

Hypertherm[®]

powermax1650[®] G3 SERIES[™]

The performance standard for air plasma cutting and gouging



1 1/4" (32 mm)
Recommended capacity

1 1/2" (38 mm)
Maximum capacity

1 3/4" (44 mm)
Severance capacity

powermax1650[®] **G3 SERIES™**

Delivering superior power and performance in a proven technology!

The benefits of Hypertherm technology –

- **Superior speed and cutting capacity**
- **Longer parts life**
- **Lower operating cost**
- **Higher-quality cuts**
- **Safety**
- **Reliability**
- **Ease of use**

–in a robust, portable cutting system.



Hypertherm – the world leader in plasma cutting technology

When you only do one thing, you'd better do it better than anyone else does. As the only manufacturer to focus exclusively on thermal cutting technology, Hypertherm is committed to providing the highest quality systems in the world. All of our engineering resources go into improving the performance, reliability and value of our systems. All of our associates are 100% devoted to serving and supporting our plasma customers. A demonstrated commitment to technology leadership, quality and support make Hypertherm the first choice of the true cutting professional.

Setting a new performance standard for air plasma cutting

The Powermax1650 is the latest addition to the Powermax G3 series of systems. With advanced technologies in both power supply and torch, Hypertherm G3 products cut faster, and more economically, than any hand system available anywhere today. Its Auto-voltage™ circuit provides automatic adjustment to any input voltage from 200 to 600 volts, 3-phase (CE 230 to 400 V 3-phase). A state-of-the-art, microprocessor-driven architecture assures optimum system reliability. Add to this Hypertherm's advanced torch technology, and easy-to-read controls and features, and you have the most powerful, advanced, and reliable plasma cutter money can buy.

Hand torch operation

- **Recommended capacity:** metals to 1 ¼ inch (32 mm) at cutting speeds of 19 inches per minute (482 mm).
- **Maximum capacity:** metals to 1 ½ inch (38 mm) at cutting speeds over 10 inches per minute (250 mm/min).
- **Severance capacity:** rough cut on metals up to 1 ¾ inch (44 mm) at low speed.

Machine torch operation

- **Recommended pierce capacity:** Up to ½ inch (12 mm).
- **Maximum pierce capacity:** Up to ¾ inch (19 mm).
- Cutting above ¾ inch (19 mm) requires an edge start.

Note: The cut capacities noted above are on mild steel. Some metals, such as aluminum and stainless steel, may require up to a 20% reduction in cut speed and capacity.

The power supply: the heart of the system

Advanced technology gives the Powermax1650 the power to cut with greater quality and efficiency.

- 100-amp, 16-kilowatt output provides ample power for cutting heavy plate cleanly and quickly.
- Auto-voltage input sensing allows you to run on voltages from 200 to 600 volts, 3-phase, with no rewiring.
- CNC/Robotic machine interface is standard on all units, allowing for automated control and rapid mechanized installation.
- New Boost Conditioner™ circuit compensates for input voltage variation.

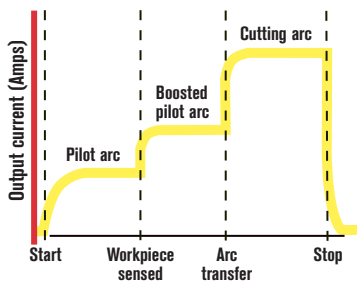


- Advanced digitally-controlled inverter design delivers continuously adjustable constant current output, from 30 to 100 amps, producing high-quality cuts over a wide range of metal thicknesses.
- An active, electronic pilot-arc controller for cutting expanded metal or grating preserves consumable life.
- A new gouging setting allows for longer arc lengths and easier operation, plus a metal removal rate in excess of 22 pounds per hour (10 kg).
- Wheels are standard on the Powermax1650 and provide improved mobility over rough and uneven surfaces.
- Back-lit LED's clearly convey all the information necessary to monitor the system status, including an easily readable and understandable air pressure gauge.

