

# Hypertherm®

## powermax 85®

**Handheld or mechanized plasma system for cutting and gouging metal**

Capacity	Thickness	Cut speed
	Handheld cut	
Recommended	1" (25 mm)	20 ipm (500 mm/min)
	1-1/4" (32 mm)	10 ipm (250 mm/min)
Severance	1-1/2" (38 mm)	5 ipm (125 mm/min)
Pierce	3/4" (19 mm)*	
* Pierce rating for handheld use or with automatic torch height control		
Metal removal rate	Groove profile	
Gouge capacity		
10.7 lbs. (4.8 kg) per hour	.14" (3.5 mm) D x .26" (6.6 mm) W	

### Key power supply advantages

- Smart Sense™ technology automatically adjusts the gas pressure according to cutting mode and torch lead length for optimal performance.
- Boost Conditioner™ circuit (on CSA models) improves performance on low-line voltage, motor generators, and fluctuating input power.
- FastConnect™ torches, CNC interface, and four work lead styles increase versatility for handheld and mechanized use.
- Simplified control panel with LCD screen for easy operation.

### Key torch advantages

- 15° and 75° Duramax™ series hand torches enable operators to easily select the right tool for the job. The handle is more heat resistant and performs at least five times longer in high impact tests than previous torches.
- Standard and short-barreled Duramax series machine torches allow a wide variety of mechanized applications with X-Y tables, track systems, pipe and robotic cutting systems.
- Conical Flow™ nozzle increases arc energy density for superior cut quality with little dross.
- Patent pending shield reduces dross buildup and enables smoother drag cutting for a better cut.



Duramax torch styles

H85 75° hand torch



H85s 15° hand torch

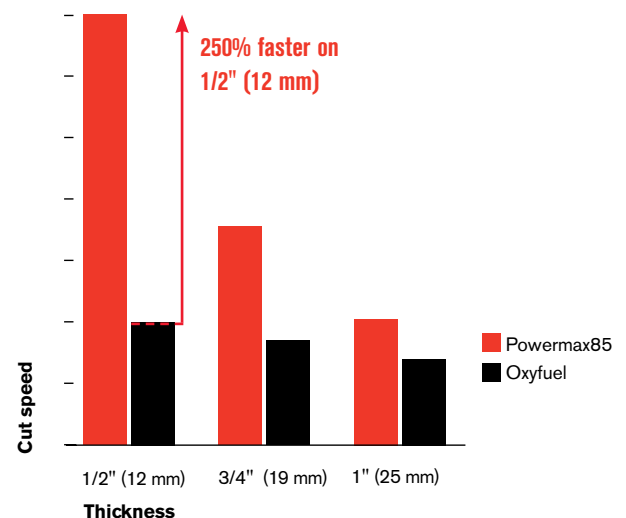


M85 full-length machine torch



M85m mini-machine torch

### Relative cut performance on mild steel



## Specifications

<b>Input voltages</b>	CSA 200 – 480 V, 1-PH, 50/60 Hz 200 – 600 V, 3-PH, 50/60 Hz CE 400 V, 3-PH, 50/60 Hz
<b>Input current @ 12.2 kW</b>	CSA 200/208/240/480 V, 1-PH 70/68/58/29 A 200/208/240/480/600 V, 3-PH 42/40/35/18/17 A CE 380/400 V, 3-PH 20.5/19.5 A
<b>Output current</b>	25 – 85 A
<b>Rated output voltage</b>	143 VDC
<b>Duty cycle @ 40° C (104° F)</b>	CSA 60% @ 85 A, 230 – 600 V, 3-PH 60% @ 85 A, 480 V, 1-PH 50% @ 85 A, 240 V, 1-PH 50% @ 85 A, 200 – 208 V, 3-PH 40% @ 85 A, 200 – 208 V, 1-PH 100% @ 66 A, 230 – 600 V, 1/3-PH CE 60% @ 85 A, 380/400 V, 3-PH 100% @ 66 A, 380/400 V, 3-PH
<b>Open circuit voltage (OCV)</b>	CSA 305 VDC CE 270 VDC
<b>Dimensions with handles</b>	19.7" (500 mm) D; 9.2" (234 mm) W; 17.9" (455 mm) H
<b>Weight with 25' (7.6 m) torch</b>	CSA 71 lbs (32 kg) CE 62 lbs (28 kg)
<b>Gas supply</b>	Clean, dry, oil-free air or nitrogen
<b>Recommended gas inlet flow rate / pressure</b>	Cutting: 400 scfh, 6.7 scfm (189 l/min) @ 85 psi (5.6 bar) Gouging: 450 scfh, 7.5 scfm (212 l/min) @ 70 psi (4.8 bar)
<b>Input power cable length</b>	10' (3 m)
<b>Power supply type</b>	Inverter – IGBT

