Prior to towing, inspect pintle, safety chains, & tires.
- Secure drag section Transport Safety Pin for transport.
- No riders are allowed on the machine. **Maximum speed during operation not to exceed 15 MPH.**

3. TIRE SAFETY INFORMATION

3.1. 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.

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.

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 under inflation 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 manual, or the sidewall of the tire you are replacing to find this information. If you have any doubt about the correct size to choose, consult with the tire dealer.

TIRE TREAD

The tire tread provides the gripping action and traction that prevent your vehicle from slipping or sliding, especially when the road is wet or icy. In general, tires are not safe and should be replaced when the tread is worn down to 1/16 of an inch. Tires have built-in tread wear indicators that let you know when it is time to replace your tires. These indicators are raised sections spaced intermittently in the bottom of the tread grooves. When they appear "even" with the outside of the tread, it is time to replace your tires. Another method for checking tread depth is to place a penny in the tread with Lincoln's head upside down and facing you. If you can see the top of Lincoln's head, you are ready for new tires.

TIRE BALANCE AND WHEEL ALIGNMENT

To avoid vibration or shaking of the vehicle when a tire rotates, the tire must be properly balanced. This balance is achieved by positioning weights on the wheel to counterbalance heavy spots on the wheel-and-tire assembly. A wheel alignment adjusts the angles of the wheels so that they are positioned correctly relative to the vehicle's frame. This adjustment maximizes the life of your tires. These adjustments require special equipment and should be performed by a qualified technician.

TIRE REPAIR

The proper repair of a punctured tire requires a plug for the hole and a patch for the area inside the tire that surrounds the puncture hole. Punctures through the tread can be repaired if they are not too large, but punctures to the sidewall should not be repaired. Tires must be removed from the rim to be properly inspected before being plugged and patched.

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.

4. COUPLING TO THE TOW VEHICLE

Follow all of the safety precautions and instructions in this manual to ensure safety of persons and satisfactory life of the Perfect Lane Maintainer.

4.1. USE AN ADEQUATE TOW VEHICLE AND HITCH

If the vehicle or hitch is not properly selected and matched to the Gross Vehicle Weight Rating (GVWR) of your Perfect Lane Maintainer, you can cause an accident that could lead to death or serious injury. If you already have a tow vehicle, know your vehicle tow rating, and Gross Combination Weight Rating (GCWR) and make certain the Perfect Lane Maintainer's rated capacity is less than or equal to the tow vehicle's rated towing capacity. If you already have (or plan to buy) a Perfect Lane Maintainer, make certain that the tow rating of the tow vehicle is equal to or greater than the GVWR of the Perfect Lane Maintainer, and that the GCWR will be within limits.

Danger

Use of a hitch with a load rating less than the load rating of the Perfect Lane Maintainer can result in loss of control and may lead to death or serious injury.

Use of a tow vehicle with a towing capacity less than the load rating of the Perfect Lane Maintainer can result in loss of control, and may lead to death or serious injury.

Be sure your hitch and tow vehicle are rated for the Gross Vehicle Weight Rating (GVWR) of your Perfect Lane Maintainer.

4.2. COUPLING AND UNCOUPLING THE PERFECT LANE MAINTAINER

A secure coupling (or fastening) of the Perfect Lane Maintainer to the tow vehicle is essential. A loss of coupling may result in death or serious injury. Therefore, you must understand and follow all of the instructions for coupling.

The following parts are involved in making a secure coupling between the Perfect Lane Maintainer and tow vehicle:

Coupling: That part of the Perfect Lane Maintainer connecting mechanism by which the connection is actually made to the Perfect Lane Maintainer hitch. This does not include any structural member, or extension of the Perfect Lane Maintainer frame.

Hitch: That part of the connecting mechanism including the ball support platform and ball and those components that extend and are attached to the towing vehicle, including bumpers intended to serve as hitches.)

Safety chains: Chains permanently attached to the Perfect Lane Maintainer such that if the coupler connection comes loose, the safety chains or cables can keep the Perfect Lane Maintainer attached to the tow vehicle. With properly rigged safety chains, it is possible to keep the tongue of the Perfect Lane Maintainer from digging into the road pavement, even if the coupler-to-hitch connection comes apart.

Perfect Lane Maintainer lighting connector: A device that connects electrical power from the tow vehicle to the Perfect Lane Maintainer. Electricity is used to turn on brake lights, running lights, and turn signals as required.

Jack: A device on the Perfect Lane Maintainer that is used to raise and lower the Perfect Lane Maintainer tongue. On larger Perfect Lane Maintainers the jack is sometimes called the "landing gear."

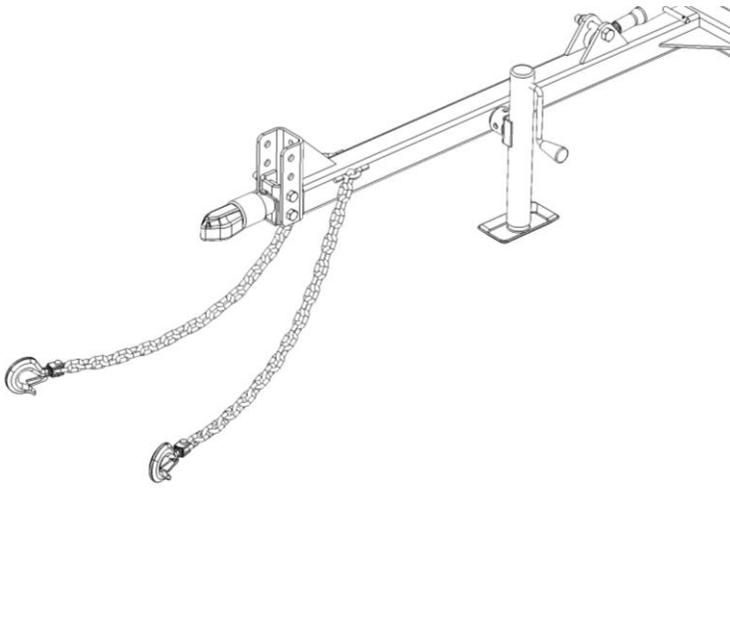
RIG THE SAFETY CHAINS

The 122 Perfect Lane Maintainer is equipped with a safety tow chains. These chains help prevent loss of control should the main hitch connection fail. Familiarize all operators with the use of safety tow chains, and the hazards of not using it properly:

Visually inspect the safety chains and hooks for wear or damage. Replace worn or damaged safety chains and hooks before towing.

Rig the safety chains so that they:

- Criss-cross underneath the coupler so if the Perfect Lane Maintainer uncouples, the safety chains can hold the tongue up above the road.
- Loop around a frame member of the tow vehicle or to holes provided in the hitch system (but, do **not** attach them to an interchangeable part of the hitch assembly)
- Attach hooks up from underneath the hole (do not just drop into hole); and
- Provide enough slack to permit tight turns, but not be close to the road surface to drag.



Uncoupling the Ball Hitch Perfect Lane Maintainer with Tongue Jack

Follow these steps to uncouple your ball hitch Perfect Lane Maintainer from the tow vehicle:

- Block the Perfect Lane Maintainer tires to prevent from rolling, before jacking the Perfect Lane Maintainer up.
- Disconnect the safety chains from the tow vehicle.
- Unlock the coupler and open it.
- Before extending jack, make certain the ground surface below the jack pad will support the tongue load.
- Rotate the jack handle (or crank) clockwise. This will slowly extend the jack and transfer the weight of the Perfect Lane Maintainer tongue to the jack.

5. GENERAL OPERATING INSTRUCTIONS

5.1. PRE-TOW CHECKLIST

Before towing, double-check all of these items: See section 6.1, "Inspection, Service & Maintenance Summary Charts," for more information.

Tires, wheels and lug nuts (see the Major Hazards section starting on page 7 of this manual)

- **Tire Pressure.** Inflate tire on Perfect Lane Maintainer and tow vehicle to the pressure stated on the VIN / Certification label.
- **Coupler secured and locked** (see the "Coupling and Uncoupling the Perfect Lane Maintainer" section starting on page 16 of this manual)
- **Safety chains properly rigged to tow vehicle, not to hitch or ball** (see the "Coupling to the Tow Vehicle" chapter starting at Page 16 of this manual)
- **Test of lights: Tail, Stop, and Turn Lights**

5.2. MAKE REGULAR STOPS

After one hour of towing, stop and check the following items:

- **Coupler secured**
 - **Safety chains are fastened and not dragging**
- SPECIAL NOTE:** this section of the manual is intended as a supplement to your specific municipal or business guidelines in equipment operation, and is not intended to be a "*complete secondary road maintenance guide*". Training is the key to safe and proper operation of this equipment. Ensure your operation is in compliance with all applicable codes and regulations.

5.3. SETUP AND ADJUSTMENT

With towing unit and maintainer on level surface, adjust hitch on the maintainer so that the front end of the carriage unit will be 1"-2" higher than carriage rear cross tube.

Connect maintainer to the towing unit. Re-check the 1"-2" measurement stated above, and connect hydraulic hoses.

Operate hydraulics to raise maintainer blades as high as possible.

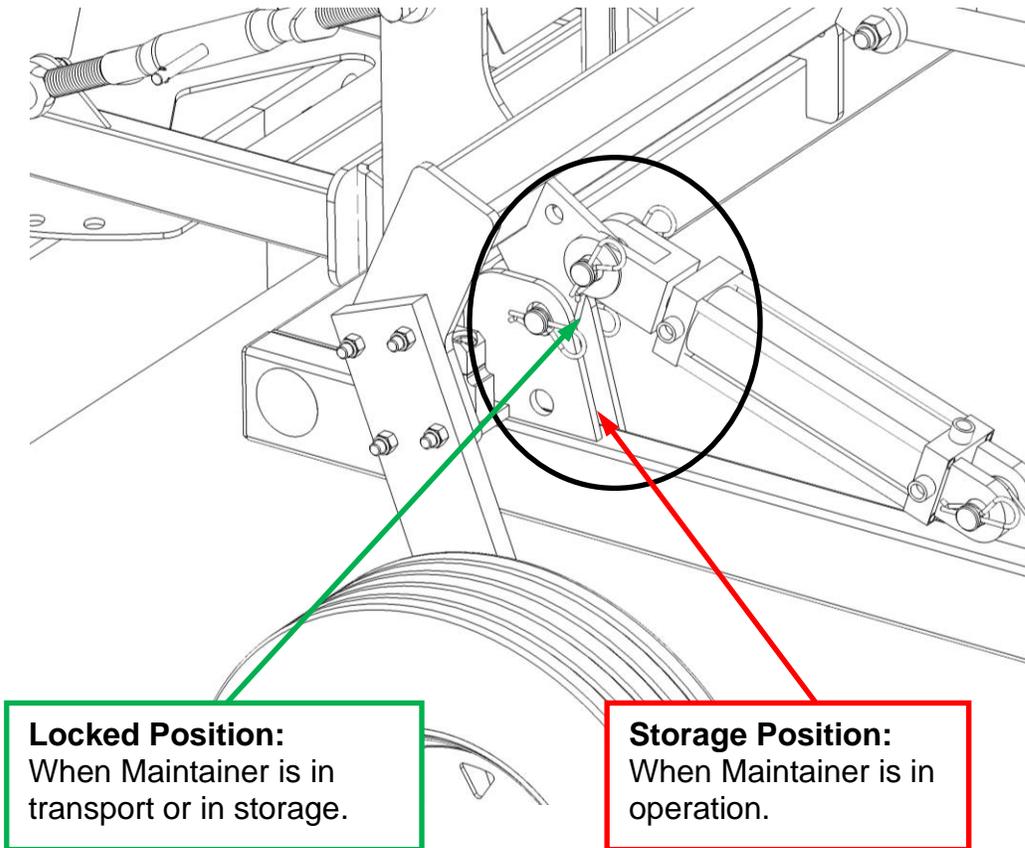
Test unit on one of your roadways. Make adjustments to the finishing blade as required. Best operating speeds are 8-12 mph, and vary with road and material conditions. Unit is designed for working section with blades to float, but when approaching an intersection, the operator should slowly raise the working section so as not to leave a pile of loose materials at the end.

Allow 4-5 hours of use to become familiar with the unit.

