



## Product Announcement

**Date:** July 2005

### HyPerformance™ Plasma HPR260 now available

**Summary:** Hypertherm is pleased to launch the continuation of the ground-breaking HyPerformance Plasma metal cutting system. The HyPerformance Plasma HPR260 is a mechanized metal cutting solution that delivers incomparable HyDefinition® cut quality at half the operating costs.

**Superior Cut Quality and Consistency** – HyPerformance Plasma cuts fine feature parts with superior quality and consistency – eliminating cost of secondary operations.

**Maximized Productivity** – HyPerformance Plasma combines fast cutting speeds, rapid process cycling, quick changeovers, and high reliability to maximize productivity.

**Minimized Operating Cost** – HyPerformance Plasma lowers your operating cost and improves your profitability.

**Unmatched process flexibility** – HyPerformance Plasma, cuts, bevels, and marks a variety of metals, thick and thin – making it the one system that does it all.

By incorporating Hypertherm's proven HyDefinition and LongLife® technologies, HyPerformance Plasma boosts overall performance, productivity, profitability and flexibility. It provides HyDefinition's virtually dross-free cut quality but does it with greater speed and up to two times longer consumable life. Its exceptional cut quality is consistent across a full range of plate thickness up to 64 mm.

HyPerformance Plasma provides maximum flexibility with up to 64 mm mild steel edge-start cutting with production-pierce capability of 32 mm. In addition, marking and cutting are performed with the same consumables.

Unparalleled reliability gives HyPerformance Plasma systems higher "up-time" and lower overall maintenance costs. HyPerformance Plasma systems have been subjected to thousands of hours of reliability testing in Hypertherm's own laboratories. They achieve a 100% duty cycle in operating environments from 0° C to 40° C with 95% humidity.

The system's simple design incorporates fewer parts and an easy-to-use interface. HyPerformance Plasma systems have CSA, NRTL/C, CCC and CE certification. Hypertherm is also ISO 9001:2000 certified. Hypertherm's full-system warranty includes complete coverage for two years on all system components and one year on the torch.

## Specifications CE, CCC, CSA

Input voltages	VAC	Hz	Amps
	200/208	50 – 60	149/144
	240	60	124
	400	50 – 60	75
	440	60	68
	480	60	62
600	60	50	
Output voltage	175 VDC		
Output current	260 A		
Duty cycle	100% at 40°C at 45.5kW		
Maximum OCV	311 VDC		
Dimensions	115 cm (45.1") H, 82 cm (32.1") W, 119 cm (46.7") L		
Weight	567 kg (1250 lbs)		
Gas supply	O <sub>2</sub> , N <sub>2</sub> , F5*, H35**, Air		
Plasma gas	N <sub>2</sub> , O <sub>2</sub> , Air		
Shield gas	8.3 bar (120 psi) Manual gas console 8.0 bar (115 psi) Automatic gas console		
Gas pressure			

\* F5 = 95% N<sub>2</sub>, 5% H<sub>2</sub>  
\*\* H35 = 35% H<sub>2</sub>, 65% Ar

## CNC-controlled gas delivery

**HyPerformance gas control makes it easier for your operator to achieve consistent results.**

- CNC system control simplifies set-up of all plasma cutting parameters.
- Automatic gas console monitors and controls gas flows and pressures close to the torch, for improved process consistency.
- Automatic gas console enables rapid switching from one gas cutting process to another or from cutting to marking.



