

DUO LIFTTM

Manufacturing Company, Inc.

OPERATORS MANUAL AND PARTS BOOK



MODEL: ST3-80K-SSA SEMI NURSE TRAILER

Read and understand this manual. This manual provides information and procedures to safely operate and maintain the *Semi Nurse Trailer*.



WARRANTY STATEMENT

DUO LIFT[®] Manufacturing Company, Inc.

Warranty

This is to certify that we warrant to the original purchaser equipment manufactured by Duo Lift Manufacturing Company, Inc., identified and recorded by serial number, to be free of defects in material and workmanship under normal use and service to replace, free of cost, to the original purchaser any part or parts of said equipment that in our judgement shows evidence of such defects; and provide further that the said part or parts shall be returned to the factory, freight prepaid, within five years of shipping date. Manufacturer agrees to replace or repair during this period of no charge any defective part or parts returned to the factory, and deemed defective by authorized factory inspection. Should it become impractical to return said parts to the factory, the manufacturer shall not be liable for any labor costs, or any other costs encountered, in repairing or replacing any part or parts involved, but will be obligated to supply only the necessary repair and/or replacement items.

Duo Lift Manufacturing Company, Inc., as the manufacturer shall not be liable for any other damage, whether direct or consequential.

No representative or other person is authorized or permitted to make any other warranty or assume for his company any liability not strictly in accordance with the foregoing. This limited warranty is in lieu of all warranties expressed or implied and of all other obligations on the part of the factory.

This limited warranty shall not apply to any item which shall have been operated in a manner not recommended by the Company nor which shall have been repaired, altered, neglected or used in any way which in the Company's opinion adversely affects its performance and results.

This limited warranty shall not apply to any equipment which has been tampered with in any way or which has been subject to misuse, neglect or accident, or which has the serial number altered, defaced, or removed.

This limited warranty does not apply to exterior finishes, tire, bearings, springs, jacks, couplers or any such items not directly manufactured by Duo Lift Manufacturing Company, Inc., except to the extent of their individual manufacturer's guarantee.

DUO LIFT MANUFACTURING CO., INC.

Semi Nurse Trailer

WARRANTY REGISTRATION FORM & INSPECTION REPORT

WARRANTY REGISTRATION (please print)

This form must be filled out by the dealer and signed by both the dealer and the customer at the time of delivery.

Customer's Name _____	Dealer Name _____
Address _____	Address _____
City, State, Zip Code _____	City, State, Zip Code _____
Phone Number (____) _____	Phone Number (____) _____
Contact Name _____	Check One:
Serial or VIN Number: _____	Farm Use <input type="checkbox"/>
Delivery Date _____	Commercial Use <input type="checkbox"/>

Semi Nurse Trailer Models

		ST3-80K-SSA			

I have thoroughly instructed the buyer on the above-described equipment. This review included the Operator's Manual content, equipment care, adjustments, safe operation, and applicable warranty policy.

Date _____ Dealer's Rep. Signature _____

The above equipment and Operator's Manual have been received by me and I have been thoroughly instructed as to care, adjustments, safe operation, and applicable warranty policy.

Date _____ Owner's Signature _____

DUO LIFT MFG.	DEALER	CUSTOMER

(MAKE COPIES AND CHECK APPROPRIATE BOX)

Send Signed Copy of Warranty Registration to One of the Options Below:
Address: Duo Lift Manufacturing Company, Inc. - 2810 38th Street - Columbus, NE 68601
E-Mail: warranty@duolift.com or FAX: (402) 564-5385

DUO LIFT MANUFACTURING CO., INC.

Semi Nurse Trailer

WARRANTY REGISTRATION FORM & INSPECTION REPORT

WARRANTY REGISTRATION (please print)

This form must be filled out by the dealer and signed by both the dealer and the customer at the time of delivery.

