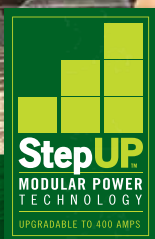
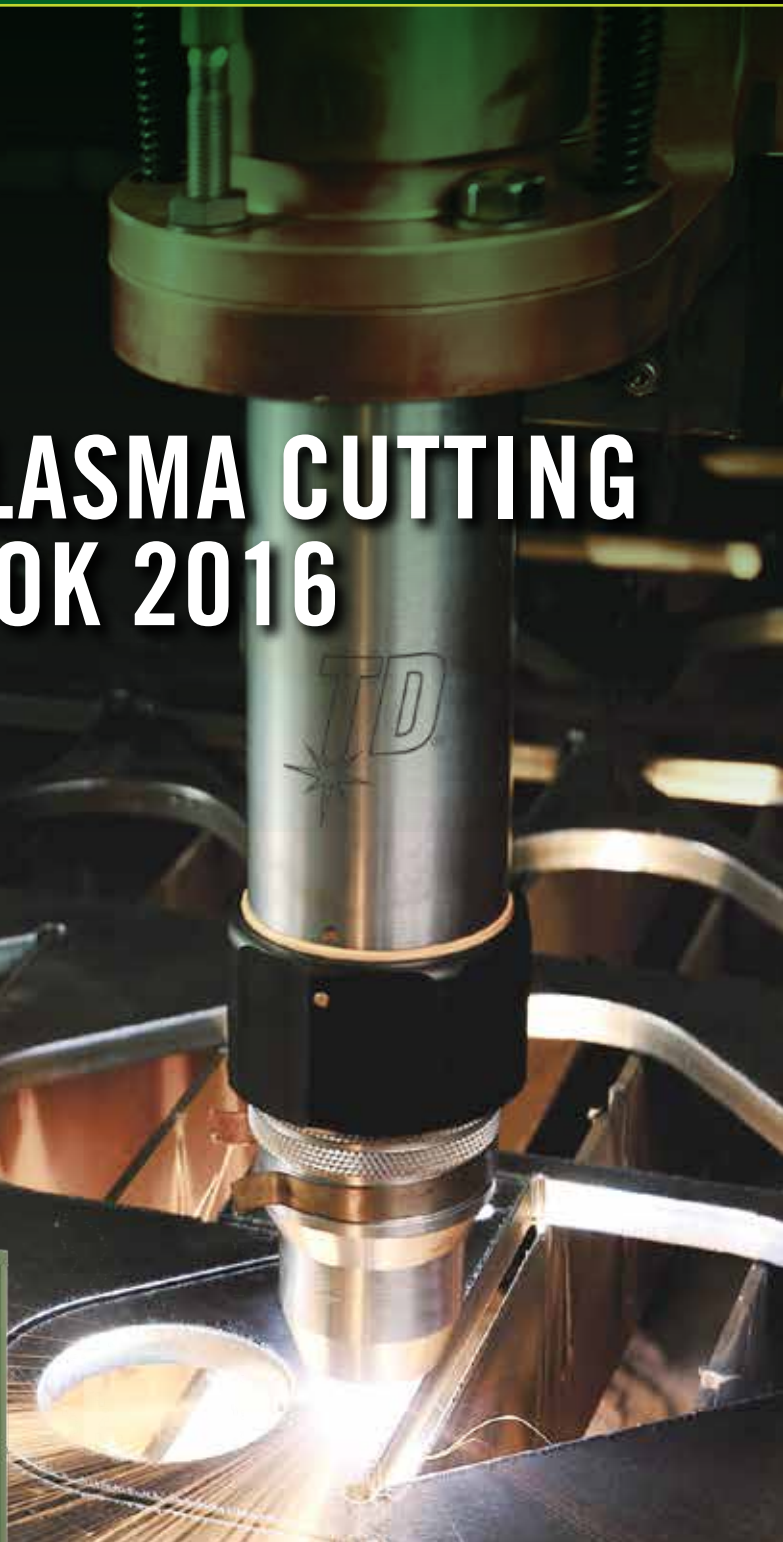




AUTOMATION PLASMA CUTTING HANDBOOK 2016



We Bring Intelligence to the Table.™

Thermal Dynamics® is where professionals look when cutting mild steel and non-ferrous materials for cut quality, ease of use, cut speed and overall productivity. Our plasma systems have the solutions you need:

**High Precision Cutting | Integrated Controls | Robotics & Beveling
Air Plasma | Upgrades & Retrofits**

Whatever your plasma cutting needs, look to the Thermal Dynamics range which offers intelligent solutions to improve productivity and ensure that every cut is the right cut with our state-of-the-art plasma cutting technology and high quality consumables, backed up by exceptional service and support.

The various components in a cutting operation must work together seamlessly to operate in real-time harmony. That takes a lot of coordination – and a Thermal Dynamics automated plasma system offers the precise control needed to get the best results, by complete integration with either our own iCNC® XT, or with virtually any CNC system on the market today.

***With a Thermal Dynamics integrated automated plasma system,
you bring the industry's most intelligent approach to the table.***



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AT THE FOREFRONT OF PLASMA CUTTING INNOVATION



Dr. James Browning, Founder



1957

Dr. James Browning & Merle Thorpe found Thermal Dynamics.

1970

First PAK® unit-power supply, PAK 40, cooling system, and console combined into one unit.

1975

PAK 44 incorporated plug-in relays, torch auto-pilot, and constant current.

1980

First single phase machine introduced, PAK 5.

1982

PAK-3, the first PAC system to use air as plasma gas, for cutting gauge thickness material.

1990

Plasma gouging introduced, PAK 15XC

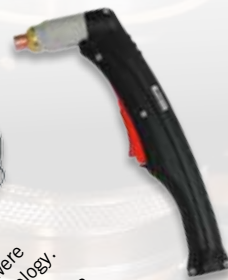
1997

PakMaster® XL series and the Econopak® provide more portability.

1998

The Drag-Gun® introduced as the first cutting system with a built-in air compressor.

We Bring Intelligence to the Table.™



1999
PakMaster® XL Plus Series introduced.

2000
CUTMASTER® 50 & Sure Lok® RPT replacement torches introduced.

2002
1Torch® and ATC® connection were introduced with SureLok® technology. First non-High Frequency system introduced with the CUTMASTER® 38

2004
CUTMASTER 1Series®; 51/81/101 launched.

2005
Automated series Ultra-Cut®/ Auto-Cut® XT™-300/ XT-301 launched.

2008
CUTMASTER TRUE™ European models 10/12/20/25/35/40 launched.

2011
CUTMASTER® 12+ with SL40 torch utilizing V2S technology.

2013
Ultra-Cut® XT and Auto-Cut XT Series launch.

2015
iCNC® Performance and iHC® XT launched.

INTRODUCTION

Plasma is a gas heated to an extremely high temperature and ionized so that it becomes electrically conductive. Plasma arc cutting uses the plasma as an electrode to transfer an electrical arc to the work piece.

The heat of the arc melts the work piece and the force of the plasma and shield gases blow away the molten metal to cut the work piece. Different metals react differently to plasma cutting. Carbon steel can be oxidized, and is usually cut with a plasma containing oxygen to take advantage of the exothermic process. Higher levels of oxygen in the plasma result in higher heat and higher rates of oxidation. The result is a faster and cleaner cut.

Stainless steel and aluminium are not subject to rapid oxidation and depend entirely on the plasma's heat for the cutting process. Because plasma produces much higher heat than the oxygen-fuel cutting process, plasma can cut stainless steel and aluminium quickly and cleanly.



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Thermal Dynamics® systems offer a variety of plasma cutting processes for precision and general purpose cutting.

Ultra-Cut® XT

systems offer High Precision cutting and take advantage of advanced technology solutions to provide the highest possible cut quality.



Auto-Cut® XT

systems offer conventional cutting at high speeds and with a dual-gas torch, allowing fabricators to take advantage of all-day production cutting with good cut quality at an attractive price point.



A-Series

systems offer good quality air-plasma cutting at high duty cycles in a compact and robust package.



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AUTO GAS CONSOLE

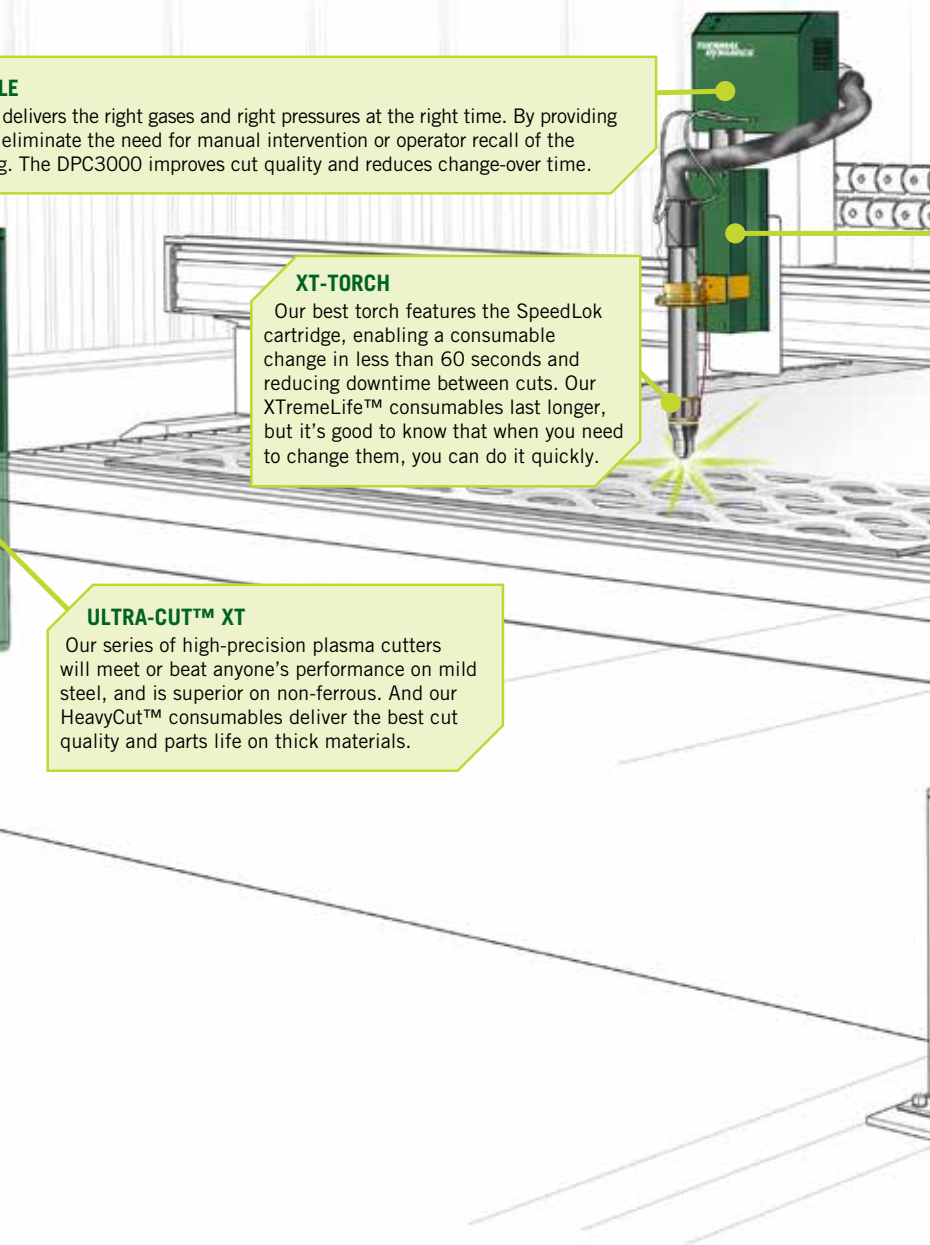
Our Auto Gas Console delivers the right gases and right pressures at the right time. By providing auto adjustments, you eliminate the need for manual intervention or operator recall of the correct pressure setting. The DPC3000 improves cut quality and reduces change-over time.

XT-TORCH

Our best torch features the SpeedLok cartridge, enabling a consumable change in less than 60 seconds and reducing downtime between cuts. Our XTremeLife™ consumables last longer, but it's good to know that when you need to change them, you can do it quickly.

ULTRA-CUT™ XT

Our series of high-precision plasma cutters will meet or beat anyone's performance on mild steel, and is superior on non-ferrous. And our HeavyCut™ consumables deliver the best cut quality and parts life on thick materials.



We Bring Intelligence to the Table.™

THE PROCESS KNOWLEDGE IS BUILT INTO THE SYSTEM

To create the perfect harmony of efficiency and profitability from your cutting table, our line-up of components is seamlessly synchronized for you.

THE INTEGRATED ADVANTAGE

Every component of a Thermal Dynamics integrated system can be added independently. More importantly, no other component combination works better together or contributes more to bottom line productivity and profitability. And no one brings to the table the level of flexibility, simplicity and intelligence of a Thermal Dynamics integrated high performance plasma system.

IHC

The iHC is an intelligent, precision plasma torch height control system. In combination with real-time knowledge of the cutting task, the iHC makes on-the-fly calculations to adjust torch height — because a truly integrated height controller produces better cut quality and more consistent cut production.

THE ICNC® XT CONTROLLER

With the process intelligence, experience and expertise stored inside, every user can easily orchestrate the fastest cut, best cut and lowest cost per cut. Regardless of experience, with point and click ease, operators can cut with confidence.

Even better, the XT Series Software can accommodate your preferred office nesting software, our software or a combination of both. The iCNC XT works any way you do.

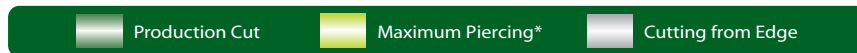
BUILT IN SERVO SYSTEM

The Servo System drives the servo motors on the table, ensuring all cutting operations work in harmony.

Here's the bottom line:

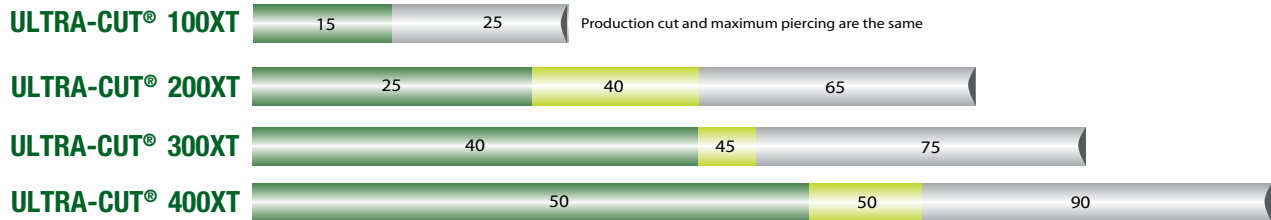
OUR INTEGRATED SYSTEM PROVIDES EXCEPTIONAL COST-PERFORMANCE BENEFITS—BECAUSE TRUE INTEGRATION IS THE DIFFERENCE BETWEEN PROFITABLE PLASMA CUTTING AND JUST BURNING PLATE.

SELECTION CHART

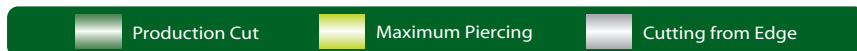
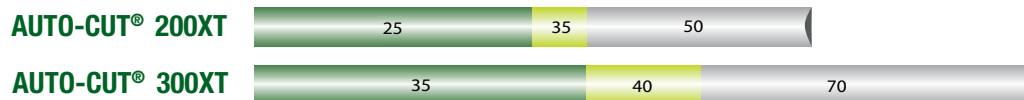


*Please note: Maximum piercing may require a height control with pierce retract

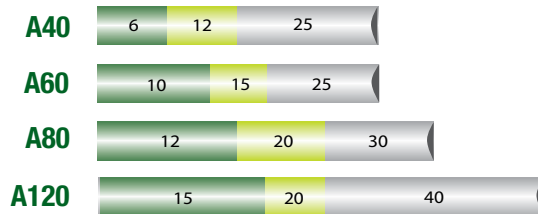
High Precision Quality Cut Thickness in mm (mild steel)



Conventional Quality Cut Thickness in mm (mild steel)



Air Plasma Cutting Cut Thickness in mm (mild steel)



System Features

System	Cut with O ₂	Water Mist Secondary	XtremeLife Consumables	HeavyCut Technology	Diameter Pro Technology*	StepUP™ Modular Power Technology	Automatic Gas Control	ScrapCutter Manual Plasma Torch Interface
Ultra-Cut 100XT	YES	YES	YES	NO	YES	YES	YES	YES
Ultra-Cut 200XT	YES	YES	YES	NO	YES	YES	YES	YES
Ultra-Cut 300XT	YES	YES	YES	YES	YES	YES	YES	YES
Ultra-Cut 400XT	YES	YES	YES	YES	YES	YES	YES	YES
Auto-Cut 200XT	YES	YES	NO	NO	NO	NO	NO	NO
Auto-Cut 300XT	YES	YES	NO	NO	NO	NO	NO	NO

* In combination with iCNC XT Controller.



HIGH PRECISION PLASMA ULTRA-CUT® XT SYSTEMS

We Bring Intelligence to the Table.™

WHAT IS HIGH PRECISION PLASMA

High Precision plasma cutting is a high quality cutting process that is used by fabricators wishing to achieve premium results.

A High Precision plasma system can deliver results that approach the quality of laser cutting, at a much lower cost. Plasma systems are also capable of cutting greater thicknesses than laser systems, and are cheaper and easier to maintain.

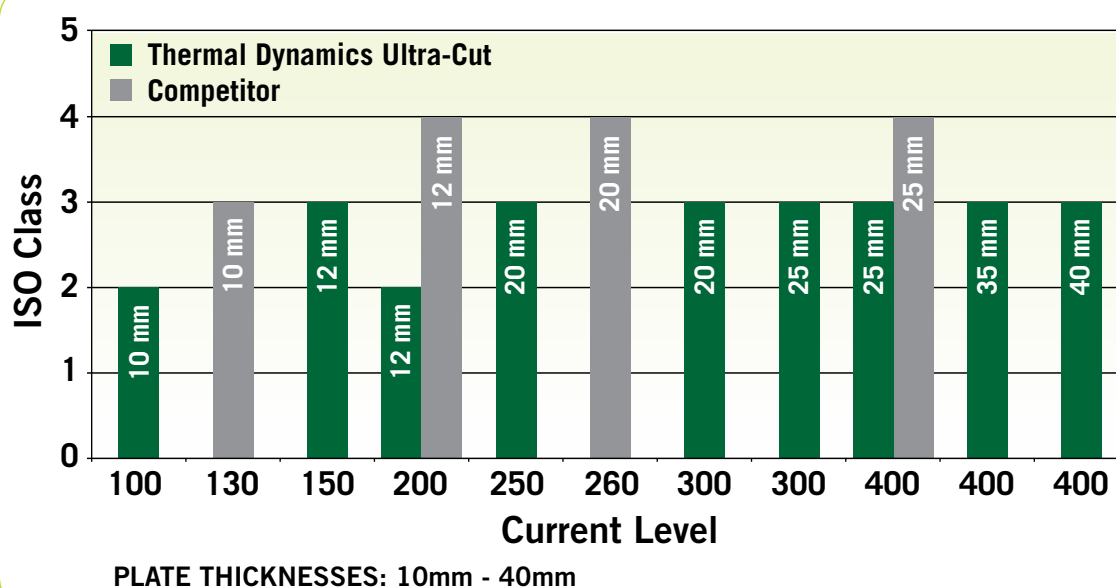
High Precision cutting is defined as narrow kerf width with no top edge rounding, smooth cut face surface, bevel angle less than three degrees on all sides, and negligible dross. Conventional cutting will have higher cutting speeds, however kerf widths will be wider and some slight top edge rounding will occur. Bevel angles for conventional cutting will be up to 6 degrees consistent on all sides.

