

OWNERS MANUAL

# LIVE BOTTOM TRAILERS



GTW-LBT-OM022021

Gincor Trailer Werx is a member of the Gincor Werx group of companies.





An Introduction To

# LIVE BOTTOM TRAILERS



We've been building trailers for 40 years. Our longevity has been fueled by our ability to meet customers demands and to foster a great work environment for our people. Our customers trust us to solve their problems and deliver a premium product.

As a leading manufacturer/up-fitter in aggregate truck and trailers, we are committed to quality workmanship, and consumer satisfaction. By offering a product line that includes various flat deck, step deck, tag-a-long, and live bottom units, we are dedicated to building trailers that are not only suited to your needs but have been engineered with safety, durability, and overall performance in mind.

This manual is intended as an overview of your Gincor Werx Live Bottom trailer for the benefit of the individual operating or maintaining the trailer and as a training guide for those working with or dealing with this product. It includes information on safety, operation, and maintenance, as well as specific live bottom trailer components and schematics. The reference material of this manual is intended to help support keeping your unit running smoothly and efficiently. More specific details can be found in other training/operating manuals available through Gincor Werx. If you ever have any questions or comments please reach out to us and we would be happy to help.







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**GENERAL SAFETY INTRODUCTION**

We are proud to be able to offer you this resource as a basic guide to your Gincor Werx Live Bottom trailer. As an owner or operator, it is important to read and understand the information within this document before operating or maintaining your Gincor Werx Live Bottom trailer. Only competent, responsible, trained individuals should operate this equipment. Anyone who has not read, understood, and been trained to follow safety procedures is not qualified to operate this unit. As an information resource for owners, this manual will provide the foundation for understanding the operation of a Gincor Werx Live Bottom trailer.

Throughout this document you will see the warning signs indicated below. Please pay close attention to the signs and their meaning. Similar indicators can be found on your product and need to be obeyed. These warnings and labels follow ANSI Z535.4 standard and are important to your understanding of the product.

DANGER

This box indicates when serious injury or death may occur if instructions are ignored.

WARNING

This box indicates a hazard that may result in death or serious injury, but where the overall risk is not severe enough for a “Danger” Sign.

CAUTION

This symbol indicates a procedure you must follow exactly or damage to components or equipment may occur. Serious personal injury may also result from failure to follow this procedure.

NOTE

This symbol is used throughout this manual to call attention to operations, procedures and instructions that are important for proper service. It may also indicate information that can make service quicker or easier.



It is important to read and understand the owner's manual before operating or maintaining the trailer. Only trained, responsible individuals should operate this equipment. Anyone who has not read, understood and been trained to follow safety procedures is not qualified to operate this unit.

It is the responsibility of the owner/operator to ensure that anyone working on or near the trailer has been made aware and follows all safety signs and procedures. An untrained individual exposes himself and others to injury or death. Utilize the safety information provided to prevent accidents.

#### The Following Is A List Of General Safety Guidelines:

- Become familiar with all safety signs and practices.
- Wear protective gear such as a hard hat, gloves, non-slip footwear and safety glasses.
- A first aid kit should be available at all times. Ensure that each individual is aware of its location and how to use it.
- A fire extinguisher should be available at all times. Ensure that it is in good working condition and that each

individual is aware of its location and how to use it.

- Never allow riders.
- Do not drink and drive.

#### Operating Safety

It is important to follow these recommended guidelines before beginning to operate the trailer.

- Check that all lights and reflectors are clean, easily visible, and in their proper location.
- Ensure the surrounding area is clear of all

bystanders before starting the truck or operating the trailer.

- Riders should not be allowed on any part of the trailer.
- Be cautious when driving on uneven terrain or during harsh weather conditions.

- Always check load weight. It should not exceed the trailer carrying specifications or legal load.
- Make sure you are in compliance with all local regulations regarding transporting on public roads and highways.
- Watch for large rocks or pieces when loading to prevent damaging gates.
- Trailer should be unloaded and on level terrain before disconnecting from tractor. Trailer wheels should be securely blocked before the landing gear is lowered.
- Trailer must be on level ground before load can be dumped.
- Keep hands, feet, clothing and hair away from all moving parts.
- Proceed with caution when operating discharge gates manually.
- Keep yourself and others at a distance from discharge gate when engine or air system is pressurized. Stay clear during unloading.
- Be certain to remove air and hydraulic lines from truck, exhaust air system before entering trailer.
- King pin and fifth wheel assembly should be maintained to continue smooth operation.

#### Maintenance Safety

Read and understand the maintenance information provided in the owner's manual before adjusting or servicing the trailer.

- Keep service area clean at all times. Use proper lighting when working on the unit.
- Before adjusting, servicing or maintaining the trailer, place all controls in neutral, stop the engine, remove the ignition key and set the park brake.
- Before deactivating spring brakes, block wheels.
- Before working on discharge gate, disconnect air lines, exhaust air system and install safety prop.
- Keep hand clear of chain during operation.
- Ensure fasteners for running gear systems are tightened to their specified torque at all times.

The trailer contains controls and valves used to operate different systems and components. Understanding the information on the hydraulic and air systems would be beneficial to the individual operating the trailer. It is important to know the location of each of the controls as well as how they are used.

#### Hydraulic Controls

The Gincor Trailer Werx Live Bottom Trailer is equipped with a hydraulic system which operates the belt. Pressurized hydraulic oil supplied by the tractor runs through the lines to a series of components that function together to operate the belt. Every Live Bottom is equipped with one of the following controls that allow the hydraulic oil to pass through the components activating the belt.

#### Directional Valve

Your Live Bottom may be equipped with a directional valve mounted on the side of the trailer. (See figure A) It has three positions which move the belt forward, reverse and off. To empty the load, the directional valve must be pushed toward the back of the trailer to the forward position.



Figure A: Manual Directional Valve

**NOTE:** The trailer must not contain more than 1/4 of the maximum load capacity when using the reverse position for the belt. This could cause the chain to dive from the sprockets causing extreme damage.

To position the valve to reverse, push the lever up towards the front of the trailer. The center position on the directional valve will turn the belt off. It is important to turn the belt off while transporting the load or servicing and maintaining the trailer.

#### Pressure Gauge

A pressure gauge is mounted on the manifold (see figure B) to indicate the pressure of the oil flowing through the lines as the belt is running. The pressure needle will show a high psi as the belt initially starts to run. As the load empties, the needle will continuously drop showing a lower psi.

#### Relief Valves

Your trailer may be equipped with a forward and re-verse relief valve mounted on the manifold. The relief valves are a security feature which prevent the hydraulic system from being overloaded. Not all trailers are equipped with a forward or reverse relief valve. Never exceed 2500 psi while running the hydraulic system.



Figure B: Pressure Gauge

It is the responsibility of the driver to keep the pressure below 2500 psi as to not damage the hydraulic system. To change the settings, please refer to the forward and reverse relief valve instructions below.

