Hypertherm®

Powermax® family brochure

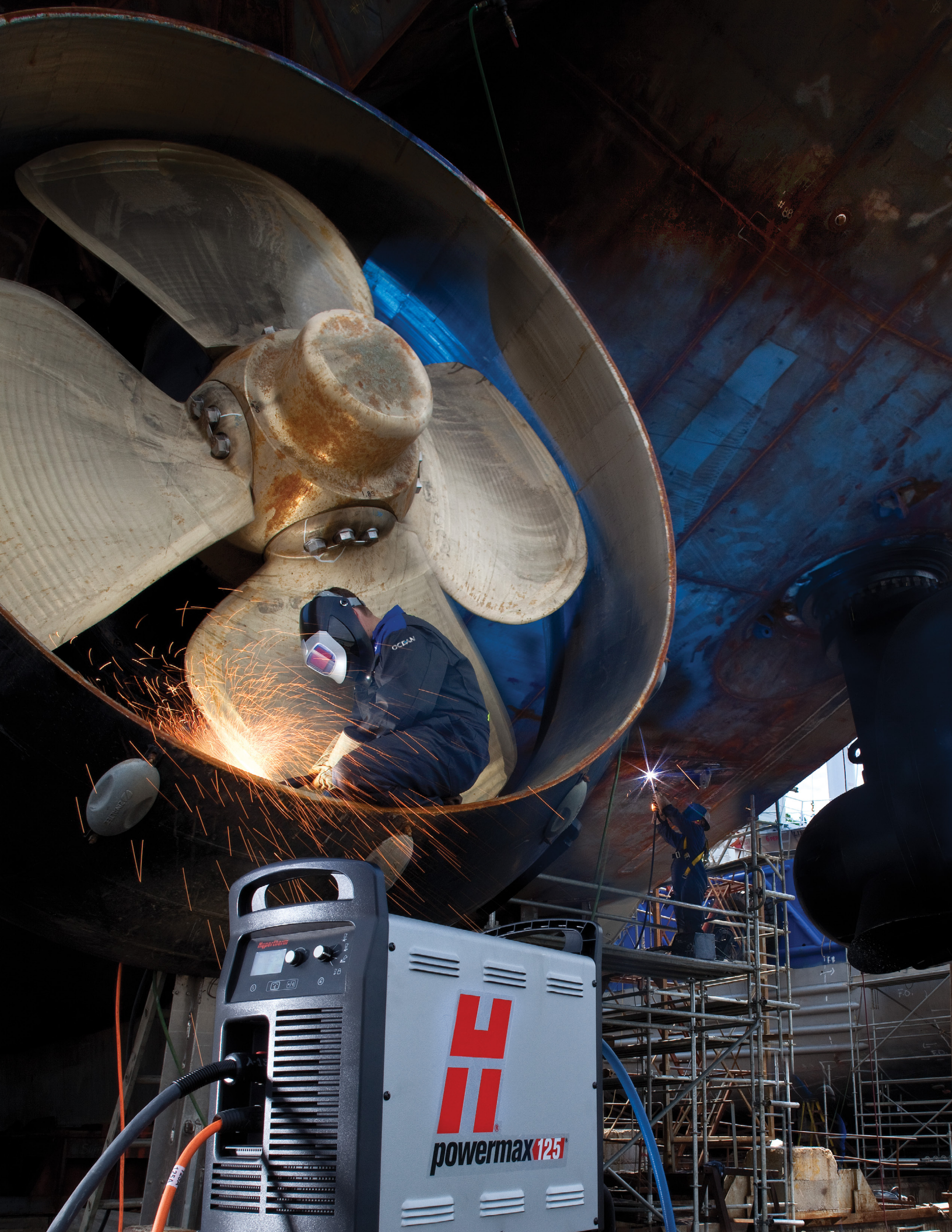
Portable air plasma cutting and gouging systems




Powermax30
Toledo

Contents

5 Understanding plasma technology
5 Why choose Powermax® over oxyfuel?
7 Why choose Powermax over other cutting and gouging systems?
7 Choose the right system
8 Powermax uses
9 Powermax30 AIR
10 Powermax30 XP
11 Powermax45 XP
12 Powermax65
13 Powermax85
14 Powermax105
15 Powermax125
16 System specifications comparison
19 Automated cutting and gouging with Powermax
20 Genuine Hypertherm consumables
22 Cutting guides, Personal protective equipment
24 System accessories
27 50 years of Shaping Possibility®


Hypertherm
powermax125

Understanding plasma technology

Powermax systems cut metal quickly, and cleanly

Plasma, and its intense heat (up to 39,000° F or 22.000° C), is created when gas is ionized by electrical energy. Powermax® systems use plasma to melt metal, and compressed air, nitrogen or F5 gas to blow the molten metal away, leaving a good quality cut edge ready to weld in most cases. Powermax systems are also effective for gouging metal.

Cut or gouge any electrically conductive metal

Whether in a shop, factory, at home or in the field, Powermax systems cut and gouge all metal types and forms. Most models are available with a handheld or machine torch to fit the application.

