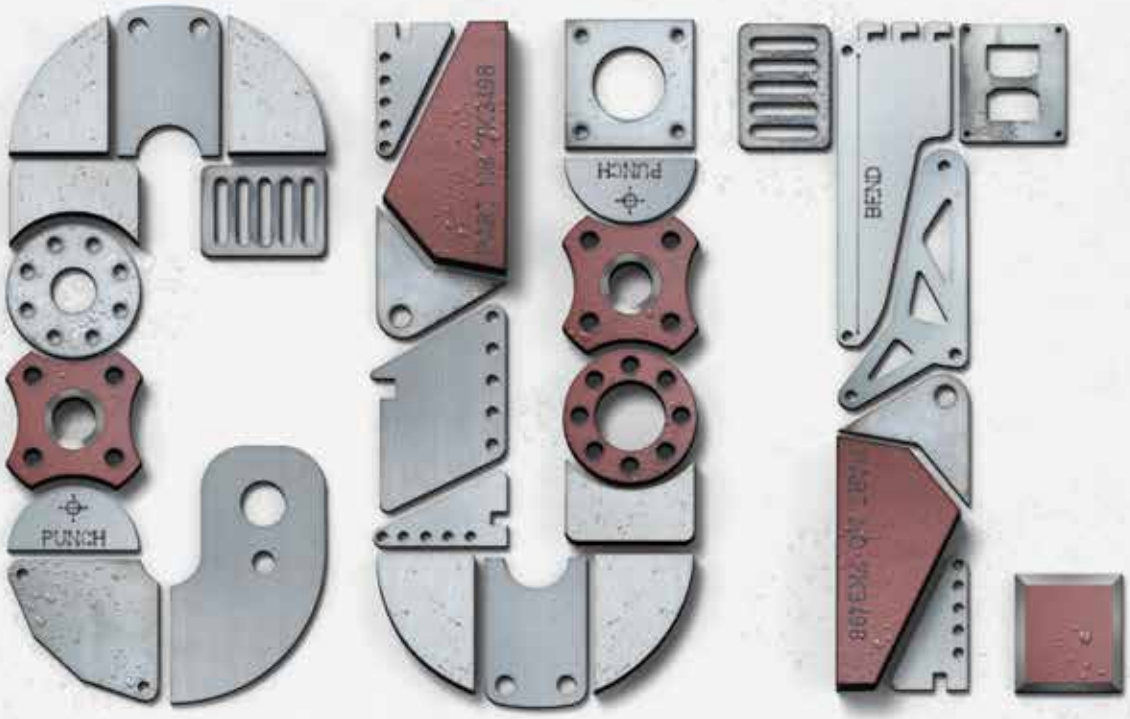
MACHINES
THAT MAKE THE



Gain unprecedented profitability and performance with Thermal Dynamics UC high-precision plasma systems.

THERMAL DYNAMICS®
UC SERIES

UNPARALLELED PERFORMANCE.

THE CUT CAPACITY YOU NEED – FOR TODAY AND TOMORROW.

With the UC Series lineup, you'll be able to deliver a production cut up to 50 mm on mild steel and an edge start of 160 mm on stainless steel. Machines are also optimized for aluminum and non-ferrous metals.

Choose the machine with the cutting capacity you need today and easily upgrade your system to grow with your business tomorrow. With StepUp technology, modular inverter blocks can be added to increase the amperage of your machine in 30 minutes or less.

StepUP™ MODULAR POWER TECHNOLOGY
UPGRADABLE TO 400 AMPS

20 mm
PRODUCTION PIERCE

UC131

Equipped for production cutting up to 20 mm on mild steel, with a cutting output of 130 A at 100% duty cycle (23.4 kW).

25 mm
PRODUCTION PIERCE

UC201

Equipped for production cutting up to 25 mm on mild steel, with a cutting output of 200 A at 100% duty cycle (40 kW).

40 mm
PRODUCTION PIERCE

UC301

Equipped for production cutting up to 40 mm on mild steel, with a cutting output of 300 A at 100% duty cycle (60 kW).

50 mm
PRODUCTION PIERCE

UC401

Equipped for production cutting up to 50 mm on mild steel, with a cutting output of 400 A at 100% duty cycle (80 kW).

100 mm
EDGE START

UC601

Equipped for production cutting up to 100 mm on stainless steel, with a cutting output of 600 A at 100% duty cycle (120 kW). Includes two UC 301 machines.