Customer's Name _____ Dealer Name _____
Address _____ Address _____
City, State, Zip Code _____ City, State, Zip Code _____
Phone Number (____) _____ Phone Number (____) _____
Contact Name _____ Check One:
Serial or VIN Number: _____ Farm Use ☐
Delivery Date _____ Commercial Use ☐

Semi Nurse Trailer Models :

		ST3-80K-SSA			

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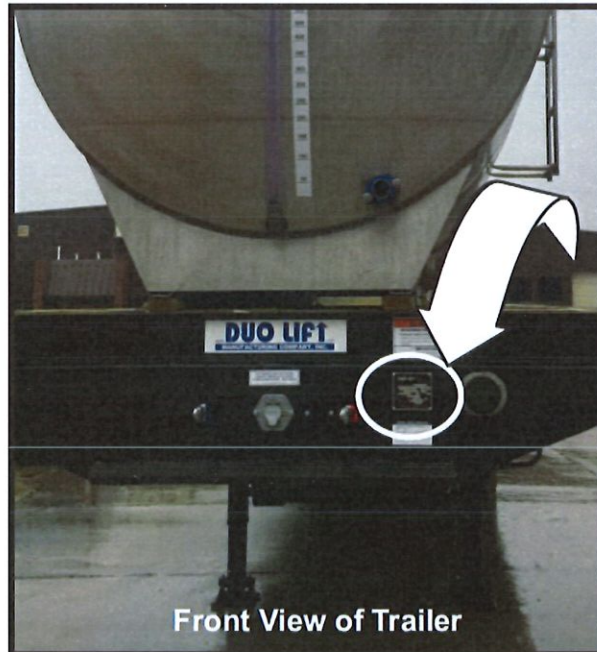
VEHICLE IDENTIFICATION NUMBER AND LOCATION

Always give your Duo Lift dealer the Vehicle Identification Number (VIN) of your Semi Nurse Trailer when ordering parts or requesting service or other information.

The VIN plate is located where indicated. Please record the number in the space provided for easy reference.

DESIGNED AND MANUFACTURED BY			
DUO LIFT[®]		Manufacturing Company, Inc.	
2810 38th St - Columbus, NE 68601 ★ 402-564-8023			
DATE OF MANUFACTURE _____			
V.I.N. _____			
MODEL _____	TYPE _____	TRAILER _____	
FRAME RATING _____	IN _____	FEET _____	
TIRES _____	PLY _____	PSI COLD _____	
RIMS _____			
GROSS VEHICLE WT. RATING _____		AT _____	MPH _____
GROSS AXLE WT. RATING _____		ALL AXLES _____	
NUMBER OF AXLES _____			
THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON DATE OF MANUFACTURE SHOWN ABOVE.			

VIN PLATE



Front View of Trailer

VIN NUMBER LOCATION

Model ST3-80K-SSA

VIN Number _____

1 INTRODUCTION

Congratulations on your choice of a new Duo Lift Semi Nurse Trailer to complement your fertilizer operation. This equipment has been designed and manufactured to meet the needs of a discerning fertilizer industry for efficient moving of fertilizer.

Safe, efficient and trouble free operation of your Trailer requires that you and anyone else who will be using or maintaining the Trailer, read and understand the Safety, Operation, Maintenance and Trouble Shooting information contained within this Operator's Manual.



Keep this manual handy for frequent reference and to pass on to new operators or owners. Call your Duo Lift dealer if you need assistance, information or additional copies of the manuals.

OPERATOR ORIENTATION - The directions left, right, front and rear, as mentioned throughout this manual, are as seen from the driver's seat and facing in the direction of travel.

DUO LIFT Manufacturing
Company, Inc.

2810 - 38th Street • Columbus, NE 68601
Toll: 800-243-2583 • Office: 402-564-8023 • FAX: 402-564-5385
www.duolift.com • sales@duolift.com

2 SAFETY

SAFETY ALERT SYMBOL

This Safety Alert symbol means
ATTENTION! BECOME ALERT!
YOUR SAFETY IS INVOLVED!



The Safety Alert symbol identifies important safety messages on the Duo Lift Semi Nurse Trailer and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

Why is **SAFETY** important to you?

3 BIG Reasons

Accidents Disable and Kill
Accidents Cost
Accidents Can Be Avoided

SIGNAL WORDS:

Note the use of the signal words **DANGER**, **WARNING** and **CAUTION** with the safety messages. The appropriate signal word for each message has been selected using the following guidelines:

DANGER - An immediate and specific hazard which **WILL** result in severe personal injury or death if the proper precautions are not taken.

