



# THERMAL DYNAMICS®

AUTOMATION

## Ultra-Cut®

**High Precision Plasma Cutting System**



**Automated Plasma Cutting Systems**

# Automated Plasma Cutting

## High Precision Plasma Cutting

The Ultra-Cut® delivers premium precision plasma cutting of mild steel and non-ferrous alloys. For non-ferrous material, **select our unique water mist secondary** for **best in class cut quality**. In addition, the Ultra-Cut systems can also be used for clean efficient **plasma marking** without having to change consumables.

### Quality

- Excellent dross-free cuts using oxygen (O<sub>2</sub>) plasma on mild steel
- Unmatched cut quality on non-ferrous materials with either Ar-H<sub>2</sub>/N<sub>2</sub> or by using our unique Water Mist Secondary (WMS®) system.

### Ease of Use

- Fast and easy installation
- Simple set-up and user-friendly gas console
- Quick-change consumable design
- Easy to identify and troubleshoot problems
- The automated Digital Flow Control increases ease of use and provides improved cut consistency.

### Productivity

- Highest cut speed in its class on stainless steel. The cut speed can be up to 3 times faster than with similar cutting systems.
- Highest kW output in its class
- Outstanding parts life
- Reduced downtime during parts changes due to the SpeedLok™ cartridge design of the XT™-300 torch.



Ultra-Cut Power Supply



Automated Digital Flow Control (DFC-3000)



XT-300 Shielded Torch and Lead Set-up to 100 ft. (30m)



RAS-1000 Remote Arc Starter

### Technology

- Microprocessor controlled to produce the best cut quality
- Fiber optic communication decreases HF interference
- Precision torch design offers the best cut quality in its class
- Higher cut speeds than argon/hydrogen on non-ferrous materials



GCM-2010 Digitally Controlled Manual Gas Console

### Reliability

Proven reliability - years of experience in high-end applications

## XT™ Torch Technology For Maximum Performance

The XT-300 torch is the most technologically advanced torch available today. Patented torch design guarantees high tolerance and consistently high performance.

### Self-centering Components Maintain Precise Alignment

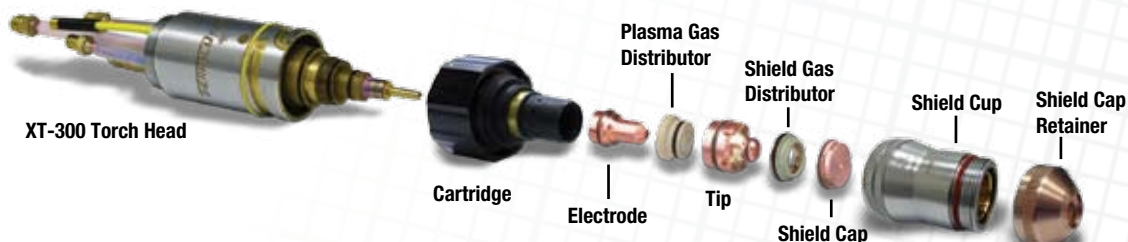
Consumable parts and torch body are precisely engineered to lock into place for absolute alignment and remain perfectly positioned cut after cut.

### Leak-Less Torch Head Design

XT's unique coolant tube design eliminates coolant leakage during consumable parts changes.

### Precision Cuts On All Metals

The XT's dual gas technology provides one of the highest density plasma streams on the market for performance cuts on mild steel, stainless steel, aluminum, and other non-ferrous materials. Choices for plasma gas include O<sub>2</sub>, N<sub>2</sub>, Ar-H<sub>2</sub>, and Ar for marking. Shield gas choices include O<sub>2</sub>, N<sub>2</sub>, H<sub>2</sub>O, and Air.