160 mm
EDGE START

UC801

Equipped for production cutting up to 160 mm on stainless steel, with a cutting output of 800 A at 100% duty cycle (160 kW). Includes two UC 401 machines.

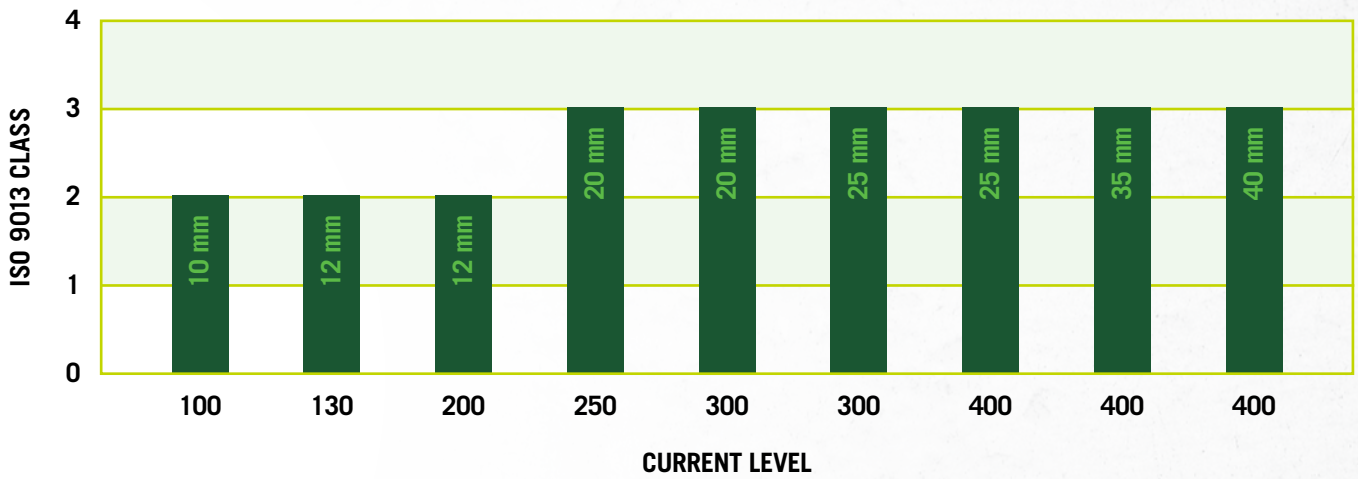
NEXT-GENERATION PROFITABILITY.

HIGH-PRECISION PLASMA PERFORMANCE. LOWEST COST OF OPERATION.

Thermal Dynamics UC plasma systems pay off by maximizing productivity to save time and money while reducing downtime and rework. Get every job done faster – and better – with the high-quality cutting-edge UC plasma series.

SUPERIOR CUT QUALITY.

Makes shops more efficient. Parts go directly from the cutting tables to welding, painting, or assembly without expensive secondary preparation.



Get better cut angles at lower ISO classes.

HIGHER PRODUCTIVITY.

Optimizes time and increases profits. Our full lineup offers the highest kilowatt output for maximized duty cycle and cut speed.

LOWEST TOTAL COST.

Lowest cost of ownership. Outstanding parts life and SpeedLok cartridge design reduce downtime, while lower gas consumption reduces cutting cost.

RELIABILITY YOU CAN DEPEND ON.

Ensures flawless performance through rigorous testing. The new power block comes with even more cooling, higher rated power electronics and discrete components for easier maintenance. If service is needed, our extensive service partner network is available to customers and OEM partners.

NEXT-LEVEL TECHNOLOGY.

CUTTING-EDGE XT™ TORCH FOR HIGH-QUALITY CUTS.

Improved concentricity of consumable cartridges on the torch head for enhanced cut performance. Leakless torch head design prevents air from entering the system and becoming trapped in the leads.

Plasma gas choices include: *Air, N_2, O_2, ArH_2, and Ar for marking with the Automatic Gas Console*
Shield gas choices include: *Air, N_2, O_2, or ArH_2 and H_2O*

PRECISE BEVEL CUTS.

Avoid costly secondary operations by cutting the bevel that's needed on Mild Steel, Stainless Steel or Aluminum. Dedicated bevel cut charts for Mild Steel help make setting up your CNC faster and easier to increase your productivity.