Operating a plasma system requires:

- AC power source (fixed or generator)
- Compressed air – shop air, portable air compressor or bottled air. Nitrogen and F5 gas are often used for stainless steel
- Safety equipment, including shaded glasses or face shield, gloves, protective clothing and proper ventilation

Why choose Powermax over oxyfuel

Safer

Cutting with a plasma system needs no flammable gasses.

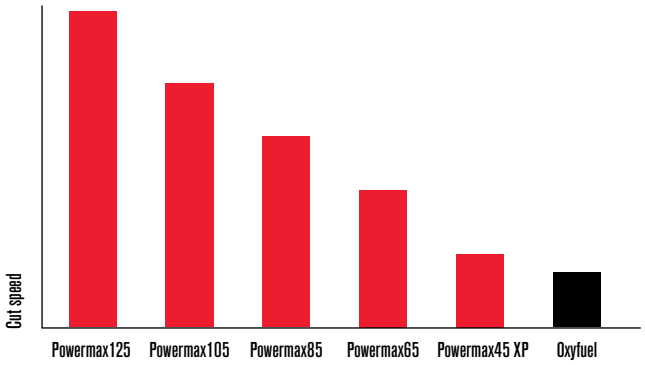
More productive

Much faster cut speeds up to 1-1/2" thick; no preheating needed; a cleaner edge with smaller heat-affected zone (HAZ) requires less grinding of the cut edge.

More versatile

Cuts and gouges all electrically conductive metal including stainless steel and aluminum; easily used with templates, cuts stacked, painted, or rusted metal.

Cut speed comparison on 1/2" mild steel



For more information, refer to product brochures or visit www.hypertherm.com/powermax/


powermax65

Why choose Powermax over other cutting or gouging systems

More productive

Our consumable technology delivers faster speeds and better cut quality to help you do more in less time.

Easier to use

High portability, simple controls and a stable plasma arc make Powermax® systems easy to operate for beginners and experts.

More versatile

With the widest array of torches and speciality consumables, Powermax systems can be configured to address a wide range of applications from extended reach cutting to precision gouging and more.

Lower operating cost

Faster speeds and longer consumable life lower your cost of cutting and gouging metal.

More reliable

Smart design and intense testing during product development and manufacturing keep you up and running.

Confidence

Hypertherm's focus on plasma by our associate-owners, and the proven performance of our global installed base of systems give you confidence that you are buying the best.

To choose the Powermax system that will best suit your long term needs, please consider the following questions

What thickness of metal will you be cutting?

Powermax plasma can cut from sheet metal to 2-1/4". Choose the Powermax system with the recommended capacity for the thickness of metal you expect to cut 80% of the time or more.

Will the cutting or gouging be done by a handheld torch or with an automated machine?

For automated cutting, select a machine-torch compatible Powermax system with interface options for automation equipment including CNC tables, robots, and track cutters.

What electrical service do you use?

Knowing the incoming line voltage, phase and breaker size where the system will be used ensures your electrical service can support the Powermax system you choose.

Will the plasma system be powered by an engine-drive generator?

Each Powermax system requires a minimum kilowatt output to deliver full performance. Refer to page 16 for more operating information using generators.

What is your compressed gas source?

Powermax systems require compressed air, nitrogen, or F5 gas for operation. The gas must be dry and free of contaminants. An optional filter is available to ensure clean and dry gas. Refer to gas flow rate and pressure requirements in the chart on page 16.

Powermax®

Product line overview



		Powermax30 XP	Powermax30 AIR	Powermax45 XP	Powermax65	Powermax85	Powermax105	Powermax125
Cut capacity	**Recommended**	3/8"	5/16"	5/8"	3/4"	1"	1-1/4"	1-1/2"
	Severance	5/8"	5/8"	1-1/8"	1-1/4"	1-1/2"	2"	2-1/4"
	Output range	15–30	15–30	10–45	20–65	25–85	30–105	30–125
	Input phase	Single	Single	Single or three	Single or three	Single or three	Three	Three
Application capabilities	**Mechanized cutting**			●	●	●	●	●
	Drag cutting	●	●	●	●	●	●	●
	FineCut®	●		●	●	●	●	●
	Marking			●				
	Precision gouging			●				
	Max control gouging			●	●	●	●	●
	Max removal gouging				●	●	●	●
	HyAccess™	●		●	●	●	●	
	FlushCut™			●	●*	●*	●*	●

*Using the 45 A FlushCut consumables above 45 amps on the Powermax65/85/105 will cause premature consumable damage.



Powermax30 AIR

The small size and light weight of the new Powermax30® AIR, with an internal compressor, make it a highly portable system enabling metal cutting just about anywhere there is single phase power. Simply plug it in, attach the work clamp and you are ready to cut. The internal compressor eliminates the need for an external air compressor and filter to operate the plasma system. The fast cutting speeds and superior cut quality of Powermax plasma enable you to finish jobs quicker.



