

ECOTRIC AI-228

ECOTRIC Class 3 Trailer Hitch Instruction Manual

MODEL: AI-228

Compatible with 2020-2023 Toyota Highlander

1. Introduction

This instruction manual provides essential information for the proper installation, safe operation, and routine maintenance of your ECOTRIC Class 3 Trailer Hitch. Please read this manual thoroughly before attempting installation or use to ensure safety and optimal performance.

The ECOTRIC Class 3 Trailer Hitch is engineered for heavy-duty towing, featuring a 2-inch square receiver and a robust design. It is specifically compatible with 2020-2023 Toyota Highlander vehicles.

This hitch is designed to support a maximum towing capacity of 5,000 lbs and a tongue weight capacity of 500 lbs.

2. Important Safety Information

- Always read and understand all instructions before installation and use.
- Professional installation is recommended. If performing a DIY installation, ensure you have the necessary tools and expertise.
- Never exceed the stated towing capacity (5,000 lbs) or tongue weight capacity (500 lbs) of this hitch or your vehicle's manufacturer-specified limits, whichever is lower.
- Ensure all bolts are tightened to the specified torque values and re-check periodically.
- Always use safety chains when towing.
- Inspect the hitch, trailer, and all connections before each towing operation.
- Wear appropriate personal protective equipment (PPE) during installation.

3. Package Contents

Verify that all components listed below are present in your package:

- Class 3 Trailer Hitch Assembly

- Step-by-step instructions (this manual)
- Mounting components (bolts, washers, nuts)

PRODUCT PACKAGE



Vehicle Type	CLASS I	CLASS II	CLASS III	CLASS IV	CLASS V
	(Up to 2,000 lbs)	(Up to 3,500 lbs)	(3,500-12,000 lbs)	(8,000-14,000 lbs)	(16,000-20,000 lbs)
Subcompact / Compact Cars	✓				
Full-Size Sedan	✓	✓			
Crossover SUV		✓			
Minivan		✓	✓		
Compact Pickup & SUV			✓		
Half-Ton Pickup & SUV			✓	✓	
Three-Quarter-Ton Pickup				✓	✓
One-Ton Pickup					✓

Figure 3.1: Product Package Contents and Vehicle Compatibility Chart. This image shows the hitch assembly, mounting hardware, and a table indicating vehicle types compatible with different hitch classes.

4. Product Specifications

Specification	Detail
Brand	ECOTRIC
Model Number	AI-228
Vehicle Service Type	Car (Toyota Highlander 2020-2023)

Specification	Detail
Material	Alloy Steel
Finish Type	Powder Coated
Maximum Towing Capacity	5,000 Pounds
Tongue Weight Capacity	500 Pounds
Receiver Size	2 x 2 inches



Figure 4.1: Detailed Dimensions of the Trailer Hitch. This diagram provides precise measurements for the hitch components.

5. Installation Guide

This hitch is designed for a bolt-on installation, requiring no cutting or welding. Pre-drilled holes are provided for

straightforward mounting. Due to the weight and size of the hitch, a two-person installation is highly recommended.

Tools Required (Not Included):

- Socket wrench set
- Torque wrench
- Safety glasses and gloves
- Jack stands or vehicle lift (for safe under-vehicle access)

Installation Steps:

1. **Vehicle Preparation:** Park the vehicle on a level surface, engage the parking brake, and turn off the engine. For safety, disconnect the negative battery terminal. If necessary, raise the vehicle using a lift or jack stands to provide adequate working space underneath.
2. **Access Mounting Points:** Locate the frame mounting points at the rear of your Toyota Highlander. It may be necessary to temporarily remove or modify certain underbody plastic trim pieces or lower the exhaust to gain full access to the frame rails. Refer to your vehicle's service manual for specific instructions on trim removal.
3. **Position the Hitch:** With assistance, carefully lift the trailer hitch assembly into position, aligning the mounting holes on the hitch with the pre-drilled holes in the vehicle's frame.
4. **Install Hardware:** Insert the provided bolts, washers, and nuts through the aligned holes. Hand-tighten all hardware to hold the hitch in place. Ensure all bolts are correctly seated and that there are no obstructions.
5. **Torque Bolts:** Using a torque wrench, tighten all mounting bolts to the manufacturer's specified torque values. If specific values are not provided, consult a professional or refer to general automotive torque specifications for bolts of this size and grade. Ensure even tightening across all bolts.
6. **Reinstall Components:** Reinstall any removed underbody trim pieces or re-secure the exhaust system. Ensure no components interfere with the newly installed hitch.
7. **Final Inspection:** Perform a thorough visual inspection to confirm that the hitch is securely mounted, all hardware is tightened, and there are no loose parts.