WARNING - A specific hazard or unsafe practice which **COULD** result in severe personal injury or death if proper precautions are not taken.

CAUTION - Unsafe practices which **COULD** result in personal injury if proper practices are not taken, or as a reminder of good safety practices.

2.1 SAFETY



General Trailer Safety

Check Federal, State and Local Safety Codes & Regulations for Full Compliance

1. This Trailer is ABS Equipped and Requires Continuous Electrical Power to the Auxiliary / Blue Circuit
1. DO NOT Load Trailer Over Recommended Capacity
2. Check Lights and Reflectors Before Towing
3. Examine Tires For Wear and Correct Pressure
4. Check Wheel Lug Bolts For Torque Tightness
5. Inspect and Check Brakes For Correct Operation
6. Raise Jack Before Moving Trailer
7. Always Secure Load and Check During Trip
8. Maintain Proper Distance For Stopping
9. Be Careful When Backing Trailer
10. When Parking, Block Wheels if on Slope
11. Use Precaution When Operating Any Equipment

2.2 TRAILER SAFETY

YOU are responsible for the **SAFE** operation and maintenance of your Duo Lift Trailer. **YOU** must ensure that you and anyone else who is going to operate, maintain or work around the Trailer be familiar with the operating and maintenance procedures and related **SAFETY** information contained in this manual. This manual will take you step-by-step through your working day and alerts you to all good safety practices that should be adhered to while operating the Trailer.

Remember, **YOU** are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Be certain that **EVERYONE** operating this equipment is familiar with the recommended operating and maintenance procedures and follows all the safety precautions. Most accidents can be prevented. Do not risk serious injury or death by ignoring good safety practices.

Trailer owners must give operating instructions to operator's or employee's before allowing them to operate the Trailer, and at least annually thereafter per OSHA (Occupational Safety and Health Administration) regulation 1928.57.

The most important safety device on this equipment is a **SAFE** operator. It is the operator's responsibility to read and understand **ALL** Safety and Operating instructions in the manual and to follow them. All accidents can be avoided.

A person who has not read and understood **ALL** operating and safety instructions is not qualified to use the equipment. An untrained operator exposes himself and bystanders to possible serious injury or death.

Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.

Duo Lift Manufacturing Company Inc., follows the general Safety Standards specified by the following agencies:

American National Standards Institute (ANSI)
American Society of Agricultural and Biological Engineers (ASABE)
Occupational Safety and Health Administration (OSHA)

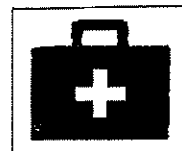
Anyone who will be operating and/or maintaining the Trailer must read and clearly understand **ALL** Safety, Operating and Maintenance information presented in this manual.

2.3 GENERAL SAFETY

1. SEE INTRODUCTION Page 1 for contact information.



2. Read and understand this Operator's Manual and all safety signs before operating, maintaining, adjusting or repairing the Trailer.



3. Have a first-aid kit available for use should the need arise and know how to use it.



4. Have a fire extinguisher available for use should the need arise and know how to use it.

5. Wear appropriate protective gear. This list includes but is not limited to:

- Protective chemical goggles
- Respirator or filter mask
- Neoprene gloves
- Water repellent clothing
- Rubber boots
- Supply of fresh water as required by Safety Standard Regulations



6. Do not allow riders on the Trailer.



7. Wear suitable ear protection for prolonged exposure to excessive noise.

8. Clear the area of bystanders, especially small children, before moving the unit.

9. Review safety related items with all personnel who will be operating or maintaining the Trailer.

Think SAFETY! Work SAFELY!