Model (input voltage, phase, certification)	Handheld system AIR T30 torch 15'
Powermax30 AIR (120–240 V, 1-PH, CSA)	088096



Air T30 hand torch

Capacity	Thickness	Cut speed
Recommended	5/16"	20 ipm
	3/8"	10 ipm
Severance	5/8"	5 ipm

Watch a Powermax® system demonstration at www.hypertherm.com/powermax/videos/

Powermax30 XP

The Powermax30® XP delivers high performance in a small, portable package. With its two-in-one design, the system provides high-power capability for thick metal cutting, plus FineCut® consumables for detailed, thin metal cutting. Combined with a custom carry case, shaded glasses, cutting gloves and adapter plugs for 120 V or 240 V circuits, this system is designed to get you cutting quickly and easily.



Model (input voltage, phase, certification)	Handheld system Duramax® LT torch 15'
Powermax30 XP (120–240 V,1-PH, CSA)	088079

Capacity	Thickness	Cut speed
Recommended	3/8"	at 20 ipm
	1/2"	at 10 ipm
Severance	5/8"	at 5 ipm



Duramax LT hand torch





Powermax45 XP

The best-selling plasma system ever made is now even better. The Powermax45 XP offers improved performance over the Powermax45 with increased cut capacity, faster cut speeds, and automatic gas adjustment for simple setup and operation. New Duramax® Lock torches and consumables support handheld and mechanized cutting of a wider range of metal thicknesses, precision gouging and maximum metal removal gouging, and marking for part identification or scoring for weld preparation.



Below are some of the most common system configurations which include a power supply, torch, work cable and starter consumable kit.

Model (input voltage, phase, certification)	Handheld systems			Mechanized systems		
	75° torch 20'	75° torch 50'	75° and 15° torches 20'	180° full-length torch 25' with remote pendant	180° full-length torch 50' with remote pendant	180° full-length torch and 75° hand torch 20'
Powermax45 XP* (200–240 V, 1-PH, CSA)	088113	088115	088124	088116	088118	088123
Powermax45 XP (480 V, 3-PH, CSA)	088127	088129				

*with CPC port



Duramax Lock 75° hand torch



Duramax Lock 15° hand torch



Duramax Lock machine torch

Capacity	Thickness	Cut speed
Recommended	5/8"	at 20 ipm
	7/8"	at 10 ipm
Severance	1-1/8"	at 5 ipm
Pierce	1/2"*	

*Pierce rating for handheld use or with automatic torch height control

Powermax65

Offering the latest technological innovations, like Smart Sense™ technology to automatically adjust the gas pressure, the Powermax65® helps you do more than ever before. A variety of Duramax® torch styles provide exceptional versatility for hand cutting or gouging, portable automation, X-Y table and robotic cutting or gouging.

Below are some of the most common system configurations, which include a power supply, torch, work cable and starter consumable kit.



Model (input voltage, phase, certification)	Handheld systems			Mechanized systems		
	75° torch 25'	75° torch 50'	75° and 15° torches 25'	180° full-length torch 25' with remote pendant	180° full-length torch 50' with remote pendant	180° full-length torch and 75° hand torch 25'
Powermax65* (200–600 V, 1/3 PH, CSA)	083275	083276	083307	083277	083278	083300

*with CPC port


75° hand torch


15° hand torch


180° mini machine torch


180° full-length machine torch

Capacity	Thickness	Cut speed
Recommended	3/4"	at 20 ipm
	1"	at 10 ipm
Severance	1-1/4"	at 5 ipm
Pierce	5/8"*	

*Pierce rating for handheld use or with automatic torch height control





Powermax85

The premier system for cutting 1", the Powermax85® has the same features and options as the Powermax65, but with more power from a max output current of 85 amps. A variety of Duramax® torch styles provide exceptional versatility for hand cutting or gouging, portable automation, X-Y table and robotic cutting or gouging.

Below are some of the most common system configurations, which include a power supply, torch, work cable and starter consumable kit.



Model (input voltage, phase, certification)	Handheld systems			Mechanized systems		
	75° torch 25'	75° torch 50'	75° and 15° torches 25'	180° full-length torch 25' with remote pendant	180° full-length torch 50' with remote pendant	180° full-length torch and 75° hand torch 25'
Powermax85* (200–600 V, 1/3-PH, CSA)	087113	087114	087144	087115	087116	087135

*with CPC port

Capacity	Thickness	Cut speed
Recommended	1"	at 20 ipm
	1-1/4"	at 10 ipm
Severance	1-1/2"	at 5 ipm
Pierce	3/4"*	

*Pierce rating for handheld use or with automatic torch height control



75° hand torch



15° hand torch



180° mini machine torch



180° full-length machine torch

Powermax105

At 105 amps, the Powermax105® offers cut speeds more than three times faster than oxyfuel. Smart Sense™ technology in the Powermax105 also detects consumable end-of-life, automatically turning off power to the torch to prevent potential damage to other parts or the work piece. A variety of Duramax® torch styles provide exceptional versatility for hand cutting and gouging, portable automation, X-Y table and robotic cutting or gouging.



Below are some of the most common system configurations, which include a power supply, torch, work cable and starter consumable kit.

