Hypertherm 220006

Hypertherm 220006 Nozzle Instruction Manual

For Powermax Plasma Torches

1. Introduction

This manual provides essential information for the proper use, installation, and maintenance of the Hypertherm 220006 Unshielded Extended 40 Amp Nozzle. Adhering to these instructions will ensure optimal performance and extend the lifespan of your consumables. Always refer to your plasma cutting system's main operating manual for comprehensive safety and operational guidelines.

2. Product Overview

The Hypertherm 220006 Nozzle is a critical consumable component designed for plasma cutting applications. It is an unshielded, extended nozzle rated for 40 Amp operation, suitable for both handheld and mechanized plasma torches. This package contains five (5) nozzles.
Compatibility: This nozzle is specifically designed for use with Hypertherm Powermax1000, Powermax1250, T60, T60M, T80, and T80M plasma torches.

This image displays the Hypertherm 220006 Nozzle product packaging. The package clearly indicates 'Hypertherm' as the brand, '220006' as the part number, and 'Contains: 5' to denote the quantity. Key specifications are visible, including 'Part type: Nozzle', 'Amperage: 40 A', 'Processes: Unshielded', and 'Torch type: Handheld or Mechanized'. It also lists compatibility with 'PMX1000/1250/1650/RT60/RT80' torch series. A 'Made in USA' quality seal is also present.

3. Safety Information

Plasma cutting involves inherent risks. Always prioritize safety. Consult your plasma cutter's main instruction manual for comprehensive safety guidelines. Key safety considerations include:

- **Electrical Shock:** Ensure proper grounding and never operate equipment with damaged cables or connections.
- **Fumes and Gases:** Work in a well-ventilated area to avoid inhaling hazardous fumes. Use fume extraction systems if necessary.
- **Burns:** Wear appropriate personal protective equipment (PPE), including flame-resistant clothing, gloves, and safety shoes.
- **Eye and Skin Protection:** Always use a welding helmet with the correct shade filter and protective eyewear to shield against intense light and UV radiation.
- **Fire Hazards:** Keep flammable materials away from the cutting area.

4. Setup and Installation

Proper installation of the nozzle is crucial for safe and effective operation.

1. **Power Off:** Ensure the plasma cutting system is completely powered off and disconnected from the power source before handling any torch components.
2. **Remove Old Consumables:** Carefully unscrew and remove the retaining cap, swirl ring, electrode, and the old nozzle from the torch head. Inspect other components for wear.
3. **Install New Nozzle:** Insert the new Hypertherm 220006 nozzle into its designated position on the torch head. Ensure it seats correctly and is aligned.
4. **Reassemble Torch:** Reinstall the electrode, swirl ring, and retaining cap. Hand-tighten the retaining cap firmly to ensure good electrical contact and proper gas sealing. Do not overtighten.
5. **Inspect:** Visually inspect the assembled torch to confirm all components are correctly in place.

5. Operating Instructions

Once the nozzle is correctly installed, follow these guidelines for operation:

- **Amperage Setting:** This nozzle is designed for 40 Amp operation. Ensure your plasma cutter is set to the appropriate 40 Amp output for optimal performance and nozzle life.
- **Process Type:** This is an unshielded nozzle. Be aware of the cutting characteristics associated with unshielded consumables, which typically offer good visibility of the arc and cut path.
- **Torch Type:** Suitable for both handheld and mechanized cutting applications. Adjust cutting parameters (speed, standoff distance) according to your specific application and material thickness.
- **Material Compatibility:** Refer to your plasma cutter's manual for recommended cutting parameters for various materials (e.g., mild steel, stainless steel, aluminum).

6. Maintenance and Replacement

Regular inspection and timely replacement of the nozzle are essential for maintaining cut quality and efficiency.