High Precision cutting offers results that meet or exceed ISO 9013:2002 (E). Class 3 – which means cut angles below 3 degrees, (Lower ISO Class means better quality).



Ultra-Cut Cut Bevel Comparison

(Lower ISO Class means better quality)



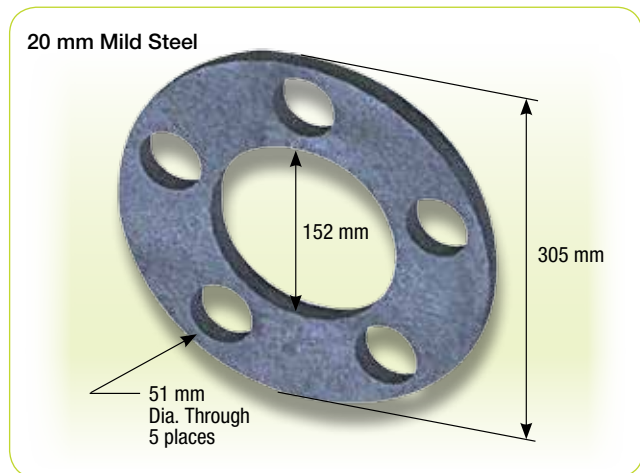
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High Precision Plasma vs Oxyfuel Cutting

High Precision plasma offers greater cutting speeds and greater cut quality on materials up to 50 mm. With an Ultra-Cut 400 XT, 1 plasma torch can do the same work as 4 oxyfuel torches. Oxyfuel is limited to mild steel, while a plasma system can be used to produce excellent results on stainless steel and aluminium as well.

Example:

This flange would take about 45 seconds to produce with plasma cutting and about 240 seconds using Oxyfuel.



High Precision Plasma vs Laser Cutting

Laser cutting systems offer excellent results on thin materials, but are extremely expensive to run and are not suitable for cutting reflective materials. Cutting capacities are lower than High Precision plasma systems

High Precision Plasma vs Water Jet Cutting

Water jet cutting offers excellent results but at very slow cut speeds. Waste disposal can also be an issue as abrasive materials used in the cut process must be safely disposed of.



Why Buy a High Precision System?

A High Precision plasma system is an extremely flexible metal cutting tool that is capable of producing excellent results at high cut speeds on mild steel, stainless steel and aluminium on thicknesses up to 50 mm and good results on thicknesses up to 90 mm.

High Precision plasma systems can also be retrofitted onto existing cutting tables, to replace an older plasma or oxyfuel cutting system, permitting older tables to take advantage of the latest advances in plasma cutting technology.

ULTRA-CUT® XT

Ultra-Cut® XT technology provides the next generation of higher productivity, increased flexibility and confidence in high precision plasma cutting. In conjunction with the iCNC® XT controller, a new level of cutting performance can be achieved.

- **PRODUCTIVITY** – superior cut quality for greater efficiency
- **FLEXIBILITY** – modular design is easier to service and upgrade
- **RELIABILITY** – rigorous testing ensures optimum system performance, day in – day out

The next generation of high precision plasma cutters works the way you do — intelligently.

Ultra-Cut® XT systems give you the flexibility to increase cutting power and the assurance of superior quality, higher productivity and lower cutting costs. Ultra-Cut® XT systems are available in 100 to 400 Amp outputs for cutting plate up to 50 mm thick. Their performance will meet or beat anyone on mild steel, and they are superior on non-ferrous metals.

Superior Cut Quality Means Greater Efficiency

The Ultra-Cut® XT systems' superior cut quality means that parts can go directly from the cutting table to welding, painting or assembly without expensive secondary operations.

Ultra-Cut® XT high precision plasma systems produce cuts with:

- Excellent dross-free cuts using oxygen (O₂) plasma on mild steel
- Unmatched cut quality on non-ferrous metals using unique Water Mist Secondary (WMS®) process
- Minimal heat affected zone (HAZ) to improve welding quality.



We Bring Intelligence to the Table.™

Higher Productivity Delivers Greater Profits

Ultra-Cut® XT high precision systems deliver superior cut quality, at superior cutting speeds.

- Outstanding parts life to reduce down time and lower the overall cost of ownership.
- Highest kW output for maximized duty cycle and cut speed.
- Reduced downtime during parts changes with the Speedlok cartridge design.
- Lower current draw to reduce cutting cost.
- Shorter switching time between marking and cutting process for higher daily throughput.
- Highest cut speed in its class on stainless steel – up to 3 times faster than similar cutting systems.

Intelligent Solutions Set Us Apart

From superior technology for cutting heavy metal to better plasma marking, Thermal Dynamics® offers intelligent high precision solutions for automated plasma cutting applications. The XT Series provides access for these powerful cutting resources.

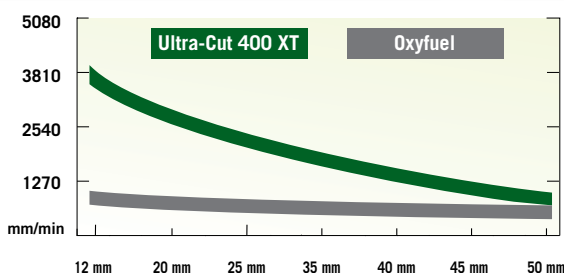
Lower HF Emissions

New electronic remote arc starter reduces HF emissions to avoid electrical interference and provides a more stable solution in areas with poor grounding.

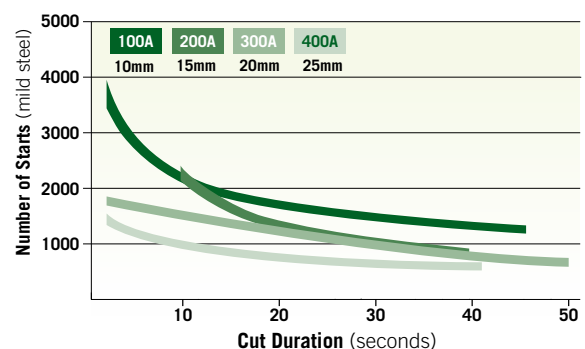
Now More Energy Efficient

Compared to previous systems, Ultra-Cut® XT systems draw about 20% less current and have an average electrical efficiency of more than 92%. They meet European Union Level V Efficiency Standards, and they will help companies everywhere lower utility bills.

Relative Cutting Speed



Longer Parts Life with XTremeLife™ Consumables



ScrapCutter

There's no longer a need for an external manual plasma cutter or oxyfuel torch to cut the leftover metal skeleton into manageable pieces. Just connect the manual TD 1Torch®.

- Consistent 100A output
- Torch length up to 30 m including extensions
- Fold back circuit (45A) if tip touches the plate (improves parts life)
- Rapid restart for constant arc on to improve cut times
- Activated by torch trigger only. No need to go back to XT power supply to switch the function on or off



ULTRA-CUT® 100 XT

System Overview

The Ultra-Cut® 100 XT is a 100 Amp High Precision plasma cutting system suitable for production cutting from 0.5 – 15 mm. This is the ideal system for high quality fabrication of thin materials and robotic applications, for production cutting up to 15 mm. Capable of piercing up to 15 mm, the Ultra-Cut® 100 XT is the ideal entry-level Precision plasma system.



	Ultra-Cut® 100 XT
Rated Output (Amps)	100 A
Output Range (Amps)	5-100 A
Output Volts	180 V
Volts, Phase	400 V, 3 ph, 50-60 Hz
Amps, Volts	31 A @ 400 V
Duty Cycle (@ 104°F/ 40° C)	100% (20 kW)
Max OCV	425 V
Plasma Gas	Air, O ₂ , Ar-H 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 ₂ O @ 0.6 l/mm
Power Supply Weight	186 kg
Dimensions	1219 mm x 698 mm x 1031 mm
Certifications	CSA, CE, CCC
Warranty	2 Years on the power supply 1 Year on the torch

Cutting Speed Chart For Ultra-Cut® 100 XT

Material	Amps	Plasma /Shield	Thickness (mm)	Speed (mm/min.)
Mild Steel	30	O ₂ /O ₂	1	3050
			3	910
	70	O ₂ /Air	3	6620
			6	3100
	100	O ₂ /Air	5	4670
			6	4030
			10	2300
			12	1800
			15	1370
Stainless Steel	30	Air/Air	0.6	8300
			1	7190
			1.5	3100
	50	N ₂ /H ₂ O	2	4310
			3	3660
			5	1523
	70	N ₂ /H ₂ O	3	3040
			5	2140
			6	1495
	100	N ₂ /H ₂ O	6	1880
			10	1350
			12	1140
	100	Ar-H ₂ /N ₂	6	1810
Aluminum	50	N ₂ /H ₂ O	2	2990
			3	1520
			5	950
	100	N ₂ /H ₂ O	10	1665
			12	1190
			15	925
	100	Ar-H ₂ /N ₂	12	1330

Note: The cutting speed chart includes preliminary data and is subject to change without notice. Take care in comparison. The speeds noted above are best cut quality 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® XT systems. Please contact Thermal Dynamics® for more information.

We Bring Intelligence to the Table.™

Excellent for Robotic and Bevel Applications

Uses the XTR Torch to produce outstanding quality bevel cuts

- One of the shortest robotic torches on the market for ease of articulation and improved access (236 mm in length)
- 100 Amp pointed consumables available for improved access and bevel cutting
- Ultra-light, ultra-flexible, robust torch leads
- Torch mounting indicators for precise positioning
- Position teach-tool included with torch got point to point programming
- A range of mount arms and crash mounts are available

Excellent quality cuts on non-ferrous metals using the exclusive Water Mist Secondary (WMS™) Process:

- WMS™ process can be used in robotic applications for extraordinary cut quality and cut speeds on non-ferrous metals
- Argon-Hydrogen can also be used for high quality robotic cuts



With a production cut of 15 mm, the Ultra-Cut® 100 is ideal for most robotic cutting requirements

Outstanding Cuts on all Materials

Excellent for Mild Steel

- Excellent cut quality with perpendicular dross-free cuts and well defined, small diameter holes
- XtremeLife technology reduces cutting costs by offering extraordinary consumables life
- Precision-engineered consumables optimised for all amperages

Excellent for Stainless Steel and Aluminium

- WMS™ process to cut Stainless Steel with Nitrogen and Water offers incredibly high cutting speeds (up to 3 times faster than with standard processes) and exceptional quality
- Edge finishing similar to that of WaterJet Cut
- Dross free
- Sharp corners
- Reduced Heat affected zone
- Excellent weldability



ULTRA-CUT® 100 XT

Competitor Comparison

Thermal Dynamics®		Competitor
SPECIFICATIONS	UC 100 XT	80 A
Output current	5-100 A	10-80 A
Input voltages	208-230 V 400 V 480 V 600 V	400 V
Input current	31 A @ 400 V 26 A @ 480 V	25 A @ 400 V
Duty Cycle @ 104 F (40 C)	100% (20 kW)	100%
Plasma gases	O ₂ , N ₂ , Air, H ₃₅ , Ar (marking)	O ₂ , N ₂ , Air
Shield gases	O ₂ , Air, H ₂ O, N ₂	O ₂ , Air, N ₂ , F ₅
Production Piercing capacity	15 mm	15 mm
Cut Speed at 6 mm MS	3940 mm/min	3200 mm/min
Cut Speed at 12 mm MS	1690 mm/min	1700 mm/min
Parts life (20 sec) at max current, production capacity and mild steel	1800	2000



We Bring Intelligence to the Table.™

Ultra-Cut 100 XT Ordering Information

Please refer to configuration sheets for a full breakdown of all part numbers.

Description	Part Number
POWER SOURCE	
Ultra-Cut 100 XT , 400V CE	3-8116-4T
AUTOMATIC GAS CONSOLE	
DMC-3000 Digital Manifold Control	9-9491
DPC-3000 Digital Pressure Control	9-9443
TSC-3000 Touch Screen Controller	9-9490
MANUAL GAS CONSOLE	
GCM2010 Manual Gas Console	3-9131
REMOTE ARC STARTER	
Remote Arc Starter	3-9130E
Mounting Kit	9-9484
LEADS	
Work Cable	See Configurator
Control Cable	See Configurator
Supply Lead Set	See Configurator
Gas Lead Set	See Configurator
Torch Lead Set	See Configurator
Fibre Optic Interface Cable	See Configurator
CNC Cable	See Configurator
Earth Cable	See Configurator
TORCH INSTALLATION STARTER KIT	
100A Torch Installation starter kit	See Configurator
Robotic Torch Installation starter kit	See Configurator
ROBOTIC ACCESSORIES	
Robotic crash mount - light spring	9-2974
Robotic crash mount - medium spring	9-2975
Robotic crash mount - hard spring	9-2976
22° mounting arm for XTR	9-2977
45° mounting arm for XTR	9-2978
90° mounting arm for XTR	9-2979
XTR Dragster advanced floating torch holder	9-0470
TVA Mounting Bracket	9-2718
Teach/Pointer tool	9-2715
WATER MIST PUMP	
(compensates for low water pressure)	
WMS Pump kit	9-0015
Filter Cartridge	9-0017
TORCH COOLANT	
Extra Cool Coolant - 3.8l	7-3580
STEPUP UPGRADE KITS	
(each kit upgrades the system by 100 Amps. To upgrade to 400 Amps, all 3 kits must be purchased)	
Upgrade kit 100A to 200A	9-7401
Upgrade kit 200A to 300A	9-7402
Upgrade kit 300A to 400A	9-7403

ULTRA-CUT® 200 XT

System Overview

The Ultra-Cut® 200 XT is a 200 Amp High Precision plasma cutting system suitable for production cutting from 0.5 – 25 mm. Offering 200 Amps of cutting power, this is the ideal system for the majority of the market, for production cutting up to 25 mm. This capacity satisfies the needs of the vast majority of metal fabrication.



Ultra-Cut® 200 XT	
Rated Output (Amps)	200 A
Output Range (Amps)	5-200 A
Output Volts	180 V
Volts, Phase	400 V, 3 ph, 50-60 Hz
Amps, Volts	62 A @ 400 V
Duty Cycle (@ 104°F/ 40° C)	100% (40 kW)
Max OCV	425 V
Plasma Gas	Air, O ₂ , Ar-H 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 ₂ O @ 0.6 l/mm
Power Supply Weight	205 kg
Dimensions	1219 mm x 698 mm x 1031 mm
Certifications	CSA, CE, CCC
Warranty	2 Years on the power supply 1 Year on the torch

Cutting Speed Chart For Ultra-Cut® 200 XT

Material	Amps	Plasma /Shield	Thickness (mm)	Speed (mm/min.)
Mild Steel	30	O ₂ /O ₂	1	3050
			3	910
	70	O ₂ /Air	3	6620
			6	3100
	100	O ₂ /Air	6	4030
			10	2300
			12	1800
			15	1370
	150	O ₂ /Air	12	2650
			20	1120
Stainless Steel			25	650
	200	O ₂ /Air	20	1590
			25	1250
	30	N ₂ /H ₂ O	1	7190
			1.5	3100
	50	N ₂ /H ₂ O	2	4310
			3	3660
			5	1523
	70	N ₂ /H ₂ O	5	2140
			6	1495
Aluminum	100	Ar-H ₂ /N ₂	6	1880
			10	1350
			12	1140
	100	N ₂ /H ₂ O	6	1810
	150	N ₂ /H ₂ O	10	1740
			12	1580
			15	1250
			20	1140
	200	N ₂ /H ₂ O	20	1100
			25	900
Aluminum	200	Ar-H ₂ /N ₂	20	950
			25	770
	50	Air/Air	3	1520
			5	950
	100	N ₂ /H ₂ O	6	2760
	150	Ar-H ₂ /N ₂	12	2100
			15	1260
	150	N ₂ /H ₂ O	20	960
	200	N ₂ /H ₂ O	20	2200
			25	1300
Aluminum	200	Ar-H ₂ /N ₂	20	1600
			25	1050

Note: The cutting speed chart includes preliminary data and is subject to change without notice. Take care in comparison. The speeds noted above are best cut quality 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® XT systems. Please contact Thermal Dynamics® for more information.

We Bring Intelligence to the Table.™

Outstanding when cutting Mild Steel **Unrivalled cutting speed**

- Fastest cutting speed thanks to a wide range of consumables and the improved beam characteristics

Excellent quality

- Perpendicular, dross free cuts
- Well defined small diameter holes
- Consistent quality throughout the whole of the consumables lifetime

Reduced cutting cost:

- XtremeLife™ technology for extraordinary consumables life
- Reduced gas consumption

The best plasma for Stainless Steel cutting

Secondary WaterMist™ process (WMS) to cut Stainless Steel with Nitrogen and Water:

Incredibly high cutting speed

- Up to 3 times faster than with standard processes

Outstanding quality

- Dross free with sharp corners
- Reduced Heat affected zone
- Excellent weldability
- Lowest cutting cost and very long consumables life
- Uses tap water rather than expensive gas mix

Excellent also on thin plate

- The super-fine current control granted by the inverter technology produces no dross and high quality cuts also on thin stainless steel and aluminium plate.



ULTRA-CUT® 200 XT

Competitor Comparison

	Thermal Dynamics®	Competitor A	Competitor B
SPECIFICATIONS	UC 200 XT	130 A	160 A
Output current	5-200 A	10-130 A	5-160 A
Input voltages	208-230 V 400 V 480 V 600 V	208-230 V 400 V 480 V 600 V	400 V
Input current	60 A @ 400 V 50 A @ 480 V	32 A @ 400 V 26 A @ 480 V	41 A @ 400 V
Duty Cycle @ 104 F (40 C)	100% (40 kW)	100% (19.5 kW)	100% (25.6 kW)
Plasma gases	O ₂ , N ₂ , Air, H35, Ar (marking)	O ₂ , N ₂ , Air, H35, F5, Ar (marking)	O ₂ , N ₂ , Air, H35, Ar (marking)
Shield gases	O ₂ , Air, H ₂ O, N ₂	O ₂ , Air, N ₂	O ₂ , Air, N ₂ , F5
Production Piercing capacity	25 mm	35 mm	30 mm
Cut Speed at 20 mm MS	1590 mm/min	1045 mm/min	1400 mm/min
Cut Speed at 25 mm MS	1250 mm/min	550 mm/min	1200 mm/min
Parts life (20 sec) at max current, production capacity and mild steel	1300	1500	1600



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Ultra-Cut 200 XT Ordering Information

Please refer to configuration sheets for a full breakdown of all part numbers.

Description	Part Number
POWER SOURCE	
Ultra-Cut 200 XT , 400V CE	3-8119-4T
AUTOMATIC GAS CONSOLE	
DMC-3000 Digital Manifold Control	9-9491
DPC-3000 Digital Pressure Control	9-9443
TSC-3000 Touch Screen Controller	9-9490
MANUAL GAS CONSOLE	
GCM2010 Manual Gas Console	3-9131
REMOTE ARC STARTER	
Remote Arc Starter	3-9130E
Mounting Kit	9-9484
LEADS	
Work Cable	See Configurator
Control Cable	See Configurator
Supply Lead Set	See Configurator
Gas Lead Set	See Configurator
Torch Lead Set	See Configurator
Fibre Optic Interface Cable	See Configurator
CNC Cable	See Configurator
Earth Cable	See Configurator
TORCH INSTALLATION STARTER KIT	
200A Torch Installation starter kit	See Configurator
Robotic Torch Installation starter kit	See Configurator
ROBOTIC ACCESSORIES	
Robotic crash mount - light spring	9-2974
Robotic crash mount - medium spring	9-2975
Robotic crash mount - hard spring	9-2976
22° mounting arm for XTR	9-2977
45° mounting arm for XTR	9-2978
90° mounting arm for XTR	9-2979
XTR Dragster advanced floating torch holder	9-0470
TVA Mounting Bracket	9-2718
Teach/Pointer tool	9-2715
WATER MIST PUMP	
(compensates for low water pressure)	
WMS Pump kit	9-0015
Filter Cartridge	9-0017
TORCH COOLANT	
Extra Cool Coolant - 3.8l	7-3580
STEPUP UPGRADE KITS	
(each kit upgrades the system by 100 Amps. To upgrade to 400 Amps, both kits must be purchased)	
Upgrade kit 200A to 300A	9-7402
Upgrade kit 300A to 400A	9-7403

ULTRA-CUT® 300 XT

System Overview

The Ultra-Cut® 300 XT is a 300 Amp High Precision plasma cutting system suitable for production cutting from 0.5 – 35 mm. Offering 300 Amps of cutting power, this system offers the highest cut speeds in its class, and produces excellent results on thicker materials with HeavyCut™ technology, for production cutting up to 35 mm, and maximum piercing up to 45 mm.



