

Built the way you want it for the way you use it!



# Viking Specialized Trailers, L.L.C. Owner's Manual

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## Built the way you want it

**Viking Specialized Trailers, L.L.C.** 

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## CONTENTS

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**iking Specialized Trailers**, L.L.C.

# **Congratulations!**

You have just purchased a Viking Specialized Trailer

built the way you want it for the way you use it!

Thank you for selecting Viking Specialized Trailers as your trailer source. This owner's manual has been prepared to assist you in the safe operation and maintenance of your Viking Specialized Trailer. It contains important information on the proper use of your Viking Specialized Trailer and the major components and optional equipment.

It is **Important** that you understand the use of signal words and safety symbols used throughout this owner's Manual.

# NOTICE

This signal word NOTICE is used throughout this manual to address practices not related to personal injury.



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



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

# **A** DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

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- All instructions are provided for assistance in the proper operation of your trailer. Specific component operating instructions and your company's procedures should be consulted. These may include DOT and employer training programs or instructions.
- This owner's manual includes periodic safety checks that the trailer operator should perform.
- It is important that every trailer owner and / or operator have an organized Trailer Preventive Maintenance program (TPM). The United States Department of Transportation requires by law that maintenance records be kept on every commercial highway vehicle. It is to your advantage to be able to show that regularly scheduled TPM inspection checks have been made on every piece of equipment operated.
- A regular TPM program will not only ensure that you will get the most usage from your trailer, but will also assist in demonstrating that the equipment has been properly maintained.
- For assistance with setting up and maintaining a Trailer Preventive Maintenance program, send for a *"Maintenance Manual for Trailers and Containers"* by writing to the **Truck Trailer Manufacturers Association, 1020 Princess Street, Alexandria, Virginia 22314**.



This owner's manual should be kept with the trailer at all times and should be left with the trailer when it is sold.

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### **REPORTING SAFETY DEFECTS**

- If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Viking Specialized Trailers, L.L.C. at the numbers below.
- If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in any individual problems between you, your dealer, or Viking Specialized Trailers, L.L.C.
- To contact NHTSA you may either call the Auto Safety Hotline toll-free at 1-800-424-9393 (366-0123 in Washington, DC area) or write:

NHTSA U.S. DEPARTMENT OF TRANSPORTATION 400 7th Street SW, (NSA-11) Washington, DC 20590

- You can also obtain other information about motor vehicle safety from the NHTSA Hotline.
- Upon request we will furnish any additional, or more detailed maintenance and operational instructions, including any nonstandard make of equipment that was specified and installed.

Stay up to date:

All information contained in this owner's manual, including illustrations, dimensions, and specifications are based on the latest product information available at the time of publication approval.

Changes are being made continually to improve the product. The right is reserved to make changes in materials, equipment, design, specifications, and models, and to discontinue models without additional notice or obligations.

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### **OPERATING LIMITS AND RESTRICTIONS**

This Viking Specialized Trailer was designed for operation within legal highway speed limits on reasonable road surfaces for the type of service it was built to perform, in accordance with the following:

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- This trailer was built to carry cargo within the limitations of two weight ratings on the identification plate. These ratings, GAWR and GVWR are:
  - a. The GAWR (gross axle weight rating) is the structural capability of the lowest rated member of the running gear components: suspension and spring system, hub, wheels and drums, rims, bearings, brakes, axles, or tires.
  - b. The GVWR (gross vehicle weight rating) is the structural capability of the trailer when supported by the kingpin and axles with the load uniformly distributed throughout the cargo space.
- 2. This trailer will carry a total payload of the Gross Vehicle Weight Rating (GVWR) less the weight of the trailer. The load must be uniformly distributed. Any **Modification** made to the trailer must comply with DOT and NHTSA regulations and must not compromise the gross vehicle weight rating (GVWR) of the trailer.

# NOTICE

The maximum load indicated on the identification 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 comply with the following sections of the Department of Transportation Regulations, Subpart 1 -Protection Against Shifting and Falling Cargo:

**Utiling Specialized Trailers**, L.L.C.

- Section 393.100 General rules for protection Against Shifting and Falling Cargo.
- Section393.102 Securement systems. To properly secure cargo, it is important that the working load limits of tie down assemblies be known. As well as the working load limit 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). 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 of the various components.
- Viking Specialized Trailers offers a variety of steel/aluminum trailers. Loading, operation, and maintenance may vary between trailers. Be sure you know specifics of your trailer including its capacities and limitations. The vehicle identification (VIN (FMVSS-115)) Metal Plate on the front of the trailer contains important information. You will need your Model Number and Serial Number when contacting Viking Specialized Trailers about your trailer.

Other Safety Standards

FMVSS-108	Lights
FMVSS-223	Rear Impact Guard
FMVSS-224	Rear Impact Guard

# NOTICE

Any operation of the trailer outside the limitations stated in this owner's manual will void any responsibility of Viking Specialized Trailers for any of its results.

## **Preventive Maintenance**

Frequent inspection and preventive maintenance are important in the life of any equipment. Your Viking Specialized Trailer is no exception. Proper care and maintenance will protect the long life of your trailer and may eliminate unnecessary repair costs and downtime.

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# NOTICE

A list of component manufacturers and information on contacting them is provided in the APPENDIX of the Owner's Manual.

## **Driver's Pre-trip Inspection**

- 1. Check Tires and Wheels
  - a. When using an air gauge, do all the tires have the correct air pressure?
  - b. Is the tread of the tires in good shape?
  - c. Is there any visibly damage to the tires?
  - d. Do the lug-nuts fit properly and have the correct torque?
- 2. Check Electrical and Air Connections
  - a. Are the gladhands tight?
  - b. Do all the lights function properly?
  - c. Does the power cable fit tight?
  - d. Do any lights have broken or cracked lenses which could lead to a short?
  - e. Clean light lens.
- 3. Check Suspension and Components
  - a. Inspect the suspension area for cracks or bends.
  - b. If equipped with air suspension, are there any broken or missing air springs?
  - c. If equipped with spring suspension, are there any broken or missing springs?
  - d. Do tires show any sign of misalignment or unusual / uneven wear?
  - e. Does the trailer ride level and at the correct ride height?



- 4. Check Brakes and Components
  - a. Do brakes engage and disengage properly?
  - b. Are brakes noisy when applied?
  - c. Does the anti-lock braking system (ABS) warning lamp operate properly?
- 5. Check wheel bearing oil.
  - a. Visually inspect seal and hub cap for leakages and hub oil level.



For instructions on wheel bearing adjustment refer to the axle manufacturer instructions such as Meritor Maintenance Manual 14. A list of component manufacturers and their contact information is provided in the Appendix Section of this Owner's Manual. for the way you use it! 🎽

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# DECALS

# NOTICE

Decals are an important part of the trailer operation. Knowing where decals are located and what information they convey will help in the safe operation of the trailer, the maintenance of the trailer and in maintaining compliance with state and federal regulations.

# NOTICE

If any of these decals are missing contact Viking Specialized Trailers for information on obtaining replacement.

The following decals represent the standard decals and their locations at the time of printing / trailer manufacture.

## DECALS

The following section contains the decals and emblems used on Viking Specialized trailers. Due to differences in configurations and equipment your trailer may or may not use all the decals and emblems listed. Newer trailers may also have decals and emblems that differ from older trailers. Replace damaged or missing decals promptly.



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DECALS

**DECALS (Continued)** 

#### Road Side View of Trailer



Examples of decals located on the main beam web, on both the road side and the curb side, in front of the Land Gear. VS# 360-00045 VS# 360-00028



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# DECALS

**DECALS** (Continued)

**Road Side View of Trailer** 



Examples of decals located on the main beam web, on both the road side and the curb side, to the rear of the Landing Gear.

#### VS# 360-00052



#### VS# 360-00066



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DECALS

**DECALS (Continued)** 

(Side View near the middle of the trailer.)

Examples of decals located on the main beam web, on both the road side and the curb side, near the middle of the trailer.

The Coil Package is generally located mid way between the trailer king pin and the center of the trailer suspension.

This decal is used on trailers supplied with a Coil Package.



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# for the way you use it! 🖁

## DECALS

DECALS (Continued)

(Side View in front of Suspension)



Examples of decals located on the main beam web, on both the road side and the curb side, in front of the Suspension or between axles.

Vendor decals related to the suspension or the operation of the suspension are located in this area.

#### VS# 360-00050



#### Vendor decal



## Vendor decal



WATSON & CHALLIN	FIRST 5 DAYS OF SERVICE FIRST 10 DAYS OF SERVICE				68 D.47 6 MON	5 OF 5	ERVICE
Watson Despension Systems							
Bolta wool he tightened an Tighten #1 & #44 to per Using the same co	é lorqueé un tial torque t questos fully		tigt tor	titare e que fil	A #3.	•	11
TO	RQUE RE	QUIRI	EMEN	18			
(non Plated	CLEAN I	UBRI	CATE	DTHR	EADS		
(UNF-Grade 8) Size -	3/8 *	1/2-	5/8*	3/4*	7/8*	17	1.1/8
U-BOLT MIN FOOT LBS	15	40	120	200	400	650	800
U-BOLT MAX FOOT LBS	20	60	150	250	450	750	900
Capacrew - Bolt Size -	3/8*	1/2-	5/8*	3/4*	7/8-	17	1 1/8
TORQUE MIN FOOT LBS	2.5	50	150	300	500	700	900
TORQUE MAX FOOT LBS	3.5	75	200	350	550	800	1000

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## DECALS

### **DECALS** (Continued)

VS# 360-00095 (Side View in front of Suspension)

🕂 WARNING					
SAFETY ALERT! (1) FOLLOW ALL TORQUE REQUIREMENTS. (2) DO NOT USE ANY COMPONENT WITH VISIBLY WORN OR DAMAGED THREADS. FAILURE TO FOLLOW THESE SAFETY ALERTS CAN LEAD TO LOSS OF VEHICLE CONTROL, PROPERTY DAMAGE, SERIOUS PERSONAL INJURY OR DEATH.					
Hutchens Suspension Torque Requirements 9600-440 Series ( Decal Part Number 16087-01 Rev. E )					
After an initial break in period, approximately 1000 miles, and at least every 4 months periodically thereafter, ALL bots and nuts should be checked to insure that recommended torque values are being maintained. Oiled otroue values listed are for new fasteners with lubicated threads. It is recommended that new installations be performed with oiled fasteners. For dry threads which have been in service, use the higher torque values which are noted below.					
Urer 70 lb-ft 8 1 1/8-12 UNF. 70 lb-ft 8 1-14 UNF. 540 lb-ft 7 7/8-14 UNF. 500 lb-ft 7 3/4-16 UNF. 220 lb-ft 3 5/8-18 UNF. 220 lb-ft 3	380 lb -ft 730 lb -ft 70 lb -ft 300 lb -ft 180 lb -ft				
Hutchens Industries, Inc., P.O. Box 1427, Springfield, Missouri 65801-1427 Toll Free 1 (800) 654-8824					

