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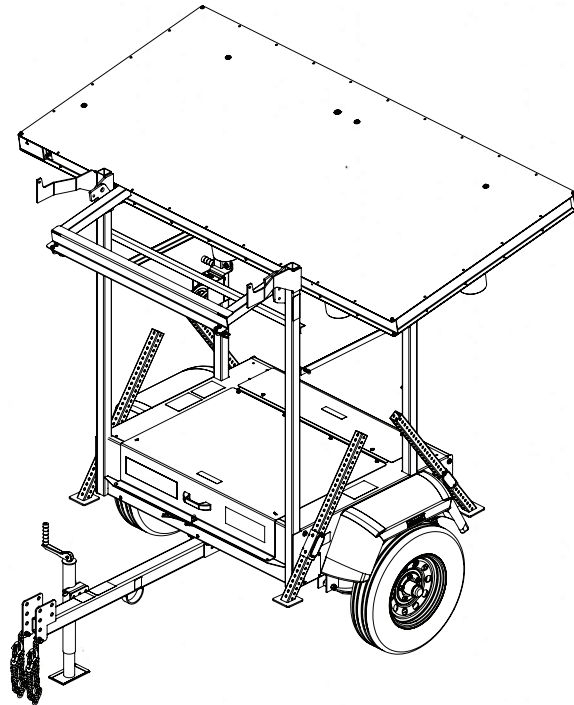
Portable
Light Towers

Portable
Light Stands

Solar Flashing
Arrow Boards



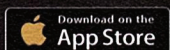
- en Operator's Manual
ECLIPSE® AB2400 Arrow Board
- es Manual del operador
ECLIPSE® Flecha de tránsito AB2400



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Part No.: 106809
Revision: A

LIGHT TOWER APP



Reliability, Performance, and Integrity Since 1938

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Record Important Information

Recording the equipment information will help when placing an order for replacement parts and/or decals.

Company Equipment No: _____

Unit model No: _____

Unit Vin: _____

Engine Model No: _____ Serial No: _____

Generator Model No: _____ Serial No: _____

Accessories: _____

WARNING
CALIFORNIA PROPOSITION 65
 Battery post, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hand after handling.

WARNING
EXPOSURE HAZARD
 Always wear personal protective equipment, including appropriate clothing, gloves, work shoes, and eye and hearing protection, as required by the task at hand.

NOTICE
 Only use replacement parts specified. Other replacement parts may effect warranty coverage.



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Introduction

About This Manual

TAKE TIME TO READ THIS MANUAL THOROUGHLY

This instruction manual provides necessary instructions for the ECLIPSE® AB2400 Arrow Board.

The information found in this manual is in effect at the time of printing. Allmand Bros Inc. may change contents without notice and without incurring obligation.

Any reference in this manual to left or right shall be determined by looking at the trailer from the rear.

If you are uncertain about any of the information in the manual, contact Allmand service department at 1-800-562-1373, or contact us through the Allmand website, www.allmand.com.

Save these original instructions for future reference.

Products Covered by This Manual

The following products are covered by this manual:

ECLIPSE® AB2400 ALT 15-Lamp Arrow Board

ECLIPSE® AB2400 APF 25-Lamp Arrow Board

Safety

Safety Definitions

Safety statements are one of the primary ways to call your attention to potential hazards. Follow the precautions listed throughout the manual before operation, during operation and during periodic maintenance procedures for your safety, the safety of others and to protect the performance of equipment. Keep the decals from becoming dirty or torn and replace them if they are lost or damaged. Also, if a part needs to be replaced that has a decal attached to it, make sure to order the new part and decal at the same time.



This safety alert symbol appears with most safety statements. It means attention, become alert, your safety is involved! Read and abide by the message that follows the safety alert symbol.

DANGER

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

WARNING

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

CAUTION

Indicates a hazardous situation which, if not avoided, **could** result in minor or serious injury.

NOTICE

Indicates a situation which can cause damage to the equipment, personal property and/or the environment, or cause the equipment to operate improperly.

NOTE:

Provides key information to make procedures easier or clearer.

Safety Precautions

The following section contains general safety precautions and guidelines that must be followed to reduce risk to personal safety. Special safety precautions are listed in specific procedures. Read and understand all of the safety precautions before operating or performing repairs or maintenance.



DANGER



Electrocution Hazard

- Contact with overhead electrical wires will result in death or serious injury. Always follow the rules or instructions for your work site, and state, province or national electric code for maintaining a safe distance from overhead wires.



WARNING

Unsafe Operation Hazard

- Untrained personnel operating this equipment could result in death or serious injury. Read and understand the Operator's Manual before operating or servicing this equipment.
- Use of alcohol or drugs while operating or attempting to operate this machine could result in death or serious injury. Never operate this machine while under the influence of alcohol, drugs or when otherwise impaired.
- Failure to replace safety decals or instructions that have become damaged or torn could result in death or serious injury. Always replace decals that are damaged, torn or illegible.



WARNING

Fall Hazard

- Falling from moving equipment could result death or serious injury. Never carry riders on this equipment.



WARNING

Modification Hazard

- Unauthorized modification of the equipment could result in death or serious injury. Never modify the equipment without consulting Allmand Brothers, Inc. Service Department.



WARNING

Crush Hazard

- Standing or walking under elevated equipment could result in death or serious injury. When elevating or lifting the trailer, always keep clear of the area around and under the trailer, and do not allow others in the area.



WARNING

Exposure Hazard

- Failure to wear appropriate personal protective equipment could result in death or serious injury. Always wear personal protective equipment including appropriate clothes, gloves, work shoes, and eye and hearing protection as required for the task.



WARNING

Rollover Hazard

- Raising the sign board without properly positioning the outriggers first could cause machine rollover resulting in death or serious injury. Always position the outriggers on a smooth, flat and stable surface before raising the sign board.
- Attempting to move or lift the trailer with the sign board raised could cause machine rollover resulting in death or serious injury. Always lower the sign board to its fully lowered position and lock in position with the snapper pins before moving or lifting the trailer.
- Operating the arrow board trailer with the sign board fully raised in winds exceeding 50 mph (80 km/h) can cause machine rollover resulting in death or serious injury. Always lower the sign board when winds are expected to exceed 50 mph (80 km/h).



WARNING



Explosion Hazard

- Smoking, open flame or other forms of ignition near the battery could cause explosion resulting in death or serious injury. Always keep smoking materials, open flame and other forms of ignition away from the battery.
- Attempting to charge a frozen battery could cause explosion resulting in death or serious injury. Always be sure that the battery is not frozen, split open or damaged before attempting to charge it.



WARNING



Entanglement / Sever Hazard

- Contact with moving or rotating parts of the machine could cause death or serious injury. Always:
 - Verify that all guards and covers are attached properly to the machine before operating.
 - Remove jewelry, tie back long hair and keep hands, other body parts and clothing away from moving or rotating parts.
 - Follow your companies "Lock Out, Tag Out" procedure, or attach a "Do Not Operate" in a prominent place on the machine prior to performing service or maintenance on the machine.



WARNING

Control Hazard

- Underrated tow hitch could cause loss of control of the towing vehicle or trailer resulting in death or serious injury. Always:
 - Ensure that the vehicle's towing capacity exceeds that of the trailer load.
 - When using the trailer coupler, ensure that the vehicle's hitch and ball are rated to accept the trailer load, and are the appropriate size for the trailer coupler socket.
 - When using the lunette eye, ensure that the vehicle's pintle hook is rated to accept the trailer load, and is the appropriate size for the lunette eye.
- Dragging safety chains on the road surface could cause them to fail in an emergency resulting in death or serious injury. Always attach safety chains properly and securely between the tow vehicle and the trailer, and do not let them drag on pavement.



WARNING



Batteries give off explosive gases during recharging. Sparks can cause explosions, resulting in death or serious injury.

Batteries contain acid, which is extremely caustic. Contact with battery contents will cause severe chemical burns.

Batteries present a risk of electric shock and high short circuit current.

- DO NOT dispose of battery in a fire. Recycle battery.
- DO NOT allow any open flame, spark, heat, or lit cigarette during and for several minutes after charging a battery.
- DO NOT open or mutilate battery.
- DO NOT charge a frozen battery.
- Wear protective gloves, rubber apron, rubber boots and rubber gloves.
- Remove watches, rings, or other metal objects.
- Use tools having insulated handles.



WARNING



Flying Object Hazard

- Flying debris, pressurized steam or water and compressed air could result in death or serious injury. Always wear eye protection when working around or cleaning the machine.



WARNING

California Proposition 65

- Certain components in this product and related accessories contain chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm. Wash hands after handling.



CAUTION

Slip Hazard

- Immediately clean up any spilled liquid on the shop floor.
- Clean up accumulated dirt and debris on the shop floor at the end of each shift.

NOTICE

The statements that follow have NOTICE level issues. Damage to equipment or property can result if not followed.

- Any part which is found defective as a result of inspection or any part whose measured value does not satisfy the standard or limit MUST be replaced.
- Always tighten components to the specified torque. Loose parts can cause equipment damage or cause it to operate improperly.
- Only use replacement parts specified. Other replacement parts may effect warranty coverage.
- Clean all accumulated dirt and debris away from the body of the equipment and its components before you inspect the equipment or perform preventative maintenance procedures or repairs. Operating equipment with accumulated dirt and debris will cause premature wear of equipment components.
- Never dispose of hazardous materials by dumping them into a sewer, on the ground, or into groundwater or waterways.
- Retrieve any tools or parts that may have dropped inside of the equipment to avoid improper equipment operation.
- If any alert indicator illuminates during equipment operation, stop operation immediately. Determine the cause and repair the problem before continuing to operate the equipment.