	Ultra-Cut® 300 XT
Rated Output (Amps)	300 A
Output Range (Amps)	5-300 A
Output Volts	180 V
Volts, Phase	400 V, 3 ph, 50-60 Hz
Amps, Volts	93 A @ 400 V
Duty Cycle (@ 104°F/ 40° C)	100% (60 kW)
Max OCV	425 V
Plasma Gas	Air, O ₂ , Ar-H 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 ₂ O @ 0.6 l/mm
Power Supply Weight	244 kg
Dimensions	1219 mm x 698 mm x 1031 mm
Certifications	CSA, CE, CCC
Warranty	2 Years on the power supply 1 Year on the torch

Cutting Speed Chart For Ultra-Cut® 300 XT

Material	Amps	Plasma /Shield	Thickness (mm)	Speed (mm/min.)
Mild Steel	30	O ₂ /O ₂	1	3050
			3	910
	70	O ₂ /Air	3	6620
			6	3100
	100	O ₂ /Air	5	4670
			6	4030
			10	2300
	150	O ₂ /Air	12	2650
			15	2080
			22	800
	300	O ₂ /Air	12	3810
			20	2540
Stainless Steel			25	1780
			35	900
			70	285
	30	Air/Air	0.6	8300
			1	7190
			1.5	3100
	50	Air/Air	2	4542
			3	3230
	70	Air/Air	3	3300
			6	1440
	100	Ar-H ₂ /N ₂	6	1880
			10	1350
	100	N ₂ /H ₂ O	6	1810
			10	1595
	150	Ar-H ₂ /N ₂	12	1330
			15	1090
			20	720
			25	520
	150	N ₂ /H ₂	15	1248
			20	1140
Aluminum	300	N ₂ /H ₂	15	2080
			20	1320
			25	1030
			50	320
	300	Ar-H ₂ /N ₂	20	1320
			25	920
			50	450
	50	Air/Air	2	2990
			3	1520
			5	950
	100	N ₂ /H ₂ O	6	2760
			10	1700
	150	Ar-H ₂ /N ₂	15	1260
			20	850
			25	650
	150	N ₂ /H ₂ O	20	960
	300	Ar-H ₂ /N ₂	25	2680
			50	390

Note: The cutting speed chart includes preliminary data and is subject to change without notice. Take care in comparison. The speeds noted above are best cut quality 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® XT systems. Please contact Thermal Dynamics® for more information.

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HeavyCut Technology for cutting thicker Mild Steel

Ultra-Cut® 300 XT systems use **HeavyCut™** Technology to improve cutting efficiency and extend the useful life of the consumable parts. Advanced consumable parts and process parameters cut thicker plates better, last longer and result in lower cost per cut.

- Sharper corners
- Sharper edges
- Rounder holes
- Lowest cost per metre
- Best quality at high cut speeds

An ideal replacement for oxy-fuel cutting

An Ultra-Cut® 300 XT is the ideal replacement for an oxy-fuel cutting system, offering numerous advantages:

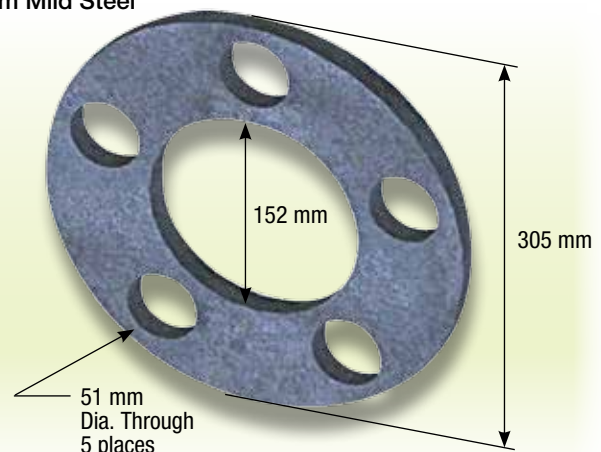
- Averages 3 times faster cut speeds
- Pierces 35 mm in 1.5 seconds
- One Ultra-Cut® 300 XT can replace up to 3 oxy-fuel torches - each requiring their own height controls.
- Ultra-Cut® 300 XT can also cut stainless steel and aluminium
- Higher arc density equals faster speeds without sacrificing cut quality
- Smaller tip orifices create a narrow kerf for tighter angles and radiuses at higher speeds - less material waste
- Patented consumable technology



Example:

This flange would take about 45 seconds to produce with plasma cutting and about 240 seconds using Oxyfuel.

20 mm Mild Steel



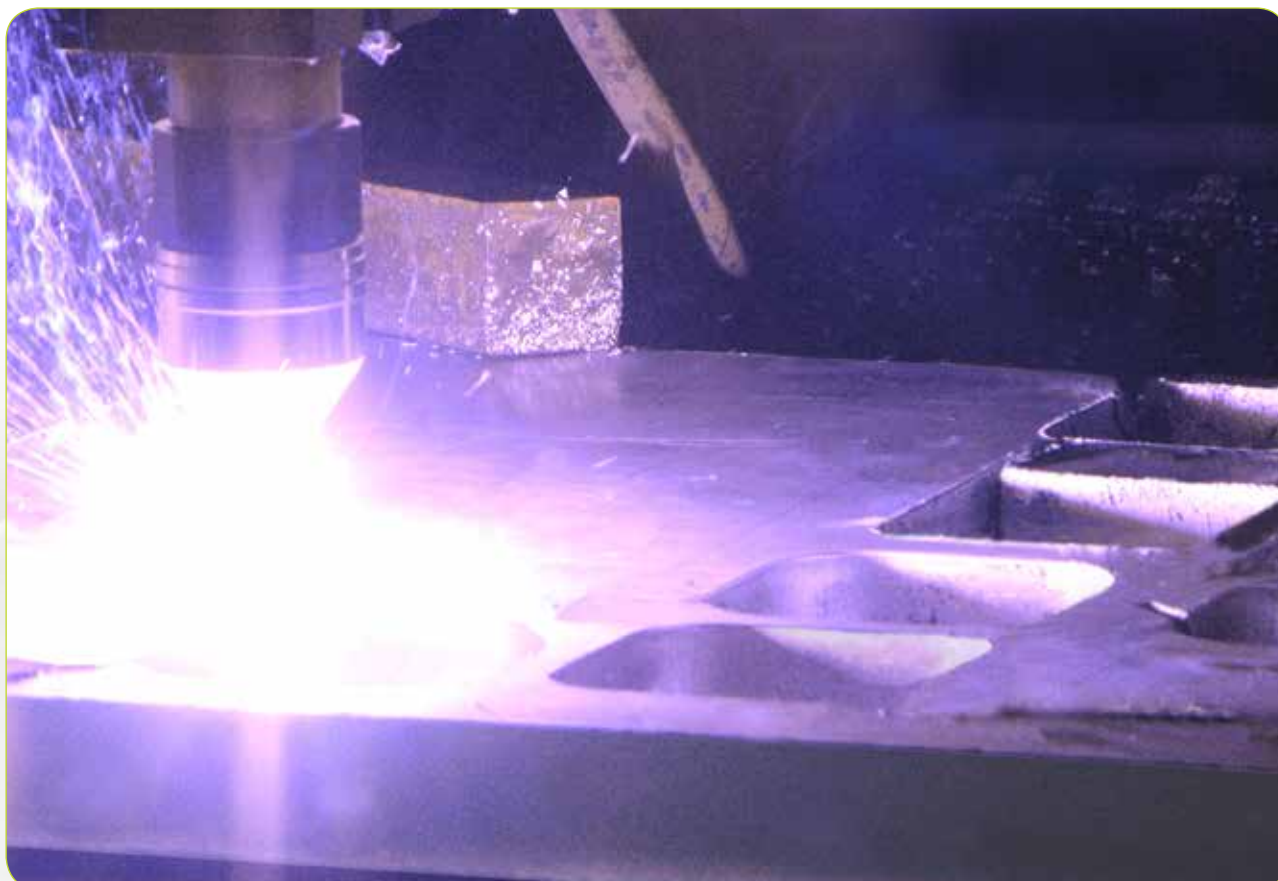
Advantages vs 260 Ampere systems

- Faster Cutting Speeds
- Maximum Cutting Capacity 75 mm (from the edge)
- Competitively Priced
- Cuts Non-ferrous Materials with Nitrogen/Water Mist Secondary (WMS™) at higher speed
- Higher Output Current

ULTRA-CUT® 300 XT

Competitor Comparison

	Thermal Dynamics®	Competitor A	Competitor B
SPECIFICATIONS	UC 300 XT	260 A	280 A
Output current	5-300 A	10-260 A	10-280 A
Input voltages	208-230 V 400 V 480 V 600 V	208-230 V 400 V 480 V 600 V	400 V
Input current	93 A @ 400 V 77 A @ 480 V	75 A @ 400 V 62 A @ 480 V	98 A @ 400 V
Duty Cycle @ 104 F (40 C)	100% (60 kW)	100% (45.5 kW)	100%
Plasma gases	O ₂ , N ₂ , Air, H35, Ar (marking)	O ₂ , N ₂ , Air, H35, F5, Ar (marking)	O ₂ , N ₂ , Air, H35, F5, Ar (marking)
Shield gases	O ₂ , Air, H ₂ O, N ₂	O ₂ , Air, N ₂	O ₂ , Air, N ₂
Production Piercing capacity	40 mm	40 mm	40 mm
Cut Speed at 20 mm MS	2430 mm/min	2170 mm/min	2600 mm/min
Cut Speed at 40 mm MS	800 mm/min	800 mm/min	800 mm/min
Parts life (20 sec) at max current, production capacity and mild steel	1300	900	900



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Ultra-Cut 300 XT Ordering Information

Please refer to configuration sheets for a full breakdown of all part numbers.

Description	Part Number
POWER SOURCE	
Ultra-Cut 300 XT , 400V CE	3-8118-4T
AUTOMATIC GAS CONSOLE	
DMC-3000 Digital Manifold Control	9-9491
DPC-3000 Digital Pressure Control	9-9443
TSC-3000 Touch Screen Controller	9-9490
MANUAL GAS CONSOLE	
GCM2010 Manual Gas Console	3-9131
REMOTE ARC STARTER	
Remote Arc Starter	3-9130E
Mounting Kit	9-9484
LEADS	
Work Cable	See Configurator
Control Cable	See Configurator
Supply Lead Set	See Configurator
Gas Lead Set	See Configurator
Torch Lead Set	See Configurator
Fibre Optic Interface Cable	See Configurator
CNC Cable	See Configurator
Earth Cable	See Configurator
TORCH INSTALLATION STARTER KIT	
300A Torch Installation starter kit	See Configurator
Robotic Torch Installation starter kit	See Configurator
ROBOTIC ACCESSORIES	
Robotic crash mount - light spring	9-2974
Robotic crash mount - medium spring	9-2975
Robotic crash mount - hard spring	9-2976
22° mounting arm for XTR	9-2977
45° mounting arm for XTR	9-2978
90° mounting arm for XTR	9-2979
XTR Dragster advanced floating torch holder	9-0470
TVA Mounting Bracket	9-2718
Teach/Pointer tool	9-2715
WATER MIST PUMP	
(compensates for low water pressure)	
WMS Pump kit	9-0015
Filter Cartridge	9-0017
TORCH COOLANT	
Extra Cool Coolant - 3.8l	7-3580
STEPUP UPGRADE KITS	
(kit upgrades the system by 100 Amps)	
Upgrade kit 300A to 400A	9-7403

ULTRA-CUT® 400 XT

System Overview

The Ultra-Cut® 400 XT is a 400 Amp High Precision plasma cutting system suitable for production cutting from 0.5 – 50 mm. Offering 400 Amps of cutting power, this system is designed to cut thicker materials all day long.



	Ultra-Cut® 400 XT
Rated Output (Amps)	400 A
Output Range (Amps)	5-400 A
Output Volts	200 V
Volts, Phase	400 V, 3 ph, 50-60 Hz
Amps, Volts	137 A @ 400 V
Duty Cycle (@ 104°F/ 40° C)	100% (80 kW)
Max OCV	425 V
Plasma Gas	Air, O ₂ , Ar-H 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 ₂ O @ 0.6 l/mm
Power Supply Weight	252 kg
Dimensions	1219 mm x 698 mm x 1031 mm
Certifications	CSA, CE, CCC
Warranty	2 Years on the power supply 1 Year on the torch

Cutting Speed Chart For Ultra-Cut® 400 XT

Material	Amps	Plasma /Shield	Thickness (mm)	Speed (mm/min.)
Mild Steel	30	O ₂ /O ₂	3	910
	70	O ₂ /Air	6	3100
	100	O ₂ /Air	6	4030
			10	2300
	200	O ₂ /Air	25	1250
			35	750
	300	O ₂ /Air	20	2540
			25	1780
			35	900
	400	O ₂ /Air	25	2100
Stainless Steel			40	1330
			50	790
	30	N ₂ /H ₂ O	1.5	3100
	50	N ₂ /H ₂ O	2	4310
			5	1523
	70	N ₂ /H ₂ O	6	1495
	100	H35/N ₂	6	1880
			10	1350
	100	N ₂ /H ₂ O	6	1810
	200	N ₂ /H ₂ O	20	1100
			25	900
	300	N ₂ /H ₂ O	25	1030
			35	760
	300	H35/N ₂	25	920
			40	760
Aluminum	400	N ₂ /H ₂ O	20	2286
			40	760
	400	H35/N ₂	25	1170
			50	440
	400	H35/H35	100	90
	50	Air/Air	3	1520
		N ₂ /H ₂ O	6	2760
	100		10	1700
		N ₂ /H ₂ O	20	2200
			25	1300
	300	N ₂ /H ₂ O	25	1560
			32	1000
		H35/N ₂	25	2190
	400	N ₂ /H ₂ O	20	2200
			40	1350
	400	H35/N ₂	25	2330
			50	810

Note: The cutting speed chart includes preliminary data and is subject to change without notice. Take care in comparison. The speeds noted above are best cut quality 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® XT systems. Please contact Thermal Dynamics® for more information.

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HeavyCut™ Technology for cutting thicker Mild Steel

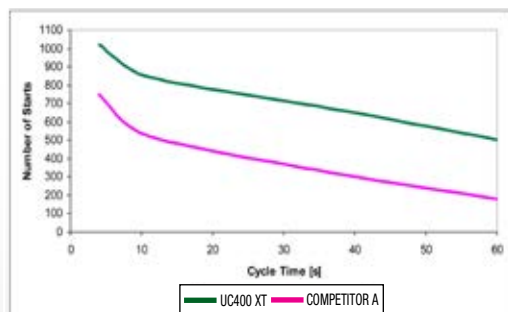
Ultra-Cut® 400 XT systems use HeavyCut™ Technology to improve cutting efficiency and extend the useful life of the consumable parts. Advanced consumable parts and process parameters cut thicker plates better, last longer and result in lower cost per cut.

- Sharper corners
- Sharper edges
- Rounder holes
- Lowest cost per metre
- Best quality at high cut speeds
- Precision cuts up to 50 mm on mild steel



The Best parts life available today

- Considerably higher consumables parts life at high amperages compared to the competition



COMPETITOR "A"
41 PIERCES



COMPETITOR "B"
300 PIERCES

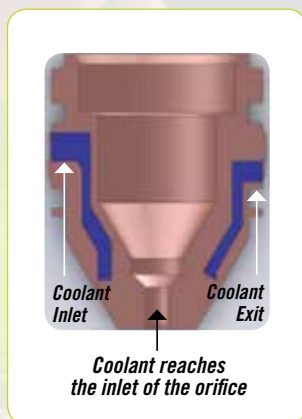


COMPETITOR "C"
300 PIERCES



TD UC 400 XT
400 PIERCES

Heavy-Duty 400A shield cup capable of withstanding repeated piercing operations on 50mm mild steel



- Parts last longer through efficient cooling technology:
Ultra-Cut® 400 XT systems are supplied with an external coolant recirculator which provides the coolant capacity for high-current applications
- HeavyCut electrode features multiple hafnium inserts, extending the lifetime of the part.
- HeavyCut 2-piece tip provides cooling all the way to the tip orifice

ULTRA-CUT® 400 XT

Competitor Comparison

	Thermal Dynamics®	Competitor A
SPECIFICATIONS	UC 400 XT	400 A
Output current	5-400 A	10-400 A
Input voltages	208-230 V 400 V 480 V 600 V	208-230 V 400 V 480 V 600 V
Input current	137 A @ 400 V 114 A @ 480 V	131 A @ 400 V 110 A @ 480 V
Duty Cycle @ 104 F (40 C)	100% (80 kW)	100% (80 kW)
Plasma gases	O ₂ , N ₂ , Air, H35, Ar (marking)	O ₂ , N ₂ , Air, H35, F5, Ar (marking)
Shield gases	O ₂ , Air, H ₂ O, N ₂	O ₂ , Air, N ₂
Production Piercing capacity	50 mm	50 mm
Cut Speed at 30 mm MS	1660 mm/min	1790 mm/min
Cut Speed at 50 mm MS	790 mm/min	795 mm/min
Parts life (20 sec) at max current, production capacity and mild steel	900	500



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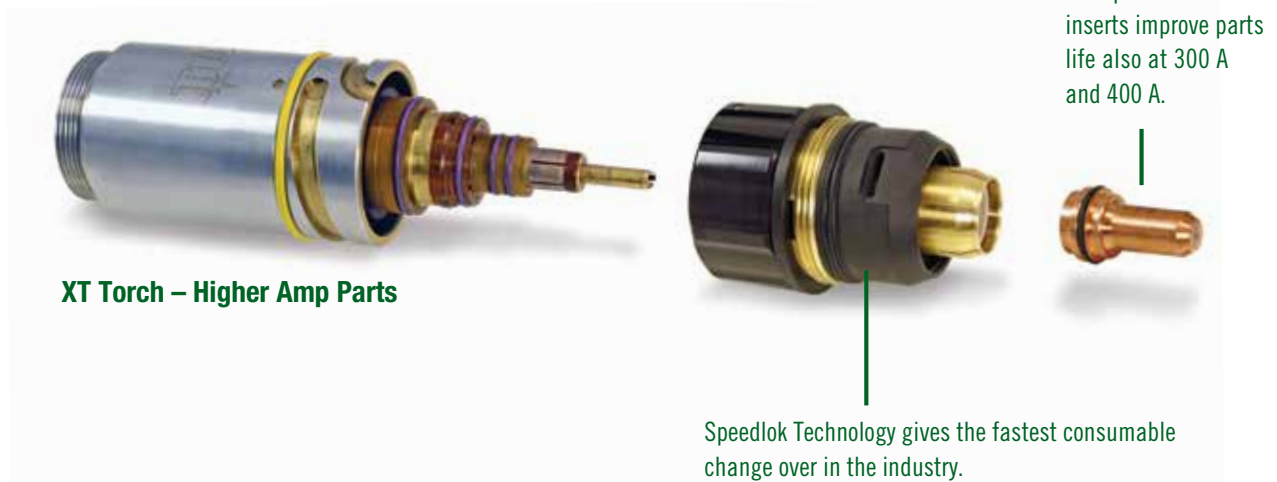
Ultra-Cut 300 XT Ordering Information

Please refer to configuration sheets for a full breakdown of all part numbers.