5.4. TRANSPORT SAFETY PIN

The 122 Perfect Lane Maintainer is equipped with a Transport Safety Pin. This pin must be in place when drag is not in operation. Familiarize all operators with the use of the Transport Safety Pin, and the hazards of not using it properly:

- Transport Safety Pin must be in place when drag is not in operation.
- Place Transport Safety Pin in storage position when in operation.
 - Drag section must be lowered to the ground while performing service work.



 WARNING	
	PINCH POINT HAZARD Serious injury or death can occur <ul style="list-style-type: none">• Keep hands, feet and clothing away from moving parts.• Drag section must be lowered to ground and blocked securely before adjusting or replacing blades.• Turn power off before servicing.• Refer to manual for rear blade adjustment procedures.
	<small>BON-006445</small>

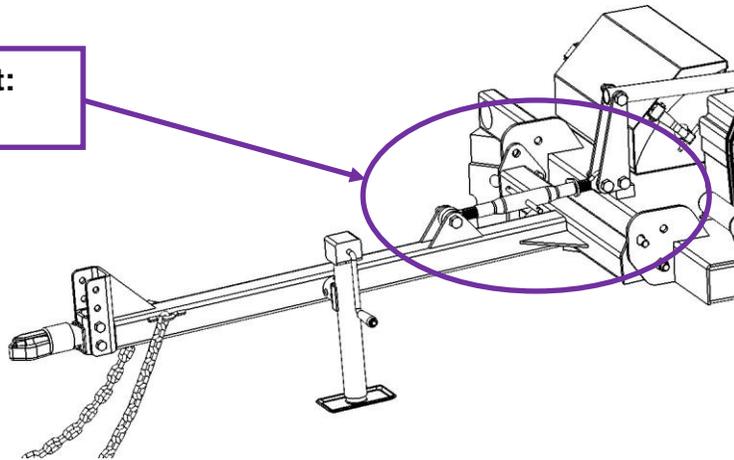
5.5. PITCH ADJUSTMENT

The mixing section of the Perfect Lane Maintainer is adjustable in the way it cuts material when in operation. Generally, the mixing section should be set to cut level. However, depending on conditions and the material being graded, the front blades can be raised or lowered to control the aggressiveness of cut. Additionally, when towing long distances, the mixing section pitch may need to be adjusted to provide a better ride, and increase ground clearance.

To adjust pitch (Model 122):

- Couple the maintainer to the tow vehicle.
- Lower the maintainer to about 1" above the ground.
- Using the front turnbuckle, adjust until all blades are approximately level with the ground.
- Tighten the turnbuckle, and raise the maintainer. The unit is now ready for operation.

Pitch Adjustment:
Adjust turnbuckle.



TIP: For extremely hard packed material, pitching the drag section with the front blades slightly lower in the front will provide additional aggressiveness. Experiment for best results.

TIP: Always lower the maintainer to within 1-2" of ground when adjusting the turnbuckle. This decreases tongue weight, and allows the turnbuckle to turn easier.

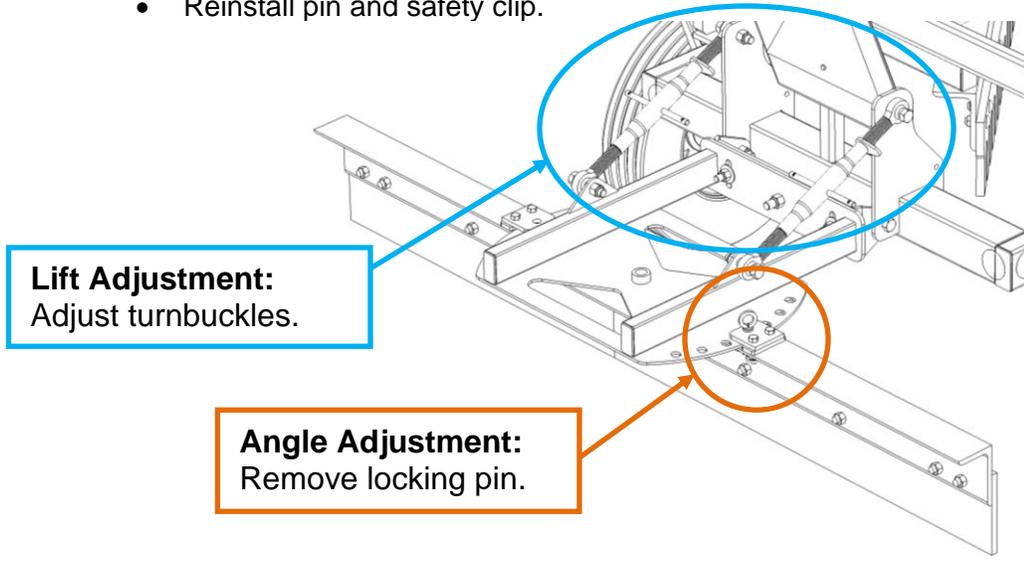
5.6. FINISHING BLADE ADJUSTMENT

The rear finishing blade can be adjusted manually up and down to feather material out into a fresh, smooth road surface, while also building crown. Several adjustments are necessary:



Angle Adjustment:

- With the maintainer raised off of the ground, locate the blade locking pin, found on the right side of the unit.
- While keeping all bodily parts out from under the blade, remove pin, and manually swing the rear blade to desired new position.
- Reinstall pin and safety clip.



Lift Adjustment:

- Using the two rear turnbuckles, adjust as necessary to increase or decrease lift.
- Adjust both turnbuckles up in soft material, where the maintainer will be cutting deeper.
- Adjust discharge turnbuckle up slightly if a crown in the finished roadway is desired.

TIP: For lanes with large grassy areas, raise the rear blade 3-4" off of ground to prevent plugging the finishing blade section. Multiple passes will be necessary to knock down the clumps of grass.

TIP: For single lane operation or in parking lot applications, position the rear blade straight across for best finish.

6. INSPECTION, SERVICE & MAINTENANCE

6.1. INSPECTION, SERVICE & MAINTENANCE SUMMARY CHARTS

Inspection and Service prior to each operation	
Item	Inspection / Service
Coupler, Clevis type	Check for cracks, pits, and flats. Inspect pin for damage.
Coupler, Hitch Ball	Check for cracks, pits, and flats. Replace w/ball & coupler having Perfect Lane Maintainer GVW Rating. Grease. Check locking device & replace if necessary.
Coupler, Pintle Ring	Check for cracks, pits, and flats. Inspect pin for damage. Grease. Check locking device & replace if necessary.
Safety Chains & Hooks	Check for wear and damage.
Transport Safety Pin	Check for wear and damage.
Cutting Edges	Check for wear and damage, also loose bolts.
Tires	Check tire pressure when cold. Inflate as needed.
Wheels - Lug Nuts (Bolts) & Hub	Check for tightness Tighten. For new and remounted wheels, check torque after first 10, 25 & 50 miles of driving and after any impact

Inspection & Service every 6 months	
Item	Inspection / Service
Tires	Rotate @ 5,000 miles
Tires	Inspect tread and sidewalls thoroughly. Replace tire when treads are worn, when sidewall has a bulge, or sidewall is worn

Inspection & Service annually	
Item	Inspection / Service
Jack, Drop-leg	Grease gears at top
Structure > Frame members > Welds	Inspect all frame members, bolts & rivets. Repair or replace damaged, worn or broken parts. Inspect all welds. Repair as needed
Wheels > UNSEALED Bearings (Hubs) > Rims	Disassemble / inspect / assemble and repack. Replace promptly if immersed in water Inspect for cracks & dents. Replace as needed.

6.2. INSPECTION AND SERVICE INSTRUCTIONS

WARNING

Never crawl under your Perfect Lane Maintainer unless it is on firm and level ground and resting on properly placed and secured jack stands.

PERFECT LANE MAINTAINER STRUCTURE

6.2.1.1. Fasteners and Frame Members

Inspect all of the fasteners and structural frame members for bending and other damage, cracks, or failure. Repair or replace any damaged fastener and repair the frame member. If you have any questions about the condition or method of repair of fasteners or frame members, get the recommendation of, or have the repair done by, your dealer.

6.2.1.2. Welds

All welds can crack or fail when subjected to heavy loads or movement of cargo that was not properly tied to prevent movement. To prevent severe damage to your Perfect Lane Maintainer, inspect all of the welds for cracks or failure at least once a year.

WARNING

Improper weld repair will lead to early failure of the Perfect Lane Maintainer structure and can cause serious injury or death.

Do not repair cracked or broken welds unless you have the skills and equipment to make a proper repair. If not, have the welds repaired by your dealer.

PERFECT LANE MAINTAINER JACK

If a grease fitting is present, you must use a grease gun to lubricate the jack mechanism. Grease the gears in the top of hand-cranked jacks once a year, by removing the top of the jack and pumping or hand packing grease into the gears.

LIGHTS AND SIGNALS

Before each tow, check the Perfect Lane Maintainer taillights, stoplights, turn signals and any clearance lights for proper operation.

WARNING

Improper operating taillights, stoplights and turn signals can cause collisions.
Check all lights before each tow.

TIRES

Perfect Lane Maintainer tires may be worn out even though they still have plenty of tread left. This is because Perfect Lane Maintainer tires have to carry a lot of weight all the time, even when not in use. It is actually

better for the tire to be rolling down the road than to be idle. During use, the tire releases lubricants that are beneficial to tire life. Using the Perfect Lane Maintainer tires often also helps prevent flat spots from developing.

The main cause of tire failure is improper inflation. Check the cold tire inflation pressures at least once a week for proper inflation levels. "Cold" means that the tires are at the same temperature as the surrounding air, such as when the vehicle has been parked overnight. Wheel and tire manufacturers recommend adjusting the air pressure to the Perfect Lane Maintainer manufacturer's recommended cold inflation pressure, in pounds per square inch (PSI) stated on the vehicle's Federal Certification Label or Tire Placard when the Perfect Lane Maintainer is loaded to its gross vehicle weight rating (GVWR). If the tires are inflated to less than the recommended inflation level or the GVWR of the Perfect Lane Maintainer is exceeded, the load carrying capacity of the tire could be dramatically affected. If the tires are inflated more than the recommended inflation level, handling characteristics of the tow vehicle/Perfect Lane Maintainer combination could be affected. Refer to the owner's manual or talk to your dealer or vehicle manufacturer if you have any questions regarding proper inflation practices.

Tires can lose air over a period of time. In fact, tires can lose 1 to 3 PSI per month. This is because molecules of air, under pressure, weave their way from the inside of the tire, through the rubber, to the outside. A drop in tire pressure could cause the tire to become overloaded, leading to excessive heat build up. If a Perfect Lane Maintainer tire is under-inflated, even for a short period of time, the tire could suffer internal damage.

High speed towing in hot conditions degrades Perfect Lane Maintainer tires significantly. As heat builds up during driving, the tire's internal structure starts to breakdown, compromising the strength of the tire. It is recommended to drive at moderate speeds.

If you are storing your Perfect Lane Maintainer for an extended period, make sure the tires are fully inflated to the maximum rated pressure and that you store them in a cool, dry place, such as a garage. Use tire covers to protect the Perfect Lane Maintainer tires from the harsh effects of the sun.

 WARNING
Worn, damaged or under-inflated tires can cause loss of control, resulting in damage, serious injury and possibly death. Inspect tires before each tow.

WHEEL RIMS

If the Perfect Lane Maintainer has been struck, or impacted, on or near the wheels, or if the Perfect Lane Maintainer has struck a curb, inspect the rims for damage (i.e. being out of round); and replace any damaged wheel. Inspect the wheels for damage every year, even if no obvious impact has occurred.

WHEELS, BEARINGS AND LUG NUTS

A loose, worn or damaged wheel bearing is the most common cause of brakes that grab.

To check your bearings, jack Perfect Lane Maintainer and check wheels for side-to-side looseness. If the wheels are loose, or spin with a wobble, the bearings must be serviced or replaced.

Most Perfect Lane Maintainer axles are built with sealed bearings that are not serviceable. Sealed bearings must be replaced as complete units.

6.2.1.3. Unsealed Bearings (Hubs)

Your Perfect Lane Maintainer has unsealed axle bearings, and they must be inspected and lubricated once a year to insure safe operation of your Perfect Lane Maintainer.

If a Perfect Lane Maintainer wheel bearing is immersed in water, it must be replaced.

If your Perfect Lane Maintainer has not been used for an extended amount of time, have the bearings inspected and packed more frequently, at least every six months and prior to use.