- **Inspection:** Before each use, inspect the nozzle orifice for signs of wear, such as enlargement, ovaling, or damage. A worn nozzle will result in poor cut quality, excessive dross, and reduced cutting speed.
- **Cleaning:** While nozzles are consumables, light carbon buildup can sometimes be gently removed with a non-abrasive tool if it does not damage the orifice. However, significant wear necessitates replacement.
- **Replacement:** Replace the nozzle when the orifice shows visible signs of wear or when cut quality deteriorates significantly. It is often recommended to replace the electrode simultaneously with the nozzle for balanced wear and optimal performance.

7. Troubleshooting

Most issues related to consumables stem from wear or incorrect installation. If you experience problems, consider the following:

- **Poor Cut Quality / Excessive Dross:** Often indicates a worn nozzle or electrode. Replace both.
- **Short Consumable Life:** Check for correct amperage settings, proper standoff distance, and clean, dry air supply. Ensure the retaining cap is tightened correctly.
- **No Arc / Intermittent Arc:** Verify all torch components (nozzle, electrode, swirl ring, retaining cap) are correctly installed and tightened. Check for proper grounding of the workpiece.

For more complex issues, refer to your plasma cutting system's comprehensive troubleshooting guide.

8. Specifications

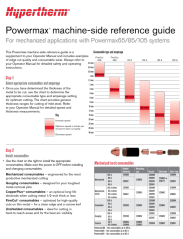
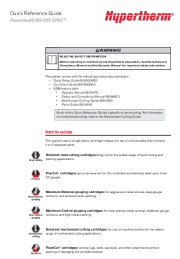
Part Number	220006
Brand	Hypertherm
Part Type	Nozzle
Amperage Rating	40 A
Processes	Unshielded
Torch Type	Handheld or Mechanized
Torch Series Compatibility	Powermax1000, Powermax1250, T60, T60M, T80, T80M
Material	Copper
Quantity per Package	5
Approximate Item Weight (Package)	4 ounces
Approximate Product Dimensions (Package)	1 x 1 x 6 inches

9. Warranty and Support

Hypertherm products are manufactured to high standards. For specific warranty information regarding your Hypertherm consumables, please refer to the documentation provided with your plasma cutting system or visit the official Hypertherm website. For technical assistance or customer support, you may contact Hypertherm directly or visit their brand page: Hypertherm Brand Page.

Related Documents - 220006

	Hypertherm MAXPRO200 Instruction Manual: Comprehensive Guide This comprehensive instruction manual provides detailed information on the Hypertherm MAXPRO200 plasma cutting system, covering installation, operation, safety procedures, specifications, maintenance, and troubleshooting for industrial applications.

	[Hypertherm HPR400XD Auto Gas Instruction Manual] Instruction manual for the Hypertherm HPR400XD Auto Gas system, covering installation, operation, safety, and warranty information.
	[Hypertherm Operator's Manual for Shape Cutting Control Systems] This comprehensive operator's manual provides detailed guidance on the setup and operation of Hypertherm's advanced shape-cutting control systems. It covers essential functionalities such as ShapeWizard, Nester, HyperCAD, and various cutting technologies including Plasma, Laser, Oxy-Fuel, and Waterjet, emphasizing user-friendliness and enhanced productivity.
	[Hypertherm Powermax Machine-Side Reference Guide for Mechanized Cutting] Comprehensive guide for Hypertherm Powermax 65, 85, and 105 systems, detailing mechanized applications, consumable selection, setup, operation, and maintenance for optimal plasma cutting performance.
	[Hypertherm ProNest 2019 CAD/CAM Nesting Software Overview] An overview of Hypertherm's ProNest 2019, an industry-leading CAD/CAM nesting software for advanced mechanized cutting. Details features, benefits, and modules for plasma, laser, waterjet, and oxyfuel cutting.
	[Hypertherm Powermax SYNC Plasma Cutting System Quick Reference Guide] A concise guide to operating and maintaining the Hypertherm Powermax 65, 85, and 105 SYNC plasma cutting systems, covering cartridge selection, setup, operation, and troubleshooting.