Spirit® II 400

FINELINE™ HIGH DEFINITION PLASMA CUTTING TECHNOLOGY

The Spirit II Series plasma systems feature the unique FineLine™ High Definition Plasma Cutting Technology that delivers unequaled performance in cut quality at lower operational costs. We provide the best hole cutting quality over consumable life by achieving the least part taper over the life of an electrode. When FineLine cutting technology is paired with our proprietary UltraSharp™ Hole Technology you also get the best hole cutting quality in the industry.

The Spirit II 400 is a full function 400 amp FineLine high definition plasma cutting and marking system with fully automated or manual process control. It has the ability to pierce most metals up to **2 in. (50 mm)** thick, and has a maximum capacity of **3 in. (75 mm)**. Automatic setting of process parameters provides exceptional ease of operation. The Spirit II 400 provides FineLine high definition 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** are important. With ease of use, the ultimate in cut quality and the highest processing speed, the Spirit II 400 truly sets the standard in precision plasma cutting.

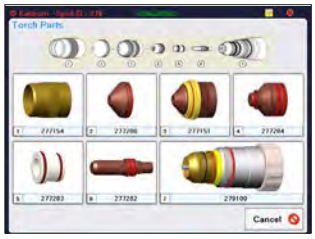
Spirit II 400 shown with Automatic Gas Console (AGC) configuration

Mild Steel Production Capacity	Max. Thickness (Edge Start, with dross)
2 in (50.0 mm)	3 in (75.0 mm)

BURNY KALIBURN 3 YEAR WARRANTY ON MACHINE 1 YEAR WARRANTY ON ORIGINAL TORCH

FEATURES

- **CleanStrike™ Technology**
  - Eliminates high frequency starting.
- **Unmatched Cut Quality and Consistency**
  - 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.
- **Longer Unparalleled Consumable Life**
  - Hafnium Optimizing Technology (H_fOT™) significantly increases electrode life.
  - EnduraX™ Silver Electrode provides up to 3 times the life of an Endura™ electrode.
  - 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**
  - Fast Proportional Valve Gas Regulation.
  - Plasma Cutting and Marking with separate gas is controlled through a CNC output, a serial link or a manual selection. The marking operation results in an instantaneous cut and mark cycle change. Operating costs are controlled 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 with rigorous manufacturing and testing standards ensure high product reliability.
  - 600 ampere IGBT chopper transistor for high reliability.
  - Industry leading 3 year warranty on machine, 1 year on original torch.
  - Multi-Tap Transformer and Common Chopper Platform are standard on all systems.



OTHER FEATURES

- Flexibility to select between an Auto Gas Console or Manual Gas Console.
- Plasma Console provides automatic PC controlled process variables through a touch screen display HMI. Using the user-friendly interface, the operator can set all plasma torch parameters by material type and thickness. The operator can also view all torch parts for selected material and thickness.
- The system can perform self-diagnostics and track pierces, pierce errors and type of errors for last six electrodes.
- The system can automatically set INOVA™ (option) Torch Height Control to the proper pierce height, cutting height and arc voltage.
- On-board CAN to CAN communications enable single wire setup and also feature CAN termination plug error reporting.

OPTIONAL FEATURES

- A pneumatic safety switch can be added to protect the torch from collision damage.
- Built-in INOVA Torch Height Control eliminates wiring and reduces setup time.

Left Picture:
Back panel shown for 150/275 models.

Right Picture:
Back panel shown for the 400 model.

INNOVATIVE CUTTING TECHNOLOGIES

CleanStrike™ Technology
Using this patented technology, we can initiate a pilot arc with a single unipolar high voltage impulse. Initiating an arc in this manner provides an opportunity to eliminate the spark gap assembly used with conventional starting as well as associated RF noise. This technology results in reduced EMI and thereby minimizes interference with sensitive electronic equipment.

