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> IRWIN Unibit #10 1/2-Inch High Speed Steel Drill Bit Instruction Manual

## IRWIN 10310

# IRWIN Unibit #10 1/2-Inch High Speed Steel Drill Bit Instruction Manual

Brand: IRWIN | Model: 10310

## 1. INTRODUCTION

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This manual provides essential information for the safe and effective use of your IRWIN Unibit #10 1/2-Inch High Speed Steel Drill Bit. Please read these instructions thoroughly before operation to ensure proper usage and to maximize the lifespan of your tool.

The IRWIN Unibit #10 is a high-speed steel fractional self-starting step drill bit designed for precision drilling. Its single-flute cutting edge offers enhanced control, and the hex shank prevents slippage in the drill chuck. This bit is suitable for drilling holes in thin materials such as stainless steel, copper, brass, aluminum, plastic, and laminates.

## 2. PRODUCT OVERVIEW

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The IRWIN Unibit #10 is engineered for durability and performance. Below is an image of the product for visual reference.



**Figure 1:** IRWIN Unibit #10 1/2-Inch High Speed Steel Drill Bit. This image displays the drill bit with its distinctive stepped design, single-flute cutting edge, and hex shank. Markings for "1/2 ONLY" and "USA" are visible on the bit's surface.

## 2.1 Key Features

- **Single-Flute Cutting Edge:** Provides enhanced control during drilling.
- **Hex Shank:** Designed to prevent slipping within the drill chuck, ensuring stable operation.
- **Material Compatibility:** Ideal for drilling into thin materials including stainless steel, copper, brass, aluminum, plastic, and laminates.
- **Hole Size:** Drills precise 1/2-inch holes.

## 2.2 What's in the Box

- One (1) IRWIN Unibit #10 1/2-Inch High Speed Steel Drill Bit

## 3. SETUP

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Proper setup is crucial for safe and effective drilling.

1. **Select the Correct Drill:** Ensure your drill is compatible with a 1/2-inch shank and is capable of the appropriate RPM for the material being drilled.
2. **Insert the Bit:** Loosen the drill chuck jaws. Insert the hex shank of the IRWIN Unibit #10 into the chuck, ensuring it is fully seated.
3. **Tighten the Chuck:** Securely tighten the drill chuck jaws around the hex shank. For drills with a key, use the key to ensure maximum tightness. A loose bit can slip or cause injury.
4. **Safety Gear:** Always wear appropriate personal protective equipment (PPE), including safety glasses, gloves, and hearing protection, before operating any power tool.

## 4. OPERATING INSTRUCTIONS

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Follow these steps for optimal drilling performance and safety.

1. **Secure Workpiece:** Always clamp or secure the material you are drilling into to prevent it from moving during operation.
2. **Mark the Hole:** Clearly mark the center point where you intend to drill the hole.
3. **Start Drilling:** Position the tip of the Unibit on your marked center point. Begin drilling at a moderate speed with light pressure. The self-starting tip will initiate the hole.
4. **Maintain Pressure and Speed:** Apply steady, consistent pressure. Adjust drill speed according to the material; generally, harder materials require slower speeds. The single-flute design allows for controlled progression through the material.
5. **Coolant (for Metals):** When drilling metals, especially stainless steel, use a suitable cutting fluid or lubricant to reduce heat, extend bit life, and improve cutting performance.
6. **Clear Chips:** Periodically withdraw the bit slightly to clear chips and prevent clogging, especially in thicker materials.
7. **Complete the Hole:** Continue drilling until the 1/2-inch step has fully passed through the material, creating a clean, precise hole.
8. **Retract Bit:** Once the hole is complete, slowly withdraw the bit from the workpiece while the drill is still rotating.

### 4.1 Safety Precautions

- Always wear safety glasses to protect your eyes from flying debris.
- Wear gloves to protect hands, but ensure they do not interfere with drill operation.
- Do not wear loose clothing or jewelry that could get caught in rotating parts.
- Ensure the workpiece is securely fastened to prevent rotation or movement.
- Avoid excessive force, which can damage the bit or the workpiece.
- Disconnect the drill from power before changing bits or performing maintenance.

## 5. MAINTENANCE

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Proper maintenance extends the life and performance of your drill bit.

- **Cleaning:** After each use, clean the bit to remove any debris, metal shavings, or residue. A stiff brush can be used.
- **Lubrication/Protection:** For high-speed steel bits, applying a light coat of oil after cleaning can help prevent rust, especially if stored in humid conditions.

- **Storage:** Store the drill bit in a dry, protected environment, preferably in a drill bit case or organizer to prevent damage to the cutting edges.
- **Inspection:** Regularly inspect the cutting edge for signs of wear, dullness, or damage. A dull bit will require more force and generate more heat, reducing efficiency and potentially damaging the workpiece.

## 6. TROUBLESHOOTING

Common issues and their solutions.

Problem	Possible Cause	Solution
Bit is slipping in chuck	Chuck not tightened sufficiently; dirty shank.	Ensure chuck is fully tightened. Clean the bit's hex shank before insertion.
Excessive heat/smoke during drilling	Dull bit; incorrect speed; insufficient coolant (for metal).	Replace or sharpen bit. Reduce drill speed. Apply appropriate cutting fluid.
Poor hole quality (rough edges, burrs)	Dull bit; incorrect feed pressure; material movement.	Ensure bit is sharp. Apply steady, consistent pressure. Secure workpiece firmly.
Bit not cutting effectively	Dull cutting edge; incorrect bit for material.	Inspect and replace/sharpen bit. Verify the bit is suitable for the material being drilled.

## 7. SPECIFICATIONS

Attribute	Detail
Brand	IRWIN
Model Number	10310
Type	Unibit Step Drill Bit
Material	High Speed Steel
Cutting Diameter	1/2 Inch (0.5 Inches)
Shank Type	Hex Shank (Round With Flats)
Cutting Angle	135 Degrees
Product Dimensions	3 x 0.7 x 6.2 inches
Item Weight	0.8 ounces

## 8. WARRANTY AND SUPPORT

For information regarding warranty coverage, product support, or to contact IRWIN customer service, please refer to the official IRWIN website or the documentation included with your purchase. Specific warranty terms may vary by region and product.

You can often find additional resources and contact information on the [IRWIN Tools official website](#).