### VS# 360-00094

🕂 WARNING				
SAFETY ALERT! (1) FOLLOW ALL TORQUE REQUIREMENTS. (2) DO NOT USE ANY COMPONENT WITH VISIBLY WORN OR DAMAGED THREADS. FAILURE TO FOLLOW THESE SAFETY ALERTS CAN LEAD TO LOSS OF VEHICLE CONTROL, PROPERTY DAMAGE, SERIOUS PERSONAL INJURY OR DEATH.				
Hutchens Suspension Torque Requirements 9600-9700 Series ( Decal Part Number 16086-01 Rev. J )				
After an initial break in period, approximately 1000 miles, and at least every 4 months periodically thereafter, ALL bolts and nuts should be checked to insure that recommed torque values are being maintained. Oiled torque values listed are for new fastmens with lubricated threads. It is recommended that new installations be performed with oiled fasteners. For dry threads which have been in service, use the higher torque values which are noted helow.				
1 1/8-7 (9600 / 9700 Rocker Bolt). 1-14 or 1-8 (9700 Radius Rod Bolt). 7/8-14 (Axle U-Bolts & 9600 Radius Rod Bolt). 3/4-16 (Axle U-Bolts). 5/8-18 (Adius Rod Clamp Bolt). 5/8-18 (Spring Retainer Bolt).	590 lb-ft         790 lb-ft           540 lb-ft         720 lb-ft           350 lb-ft         470 lb-ft           310 lb-ft         420 lb-ft           130 lb-ft         170 lb-ft           351 lb-ft         50 lb-ft			
Hutchens Industries, Inc., P.O. Box 1427, Springfield, Missouri 65801-1427 Toll Fi	ree 1 (800) 654-8824			

🕂 WARNING			
FAILURE TO LOCK THE SLIDING SUSPENSION CAN CAUSE LOSS OF VEHICLE CONTROL, DEATH, SERIOUS BODILY INJURY, AND PROPERTY DAMAGE.			
Hutchens Silder Series (Decal Part Number 16088-01 Rev. C) THIS TRAILER IS EQUIPPED WITH A SLIDING SUSPENSION THAT MUST BE SECURELY LOCKED PRIOR TO OPERATION. THE SLIDING SUSPENSION IS LOCKED WHEN THE MAIN BODY OF EACH LOCK PINE NETTINGS THROUGH THE HOLES IN THE RAILS BEFORE PULLING THE TRAILER, THE SLIDING SUSPENSION MUST BE CAREFULLY INSPECTED TO EDNIFE IT IS PROPERLY POSITIONED AND THE MAIN BODY OF EACH LOCK PIN DOES SECTION THROUGH THE HOLE IN THE RAILS. BEFORE PULLING THE TRAILER, APPLY TRAILER BRAKES AND GENTLY ROCK TRAILER BACKWARDS AND FORWARDS TO ENSURE SUBJING SUSPENSION IS SECURE.			
TO POSITION THE SLIDING SUSPENSION:     Set both tractor and trailer brakes.     Remove locator bar from behind sider and move to desires location.     Remove locator bar from behind sider and move to desires location.     Remove locator bar from desired brakes and carefully drive forward or backward until the silding suspension is at the desired location.     Release the tractor brakes and carefully drive forward or backward until the silding suspension is at the desired location.     Release the tractor brakes and carefully drive forward or backward until the silding suspension is at the desired location.     Release the tractor brakes and prevention of the silding suspension is properly locked and follow procedures set out above before pulling the trailer. The lock is means eliding suspension is properly locked and follow procedures set out above before pulling the trailer. The lock is means the solution.			
Hutchens Industries, Inc., P.O. Box 1427, Springfield, Missouri 65801-1427 Toll Free 1 (800) 654-8824			

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## DECALS

**DECALS** (Continued)



Examples of decals located on the Rear of Trailer and other areas where they are appropriate.





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# DECALS

**DECALS** (Continued)

### VS# 360-00079







# DECALS

### **DECALS (Continued)**

Examples of decals supplied with stock components.

- 1. Automatic slack adjuster decal
- 2. Wheel: Torque Specifications
- 3. Wheel: Warning
- 4. Wheel: Danger Torque Specification
- 5. Suspension Maintenance Recommendations
- 6. Hendrickson: Suspension Torque Specifications

#### Vendor decal



### Vendor decal







# DECALS

**DECALS (Continued)** 

VS# 360-00125.2



VS# 360-00125.3



VS# 360-00124.1



VS# 360-00125.4



# NOTICE

This is only a representation of some of the decals that may be found in this area. It is not all, or the only, nor must all the ones shown be placed here. These are only examples of decals that may be found here.

# NOTICE

If any of these decals are missing, contact Viking Specialized Trailers for information on obtaining replacements. The following decals represent the standard decals and their locations at the time of printing / trailer manufacture.

## for the way you use it!

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# DECALS

### **DECALS** (Continued)

### (Side View in front of Suspension)



Examples of decals located on the main beam web, on both the road side and the curb side, in front of the Suspension or between axles.

Vendor decals related to the suspension or the operation of the suspension are located in this area.



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DECALS

**DECALS (Continued)** 

(Side View to rear of Suspension)

Examples of decals located on the main beam web, on both the road side and the curb side, to the rear of the Suspension.

VS# 360-00076



#### ABS Decal VS# 360-00006





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# DECALS

## **DECALS (Continued)**

Examples of decals used for Instructional/Operational information.





## STAY CLEAR WHILE RAISING OR LOWERING RAMPS

Main Control Valve				
WINCH	DECK	SUPPORT	APPON	APPON
		DECK	LATCH	
		BRACE		
PULL TO	PULL TO	PULL TO	PULL TO	PULL TO
UNWIND	RAISE	RAISE	UNLOCK	RETRACT
PUSH TO	PUSH TO	PUSH TO	PUSH TO	PUSH TO
WIND	LOWER	LOWER	LOCK	EXTEND

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# **OPERATING INSTRUCTIONS**



All Viking Specialized Trailers must be operated ONLY by trained and qualified professional drivers.



#### Incorrect coupling and uncoupling of your 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.

### **COUPLING TRACTOR-SEMITRAILERS**

- 1. Inspect the Fifth Wheel
  - Check for damaged or missing parts.
  - Check to see that mounting to tractor is secure no cracks in frame, etc.
  - Be sure that the fifth wheel plate is properly greased; failure to do so could cause severe friction leading to loss of control.
  - Check if fifth wheel is in proper position for coupling (Wheel tilted down towards rear of tractor, jaws open, and safety unlocking handle in the automatic lock position).
  - If you have a sliding fifth wheel, make sure it is locked.
  - Make sure the trailer kingpin is not bent, broken, or damaged in any way.

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## OPERATING INSTRUCTIONS COUPLING AND UNCOUPLING (Continued)

- 2. Inspect Area and Chock Wheels
  - Make sure area around vehicle is clear.
  - Be sure trailer spring brakes are on.
  - Check that all trailer cargo is secured against movement.
- 3. Position Tractor
  - Put the tractor directly in front of the trailer.
  - Check position, using outside mirrors, look down both sides of trailer.



Never back a tractor under a trailer at an angle. Pushing the trailer sideways can damage the landing gear or other structures of the trailer.

- 4. Back Slowly
  - Back until fifth wheel touches the trailer.
  - Do not impact the trailer.
- 5. Secure Tractor
  - Apply the parking brake.
  - Shift the transmission into neutral.
- 6. Check Trailer Height (see page 32 Operating Landing Gear)
  - The trailer should be low enough so that it is raised slightly by the tractor when the tractor is backed under it. Raise or lower the trailer as needed. Make sure the trailer is proper height and the kingpin and fifth wheel are aligned.



If trailer is too high, it may not couple correctly to the tractor. If it is too low, the kingpin may be struck and bent or the front of the trailer may be damaged. Built the way you want it

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# OPERATING INSTRUCTIONS

COUPLING AND UNCOUPLING (Continued)



Do not walk or stand between tractor and trailer. Tractor movement can cause serious injury or death.

- 7. Connect air Lines to Trailer
  - Check glad-hand seals and connect tractor supply (emergency) airline to trailer supply (emergency) glad-hand.
  - Check glad-hand seals and tractor control (service) airline to trailer control (service) glad hand.
  - Make sure airlines are supported where they cannot be hung-up or damaged while tractor is backing under trailer.
- 8. Supply Air to Trailer
  - From the tractor cab, push in "air supply" knob or move tractor protection valve control from the "emergency" to the "normal" position to supply air to the trailer brake system.
  - Wait until the air pressure is normal.
  - Check brake system for crossed airlines.
  - Shut engine off to hear brakes.
  - Apply and release trailer brakes, listen for the sound of trailer brakes being applied and released.
  - Check the air brake system pressure gauge for signs of major air loss.
  - When you are sure the trailer brakes are working properly, start the engine.
  - Check to see that air pressure is normal.
- 9. Lock trailer Brakes
  - Pull out the "air supply" knob, or move the tractor protection valve from "normal" to "emergency".
- 10. Back Tractor under the Trailer
  - Shift into lowest reverse gear.
  - Back tractor slowly under trailer to avoid severely impacting the kingpin.

## OPERATING INSTRUCTIONS COUPLING AND UNCOUPLING (Continued)

- Stop when the kingpin is locked into the fifth wheel.
- 11. Check that Connection is Secure
  - Raise trailer landing gear slightly off ground.
  - Gently pull the tractor forward while the trailer brakes are still locked.
  - Fifth wheel should be locked into kingpin at this time.

#### 12. Secure Vehicle

- Shift the transmission into neutral.
- Apply parking brakes.
- Shut off engine and be sure someone else will not move the truck while you are under it.
- 13. Inspect Coupling
  - Use a flashlight if necessary.
  - Make sure there is no space between upper and lower fifth wheel. – If there is space, something is wrong! The kingpin may be on top of closed fifth wheel jaws; trailer would come loose very easily.
  - Look into the back of the fifth wheel with caution. Make sure the fifth wheel jaws have closed around the shank of the kingpin.
  - Check that the locking lever is in the "lock" position.



Make sure the parking brake is engaged and the tractor cannot be moved before placing any part of your body between the tractor and trailer. Tractor movement can cause serious injury or death.

- 14. Connect Electrical Cord and Check Airlines
  - Plug the electrical cord into the trailer and fasten the safety catch.
  - Check both airlines and electrical line for damage.
  - Make sure air and electrical lines will not be crushed or damaged by any of the vehicle's moving parts.

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# **OPERATING INSTRUCTIONS**

## COUPLING AND UNCOUPLING (Continued)

- Visually inspect to see that the ABS light functions correctly when the power cord is connected. If the light stays on or comes on during use, have the ABS unit repaired at once.
- 15. Raise Front Trailer Supports (See page 32 Landing Gear)
  - Use low gear range (if equipped) to begin raising the landing gear.
  - Once free of weight, switch to high gear range.
  - Raise landing gear all the way up.
  - After raising the landing gear fully, secure the crank handle.
  - When full weight of trailer is resting on tractor, check for clearance between rear of tractor frame and landing gear.
  - Check that there is enough clearance between the top of the tractor tires and the nose of the trailer.