The torch: intelligent design combines performance, durability, comfort and safety

The Powermax1650 features Hypertherm's patented T100 safety trigger torch and T100M mechanized torch, which produce outstanding cut performance, reliability and operator comfort.

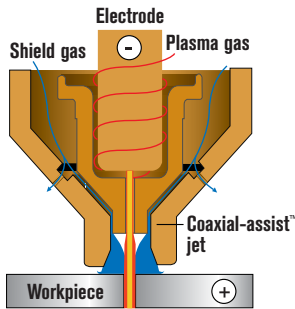
- The longest consumable life in the industry, and we'll prove it. HyLife® electrodes last longer than ordinary designs by using the same patented technologies developed for advanced Hypertherm mechanized systems.
- Dual-threshold™ pilot circuit significantly reduces nozzle wear by boosting pilot current precisely when needed.



- Patented nozzle shield technology lets you drag the torch on the workpiece at full output, without damaging consumables, and protects the nozzle from molten metal spray and double arcing.
- Postflow cooling reduces torch stress.



- Hypertherm's patented Coaxial-assist™ jet design boosts cutting speed as much as 20% over conventional designs.



- Hypertherm's ETR™ (Easy Torch Removal) system allows for easy switching between hand and machine torches, while providing a radical integrated approach to strain relief designed for durability.
- Hypertherm's patented safety trigger protects against accidental starts. Safety interlocks deactivate the torch when the consumable parts are removed, using a durable mechanical contact.
- No breakable ceramic parts.
- Patented "blow-back" technology provides a pilot arc without excessive high-frequency interference.
- Consumables for gouging, extended-nozzle cutting, pipe saddle cutting and other applications. Most consumables compatible with existing G3 systems, resulting in fewer stock parts.

Engineered for superior reliability

The Powermax1650 is designed for heavy use and very harsh conditions.

- Mechanical and electrical designs are validated through aggressive, accelerated testing.
- Fan-on-demand feature minimizes dust ingestion.

Options for specialized requirements

FINECUT™ CONSUMABLES for superior cut quality on thin plate, mild and stainless steel.

CIRCLE CUTTING GUIDE for cutting measured circles.

LEATHER CABLE COVERS for torch leads.

AIR FILTRATION KIT with a .85 micron filter and auto-drain filter bowl.

HEAT SHIELD protects hands from excessive reflective heat.

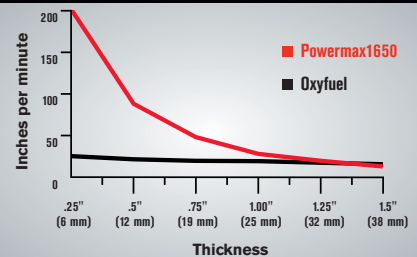
STATIONARY MOUNTING KIT for fixed installation on table or floor.



- Chemically cross-linked torch cable jacket provides improved resistance to molten spray and cut-through.
- CSA/NRTL and CE certifications comply with the highest safety standards.
- IP23CS compliance means resistance to rain damage.
- The Powermax1650 is backed by Hypertherm's full three-year power supply warranty and one-year torch warranty. No parts excluded. Examine competitive policies closely.



Relative cutting speed, Powermax1650 vs. oxyfuel



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High-performance portable plasma cutting system

Powermax1650 G3 Series standard system components

- Power supply
- T100 or T100M torch
- Spare consumables
- Work cable with clamp
15 feet (4.5 m)

Options

- Circle cutting guide – 027668
- Leather cable covers – 024548
- Air filtration kit – 128647
- Extended work cable – 123655
- Hand heat shield – 128658
- Stationary mounting kit –
128788

Ordering information

	Systems part numbers		
	With 25' (7.5 m) torch	With 50' (15 m) torch	With 75' (23 m) torch
200 – 600 V, 3-PH, CSA			
Hand system	059275	059276	059301
Machine system	059279	059280	059303
230 – 400 V, 3-PH, CE			
Hand system	059288	059289	059302
Machine system	059290	059291	059304

