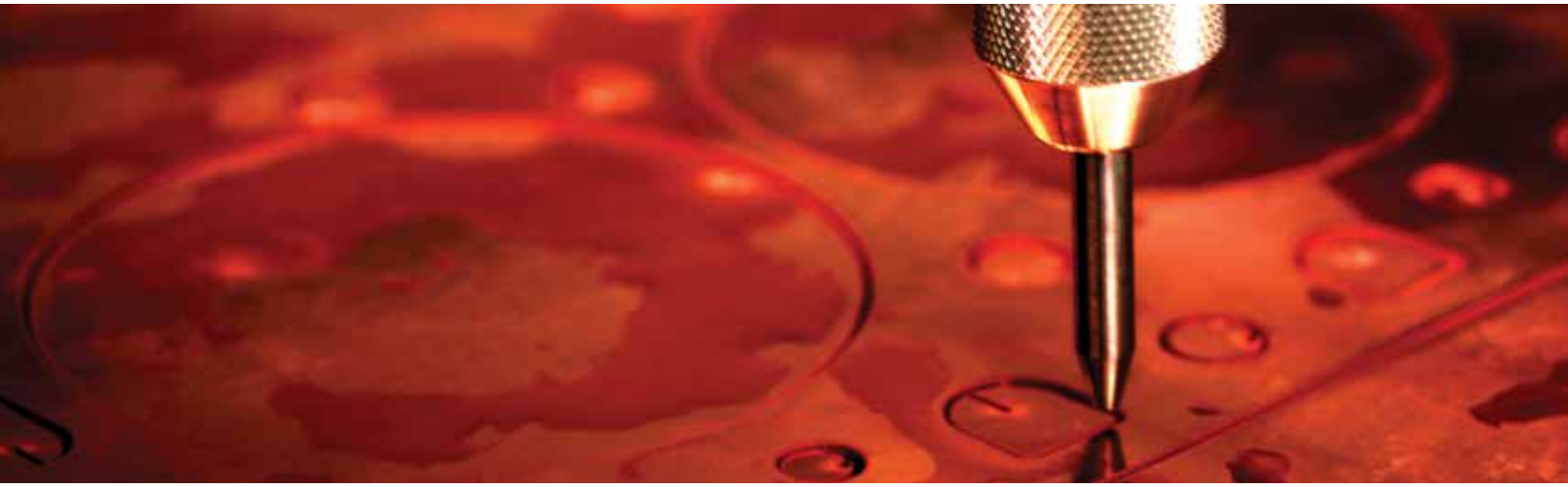
Hypertherm®



Built for Business™

INTEGRATED CUTTING SOLUTIONS

Waterjet

PLASMA | LASER | WATERJET | AUTOMATION | SOFTWARE | CONSUMABLES

Advantages of waterjet

Waterjet technology produces excellent cut quality with low edge angularity, no heat-affected zone at all, a narrow kerf and virtually dross-free cutting. With a narrow kerf, waterjet technology produces excellent fine feature cut capability. Waterjet also offers the ability to process a variety of materials and a thickness range capability unmatched by other cutting technologies.

Contents

For the latest product information and complete specifications visit www.hypertherm.com/waterjet

Built for Business: Integrated Cutting Solutions

It is like having your best operator equipped with the latest technology on every shift

Hypertherm's automated cutting products have over 45 years of innovation and "know how" built into them. Our off-line nesting software, computer numeric controller (CNC), and waterjet cutting systems work together seamlessly and make it easy to get the most out of your cutting operation. It is like having your best operator equipped with the latest technology – optimizing cut quality, productivity and operating cost every day.

Hypertherm's Built for Business Integrated Cutting Solutions:

- Embed process expertise making it easy to:
  - Train new operators to cut like a professional within minutes using the same off-line nesting and CNC operator interface as with plasma, fiber laser and oxyfuel cutting.
  - Maintain more consistent performance from operator to operator, shift to shift and site to site.
- Produce fine feature waterjet cuts with ease.
- Make it easy for your cutting table provider and Hypertherm to access the system within seconds via Hypertherm's Remote Help™ utility.

