



# Pit Viper and Super Scrapper Owner's Manual



*Brazos Dump Trailer*

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## **Section 1 – Introduction and Warranty**

### **A Word from the Brazos Trailer Manufacturing Team**

We thank you for choosing a Brazos Trailer. Our Team has worked hard to engineer and deliver a trailer that by design, will prove to be the most dependable heavy-duty trailer on the market. Whether your needs are commercial, industrial, or governmental, be assured that we have the trailer designed to accomplish the task.

The rugged design of the Brazos Trailer will provide you with both reliable structural support, as well as dependable service. Our over land testing assures that each unit meets all design requirements, no matter the environment it is used in. As an example, we are using AR450 steel in the bed of our dump trailers. AR450 is a steel product with an impressive surface hardness. This steel has been specifically designed for use in rugged environments and applications, which promotes longevity in our trailers. We hope that you will use your Brazos Trailer in a safe manner, allowing you to obtain the same results.

Building the Brazos Trailer family of trailers has been exciting for us because we know their capabilities and stand firmly behind their performance. As a commitment to our users, your comments have been reviewed, and many have been incorporated into product design.

Thank you for choosing Brazos Trailer Manufacturing.

## **Warranty**

### **Brazos Trailer Manufacturing, LLC**

#### **Warranty Policy**

Brazos Trailer Manufacturing, LLC. is known for providing exceptional customer service. We focus on acting quickly so you can get your semitrailer back on the road. Your calls are important to us. We guarantee your call will be answered by a human, not a recording, and your problem addressed immediately.

If you have any questions about the condition of your semitrailer, or wish to share any concerns, call us at (430) 540-3400.

The warranty is void for any damage caused by misuse, abuse, neglect, or acts of nature.

The warranty does not cover any defects or costs caused by:

- Misuse and subsequent damage.

Misuse is defined by, but not limited to, the cases described below:

- Modification, alteration, repair or service of this product by anyone other than repair shops approved by Brazos Trailer Manufacturing, LLC.
- Physical abuse to, overload of, or misuse of, the product or operation thereof in a manner contrary to the instructions accompanying the product.
- Any use of the product other than that for which it was designed.
- Failure to comply with care and maintenance instructions accompanying the product.

Brazos Trailer Manufacturing, LLC prides itself on manufacturing the best quality trailers on the market. However, should a problem be encountered, we back our trailers with the best warranty in the industry.

This Limited Warranty does not apply to and does not cover defects in material and workmanship due to or in any way arising out of:

- Failure to properly maintain the Trailer or any other improper maintenance of the Trailer.
- Abnormal use and service, including (without limitation) loading, unloading and/or transportation of non-uniformly distributed loads, use with corrosive cargo, and/or failure to adequately restrain or secure loads such that the Trailer is subjected to strains or impacts greater than are imposed by normal use.

- Total weight of Trailer and cargo exceeding the Gross Vehicle Weight Rating (GVWR) stated on the vehicle identification plate affixed to the Trailer by Brazos or the loading of each axle exceeding the Gross Axle Weight Rating (GAWR) listed on the vehicle identification plate.
- Accidents; Any other misuse or negligence.

In addition, this Limited Warranty does not cover:

- Tires
  - » Except with respect to title
- Used goods sold by Brazos, all of which are sold “as is.”
- Except with respect to title, items or parts not manufactured by Brazos.
  - » Provided, that Brazos will, as an accommodation to First User, pass on to First User any warranty it receives from the manufacturer of such items or parts, but only to the extent allowed by such manufacturer.
  - » Trailers that have been repaired or altered by anyone other than an authorized repair facility approved by Brazos, unless in Brazos’ sole and exclusive judgment, such repairs are in no way responsible for the condition complained of.
  - » Parts that are not defective but that wear out under normal use, such as (but not limited to) light bulbs, electrical receptacles, paint and coatings, brakes, linings, drums and return springs, equalizers, torque rod and camshaft bushings, camshafts, slack adjusters, brake cylinder diaphragms, springs, slider pads, wheel bearings, oil and oil seals, rim clamps and studs, gaskets and sealers, and all types of floors and floorboards.

If First User notifies Brazos in writing within the applicable warranty period of a defect in the Trailer and Brazos determines, after such tests and/or inspections as Brazos deems appropriate, that such Trailer or part is not in conformity with this Limited Warranty, Brazos will repair or replace, at its sole option, such defective Trailer or part, provided First User returns such Trailer or part to such repair facility as may be designated by Brazos, freight prepaid. No Trailer or part shall be returned without Brazos’ prior approval. This shall be First User’s exclusive remedy for Brazos’ liability hereunder. Any claims not made within the applicable warranty period are deemed waived by First User. In lieu of repairing or replacing the defective Trailer or part, Brazos may, at its sole option, refund the purchase price of such Trailer or part.

**THIS IS BRAZOS’ ONLY WARRANTY. BRAZOS MAKES NO OTHER WARRANTY OF ANY KIND WHATSOEVER, EXPRESS OR IMPLIED. ALL**

IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED BY BRAZOS AND EXCLUDED. Brazos' liability to First User, or anyone claiming through or on behalf of First User, with respect to any claim or loss arising out of the Trailer or alleged to have resulted from an act or omission of Brazos, whether negligent or otherwise, and whether in tort, contract, or otherwise, including failure to deliver, delay in delivery, or breach of warranty, shall be limited to an amount equal to the purchase price of the Trailer or part with respect to which such liability is claimed or, where appropriate and at the option of Brazos, to repair or replacement of the Trailer or part. In no event shall Brazos be liable for any bodily injury, death, or property damage resulting from or in any way arising out of the Trailer or its sale, use, or manufacture or for any cargo loss or loss of use. Brazos is not responsible for any financial loss due to lack of use of the Trailer or any expenses arising therefrom, including but not limited to lodging, fuel, towing, loss of revenue and other expenses or damages.

IN NO EVENT SHALL BRAZOS BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSSES, OR EXPENSES. This Limited Warranty may not be changed except in writing by an authorized officer of Brazos. THE PROVISIONS OF THIS LIMITED WARRANTY SHALL BE INTERPRETED AND GOVERNED UNDER THE LAWS OF THE STATE OF TEXAS. This Limited Warranty gives you specific rights, and you may also have other rights that vary from state to state.

The maximum load indicated on the VIN plate may or may not be a legal load on the highway you plan to use.

The cargo should be properly loaded, blocked and braced to prevent load shifts and to comply with the following sections of the Department of Transportation Regulations, Subpart 1 –

Protection against Shifting and Falling Cargo:

- Section 393.100 – General rules for protection against shifting or falling cargo.
- Section 393.102 – Securement systems. To properly secure cargo, it is important that the working load limits of the tie-downs be known, as well as the working load limits of the anchor points.
- Section 393.104 – Blocking and Bracing.
- Section 393.106 – Front-end structure. Your trailer may or may not be equipped with a “rated” bulkhead. It is your responsibility to ensure compliance with 393.106.

Beginning March 1, 1998, all trailers are required by law to have anti-lock brake systems on at least one axle per FMVSS-121 (49CFR 571.121). A “4S-2M” system means there are 4 sensors and 2 modulator valves controlling the axles, while a “2S-1M” system is 2 sensors and 1 modulator valve. Refer to the manufacturer of the ABS system for specific information on the various components.

Brazos Trailer Manufacturing's full Warranty is as follows:



## LIMITED WARRANTY

Brazos Trailer Manufacturing LLC. (“Manufacturer”) warrants to the original consumer purchaser that the trailer produced by the Manufacturer (the “Product”) will be free from defects in material and workmanship for a period of one year, except as herein limited, from the date of the first retail purchase, provided all stated conditions and exclusions are satisfied. This warranty is limited to the first retail purchaser and it is not transferable.

Manufacturer’s sole obligation under this limited warranty is to repair or replace, at its option, any part or component of the Product that was furnished and installed by Manufacturer and that proves defective in material and /or workmanship during the first year following the date of delivery to the Purchaser. Such repair or replacement will be performed by Manufacturer or, with Manufacturer’s prior express authorization, at a repair facility designated or approved by Manufacturer. **Manufacturer assumes no responsibility to reimburse Purchaser or pay for repairs made without Manufacturer’s prior express authorization or at repair facilities not designated or approved by Manufacturer.**

### Return Warranty Card for Coverage

The original purchaser must complete and return the warranty card provided with the product to the Manufacturer within 30 days of purchase or this Limited Warranty will be null and void. In addition to validating your warranty coverage, returning the registration card will allow Manufacturer to provide you with notice of any condition Manufacturer may need to supply after you have purchased the product.

### Action Required in the Event of a Defect

For Warranty coverage, you must immediately contact the dealer from which your unit was purchased to make a warranty claim. The dealer that sold you the trailer will initiate the claims process in order to obtain approval for warranty work. Prior to warranty repairs, dealer must verify unit number, purchase date, and original ownership. The dealer must obtain an authorization from the manufacturer prior to repair of the trailer. Also, please be advised, some parts or accessories may need to be replaced by third party suppliers, and in some cases the defective part may need to be returned for reimbursement or inspection.

**You must pay all incidental expenses incurred in obtaining warranty service, including, without limitation, transportation of the product and delivery charges to and from the dealer or manufacturer.**

### Items Excluded From Warranty

1. Damage or deterioration due to normal wear and tear, salt, road grime, application of or exposure to corrosive chemicals or other corrosive materials (including without limitation magnesium chloride or calcium chloride) or arising from an accident or use of the product.
2. Defects arising from operator’s negligence, misuse, abuse, loading the unit beyond its gross weight limitations, improper loading, accidents, acts of God, improper connection or disconnection from/to trailer, or other contingencies beyond the control of Manufacturer.
3. Repairs made necessary by reason of failure to follow ordinary and customary maintenance procedures, including procedures recommended by manufacturer or component manufacturers.
4. Repairs made necessary by reason of repairs or alterations or installation of aftermarket accessories not performed by Manufacturer.
5. Paint (Surface corrosion caused from stone chips, scratches, removal of decals, reverse impact or similar surface damage.)
6. Tarp System other than electric motor (Arms, Axle, Springs, Pins, Mesh material)
7. Tires

**DISCLAIMER OF IMPLIED WARRANTIES AND LIMITATION OF DAMAGES**

**ANY EXPRESS OR IMPLIED WARRANTY NOT PROVIDED HEREIN, INCLUDING WITHOUT IMPLIED LIMITATION, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND ANY REMEDY FOR BREACH OF CONTRACT, WHICH BUT FOR THIS PROVISION MIGHT ARISE BY IMPLICATION OR OPERATION OF LAW, ARE HEREBY EXCLUDED AND DISCLAIMED. IF THEY CANNOT BE DISCLAIMED, ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE ARE EXPRESSLY LIMITED TO THE ONE YEAR TERM.**

**UNDER NO CIRCUMSTANCES SHALL MANUFACTURER BE LIABLE TO PURCHASER OR ANY OTHER PERSON FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER ARISING OUT OF BREACH OF WARRANTY, BREACH OF CONTRACT, TORT, OR OTHERWISE. SUCH DAMAGES INCLUDE, BUT ARE NOT LIMITED TO, TRANSPORTATION TO AND FROM THE DEALER OR MANUFACTURER TO GET WARRANTY SERVICE, LOSS OF TIME, LOSS OF USE, LOSS OF REVENUES, SALARIES OR COMMISSIONS, LODGING, TOWING CHARGES, BUS FARES, CAR RENTALS, GASOLINE EXPENSE, TELEPHONE CHARGES, INCONVENIENCE, AND THE COST OF REPAIRING OR REPLACING OTHER PROPERTY WHICH IS DAMAGED BECAUSE OF A DEFECT IN THE PRODUCT. MANUFACTURER IS NOT RESPONSIBLE FOR ANY DOWN TIME, LOST PROFITS, PUNITIVE, INDIRECT OR DIRECT DAMAGES ARISING FROM THE TIME ASSOCIATED WITH PAINT OR OTHER REPAIRS. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES SO THE PRECEDING LIMITATION MAY NOT APPLY TO YOU.**

**NOTWITHSTANDING ANYTHING TO THE CONTRARY HEREIN, THIS LIMITED WARRANTY IS LIMITED TO REPAIR OR REPLACEMENT AND IF SUCH WARRANTY FAILS BECAUSE ATTEMPTS AT REPAIR ARE NOT COMPLETED WITHIN A REASONABLE TIME, OR IT FAILS FOR ANY OTHER REASON, ANY DAMAGES ARE LIMITED TO THE LESSOR OF THE EITHER THE COST OF NEEDED REPAIRS OR REDUCTION IN THE MARKET VALUE OF THE TRAILER CAUSED BY THE LACK OF REPAIRS, IN ANY CASE.**

No dealer, distributor, agent, representative of Manufacturer, or other person is authorized to make any representation or a promise of warranty concerning Manufacturer's products on behalf of the manufacturer except to refer the purchaser to this Limited Warranty.