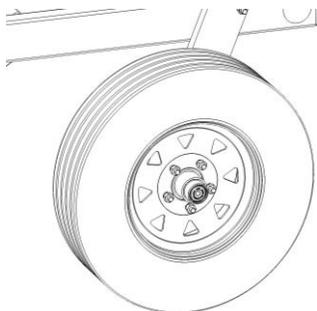
Follow the steps below to disassemble and service the UNSEALED wheel bearings.

- After removing the grease cap, cotter pin, spindle nut and spindle washer (items 7-10 in “Exploded Wheel Bearing” figure), remove the hub and drum to inspect the bearings for wear and damage.
- Replace bearings that have flat spots on rollers, broken roller cages, rust or pitting. Always replace bearings and cups in sets. The inner and outer bearings are to be replaced at the same time.
- Replace seals that have nicks, tears or wear.
- Lubricate the bearings with a high quality EP-2 automotive wheel bearing grease.

Every time the wheel hub is removed and the bearings are reassembled, follow the steps below to check the wheel bearings for free running and adjust.

- Turn the hub slowly, by hand, while tightening the spindle nut, until you can no longer turn the hub by hand.
- Loosen the spindle nut just until you are able to turn it (the spindle nut) by hand. Do not turn the hub while the spindle nut is loose.
- Put a new cotter pin through the spindle nut and axle.
- Check the adjustments. Both the hub and the spindle nut should be able to move freely (the spindle nut motion will be limited by the cotter pin).

6.2.1.4. Lug Nuts (Bolts)



Being sure wheel mounting nuts (lug nuts) on Perfect Lane Maintainer wheels are tight and properly torqued is an important responsibility that Perfect Lane Maintainer owners and users need to be familiar with and practice. Inadequate and/or inappropriate wheel nut torque (tightness) is a major reason that lug nuts loosen in service. Loose lug nuts can rapidly lead to a wheel separation with potentially serious safety consequences.

Lug nuts are prone to loosen right after a wheel is mounted to a hub. When driving on a new or remounted wheel, check the lug nut tightness often during the first few hundred miles of the Perfect Lane Maintainer’s use, especially after the first 10, 25 and 50 miles of driving, before each tow, and at least twice per year thereafter.

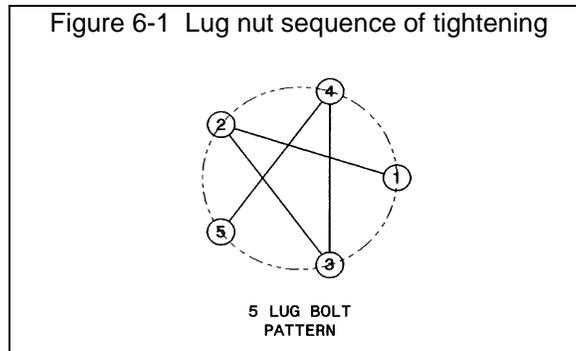
WARNING

Lug nuts are prone to loosen after initial installation, which can lead to death or serious injury. Check lug nuts for tightness on a new Perfect Lane Maintainer or when wheel(s) have been remounted after the first 5, 10 and 25 miles of operation.

WARNING

Metal creep between the wheel rim and lug nuts will cause rim to loosen and could result in a wheel coming off, leading to death or serious injury. Tighten lug nuts before each tow.

Tighten the lug nuts to the proper torque for the axle size on your Perfect Lane Maintainer to prevent wheels from coming loose. Use a torque wrench to tighten the fasteners. The only way to be certain you have checked the torque or torqued the lug nuts to the proper torque is with a torque wrench. Four-way wrenches, ratchets, and similar tools can be useful for short-term emergency repairs, but are not appropriate tools for adequately checking lug nut torque. You must use a torque wrench to adequately indicate the torque that you are applying to the lug nut. If you do not have a torque wrench, tighten the fasteners with a lug wrench as much as you can, then have a service garage or dealer tighten the lug nuts to the proper torque. Over-tightening will result in breaking the studs or permanently deforming the mounting stud holes in the wheels.



Keep a record of the date and approximate mileage when you check the lug nut torque. Note any lug nut that has lost torque. Investigate the reason(s) if the lug nut torque is not maintained after more than one re-torque application, because this indicates there is something wrong with the lug nuts, nut studs, wheels and/or hubs and should be corrected.

Contact your dealer or vehicle manufacturer immediately if you experience any persistent lug nut loosening or any other lug, wheel or axle problems.

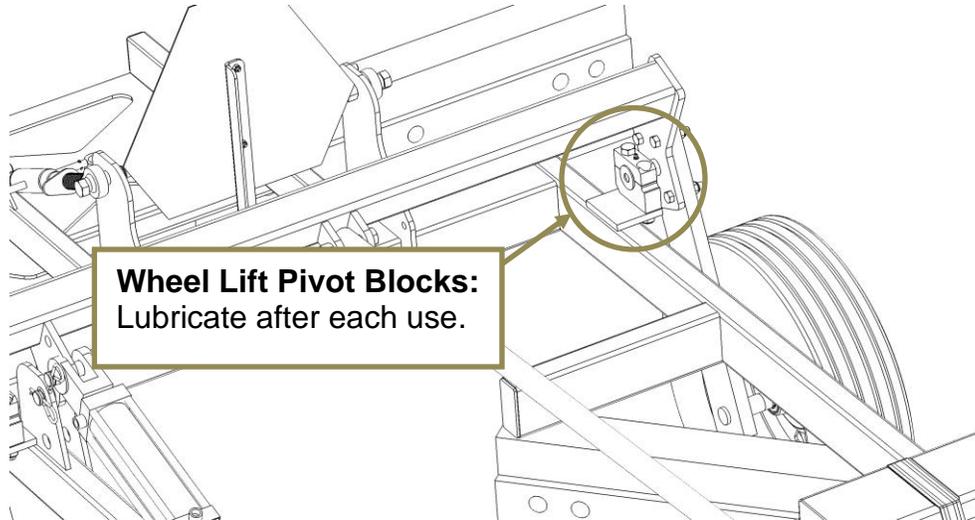
In the event of a wheel separation incident, notify the vehicle manufacturer and dealer. Seek prompt professional assistance in assessing the Perfect Lane Maintainer and its gear, and retain, but don't re-use involved lugs, wheels and studs. Don't repair or service the Perfect Lane Maintainer yourself. Call a trained technician.

LUBRICATION

Several areas on the 122 Perfect Lane Maintainer require lubrication:

Turnbuckles – The adjustment screws may require lubrication from time to time. This can be done by cranking the screws out fully, then applying a lubricant to the threads and then screwing back to the operating position. Oil, grease, or never seize can be used on the screws.

Wheel Lift Assembly – the wheel lift assembly is equipped with grease fittings on the pivot axle blocks. Lubricate these after each use (1-2 pumps each side).



Tongue Jacks

Read, Understand, Follow and Save These Instructions

Read, understand and follow all of these instructions and warnings (Instructions) before installing and using this product. Install and use this product only as specified in these instructions. Improper installation or use of this product may result in property damage, serious injury, and/or death. Never allow installation or use of this product by anyone without providing them with these instructions. You must read, understand and follow all instructions and warnings for any product(s) to which this product is used in conjunction with or installed. Save these instructions with the product for use as a reference for any future installation and use of the product.

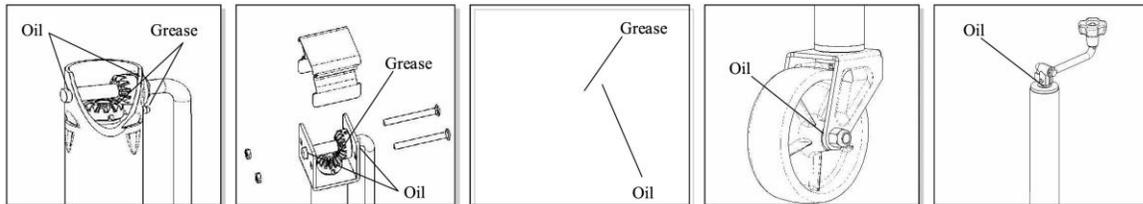
WARNING

Failure to follow these warnings and instructions may result in property damage, serious bodily injury, and/or death.

- Purchaser/owner must ensure that product is installed according to these instructions. Purchaser/owner must not alter or modify product.
- Operator and bystanders should never position any part of body under any portion of this product or the load being supported.
- Fully retract and rotate jack before towing.
- When using the drop foot or drop leg, make certain the supplied pin is fully inserted through both sides of the inner tube and the drop tube before using the jack.
- If using optional drop foot or caster, always remove drop foot or caster before towing to maximize ground clearance.
- This product is not intended to be used as a transport device for the implement it is attached to. Minimize movement of implement while jack is under load.
- Do not allow children to play on or around this product or the load being supported.
- Secure the load, vehicle and trailer from rolling (by blocking wheels) when operating jack or coupling trailer.
- Jack capacity is limited to the lesser of the jack, footplate, or caster wheel capacity.
- Never exceed maximum rated capacity. Refer to stamped markings or decals on product to obtain rated capacity. If uncertain, contact Cequent Performance Products at 1-800-521-0510 or www.cequentgroup.com.
- These jacks are designed for vertical loading. Excessive side forces may cause jack failure and must be avoided.
- Before manually moving trailer, crank to lowest position.
- If this product has a pivot tube mount, make certain the pivot pin is fully inserted through both sides on the pivot tube and the pivot mount.
- If this product is a swivel jack, lock the plunger pin into a hole in the mounting bracket before raising or lowering the tongue.
- Before installing the snap ring, inspect the snap ring groove and remove any debris. Seat the snap ring fully into the groove.
- Do not attempt to weld "Bolt-On" brackets or straps to the tongue. Special brackets are available for "Weld-On" applications.
- If this product has a drop foot or drop leg, never attempt to adjust the drop foot or drop leg when there is any load on the jack.
- If this product is a rack jack, do not raise the gear housing above inner tube.
- These jacks are not designed for mounting to round tongues.
- All welding must be performed by an AWS certified welder.
- Always replace bent, broken, or worn parts before using this product.

Maintenance

The following procedures should be performed at least annually: For side-wind models, the internal gearing and bushings of the jack must be kept lubricated. Apply a small amount of automotive grease to the internal gearing by removing the jack cover, or if equipped, use a needle nose applicator or standard grease gun on the lubrication point found on the side of the jack near the crank. Rotate the jack handle to distribute the grease evenly. A lightweight oil must be applied to the handle unit at both sides of the tube for side-wind models. If equipped, the axle bolt and nut assembly of the caster wheel must also be lubricated with the same light weight oil. For top-wind models, apply a lightweight oil to the screw stem. If this product is used in a marine environment, flush the jack assembly and bushings with fresh water, and apply fresh lubricant.



How to Order

Use only Cequent Performance Products' parts or parts of equal quality for repair. Replacement parts are available through Cequent Performance Products' Customer Service Department, 1-800-521-0510. Please specify product model number.

Limited Warranty

Limited Warranty. Cequent Trailer Products, Inc. ("We" or "Us") warrants to the original consumer purchaser only ("You") that the product purchased will be free from material defects in both material and workmanship, normal wear and tear excepted, for a period of **five years for Bulldog® and Fulton® products and one year for the Pro-Series® products**. The foregoing warranty is valid only if the installation and use of the product is in accordance with product instructions. There are no other warranties, express or implied, including the warranty of merchantability or fitness for a particular purpose. If the product does not comply with the applicable limited year warranty, Your sole and exclusive remedy is that We will replace the product without charge to You and within a reasonable time or, at our option, refund the purchase price. This limited warranty is not transferable.

Limitations on the Warranty. This limited warranty does not cover: (a) normal wear and tear; (b) damage through abuse, neglect, misuse, or as a result of any accident or in any other manner; (c) damage from misapplication, overloading, or improper installation, including welds; (d) improper maintenance and repair; and (e) product alteration in any manner by anyone other than Us, with the sole exception of alterations made pursuant to product instructions and in a workmanlike manner.

Obligations of Purchaser. You must retain Your product purchase receipt to verify date of purchase and that You are the original consumer purchaser. To make a warranty claim, contact Us at 47774 Anchor Ct. W., Plymouth, MI 48170, 1-800-521-0510, identify the product by make and model number, and follow the claim instructions that will be provided. The product and the purchase receipt must be provided to Us in order to process Your warranty claim. Any returned product that is replaced or refunded by Us becomes our property. You will be responsible for return shipping costs.

