

The Spirit 400a system delivers exceptional performance in cut quality at lower operational costs. We provide superior cut quality over consumable life by achieving the least part taper over the life of an electrode.

The Spirit 400a is a full function 400 amp high current density plasma cutting and marking system with fully automated process control, piercing most metals up to 2 in. (50 mm) thick, and has a maximum capacity of 3 in. (75 mm). Automatic process parameter control provides exceptional ease of operation.

The Spirit 400a provides precision high current density plasma cut edge quality. It delivers virtually dross free cuts with 2° or less cut edge bevel.

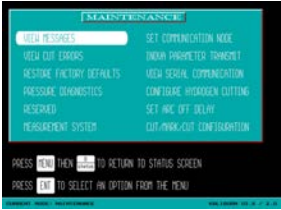
It is designed to be the ultimate process tool when precise, square, and virtually dross free cuts with ease of operation are important. Featuring ease of use with the ultimate in cut quality and the highest processing speed, the Spirit 400a truly sets the standard in precision plasma cutting.



FEATURES

- **Exceptional Cut Quality and Consistency**
 - Production pierces most metals to 2 in. (50 mm) and has a maximum capacity of 3 in. (75 mm).
 - Delivers exceptional cut edge quality, virtually dross free, with bevels of 2° or less.
 - Advanced Torch technology for a stable plasma column and Optimized Plasma Gas Flow.
- **Extremely Long Consumable Life**
 - Hafnium Optimizing Technology (H₂OT™) significantly increases electrode life. Extending electrode life using this patented technology means more production from a single set of consumables and lower cost of ownership.
 - Shield cap life is extended using the very low transferred arc current sensing for higher starting height.
 - Optimized nozzle design technology for dominant convective heat transfer, which results in longer nozzle life.
- **Lower Operating Costs**
 - Operating costs are reduced by using the same consumables to cut and mark and using a fast switch transferred arc for extended nozzle life.
 - *Uses up to 78% less plasma gas than competition.* That is an average of 48% across all ranges and 38% average on the high amperage range (200A to 400A).
 - Advanced technology, high efficiency chopper-stabilized current output.
- **Higher Reliability**
 - Extremely robust design components and testing standards achieve high product reliability. A 600 ampere IGBT chopper transistor enhances reliability.
 - Rigorous manufacturing and testing standards deliver a robust system.
 - Industry leading 3 year warranty on machine, 1 year on original torch.

Mild Steel Production Capacity	Max. Thickness (Edge Start, with dross)
2 in (50 mm)	3 in (75 mm)



OTHER FEATURES

- Automatic gas console (AGC) provides a user-friendly interface for programming. The operator can set all plasma torch parameters by material type and thickness. They can also view all torch parts for selected material and thickness.
- The system can perform self-diagnostics, track pierces, pierce errors and type of errors for last six electrodes.
- The system can set INOVA™ (option) Torch Height Control automatically to the proper pierce height, cutting height and arc voltage.



