

## Hillman 240453

# Hillman 240453 Carriage Bolt Instruction Manual

Model: 240453 | Brand: Hillman

## 1. PRODUCT OVERVIEW

The Hillman 240453 Carriage Bolt is a specialized fastener designed for securing a wooden face to either a wood or metal frame. Its unique design features a smooth, rounded head with a square section directly underneath. This square neck is engineered to seat into the material, preventing the bolt from rotating during tightening, thus eliminating the need for a separate driving tool for the bolt itself.

The flat head of the carriage bolt provides a semi-flush finish and is designed to negate the requirement for an additional washer under the head. These bolts are zinc-plated, offering moderate corrosion resistance and a consistent, aesthetically pleasing silver finish. While suitable for many applications, their zinc plating may not be ideal for all exterior projects exposed to harsh conditions.

### Key Features:

- Designed to fasten a wooden face to either wood or metal.
- Flat head provides a semi-flush finish to applications.
- Head design eliminates the need for a washer.
- Square underside of the head is self-locking, preventing rotation during installation.
- Zinc finish provides a beautiful, consistent appearance and moderate corrosion resistance.

## 2. SETUP AND INSTALLATION

Proper installation of carriage bolts ensures a secure and lasting connection. Follow these steps for optimal results:

1. **Prepare the Materials:** Ensure the wooden face and the wood or metal frame are clean and free of debris. Mark the precise location for the bolt hole.
2. **Drill Pilot Hole:** Drill a pilot hole through both the wooden face and the frame. The diameter of this hole should be slightly larger than the threaded shank of the bolt but small enough for the square neck under the head to bite into the wood. For a 3/4-inch bolt, a 3/4-inch or slightly larger hole is typically appropriate for the shank, with the square neck requiring a snug fit.
3. **Insert the Bolt:** Insert the carriage bolt through the pre-drilled holes from the wooden face side. Gently tap the head with a mallet if necessary to ensure the square neck fully seats into the wood, preventing the bolt from turning.
4. **Secure with Nut:** On the opposite side, attach a suitable nut (and optionally a washer, though the bolt head design

often negates the need for one on its side) to the threaded end of the bolt.

5. **Tighten:** Use a wrench to tighten the nut until the connection is secure. The self-locking square neck will prevent the bolt from spinning, allowing for single-tool tightening. Do not overtighten, as this can strip threads or damage the material.

**Important Note:** For applications involving metal frames, ensure the pilot hole in the metal is precisely sized for the bolt shank, and consider using a washer under the nut for better load distribution.

### 3. OPERATING PRINCIPLES

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Once installed, the Hillman 240453 Carriage Bolt operates as a robust and secure fastening element. The primary operating principle relies on the square neck under the bolt's head. When the bolt is inserted through a pre-drilled hole in wood, this square section bites into the wood, creating a positive lock that prevents the bolt from rotating. This allows the nut to be tightened from the opposite side without needing to hold the bolt head with a tool.

The rounded, flat head provides a clean, low-profile finish on the visible side of the assembly, making it suitable for applications where aesthetics are important or where a protruding bolt head could snag. The zinc plating contributes to the bolt's longevity by offering resistance against rust and corrosion in moderately dry environments.

### 4. MAINTENANCE

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Carriage bolts are generally low-maintenance fasteners. The zinc plating provides a protective layer against corrosion. To ensure the longevity of the bolt and the integrity of the fastened assembly:

- **Regular Inspection:** Periodically inspect the fastened area for any signs of loosening, rust, or material degradation.
- **Environmental Considerations:** While zinc-plated, these bolts are best suited for indoor or moderately dry outdoor applications. For projects exposed to high humidity, saltwater, or harsh chemicals, consider fasteners with superior corrosion resistance (e.g., hot-dip galvanized or stainless steel).
- **Cleaning:** If necessary, clean the exposed parts of the bolt with a dry cloth to remove dust or dirt. Avoid abrasive cleaners that could damage the zinc coating.
- **Retightening:** If any loosening is observed, carefully retighten the nut to the appropriate torque.

### 5. TROUBLESHOOTING

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Encountering issues during or after installation can often be resolved with simple adjustments:

- **Bolt Spins During Tightening:**  
*Cause:* The pilot hole in the wood is too large, or the square neck did not fully seat into the material.  
*Solution:* Ensure the pilot hole is appropriately sized for the square neck to bite firmly. If the hole is too large, consider using a larger washer under the head or relocating the bolt to a new, properly drilled hole.
- **Bolt Does Not Go Through Material:**  
*Cause:* The pilot hole is too small, or there is an obstruction.  
*Solution:* Verify the pilot hole diameter matches the bolt's shank. Clear any obstructions. Do not force the bolt, as this can damage the threads or the material.
- **Rust or Corrosion Appears:**  
*Cause:* Exposure to excessive moisture, chemicals, or harsh outdoor conditions beyond the zinc plating's protective capacity.  
*Solution:* For future projects in such environments, select fasteners made from materials like stainless steel or those with hot-dip galvanized coatings, which offer superior corrosion resistance.