Model (input voltage, phase, certification)	Handheld systems			Mechanized systems		
	75° torch 25'	75° torch 50'	75° and 15° torches 25'	180° full-length torch 25' with remote pendant	180° full-length torch 50' with remote pendant	180° full-length torch and 75° hand torch 25'
Powermax105 (200–600 V, 3-PH, CSA)	059376	059377	059382	059378	059379	059384

*with CPC port and voltage divider


75° hand torch


15° hand torch


180° mini machine torch


180° full-length machine torch

Capacity	Thickness	Cut speed
Recommended	1-1/4"	at 20 ipm
	1-1/2"	at 10 ipm
Severance	2"	at 5 ipm
Pierce	7/8"*	

*Pierce rating for handheld use or with automatic torch height control



Powermax125

With maximum power and performance for air plasma, the new Powermax125® cuts fast and thick. A 100% duty cycle, a 1" pierce capability, and a gouging metal removal rate of 27.6 lbs/hour, make the Powermax125 the tool for any industrial cutting or gouging job. The new Duramax® Hyamp™ torch series is available in a variety of styles to address the widest variety of cutting and gouging applications.

Below are some of the most common system configurations, which include a power supply, torch, work cable and starter consumable kit.



Model (input voltage, phase, certification)	Handheld systems			Mechanized systems		
	85° torch 25'	85° torch 50'	85° and 15° torches 25'	180° full-length torch 25' with remote pendant	180° full-length torch 50' with remote pendant	180° full-length torch 50' and 85° hand torch 25'
Powermax125* (480 V, 3-PH, CSA)	059536	059537	059538	059539	059540	059541
Powermax125* (600 V, 3-PH, CSA)	059546	059547	059555	059552	059553	059554

*with CPC port and voltage divider


85° hand torch


15° hand torch


180° mini machine torch


180° full-length machine torch

Capacity	Thickness	Cut speed
Recommended	1-1/2"	at 18 ipm
	1-3/4"	at 10 ipm
Severance	2-1/4"	at 5 ipm
Pierce	1"**	

**Pierce rating for handheld use or with automatic torch height control

Duramax and Duramax Hyamp application torches

The Duramax torch series includes torches for every application need, from gouging to robotic to extended reach.


15° Duramax hand torch


45° Duramax robotic torch


90° Duramax robotic torch


180° Duramax robotic torch


45° Duramax Hyamp 2' Long torch


45° Duramax Hyamp 4' Long torch

	Duramax robotic torches			Duramax Hyamp robotic torches			Duramax Hyamp 2' Long torches		Duramax Hyamp 4' Long torches		Duramax Hyamp 6' Long torches
	45°	90°	180°	45°	90°	180°	45°	90°	45°	90°	90°
25'	059464	059465	059466	059564	059565	059566	059562	059563	059567	059568	059623
50'	059585	059586	059587	059670	059671	059672	059579	059580	059581	059582	059624

All Duramax Hyamp torches listed here are compatible with the Powermax45 XP, 65, 85, 105, and 125.
All Duramax torches are compatible with the Powermax45 XP, 65, 85, and 105 only.

System specifications comparison

		Powermax30® AIR	Powermax30® XP	Powermax45® XP	
Handheld cut capacity	Recommended	5/16"	3/8"	5/8"	
		3/8"	1/2"	7/8"	
	Severance	5/8"	5/8"	1-1/8"	
Mechanized pierce capacity	with automatic torch height control	Not applicable	Not applicable	1/2"[1]	
	without automatic torch height control	Not applicable	Not applicable	1/2"	
Typical gouge	Metal removed per hour	Not applicable	Not applicable	7.5 lbs	
	depth x width[2]	Not applicable	Not applicable	.12 x .26"	
Output current		15–30 A	15–30 A	10–45 A	
Input voltages		120–240 V, 1-PH, 50/60 Hz	120–240 V, 1-PH, 50/60 Hz	200–240 V, 1-PH, 50–60 Hz 480 V, 3-PH, 50–60 Hz	
Rated output voltage		83 VDC	125 VDC	145 VDC	
Input current		120–240 V, 1-PH, 28.7–15 A	120–240 V, 1-PH, 25.5–18.8 A	200–240 V, 1-PH, 39/32 A 480 V, 3-PH, 9.4 A	
Duty cycle[3]		35%, 240 V 20%, 120 V	35%, 240 V 20%, 120 V	50% @ 45 A, 200–240 V, 1-PH 60% @ 41 A, 200–240 V, 1-PH 100% @ 32 A, 200–240 V, 1-PH 50% @ 45 A, 480 V, 3-PH 60% @ 41 A, 480 V, 3-PH 100% @ 32 A, 480 V, 3-PH	
Dimensions with handle	depth x width x height	16.5 x 7.7 x 13.1"	14.0 x 5.5 x 12.0"	17.4 x 6.8 x 14.1"	
Weight with torch		29.8 lbs	21.4 lbs	31 lbs	
Gas supply	Cutting Gouging Marking	Not applicable	Air or N_2 Air, N_2, F5 Air, N_2, F5	Air, N_2, F5 Air, N_2, F5 Air or Argon	
Recommended flow rate and pressure		Not applicable	Cutting: 4 scfm @ 80 psi	Cutting: 400 scfh, 6.6 scfm @ 85 psi Gouging: 350 scfh, 5.8 scfm @ 60 psi	
Torch lead lengths	Handheld	15'	15'	20, 50, 75'	
	Mechanized	Not applicable	Not applicable	15, 25, 35, 50, 75'	
Motor generator requirements for full arc stretch at full output		6.8 kVA or 5.5 kW	6.8 kVA or 5.5 kW	12.5 kVA or 10 kW	

[1] Pierce rating for handheld use or with automatic torch height control.
[2] Dependent on speed, torch angle and standoff.
[3] Hypertherm's duty cycle ratings are established at 104° F, according to international standards, and are determined at actual cutting arc voltage levels.
[4] Selected torch styles.

