

Owner's Manual

AG/DOT Water Trailer

500/1000/1600 Gallon



NOTE: This Owner's Manual covers several models. Features may vary by model. Not all features in this manual are applicable to all models and the model depicted may differ from yours.

For Your Records

Record your machine's information and serial number in the space provided below. ABI will use this information to give you prompt, efficient service when you order parts or need product support.

Model and Serial Number

| |
|--------------------------------|
| Model Number: _____ |
| Serial Number: _____ |
| Invoice Number: _____ |
| Purchaser's Name: _____ |

Contact Information

ABI Attachments, Inc
520 S. Byrkit Ave.
Mishawaka, IN 46544

Customer Support

Email: abcustomerservice@abiattachments.com
Phone: 877-788-7253
Website: www.abisupport.com

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LIMITED WARRANTY

ABI Water Trailers

36 Month Farm & Ranch, 36 Month Commercial, & 12 Month Rental

TERMS & CONDITIONS

“ABI” means ABI Attachments, Inc. 520 S Byrkit Ave, Mishawaka, Indiana 46544, 877.788.7253. The above referenced models are warrantied for 36 months, from the original invoice date, against defects in materials and/or workmanship when put to normal and designed residential, farm, & ranch consumer use; 36 months for commercial use and 12 months for rental use. This limited warranty is only valid on new equipment to the original purchaser with proof of purchase. Non-transferable.

ABI will coordinate warranty claims for engines and tires and process warranty claims for pumps, tanks, valves, plumbing or other trade components for their respective manufacturers as these items are warranted separately from this limited warranty. The following is a listing of the length of these limited warranty terms; refer to the actual products warranties for details. This listing is not a substitute for or statement of these separate manufacturers warranties. All warranty claims for these components are processed through ABI as stated below. • Honda GX Series Engine: 3 years consumer, 3 Years Commercial • Compact Units: Briggs & Stratton Engine: 2 years consumer, 1 Year Commercial • Compact Units: Honda GC Series Engine: 2 years consumer, 3 Months Commercial • Commercial Pump: Upon discovery of manufacturer confirmed defect • Tanks: Prorated 5 Years • Valves: Upon discovery of manufacturer confirmed defect • Axles: 2 Years • Tires: Down to listed tread remaining - 2 remaining 32nds on highway and 10% remaining 32nds on farm tire.

For the purpose of the warranties of the total frame and overall construction, “normal & designed use” refers to such uses shown in ABI marketing materials, websites, & videos specific to this product and does not include misuse, abuse, accidents, or damage due to inadequate maintenance, storage, or exposure to corrosive materials including airborne salt. However, a final judgment of “normal & designed use” is the sole opinion of ABI.

ABI’s obligation and or liability, under this warranty, of any product defect or claim for injury or damages is limited to repair or replacement of the product, or payment of the reasonable cost of repair or replacement of the product, at ABI’s sole discretion and direction. During the warranty period, warranty replacement parts or replacement product will ship by a standard method at no charge to the warranty holder, in the United States & Canada only. Expedited shipping costs or international shipping costs (Outside of US or Canada) of warranty parts or replacement product is the responsibility of the warranty holder.

To secure warranty service, the warranty holder must, (1) report the defect immediately to ABI customer service, in writing, for warranty consideration within the applicable warranty term and discontinue use of the product; (2) present photographic evidence of the warranty claim and valid proof of purchase; (3) return the product or part to ABI or independent service technician within 30 days of defect discovery or failure, for return, inspection, or repair; if required. If ABI is unable to repair the product to conform to the warranty in a reasonable number of attempts, ABI will provide, at its option, one of the following: (a) a replacement for the product or, (b) a full refund of the purchase price. Repair, replacement, or refunds are the warranty holder’s EXCLUSIVE remedies against ABI under this limited warranty.

ABI IS NOT RESPONSIBLE FOR THE FOLLOWING: (1) Equipment purchased used; (2) Any equipment that has been altered or modified in ways not approved by ABI, including, but not limited to, unauthorized repair, and acts of God; (3) Depreciation or damage caused by normal wear, lack of reasonable and proper maintenance, failure to follow operating instructions/recommendations; misuse, lack of proper protection during storage or use, vandalism, the elements, collision or accident; (4) Normal maintenance/wear parts and/or service, including but not limited to, tips, shanks, teeth, scarifiers, top-links, finish rakes, pins, bolts, leveling blades, profile blades, tires, rims, and bearings. Periodic replacement of normally wearing parts is the responsibility of the warranty holder.

To the extent permitted by law, the limited warranty stated above is the exclusive warranty given by ABI to the original purchaser, and ABI disclaims any other warranties. There are no other warranties, either express or implied, including any warranty of merchantability, fitness for a particular purpose, or arising from course of dealing or trade usage. ABI shall not be liable in any event for incidental or consequential or other special damages under any theory of strict liability or negligence, or expenses of any kind, including, but not limited to, personal injury, damage to property, cost of equipment rentals, loss of profit, loss of time, loss of wages, or cost of hiring services to perform tasks normally performed by this product. ABI reserves the right to make improvements in design or changes in specifications at any time without incurring any obligation to owners of units previously sold. Some jurisdictions do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights, which vary from jurisdiction to jurisdiction.

Publish Date: 5/30/2023

Email: support@abiattachments.com

Safety



WARNING! The *SAFETY ALERT SYMBOL* indicates there is a potential hazard to personal safety involved and extra safety precaution must be taken. When you see this symbol, be alert and carefully read the message that follows it. In addition to design and configuration of equipment, hazard control, and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of equipment.



CALIFORNIA PROPOSITION 65

WARNING! Cancer and reproductive harm- www.P65Warnings.ca.gov

SAFETY AT ALL TIMES

Careful operation is your best assurance against an accident. All operators, no matter how much experience they may have, should carefully read this manual and other related manuals, or have the manuals read to them, before operating the tow vehicle and this implement.