Remedy Limits. Repair or replacement is Your sole remedy under this limited warranty or any other warranty related to the product. We shall not be liable for service or labor charges incurred in removing or replacing a product or any incidental or consequential damages of any kind.

Assumption of Risk. You acknowledge and agree that any use of the product for any purpose other than the specified use(s) stated in the product instructions is at Your own risk.

Governing Law. This limited warranty gives You specific legal rights, and You also may have other rights which vary from state to state. This limited warranty is governed by the laws of the State of Michigan, without regard to rules pertaining to conflicts of law. The state courts located in Oakland County, Michigan shall have exclusive jurisdiction for any disputes relating to this warranty.

CEQUENT PERFORMANCE PRODUCTS, INC.

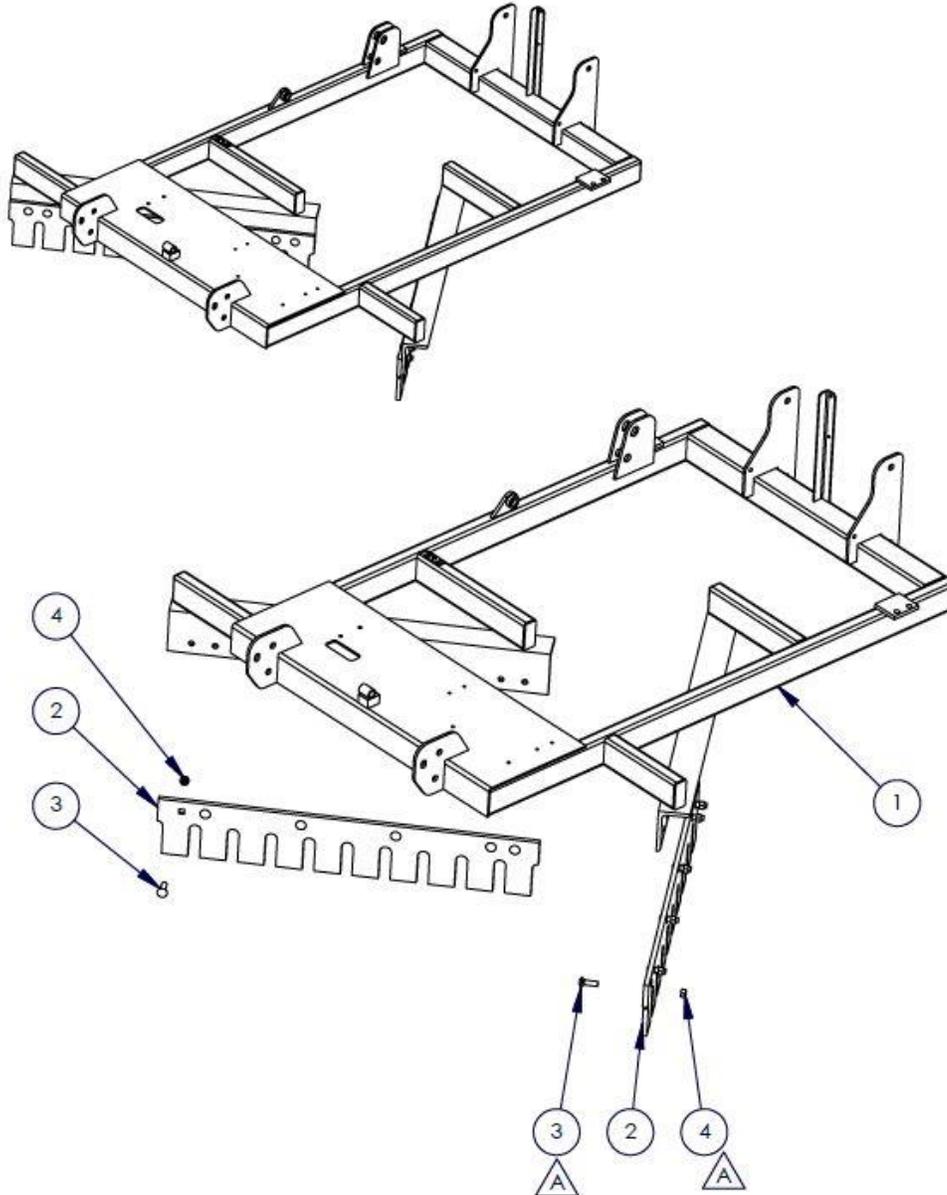


Plymouth, MI 48170 USA
800/521-0510
www.cequentgroup.com

7. PART BREAKDOWNS

7.1. MAIN BODY BLADE ASSEMBLY

FILE NAME	122 ASSEMBLIES	REV.	DESCRIPTION	DATE	INITIALS
DWG NAME	MAIN BODY	-	ORIGINAL		
		A	UPDATED HARDWARE TO 2-1/2" BOLTS AND FLANGE NUTS	3/17/2020	CLR



CONFIDENTIAL: THIS DRAWING AND/OR INFORMATION CONTAINED HEREIN IS AND REMAINS THE SOLE PROPERTY OF, AND IS PROPRIETARY TO, BONNELL INDUSTRIES, INC. THIS DRAWING AND/OR INFORMATION SHALL BE KEPT CONFIDENTIAL AND MAY NOT BE REPRODUCED, COPIED, MODIFIED, DISCLOSED, TRANSFERRED, OR MADE AVAILABLE TO OTHERS, EXCEPT WITH THE EXPRESS WRITTEN CONSENT OF BONNELL INDUSTRIES, INC. IT IS LOANED IN CONFIDENCE FOR MUTUAL ASSISTANCE PURPOSES ONLY. BONNELL INDUSTRIES, INC. MAY AT ANY TIME, MODIFY THE DRAWING AND/OR INFORMATION CONTAINED HEREIN.

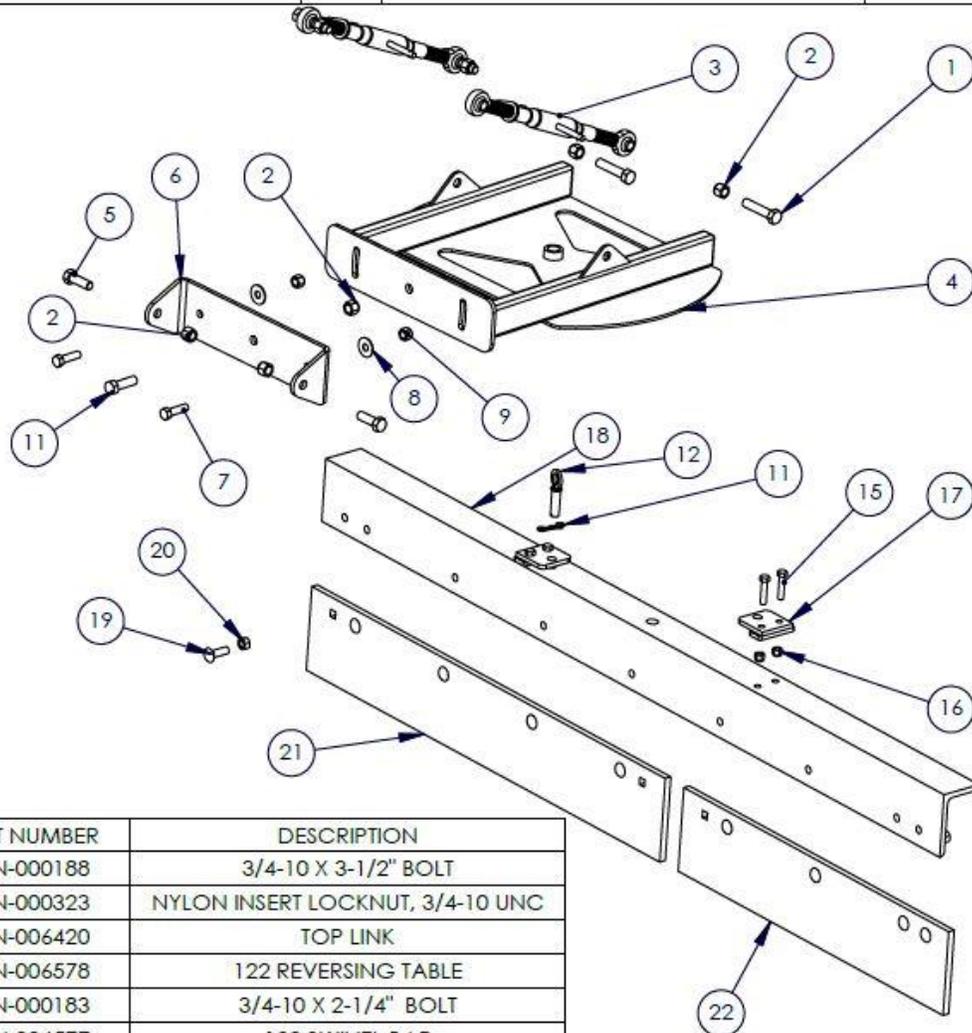
1	1	BON-006560	122 MAIN FRAME
2	2	BON-000753.1	FSE, 3/4X8X4' CARBON SERRIATED, WIDE TANGS
3	12	BON-CB8250	5/8-11 X 2-1/2" CARRIAGE BOLT GR.8
4	12	BON-000307F	HEX FLANGE NUT, 5/8"-11TPI
ITEM	QTY	PART NUMBER	DESCRIPTION

BONNELL
INDUSTRIES INC
TRUCK & ROAD EQUIPMENT

DIXON, ILLINOIS
PHONE: 800-851-9664

7.2. FINISHING BLADE ASSEMBLY

FILE NAME	122 ASSEMBLIES	REV.	DESCRIPTION	DATE	INITIALS
DWG NAME	FINISHING ASSEMBLY	-	ORIGINAL		



ITEM	QTY	PART NUMBER	DESCRIPTION
1	4	BON-000188	3/4-10 X 3-1/2" BOLT
2	7	BON-000323	NYLON INSERT LOCKNUT, 3/4-10 UNC
3	2	BON-006420	TOP LINK
4	1	BON-006578	122 REVERSING TABLE
5	2	BON-000183	3/4-10 X 2-1/4" BOLT
6	1	BON-006577	122 SWIVEL BAR
7	2	BON-000154	5/8-11 X 2-1/4" BOLT
8	2	BON-000341	FLAT WASHER, 5/8
9	2	BON-000322	NYLON INSERT LOCKNUT, 5/8-11 UNC
10	1	BON-000184	3/4-10 X 2-1/2" BOLT
11	1	BON-000403	BOW TIE COTTER, FOR 3/4" PIN
12	1	BON-006588	PIN WITH PULL RING, 3/4X2-1/4
13	1	BON-000238	1/8 X 4" BOLT
14	1	BON-000310.3	NYLON INSERT LOCKNUT, 1-8 UNC
15	4	BON-000110	1/2-13 X 2-1/4"
16	4	BON-000321	NYLON INSERT LOCKNUT, 1/2-13 UNC
17	2	BON-006584	TURNTABLE HOLD DOWN
18	1	BON-006575	122 FINISHING BLADE
19	9	BON-CB8250	5/8-11 X 2-1/2" CARRIAGE BOLT GR.8
20	9	BON-000307F	HEX FLANGE NUT, 5/8-11TP
21	1	BON-000724	FSE, 5/8X8X4' CUTTING EDGE
22	1	BON-000723	FSE, 5/8X8X3' CUTTING EDGE