**NOTE: All truck PTO pumps should be equipped with a relief that should be set at 2500 psi. If the setting is higher it may cause damage to the drive system. If the setting is lower than 2500 psi the belt may not operate.**

Forward Relief Valve

The forward relief valve is located on the rear of the manifold (See Figure D) and should always remain set at 2500 psi. If the settings are incorrect, use a 3/4" wrench to loos-en the jam nut. Insert a 1/4" hex key and turn clockwise to increase, counter-clockwise to decrease. One full turn is about 500psi.

Reverse Relief Valve

The reverse relief valve is located on the side of the manifold (See figure C) and should always remain set at 600 psi. It is the responsibility of the owner/ operator to ensure the belt does not reverse above 600psi. Running the reverse at more than 600 psi will void all warranty and cause severe damage to the system. If the settings are incorrect, adjust in the same manner as the forward relief valve.



Figure D: Forward Relief Valve

The hydraulic fluid in your trailers system can reach 2500 psi. ALWAYS wear safety glasses, gloves and your other personal protection equipment when in proximity of pressurized hydraulic hoses and systems. This high pressure coming through a pin hole can penetrate skin. If you suspect a leak use a soapy water solution or a piece of wood to locate leak. If you suspect a leak or have exceeded the stated maximum pressure, turn the system off and wait for the pressure to a safe level.

Air System

The air system is made up of a series of components that work together to control the brakes, lift axle, gate, and air ride suspension. A switch is located inside the tractor which allows pressurized air to be supplied by the air compressor on the tractor to be stored in air tanks mounted on the trailer. The air tanks release the pressurized air through hoses and air lines at the pressure and speed required by the commanding component.

The control box (see Figure E below) is mounted on the side of the trailer and contains valves to operate the gate lock, gate, lift and/or lift/steer axle and the air ride suspension. Figure F shown below is a diagram of the location of the operating valves inside the control box.



Figure C: Reverse Relief Valve



Figure E: Control Box

End Gate Lock

The gate lock system is a Gincor Trailer Werx feature which ensures there is no possibility that the gate will open under pressure of the load while loading or transport- ing. Pressurized air from the air tanks run through the lines to the gate lock air cylinders, which in turn pulls the gate lock arms against the gate. The gate lock (See figure G) arms are controlled from inside the valve box mounted on the frame of the trailer. To open the gate lock, depress the knob and make a ¼ turn so that the knob stays in the depressed position. Completing another ¼ turn so that the knob pops out and remains out will close the gate arms locking them in place.



Figure G: Gate Lock



Figure F: Control Box diagram

End Gate

The Live Bottom gate is located at the rear of the trailer. It can be closed or opened for transporting or unloading. It is built with bolted on rubber sections that create a tight seal between the belt and the gate, as well as the trailer walls. The gate is controlled from inside the valve box mounted on the frame of the trailer. To open the gate, depress the knob and make a ¼ turn so that the knob stays in the depressed position. This will send air to the cylinders (See Figure H) opening the gate. Completing another ¼ turn so that the knob pops out and remains out will close the gate.

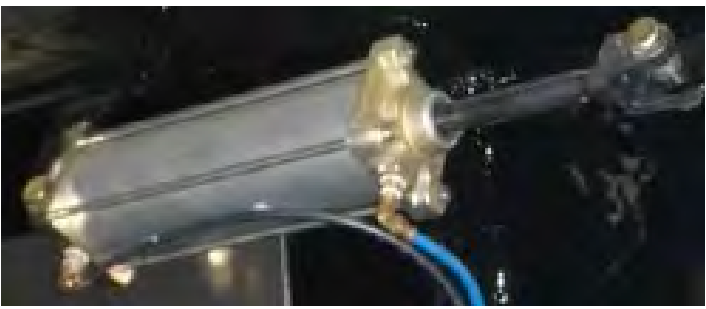


Figure H: Air Cylinder



### Filter

The filter (On left in Figure I) is used to remove moisture and contaminants from the air running through the lines. The pressurized air used by the gate cylinders should be dry to prevent wearing the seals or freezing in cold weather.

When moisture is filtered out of the air lines it is stored in the bottom portion of the filter. The filter is equipped with components to store and release excess moisture, and should be checked daily. There is a sight glass on the front of the filter to check reservoir level. To remove moisture, open the valve on the bottom of the filter.

### Lubricator

The lubricator is necessary to lubricate all internal and moving components by releasing a fine oil mist into the air stream as it moves through the system. It is important to keep oil in the lubricator at all times to prevent seals and gaskets from drying out, and the cylinders to experience excessive wear and fail. See page 14 of this manual for approved additives.

Oil levels should be checked daily using the sight glass on the front of the lubricator. Prior to adding more oil, evacuate the trailer air supply and open the drain valve on the filter. When air there is no air present it is safe to unscrew the bottom and add oil as needed. To release and dispose of excess oil, open the valve located on the bottom of the lubricator.



Figure 1: Air Filter And Lubricator

### Calcium Sprayer System

Your live bottom trailer may be equipped with a release agent system used to spray the inside walls of the cargo area prior to loading your trailer (See figure K). Always wear your personal protection gear when working with our around this system. SAFETY GLASSES are an absolute must!

The system works by using compressed air from your trailer's air reservoir system to pressurize the release agent in the tank. The pressurized liquid runs through the hose and the spray is directed by the triggered gun.

It is important that the calcium tank is not under pressure prior to opening up to plug to add release agent. The pressure is controlled by a regulator located to the left of the air gauge. Pull out slightly and turn knob clockwise to increase pressure and counter-clockwise to decrease pressure. It is normal for air to leak from the regulator after adjusting to lower pressure. A quick opening and closing of the drain valve on the bottom of the air tank will confirm if the tank is still under pressure. It is now safe to open the top plug and add the liquid calcium. Do not fill completely to the top, allow for some air. Close cap tight.

Once tank is filled with calcium you may now adjust the pressure up to create your desired spray force. Set the pressure at 10 psi to check for leaks. Slowly, open the ball valve (turn the handle so the lever is parallel with the air line) to put pressure to the tank. When you are comfortable with that there are no leaks turn up to your desired pressure. Avoid pressure in excess of 100 psi. Shut off ball valve when you are finished use.



Figure K: Calcium Sprayer

### Lift Axle

The lift axle is an optional component and is not included on all Gincor Trailer Werx Live Bottom trailers. When equipped with a lift axle, the axle can be lifted or lowered by pressurized air fed through the lines from the air tanks to the air bags. As the air bags are filled, the axle is lifted. This is beneficial while hauling light loads or an empty trailer to maximize tire life and save fuel. When the trailer is fully loaded it requires all axles to be lowered and fully functional. This distributes the load weight evenly and provides a greater load carrying capacity. The lift axle switch is located in the valve box mounted on the side of the trailer. To lift the axle, depress the knob and make a 1/4 turn so that the knob stays in the depressed position. Complete another 1/4 turn so that the knob pops out and remains out to lower the lift axle.