**Legal Remedies of Purchaser**

This warranty provides specific legal rights. You may have additional rights not included in this warranty which vary from state to state. No Action to enforce this warranty shall begin more than six months after a defect is discovered and shall not commence after expiration of the stated warranty period.

## **Introduction**

Congratulations on purchasing your new Brazos Trailers Heavy Duty Trailer. We have developed this manual to assist you in understanding the proper and safe use, operation, and care of the trailer.

It is the operator's first responsibility to take the time to read and understand the contents of this manual and become completely familiar with your responsibilities, equipment controls and their functions, and the safety features prior to operation.

Included in this manual is specific information on all major components such as the frame style, trailer body and operator's controls, in addition to maintenance and servicing recommendations. Suppliers of components not provided by Brazos Trailers may have their own operator, maintenance, and warranty manuals and service procedures concerning maintenance, service, and care. Be sure to read this information completely and follow their directions.

### **NOTICE**

The illustrations and components provided in this manual may be slightly different than which is installed on your model. Contact Brazos Trailers for model specific information concerning optional equipment installed by Brazos Trailers.

## **Owner Responsibilities**

The complete family of Brazos Trailers are classified as heavy duty over the road construction trailers. Therefore, each trailer must be registered. Check with your State for specific requirements.

## **Important Numbers and Warning Labels**

The identification numbers of the trailer and component systems are important and should be kept in a safe place. Record the serial numbers, model, and registration numbers immediately after purchase for future reference. You will need to report these numbers to the authorities in case of theft, fire damage, etc.

## **Warning Labels**

There are warning labels or decals located at various locations on the trailer. Take notice of these warning labels and follow the recommended precautions and procedures noted on the labels.

## **Warranty Registration**

Upon purchase of your Brazos Trailer, all identifying numbers will be on file with Brazos Trailers.

### Vehicle Identification Number

The VIN (Vehicle Identification Number) tag is located above the king pin (Figure 1-1). The VIN tag must be clearly visible at all times and must not be altered, removed, or tampered with in any way. You will need to know the VIN for any warranty questions or future transactions.



<b>MFD BY: BRAZOS TRAILER MANUFACTURING</b>			<b>DATE OF MFG: XX/2021</b>	
<b>GVWR: 34019 KG (75000 LB)</b>				
	<b>GAWR</b>	<b>WITH TIRES</b>	<b>RIMS AT</b>	<b>COLD</b>
<b>FRONT</b>	<b>11340 KG (25000 LB)</b>	<b>11R24.5</b>	<b>8.25X24.5</b>	<b>827 KPA (120 PSI) DUAL</b>
<b>1ST INNER</b>				
<b>2ND INNER</b>				
<b>REAR</b>	<b>11340 KG (25000 LB)</b>	<b>11R24.5</b>	<b>8.25X24.5</b>	<b>827 KPA (120 PSI) DUAL</b>

**THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE**

**V.I.N. 4B9BKDG26MH054434**                      **TYPE: TRAILER**                      **BRAZ32X48PV**

Figure 1-1 – VIN Tag Location

### **General Information**

Operator and passenger education, along with proper care of your trailer, is essential to ensure that your use of this trailer will be safe and productive. In this manual we will suggest safe operating techniques, describe all components, controls and their functions, and basic maintenance procedures for the Brazos Trailer.

#### **WARNING**

**Failure to require compliance with all safety precautions related to misuse, overloading, and wearing of required personal safety equipment at all times, can result in serious bodily injury and even death.**

A pre-operation trailer inspection should be the first daily safety procedure. This procedure will make sure the trailer, and all approved options and attachments, are in safe operational and ready condition. For assistance, in conducting this pre-operation inspection, refer to the Pre-start Trailer Inspection information in this manual, as well as using the Brazos Trailer inspection sheet that will assist you in making sure the Brazos Trailer is safely service ready.

Before operating the Brazos Trailer, it is mandatory that the operator fully read and understand the operator's manual to become familiar with all controls, their functions, and the safety features of the Brazos Trailer.

It is extremely important that first time operators find a smooth, spacious area with no obstacles, (buildings, ditches, trees, overhead obstructions, etc.) to allow the operator to become completely familiar with the operation of all Brazos Trailer controls and functions including starting, stopping, braking, turning and elevating the trailer body before putting the trailer into a working environment.

### **Basic Safety Recommendations:**

- Before beginning trailer operation, make sure that each operator reads and understands the safety instructions presented in the Safety Section of this manual.
- Before beginning trailer operation, make sure that each operator reads and understands the instructions presented in the Operating Instructions Section of this manual.
- Make sure all gear is properly stowed and secured before moving the trailer.
- Always make sure the hydraulic controls are in the neutral position (disengaged) before attempting to start the tractor engine.
- Make sure everyone is a safe distance away from the trailer when starting or when attempting to operate the trailer. Pay special attention to the rear area when starting or operating the trailer.
- No one under the age of twenty-one (21) should be allowed to operate the trailer. The operator must also hold a valid Driver's License and CDL, with the appropriate endorsements for the state where the trailer will be operated.

## Section 2 – Safety

### Safety Introduction

Following the safety guidelines set forth in this manual will assist you in safely operating, maintaining, and servicing your Brazos Trailer. Before operating the Brazos Trailer check the regulations, restrictions and safe guards for the area. Contact your local authorities for any information pertaining to the area where you will be operating.

#### Be Prepared - Get to Know All Operating and Safety Instructions

This is the Safety Alert Symbol.



Wherever it appears, either in this manual or on safety signs on the trailer, you should be alert to the potential for personal injury or accidents. Always observe safety precautions and follow recommended procedures.

#### Learn the Signal Words Used with the Safety Alert Symbol

The words “**DANGER**”, “**WARNING**”, and “**CAUTION**” are used throughout this manual, and on labels on the trailer to indicate hazards or unsafe practices. All three statements indicate that safety is involved. Observe the precautions indicated whenever you see the Safety Alert symbol no matter which signal word appears next to the Safety Alert symbol.

#### **DANGER**

**DANGER INDICATES A HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY.**

#### **WARNING**

**WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.**

#### **CAUTION**

**CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.**

#### **NOTICE**

**NOTICE is used to address practices not related to personal injury. This type of statement is used to draw attention to a procedure that needs to be followed to prevent machine damage.**

### Safety Precautions

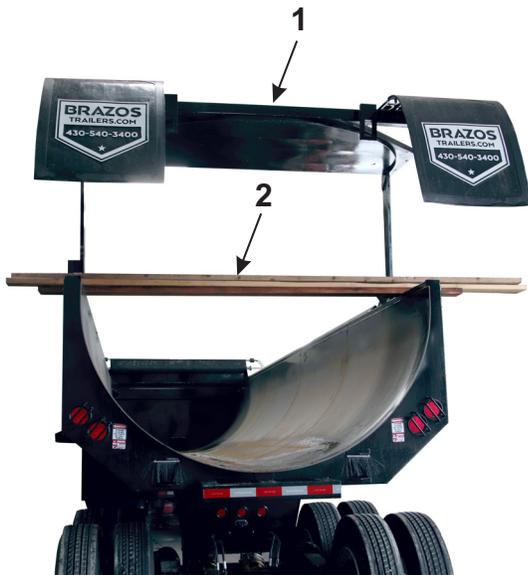
Since Brazos Trailer Inc. has no direct control over trailer application or operation, following the proper safety practices is the responsibility of the owner and/or operator. Remember that this trailer is only as safe as those who operate it. Safety tips shown throughout this Operator’s Manual must be followed at all times.

#### **NOTICE**

The illustrations and components provided in this manual may be slightly different than what is installed on your model. Contact Brazos Trailer for unit specific information concerning optional equipment installed at the factory.

**⚠ DANGER**

**CRUSH HAZARD. NEVER ENTER THE SEMITRAILER BODY IF THE TAILGATE IS RAISED. TO WORK IN THE SEMITRAILER BODY WITH THE TAILGATE RAISED, FULLY RAISE THE TAILGATE (1, **Figure 2-1**), INSERT WOODEN BLOCKING ACROSS THE ENTIRE TOP OF THE SEMITRAILER (2, **Figure 2-1**). LOWER THE TAILGATE UNTIL THE ARMS (1, **Figure 2-2**) ARE SUPPORTED BY THE WOODEN BLOCKING (2, **Figure 2-2**), SECURING THE TAILGATE IN AN OPEN POSITION.**



**Figure 2-1 – Tailgate Raised**



**Figure 2-2 – Tailgate Lowered onto  
Wooden Blocking**

### General Safety

- Never operate the Brazos Trailer without first completely reading and understanding this Owner's Manual.
- No one under the age of twenty one (21) should be allowed to operate the trailer. The operator must also hold a valid Driver's License and CDL with the appropriate endorsements for the state where the trailer will be operated.
- Never operate the trailer under the influence of alcohol, awareness altering drugs, or medications that would affect your ability to operate safely.
- Keep children clear from the work site area at all times.
- Never allow a child to operate the trailer.
- Serious injury or death involving children can occur. Stay alert and be aware of your surroundings at all times. Stop operations if children wander onto the job site. Resume work only when the operating area is clear.
- Keep all non-operating personnel away from the trailer during operation.
- Make sure all gear is properly stowed and secured before operation.
- Wearing protective clothing and gear, such as hard hats, safety glasses, safety shoes, hearing protection, breathing protection, and long pants and shirts when working is highly recommended. Do not operate in clothing or shoes which will expose skin or feet to possible flying debris.
- Clothing should be relatively close fitting. Loose clothing, long hair, rings, and other jewelry should be avoided because of the danger of catching them on trailer parts or controls, or on any moving parts, either on the trailer or any attachment.
- Keep hands/fingers clear from all moving parts.
- Never touch trailer components while they are hot.
- Use only original Brazos Trailer or approved replacement parts and attachments. Imitation parts may lead to unit damage and/or injury to personnel. The trailers' warranty may be voided if unauthorized parts and attachments are used.

## Operating Safety

### WARNING

If the following operational requirements are not properly followed, serious injury can occur.