Description	Part Number
POWER SOURCE	
Ultra-Cut 400 XT , 400V CE	3-8120-4T
AUTOMATIC GAS CONSOLE	
DMC-3000 Digital Manifold Control	9-9491
DPC-3000 Digital Pressure Control	9-9443
TSC-3000 Touch Screen Controller	9-9490
MANUAL GAS CONSOLE	
GCM2010 Manual Gas Console	3-9131
REMOTE ARC STARTER	
Remote Arc Starter	3-9130E
Mounting Kit	9-9484
EXTERNAL COOLER	
HE-400A Cooler	9-9416
Cooler Lead set, 3m	4-5150
LEADS	
Work Cable	See Configurator
Control Cable	See Configurator
Supply Lead Set	See Configurator
Gas Lead Set	See Configurator
Torch Lead Set	See Configurator
Fibre Optic Interface Cable	See Configurator
CNC Cable	See Configurator
Earth Cable	See Configurator
TORCH INSTALLATION STARTER KIT	
400A Torch Installation starter kit	See Configurator
Robotic Torch Installation starter kit	See Configurator
ROBOTIC ACCESSORIES	
Robotic crash mount - light spring	9-2974
Robotic crash mount - medium spring	9-2975
Robotic crash mount - hard spring	9-2976
22° mounting arm for XTR	9-2977
45° mounting arm for XTR	9-2978
90° mounting arm for XTR	9-2979
XTR Dragster advanced floating torch holder	9-0470
TVA Mounting Bracket	9-2718
Teach/Pointer tool	9-2715
WATER MIST PUMP	
(compensates for low water pressure)	
WMS Pump kit	9-0015
Filter Cartridge	9-0017
TORCH COOLANT	
Extra Cool Coolant - 3.8l	7-3580

XT TORCH TECHNOLOGY

XT Torch Technology – The New Standard for High Precision Plasma Cutting



No Tools Required

Unlike other torches, no tools are required to change either the torch consumables or major components in the torch head.

The unique, SpeedLok™ Consumables Cartridge houses consumable parts only, no built-in head/torch body to drive replacement costs up. Changing cartridges is fast and easy – a couple of twists and the unique ‘rapid engagement’ retaining collar threads release the cartridge. Down-time is reduced to seconds and you can change from one process to another or from one application to another quickly and easily.

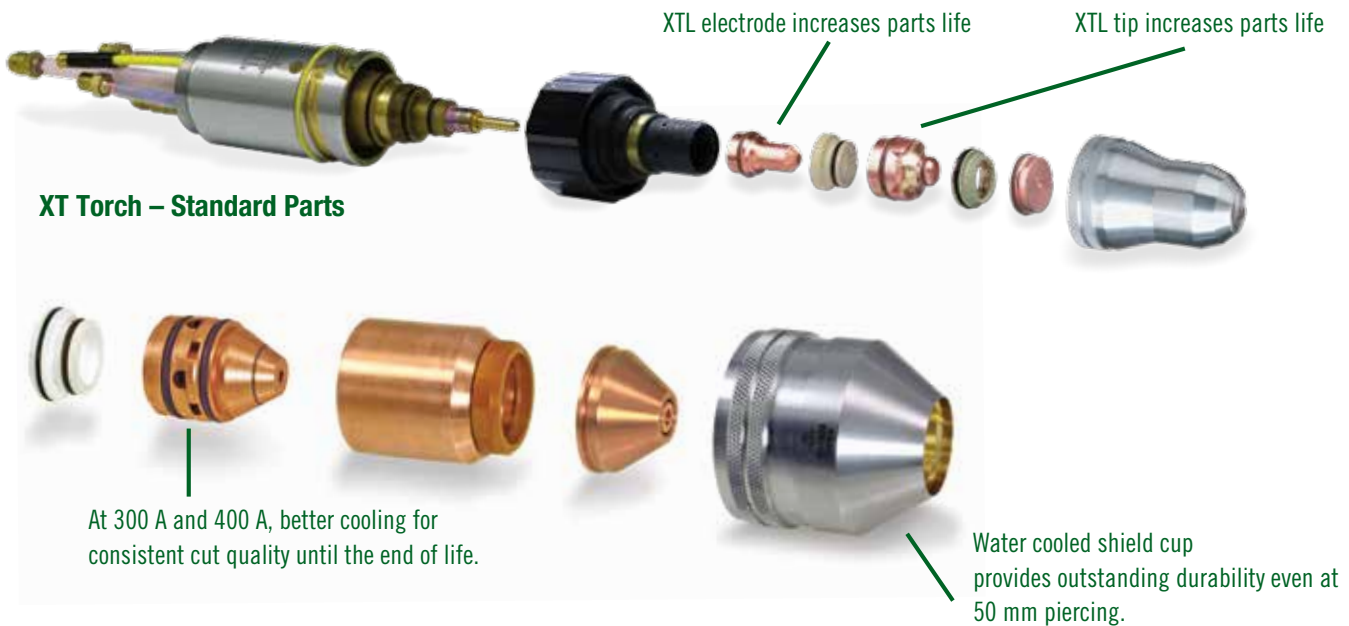
‘Leakless’ Torch Head Design

Coolant doesn’t drip from the torch head when the consumables cartridge is removed from the torch head. The design prevents air from entering the system and becoming trapped in the leads.

Self-Centering Components

Consumable parts and torch body are precisely engineered to lock into place for absolute alignment and remain positioned cut after cut. Independently aligned tip and electrode assures accurate re-centering of the consumable cartridge after each parts change. This guarantees best cut quality time and time again.

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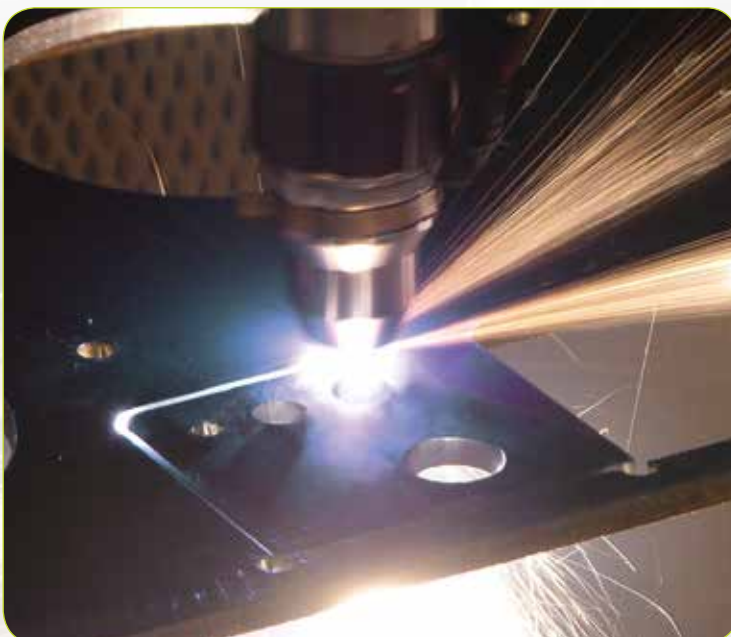


Superior Warranty

Thermal Dynamics' XT-Torch warranty covers components and service for a full 1-year period.

Precision Cuts on All Metals

The XT-Torch dual gas technology provides the highest arc density plasma stream in the industry for precision cuts on mild steel, stainless steel, aluminium and other non-ferrous materials, and Ar for marking with systems supplied with automatic gas control. Choices for plasma gas include - Air, N₂, O₂, Ar-H₂ and Ar for marking with an automatic gas console. Shield gas choices include - Air, N₂, O₂, or Ar-H₂ and H₂O.



Designed for Demanding Production

With the XT-Torch the operating window permits wide travel speed variance, which means you'll get great cuts more often with less wasted material and time.

- Less critical standoff height
- Wider 'Operating Window' for dross-free cutting

ULTRA-CUT® XT SYSTEMS FLEXIBILITY

StepUP™ Modular Power Technology – Expand As Your Cutting Needs Grow

With StepUP Modular Power Technology your system has the flexibility to grow with your business. It features modular “inverter blocks” and a common cabinet for all amperages. To expand a 100 A system into a 200 A, 300 A or 400 A system, additional blocks can be easily installed.* A field technician can install a new inverter block in less than 30 minutes.

The Thermal Dynamics intelligent approach means never “under-buying” again. With Ultra-Cut XT systems, you’ll always have the right amount of power today — and tomorrow.

* When expanding to 300 or more amps, simply connect the required additional external cooler to the system, switch to the correct consumables and you’re ready to cut.



Multiple Processes with a single plasma system

A single Ultra-Cut XT system is able to perform many different cutting operations, with minimal downtime for process changeover. Simply change the consumables cartridge and alter the cutting parameters, and the system is ready for the new process.

Ultra-Cut XT systems employ a variety of exclusive Thermal Dynamics technologies, allowing the user to get the best results, no matter the operation:

Cutting Mild Steel?

- XTremeLife™ consumables and HeavyCut™ Technology offer consistent high quality cuts at high speeds, even on the thickest materials
- Cut speeds are on average 3 times faster than oxy-fuel cutting with narrower kerfs.



Cutting Stainless Steel and Aluminium?

- Water Mist Secondary (WMS™) technology delivers unmatched non-ferrous cut quality and low cost of operation by using N₂ as plasma gas and ordinary tap water as the secondary.
- WMS technology offers better results on thinner materials than H35 (Argon-Hydrogen) cutting
- The best plasma for non-ferrous cutting



Cutting Holes?

- Diameter PRO is a software based intelligent solution that allows the Thermal Dynamics iCNC XT controller to optimise hole quality for holes with a diameter to thickness ratio of 1:1 or greater.



We Bring Intelligence to the Table.™

Bevel Cutting?

- Specially engineered consumable parts allow Ultra-Cut XT systems to bevel cut 35 mm plate at 45 degrees.
- Extremely flexible torch leads are protected by a Kevlar® sleeve to stand up to high intensity automated bevel head cutting applications



Robotic Cutting?

- Sleek profile XTR Robotic torch allows for excellent accessibility and visibility in robotic applications.
- Contoured consumables specifically designed for robotic applications



Plasma Marking?

- Intelligent gas control with the automatic gas console allows high quality marking that produces clean, clear lines for easy identification and readability
- Rapid process changeover from cutting to marking with no need to change consumables



Need A CNC System?

- iCNC Performance offers a low cost CNC specifically designed for Thermal Dynamics plasma systems
- Thermal Dynamics iCNC™ XT integrates seamlessly with Ultra-Cut XT systems and turns the most precise plasma system into the one of the easiest to operate.
- iCNC XT controllers offer intelligent control, which controls every aspect of the cutting process, resulting in improved cut quality



Time to Upgrade your cutting system?

- Ultra-Cut XT systems can be retrofitted onto your existing automated plasma or oxy-fuel cutting table
- If your current CNC does not support automatic gas control, this can be added using our touch-screen controller, or upgrade to intelligent control with the iCNC XT.



Need to cut the remnant plate?

- Ultra-Cut XT systems now feature ScrapCutter - the ability to connect a manual Thermal Dynamics plasma torch to the Ultra-Cut and start cutting. An separate manual plasma cutter or oxyfuel torch is no longer required!



DIAMETER PRO™ TECHNOLOGY

Excellent Quality Holes with virtually no taper

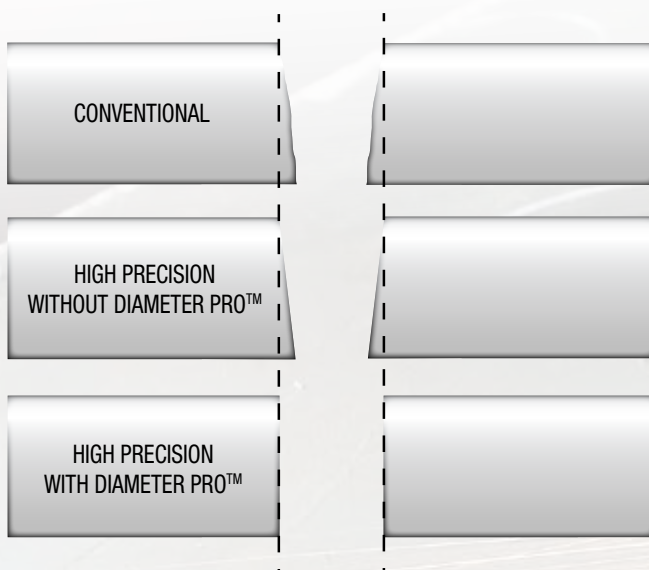
Diameter PRO™ Diameter PRO is a software based intelligent solution that allows the Thermal Dynamics® iCNC XT controller to optimise hole quality for holes with a diameter to thickness ratio of 1:1 or greater. It is the ideal process for a precision hole or radius with minimal-to-no taper on mild steel and aluminium up to 25 mm.

Diameter PRO™ combines simplicity with advanced CNC controller intelligence to allow cutting “optimized” holes automatically, with the click of a button. With this technology the system automatically adjusts all parameters to cut high quality holes every time.

There is no need to change anything in your nesting software. Diameter PRO™ is compatible with any existing nesting software.



Diameter PRO™ Technology is integrated into Thermal Dynamics® iCNC™ XT controllers and is also available when using Thermal Dynamics® High Precision systems with other CNC systems, through a parameter database that can be installed in virtually any CNC system, allowing it the same precise control of the plasma power source as the iCNC™ XT.



HOLE CUT
WITHOUT DIAMETER PRO™



HOLE CUT
WITH DIAMETER PRO™

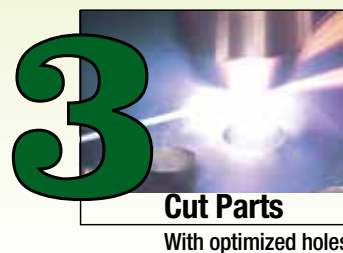
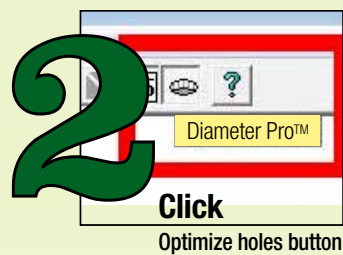
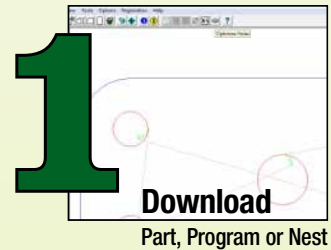
We Bring Intelligence to the Table.™

Diameter PRO™ adjusts an infinite variety of settings – anything from cut speeds and torch heights to arc voltages and cut diameters – all automatically. The integrated height control works seamlessly with the integrated drive system to control machine motion and cuts high quality holes every time.

Diameter PRO™ can be utilized with any existing nesting software. No need to change anything in your nesting software. The basic requirements for Diameter PRO™ include a Thermal Dynamics® iCNC Plasma Controller with Automatic Height Control and an Ultra-Cut® XT Precision Plasma System.



Three Simple Steps



HEAVYCUT™ TECHNOLOGY

Excellent Cut Quality on thicker mild steel.

Historically oxyfuel cutting was the most popular cutting process for mild steel in the 20 – 50 mm range, with plasma systems offering mixed consumables lifetimes and poorer results than on thinner plate.

HeavyCut™ Technology allows Ultra-Cut® XT systems to cut 50 mm mild steel with the same excellent cut quality as 15 mm mild steel, through specially designed torch consumables and highly optimised cutting parameters which improve cutting efficiency and extend the useful life of the consumable parts.

HeavyCut™ technology improves cutting efficiency and extends the useful life of the consumable parts. Advanced consumable parts and process parameters cut thicker plates better, last longer and result in lower cost per cut. True precision performance is no longer limited to thinner plates.

HeavyCut™ technology offers numerous advantages on thicker mild steel, including:

- Sharper corners
- Sharper edges
- Rounder holes
- Lowest cost/metre
- Best quality cut speed
- Precision cuts up to 50 mm on mild steel



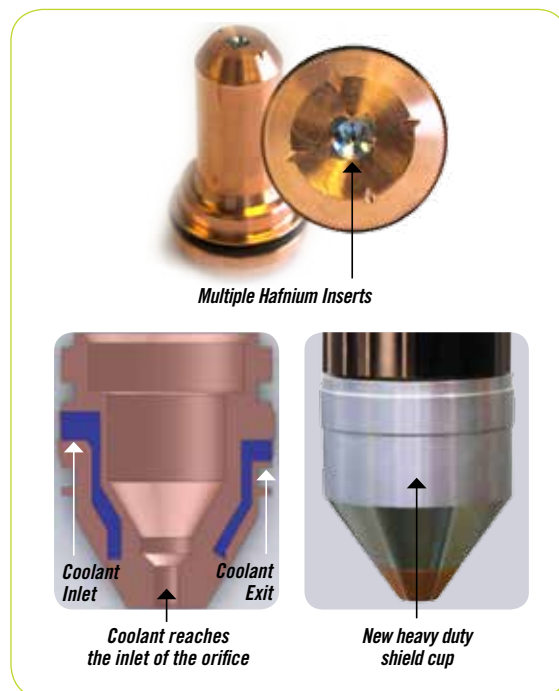
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Advanced Consumables Technology

Patented electrode features multiple hafnium inserts to increase parts life during high current applications.

Patented two-piece tip provides cooling all the way to the tip orifice, increasing the lifetime and providing consistently good cut quality over its complete lifespan.

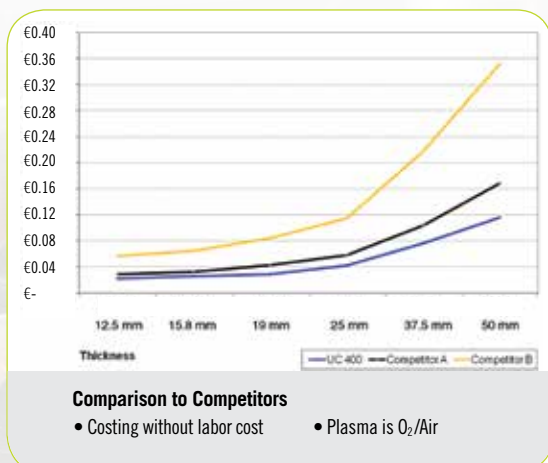
Heavy duty shield cup is designed to withstand over 400 piercings on 50 mm mild steel at 400 Amps without compromising cut quality.



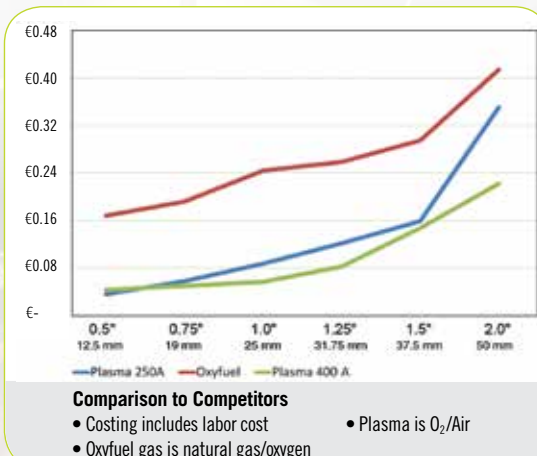
Advanced Process Control

Thermal Dynamics® has rigorously tested these consumable parts to create the optimum cutting parameters, resulting in the best possible quality, speeds and consumables lifetime.

Ultra-Cut® 400 XT vs. Competitors



Cost/metre comparison between Oxyfuel and Plasma



Lowest Cost per Metre

Ultra-Cut® XT systems with HeavyCut™ Technology offer significantly lower cutting costs compared not only to other plasma systems, but also to oxy-fuel cutting. Upgrading an old oxy-fuel table with an Ultra-Cut® system will let you cut not only what you cut today, (at a lower cost and with improved quality) but also offers further opportunities to cut non-ferrous metals with the same torch.