Step 1 = Program using the off-line nesting software

Hypertherm's off-line nesting software automatically nests parts and applies optimal cutting techniques in the NC Code (Numerical Control Programming Language).

Step 2 = Set up on the CNC

The off-line nesting software interacts with the CNC software to make it easy for the operator to set up the job and cut like a pro.

Step 3 = Produce results

Hypertherm's integrated nesting, CNC, and HyPrecision™ Waterjet pumps work together seamlessly to optimize fine feature cut quality, parts per hour and cost per part.

Step 1: Program using the nesting software

Build Hypertherm expertise into your part programs to minimize operator variability

Hypertherm's off-line nesting software makes it easy to:

- Create and import part drawings
- Efficiently nest them on the plate
- Apply optimal cutting techniques
- Generate the NC code

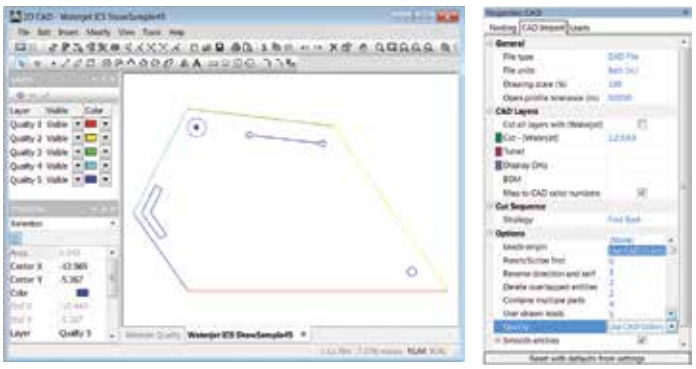
The resultant NC code will be used by the CNC to complete the job. Embedding Hypertherm's cutting techniques into the part program will help you achieve more consistent results (cut quality and productivity) from operator to operator, shift to shift, and site to site. In less than an hour you will be programming jobs like an industry professional.

Easily import CAD drawings:

- 2D and 3D CAD/CAM file import and conversion
- Industry-specific design files
- Set waterjet cut quality by color in CAD and import into the off-line nesting software easily

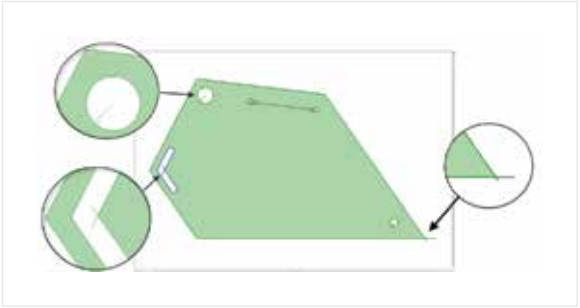
Nest parts efficiently to maximize material utilization.

Hypertherm's superior nesting optimization capabilities deliver measurable material savings by automatically placing the parts efficiently on the plate; full sheets or remnants.



Set the desired Waterjet cut quality by drawing layer color in the off-line software

Lead-in selection and size is set automatically



Automatically apply expert cutting techniques to optimize performance

The software puts decades of laser, plasma, oxyfuel, and waterjet process expertise at your fingertips. It automatically applies optimal cutting techniques, including intelligent speedrate ramping, that are specific to the parts being cut (material type, thickness, part geometry) and the processes being used to cut them.

Operators simply select the desired job on the CNC and the part program will automatically apply the ideal cutting parameters.

The software automatically programs the optimal pressure settings, piercing techniques and motion routines to maximize cut quality and productivity and minimize operating costs.

- Lead in type, location and speeds are set to optimize quality and minimize material scrap.
- Lead-outs and part sequencing are managed to optimize quality, reduce movement between parts and maximize the number of parts produced per hour.
- Collision and tip up avoidance routines maximize productivity and minimize machine downtime.

