

RIVERWELD PCH-35

RIVERWELD Thermal Dynamics Plasma Cutter Consumables User Manual

For PCH-35, PCH25/38, PCH/M-28, PCH/M-35/40 Torches

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1. INTRODUCTION

This manual provides essential information for the safe and effective use of RIVERWELD Thermal Dynamics Plasma Cutter Consumables. These components are designed for compatibility with Thermal Dynamics PCH25, PCH38, PCH/M-28, PCH/M-35, and PCH/M-40 plasma cutter torches. Please read these instructions thoroughly before installation and operation to ensure proper function and longevity of the parts.

2. PACKAGE CONTENTS AND COMPONENT OVERVIEW

The RIVERWELD consumable kit includes the following components:

- **10 x Electrodes (Ref No: 9-6506):** Essential for initiating and maintaining the plasma arc.
- **10 x Nozzles (Ref No: 9-6501):** Directs the plasma arc for precise cutting.
- **2 x Ring Swirl (Ref No: 9-6507):** Creates a swirling action in the plasma gas for improved cut quality.
- **1 x Shield Cup (Ref No: 9-6003):** Protects the internal components of the torch and helps shape the plasma arc.



Figure 2.1: RIVERWELD Plasma Electrodes (Ref No: 9-6506). These electrodes are crucial for generating the plasma arc.



Figure 2.2: RIVERWELD Plasma Nozzles (Ref No: 9-6501). These nozzles shape and direct the plasma stream for cutting.



Figure 2.3: RIVERWELD Plasma Swirl Ring (Ref No: 9-6507). This component ensures proper gas flow for optimal cutting performance.



Figure 2.4: RIVERWELD Plasma Shield Cup (Ref No: 9-6003). The shield cup protects the torch and focuses the plasma arc.

Video Overview of Consumables

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Video 2.1: An overview of the RIVERWELD Thermal Dynamics Plasma Cutter Consumables, demonstrating the various components included in the kit.

3. INSTALLATION AND SETUP

Before installing new consumables, ensure your plasma cutter is powered off and disconnected from the power source to prevent accidental activation or electrical shock. Always wear appropriate personal protective equipment (PPE), including safety glasses and gloves.

1. **Remove Old Consumables:** Carefully unscrew the old shield cup from the torch head. Then, remove the used nozzle, swirl ring, and electrode. Inspect the torch head for any damage or debris.
2. **Install New Electrode:** Insert the new electrode (9-6506) into its designated slot in the torch head. Ensure it is seated firmly.
3. **Install New Swirl Ring:** Place the new swirl ring (9-6507) over the electrode. Ensure it aligns correctly with the torch body.
4. **Install New Nozzle:** Screw the new nozzle (9-6501) onto the torch head, over the swirl ring and electrode. Hand-tighten only; do not overtighten.
5. **Install New Shield Cup:** Screw the new shield cup (9-6003) onto the torch head. Ensure it is securely fastened but not excessively tight. The shield cup should engage with any safety pins or mechanisms on your torch.
6. **Verify Installation:** Double-check that all components are correctly installed and tightened.

Note: Some torch models may have slight variations in assembly. Refer to your plasma cutter's specific torch manual for detailed instructions if needed.

4. OPERATING GUIDELINES

These consumables are designed to work with Thermal Dynamics PCH25, PCH38, PCH/M-28, PCH/M-35, and PCH/M-40 plasma cutter torches. Optimal performance depends on correct installation and appropriate plasma cutter settings.

- **Power Settings:** Adjust your plasma cutter's amperage and air pressure according to the material thickness and type you are cutting. Consult your plasma cutter's manual for recommended settings.
- **Torch Standoff:** Maintain the correct standoff distance between the torch nozzle and the workpiece. This is crucial for cut quality and consumable life.
- **Cutting Speed:** Use an appropriate cutting speed. Too slow can lead to excessive dross and consumable wear, while too fast can result in an incomplete cut.
- **Safety:** Always follow all safety precautions outlined in your plasma cutter's operating manual. This includes wearing appropriate PPE, ensuring proper ventilation, and maintaining a safe work environment.

5. MAINTENANCE AND CARE

Regular inspection and replacement of consumables are vital for maintaining cut quality and extending the life of your plasma torch.

- **Inspect Regularly:** Before each use, inspect the electrode, nozzle, swirl ring, and shield cup for signs of wear, pitting, or damage.
- **Replace Worn Parts:** Replace consumables as soon as signs of wear are visible. A worn electrode or nozzle can lead to poor cut quality, reduced cutting speed, and potential damage to the torch.
- **Clean Torch Head:** Periodically clean the torch head and internal components to remove any slag or

debris that may accumulate.

- **Storage:** Store unused consumables in a clean, dry environment to prevent contamination and corrosion.

6. TROUBLESHOOTING COMMON ISSUES

Problem	Possible Cause	Solution
Poor Cut Quality / Excessive Dross	Worn nozzle or electrode, incorrect cutting speed, improper standoff distance, insufficient air pressure.	Replace worn consumables. Adjust cutting speed, standoff, or air pressure according to material.
Torch Fails to Arc	Damaged or improperly installed electrode/nozzle, shield cup not fully engaged, low air pressure, power supply issue.	Check and replace consumables. Ensure shield cup is fully tightened. Verify air pressure and power supply.
Short Consumable Life	Incorrect operating parameters (amperage, air pressure, cutting speed), frequent piercing, dirty air supply.	Optimize cutting parameters. Minimize piercing. Ensure clean, dry air supply.

If issues persist, consult your plasma cutter's main instruction manual or contact technical support.

7. PRODUCT SPECIFICATIONS

- **Brand:** RIVERWELD
- **Model Compatibility:** Thermal Dynamics PCH25, PCH38, PCH/M-28, PCH/M-35, PCH/M-40 Plasma Cutter Torches
- **Item Model Number:** PCH-35 (for reference)
- **Material:** Copper, Ceramic Aluminium Oxide, Brass
- **Package Contents:**
 - 10 x Electrodes (Ref No: 9-6506)
 - 10 x Nozzles (Ref No: 9-6501)
 - 2 x Ring Swirl (Ref No: 9-6507)
 - 1 x Shield Cup (Ref No: 9-6003)
- **Item Weight:** Approximately 3.84 ounces (total package)
- **Product Dimensions:** Approximately 5.91 x 3.94 x 0.59 inches (package)

8. WARRANTY INFORMATION

RIVERWELD consumables are designed for durability and performance. Due to the nature of consumable parts in plasma cutting, specific wear-and-tear warranties are not typically offered. However, if you receive components that are defective upon arrival or do not match the product description, please contact customer support immediately for assistance. Proof of purchase may be required.

9. CUSTOMER SUPPORT

For further assistance, technical inquiries, or to report issues with your RIVERWELD plasma cutter consumables, please contact your retailer or visit the official RIVERWELD store online. When contacting support, please have your product details and purchase information ready.

Online Store: RIVERWELD Store on Amazon