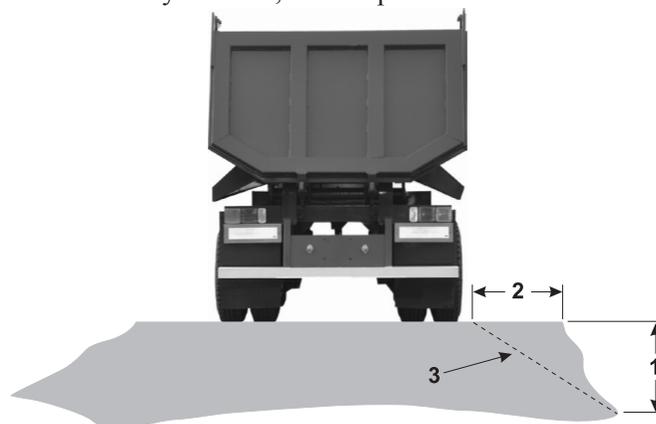
- Plan ahead and learn as much as possible about your job-site area before beginning any work.
- Know the exact location of overhead power lines or obstructions.
- Prior to use, perform the Pre-Start Trailer Inspection and Daily Trailer Maintenance to make sure that the trailer is in safe operating condition. Use the Pre-Start Trailer Inspection checklist in this manual as a guide.
- Never operate a malfunctioning trailer.
- If the amber ABS light (1, [Figure 2-3](#)) located on the driver's side rear trailer frame turns on, immediately have the trailer brake system serviced. NOTE: The ABS light has been located so that the operator can see the light easier when connecting the electrical cabling and while driving.



**Figure 2-3 – Trailer ABS Light**

- Keep hands, gloves, shoes, control knobs, and tractor operator cab clean. Slippery controls can cause you to lose control, which may result in an accident.
- Make sure to remain seated in the tractor cab seat, with the seat belt fastened at all times during trailer operation.
- When working on an unfamiliar site, review, understand and follow job site safety rules.
- Keep the work site clear of all non-operating personnel. Should a non-authorized person enter the work area, stop trailer operation until the work area is clear.
- Prior to unloading the trailer, inspect the path you will travel and work site area for potential hazards, including but not limited to firm solid roadways and stable and level soil conditions at the dump site.

- If any of these conditions exist, correct the hazard or obstruction before entering the site. If any of these conditions cannot be corrected, avoid operating on them or traveling near them.
- Be extremely cautious traveling through or near trees, brush, shrubs or any obstacles which might obscure your vision. These might hide potential hazards, such as the edge of a steep slope, deep holes, large rocks, etc.
- Be extremely cautious when operating near a ditch or embankment where loose or soft ground conditions could cause the surface to give way under the trailer, causing it to become unstable. If there is a drop off along the edge of the roadway (1, [Figure 2-4](#)), a shear line can be created (3, [Figure 2-4](#)). The shear line is the distance from the drop off into the roadway, equal to the depth of the drop off (2, [Figure 2-4](#)) i.e. a 6 foot drop off requires driving no closer than 6 feet from the edge of the roadway. Increased ground pressure caused by the loaded trailer can cause the roadway to shear, or collapse under the trailer.



**Figure 2-4 – Road Edge Shear**

- Never exceed the rated capacity of the trailer. Trailer specifications can be found in the Operator's Manual.
- Never attempt to operate any attachment (flip tarp, etc.) without first understanding proper installation and operating procedures.
- Operate all controls slowly and smoothly and never abruptly stop any function. This can cause the trailer to become unstable.
- Always look in the direction of travel.
- Come to a complete stop prior to changing travel directions.
- Reduce speed and proceed with caution when traveling in reverse or turning.
- Approach corners slowly, turning too fast or sharply may cause loss of trailer control.
- If the trailer is involved in an accident, or inadvertently damaged during operation, stop and

## Brazos Dump Trailer

perform a thorough inspection. Make sure the trailer is in safe operating condition prior to resuming work.

- Be alert to any unusual reaction to any of the controls. If anything unusual is noticed, shut the trailer down and thoroughly inspect it to determine the cause of the problem. Do not operate the trailer until all required repairs have been made.
- If the tractor and trailer must be left unattended, set all brake systems, shut the tractor engine down and remove the key, and make sure that the tractor cannot be started by an unauthorized individual.
- When the trailer is being loaded, make sure that the load is as evenly distributed as possible.
- When dumping the trailer load, make sure the dump area is as level and solid as possible, and that the tractor and trailer are in as straight a line as possible.
- When raising the trailer bed for dumping, make sure that the center of gravity (3, Figure 2-5) stays directly over the centerline of the trailer (1, Figure 2-5). If the dump area or the position of the trailer is not level (4, Figure 2-5), the higher the trailer bed is raised, the farther the center of gravity (5, Figure 2-5) moves away from the centerline of the trailer (1, Figure 2-5). As the center of gravity moves towards the outside of the trailer, the greater the chance of the trailer rolling over.

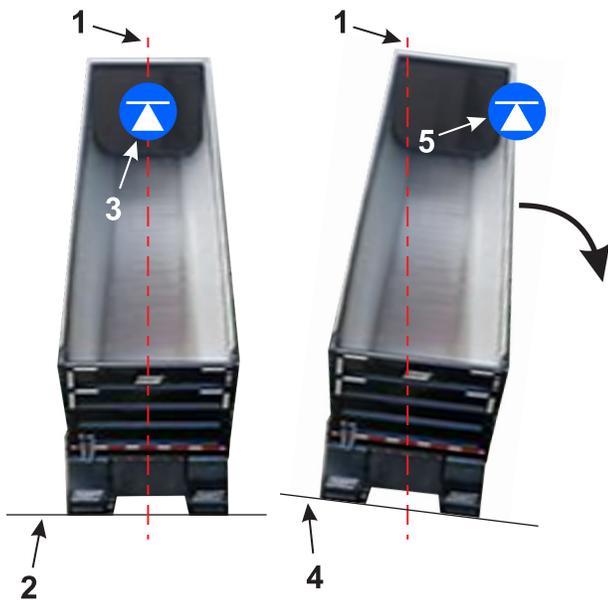


Figure 2-5 – Trailer Roll Over

- Raising the trailer in high winds can create an unstable condition the higher the trailer bed is raised.
- Make sure the overhead area at the dump site is free from any overhead wires or obstructions.
- NEVER drive the truck forward with the trailer bed in a raised position. Contact with overhead wires

or obstructions can caused serious injury and an increased potential of a trailer rollover.

- DO NOT “jerk” a raised trailer bed to loosen a stuck load.
- DO NOT climb onto or into a raised trailer bed.
- NEVER work under a raised trailer bed or tailgate unless proper bracing, such as wooden blocks, are being used to prevent the trailer or tailgate from falling.

## Service & Maintenance Safety

### WARNING

**Maintenance work can be hazardous if not done in a careful manner. All personnel should realize the hazards and strictly follow safe maintenance practices. Failure to comply with these safety precautions may result in serious personal injury and/or death.**

- Use only Brazos Trailer supplied or approved replacement parts and attachments. Imitation parts may lead to trailer damage and/or injury to personnel. Warranty may be voided if unauthorized parts and attachments are used.
- Wear the proper protective clothing and personal safety equipment necessary to perform the maintenance or service required.
- Prior to performing maintenance or service, park the trailer on a solid and level area away from obstructions and/or work site hazards.
- Be sure the area has adequate light and is well ventilated.
- Clean-up any oil, grease, mud, water, or snow which might cause the floor surface to become slippery.
- If the trailer requires maintenance, take the trailer out of service and attach a “Do Not Operate” tag.

### WARNING

**Hydraulic oil under pressure can penetrate body tissue causing serious injury and possible death. When troubleshooting a hydraulic system for leaks, always use cardboard or wood as a detector. DO NOT USE YOUR BARE HANDS. If you are injected with hydraulic oil or any other fluids, immediately seek treatment by a doctor trained in the treatment of penetrating fluid injuries.**

- If maintenance or repairs are required on any part of the hydraulic system, make sure that all residual hydraulic pressure has been relieved by operating the tractor hydraulic controls after the engine has been shut off.

- Know where all pinch points and moving parts on the trailer are. These areas must be avoided to prevent serious injury.
- Remove only those guards or covers on the component being serviced and replace them immediately upon completion of the work.
- Never attempt to adjust or service trailer components while they are hot.
- When working under a raised trailer or tailgate, make sure to use proper bracing, such as blocks, to prevent the trailer or tailgate from falling.
- Chock the trailer wheels to prevent unanticipated trailer movement before starting any work.

## Hydraulic System Hazards

### **WARNING**

**Hydraulic oil under pressure can penetrate body tissue causing serious injury and possible death. When troubleshooting a hydraulic system for leaks, always use cardboard or wood as a detector. DO NOT USE YOUR BARE HANDS. If you are injected with hydraulic oil or any other fluids, immediately seek treatment by a doctor trained in the treatment of penetrating fluid injuries.**

The hydraulic system is under pressure whenever the tractor engine is running and the trailer hydraulic lines are connected. The hydraulic system may hold pressure even after the engine is shut off. After shutting off the tractor engine, move the tractor hydraulic control levers forward or backward to release any stored hydraulic pressure. Some components will retain residual or trapped pressure. Use extreme caution when removing any hydraulic component.

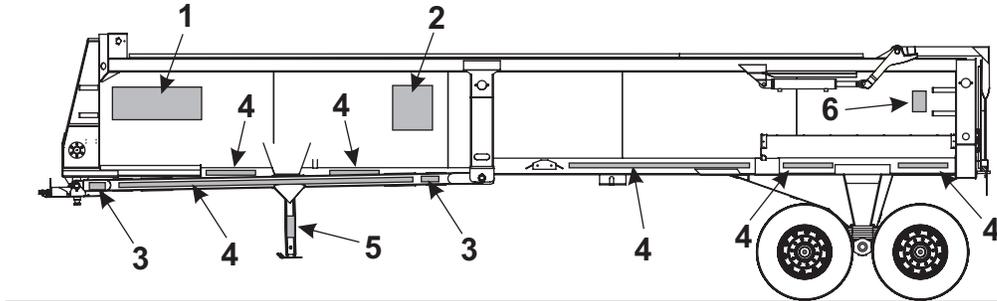
During inspection of the hydraulic system:

- Shut off the tractor engine and cycle all tractor hydraulic controls to release residual pressure.
- Wait for the hydraulic fluid to cool down before disconnecting any hydraulic lines. Hot hydraulic fluid can cause severe burns.
- Hydraulic fluid can cause permanent eye injury. Wear safety glasses or a full face shield to provide appropriate eye protection.

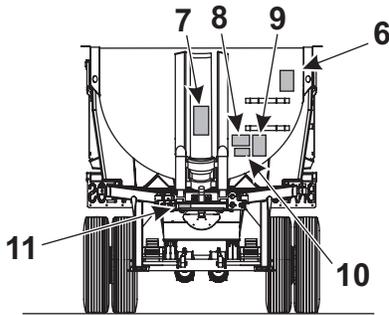
**Trailer Decal Locations**

For safety, each semitrailer has a series of decals and warning labels applied. During the daily semitrailer safety inspection, the condition of each decal or label needs to be checked. If any are damaged or unreadable, they must be replaced with a genuine Brazos Trailers decal or warning label.

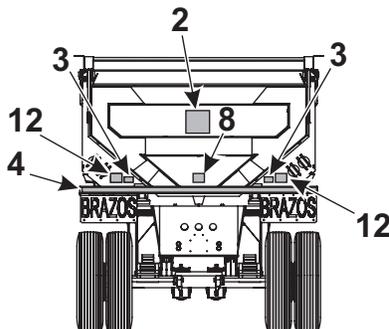
The following are the locations of each type of decal on the semitrailer. **NOTE:** Each side of the semitrailer has the same decals in the same locations.



**Figure 2-6 – Trailer Side Decal and Warning Label Locations**



**Figure 2-7 – Trailer Nose Decals**



**Figure 2-8 – Trailer Tailgate Decals**

Item	Description	Part Number
1	Brazos Trailer ID	5-010-00048
2	Brazos Pit Viper Trailer Logo	5-010-00002
3	Pinch Point Warning	5-010-00004 Sheet
4	Conspicuity Decal	
5	Do Not Drop Loaded Trailer Decal	
6	Ladder Safety Decal	
7	Main Lift Cylinder Warning Decal	
8	Tail Gate Must Be Lifted Decal	
9	Operating Instruction Caution Decal	
10	Air Brake Additive Warning Decal	
11	Door Control Decal	
12	Stand Clear of Gate Decal	

## Section 3 – Semitrailer Orientation, Pre-Start Inspection and Operation

**NOTE:** All view references are made from the operator's position, with the operator seated in the tractor cab, facing forward.