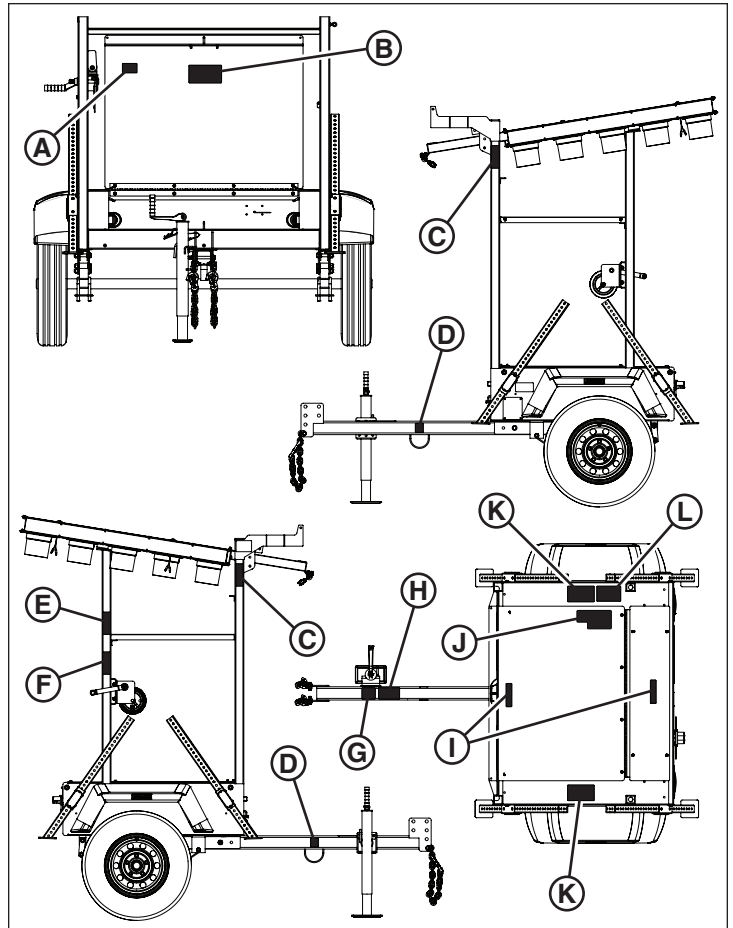





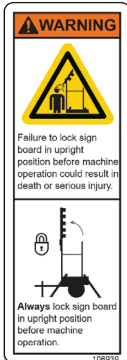

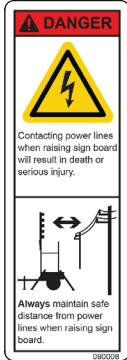
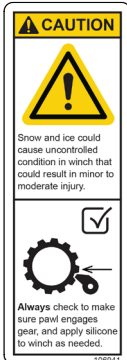

Figure 1



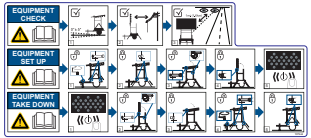

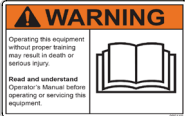
Safety Decals

Before operating your unit, read and understand the following safety decals. Compare Figure 1 with the table below. The cautions, warnings, and instructions are for your safety. To avoid personal injury or damage to the unit, understand and follow all the decals.

| | |
|---|---|
|  | <p>WARNING</p> <p>If any safety or instructional decals become worn or damaged, and cannot be read, order replacement decals from your dealer.</p> |
|---|---|

| | |
|--|---|
| <p>A WARNING - Hood Latch. Failure to turn hood latch in block position while hood is open could result in death or serious injury. Always turn hood latch in block position after opening hood.</p> <p>Part No. 107245</p> |  |
| <p>B WARNING - Explosion Hazard. Smoking materials, open flames, or other forms of ignition near the battery could cause explosion resulting in death or serious injury. Always keep smoking materials, open flames, and other forms of ignition away from the battery.</p> <p>Part No. 106940</p> |  |

| | |
|---|---|
| <p>C WARNING - Locking Sign Board. Failure to lock the sign board in the upright (operating) position before operation could result in death or serious injury. Always lock the sign board in the upright (operating) position before machine operation.</p> <p>Part No. 106939</p> |  |
| <p>D Tie-Down Point</p> <p>Part No. 104753</p> |  |
| <p>E DANGER - Contacting Power Lines. Contacting electric power lines when raising the sign board will result in death or serious injury. Always maintain a safe distance from power lines when raising the sign board.</p> <p>Part No. 090008</p> |  |
| <p>F CAUTION - Icy Conditions. Snow and ice could cause uncontrolled condition in which that could result in minor or moderate injury. Always check to make sure pawl engages gear, and apply silicone to winch as needed.</p> <p>Part No. 106941</p> |  |
| <p>G WARNING - Excessive Towing Speed. To prevent death, serious injury or equipment damage, do not exceed 55 mph (90 km/h).</p> <p>Part No. 090160</p> |  |

| | |
|--|---|
| <p>H WARNING - Locking Sign Board. Failure to lock the sign board in the lowered (transport) position could result in death or serious injury. Always lock the sign board in the lowered (transport) position before towing the trailer.</p> <p>Part No. 090079</p> |  |
| <p>I No Step</p> <p>Part No. 106939</p> |  |
| <p>J Operating Instructions</p> <p>Part No. 107244</p> |  |
| <p>K WARNING - Positioning Jack Stands (Outriggers). Raising the sign board without properly positioning the jack stands could result in death or serious injury. Always position the jack stands on a smooth, flat and stable surface before raising the sign board.</p> <p>Part No. 090125</p> |  |
| <p>L WARNING - Read Manual. Read and understand the Operator's Manual before attempting to operate the machine.</p> <p>Part No. 090148</p> |  |

Features and Controls

Introduction

Allmand Eclipse® 2400 Series arrow board trailers meet the U.S. Department of Transportation (USDOT), Federal Highway Administration (FHA) requirements as stated in the Manual on Uniform Traffic Control Devices (MUTCD). They are intended for use as a stationary roadside device to advise approaching traffic of lane closure along multi-lane roadways. Allmand Eclipse 2400 Series arrow boards conform to MUTCD Type 'C' (minimum sign board size 96 x 48 inches / 244 x 122 cm) requirements for high-speed, high volume motor vehicle traffic control projects.

The Allmand Eclipse 2400 Series arrow board is powered by a 12 volt DC battery which is charged by a photovoltaic solar panel. The combination of the battery and solar panel allow maintenance-free operation for long periods of time.

Identify the features and controls of the machine by comparing Figure 2 with the table below. See “Operation” for detailed information on each feature / control.

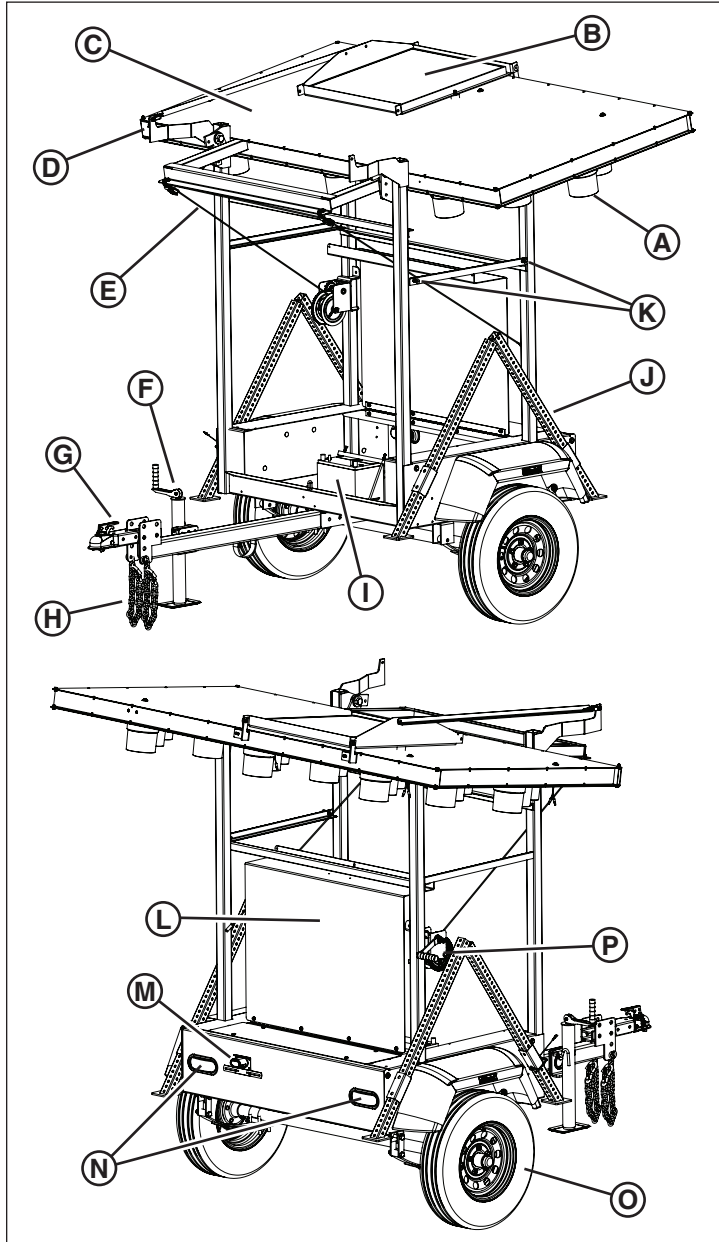


Figure 2

| Ref | Description |
|-----|--|
| A | Lamp Assembly (15 or 25, depending on model) |
| B | Solar Panel |
| C | Sign Board (in transport position) |
| D | Sign Board Controller (partially hidden) |
| E | Sign Board Hoisting Cable |
| F | Tongue Jack |

| Ref | Description |
|-----|---|
| G | Combination Trailer Coupler / Lunette Eye |
| H | Safety Chains (2) |
| I | Battery |
| J | Outrigger (4) |
| K | Trailer Positioning Eyelet (2) |
| L | Battery Compartment Door (shown open) |
| M | License Plate Bracket / Lamp |
| N | Taillight (2) |
| O | Wheel Assembly (2) |
| P | Winch |

Operation

See “Safety” before attempting to operate the unit.

Preparing the Arrow Board for Use

If the arrow board has been stored or idle for a period of time, follow these steps to prepare the Eclipse 2400 Series arrow board trailer for use.



WARNING

Unsafe Operation Hazard

- Operating or towing a machine with worn, damaged or missing parts can result in death or serious injury. Always replace worn, damaged or missing parts promptly. Do not operate or tow this machine until all worn, damaged or missing parts have been replaced, and proper operation of machine has been verified.

NOTICE

The replacement of any part on this machine by anything other than an Allmand authorized replacement part may adversely affect the performance, durability or safety of this machine and may void the warranty. Allmand assumes no liability for unauthorized replacement parts which adversely affect the performance, durability or safety of this machine.

Pre-Operation Check List

- Check that a copy of the Operator’s Manual is with the arrow board trailer in the manual storage container.
- Check that all safety decals are legible and in place on the arrow board trailer. See “Location of Safety Decals” in the Operator Safety section of this manual.
- Check the arrow board trailer for proper operation:
 - Check that the outriggers operate properly, and that each one is locked with the correct snapper pin. See “Setting the Outriggers”.
 - Check the winch and cable system for proper operation. Make sure the cable is not frayed or damaged.