### Lift Steer Axle

The lift steer axle is also an optional component that is not included on all Gincor Trailer Werx Live Bottoms. The lift steer axle often replaces the front axle on a live bottom. The lift steer axle switch is located in the valve box mounted on the side of the trailer. To lift the steer axle, depress the knob and make a 1/4 turn so that the knob stays in the depressed position. Complete another 1/4 turn so that the knob pops out and remains out to lower the lift steer axle. If your trailer is equipped with a lift steer axle it may also have an optional wheel monitor system. The Electronic control unit requires constant power from the truck. It draws power from the blue wire in the main 7 way. This system will automatically sense backward motion of the vehicle and lift the steer axle. When you travel forward approximately 75' the axle will return to the down position. Notice-backing up with the steer axle in the down position and free to steer may cause damage or premature wear.

### Tank Drain Valve

The air tanks are equipped with a spring loaded valve to release moisture from inside the tank. This valve is connected to a cable (Figure L) that extends out to the frame to allow the moisture to be drained from the tanks. To open the valve, pull on the cable. When the moisture is drained from the tank, the valve will close by releasing the cable.



Figure L: Air Tank Release Cable

### Air Ride Suspension

Air ride suspension is a system in which the trailer load is supported on air bags rather than steel springs. The air bags are filled with pressurized air fed through lines from the air tanks, and controlled by the controls mounted on the side of the trailer. The air ride suspension provides not only a smoother ride but stabilizes the trailer as it is being loaded or unloaded. As the belt releases the load, the weight inside the trailer decreases significantly as well. The suspension levelling valve is provided to control air pressure and adjust the suspension in accordance with the weight of the load. (See "Leveling Valve" in the Service and Maintenance Section for more information.) The control valve for the air ride suspension dump is located inside the valve box on the side of the trailer. To dump the air suspension, depress the knob and make a 1/4 turn so that the knob remains locked in the depressed position. Completing another 1/4 turn will "air up" the trailer suspension system.

Gincor Trailer Werx Trailers are designed to be safe, efficient and with proper maintenance, provide many years of trouble free service. As the owner/operator it is your responsibility to be aware of the weight and loading of the trailer. Please use this operating manual to learn about the trailer equipment and assist you with proper operating procedures.

The break in period is crucial to your trailer's performance. If done correctly, it will ensure a longer life span and can prevent future problems and costly repairs. Check the unit for proper performance of all components and systems, adjusting as required. It is important to inspect the unit frequently during the first 5000 miles as illustrated below. Note: This is only a guideline. The trailer should be checked more frequently when operating in extreme or severe conditions.

#### Inspect at:

50-100 Miles, 1-2 Hours  
500 Miles, 8-10 Hours  
1500 Miles, 25-30 Hours  
5000 Miles, 100 hours:

#### Brakes

The brake shoes will mate with the drum contour and burnish the surface after a few weeks of operation. Unburnished brakes will operate in the upper range of brake adjustment. Manual adjustment of automatic slack adjusters should be limited to brake relines. Over tightening of new brakes will cause premature failure and may cause a fire. The function and adjustment of brakes should be checked every day.

#### Tires

Check that tires are inflated to their specified pressure. Tire bulges on road surfaces suggest low air pressure. When the tire is cold it can be accurately checked and adjusted. Preventing tires from being over or under- inflated will proved extended life and performance.

#### Wheels/Rims

Check wheel nuts are tight. It is common for them to lose some of their torque during the first few miles of trailer operation. Re-torqueing is wheel nuts should be torqued before putting trailer into service.

#### Axles

The axles and bearings will function properly when the wheel bearings are set with the correct end play. Check the hub temperature by hand every few miles during the first trip. If the hub is hot the end play may be too tight and must be reset before continuing.

To check the axles, use a jack to lift the axle up and support it on a stand. NEVER lift a loaded trailer from the middle of the axle. The wheel should turn freely when turning it by hand. If not, check if the bearing end play or if the brakes are dragging. If either of these conditions exist, correct before proceeding. Move the wheel laterally on the axle shaft. If the wheel wobbles, the wheel bearings may be loose. Tighten them before proceeding. Refer to Appendix D for detailed instructions.

#### Hub Oil Levels

The trailer should not be operated without oil in the hubs. Hubs can be checked by looking through the hub cap sight glass when the trailer has been standing on a level surface for 10 minutes or more. Replace seals and gaskets if an oil leak is present. Hub oil level must be checked before putting trailer into service. over or under- inflated will proved extended life and performance.

#### Suspension

The axles are connected to the frame by the suspension system. All fasteners should be maintained to their specified torque to ensure all anchoring and clamping forces remain intact. This will prevent components from shifting or moving and maximize component life and performance. Loosening fasteners can lead to component shifting, twisting and misalignment. Maintain fastener torque to prevent erratic handling, broken components or rapid tire wear. Always tighten the nut end of the fastener as specified torque values apply only to nut end torqueing.

#### Axle Alignment

The axle alignment will normally remain aligned unless the fasteners become loose, components wear, or an impact to the axle occurs. A misaligned axle can cause erratic handling characteristics, broken components, or accelerated tire wear.

#### Fifth Wheel Assembly Components

All components which make up the fifth wheel assembly must be inspected for mechanical integrity. This inspection should include the king pin, anchor plate, and upper and lower fifth wheel assemblies. All components and systems should be kept in good condition. Inspect the king pin for cracks, chips or bends. No cracks should be found between the king pin and its anchor plate. If defects are found, replace the anchor plate and king pin before resuming work.

#### Electrical and Air Lines

Check along all electrical and air lines. Look for any that are pinched, kinked, cut or abraded, especially in more severe operating conditions. If the lines have become unfastened or are sagging away from the frame, secure using hose clips. All lines should be damage free and anchored securely. When components are damaged, do not operate before cleaning and repairing.

#### Planetary Gears

It is important to change the oil in both hydrostatic drive gear boxes after the first 50 hours of operation. The drain plug has a magnetized tip. It is common to have some metal filings in the oil during the first few hours of operation. See page 20 for detailed instructions and lubrication requirements.

#### Chain System

The chain system is the heart of your live bottom trailer. The chain gears, sprockets and hydraulics is what drives the belt system to unload your trailer. During the break in period is the first time all these components have worked together under full load. Checking the belt tension and that the chain is being oiled is critical during the first few hours of operation. See pages 18, 19, 20 for more detailed information.

The maintenance section of this owner's manual provides information on regular service and maintenance of your trailer. Following these recommendations will ensure safe, dependable trailer operation. Always put safety first and be sure all operators are familiar with proper maintenance and operating procedures.