	Powermax65®	Powermax85®	Powermax105®	Powermax125®
	3/4"	1"	1-1/4"	1-1/2"
	1"	1-1/4"	1-1/2"	1-3/4"
	1-1/4"	1-1/2"	2"	2-1/4"
	5/8"[1]	3/4"[1]	7/8"[1]	1"[1]
	1/2"	5/8"	3/4"	7/8"
	10.7 lbs	19.5 lbs	21.7 lbs	27.6 lbs
	.14 x .26"	.23 x .28"	.32 x .26"	0.17-0.31 x 0.24-0.39"
	20–65 A	25–85 A	30–105 A	30–125 A
	200–480 V, 1-PH, 50–60 Hz 200–600 V, 3-PH, 50–60 Hz	200–480 V, 1-PH, 50–60 Hz 200–600 V, 3-PH, 50–60 Hz	200–600 V, 3-PH, 50/60 Hz	480 V, 3-PH, 50–60 Hz 600 V, 3-PH, 50–60 Hz
	139 VDC	143 VDC	160 VDC	175 VDC
	200/208/240/480 V, 1-PH, 52/50/44/22 A 200/208/240/480/600 V, 3-PH, 32/31/27/13/13 A	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	200/208/240/480/600 V, 3-PH, 50/60 Hz, 58/56/49/25/22 A	480/600 V, 3-PH, 50/60 Hz, 31/24 A
	50% @ 65 A, 230–600 V, 1/3-PH 40% @ 65 A, 200–208 V, 1/3-PH 100% @ 46 A, 230–600 V, 1/3-PH	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	50% @ 105 A, 200 V, 3-PH 54% @ 105 A, 208 V, 3-PH 70% @ 105 A, 240 V, 3-PH 80% @ 105 A, 480–600 V, 3-PH 100% @ 94 A, 480–600 V, 3-PH 100% @ 88 A, 240 V, 3-PH 100% @ 77 A, 208 V, 3-PH 100% @ 74 A, 200 V, 3-PH	100% @ 125 A, 480/600 V, 3-PH
	19.7 x 9.2 x 17.9"	19.7 x 9.2 x 17.9"	23.3 x 10.8 x 20.0"	23.3 x 10.8 x 20.0"
	64 lbs	71 lbs	100 lbs	480 V 105.7 lbs 600 V 104.7 lbs
	Air, N_2, F5 Air, N_2, F5	Air, N_2, F5 Air, N_2, F5	Air, N_2, F5 Air, N_2, F5	Air, N_2, F5 Air, N_2, F5
	Cutting: 400 scfh, 6.7 scfm @ 85 psi Gouging: 450 scfh, 7.5 scfm @ 70 psi	Cutting: 400 scfh, 6.7 scfm @ 85 psi Gouging: 450 scfh, 7.5 scfm @ 70 psi	Cutting: 460 scfh, 7.7 scfm @ 85 psi Gouging: 480 scfh, 8.0 scfm @ 70 psi	Cutting: 550 scfh, 9.2 scfm @ 85 psi Gouging: 450 scfh, 7.5 scfm @ 60 psi
	25, 50, 75'	25, 50, 75'	25, 50, 75'	25, 50, 75, 150[4]'
	15, 25, 35, 50, 75'	15, 25, 35, 50, 75'	15, 25, 35, 50, 75'	15, 25, 35, 50, 75, 150[4]'
	20.1 kVA or 15 kW	26.8 kVA or 20 kW	40.2 kVA or 30 kW	53.6 kVA or 40 kW

Handheld cut capacity

Recommended – The thickness of mild steel on which the system delivers good cut quality and speeds at about 20" per minute or faster. Eighty percent or more of cutting should be at the recommended thickness.

Severance – The thickness that can be reasonably severed at a minimum of 5" per minute but with poor cut quality. Cutting the severance thickness should be infrequent.

Capacity ratings

There is no industry standard for rating plasma systems, so it is important to take care when comparing brands.

Mechanized pierce capacity

The thickness of mild steel that may be pierced using an automated torch height control without excessive wear on the consumable parts. Cut capacity for edge starts is the same as handheld capacity.


Hypertherm
powermax125
Hypertherm
125A

Automated cutting and gouging with Powermax

Industrial duty cycles, low operating costs and Hypertherm reliability make Powermax systems ideal for many mechanized applications.

Powermax® systems are used on X-Y cutting tables, robots, track cutting systems, and pipe cutting and beveling machines. FastConnect™ technology enables easy switching between handheld and machine torches.