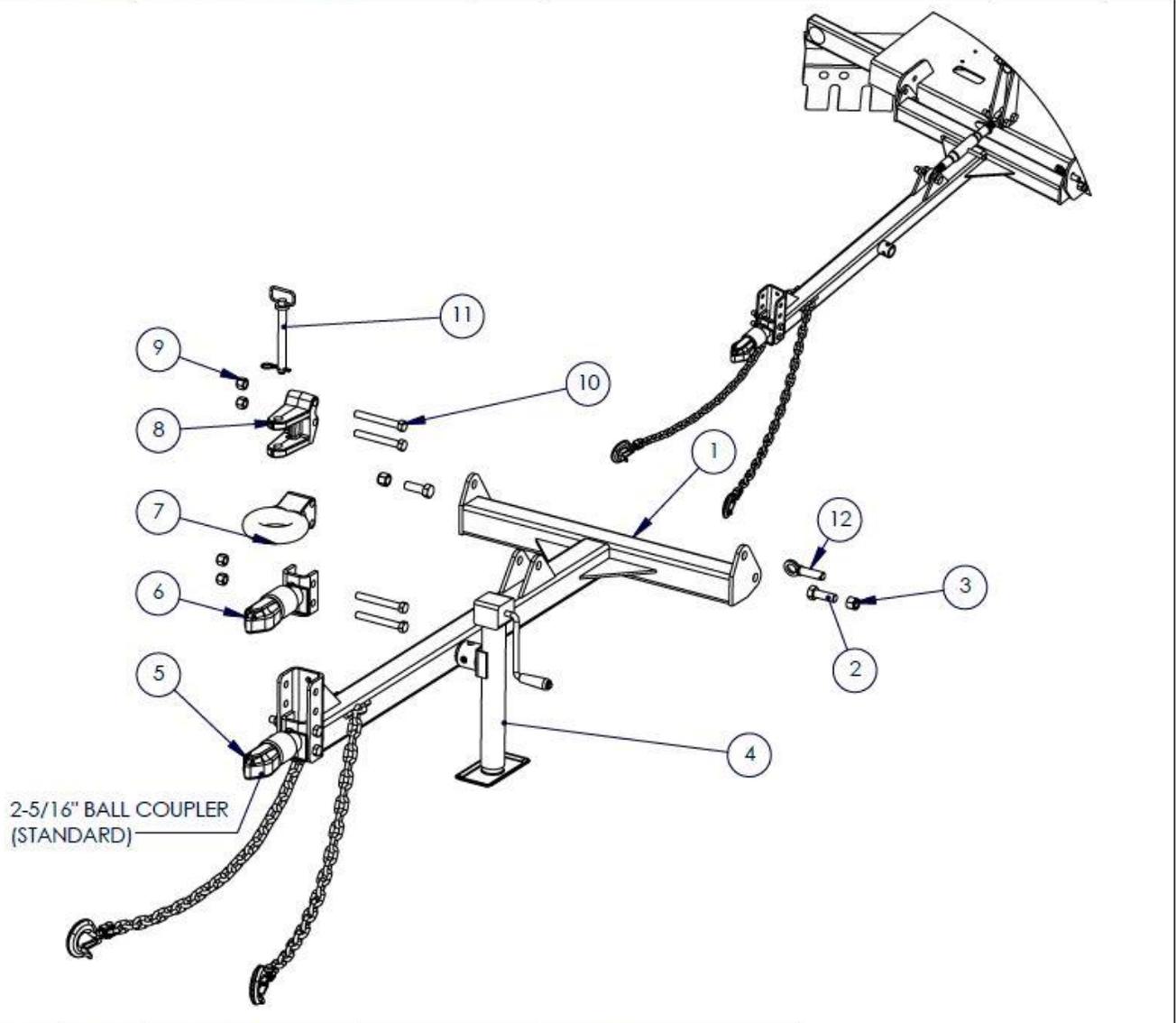
CONFIDENTIAL: THIS DRAWING AND/OR INFORMATION CONTAINED HEREIN IS AND REMAINS THE SOLE PROPERTY OF, AND IS PROPRIETARY TO, BONNELL INDUSTRIES, INC. THIS DRAWING AND/OR INFORMATION SHALL BE KEPT CONFIDENTIAL AND MAY NOT BE REPRODUCED, COPIED, MODIFIED, DISCLOSED, TRANSFERRED, OR MADE AVAILABLE TO OTHERS, EXCEPT WITH THE EXPRESS WRITTEN CONSENT OF BONNELL INDUSTRIES, INC. IT IS LOANED IN CONFIDENCE FOR MUTUAL ASSISTANCE PURPOSES ONLY. BONNELL INDUSTRIES, INC. MAY AT ANY TIME, MODIFY THE DRAWING AND/OR INFORMATION CONTAINED HEREIN.

BONNELL
INDUSTRIES INC
TRUCK & ROAD EQUIPMENT

DIXON, ILLINOIS
PHONE: 800-851-9664

7.3. 122 TONGUE ACCESSORIES

FILE NAME	122 ASSEMBLIES	REV.	DESCRIPTION	DATE	INITIALS
DWG NAME	TONGUE ACCESSORIES	-	ORIGINAL		



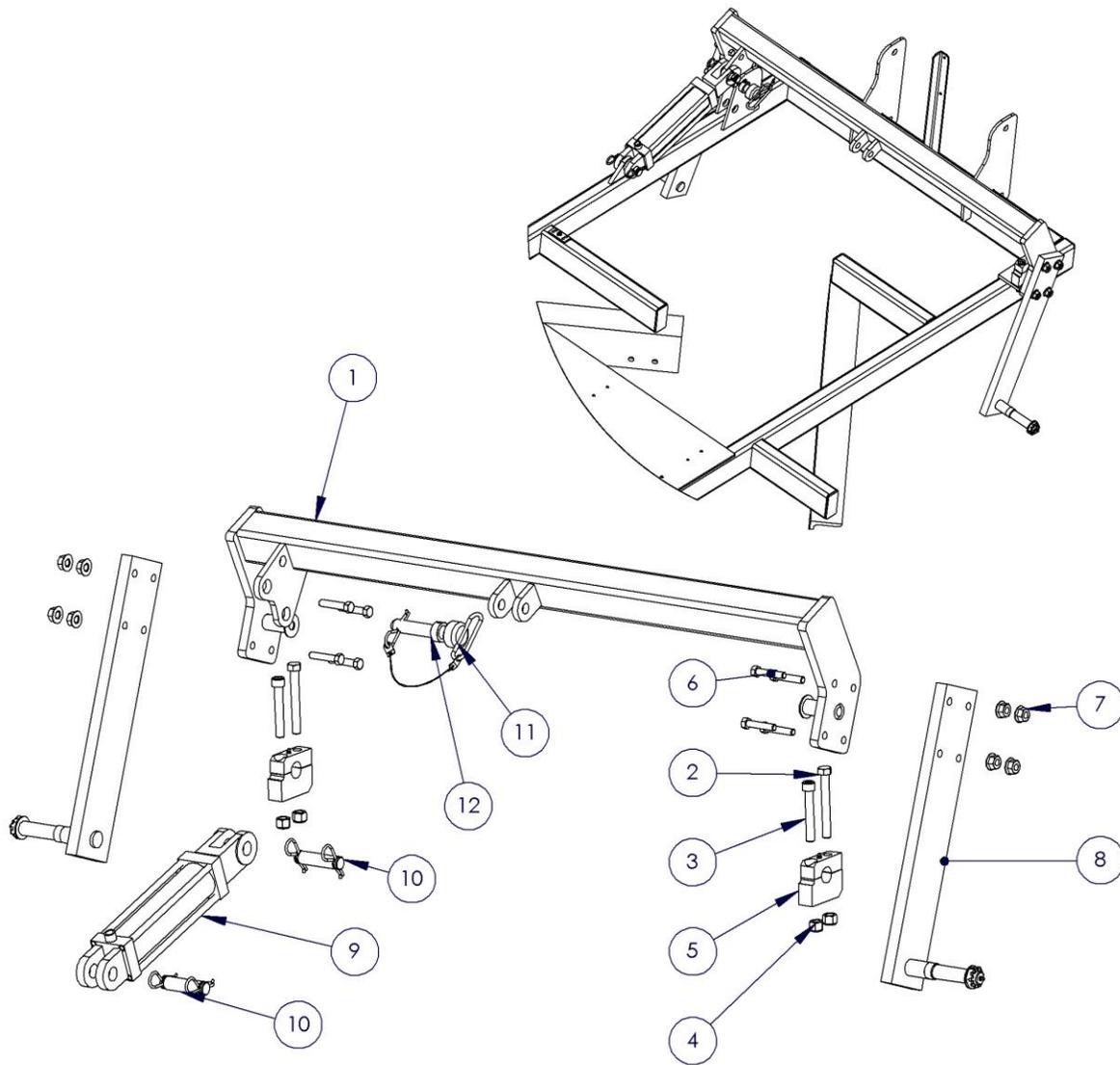
1	1	BON-006564	122 TONGUE
2	2	BON-000183	3/4-10 X 2-1/4" BOLT
3	2	BON-000323	NYLON INSERT LOCKNUT, 3/4-10 UNC
4	1	BON-010024	JACK STAND, SIDE WIND 5000 LB CAP.
5	1	BON-006566	2-5/16" BALL COUPLER (INCLUDES MTG HARDWARE)
6	1	BON-006567	2" BALL COUPLER (INCLUDES MTG HARDWARE)
7	1	LV-1085	PINTLE EYE, 3" ID, 14,000 MAX CAPACITY
8	1	BON-006568	3/4 DROP PIN CLEVIS (MOUNTING BOLTS NOT INCLUDED)
9	2	BON-000322	NYLON INSERT LOCKNUT, 5/8-11 UNC
10	2	BON-000163	5/8-11X5" BOLT
11	1	BON-003803	PIN, 3/4 X 6-1/4"
12	1	BON-006588	RING HEAD PIN, 3/4" X 2-1/4" WORKING LENGTH
ITEM	QTY	PART NUMBER	DESCRIPTION

CONFIDENTIAL: THIS DRAWING AND/OR INFORMATION CONTAINED HEREIN IS AND REMAINS THE SOLE PROPERTY OF, AND IS PROPRIETARY TO, BONNELL INDUSTRIES, INC. THIS DRAWING AND/OR INFORMATION SHALL BE KEPT CONFIDENTIAL AND MAY NOT BE REPRODUCED, COPIED, MODIFIED, DISCLOSED, TRANSFERRED, OR MADE AVAILABLE TO OTHERS, EXCEPT WITH THE EXPRESS WRITTEN CONSENT OF BONNELL INDUSTRIES, INC. IT IS LOANED IN CONFIDENCE FOR MUTUAL ASSISTANCE PURPOSES ONLY. BONNELL INDUSTRIES, INC. MAY AT ANY TIME, MODIFY THE DRAWING AND/OR INFORMATION CONTAINED HEREIN.

BONNELL INDUSTRIES INC
TRUCK & ROAD EQUIPMENT
DIXON, ILLINOIS
PHONE: 800-851-9664

7.4. 122 LIFT ASSEMBLY

FILE NAME	122 ASSEMBLIES	REV.	DESCRIPTION	DATE	INITIALS
DWG NAME	LIFT ASSEMBLY	-	ORIGINAL		



1	1	BON--006574	122 TORQUE ARM
2	2	BON-000163	5/8-11X5" BOLT
3	2	SCS-5/8-11X4	5/8-11X4 SOCKET HEAD CAP SCREW
4	4	BON-000322	NYLON INSERT LOCKNUT, 5/8-11 UNC
5	2	BON-006590	SPLIT BLOCK WITH GREASE ZERK
6	8	BON-000111	1/2-13 x 2-1/2" BOLT
7	8	BON-000321	NYLON INSERT LOCKNUT, 1/2-13 UNC
8	2	BON-006572	122 AXLE PIVOT ARM
9	1	BON-006561	CYLINDER, 2"X8", CLEVIS END, 1" PIN EYES
10	2	PMC-190400004	CLEVIS PIN. 1" X 3-1/4" WORKING LENGTH
11	1	BON-006435	PIN, 1X4-1/2, WITH LANYARD
12	1	BON-1505.1	1" SET COLLAR
ITEM	QTY	PART NUMBER	DESCRIPTION