## Engine-driven generator operation

Engine drive rating (kW)	System output (amps)	Performance (arc stretch)
20	85	Full
15	70	Limited
15	60	Full
12	60	Limited
12	40	Full
8	40	Limited
8	30	Full

## Cut chart

Material	Thickness		Current (amps)	Maximum cut speed <sup>1</sup>	
	(inches)	(mm)		(ipm)	(mm/min)
Mild steel	10 GA	3	45	205	5000
	¼	6	85	200	5330
	½	12	85	70	2000
	¾	19	85	36	920
	1	25	85	21	560
Stainless steel	¼	6	85	205	5850
	½	12	85	60	1750
	¾	19	85	30	770
Aluminum	1	25	85	18	475
	¼	6	85	215	6200
	½	12	85	85	2400
	¾	19	85	46	1170
	1	25	85	25	670

<sup>1</sup> Maximum cut speeds are the results of Hypertherm's laboratory testing. For optimum cut performance, actual cutting speeds may vary based on different cutting applications. Refer to the operator manual for more details.

# Hypertherm®

## Cut with confidence™

Hypertherm, Powermax, Duramax, Smart Sense, Boost Conditioner, FineCut, FastConnect and Conical Flow are trademarks of Hypertherm, Inc. and may be registered in the United States and/or other countries.

For more information, contact your authorized Hypertherm dealer or visit [www.hypertherm.com](http://www.hypertherm.com).

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## Ordering information

Below are some of the most common system configurations which include a power supply, torch and work cable. Additional configurations are listed on our website.

Input voltages	Handheld systems				Mechanized systems	
	Standard power supply		Power supply with CPC port and selectable voltage ratio		Power supply with CPC port and selectable voltage ratio	
	H85 torch 25' (7.6 m)	H85 torch 50' (15 m)	H85 torch 25' (7.6 m)	H85 torch 50' (15 m)	M85 torch 25' (7.6 m)	M85 torch 50' (15 m)
200 – 600 V CSA <sup>2</sup>	087108	087109	087113	087114	087115	087116
400 V CE <sup>3</sup>	087117	087118	087122	087123	087124	087125

<sup>2</sup> For use in the Americas and Asia, except China.

<sup>3</sup> For use in countries that require CE, CCC or GOST marks.

## Custom configurations (select power supply, torch, work cable and other components)

### Power supply options

	Standard power supply	Power supply with CPC port and selectable voltage ratio	Power supply with CPC port, selectable voltage ratio and serial interface port (RS-485)
200 – 600 V CSA	087067	087104	087105
400 V CE	087068	087106	087107

### Component options

Cable length	Torches				Work cables				Control cables		
	H85	H85s	M85	M85m	Hand clamp	C-style clamp	Magnet	Ring terminal	Remote pendant	CNC spade plug <sup>4</sup>	CNC spade plug <sup>5</sup>
15' (4.5 m)			087092	087097							
25' (7.6 m)	087085	087089	087093	087098	223035	223203	223206	223209	128650	228350	023206
35' (11 m)			087094	087099							
50' (15 m)	087086	087090	087095	087100	223034	223204	223207	223210	128651	228351	023279
75' (23 m)	087087	087091	087096	087101	223033	223205	223208	223211	128652		

<sup>4</sup> For use with automation equipment that requires divided arc voltage.

<sup>5</sup> For use when divided arc voltage is not required.

## Torch consumable parts

Nozzles and electrodes are available in various quantities. Contact your distributor for more information.

Consumable type	Torch type	Amperage	Nozzle	Shield/Deflector	Retaining cap	Electrode	Swirl ring
Drag-cutting	Hand	45	220941	220818	220854	220842	220857
		65	220819				
		85	220816				
Mechanized	Machine	45	220941	220817	220854 or 220953 (Ohmic)	220842	220857
		65	220819				
		85	220816				
Unshielded	Machine	45	220941	220955	220854	220842	220857
		65	220819				
		85	220816				
FineCut®	Hand	45	220930	220931	220854 or 220953 (Ohmic)	220842	220947
	Machine	45		220948			220857
Gouging	Hand		220797	220798	220854	220842	220857
	Machine						



This system meets the RoHS directive restricting the use of lead, mercury, cadmium and other hazardous compounds.



**Engineered and assembled in the USA**

Power supplies have a 3-year warranty and torches have a 1-year warranty.

**ISO 9001:2008**