## Operating data

**Production cutting capacity (piercing) – mild steel** 32 mm (1¼")  
**Maximum pierce capacity – mild steel** 32 mm (1¼")  
**Maximum cutting capacity (edge start) – mild steel** 64 mm (2½")

Material	Current (amps)	Thickness (mm)	Approximate cutting speed (mm/min.)	Thickness (inches)	Approximate cutting speed (ipm)
Mild steel O <sub>2</sub> plasma O <sub>2</sub> shield	30	.5	5355	.018	215
		1	3615	.036	155
		3	1160	.135	40
		6	665	¼	25
O <sub>2</sub> plasma Air shield	80	3	6145	.135	180
		6	3045	¼	110
		10	1810	⅜	75
		20	545	¾	25
O <sub>2</sub> plasma Air shield	130	6	4035	¼	150
		10	2680	⅜	110
		12	2200	½	80
		25	550	1	20
O <sub>2</sub> plasma Air shield	200	6	5250	¼	200
		12	3060	½	115
		20	1575	¾	65
		25	1165	1	45
		50	255	2	10
O <sub>2</sub> plasma Air shield	260	10	4440	⅜	180
		12	3850	½	145
		20	2170	¾	90
		32	1135	1¼	45
		64	195	2½	8
Stainless steel F5* plasma N <sub>2</sub> shield	45	1	5740	.036	240
		2.5	2510	.105	90
		6	845	¼	30
F5* plasma N <sub>2</sub> shield	80	4	2180	.135	105
		6	1225	¼	45
		10	560	⅜	25
H35** plasma N <sub>2</sub> shield	130	10	980	⅜	40
		12	820	½	30
		25	260	1	10
H35** plasma N <sub>2</sub> shield	200	10	1620	⅜	65
		12	1450	½	55
		15	1200	⅝	45
		20	820	¾	35
H35** plasma N <sub>2</sub> shield	260	12	1710	½	65
		20	1085	¾	45
		25	785	1	30
		50	270	2	10
Aluminum Air plasma Air shield	45	1.5	4420	.048	220
		4	2575	.135	110
		6	1690	¼	60
H35** plasma N <sub>2</sub> shield	130	12	1455	½	55
		20	940	¾	40
		25	540	1	20
H35** plasma N <sub>2</sub> shield	200	10	4400	⅜	180
		12	3800	½	140
		20	1450	¾	70
H35** plasma N <sub>2</sub> shield	260	12	5160	½	190
		20	2230	¾	90
		50	390	2	14

Note: Take care in comparison: Competitors often show maximum cutting speeds, rather than speeds that deliver the best cuts, as shown above. Cut speeds listed above deliver best cut quality, but cut speeds can be up to 50% faster.

The operating data chart does not list all processes available for the HPR260. Please contact Hypertherm for more information.

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# HyPerformance™ Plasma HPR260™