Using a Powermax plasma system in a mechanized application

The equipment required to run a Powermax system in a mechanized application varies. For example:

- To automate long, straight cuts, a mechanized torch, a remote on/off pendant and track cutter may be all that is needed.
- An entry-level X-Y table application requires a mechanized torch, control cable, and a computer numeric control (CNC) along with the table and lifter.
- For optimum performance on an X-Y table, a programmable torch height control and nesting software would also be used. Proper torch height reduces dross while improving cut angularity and speed.

Mechanized communications

Mechanized Powermax systems include a standard machine interface through a CPC port, which provides access to start, transfer, and divided voltage signals.

For increased control of the power supply through a CNC, the Powermax45 XP, 65, 85, 105, and 125 models are available with an optional RS-485 serial interface port (ModBus ASCII protocol).

One of Hypertherm's long-standing core values is a focus on minimizing our impact on the environment. We work along our entire value stream, from our suppliers to our end users, to reduce negative environmental impacts. 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.

Our products are engineered to go well beyond environmental regulatory requirements. We meet the EU RoHS directive for restricting the use of hazardous materials, such as lead and cadmium, in our Powermax products. We use Life Cycle Analysis and design for sustainability scorecard to identify opportunities to reduce negative impacts or create beneficial outcomes. Our Powermax systems are manufactured in a LEED Gold designated factory where we purchase 100% renewable energy credits and are well on our way to generating zero landfill waste. Powermax products are shipped in 100% recyclable packaging.

Four of our newest Powermax systems are 5%–40% more efficient than their predecessors. They often cut thicker and faster yet use less energy. An example of this increased efficiency is the Powermax65 compared to an earlier predecessor, the MAX100®. Both have the same cut capacities, yet the Powermax65 is much smaller, lighter and uses less power.



	MAX100	Powermax65	Difference
Cut capacity	1-1/4"	1-1/4"	SAME
Output	100 A	65 A	35% less
Size	21'³	1,9'³	90% smaller
Weight	420 lbs	64 lbs	85% lighter

For more information about automated cutting refer to the Powermax Mechanized Applications brochure.

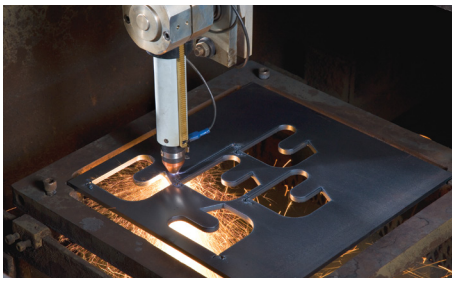
Genuine Hypertherm consumables

Hypertherm designs and manufactures an extensive array of innovative consumable technologies for Powermax® systems. This versatility of application capabilities is what distinguishes Powermax from other plasma systems.



Drag cutting

For consistent torch motion and improved cut edge quality



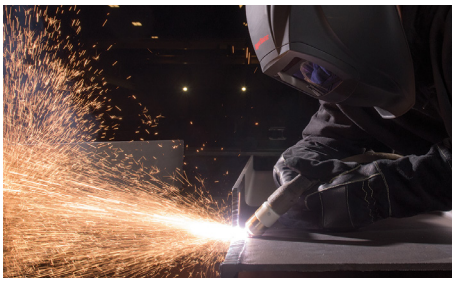
Mechanized cutting

For a variety of automated cutting applications with machine torches



Gouging

Max removal, max control or precision gouging options to achieve the optimal gouge profile



FlushCut™

FlushCut consumables feature an angled nozzle bore design for cutting close to base material



FineCut®

For intricate and fine feature cutting with minimal dross



Marking

Marking consumables for the Powermax45 XP



HyAccess™

For cutting or gouging in hard to reach or confined spaces

To determine which Powermax systems are compatible with the specific applications being referred to above see the table on page 8.

Consumable kits

- Powermax® Essential consumable kits – designed to provide the optimal mix of cutting consumables for your Powermax system
- HyAccess™ and FlushCut™ kits
- Dual pack electrode/nozzle kits for Powermax30 AIR and Powermax30 XP
- Bulk kits – economical for high volume use of select consumables





Powermax Essential consumable kits

Powermax system	Handheld	Mechanized	Mechanized Ohmic
Powermax30 AIR	851462		
Powermax30 XP	851479		
Powermax45 XP	851510	851511	851512
Powermax65	851465	851466	851467
Powermax85	851468	851469	851470
Powermax105	851471	851472	851473
Powermax125	851474	851475	851476



FlushCut kits

Powermax system	Kit part number	Operating amperage
Powermax45 XP Powermax65 Powermax85	428746	15–45 A
Powermax105	428647	85–105 A
Powermax125	428713	85–125 A



HyAccess kits

Powermax system	Kit type	Kit part number	Operating amperage
Powermax30 XP	Combination Cut/Gouging Starter kit – Cutting Starter kit – Gouging	428337 428443 428444	15–30 A
Powermax45 XP Powermax65 Powermax85 Powermax105	Combination Cut/Gouging Starter kit – Cutting Starter kit – Gouging	428414 428445 428446	15–65 A