- Thoroughly read and understand the “Safety Label” section. Read all instructions noted on them.
- Do not operate the equipment while under the influence of drugs or alcohol as they impair the ability to safely and properly operate the equipment.
- The operator should be familiar with all functions of the tow vehicle and attached implement and be able to handle emergencies quickly.
- Make sure all guards and shields appropriate for the operation are in place and secured before operating implement.
- Keep all bystanders away from equipment and work area.
- Start tow vehicle from the driver’s seat with hydraulic controls in neutral.
- Operate tow vehicle and controls from the driver’s seat only.
- Never dismount from a moving tow vehicle or leave tow vehicle unattended with engine running.
- Do not allow anyone to stand between tow vehicle and implement while backing up to implement.
- Keep hands, feet, and clothing away from power-driven parts.
- While transporting and operating equipment, watch out for objects overhead and along side such as fences, trees, buildings, wires, etc.
- Do not turn tow vehicle so tight as to cause hitched implement to ride up on the tow vehicle’s rear wheel.
- Store implement in an area where children normally do not play. When needed, secure attachment against falling with support blocks.

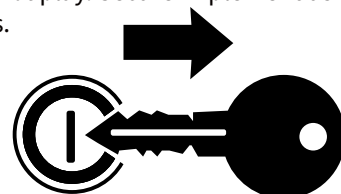
SAFETY PRECAUTIONS FOR CHILDREN

Tragedy can occur if the operator is not alert to the presence of children. Children generally are attracted to implements and their work.

- Never assume children will remain where you last saw them.
- Keep children out of the work area and under the watchful eye of a responsible adult.
- Be alert and shut the implement and tractor down if children enter the work area.
- Never carry children on the tractor or implement. There is not a safe place for them to ride. They may fall off and be run over or interfere with the control of the tow vehicle.
- Never allow children to operate the tow vehicle or implement, even under adult supervision.
- Never allow children to play on the tow vehicle or implement.
- Use extra caution when backing up. Before the tractor starts to move, look down and behind to make sure the area is clear.

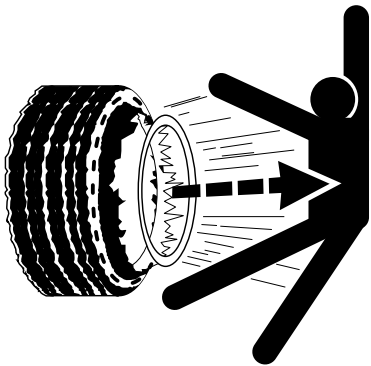
SHUTDOWN & STORAGE

- If engaged, disengage power take-off.
- Park on solid, level ground and lower implement to ground or onto support blocks.
- Put tractor in park or set park brake, turn off engine, and remove switch key to prevent unauthorized starting.
- Relieve all hydraulic pressure to auxiliary hydraulic lines
- Wait for all components to stop before leaving operator’s seat.
- Use steps, grab-handles and anti-slip surfaces when stepping on and off the tractor.
- Detach and store implement in an area where children normally do not play. Secure implement using blocks and supports.



TIRE SAFETY

- Tire changing can be dangerous and must be performed by trained personnel using the correct tools and equipment.
- Always maintain correct tire pressure. Do not inflate tires above recommended pressures shown in the Operator’s Manual.
- When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage if available.
- Securely support the implement when changing a wheel.
- When removing and installing wheels, use wheel handling equipment adequate for the weight involved.
- Make sure wheel bolts have been tightened to the specified torque.
- Some attachments may have foam or sealant inside them and must be disposed of properly.

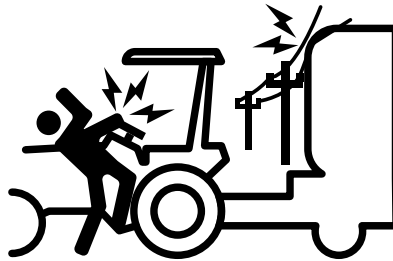


OPERATION SAFETY

- Stay alert for holes, rocks, and roots in the terrain and other hidden hazards. Keep away from drop-offs.
- Stop implement immediately upon striking an obstruction. Turn engine off, remove key, inspect and repair any damage before resuming operation.
- Never operate tractor and implement under trees with low hanging limbs. Operators can be knocked off the tractor and then run over by implement.

TRANSPORT SAFELY

- Comply with federal, state, and local laws.
- Use towing vehicle and trailer of adequate size and capacity. Secure equipment towed on a trailer with tie downs and chains.
- Sudden braking can cause a towed trailer to swerve and upset. Reduce speed if towed trailer is not equipped with brakes.
- Avoid contact with any overhead utility lines or electrically charged conductors.
- Always drive with load on end of loader arms low to the ground.
- Always drive straight up and down steep inclines with heavy end of a tow vehicle with loader attachment on the “uphill” side.



- Engage park brake when stopped on an incline.
- Maximum transport speed for an attached equipment is 20 mph. DO NOT EXCEED. Never travel at a speed which does not allow adequate control of steering and stopping. Some rough terrains require a slower speed.
- As a guideline, use the following maximum speed weight ratios for attached equipment:
 - **20 mph** when weight of attached equipment is less than or equal to the weight of machine towing the equipment.
 - **10 mph** when weight of attached equipment exceeds weight of machine towing equipment but not more than double the weight.
- **IMPORTANT:** Do not tow a load that is more than double the weight of the vehicle towing the load.



PRACTICE SAFE MAINTENANCE

- Understand procedure before doing work. Refer to the Operator’s Manual for additional information.
- Work on a level surface in a clean dry area that is well-lit.
- Lower implement to the ground and follow all shutdown procedures before leaving the operator’s seat to perform maintenance.
- Do not work under any hydraulic supported equipment. It can settle, suddenly leak down, or be lowered accidentally. If it is necessary to work under the equipment, securely support it with stands or suitable blocking beforehand.
- Use properly grounded electrical outlets and tools.
- Use correct tools and equipment for the job that are in good condition.
- Allow equipment to cool before working on it.
- Disconnect battery ground cable (-) before servicing or adjusting electrical systems or before welding on implement.
- Inspect all parts. Make certain parts are in good condition & installed properly.
- Replace parts on this implement with genuine ABI Attachments parts only.
- Do not alter this implement in a way which will adversely affect its performance.
- Do not grease or oil implement while it is in operation.
- Remove buildup of grease, oil, or debris.
- Always make sure any material and waste products from the repair and maintenance of the implement are properly collected and disposed.
- Remove all tools and unused parts before operation.