WATER MIST SECONDARY (WMS) TECHNOLOGY

- Up to 3 times faster cut speeds on 20 mm stainless steel compared to other plasma systems
- Similar quality to water-jet for the same cost as oxy-fuel Cutting
- Gas costs reduced to the minimum - using nitrogen as the plasma gas and ordinary tap water as the shield

Excellent Cut Quality on Stainless Steel and Aluminium

WMS technology delivers excellent non-ferrous cut quality and low cost of operation by using N₂ as plasma gas and ordinary tap water as the secondary.

By using N₂/H₂O instead of H35/N₂ gas, the expense of gas is reduced, cut speed is increased, and distortion and the heat-affected zone are minimized. The result is a clean, dross-free and oxide-free cut surface that's ready to weld, form and paint.

How does Water Mist Secondary technology work? During the cutting process, the water in the shield stream is divided into its principal components—hydrogen and oxygen. The hydrogen creates a reduced atmosphere in the cut zone, isolating it from contaminants at a much lower cost per metre than other cutting processes. Since it uses normal tap water, Water Mist Secondary also reduces production costs and keeps overall energy usage to a minimum.

WMS technology is recommended for non-ferrous cutting up to 40 mm. For thicker non-ferrous metals, H35 is still the recommended process.



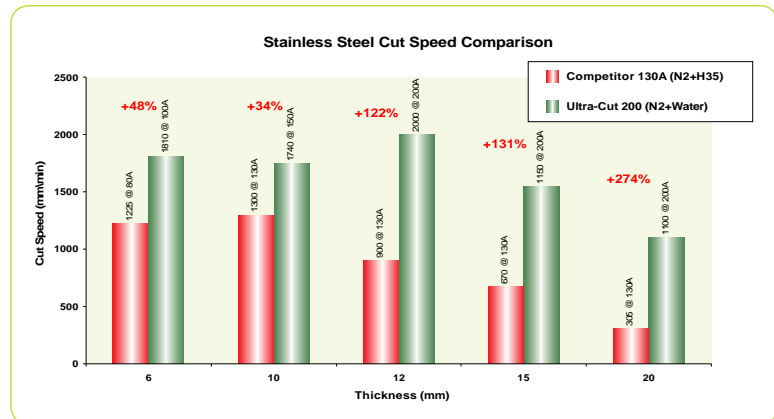
Example of a 20mm cut with WMS



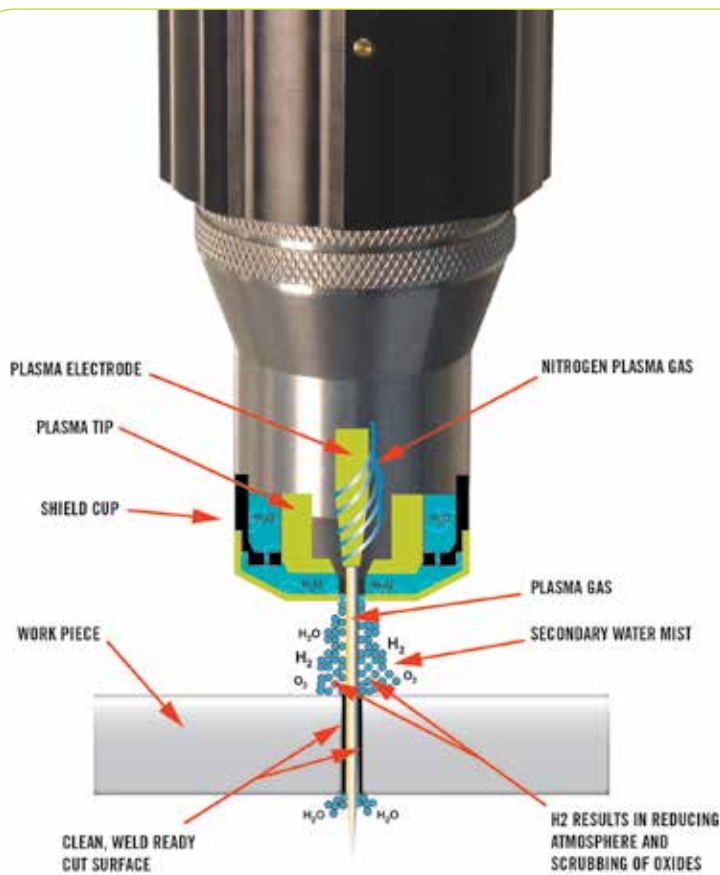
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Advantages of WMS Technology

- Excellent non-ferrous metal cut quality using N₂ as plasma gas and ordinary tap water as the secondary.
- Lowest operating cost.
- Dross-free cutting from 1 mm to 40 mm.
- Oxide-free cut face surface.
- Wide parameter window.
- Easy-to-use.
- Higher cut speeds compared to H35 cutting.



Effect of N₂/H₂O Plasma on Non-Ferrous



ROBOTIC AND BEVEL CUTTING APPLICATIONS

High Precision Plasma Cutting integrates seamlessly into robotic and bevel cutting applications

Robots offer cost and performance advantages for mild steel, stainless steel and aluminium. Ultra-Cut® systems are designed to integrate seamlessly with robots, allowing High Precision cuts to be made at any angle, using the XTR™ High Precision robotic torch. The sleek profile design of the torch allows for excellent accessibility and visibility in most applications.

Smaller, lighter and with optimized consumable parts, the XTR™ Robotic Torch installs easily to a robot without any loss of accuracy or performance. This torch is designed with built-in torch leads that offer reduced weight, flexibility and robustness, which makes it extremely durable in repeated articulated motions. Contoured consumables allow for improved accessibility and visibility and both the consumable parts and torch body are engineered to precisely lock into place for absolute alignment, and to remain perfectly positioned cut after cut.

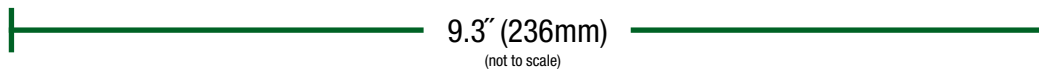
This torch system is also capable of extremely precise and powerful bevel cutting. Using specifically engineered consumable parts, it can bevel cut 35 mm plate at 45 degrees.



Advantages of Thermal Dynamics® Robotic Solutions:

- Short torch mounting tube for improved articulation and ease of access
- Specifically engineered profile/bevel cutting consumable parts for accuracy and flexibility
- Light and flexible, robust torch leads
- Torch mounting index marks for precise torch positioning
- Consumables starting at 15 A.

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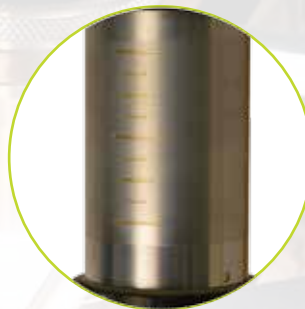


XTR™ Torch - Key Features

- One of the shortest profiles on the market at only 236mm in length
- Bevel consumables for improved accessibility
- Light-weight, flexible leads designed for robotic applications
- Torch mounting indicators for consistent positioning
- Position teach tool for point to point programming

Specifications (subject to change without notice)

Rating	30 - 400 Amps
Plasma Gas	O ₂ , N ₂ , Ar-H ₂ , Air @ 8 bar
Shield Gas	O ₂ , N ₂ , H ₂ O, Air @ 8 bar
Weight	Torch Assembly w/ 1.2 m leads - 2.8kg Torch/Supply Leads - 0.38kg Torch Solenoid Assy (TVA) -3.04kg
Dimensions	L 236 mm x D 50 mm



Position Indicator Marks



Easy Access Consumables

SUPERIOR GAS CONTROL

Choice of Technologies

Good gas flow control enhances cut quality and extends consumables life. Automatic gas control provides a better level of quality control, able to instantly set and control gas pressure, leading to faster cycle times and more productive cutting.

Ultra-Cut® XT systems are available with a choice of automatic or manual gas control.

Automatic Gas Control

Choose automatic gas control for easy integration into the CNC system. This allows the CNC to automatically control gasses and gas flow and enables fast switching between cutting processes. When plasma marking, automatic gas control gives you the precise control needed to produce consistent high quality results, and allows rapid changeover between cutting and marking processes.

An optional touch-screen interface is available for installations where CNC controlled, automatic gas control is not possible. The operator can quickly choose one of potentially 1000's of stored programs and start cutting by touching the green "Go" button. The operator can also edit existing cutting programs and create new ones, allowing parameters to be changed to suit a wide variety of materials and conditions. Future software upgrades can be made through the standard USB port.



Why Choose Automatic Gas Control?

- Easier to use
- No setup errors
- Reduced setup times
- Consistent cut quality
- Improved parts life and cut quality
- Easily switch between marking and cutting
- Integrates easily into most CNCs

Consider Automatic Gas Control For:

- Easy setup
- More consistent cut quality
- Plasma marking
- When applications call for frequent changes in material types or thicknesses
- Optimizing cut quality
- Controlling the Ultra-Cut® XT system automatically

Manual Gas Control

The same high quality results that are available with automatic gas control are achievable with manual gas control; however a manual gas console requires more expertise to use and more time to set up. Gas pressure and flow is controlled by the operator rather than the CNC.

Choose manual gas control to reduce costs where cutting processes are not constantly changed, for example when being used to cut only a single thickness of one material. The GCM 2010 manual gas console from Thermal Dynamics® offers stable gas flow and pressure control.



PLASMA MARKING

Plasma marking is an easy way for factories to label parts which look the same and yet are completely different, such as a left and right bumper mount. Plasma marking allows the user to identify the proper parts necessary to make a solid repair.

Ultra-Cut® XT systems are capable of plasma marking on mild steel and non-ferrous materials. In order to get solid markings, argon is used to produce a clean, clear line, which is easy to read and will remain visible indefinitely.

Plasma marking uses the same consumable parts as the cutting process, so no consumable part changes are necessary. You can even switch seamlessly from marking to cutting on the same part with no operator intervention. All this is done on an Ultra-Cut® XT system equipped with an automatic gas console controlled by a CNC with embedded process parameters. This leads to faster cycle times and more productive cutting.

Why use an Ultra-Cut® XT System for plasma marking?

- Automatic Gas Control system uses argon for marking, minimizing the purge cycle between marking and cutting
- Faster cycle times
- Ideal on all materials—mild steel, stainless steel and aluminium
- Clean, clear lines for easy identification and readability
- No consumable parts change between cutting and marking



SERVICE AND SUPPORT

Thermal Dynamics® rigorously tests its plasma cutters to ensure flawless performance. Should your Ultra-Cut® XT need service, our modular approach minimizes parts inventory and repair time, while the Amperage/Error display indicates the status of the XT system to accelerate troubleshooting.

If an Ultra-Cut® XT System is used with a Thermal Dynamics iCNC, the error code and explanation will be displayed on the CNC itself, facilitating even easier troubleshooting.

Service doesn't stop after the sale

We provide our customers with access to a full-time Technical Support Team which is always ready to take your call and answer any questions you have.

We are a partner who cares about your business. If you're interested in seeing our cut quality for yourself, please contact one of our automation sales managers who can arrange a cut sample.

We can also provide custom cut samples if you'd prefer. That way, you can see how our precision plasma cutting solutions can fit the users' specific cutting needs.

First Class Warranty

Ultra-Cut® XT systems come with a 2 Year machine warranty and 1 year Torch warranty. Repair parts are held in inventory in Europe and can be despatched same-day.



ULTRA-CUT® XT SYSTEM AND COMPONENTS

The XT™ System Technology

Auto Gas Control

Digital Flow Control for optimized and easy set up for frequent changes between materials and thicknesses. A must for marking with Argon and fast switching between cutting and marking.

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

XT Torch

Fastest consumable changes with SpeedLok technology to reduce downtime.

Manual Gas Control

Offers reliable performance with stable gas flow and pressure control.

New Electronic Arc Starter

For reduced High Frequency emission, to avoid electrical interference.



System Capabilities

		Ultra-Cut 100 XT	Ultra-Cut 200 XT	Ultra-Cut 300 XT	Ultra-Cut 400 XT
MILD STEEL	Production Pierce	15* mm	25 mm	40 mm	50 mm
	Maximum Pierce	15* mm	40 mm	45 mm	50 mm
	Edge Start	20 mm	65 mm	75 mm	90 mm
STAINLESS STEEL	Production Pierce	12 mm	25 mm	25 mm	50 mm
	Maximum Pierce	15* mm	25 mm	30 mm	50 mm
	Edge Start	20 mm	50 mm	50 mm	100 mm
ALUMINUM	Production Pierce	15* mm	20 mm	25 mm	50 mm
	Maximum Pierce	15* mm	25 mm	30 mm	60 mm
	Edge Start	20 mm	50 mm	50 mm	90 mm

* With pierce retract function

ULTRA-CUT® XT SYSTEMS



Unit Specifications*

	Ultra-Cut 100 XT	Ultra-Cut 200 XT
Rated Output (Amps)	100 A	200 A
Output Range (Amps)	5-100 A	5-200 A
Output (Volts)	180 V	180 V
Input Volts (Volts, Phase, Hertz)	380 V, 3 ph, 50-60 Hz, 400 V, 3 ph, 50-60 Hz, 480 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
Input Amps (Amps, Volts)	33 A @ 380 V 31 A @ 400 V 26 A @ 480 V	65 A @ 380 V 62 A @ 400 V 52 A @ 480 V
Duty Cycle (@ 104°F / 40° C)	100% (20 kW)	100% (40 kW)
Max OCV	425 V	425 V
Plasma Gas	Air, O ₂ , Ar-H ₂ , N ₂ @ 8.3 bar and Ar for marking	Air, O ₂ , Ar-H ₂ , N ₂ @ 8.3 bar and Ar for marking
Shield Gas	Air, N ₂ , O ₂ @ 8.3 bar, H ₂ O @ 0.6 l/min	Air, N ₂ , O ₂ @ 8.3 bar, H ₂ O @ 0.6 l/min
Power Supply Weight	186 kg	205 kg
Dimensions	1219 mm x 698 mm x 1031mm	1219 mm x 698 mm x 1031mm
Certifications	CSA, CE, CCC	CSA, CE, CCC
Warranty	2 Years on the power supply 1 Year on the torch	2 Years on the power supply 1 Year on the torch

	Ultra-Cut 300 XT	Ultra-Cut 400 XT
Rated Output (Amps)	300 A	400 A
Output Range (Amps)	5-300 A	5-400 A
Output (Volts)	180 V	200 V
Input Volts (Volts, Phase, Hertz)	380 V, 3 ph, 50-60 Hz, 400 V, 3 ph, 50-60 Hz, 480 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
Input Amps (Amps, Volts)	97 A @ 380 V 93 A @ 400 V 77 A @ 480 V	144 A @ 380 V 137 A @ 400 V 114 A @ 480 V
Duty Cycle (@ 104°F / 40° C)	100% (60 kW)	100% (80 kW)
Max OCV	425 V	425 V
Plasma Gas	Air, O ₂ , Ar-H ₂ , N ₂ @ 8.3 bar and Ar for marking	Air, O ₂ , Ar-H ₂ , N ₂ @ 8.3 bar and Ar for marking
Shield Gas	Air, N ₂ , O ₂ @ 8.3 bar, H ₂ O @ 0.6 l/min	Air, N ₂ , O ₂ @ 8.3 bar, H ₂ O @ 0.6 l/min
Power Supply Weight	244 kg	252 kg
Dimensions	1219 mm x 698 mm x 1031mm	1219 mm x 698 mm x 1031mm
Certifications	CSA, CE, CCC	CSA, CE, CCC
Warranty	2 Years on the power supply 1 Year on the torch	2 Years on the power supply 1 Year on the torch

* Subject to change without notice

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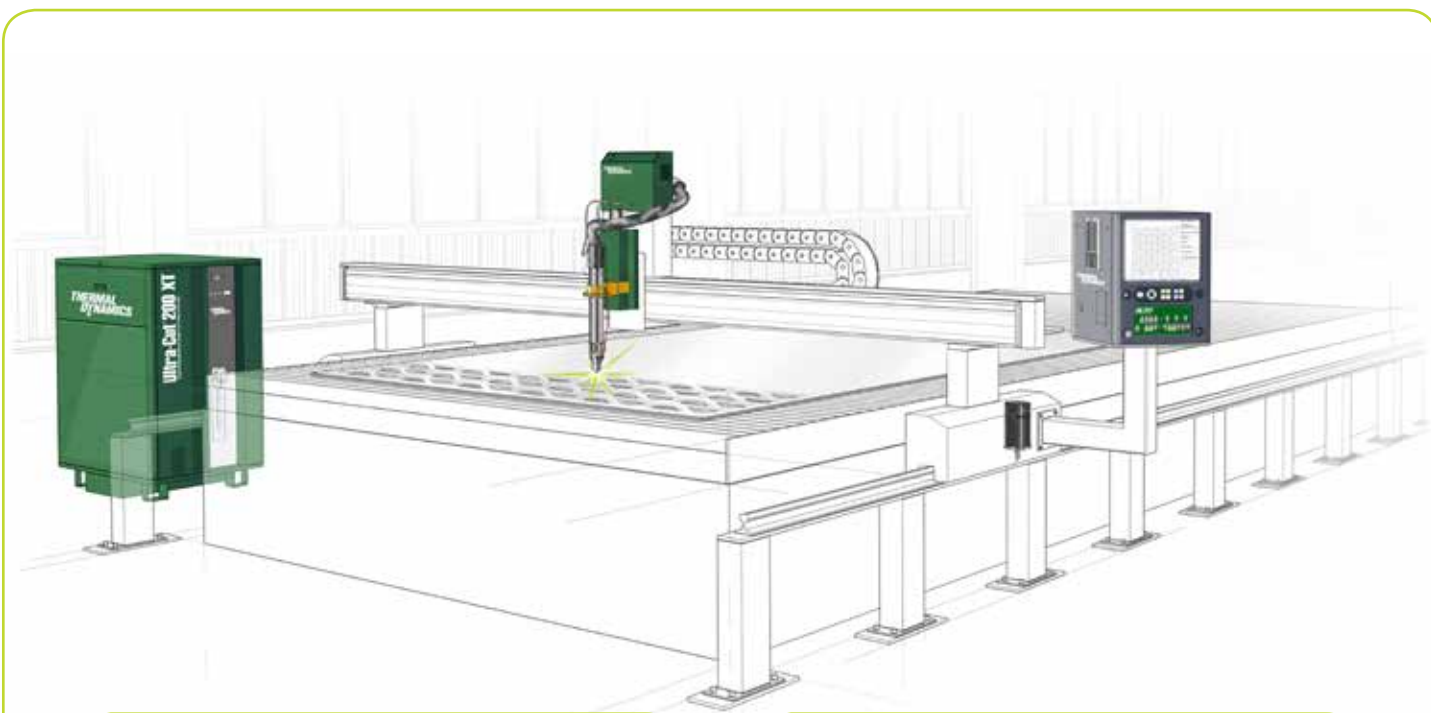
Cutting Speed Chart For Ultra-Cut XT Systems

Material	Amps	Plasma /Shield	Thickness (mm)	Speed mm/min.
Mild Steel	30	O ₂ /O ₂	3	910
	70	O ₂ /Air	6	3100
	100	O ₂ /Air	6	4030
			10	2300
	200	O ₂ /Air	25	1250
			35	750
	300	O ₂ /Air	20	2540
			25	1780
			35	900
	400	O ₂ /Air	25	2100
Stainless Steel			40	1330
			50	790
	30	N ₂ /H ₂ O	1.5	3100
	50	N ₂ /H ₂ O	2	4310
			5	1523
	70	N ₂ /H ₂ O	6	1495
	100	H35/N ₂	6	1880
			10	1350
	100	N ₂ /H ₂ O	6	1810
	200	N ₂ /H ₂ O	20	1100
			25	900
	300	N ₂ /H ₂ O	25	1030
			35	760
	300	H35/N ₂	25	920
			40	760
	400	N ₂ /H ₂ O	20	2286
Aluminum			40	760
	400	H35/N ₂	25	1170
			50	440
	400	H35/H35	100	90
	50	Air/Air	3	1520
		N ₂ /H ₂ O	6	2760
	100		10	1700
		N ₂ /H ₂ O	20	2200
			25	1300
	300	N ₂ /H ₂ O	25	1560
			32	1000
		H35/N ₂	25	2190
	400	N ₂ /H ₂ O	20	2200
			40	1350
	400	H35/N ₂	25	2330
			50	810

Note: The cutting speed chart includes preliminary data and is subject to change without notice. Take care in comparison. The speeds noted above are best cut quality 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® XT systems. Please contact Thermal Dynamics® for more information.