Dual electrode/nozzle packs

Powermax system	Part number	Process
Powermax30 AIR	428350	Standard cutting
Powermax30 XP	428243	Standard cutting
	428244	FineCut®

Cutting guides



Circle cutting guide

Quick and easy setup for accurate circles up to 28" diameter and as a stand-off guide for straight and bevel cuts. For use with Powermax® system torches. Made in USA

127102 Basic kit – 15" arm, wheels and pivot pin
027668 Deluxe kit – 11" arm, wheels, pivot pin, anchor base and plastic case
017053 Hyamp deluxe kit – 11" arm, wheels, pivot pin, anchor base and plastic case*

*For use with Hyamp torches only



Angle cutting guide

Protractor with magnetic base holds straight or square edges to make cutting precise angles easy. Made in USA

017041



Bevel cutting guide

Cut a precise beveled edge for perfect weld preparation. Compatible with circle cutting guides, magnetic straight edge, angle guide. Made in USA

017059 Standard
017058 Hyamp

Personal protective equipment



Face shield

Clear face shield with flip-up shade for cutting and grinding. Safety shield included ANSI Z87.1, CSA Z94.3, CE.

127239 Face shield shade 6
127103 Face shield shade 8
017047* Face shield for hard hat shade 6
017048* Face shield for hard hat shade 8
017030 Leather neck guard (optional)
017029 Replacement shade 5 (for <40 A)
127243 Replacement shade 6 (for <60 A)
127105 Replacement shade 8 (for <80 A)
127104 Clear shield replacement
017046 Hard hat only (white)

*Hard hat not included



Cutting goggles

Shade 5 (for <40 A) soft body goggle fits over prescription glasses. ANSI Z87.1, CSA Z94.3, CE.

017035



Basic eyewear

127416 Shade 5 adjustable eyeshade
017034 Clear safety eye shields



Flip-up eyeshades

Shade 5 (for <40 A) flip-up shade, anti-scratch lens and adjustable frame. ANSI Z87.1, CSA Z94.3, CE.

017033



Magnetic straight edge

Two magnet blocks with 24" straight edge. Made in USA

017042



Pocket level and tape holder

Magnetic base and tape holder with built-in level. Made in USA

017044



Magnetic block 2-pack

Attaches to any standard square or straight edge up to 1/8" thick. On-off magnets. Made in USA

017043



Hyamp cutting and gouging gloves

Insulated for heavy duty applications. Gun-cut palm design with seamless trigger finger and extended cuff provide flexibility and protection.

- Fire resistant goatskin leather and suede
- Padded areas for extra heat and abrasion protection
- Made in USA

017025 Medium
017026 Large
017027 X-Large
017028 2X-Large



Leather cutting gloves

Pigskin grain leather.

127169

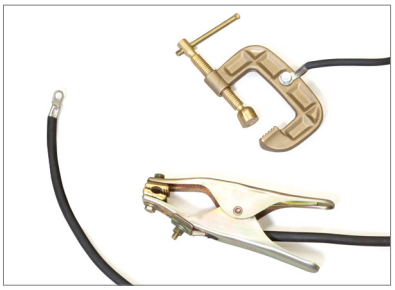


Cutting blanket

5' x 6' 18 oz. fiberglass blanket protects nearby surfaces from cutting and gouging sparks. Rated for 1000° F.

017032

System accessories



Work cables

Three grounding connection styles. 50' and 75' lengths available.

Powermax65

223125 Hand clamp 25'
223194 C-style clamp 25'
223200 Ring terminal 25'

Powermax85

223035 Hand clamp 25'
223203 C-style clamp 25'
223209 Ring terminal 25'

Powermax105

223254 Hand clamp 25'
223287 C-style clamp 25'
223284 Ring terminal 25'

Powermax125

223292 Hand clamp 25'
223298 C-style clamp 25'
223295 Ring terminal 25'



Remote pendants

Remote on/off control for a machine torch attaches to the CPC port on Powermax45 XP, 65, 85, 105 and 125 models.

128650 25'
128651 50'
128652 75'



Oil removal air filter kit

Protect your Powermax® plasma system against oil in compressed air to maximize consumable life and system performance.

428719 Oil removal air filter kit
428718 Mounting bracket kit for 428719 and 128647 air filter kits
428720 Replacement oil removal filter element



Wheel/gantry kits

Complete, pre-assembled kits for added mobility or mounting on a cutting table gantry.

229370 Powermax65/85 wheel kit
229569 Powermax65/85 gantry kit
229467 Powermax105/125 wheel kit
229570 Powermax105/125 gantry kit



Air filtration kits

Ready-to-install kits with a 1-micron filter and an auto-drain moisture separator protects against contaminated air.

128647 Filter only
228570 Filter plus cover for Powermax65/85
228624 Cover only for Powermax65/85
228890 Filter plus cover for Powermax105/125
101215 Cover only for Powermax105/125
011092 Replacement air filter element
428718 Mounting bracket kit for 428719 and 128647 air filter kitst



Leather torch sheathing

Available in 25' sections, this option provides additional protection for torch leads against burn-through and abrasion.