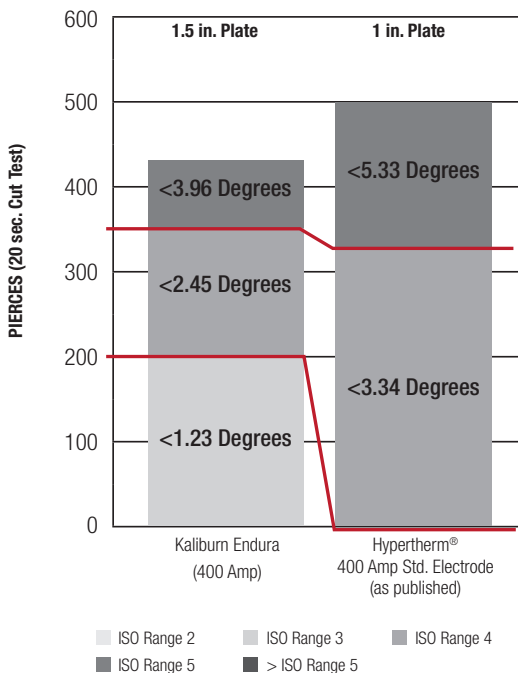
OPTIONAL FEATURES

- A pneumatic safety switch can be added to protect the torch from collision damage.
- Communicates with optional INOVA torch Height Control and the x-y cutting table control via RS-422.
- With the Spirit 400a automatic gas console (AGC), you simply select the material type and thickness or let your computer's serial port transmit the cutting parameters. The rest is automatic, and especially easy when interfaced to a 10LCD Plus or Phantom Control.

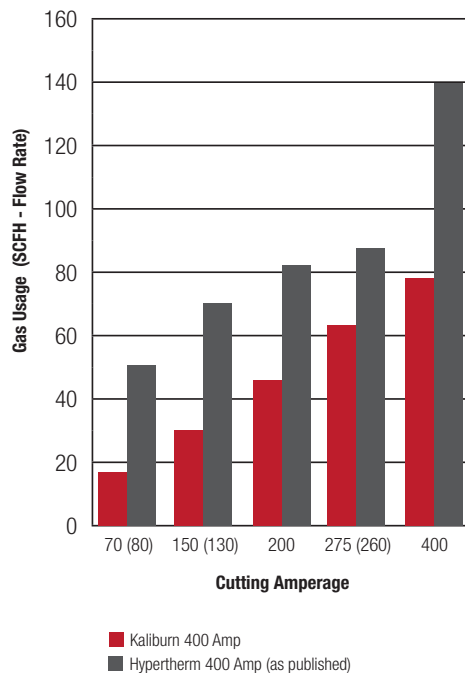
PERFORMANCE COMPARISON

CUT QUALITY OVER CONSUMABLE LIFE

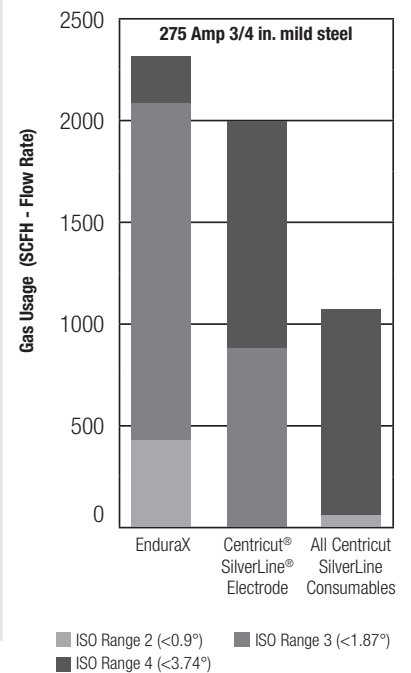
Based on testing performed in lab conditions in 2012.



GAS USE COMPARISON



CUT QUALITY OVER CONSUMABLE LIFE FOR EnduraX™ ELECTRODE



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INNOVATIVE CUTTING TECHNOLOGIES



Hafnium Optimizing Technology (Hf OT™)

This proprietary technology maximizes consumable life while ensuring superior cut quality. Hf OT™ begins with the design of the torch and consumables. The components are designed to provide proper arc formation, constriction, and centering. Hf OT™ includes a breakthrough method for minimizing consumable wear during start up and shut down of the system, where a majority of the consumable wear occurs. This is done by uniquely controlling the relationship between the arc current and plasma gas. Hf OT™ results in superior cut quality, extraordinary consumable life, and low operating cost.



With our innovative Quick Disconnect Torch, you can change consumables up to 4 times faster than previous models to decrease downtime and enhance productivity.



Patent Pending combination of Hafnium Inserts for extraordinary long consumable life while delivering superior cut quality.



UltraSharp™ Hole Technology

Our 40 years of shape cutting experience helps us produce the industry's most consistent hole quality for mild steel and stainless steel at various thicknesses. This advanced technology requires no operator expertise or intervention to get the UltraSharp quality holes.