Find more information on bevel cutting on page 5.

HEAVYCUT™ AND QUICKPIERCE TECHNOLOGY FOR MAXIMUM PERFORMANCE ON THICK MATERIALS.

Get the best cut quality, precision, and parts life with XTremeLife™ consumables, reducing the cost per cut on materials up to 50 mm. Front-end parts are easy to use and require less cleaning, saving you time in the long run. Use the new QuickPierce function to reduce piercing time for faster overall cut speed and increased parts life on 300 A and 400 A systems by up to 40% on mild steel thicknesses ranging from 30 to 50 mm.

3DPRO TECHNOLOGY FOR PRECISION ROBOTIC CUTTING.

Achieve high-quality, laser-like cuts on 3D surfaces using robotic cutting technology.

- The XTR robotic torch has built-in lightweight torch leads for greater flexibility and visibility
- Consumable parts and torch body lock in place for absolute alignment
- Unique consumable cartridge reduces downtime to increase productivity
- Beveled consumables for improved accessibility
- Easy integration with UC Series systems

WATER MIST SECONDARY® (WMS) FOR ENHANCED PERFORMANCE ON STAINLESS STEEL.

Achieve superior cut speed on stainless steel and non-ferrous metals compared to laser cutting – all at a lower cost. Our entire lineup of machines comes **standard** with WMS – a high-end capability process that produces excellent cut quality, including dross-free cutting from 1 mm to 40 mm at 400 A and up to 125 mm at 800 A on non-ferrous materials using N_2 as plasma gas and filtered tap water as secondary.

BOLT-READY HOLES.

Produce higher-quality, straighter holes on mild steel with a perfect fit to bolts using Diameter Pro™ or OptiHole technology, optimized for 1:1 diamter-to-thickness ratio.

Find more information on bolt-ready holes on page 7.

UNDERWATER CUTTING FOR REDUCED GLARE AND FUMES.

Enhance the environment of your cutting areas using existing parts to achieve cut quality on mild steel from 5 mm to 40 mm at 400 A and 75 mm at 800 A.
iCNC Performance[e] capabilities, including dedicated cut charts and setups, make it easy to find the best cut performance.

OPTIONAL SCRAP CUTTER FOR CONVENIENT METAL SKELETON REMOVAL.

Increase productivity simply by connecting the manual TD 1Torch®. There's no longer a need for an external manual plasma cutter or oxy-fuel torch to cut the leftover metal skeleton into manageable pieces.

Torch length up to 30 m including extensions.

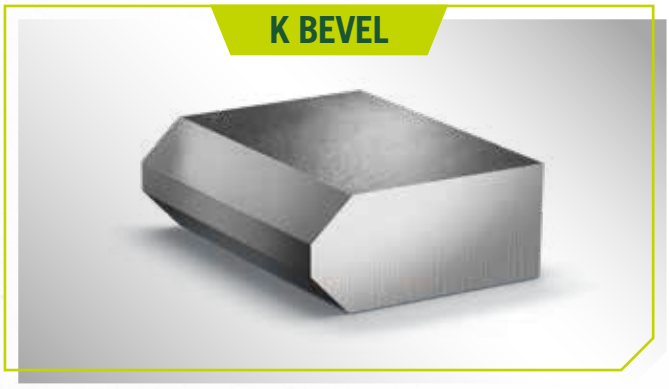
CUTTING-EDGE CAPABILITY.

PRECISE BEVEL CUTS.

Make precise and consistent bevel cuts effortless, providing excellent weldability and repeatability – with less rework. All cartridge assemblies have the same lengths for easier setup from 100 to 400 A.

High-quality bevels with the touch of a button, at no extra cost:

- Access to Optibevel, a global database providing cut charts and consumables to OEM's for easy integration with cutting machines
- Dedicated mild steel bevel cut charts from 100 to 400 A at 15-, 30-, and 45-degree angles and V, Y, X, and K bevels



CARBON STEEL

CURRENT (AMPS)																				
THICKNESS	100				150				200				300				400			
mm	V	Y	X	K	V	Y	X	K	V	Y	X	K	V	Y	X	K	V	Y	X	K
6	•	•	•																	
10					•	•	•													
12					•	•	•		•	•	•									
15									•	•	•									
20									•	•	•	•	•	•	•	•				
22									•	•	•	•	•	•	•	•				
25									•	•	•	•	•	•	•	•	•	•	•	•
30																	•	•	•	•
40																	•	•	•	•
45																	•	•	•	•
50																	•	•	•	•

OPTI BEVEL: DATABASE FOR MAKING BEVEL CUTTING EASY

Opti bevel provides the all cutting parameters to achieve the best possible bevel cuts on mild steel.
Below chart shows all available data for 200A just for a Y bevel.