Integrate seamlessly with business systems

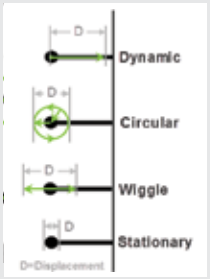
For incremental productivity and efficiency:

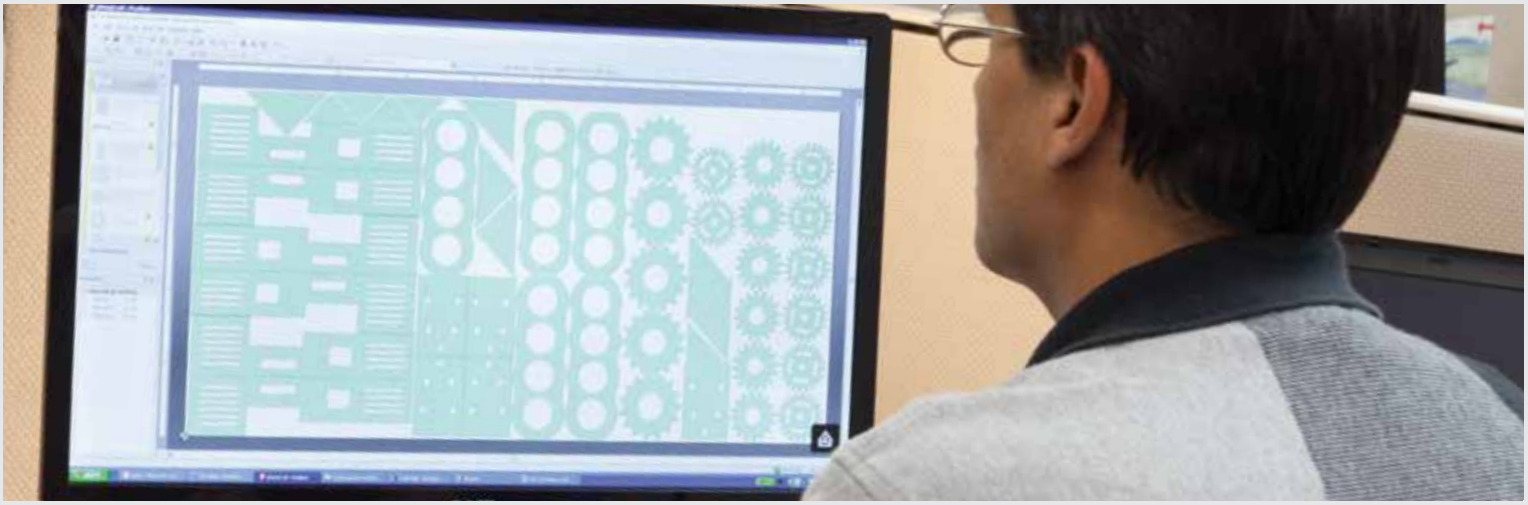
- Connect the nesting software directly to your MRP/ERP (Manufacturing Resource Planning/Enterprise Resource Planning) system. Working directly with current ERP data, combining orders is made easy, helping to reduce delays and improve efficiency, with less time spent setting up individual jobs and longer continuous runs.
- Pass plate inventory data from your MRP/ERP system to the nesting software plate inventory. Initial setup is fast and easy. Once operational, the system will routinely synchronize your MRP/ERP plate inventory with the nesting software plate inventory; continuously adding and updating plate information.