# Automated Plasma Cutting

## Automated Digital Flow Control (DFC-3000)

### Why choose the automated Digital Flow Control?

- Easier to use
- No setup errors
- No need for CNC to control the DFC
- Uses the same parts for cutting and marking
- Reduced set up times
- Consistent cut quality
- Improved parts life and cut quality
- Easily switch between marking and cutting
- Integrates easily to most CNC's



Marking Samples



### Advantages

- Can use Argon as marking gas which reduces the kerf depth
- Cut chart updates can be done easily through the USB port

## XTR™ Robotic Torch

- Specifically designed for the Ultra-Cut® precision cutting systems
- One of the shortest Robotic torches in the market to provide for ease of articulation or access. Only 9.3" (236mm) in length
- Profile/Bevel consumables for improved access and bevel cutting



**Easy Access Consumables**

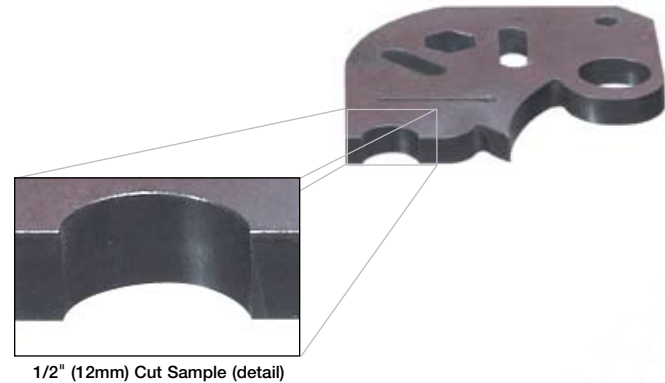
- Ultra-light, ultra-flexible, robust torch leads
- Torch mounting indicators for positive torch positioning
- Position teach tool for point to point programming



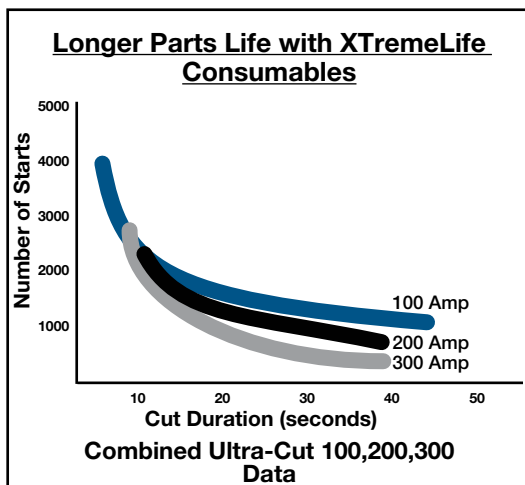
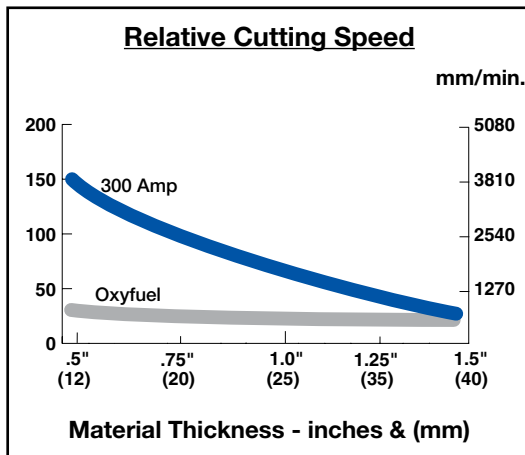
### XTremeLife™ Consumables For Mild Steel

The XTremeLife technology delivers the parts life and cut quality on mild steel with O<sub>2</sub> plasma that the high end customer expects. Unrivalled cut quality from gauge (0.5mm) to 1½" (40mm) material with the widest range of consumables in the market.

- Bevel angles less than 3°
- Square cut face with minimal top edge rounding
- Smooth cut edge surface
- Virtually dross-free parameter window up to 1½" (40mm)
- Consistent cut quality over the whole parts life

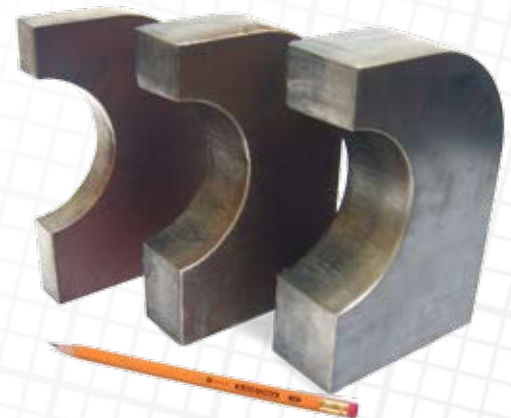


1/2" (12mm) Cut Sample (detail)