Never drive with the landing gear partially down; it could hang on railroad tracks or other object.

### UNCOUPLING TRACTOR-SEMITRAILERS

- 1. Position Rig
  - Make sure the surface of the parking area can support the weight of trailer.
  - Have tractor lined up with trailer. (Pulling out at an angle can damage landing gear.)
- 2. Ease Pressure on Locking Jaws
  - Shut off trailer air supply to lock trailer brakes. Ease pressure on fifth wheel by backing up gently (this will help to release the fifth wheel locking lever).
  - Put parking brakes on while tractor is pushing against the king-pin. This will hold the rig with pressure off the locking jaws.

## OPERATING INSTRUCTIONS COUPLING AND UNCOUPLING (Continued)

- 3. Lower the Landing Gear
  - If trailer is empty lower the landing gear until it makes firm contact with the ground, turn crank in low gear a few extra turns; this will lift some of the weight off the tractor. (Do not lift trailer off the fifth wheel.) This will make it easier to unlatch the fifth wheel and easier to re-couple.

- 4. Disconnect Airlines and Electrical Cable
  - Disconnect airlines from trailer. Connect airline gladhands to dummy couplers at back of cab or couple them together.
  - Hang electrical cable with plug down to prevent moisture from entering it.
  - Make sure lines are supported so they won't be damaged while driving the tractor.
- 5. Unlock Fifth Wheel
  - Raise release handle lock.
  - Pull the release handle to the "open" position.
  - Stay clear of the rear tractor wheels to avoid serious injury in the event of vehicle movement.
- 6. Pull Tractor Partially Clear of Trailer
  - Pull tractor forward until fifth wheel comes out from under trailer.
  - Stop with tractor frame under trailer (Prevents trailer from falling to ground if landing gear should collapse or sink).
- 7. Secure Tractor
  - Apply parking brake.
  - Place transmission in neutral.
- 8. Inspect Trailer Supports
  - Make sure ground is supporting trailer.
  - Make sure landing gear is not damaged.
- 9. Pull Tractor Clear of Trailer
  - Release parking brakes.
  - Check the area, then drive the tractor clear.

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# **OPERATING INSTRUCTIONS**

SLIDING SUSPENSIONS



Failure to lock a sliding suspension can cause loss of vehicle control, property damage, serious bodily injury and death. Always check to ensure that lock pins are fully engaged in the trailer frame or slider rail before use.

When a trailer is equipped with a sliding suspension . . .

Follow these procedures.

- Make sure the suspension is securely locked into place. (The suspension is locked into place when the main body of each lock pin extends through the holes in the rails.)
- 2. Inspect the suspension carefully to ensure it is properly positioned and the main body of each lock pin does extend through the holes in the rails.
- 3. Check area around and under trailer to be clear of obstructions and personnel.
- 4. Apply the trailer brakes and gently rock the trailer backwards and forwards to make sure the sliding suspension is secure.



Typical Side View, at Rear of Trailer,

Showing a Sliding Suspension



Reference the suspension manufacturer's recommendations for more detailed operating instructions, cautions and warnings.

# **OPERATING INSTRUCTIONS**

## SLIDING SUSPENSIONS (Continued)

## POSITIONING

for the way you use it! 🚩



7. With the trailer brakes applied, gently rock trailer backward and forward to ensure sliding suspension is properly locked and follow proper operating procedures before pulling trailer. The lock pin must be checked at each stop to ensure each is locked.

Note: Locator bars are not used on Hendrickson AAZNT air ride sliders.

# OPERATING INSTRUCTIONS LANDING GEAR



GEAR LOCATIONS:

For low speed, extension or retraction, push crank in. For high speed, extension or retraction, pull crank out.

# **A** CAUTION

- 1. Do not over extend landing gear.
- 2. Never drop trailer on landing gear. Always extend landing gear until the landing gear foot contacts the

ground before removing from the trailer.

- 3. Always ensure that the landing gear foot rests on a hard surface capable of supporting the trailer and load (hard ground, concrete etc.). If necessary, place foot pads on a support plank to prevent the landing gear from sinking into the surface.
- 4. Always retract landing gear fully before moving the trailer.
- 5. Always store the crank in the crank holder after extending or retracting the landing gear.
- 6. Replace all damaged or worn parts.
- 7. Failure to replace worn or damaged riser nut and retracting screw assembly could cause a failure.

# NOTICE

Landing Gear Bolts . . Use a minimum 5/8" Grade-5 bolt (torque 150ft Ibs dry, 110ft Ibs oiled) on all Landing Gear connections except on cross pipe. On cross pipe use a minimum 5/16" Grade-5 bolt (torque 17ft Ibs. dry, 13ft Ibs. oiled).

## OPERATING INSTRUCTIONS FOLD BACK GEAR

Viking Specialized Trailers that have fold back landing gear use a brake cable winch to raise the landing gear to the up positions. Operating Instructions for brake winch:

Wind cable on winch reel by turning winch handle in clockwise direction. This should produce a loud, sharp, clicking noise. The load will remain in position when the handle is released. Wind cable off the winch reel by turning winch handle counterclockwise (no noise will be produced). The load will remain in position when the handle is released, but for extra security it is recommended that the handle be turned clockwise until at least two clicks are heard. This will add extra tightness to the brake mechanism. Always satisfy yourself that the winch is holding the load before releasing the winch handle.

**IMPORTANT:** Sufficient load must be applied to the cable to overcome internal resistance and operate the brake properly; otherwise turning the crank handle counter-clockwise will only remove the handle for the shaft - the reel will not turn. The minimum operating load requirement is 50lbs.





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# NOTICE

Do not oil or grease brake mechanism. Keep winch in good working order. Damaged or severely-worn parts create unnecessary dangers and could result in personal injury or property damage.

#### VS# 360-00071

#### BE SURE THE SUPPORT LEG IS SECURED IN THE PROPER POSITION FOR USE IN TRANSPORTING OR PARKING BY USE OF THE ATTACHED PIN. DO NOT ATTEMPT ANY OPERATION OF THE LEG UNLESS THE TRALER IS PROPERLY SUPPORTED BY THE TRACTOR OR OTHER SOLID DEVICE.



## VS# 360-00028

## **A**CAUTION

ALL LOCKING PINS MUST BE IN PLACE BEFORE MOVING THE EQUIPMENT!!

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## FOLD BACK LANDING GEAR



**Rolling Tailboard Flat Bed Trailer with Fold Back Landing Gear.** Read page 33



Log Trailer with Fold Back Landing Gear Read page 33

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# **OPERATING INSTRUCTIONS**

**RAMP LOADING** 

Viking Specialized Trailers come with ramps of your choice. The Spring assist ramps & the Hydraulic ramps help make loading and unloading easier and help prevent back injury.



Trailer must be coupled to tractor while using ramps for loading or unloading. While lowering or raising ramps keep other obstruction and/or personnel clear of ramps. Secure Ramps in raised position before moving trailer.



• Hydraulic Ramps



 Securement of Ramps

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iking Specialized Trailers, L.L.C.

## OPERATING INSTRUCTIONS THREE WHEEL FORKLIFT HAULER KIT

Viking Specialized "Poultry" Trailers equipped with the optional three wheel forklift hauler mounting package have the rear of the trailer designed to accept the Bright Coop BC3-5000 three wheel forklift built for the poultry industry. Always check to ensure the mounting package on the trailer is appropriate for the forklift you plan to use. **IMPORTANT:** Check with the manufacturer of the lift you are going to haul to be sure the trailer has the correct ballast in the front of the trailer to offset the weight of lift and maintain 5<sup>th</sup> wheel and king pin contact.

Read and understand the OPERATOR'S MANUAL for the forklift you plan to use before attempting to load/transport it on your Viking Specialized Trailer. Always maintain the clearances specified by the forklift manufacturer.



Driving over abrupt drop-offs and steep inclines may damage the lift trucks rear wheel. Follow all instructions in the lift truck's operator's manual to avoid serious injury.

# **WARNING**

DON'T RISK SERIOUS INJURY OR DEATH "FOLLOW THESE INSTRUCTIONS"

- Read and understand the forklift OPERATOR'S MANUAL before attempting to transport it.
- Read, understand and follow all SAFETY SIGNS on the forklift.
- Always park trailer in a position to permit safe loading and unloading of the forklift.
- Safety chains and binders must be in place and secure when transporting the forklift.
- Do not put any part of your body between the forklift and the trailer.
- Operate the forklift carefully when loading and unloading. Keep people away.
- Do not allow people or parts of the body under the forklift.
- Lower forks immediately after unloading forklift from the trailer.
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### OPERATING INSTRUCTIONS THREE WHEEL FORKLIFT HAULER KIT



Before attempting to transport a forklift:

- 1. Hitch pins must be installed in hanger plates (if applicable).
- 2. Safety chains must be connected.
- 3. Electrical connector (7 pin) must be connected.

Trailers with the rear unloader kit installed are required to have a Rear Impact Guard which complies with N.H.T.S.A. Articles 571.223 and 571.224. Your Viking Specialized "Poultry" Trailer rear under ride guard/bumper is DOT certified.



VIKING SPECIALIZED "POULTRY" TRAILERS FORKLIFT HAULER KIT



Always check & Inspect chains & Safety pins before moving trailer.





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# OPERATING INSTRUCTIONS ACCESSING DECK

Use caution when accessing the trailer deck. Enter and leave the trailer deck only from a dock as high as the trailer floor, or by means of a ladder or stairs. Do not attempt to use items such as lights or light brackets as "footholds" when accessing the deck. The lights or brackets may break causing you to fall resulting in an injury to yourself or others.



Walk carefully on trailer deck. Use caution to avoid slippery conditions which may result from water, ice, dirt or cargo being carried.

# **WARNING**

Never attempt to stand or walk on the trailer deck when the trailer is moving. This could cause you to lose your balance and fall from the trailer resulting in serious injury or death.



Use caution when entering or leaving deck under wet or icy conditions. Side rails, front skirts, and tail skirts can become slippery resulting in a fall. Falls from the trailer deck can result in serious injury or death. for the way you use it!

## OPERATING INSTRUCTIONS

ACCESSING DECK



NO STEP! TAILPIPE WILL ROLL!

TAIL ROLLER





POP UP ROLLERS









**NECK ROLLER!** 

NECK ROLLER



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### OPERATING INSTRUCTIONS HYDRAULIC DETACHABLE NECK OPERATION

# 

STAY CLEAR WHILE RAISING OR LOWERING THE NECK AND TRAILER







Raise an lower load deck

Lower & raise truck stand

#7.