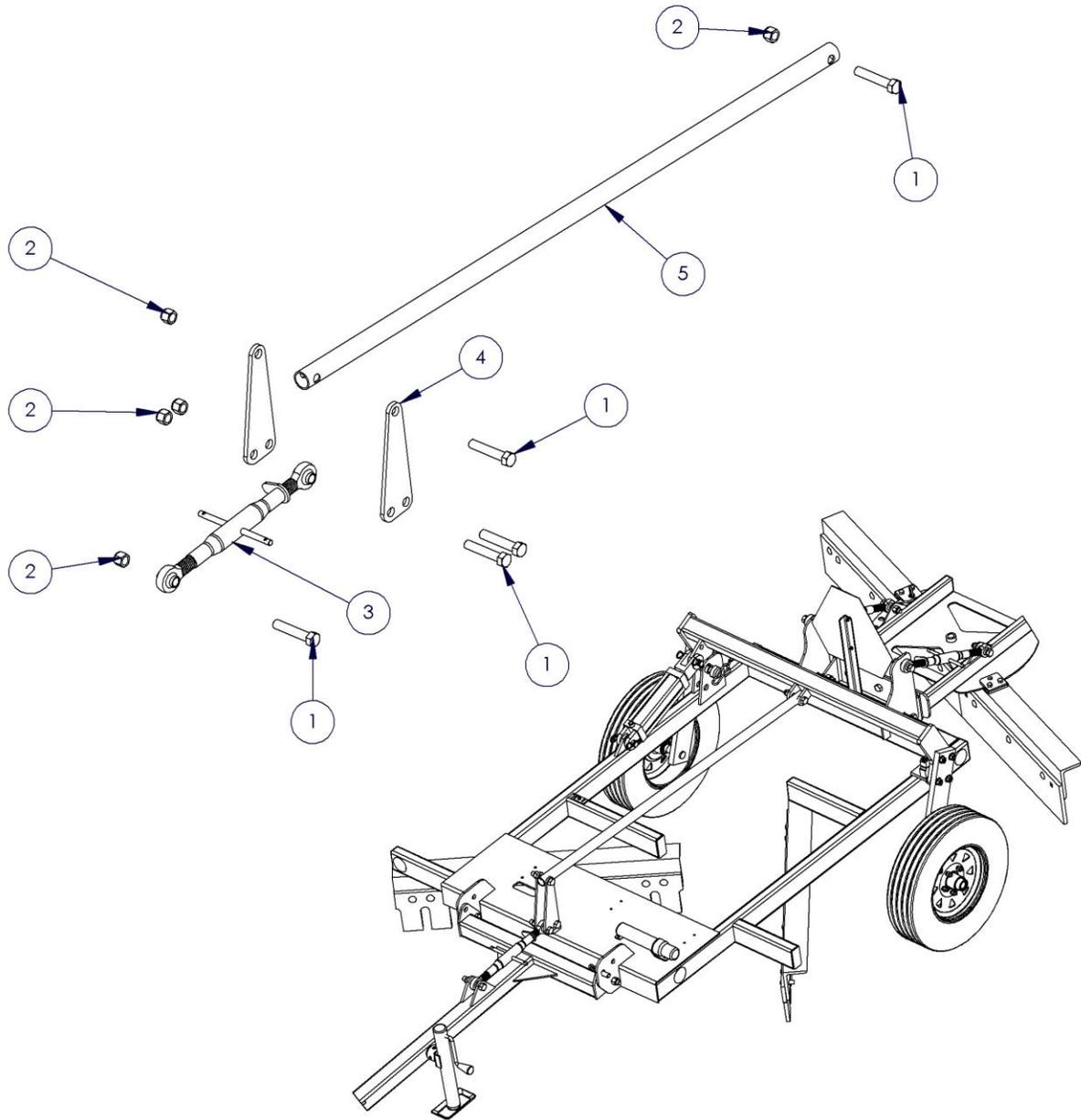
CONFIDENTIAL THIS DRAWING AND/OR INFORMATION CONTAINED HEREIN IS AND REMAINS THE SOLE PROPERTY OF, AND IS PROPRIETARY TO, BONNELL INDUSTRIES, INC. THIS DRAWING AND/OR INFORMATION SHALL BE KEPT CONFIDENTIAL AND MAY NOT BE REPRODUCED, COPIED, MODIFIED, DISCLOSED, TRANSFERRED, OR MADE AVAILABLE TO OTHERS, EXCEPT WITH THE EXPRESS WRITTEN CONSENT OF BONNELL INDUSTRIES, INC. IT IS LOANED IN CONFIDENCE FOR MUTUAL ASSISTANCE PURPOSES ONLY. BONNELL INDUSTRIES, INC. MAY AT ANY TIME, MODIFY THE DRAWING AND/OR INFORMATION CONTAINED HEREIN.

BONNELL™
INDUSTRIES INC
 TRUCK & ROAD EQUIPMENT

DIXON, ILLINOIS
 PHONE: 800-851-9664

7.5. 122 TOP LINK ASSEMBLY

FILE NAME	122 ASSEMBLIES	REV.	DESCRIPTION	DATE	INITIALS
DWG NAME	TOP LINK ASSEMBLY	-	ORIGINAL		



CONFIDENTIAL: THIS DRAWING AND/OR INFORMATION CONTAINED HEREIN IS AND REMAINS THE SOLE PROPERTY OF, AND IS PROPRIETARY TO, BONNELL INDUSTRIES, INC. THIS DRAWING AND/OR INFORMATION SHALL BE KEPT CONFIDENTIAL AND MAY NOT BE REPRODUCED, COPIED, MODIFIED, DISCLOSED, TRANSFERRED, OR MADE AVAILABLE TO OTHERS, EXCEPT WITH THE EXPRESS WRITTEN CONSENT OF BONNELL INDUSTRIES, INC. IT IS LOANED IN CONFIDENCE FOR MUTUAL ASSISTANCE PURPOSES ONLY. BONNELL INDUSTRIES, INC. MAY AT ANY TIME, MODIFY THE DRAWING AND/OR INFORMATION CONTAINED HEREIN.

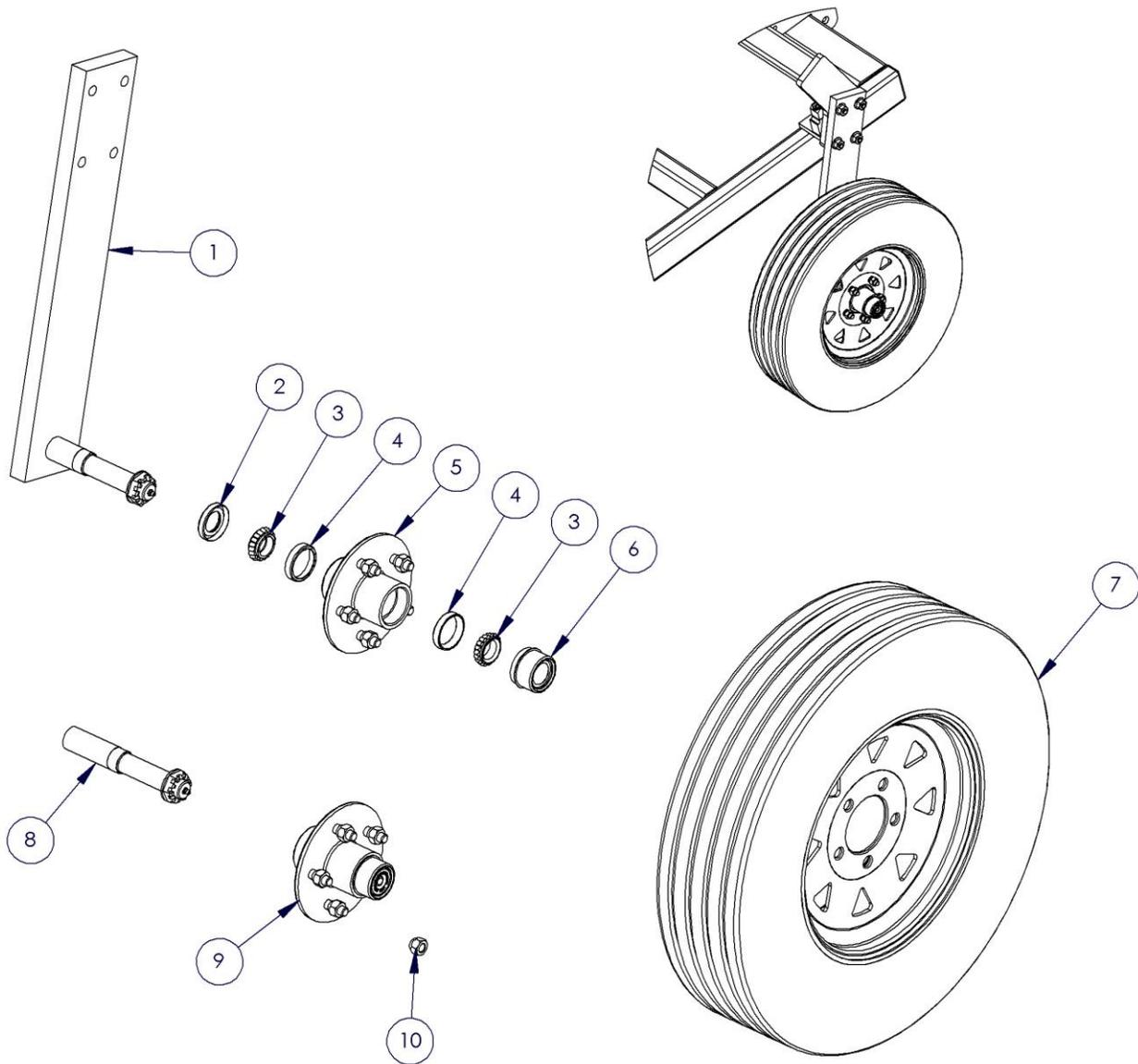
1	5	BON-000190	3/4-10X4" BOLT
2	5	BON-000323	NYLON INSERT LOCKNUT, 3/4-10 UNC
3	1	BON-006420	TOP LINK
4	2	BON-006587	PIVOT LIFT PLATE
5	1	BON-006589	TOP LINK PIPE
ITEM	QTY	PART NUMBER	DESCRIPTION

BONNELL
INDUSTRIES INC
TRUCK & ROAD EQUIPMENT

DIXON, ILLINOIS
PHONE: 800-851-9664

7.6. 122 HUB & WHEEL ASSEMBLY

FILE NAME	122 ASSEMBLIES	REV.	DESCRIPTION	DATE	INITIALS
DWG NAME	WHEEL HUB ASSEMBLY	-	ORIGINAL		



1	1	BON-006572	122 AXLE PIVOT ARM
2	1	BON-006582	SEAL, 122 ROAD DRAG HUB
3	2	BRG-L44610	122 BEARING
4	2	RACE-L44610	122 RACE
5	1	BON-006579	122 RAW HUB
6	1	BON-006583	DUST CAP, 122 RAD DRAG HUB
7	1	BON-006571	122 WHEEL
8	1	BON-006569	SPINDLE, FOR 122 DRAG
9	1	BON-006570	122 HUB
10	1	BON-000297	1/2-20 TPI LUG NUT
ITEM	QTY	PART NUMBER	DESCRIPTION