A good maintenance program will find conditions early when they are easily and quickly corrected before they become major problems. Operating your trailer in a defective condition, can lead to serious mechanical problems, create safety hazards for the driver, bystanders or other operators, as well as void warranty.

### Maintenance Safety

It is important to read and understand all the information supplied by this owner's manual in regard to service, adjustment, and maintenance of the trailer.

- Immediately repair or replace broken fittings.
- Remove and clean fittings if they do not take grease. Also clean lubricant passageway. If necessary, replace fitting.
- Before adjusting or servicing the trailer, all controls should be placed in neutral, the engine stopped, the ignition key removed and the park brake set.
- Before de-activating spring brakes, block wheels.

### Fluids and Lubricants

- Use an SAE multi-purpose lithium based grease on all hinges and pivot points.
- For wheel hub oil, use an SAE 80W90 for normal temperature conditions (-10F to 100F)
- For wheel hub oil in hot temperature conditions (100F or hotter) use an SAE 85W140
- For wheel hub oil in cooler temperature conditions (below -10F) use an SAE 30W motor oil
- Capacity for wheel hub oil is 1 pint (500ml)
- Use only clean lubricants to operate your trailer at top efficiency. Lubricants should be stored in clean containers away from dust, moisture and other contaminants.

### Greasing

- A hand held grease gun is recommended for greasing. Air powered greasing systems can lead to early failure by damaging grease seals.
- To avoid injecting dirt and grit, wipe the grease fitting with a clean cloth before greasing.

### Servicing Intervals

A standard servicing schedule is provided as a guide for your convenience. In unusual or extreme operating conditions, increase the frequency or perform additional service items to customize this schedule to your application.

#### 1. Servicing: Daily, 10 hours or 500 Miles

- Drain moisture from air tanks (use cables to open drain valves).
- Check tire air pressure. Add as required.
- Grease top and bottom points on each box cylinder.
- Grease two grease points located behind each box latch.
- Grease fifth wheel.
  - Pivots (2 locations).
  - Surface
- Check truck hydraulic oil level.
- Check for hydraulic leaks on trailer.
- Check and inspect unloading locks.
- Check wheel hub oil levels.

#### 2. Weekly, 10 Days or 5000 Miles

- Re-torque mounting bolts on push block.
- Re-torque the following fasteners:
  - Brake/wheel end system fasteners.

### 3. 10000 Miles (16,000 km) or Monthly

- Re torque landing gear fasteners.

### 4. 25,000 Miles (40,000 km), Quarterly or Every 3 Months

- Inspect the condition of wheel ends. Release brakes, jack up the axle and spin the wheel.

Check:

- Wheel Bearings
- Wobble
- Rims and tires
- Brake drag

- Inspect frame and structure for bends, distortions or cracks.

- Kingpin.
- Fifth wheel and mounts
- Longitudinal and transverse frames.
- Compartment structure
- Suspension system anchorage
- Axles
- Tarp

- Inspect electrical system components for:

- Binding
- Rubbing/abrasion
- Looseness/dangling
- Cracks/tears in harness
- Burned out lights

- Check air system and components for:

- Rubbing/abrading
- Cracked hoses
- Perform leak-down test

- Clean glad hand screens.

- Inspect brake lining thickness, replacing as required.

### 5. 100,000 Miles (160,000 km) or Annually

- Reline brakes as required.
- Change oil in hubs.
- Change planetary oil





\*Use a good quality lithium based extreme pressure grease throughout. MIL-G-25013C in below -40F.  
**NOTE:** Do not use excessive lubricant.

Location	Description	Frequency	Lubricant
Fifth Wheel Coat pivot pins & lock	Coat contact surface	Daily or as needed	Chassis Grease*
Landing Gear	Gearbox & Screws	Periodic basis (semi-annually)	Chassis Grease*
Wheels	Check Oil Level	Daily	
Hubs and wheel bearings	Change Oil	100000M (160000km)	SAE80W90 Gear Oil
Brakes			
Camshaft Bushing	Lubricate	5000M (8000km) or monthly	Chassis Grease*
Slack Adjuster	Lubricate	50000M (80000km) or semi-annually	Chassis Grease*
Brake shoe anchor pin bushing	Lubricate	30000M (50000km) or yearly & during brake replacement	Anti-seize
Planetary oil	Change oil	100000M (160000km)	SAE80W90 Gear Oil

RECOMMENDED TORQUE SPECIFICATIONS  
Air Ride Suspension

Description	Size	Torque – ft-lbs
Quick-align Pivot Bolt	7/8” - 9	475-525
Shock Bolt	3/4” - 10	150 -175
Air Spring Bolt (Lower)	1/2” - 13	25 - 35
Air Spring Nut (Upper)	3/4” - 16	45 - 55
Brake Dust Shield Bolt	5/16” - 18	12 - 15

Spring Ride Suspension

Description	Size	Torque – ft-lbs
Equalizer Shaft (all spread)	1-1/4” Nut	575 - 625
49” Spread	3/4” Cap screw	200 - 225
54” - 65-1/2” Spread	2-1/2” Nut	300 - 325
72” - 109” Spread	1-1/2” Nut	200 - 225
U-Bolt Nuts	5/16” - 18	300 - 325
Torque Arm Bolt Nuts	1”	160 - 200
Torque Arm Clamping Nuts	1/2”	80
	3/4”	175 - 200
Spring Retainer Nuts	1/2”	80



Wheel End Components

Description	Fastener Size	Torque – ft-lbs
Hub-cap bolts	5/16”	10 - 15
Hub fill plug	3/4” Cap screw	15 - 20
Adjustment nut - manual bearing adjustment (double nut) See appendix B for more detailed instructions.	3/8”	Tighten to 100, loosen, tighten to 50, loosen 1/4 turn
Jam nut - manual bearing adjustment		250 - 300
Brake mounting bolt	5/8”	130 - 165
Two piece dust shield bolts (shown)	1”	
Forged spider	3/8”	15 - 20
Bolt-on bushing bolts	3/8”	25 - 35
Cam bushing bolts	3/8”	25 - 35
Air chamber nuts	3/8”	80 - 125

Torque Wheel Nuts to 450-500 ft-lbs

**IMPORTANT:** There is absolutely no substitute for an accurate and frequently calibrated torque wrench to set and maintain a bolted connection. An over tightened bolt will stretch threads and can create unseen fractures within the fastener. These two conditions will lead to a connection failure. Over tightening may also lead to collapsing the material being fastened which will also create a loose connection situation. Maintaining bolt torque is critical.





Prior to Installation:

- A) Chock the vehicle wheels (Block all the wheels to prevent the vehicle from rolling and avoid injury)
- B) Check all foundation brakes. Brake adjuster cannot compensate for problems with foundation brakes. Re-place any worn cam bushing, pins, rollers and brake shoes, or broken return springs.
- C) Fully cage the spring brake, by following the manufacturer’s recommended procedures.

