

Astro Pneumatic Tool TS29

Astro Tools TurboStep TS29 ONYX HSS Drill Bit Set User Manual

INTRODUCTION

This manual provides essential information for the safe and effective use of your Astro Tools TurboStep TS29 ONYX 29-Piece HSS Reduced Shank Mechanics Length Drill Bit Set. These drill bits are engineered with a patented spiral fluted step tip design, offering superior performance across various materials. They are designed to eliminate bit walk and the need for pilot holes, making them highly effective on hard alloys, sheet metal, and challenging starting surfaces.

The bits are precision ground from heat-treated M2 High Speed Steel and feature an Onyx oxide coating to prevent chip build-up. Their three-flat shanks and mechanics length provide enhanced access in confined spaces.

SAFETY INFORMATION

Always observe the following safety precautions when using drill bits:

- Always wear appropriate personal protective equipment (PPE), including safety glasses or goggles, gloves, and hearing protection.
- Ensure the workpiece is securely clamped before drilling to prevent movement.
- Use the correct drill bit size and type for the material being drilled.
- Apply steady, even pressure; avoid excessive force, which can cause bit breakage or damage to the workpiece.
- Allow the drill bit to cool down during prolonged use to prevent overheating and premature wear.
- Disconnect power tools from the power source before changing drill bits or performing maintenance.
- Keep hands and loose clothing away from rotating parts.
- Store drill bits in their protective case when not in use to prevent damage and injury.

PACKAGE CONTENTS

Your Astro Tools TurboStep TS29 ONYX Drill Bit Set includes:

- 29-piece TurboStep HSS Reduced Shank Drill Bit Set
- Durable metal storage case



Figure 1: Astro Tools TurboStep TS29 ONYX Drill Bit Set in its protective metal case.



Figure 2: The Astro Tools TurboStep TS29 ONYX Drill Bit Set with bits organized in the open case.

SETUP

Before beginning any drilling operation, ensure your drill is in good working condition and you have selected the appropriate drill bit.

1. **Select the Correct Bit:** Choose the drill bit size appropriate for your application from the 29-piece set (1/16" to 1/2").
2. **Insert into Drill Chuck:** Loosen the drill chuck jaws. Insert the drill bit's three-flat shank into the chuck, ensuring it is seated deeply and centrally.
3. **Tighten Chuck:** Hand-tighten the chuck firmly, then use a chuck key (if applicable) to ensure the bit is securely gripped. A loose bit can wobble, causing inaccurate holes or injury.
4. **Verify Security:** Give the bit a gentle tug to confirm it is held firmly in place.

OPERATING INSTRUCTIONS

- The TurboStep design of these drill bits offers enhanced performance. Follow these guidelines for optimal results:
- **Starting the Hole:** The patented spiral fluted step tip is designed to eliminate bit walk. Position the tip directly on your mark. Start drilling at a low speed to allow the bit to self-center.
 - **Drilling Speed:** Adjust drilling speed based on the material. Generally, harder materials require slower speeds, while softer materials can tolerate higher speeds.
 - **Pressure:** Apply consistent, moderate pressure. Let the bit do the work. Excessive pressure can generate heat and dull the bit, while too little pressure can cause the bit to rub and overheat.
 - **Coolant/Lubricant:** For drilling in metals, especially hard alloys and stainless steel, using a cutting fluid or lubricant is highly recommended. This reduces friction, dissipates heat, and extends bit life.
 - **Chip Clearance:** The Onyx oxide coating helps prevent chip build-up. Periodically withdraw the bit slightly from the hole to clear chips, especially in deep holes.
 - **Material Compatibility:** These bits excel on hard alloys, sheet metal, and imperfect starting surfaces.
 - **Mechanics Length:** Utilize the mechanics length and reduced shanks (above 3/8") for superior access in cramped or confined spaces.

MAINTENANCE

Proper maintenance ensures the longevity and performance of your drill bit set.

- **Cleaning:** After each use, wipe down the drill bits to remove any debris, metal shavings, or cutting fluid residue.
- **Lubrication:** For long-term storage, a light coat of oil can help prevent corrosion, especially in humid environments.
- **Storage:** Always store the drill bits in their original metal case. This protects them from damage, keeps them organized, and prevents accidental injury.
- **Inspection:** Periodically inspect bits for signs of wear, dullness, or damage. A dull bit will require more force and generate more heat.
- **Sharpening:** While these bits are designed for durability, they can be professionally sharpened if they become dull over time.

TROUBLESHOOTING

Here are some common issues and their potential solutions:

Problem	Possible Cause	Solution
Bit not cutting efficiently / Excessive heat	Dull bit, incorrect speed, insufficient coolant, too much pressure.	Inspect bit for sharpness, reduce drilling speed, use cutting fluid, reduce pressure.
Bit breakage	Excessive side pressure, bit binding, incorrect feed rate, workpiece not secure.	Maintain straight drilling, clear chips, secure workpiece, use appropriate feed rate.
Hole not round or oversized	Wobbling bit, loose chuck, incorrect drilling angle.	Ensure bit is securely tightened in chuck, maintain a perpendicular drilling angle.
Chips not clearing	Insufficient withdrawal, sticky material.	Periodically withdraw bit to clear chips, use cutting fluid.

SPECIFICATIONS

Feature	Detail
Model Number	TS29
Material	High Speed Steel (HSS)
Finish Type	Onyx Oxide
Shank Type	3-Flat (Reduced Shanks above 3/8")
Cutting Diameter Range	1/16" to 1/2"
Set Quantity	29 Pieces
Product Dimensions	3.94 x 1.77 x 7.09 inches
Item Weight	2.93 Pounds
Manufacturer	Astro Tools

WARRANTY AND SUPPORT

For warranty information or technical support regarding your Astro Tools TurboStep TS29 ONYX Drill Bit Set, please refer to the official Astro Pneumatic Tool website or contact their customer service directly. Keep your purchase receipt for any warranty claims.

Astro Pneumatic Tool Contact Information:
Please visit the manufacturer's official website for the most current contact details and support resources.

ASK A QUESTION ABOUT THIS MANUAL

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Question

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

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

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