INTEGRATED INTELLIGENCE

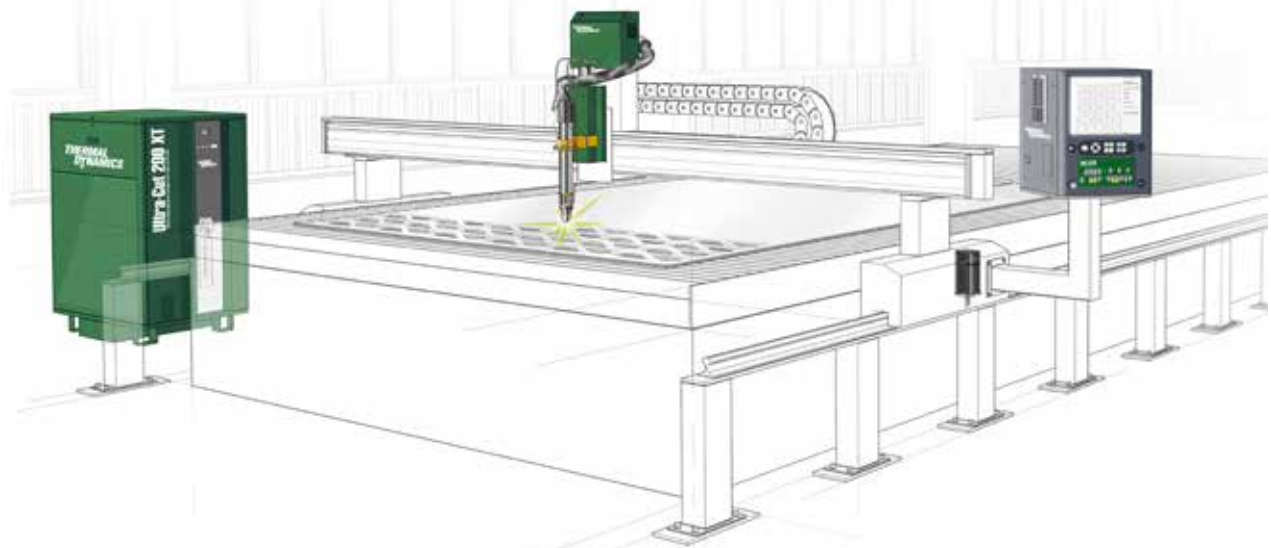
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ADVANTAGES OF INTELLIGENT CONTROL

A state-of-the-art Integrated Control offers high precision cutting performance, as well as exceptional ease of use. A high precision Ultra-Cut XT Auto Gas plasma system can use the iCNC XT or iCNC Performance and an integrated precision Torch Height Control to provide a single control point for all plasma and motion parameters.

iCNC XT

The iCNC XT offers a 15" TFT, high resolution flat panel touch screen equipped with dual microprocessor technology for true multi-tasking. Operators gain unparalleled ease of use with the unique ergonomics, a single point of plasma control and motion and torch height control. Cut parameters are embedded in the system, so operators can select from a menu of routine cut programs that are automatically applied to optimize cut procedures for the selected material.



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iCNC™ XT Overview

- Diameter Pro™ Automatic Hole Optimization (optional)
- Automatic Height Control & Plasma Settings
- Remote Access through Wireless Internet Connection
- 15" Touch Screen
- Dual Microprocessor System
- Ethernet Connectivity as a Standard Feature
- Heat Exchanger to Allow All-in-one Design
- Designed for Shape Cutting Tables
- Runs Sophisticated, Easy to Use Software
- Reads ESSI, EIA and DXF Files
- Provides Many Cutting Specialized Tools
- Automatic Nesting also on Remnant Plates (optional)
- Automatic Cutting Order Optimization (optional)
- Automatic Parameter Settings by Process
- Dynamic Plasma Pre-Stop Adjusting
- Flash SATA Hard Drives with No Moving Parts

Optimized for Thermal Dynamics® Plasma Systems

Integrated Intelligence

- By seamlessly integrating sophisticated equipment and adding our extensive Plasma Cutting Knowledge, we have added the “experience” of Thermal Dynamics® into every system, greatly reducing the need for operator or programmer process expertise.
- The iCNC XT has the capability to recognize if a cut is a hole or an inside or outside contour. The shapes and nests are truly interpreted by the CNC, not just commands, coordinates, lines and arcs.
- That’s why it is called the “intelligent” CNC.

IT WORKS WITH ANY OFFICE NESTING SOFTWARE THAT YOU PREFER TO USE, nothing has to be changed in the way you build your nesting.

Built-In Cut Quality

- Hole cutting quality always optimal, automatically. Also with Macro Shapes or DXF files direct from a CAD system. But also with ESSI or EIA coded programs without doing anything special in the office software.
- Optimized cutting order and piercing locations.
- Optimized settings for different radius arcs.
- Dynamically optimized torch distance from plate through the whole operation from ignition, piercing, cutting and special circumstances.
- Automatic, dynamic compensation for plasma pre-stops, acceleration, following error, and much more.



When matched with Thermal Dynamics®, innovative plasma systems with Automatic Gas Control, the iCNC™ XT achieves true integrated control and turns the plasma system into one of the easiest to operate. With special features like Dual Microprocessor Control, iCNC™ XT is an affordable upgrade that can be paired with any plasma cutting system for improved cut quality and performance.

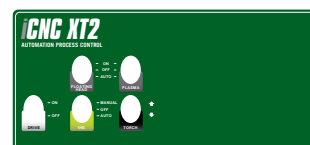
Integrated System Savings

- Simpler installation when all systems are wired to one central box (iCNC XT) and can be pre-set to work with each other.
- Less case by case engineering.
- No finger pointing from vendor to vendor.
- Remote one spot access to the whole system and a possibility to do joint remote sessions with Thermal Dynamics® specialists for help and training.
- All information is available in one location and all settings and tuning can be done on the same screen.

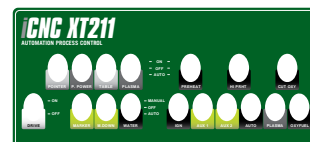


Operator Console Options

- XT2 is for single plasma machines with all needed switches and I/O also for a marking device, no external relays needed



- XT211 is for one plasma, for one marking device and one oxy fuel torch.



- XT242 is for a maximum of 2 plasma torches, 4 oxy fuel torches and one marking device.
- The simplest version has no operator switches and the machine interface has 8 relay contacts and several low level I/O.
- Several additional configurations exist, we are happy to provide custom panels for partnering table OEMs.

Built-In Process Parameter Database

- Plasma systems without communication are supported by the databases, offering automatic settings for all other parameters. On time guidelines allow the operator to set the plasma system for selected cutting processes and tasks.
- Best integration is provided for Thermal Dynamics® Ultra-Cut® high precision plasma systems and other Thermal Dynamics® plasma systems.
- Operator setting errors are practically eliminated.

We Bring Intelligence to the Table.™

Built-In Torch Height Control (iHC) Options

- A1 Option Includes built in iHC for one plasma torch. No external electronics are needed, everything is inside the iCNC™.
- A2 Option Includes built in iHC for two plasma torches. No external electronics are needed, everything is inside the iCNC™.
- 2 lifter versions with different mechanics and collision sensor designs.
- The iHC is easy to integrate to any plasma torch lifter mechanics.
- To accommodate a standalone external torch height control, we offer a simple version with only a serial port to communicate with the external height control system.



Internet Diagnostics and Support

- Our dual microprocessor technology offers a significant advantage by fully utilizing sophisticated third party software solutions like GoToMeeting*.
- Everything that is truly integrated into the iCNC™ can be diagnosed and serviced through the internet, servos, the height control and the plasma system itself. In addition, even the dip-switch settings of the Ultra-Cut® are displayed.
- Diagnose the system while it is cutting, in real time, a capability that is comparable to having an service expert on site in minutes, always.
- Its not just about trouble shooting, its also about answering simple support questions quickly and with less communication problems while the support technician or operator sees the screen.



Built-In Servo System Options

- Y2 Option has two 400 W amplifiers built in.
- Y2L Option has one 400 W + one 750 W amplifiers.
- Y3 Option has three 400 W amplifiers.
- Y3L Option has one 400 W + two 750 W amplifiers.
- All options are with Yaskawa amplifiers.
- Additional option with an installation kit for Yaskawas available without the actual servo amplifiers to provide the most economical option for table manufacturers.
- The simplest version (E3 option) has no servos built in, just 2 or 3 axis enable and analog speed signal outputs for external servo amplifiers and corresponding encoder inputs.



*By utilizing dual microprocessor technology, the system runs critical, real-time operations on a separate computer. This allows the required sophisticated software to run safely on the Windows** based platform.*

*GoToMeeting is a registered trademark of Citrix Systems, Inc

**Windows is a registered trademark of Microsoft Corporation in the United States and other countries

iCNC PERFORMANCE

Integrated plasma systems have revolutionized the high-end, high-capacity, automated plasma cutting industry. Today Thermal Dynamics' iCNC Performance makes it possible to build low-cost machines with high-end, professional performance that until now have been unavailable at this price level. This is a true industry Game Changer.

Thermal Dynamics – Changes the Game

- Professional system performance
- Integrated, full-featured systems for any size cutting table
- Now made affordable



Optional Built-In Torch Height Control

- Selecting material, thickness and process is all that is required. Seamlessly integrated advanced torch height control is included
- Select a lifter with 100 or 200 mm stroke, both have collision protection
- Built-in laser pointer for easy torch positioning
- Voltage sampling to compensate for electrode wear
- 2 methods of plate detection: ohmic contact, & torch holder sensors (also used for collision detection)
- Parameters from process database set automatically: ignition height, pierce height, stay-up-time, pierce time, cut height, arc voltage, etc.
- Review the statistics from completed work



Optional Servo Motors with Built-In Amplifiers

- Connect motors direct to iCNC Performance
- True brushless servo performance with stepper-like costs and simplicity
- Simple, low cost wiring



Ideal with Thermal Dynamics Plasma Systems

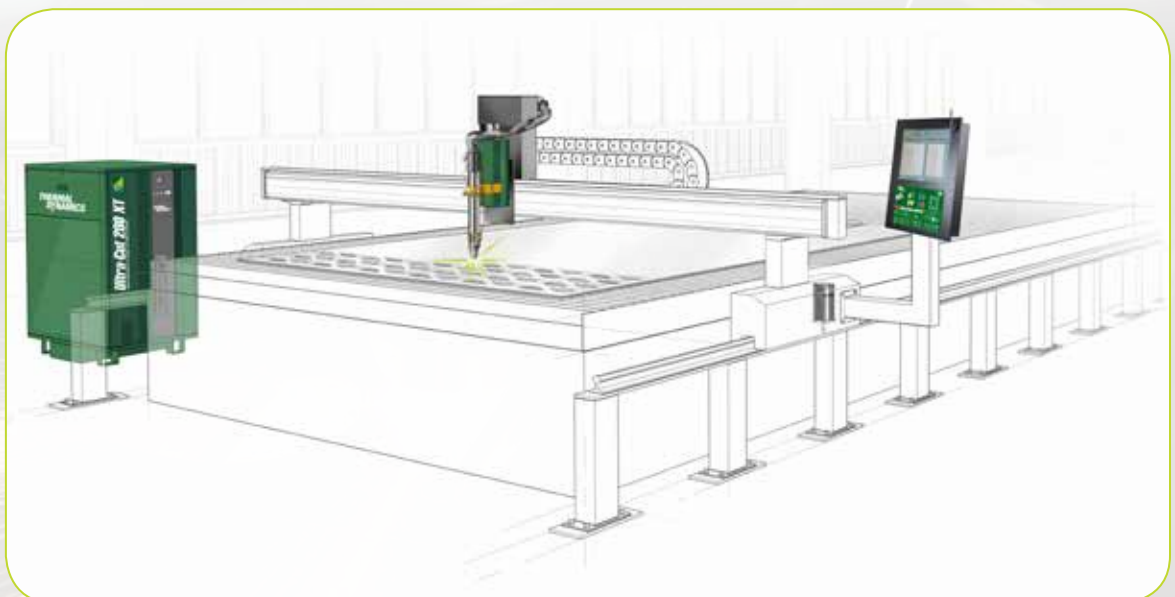
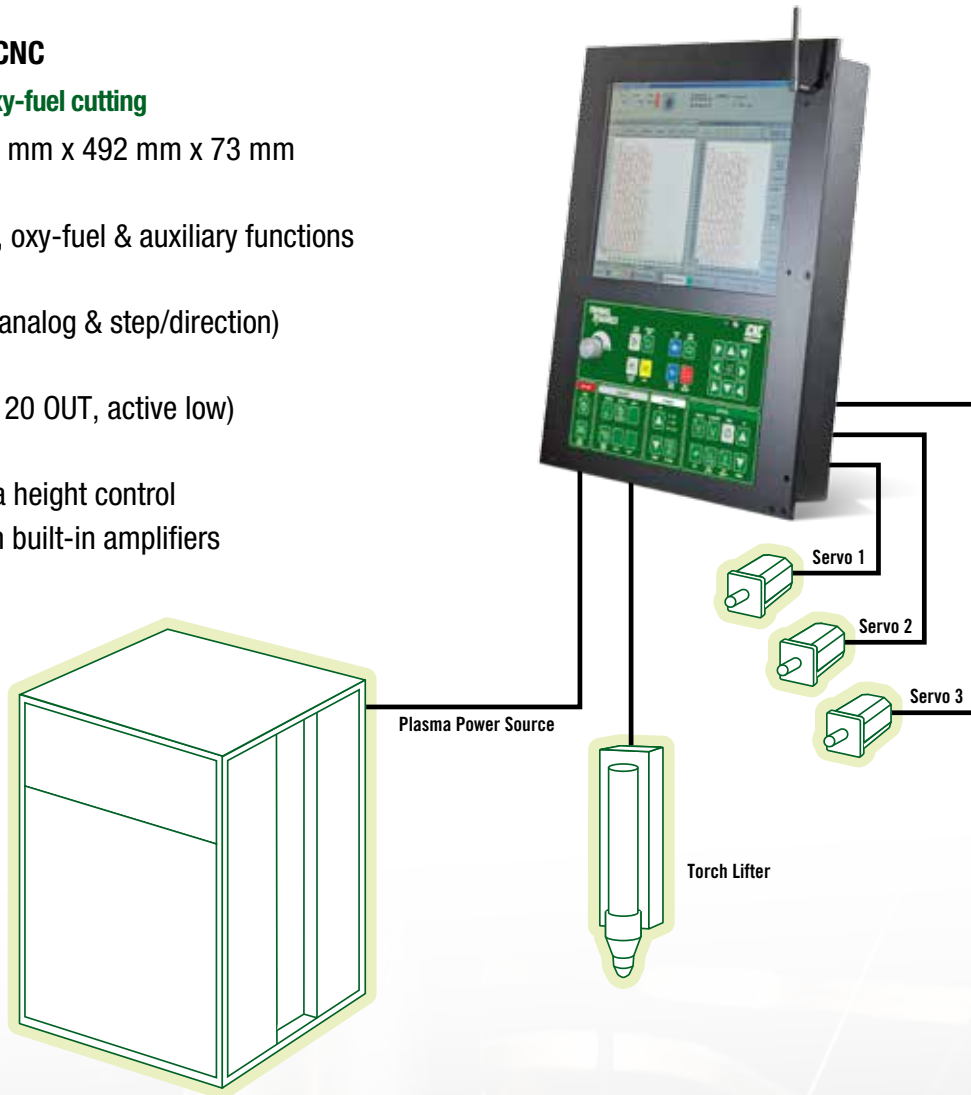
- iCNC Performance and plasma power source work seamlessly together
- Process databases are built into the system
- All premade cables available when built-in iHC, Thermal Dynamics lifter, plasma and smart motors are used. No need for any additional relays.
- Extremely low cost of operation
- Maximum performance
- Operator errors are virtually eliminated
- Excellent cut quality

We Bring Intelligence to the Table.™

Hi Performance, Low Cost CNC

A CNC dedicated to plasma & oxy-fuel cutting

- Thin panel mount unit 409 mm x 492 mm x 73 mm
- 15" Touch Screen
- Operator panel for plasma, oxy-fuel & auxiliary functions
- Built-in WiFi
- 3-axis drive outputs (both analog & step/direction)
- 3 encoder inputs
- Programmable I/O (16 IN / 20 OUT, active low)
- Power input 24 VDC
- Optional integrated plasma height control
- Optional servo motors with built-in amplifiers



PROMOTION NEST SOFTWARE

From CAD-Drawings To Cutting

ProMotion Nest is a powerful software for creating efficient cutting programs directly from standard (DXF) CAD drawings. It runs in the latest Windows® environment and creates cutting programs in EIA/ESSI-code for any CNC-system as an option.