- c. Check that the sign board can be positioned properly, and that it can be locked in both the transport and operating positions. Check that the correct snapper pins for locking the sign board in position are with the trailer. See “Raising and Lowering the Sign Board”.
- d. Check that the trailer coupler operates properly, and that the combination trailer coupler / lunette eye is securely fastened to the arrow board trailer tongue. See “Connecting the Trailer to the Tow Vehicle” for detailed information on operating the trailer coupler / lunette eye.
- e. Check that the safety chains are properly secured to the arrow board trailer tongue, and check the safety chains and hooks for damage. Replace damaged safety chains and hooks.
- f. Check the condition and inflation pressure of the tires. See “Checking the Tire Pressure” in the Maintenance section.



WARNING

Unsafe Operation Hazard

- Towing a trailer with worn, damaged or underinflated tires could result in death or serious injury. Always replace worn or damaged tires promptly. Always keep tires inflated to proper cold tire inflation pressure.

- 4. Check the battery for adequate charge. Charge if needed. See “Maintaining the Battery” in the Maintenance section.
- 5. If the trailer was stored with the battery disconnected, reconnect the battery. See “Maintaining the Battery” in the Maintenance section.
- 6. Make sure that the solar panel is clean and free of dirt and debris that could hamper adequate charging of the battery. See “Cleaning” in the Maintenance section.
- 7. Check that all modes of the sign board lighting system are working properly. See “Operating the Sign Board”.

Preparing The Arrow Board For Towing

To prepare the Eclipse 2400 Series arrow board trailer for towing:

- 1. Check the tow vehicle’s owner / operator manual for the maximum towing capacity. Make sure the tow vehicle and trailer hitch are rated to tow the arrow board trailer. See “Specifications” for detailed information on trailer weight and tongue weight.



WARNING

Unsafe Operation Hazard

- Towing a trailer with an underrated tow vehicle, or an underrated or undersized hitch could result in death or serious injury. Always use a tow vehicle that has a rated towing capacity that exceeds the Gross Vehicle Weight Rating (GVWR) of the trailer, and is equipped with the appropriate size tow hitch rated for the GVWR of the trailer.

- 2. Check the tow vehicle’s lighting connector and make sure it will mate with the trailer lighting connector on the arrow board trailer.
- 3. The arrow board trailer is equipped with both a SAE J684 Class 2 trailer coupler (for use with a 2 inch (50 mm) diameter ball), and a SAE J847 lunette eye (3 inch (75 mm) diameter) for a pintle hook. Determine which is to be used for towing the trailer. See “Trailer Coupler And Lunette Eye” for detailed information on changing between the trailer coupler and the lunette eye.



WARNING

Unsafe Operation Hazard

- Failure to secure the combination trailer coupler and lunette eye to the trailer tongue could cause the trailer to separate from the tow vehicle, resulting in death or serious injury. Always check and securely tighten the hardware securing the combination trailer coupler and lunette eye to the tongue.

- 4. Check that the safety chains are properly secured to the arrow board trailer tongue, and check the safety chains and hooks for damage. Replace damaged safety chains and hooks.
- 5. Check the condition and inflation pressure of the tires. See “Checking the Tire Pressure”.



WARNING

Unsafe Operation Hazard

- Towing a trailer with worn, damaged or underinflated tires could result in death or serious injury. Always replace worn or damaged tires promptly. Always keep tires inflated to proper cold tire inflation pressure.

- 6. If the sign board is not already lowered to the transport (horizontal) position, lower the sign board. See “Raising and Lowering the Sign Board”.
- 7. Make sure that the sign board is locked in the transport position. See “Raising and Lowering the Sign Board”.



WARNING

Unsafe Operation Hazard

- Failure to lock the sign board in the transport (horizontal) position before transporting could result in death or serious injury. Always lock the sign board in the transport position before transporting the arrow board trailer.

8. Close the sign board controller cover on the bottom right edge of the sign board. See “Operating the Sign Board”.
9. Make sure the battery compartment door is closed and secured with the cotter pin. See “Maintaining the Battery” in the Maintenance section.
10. Raise and lock the outriggers in the transport position. See “Setting the Outriggers”.

NOTE: Make sure the tongue jack is supporting the trailer before raising the outriggers.



WARNING

Rollover Hazard

- Failure to support the trailer tongue with the tongue jack before raising the outriggers could result in death or serious injury. Always support the trailer tongue with the tongue jack before raising the outriggers



WARNING

Unsafe Operation Hazard

- Failure to raise and lock the outriggers in the transport position could result in death or serious injury. Always raise and lock the outriggers in the transport position before transporting the arrow board trailer.

11. Connect the trailer coupler or lunette eye to the tow vehicle trailer hitch or pintle hook. Connect the safety chains and trailer lighting connector to the tow vehicle. See “Connecting The Trailer To The Tow Vehicle”.

Combination Trailer Coupler And Lunette Eye

Eclipse 2400 Series arrow board trailers are equipped with an adjustable height, reversible combination trailer coupler and lunette eye. The trailer coupler is a SAE J684 Class 2 tow hitch for use with a 2 inch (50 mm) diameter ball. The lunette eye is 3 inches (75 mm) in diameter conforming to the requirements of SAE J847.



WARNING

Unsafe Operation Hazard

- Operating or towing a machine with worn, damaged or missing parts can result in death or serious injury. Always replace worn, damaged or missing parts promptly. Do not operate or tow this machine until all worn, damaged or missing parts have been replaced, and proper operation of machine has been verified.

1. Check the tongue, trailer coupler and lunette eye for missing and damaged parts. Replace any part that is missing or damaged.
2. To change the position of the trailer coupler and the lunette eye, remove the two hex head screws and lock nuts (A, Figure 3) securing the channel portion of the lunette eye to the tongue. Discard the lock nuts. Do not remove the two hex head screws and lock nuts (B) securing the trailer coupler to the lunette eye.
3. Select the trailer coupler (C, Figure 3) or lunette eye (D) (whichever is required to couple the arrow board trailer to the tow vehicle), and position it at the front of the tongue. Determine the height which works best for the tow vehicle.
4. Insert the two hex head screws removed in Step 2 through the appropriate holes in the tongue and through the holes in the channel on the lunette eye.
5. Using new lock nuts, install nuts on the two hex head screws and tighten securely.
6. Check the two hex head screws and lock nuts securing the trailer coupler to the channel of the lunette eye, and make sure they are tight. If the screws or lock nuts are loose, replace the lock nuts and tighten securely.



WARNING

Unsafe Operation Hazard

- Failure to secure the combination trailer coupler and lunette eye to the trailer tongue could cause the trailer to separate from the tow vehicle, resulting in death or serious injury. Always check and securely tighten the hardware securing the combination trailer coupler and lunette eye to the tongue.

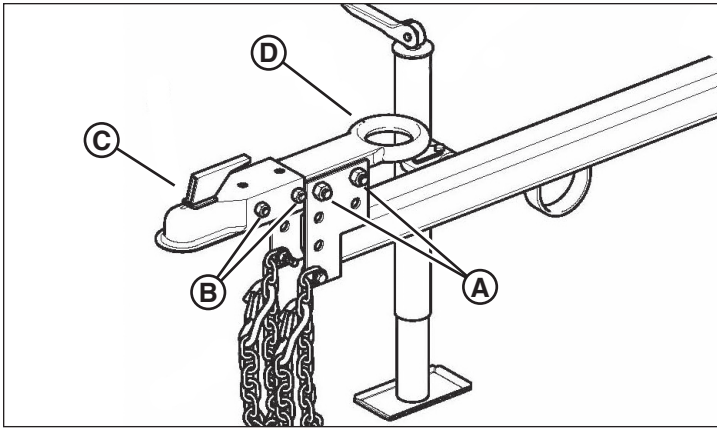


Figure 3

Connecting The Trailer To The Tow Vehicle

To connect the Eclipse 2400 Series arrow board trailer to the tow vehicle.

1. Place wheel chocks on both sides of each of the arrow board trailer wheels.
2. Use the tongue jack to raise the trailer coupler or lunette eye above the tow vehicle's hitch ball or pintle hook. Turn the jack handle clockwise to raise the trailer tongue.
3. Position the tow vehicle's hitch ball or pintle hook under the trailer coupler or lunette eye.
4. Lower the trailer coupler or lunette eye onto the hitch ball or pintle hook using the tongue jack. Turn the jack handle counter-clockwise to lower the tongue jack.
5. Lock the trailer coupler or pintle hook. See "Using The Trailer Coupler" or "Using A Pintle Hook" for detailed coupling information.
6. Attach the safety chains (A, Figure 4) to the tow vehicle's hitch frame. Cross the chains under the tongue as shown in Figure 4. Leave enough slack in the chains to allow for turns, but not so much that the chains will contact the road surface.



WARNING

Control Hazard

- Attach the safety chains properly and securely between the towing vehicle and trailer before towing.
- Never allow the safety chains to drag the ground when towing.

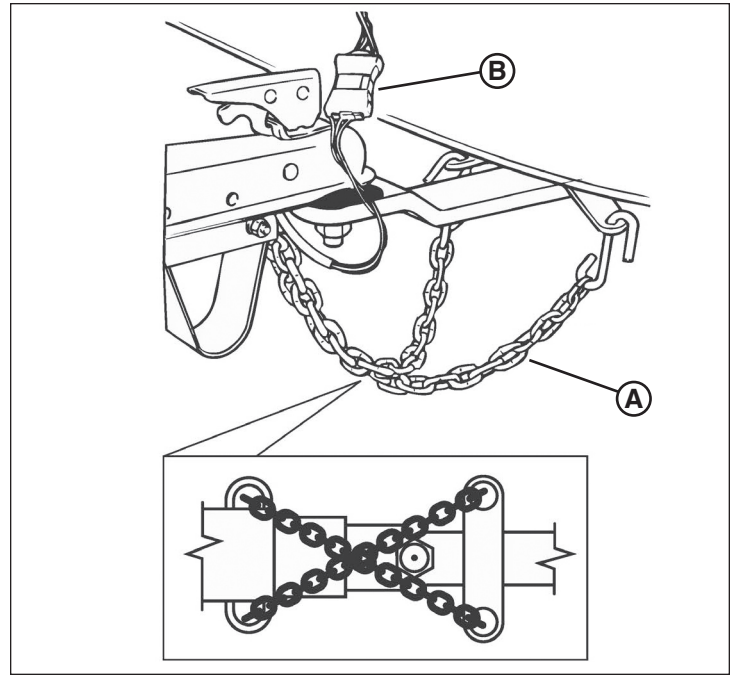


Figure 4

8. Turn the tongue jack handle (A, Figure 5) counter-clockwise to fully retract the tongue jack (B). Fold the crank handle over completely to lock the crank handle in transport position (C). Pull the lock lever (D) and rotate the jack 90° to place the jack in transport position (E), and release the lock lever. Make sure the lock lever engages and is secure.