*Superior cut quality and consistency*

*Maximized productivity*

*Minimized operating costs*

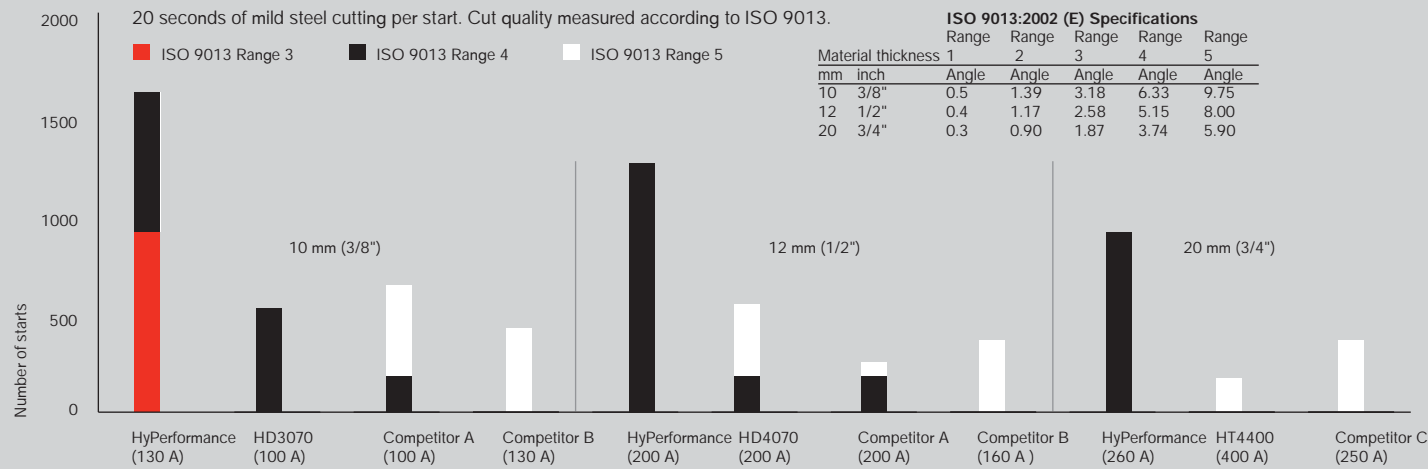
*Unmatched process flexibility*

- Hypertherm is ISO 9001:2000 certified.

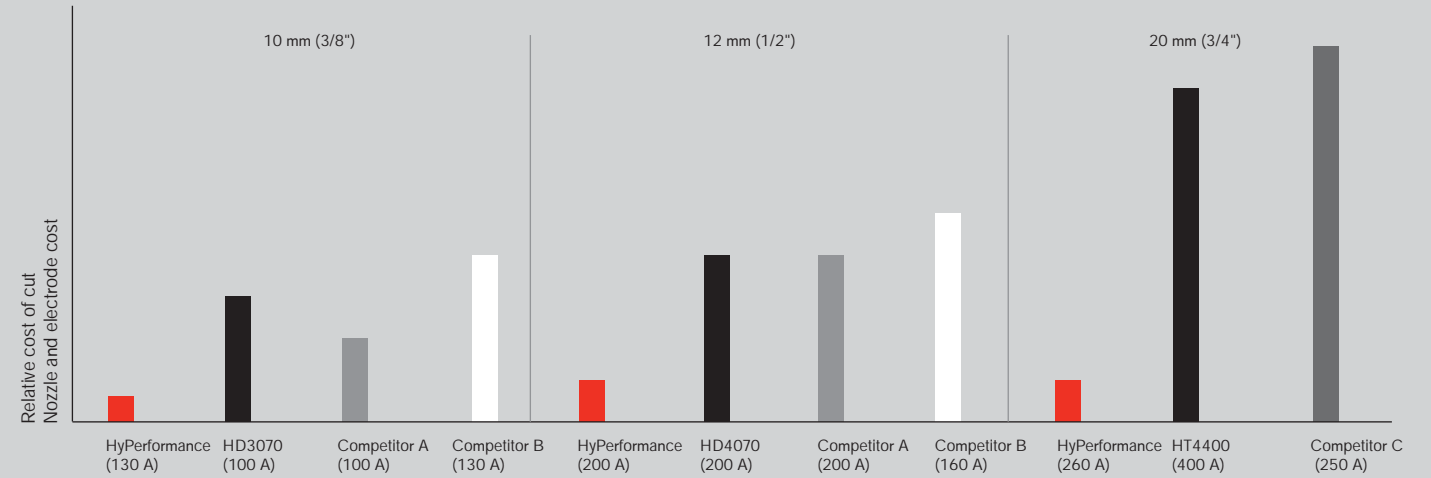
- Hypertherm full-system warranty; complete coverage for two years on all system components and one year on the torch.

# Hypertherm®

HyPerformance Plasma provides more consistent cut quality and longer consumable life than the competition.



HyPerformance HPR260's operating cost is less than half the cost of the competition.



# HyPerformance: the next generation of mechanized plasma

## Superior cut quality and consistency

HyPerformance Plasma cuts fine-feature parts with superior quality and consistency – eliminating cost of secondary operations.

## Maximized productivity

HyPerformance Plasma combines fast cutting speeds, rapid process cycling, quick changeovers, and high reliability to maximize productivity.

## Minimized operating cost

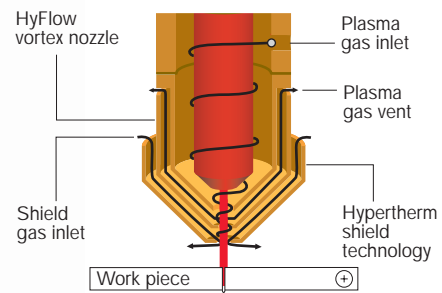
HyPerformance Plasma lowers your operating cost and improves your profitability.