UltraSharp
precision in shape cutting

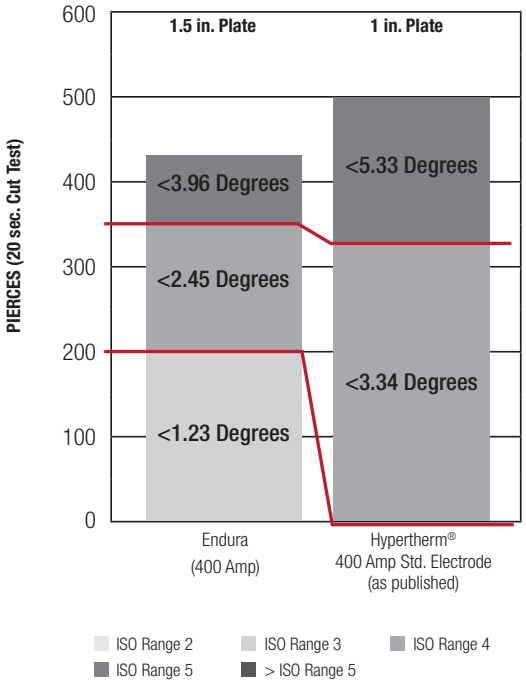
HAFNIUM OPTIMIZING TECHNOLOGY

Hafnium Optimizing Technology (H_f OT™)
This proprietary technology maximizes consumable life while ensuring superior cut quality. H_f OT™ begins with the design of the torch and consumables. The components are designed to provide proper arc formation, constriction, and centering. H_f 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. H_f OT™ results in superior cut quality and extraordinary consumable life, which means more production from a single set of consumables and therefore lower operating cost.

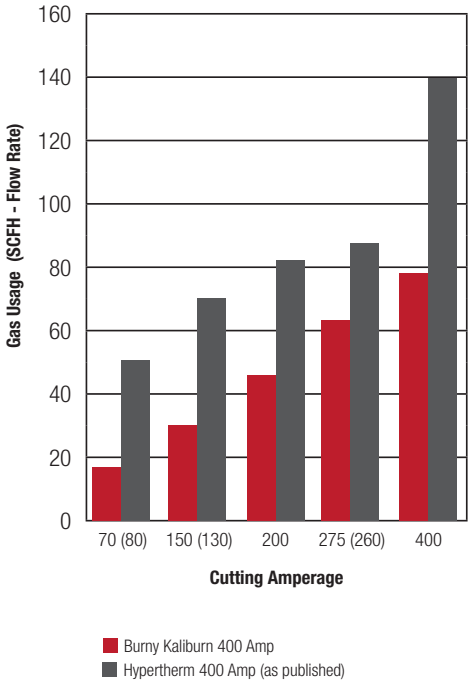
PERFORMANCE COMPARISON

CUT QUALITY OVER CONSUMABLE LIFE

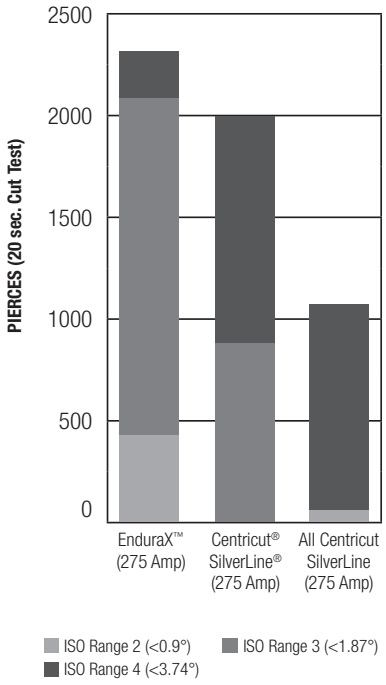
Based on testing performed in lab conditions in 2012.



GAS USE COMPARISON



CUT QUALITY OVER CONSUMABLE LIFE



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OPERATING DATA

MILD STEEL

AMP	Thickness in (mm)	Speed ipm (m/min)	GAS
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)	O_2 Plasma Air Shield
	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)	
	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)	
	1 (25.0)	50 (1.310)	
275	1/2 (12.0)	125 (3.290)	
	3/4 (20.0)	90 (2.190)	
	1 (25.0)	65 (1.690)	
	1 1/4 (32.0)	45 (1.120)	
400	1/2 (12.0)	160 (4.205)	
	3/4 (20.0)	110 (2.700)	
	1 (25.0)	85 (2.200)	
	1 1/2 (38.0)	50 (1.275)	
	2 (50.0)*	33 (0.860)	
	2 1/2 (65.0)*	15 (0.381)	
	3 (75.0)*	8 (0.203)	