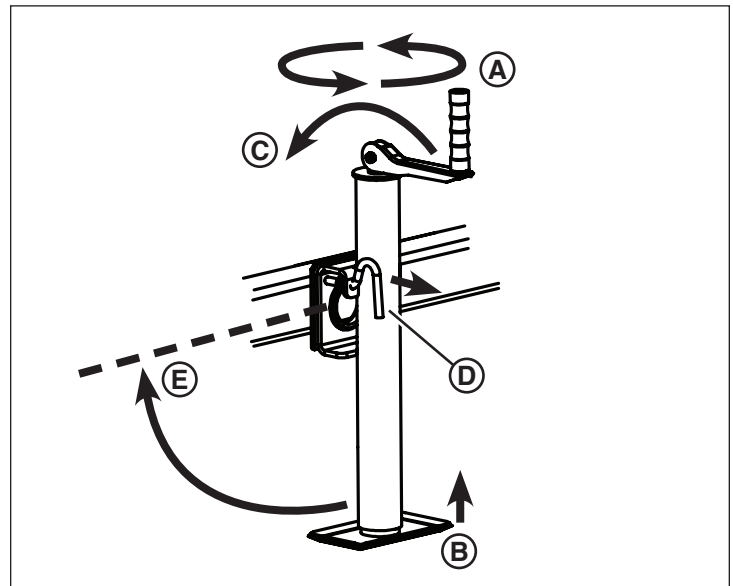


Figure 5

7. Connect the trailer lighting connector (B, Figure 4) to the tow vehicle's connector. Make sure that the trailer lighting harness has adequate length to prevent disconnection when turning, but not so much length that the harness will contact the road surface. Check the stop, turn signal, tail, side maker and license plate lamps for proper operation.

9. Remove the wheel chocks from both sides of each of the arrow board trailer wheels.

Using The Trailer Coupler

Eclipse 2400 Series arrow board trailers are provided with an SAE Class 2 trailer coupler for gross trailer weights up to 3,500 pounds (1,589 kg), and maximum tongue weights of

300 pounds (136 kg). This coupler complies with SAE J684 and VESC V-5 standards.

To couple the trailer to the tow vehicle:

1. Pull the locking trigger (A, Figure 6) upward and lift the locking lever (B, shown lifted).
2. Adjust the coupler to the hitch ball (F, Figure 6) by pushing the channel lock (D) up, away from the adjusting nut (E).
3. Tighten the adjusting nut by turning the nut clockwise, or loosen by turning counter-clockwise. Proper adjustment is obtained when the coupler is as tight as possible on the ball and the locking lever can still be opened and closed.

NOTE: Check adjustment frequently and tighten the adjusting nut as necessary.

4. Make sure the hitch ball is completely engaged in the coupler socket (C, Figure 6).
5. Push the locking lever down into the locked position. Insert the locking pin (G, Figure 6) into the hole in the locking lever, or use a padlock for added security.
6. Check that the coupler is securely attached to the ball hitch.

To uncouple the trailer from the tow vehicle:

1. Remove the locking pin (or padlock, if used) from the hole in the locking lever.
2. Pull the locking trigger upward and lift the locking lever.

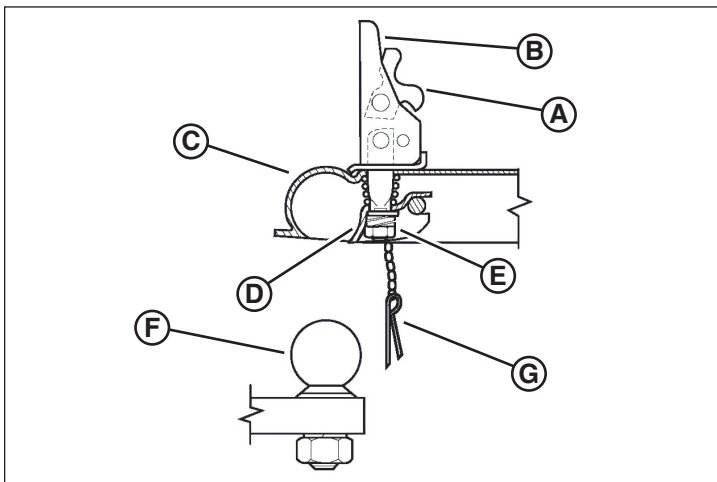


Figure 6

Using A Pintle Hook

The lunette eye meets the requirements of SAE J847, and is 3 inches (75 mm) in diameter. Couple the lunette eye to a pintle hook meeting the requirements of SAE J847.

When using the lunette eye with a pintle hook, follow the pintle hook manufacturer's instructions for coupling and locking the lunette eye to the pintle hook, and uncoupling the lunette eye from the pintle hook.

Figure 7 shows a typical pintle hook.

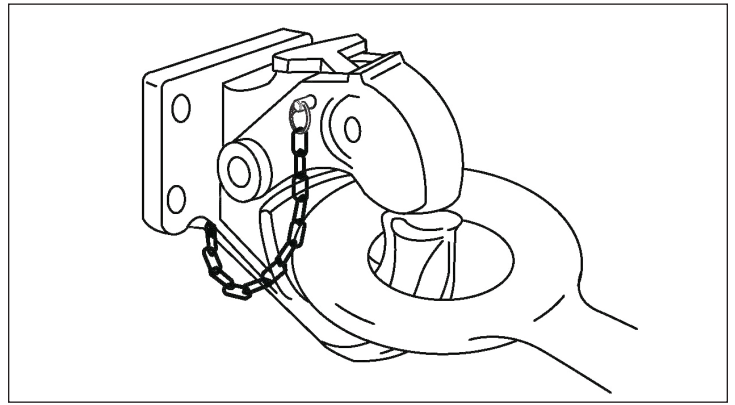


Figure 7

Towing The Arrow Board

The rated maximum highway towing speed for the Eclipse 2400 Series arrow board trailers is 55 MPH (90 km/h). Be sure to check state or province laws regarding maximum legal towing speeds for trailers.



WARNING

Excessive Speed Hazard

- Excessive speed when towing the trailer could result in death or serious injury. Always maintain a safe towing speed for road conditions. Never exceed 55 MPH (90 km/h) when towing the trailer.

When towing the arrow board trailer off-highway or on rougher terrain, the maximum towing speed is 20 MPH (30 km/h).

Eclipse 2400 Series arrow board trailers are designed to be towed with the sign board in the transport position only. See "Raising and Lowering the Sign Board".



WARNING

Towing Hazard

- Failure to secure all trailer components in the transport position before towing could result in death or serious injury. Always secure all trailer components in the transport position before towing.

Eclipse 2400 Series arrow board trailers are SAE Class 1 trailers (gross trailer weights up to 2,000 pounds / 907 kg, and maximum tongue weights of 200 pounds / 91 kg). They are not required to be equipped with an axle brake system or a break-away brake system.

If intending to tow the arrow board trailer to the work site with added ballast or weight, do not exceed the maximum weight limits for trailers without axle brake or break-away brake systems. Check state or province laws regarding maximum legal weights for trailers without axle brake or break-away brake systems.

Work Site Considerations

Prior to setting up the Eclipse 2400 Series arrow board trailer, the operator must determine where to place it on the work site. Consideration must be given to ground conditions, overhead clearance, wind, and sign board visibility.

It is the operator's responsibility to ensure that the arrow board trailer is properly and safely positioned at the work site. Follow state, province and federal rules, as well as rules or instructions for the work site.

Ground Conditions



WARNING

Rollover Hazard

- Positioning the arrow board trailer on soft or unstable ground could cause trailer rollover resulting in death or serious injury. Always position the trailer on a firm, level and stable surface and deploy the outriggers before raising the sign board.

The arrow board trailer must be placed on a firm, stable surface that will support the total weight of the trailer, and support the force exerted on the ground by each of the four outriggers as well as the tongue jack. Make sure the surface has enough area to allow full extension of all outriggers and the tongue jack. The surface should be level, and must not exceed a grade of 5% (2.8° incline) in any direction. Grades greater than 5% may exceed the extension limits of the outriggers and prevent the trailer from being properly leveled.

Overhead Clearance



DANGER



Electricution Hazard

- Contact with overhead electrical wires will result in death or serious injury. Always follow the rules or instructions for your work site, and the state, province and federal rules for maintaining a safe distance from overhead wires.

Make sure there are no overhead obstructions in the area where the arrow board trailer is to be placed, keeping in mind the total height of the arrow board trailer with the sign board in the operating (vertical) position. See "Specifications".

Always keep well clear of overhead electrical wires. Also keep clear of loose cables, ropes or obstructions that could ensnare the sign board.

When in the operating position, the solar panel should be exposed to sunlight for the majority of daylight hours. The solar panel requires adequate sunlight to maintain battery charge, and should not be in shady areas.

Wind



WARNING

Unsafe Operation Hazard

- Operating the arrow board trailer with the sign board in the operating position in winds exceeding 50 mph (80 km/h) can cause trailer tip over resulting in death or serious injury. Always lower the sign board when winds are expected to exceed 50 mph (80 km/h).

When positioned on level, stable ground with the outriggers deployed and the sign board raised in the operating (vertical) position, the arrow board trailer is designed to withstand sustained winds of 50 MPH (80 km/h) without tip over. This does not include the addition of wind generated by passing vehicles.

When placing the trailer on the work site, be aware of ground obstructions such as structures or trees that may direct wind toward or cause buffeting around the arrow board trailer.

As noted, wind generated by passing vehicles will also affect the arrow board trailer. Position the trailer with sufficient distance from traffic lanes to minimize the effect of wind generated by passing vehicles.

Visibility

The arrow board should be visible to oncoming traffic at least 1 mile (1.6 km) away. Be aware of ground obstructions that may block visibility, such as structures or trees. Consideration should also be given to intersections, on and off ramps, and other diverting lanes or roadways. Also be aware of the curvature of the roadway approaching the arrow board.

Always confirm the visibility of the arrow board by observing it from various vantage points on the roadway approaching the arrow board.

Use the eyelets to assist in positioning the arrow board. See "Using the Eyelets to Position the Trailer".

Using The Eyelets To Position The Trailer

The eyelets located midway up the left side frame uprights (as viewed from the rear of the arrow board) are used to sight through to assist in positioning the arrow board at the work site.

- Position yourself at the front (tongue end) of the arrow board trailer, facing oncoming traffic.
- Locate a point on the roadway (**A**, Figure 8) approximately 1 mile (1.6 km) (**B**) from the arrow board in approaching traffic.
- Sight through both eyelets (**C**, Figure 8) and determine where the point in approaching traffic is relative to the eyelets.
- Use the tow vehicle to move the arrow board trailer left or right until the point is on a vertical line either above or below the eyelets.