PREPARE FOR EMERGENCIES

- Be prepared if a fire starts.
- Keep a first aid kit and fire extinguisher handy.
- Keep emergency numbers for doctor, ambulance, hospital, and fire department near phone.



USE SAFETY LIGHTS AND DEVICES

- Slow moving tractors, skid steers, self-propelled machines, and towed equipment can create a hazard when driven on public roads. They are difficult to see, especially at night. Use the Slow Moving Vehicle sign (SMV) when on public roads.
- Flashing warning lights and turn signals are recommended whenever driving on public roads.



AVOID UNDERGROUND UTILITIES

- **Dig Safe, Call 811 (USA)** Always contact your local utility companies (electrical, telephone, gas, water, sewer, and others) before digging so that they may mark the location of any underground services in the area.
- Be sure to ask how close you can work to the marks they positioned.



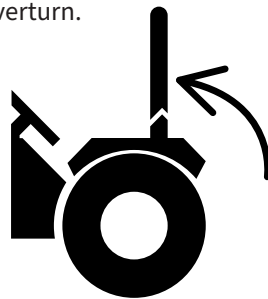
WEAR PERSONAL PROTECTION EQUIPMENT (PPE)

- Wear protective clothing and equipment appropriate for the job such as safety shoes, safety glasses, hard hat, and ear plugs.
- Clothing should fit snug without fringes and pull strings to avoid entanglement with moving parts.
- Prolonged exposure to loud noise can cause hearing impairment or hearing loss. Wear suitable hearing protection such as earmuffs or earplugs.
- Operating equipment safely requires the operator's full attention. Avoid wearing headphones while operating equipment.



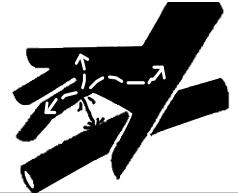
USE SEAT BELT AND ROPS

- ABI Attachments recommends the use of a CAB or roll-over protective structures (ROPS) and seat belt in almost all tow vehicles. Combination of a CAB or ROPS and seat belt will reduce the risk of serious injury or death if the tow vehicle should be upset.
- If ROPS is in the locked-up position, fasten seat belt snugly and securely to help protect against serious injury or death from falling and machine overturn.



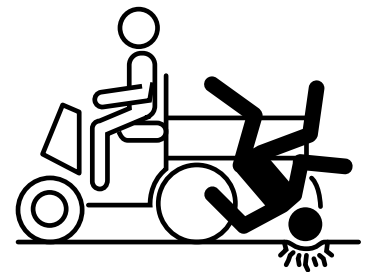
AVOID HIGH PRESSURE FLUIDS HAZARD

- Escaping fluid under pressure can penetrate the skin causing serious injury.
- Before disconnecting hydraulic lines or performing work on the hydraulic system, be sure to release all residual pressure.
- Make sure all hydraulic fluid connections are tight and all hydraulic hoses and lines are in good condition before applying pressure to the system.
- Use a piece of paper or cardboard, NOT BODY PARTS, to check for suspected leaks.
- Wear protective gloves and safety glasses or goggles when working with hydraulic systems.
- **DO NOT DELAY.** If an accident occurs, see a doctor familiar with this type of injury immediately. Any fluid injected into the skin or eyes must be treated within a few hours or gangrene may result.



KEEP RIDERS OFF MACHINERY

- Never carry riders on tractor or implement.
- Riders obstruct operator's view and interfere with the control of the tow vehicle.
- Riders can be struck by objects or thrown from the equipment. Never use tractor or implement to lift or transport riders.



Do not use the ABI Water Trailers on highways or public thoroughfares unless Optional Commercial DOT Package has been installed. The ABI WaterTrailer is designed for off road use only.

Safety Inspection Check List

The following items should be inspected before use:

- Check for Water leakage from tank, valves, piping, or hoses.
- Check ratcheting valve rope for any damage.
- Check cradle straps to ensure they are tight and bolted in properly.
- Make sure vent cap is secured in place properly.
- Inspect hoses for any tears or damage to hoses or connectors.
- Inspect spray boom for any damage to boom or nozzles.
- Check engine for fuel or oil leakage – if found refer to motor manufacturer manual.
- Check engine for fuel level before operating the motor. Refer to motor manufacturer manual for running instructions.
- Check engine for oil level before operating the motor. Refer to motor manufacturer manual for running instructions.
- Inspect hand jack for any damage and ability to raise or lower the Water Trailer.
- Check tow receiver, safety chains, and hooks for any damage.
- Check wheels, and rims for damage. Check lugs or studs to ensure they are tight.
- Check tires for proper air pressure. Refer to PSI rating on the tire for proper air pressure.
- DOT models-- Check to make sure the standard electrical connector is properly connected, and free of damage.
- DOT models – Check to make sure breakaway brake line is secured and free of damage.
- DOT models – Ensure Running/Brake lights are working before driving on any public road.
- DOT models – Ensure that reflectors are visible and not damaged.
- DOT models – Make sure fenders are not hitting the tires and are free of damage.
- DOT models – Make sure all hoses are properly secured before driving on any public road.

CAUTION: Correct any discovered defects before continuing use!