### Comparison - Ultra-Cut® 300 vs Oxyfuel

- Averages 3 times faster cut speeds
- Pierces 1¼" (35mm) in 1 second
- One Ultra-Cut 300 can replace up to 3 oxy-fuel torches - each requiring their own height controls.
- Ultra-Cut 300 provides superior stainless steel and aluminum cut quality
- Higher arc density equals faster speeds without sacrificing cut quality
- Smaller tip orifices create a narrow kerf for tighter angles and radiuses at higher speeds - less material waste.
- Patented consumable technology



# Automated Plasma Cutting

## Water Mist Secondary (WMS<sup>®</sup>) For Non-Ferrous Materials

WMS delivers excellent non-ferrous cut quality and low cost of operation by using N<sub>2</sub> as plasma gas and ordinary tap water as the secondary. A reducing atmosphere is produced in the cut by the release of hydrogen from the secondary water. The reducing atmosphere decreases oxidation on the cut face surface. WMS is recommended for materials up to 1" (25mm) thick depending on power supply.



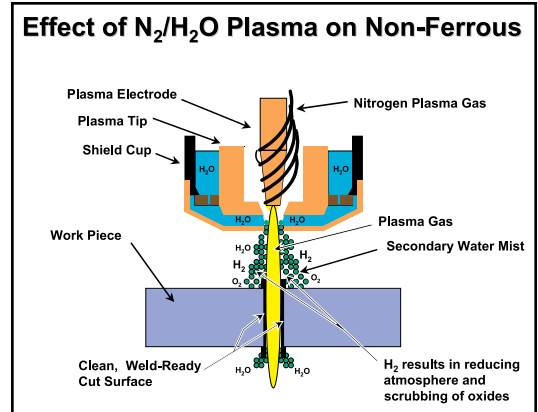
Cutting Aluminum with the Ultra-Cut<sup>®</sup> 200

### WMS Benefits

- Lowest operating cost
- Dross-free cutting
- Oxide-free cut surface
- Wide parameter window
- Easy to use
- Laser-like cut quality on Aluminum
- Small heat effected zone
- Less distortion
- Same weldability than Ar/H<sub>2</sub>



Example for ¾" (20mm) with WMS



The WMS process uses nitrogen as the plasma gas while water is used as the secondary gas (shield gas). The water in the torch is divided into its principal components (hydrogen and oxygen) during the cutting process. The hydrogen creates a reduced atmosphere in the cutting zone, isolating it from contaminating elements, and producing a clean, dross-free and oxide-free cut surface. The majority of the water used during the process (from 4 to 8 GPH) is converted to principal components (gas) and thereby does not require the need for disposal.



Example for ¼" (6mm)  
Aluminum cut with WMS



Marking on Aluminum  
and Stainless Steel

### How To Select The Right System



	Ultra-Cut® 100	Ultra-Cut 200	Ultra-Cut 300
Production Pierce	½" (12mm)	1¼" (35mm)	1½" (40mm)
¼" (6mm) Mild Steel	150 ipm (3.21m/min)	200 ipm (5.08 m/min)	—————
½" (12mm) Mild Steel	64 ipm (1.63 m/min)	115 ipm (2.92 m/min)	150 ipm (3.21 m/min)
¾" (20mm) Mild Steel	25 ipm (0.64 m/min)	65 ipm (1.65 m/min)	100 ipm (2.54 m/min)
1" (25mm) Mild Steel	—————	48 ipm (1.22m/min)	70 ipm (1.78 m/min)

\*Cut speeds using O<sub>2</sub>/Air on Mild Steel at max output current.

### When to choose the Automated Digital Flow Control

#### Consider the automated DFC when:

- Plasma Marking
- Applications call for frequent changes in material types or thicknesses
- Need to optimize cut quality
- Not using a PLC to control the Ultra-Cut system



TSC-3000 with Material Screen Shot

# Automated Plasma Cutting

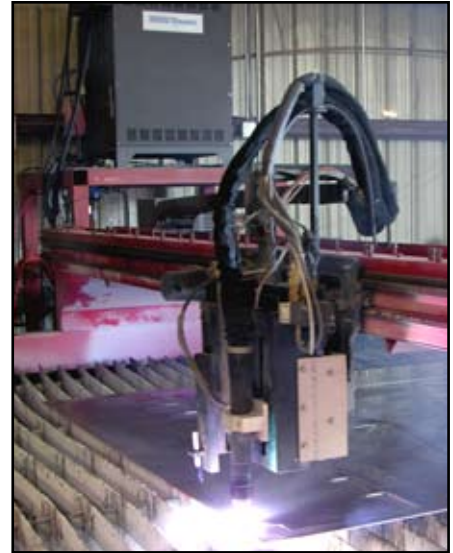
## Ultra-Cut<sup>®</sup> 100

### High Precision Plasma Cutting System

- Ideal for robotic applications
- Cuts up to 1/2" (12mm)