- Once side-to-side positioning is achieved, disconnect the trailer from the tow vehicle. See “Disconnecting the Trailer from the Tow Vehicle”.
- Use the outriggers to move the arrow board trailer up or down until the point is in the center of the eyelets. See “Setting the Outriggers”.
- Check the visibility of the arrow board by observing it from various vantage points on the roadway approaching the arrow board. Adjust as needed.

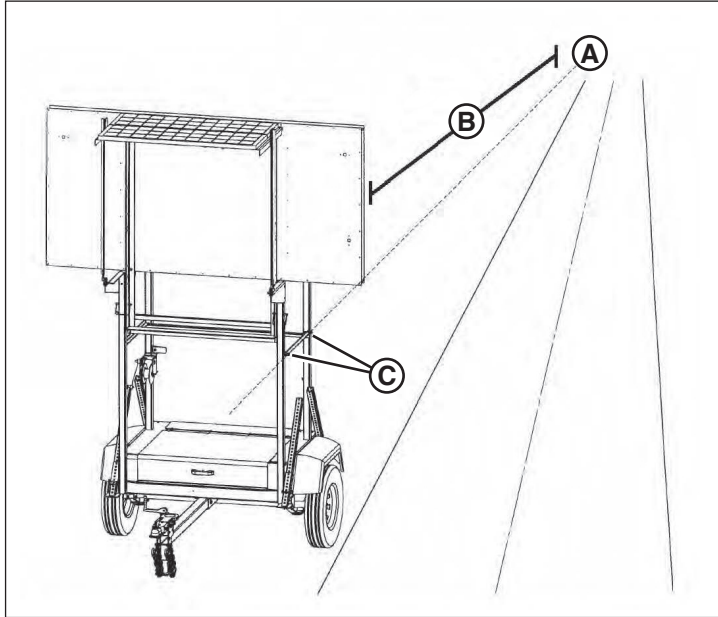


Figure 8

handle (C) to unlock and operate the jack. Turn the tongue jack handle clockwise (D) to extend the tongue jack (E), and support the trailer to allow the trailer coupler or pintle hook to be disconnected from the tow vehicle.

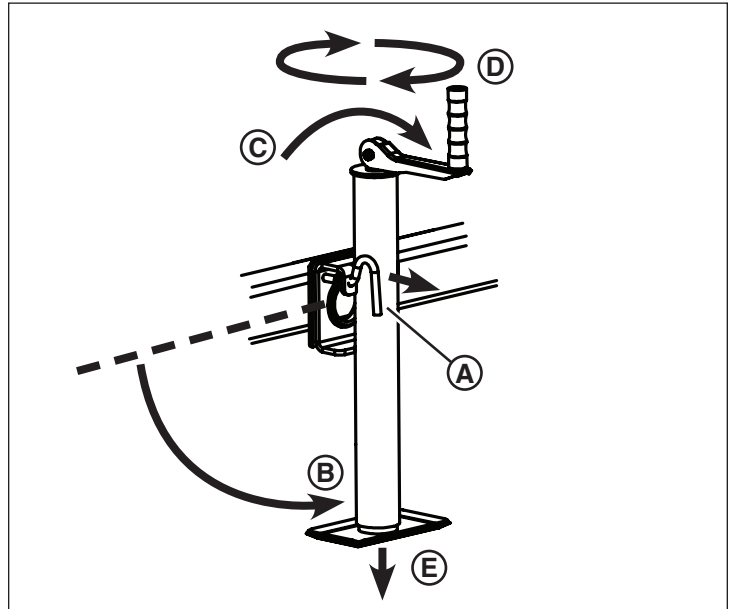


Figure 9

Disconnecting The Trailer From The Tow Vehicle

- Make sure the selected work site is suitable for the arrow board trailer. See “Work Site Considerations”.
- Position the arrow board trailer to face oncoming traffic. See “Using The Eyelets To Position The Trailer”.
- Chock both sides of each wheel.



WARNING

Crush Hazard

- Attempting to move or position the arrow board trailer by manually pushing or pulling it could present a crush hazard resulting in death or serious injury. Always position the trailer with the tow vehicle, chock the wheels and lower the tongue jack before uncoupling the trailer from the tow vehicle.
- Disconnect the trailer lighting connector from the tow vehicle’s connector.
 - Pull the lock lever (A, Figure 9) and rotate the tongue jack 90° so that the pad of the jack faces the ground (B), and release the lock lever. Make sure the lock lever engages the locking hole and is secure. Unfold the crank

- Disconnect the trailer coupler or pintle hook. See “Using The Trailer Coupler” or “Using A Pintle Hook” for detailed uncoupling information.
- Use the tongue jack to raise the trailer coupler or lunette eye above the tow vehicle’s hitch ball or pintle hook.
- Disconnect the safety chains from the tow vehicle’s hitch frame.
- Move the tow vehicle clear of the arrow board trailer.

Setting The Outriggers



WARNING

Rollover Hazard

- Raising the sign board without properly positioning the outriggers could cause trailer rollover, resulting in death or serious injury. Always extend the outriggers on a firm, level, and stable surface before raising the sign board.

- Make sure the work site is suitable for the arrow board trailer. See “Work Site Considerations”.
- Position the arrow board trailer to face oncoming traffic. See “Using The Eyelets To Position The Trailer”.
- Disconnect the arrow board trailer from the tow vehicle. See “Disconnecting the Trailer from the Tow Vehicle”.
- Level the arrow board trailer using the tongue jack:
 - Turn the jack handle clockwise to raise the front of the trailer.

- Turn the jack handle counterclockwise to lower the front of the trailer.

NOTE: A jack may be required to level the trailer side-to-side.

5. Lower the front of the trailer using the tongue jack (A, Figure 10).
6. Set the rear outriggers (B, Figure 10) by unlocking (F, inset) and removing (G) the locking pin securing each outrigger to the trailer frame. Slide the outrigger down until the top of the outrigger is flush with the top of the outrigger bracket on the frame (H). Secure with the locking pin.
7. Raise the front of the trailer using the tongue jack (C, Figure 10).
8. Set the front outriggers (D, Figure 10). (Follow the same procedure as in Step 6.)
9. Fully raise the tongue jack. The trailer should now rest solely on the outriggers, with the tires raised off the ground approximately 3" (7,6 cm) (E, Figure 10).

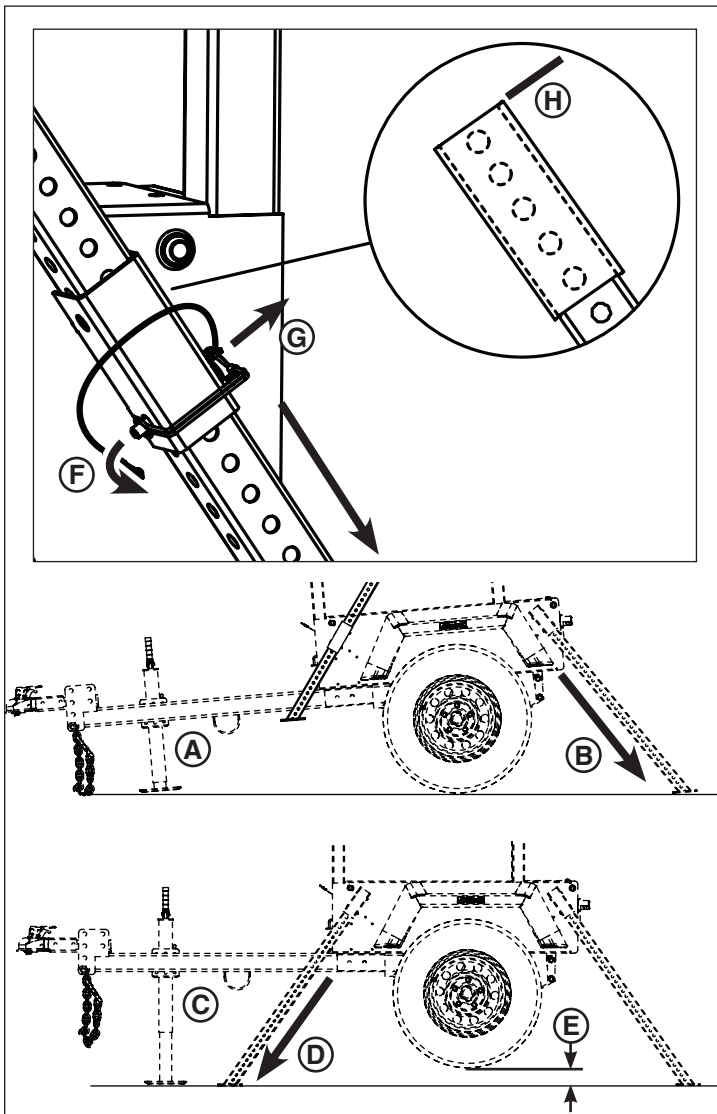


Figure 10

Raising And Lowering The Sign Board



WARNING

Rollover Hazard

- Raising the sign board without properly positioning the outriggers could cause trailer rollover, resulting in death or serious injury. Always extend the outriggers on a firm, level, and stable surface before raising the sign board.

To raise the sign board:

1. Remove the locking pins (A, Figure 11) securing the sign board in the transport position (B).
2. Turn the winch handle clockwise (C, Figure 11) until the sign board is in the operating (vertical) position (D).

NOTICE

Do not overturn the winch handle. Equipment damage can result.

3. Secure the sign board in the operating position with the locking pins removed in Step 1.



WARNING

Unsafe Operation Hazard

- Failure to lock the sign board in the operating position could result in death or serious injury. Always lock the sign board in the operating position at all times during operation.