2.4 OPERATING SAFETY

1. This Trailer is ABS equipped and requires continuous electrical power to the auxiliary / blue circuit.
2. Read and understand the Operator's Manual and all safety signs before operating, maintaining, adjusting or servicing.
3. Read and follow the chemical manufacturers' instructions on the handling, storage and disposal of chemicals before starting.
4. Agricultural chemicals are among the most toxic substances known to man. Minute quantities can be harmful to humans, contaminate clothing, machinery, the workplace and the environment. Follow the chemical manufacturers' instructions exactly.
5. Do not breathe, touch or ingest chemicals. Always wear protective clothing and follow safe handling procedures.
6. Do not allow riders on the Trailer.
7. Make sure you are in compliance with all local regulations regarding transporting equipment on public roads and highways.
8. Keep hands, feet, hair and clothing away from all removing parts.
9. Clear the area of bystanders, especially small children, before moving.
10. Shift towing unit to a lower gear before going down steep downgrades to use engine as retarding force. Keep towing vehicle in gear at all times.
11. Maintain proper brake setting at all times.
12. Do not attempt to operate this equipment under the influence of drugs and/or alcohol.
13. Review safety instructions with all users annually.
14. Support the Trailer with blocks or safety stands when changing tires or working beneath it.
15. Follow good shop practices:
 - Keep service area clean and dry.
 - Be sure electrical outlets and tools are properly grounded.
 - Use adequate light for the job at hand.



2.5 TIRE SAFETY

1. Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death. **See Section 6**
2. Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.
3. Have a qualified tire dealer or repair service perform required tire maintenance.
4. Always order and install tires and wheels with the appropriate capacity to meet or exceed the anticipated weight to be placed on the equipment.
5. It is recommended to install wheels with valve stems to the outside of the wheels.

2.6 SAFETY SIGNS

1. Keep safety signs clean and legible at all times.
2. Replace safety signs that are missing or have become illegible.
3. Replaced parts that displayed a safety sign should also display the current sign.
4. Safety signs are available from your Duo Lift Dealer Parts Department or the factory at no cost.

How to Install Safety Signs

- Be sure that the installation area is clean and dry.
- Decide on the exact position before you remove the backing paper.
- Remove the smallest portion of the split backing paper.
- Align the sign over the specified area and carefully press the small portion with the exposed sticky backing in place.
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the sign in place.
- Small air pockets can be pierced with a pin and smoothed out using the piece of sign backing paper.

2.7 DEFINITIONS

GCVW

Gross Combined Vehicle Weight (GCVW) is the total combined weight of a fully loaded vehicle, including passengers, payload and everything in tow.

GVW

Gross Vehicle Weight (GVW) is the total weight of a fully loaded vehicle, including passengers and payload but excluding all towing.

GVWR

Gross Vehicle Weight Rating (GVWR) is the maximum number that the GVW or GTW should never exceed. GVWR is applied to trailers as well as vehicles, but you may see this rating referred to as the **Maximum Loaded Trailer Weight**.

Curb Weight

The weight of a vehicle without any passengers or cargo, but including all necessary fuel, fluids and standard equipment.

Understanding Gross Vehicle Weight Rating

Knowing and understanding GVWR is important to towing because it tells you explicitly the maximum weight of passengers and cargo you can safely carry. GVWR is the total combined weight of truck, including all passengers, fuel, fluids and cargo. GVWR is constant and does not change, regardless of what you tow. It's engineered in when the vehicle is manufactured.

3 SAFETY SIGNS AND LOCATIONS

The types of sign and locations on the equipment are shown in the illustration below. Good safety requires that you familiarize yourself with the various Safety Signs, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

- * Think SAFETY! Work SAFELY!



WARNING

TIRE MOUNTING EXPLOSION HAZARD

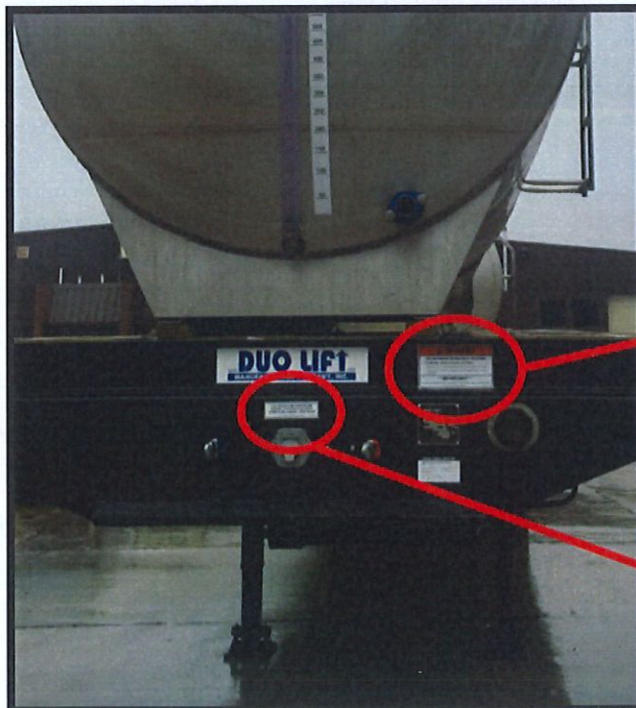
To prevent serious injury or death:

- Serious injury or death may result from an explosion of the tire/rim assembly due to improper mounting procedures.
- Only specially trained personnel should mount these tires.
- Standard internal tire pressure must be ensured and the tire pressures should be checked regularly. Always inflate tire/rim in a safety cage or restraining device and always use remote-controlled clip-on air hose.
- Never exceed 40 P.S.I. to seat tire beads.
- After seating tire beads, inflate to pressure recommended by tire manufacturer.
- Never put a flammable substance into a tire/rim assembly and lights to seat tire beads.
- Never weld or braze or apply heat to rim.
- Follow tire manufacturers recommendations.
- Never stand, lean or reach over tire/rim assembly during inflation.

Special procedures for steel radial tires

- Keep your tires dry.
- Moisture trapped inside tires can cause damage. Store in a dry area.
- Dry interior before mounting. Inflate with dry air.

DUO LIFT MANUFACTURING COMPANY, INC. Part No. DUE02113



WARNING

DETACHMENT/RUNAWAY HAZARD

TO PREVENT SERIOUS INJURY OR DEATH:

- ASSURE FIFTH WHEEL LOCKING LEVER IS IN LOCKED POSITION.
- TEST CONNECTION BY LOCKING TRAILER BRAKES AND PULLING FORWARD.

****IMPORTANT****

RETRACT LANDING GEAR TO UPWARD POSITION BEFORE TRANSPORTING

DUO LIFT MANUFACTURING COMPANY, INC. Part No. DEB0111

**THIS TRAILER IS ABS EQUIPPED AND
REQUIRES CONTINUOUS ELECTRICAL
POWER TO THE AUXILIARY / BLUE CIRCUIT**

DUO LIFT MANUFACTURING COMPANY, INC. Part No. DEB0111

REMEMBER - If Safety Signs have been damaged, removed, become illegible or parts replaced without signs, new signs must be applied. New signs are available from your authorized dealer or from Duo Lift at no cost.

4 OPERATION



OPERATION SAFETY

1. Read and understand the Operator's Manual and all safety signs before operating, maintaining, adjusting or servicing.
2. Assure fifth wheel locking lever is in locked position.
Test connection by locking trailer brakes and pulling forward.
3. This trailer is ABS equipped and requires continuous electrical power to the auxiliary / blue circuit.
4. Read and follow the chemical manufacturers' instructions on the handling, storage and disposal of chemicals before starting.
5. Agricultural chemicals are among the most toxic substances known to man. Minute quantities can be harmful to humans, contaminate clothing, machinery, the workplace and the environment. Follow the chemical manufacturers' instructions exactly.
6. Do not breathe, touch or ingest chemicals. Always wear protective clothing and follow safe handling procedures.
7. Do not allow riders on the Trailer.
8. Make sure you are in compliance with all local regulations regarding transporting equipment on public roads and highways.
9. Keep hands, feet, hair and clothing away from all moving parts.
10. Clear the area of bystanders, especially small children, before moving.
11. Retract landing gear to upward position before transporting.
12. Shift towing unit to a lower gear before going down steep downgrades to use engine as retarding force. Keep towing vehicle in gear at all times.
13. Maintain proper brake setting at all times.
14. Do not attempt to operate this equipment under the influence of drugs and/or alcohol.
15. Review safety instructions with all users annually.
16. Support the Trailer with blocks or safety stands when changing tires or working beneath it.
17. Follow good shop practices:
 - Keep service area clean and dry.
 - Be sure electrical outlets and tools are properly grounded.
 - Use adequate light for the job at hand.



CAUTION:

Always refer to the Towing Vehicle owners manual trailer towing section to determine the vehicles towing capacity and to ensure compatibility and maximum safety.