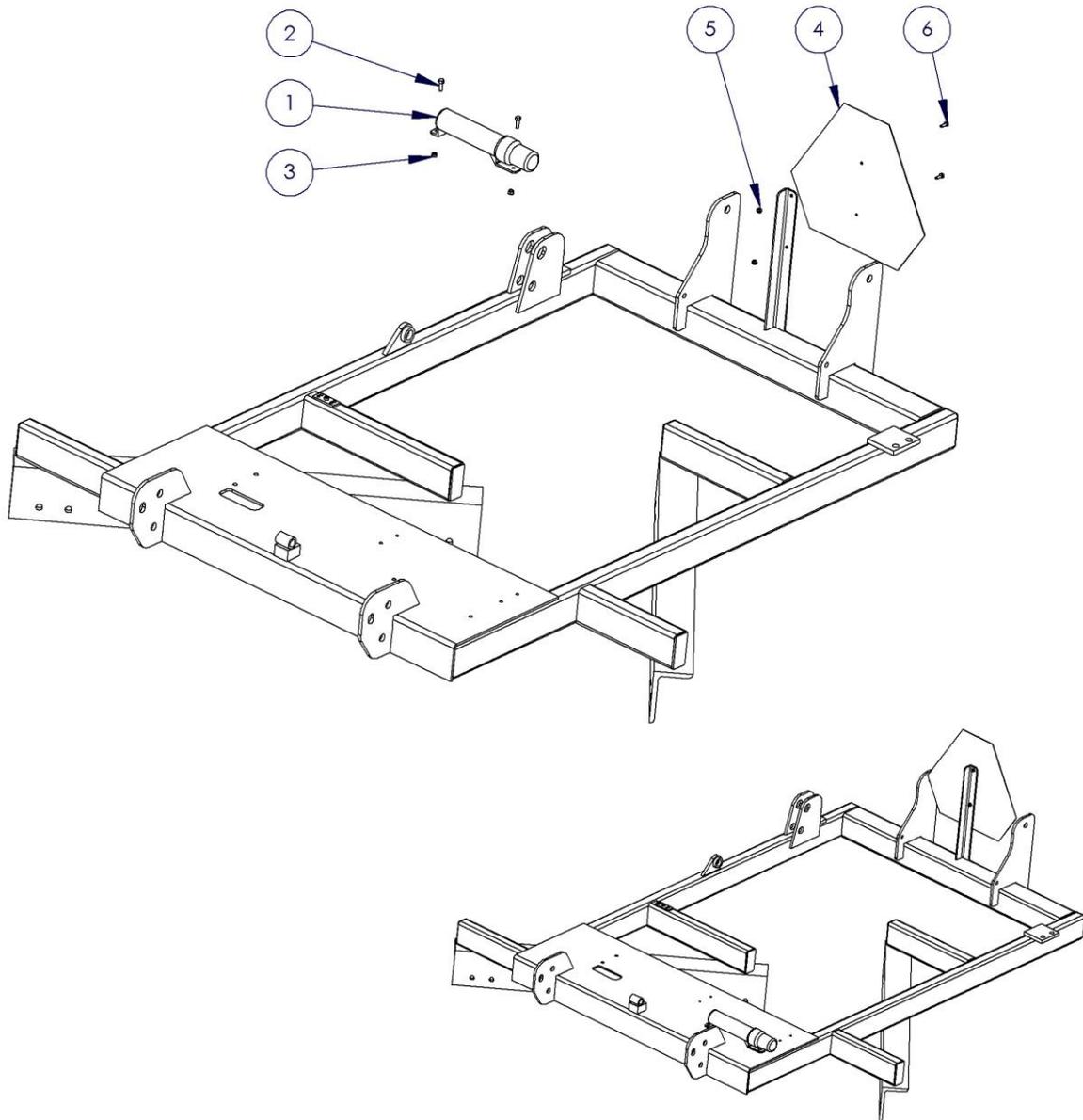
CONFIDENTIAL. THIS DRAWING AND/OR INFORMATION CONTAINED HEREIN IS AND REMAINS THE SOLE PROPERTY OF, AND IS PROPRIETARY TO, BONNELL INDUSTRIES, INC. THIS DRAWING AND/OR INFORMATION SHALL BE KEPT CONFIDENTIAL AND MAY NOT BE REPRODUCED, COPIED, MODIFIED, DISCLOSED, TRANSFERRED, OR MADE AVAILABLE TO OTHERS, EXCEPT WITH THE EXPRESS WRITTEN CONSENT OF BONNELL INDUSTRIES, INC. IT IS LOANED IN CONFIDENCE FOR MUTUAL ASSISTANCE PURPOSES ONLY. BONNELL INDUSTRIES, INC. MAY AT ANY TIME, MODIFY THE DRAWING AND/OR INFORMATION CONTAINED HEREIN.

BONNELL[™]
INDUSTRIES INC
 TRUCK & ROAD EQUIPMENT

DIXON, ILLINOIS
 PHONE: 800-851-9664

7.7. MANUAL CANISTER AND SMV SIGN ASSEMBLY

FILE NAME	122 ASSEMBLIES	REV.	DESCRIPTION	DATE	INITIALS
DWG NAME	MANUAL & SMV SIGN ASSEMBLY	-	ORIGINAL		



CONFIDENTIAL THIS DRAWING AND/OR INFORMATION CONTAINED HEREIN IS AND REMAINS THE SOLE PROPERTY OF, AND IS PROPRIETARY TO, BONNELL INDUSTRIES, INC. THIS DRAWING AND/OR INFORMATION SHALL BE KEPT CONFIDENTIAL AND MAY NOT BE REPRODUCED, COPIED, MODIFIED, DISCLOSED, TRANSFERRED, OR MADE AVAILABLE TO OTHERS, EXCEPT WITH THE EXPRESS WRITTEN CONSENT OF BONNELL INDUSTRIES, INC. IT IS LOANED IN CONFIDENCE FOR MUTUAL ASSISTANCE PURPOSES ONLY. BONNELL INDUSTRIES, INC. MAY AT ANY TIME, MODIFY THE DRAWING AND/OR INFORMATION CONTAINED HEREIN.

1	1	BON-000950	MANUAL CONISTER, SMALL
2	2	BON-000030	5/16-18X1" BOLT
3	2	BON-000320	NYLON INSERT LOCKNUT, 5/16-18 UNC
4	1	SMV SIGN	SLOW MOVING VEHVLE SIGN
5	2	BON-000318.5	NYLON INSERT LOCKNUT, 1/4-20 UNC
6	2	BON-000003	1/4-20X 3/4" BOLT
ITEM	QTY	PART NUMBER	DESCRIPTION

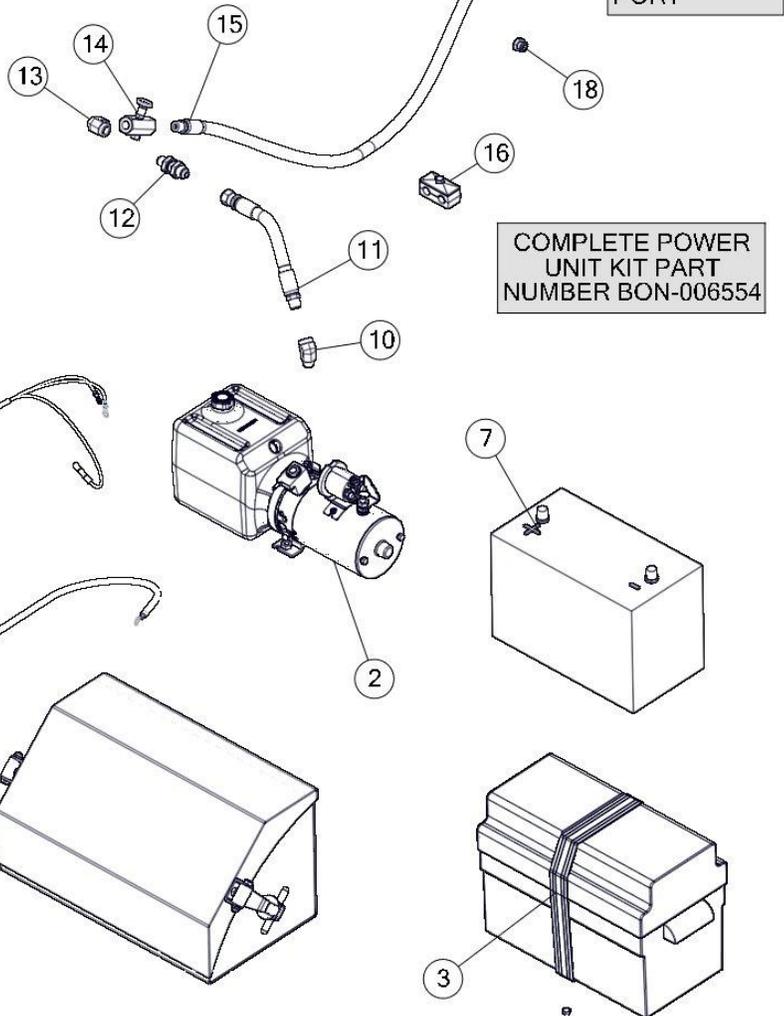
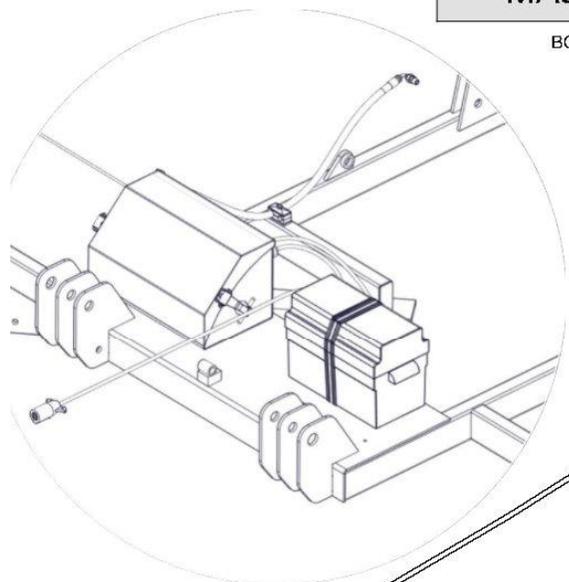
BONNELL
INDUSTRIES INC
TRUCK & ROAD EQUIPMENT

DIXON, ILLINOIS
PHONE: 800-851-9664

7.8. 122 HYDRAULIC POWER ASSEMBLY

122 HYDRAULIC POWER UNIT MAJOR COMPONENTS

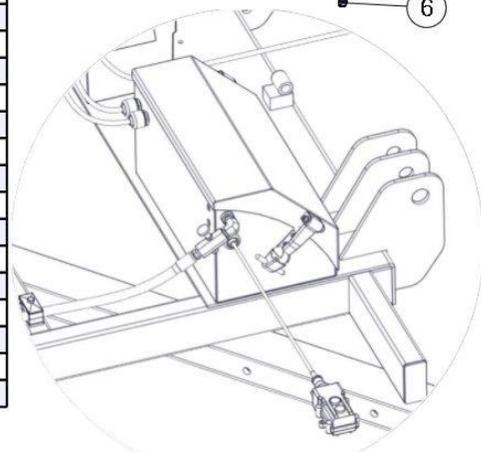
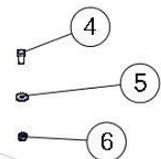
BON-006429.SMG REV 041614



TO CYLINDER
PORT

COMPLETE POWER
UNIT KIT PART
NUMBER BON-006554

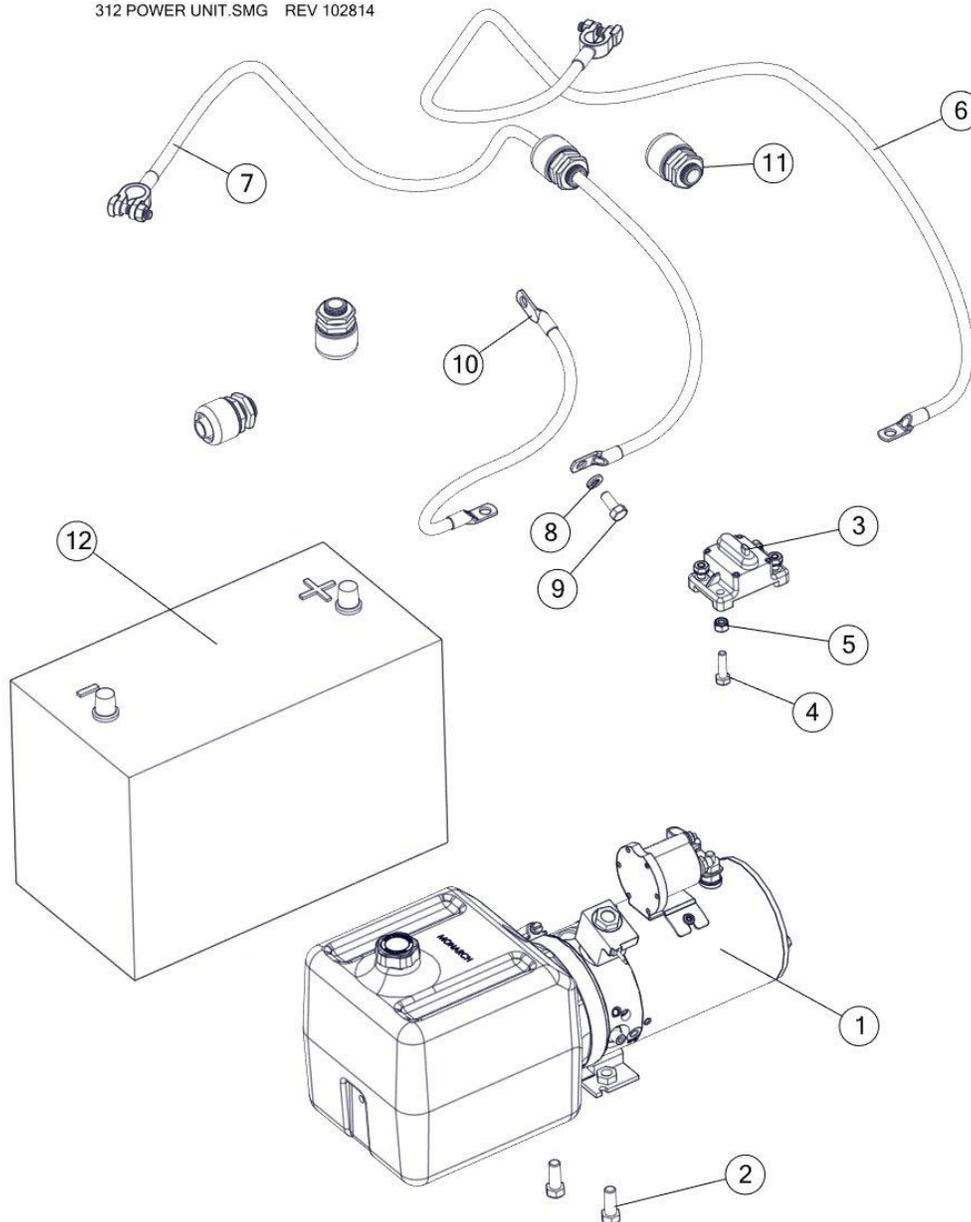
BOM ID	PartNo (config)	Qty	Description (config)
1	LV-1433	1	SINGLE SECTION HYD. POWER UNIT ENCLOSURE
2	BON-001504	1	HYD POWER UNIT, SINGLE FUNCTION
3	LV-1145	1	BATTERY BOX (INCLUDES TIE DOWN STRAP)
4	BON-000003	2	1/4-20 x 3/4" BOLT
5	BON-000336	2	FLAT WASHER, 1/4
6	BON-000318.5	2	NYLON INSERT LOCKNUT, 1/4-20 UNC
7	LV-1144	1	BATTERY (12VOLT)
8	BON-006449	1	CHARGE WIRE HARNESS WITH TRAILER PLUG
9	MON-03240	1	PENANT CONTROL
10	25UT 06	1	MALE PIPE X 45DEG FEMALE PIPE 3/8" NPT
11	BON-006450	1	312 HYD HOSE, POWER UNIT TO BULKHEAD
12	2706-06-08LN	1	BULKHEAD; 3/8 MNPT X #08 37* MALE JIC
13	25UG 06	1	MALE PIPE X 90DEG FEMALE PIPE 3/8" NPT
14	F 25 BK	1	FLOW CONTROL VALVE
15	BON-007295	1	HYDRAULIC HOSE
16	3190 KIT	1	HOSE CLAMP FOR TWO 3/8" HYD HOSE
17	6401-06-06	1	ORB TO MALE PIPE ADAPTER
18	PMC-PMBHF4	1	BREATHER, 3/8" NPT