The operator at the cutting table does not need to set the following Hypertherm factory-tested parameters

- Pierce time
- Pierce type
- Cutting speed rate for all cutting including corners and internal features
- Abrasive flow rate
- Pump pressure
- Plate size, thickness and material type
- Nozzle / orifice combination
- Kerf size
- Abrasive on delay
- Abrasive off delay
- Water off delay
- Pierce motion delay

Pierce types set automatically





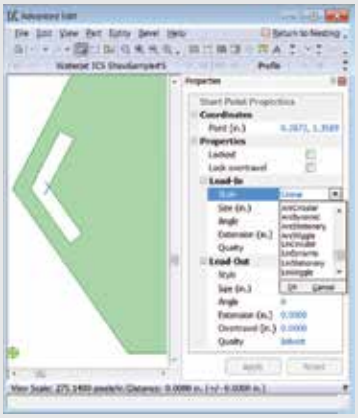
Manually adjust pierce type and cut quality in Advanced Edit

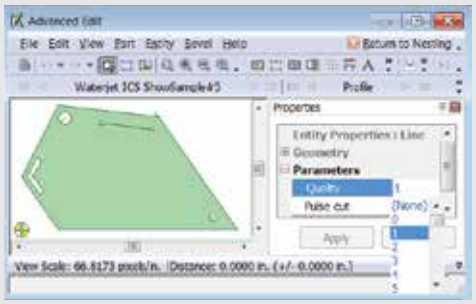
- Manually edit pierce type: Circular, Dynamic, Stationary or Wiggle
- Manually assign Quality 1–5 to specific entities within the part geometry

Manually adjust pierce type and cut quality in Advanced Edit

- Edit cut quality manually in the Advanced Edit module in the Nesting software if desired
- Select geometries to be changed on the Part graphic window
- Select Quality 1–5 manually under Property Parameters

Advanced Edit





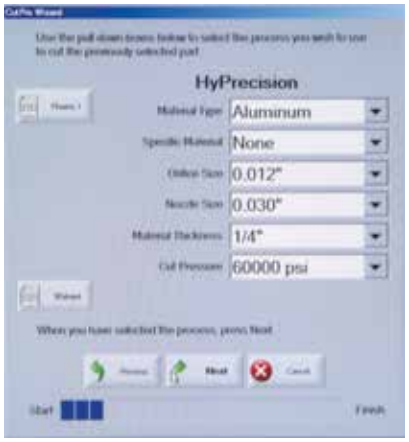
Step 2: Set up on the CNC

Setting up a job and cutting like a pro is as easy as 1, 2, 3

In customer testing, new operators were cutting high-quality parts in less than 5 minutes without any training. The expert cutting techniques that are built into the software will ensure consistently optimized cut quality, productivity and operating cost with minimal operator intervention.

1. Select the program on the CNC and select the correct process

- The operator loads the job created using Hypertherm's nesting software.
- The software automatically sets the optimal cutting parameters in the CNC that are specific to the parts being cut and the equipment being used to cut them.
- The waterjet operator at the cutting machine does not need to set the following Hypertherm factory-tested parameters such as pierce time, cutting speed rate for all cutting including corners and internal features, pump pressure, material type and thickness, nozzle/orifice combination, kerf size, abrasive on and off delay, water off delay.

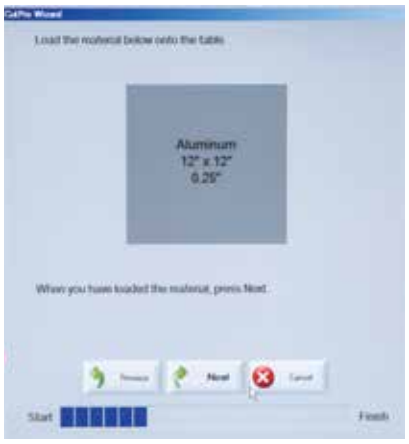


2. Load the plate and consumables

- The patented CutPro® Wizard prompts the operator with the specific material type, thickness and size to be loaded onto the cutting table.
- The nozzle and orifice combination that needs to be loaded into the cutting head is identified with pictures and part numbers on the CNC display.