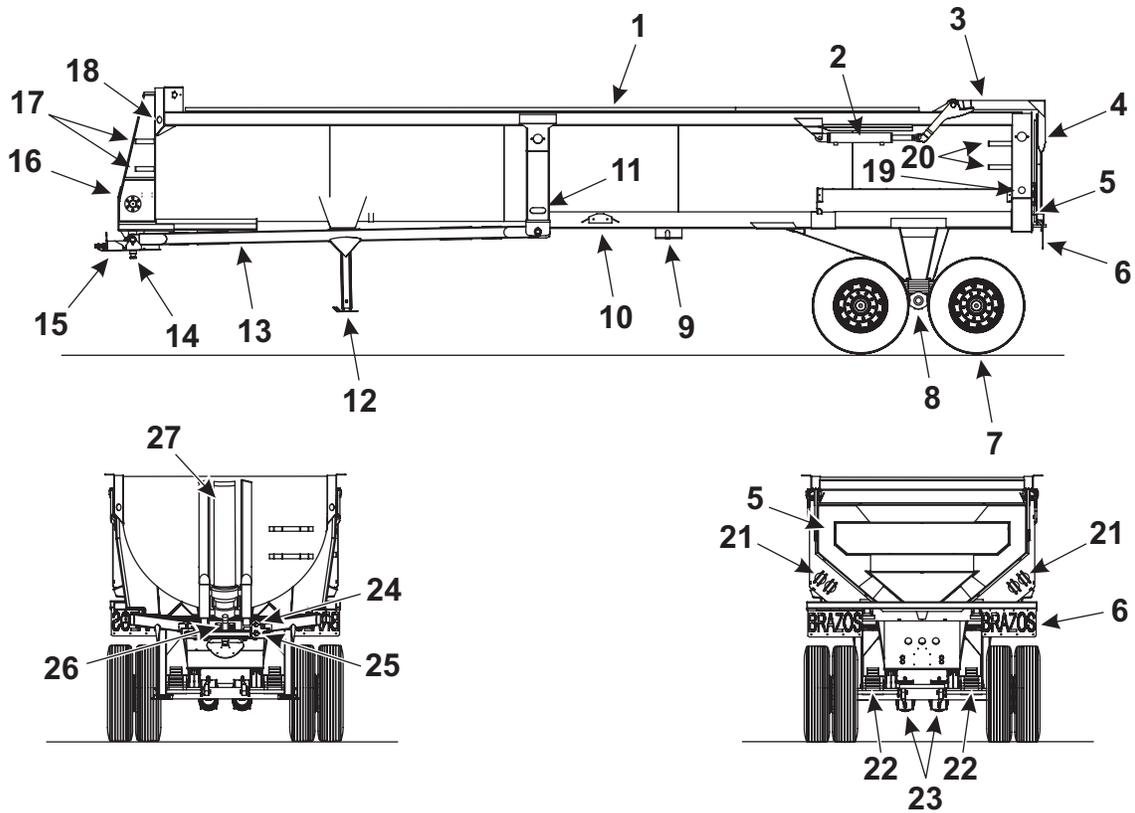


Figure 3-1 – Semitrailer Orientation Views

Item No.	Description
1	Trailer body
2	Tailgate air lift cylinder (one per side)
3	Lift gate lift arm
4	Tailgate
5	Tailgate locking latch
6	Mudflap bracket
7	Tandem wheel assembly
8	Suspension mounting assembly
9	Tailgate lock lift control valve
10	Tarp Arm Attachment Bracket
11	Side marker light
12	Support Leg assembly
13	Trailer Lift Frame
14	King pin
15	5th Wheel Coupler Assembly
16	Lift cylinder Dump Body Mounting Point
17	Front Ladder
18	Front marker light
19	ABS warning light
20	Rear Ladder
21	Taillight
22	Center point spring suspension
23	Air brake assembly
24	Tractor electrical connection
25	Tractor pneumatic connection
26	Hydraulic quick connect
27	Dump hoist cylinder

** DANGER**

**IMPROPER USE OF THE TRAILER COULD CAUSE SERIOUS INJURY OR DEATH. BEFORE OPERATING THE TRAILER, OR PERFORMING MAINTENANCE, THE OPERATOR MUST READ AND UNDERSTAND THE ENTIRE OPERATOR'S MANUAL, REVIEW TRAILER CONTROLS, LOCATE AND REVIEW ALL WARNINGS AND SAFETY PLACARDS AND RELEVANT OPERATOR SAFETY MATERIALS INCLUDING WRITTEN, VISUAL, VIDEO OR VERBAL INSTRUCTIONS.**

## Pre-Trip Inspection

It is mandatory to do a visual inspection of the tractor and semitrailer before beginning operation, during all trips, and an end of day inspection.

**NOTICE**

- While the responsibility for major checks, service and adjustments of a tractor and semitrailer may belong to a company's maintenance department, it is the driver's responsibility to make sure that the condition of a tractor or semitrailer is safe for operation. As stated in the Federal Motor Carrier Safety Administration (FMCSA, Section 396) and CDL Class A requirements, the driver must do a full and complete pre-trip and post-trip inspection as well as making on-the-road observations of any tractor and semitrailer problem conditions. If any problems are noted, a written report of the problem observed must be filed immediately.
- The following inspection information is a brief listing of inspection and daily service procedures. More detailed information on doing all Daily Service checks is located later in this section.

** WARNING**

**When inspecting a tractor and semitrailer, hookups, and/or repairs, be wary of physical positioning. The tractor and/or semitrailer may move unexpectedly causing death or serious injury.**

The inspection should include:

1. Check and clean all decals, conspicuity tape, reflectors and warning signs. If any decals, conspicuity tape, reflectors or warning signs are damaged, replace those items.

** WARNING**

**Hydraulic oil under pressure can penetrate body tissue causing serious injury and possible death. When troubleshooting a hydraulic system for leaks, always use cardboard or wood as a detector. DO NOT USE YOUR BARE HANDS. If you are injected with hydraulic oil or any other fluids, immediately seek treatment by a doctor trained in the treatment of penetrating fluid injuries.**

2. Check hydraulic lines and hoses for signs of damage or leaks. **NOTE:** Hydraulic systems can retain pressure even if the unit is not connected to the tractor.
3. Inspect the trailer for any signs of damage, cracked welds, or loose fasteners.

4. Check to make sure that all wheel lug nuts are tight and torqued to the proper setting. **NOTE:** Lug nuts on new wheels can shift and settle quickly after being assembled. After 50 – 100 miles of driving, recheck the lug nuts for proper torque – 450 - 550lb.-ft.
5. Check to make sure all tires are at proper inflation.
6. Turn on the tractor lights and make sure all semitrailer marker lights are clean and working.
7. Make sure the rear tailgate or trailer doors are closed and securely latched.
8. After the semitrailer has been securely attached to the tractor, make sure the support legs and landing pads have been fully retracted into the travel position and the crank handle has been stowed securely before moving the semitrailer.

## Coupling Tractor to Semitrailer

Knowing how to couple and uncouple the tractor to the semitrailer correctly is basic to safe operation of combination vehicles. Different tractors require different techniques, so learn the details for coupling and uncoupling the tractors you operate. The general coupling and uncoupling procedures are listed below.

### **WARNING**

**Incorrect coupling and uncoupling of the tractor to or from the trailer can result in accidents causing serious injury or death. Not all tractors are identical. Be aware of the differences in the vehicles you operate.**

1. Inspect the fifth wheel.  
Check the fifth wheel assembly:
  - Make sure that there are no damaged or missing parts.
  - Inspect that the mounting to the tractor is secure, with no visible cracks in the frame, etc. (Figure 3-2).



Figure 3-2– Tractor Fifth Wheel

### **WARNING**

**The use of a lube plate or slick plate may prevent proper coupling creating a hazardous condition. Make sure to use only SAE approved lubricants.**

- Make sure that the fifth wheel plate is lubricated with an SAE approved grease. Failure to maintain adequate lubrication could result in steering problems and/or damage to the semitrailer due to friction between mounting surfaces.
- Check that the fifth wheel is in the proper coupling position with the fifth wheel plate tilted down towards rear of tractor (1, Figure 3-3).

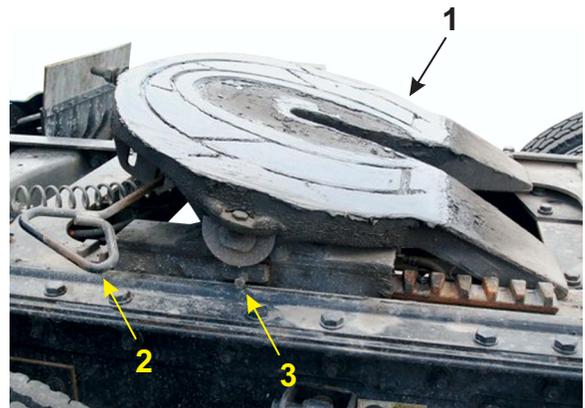


Figure 3-3– Tractor Fifth Wheel in Coupling Position

- Check that the safety unlock handle is in the automatic lock position (2, Figure 3-3).
- Confirm that the sliding fifth wheel is locked in position (3, Figure 3-3).
- Make sure the fifth wheel jaws are fully opened (1, Figure 3-4).

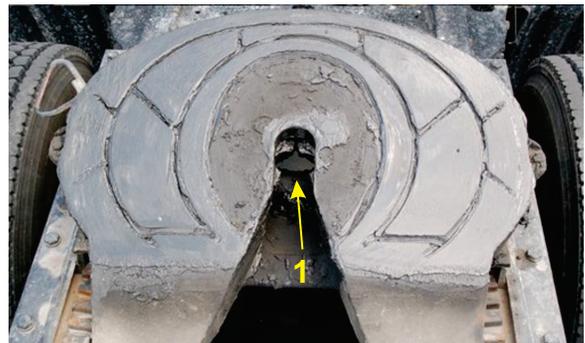
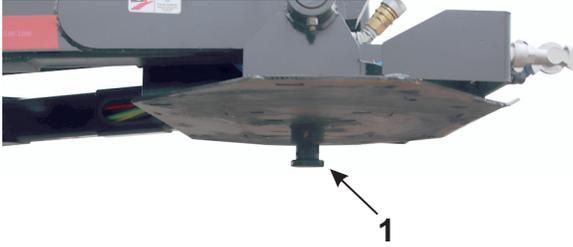


Figure 3-4– Open Fifth Wheel Lock Jaws

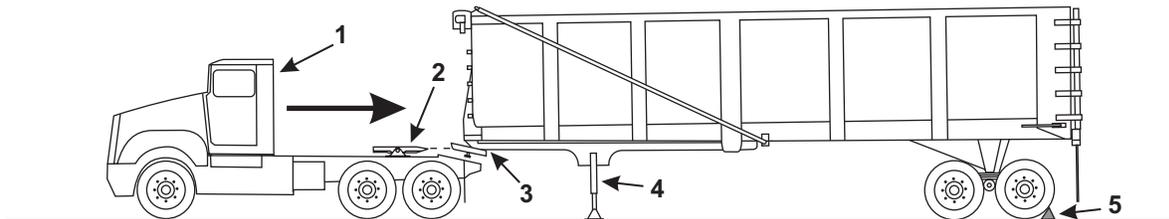
## Brazos Dump Trailer

2. Inspect the semitrailer kingpin for damage and/or wear.



**Figure 3-5 – Inspect King Pin**

3. Inspect work area to make sure the area is clear of workers or debris around both the tractor and semitrailer.
4. Before coupling the tractor.
  - a. Always chock the trailer using chock blocks (5, [Figure 3-6](#)) when coupling the tractor and semitrailer.



