

Hypertherm®



10 things you might not know about plasma



If you have not looked at plasma in the past few years, you should. Manufacturers have made huge strides in terms of cut quality, cut speed, operating cost, and ease of use leading to better productivity and profitability. Here are 10 things you might not know about today's new X-Definition™ plasma.

1. Smoother surface edges than fiber laser.

When cutting material thicker than 10 mm (3/8"), X-Definition plasma produces parts with edges that are smoother than fiber laser cut parts. See our [cut samples](#) showing the finish on mild steel, stainless, and aluminum.

2. Tolerances thinner than a pencil lead.

In addition to smoother cut edges, X-Definition plasma on a high-quality cutting machine, is capable of ISO 9013 Class 1 and 2 tolerances and ISO 9013 Range 2 and 3 cut quality for tolerances of around 0.5 mm (0.020").

3. Cut speeds that beat out laser.

At 170 amps, X-Definition plasma can cut 10 mm (3/8") material two times faster than a 4 kW fiber laser. Increase the amperage and material thickness and this gap gets even wider.

4. Ability to cut any metal.

Whether cutting mild steel, stainless, aluminum, brass, copper, or something else, X-Definition plasma can cut it. In addition, plasma easily cuts rusty or "dirty" metal, which poses problems for fiber laser.

5. Bolt-ready holes with minimal taper, ding, or divot.

When it comes to hole cutting, plasma has always had two large issues. It has always created a severe taper in which the bottom of the hole was much smaller than the top. In addition, plasma left notches inside the hole called a ding or divot. Both issues made dropping a bolt through a plasma cut hole impossible. Happily, both those issues are now solved with True Hole®, allowing today's plasma to cut bolt-ready holes with 1:1 and 2:1 diameter-to-thickness ratios.

6. Built in Wi-Fi and other smart features.

Wi-Fi capability enables connectivity to your desktop, tablet, or smart phone for convenient system monitoring, process set up, and multiple system tracking. Sensors in the power supply deliver refined diagnostic codes and significantly enhanced system information to reduce troubleshooting time and provide proactive data to improve overall optimization.

7. Lower capital cost than laser.

A complete X-Definition plasma system mounted on a high-quality cutting machine and capable of cutting 25 mm (1") at speeds of more than 1,900 mm/min (75 ipm) would likely cost somewhere between \$175,000 and \$225,000. A comparable laser system would easily cost three to four times that depending on type (CO₂ or fiber) and power level.

8. Fast and easy set-up when cutting parts with beveled edges.

Better integration between the software and plasma makes the days of trial and error during bevel set up a thing of the past. Today's plasma systems do the work for you allowing you to both cut and make the most common bevel types right from your plasma table.

9. Ability to mark parts.

Long gone are the days of needing a separate system just for marking. Today's plasma is much more adept at marking workpieces with bend marks, hole locations, or part numbers. You can even mark with the same consumables used to cut. By varying your torch speed and current level you can alternate between shallow and deep marks.

10. Today's plasma is profitable.

A common thread in the technological advancement of plasma cutting since its invention is the continuous reduction in the cost per meter (or foot) of metal cut. This phenomenon is greatly accelerated with X-Definition plasma thanks to a combination of faster cut speeds, longer consumable life, improved cut quality, and greater cutting consistency.

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