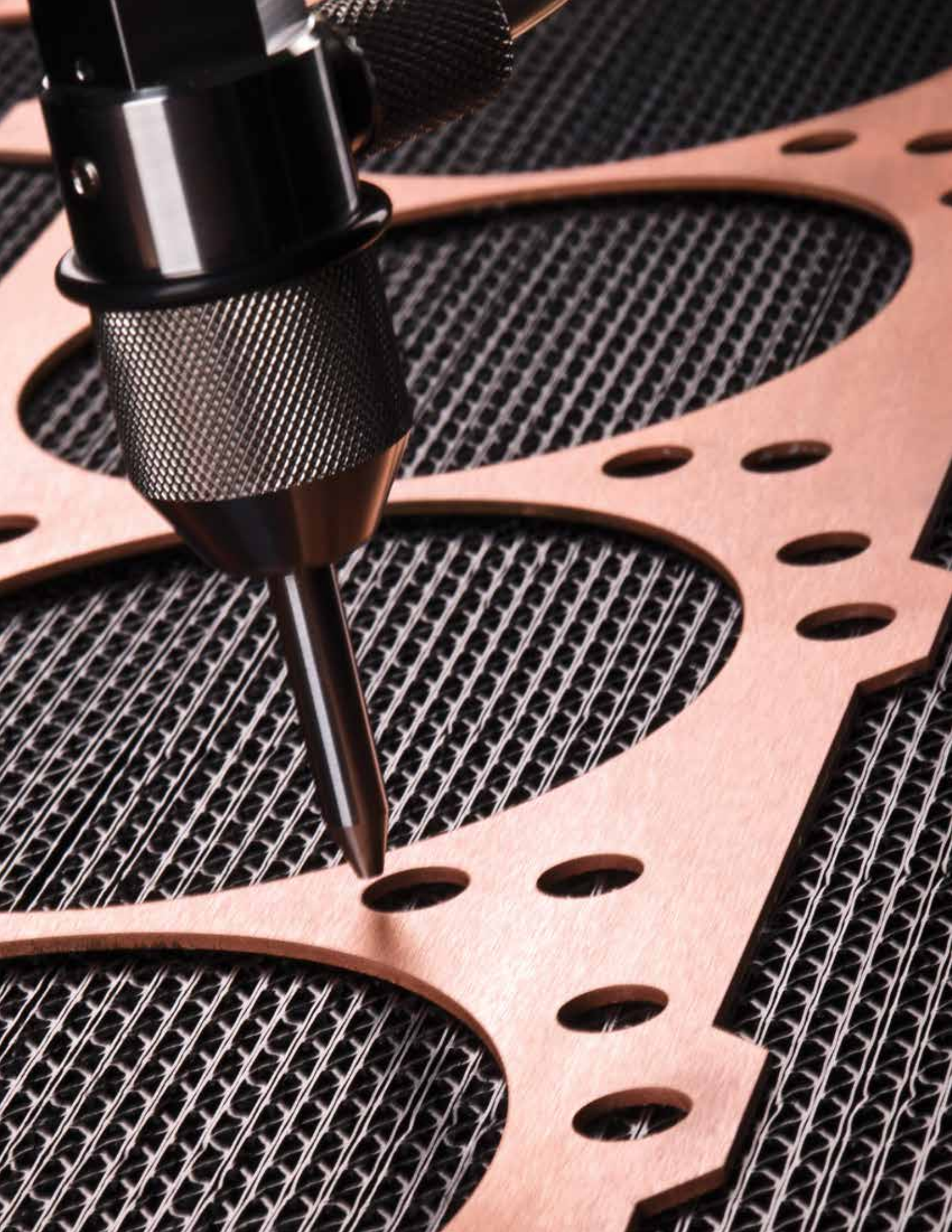
3. Align the plate

The CutPro Wizard guides the operator through a step-by-step process of aligning the plate.



If the operator needs help, photos and consumable change instructions are available on the CNC.

Hypertherm's instruction manuals for the CNCs and HyPrecision Waterjet pumps are all available on the CNC. Available in multiple languages, these support tools help the operator and maintenance teams maximize the performance of the cutting machine.



Step 3: Produce results

Optimized cut quality, productivity and operating cost equals greater profitability

Hypertherm's nesting software, CNC and HyPrecision Waterjet pumps have over forty-five years of cutting innovation and process knowledge built into them. Our products are designed to work together seamlessly, making it easy to optimize cut quality, parts per hour and cost per part.

