Hypertherm®

SilverPlus® electrode technology

For mechanized plasma cutting systems

SilverPlus is a proven electrode technology that extends consumable life and significantly reduces operating costs.

On average, SilverPlus electrode technology doubles the life of the electrode and nozzle compared to copper electrodes.

SilverPlus technology permits the user to burn the electrode deeper and helps to preserve the size and shape of the nozzle orifice maintaining excellent cut quality throughout the life of the consumables.

Improve your cutting process:

- Twice the life
- Excellent cut quality
- Consistent performance

SilverPlus electrodes deliver long life and exceptional cut quality

The SilverPlus difference

Unlike other copper/silver electrodes, SilverPlus® electrodes are manufactured with a robust solid-state copper/silver weld joint insuring consistent performance from every electrode.

Because the silver and copper are welded prior to electrode machining, the hafnium is guaranteed to be perfectly centered in the electrode giving the most reliable performance.

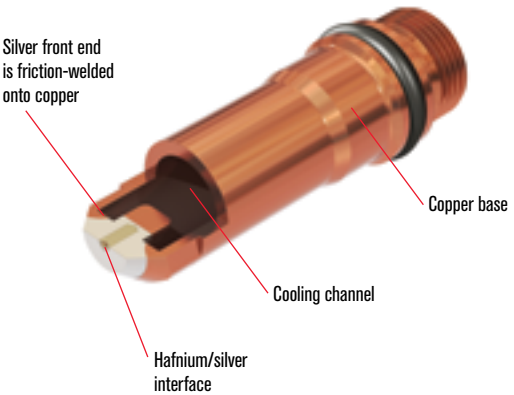
The friction welded silver/copper bond is near forge quality giving the best possible electrical and thermal conductivity which maximizes life and consistency.

Distinct from all-copper electrodes, SilverPlus electrodes wear in a way that greatly reduces debris build up on the inside wall of the nozzle which reduces damage to the nozzle orifice. As a result, SilverPlus technology doubles the life of both the electrode and the nozzle.

Hypertherm consumables are designed with critical-to-function tolerances and manufactured with the highest levels of precision and repeatability delivering highly reliable and repeatable performance.

How the technology works

SilverPlus electrodes utilize a hafnium/silver interface at the point of electrical transfer. The hafnium/silver interface extracts more heat and has a stronger bond, enabling a deeper pit depth in the hafnium. This means that you will get double the life compared to standard copper electrodes.



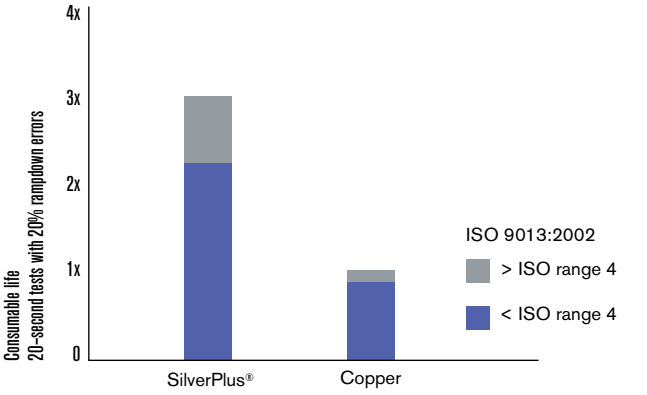
Our testing

To better simulate a production application, Hypertherm programs ramp down errors into 20% of our cuts while testing. This means that we purposely commit a cutting error, like running off the plate, in one out of five cuts made in the lab. Testing at Hypertherm is conducted until we reach the end of consumable life.

In a production environment, you should experience at least twice the life from SilverPlus than you do from standard copper electrodes from 80 to 260 amps. SilverPlus electrodes used in applications that cut from 300 to 400 amps generally last 50% longer than copper.

Average cut quality over life (80–260 A)*

Oxygen 20/20 parts life and cut quality, 10 to 20 mm (3/8 to 3/4") mild steel



*Data from HyPerformance® HPRXD® 80–260 A, HSD130® and HyPro2000™ lab testing. Production results may vary.

The cut quality ranges, shown in these test results, meet the ISO 9013:2002 industrial standard that defines cut quality of thermally cut parts. The lower the range, the smaller the angle on the cut face.