## Unmatched process flexibility

HyPerformance Plasma cuts, bevels, and marks a variety of metals, thick and thin, making it the one system that does it all.

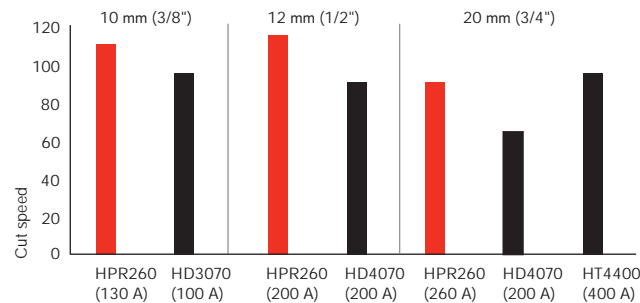


### Patented HyDefinition cutting for consistent quality



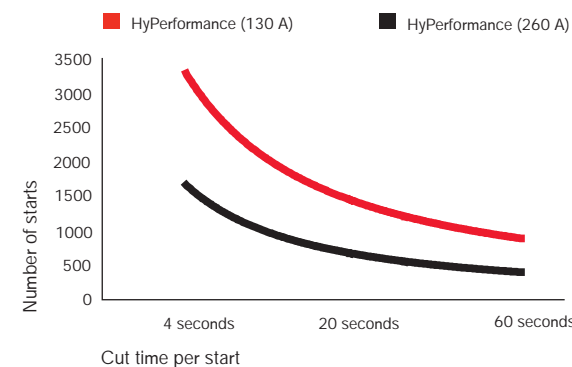
- Patented HyDefinition® technology aligns and focuses the plasma arc, improving arc stability and energy for more powerful precision cutting.
- Narrow kerf width enables fine feature cutting and minimizes material waste.
- Robust, dross-free cutting minimizes part clean-up.
- Repeatable cut-edge quality eliminates scrap and rework.
- Improved hole and internal shape cuts rival laser quality at lower cost.
- New improved stainless-steel process results in mirror-like finish.

### HyDefinition cutting up to 38% faster



- HyPerformance delivers power with HyDefinition precision for production cutting at unprecedented speeds: cut speeds approach competitive 400-amp systems.
- Cut-to-cut cycle time (downtime between cuts) reduced to less than 1.1 seconds: lower than any competitor tested.
- Quick-disconnect torch and intuitive user interface reduce set-up time.
- Long consumable life and high system reliability maximize productive "arc-on" time.

### Longer consumable life



- Patented LongLife® technology significantly improves consumable life.
- Exceptional cutting speeds produce more finished parts per set of consumables.
- HyPerformance consumables are engineered for higher quality with lower cost.



- HyPerformance cuts carbon steel, stainless steel, aluminum and other metals with HyDefinition precision.
- HPR260 puts the power to the plate with speed and thickness capability of competitive 400-amp systems.
- Virtually dross-free cutting from gauge to 32 mm (1-1/4").
- Maximum cutting thickness up to 65 mm (2-1/2").
- Bevel cutting up to 45 degrees.
- Marking and cutting with the same consumables.

Hypertherm has led the advancement of plasma cutting technology for over 35 years and is the world's foremost manufacturer of plasma arc cutting equipment. By continually delivering breakthrough advances in cut quality, productivity and operating costs, Hypertherm reaffirms and extends its position as the world's leading supplier of advanced high-temperature metal cutting technology.