**CAUTION:** Some mechanical caging devices do not fully cage the spring brake. It is recommended to use air at 90 - 100 psi to fully cage the spring brake.

ABA Installation

- 1. Remove the existing brake adjuster and clevis. Keep the existing mounting hardware. Do not remove the clevis jam nut.
- 2. Thread the clevis on to the push rod and install the 1/2” clevis pin into the clevis. Do not tighten jam nut. (See photo A.)
- 3. Slide the installation template over the S-cam spline, swing the template into the clevis until the appropriate slot totally engages the 1/2” clevis pin. (See photo B.)

- 4. Once the template has been swung into place, install the 1/4” clevis pin. If the 1/4” clevis does not slide freely into the clevis and template, remove the template from the clevis. Follow these instructions: (See photo C.)

- A) If the 1/4” template hole sits below the 1/4” clevis hole, rotate the clevis clockwise until the holes align.
- B) If the 1/4” template hole sits about the 1/4” clevis hole, rotate the clevis counterclockwise until the holes align.

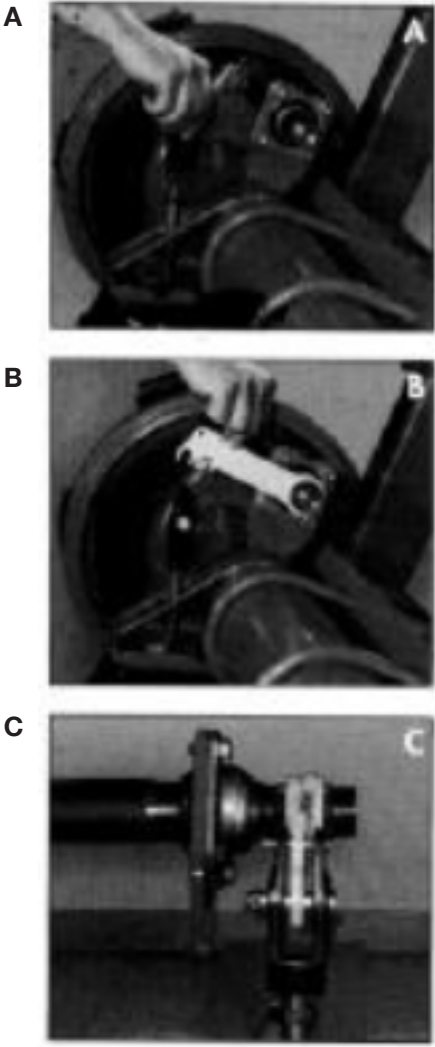
- C) If the push rod threads extend through the clevis more than 1/16”, remove clevis and cut rod to length

- D) A minimum of 1/2” of push rod engagement in the clevis body is required. If this is not the case, install a new push rod and cut rod to length, or use an extended clevis.

- E) Remove the template and both clevis pins.

Maintenance

The ABA should be greased every 6 months or 50,000 miles using a quality NLGI #2 Moly EP Multi-Purpose grease as part of the regular equipment maintenance schedule.



Install the ABA onto the S-cam

- 1. Before installing the ABA, apply anti-seize on the S-cam splines. Install the ABA onto the camshaft using the original mounting hardware. Properly shim the ABA. Place other washers as needed on the end of the camshaft on the outside of the ABA. Re-attach the retaining clip. (See photo D)
- 2. Tighten jam nut to 50 ft-lbs torque minimum.
- 3. Use a 7/16” wrench, manually rotate the adjuster shaft clockwise until the ABA arm holes align with the clevis holes.
- 4. If your slack is equipped with “Auto-check” stroke indicator, do the following:

- A) Insert the 1/2” clevis pin into the yellow “Auto-check” pointer hole. Be sure to use the correct set of holes in the pointer for the ABA you are installing. The clevis pin’s head should face the front of “auto-check”. (See photo E)
- B) “Auto-check” is non-handed and can be installed on either the right or left side of the ABA. “Auto-check” is designed to face the center of the vehicle.
- C) Now insert the 1/4” clevis pin with the “Auto-check” pointer into the clevis and install your cotter pins.

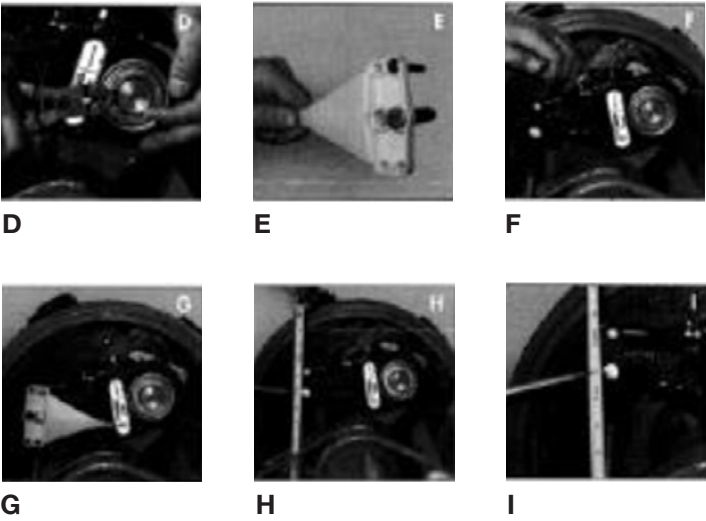
- 5. If your slack is not equipped with “Auto-check” simply install the pins.
- 6. Use a 7/16” wrench, manually rotate the adjuster clockwise until the brake shoes contact the drum. Now back off 1/2 turn counterclockwise to set the clearance. (See photo F)

**WARNING:** If you apply the brakes before this step, you will cause damage to the ABA.

- 7. Uncage the spring brake.
- 8. Build up the vehicle air pressure to 90 psi min.
- 9. Fully apply and release the brakes several times to check for adequate clearance to all the adjacent components.
- 10. The “Auto-check” pointer will now point to the “home” location on the housing. (See photo G). If it does not point to the home position, remove the ABA and reinstall.
- 11. Measure the distance from the air chamber to the center of the 1/2” pin. Apply the brakes with 80-90 psi air pressure and re-measure the distance to the 1/2” pin (See photo H).

- 12. The stroke (difference of these two measurements) must be less than those in the chart below. (See photo I)

**WARNING:** Excessive pushrod stroke or tight running brakes indicates that there is a problem with the foundation brake components, the ABA installation, or the ABA. The proper way of checking an ABA to see if it is working within specs is to measure the pushrod stroke. The only time the ABA should be manually adjusted is during installation or at reline. Constant manual adjustment of the ABA is a dangerous practice and may lead to reduced internal component life, or have other more serious consequences.