Y&X BEVEL - 200 AMP PARAMETERS*

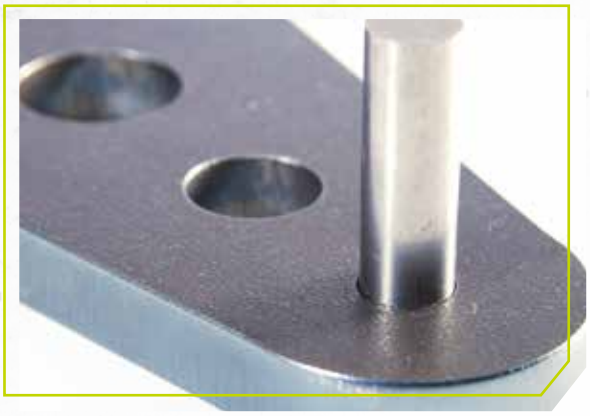
BEVEL TYPE	TOP/BOTTOM BEVEL	BEVEL ANGLE	BEVEL DATA					
Y&X	ALL	ALL	CURRENT (A)	200	200	200	200	200
Y&X-Bevel	TOP	0	Kerf (mm)	3.20	3.20	3.30	4.70	4.90
		15	Kerf (mm)	3.80	3.64	3.50	4.90	5.10
		30	Kerf (mm)	5.10	4.78	4.40	5.70	5.80
		45	Kerf (mm)	6.70	6.50	6.30	7.70	7.90
		0	Angle	1	1.2	1.5	1	0.5
		15	Angle	15	15	15	14.5	14
		30	Angle	30	29.6	29	29	29
		45	Angle	45	44.2	43	43	43
		0	Height (mm)	4.10	4.20	4.40	5.10	5.10
		15	Height (mm)	5.10	5.20	5.40	6.10	6.10
		30	Height (mm)	6.10	6.20	6.40	7.35	7.60
		45	Height (mm)	8.10	8.20	8.40	9.45	9.80
		0	Voltage (V)	154.42	156.42	160.42	163.94	166.45
		15	Voltage (V)	157.42	159.42	163.42	167.55	170.67
		30	Voltage (V)	163.70	165.70	169.70	175.00	179.30
		45	Voltage (V)	173.90	175.90	179.90	185.86	190.82
		0	Speed (mm/min)	3100	2700	2100	1600	1245
		15	Speed (mm/min)	2883	2511	1953	1488	1158
		30	Speed (mm/min)	2077	1809	1407	1072	835
		45	Speed (mm/min)	1550	1350	1050	800	623

CUTTING-EDGE CAPABILITY.

BOLT-READY HOLES.

Produce the industry's most precise bolt-ready holes with Diameter PRO, and never worry about rework before moving to finishing or assembly. Optimized for a diameter-to-thickness ratio of 1:1 or greater, it is the ideal process for a precision hole or radius with minimal to no taper on mild steel from 3 mm to 25 mm.

- Combines simplicity with advanced iCNC™ Performance controller intelligence to cut optimized holes automatically, with the click of a button
- Easy-to-use Diameter PRO automatically adjusts cut speeds, torch heights, arc voltages, cut diameters, and other settings
- Diameter PRO can be utilized with your Thermal Dynamics iCNC Performance Controller, and the Optihole database can be easily integrated into any third-party CNC for the same functionality



UPGRADE EVEN MORE TO 600 A OR 800 A

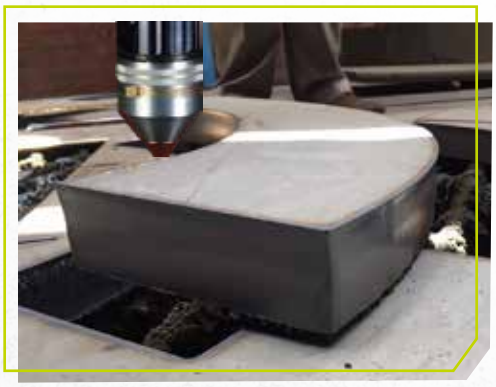
Paralleling power supplies has never been easier. The standard systems, accessories, and torch plus an external water cooler is all that is needed to have enough power to cut up to 160 mm of Stainless Steel and Aluminum.