4.1 TO THE NEW OPERATOR OR OWNER

The Duo Lift Trailer is designed for the mounting of fertilizer or chemical containers to it. It efficiently carries the containers and chemical on the road or in the field.

Owner's Responsibility:

It is the responsibility of the owner or operator to read this manual and to train all other operators before they start working with the Trailer. Follow all safety instructions exactly. Safety is everyone's business. By following recommended procedures, a safe working environment is provided for the operator, bystanders and the area around the work site. Untrained operators are not qualified to use the equipment.

Many features incorporated into this Trailer are the result of suggestions made by customers like you. Read this manual carefully to learn how to operate the Trailer safely and how to set it to provide maximum efficiency. By following the operating instruction in conjunction with a good maintenance program, your Duo Lift Trailer will provide many years of trouble-free service.



Each trailer is equipped with lanyards for each rear axle tank.

REMEMBER – If Safety Signs have been damaged, removed, become illegible or parts replaced without signs, new signs must be applied. New signs are available from your authorize dealer or from Duo Lift at no cost.

4.2 TRAILER BREAK-IN

Although there are no operational restrictions on the Trailer when used for the first time, it is recommended that the following mechanical items be checked:



- A. This Trailer is ABS equipped and requires continuous electrical power to the auxiliary / blue circuit.
- B. After traveling for 1/2 hour or going 5 miles (8 km):
1. Tighten wheel bolts to their specified torque levels. **Refer to Section 7.**
 2. Check all nuts, bolts and other fasteners. Tighten to their specified torque level.
 3. Check tire pressure. Bring to specified level.
 4. Check the container mounting hardware. Tighten to the specified torque.
 5. Check hubs for proper tightness. The spindle castle nuts are set at the factory but may need additional adjustment to ensure the bearings are seated properly.
- C. After operating for 5 and 20 hours or 50 and 200 miles (80 and 320 km):
1. Repeat items 1 through 4 of Section A.
 2. Then go to the regular service schedule as outlined in the Maintenance Section.
- D. Repeat the torquing of wheel bolts after 5, 50 and 200 miles (8, 80 and 320 km) or whenever a wheel is removed and installed on the Trailer.

4.3 PRE-OPERATION CHECKLIST

Efficient and safe operation of the Trailer requires that each operator reads and understands the operating procedures and all related safety precautions outlined in this section. A pre-operation checklist is provided for the operator. It is important for both the personal safety and maintaining the good mechanical condition of the Trailer that this checklist is followed.

Before operating the Trailer and each time thereafter, the following areas should be checked off:

1. Check the tire pressure. Bring to specified level.
2. Check the wheel bolts. Tighten to their specified torque. **Refer to Section 7.**
3. Check the container mounting hardware. Be sure it is tightened to its specified torque. **Refer to Section 5.2.1.**
4. Check the container and accessory equipment. Be sure that all components are in good condition and working properly.
5. If transporting during times of limited visibility or dusk, install extra lights or use pilot vehicles.
6. "The employer shall instruct each employee in the recognition and avoidance of unsafe conditions and the regulations applicable to his work environment to control or eliminate any hazards or other exposure to illness or injury." Ref: 29CFR 1929.20 (b) (4) (a) (2)

4.4 TRANSPORTING



TRANSPORT SAFETY

1. Make sure you are in compliance with all local regulations regarding transporting equipment on public roads and highways.
2. This Trailer is ABS equipped and requires continuous electrical power to the auxiliary / blue circuit.
3. Do not allow anyone to ride on the Trailer or towing vehicle during transport.
4. Make sure all lights and reflectors that are required by the local highway and transport authorities are in place, are clean and can be seen clearly by all overtaking and oncoming traffic.

When transporting the Trailer, review and follow these instructions:

1. It is the responsibility of the customer to know the lighting and marking requirements of the local highway authorities. Install reflectors and extra lights as required to comply with the regulations.
2. Retract landing gear to upward position before transporting.
3. Clean the reflectors and check that the lights are in good working order before starting.
4. If transporting during times of limited visibility or dusk, install extra lights or use pilot vehicles.
5. Do not allow riders on the Trailer.
6. Never exceed a safe travel speed. Slow down for corners and rough road conditions.

Always shift to a lower gear when going down hills to use the engine as a retarding force.