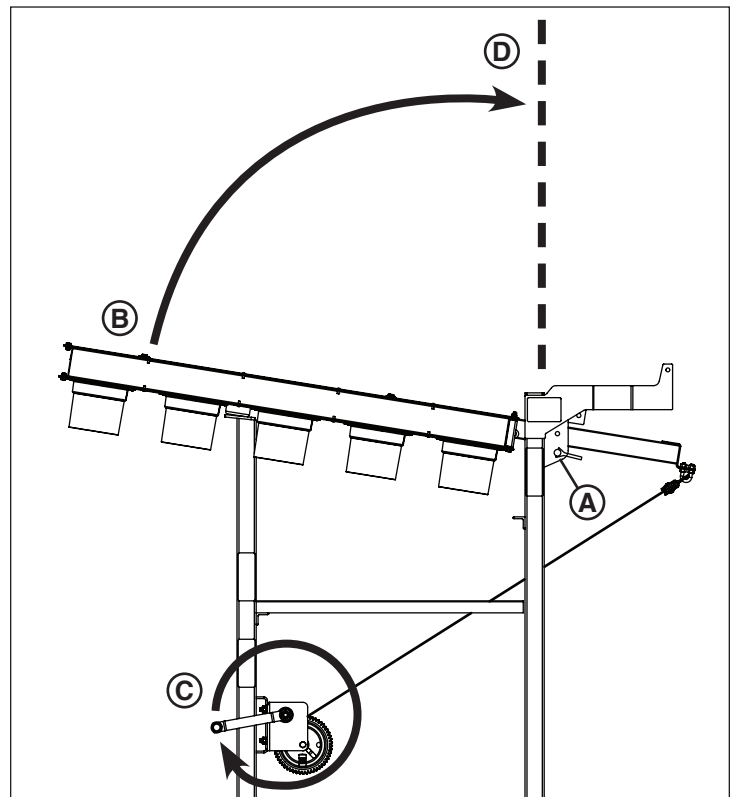


Figure 11

To lower the sign board:

1. Remove the locking pins securing the sign board in the operating position.
2. Turn the winch handle counterclockwise 2 rotations to begin lowering the sign board. If the sign board begins to lower, proceed to Step 7; if not, proceed to Step 3.
3. If the sign board does not begin to lower, turn the winch handle clockwise 2 rotations, or until the cable is tight.
4. Secure the sign board with locking pins in the operating (vertical) position.
5. Raise the front of the trailer with the tongue jack by turning the handle clockwise 3 rotations. Raise the outriggers if necessary.
6. Repeat Steps 1 and 2. If the sign board does not lower, repeat Steps 3 through 6. When the sign board does lower, proceed to Step 7.
7. Continue turning the winch handle counterclockwise until the sign board is fully lowered in the transport (horizontal) position. Do not overturn the winch handle.
8. Secure the sign board in the transport (horizontal) position with the locking pins.



WARNING

Unsafe Operation Hazard

- Failure to lock the sign board in the transport position could result in death or serious injury. Always lock the sign board in the transport position before towing the trailer.

Operating the Sign Board

Sign Board Lamps And Controller

Eclipse 2400 Series arrow board trailers are available in 15 lamp or 25 lamp configurations (A or B, Figure 12). The sign board is equipped with LED lamps and an electronic controller that allows the operator to select the operating mode.

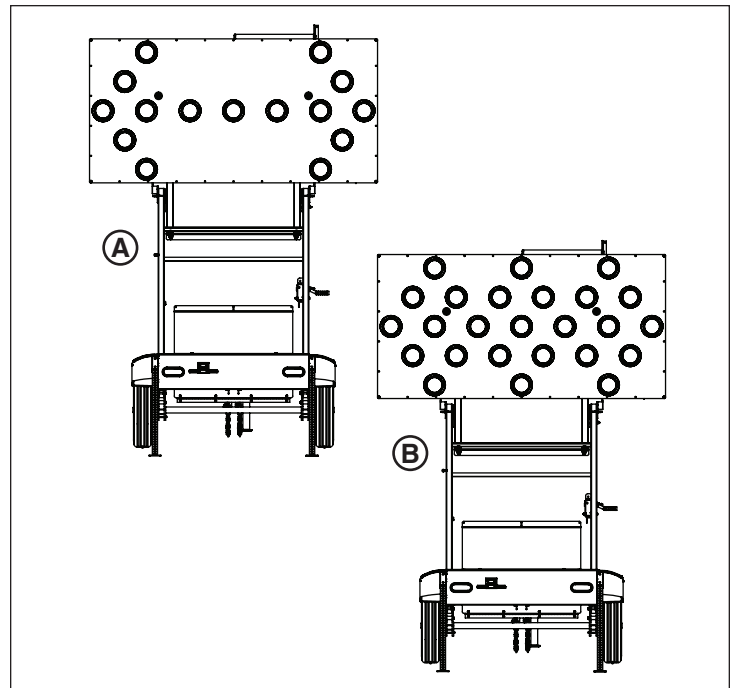


Figure 12

Lamps

The lamps are designed specifically for the Eclipse 2400 Series arrow board trailer. Each lamp is a single amber LED with a special lens to provide visibility under all daytime and nighttime conditions.

Controller

The weatherproof controller, located in the bottom right edge of the sign board (A, Figure 13), is specifically designed for the Eclipse 2400 Series arrow board trailer. It features two sealed touch buttons (D, E) that allow the operator to “scroll” forward and backward through the operating modes, and an indicator panel (F) to show the operator what mode has been selected. See “Operating Modes”. A small red indicator shows low battery warning (G).

A photocell (H, Figure 13) located on the controller senses ambient lighting and automatically varies lamp intensity to reduce power consumption. The photocell is located to prevent false signals to the controller by headlights of oncoming vehicles.

The controller is internally protected from shorts in the wiring or in the lamps. It is also protected from reverse polarity should the battery be connected incorrectly. In the event of either of these conditions, the controller will “reset” itself once the problem is corrected.

To access the controller, twist the eyelet (B, Figure 13) to unlock and open the controller door (C). A padlock can be fastened to the eyelet to prevent unauthorized access.

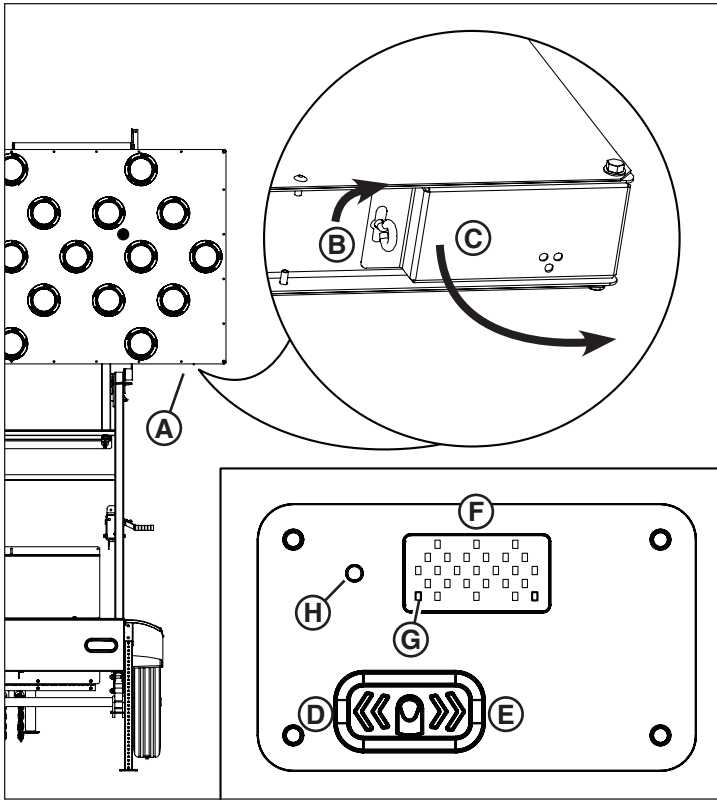


Figure 13

Low Battery Warning Lamp

The red LED in the lower right corner on the back of the sign board (A, Figure 14) will flash intermittently if the battery voltage drops below 11.5 volts. Should the battery voltage drop below 11.2, in addition to the red LED, the operating mode of the sign board will automatically change to the four corner flashing caution mode. (See “Operating Modes”.) The red indicator in the lower left of the controller indicator panel (G, Figure 13) will also illuminate.

If the battery voltage drops below 11.0, the controller will shut off the sign board, but the low battery warning lamp will stay on. When the battery is fully re-charged, the controller will once again allow operation of the sign board, however it will remain in the “off” mode until the operator selects an operating mode.

Operating Mode Indicator Lamps

Sign board operating modes may have a one-, two- or three-part display cycle. (See “Operating Modes”.) The three amber LED’s on the back side of the sign board (B, C, D, Figure 14) are indicator lamps that will light in order through a given mode’s display cycle: Lamp B will light during the first part of the display cycle, Lamp C will light during the second part of the display cycle (if applicable), and Lamp D will light during the third part of the display cycle (if applicable).

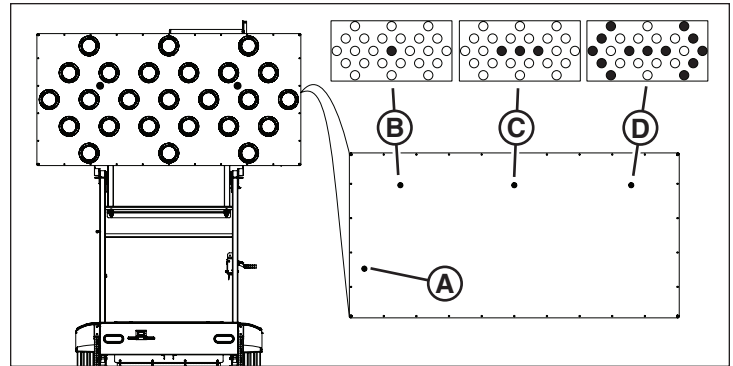


Figure 14

Operating Modes

For both 15- and 25-lamp arrow board trailers, the sign board operating mode can be selected using the forward (right) button or backward (left) button on the controller (D or E, Figure 13).

Operating modes are listed in the following tables in the order of appearance when selecting with the “forward” or right side button (E, Figure 13), beginning from the “off” mode. When starting with the “backward” or left button, the order is reversed. Either button may be used at any time to “scroll” forward or backward through the operating modes.

15-Lamp Sign Board

The 15 lamp arrow board trailer has 10 operating modes (plus “OFF”).

| | | |
|---|------------------------------|--|
| 0 | Off | |
| 1 | Test – All Lamps | |
| 2 | Flashing Double Arrow | |
| 3 | Sequential Double Arrow | |
| 4 | Four Corner Flashing Caution | |

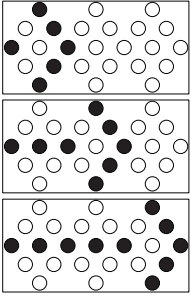
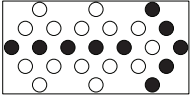
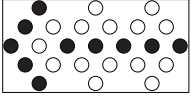
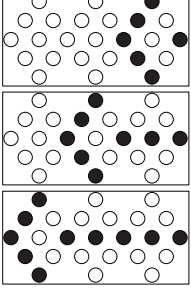
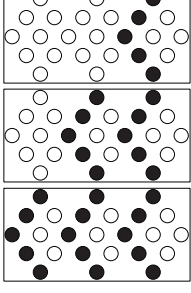
| | | |
|----|----------------------------|--|
| 5 | In-Line Flashing Caution | |
| 6 | In-Line Sequential Caution | |
| 7 | Sequential Right Arrow | |
| 8 | Flashing Right Arrow | |
| 9 | Flashing Left Arrow | |
| 10 | Sequential Left Arrow | |

25-Lamp Sign Board

The 25-lamp arrow board trailer has 13 operating modes (plus "OFF").

| | | |
|---|------------------|--|
| 0 | Off | |
| 1 | Test – All Lamps | |

| | | |
|---|------------------------------|--|
| 2 | Flashing Double Arrow | |
| 3 | Sequential Double Arrow | |
| 4 | Four Corner Flashing Caution | |
| 5 | In-Line Flashing Caution | |
| 6 | In-Line Sequential Caution | |
| 7 | Alternating Diamond Caution | |
| 8 | Sequential Right Chevron | |

| | | |
|----|-------------------------|---|
| 9 | Sequential Right Arrow |  |
| 10 | Flashing Right Arrow |  |
| 11 | Flashing Left Arrow |  |
| 12 | Sequential Left Arrow |  |
| 13 | Sequential Left Chevron |  |

Maintenance

Before performing any maintenance procedures, see “Safety”.