**Operating Procedure** 

- 1. Before operating gooseneck verify proper levels.
  - Check engine oil level
  - Check fuel level
  - Check hydraulic reservoir level
- 2. Position trailer on reasonably level and firm ground.
- 3. Start engine and set throttle at full open.
- 4. Pull out gooseneck lock pin located at base of gooseneck.
- 5. Disconnect air and electrical lines and properly store.
- 6. Move neck hydraulic control lever upward to raise the trailer bed slightly.
- 7. Rotate the ride height lever counterclockwise and pull to clear the pin.
- 8. Lower trailer deck by moving the hydraulic lever downward.
- 9. Move truck stand lever downward to position truck stand on the truck frame to support the neck.
- 10. Pull tractor away from trailer.
- 11. Load trailer.
- 12. Reconnect by reversing this procedure.



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## **OPERATING INSTRUCTIONS**

HYDRAULIC LOADING RAMPS OPERATION



#### STAY CLEAR WHILE RAISING OR LOWERING RAMPS

35 Ton Paver Special Lowboy

- OPERATION OF HYDRAULIC ACCESSED RAMPS
- 1. Locate and understand the specific control levers and their function.
- 2. Before attempting operation be sure the area is clear of any personnel. Keep people a safe distance from trailer during this operation.
- 3. To lower ramps, determine if the ramps you are operating are lowered in one stage or two.
- 4. Ramps that operate in two stages requires that the smaller section be extended before lowering the complete ramp to the ground.
- 5. Note that the beaver tail ramp requires raising the deck slightly to allow extension of the small section before lowering the complete unit to the ground.
- 6. Ramps of only a single section are simply raised and lowered with one control lever.
- 7. After ramp use, reverse the lowering procedure. Note that the ramps that operate in two stages requires that the entire unit be lifted and then the small section folded in to place.
- 8. Caution: Once ramps are in their travel mode be sure they are secure and locked in place. Certain models will use a bar and pin to lock the ramps and others may use a chain and binder.

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## **OPERATING INSTRUCTIONS**

HYDRAULIC LOADING RAMPS OPERATION



#### STAY CLEAR WHILE RAISING OR LOWERING RAMPS







Hydraulic Winch for Loading Deck Loads.

Control Bank for Hydraulic Ramps.

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iking Specialized Trailers, L.L.C.

# LOAD SECUREMENT

# NOTICE

All working load limits (WLL) pertain to standard test results published by component manufacturers.

# **A**CAUTION

Anchor Points describe points that are considered part of the trailer, **NOT** the securing devices such as chains, cables or straps. Securing devices must be of a sufficient design not to cut into or deform the anchor point, and be rated equal to or greater than the WLL of the anchor point to obtain maximum ratings.

Customer specified anchor points are designed for specific units and will be rated on a per customer basis.



All anchor points must have a visual inspection prior to use. If an anchor point is visibly damaged (deformed, bent, torn, ripped, cracked or any other structural defect is found) **DO NOT USE** as an anchor point.

# **WARNING**

Side Rails (such as 6" structural channel or

6" extruded aluminum side rails) are not considered anchor points and should not be used as such.



DO NOT exceed the Working Load Limits of any anchor point.



## LOAD SECUREMENT





<u>ras</u>

"SLIDING WINCH" (In Winch Track) "SLIDING WINCH" (On Aluminum Winch Track)



Chain tie-downs have the same Working Load Limit whether mounted in the side rail or recessed into the floor.

# **WARNING**

When hooking to a Chain Tie-Down ALWAYS hook between two chain links. NEVER hook between the chain Tie-Down Cap and a chain link.



When placing a container on a trailer NEVER place any part of your body between the container and the trailer.



"Stake pocket" Side Mount





D RING & Pin Pocket" Side Mount



D Ring Working Load Limits are for standard mountings only. Working Load Limits on D rings may vary with design. DO NOT exceed standard WLL without documentation of design change and rating.

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## LOAD SECUREMENT

#### **BULKHEAD SECUREMENT**

A Bulkhead (Header Board) is a vertical member across the front of the trailer.

Typical Bolt On

Bulkhead



Rear Bolt On Bulkhead



# **A**CAUTION

The Bulkhead MUST BE SECURED before trailer is transported. Always check Bulkhead bolts during the pre-trip inspection for lose or broken bolts. Tighten any loose bolt and replace any broken, bent or missing bolts.

Tie-Down / Bolt Torque Specifications:

5/8" GR-8 . . . 110 Ft. Lb. Dry . . . 85 Ft. Lb. Oiled

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## MAINTENANCE

CHECKING TRAILER RIDE HEIGHT

#### PREPARATION

- 1. Unload the trailer and park it on flat, level ground that is free of stones and debris.
- 2. Chock the wheels.
- Check air pressure in tires. If necessary, inflate or deflate tire(s) to proper pressure.
- 4. Maintain pressure in the air system.



#### DESIGNED KINGPIN HEIGHT MEASUREMENT

- 1. Measure the trailer's kingpin height. The trailer may or may not be connected to a tractor during the measurement.
- If necessary, adjust the landing gear to place the trailer at the designed kingpin height. The standard design kingpin height for Viking Specialized Trailers is 48 inches. Contact Viking Specialized Trailers if you are unsure of your trailers designed kingpin height.

# NOTICE

When the trailer and tractor are connected, the tractor's fifth wheel height must be equal to the designed kingpin height of the trailer. If the fifth wheel height does not equal the designed kingpin height.

Be aware that the trailer will run uphill or downhill depending on the difference in dimensions.

# NOTICE

When the trailer is not connected to a tractor, measure the distance from the ground to the kingpin mounting plate. Air pressure to the suspension must still be maintained.

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#### MAINTENANCE DESIGNED RIDE HEIGHT MEASUREMENT

- Locate the suspension ID tag on the front of the HT hanger, the front crossmember of the HS slider bogie or on the inside of the suspension beam for the Intraax (Figure 2 for HT series and Figure 3 for Intraax).
- 2. Check the indicated (underlined) number in the following examples to find the designed ride height.

#### **Examples**

HT product: HT230-<u>14</u>-001 HS slider: HS190T-<u>14</u>-4801A Intraax: AA230TBA..I <u>14</u>A1A01...

3. Measure the ride height (Figure 4). The designed ride height is the distance from the center of the axle to the mounting surface of the suspension. Measure from the bottom of the flange to the top of the axle and add half of the axle's diameter to the measurement shown on the tape measure. If necessary, adjust the height control



Figure 2: ID tag on HT Series



Figure 3: ID Tag on Intraax



Figure 4: Measure ride height

# NOTICE

To determine the ride height, add half of the axle's diameter to the measurement shown on the tape measure. For example, a 5" diameter axle would have 2-1/2" added to the measurement.

#### HEIGHT CONTROL VALVE ADJUSTMENT

- 1. Realign the position of the lever arm for minor adjustments of the height control valve (Figure 5).
- 2. Remove the plastic locating pin.
- 3. Push the control arm up to raise, or down to lower, the ride height until the distance



Figure 5: Realign lever arm

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## MAINTENANCE

between the vehicle frame and the center of the axle matches the suspension ride height.

- 4. After adjusting the ride height, reinsert the plastic locating pin into the adjusting block and bracket on the height control valve.
- If additional or major adjustments are necessary, adjust or replace the linkage.

# NOTICE

There must be a minimum of 80 psi air pressure in the air reservoir to open the brake protection valve and allow air to flow through the height control valve.

# NOTICE

A 5 to 10 second delay may occur before the height control valve will allow air to flow to or from the air springs.

#### **AIR BRAKE MAINTENANCE**

Successful maintenance of the air brake system depends upon systematic inspection and repair at regular intervals. The length of these intervals depends upon the trailer operation and mileage.

Adjustments, inspections and minor repairs that can be performed by the operator are listed below. These procedures must include immediate replacement of all worn or damaged parts.

#### RESERVOIR TANK

The first requirement in an air brake system is clean air at proper pressure. The operator must open the drain cock on the underside of the reservoirs until all moisture has escaped.

Drainage should be done periodically to remove water and sludge from the system. This is especially important in cold weather to forestall freezing and obstruction of the lines and valves. Each tank must be drained completely to ensure removal of condensation. After removing moisture, close the drain cock and inspect reservoirs for looseness or damage. Make sure all connections are tight and brake lines are properly supported.

## MAINTENANCE

#### **GLAD-HANDS**

Inspect glad-hands to ensure proper operation without obstructions. With the trailer connected to the truck tractor and air in the system, coat the gladhands and mounting with soapsuds to make sure there is no leakage. Be certain gladhands seals are in good condition and are not saturated with grease, oil or other foreign material. We recommended annual replacement of glad-hands seals.

#### **BRAKE TUBING, LINES, FITTINGS & HOSES**

Visually inspect brake lines and hoses for loose connections, chafing, cracks, breaks, cuts, bruises, broken-out sections and deterioration. Replace immediately upon first sign of the above. Exercise extreme caution when working or welding around nylon tubing, if so equipped. It is recommended that tubing in areas where welding operations are performed be removed prior to welding operations and reinstalled after welding is completed. If tubing removal is not practical, the tubing must be shielded from welding sparks and/or heat damage.

# **WARNING**

Disassembly and repair of any spring brake is a dangerous and complex task that should not be undertaken by an inexperienced mechanic. Special tools and information are required if serious personal injury is to be avoided.

#### SERVICE AND SPRING BRAKE CHAMBERS

Visually check air chamber clamp bands and mounting nuts for tightness. Torque chamber mounting nuts 75 to 100 ft. lb. Check chambers for damage or dents and sign of leaks.

#### **AIR VALVES**

Inspect all air valves for leaks. If excessive leakage is found, the valve must be repaired or replaced. We recommend that air valves be replaced when necessary with new or rebuilt valves. Replacement maintenance and seal kits are available from your Viking Specialized Trailers Dealer. Inspect brake drums. Any accumulation of mud, dirt or rust on the drums should be removed. Any broken or cracked drums should be removed from service. Built for Your Industry

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## MAINTENANCE

#### BRAKE LINING

Inspect and check the brake lining thickness. Brake lining must be replaced if excessively worn, or if coated with oil, grease, or foreign material.

#### ANTI-LOCK BRAKING SYSTEM

Meritor WABCO Easy-Stop (TM) Anti-Lock Braking System (ABS) is standard equipment on all Viking Specialized Trailers. The system monitors wheel speed at all times and improves vehicle stability and control by reducing wheel lock during braking.



ABS information in this Owner's Manual was provided by Meritor Wabco and is specific to its products. If your trailer is equipped with another manufacturer's Anti-Lock braking system, you must contact Viking Specialized Trailers or the manufacturer of the braking system for the instructions specific to that braking system.

#### **Electronic Control Unit (ECU) Malfunction**

In the event of an ECU malfunction, the ABS in the affected wheels is disabled. The affected wheels should continue to operate in a non-ABS braking mode if the braking valve itself has not failed. The ABS should continue to operate on the wheels unaffected by the ECU malfunction.

Two ABS indicator lamps (one on the dash of the tractor and one on the side of the trailer) let the driver know the status of the system.

#### **ABS Indicator Lamp**

The ABS Indicator Lamp (amber) is located on the road side (driver side), near the rear axle. The lamp is identified with the letters ABS. This lamp indicates the status of the trailer ABS.

