

Spirit® II 275

FINELINE™ HIGH DEFINITION PLASMA CUTTING TECHNOLOGY



The Spirit II Series plasma systems feature the unique FineLine™ High Definition Plasma Cutting Technology that delivers unequalled 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 275 is a full function 275 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 **1.25 in. (32 mm)** thick, and has a maximum capacity of **2.5 in. (65 mm)**. Automatic setting of process parameters provides exceptional ease of operation. The Spirit II 275 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 275 truly sets the standard in precision plasma cutting.



Spirit II 275 shown with Automatic Gas Console (AGC) configuration

Mild Steel Production Capacity	Max. Thickness (Edge Start, with dross)
1.25 in (32 mm)	2.5 in (65 mm)



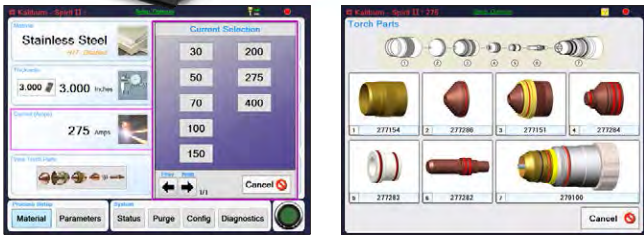
FEATURES

- **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 (HfOT™) 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



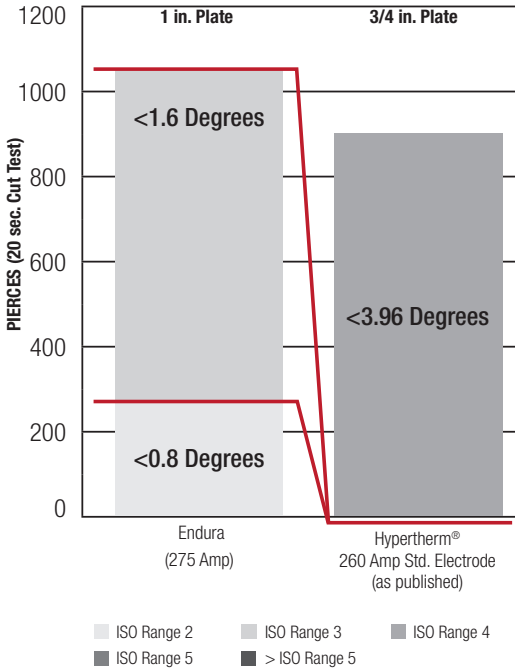
Hafnium Optimizing Technology (Hf OT™)

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 and extraordinary consumable life, which means more production from a single set of consumables and therefore lower operating cost.

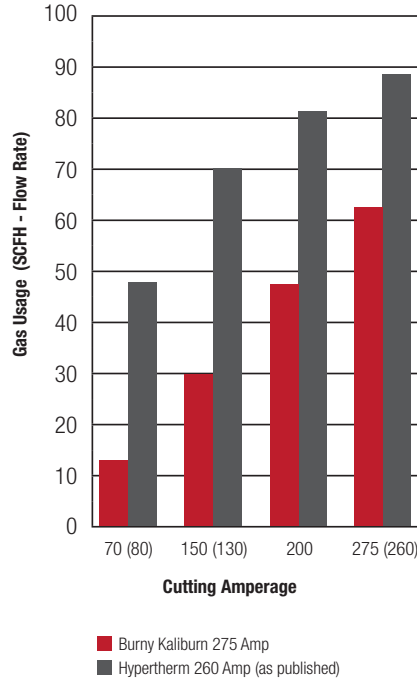
PERFORMANCE COMPARISON

CUT QUALITY OVER CONSUMABLE LIFE

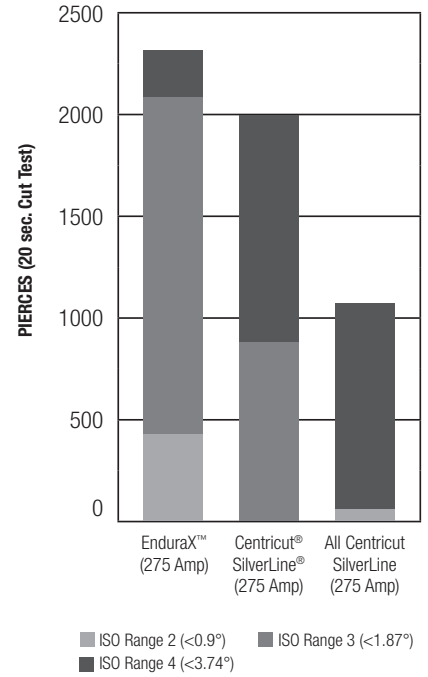
Based on testing performed in lab conditions in 2012.