Optimize cut quality

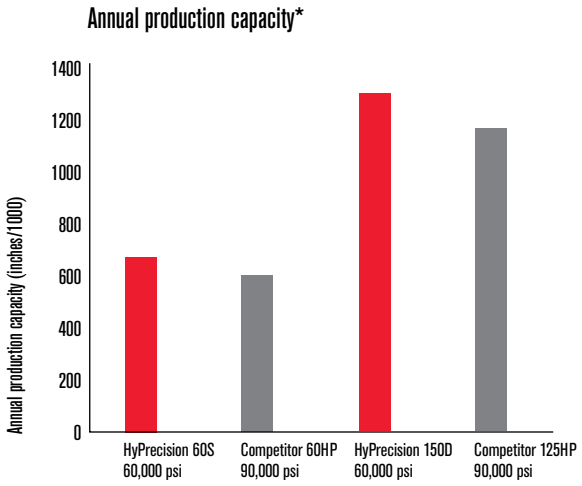
Hypertherm's nesting software, CNC, and HyPrecision Waterjet pumps provide:

- Automatically applied cutting techniques to ensure consistently optimized quality.
- Hypertherm's Integrated Cutting Solutions for waterjet cuts fine-feature parts with superior quality and consistency, reducing part to part variability as well as the need for secondary operations.

Waterjet performance: increased capability and productivity

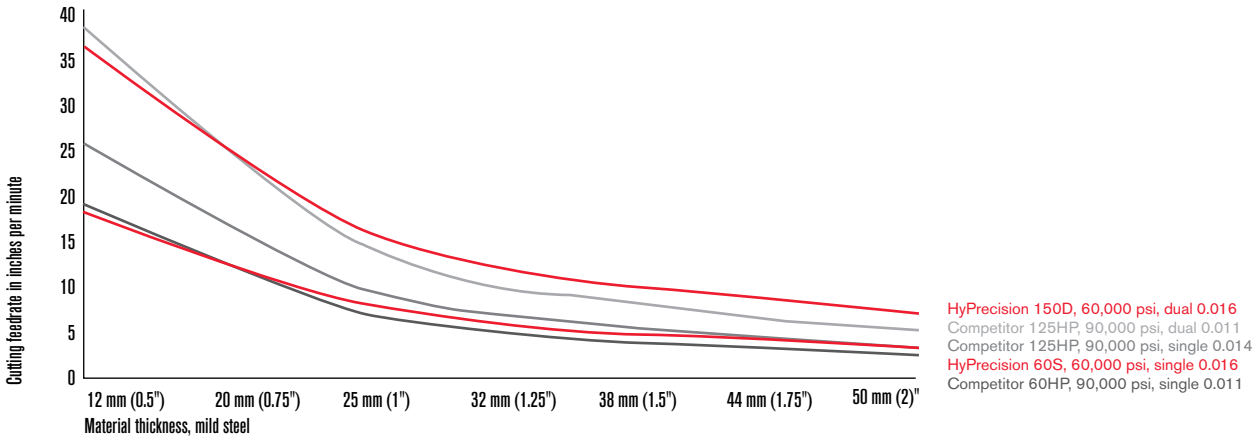
Precise and repeatable fine feature cutting:

- A HyPrecision Waterjet produces excellent cut quality with low cut edge angularity, no heat-affected zone, small kerf and virtually dross-free cutting. With a very narrow kerf, waterjet produces excellent fine feature cutting and thickness and material flexibiity that is unmatched by any other cutting technology.
- Hypertherm offers a tightly integrated waterjet cutting solution including off-line nesting, CNC and a HyPrecision Waterjet pump designed with embedded cutting process technology for ease of operation, simple, reliable integration and consistent, automatic cutting process optimization that minimizes time-consuming secondary operations.
  - The HyPrecision Waterjet pumps combine fast cutting speeds, rapid process cycling, quick changeovers and high up time to maximize the number of parts produced per hour.
  - Hypertherm's easy to use off-line nesting software coupled with the patented CutPro Wizard on the CNC make job set up extremely fast and easy.



