

POWERMAX 105 SYNC



MACHINE DESCRIPTION:

The **Powermax105 SYNC™** is a next-generation, professional-grade air plasma cutter that dramatically simplifies system operation for **cutting and gouging up to 32 mm (1-1/4")**. **Features automated system process set-up via advanced RFID-enabled SmartSYNC™ torches**, and a revolutionary single-piece cartridge consumable that provides trackable utilization data. The Powermax105 SYNC maximizes productivity through reductions in downtime, optimized cut quality performance, and streamlined consumable inventory management.

APPLICATIONS:



Drag cutting

For dragging the torch directly across the work piece



Fine feature cutting

For narrow kerf width with minimal dross and heat affected zone



Flush cutting

For cutting closer to base materials using a 45 degree



Max control gouging

For precise metal removal, shallower gouge profiles and light metal washing



Max removal gouging

For aggressive metal removal, deep gouge profiles, and extreme metal washing



Mechanized cutting

For portable automation and table cutting

TECHNICAL PARAMETER:

POWERMAX 105 SYNC	
Brand Name	: "HYPERTHERM"
Input voltages	: 200-600 V, 3-PH, 50/60 Hz
Kilowatt output	: 16.8 kW
Input current	: 200/208/240/480/600 V, : 3-PH 58/56/49/25/22 A @ 16.8 kW
Output current	: 30-105 A
Rated output voltage	: 160 VDC
Duty cycle @ 104° F	: 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
Open circuit voltage (OCV)	: 300 VDC
Dimensions with handles	: 592 mm D; 274 mm W; 508 mm H (23.3" D; 10.8" W; 20.0" H)
Weight w/7,6 m (25') torch	: 45.3 kg (95 lbs.)
Gas supply	: Clean, dry, oil-free air or nitrogen
Optimum inlet gas pressure	: 7.6-8.3 bar (110-120 psi)
Minimum inlet gas pressure	: 5.5 bar (80 psi)
Recommended inlet gas flow rate	: Cutting: 260 I/min @ 5.9 bar (550 scfh, 9.2 scfm @ 90 psi) : Gouging: 260 I/min @ 4.8 bar (550 scfh, 9.2 scfm @ 70 psi)
Input power cable length	: 3 m (10')
Power supply type	: Inverter-IGBT
Engine drive requirement	: 30 kW for full 105 A output
Brand New	: USA

CUTTING CAPACITY

Capacity	Thickness	Cut speed
Recommended	32 mm (1-1/4")	500 mm/min (20 ipm)
	38 mm (1-1/2")	250 mm/min (10 ipm)
Severance (hand cutting)	50 mm (2")	125 mm/min (5 ipm)
Pierce*	22 mm (7/8")	

*Pierce rating for handheld cutting, or mechanized cutting with programmable torch height control.

MAXIMUM REMOVAL GOUGING:

Capacity	Metal removal rate	Gouge profile
Typical gouge	8,6 kg (19.1 lbs.) per hour	6,6 mm D x 6,0 mm W (0.26" D x 0.24" W)

SMARTSYNC TORCHES



SmartSYNC torches feature RFID capability that when coupled with a Hypertherm cartridge will communicate with a Powermax SYNC system to automatically set the amperage and process on the power supply. Available in handheld, mechanized and robotic torch configurations.

	Hand torches		Machine torches	Robotic/Mini		
	75°	15°	180°	180°	90°	45°
4,5 m (15')				059733		
7,6 m (25')	059726	059723	059719	059734	059731	059729
10,7 m (35')			059720			
15,2 m (50')	059727	059724	059721	059735	059732	059730
22,8 m (75')	059728	059725	059722		059737	059736

HYPERTHERM CARTRIDGES

The **Hypertherm cartridge consumable platform** is a revolutionary change to standard air plasma consumables. Each single-piece cartridge is optimized by process and amperage to ensure performance while dramatically simplifying the parts needed to cut or gouge with plasma.