Specifications

SPECIFICATIONS: (OFF ROAD MODELS SPECS):

| Part # | WW500SFLABI | WW500DFLABI | WW1000FLABI | WW1600FLABI |
|---------------------|---|--------------------------------|-------------------|----------------|
| Capacity | 500 Gal | 500 Gal | 1,000 Gal | 1,600 Gal |
| Dry Weight | 1,260 lbs | 1,460* lbs | 1,900* lbs | 2,260 lbs |
| Full Weight | 5,385 lbs | 5,585* lbs | 10,400 lbs | 15,860 lbs |
| Length | 151" | 151" | 204" | 213" |
| Width | 74" | 74" | 84" | 100" |
| Height | 70" | 70" | 75" | 79" |
| Min. Tractor H.P. | 35 w/4wd | | 55 w/4wd | |
| Frame Construction | 6" - 8" Channel Iron | | | |
| # of Axles | 1 | 2 | 2 | 2 |
| Suspension Type | 5 leaf double eye spring suspension | | | |
| Standard Tires | WH 235/85/16-8/65 (RADIAL) | WH 9.5L15-6/5.5 Implement Tire | | |
| Optional Road Tires | - | WH 235/85/16-8/65 (RADIAL) | | |
| Hitch Type | Select From A Ball Hitch, Pin Hitch or Clevis Hitch | | | |
| Tank Type | Rotationally Molded | | | |
| Tank Color | Select From White or UV Resistant Black | | | |
| Tank Drainage | Full Drain | | Sloped Full Drain | Full Drain Leg |
| # of Spray Nozzles | 3 | | | |
| Nozzle Type | Adjustable Brass Flood 3/4" K-210 180 DEG. | | | |
| Nozzle Flow Rate | 21 Gal. p/min. @ 10 psi | | | |
| Spray Coverage | 8' - 21' | | | |
| Motor Brand | Briggs & Stratton 200 P6 PRO/ Optional Honda Upgrade | | | |
| Motor H.P. | 6.5 h.p. Gas | | | |
| Cylinder Sleeve | Cast Iron | | | |
| Overhead Valve | YES | | | |
| Pump Brand | Self Priming Centrifugal Pump | | | |
| Pump Construction | 2" Polypropylene | | | |
| Open Discharge Rate | 190 gal. p/min | | | |
| Flow Rate | Pump Spinning @ 3450 RPM/ 140 Gal p/min @ 40 PSI | | | |
| Priming | Self-Priming | | | |
| Valves Fittings | 2" | | | |
| Spray Hose | 25' Standard - 50' Optional | | | |
| Quick Fill System | Standard | | | |
| D.O.T. Compliant | Requires Optional Commercial DOT Pkg (Brakes, Lights, Fenders, VIN #, etc...) | | | |
| Warranty | 12 Month Limited | | | |

Specifications (cont'd)

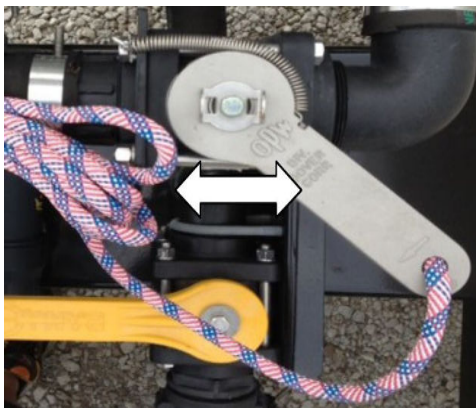
BASIC OPERATIONS:

Average Needed Water Amounts*:

| INDOOR | WEEKLY | OUTDOOR | WEEKLY |
|---------------|----------------|----------------|----------------|
| 80' X 100' | 500-800 GAL. | 60' ROUND | 800-1200 GAL. |
| 100' X 150' | 1000-1500 GAL. | 150' X 200' | 2000-3000 GAL. |
| 150' X 200' | 1500-3000 GAL. | 180' X 300' | 4000-5000 GAL. |

Numbers are averages. Footing, drainages and climate will determine proper application for a specific arena.

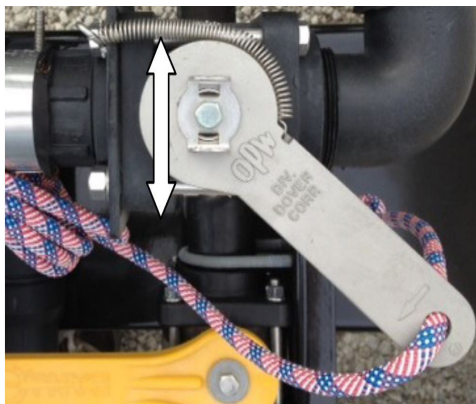
SETUP INSTRUCTIONS



The Ratcheting Valve:

When the ears of the tab on the ratcheting valve are in line with pipe, water will flow to the rear sprayer. When the tab is not in line with the pipe coming from the valve, the sprayer is off. The rope needs to be pulled completely to fully turn the tab on top in order to work. A partial pull will result in partial flow out of the rear sprayers. To reset a partially open ratchet valve, it pull the rope fully again to turn off flow and then re-pull the rope fully to open again.

To ensure the sprayer is "on" make sure the silver "eared" tab is fully in line with the tubing.



To ensure that the sprayers are "off" make sure the silver tab is not in line with the tubing. The tab will run perpendicular to the tubing.

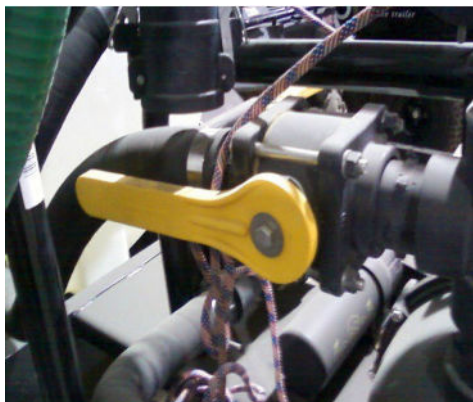
Additional information on proper Ratchet Valve care and use can be found on page 13.