- Our unique WMS process can be used up to 125 mm to lower your gas cost dramatically
- Go back and forth easily between parallel and single power supply cutting, cut with 800 A for the really thick plates or cut with 2 torches at 400 A

UC801

160 mm
EDGE START

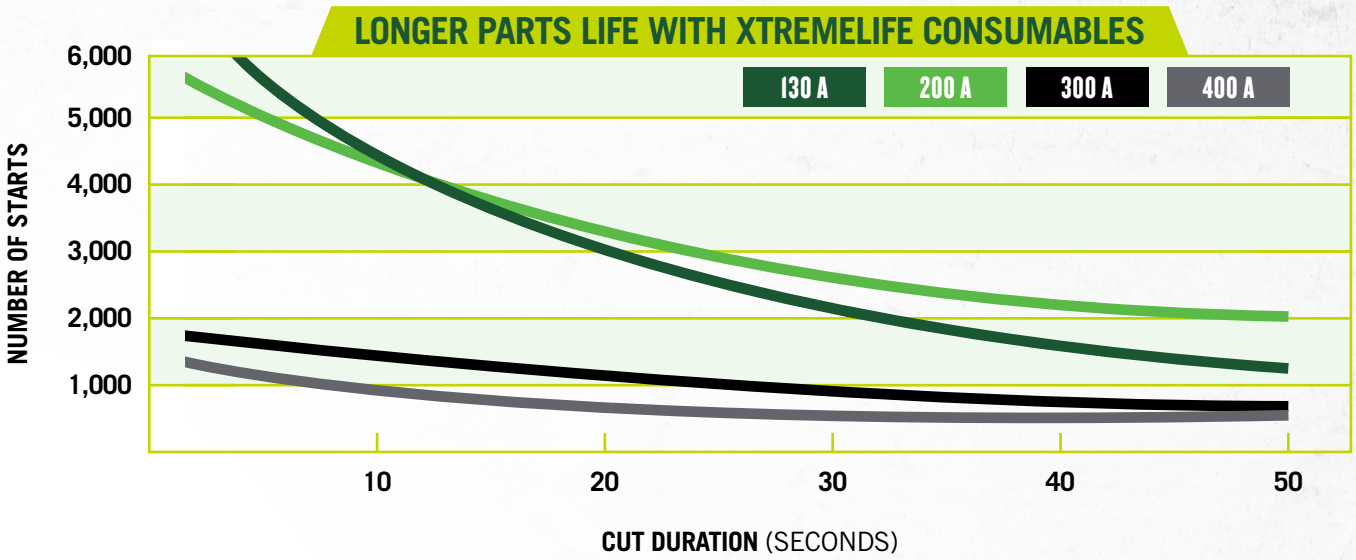
60 mm cut with WMS (using N_2 plasma and water secondary) at 800 A



70 mm cut with H35/N_2 at 600 A

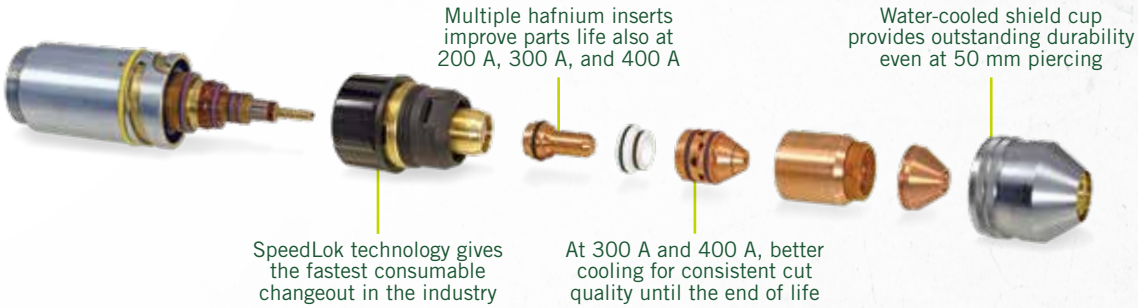
LONGER-LASTING CONSUMABLES.

