HYPERTHERM®
A Hypertherm Associates Brand

Preventive maintenance

For your automated plasma cutting system



Protect your investment. Maximize productivity. Minimize unplanned downtime.

Hypertherm systems are built to last, even in the most rugged environments, but like most industrial equipment, they require proper care. Regular maintenance helps to ensure the best system performance. Whether it is the main power supply, cutting torch, or consumables, preventive maintenance will extend the life of these systems and components and keep your cutting operation running smoothly.

Importance of preventive maintenance

Power supply

While Hypertherm® plasma cutting systems are designed to operate in a variety of industries and environments, there are some common factors that can impact component wear and tear and lead to unexpected downtime, reduced consumable life, and poor system performance:

Metal dust build up

- **Component efficiency:** Metal dust buildup can reduce or halt output to critical components like the main power supply, chopper, and heat exchanger.
- **Cooling:** Dust decreases the life and effectiveness of the cooling fans, leading to potential overheating issues.
- **Temperature errors:** Temperature-related errors can occur due to reduced cooling efficiency and component performance.

QUICK TIP

Remove dust, dirt and debris from the inside and outside of the power supply at least every six months. Inspect and clean all critical components as recommended in the preventive maintenance program (PMP) manual for your system.



Preventive maintenance is about taking care of the small problems BEFORE they become big ones.

Refer to the instruction manual or preventive maintenance manual for your power supply before performing any maintenance tasks.

Cable and lead management

- **Placement and protection:** Cable and lead sets that do not have adequate room to move or that are installed too close together, especially on cable track systems, can rub, twist, or bend excessively during operation. This can lead to premature wear, power current issues, short life, and gas hose leaks.

QUICK TIP

Make sure to order the correct cable and lead lengths for your cutting application. Keep cables and leads free from dirt and debris. Inspect them weekly for signs of wear. Cables placed across aisles should be protected from fork-lifts and other equipment with metal sheets. Stocking an extra lead set for each cutting table is highly recommended

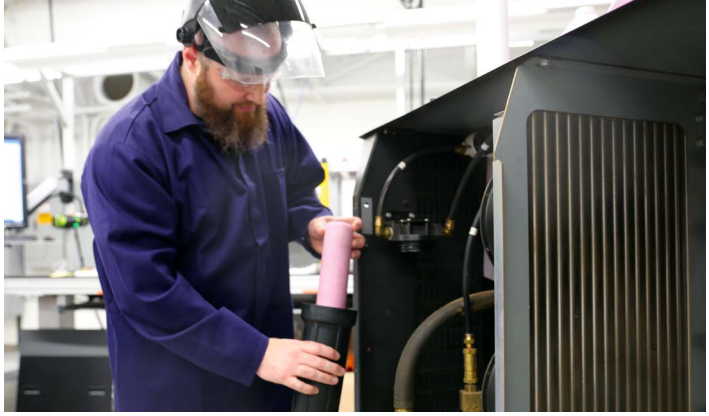
Poor-quality compressed air

- **Airflow impact:** Poor quality compressed air (containing excessive moisture, particles, or oil) decreases air flow, affecting cut quality and overall system performance.
- **Gas errors:** Poor quality air leads to an increase in system gas errors, potentially impacting cutting efficiency and quality.
- **Oil contamination:** Oil contamination, mixing with an oxygen cutting process, can pose a fire hazard and serious safety risk to the cutting operation.

QUICK TIP

Air compressors should follow ISO 8573 -1:2010 Class 1.4.2. standard for air quality. If air supply quality cannot be improved by your supplier, replace air filters, torch, torch receptacle, torch lead, gas solenoid valve, and pressure transducer more frequently.





Contaminated coolant

- **Coolant contamination:** Metal dust and debris can enter the cooling system, particularly during consumable or torch changeovers, and can cause premature wear of critical components and starting issues.
- **Seal leakage:** Dirt and debris can cause leaking around the seals of the torch and receptacle. Leaky seals can result in reduced cooling and shortened consumable life.
- **Coolant flow disruptions:** Debris blockage can reduce coolant flow and cause excessive wear on the coolant pump and flow sensor.

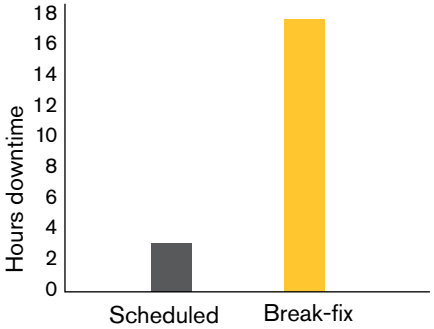


QUICK TIP

Make sure the location where consumables are replaced is clean and free of dirt and debris. Change consumables with clean hands, or with gloves on. Examine air filters. Check coolant reservoir for contamination. We recommend replacing the coolant, and coolant filter every six months with genuine Hypertherm® coolant.