THE LINCOLN ELECTRIC GREEN INITIATIVE




High Energy Efficiency
reduces energy demand

www.lincolnelectric.com/green

Green Technology

We are committed to being environmentally responsible. Spirit plasma systems have a high power efficiency resulting in lower power consumption per cut. Lower gas consumption, longer consumable life, high energy efficiency and responsible manufacturing processes reduce the environmental impact throughout the value chain of design, manufacturing and field use of Spirit systems.

SPECIFICATIONS

Rated Output ⁽¹⁾	Input Voltage & Amperage (3 Phase)	Dimensions		Gas Supply		  
		Power Supply ⁽²⁾	Cooling System	Plasma Gas	Shield Gas	
400 amps DC @ 100% duty cycle	208V/60Hz/276A 230V/60Hz/250A 380V/50/60Hz/151A 415V/50/60Hz/138A 460V/60Hz/125A 575V/60Hz/100A	Weight: 2048 lb (929 kg) Height: 49.8 in (1266 mm) Width: 34 in (864 mm) Depth: 51.6 in (1311 mm)	Weight: 110 lb (50 kg) Height: 36 in (914 mm) Width: 23 in (584 mm) Depth: 15.8 in (401 mm)	O ₂ AIR H17 ⁽³⁾ N ₂	AIR O ₂ N ₂	

⁽¹⁾@ 104°F/40°C ⁽²⁾Including AGC ⁽³⁾H17 = 50% N₂, 32.5% Ar, 17.5% H₂

OPERATING DATA

	AMP	Thickness in (mm)	Speed ipm (m/min)	GAS
MILD STEEL	30	0.036 (1.0)	105 (2.615)	O ₂ Plasma O ₂ Shield
		0.075 (2.0)	65 (1.615)	
		0.135 (3.0)	40 (1.285)	
	50	0.075 (2.5)	200 (4.885)	
		0.125 (3.0)	180 (4.660)	
		1/4 (6.0)	75 (2.075)	
	70	0.125 (3.0)	190 (4.995)	
		1/4 (5.0)	120 (3.265)	
		3/8 (6.0)	75 (3.105)	
	100	1/4 (6.0)	150 (3.950)	
		1/2 (12.0)	65 (1.850)	
		3/4 (20.0)	35 (0.800)	
	150	1/4 (6.0)	165 (4.305)	O ₂ Plasma Air Shield
		1/2 (12.0)	90 (2.485)	
		1 (25.0)	40 (1.040)	
	200	1/4 (6.0)	230 (6.100)	
1/2 (12.0)		120 (3.160)		
3/4 (20.0)		75 (1.810)		
275	1 (25.0)	50 (1.310)		
	1/2 (12.0)	125 (3.290)		
	3/4 (20.0)	90 (2.190)		
400	1 (25.0)	65 (1.690)		
	1 1/4 (32.0)	45 (1.120)		
	1/2 (12.0)	160 (4.205)		
STAINLESS STEEL	30	0.036 (1.0)	200 (4.855)	AIR Plasma AIR Shield
		0.075 (1.5)	90 (3.260)	
		0.075 (2.0)	105 (2.565)	
	50	0.120 (3.0)	65 (1.685)	
		1/4 (6.0)	40 (1.075)	
		0.135 (3.0)	120 (3.210)	
	70	3/8 (6.0)	50 (2.050)	
		3/8 (10.0)	80 (1.935)	
		1/2 (12.0)	55 (1.540)	
	150	1/4 (6.0)	150 (3.910)	
1/2 (12.0)		85 (2.330)		
3/4 (20.0)		45 (1.030)		