**Figure 3-6 – Coupling Tractor to Semitrailer**

- b. Verify that the tailgate is tightly secured to the end of the semitrailer (1, [Figure 3-7](#)) or the rear semitrailer door is closed and securely latched (2, [Figure 3-7](#)). For the manually closed rear door, make sure that the lock lever has been secured in the latched position (3, [Figure 3-7](#)).



**Figure 3-7 – Locked Tailgates**

### Section 3 – Semitrailer Orientation, Pre-Start Inspection and Operation

- c. Make sure the tarp, if equipped, is securely stored in the uncovered position (1, Figure 3-8) for an empty trailer or secured in the covered position with a loaded trailer.



Figure 3-8 – Tarp in Stored Position

5. Check the semitrailer coupler height.
  - a. Back the tractor in a straight line with the semitrailer, close to the nose of the semitrailer, but **DO NOT** back under the trailer at this point.
  - b. Set the tractor parking brake and shift the transmission into NEUTRAL.
  - c. Check to make sure that the semitrailer nose (3, Figure 3-9) is just slightly below the fifth wheel height (2, Figure 3-9). If the semitrailer nose is too low, it may strike the tractor. If the semitrailer nose is too high, the fifth wheel may not couple correctly to the king pin.
  - d. As needed, raise or lower the trailer nose using the landing gear support legs (4, Figure 3-9).

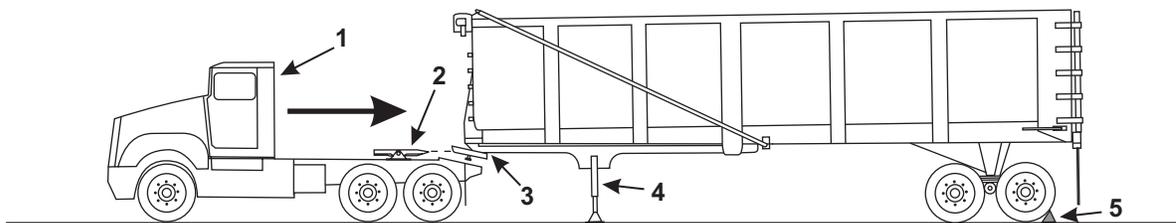


Figure 3-9 – Tractor height alignment with semitrailer

6. Check to make sure that the fifth wheel and kingpin are aligned properly.
7. Check the coupler seals for any signs of wear or damage. Replace these seals as needed before connecting to the semitrailer.
8. Connect the electrical, pneumatic and hydraulic lines to the semitrailer.
  - a. Inspect all flexible tractor service lines for signs of wear or damage.

#### CAUTION

- As soon as the pneumatic (air) lines have been connected to the semitrailer, pressure will begin to build. The building air pressure will release the trailer brakes, allowing the trailer to move. Make sure the trailer wheels have been chocked (5, Figure 3-9).
- **DO NOT** stand between the trailer nose and tractor fifth wheel assembly in case the trailer moves forward. Severe injury could occur.
- b. Connect the tractor service control airline (1, Figure 3-10) to the semitrailer service control coupler.

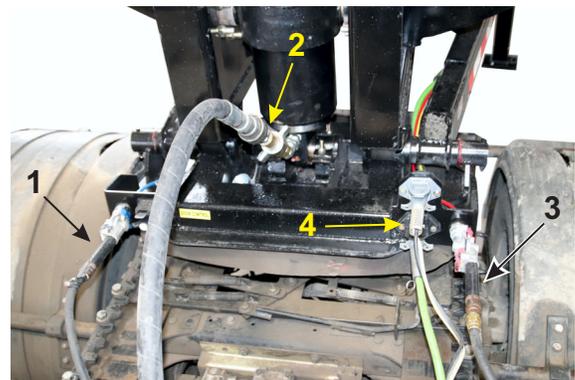
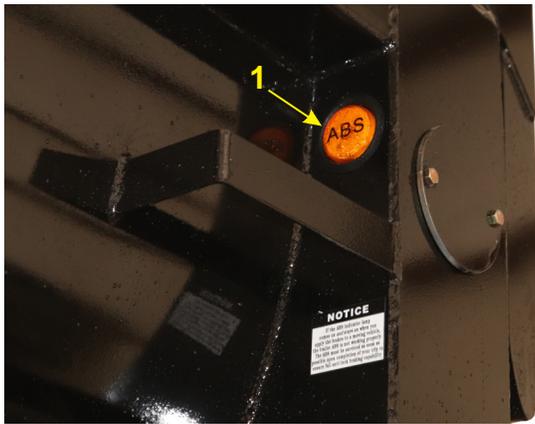


Figure 3-10 – Umbilical Connections from Tractor to Semitrailer

#### WARNING

The ABS warning light (1, Figure 3-11) should turn ON briefly and then OFF when the electrical power is connected. If the light does not turn on, the warning light needs to be replaced before using the trailer. If the light turns on and remains on, the trailer brake system needs to be repaired before using the semitrailer. Failure of this system could result in severe injury or death.



**Figure 3-11 – ABS Indicator Light**

- c. Plug the electrical cord (4, [Figure 3-10](#)) into the trailer and secure the safety catch.

**⚠ WARNING**

Hydraulic oil under pressure can penetrate body tissue causing serious injury and possible death. When troubleshooting a hydraulic system for leaks, always use cardboard or wood as a detector. **DO NOT USE YOUR BARE HANDS.** If you are injected with hydraulic oil or any other fluids, immediately seek treatment by a doctor trained in the treatment of penetrating fluid injuries.

- d. Connect the hydraulic supply line (2, [Figure 3-10](#)) from the tractor to the semitrailer quick connect.
  - e. Make sure that all hydraulic, pressurized air and electrical lines are supported to prevent contact with any moving parts of either the tractor or semitrailer.
9. From the tractor cab, push either the Trailer Air Supply knob (1, [Figure 3-12](#)) or move the tractor protection control valve from the Emergency to the Normal position. Either of these actions will provide air pressure to the semitrailer brake system. Do not move the tractor until the entire pneumatic system has returned to the normal system pressure. **NOTE:** The air supply controls may vary from tractor to tractor.



**Figure 3-12– Tractor Air Supply Controls**

10. When full pneumatic system pressure has been reached, shut off the tractor engine and listen for any air leaks. Locate and repair any air leaks before using the semitrailer.
11. With the tractor engine off, press the brake pedal and listen for the sound of the trailer brakes being applied.
12. If there are no problems with air leaks, start the tractor engine and allow the pneumatic system to build to full system pressure.
13. When full system pressure has been achieved, set the trailer brakes by pulling the Parking Brake control knob (2, [Figure 3-12](#)) outwards. Release the trailer brakes by pressing inwards on the Parking Brake control knob.
14. Couple the tractor to the semitrailer.

**⚠ WARNING**

- **Never back under the semitrailer at an angle. The pressure from an angled tractor could cause the landing gear to collapse, potentially rolling the trailer over.**
- **Back tractor under the semitrailer slowly. DO NOT collide with the semitrailer**
  - a. Slowly back the tractor in a straight line under the trailer until the fifth wheel contacts the king pin, and the fifth wheel jaws securely lock around the king pin. Stop moving the tractor as soon as the kingpin has been fully engaged and securely locked.



**Figure 3-13 – Locked Kingpin**

### Section 3 – Semitrailer Orientation, Pre-Start Inspection and Operation

- b. Put the tractor transmission in Neutral.
- c. Make sure that the semitrailer parking brakes are engaged.
- d. Slightly raise the support legs until there is a small space between the parking area grade and the landing pad (1, Figure 3-14).

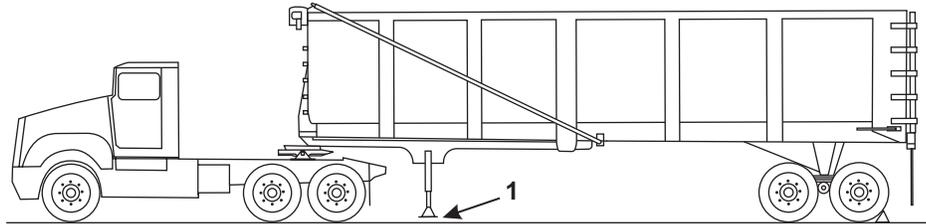


Figure 3-14 – Tractor and Semitrailer Coupled

- e. With the trailer brakes still applied, pull the semitrailer slightly forward to confirm a secure connection between the tractor and semitrailer.
15. Shut off the tractor engine and inspect the fifth wheel coupling.

#### **WARNING**

**Shut off the tractor engine and remove the ignition key to prevent unauthorized movement of the semitrailer.**

- a. After shutting off the engine and removing the ignition key, check the connection between the fifth wheel and the kingpin. There should be no space between these items. If there is space, the kingpin may be on top of the fifth wheel jaws (1, Figure 3-15), which would allow the trailer to come loose when the tractor is moved forward.

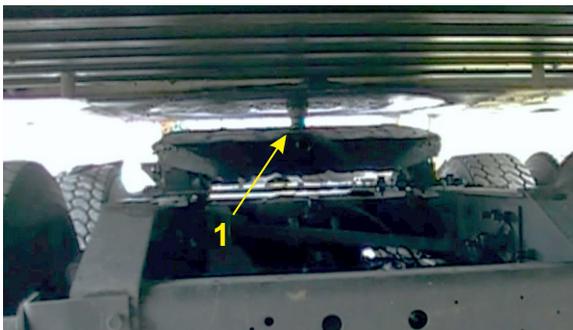


Figure 3-15 – Kingpin On Top of Fifth Wheel

- b. Confirm that the kingpin has latched with the fifth wheel. Inspect the coupling to make sure the fifth wheel jaws have fully closed around the kingpin (1, Figure 3-16).

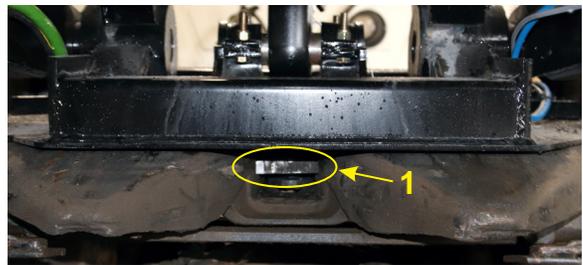


Figure 3-16 – Locked Kingpin

- c. Check that the fifth wheel kingpin locking lever (1, Figure 3-17) is in the LOCK position. **NOTE:** Make sure that the safety catch is in position over the locking lever. On some fifth wheel systems, this safety catch needs to be positioned by hand.

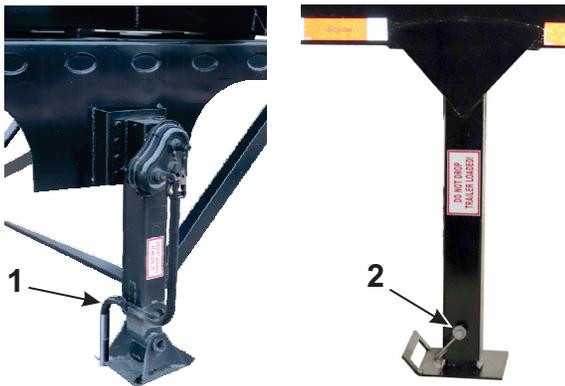


Figure 3-17 – Fifth Wheel Lock lever

- d. If the coupling is not correct, **DO NOT** drive the truck.