How much money does your company lose when your plasma system is down? For some, this can be as much as $10,000+ a day in lost revenue.

Downtime comparison – scheduled maintenance vs. break-fix



Notes: Comparison based on one system running one 8-hour shift per day. Scheduled maintenance is a torch and electronics service. Break-fix time includes service travel, diagnosis, overnight delivery, and installation of replacement parts.

Consumable and torch maintenance



The plasma cutting area is usually not the cleanest place in the factory, and like the power supply, dirt, dust, and debris can also impact the performance and life of the torch and consumables. Here are some practices that can help to improve the life and performance of these components.

Minimize dirt and debris

Keep the torch and consumables free of dirt and debris. Once inside the cooling system, dirt can damage and shorten the life of critical power supply components.

- Always change your consumables in an area that is clean and dry, with clean hands or with gloves on.
- Periodically wipe down your torch body inside and out with a clean, dry, soft cloth.
- Use compressed air to remove contaminants.

O-ring maintenance

- Lubricate o-rings with Hypertherm silicone lubricant, 027055. Dry or cracked o-rings increase the risk of torch leaks, which in turn can reduce cooling and shorten the life of consumables.
- Apply a small amount to o-rings, wiping off any excess. O-rings should be shiny, with no visible lubricant remaining.
- Excess lubricant, particularly on swirl rings, can disrupt gas flows.
- One exception on lubrication is the thick black o-ring on the torch receptacle. This o-ring functions as a dust seal and does not require lubrication.

Use correct consumables

- Always use the proper consumables for your cutting application. This will ensure the best cutting life and performance.
- Hypertherm consumables are laser marked with part numbers for easy identification.
- Use your operator manual as a reference for consumable part numbers.



For information on consumable inspection and when to replace consumables, download our Consumable Inspection Guide, 897670, from our document library.

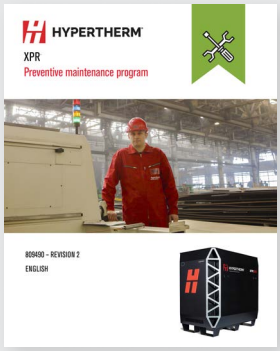
We have the tools that make preventive maintenance easy!

Work with your Hypertherm partner to develop a maintenance plan that is customized for your cutting operation.



PM parts replacement schedule

Our schedules are based on cumulative arc hours of one system operating in average cutting conditions for one 8-hour shift. Systems running two or more shifts will require more frequent maintenance. System specific schedules are in our preventive maintenance program manuals listed below.



Preventive maintenance program manuals

Our PM program manuals detail how to take care of your Hypertherm power supply.

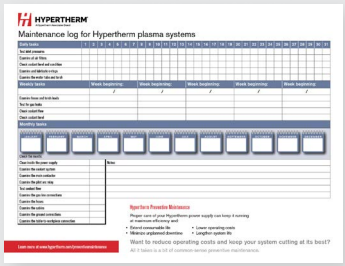
Manual number	System
809490	XPR
808630	HPR130XD – Manual Gas
808620	HPR130XD – Auto Gas
808250	HPR260XD – Auto Gas
808640	HPR260XD – Manual Gas
808650	HPR400XD – Manual Gas
808660	HPR400XD – Auto Gas
808670	HPR800XD – Manual Gas
808680	HPR800XD – Auto Gas
808800	MAXPRO200

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Preventive maintenance kits

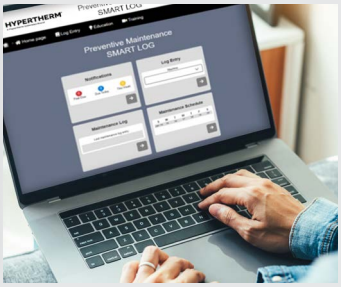
Our kits for torches and power supplies take the guess work out of maintaining your cutting system. They come with the common wear parts needed to complete a torch or power supply maintenance. Any electronics service should be completed by an authorized Hypertherm partner.



Machine-side guide

A detailed check list to keep your system running smoothly in between preventive maintenance services.

Download 897300 at: www.hypertherm.com/support/documents-library



XPR® SMART log

- Digital maintenance tool.
- Text or email service reminders.
- Access to PM training resources.
- Maintenance tracking.

XPR SMART Log

Additional resources

For more information on system maintenance visit: Hypertherm PM

For service training resources visit Hypertherm Cutting Institute (HCI): Hypertherm PM Resources

Learn more at www.hypertherm.com/maintenance

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