> ABS Indicator Lamp



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#### MAINTENANCE ANTI-LOCK BRAKING SYSTEM (Continued)

If the ABS lamp comes **ON** and stays **ON** when you apply the brakes to a moving vehicle, there is an ABS malfunction. It is normal for the lamp to come **On** and go **OFF** to perform a bulb check, but it should not stay **ON** when the vehicle is moving above 4 mph. As with any safety system, it is important not to ignore this indicator. If the indicator lamp indicates a malfunction, the vehicle can be operated to complete the trip. However, it is important to have the vehicle serviced as soon as possible using the appropriate maintenance manual to ensure proper braking performance and to ensure that the benefits of ABS remain available to the driver.

System is Ignition Powered ( constant power )				
Brakes	Ignition	Fault in System	Vehicle Speed	Indicator Lamps (Trailer and Dash)
Released	OFF	N.A.	N.A.	OFF
	ON	NO	Less than 4 mph	ON for 3seconds, then go OFF.
	ON	NO	Greater than 4 mph	OFF
	OFF	YES	N.A.	ON
Applied	OFF	NO	Less than 4 mph	ON for 3 seconds, then go OFF.
	OFF	YES	N.A.	ON
	ON	NO	Less than 4 mph	ON for 3 seconds, then go OFF.
	ON	NO	Greater than 4 mph	OFF
	ON	YES	N.A.	ON

<u>Blink Codes:</u> Blink codes are the number of times the ABS lamp blinks on and off. The number of blinks refers to the problem area. See Meritor Wabco Maintenance And Troubleshooting Manual for complete details. Specialized Trailers, L.L.C.

## MAINTENANCE

AIR RIDE SUSPENSION

# NOTICE

For complete details for inspection and maintenance of your air ride suspension contact the manufacturer. See Appendix for contact information.

#### Periodic Inspections

Inspect the following items at least once a month:

- Alignment bolts and collars for proper tightness.
- Pivot bushings for wear and damage.
- Suspension structure and axles for damage.
- Air springs, air lines and fittings for damage, wear, and leaks.
- All fasteners for proper tightness. (Refer to the manufacturer's information for specific torque values.)
- Height control valve, mounting bracket, linkage, and air fittings for damage and wear.
- Ride height at the rearmost axle for proper adjustment.
- Operate the full suspension dump valve to check for proper operation of the exhaust and inflate functions.

#### Ride Height

Air ride suspensions ride height is set from the factory and should not be changed. It has been set to operate at a specific ride height. The ride height is measured from the center of the axle to the bottom of the trailer frame on the rearmost axle and is controlled by the *height control valve*. Contact the manufacturer of the suspension or Viking Specialized Trailers for information on measuring and setting the ride height.

# NOTICE

Changing the ride height can affect the performance and load equalization of the suspensions. Damage to the suspension, tires, and trailer may occur if the height is not properly adjusted.

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### MAINTENANCE

LIFT AXLE OPERATION



Damage to the trailer frame and/or axles can result from over loading by lifting an axle.

Caution must be exercised when using lift axles. Damage to the trailer frame and/or axles can result from over loading by lifting an axle so that the distance from the king pin to the remaining axles suddenly increases. See below.



When the lift-able axle is positioned on the rear and it is lifted, the front axle will take on the entire load, which could result in bending or causing other damage.

#### DUMP VALVE OPERATION

If specified by the customer, a spread axle trailer may be equipped with a manual dump valve. When actuated, this valve will exhaust the air in the rear axle. The dump valve can improve tractor/trailer handing, tire wear, and increase the life of the trailer if properly used. An electric dump valve may also be installed, but must dump all air bags per Federal law.

When using a dump valve you should do the following:

- Always check to be sure all air bags are fully inflated before driving away.
- Do not operate loaded trailer in excess of five miles per hour (5 mph) with current applied and air bags exhausted.
- Do not operate trailer when air bags are exhausted except in parking lots or loading areas.
- It is unlawful to operate trailers with air bags exhausted on public thoroughfares.

Before operating your spread axle trailer, make certain air bags exhaust and re-inflate as desired. It is advisable to use a spring-loaded toggle switch or put a red warning light in the cab of the tractor to show when the air is released from the rear axle air bags.



- \* Tire must have a diameter between 38" and 46".
- \* Tightly wrap the safety chain around the tire with the end clasp fastened back into the chain.
- \* Do not use the carrier if the chain or carrier is broken, damaged or is missing parts.

# for the way you use it! <del>Ma Sa</del> MAINTENANCE TIRE CARRIER BOLT-ON TYPE (Continued) 3/8" GR - 5 – 1/2" GR - 5 -Main Beam Main Beam Mounting Bracket Inside of Beam Mounting Bracket 3/8" GR - 5 -4"- I Beam 4"- I Beam Mounting Bracket Mounting Bracket



Always check the tire carrier bolts during the pre-trip inspection for loose or broken bolts.

Tighten any loose bolts and replace any broken, bent or missing bolts. Bolt Torgue Specifications:

3/8" GR-5 . . . 30 Ft. Lb. Dry . . . 23 Ft. Lb. Oiled

1/2" GR-5 . . . 75 Ft. Lb. Dry . . . 55 Ft. Lb. Oiled



Proper torque must be maintained on each bolt that connects the tire carrier to the trailer.

If the tire carrier becomes loose from the trailer, it may fall off, become a projectile and may cause death or serious injury to people in its path.

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### MAINTENANCE

**TIRE STORAGE AREA** 

**Between Main Beams** 







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## MAINTENANCE

TIRE STORAGE AREA

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**Between Main Beams** 



If spare tire is not properly secured in the carrier it can dislodge during transit, become a projectile, and may cause death or serious injury to people in its path.

- \* Limit one tire per carrier.
- \* Tire must have a diameter between 38" and 46".
- \* Tightly wrap the safety chain around the tire with the end clasp fastened back into the chain.
- \* Do not use the carrier if the chain or carrier is broken, damaged or is missing parts.
- \* Securement Requirement . . .

Use minimum of 4/0 Double Loop Chain, Strap or Cable with a minimum working load limit of 70 lbs.

Tire carrier mount on neck of trailer.



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## MAINTENANCE

# NOTICE

The information provided in this section is intended to provide suggested basic maintenance procedures. Refer to the vendor component suppliers in the Appendix Section of this Owner's Manual for more detailed maintenance instructions.

#### KINGPIN AND FIFTH WHEEL AREA

Inspect the kingpin for excessive wear, rough edges, looseness, broken or chipped out areas and cracks. Any kingpin showing such condition must be replaced at once. Do not under any circumstance weld the kingpin to compensate for wear. Once a kingpin has been heated its physical characteristics are changed and its subsequent performance cannot be predicted. Contact Viking Specialized Trailers Customer Service for proper replacement services.

Check and inspect the fifth wheel area for cracks or breaks and for secure attachment to the trailer. Any welding performed in this area is to be restricted to those welds specified by Viking Specialized Trailers, and is to be performed in the manner prescribed by Viking Specialized Trailers.

# NOTICE

Viking Specialized Trailers recommends that only an authorized dealer perform repairs in the kingpin area.

#### **REAR IMPACT GUARDS**

Your new Viking Specialized Trailer has been designed and tested to meet the requirements of N.H.T.S.A. article 571.223 and 571.224. The rear bumper should be checked during regular maintenance for cracks, bonds, etc. If repair is needed please refer to T.M.C.

# NOTICE

A damaged guard may not be as strong as originally manufactured and may not satisfy NHTSA performance standards.

Viking Specialized Trailers recommends that only an authorized dealer perform repairs on rear impact guards.

## MAINTENANCE

#### WHEEL AND RIM CARE

Standard wheels on your Viking Specialized Trailer are aluminum or steel disc wheels. Wheel nuts are inspected and tightened to specifications at the factory and are checked again at pre-delivery. To maintain the correct torque on the wheels of a new trailer the nut torque must be checked periodically. During normal highway operation of a new trailer, this check should be made at the first 100, 500, and 1,000 miles, and every 5,000 miles thereafter. Severe service conditions may require more tightening. Loose wheel nuts may cause shimmy, uneven tire wear, and vibration. Elongated stud holes in the wheels may result from loose hub nuts. Wheel and hub nuts must be torqued to proper specifications to provide maximum service life.

# Disc Wheel Mounting Instructions for 10 Stud Hubs used with HUB PILOTED Disc Wheels.

- 1. All parts must be clean, free of rust, dirt or paint.
- 2. Position the inner wheel over the studs, being careful not to damage the threads.
- 3. Position the outer wheel over the studs, being careful not to damage the threads.
- 4. Install the flange nuts and tighten to 50ft. lbs in the sequence shown.



Then tighten to full torque using the same sequence.

THREAD SIZE	TORQUE	
Flange Nuts M-22 x 1.5	500-550ft. lbs	



The torque listed is for dry threads with no lubricant. Proper capnut torque is important. Insufficient torque can cause stud breakage and damage. Over torque can over stress the studs and strip the threads.

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## MAINTENANCE

#### **Disc Wheel Mounting Instructions (Continued)**

- 5. After the first 50 to 100 miles of service the capnut torque should be re-tightened to 500-550 ft. lbs.
- 6. Make sure the surface on the disc wheel, which is contacted by the flangenut, is flat.
- Disc wheel mounting surfaces should not have more than 1-1/2Mil. thickness of paint. Excessive paint thickness can cause loose disc-wheels.



Before installing two piece cone lock capnuts, lubricate the contact surfaces between the cap nut and the washer with an SAE30W oil. This will minimize corrosion between the mating surfaces. Wheel studs on both the right and left side hubs of vehicles utilizing the hub-piloted wheel system have right-hand threads.

#### SELF ADJUSTING SLACK ADJUSTER

**Operational Check** 

Functional operation of the slack adjuster can be performed on vehicle by:

- 1. Block wheels to prevent vehicle from rolling.
- 2. Check that the push rod is fully retracted, and apply air to release spring brake.
- Manually de-adjust brakes (turn adjustment hex counter-clockwise) to create an excessive clearance condition. (A ratcheting sound will occur)

ArvinMeritor Automatic Slack Adjusters Bendix automatic Slack Adjusters Gunite automatic slack Adjusters Haldex automatic Slack Adjusters



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## MAINTENANCE

#### Self-adjusting Slack Adjuster (Continued)

- 4. Make a full service brake application. On release allow sufficient time for brake to fully retract. During the brake release, observe rotation of the adjustment hex (attaching a wrench on the hex will make this rotation easier to see). This rotation indicates that an excessive clearance condition has been determined by the slack adjuster, and it is making an adjustment to compensate. On each subsequent brake release the amount of adjustment and pushrod travel will be reduced until the desired clearance is achieved.
- Refer to the Slack Adjuster manufacturer's literature for proper push-rod stroke.

#### Maintenance

During normal chassis lube, adjusters should be inspected for damage. Check anchor brackets to ensure that they are tight.