Hypertherm cartridges for Powermax systems are manufactured to uphold our high standards for quality and reliability. As part of the manufacturing process, we test-fire each cartridge to ensure proper assembly and function. As a result, there may be burn marks on the tip of the cartridge. This is normal and not a sign of damage.

Drag cutting and FineCut for hand torches



Hypertherm Cartridges	
Process	Cartridge
105 A	428937
85 A	428935
65 A	428931
45 A	428927
FineCut® drag cutting	428928

Mechanized and FineCut for machine torches



Hypertherm cartridges	
Process	Cartridge
105 A	428936
85 A	428934
65 A	428930
45 A	428925
FineCut® mechanized cutting	428926
Ohmic ring kit	428895 (contains 3 #420580 ohmic rings)

Mechanized cartridges can be used on hand torches if a stand-off is desired.

Max Removal and Max Control Gouging



Hypertherm cartridges	
Process	Cartridge
Max removal gouging 105 A	428938
Max removal gouging 45–85 A	428932
Max control gouging 105 A	428939
Max control gouging 45–85 A	428933

FlushCut Options



Hypertherm cartridges	
Process	FlushCut™
105 A	428954
85 A	428953
65 A	428952

HYPERTHERM CARTRIDGE PLATFORM FOR POWERMAX SYSTEMS



With its revolutionary single-piece design, the new cartridge consumable for Powermax® systems will change the way you cut and gouge metal forever. Your consumable inventory management will be streamlined. Select your cartridge and with a simple twist onto the torch you're ready to go.

Benefits of Hypertherm Cartridges

Easy to use

- Reduce operator training and troubleshooting time with fewer consumable parts to manage and replace.
- Cartridges are color coded by application and clearly laser marked for easy identification of process and amperage.
- Upgrading to the Hypertherm cartridge platform is easy for Powermax45® XP/65/85/105 systems via a torch adapter for Duramax® torches.

Productivity gains

- Cartridges are optimized by design to maximize performance and output for life gains when handheld cutting and optimal cut quality for mechanized cutting.
- The cartridge provides useful utilization data when used in conjunction with SmartSYNC™ torches and a Powermax SYNC™ system. The data can be

used to improve cutting operations and identify opportunities for operator training.

- Specialty cartridges for gouging, FlushCut™ and FineCut® extends the capabilities of Powermax systems.

Torch compatibility

- Fully compatible with all [SmartSYNC torches](#), providing automated process set-up and data transfer to the system
- Limited functionality with Duramax and Duramax® Lock torches (found on Powermax45 XP/65/85/105)
 - Requires separate torch adapter (part number [428951](#))
 - Does not provide automated process set-up or data transfer.

POWERMAX SYNC BENEFITS:

Easy to use



- Cartridges are easy to identify by process with clear laser marking and color coding to eliminate part mix-ups.
- RFID-enabled SmartSYNC™ torches and cartridges automatically set the correct amperage and operating mode, eliminating setup errors.
- End-of-life consumable detection eliminates the uncertainty of knowing when to change the cartridge.
- Less operator fatigue when using hand torches with our new flexible lead. The lead has the same robustness of our previous lead jacket material and will also be used on robotic torches.

Minimize Operation Costs



- Simplified system operation minimizes the time and costs spent on training and troubleshooting.
- Reductions to downtime during consumable change-outs and elimination of costs associated with premature disposal of consumable parts.
- Cartridge usage data provides valuable insights for improving cutting operations and consumable inventory management.

Maximize Performance



- Tackle a wide range of jobs with easily interchangeable torch styles and application specific cartridges for various types of cutting and gouging.
- Optimized cartridge consumable design provides up to twice the life for handheld cutting and improved quality over life in mechanized setups compared to standard consumables.
- Time-saving hand torch controls allow the operator to adjust the amperage on the fly, change cartridges and applications without returning to the power supply.

Industry-leading Reliability



- [SmartSYNC™ torches](#) are engineered for rugged, industrial environments.
- SpringStart™ technology ensures consistent starting and a more reliable torch.
- Industry-leading reliability reduces production downtime.