#### Specifications (subject to change without notice)

Rated Output	100 Amps
Output Range (A)	10 - 100 Amps
Output (V)	80 - 180V
Input Volts	208-230/460V, 3ph, 50-60 Hz, 400V, 3ph, 50-60 Hz, 600V, 3ph, 50-60 Hz
Input Amps @ Rated Output	60A @ 208V, 50A @ 230V, 35A @ 400V, 33A @ 460V, 26A @ 600V
Duty Cycle (@104°F / 40°C)	100% @ 100A @ 180V (36kW)
MAX OCV	380 VDC
Pre-Flow Gas	Air @ 120 psi (8.3bar)
Plasma Gas	O <sub>2</sub> , Ar-H <sub>2</sub> , N <sub>2</sub> , Air @ 120 psi (8.3bar)
Shield Gas	O <sub>2</sub> , N <sub>2</sub> , Air @ 120 psi (8.3bar) H <sub>2</sub> O @ 10 GPH (0.6 l/min).
Weight	Power Supply - 343 lbs. (156kg)
Dimensions	H 41.5" (1054mm) x W 27.5" (700mm) x D 38.5" (978mm) (Fully Assembled Power Supply)
Warranty	Two Years Power Supply & One Year Torch
Certifications	CE, CCC, CSA

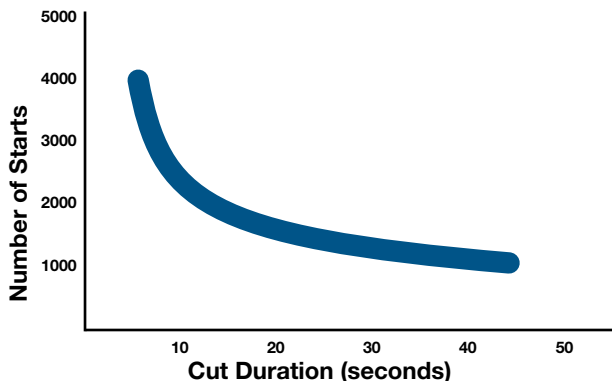


#### Cutting Speed Chart

Torch Model	XT <sup>™</sup> -300
Production Piercing & Cutting Capacity (Mild Steel)	1/2" (12mm)
Maximum Piercing & Cutting Capacity (Mild Steel)	5/8" (15mm)
Maximum Edge Start (Mild Steel)	3/4" (20mm)

Material	Thickness Inch	Speed IPM	Amps	Plasma/ Shield	Thickness mm	Speed mm/min.
<b>Mild Steel</b>						
	20 ga.	130	30	O <sub>2</sub> /O <sub>2</sub>	1	3050
	10 ga.	30			3	910
	10 ga.	210	70	O <sub>2</sub> /Air	3	6620
	1/4	120			6	3100
	3/16	190	100	O <sub>2</sub> /Air	5	4670
	1/4	150			6	4030
	3/8	95			10	2300
	1/2	64			12	1800
	5/8	50			15	1370
	1/4	150	100	Air/Air (Conventional)	6	4150
	3/8	85			10	2120
	1/2	75			12	1960
	3/4	30			20	720
<b>Stainless Steel</b>						
	26 ga.	350	30	Air/Air	.6	8300
	20 ga.	300			1	7190
	16 ga.	110			1.5	3100
	14 ga.	170	50	N <sub>2</sub> /H <sub>2</sub> O	2	4310
	12 ga.	150			3	3660
	3/16	70			5	1523
	10 ga.	120	70	N <sub>2</sub> /H <sub>2</sub> O	3	3040
	3/16	90			5	2140
	1/4	50			6	1495
	1/4	72	100	N <sub>2</sub> /H <sub>2</sub> O	6	1880
	3/8	55			10	1350
	1/2	42			12	1140
	1/4	70	100	Ar-H <sub>2</sub> /N <sub>2</sub>	6	1810
<b>Aluminum</b>						
	16 ga.	140	50	N <sub>2</sub> /H <sub>2</sub> O	2	2990
	11 ga.	60			3	1520
	3/16	40			5	950
	3/8	70	100	N <sub>2</sub> /H <sub>2</sub> O	10	1665
	1/2	40			12	1190
	5/8	35			15	925
	1/2	50	100	Ar-H <sub>2</sub> /N <sub>2</sub>	12	1330