Figure 5.1: Hitch Details. This image highlights the heavy-duty steel, 2-inch receiver, and powder-coated finish.



Figure 5.2: Close-up of a Mounting Arm. This image shows the attachment points for securing the hitch to the vehicle frame.



Figure 5.3: Receiver and Mounting Bolts. This image provides a detailed view of the receiver and the hardware used for installation.

6. Operating Your Trailer Hitch

Once installed, your ECOTRIC Class 3 Trailer Hitch is ready for use. Always ensure proper trailer connection and adherence to weight limits.

Connecting a Trailer:

1. Insert your chosen hitch ball mount into the 2-inch receiver tube and secure it with a hitch pin and clip (not included).
2. Lower the trailer coupler onto the hitch ball, ensuring it is fully seated and locked.
3. Attach safety chains from the trailer to the designated chain loops on the hitch. Cross the chains under the trailer tongue to prevent it from dropping to the ground if it detaches.
4. Connect the trailer's electrical wiring to your vehicle's towing harness (if applicable).
5. Verify all lights (brake, turn signals, running lights) on the trailer are functioning correctly.

Weight Limits:

Always respect the maximum towing capacity of 5,000 lbs and a tongue weight capacity of 500 lbs. Exceeding these limits can lead to unsafe towing conditions, damage to your vehicle, or damage to the hitch.

5000 LBS



Towing weight capacity	5000 Lbs
Tongue weight capacity	500 Lbs

Figure 6.1: Towing and Tongue Weight Capacity. This graphic clearly indicates the maximum load limits for the hitch.

MULTI-COMPATIBILITY



Boats



Campers



Kayak trailer



Utility trailer

Figure 6.2: Multi-Compatibility. This image shows the versatility of the hitch for various towing needs.

7. Maintenance and Care

Regular maintenance will extend the life of your trailer hitch and ensure safe operation.

- **Regular Inspection:** Periodically inspect the hitch for any signs of wear, damage, or corrosion. Check all bolts for tightness and re-torque if necessary.
- **Cleaning:** Clean the hitch regularly, especially after exposure to road salt, dirt, or harsh weather conditions. Use mild soap and water, then rinse thoroughly.
- **Corrosion Protection:** The hitch features a powder-coated finish for rust resistance. If the coating is scratched or damaged, touch up with rust-inhibiting paint to prevent corrosion.
- **Lubrication:** Keep the receiver tube free of debris. A light coat of grease on the hitch ball (if used) can help reduce wear and friction.

8. Troubleshooting

This section addresses common issues you might encounter with your trailer hitch.

• **Hitch Does Not Align with Frame Holes:**

Solution: Ensure the hitch is correctly oriented. Sometimes, slight adjustments to the vehicle's exhaust hangers or temporary removal of plastic underbody panels are required to achieve proper alignment. If significant misalignment occurs, double-check the product's compatibility with your specific vehicle year and model.

• **Loose Bolts After Installation:**

Solution: Re-torque all mounting bolts to the specified values. It is normal for bolts to settle after initial use, so a re-check after the first few towing trips is recommended.

• **Excessive Noise or Movement During Towing:**

Solution: Inspect all connections, including the hitch ball mount, hitch pin, and safety chains. Ensure the trailer coupler is securely latched onto the hitch ball. Verify that the tongue weight is within acceptable limits.

• **Rust or Corrosion Appears:**

Solution: Clean the affected area thoroughly and apply a rust-inhibiting primer and paint. Regular cleaning and inspection can prevent this.

9. Warranty and Customer Support

For warranty information or technical assistance, please contact ECOTRIC customer support. Details regarding warranty coverage and claims procedures are typically provided with your purchase documentation or can be found on the official ECOTRIC website.

When contacting support, please have your product model number (AI-228) and purchase date available.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page’s manual context to help answer it.

Name

Anonymous

Email

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After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question