# Hypertherm®

## HyPerformance™ Plasma HPR260™

### Consumables



### Mild steel

	Shield cap	Shield	Retaining cap	Nozzle	Swirl ring	Electrode
30A		220194	220313	220193	220180	220192
80A	220173	220189	220176	220188	220179	220187
130A		220183	220176	220182	220179	220181
200A		220356	220355	220354	220353	220352
260A	220398	220440	220433	220439	220436	220435

### Stainless steel

	Shield cap	Shield	Retaining cap	Nozzle	Swirl ring	Electrode
45A		220202	220304	220201	220180	220308
80A	220173	220338	220304	220337	220179	220339
130A		220198	220304 (H35) 220176 (N <sub>2</sub> )	220197	220179	220307
200A		220345	220344	220343	220342	220307
260A	220398	220407	220344	220406	220405	220307

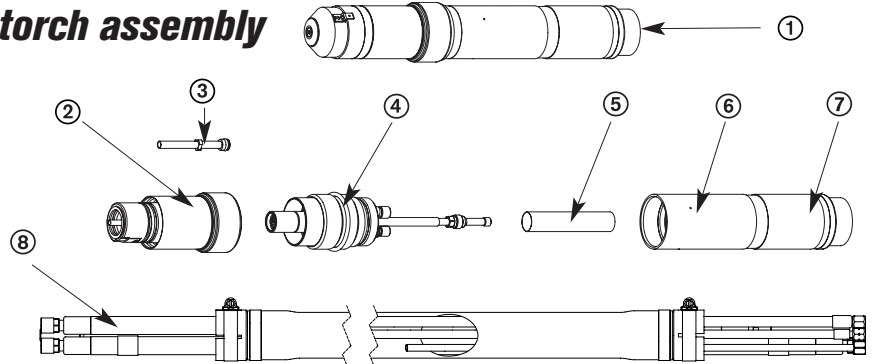
### Aluminum

	Shield cap	Shield	Retaining cap	Nozzle	Swirl ring	Electrode
45A		220202	220176	220201	220180	220308
130A	220173	220198	220304 (H35) 220176 (Air)	220197	220179	220307 (H35) 220181 (Air)
200A		220345	220347	220346	220342	220307
260A	220398	220407	220344	220406	220405	220307

# HPR260 consumables

MATERIAL	CONSUMABLE DESCRIPTION	260 AMPS	200 AMPS	130 AMPS	80 AMPS	45 AMPS	30 AMPS
Mild steel	Electrode	220435	220352	220181	220187	-----	220192
	Swirl ring	220436	220353	220179	220179	-----	220180
	Nozzle	220439	220354	220182	220188	-----	220193
	Inner retaining cap	220433	220355	220176	220176	-----	220313
	Shield	220440	220356	220183	220189	-----	220194
	Shield cap	220398	220398	220173	220173	-----	220173
Stainless steel	Electrode	220307	220307	220307	220339	220308	-----
	Swirl ring	220405	220342	220179	220179	220180	-----
	Nozzle	220406	220343	220197	220337	220201	-----
	Inner retaining cap	220344	220344	220304 (H35)	220304	220304	-----
	Shield	220407	220345	220198	220338	220202	-----
	Shield cap	220398	220398	220173	220173	220173	-----
Aluminum	Electrode	220307	220307	220307 (H35)	-----	220308	-----
	Swirl ring	220405	220342	220181 (Air)	-----	-----	-----
	Nozzle	220432	220346	220179	-----	220180	-----
	Inner retaining cap	220344	220347	220197	-----	220201	-----
	Shield	220407	220345	220304 (H35)	-----	220176	-----
	Shield cap	220398	220398	220176 (Air)	-----	-----	-----
		220407	220345	220198	-----	220202	-----
		220398	220398	220173	-----	220173	-----

## HyPerformance Plasma HPR260 torch assembly



HPR260 torch

ITEM NO.	PART NO.	DESCRIPTION
1	128818	HPR torch assembly
2	220162	Quick-disconnect torch
3	220340	Water tube with O-Ring
4	220163	Quick-disconnect receptacle
5	024249	Insulating sleeve
6	220164	Torch mounting sleeve
7	220232	Torch mounting sleeve assembly (includes item number 8)
	128879	Torch kit: Bullet plugs, O-Rings, water tube and seal
	128880	Quick-disconnect kit: O-Ring and connector
8	128784	25' (7.5 m) Leads
8	128785	50' (15 m) Leads

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New HyPerformance Plasma is a mechanized metal cutting system that delivers incomparable HyDefinition® cut quality at half the operating costs. By incorporating Hypertherm's proven HyDefinition and LongLife® technologies, HyPerformance Plasma boosts overall performance, productivity and profitability. It provides HyDefinition's virtually dross-free cut quality but does it with greater speed and up to two times longer consumable life. Its exceptional cut quality is consistent across a full range of plate thickness.