Maintaining the Trailer

Frame

1. Check the trailer coupler operation and for corrosion or damage; replace as needed.
2. Inspect the trailer frame for rust, nicks and chips. Use the proper touch-up paint to touch up nicks or scratches. Contact your dealer for additional information.
3. Inspect the axle, springs and undercarriage for wear and damage. Replace as needed.
4. Inspect the outriggers, jack and locking mechanisms for proper operation, wear and damage. Replace as needed.

5. Inspect the safety chains for wear and corrosion damage. Replace as needed.



WARNING

Unsafe Operation Hazard

- Operating or towing a machine with worn, damaged or missing parts can result in death or serious injury. Always replace worn, damaged or missing parts promptly. Do not operate or tow this machine until all worn, damaged or missing parts have been replaced, and proper operation of machine has been verified.

NOTICE

The replacement of any part on this machine by anything other than an Allmand authorized replacement part may adversely affect the performance, durability or safety of this machine and may void the warranty. Allmand assumes no liability for unauthorized replacement parts which adversely affect the performance, durability or safety of this machine.

Trailer Wheels and Tires



WARNING

Unsafe Operation Hazard

- Towing a trailer with worn, damaged or underinflated tires could result in death or serious injury. Always replace worn or damaged tires promptly. Always keep tires inflated to proper cold tire inflation pressure.

1. Check tires for cracks, cuts or damage. Replace damaged tires before towing.
2. Check air pressure of the trailer tires when cold. See “Specifications”.
3. Check wheel rims for cracks or damage. Replace damaged rims.
4. Make sure all lug nuts are in place. Never tow the trailer with missing or improperly tightened lug nuts.
5. Check that lug nuts are tightened properly. Correct torque for lug nuts is 90 lb-ft (122 Nm).
6. When torquing lug nuts, always use a criss-cross pattern (Figure 15).

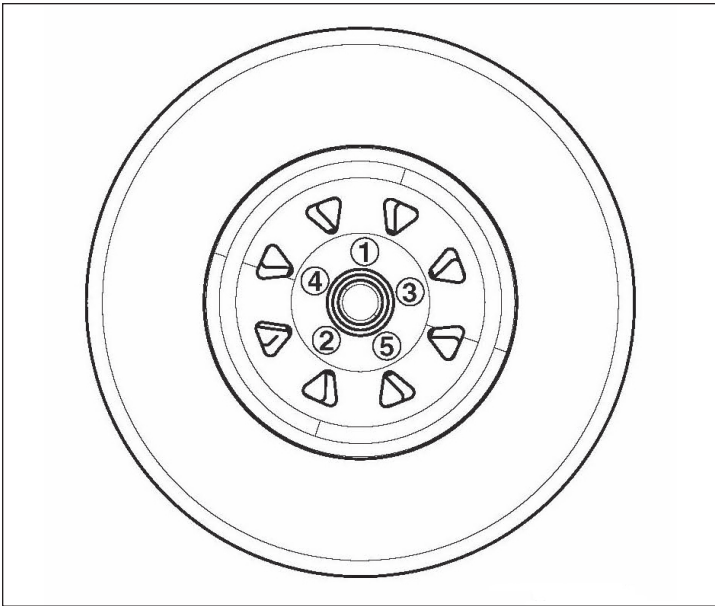


Figure 15

Wheel Bearings

Wheel bearings require periodic maintenance and scheduled replacement. More frequent service may be required under extremely dusty or damp operating conditions. The best protection against failure is to keep the wheel bearings clean and fully lubricated.

Wheel hub assembly (Figure 16):

- A - Grease seal (double lipped)
- B - Bearing cone (inner and outer)
- C - Bearing cup (inner and outer)
- D - Hub (5 on 4.5" (11,4 cm) bolt circle)
- E - Stud (1/2-20 x 1.81)
- F - Wheel nut (1/2-20 cone)
- G - Spindle washer
- H - Spindle nut (1-14)
- I - Cotter pin
- J - Grease cap

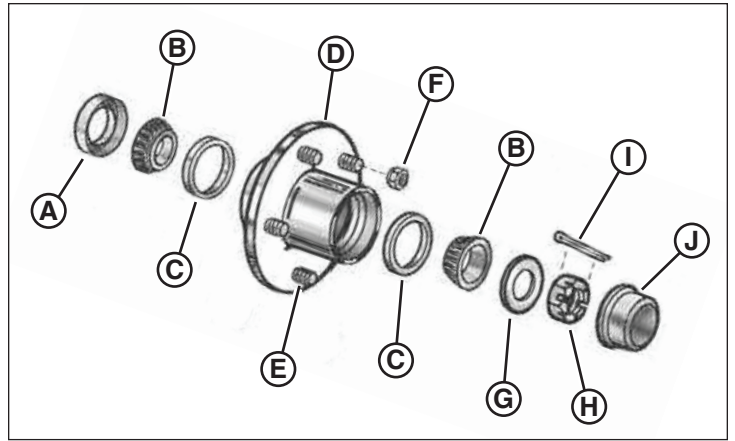


Figure 16

When replacing or repacking wheel bearings, always:

- Use an NLGI Grade 2 wheel bearing grease with a minimum dropping point of 440° F (227° C).
- Clean all components thoroughly of all grease and inspect for damage and wear. Replace all damaged or worn parts.
- Always use a new grease seal and cotter pin.
- Always replace bearings and races as a set. Never mix bearings and races. Always use the correct bearing set. Contact Allmand for replacement parts.
- Pack grease into the bearing before installing it.
- Do not over-tighten or under-tighten the bearing nut. Wheel bearings should only be tightened by hand (spin the wheel while tightening). Back off the nut to insert the cotter pin. The wheel should spin freely but without play.
- Pack some grease in the inner hub area and dust cap and ensure the dust cap fits tightly.

Trailer Lighting



WARNING

Towing Hazard

- Towing the trailer with inoperable lights can be a road hazard resulting in death or serious injury. Never tow the trailer with inoperable trailer lights.

Lights are a vital safety feature of your trailer and are also required by state law. Keep the lights in proper working order.

- Check the trailer lights and harness for damage or wear. Repair or replace damaged or worn parts.
- Ensure the harness is secured to the trailer and does not hang down onto the ground.
- Check taillight housing assemblies for damage or leaks. Repair or replace damaged or leaky housing assemblies. Electrical grease will help protect the sockets and prevent their corrosion.

- When replacing bulbs, ensure the proper bulb is used and use a small amount of electrical grease in the sockets to prevent corrosion.

Checking the Tire Pressure

Use a tire gauge to check the tire pressure; add or release air as needed. See “Specifications” for correct cold tire inflation pressure.



WARNING

Unsafe Operation Hazard

- Towing a trailer with worn, damaged or underinflated tires could result in death or serious injury. Always replace worn or damaged tires promptly. Always keep tires inflated to proper cold tire inflation pressure.

Maintaining the Battery



WARNING



Batteries give off explosive gases during recharging. Sparks can cause explosions, resulting in death or serious injury.

Batteries contain acid, which is extremely caustic. Contact with battery contents will cause severe chemical burns.

Batteries present a risk of electric shock and high short circuit current.

- DO NOT dispose of battery in a fire. Recycle battery.
- DO NOT allow any open flame, spark, heat, or lit cigarette during and for several minutes after charging a battery.
- DO NOT open or mutilate battery.
- DO NOT charge a frozen battery.
- Wear protective gloves, rubber apron, rubber boots and rubber gloves.
- Remove watches, rings, or other metal objects.
- Use tools having insulated handles.

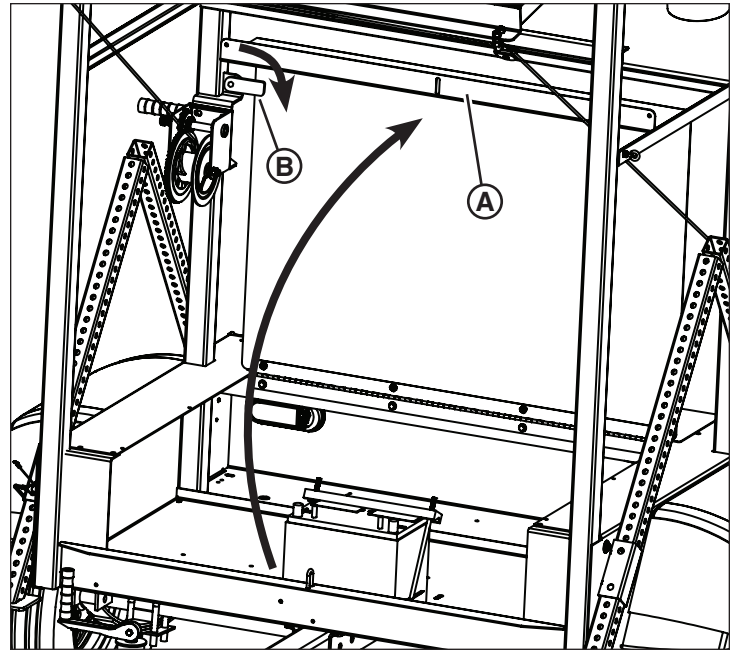


Figure 17

2. Disconnect the black negative (-) cable(s) from the negative (-) battery terminal (A, Figure 18), and secure away from the battery.



WARNING



Explosion Hazard

- Failure to remove the black negative (-) battery cable(s) first could cause sparks and/or an explosion resulting in death or serious injury. Always remove the black negative (-) battery cable(s) first.
3. Disconnect the red positive (+) battery cable(s) from the positive (+) battery terminal (B, Figure 18), and secure away from the battery.
 4. Loosen the hardware securing the battery hold-down (C, Figure 18), and move the hold-down back away from the battery.
 5. Carefully remove the battery, and place in a well-ventilated area on a level surface.

Removing and Installing the Battery

To remove the battery:

1. Unlock and open the battery compartment door (A, Figure 17). Secure in the open position by rotating the prop latch (B) down in front of the door.