#### Longer Parts Life with XTremeLife Consumables



Note: This cutting speed chart includes preliminary data and is subject to change without notice. Take care in comparison. The speeds noted above are best cut speeds. Often, competitors show maximum cutting speeds. Although much higher speeds can be achieved, edge quality and bevel angle may be compromised. The capabilities shown in this table were obtained by using new consumables, correct gas and current settings, accurate torch height control and with the torch perpendicular to the workpiece. The operating chart does not list all processes available for the Ultra-Cut 100. Please contact Thermal Dynamics® for more information.



# Ultra-Cut 200®

## High Precision Plasma Cutting System

- Covers the production cut range up to 1" (25mm)
- Handles 80-85% of all plasma applications
- Highest cut speeds in the 200A range

### Specifications (subject to change without notice)

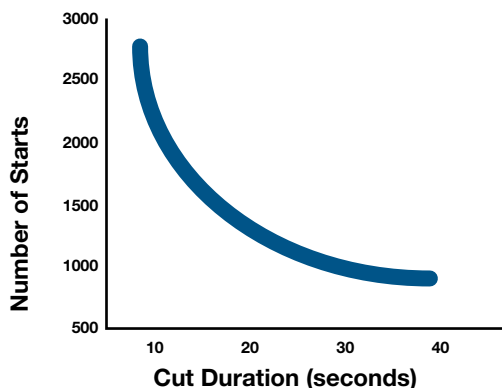
Rated Output	200 Amps
Output Range (A)	10 - 200 Amps
Output (V)	80 - 180V
Input Volts	208-230/460V, 3ph, 50-60 Hz, 400V, 3ph, 50-60 Hz, 600V, 3ph, 50-60 Hz
Input Amps @ Rated Output	130A @ 208V, 125A @ 230V, 77A @ 400V, 75A @ 460V, 78A @ 600V
Duty Cycle (@104°F / 40°C)	100% @ 200A @ 180V (36kW)
MAX OCV	380 VDC
Pre-Flow Gas	Air @ 120 psi (8.3bar)
Plasma Gas	O <sub>2</sub> , Ar-H <sub>2</sub> , N <sub>2</sub> , Air @ 120 psi (8.3bar)
Shield Gas	O <sub>2</sub> , N <sub>2</sub> , Air @ 120 psi (8.3bar) H <sub>2</sub> O @ 10 GPH (0.6 l/min).
Weight	Power Supply - 433 lbs. (197kg)
Dimensions	H 41.5" (1054mm) x W 27.5" (700mm) x D 38.5" (978mm) (Fully Assembled Power Supply)
Warranty	Two Years Power Supply & One Year Torch
Certifications	CE, CCC, CSA