## Brazos Dump Trailer

16. Brazos Trailers offer two types of support legs, the manually raised support leg, and the crank handle version.
  - a. For the manually raised version, remove the lock pin (2, [Figure 3-18](#)), lift the support leg to the transport position, and reinsert and secure the lock pin. Repeat this procedure for the opposite side of the semitrailer.
  - b. The crank handle version is raised by rotating the crank handle (1, [Figure 3-18](#)) until the support legs are in the transport position. When the support legs are fully raised, secure the crank handle.



**Figure 3-18 – Support Leg**

17. Test the hydraulics on the semitrailer by slightly raising the body of the semitrailer. Also check to make sure that the tarp system, if equipped, is working properly.

## Daily Maintenance

After the semitrailer is securely connected to the tractor and all safety checks have been completed, and before putting the semitrailer to work, perform the following Daily Maintenance.

1. Using a rubber hammer or equal, “thump” each tire. It is suggested to place your hand on the tire you are checking to better feel the response to this check. If you feel vibration, check the tire pressure with an accurate tire pressure gauge. If the tire is under inflated, reinflate or replace the tire before beginning the days trips.
2. Inspect all semitrailer lights to make sure they are working properly. Turn on the tractor lights and check the semitrailer front marker light (1, [Figure 3-19](#)), side marker light (2, [Figure 3-19](#)), rear marker light (4, [Figure 3-19](#)) and the rear marker lights (6, [Figure 3-19](#)). **NOTE:** Check both sides of the semitrailer for the marker lights.
3. Turn on the 4-way flashers and have an assistant step on the tractor brake pedal to check the brake lights and turn signals (5, [Figure 3-19](#)).



Figure 3-19 – Semitrailer Marker, Stop and Turn Signal Lights

4. Check and clean all decals, conspicuity tape, reflectors and warning signs. If any decals, conspicuity tape, reflectors or warning signs are damaged, replace those items.
7. Check to make sure that all wheel lug nuts are tight and torqued to the proper setting. **NOTE:** Lug nuts on new wheels can shift and settle quickly after being assembled. After 50 – 100 miles of driving, recheck the lug nuts for proper torque.

**WARNING**

Hydraulic oil under pressure can penetrate body tissue causing serious injury and possible death. When troubleshooting a hydraulic system for leaks, always use cardboard or wood as a detector. **DO NOT USE YOUR BARE HANDS.** If you are injected with hydraulic oil or any other fluids, immediately seek treatment by a doctor trained in the treatment of penetrating fluid injuries.

5. Check hydraulic lines and hoses for signs of damage or leaks. **NOTE:** Hydraulic systems can retain pressure even if the unit is not connected to the tractor.
6. Inspect the trailer for any signs of damage, cracked welds, or loose fasteners.



Figure 3-20 – Wheel Lug Nuts

## Brazos Dump Trailer

8. Make sure that the tailgate is tightly secured to the end of the semitrailer (1, [Figure 3-21](#)) or the rear semitrailer door is closed and securely latched (2, [Figure 3-21](#)). For the manually closed rear door, make sure that the lock lever has been secured in the latched position (3, [Figure 3-21](#)).



**Figure 3-21 – Locked Tailgates**

9. Make sure to bleed off moisture accumulated in the pressurized air tanks on the tractor. Release enough pressurized air to lower the overall system air pressure.
10. Inspect the semitrailer axle suspension system when under a load to make sure it is working properly. If any problem is noted, take the semitrailer out of service for immediate repairs.

## Semitrailer Operation

The following operation instructions must be read and understood by all tractor-semitrailer operators.

### NOTICE

The following procedures are shown with the understanding that the tractor and semitrailer have been properly coupled.

1. Do all tractor daily maintenance and inspections. See the tractor's Operators Manual for more detailed information.
2. Make sure to bleed off moisture accumulated in the pressurized air tanks on the tractor. Release enough pressurized air to lower the overall system air pressure.
3. Inside the tractor cab.
  - a. Apply the parking brake and start the engine.
  - b. Check for engine oil pressure and any warning lights.
  - c. The reduced air pressure in the tanks should activate the Low Air Pressure warning buzzer. This will turn off when the system air pressure reaches normal operating levels.
  - d. Turn on the tractor hazard warning lights, marker lights, and headlights.
4. Leave the cab with the engine running to inspect the semitrailer. Follow the items listed in the Daily Inspection procedures:
  - a. Check the tractor and semitrailer wheels, lug nuts, hubs and tries to make sure they are in good oerating condition, at the proper inflation levels and are not leaking.
  - b. Make sure the wheel lug nuts are torqued to specifications.
  - c. Make sure that the electrical, air and hydraulic lines are properly and securely connected.
  - d. Confirm that the support legs and landing pads have been fully retracted and the crank handle, if equipped, has been safely stored and secured.

### Section 3 – Semitrailer Orientation, Pre-Start Inspection and Operation

- e. Check to make sure the fifth wheel king pin latch (1, Figure 3-22) has been fully locked.



Figure 3-22 – Tractor Fifth Wheel

- f. Inspect and clean all marker lights, reflectors and conspicuity tape.
- g. Check the rear taillights to make sure they are on and functioning properly with the hazard warning flashers.
- h. Make sure that the rear tailgate or doors (1, 2, Figure 3-23) are fully closed and secured. If equipped with a manually closed tailgate, check to make sure the rear door latch handle (3, Figure 3-23) is in the secured position.

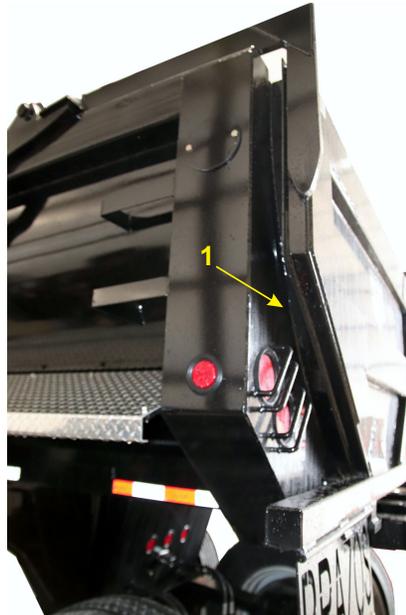


Figure 3-23 – Locked Tailgates

5. Return to the tractor cab.
  - a. With the semitrailer brakes applied, release the tractor brakes and gently move the tractor forward to make sure the semitrailer is properly coupled to the tractor.
  - b. Apply the foot brake for one minute. The air system must not lose more than 4 psi per minute for the combined tractor – semitrailer unit.
6. Load the semitrailer

#### **WARNING**

- **DO NOT overload trailer. See certification plate for Gross Vehicle Weight Rating (GVWR) and Gross Axle Weight Rating (GAWR).**

- **If material is likely to flow poorly, lighten up the load in the front end of the trailer. A slightly smaller load will be better than a full load that causes tipping over.**

Brazos Trailer Manufacturing, LLC. trailers are specially designed for hauling a payload that is to be dumped. Loading of the trailer from the front-to-back must meet allowable gross weight and axle weight limitations.

If material is likely to flow poorly, lighten up the load in the front end of the trailer. A slightly smaller front load will be better than a full load that causes tipping over.

## Brazos Dump Trailer

Before loading:

- a. Make sure that the rear doors on the semitrailer are fully closed and properly secured before loading procedures begin.
  - b. When the semitrailer is being loaded, make sure that the load will not affect the semitrailer stability. When the center of gravity of the load is not evenly distributed, or if the load is “sticky” and will not flow out of the semitrailer properly, the semitrailer stability will be affected during the dumping process.
  - c. If the load appears to be “sticky”, **DO NOT** fully load the nose of the semitrailer. When raised, this sticky load could cause the trailer to become unstable and tip over.
  - d. Do not overload the trailer.
  - e. When the loading has been completed, activate the tarp (if equipped) to cover the load to prevent load loss while traveling.
7. Dumping the load from the semitrailer.

### **WARNING**

- Extreme caution must be used when dumping the trailer.
- There are many factors that can result in a semitrailer rollover while in the dumping cycle. Driver awareness is key to preventing a rollover and preventing injury to personnel or damage to equipment.
- At any time and for any reason the operator does not feel that the equipment is properly maintained or that the ground conditions are not correct for the dumping process, the operator should not raise the trailer into the dumping position.
- During the dumping cycle, the driver shall always maintain a clear area around the trailer sufficient to prevent injuries or damage to surrounding personnel, equipment and property in case of a rollover.
- Never enter a raised semitrailer body.
  - a. Make sure the dumping surfaces are as solid and level as possible.
  - b. Make sure the area around the dump zone is clear of all personnel and equipment.
  - c. Check the dumping site to make sure that there are no overhead obstacles.
  - d. Apply the tractor brakes, but do not set the trailer brakes.

### **WARNING**

When raising the semitrailer bed for dumping, make sure that the center of gravity (3, Figure 3-24) stays directly over the centerline of the semitrailer (1, Figure 3-24). If the dump area or the position of the semitrailer is not level (4, Figure 3-24), the higher the semitrailer bed is raised, the farther the center of gravity (5, Figure 3-24) moves away from the centerline of the semitrailer (1, Figure 3-24). As the center of gravity moves towards the outside of the trailer, the greater the chance of the trailer rolling over.

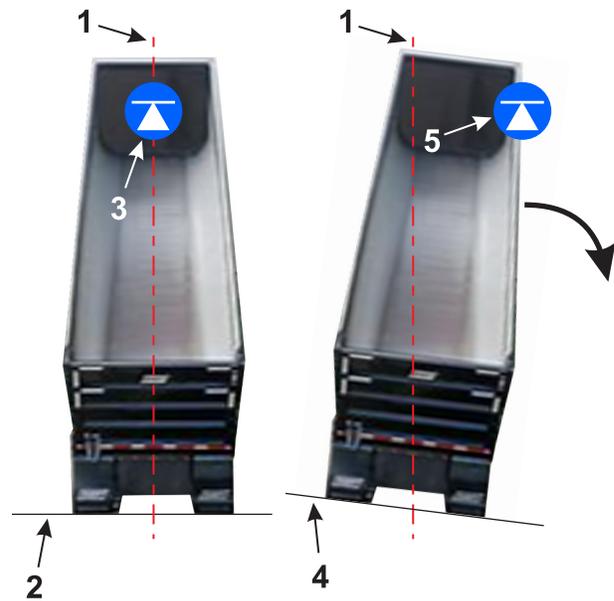


Figure 3-24 – Trailer Roll Over

From the cab, retract the tarp (if equipped) to the stored position.

### **WARNING**

When manually opening a loaded trailer tailgate, use extreme caution as the load may start to come out of the trailer as soon as the tailgate is unlocked.

### **CAUTION**

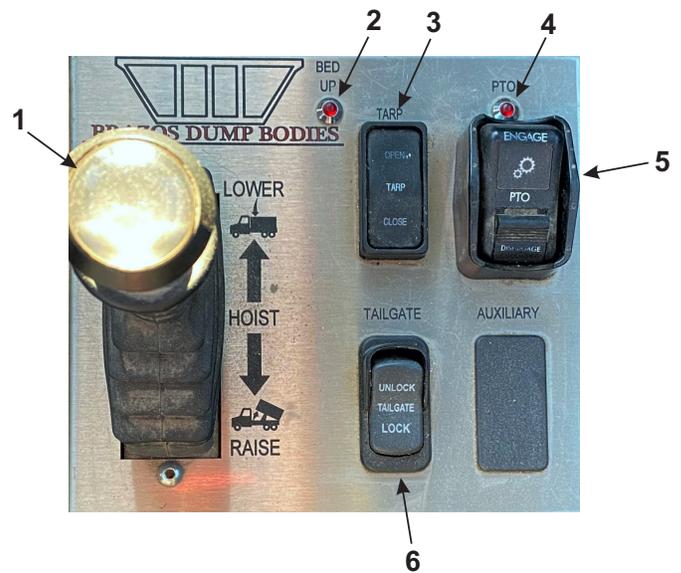
If spreading the materials from a moving vehicle, make sure the surface being traveled on is as level and smooth as possible.