7.9. 122 HYDRAULIC POWER UNIT ELECTRICAL SYSTEM

312 & 122 PERFECT ROAD MAINTAINER HYDRAULIC POWER UNIT ELECTRICAL SYSTEM

312 POWER UNIT.SMG REV 102814

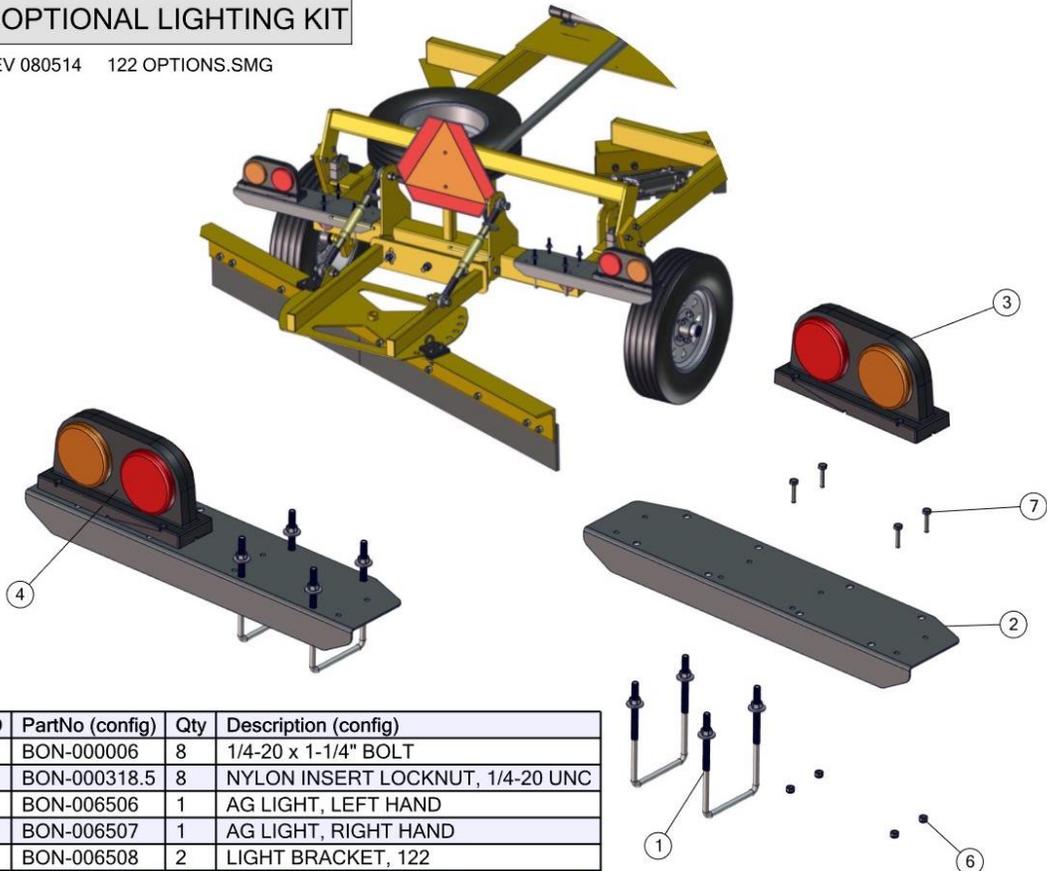


BOM ID	PartNo (config)	Qty	Description (config)
1	BON-001504	1	HYD POWER UNIT, SINGLE FUNCTION
2	BON-000057	2	3/8-16 X 1" BOLT
3	BON-006592	1	CIRCUIT BREAKER, 150 AMP
4	BON-000005	2	1/4-20 x 1" BOLT
5	BON-000318.5	2	NYLON INSERT LOCKNUT, 1/4-20 UNC
6	BON-006448	1	312 CABLE, FUSE TO BATTERY
7	BON-006447	1	312 CABLE, GROUND
8	BON-000351	1	LOCK WASHER, 5/16
9	BON-000028	1	5/16-18 X 3/4" BOLT
10	BON-006446	1	312 CABLE, POWER UNIT TO FUSE
11	WAY-27262	4	THREADED LOOM FITTING, 1/2" NTP, 1/2" LOOM
12	LV-1144	1	BATTERY (12VOLT)

7.10. 122 OPTIONS

122 OPTIONAL LIGHTING KIT

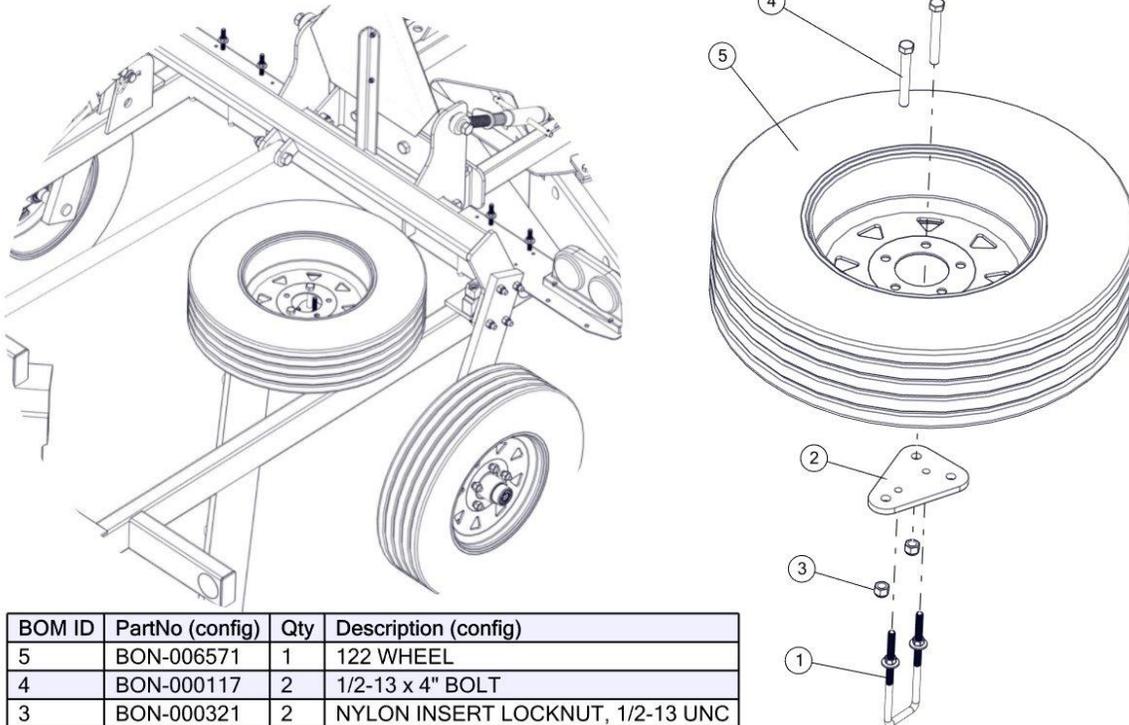
REV 080514 122 OPTIONS.SMG



BOM ID	PartNo (config)	Qty	Description (config)
7	BON-000006	8	1/4-20 x 1-1/4" BOLT
6	BON-000318.5	8	NYLON INSERT LOCKNUT, 1/4-20 UNC
4	BON-006506	1	AG LIGHT, LEFT HAND
3	BON-006507	1	AG LIGHT, RIGHT HAND
2	BON-006508	2	LIGHT BRACKET, 122
1	BON-006433	4	U-BOLT, 4" X 6", SQUARE

122 SPARE TIRE KIT

REV 080414 122 OPTIONS.SMG



BOM ID	PartNo (config)	Qty	Description (config)
5	BON-006571	1	122 WHEEL
4	BON-000117	2	1/2-13 x 4" BOLT
3	BON-000321	2	NYLON INSERT LOCKNUT, 1/2-13 UNC
2	BON-006510	1	SPARE TIRE BRACKET, 122
1	BON-006438	1	U-BOLT, 2" X 6", SQUARE

8. WARRANTY



WARRANTY

Issued: January 1, 1998

Bonnell Industries, Inc. warrants to the original purchaser that if any part of the product proves to be defective in workmanship or material within one year of the date of original installation and is returned to us freight prepaid within 30 days after such defect is discovered and notification thereof is provided Bonnell, we will either replace or repair the defective part (our option). This warranty does not apply to damage resulting from neglect, misuse, accident or improper installation or maintenance. Charges for field service, labor, or other expenses not previously authorized and approved in writing by Bonnell Industries, Inc. will not be accepted. This warranty is exclusive and in lieu of all other warranties whether expressed or implied. Bonnell Industries, Inc. neither assumes nor authorizes anyone to assume for it any other obligation or liability in connection with this warranty, and will not be liable for consequential damages. This warranty applies only to products made and/or supplied by Bonnell Industries, Inc. and does not apply to other products not made or supplied by us and to which our products may be attaches, such as trucks. We accept no responsibility for damages to such other products, even if our product is alleged to have contributed to the damage of the other product.

Hydraulic, electrical, or other components furnished by other manufacturers and used with our products are warranted by that manufacturer and not by Bonnell Industries, Inc. the manufacturer's own warranty will apply to these parts. Hydraulic or electrical components are not to be disassembled without the express written permission of Bonnell Industries, Inc.

All defective parts returned from an end user must include the unit model, serial number, date installed, and dealer from whom purchased.

Bonnell Industries, Inc. reserves the right to make changes or improvements to its products without incurring any liability or obligation and without being required to make corresponding changes or improvements to products manufactured or sold prior to those changes or improvements.

The Bonnell Industries, Inc. Warranty Policy is subject to change without notice.

Product Information

When ordering parts, please refer to the information below.

INSTALLATION DATE:

Certificate of Origin

This product was manufactured at Bonnell Industries, Inc.,
located at 1385 Franklin Grove Rd.,
in the city of Dixon, Illinois, U.S.A.

MADE IN THE USA 