* Based on calculated cut speeds psib 25 mm (1-inch) mild steel

Speed rate comparisions 60,000 psi vs. 90,000 psi



Proven reliability, on-board diagnostics, maximize uptime: Built-in expertise

During development Hypertherm systems endure rigorous reliability testing procedures that are equivalent to years of use in extreme operating environments. Most equipment is subjected to a wide range of temperatures, humidity levels, vibration, electrical noise, dust and incoming voltage to ensure that the products are extremely robust.

- Hypertherm's HyPrecison Waterjet cutting systems (including the pump, Advanced Intensifier Technology™ and cutting head) have been designed, manufactured and tested as a complete system to ensure reliability.
- With a background as originally users of waterjet cutting systems, then developing parts and consumables for waterjets from many different manufacturers, to ultimately designing Hypertherm's HyPrecision Waterjet cutting systems, our engineers have embedded a wealth of experience and waterjet industry best practices in Hypertherm's waterjet offering.
- During development Hypertherm systems endure rigorous reliability testing procedures that are equivalent to years of use in extreme operating environments.
- Hypertherm's preventive maintenance and troubleshooting tips are available on the CNC for all of our equipment (CNC and HyPrecision Waterjet pumps). This makes vital system information easily accessible when you need it.
- Hypertherm CNCs include built-in diagnostic tools specifically designed for use with HyPrecision Waterjet pumps. In addition, table components can be diagnosed from the CNC, in-person or remotely.
- Hypertherm's AIT (Advanced Intensifier Technology) with its practical approach to engineering and its unique intensifier design offers many advantages like simplified access to seals and plunger, extended component life, easy and quick maintenance, smooth and more reliable shifting, reliable high pressure ends and extended seal life resulting in a more consistent performance, superior cut quality, better reliability and more up time.
- AIM (Advanced Intensifier Monitoring) is Hypertherm's patent pending real time visualization tool for viewing the overall health of your intensifier(s). Easy to understand icon based graphics guide the operator through the steps necessary to operate and maintain the pump. Quick touch maintenance logging.
- Hypertherm Waterjet Mobile Assistant – Ethernet and web based interface delivers remote access to systems and maintenance performance from any computer or mobile device.

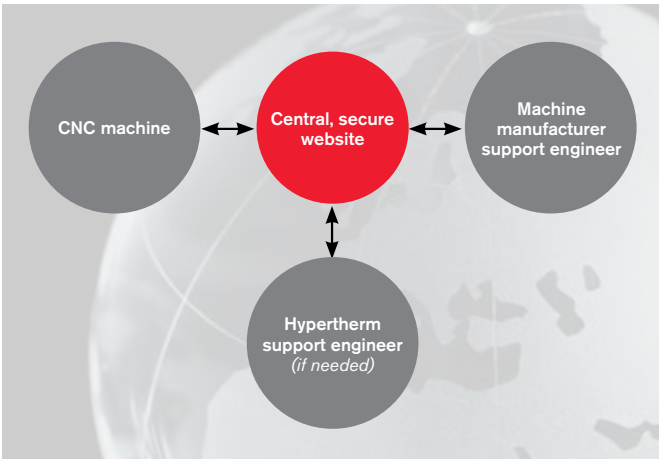
System diagnostics over the Internet: Remote Help

Remote Help is an Internet based tool that allows your table manufacturer and Hypertherm to be virtually in your factory within minutes. Part program, CNC, THC, waterjet pumps, and cutting table motion diagnosis and repair can often be accomplished without an on-site visit. Hypertherm's Remote Help utility allows cutting system diagnostics over the Internet to help avoid costly downtime.