Tank Valve:

(bottom valve in photo)

Crack open this valve when sending water to the sprayers or the fire hose. One way to control the amount of water coming out of the sprayers is by adjusting how far open or closed this valve is. When the valve arm is in line with the valve the water flow is fully open (see photo). When it is not in line with the valve is closed. Crack this valve open when using the optional fire hose, close this valve fully when using the optional pond fill system.



Return Valve:

(right hand side from tractor seat)

This valve allows water to recirculate back into the tank. This valve should be opened just a little when using the sprayers or optional fire hose. Opening fully will reduce the flow of water to the sprayers or optional fire hose, closing will increase water to the sprayers or optional fire hose. For use with the optional pond fill hose this valve must be fully opened to fill the tank.

SETUP INSTRUCTIONS (cont'd)



Sprayer Boom:

The sprayers are able to spray between 8' --21' by setup. You can adjust these by turning the brass heads to cover more area. The 2 outside sprayers can both be shut off to control how much of an area is covered. This also gives you even more control over how much water is applied.



Hose Connector:

This is where the optional hose will connect. In order for the hose to work properly you need to shut off the ratcheting top valve (covered above). Shut off the ratcheting valve, open the tank valve and crack the return valve when using the optional hose.



Pond Fill system:

This optional feature allows you to fill the tank using a pond, river, creek, etc. to operate this attachment you will need to shut off the sprayers, using the ratcheting valve, and open the pond fill valve shown in the picture. Close the tank valve, and you will open the return valve fully. Make sure the pump has been primed and either remove the top fill lid or open it slightly to allow water to fill the tank. You will also need to secure the fill head into a small bucket to help prevent sucking up debris into the hose and tank.

Maintenance

Pump/Motor:

Refer to the manuals provided by the pump and motor manufacturer for maintenance instructions for the respective components. This can be located in the document holder connected to the frame on the front of the Water Trailer.

- Never run the Motor and Pump for long periods of time without water in the system. Operating the Pump and Motor while the system is empty may result in damage to the Pump seals or impeller. When the Water Trailer is empty shut off the Motor to prevent any damage to the Pump and Motor.
- Always use a gas stabilizer in the gas used in the engine for the Water Trailer. Failure to use gas stabilizer in the fuel may result in issues with the engine functionality.
- Always follow Manufacturer suggested maintenance requirements and manufacturer recommendations for any replacement parts.
- Check oil level before any use to ensure the oil level is at proper operational levels. See Manufacturers guide for information on oil types and levels.
- When the motor is not in use, during transport or after operation; make sure to shut off the gas flow to the engine. Information on shutting off the gas flow to the engine can be found in the Motor Manual for the Water Trailer. Failure to shut off gas flow when motor is not in use may result in gas mixing with the oil or may cause damage to the motor carburetor causing the motor not to function.

Lubrication:

The wheel bearings should be packed every 6 months or every 6,000 miles (whichever comes first). Lubrication may be needed more often if the trailer is used in severe conditions. The wheel hubs should be checked regularly for excess heat. Heat buildup is an indication that the bearings need greased and may soon fail. It is imperative that the 5th wheel and pivot pins be lubricated daily in the Hi-Rise trailer front end to prevent premature wear and failure of the pivoting joints.

Cleaning Your Tank for Potable Water Usage:

When cleaning out the tank first drain the system completely. Once the water has been drained out, refill the tank $\frac{3}{4}$ full of non-contaminated water. Add 2 gallons of bleach. Drive tank around briefly to agitate the water around the tank. Then let it soak for a few hours. Drive around again then dispose of water in compliance with local regulations. Rinse out tank.

Winterizing Preparation:

The tank and fittings are susceptible to rupture in freezing conditions if water or other fluids are left in tank or plumbing. To prevent freeze damage, the tank and plumbing should be drained. Remove all the drain plugs from the system allowing the water to drain out including the pump drain plug, and then open valves to allow any of the excess water to drain from the system.

Then run 3-4 gallons of RV antifreeze through entire system - all hoses, nozzles, and pumps. This will lubricate and prevent freezing and breakage. After circulating through pumps, open ratchet valve until the pink antifreeze begins spraying out the back nozzles indicating that it has circulated and the entire system has been properly lubricated.

Leave about 2 gallons of the RV Antifreeze in the tank to store for winter.

*** Failure to properly Winterize/Freeze Protect your Water Trailer may result in damage to the Water Trailer components that may not be covered by Manufacturer Warranty. Be sure to properly flush already winterized units before use.*

Maintenance (cont'd)

Ratcheting Valve Information:

The Ratcheting Valve works on a spring and pin system. The spring located on the outside of the handle returns the handle back to neutral after every pull. Pulling the handle past the designed distance to turn the ball valve may damage the spring. Additionally, the pin on the inside of the handle may become damaged, or the housing around the pin or retainer points may become damaged. ABI advises taking time to familiarize the operator with how to operate the Ratcheting Valve prior to operation. The silver tab on the top of the valve will turn at 90-degree turns indicating that the ball inside the valve has been properly turned.

The Ratcheting Valve handle is bolted to the valve body via a bolt. This bolt should be snug but never tight. If the bolt is tightened down fully it will prevent the spring from pulling the handle back to neutral. If the bolt is too loose then the handle will not turn properly and may cause the pin inside the handle to fall out. The bolt is factory set and should not be adjusted, unless the handle becomes difficult to turn, or is able to be moved up and down when in the neutral position. Any adjustment should be made to allow the handle to move freely front to back without having to be forced.