Standard Stroke

Chamber Size	Adjuster Stroke
6	1-1/4 or less
9	1-3/8 or less
12	1-3/8 or less
16	1-3/4 or less
20	1-3/4 or less
24	1-3/4 or less
30	2 or less
36	2-1/4 or less

Long Stroke

Chamber Size	Adjuster Stroke
16	2 or less
20	2 or less
24 (below 3” max stroke)	2 or less
24 (3” max stroke version)	2-1/2 or less
30	2-1/2 or less





### Grease Points

The following grease points need to be maintained regularly to keep the trailer in good working condition. All grease points should be inspected monthly. Use an SAE multi-purpose lithium based grease on all grease points. Use only clean lubricants to operate your trailer at top efficiency. Lubricants should be stored in clean containers away from dust, moisture and other contaminants.

### Axles

Every axle includes two cam shafts and two slack adjusters. Grease points are located on each cam shaft (See Figure M) and every slack adjuster (See Figure N). These grease points apply to all standard and lift axles.

### Lift/Steer Axles

If your trailer is equipped with a lift/steer axle, there will be additional grease points to consider. The lift/steer axle includes a tie rod end, slack adjuster, and steering pivot on each axle end, as well as a steering lock-all of which have grease points. Each tie rod end has one grease point. (See Figure O). The slack adjuster shown in (Figure P) has two grease points. Every steering pivot (Figure Q) has two grease points directed at the upper and lower points of the steering pivot. The steering lock (Figure R) is located in the middle of the axle, with one grease point on each side.

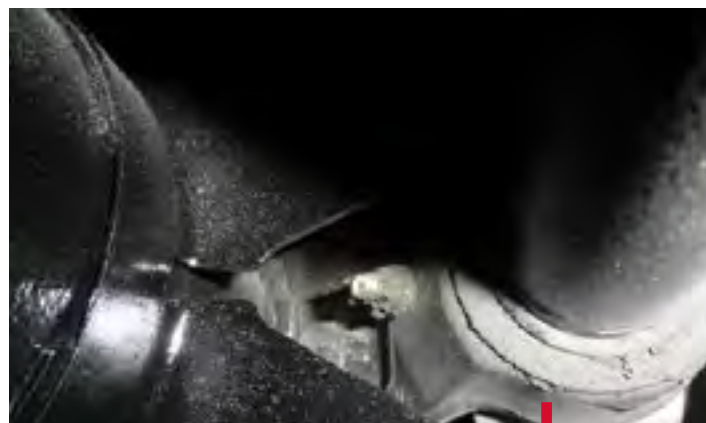


Figure M: Camshaft Grease Point



Figure O: Tie Rod End

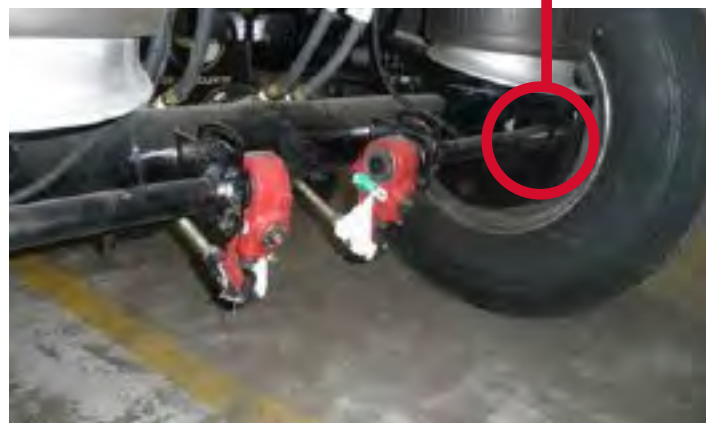


Figure N: Slack Adjuster



Figure P: Slack Adjuster

### Upper Gate Hinges

There is one upper gate hinge located on each side of the trailer. The grease nipple for each of these is located on the bottom of the gate hinge. (See Figure S.)

### Belt Tensioner

The belt tensioners are located on both sides of every trailer. One grease point can be found on each tensioner. (See Figure T.)

### Landing Gear

Two grease points are located on each landing gear. (See Figure U.)

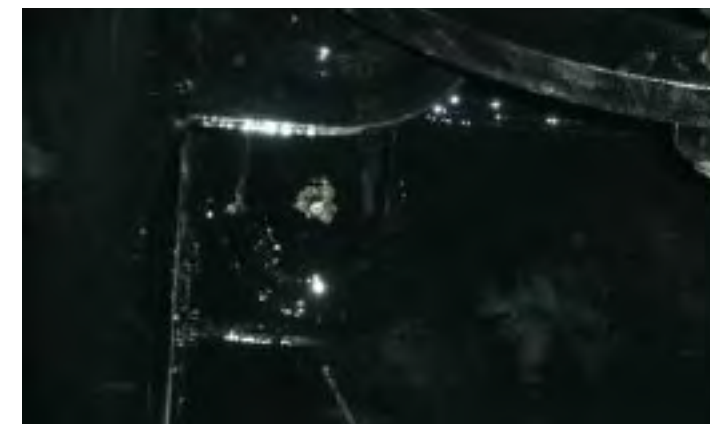


Figure S: Gate Hinge



Figure Q: Steering Pivot



Figure T: Belt Tensioner



Figure R: Steering Lock



Figure U: Landing Gear



### Chain Oiler

Your Gincor Trailer Werx Live Bottom is equipped with two chain oiling brushes. (See Figure Y). These brushes use the oil in the drive system (from the return line) to provide lubrication to the chain of the belt system.

Depending on the vintage of your trailer, these brushes may be located in either the side inspection hatch or at the front of the trailer above the fifth wheel plate.

The rate of flow of oil is determined by the adjustment knob (see Figure X) located at the top of the brush. Turning the knob clockwise will reduce flow of oil while turning it counterclockwise will increase flow.

Over the course of time the height of the brush may need to be adjusted due to wear of the bristles. The brush height can be raised or lowered using the adjusting nuts on the threaded shaft.

The brushes are all equipped with a sight glass which allows you to verify that oil is moving throughout the brush. In addition, proper functioning of the brush can be verified by the presence of oil on the top of the chain as it passes through.

For those models equipped with chain oilers in the inspection hatch, a gap between the top of the chain and the bottom of the brush can also be an indicator of excessive slack in the belt. To correct this, please refer to the “Belt Tensioner” section for tightening procedures.

**Note:** Keeping your chain lubricated may be the most cost saving maintenance you can do on your Live Bottom Trailer. A dry chain will lead to costly repairs. Inspect the chain daily to verify lubrication. If your trailer will be sitting for an extended period of time, apply additional lubrication to chain before and after.



Figure X: Chain Oiler Adjustment Knob



Figure Y: Chain Oiling Brush

### Belt Tensioner

All Gincor Trailer Werx Live Bottom trailers are equipped with a belt tensioning device on either side of the trailer. These devices are made up of a pillow block, a 1 1/4" threaded rod, a tensioning and securing nut. (See Figure Z). The belt tensioning assembly is also equipped with a lock nut threaded onto the end of the threaded rod for safety. The pillow block is attached to the front shaft of the drive system which is connected to the sprockets holding the chain for the belt.