### Cutting Speed Chart

Torch Model	XT™-300					
Production Piercing & Cutting Capacity (Mild Steel)	1" (25mm)					
Maximum Piercing & Cutting Capacity (Mild Steel)	1½" (40mm)					
Maximum Edge Start (Mild Steel)	2½" (65mm)					
Material	Thickness Inch	Speed IPM	Amps	Plasma/ Shield	Thickness mm	Speed mm/min.
<b>Mild Steel</b>						
	20 ga.	130	30	O <sub>2</sub> /O <sub>2</sub>	1	3050
	10 ga.	30			3	910
	10 ga.	210	70	O <sub>2</sub> /Air	3	6620
	1/4	120			6	3100
	1/4	150			6	4030
	3/8	95			10	2300
	1/2	64			12	1800
	5/8	50			15	1370
	3/8	85	100	Air/Air (Conventional)	10	2120
	1/2	75			12	1960
	3/4	30			20	720
	1/2	100	150	O <sub>2</sub> /Air	12	2650
	3/4	50			20	1120
	1	25			25	650
	3/4	65	200	O <sub>2</sub> /Air	20	1590
	1	48			25	1250
<b>Stainless Steel</b>						
	20 ga.	300	30	N <sub>2</sub> /H <sub>2</sub> O	1	7190
	16 ga.	110			1.5	3100
	14 ga.	170	50	N <sub>2</sub> /H <sub>2</sub> O	2	4310
	12 ga.	150			3	3660
	3/16	70			5	1523
	3/16	90	70	N <sub>2</sub> /H <sub>2</sub> O	5	2140
	1/4	50			6	1495
	1/4	72	100	Ar-H <sub>2</sub> /N <sub>2</sub>	6	1880
	3/8	55			10	1350
	1/2	42			12	1140
	1/4	70	100	N <sub>2</sub> /H <sub>2</sub> O	6	1810
	3/8	70	150	N <sub>2</sub> /H <sub>2</sub> O	10	1740
	1/2	60			12	1580
	5/8	50			15	1250
	3/4	45			20	1140
	3/4	50	200	N <sub>2</sub> /H <sub>2</sub> O	20	1100
	1	35			25	900
	3/4	40	200	Ar-H <sub>2</sub> /N <sub>2</sub>	20	950
	1	30			25	770
<b>Aluminum</b>						
	11 ga.	60	50	Air/Air	3	1520
	3/16	40			5	950
	1/4	100	100	N <sub>2</sub> /H <sub>2</sub> O	6	2760
	1/2	75	150	Ar-H <sub>2</sub> /N <sub>2</sub>	12	2100
	5/8	40			15	1260
	3/4	40	150	N <sub>2</sub> /H <sub>2</sub> O	20	960
	3/4	90	200	N <sub>2</sub> /H <sub>2</sub> O	20	2200
	1	50			25	1300
	3/4	70	200	Ar-H <sub>2</sub> /N <sub>2</sub>	20	1600
	1	40			25	1050

### Longer Parts Life with XTremeLife Consumables



Note: This cutting speed chart includes preliminary data and is subject to change without notice. Take care in comparison. The speeds noted above are best cut speeds. Often, competitors show maximum cutting speeds. Although much higher speeds can be achieved, edge quality and bevel angle may be compromised. The capabilities shown in this table were obtained by using new consumables, correct gas and current settings, accurate torch height control and with the torch perpendicular to the workpiece. The operating chart does not list all processes available for the Ultra-Cut 200. Please contact Thermal Dynamics® for more information.

# Automated Plasma Cutting

## Ultra-Cut<sup>®</sup> 300

### High Precision Plasma Cutting System

- The most powerful system in the Ultra-Cut range
- Ideal for bevel cutting up to 45° on 1½" (40mm)
- Can replace up to 3 oxyfuel torches considering cut speed and pierce time

### Specifications (subject to change without notice)

Rated Output	300 Amps
Output Range (A)	10 - 300 Amps
Output (V)	80 - 180VDC
Input Volts	208-230/460V, 3ph, 50-60 Hz, 400V, 3ph, 50-60 Hz, 600V, 3ph, 50-60 Hz
Input Amps @ Rated Output	208A @ 208V, 188A @ 230V, 109A @ 400V, 112A @ 460V, 81A @ 600V
Duty Cycle (@104°F / 40°C)	100% @ 300A @ 180V (54kW)
MAX OCV	380 VDC
Pre-Flow Gas	Air @ 120 psi (8.3bar)
Plasma Gas	O <sub>2</sub> , Ar-H <sub>2</sub> , N <sub>2</sub> , Air @ 120 psi (8.3bar)
Shield Gas	Air, O <sub>2</sub> , N <sub>2</sub> @ 120 psi (8.3bar), H <sub>2</sub> O @ 10 GPH (0.6 l/min.)
Weight	Power Supply - 535 lbs. (243kg)
Dimensions	H 53.1" (1298mm) x W 27.5" (700mm) x D 38.5" (978mm) (Fully Assembled Power Supply)
Warranty	Two Years Power Supply & One Year Torch
Certifications	CE, CCC, CSA