### Frequently asked questions:

#### How is the HPR260 system different from the HPR130 system?

The HPR130 and HPR260 share many components, including the torch and lead set, start circuit, gas consoles (either manual or automatic), consumables from 30A to 130A, cut charts for 30A to 130A processes. The only difference between the two systems is the power supply and the input current and DC cables are larger size for the HPR260. All other components are identical. The process charts, consumables, cut quality, etc are identical between the two systems for 30A to 130A cutting.

#### Is HyPerformance the same as HyDefinition?

In cut-quality characteristics, HyPerformance is a HyDefinition system. Due to advancements in consumables, torch and gas delivery design Hypertherm engineers have made HyDefinition cutting more consistent with HyPerformance.

#### What is F5?

F5 is a pre-mix gas of 5% hydrogen and 95% nitrogen. F5 is used for cutting thin stainless steel and in combination with Hypertherm consumables design, provides superior thin stainless cut quality.

#### What is ISO 9013?

ISO 9013 is a standard from the International Standards of Organization that provides a means of classifying thermal cut parts. The standard is available from ISO and classifies many aspects of thermal cut quality. Hypertherm is using ISO9013 as an independent means of comparing Hypertherm cut angularity tolerance to competitive systems tested in Hypertherm labs.

#### How does Hypertherm achieve 2X consumable life with HyPerformance?

Hypertherm engineers have made another break through in extending consumable life. This time, using LongLife technology, Hypertherm has doubled consumable life over previous Hypertherm systems by improving consumable design and gas delivery. The patent-pending water tube/electrode design extends electrode life. In addition, much work has been done to improve gas delivery by dramatically reducing gas variability, which also extends consumable life. Finally, "six sigma" methodologies were used in the design and manufacture of all parts, providing better tolerance and stability of parts.

#### What is better about stainless steel cutting?

Hypertherm now offers what may be the best stainless steel cut quality in the industry. The F5 process for thin stainless allows for clean, shiny surface finish with minimal dross. Show your customers cut samples from the new process and they will be pleasantly surprised at Hypertherm's stainless steel cut capabilities.

#### What tolerance can HyPerformance hold?

The overall tolerance of the complete cutting solution depends upon a number of factors including height control, drive capability, software, controller, plasma system and more. Hypertherm testing proves that HyPerformance Plasma consistently provides cut quality within ISO9013 range 3 (20 second life test results on (3/8" 10mm) mild steel). In our testing we hold a number of factors constant to allow for a true reflection of HyPerformance Plasma cutting capability. Results will vary depending upon the quality of the total solution, but with an optimal set-up of the Hypertherm suite of products (Hypertherm Automation CNC, Hypertherm height control, and HyPerformance Plasma) on a dual-side drive, rigid-frame table or dual side-drive, we are confident field results will match laboratory results.

### **What is the difference between virtually dross-free cutting capacity and production pierce capacity?**

Virtually dross-free cutting capacity represents the thickness range where virtually dross-free cuts are expected and consumable life will match the life curve. Production pierce capability represents the thickness range where piercing with 100% duty cycle is still attainable, but dross is likely and consumable life may be reduced by 20% or so.

### **Can I mark with HyPerformance Plasma?**

With HyPerformance Plasma marking and cutting can be done without changing consumables. The mark provided by the 30A mild steel consumables looks slightly different than the mark generated with the 260A mild steel set of consumables. We suggest you try the marking process with all consumables sets to determine which consumable set provides the best mark for the application.