Specifications



Input voltages	200 – 600 V, 3-PH, 50 – 60 Hz, CSA 230 – 400 V, 3-PH, 50 – 60 Hz, CE
Input current @ 16 kW output	200/208/230/240/400/480/600 V, 3-PH: 53/51/46/44/27/22/21 A
Output voltage	160 VDC
Duty cycle @ 40° C (104° F) @ 100 amps	60% @ 200 – 208 V 70% @ 230 – 240 V 80% @ 400 – 600 V
Output for 100% duty cycle @ 40° C (104° F)	80 A @ 200 – 208 V 85 A @ 230 – 240 V 90 A @ 400 – 600 V
Maximum OCV	300 VDC
Dimensions	26.4" (671 mm) D; 16.8" (427 mm) W; 25.8" (655 mm) H
Weight with torch	128 lbs (58 kg)
Gas supply	Clean, dry, oil-free air or nitrogen
Flow rate	550 scfh; 9.2 cfm (260 l/min) at 90 psi (6.2 bar)
Flow pressure	75 psi (5.1 bar) flowing, 25' leads 80 psi (5.4 bar) flowing, 50' leads

Standard machine interface signals

Plasma start
Transfer (start machine motion)
24 VDC (100 ma maximum)
Arc voltage (torch height control) – signal not available on rear panel connector

For more information, refer to your operator's manual.

Hypertherm, Powermax, G3 Series, HyLife, Boost Conditioner, Dual-threshold, Auto-voltage, Coaxial-assist, ETR (Easy Torch Removal) and FineCut are trademarks of Hypertherm, Inc. and may be registered in the United States and/or other countries.

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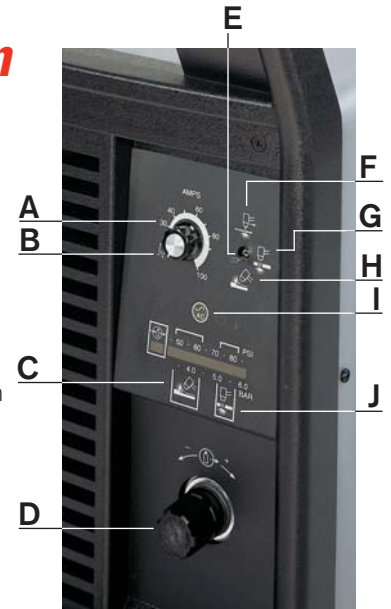
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- A: Cutting-current output control, 30 – 100 amps
- B: Gas test/set position
- C: Air pressure range, gouging mode
- D: Air pressure adjustment knob
- E: Cutting mode selector switch
- F: Pilot arc control mode
- G: Normal cutting mode
- H: Gouging mode
- I: Power on indicator
- J: Air pressure range, cutting mode



Operating data

	Hand torch	Machine torch
Recommended capacity	1 ¼" (32 mm)	½" (12 mm)
Maximum capacity	1 ½" (38 mm)	¾" (19 mm)
Severance capacity	1 ¾" (44 mm)	–

Material	Thickness		Current (amps)	Maximum travel speed*	
	(inches)	(mm)		(ipm)	(mm/min.)
Mild steel	26 GA.	0.5	30	638	16205
	10 GA.	3.4	40	151	3835
	¼	6.4	60	132	3353
	½	12.7	100	88	2235
	¾	19.0	100	47	1194
	1	25.4	100	28	711
	1 ¼	31.8	100	19	482
Aluminum	½	0.8	30	610	15494
	⅝	3.2	40	204	5182
	¼	6.4	60	145	3683
	½	12.7	100	108	2743
	¾	19.0	100	57	1448
	1	25.4	100	33	838
Stainless steel	26 GA.	0.5	30	631	16027
	14 GA.	1.9	40	221	5613
	¼	6.4	60	110	2794
	½	12.7	100	79	2007
	¾	19.0	100	39	991
	1	25.4	100	23	584
1 ¼	31.8	100	14	356	

*Maximum travel 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's manual for more details.