**Requires edge start or moving pierce*

STAINLESS STEEL

AMP	Thickness in (mm)	Speed ipm (m/min)	GAS
30	0.036 (1.0)	200 (4.855)	AIR Plasma AIR Shield
	0.075 (1.5)	90 (3.260)	
50	0.075 (2.0)	105 (2.565)	Air Plasma N_2 Shield
	0.120 (3.0)	65 (1.685)	
	1/4 (6.0)	40 (1.075)	
70	0.135 (3.0)	120 (3.210)	
	3/8 (6.0)	50 (2.050)	
100	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)	
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)	
	2 (50.0)*	18 (0.410)	
70	3/16 (5.0)	80 (2.030)	
100	1/4 (6.0)	100 (2.625)	
150	1/2 (12.0)	60 (1.610)	
	3/4 (20.0)	40 (0.940)	
200	3/8 (10.0)	80 (2.010)	
	5/8 (16.0)	60 (1.515)	
	1 (25.0)	35 (0.915)	
260	3/8 (10.0)	85 (2.140)	
	3/4 (20.0)	55 (1.315)	
	1 (25.0)	33 (0.875)	
400	1/2 (12.0)	105 (2.750)	
	1 (25.0)	50 (1.310)	
	1 1/2 (38.0)	30 (0.765)	
	2 (50.0)*	18 (0.470)	

ALUMINUM

AMP	Thickness in (mm)	Speed ipm (m/min)	GAS
50	0.080 (2.0)	90 (2.360)	Air Plasma N_2 Shield
70	0.080 (2.0)	250 (6.400)	
	3/16 (5.0)	80 (1.920)	
	1/2 (12.0)	30 (0.820)	
100	1/4 (6.0)	105 (2.710)	
	3/8 (10.0)	90 (2.210)	
	1/2 (12.0)	70 (1.890)	
150	1/4 (6.0)	145 (3.770)	
	1/2 (12.0)	90 (2.430)	
	3/4 (20.0)	45 (0.990)	
200	1/4 (6.0)	190 (4.995)	
	1/2 (12.0)	110 (2.995)	
	3/4 (20.0)	65 (1.575)	
275	3/8 (10.0)	160 (3.930)	
	1/2 (12.0)	125 (3.375)	
	3/4 (20.0)	85 (2.055)	
400	1/2 (12.0)	150 (3.950)	
	1 (25.0)	75 (1.945)	
	1 1/2 (38.0)	35 (0.895)	

SPECIFICATIONS

Product Number	Input Voltage & Amperage	Rated Output[1]	Gas Console	Plasma Gas	Gas Supply Shield Gas	Marking Gas	
BK300052	220V	400 amps DC @ 100% duty cycle	Automatic	O_2 AIR H17[3] N_2	O_2 AIR H17[3] N_2	A_T N_2	CSA® CE Approval Available
BK300053	240V						
BK300054	380V						
BK300055	400V						
BK300056	415V						
BK300057	440V						
BK300058	480V						
BK300059	600V						
BK300062	220V		Manual				
BK300063	240V						
BK300064	380V						
BK300065	400V						
BK300066	415V						
BK300067	440V						
BK300068	480V						
BK300069	600V						

[1]@ 104°F/40°C [2]Including AGC [3]H17 = 50% N_2, 32.5% Ar, 17.5% H_2

Designed and manufactured in the U.S.A. For best cutting results and long consumable life, always use genuine Lincoln Electric consumables. For more information, visit: www.burny.com.

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.

THE LINCOLN ELECTRIC GREEN INITIATIVE
High Energy Efficiency
reduces energy demand
www.lincolnelectric.com/green

CUSTOMER ASSISTANCE POLICY

The business of Burny Kaliburn 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 Kaliburn 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 Kaliburn 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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Subject to Change – This information is accurate to the best of our knowledge at the time of printing. Please refer to www.burny.com for any updated information.

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