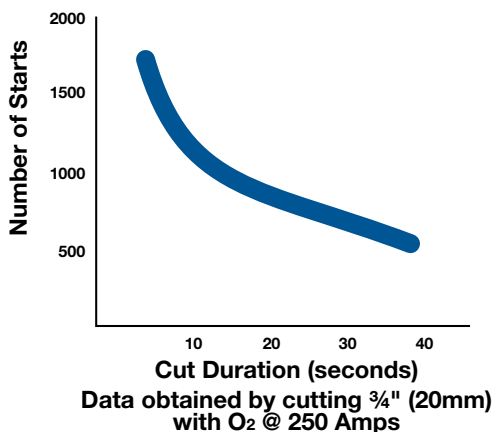


### Cutting Speed Chart

Torch Model	XT <sup>™</sup> -300
Production Piercing & Cutting Capacity (Mild Steel)	1½" (40mm)
Maximum Piercing & Cutting Capacity (Mild Steel)	1¾" (45mm)
Maximum Edge Start (Mild Steel)	3" (75mm)

Material	Thickness Inch	Speed IPM	Amps	Plasma/ Shield	Thickness mm	Speed mm/min.
<b>Mild Steel Precision</b>						
	20 ga.	130	30	O <sub>2</sub> /O <sub>2</sub>	1	3050
	10 ga.	30			3	910
	1/4	120	70	O <sub>2</sub> /Air	6	3100
	1/4	150	100	O <sub>2</sub> /Air	6	4030
	3/8	95			10	2300
	1	48	200	O <sub>2</sub> /Air	25	1250
	1-1/4	30			32	750
	1-1/2	20			38	510
	3/4	100	300	O <sub>2</sub> /Air	20	2540
	1	70			25	1780
	1-1/4	50			35	900
	3	7			70	285
<b>Stainless Steel</b>						
	20 ga.	300	30	N <sub>2</sub> /H <sub>2</sub> O	1	7190
	16 ga.	110			1.5	3100
	14 ga.	170	50	N <sub>2</sub> /H <sub>2</sub> O	2	4310
	12 ga.	150			3	3660
	3/16	70			5	1523
	3/16	90	70	N <sub>2</sub> /H <sub>2</sub> O	5	2140
	1/4	50			6	1495
	1/4	72	100	Ar-H <sub>2</sub> /N <sub>2</sub>	6	1880
	3/8	55			10	1350
	1/4	70	100	N <sub>2</sub> /H <sub>2</sub> O	6	1810
	3/4	50	200	N <sub>2</sub> /H <sub>2</sub> O	20	1100
	1	35			25	900
	1	40	300	N <sub>2</sub> /H <sub>2</sub> O	25	1030
	1-1/4	30			32	760
	1	35		H35/N <sub>2</sub>	25	920
	1-1/4	30			32	760
<b>Aluminum</b>						
	11 ga.	60	50	Air/Air	3	1520
	3/16	40			5	950
	1/4	100	100	N <sub>2</sub> /H <sub>2</sub> O	6	2760
	3/8	70			10	1700
	3/4	90	200	N <sub>2</sub> /H <sub>2</sub> O	20	2200
	1	50			25	1300
	1	60	300	N <sub>2</sub> /H <sub>2</sub> O	25	1560
	1-1/4	40			32	1000
	1	85			25	2190

### Longer Parts Life with XTremeLife Consumables



Note: This cutting speed chart includes preliminary data and is subject to change without notice. Take care in comparison. The speeds noted above are best cut speeds. Often, competitors show maximum cutting speeds. Although much higher speeds can be achieved, edge quality and bevel angle may be compromised. The capabilities shown in this table were obtained by using new consumables, correct gas and current settings, accurate torch height control and with the torch perpendicular to the workpiece. The operating chart does not list all processes available for the Ultra-Cut 300. Please contact Thermal Dynamics® for more information.

### Height Control SC-3000

- **Reliable, Rugged, and Operator Friendly**
- **Built in collision sensor**

#### Torch Height Adjustable by Distance or Voltage

##### Distance Mode:

- Change speed without changing standoff height
- Automatically adjusts for electrode wear

##### Voltage Mode:

- Ideal for contoured materials

#### Pierce Retract Mode

- Automatically increases the pierce height for a better transfer and increased pierce capacity

#### Real Time Data Display

- Actual arc voltage
- Operational status

#### Easy to Read Display

- High visibility in all lighting conditions
- Status LED's

#### User Friendly Setup and Operation

- Dynamic controls for easy menu navigation
- Quick setup feature
- Online help



Remote Terminal

- **Accurate and Fast**
- **Improves Productivity**

#### Linear Drive Torch Lifter Station

- Multidirectional collision sensor
- Torch weight compensation adjustment
- Dust proof slider design
- Multiple stations
- Universal torch clamp  
1-3/8" (35mm) – 2" (53mm)