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)	O ₂ Plasma Air Shield
	1/4 (5.0)	120 (3.265)	
	3/8 (6.0)	75 (3.105)	
100	1/4 (6.0)	150 (3.950)	O ₂ Plasma Air Shield
	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)	O ₂ Plasma Air Shield
	1/2 (12.0)	120 (3.160)	
	3/4 (20.0)	75 (1.810)	
275	1 (25.0)	50 (1.310)	O ₂ Plasma Air Shield
	1/2 (12.0)	125 (3.290)	
	3/4 (20.0)	90 (2.190)	
275	1 (25.0)	65 (1.690)	O ₂ Plasma Air Shield
	1 1/4 (32.0)	45 (1.120)	
	1 1/2 (38.0)	25 (0.645)	
275	2 (50.0)*	15 (0.395)	O ₂ Plasma Air Shield
	2.5 (65.0)*	9 (0.202)	

*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)	
	0.075 (2.0)	105 (2.565)	
50	0.120 (3.0)	65 (1.685)	AIR Plasma N ₂ Shield
	1/4 (6.0)	40 (1.075)	
	0.135 (3.0)	120 (3.210)	
70	3/8 (6.0)	50 (2.050)	AIR Plasma N ₂ Shield
	1/2 (12.0)	80 (1.935)	
	1/2 (12.0)	55 (1.540)	
100	1/4 (6.0)	150 (3.910)	AIR Plasma N ₂ Shield
	1/2 (12.0)	85 (2.330)	
	3/4 (20.0)	45 (1.030)	
150	1/4 (6.0)	200 (5.220)	AIR Plasma N ₂ Shield
	5/8 (16.0)	75 (1.890)	
	1 (25.0)	40 (1.050)	
200	1/2 (12.0)	120 (3.220)	AIR Plasma N ₂ Shield
	3/4 (20.0)	80 (1.940)	
	1 (25.0)	55 (1.435)	
275	1 1/4 (32.0)*	35 (0.880)	AIR Plasma N ₂ Shield
	1 1/2 (38.0)*	25 (0.640)	
	1 (25.0)	55 (1.435)	
70	3/16 (5.0)	80 (2.030)	H17 plasma N ₂ shield
	1/4 (6.0)	100 (2.625)	
	1/2 (12.0)	60 (1.610)	
150	3/4 (20.0)	40 (0.940)	H17 plasma N ₂ shield
	3/8 (10.0)	80 (2.010)	
	5/8 (16.0)	60 (1.515)	
200	1 (25.0)	35 (0.915)	H17 plasma N ₂ shield
	3/8 (10.0)	85 (2.140)	
	3/4 (20.0)	55 (1.315)	
260	1 (25.0)	33 (0.875)	H17 plasma N ₂ shield
	1 1/4 (32.0)*	26 (0.650)	

ALUMINUM

AMP	Thickness in (mm)	Speed ipm (m/min)	GAS
30	0.040 (1.0)	150 (3.885)	AIR Plasma AIR Shield
	0.080 (2.0)	90 (2.360)	
50	0.080 (2.0)	250 (6.400)	AIR Plasma N ₂ shield
	3/16 (5.0)	80 (1.920)	
70	1/2 (12.0)	30 (0.820)	AIR Plasma N ₂ shield
	1/4 (6.0)	105 (2.710)	
	3/8 (10.0)	90 (2.210)	
100	1/2 (12.0)	70 (1.890)	AIR Plasma N ₂ shield
	1/4 (6.0)	145 (3.770)	
	3/8 (10.0)	90 (2.430)	
150	1/2 (12.0)	90 (2.430)	AIR Plasma N ₂ shield
	3/4 (20.0)	45 (0.990)	
	1/4 (6.0)	190 (4.995)	
200	1/2 (12.0)	110 (2.995)	AIR Plasma N ₂ shield
	3/4 (20.0)	65 (1.575)	
	3/8 (10.0)	160 (3.930)	
275	1/2 (12.0)	125 (3.375)	AIR Plasma N ₂ shield
	3/4 (20.0)	85 (2.055)	
	1 (25.0)*	60 (1.565)	
275	1 1/4 (32.0)*	45 (1.120)	AIR Plasma N ₂ shield
	1 1/2 (38.0)*	25 (0.645)	

SPECIFICATIONS

Product Number	Input Voltage & Amperage	Rated Output ⁽¹⁾	Gas Console	Plasma Gas	Gas Supply Shield Gas	Marking Gas	
BK300031	208V	275 amps DC @ 100% duty cycle	Automatic	O ₂	O ₂	A _T N ₂	  Approval Available
BK300032	220V			AIR	AIR		
BK300033	240V			H17 ⁽³⁾	H17 ⁽³⁾		
BK300034	380V			N ₂	N ₂		
BK300035	400V						
BK300036	415V						
BK300037	440V						
BK300038	480V						
BK300039	600V						
BK300041	208V				Manual		
BK300042	220V						
BK300043	240V						
BK300044	380V						
BK300045	400V						
BK300046	415V						
BK300047	440V						
BK300048	480V						
BK300049	600V						

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

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.



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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