024877 Black leather with Hypertherm logos



Torch carry bags

Durable bag for carrying spare torches, work cables and accessories.

127363 Standard torch bag (shown)
23" x 11" x 11"

Machine interface cables

Cables for connecting the serial interface port to CNC controllers on Powermax45 XP, 65, 85, 105 and 125 models.

223236 RS-485 to unterminated 25'
223237 RS-485 to unterminated 50'
223239 RS-485 to 9-pin D-sub connector 25'
223240 RS-485 to 9-pin D-sub connector 50'

Cables for connecting the CPC port to CNC controllers on Powermax45 XP, 65, 85, 105 and 125 models.

023206 14-pin CPC to spade connector 25'
023279 14-pin CPC to spade connector 50'
228350 14-pin CPC to spade connector 25', for divided arc voltage
228351 14-pin CPC to spade connector 50', for divided arc voltage
123896 14-pin CPC to D-sub connector 50', for divided arc voltage
223733 CPC interface cable for PlasmaCAM, 15'
223734 CPC interface cable for PlasmaCAM, 20'



Rolling tool bag

This rugged bag transports the Powermax30, 30 AIR, 45 or 45 XP with extra room for torches, consumables, accessories, and other gear. 19.5" x 17.5" x 12.5"

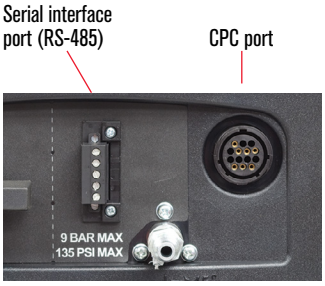
017060



System dust covers

Made from a flame-retardant vinyl, a dust cover will protect your Powermax system for years.

127144 Powermax30/30 XP
127469 Powermax30 AIR
127219 Powermax45 XP
127301 Powermax65/85
127360 Powermax105/125



Mechanized communication kits

Upgrade kits for the Powermax45 XP, 65, 85, 105 and 125 systems for mechanized applications.

428653 CPC port with selectable voltage divider board, Powermax45 XP
228697 CPC port with selectable voltage divider board, Powermax65 and 85
228884 CPC port with selectable voltage divider board, Powermax105 and 125
428654 Serial interface port (RS-485), Powermax45 XP
228539 Serial interface port (RS-485), Powermax65, 85, 105 and 125



System carry case

Rugged case for protecting and storing the Powermax30 or 30 XP and accessories.

127410



Gouging heat shield

Additional protection when gouging.

428347 Duramax torches
428348 Hyamp torches
128658 T45v and T60/80/100 torches


Hyperthern
United States Patent
Brandt et al.
Patent No.: US 7,754,996 B2
Date of Patent: *Jul. 13, 2010
(54) METHOD AND APPARATUS FOR CONTROLLING THE CUT HEIGHT OF A PLASMA ARC TORCH
(75) Inventors: Aaron D. Brandt, Cranston, NH (US); Richard K. Anderson, Carpenter, NH (US); Richard J. Cuvelier, Newport, NH (US); Jon W. Kimball, Hanover, NH (US); Kevin Dean, Hanover, NH (US); Carl C. Conway, Lebanon, NH (US); Ernest M. Magnuski, Erin, NH (US)
(73) Assignee: Hypertherm, Inc., Hanover, NH (US)
(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 821 days.
This patent is subject to a terminal disclaimer.
(21) Appl. No.: 11/709,665
(22) Filed: Feb. 20, 2007
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Related U.S. Application Data
(63) Continuation of application No. 11/347,901, filed on Feb. 6, 2006, now Pat. No. 7,193,174, which is a continuation of application No. 10/990,548, filed on Nov. 17, 2004, now Pat. No. 7,015,419, which is a continuation of application No. 10/212,145, filed on Aug. 31, 2002, now Pat. No. 6,861,617.
(51) Int. Cl.
B23K 9/00 (2006.01)
B23K 9/067 (2006.01)
(52) U.S. Cl. 219/121.67; 219/121.5
(56) References Cited
U.S. PATENT DOCUMENTS
FOREIGN PATENT DOCUMENTS
OTHER PUBLICATIONS
(Continued)
Primary Examiner—Quang T. Van
(74) Attorney, Agent, or Firm—Fredrikson & Byron, P.A.
(57) ABSTRACT
10 Claims, 4 Drawing Sheets

50 years of Shaping Possibility®

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

Fifty years ago, in a small two car garage, Hypertherm® began our journey with simple, powerful ideas about business and an invention that shaped the future of industrial cutting. The same ideals that fueled our inception all those years ago are still what drive us today: a passion for challenging what is achievable with the products we create, the culture we foster, and the experience we deliver to our customers. As we look to the horizon and the next 50 years, we are proud that our people, partners, and innovations will shape the future with solutions that make anything possible for industries around the world.

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, cutting stone in Italy, 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 are not just employees: we are 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.

Worldwide presence and strength

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

Hypertherm wall of patents

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PLASMA | LASER | WATERJET | AUTOMATION | SOFTWARE | CONSUMABLES

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100% Associate-owned Greener Cuts