- e. To unload the semitrailer, use the tractor wet kit controls:

**NOTE:** The following instructions refer to the Brazos Trailers wet kit controls. These controls may vary from tractor to tractor. Follow all instructions from the wet kit control manufacturer.

### Section 3 – Semitrailer Orientation, Pre-Start Inspection and Operation

- i. Move the TARP button (3, [Figure 3-25](#)) to the OPEN position. Wait until the tarp has fully retracted before raising the semitrailer bed.
- ii. Move the PTO button (5, [Figure 3-25](#)) to the ENGAGE position. When the PTO is active, the red PTO light (4, [Figure 3-25](#)) will turn on.
- iii. Open tailgate:
  1. For the pneumatic tailgate, move the TAILGATE button (6, [Figure 3-25](#)) to the UNLOCK position. This will unlock the tailgate and it will raise to the fully open position.
  2. If the semitrailer is equipped with a side swinging manually opened tailgate, manually release the tailgate lock lever and move to the unlocked position. Fully open the tailgate and secure it in the open position.
- iii. Move the HOIST lever (1, [Figure 3-25](#)) downwards to the RAISE position to activate the main semitrailer lift cylinder to raise the semitrailer bed to the dump position.
- iv. Watch for semitrailer stability to make sure that tipping does not occur. **NOTE:** As soon as the bed starts to lift, the BED UP light (2, [Figure 3-25](#)) will turn on.
- v. As the load shifts along the bed towards the discharge end of the semitrailer, the additional weight may cause tires on one side of the semitrailer to settle further than on the opposite side. This can cause an instability problem.
- vi. Make sure that the raised semitrailer bed does not contact any overhead objects or power lines.
- vii. As soon as the load has fully exited the rear of the raised semitrailer bed, move the HOIST lever to the LOWER position to lower the bed to the transport position.



**Figure 3-25 – Tractor Wet Kit Controls**

- f. When the semitrailer bed has fully lowered into the transport position and the BED UP light has turned off, move the TAILGATE switch to the LOCK position to fully lower and secure the tail gate.

If the trailer has manually activated gates, set the tractor and trailer brakes, release the gate from the open position and swing the tail gate to the fully closed position. Make sure to lock the tailgate in the closed position.

## Uncoupling Tractor from the Semitrailer

 **WARNING**

**Uncouple only from an empty semitrailer. The semitrailer load legs are not designed to support an uncoupled fully loaded semitrailer.**

1. Make sure the area where the semitrailer will be parked can support the weight of the semitrailer.
2. Make sure that the tractor and semitrailer are in a straight line when backing into the parking spot. If the tractor is at an angle to the semitrailer and the tractor pulls out on an angle, the sideways force could damage the support legs and kingpin coupler.
3. When in position, shut off the air supply to the semitrailer. As the air pressure in the semitrailer's system falls, the brakes will automatically be applied, locking the semitrailer in position.
4. When the semitrailer brakes have engaged, back-up slowly to push backwards on the kingpin. Apply the tractor brakes, holding the backwards pressure on the kingpin.
5. Lower the support legs until they firmly contact the ground. Continue to raise the semitrailer slightly to remove some of its weight from the tractor fifth wheel.
6. Disconnect the airlines, electrical cables and hydraulic line from the semitrailer. Make sure to securely store these cables to the back of the tractor cab so that they will not be damaged.
7. Standing to the side of the tractor, pull the kingpin lock release handle to release the kingpin.
8. Move the tractor slowly forward allowing the semitrailer to slowly slide off from the fifth wheel, putting the full weight of the semitrailer onto the load legs.
9. Before fully pulling the tractor away from the semitrailer, make sure that the ground is properly supporting the semitrailer.
10. If everything checks out OK, return to the cab, release the tractor brakes and drive clear.
11. Perform the post trip inspection of the semitrailer and document any operational problems, safety concerns or need for maintenance that is beyond the scope of operator level Daily Maintenance.

## Section 4 – Routine Service and Maintenance

### DANGER

IMPROPER USE OF THE SEMITRAILER COULD CAUSE SERIOUS INJURY OR DEATH. BEFORE OPERATING THE SEMITRAILER, OR PERFORMING MAINTENANCE, THE OPERATOR MUST READ AND UNDERSTAND THE ENTIRE OPERATOR'S MANUAL, REVIEW SEMITRAILER CONTROLS, LOCATE AND REVIEW ALL WARNINGS AND SAFETY PLACARDS AND RELEVANT OPERATOR SAFETY MATERIALS INCLUDING WRITTEN, VISUAL, VIDEO OR VERBAL INSTRUCTIONS.

### WARNING

Hydraulic oil under pressure can penetrate body tissue causing serious injury and possible death. When troubleshooting a hydraulic system for leaks, always use cardboard or wood as a detector. DO NOT USE YOUR BARE HANDS. If you are injected with hydraulic oil or any other fluids, immediately seek treatment by a doctor trained in the treatment of penetrating fluid injuries.

The following information presents the routine service and maintenance required to make sure that the semitrailer functions safely and properly on a daily basis. The following procedures are suggested for the semitrailer driver. More detailed service information is contained in the Service Manual.

**Table 4-1 – Service and Maintenance Schedule**

Activity		Daily	New Trailer (200 Miles)	Weekly	Monthly	Annual
1	Safety decals	✓ and R				
2	Axle U-bolts					✓ and T
3	Frame and Structure	✓				
4	Leaf Spring Suspension	✓				✓
5	Cracks in semitrailer assemblies or welds	✓				
6	Inspect Tire Pressure	✓ and A				
7	Inspect Tire Damage	✓			✓	
8	Inspect Wheel Lug Nuts	✓	✓		✓	
9	Wheel Bearings	✓		✓		✓
10	Axel Alignment	✓			✓	
11	Brake System	✓		✓	✓***	✓**
12	Hydraulic Hoses	✓				
13	Inspect Hydraulic Lift Cylinder	✓				
14	Grease	✓		✓		
15	Visual Check for Loose/Missing Fasteners	✓				
16	Check Trailer Lights and Wiring	✓			✓	
17	Air Line Water Separator	✓ and D				
18	Check Safety Equipment and Tools	✓				
19	Check for air leaks from pneumatic system	✓				

Service Cycle - R = Replace ✓ = Check A = Add D = Drain

† Refer to engine manual for oil change cycles.

\* First 200 miles, then follow normal service cycle.

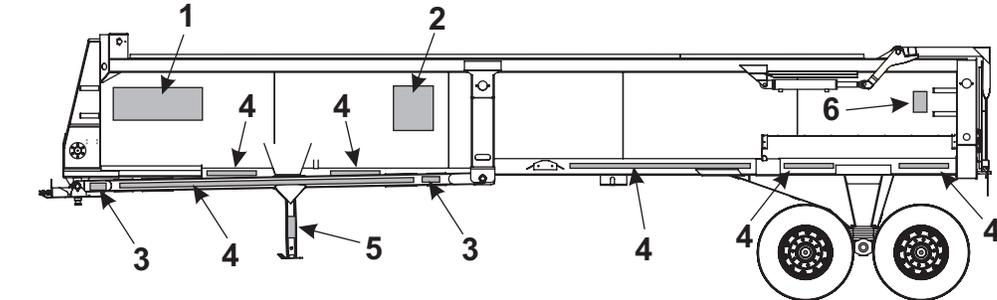
\*\* Service every 12,000 miles or annually.

\*\*\* Check brake shoes every 3,000 miles

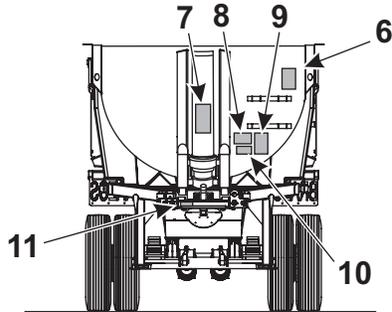
## Daily Maintenance Procedures

The operator is required to do the following daily service checks:

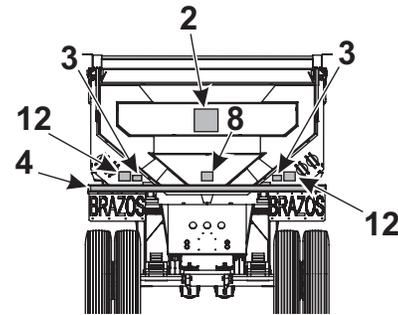
1. Check condition of all warning and instructional decals. Replace any damaged decals with genuine Brazos Trailers replacement decals.



**Figure 4-1 – Trailer Side Decal and Warning Label Locations**



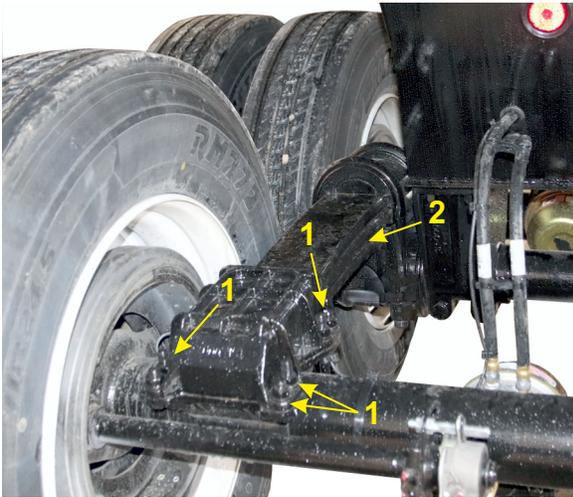
**Figure 4-2– Trailer Nose Decals**



**Figure 4-3– Trailer Tailgate Decals**

Item	Description	Part Number
1	Brazos Trailer ID	5-010-00048
2	Brazos Pit Viper Trailer Logo	5-010-00002
3	Pinch Point Warning Sheet	5-010-00004
4	Conspicuity Decal	
5	Do Not Drop Loaded Trailer Decal	
6	Ladder Safety Decal	
7	Main Lift Cylinder Warning Decal	
8	Tail Gate Must Be Lifted Decal	
9	Operating Instruction Caution Decal	
10	Air Brake Additive Warning Decal	
11	Door Control Decal	
12	Stand Clear of Gate Decal	

2. Prior to each use, inspect all fasteners and structural frame members for bending and other damage, cracks and/or failure. Repair or replace any damaged components.
3. Inspect trailer suspension.
  - a. Make sure all suspension mounting bolts (1, **Figure 4-4**) are secure and not damaged. Inspect suspension for each side of the semitrailer.
  - b. Inspect the suspension leaf springs (2, **Figure 4-4**). If there are any broken or cracked spring leaves, the semitrailer should be taken out of service immediately.



**Figure 4-4 – Trailer Suspension**

4. Inspect the semitrailer for cracks in welds, tubes, or steel and fasteners for damage prior to each use. Welds can stress crack or fail when subjected to wear, heavy loads, overloads, and movement of cargo. If any cracks are found, the semitrailer should be taken out of service immediately.
5. Do a pre-trip check on the tires and tire air pressure to look for worn, damaged, or improperly inflated tires and replace worn out tires immediately as they may cause serious injury or death.
  - a. While checking inflation pressures, it is a good time to inspect your tires. Any time you see any damage to a tire or wheels/rims, the semitrailer should be taken out of service immediately.
  - b. Semitrailer tires may be worn out even though they still have plenty of tread. This is because trailer tires carry a lot of weight all the time, even when not in use. The main cause of tire failure is improper inflation.
  - c. Tire pressure should be checked prior to each use as part of the pre-trip inspection. Always make sure tires are inflated to the pressure recommended by the tire manufacturer. The

pressure must be checked while the tire is cool. Do not check the tire immediately after towing the semitrailer.