During reline, check the de-adjustment torque. Place a torque wrench on the 7/16" adjusting hex. Turn the torque wrench counterclockwise and check that the clutch does not slip at a torque less than 13 Ft. Lbs. A ratcheting sound will occur while backing off. If clutch slips at a lesser torque, the adjuster must be replaced.

# NOTICE

Refer to the Slack Adjuster manufacturer recommendations for complete details on maintenance, inspection and troubleshooting of this component. A list of component manufacturers and their contact information is provided in the Appendix Section of this Owner's Manual.

#### Lubrication

The Self-adjusting Slack Adjuster should be lubricated in conjunction with the lubrication prescribed for vehicle chassis. The lubrication interval should not, however, exceed 5,000 miles or 3 months. No special grease is required, however, the use of moly-disulphide loaded grease or oil is not recommended since it may lower friction capabilities in the adjusting clutch parts, and decrease automatic adjustment reliability.

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## MAINTENANCE

#### Self-adjusting Slack Adjuster (Continued)

Inspection

- 1. During normal lubrication intervals, visually inspect slack adjuster and anchor bracket for damage. Check that anchor bracket is tight and the control arm is in its "Full Release" position (refer to manufacturer literature).
- 2. Maintaining proper brake adjustment and brake balance cannot be accomplished by the slack adjuster alone. The condition of foundation brake components has a direct bearing on the effectiveness of brake adjustment; therefore, periodic inspection of these components is necessary.
  - a. BRAKE CHAMBERS

Check that brake chamber mounting bolts are tight and proper alignment is maintained to avoid interference between chamber pushrod and chamber housing. Verify that the brake chamber pushrod length is equal on opposing brake chambers of the same axle.

- CAMSHAFT BUSHINGS
  Optimum brake adjustment cannot be achieved when worn bushings are used.
- c. WHEEL BEARING ADJUSTMENT

Accurate wheel bearing pre-load is necessary to maintain proper alignment between the brake drum and brake shoes.

#### TIRE MAINTENANCE

INFLATION PRESSURE:

- The most critical factor in tire maintenance is proper inflation. No tire or tube is completely impervious to loss of air pressure. To avoid the hazards of under inflation, lost air must be replaced.
- Driving on any tire that does not have the correct inflation pressure is dangerous and will cause tire damage.
- Any under inflated tire builds up excessive heat that may result in sudden tire destruction. The correct inflation pressures for your tires are a function of many factors including: load, speed, road surface and handling. Consult your tire dealer for the proper inflation pressures for your application.

## MAINTENANCE

#### INFLATION PRESSURE: (Continued)

Check inflation pressures on all your tires, including spares at least once a week, and before driving when tires are cold; especially when more than one driver uses vehicle.



Failure to maintain correct inflation pressure may result in sudden tire destruction, improper vehicle handling, and may cause rapid and irregular tire wear. Therefore, inflation pressures should be checked weekly and always before long distance trips.

- Pressure should be checked when tires are cold, before they have been driven over the road. The ideal time to check tire pressures is early morning. Driving, even for a short distance, causes tires to heat up and air pressures to increase.
- Never bleed air from hot tires as your tires will then be under inflated. Make sure to check both tires in a dual fitment. Pressures should be the same.
- Use accurate tire gauge to check pressures. (Do not use "Tire Billys" to hit tires as an inflation check. This is an unreliable method.)
- For optimum tire performance it is usually best to use the tire inflation pressure recommended by the tire manufacturer for the particular axle load. Exceeding this pressure could result in reduced traction and tread life.

#### TIRE INSPECTION

- While checking inflation pressures it is a good time to INSPECT YOUR TIRES. ANY TIME YOU SEE ANY DAMAGE TO YOUR TIRES OR WHEELS/RIMS, SEE ANY OF YOUR TIRE DEALERS AT ONCE.
- Before driving, inspect your tires, including the spare, and check your air pressures. If your pressure check indicates that one of your tires has lost pressure of four pounds or more, look for signs of penetrations, valve leakage, or wheel/rim damage that may account for air loss.

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## MAINTENANCE

Always examine your tires for bulges, cracks, cuts or penetrations. If any such damage is found, a tire dealer must inspect the tire at once. Use of a damaged tire could result in tire destruction, property damage and personal injury.

#### DRIVE CAREFULLY

All tires will wear out faster when subjected to high speeds as well as hard cornering, rapid starts, sudden stops and frequent driving on surfaces that are in poor condition. Surfaces with potholes or rocks and other objects can damage tires and cause vehicle misalignment. When you drive on such surfaces, drive on them carefully and slowly, and before driving at normal or highway speeds examine your tires for any damage, such as cuts or penetrations.

#### DO NOT OVERLOAD

The maximum load that can be put on a truck tire is dependent upon the speed at which the tire will be used. Consult your tire dealer for complete information on the allowable loads for your tires in your application. Tires that are loaded beyond their maximum allowable loads for the particular application will build up excessive heat that may result in sudden tire destruction, property damage and personal injury.

Do not exceed the gross axle weight ratings for any axle on your vehicle.

#### DRIVE AT PROPER SPEEDS

The maximum speed at which tires can be operated is indicated in the tire manufacturer's data book. This speed varies for each type of tire and depends on the type of application. Consult your tire dealer for assistance in determining the maximum speed for your application. You should not exceed reasonable speeds indicated by the legal limits and driving conditions.



Exceeding the maximum speed for which your tire is rated can result in sudden tire destruction, property damage and personal injury.

## MAINTENANCE

WHEN DRIVING AT HIGHWAY SPEEDS CORRECT INFLATION PRESSURE IS ESPECIALLY IMPORTANT, however, at these speeds, even with correct inflation a road hazard is more difficult to avoid. If contact is made, there is a greater chance of tire damage than when traveling at a lower speed. Driving at a high speed increases the possibility of an accident as a greater distance is required to bring your vehicle to a stop.

#### BALANCING

Under normal conditions, truck tires do not need to be balanced. Common practice is to check tire balance if a ride complaint is made by the driver. Before removing the tire-wheel assembly from the vehicle, check for radial and lateral runout. Bent wheels and rims or improper mounting can cause excessive runouts. If balance is still required, a simple static balance with bubble balance or a wall mounted axle bearing and hub type gravity balance should be sufficient.

#### ROTATION

Tires should be rotated only when necessary. If the tires are wearing evenly there is no need to rotate. If irregular wear becomes apparent or if the wear rate on the tires is perceptively different (from axle to axle), then the tires should be rotated in such a manner as to alleviate the conditions.

AXLE ALIGNMENT See next page. Built the way you want it

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## MAINTENANCE

#### AXLE ALIGNMENT

Use the following procedures to check the alignment of trailer axles:

#### SINGLE AXLE TRAILERS

- 1. Raise or lower the landing gear leg to put the trailer in a level position.
- 2. Remove the outer wheels or the outer tires and rims, depending on the wheel equipment.
- Remove any parts from under the chassis that can interrupt measuring the distance between the king pin and the ends of the axle.
- 4. Attach a steel measuring tape to a hook and the hook over the kingpin. Measure the distance "A" and "B" from the kingpin to the ends of the axle. the difference between the "A" and "B" measurements must not exceed 1/8" (3.2 mm).



#### TANDEM AXLE TRAILERS

- Measuring the alignment of a tandem axle trailer is not very different from the measuring procedure for single axle trailers. The trailer must be correctly positioned before making the necessary measurements.
  - 1. Move the trailer forward and backward over a level floor, two or three times with the last movement forward, to permit the suspension to become correctly aligned to center the front and rear wheel tracks.

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## MAINTENANCE

#### AXLE ALIGNMENT (Continued)

- 2. Raise or lower the landing gear legs to put the trailer in a level position.
- 3. Remove the outer wheels or outer tires and rims.
- 4. Remove any parts from under the chassis that can interrupt measuring the distances between the kingpin and the ends of the forward axle.
- 5. Attach a steel measuring tape to a hook and the hook over the kingpin. Measure the distances "A" and "B" from the kingpin to the ends of the forward axle. The difference between "A" and "B" measurement must not exceed 1/8" (3.2 mm). See page 33.
- 6. Measure the distance "C" and "D". Measurements must not exceed 1/16" (1.6 mm).

#### HOW TO CORRECT THE ALIGNMENT OF AXLES



NOTICE

To correct alignment measurements that are not within the limits,

inspect the suspension for worn, broken or loose parts.

Adjustment of the suspension, and the replacement of worn or

broken parts, must be made to put the axles into alignment.



Carefully follow the service instructions made available by the suspension manufacturer when you work on this component. Information on how to contact component manufacturers can be found in the Appendix Section of this Owner's Manual. iking Specialized Trailers, L.L.C.

### MAINTENANCE

STORAGE

All tires should be stored in a cool dry place indoors so that there is no danger of water collecting inside them. Serious problems can occur with tube-type tires when they are mounted with water trapped between the tire and tube. Due to pressurization, the liquid can pass through the inner liner and into the casing plies.

This can result in sudden tire failure. Most of the problems of this nature have been due to improper storage that allowed water to enter the casing. This is a particular problem with tube-type tires because of the difficulty in detecting water that collected between the tire and tube. When tires are stored they should be stored in a cool place away from sources of heat and ozone such as hot pipes and electric generators. Be sure tires do not contact surfaces which could deteriorate the rubber.

TIRES EXPOSED TO THESE SUBSTANCES COULD BE SUBJECT TO SUDDEN FAILURE.

RECOMMENDATIONS FOR THE USE OF DYNAMOMETERS

Severe damage can result in the crown area of radial truck tires when run on dynamometers for extended periods. Quite often the damage is internal and not discovered until after the vehicle has been put back in service.

PROPER MOUNTING ON VEHICLE

- When wheel assemblies are mounted on a vehicle, be sure that the valves do not touch the brake drums or any mechanical part of the vehicle.
- Tires mounted in duals must be matched so that the maximum difference between the diameters of the tires does not exceed 1/4 inch or a circumferential difference of 3/4 inch. Failure to properly match dual tires will result in the tire with the larger diameter carrying a disproportionate share of the load, which can cause sudden tire destruction.

## MAINTENANCE

#### DUAL SPACING

- It is also important that sufficient space is provided between dual tires to allow air to flow and cool the tires and to prevent the tires from rubbing against one another.
- To make sure dual spacing is correct, simply measure the two tires from center to center of the tread, and refer to the minimum dual spacing required by the tire manufacturer.

TIRE MIXING



Improper tire mixing can be dangerous. On vehicles with four or more wheel positions, radial and non-radial tries should not be mixed in a dual fitment..