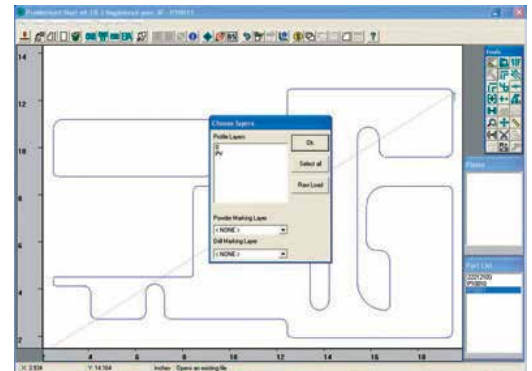
ProMotion Nest Basic Version Features

- Reads both CAD-drawings and EIA/ESSI-coded cutting programs
- Set by pointing with a mouse to piercing points, cutting directions, cutting order, bridging, chain cutting, copying, mirroring, moving, etc.
- Adding the machining allowances to any location of any shape
- Preprogrammed macros
- Marking from CAD-drawings using different layers

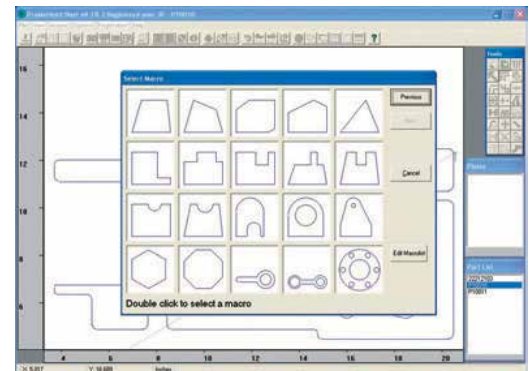
ProMotion Nest Basic Version Advantages

- No need to program a shape already designed by a CAD system
- Faster and easier creation of cutting programs
- Manual nesting on plate fully visual operation, no need to be familiar with ESSI/EIA
- Improved usage of the material
- Minimizing the number of piercings will save time and consumable costs and also improve the cutting operation reliability
- Extremely powerful and easy to use
- Pays for itself faster than you can imagine

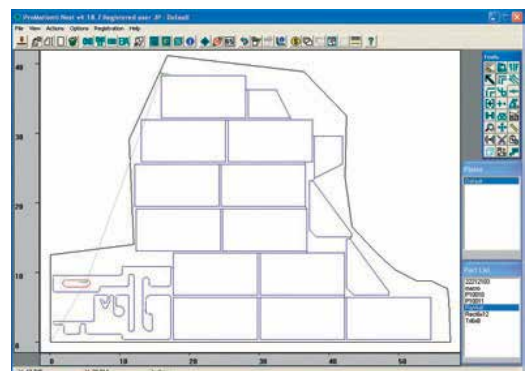
DXF input (standard)



Macro shapes (standard)



Nest on remnant (standard)

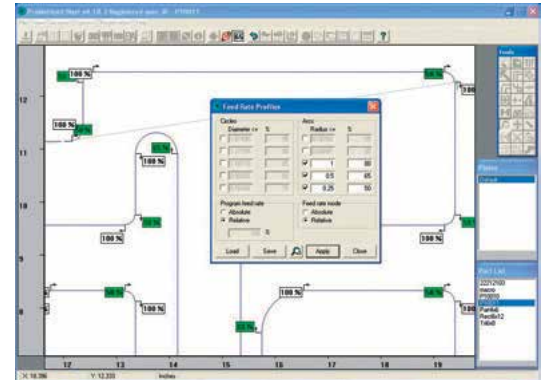


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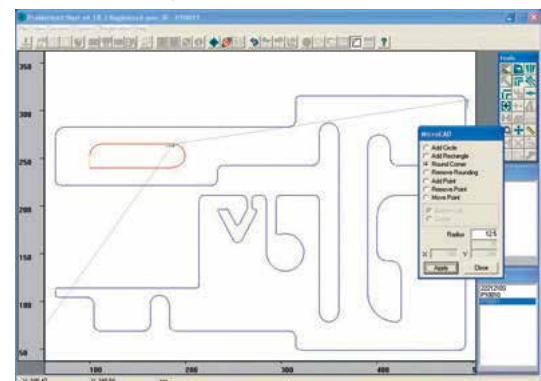
Optional modules for ProMotion Nest

- Automatic Interlocking Nesting
- Micro CAD
- Cost Calculator
- Variable Feed Rates
- Advanced Marking/Texts
- DSTV Input
- Drilling Program Generation
- Serial Communication (ProMotion iLink)

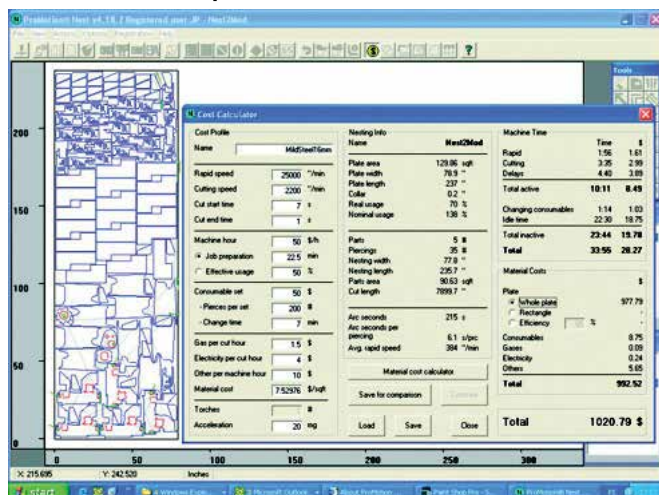
Variable feed rates (option)



Micro CAD (option)



Cost calculator (option)



Please contact us for a FREE evaluation version of the software

*Windows is a registered trademark of Microsoft Corporation in the United States and other countries

INTEGRATED INTELLIGENT HEIGHT CONTROL

The iHC intelligent Height Control system from Thermal Dynamics integrates directly into the iCNC XT, enabling automatic, real-time parameter setting.

When selecting a cutting process (for example, Mild Steel, 6 mm, 100 A), all the necessary height control parameters are set automatically – not just the cut height.

Using optimized processes like Diameter Pro™, the parameters are adjusted in real time according to the requirements of the specific cutting task, such as different size holes or pierces.

In addition to eliminating operator errors, the integrated system optimizes performance continually throughout the cutting process, providing a level of performance unobtainable through even the best operator adjustments.

Two Plasma Torches in One Machine

- Two lifter control version also available.
- No external electric boxes – everything connects direct to the iCNC® XT controller.



Intuitive Full Screen User Interface

- Easy to understand graphics show operators how the parameters are to be set.
- Settings are automatically controlled by selecting the process.
- For special needs, the default settings can be easily overridden.



Precise Arc Voltage Monitoring for Ultimate Cut Quality

- 25 - 300 V, settable by 0.1 V increments, controlled by 0.02 V measuring resolution.

2 Ways to Sense the Plate

- Ohmic Contact
- Collision sense (adjustable sensitivity) virtually eliminates plate sensing problems caused by dirty nozzle/plate, preventing electric contact. If Ohmic contact does not work, the sensors on the iHolder take care of sensing the plate.

2 Lifter Versions, Either 100 mm or 200 mm Stroke

- Precise and Fast Servo Amplifier controlled motion with Encoder Feedback.
- 20 m/min, Position Feedback resolution 0.0025 mm.
- Lifter dimensions (W/D/L) 127 / 100 / 400 or 480 mm.
- 100 mm lifter weight 6.0 kg; 200 mm lifter weight 7.0 kg. The collision sensor weighs an additional 1.0 kg.

STAND-ALONE INTELLIGENT HEIGHT CONTROL

The iHC XT stand-alone intelligent Height Control system from Thermal Dynamics provides a cost-effective height control solution, compatible with Thermal Dynamics automated plasma systems.

What could be easier? Simply choose the material, thickness and amps you are using to cut your next work – the intelligent iHC XT takes care of the rest. All the torch height related parameters are set automatically. The iHC XT will even give proper kerf and speed value settings for the CNC. This minimizes the work load and potential operator errors, without sacrificing the advanced features of the height control. All ideal settings for Ignition Height, Pierce Height & Time, Cut Height, Arc Voltage and other key parameters are preset.



Intuitive User Interface

- Rotate the dial to pick up the right process – or when cutting, to fine-tune the cut height!

Precise Arc Voltage Monitoring for Ultimate Cut Quality

- 50 - 300V, settable in 0.1V increments, controlled by 0.02V measuring resolution.

Voltage Sampling to Adapt for Consumable Wear

- Keeps the nozzle distance from plate correct throughout the entire life-time of the electrode.

Two Ways to Sense the Plate

- Ohmic Contact
- Collision sense (adjustable sensitivity) virtually eliminates plate sensing problems caused by dirty nozzle/plate, preventing electric contact. If Ohmic contact does not work, the sensors on the iHolder take care of sensing the plate.

Built-in Laser Pointer for easier torch positioning.

Programmable Cutting Parameters Include:

- Arc voltage
- Cut height
- Height to slow down for plate sensing
- Short distance transfer height and time-in-place before returning back to position
- Ignition height
- Pierce height

Two Lifter Versions, 100 mm / 200 mm Stroke

- Lifter dimensions (W x D x L) 127x100x400 or 480 mm.
- 100 mm lifter weight 6.0 kg; 200 mm lifter weight 7.0 kg. The collision sensor weighs an additional 1.0 kg.

```
MS 1/2in 200A Air-Air [Air] [10173]
Speed: 100.0ipm Kerf: 0.150"
2.305"
* 0.0/162.0V SD A H Idle
```

```
Cut Height 0.148"
Ignition Height 0.300"
Pierce Height Time 0.8 s
Pierce Delay 0.8 s
```

Sample iHC XT screen captures



iHC XT Specifications

Maximum Speed	6000 mm/min @ 1200 rpm
Voltage Control Accuracy	± 1V
Arc Voltage Range	50-300V
External Power Supply Requirement	24VDC/5A (±10%)
Size	400 mm x 70 mm x 290 mm
Weight	3 kg
Warranty	1 year

The iHC XT comes complete with height control, lifter, all cables to connect to CNC and power supply (including ohmic sensing) & voltage supply with cable for 230V

WHAT IS CONVENTIONAL PLASMA

Introduction to the technology

Conventional plasma cutting is a good quality cutting process, suitable for general purpose cutting applications. All Thermal Dynamics® conventional plasma cutting systems offer high cut speeds, with excellent parts life and consistent cut quality and cleanliness.

Thermal Dynamics® offers 2 ranges of conventional plasma systems:

Auto-Cut® XT systems offer conventional cutting at high speeds and with a dual-gas torch, allowing fabricators to take advantage of all-day production cutting with good cut quality at an attractive price point. Models are available with 200 or 300 Amps of cutting power.



A-Series systems offer good quality air-plasma cutting at high duty cycles in a compact and robust package. Models are available with 60, 80, 100 or 120 Amps of cutting power.





AUTO-CUT® XT

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AUTO-CUT® XT RANGE

The new Auto-Cut XT systems deliver the next step in flexibility and reliability in heavy plate cutting applications.

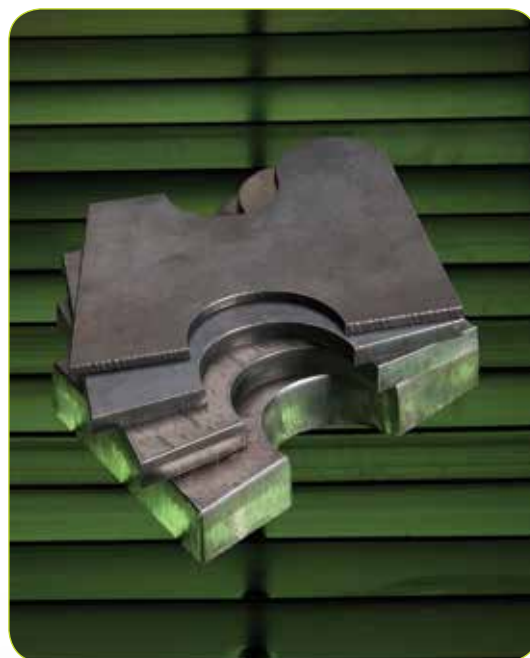
- MaximumLife® Parts to Lower Operating Costs
- Increased Productivity for Greater Profits
- Water Mist Secondary (WMS®) for Low Cost, High Quality Cutting on Non-Ferrous Metals

The Flexibility to Cut Thick or Thin on All Kinds Of Metals

XT-301 consumable parts are available for cutting metals from 1 mm to 25 mm (35 mm for Auto-Cut 300 XT). Auto-Cut XT systems with the XT-301 torch, are normally operated using economical air plasma and air shield gas for cutting mild steel and most non-ferrous metals. This results in high quality surface finishes and low dross cuts.

For even better cut quality on mild steel, Auto-Cut XT models offers O₂ plasma cutting capability. For lowest cost non-ferrous metal cutting and unmatched cut quality, use our unique Water Mist Secondary (WMS®) process with nitrogen plasma and water shield.

If heavy non-ferrous metal cutting is required, switch to Ar-H₂ (H35) and Nitrogen shield for premium non-ferrous metal performance up to 25 mm or 35 mm for Auto-Cut 300 XT.

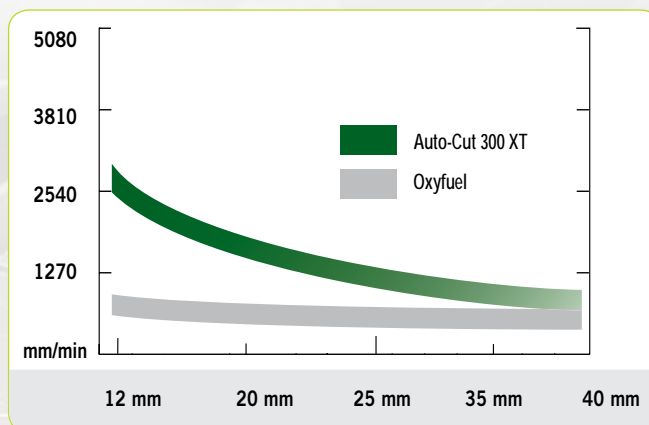


Cut fast with Air-Air

Thermal Dynamics' patented XT Torch Consumable Technology is ideal for cutting metals from 1 mm to 25 mm (35 mm for Auto-Cut 300 XT). Excellent quality cuts will be achieved on both ferrous and non-ferrous metals at higher speeds.

- Small heat affected zone and smooth cutting edge surface
- Narrow kerf for tighter angles and radiuses at high speeds
- Wide low dross parameter windows
- Higher arc density for faster speeds without sacrificing cut quality
- Faster cuts with Air/Air on Stainless Steel

Relative Cutting Speed



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Excellent Replacement for Oxyfuel Cutting Auto-Cut XT systems offer:

- Up to 3 times faster cut speeds
- Can pierce 25 mm in 0.7 seconds
- One Auto-Cut 300 XT replaces 3 oxyfuel torches that require 3 separate height controls
- Less material waste
- Stainless steel and aluminium cutting
- Higher arc density which results in faster speeds without sacrificing cut quality
- Smaller tip orifices create a narrow kerf for tighter angles and radiuses at higher speeds



WMS Cut Example



Examples for 15 mm on Aluminium and 20mm on Stainless Steel

Air/Air Cut Example



Example for 20 mm cutting with Air/Air on Mild Steel

Cut Speeds with Reliable Performance

Cutting Speed Chart For Auto-Cut XT Systems

Material	Amps	Plasma /Shield	Thickness (mm)	Speed mm/min.
Mild Steel	55	Air/Air	1	11500
			3	5460
			5	3180
	100	Air/Air	6	4150
			12	1960
			20	720
			25	520
	200	Air/Air	10	3190
			12	2710
			20	1430
			25	920
	300	Air/Air	12	2790
			20	1960
			25	1300
			35	920
			38	510
			50	220
			70	100
Stainless Steel	55	Air/Air	1.5	9750
			4	2180
			5	1450
	100	Air/Air	6	3020
			10	1580
			12	1260
	100	N ₂ /H ₂ O	6	1750
			10	1210
			12	970
	200	N ₂ /H ₂ O	20	1450
			25	1000
	300	Air/Air	20	3020
			25	1750
Aluminium	55	Air/Air	2	8790
			5	2360
			6	2650
	100	Air/Air	12	1310
			20	890
			6	1640
	100	N ₂ /H ₂ O	10	1210
			12	970
			20	1700
	200	N ₂ /H ₂ O	25	1000
			20	1600
			25	1490
	300	Air/Air	20	1600
			35	1320

Note: The 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 Auto-Cut 200 & 300 XT. Please contact Thermal Dynamics for more information.

AUTO-CUT® XT RANGE

Auto-Cut XT systems offer maximum productivity with reliability and ease

Productivity

- High cut speed to produce more parts per hour
- With Water Mist Secondary (WMS) 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™301-Torch

Reliability

- Exhaustive lab testing and field trials ensure on-going performance and reliability

Technology

- Microprocessor controlled to produce the best cut quality
- Precision torch design offers the best cut quality in its class
- Higher cut speed than H35 with the use of N₂/H₂O on non-ferrous metals

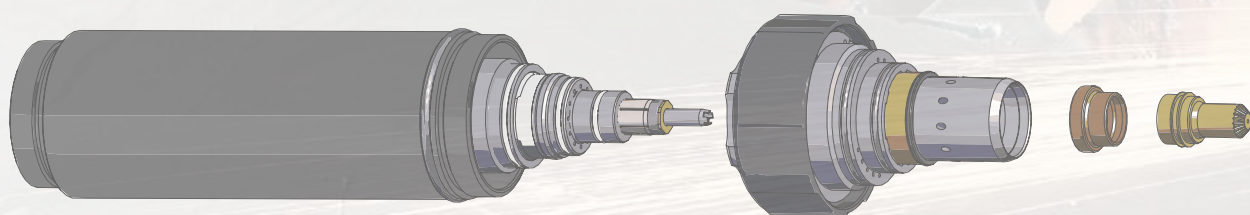
XT™ 301-Torch Technology

Thermal Dynamics XT Torch Technology delivers productivity and reliability.

- Keyless consumable cartridges for rapid process changes
- Precision construction insuring accurate re-centering of consumable cartridge after parts change
- Rapid engagement SpeedLock retaining collar
- Liquid cooled consumable parts electrical connections
- Spring loaded leak-less coolant tube design
- Increased cooling of tip and electrode
- Improved life through patent alignment control

Ease of Use

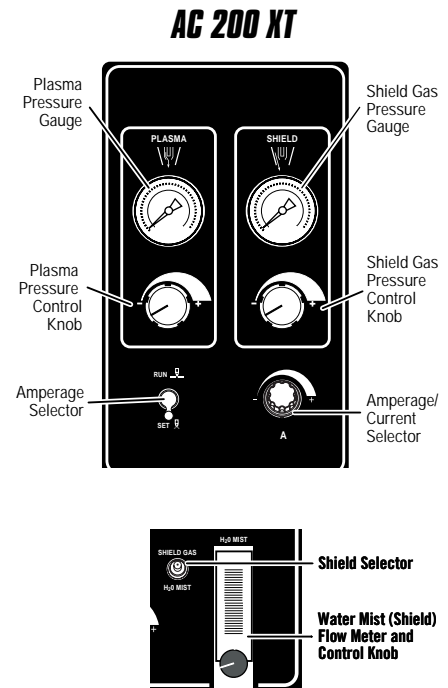
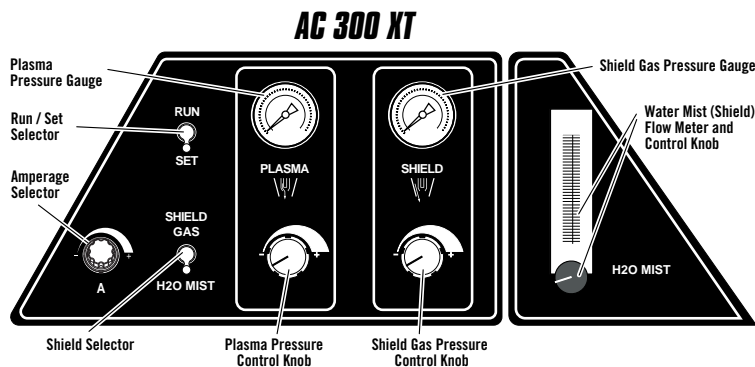
- Fast and easy installation
- Simple set-up and user-friendly gas console
- SpeedLok™ quick-change consumable design
- Easy to identify and troubleshoot problems



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Full Featured Gas Control

Plasma, secondary pressures and flows are precisely controlled at the power supply with individual single stage regulators. Changing from the secondary gas to water mist secondary is simple with the front panel mounted selector switch.

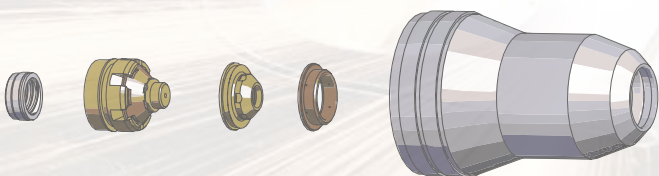
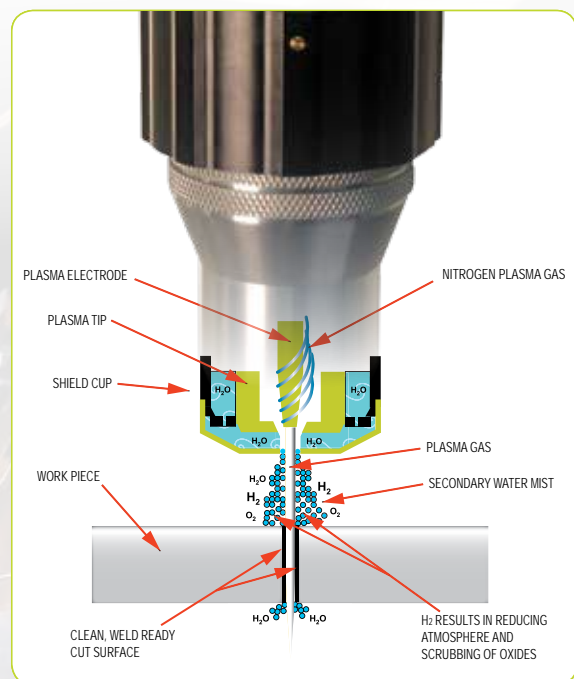


Water Mist Secondary (WMS) optimizes non-ferrous metal cutting

WMS Benefits

- Excellent non-ferrous metal cut quality using N_2 as plasma gas and ordinary tap water as the secondary
- Lowest operating cost
- Dross-free cutting from 1 mm to 25 mm
- Oxide-free cut face surface
- Wide parameter window
- Easy-to-use
- High cut speeds compared to H35 cutting

N_2 / H_2O Plasma on Non-Ferrous



AUTO-CUT® 200 XT

System Overview

The Auto-Cut 200 XT is a 200 Amp plasma cutting system suitable for production cutting from 0.5 – 25 mm. This is an excellent system for general fabrication and is powerful enough for the majority of cutting applications.