XTremeLife technology provides long consumable parts life for a reduction of downtime and increased return on investment.



Note: The capabilities shown in this table were obtained by using new consumables, correct gas and current settings, and accurate torch height controls with the torch perpendicular to the workpiece. Parts life shown for 130 A and 200 A are non-bevel parts. Please contact Thermal Dynamics for more information.

- Easily install all consumables with our patented SpeedLok technology – no tools required
- Standardized parts across the UC Series reduce stock and simplify technical training and troubleshooting
- Self-centering components mean that all consumable parts and the torch body are precisely engineered to lock in place for absolute alignment, remaining in position cut after cut



POWER SUPPLY DIGITAL FEATURES, INDUSTRY 4.0 READY.

Each of our UC Series machines can be equipped with an optional Ethercat and Wi-Fi interface, providing real-time process data, access to troubleshooting recommendations and easy processes setup through a downloadable APP.

- Actual gas pressures and calculation of gas flow
- Actual water flow
- Calculated power consumption
- Test procedure for gas valves
- Maintenance schedule for arc-on hours
- Links to troubleshooting wizard with videos
- Links to cut charts and operating manuals

PRODUCT SPECIFICATIONS.

BRING FLEXIBILITY TO THE TABLE.

Our next generation of high-precision plasma cutters work the way you do.

Integrated transformers for systems from 200 to 600 V are available.

SYSTEM CAPABILITIES

		UC 131	UC 201	UC 301	UC 401	UC 601	UC 801
Mild Steel	Production Pierce	20 mm	25 mm	40 mm	50 mm	50 mm	50 mm
	Maximum Pierce	25 mm	40 mm	45 mm	50 mm	50 mm	50 mm
	Edge Start	40 mm	65 mm	75 mm	90 mm	90 mm	90 mm
Stainless Steel	Production Pierce	15 mm	25 mm	30 mm	50 mm	75 mm	90 mm
	Maximum Pierce	20 mm	25 mm	30 mm	50 mm	75 mm	100 mm
	Edge Start	40 mm	50 mm	50 mm	100 mm	100 mm	160 mm
Aluminum	Production Pierce	20 mm	22 mm	25 mm	50 mm	75 mm	90 mm
	Maximum Pierce	22 mm	25 mm	30 mm	60 mm	75 mm	90 mm
	Edge Start	40 mm	50 mm	50 mm	90 mm	100 mm	160 mm

SYSTEM CAPABILITIES*

	UC 131	UC 201	UC 301	UC 401	UC 601	UC 801
Output Range (Amps)	5–130 A	5–200 A	5–300 A	5–400 A	5–600 A	5–800 A
Output (Volts)	180 V			200 V		
Input Volts (Volts, Phase, Hertz)	230 V, 3 ph, 50–60 Hz 380 V, 3 ph, 50–60 Hz 400 V, 3 ph, 50–60 Hz 480 V, 3 ph, 50–60 Hz 600 V, 3 ph, 50–60 Hz			– 380 V, 3 ph, 50–60 Hz 400 V, 3 ph, 50–60 Hz 480 V, 3 ph, 50–60 Hz 600 V, 3 ph, 50–60 Hz	230 V, 3 ph, 50–60 Hz 380 V, 3 ph, 50–60 Hz 400 V, 3 ph, 50–60 Hz 480 V, 3 ph, 50–60 Hz 600 V, 3 ph, 50–60 Hz	– 380 V, 3 ph, 50–60 Hz 400 V, 3 ph, 50–60 Hz 480 V, 3 ph, 50–60 Hz 600 V, 3 ph, 50–60 Hz
Input Amps (Amps, Volts)	78 A @ 230 V 43 A @ 380 V 41 A @ 400 V 34 A @ 480 V 30 A @ 600 V	121 A @ 230 V 65 A @ 380 V 62 A @ 400 V 52 A @ 480 V 45 A @ 600 V	194 A @ 230 V 97 A @ 380 V 93 A @ 400 V 77 A @ 480 V 73 A @ 600 V	144 A @ 380 V 137 A @ 400 V 114 A @ 480 V 96 A @ 600 V	388 A @ 230 V 194 A @ 380 V 186 A @ 400 V 154 A @ 480 V 146 A @ 600 V	288 A @ 380 V 274 A @ 400 V 228 A @ 480 V 192 A @ 600 V
Duty Cycle (@104 °F / 40 °C)	100% (23.4 kW)	100% (40 kW)	100% (60 kW)	100% (80 kW)	100% (120 kW)	100% (160 kW)
Max OCV	425 V					
Plasma Gas	Air, O_2, ArH_2, N_2 @ 8.3 bar and Ar for marking with automatic gas console					
Shield Gas	Air, N_2, O_2 @ 8.3 bar, H_2O @ 0.6 L/min.					
Power Supply Weight						
@ 230 V	336 kg	455 kg	555 kg	–	2 x 555 kg	–
@ 380, 400, 480 V	186 kg	205 kg	244 kg	252 kg	2 x 244 kg	2 x 252 kg
@ 600 V	296 kg	326 kg	356 kg	386 kg	2 x 356 kg	2 x 386 kg
Dimensions (H x W x D)	1,219 x 698 x 1,031 mm *H: 445 mm* *for 230 V / 600 V units*				2 x 1,219 x 698 x 1,031 mm *H: 2 x 445 mm* *for 600 V units*	
Certifications	CSA, CE, CCC					