- d. Wheel and tire manufacturers recommend adjusting the air pressure to the maximum PSI listed on the tire sidewall when the semitrailer is fully loaded. If the tires are underinflated the load carrying capacity of the tire could be affected. Tires can lose air over time. A reduction in tire pressure could cause the tire to become overloaded leading to excessive heat build-up. If the tire is underinflated, even for a brief period, the tire could suffer internal damage. Driving at higher than the recommended maximum speed can also cause internal damage to the tire.
6. Check all wheel parts for damage, including the wheels and ring clamps.
    - a. Ensure the studs, nuts, and mounting faces of the hub and wheels are clean and free from grease and debris. Replace any defective parts.
    - b. Check lug nut torque. If the lug nuts become loose, torque can cause the wheels to shimmy, resulting in damage to parts and extreme tire tread wear. Excessive mounting torque can cause studs to break and discs to crack in the stud hole area. Both cases could result in serious injury or death.
    - c. Check for wheel cracking and worn mating face on hub or drum.
    - d. If needing to replace a wheel assembly, do not inter-mix wheel types.
    - e. Check for loose studs in the hub as well as broken or cracked studs and replace any damage parts prior to operation.
  7. Check wheel hub gaskets and seals for leaks prior to each trip.
    - a. Leaking seals can result in damaged wheel bearings and possible failure of the axle assembly and/or brakes.
    - b. Check lubricant levels in each hub prior to every trip. Add lubricant when the level is low. Only add lubricant to the level indicated by the mark on the hub cap sight glass. Too much oil can damage the wheel bearings.
    - c. As a preventative maintenance precaution, inspect all of the inner sides of the hub for leakage at least once a year or every 60,000 miles, whichever comes first.
  8. Axle alignment also must be checked at regular intervals. If the semitrailer is not tracking properly, it should be taken out of service immediately.

## Brazos Dump Trailer

9. The brake shoes must be adjusted after the first 200 miles of use and every 3,000 miles thereafter.
  - a. The brake shoes must be adjusted after the first 200 miles of use and every 3,000 miles thereafter. Most axles are fitted with a brake mechanism that will automatically adjust the brake shoes when the trailer is “hard braked” while backing up.

### **WARNING**

- **Hydraulic oil under pressure can penetrate body tissue causing serious injury and possible death. When troubleshooting a hydraulic system for leaks, always use cardboard or wood as a detector. DO NOT USE YOUR BARE HANDS. If you are injected with hydraulic oil or any other fluids, immediately seek treatment by a doctor trained in the treatment of penetrating fluid injuries.**
- **The hydraulic system can retain high pressure even after the tractor has been disconnected from the semitrailer.**
- **Hydraulic cylinders are NOT to be used as a stabilizer on a dump body or dump trailer.**

### **NOTICE**

The hydraulic system in the end dump semitrailer requires that the tractor have a Wet Kit with the following minimum requirements:

- Pump: 20-25 GPM (Gallons Per Minute) recommended
  - Pressure: 2,000 PSI (Pounds per Square Inch)
  - Reservoir: 65 Gallons
  - The 280” main lift cylinder stroke length requires a wet kit with a 60-gallon minimum reservoir.
10. Inspect the main semitrailer dump body lift cylinder for leaks or damage. If any leaks or damage are noted, take the semitrailer out of service.
  11. Inspect the entire semitrailer chassis for any loose or missing fasteners. Tighten or replace these fasteners as needed.
  12. Turn on the tractor lights.
    - a. Inspect all semitrailer lights to make sure they are working properly. Turn on the tractor lights and check the semitrailer front marker light (1, [Figure 4-5](#)), side marker light (2, [Figure 4-5](#)), rear marker light (4, [Figure 4-5](#)) and the rear marker lights (5, [Figure 4-5](#)). **NOTE:** Check both sides of the semitrailer for the marker lights.
    - b. Turn on the 4-way flashers and have an assistant step on the tractor brake pedal to check the brake lights and turn signals.



Figure 4-5 – Semitrailer Marker, Stop and Turn Signal Lights

- c. Inspect the electrical wiring on the semitrailer for signs of wear or damage. If any is noted, take the semitrailer out of service.
  - d. Inspect the cables from the tractor to the semitrailer for wear or damage. Make sure the cables are properly supported to prevent wear and/or damage to the semitrailer connectors.
  - e. Make sure the cables are long enough to prevent accidental disconnection if the tractor and semitrailer jackknife.
13. Check and drain the airline water separator (1, Figure 4-6). **NOTE:** The style of water separator and its location will change from tractor to tractor.
- a. Open the drain cock at the bottom of the water separator to allow all water to drain out. Leave the drain cock open until only compressed air exits the water separator.



Figure 4-6 – Air Line Water Separator

14. Check the pneumatic system for air leaks.
  - a. From the tractor cab, push either the Trailer Air Supply knob (1, [Figure 4-7](#)) or move the tractor protection control valve from the Emergency to the Normal position. Either of these actions will provide air pressure to the semitrailer brake system. Do not move the tractor until the entire pneumatic system has returned to the normal system pressure.



**Figure 4-7 – Tractor Air Supply Controls**

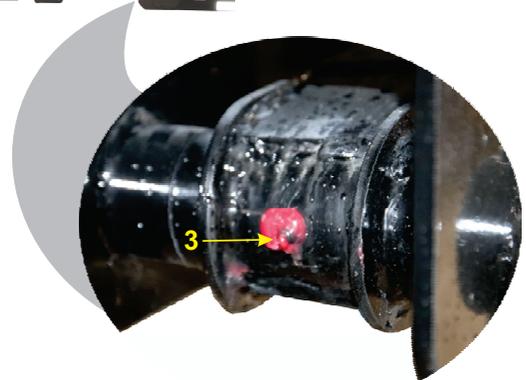
- b. When full pneumatic system pressure has been reached, shut off the tractor engine and listen for any air leaks. Locate and repair any air leaks before using the semitrailer. If the leak cannot be repaired, take the semitrailer out of service.
    - c. With the tractor engine off, press the brake pedal and listen for the sound of the trailer brakes being applied.
    - d. If there are no problems with air leaks, start the tractor engine and allow the pneumatic system to build to full system pressure.
    - e. When full system pressure has been achieved, set the trailer brakes by pulling the Parking Brake control knob (2, [Figure 4-7](#)) outwards. Release the trailer brakes by pressing inwards on the Parking Brake control knob.
15. Check the tool kit, safety kit for flares and warning markers, and other safety equipment to make certain all are present and in good condition. Minor repairs or adjustments depend to a great extent upon the tools and equipment carried on the trailer.

## Monthly Maintenance Procedures

### NOTICE

Some of the following maintenance procedures will need to be done by a qualified semitrailer mechanic.

1. Do all Daily Maintenance procedures.
2. Lubricate all grease zerks:
  - a. Trailer support arms and main pivot shaft (1, 2, [Figure 4-8](#)).
  - b. Trailer support arm center pivot (3, [Figure 4-8](#)).



**Figure 4-8 – Semitrailer Support Arm Lubrication**

- c. Tailgate pivots
        - i. High lift tailgate assembly  
The grease zerk for this style of tailgate is located on the top of the semitrailer body at the tailgate pivot arm. Make sure to grease both tailgate lift arms. **NOTE:** A ladder will be needed to reach the grease zerks.

## Section 4 – Routine Service and Maintenance



**Figure 4-9 – High Lift Tailgate Grease Zerks**

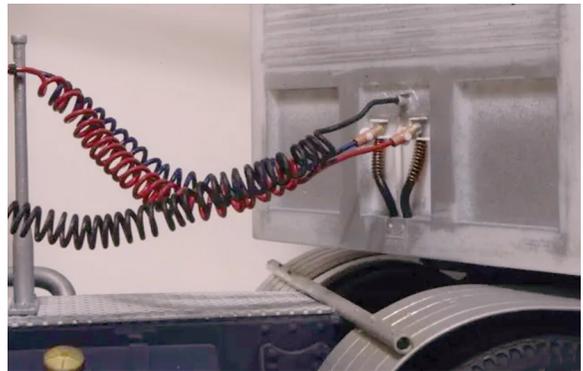
ii. Manually opened tailgate

Grease the zerk (1, [Figure 4-10](#)) on each of the hinge pivots. **NOTE:** A ladder will be needed to reach all the grease zerks.



**Figure 4-10– Manual Tailgate Grease Zerks**

3. Adjust the semitrailer brakes:
  - a. Check the travel of brake chamber push rod and adjust brakes if necessary. Push rod travel should be kept at a minimum of 1/2" without the brakes dragging.
  - b. Inspect Hose Assemblies and Gaskets for abrasions, swelling, or other damages. Replace as necessary.
4. Check to make sure cable and hoses between the tractor and semitrailer are properly supported, ([Figure 4-11](#)) do not rub on tractor frame and do not show any signs of wear or damage.



**Figure 4-11 – Properly Supported Air and Brake Lines**

5. Check the semitrailer brake linings (1, [Figure 4-12](#)) for lining thickness. Brake lining should be replaced if excessively worn.



**Figure 4-12 – Brake Lining Inspection**

6. Inspect tractor brake fluid reservoir and brake lines:
  - a. Check to make sure all brake lines are properly fastened to the semitrailer frame or show any signs of damage.

- b. Make certain all brake line connections are tight.
  - c. Check to make sure that the brake lines are properly supported so they do not rub on other trailer parts.
7. Check semitrailer electrical system:
- a. Inspect lights, wiring, and coupling sockets.
  - b. Make sure all lights are clean and working properly. Replace any light that is not working properly.
  - c. Secure loose wires to the semitrailer frame.
8. Inspect and tighten all wheel lug nuts, spring clips, and U-bolts.



**Figure 4-13 – Check Lug Nuts**

9. Check all tires
- a. Check air pressure in all tires.
  - b. Measure and check all tires for proper mating and unserviceable condition. Serviceable tires that indicate abnormal wear should be rotated to other wheel positions.
  - c. Apparent mechanical defects should be corrected.
10. Check the axle for proper alignment. This deficiency is the most probable cause of tire wear.
11. Check the underside of the trailer frame, axle mounts and springs for any debris that may be trapped.
12. Inspect the spring assemblies for:
- a. Excessive spring sag.
  - b. Shifted or broken spring leaves.
  - c. Loose or damaged spring clips.
  - d. Check the leaf spring U-bolts to make sure the U-bolt nuts are torqued properly.
  - e. If any damage is noted, take the semitrailer out of service.
13. Check the radius rod rubber bushings to make sure they are in good condition and free of oil or grease.

## Annual/Seasonal Maintenance Procedures

### NOTICE

Some of the following maintenance procedures will need to be done by a qualified semitrailer mechanic.

1. Do all Daily and Monthly maintenance procedures.
2. Check the axle for proper alignment and axle U-bolts.
  - a. Make sure that the axle U-bolts nuts are tightened to the required torque.
  - b. Check for proper axle alignment. This deficiency is the most probable cause of tire wear.
3. Inspect the spring assemblies for:
  - a. Excessive spring sag.
  - b. Shifted or broken spring leaves.
  - c. Loose or damaged spring clips.
  - d. Check the leaf spring U-bolts to make sure the U-bolt nuts are torqued properly.
  - e. If any damage is noted, take the semitrailer out of service.
4. Check wheel hub gaskets and seals for leaks.
  - a. Leaking seals can result in damaged wheel bearings and possible failure of the axle assembly and/or brakes.
  - b. Check levels in each hub. Add lubricant when the level is low. Only add lubricant to the level indicated by the mark on the hub cap sight glass. Too much oil can damage the wheel bearings.
  - c. As a preventative maintenance precaution, inspect all the inner sides of the hub for leakage at least once a year or every 60,000 miles, whichever comes first.