#### LIGHTING MAINTENANCE

LIGHTS AND WIRING

- The lighting system for your trailer is a heavy duty, 12-volt, 30-amp system. The 7-way receptacle is located on the front of the trailer near the gladhands. The jumper cable from the truck tractor plugs into the trailer's 7-way receptacle to complete the electrical circuit to the trailer. The receptacle is equipped with a hinge type cover to protect it from exposure to dirt and water. The same light switches that control the lights on the truck tractor control trailer lights.
- Proper maintenance of the lighting system requires periodic cleaning of lamps and reflectors to ensure maximum visibility of the tractor and trailer. Use a damp cloth to wipe the lenses. A dry cloth will cause the dirt to act as an abrasive and scratch the lenses. A daily cleaning can well be worth the time invested, plus, it is a good safety practice. Maintenance of the lighting and wiring system consists of an occasional inspection to see that all wiring connections are tight. Make sure the lighting units are securely mounted, and that the wiring is not pinched or damaged. Inspect lights, couplings, and sockets for their service ability and replace as required.

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## MAINTENANCE

LIGHTING MAINTENANCE (Continued)

# NOTICE

All Viking Specialized Trailers manufactured after March 1, 1998 are wired to provide constant power to the trailer's Anti-Lock braking system (ABS) from the CENTER PIN of the main 7-way connector at the front of the trailer. If you need help determining how your particular trailer is wired contact Viking Specialized Trailers at (844) 815-6210.

TURN SIGNAL AND HAZARD FLASHER SYSTEM

- The turn signal lever and hazard flasher switch are located in the truck tractor. To operate the turn signals, the ignition switch must be in the ON position. The hazard flasher system is operated independently of the ignition switch in most cases. All turn signal lights can be made to flash simultaneously by pulling out the activating knob on the hazard flasher switch.
- Two flasher units are used for the trailer. One unit is used in the turn signal circuit, and the other for the hazard flasher system located in the truck tractor. The most common problems with the turn signals and hazard flasher system are defective flashers, burnedout bulbs, blown fuses, defective switches, or faulty wiring.

#### REFLECTORS

Reflectors or conspicuity tape is located on the front, sides, and rear sections of the trailer. They should be kept clean by wiping with a damp cloth. Replace any reflectors or tape that is cracked or broken.
# MAINTENANCE

LIGHTING MAINTENANCE (Continued)

STOP, TAIL, TURN, MARKER & IDENTIFICATION LIGHTS

To remove lens and bulb with grommet mount installation, insert a screw-driver under the lens flange and pry lens out of the soft housing. To remove lens with flange mount installation, remove screws or rivets. Disconnect from plug and wire assembly. To replace lens and bulb with grommet mount installation, reconnect the plug and wire assembly, tilt the lens slightly, and push lens into soft housing. To replace the lens and bulb with flange mount installation, reconnect the plug and wire assembly align mounting holes an re-insert screws.

#### LICENSE LAMP

To remove license bulb from the license lamp, remove the mounting screws and remove license lamp cover. Follow same instructions as for the clearance, marker, and identification lamps above. Reinstall cover using the mounting screws.

#### **GENERAL LUBRICATION**

#### NOTE ON LUBRICATION:

Use a standard, LP-2 chassis grease for all lubrication points having fittings. Apply grease with a suitable pressure type grease gun that fits the lubrication fittings. The gun may need a flexible extension on it to enable you to reach certain fittings.

Clean each fitting and wipe off old accumulated grease before applying fresh lubricant. When old grease is forced from the joint, the part has been adequately lubricated.

Replace faulty or broken lubrication fittings. Use a rag to clean all lubrication fittings before applying lubrication. The person doing the lubricating has an opportunity to inspect parts of the vehicle that are relatively inaccessible. Any noticeable leaks of grease, excessive rusting of the chassis parts, broken, bent or damaged bolts and brackets, or other defective members should be reported for corrective action. iking Specialized Trailers, L.L.C.

# MAINTENANCE

GENERAL LUBRICATION (Continued)

WHEEL BEARINGS AND HUBS

- The wheel bearings on your Viking Specialized Trailer may be oil or grease lubricated. Before attempting to service this part, determine which type of lubricant is used and follow the appropriate service procedures. Change the lubricant whenever it is contaminated or when the wheel end cavity is disrupted by removing spoke wheel or hub. Viking Specialized Trailers recommends changing the lubricant every 12 months or 100,000 miles, whichever comes first. Always follow the instructions of the axle manufacturer when servicing wheel end components.
- A list of component manufacturers is provided in the Appendix Section of this Owner's Manual.
- To check the oil level, make sure the trailer is on level ground. Wipe the hubcap clean with a rag and inspect the lubricant level. The hub should be filled with all-weather oil SAE 80W-140 (or equivalent) to the level indicated by a mark on the hubcap. MINIMUM LEVEL ALLOWABLE 1/4 inch mark. If the lubricant level is low, remove the center plug and add oil to proper level. DO NOT OVERFILL.

Many Viking Specialized Trailers now come equipped with the



Hendrickson Long-life System (HLS) Wheel End. These wheel ends do not require service for up to 5 years or 500,000 miles. To determine if your trailer is equipped with this system, inspect the hubs for the label shown at left or contact Viking Specialized Trailers.

# NOTICE

For trailers equipped with the Hendrickson Long-life System Wheel End, <u>DO NOT REMOVE</u> the hubcap without first contacting Hendrickson technical service at 800-455-0043 in the U.S. or 800-668-5360 in Canada.

## MAINTENANCE

**GENERAL LUBRICATION (Continued)** 

#### LANDING GEAR (TWO SPEED)

Under normal operation conditions, your landing gear should never require lubrication. However, grease zerks are provided in the leg and the gearbox housing if necessary. Follow the landing gear manufacturers instructions for service and maintenance. A list of component manufacturers can be found in the Appendix Section of this Owner's Manual.

#### BRAKE CAMSHAFTS

Lubricate the brake camshaft bearings with chassis grease. There are four fittings located on each axle.

#### BRAKE SHOES

When brakes are relined, apply an even coat of lubricant or equivalent between contact face of anchor pin bushing, brake shoe area, and spider faces. Coat anchor pin completely. Wipe off all excess grease.

#### BRAKE ROLLER AND CAM HEADS

When the wheels and hubs are removed, place a light film of lubricant on cam roller follower shafts, journals, and the top and bottom surface of the S-cam.

#### SUSPENSION

Refer to the suspension manufacturers instructions for details on the correct maintenance of your suspension. A list of component manufacturers can be found in the Appendix Section of this Owner's Manual.

#### FIFTH WHEEL

Check the fifth wheel locking jaws or hook (depending upon the model) and support brackets for lubrication fittings and lubricate as required.

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# MAINTENANCE

#### GENERAL LUBRICATION (Continued)

#### HYDRAULIC OIL RESERVOIR

Whenever the chassis is lubricated, the condition and level of the oil in the reservoir tank should be checked. Dirty oil is the main cause of expensive pump and cylinder repairs. Dirty oil is detectable and should be replaced before considerable damage is done to the system. A sample from a dipstick will show its condition. Place a drop of the sample on a blotter, cloth or paper. Any noticeable residue means dirty oil.

#### RESERVOIR LEVEL CHECK

Measure oil level with the trailer cylinder in the center position. The trailer must be hooked up to the truck tractor. Remove the reservoir filler cap and inspect oil level. Use care in filling reservoir so that dirt or other foreign material does not get into the hydraulic system. Rectangular tank - fill to two inches below flange of reservoir. Cylinder tank - fill to four inches below flange of reservoir.

Do not overfill. Install reservoir filler cap.

There must be enough space to hold all the oil when the cylinder is retracted, with some space to allow for expansion when the oil is hot.

#### DRAINING OIL RESERVOIR

The hydraulic oil should be changed at least once a year, or sooner if it becomes contaminated. Drain the system by removing the reservoir drain plug. Catch all oil in a suitable container. Reinstall the plug and fill reservoir to required level with the proper type and grade of oil.

#### OIL RECOMMENDATIONS

Use standard SAE 5 or 10 weight hydraulic oil.

- Detergent oils are not recommended because the additives attack the cylinder packing.
- Never use crank case draining, transmission oil, kerosene, fuel oil, water, or any non-lubricating fluids.
- Never thin oil with kerosene or fuel oil in winter operation. Either of these will cause packing to swell, resulting in plungers sticking. Good low viscosity hydraulic oils are available from Viking Specialized Trailers.

# MAINTENANCE SCHEDULE

#### TRAILER MAINTENANCE SERVICES REQUIRED

In addition to the Driver's pre-trip inspection, the services listed below are Viking Specialized Trailers suggested maintenance service intervals for keeping your trailer in peak operating condition.

#### SCHEDULED MAINTENANCE SERVICE Each 5,000-Miles or Once a Month (Whichever comes first)

- Check kingpin and upper coupler.
- Check electrical and ABS system for proper operation.
- Check secondary and parking brake system (if applicable) for proper operation.
- Check tires and wheels. (Torque wheel nuts to proper torque).
- Check axle oil level, add oil if required.
- Check wheel seals for leaks.
- Check tires for proper tire pressure.
- Drain any moisture from air reservoirs.
- Check accessories operated with air from brake system.
- Inspect brake system gladhands, hoses, tubing, chamber valves, and reservoirs for leaks or damage.
- Inspect trailer structure and clean out / remove any build-up of mud, dirt, ice, snow or chemicals.
- Check chamber push rod travel and adjust brakes.
- Check lining thickness.
- Visually check axle alignment.
- Inspect splashguards.
- Check tire carrier, mounting and lock chain.
- Check hydraulic system for damage or leaks.
- Inspect U-Bolts and torque to specification

Each 20,000-Miles or Four Months (Whichever comes first)

- Inspect brake drums and wheels.
- Inspect brake linkage and shoes.
- Inspect brake lines and hoses for chafing, looseness and deterioration.
- Test brakes for action, side pull, and synchronization.
- Run complete system check of ABS system.
- Make soapsuds test for air leaks in entire air system.
- Check axle alignment.
- Steam clean complete chassis and inspect.

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# MAINTENANCE SCHEDULE

SCHEDULED MAINTENANCE SERVICE (Continued)

- Check undercarriage components.
- Check springs, hangers, and bushings.
- Inspect kingpin for excess wear, rough edges, looseness, broken out areas and cracks.
- Clean kingpin plate and all welds.
- Check all bolts, nuts and rivets for looseness.
- Lubricate cam heads, rollers, and anchor pins.



All maintenance periods are recommendations based on average operating conditions. A trailer operated principally on gravel or dusty roads, or through unusual amounts of water may require maintenance more frequently.

# NOTICE

Observe the day-to-day care recommendations. Watch for the symptoms described below and have any needed adjustments made promptly at your local Viking Specialized Trailers Dealer. Use only the recommended lubricants and parts conforming to Viking Specialized Trailers specifications. To find a service center near you contact Viking Specialized Trailers at (844) 815-6210.

### TROUBLESHOOTING ANALYZING & DIAGNOSING TRAILER SERVICE

@\*@\*>>

To directly assist in keeping your trailer on the road and rolling, the following troubleshooting guide has been prepared for your convenience. You can avoid serious delay and downtime in servicing your trailer if the cause of the trouble can be diagnosed and corrected quickly by you.