	AMP	Thickness in (mm)	Speed ipm (m/min)	GAS	
STAINLESS STEEL	200	1/4(6.0)	200 (5.220)	H17 Plasma N ₂ Shield	
		5/8 (16.0)	75 (1.890)		
		1 (25.0)	40 (1.050)		
	275	1/2 (12.0)	120 (3.220)		
		3/4 (20.0)	80 (1.940)		
		1 (25.0)	55 (1.435)		
	400	1/2 (12.0)	105 (3.415)		
		1 (25.0)	50 (1.690)		
		1 1/2 (38.0)	30 (0.895)		
	ALUMINUM	70	2 (50.0)*	18 (0.410)	Air Plasma N ₂ Shield
			3/16 (5.0)	80 (2.030)	
			1/4 (6.0)	100 (2.625)	
		150	1/2 (12.0)	60 (1.610)	
			3/4 (20.0)	40 (0.940)	
			3/8 (10.0)	80 (2.010)	
		200	5/8 (16.0)	60 (1.515)	
1 (25.0)			35 (0.915)		
3/8 (10.0)			85 (2.140)		
260		3/4 (20.0)	55 (1.315)		
	1 (25.0)	33 (0.875)			
	1/2 (12.0)	105 (2.750)			
400	1 (25.0)	50 (1.310)			
	1 1/2 (38.0)	30 (0.765)			
	2 (50.0)*	18 (0.470)			
ALUMINUM	50	0.080 (2.0)	90 (2.360)	Air Plasma N ₂ Shield	
		0.080 (2.0)	250 (6.400)		
		3/16 (5.0)	80 (1.920)		
	100	1/2 (12.0)	30 (0.820)		
		1/4 (6.0)	105 (2.710)		
		3/8 (10.0)	90 (2.210)		
	150	1/2 (12.0)	70 (1.890)		
		1/4 (6.0)	145 (3.770)		
		1/2 (12.0)	90 (2.430)		
	200	3/4 (20.0)	45 (0.990)		
1/4 (6.0)		190 (4.995)			
1/2 (12.0)		110 (2.995)			
275	3/4 (20.0)	65 (1.575)			
	3/8 (10.0)	160 (3.930)			
	1/2 (12.0)	125 (3.375)			
400	3/4 (20.0)	85 (2.055)			
	1/2 (12.0)	150 (3.950)			
	1 (25.0)	75 (1.945)			
1 1/2 (38.0)	35 (0.895)				

*Requires edge start or moving pierce

CUSTOMER ASSISTANCE POLICY

The business of Burny Kalburn is manufacturing and selling high quality cutting equipment. Our challenge is to meet the needs of our customers and to exceed their expectations. On occasion, purchasers may ask Burny Kalburn for information or advice about their use of our products. Our employees respond to inquiries to the best of their ability based on information provided to them by the customers and the knowledge they may have concerning the application. Our employees, however, are not in a position to verify the information provided or to evaluate the engineering requirements for the particular application. Accordingly, Burny Kalburn does not warrant or guarantee or assume any liability with respect to such information or advice. Moreover, the provision of such information or advice does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or advice, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose is specifically disclaimed.

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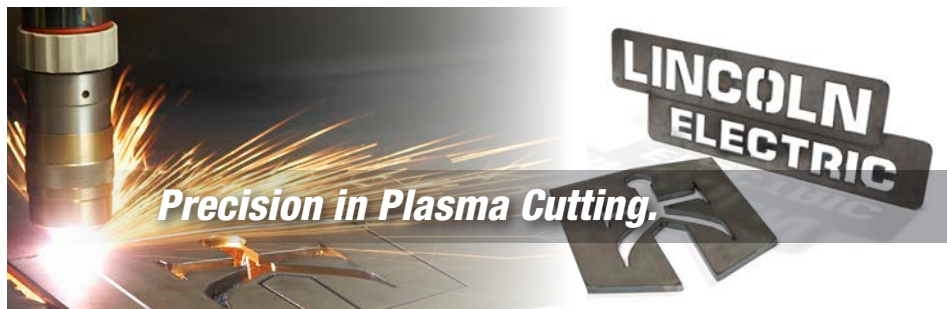
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