The belt must be tightened regularly to prevent slack. Without tension, the belt will not be properly sealed causing the load to be lost under the trailer. Damage to your drive system can also occur.

To tighten the belt, use a 1 7/8" wrench to screw the tensioning nut towards the rear of the trailer. (See Figure AA.) The nut should be tightened until it becomes difficult to turn further. This will force the pillow block forward creating tension in the belt. Proceed to tighten the tensioning nut on the other side of the trailer to create equal tension on either side. Once completed, check both tensioners to ensure they are as tight as possible. Tighten the second nut on either side to the tensioning nut to secure it in place.

Test the belt tension by pushing up underneath the belt between the first axle and the front shaft. The belt should not lift off more than 1/2" off the track. More tensioning is required if this occurs.

Check the tension on either side of the trailer by measuring the distance from the pillow block to the front of the trailer. Both sides of the drive system must be tightened equally to ensure that the front shaft is running straight. Unequal tension will cause the chain to climb up the sprockets, causing the belt to bind and severe damage to occur.



Figure Z: Belt Tensioner



Figure AA: Tensioner Tightening Nuts





Planetary Gears

Your trailer is equipped with a double reduction planetary gear drive system. The oil in these planetary gears is crucial to the proper function and longevity of these units. Initially the oil in these units needs to be changed after the first 50 hours of use and should subsequently be changed annually. Use extreme pressure lubricant API-GL-5, no. 80 or 90 when filling the Power Wheel under normal temperature ranges between 0 - 120°F (-18 to 49°C). Power Wheel is to be half full of oil when unit is mounted level and horizontal. Use drain and fill plugs located in cover and ring gear. Oil is to be changed after first 50 hours of operation with subsequent changes every 1000 hours or yearly, whichever comes first. If unit is to be operated vertically, if ambient conditions are outside the specified range, or if the oil temperature exceeds 200°F (93°C) contact Auburn Gear for oil and level recommendations.

Storage

A protective film is applied to the Power Wheel at the factory to prevent rust during shipment. Additional protection may be required if the Power Wheel is to be stored for an extended period of time.

Sealing Compound

Silastic RTV732 sealer and General Electric Silimate RTV No. 1473 or RTV No. 1503 are currently recommended for sealing gasket surfaces. Sealant should be applied in a continuous bead, which should be centered on the surface to be sealed but should move to the inside of the hole at each bolt hole location.

Tires

Tires play a large role in the smooth operation of your trailer. They are designed to be used under a specified maximum pressure and load capacity, and must be maintained in good condition to obtain these specifications. Poorly maintained tires can cause rapid wear and tire degradation which could result in tire failure as well as the injury and failure of adjoining components. The rate in which the tires wear down or deteriorate is often an indicator of the condition of the axle alignment or suspension system.

*It is important to follow the provided maintenance procedures to keep you tires working in good condition.*

Tire Inflation Pressure

All tires are designed to perform within a maximum tire inflation pressure. Inflation pressure is measured in pounds per square inch (psi) which is indicated on the side wall of each tire. Operating at an incorrect inflation pressure can cause improper handling and shorten tire life.

Tires should be checked for the correct operating pressure frequently and it is recommended they be checked before operating the trailer each day. It is important to check each tire while it is cold to obtain a more accurate read. Adjusting the pressure on a cold tire will also ensure an accurate inflation pressure. On average, pressure will increase 10-15 psi as the tire heats up with operation. Tires which are over or under inflated, driven too fast, or improperly sized will exceed the normal increase in pressure. Identify the cause of the problem and correct before continuing work.



a) Under inflation

Tire pressure should be checked at the start of each working day with an accurate tire pressure gauge. Check for sudden changes in handling characteristics throughout operation as well. Operating a tire at lower than the specified pressure will increase tread wear and cause the tire body to deteriorate. This deterioration can lead to the tread separating from the tire body.

An under inflated tire is much softer than a properly inflated tire and deflects more than it should. This causes fatigue cracks or breaks in the body cord construction leading to sudden air loss. Operating the trailer with a flat or low tire on a dual will cause the adjacent tire on the axle to become overloaded and fail as well. Friction can also cause heat between both tires causing the under inflated tire to disintegrate or catch on fire.

b) Over Inflation

Serious problems can arise from an over inflated tire. Over inflation causes the tire to become rigid therefore preventing shock absorption from road bumps or pot holes. Higher loads can be transmitted into the rim, wheel and adjacent components causing them to fail as well. An over inflated tire does not increase load carrying capacity and will cut, snag or puncture easily.

Dual Tire Matching and Spacing

To obtain desired performance and tire life, tires must be matched for size and construction. Size is measured by diameter and rolling radius. The following dimensions indicate the maximum difference allowable between two tires. Rolling radius: 1/8" (3mm) Diameter: 1/4" (6mm) Circumference 3/4" (19mm) Check for size variation in tires as they wear. Tires can be measured while mounted, inflated to

the specified pressure and not loaded. Tires that are not within the above dimensions require more of the load to be carried on the larger tire. Overloading will accelerate tire wear and lead to failure, which can cause the remaining tires to be overloaded also. The smaller tire will be unable to properly contact the road surface and will wear irregularly causing poor durability.

Tire Construction

Different types of tires differ in deflection, cornering and spring characteristics therefore it is not recommended to mix different tires on the same axle. The differing characteristics in the tires will cause erratic handling and poor wear.



There are many benefits to keeping your Gincor Trailer Werx trailer clean and your paint fresh. The most obvious reason is usually the enhanced image projected. Your customers and the local DOT associate a clean piece of equipment as well maintained. Frequent washing alone does not constitute a maintenance program, however it's definitely a key starting point.

Dirt and debris can conceal broken or worn parts. Early detection is the key to reducing maintenance cost and reducing down time. The ability to see it, will give you the opportunity make an informed decision on how and when to carry out repairs.

Dirt and other environmental contaminants may also migrate into the mechanical components causing premature wear or even failure. They may also lead to corrosion which may shorten the service life of your trailer.

Clean your Gincor Trailer Werx trailer with water and a mild detergent only. Avoid harsh cleaning chemicals and acids. Use care when using pressurized water in the area of hubs, hydraulic reservoirs and controls. Very hot water may remove paint and warning labels.

If during your inspection you find chipped/missing paint, sand, prime and paint the area to restore the protective layer provided by the factory paint.





**IMPORTANT:** do not overtighten fittings onto the height control valve. Overtightening the fittings may damage the valve body.

#### Valve Mounting/Air Line Attachment

**IMPORTANT:** Before installing the height control valve, please review the drawings in the height control valve kit in order to determine the proper mounting and assembly.

1. When tightening the lock nuts on the height control valve mounting studs, **DO NOT BACK OUT** the studs from the height control valve body.