#### Pendant Or Fixed Mounting

- Two mounting brackets provided

#### Plasma Preflow Control

- Begin preflow of gasses during height find save time and increases productivity

#### Kerf and Edge Control

- Automatically detects crossing the kerf or edge and locks height

#### Retract

- Automatically retracts the torch at the end of cut

#### Pierce Hold Delay

- Maintains pierce height until torch clears pierce slag



Linear Drive

#### Specifications (subject to change without notice)

Lifter Station	
Height:	28.7" (730mm)
Width:	4.7" (120mm)
Depth:	9.8" (250mm)
Weight:	26.4 lbs. (12kg)
Position Speed:	190 ipm (80mm/sec.)
Stroke:	8.7" (220mm)
Lifting Capacity:	26.4 lbs. (12kg)

## What You Get

### Ultra-Cut® Systems Include:

- Power supply
- Supply leads to remote arc starter
- Gas console (GCM-2010) or DFC-3000
- Torch installation starter kit
- Remote arc starter (RAS-1000)
- Torch leads



## Options And Accessories

- Spare parts kit
- Wheel kit
- TSC-3000 (Touch Screen Controller)
- Ohmic clip  
Cat. No. 9-9414
- Water filter  
Cat. No. 9-1068
- Water filter cartridge  
Cat. No. 9-1069
- Water pressure regulator  
Cat. No. 8-6118
- RAS Shelf Kit and Hardware  
Cat. No. 9-9484

DISTRIBUTED BY:



### Torch Coolant

#### Extra Cool Coolant

Cat. No. 7-3580

Resists freezing down to +10° (-12°C)



#### Ultra Cool Coolant

Cat. No. 7-3581

Resists freezing down to -27° (-33°C)

#### Extreme Cool Coolant

Cat. No. 7-3582

Resists freezing down to -65°F (-51°C)

#### De-I Cool Coolant

Cat. No. 7-3583

De-ionized water mixture for use where freezing protection is not required

For complete ordering information contact Thermal Dynamics® or your local Thermal Dynamics Automation Distributor.

**U.S. Plasma Automation Customer Care: 866-279-2628 / FAX 800-535-0557 • Canada Customer Care: 905-827-4515 / FAX 800-588-1714**  
**International Customer Care: 940-381-1212 / FAX 940-483-8178 • [www.thermal-dynamics.com](http://www.thermal-dynamics.com)**



**A Global Cutting & Welding Market Leader™**

**WORLD HEADQUARTERS: 16052 Swingley Ridge Road, Suite 300 • St. Louis, Missouri 63017 U.S.A.**

#### THE AMERICAS

Denton, TX USA  
U.S. Customer Care  
Ph: (1) 800-426-1888  
Fax: (1) 800-535-0557  
International Customer Care  
Ph: (1) 940-381-1212  
Fax: (1) 940-483-8178

Miami, FL USA  
Sales Office, Latin America  
Ph: (1) 954-727-8371  
Fax: (1) 954-727-8376

Oakville, Ontario, Canada  
Canada Customer Care  
Ph: (1) 905-827-4515  
Fax: (1) 800-588-1714

#### EUROPE

Chorley, United Kingdom  
Customer Care  
Ph: (44) 1257-261755  
Fax: (44) 1257-224800

Milan, Italy  
Customer Care  
Ph: (39) 0236546801  
Fax: (39) 0236546840

#### ASIA/PACIFIC

Cikarang, Indonesia  
Customer Care  
Ph: 62 21+ 8983-0011 / 0012  
Fax: 62 21+ 893-6067

Osaka, Japan  
Sales Office  
Ph: 816-4809-8411  
Fax: 816-4809-8412

Melbourne, Australia  
Australia Customer Care  
Ph: 1300-654-674  
Fax: 613+ 9474-7391  
International  
Ph: 613+ 9474-7508  
Fax: 613+ 9474-7488

Rawang, Malaysia  
Customer Care  
Ph: 603+ 6092-2988  
Fax: 603+ 6092-1085

Shanghai, China  
Sales Office  
Ph: 86-21-64072626  
Fax: 86-21-64483032

Singapore  
Sales Office  
Ph: 65+ 6832-8066  
Fax: 65+ 6763-5812