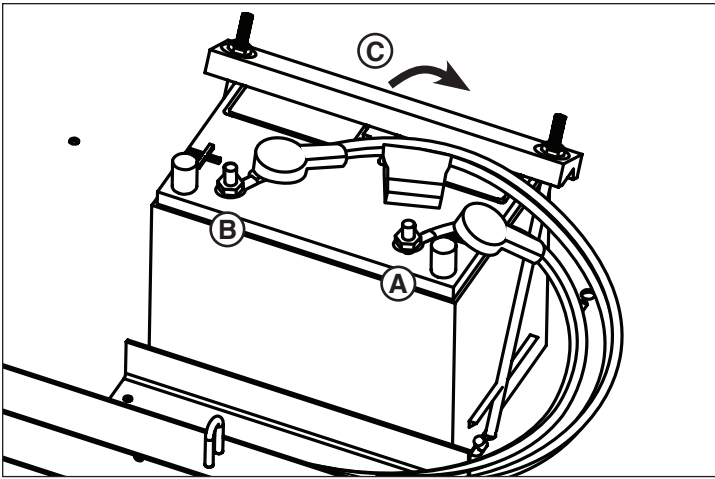




Figure 18

To install the battery:

1. Carefully place the battery in the battery compartment with the battery terminals toward the front (trailer tongue end) of the unit.
2. Install the battery hold-down on top of the battery. Tighten the hardware securely.
3. Connect the red positive (+) battery cable(s) to the positive (+) battery terminal.
4. Connect the black negative (-) battery cable(s) to the negative (-) battery terminal.

 **WARNING** 

Explosion Hazard

- Failure to install the black negative (-) battery cable(s) last could cause sparks and/or an explosion resulting in death or serious injury. Always install the black negative (-) battery cable(s) last.

5. Replace the terminal covers over the battery terminals.
6. Close and lock the battery compartment door.

NOTE: The unit comes equipped with a hairpin cotter to secure the battery compartment door, but may be replaced with a padlock to prevent unauthorized access.

Cleaning the Battery and Cables

1. Remove the battery. See “Removing and Installing the Battery”.
2. Clean the battery terminals and cable ends with a wire brush until shiny.
3. Reinstall the battery. See “Removing and Installing the Battery”.
4. Coat the cable ends and battery terminals with petroleum jelly or non-conducting grease.
5. Be sure to replace the terminal covers over the battery terminals.

Charging the Battery



The arrow board is equipped from the factory with an Absorbent Glass Mat (AGM) type battery. Use a 12-volt battery charger to bring the battery back to full charge.

1. Remove the battery. See “Removing and Installing the Battery”.
2. Place the battery in a well ventilated area on a level surface.
3. Connect the battery charger to the battery terminals: red to positive (+) terminal and black to negative (-) terminal.
4. Charge the battery at 15 amps for 5 hours.
5. Reinstall the battery. See “Removing and Installing the Battery”.
6. If the battery will not accept a charge or is partially charged after 5 hours of charging at 15 amps, replace with a new battery.

Cleaning the Unit

Keeping the unit clean is important to ensure proper operation. Use the following as cleaning guidelines:

- Clean the trailer and remove all dust, dirt or other foreign material.
- Clean the sign board and lamp assemblies with a damp cloth or sponge.
- Inspect and clean the cable, linkages, etc. so they operate properly.

 **WARNING** 

Entanglement / Sever Hazard

- Contact with moving or rotating parts of the machine could cause death or serious injury. Always:
 - Verify that all guards and covers are attached properly to the machine before operating.
 - Remove jewelry, tie back long hair and keep hands, other body parts and clothing away from moving or rotating parts.
 - Follow your companies “Lock Out, Tag Out” procedure, or attach a “Do Not Operate” in a prominent place on the machine prior to performing service or maintenance on the machine.

NOTICE

Use caution when using compressed air or water / steam pressure washers. Do not pressure-wash electrical components, as this may damage electrical components.

Long-Term Storage

Proper maintenance is required when the trailer will be stored or removed from operation for long periods of time.

- Make any repairs necessary to ensure the equipment is fully functional upon recommissioning.
- Clean the unit. See “Cleaning”.
- Apply an anticorrosion coating to all surfaces where applicable.
- Lower the sign board to the transport (horizontal) position.
- Disconnect and remove the battery. See “Maintaining the Battery”.
- Use a suitable cover to protect the unit.
- Properly support the trailer axle on jack stands or other suitable supports to allow the tires to remain off the ground during storage.

Optional Accessories

- Additional Solar Panel
- Additional 12-Volt AGM Battery
- 15-Amp On-Board Battery Charger

Troubleshooting

Before performing any troubleshooting procedures, see “Safety”.

| Problem | Possible Cause | Solution |
|---|-----------------------|---------------------------|
| Display not functioning | Battery not connected | Connect battery |
| | Battery dead | Charge or replace battery |
| Incorrect display | Battery low | Charge battery |
| Short operation time | Battery low | Charge battery |
| | Solar panel dirty | Clean solar panel |
| For all other issues, contact your authorized dealer. | | |

Specifications

Overall Dimensions

| | |
|---|---------------------|
| Height (transport position) | 95.7 in (243,1 cm) |
| Height (operating position, with outriggers deployed) | 143.7 in (365 cm) |
| Length (transport position) | 104 in (264,1 cm) |
| Length (operating position, with outriggers deployed) | 113.9 in (289,3 cm) |
| Width (sign board) | 96 in (289,3 cm) |
| Width (trailer) | 67.7 in (172 cm) |
| Width (track) | 60.7 in (243,8 cm) |
| Weight | 812 lbs (368,3 kg) |
| GVWR | 1500 lbs (680,4 kg) |

Trailer

| | |
|------------------------------|---|
| Hitch Coupler | Adjustable height, reversible combination, 2 inch (50,8mm) ball, 3 inch (75mm) pintle hitch |
| Max Road Speed (paved road) | 55 mph (90 km/h) |
| Max Off-Road Speed | 20 mph (30 km/h) |
| Number of Axles | 1 |
| Axle Rating | 1500 lbs (680,4 kg) |
| Tire Size and Rating | ST175/80D13 Load Range 'C' |
| Rims | 13 x 4.5 JJ |
| Cold Tire Inflation Pressure | 25 psi (172 kPa) |
| Trailer Light Connector | 4-Pin plug |
| Battery | 12VDC Negative Ground AGM |

Sign Board

| | |
|--|------------------|
| Max Continuous Wind Load (with sign board in operating position) | 50 mph (80 km/h) |
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ALLMAND BROS. INC. WARRANTY POLICY

LIMITED WARRANTY

Allmand Bros. Inc. warrants to the original purchaser that, during the warranty period specified below, it will repair or replace at manufacturer's discretion, free of charge, any part that is defective in material or workmanship or both, or to refund the cost of the product if it is determined by the manufacturer that repair or replacement will not return the goods to proper working order or utility. This warranty is effective for and is subject to the time periods and conditions stated below.

There is no other express warranty. Implied warranties, including those of merchantability or fitness for a particular purpose, are limited to the warranty period listed below, or to the extent permitted by law. Liability for incidental or consequential damages are excluded to the extent exclusion is permitted by law. Some states or countries do not allow limitations on how long an implied warranty lasts, and some states or countries do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state or country to country. **

WARRANTY PERIOD

| Product | Warranty | Product | Warranty |
|-------------------|-----------|-----------|---------------------------------------|
| Lighting Systems | 2 years * | Generator | See Generator Manufacturer's Warranty |
| 1250-Watt Ballast | 2 years | Engine | See Engine Manufacturer's Warranty |
| Arrowboard AB2220 | 3 years | | |
| Arrowboard AB2400 | 3 years | | |
| LED Lamps | 5 years | | |
| Solar Panels | 10 years | | |
| Maxi-Heat | 1 year | | |
| Replacement Parts | 90 days | | |

** 2nd year - parts only; no labor (only parts manufactured by Allmand Bros. Inc)*

** In Australia – Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. For warranty service, contact Compressed Air & Power Solutions (CAPS) Australia at 1800 802 697, or on-line at www.capsaustralia.com.au, or by writing to CAPS Australia, 185 Planet Street, Welshpool, WA 6106.

The warranty begins on the date of original purchase (invoice date). If you do not provide proof of the invoice date at the time warranty service is requested, the manufacturing date of the product will be used to determine the warranty period. The original purchaser is deemed to be the first person or entity that acquires the product for actual use. The warranty does not transfer to subsequent purchasers. Any person or entity holding products for wholesale or retail sale is not considered an original purchaser. However, leasing or using the product beyond normal demonstration purposes is considered to be "actual use" by an original purchaser, and the warranty period will begin on the first date of such use.

Transportation charges on parts or product submitted to the factory for repair or replacement under this warranty shall be borne by the purchaser. If it is subsequently determined that the parts are warrantable, the cost of the transportation charges will be credited back to the purchaser. Air freight for international shipments of replacement parts is not covered under this warranty. The manufacturer shall in no event pay mileage expenses or be responsible for down time or lost revenue.

ABOUT YOUR WARRANTY

This warranty covers only defects in material or workmanship. It does not cover damage from improper use or abuse, improper maintenance or repair, or normal wear and tear.

Improper Use and Abuse – The proper, intended use of the product is described in the Operator's Manual. Using the product in a manner not described in the Operator's Manual or continuing to use the product after it has been damaged will not be covered under this warranty. Warranty coverage also will not be provided if the serial number on the product has been removed, defaced, or altered, or if the product shows evidence of abuse, such as impact damage or water- or chemical-corrosion damage.

Improper Maintenance or Repair – This product must be maintained according to the procedures and schedules provided in the Operator's Manual, and serviced or repaired using original equipment parts or equivalent. Damage caused by lack of maintenance or use of non-original parts is not covered by warranty. The warranty does not extend to any failures resulting from unauthorized alterations, modifications, or other changes, or to damage resulting from improper installation, repair, operation, or maintenance. This exclusion does not apply to installations, repairs, or other work performed at the manufacturer's plant or under the manufacturer's direct supervision.

Normal Wear and Tear – Like most mechanical devices, this unit is subject to wear even when properly maintained. This warranty does not cover repair when normal use has exhausted the life of a part or the product. Maintenance and wear items such as filters, belts, tires, lamps, batteries, etc. are not covered by warranty, unless the cause of such wear is due to defects in material or workmanship directly related to those items.

Other Exclusions – This warranty excludes damages due to accident, abuse, modifications, alterations, improper servicing, or chemical deterioration. Attachments or accessories that were not originally installed in the product are also excluded. This warranty does not include used, reconditioned, second-hand, or demonstration equipment. This warranty also excludes failure due to acts of God and other force majeure events beyond the manufacturer's control.

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