### 6. PRODUCT SPECIFICATIONS

Attribute	Value
Brand	Hillman
Model Number	240453
Material	Alloy Steel, Zinc
Size	3/4 x 8-Inch
Thread Size	3/4-inch
Exterior Finish	Zinc
Color	Silver
Head Style	Dome, Flat, Round, Square
Fastener Type	Carriage Bolt
Number of Pieces	20
Item Weight	19.3 pounds
Product Dimensions	4.6 x 4.9 x 13.5 inches
Manufacturer	The Hillman Group
Date First Available	May 27, 2014

## 7. PRODUCT IMAGES

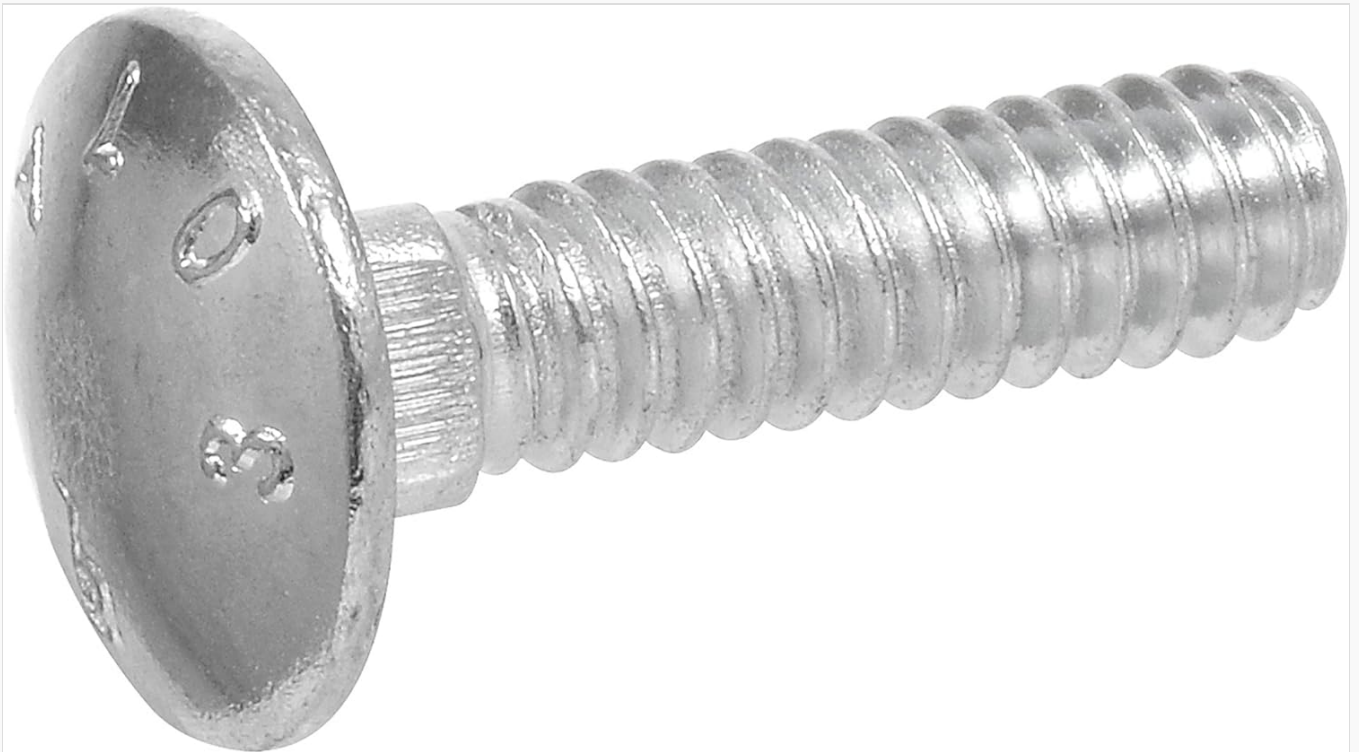


Image 1: A detailed view of the Hillman 240453 Carriage Bolt, highlighting its smooth, rounded head and the robust threading. The zinc-plated finish is visible, giving it a silver appearance.



Image 2: A side profile of the Hillman 240453 Carriage Bolt, illustrating its full length and the critical square section directly beneath the head, which is designed to prevent rotation during installation.

## 8. WARRANTY AND SUPPORT

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Specific warranty information for the Hillman 240453 Carriage Bolt is not provided in the product details. For any inquiries regarding product performance, specifications, or support, please contact Hillman customer service directly or refer to their official website. Hillman Solutions is a leading provider of hardware products, and their contact information can typically be found on their corporate site or product packaging.

For general product information, you may visit the [Hillman Store on Amazon](#).