Electric Brakes :

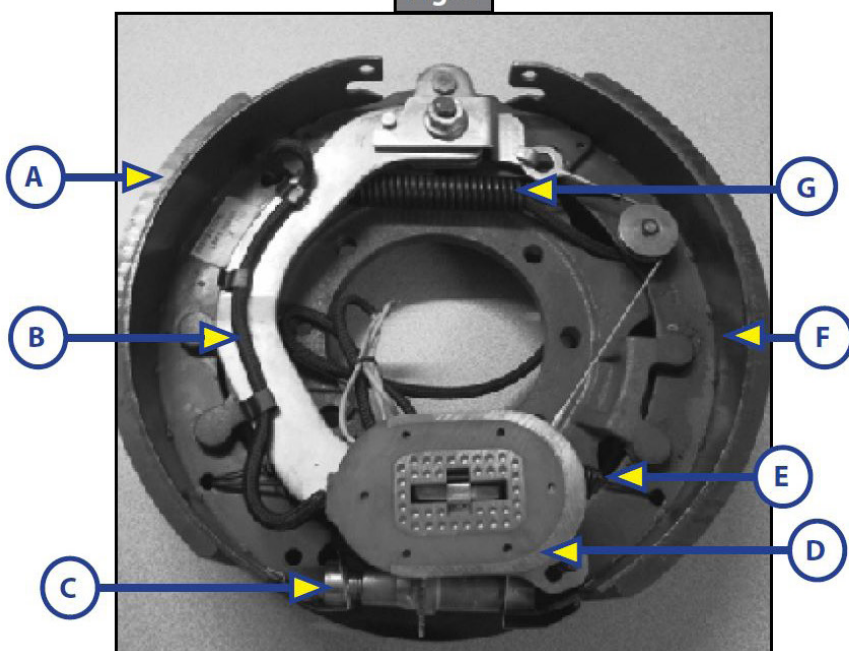
The basic structure of the Electric Brakes on your trailer will resemble the brakes on your car or tow vehicle, with one major difference; your trailer implements an Electric Actuation system and your tow vehicle utilizes a hydraulic system. Refer to the brake components diagram (Fig. 3), the Wiring Diagram (Fig. 13) and Pigtail and Coupler Wiring Color Codes (Fig. 14). The Electric Braking System operates in the following order of steps:

1. Electric current is supplied to the trailer's braking system when the tow vehicle's brakes are applied.
2. From the tow vehicle's battery, the electricity flows to the brake's electromagnet.
3. When energized, the magnets are attracted to the rotating surface of the drums.
4. This moves the actuating levers in the direction the drums are turning.
5. The actuating cam at the end of the shoe forces the primary shoe out to the drum surface.
6. The force of the primary shoe actuates the secondary shoe to contact the drum.
7. The force applied to the brake drum can be increased by elevating the current flow to the magnet.

How to Use Lippert Electric Brakes Properly :

The LCI Electric Braking System is synchronized with the tow vehicle's brakes. Never attempt to stop the combined load of the tow vehicle and the trailer by using either the tow vehicle brakes or the trailer brakes only. They are designed to work together.

Fig. 3



| Brake Components | |
|------------------|-------------------|
| Callout | Description |
| A | Primary Shoe |
| B | Actuating Lever |
| C | Adjuster |
| D | Magnet |
| E | Adjusting Spring |
| F | Secondary Shoe |
| G | Retracting Spring |

Maintenance (cont'd)

Small manual adjustments may occasionally be necessary to accommodate changing loads and driving conditions. Synchronization of the tow vehicle-to-trailer braking can only be accomplished by road testing. Locking up, excessive grab, or delayed application is quite often due to the lack of synchronization between the tow vehicle and the trailer being towed. High voltage (2V+), Low voltage (2V-) or improperly adjusted brakes are the most common causes of these problems and can easily be corrected.

Prior to any adjustments, your trailer brakes should be burnished-in by applying the brakes 20-30 times with a 20 m.p.h. decrease in speed, e.g. 40 m.p.h. to 20 m.p.h. Allow ample time for brakes to cool between application. This allows the brake shoes and magnets to begin seating to the brake drum.

General Maintenance - Electric Brakes

Brake Adjustment :

Prior to testing or adjusting brakes, be sure area is clear of any persons and vehicles. Failure to perform test in a clear area may result in serious injury or death.

Lift the trailer by its frame and never the axle or suspension. Do not go under the trailer unless it is properly supported by jack stands. Unsupported trailers can fall causing serious injury or death.

The LCI Electric Brakes are offered in a manual and automatic adjusting form. If manual brake adjusting is required, do as follows:

1. Jack up trailer and secure on adequate capacity jack stands.
 - A. Follow trailer manufacturer's recommendations for lifting and supporting the trailer.
 - B. Make sure the wheel and drum rotate freely.
2. Remove the adjusting hole cover from the adjusting slot on the bottom of the brake backing plate.
3. With a screwdriver or standard adjusting tool, rotate the starwheel of the adjuster assembly to expand the brake shoes.
 - A. Adjust the brake shoes out until the pressure of the linings against the drum makes the wheel very difficult to turn.
4. Rotate the starwheel in the opposite direction until the wheel turns freely with a slight lining drag, or approximately 10 click adjustments.

Note: A second screwdriver will be needed to push the auto adjusting lever away from the adjuster starwheel so that the starwheel can be rotated backward in the case of a self-adjusting brake.

5. Replace the adjusting hole cover and lower the wheel to the ground.
6. Repeat the above procedure on all brakes.

Note: For best results, the brakes should all be set at the same clearance. If the first brake's clearance was adjusted to 10 clicks, then adjust the remaining brake clearances to the same amount.

Lubricate Brakes :

Prior to reassembling the brake drum assembly, do as follows:

1. Apply a light film of white grease or an anti-seize compound to:
 - A. Follow trailer manufacturer's recommendations for lifting and supporting the trailer.
 - B. Make sure the wheel and drum rotate freely.
 - C. The areas of the backing plate that are in contact with the brake shoes and magnet lever arm,
 - D. And on the actuating block mounted to the actuating arm.

Maintenance (cont'd)

Clean and Inspect Brakes :

In the event the braking system encounters symptoms of improper application or failure, immediate inspection and service **MUST** be implemented. During normal use, servicing the braking system once a year is considered normal. Above normal use will require servicing based on a 3,000-6,000 mile increment schedule. Change worn magnets and shoes as needed to maintain maximum braking capability.