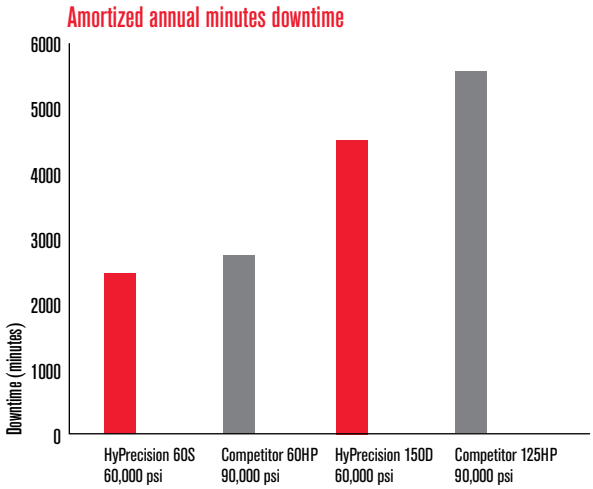
This means that cutting machines can be up and running quickly without costly travel and wait time.

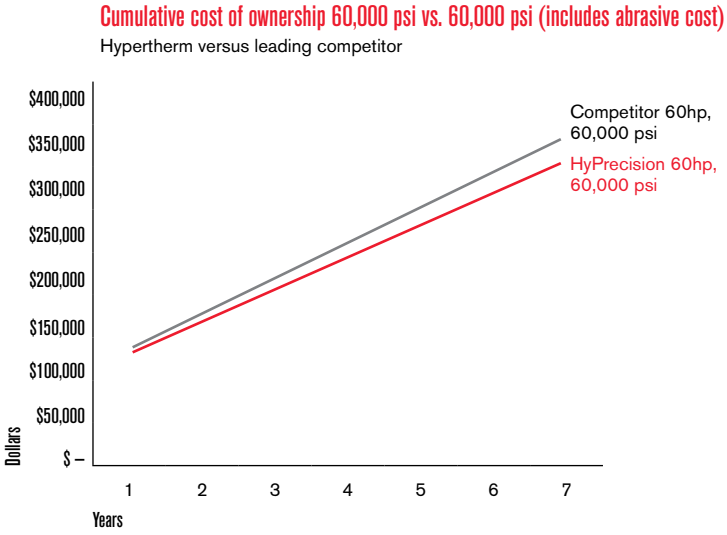
Remote Help features include:

- Fast and secure connectivity
- Safe remote access to the CNC to view and modify setups
- Secure and rapid transfer of files
- Multiple parties can join the same session
- Ability to conduct HyPrecison Waterjet pump diagnostics remotely
- Useful for technical training



Remote Help communication structure





System components

Nesting software

ProNest®

Computer numerical controllers (CNCs)

EDGE® Pro Ti

MicroEDGE® Pro

EDGE® Pro

Waterjet systems

HyPrecision™ Waterjet

DiaLine head

Reverse osmosis systems

Abrasive pot

Abrasive regulator

High pressure tubing and connectors

To learn more about these products go to www.hypertherm.com/waterjet

Nearly 50 years of cutting excellence

At Hypertherm, our sole focus is cutting. Every Associate – from our engineers to our manufacturing and service teams – is completely focused on providing our customers with the best cutting solutions in the industry. It's a mission stretching back nearly 50 years to our first industrial cutting patent. Today, our patent wall continues to expand as we innovate tirelessly to introduce new plasma, laser and waterjet technologies and services that will help you achieve optimal cutting outcomes that support your business objectives. 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. No matter what you cut, where you cut, or how you cut, we are here to guide you toward the cutting solution that is right for you.

100% employee ownership

Hypertherm, we aren't just employees: we're all owners. Ownership is a powerful motivator that ensures our customers – not investors – 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.

Worldwide presence and strength

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

Key elements of the Hypertherm formula include:

- Dedicated associates concentrating on cutting technology
- Regional sales, customer service and technical service for local support
- Broad application experience and proven results
- Complete product line solutions for your cutting needs
- Commitment to customer-centered product design, service and support.

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.

895820

Greener Cuts™

Hypertherm®

Cut with confidence®