**IMPORTANT:** Loosening the studs may cause the height control valve to leak.

2. Ports C1 and C2 on the forward and rear face of the height control valve are the suspension ports. Attach the air line(s) from the air springs to the C1 and/or C2 port(s) (Figure 1).
3. When using only one suspension port, plug the unused port with the 1/4-inch NPT pipe plug provided in the height control valve kit.
4. Attach air supply line from the pressure protection valve to the supply port on the top of the height control valve (Figure 1).
5. Install the exhaust fitting into the exhaust port (Figure 1).
6. Tighten all the lines.

#### Ride Height Adjustment

1. Determine recommended ride height by locating and reading the information on the identification tag; it is on the suspension trailing arm.
2. Install the supply and suspension fittings on the height control valve until the distance between the suspension mounting surface and the axle center matches the recommended suspension ride height (Figure 2).

**IMPORTANT:** After setting the ride height, the control arm must remain in the neutral position.

3. Insert the wooden centering dowel into the control arm alignment hole and engage into the housing (Figure 1).

#### Fitting Installation

1. Apply thread sealant onto the fitting threads, unless it is already pre-applied.

**IMPORTANT: DO NOT APPLY TAPE** to the fitting threads; the tape may cause contamination of the air system.

2. Install the supply and suspension fittings on the height control valve.

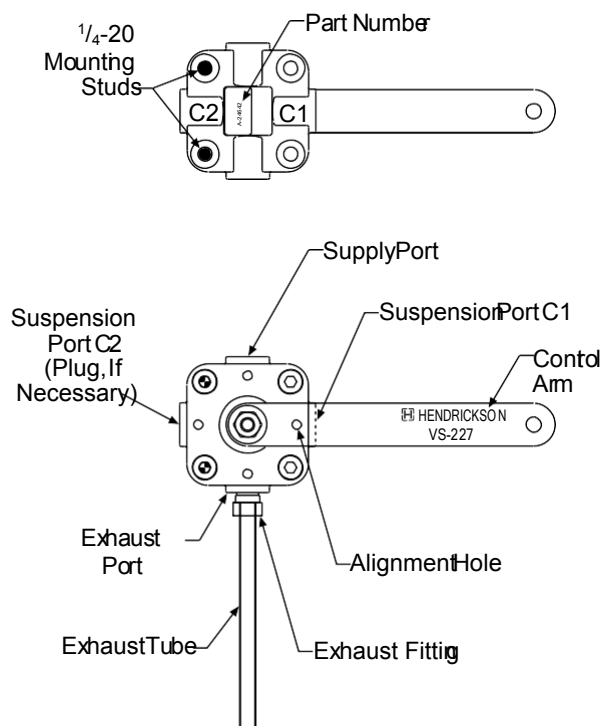


Figure 1. The Hendrickson non-delay height control valve

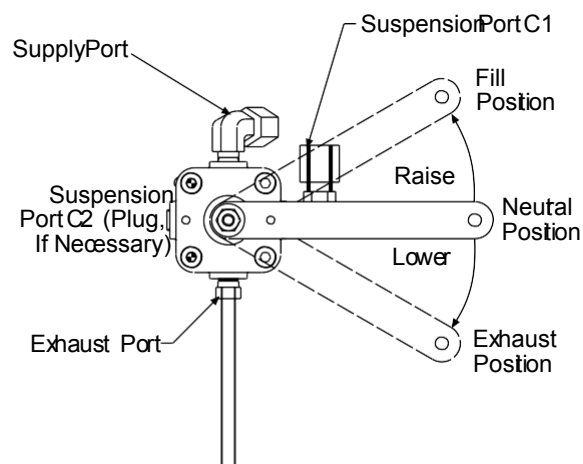


Figure 2. Ride height adjustment

**IMPORTANT:** To install the height control valve link, go to the section covering the style of link — bolted or clamped — on your suspension.

#### Link Installation Bolted-Link Installation

Refer to Figure 4 or 5 for installing the bolted link.

1. Fasten half the link to the height control valve control arm and the other half to the lower mounting bracket with the provided shoulder bolts.



**CAUTION:** Ensure that the links rotate freely and do not bind. Failure of the link to rotate freely about the fastener will result in damage to the link, brackets and/or suspension.



**CAUTION:** Ensure the height control valve linkage is vertical when viewed from the rear of the suspension.

2. Tighten the 1/4-inch locking nut onto the 5/16-inch shoulder bolt until snug.

3. Rotate the halves until they are side by side. Line up the nearest set of holes on both halves. Install the #10-24 screws that are provided in the kit.

4. Remove the wooden centering dowel. Verify the ride height setting.

#### Clamped-Link Installation

Refer to Figure 6 for installing the clamped link.

1. Measure the distance from the center of the control arm mounting hole to the center of the lower mounting bracket hole (Figure 3).

**IMPORTANT:** Check the control arm to ensure that it remains in the neutral position. If it moved, redo the ride height adjustment and re measure the distance from the control arm hole to the bracket hole.

2. Subtract 15/8 inches from the measured distance; cut the rod to the new length.

3. After cutting the rod to length, attach the supplied rubber ends to the rod.

**IMPORTANT:** Push in the rod to the very end of each rubber end prior to securing them.

4. Secure the rubber ends to the rod by tightening the small hose clamps with a screw driver.



**CAUTION:** Ensure ends are secured. Loose ends will slip and allow the suspension to raise or lower beyond the ride height setting. It may cause over height of trailer or suspension damage.



**CAUTION:** Ensure the height control valve linkage is vertical when viewed from the rear of the suspension.

5. Use only the supplied fasteners to attach each end of the link to the mounting holes.



**CAUTION: DO NOT OVERTIGHTEN** the link fasteners. Overtightening the fasteners prevents the link from pivoting freely about the fastener; this condition will result in failure of the link.

6. Remove the wooden centering dowel. Verify the ride height setting.

#### Minor Valve Adjustment

1. If a minor adjustment is necessary, loosen the mounting nuts for the height control valve (HCV).
2. Rotate height control valve clockwise to increase ride height setting and counterclockwise to decrease ride height setting.
3. Retighten the mounting nuts after completing the minor adjustment. Check ride height to ensure it is properly set.

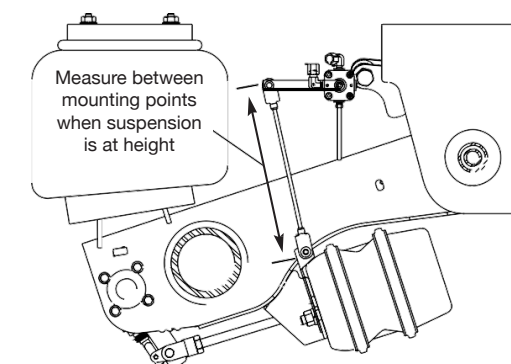


Figure 3. Measurement for fixed clamp installation

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