#### <u>BRAKES</u>

#### BRAKES WILL NOT RELEASE

Probable Cause	Remedy
1. Low Air Pressure	<ol> <li>Check air line connections</li> <li>&amp; verify sufficient air in tank</li> </ol>
<ol> <li>Brake shoes bound up at cams</li> <li>Brake hoses restricted</li> <li>Brake out of adjustment</li> <li>Damaged brake assembly</li> </ol>	<ol> <li>Lubricate brake operating part</li> <li>Replace hoses</li> <li>Adjust brakes</li> <li>See your nearest Viking Specialized Trailers Dealer</li> </ol>

#### NO BRAKES OR INSUFFICIENT BRAKES

	Probable Cause	Remedy
1.	Source of air supply shut off at tractor	1. Push control valve in
2.	Low brake line pressure	2. Check air pressure gauge on tractor- Inoperative compressor
3.	Brake lines between tractor and trailer not properly coupled	3. Properly couple brake lines
4.	Reservoir drain cock open	4. Close drain cock

#### SLOW BRAKE APPLICATION OR RELEASE

Probable Cause	Remedy
1. Lack of lubrication	1. Lubricate brake operating parts
2. Excessive travel in brake chamber	2. Adjust brakes
3. Restriction in hose or line	3. Replace brake hose or line
4. Defective brake valve	4. Replace brake valve

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#### **BRAKES GRABBING**

Probable Cause	Remedy	
<ol> <li>Foreign material on brake lining</li> <li>Brakes out of adjustment</li> <li>Brake drum out-of-round</li> <li>Damaged brake chamber or internal assembly</li> <li>Leaky or broken hose between relay valve and brake chamber</li> </ol>	<ol> <li>Reline brakes</li> <li>Adjust brakes</li> <li>Replace brake drum</li> <li>See your nearest Viking Specialized Trailers Dealer</li> <li>Replace or repair as required</li> </ol>	
BRAKES DRAGGING		
Probable Cause	Remedy	
<ol> <li>Out of adjustment</li> <li>Binding cam, anchor pins or chamber rod end pin</li> </ol>	1. Adjust brakes 2. Lubricate and free up	
3. Damaged brake assembly	3. Replace. See your nearest	

#### WHEELS, TIRES AND ALIGNMENT

or brake drum out-of-round

#### PULLING HARD

Viking Specialized Trailers Dealer

Probable Cause	Remedy
1. Broken or cracked spring	1. Replace complete spring
2. Uneven load distribution	2. Rearrange load for proper distribution
3. Weak spring	3. Replace complete spring
4. Axle out of alignment	4. Align axles
5. Tracking to one side or excess	5. Align axles

#### WHEELS, HUBS AND TIRES

Probable Cause	Remedy
1. Tire wobble due to uneven rim clamping	1. Torque tighten all rim clamps
2. Burnt, worn or damaged wheel bearings	2. Replace bearings
<ol> <li>Bent wheel or rim</li> <li>Bent axle</li> <li>Leaking oil</li> </ol>	<ol> <li>Replace wheel or rim</li> <li>Replace or straighten axle</li> <li>Replace wheel seals</li> </ol>

#### SCUFFED TIRES

1. Over and under inflation 1. Inflate to proper pressure

Probable Cause

2. Excessive speed on turns 2. Reduce speed

#### TRACKING TO ONE SIDE

Probable Cause	Remedy
1. Leaf spring broken	1. Replace complete spring
2. Bent axle	2. Replace or straighten axle

3. Axles out of alignment 3. Align axles

#### LOSS OF TIRE AIR PRESSURE

Probable Cause	Remedy
1. Puncture in tire	1. Repair or replace tire
2. Faulty valve or valve core	2. Replace valve assembly or core

#### **UNEVEN TIRE WEAR**

Probable Cause	Remedy
1. Over and under inflation	1. Inflate to proper pressure
2. Loose wheel stud nuts or clamps	2. Tighten wheel stud nuts or clamps
<ol> <li>Loose or tight wheel bearing adjustment</li> </ol>	3. Adjust bearings
4. Axle bent or out of alignment	4. Straighten, align, or replace axle
5. Tires not properly matched	5. Match tires
6. Improper brake actuation	<ol><li>Correct brakes as required</li></ol>
7. Rapid stopping	<ol> <li>Apply brakes slowly when approaching stop</li> </ol>
8. High speed driving on turns	8. Reduce speed

Remedy

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LANDING GEAR

#### DIFFICULTY IN TURNING HANDCRANK

Probable Cause	Remedy
1. Bent crank shaft	1. Straighten or replace shaft
2. Bent cross shaft	2. Replace shaft
3. Lack of lubricant or incorrect	3. Lubricate in accordance with
lubricant	lubrication chart
4. Gears or components damaged	4. Free up or replace
	C Devlace investige eccembly

- 5. Jackscrew nut jammed
- Replace inner leg assembly

#### ELECTRICAL SYSTEM

#### WIRING, FUSES & CIRCUIT BREAKERS

Probable Cause	Remedy
1. Circuit breaker kicks off	1. Correct short. Splice or repair wiring
2. Wires burned	2. Replace wiring
3. Contact points dirty or corroded	3. Remove lamp unit and clean
4. Loss of ground at bulb	4. Repair as necessary

#### COMPLETE LOSS OF TRAILER LIGHTS

Probable Cause	Remedy
<ol> <li>Broken main harness</li> <li>Blown fuse or breaker</li> <li>Broken ground lead between tractor and trailer</li> </ol>	<ol> <li>Repair or replace wire</li> <li>Replace fuse</li> <li>Check, repair or replace jumper cable if equipped</li> </ol>
<ol> <li>Loose or corroded connection in ground lead between tractor and trailer</li> </ol>	4. Repair or replace

#### **DIM OR FLICKERING LIGHTS**

Probable Cause	Remedy
1. Battery on tractor not sufficiently charged	1. Charge battery
<ol> <li>Damaged wire in jumper cable</li> <li>Dirty or corroded contact blades</li> <li>Loose connection</li> <li>Poor ground at socket</li> </ol>	<ol> <li>Repair or replace wire</li> <li>Clean contact blades</li> <li>Repair as necessary</li> <li>Repair as necessary</li> </ol>

#### HYDRAULIC SYSTEM

#### CYLINDER WILL NOT OPERATE

Probable Cause	Remedy
1. Insufficient oil level	1. Fill reservoir to proper level
2. Restriction of oil flow	2. Remove restriction
3. Pump is worn	3. Repair or replace pump
4. Hydraulic hose not connected	4. Connect a hose
5. Restricted control linkage	5. Check and repair linkage
6. Broken key or keyway in drive	6. Repair or replace key or keyway
CYLINDER V	VILL NOT HOLD
Probable Cause	Remedy
1. Air in hydraulic system	1. Bleed system by making several cycles
2. Valve control level not in hold	2. Check and repair linkage

- 2. Valve control level not in hold position
- 3. Worn control valve
- 4. Wornpump

- 3. Replace or repair valve
- 4. Replace or repair pump

#### NOISY PUMP

Probable Cause	Remedy
1. Air in hydraulic system	1. Bleed system of air
2. Restriction of oil flow	2. Drain tank and remove restriction
3. Insufficient oil supply	3. Fill reservoir
4. PTO running at excessive RPM	4. Lower PTO RPM's
5. Water in oil	5. Drain system and replace oil
6. Dirty or contaminated oil	6. Drain system and replace oil
7. Use of wrong viscosity or type oil	7. Drain. Replace with recommended oil
8. Worn or damaged pump	8. Replace pump

# Call (844) 815-6210 for a Viking Specialized Trailers Dealer Nearest You

www.vikingspzdtrailers.com

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### APPENDIX

The following names, addresses and phone numbers will provide a second source when there are questions:

#### Component Manufacturers:

DECALS, WARNING & INFORMATIONAL LABELS

Viking Specialized Trailers, L.L.C (A subsidiary of Bright Coop, Inc. 1730 S.W. Stalling Dr., Suite 101 Nacogdoches, Texas 75964 (936) 564-8370 (844) 815-6210 www.vikingspzdtrailers.com

LANDING GEAR

Holland MARK V Wylie, Tx 75098 (214) 442-3556

JOST 1770 Hayes Street Grand Haven, MI 49417 (616) 846-7700 (800) 253-5105 www.jostinternational.com

4 Bunk or Plantation Trailers Brake Winches

DUTTON-LAISON Company 451 West 2dn St Hastings, NE 68902-0729 402-462-4141 www.dutton-lainson.com

#### BRAKE COMPONENTS

Meritor WABCO Vehicle Control Systems 2135 West Maple Road Troy, MI 48084 U.S.A. Call Meritor Customer Center (800) 535-5560 www.meritorwabco.com

ArvinMeritor Inc. (Auto Slacks) 2135 West Maple Road Troy Mi,48084 (800) 535-5560 www.arvinmeritor.com Bendix Commercial Vehicle System 901 Cleveland Street Elyria, Ohio 44035 (800) -AIRBRAKE www.bendix.com

Gunite Corporation 302 People Ave. Rockford, II 61104-7092 (800) 677-3786 www.gunite,com

Haldex Brake Products Corp. 10930 North Pomona Avenue Kansas City, MO 64153 (816) 891-2470 www.haldex.com

#### SUSPENSION

Hendrickson Trailer Suspension Systems 2070 Industrial Place SE Canton, OH 44707-2600 (800) 455-0043 www.hendrickson-intl.com

Hutchens Industries, Inc. P.O. Box 1427 Springfield, Missouri 65801-1427 (417) 862-5012 (800) 654-8824

WASON & CHALIN INC. Watson Suspension Systems 2060 Couch Drive McKinney, Texas 75069 (972) 6026 Wats-1-800-445-0736

RIDEWELL Suspensions 3715 E Farm Road 94 Springfield MO 65803 Toll free: (800) 641-4122 Phone: 417 833-4565 info@ridewellcorp.com

### APPENDIX

The following names, addresses and phone numbers will provide a second source when there are questions:

#### Component Manufacturers:

LIGHTS / HARNESSES

USA Harness 1201 E. Coke RD. Winnsboro, Tx. 75494 (903) 342-3767 www.usaharness.com TIRE INFLATION SYSTEMS

Hendrickson Trailer Suspension Systems (See Above)

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Meritor WABCO (See Above)

Airgo Systems 3712 E. 2nd Street Edmond, Oklahoma 73034 Phone:(405)-844-5825 Toll Free: (877)-550-6111

Grote Industries, Inc. 2600 Lanier Drive Madison, IN 47250 (812) 273-1296 www.grote.com

Maxxima 125 Cabot Court Hauppauge, NY 11788 (631) 434-1200 www.maxxima.com

#### WHEELS

Accuride Corporation 7140 Office Circle P.O. Box 15600 Evansville, IN 47716-0600 Phone: (888) 770-7282 www.accuridecorp.com

Alcoa Inc. Wheel Products 1600 Harvard Avenue Cleveland, OH 44105 Phone: (800) 242-9898 www.alcoa.com

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**Uiking Specialized Trailers**, L.L.C.

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