System	Amperage	Part number
HPR®/HPRXD®	80 A	420566
HPR®/HPRXD®	130 A	220665
HPR®/HPRXD®	200 A	220666
HPR®/HPRXD®	260 A	220668
HPR400XD®	400 A	420530
HSD130®	130 A	420185
HT2000®	200 A	220084
HT2000® with HyPro2000™ torch	130 A	420185
HT2000® with HyPro2000 torch	200 A	220925
MAX200®	200 A	220083
HT4400®	200–400 A	220412
HD3070®	100 A	220408
HT4001®	260 A	220397
HT4000®	400 A	220397
HT400®	400 A	220397

Before you cut

Purge torch

After each parts change, purge the torch for at least 30 seconds to remove residual moisture which can damage a SilverPlus® electrode.

Prevent leaks

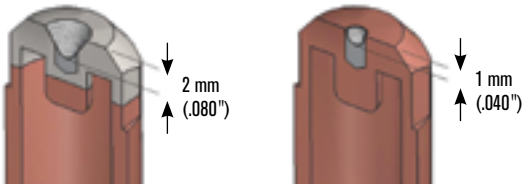
Apply o-ring lubricant to all consumable o-rings. After purging the torch, make sure all o-ring seals are tight and there are no torch coolant leaks.

Confirm gas pressures

Plasma gas flow rate is critical. High flow will cause rapid electrode wear and hard starting. Low flow will cause uncontrolled arcing. Refer to the cut chart for optimum shield gas pressure. Having the correct start shield flow provides protection to the nozzle and shield during the piercing process.

Pierce at correct height

Refer to the cut chart for optimum pierce (initial) height. Piercing too low causes molten metal (spatter) to hit the shield and nozzle – the most common cause of premature nozzle failure. Piercing too high can cause misfires and nozzle damage.



SilverPlus® electrode fully used

Copper electrode fully used

SilverPlus electrodes burn almost twice as deep as standard copper electrodes, doubling SilverPlus life over a standard copper electrode.

Maximize consumable life

Use electrode to full life

A fully used SilverPlus electrode will have a pit depth of 2.0 mm (.080"). This is deeper than the recommended pit depth for standard copper electrodes of 1.0 mm (.040").

Adjust arc voltage

In order to maintain the proper torch-to-plate distance in systems using a voltage-based height control, arc voltage should be increased in 5-volt increments throughout the life of the SilverPlus electrode. The first adjustment is usually needed at the time that you would replace a copper electrode. To maximize consumable life, continue to adjust arc voltage to maintain the initial torch-to-plate distance.

Avoid arc stretching

This can occur during rip cutting off the plate or when the lead out is improperly programmed. This shortens consumable life.

Nearly 50 years of Shaping Possibility

With the right tools and a relentless focus on innovation, partnership and community, we believe anything is possible.

At Hypertherm®, we give shape to our customers' vision with the world's leading industrial cutting solutions. Every day we help individuals and companies around the world envision better, smarter and more efficient ways to produce the products that shape our world. So whether you're cutting precision parts in North America, constructing a pipeline in Norway, fabricating agricultural machinery in Brazil, gouging out welds in the mines of South Africa, or building a skyscraper in China, you can count on Hypertherm to help you not just cut parts but achieve your vision.

100% employee ownership matters

At Hypertherm, we aren't just employees: we're all owners. Ownership is a powerful motivator that ensures our customers are our top priority. As owners, we make sure every product is built to the highest quality and that our service is second to none. And we build long-term relationships that deliver value for us, our partners and our customers.

Shaping what's possible the world over

Hypertherm is a key partner for your fabrication needs and has built a global organization focused on providing high-performance cutting solutions.

Key elements of the Hypertherm formula include:

- Dedicated Associates focused on customer-centered product design and support
- Local sales and service
- Broad application experience and proven results
- Sustainable and ethical business practices benefit our customers and communities

HELPING YOU SHAPE THE WORLD.

PLASMA | LASER | WATERJET | AUTOMATION | SOFTWARE | CONSUMABLES

For location nearest you, visit:
www.hypertherm.com

One of Hypertherm's long-standing core values is a focus on minimizing our impact on the environment. Doing so is critical to our, and our customers' success. We are always striving to become better environmental stewards; it is a process we care deeply about.

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Greener Cuts

Hypertherm®
SHAPING POSSIBILITY™