When disassembling the brakes for cleaning, make sure to:

1. Clean the backing plate, magnet arm, magnet and shoes.
2. Make sure all parts removed for cleaning are placed back into the same brake drum assembly.
3. Check for parts that have become loose or worn.
 - A. Service or replace loose or worn parts.

Magnets :

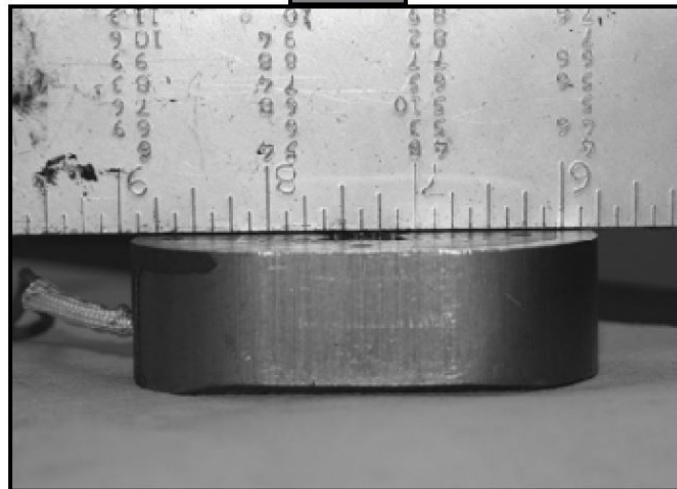
The LCI Electric Braking System uses high-quality electromagnets to actuate the brake shoes. These electromagnets provide superior force and friction to safely, and effectively, stop the trailer. Inspect and service the electromagnets annually if the trailer has seen normal use, more often if the trailer is used extensively. Inspect the electromagnets and do as follows:

1. Use a straight edge to check the electromagnet surface for uneven wear (Fig. 4).

Note: Figure 4 shows an electromagnet with little or no wear.

- A. Surface of electromagnet should be completely flat.
 - B. If abnormal or uneven wear is indicated by pronounced gaps, replace the electromagnet.
2. If the magnet's coil is exposed in any way, even if normal wear is evident, the magnets should be replaced immediately.
 - A. If the electromagnets are replaced, the drum armature surface should be refaced.
 3. If an electromagnet is replaced on one side of an axle, LCI recommends replacing the electromagnet on the opposite brake assembly. This will ensure an even braking capacity.

Fig. 4



Maintenance (cont'd)

Shoes and Linings :

Inspect brake shoes and linings for:

1. Grease or oil.
2. Surface scoring, pitting or gouges.
3. Replace both shoes if lubricant contamination or physical damage is present, even if found on only one shoe.
 - A. Replace both shoes (two) on the brake and on both brakes (four) installed on the same axle. Replace brake parts at the same time. This will ensure an even braking capacity.
4. Measure lining thickness.
 - A. Lining thickness shall not be less than 1/16".
 - I. If lining measures less than 1/16", replace the shoe.
 - II. Repeat step 3.A.
5. Heat cracks are normal and rarely require attention.

After replacing the brake shoes and linings, burnish-in trailer brakes as follows:

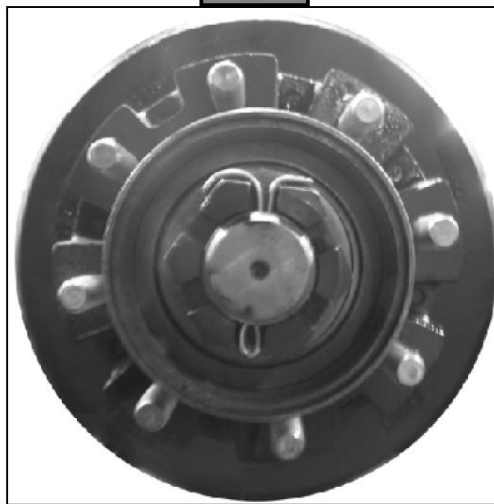
1. Apply the brakes 20-30 times over a 20 m.p.h. decreasing speed range.
 - A. For example, brake 20-30 times while decreasing in speed from 40 m.p.h. to 20 m.p.h.
 - B. Make sure ample time is allowed for brakes to cool between application.
 - I. The cooling period allows the brake shoes and magnets to begin seating to the brake drum.

Hub Replacement :