*Subject to change without notice.

CUTTING SPEED FOR UC SYSTEMS

MATERIAL	AMPS	PLASMA/SHIELD	THICKNESS (MM)	SPEED (MM/MIN.)
Mild Steel	30	O_2/O_2	3	1,340
	70	O_2/Air	6	2,710
	130	O_2/Air	6	4,300
			12	2,160
			20	1,321
	200	O_2/Air	20	1,590
			25	1,250
	300	O_2/Air	20	2,430
			25	1,830
			35	1,080
	400	O_2/Air	25	2,100
			40	1,110
			50	790
Stainless Steel	30	N_2/H_20	1.5	5,500
	50	N_2/H_20	2	4,310
			4	2,410
	70	N_2/H_20	6	1,490
	130	N_2/H_20	6	2,896
			12	1,346
	200	N_2/H_20	20	1,190
			25	910
	300	N_2/H_20	25	1,030
			35	720
	300	H35/N_2	25	920
			40	600
	400	N_2/H_20	20	2,286
			40	760
	400	H35/N_2	25	1,170
			50	440
	600	N_2/H2O	50	710
	600	H35/N_2	75	330
	600	N_2/H_2O	75	300
	400	H35/H35	100	90
	800	H35/N_2	160	110
Aluminum	30	N_2/H_20	1.5	3,210
	70	N_2/H_20	6	2,060
	130	N_2/H_20	6	2,896
			12	1,473
	200	N_2/H_20	20	2,170
			25	1,350
	300	N_2/H_20	25	1,560
			35	760
		H35/N_2	25	2,190
	400	N_2/H_20	20	2,170
			40	1,280
	400	H35/N_2	25	2,330
			50	810
	800	H35/N_2	100	530

Note: The cutting speed chart includes preliminary data and is subject to change without notice. The speeds noted above are best cut quality speeds. Much higher speeds can be achieved, but 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, and accurate torch height controls with the torch perpendicular to the workpiece. The operating chart does not list all processes available for the UC systems. Please contact Thermal Dynamics for more information.

THERMAL DYNAMICS

- Microprocessor controlled for optimized cut quality and parts life
- Power upgrade; inverter blocks can be easily added for higher cutting capacity

Automatic Gas Control
Digital Flow Control for optimized and easy setup for frequent changes between materials and thicknesses. A must for marking with argon and fast switching between cutting and marking.

XT Torch
Fastest consumable changes with SpeedLok technology.

Manual Gas Control
GCM2010 for stable gas flow and pressure control.

Electronic Arc Starter
For reduced HF emission.

Optional 1Torch
For Scrap Cutter option.

THE ALL-AROUND PERFORMANCE YOU NEED.

Our fully integrated system allows you to achieve the best plasma cutting performance for maximum quality cuts.

- Save money by retrofitting your current machine to take advantage of longer consumable life and less downtime
- Gain access to customer support from installation to troubleshooting during operation
- Simplify OEM integration with plug-and-play capabilities.

XA00228220 / 24.02.23 / UK_EN

THERMAL DYNAMICS UC SERIES

Make the cut with Thermal Dynamics UC high-precision plasma systems today. Talk to a TD expert about optimized offers by calling **1-866-279-2628** in North America and **+39 02 36546801** in Europe, or fill out our online contact form on **thermal-dynamics.com**.