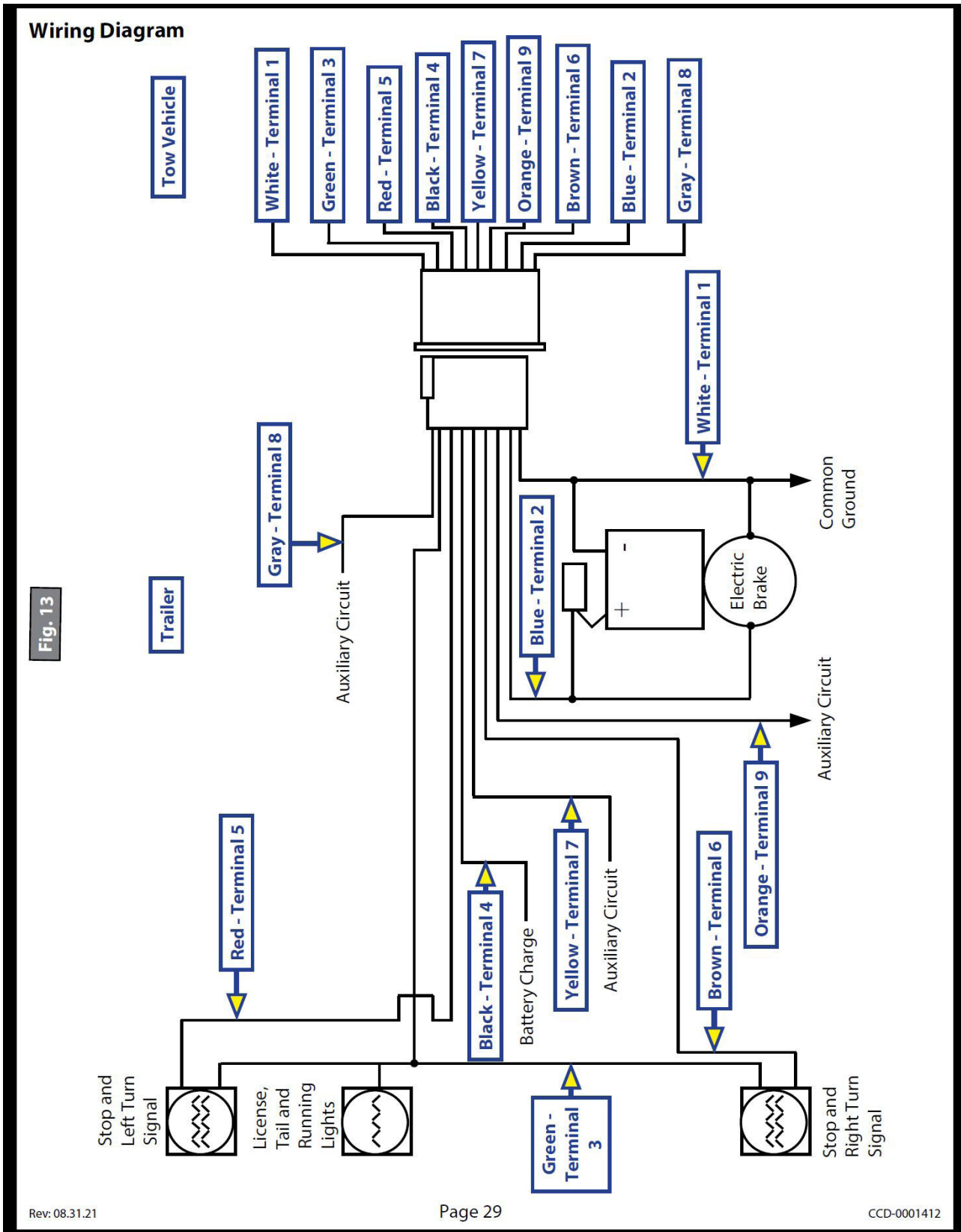
To adjust bearings or replace removed hub, follow procedures below:

1. Place hub, bearing, washers and castle nut back on axle spindle in the reverse order from which they were removed. Castle nut should be torqued to 50 ft.-lbs. Hub will rotate during this process.
2. Loosen castle nut to back off the torque.
3. Tighten castle nut finger tight until snug.
4. Insert cotter pin. If cotter pin does not line up with hole, back castle nut up slightly until pin can be inserted (Fig. 5).
5. Bend cotter pin over to lock nut in place. Nut should be free to move with only the cotter pin keeping it in place.

Fig. 5



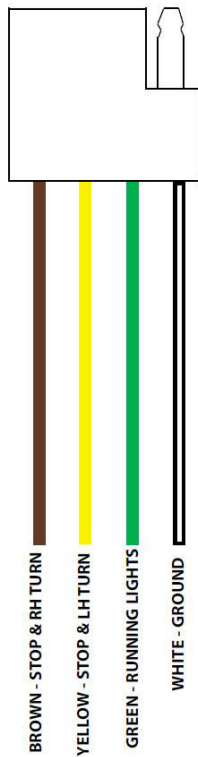
Maintenance (cont'd)



Maintenance (cont'd)

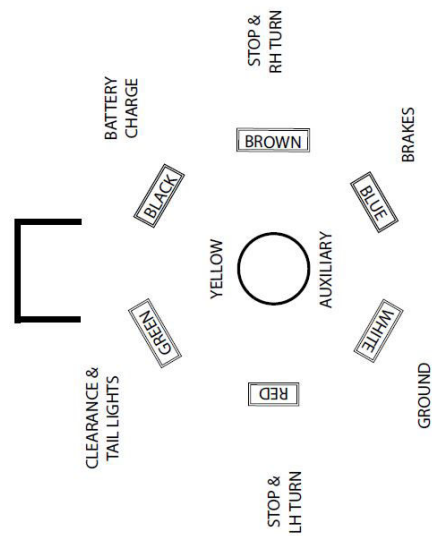
Pigtail and Coupler Wiring Color Codes

Fig. 14

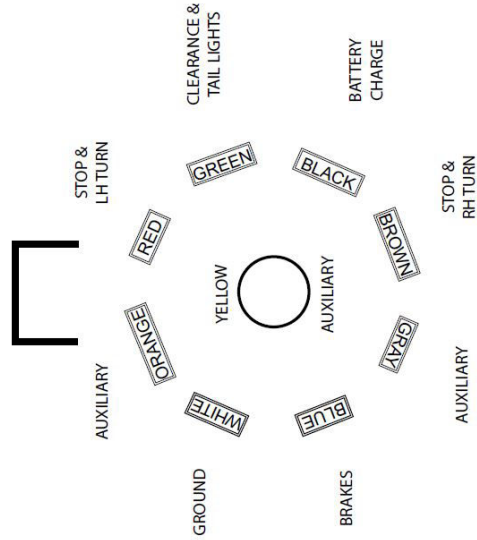


TRAILER LIGHTS PIGTAIL - DOES NOT OPERATE BRAKES

7-PIN COUPLER



9-PIN COUPLER



TRAILER BRAKE AND LIGHT COUPLER - OPERATES BRAKES

Contact Information

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To order parts or to speak to one of ABI's Customer Service Representatives contact us Monday to Friday 9am to 5pm EST.

The setup video for operation is available at abisupport.com under Water Trailers.

For additional information on the use or setup of the Water Trailer, please contact the ABI customer support team at 855.211.0598.

Additional support videos are available at the ABI support page (abisupport.com) under each tool.

Warranty Information and Return Policy - Warranty and return policy information can also be found on the ABI support page under each tool. For additional questions regarding warranty or return policy, contact the ABI customer support team at 855.211.0598.