The Auto-Cut 200 XT includes Water Mist Secondary (WMS) Technology. Choose WMS Technology for faster cutting speeds and lower operating costs on stainless steel and aluminium.



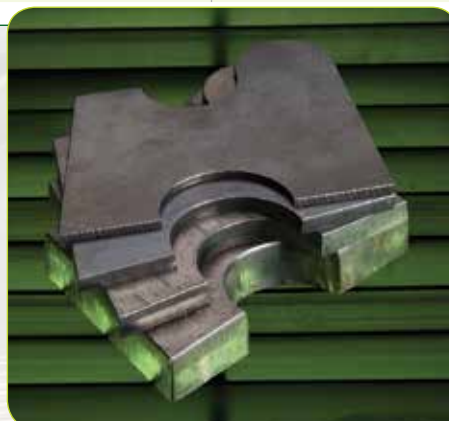
Auto-Cut 200 XT

Unit Specifications*

Rated Output (Amps)	200 A
Output Range (Amps)	5-200 A
Output (Volts)	170 V
Input Volts (Volts, Phase, Hertz)	400 V, 3 ph, 50-60 Hz
Input Amps (Amps, Volts)	60 A @ 400 V
Duty Cycle (@ 104°F / 40° C)	100% (40 kW)
Max OCV @ 400V	425 V
Plasma Gas	Air, O ₂ , Ar-H ₂ , N ₂ @ 8.3 bar
Shield Gas	Air, N ₂ @ 8.3 bar
Water Mist Secondary (WMS)	H ₂ O @ 0.6 l/min
Power Supply Weight	215 kg
Dimensions (H x W x D)	1219 mm x 698 mm x 1031 mm

Cutting Capacity

	Mild Steel	Stainless Steel	Aluminium
Production Piercing	25 mm	25 mm	25 mm
Maximum Piercing	35 mm	35 mm	35 mm
Maximum Edge Start	50 mm	50 mm	50 mm



* Subject to change without notice

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Auto-Cut 200 XT Ordering Information

Please refer to configuration sheets for a full breakdown of all part numbers.

Description	Part Number
POWER SOURCE	
Auto-Cut 200 XT , 400V CE, with WMS	3-8112-4W
LEADS	
Work Cable	See Configurator
Control Cable	See Configurator
Earth Cable	See Configurator
TORCH AND LEAD SET	
Torch and lead set	See Configurator
WATER MIST PUMP	
(compensates for low water pressure)	
WMS Pump kit	9-0015
Filter Cartridge	9-0017
TORCH COOLANT	
Extra Cool Coolant - 3.8l	7-3580



AUTO-CUT® 300 XT

System Overview

The Auto-Cut 300 XT is a 300 Amp plasma cutting system suitable for production cutting from 0.5 – 35 mm. This is a heavy duty system for heavier cutting applications, and includes Water Mist Secondary (WMS) Technology for faster cutting speeds and lower operating costs on stainless steel and aluminium.



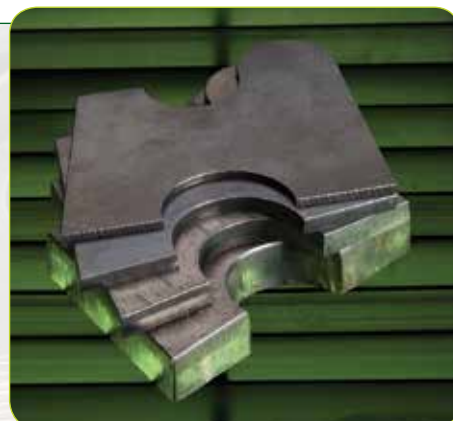
Auto-Cut 300 XT

Unit Specifications*

Rated Output	300 A
Output Range	5-300 A
Output	180 V
Input Volts	400 V, 3 ph, 50-60 Hz
Input Amps	93 A @ 400 V
Duty Cycle (@ 104°F / 40° C)	100% (60 kW)
Max OCV @ 400V	425 V
Plasma Gas	Air, O ₂ , Ar-H ₂ , N ₂ @ 8.3 bar
Shield Gas	Air, N ₂ @ 8.3 bar
Water Mist Secondary (WMS)	H ₂ O @ 0.6 l/min
Power Supply Weight	268 kg
Dimensions (H x W x D)	1371 mm x 698 mm x 1031 mm

Cutting Capacity

	Mild Steel	Stainless Steel	Aluminium
Production Piercing	35 mm	35 mm	35 mm
Maximum Piercing	40 mm	40 mm	40 mm
Maximum Edge Start	70 mm	70 mm	70 mm



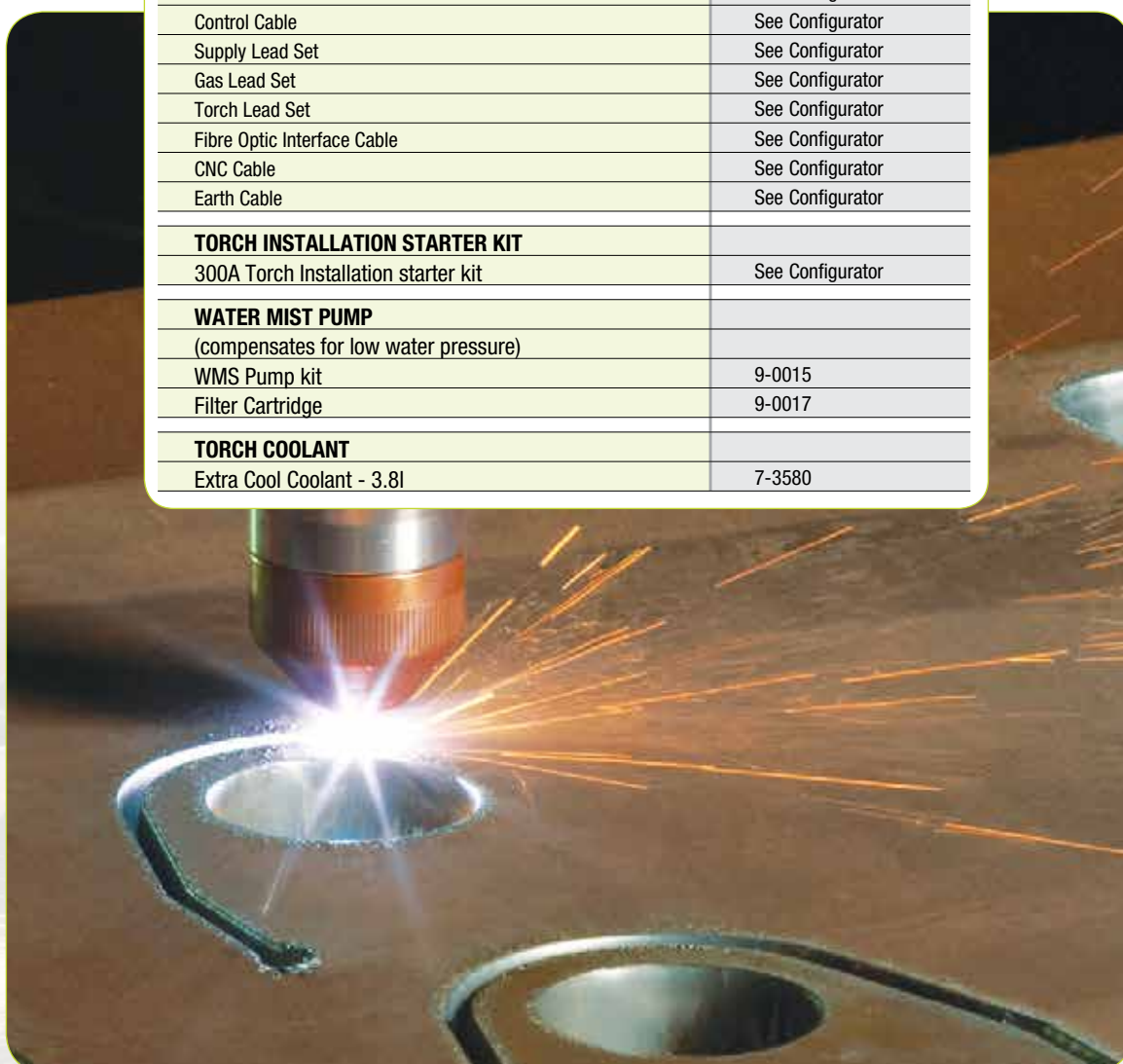
* Subject to change without notice

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Auto-Cut 300 XT Ordering Information

Please refer to configuration sheets for a full breakdown of all part numbers.

Description	Part Number
POWER SOURCE	
Auto-Cut 300 XT , 400V CE	3-8113-4
REMOTE ARC STARTER	
(Only required if distance from torch to power supply is greater than 15.2m)	
Remote Arc Starter	3-9130E
Mounting Kit	9-9484
LEADS	
Work Cable	See Configurator
Control Cable	See Configurator
Supply Lead Set	See Configurator
Gas Lead Set	See Configurator
Torch Lead Set	See Configurator
Fibre Optic Interface Cable	See Configurator
CNC Cable	See Configurator
Earth Cable	See Configurator
TORCH INSTALLATION STARTER KIT	
300A Torch Installation starter kit	See Configurator
WATER MIST PUMP	
(compensates for low water pressure)	
WMS Pump kit	9-0015
Filter Cartridge	9-0017
TORCH COOLANT	
Extra Cool Coolant - 3.8l	7-3580



SERVICE AND SUPPORT

Thermal Dynamics® rigorously tests its plasma cutters to ensure flawless performance. Should your Auto-Cut® XT plasma system need service, our modular approach minimizes parts inventory and repair time, while the Amperage/Error display indicates the status of the XT system to accelerate troubleshooting.

If the Auto-Cut® XT System is used with a Thermal Dynamics iCNC XT, the error code and explanation will be displayed on the iCNC itself, facilitating even easier troubleshooting.

We are a partner who cares about your business. If you're interested in seeing our cut quality for yourself, please contact one of our automation sales managers who can arrange a cut sample. We can also provide custom cut samples if you'd prefer. That way, you can see how our precision plasma cutting solutions can fit the users' specific cutting needs.

First Class Warranty

Auto-Cut® XT systems come with a 2 Year machine warranty and 1 year Torch warranty. Repair parts are held in inventory in Europe and can be despatched same-day.





A-SERIES

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A-SERIES

The A-Series is a range of 4 compact air-plasma cutting systems that take advantage of the reliability of the Thermal Dynamics® platform and proven 1Torch technology to offer the following advantages:

- A powerful **80% Duty Cycle** to handle all-day production cutting in the toughest environments
- **Light-weight, compact design** and convenient mounting feet allow for easy mounting in any application
- **Valve in torch** design reduces cycle time between parts and increases productivity
- **CNC Interface** connection located on the rear of the power supply offering “Start/Stop”, “OK to MOVE” and Divided Arc Voltage
- **Full arc voltage** is available using an internal terminal connection
- Dedicated automation software **improves cycle time** and **performance** in many applications

The A-Series includes the SL100®SV 1Torch® with standard ATC Quick Disconnect in lengths of 7.6 m, 10.6 m and 15.2 m (Longer torch leads up to 30.5 m available). Our 1Torch start technology eliminates the electronic interference that can occur with other designs. 1Torch provides quick, reliable starts and a strong pilot arc to pierce heavy plate. With auto-pilot restart, it can also cut expanded metal quickly and easily.

FEATURES



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PRODUCT SELECTION

Light

Medium

Heavy

A40

A60

A80

A120



Product Selection

SPECIFICATIONS		A40	A60	A80	A120
Production Piercing & Cutting Capacity	0.5 mm – 2 mm	*	*	*	*
	6 mm	*	*	*	*
	10 mm		*	*	*
	12 mm			*	*
	15 mm				*
Applications	Sheet Metal – Ductwork, Artwork, Trailer Panels	*	*	*	*
	Light Fabrication – Kitchenware, Autobody Panels, Pipe		*	*	*
	Medium Fabrication – Industrial Components, Truck Frame & Body			*	*
	Heavy Fabrication – Heavy Equipment Components, Structure Components, Pipe				*
Duty	High Production – 80% Duty Cycle	*	*	*	*

A-SERIES

A-SERIES A40

The A40 is a compact, robust and reliable Automated Air-Plasma Cutting power source with a maximum piercing and cutting capacity of 12 mm. When starting from the edge, it can cut up to 25 mm if occasional cuts on thicker metals are required.

Attractively priced and weighing less than 20 kg, this unit is ideally suited for HVAC duct work, with its light-weight, compact design and convenient mounting feet allowing for easy installation. It offers high-speed, dross-free cutting on zinc plate and stainless steel and a heavy-duty 80% Duty Cycle at 40 Amps allows you to go on cutting all day.



LIGHT DUTY

Production Cut	6 mm
Duty Cycle	80 %
Plasma	Air
Maximum Output	60 A

SPECIFICATIONS

Rated Output	40 Amps
Output Range	20 - 40 Amps, 60 Amps Max., Adjustable
Production Piercing and Cutting Capacity	6 mm
Maximum Piercing and Cutting Capacity	12 mm
Maximum Edge Start	25 mm
Input Volts	380/400 V, 3 ph, 50/60 Hz,
Input Amps @ Max Output	16 (380 V, 3 ph) 16 (400 V, 3 ph)
Kilowatt Output	6.3 kW
Duty Cycle	80% @ 40 Amps 100% @ 30 Amps
MAX OCV	260 VDC
Gas Type	Air @ 5.2 bar @ 189 lpm
Pilot	Start Cartridge
Weight	19.5 kg - Unit, Power Cable, (Torch and Leads)
Dimensions	H 343 mm x W 248 mm x L 533 mm
Work Cable	6.1 m
Control	CNC rear panel connector, Start/Stop, OK to Move, and divided arc voltage
Input Power Cable	2 m without plug (400 V)
Warranty	3 Years Power Supply & 1 Year Torch
Certifications	IP-23C, CSA, NTRL/C, CE, CCC
Torch Configuration	
Torch	SL100®SV w/ATC®, 180° Automation

(subject to change without notice)

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A-SERIES A60

The A60 is a compact, robust and reliable Automated Air-Plasma Cutting power source with a maximum piercing and cutting capacity of 15 mm. When starting from the edge, it can cut up to 25 mm if occasional cuts on thicker metals are required.

In addition to HVAC work, this unit is suitable for light fabrication and benefits from an 80% Duty Cycle at 60 Amps (100% @ 50 A.) This is the ideal solution for a small cutting table.



MEDIUM DUTY

Production Cut	10 mm
Duty Cycle	80 %
Plasma	Air
Maximum Output	80 A

SPECIFICATIONS

Rated Output	60 Amps
Output Range	20 - 60 Amps, 80 Amps Max., Adjustable
Production Piercing and Cutting Capacity	10 mm
Maximum Piercing and Cutting Capacity	15 mm
Maximum Edge Start	25 mm
Input Volts	380/400 V, 3 ph, 50/60 Hz,
Input Amps @ Max Output	17 (380 V, 3 ph) 17 (400 V, 3 ph)
Kilowatt Output	9 kW
Duty Cycle	80% @ 60 Amps 100% @ 50 Amps
MAX OCV	260 VDC
Gas Type	Air @ 5.2 bar @ 189 lpm
Pilot	Start Cartridge
Weight	19.5 kg - Unit, Power Cable, (Torch and Leads)
Dimensions	H 343 mm x W 248 mm x L 533 mm
Work Cable	6.1 m
Control	CNC rear panel connector, Start/Stop, OK to Move, and divided arc voltage
Input Power Cable	2 m without plug (400 V)
Warranty	3 Years Power Supply & 1 Year Torch
Certifications	IP-23C, CSA, NTRL/C, CE, CCC
Torch Configuration	
Torch	SL100®SV w/ATC®, 180° Automation

(subject to change without notice)

A-SERIES

A-SERIES A80

The A80 is a compact, robust and reliable Automated Air-Plasma Cutting power source with a maximum piercing and cutting capacity of 20 mm. When starting from the edge, it can cut up to 30 mm if occasional cuts on thicker metals are required.

This unit offers an 80% Duty Cycle at 80 Amps (100% at 70 A) and is ideally suited for pipe cutting and medium duty applications.



HEAVY DUTY

Production Cut	12 mm
Duty Cycle	80 %
Plasma	Air
Maximum Output	100 A

SPECIFICATIONS

Rated Output	80 Amps
Output Range	30 - 80 Amps, 100 Amps Max., Adjustable
Production Piercing and Cutting Capacity	12 mm
Maximum Piercing and Cutting Capacity	20 mm
Maximum Edge Start	30 mm
Input Volts	380/400 V, 3 ph, 50/60 Hz,
Input Amps @ Max Output	29 (380 V, 3 ph) 28 (400 V, 3 ph)
Kilowatt Output	12 kW
Duty Cycle	80% @ 80 Amps 100% @ 70 Amps
MAX OCV	260 VDC
Gas Type	Air @ 5.2 bar @ 189 lpm
Pilot	Start Cartridge
Weight	28.6 kg - Unit, Power Cable, (Torch and Leads)
Dimensions	H 343 mm x W 248 mm x L 660 mm
Work Cable	6.1 m
Control	CNC rear panel connector, Start/Stop, OK to Move, and divided arc voltage
Input Power Cable	2 m without plug (400 V)
Warranty	3 Years Power Supply & 1 Year Torch
Certifications	IP-23C, CSA, NTRL/C, CE, CCC
Torch Configuration	
Torch	SL100®SV w/ATC®, 180° Automation

(subject to change without notice)

We Bring Intelligence to the Table.™

A-SERIES A120

The A120 is our largest capacity automated air-plasma system. This machine features a production cut of 15mm, a maximum piercing capability of 20 mm, and a maximum edge start capability of 40 mm. The A120 is rated at 120 Amps maximum output, with a duty cycle of 80% @ 120 A, and 100% @ 100 A.

Though this unit is the heavy-weight of the Automation series in terms of power, it still comes in a compact size and weighs less than 30 kg. Convenient mounting feet allow for easy installation for any application.



EXTRA HEAVY DUTY

Production Cut	15 mm
Duty Cycle	80 %
Plasma	Air
Maximum Output	120 A

SPECIFICATIONS

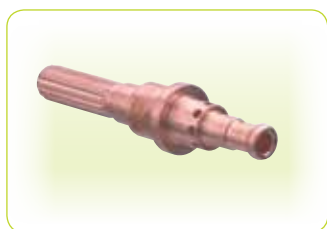
Rated Output	120 Amps
Output Range	30 - 120 Amps, 120 Amps Max., Adjustable
Production Piercing and Cutting Capacity	15 mm
Maximum Piercing and Cutting Capacity	20 mm
Maximum Edge Start	40 mm
Input Volts	380/400 V, 3 ph, 50/60 Hz,
Input Amps @ Max Output	35 (380 V, 3 ph) 36 (400 V, 3 ph)
Kilowatt Output	15.4 kW
Duty Cycle	80% @ 120 Amps 100% @ 100 Amps
MAX OCV	260 VDC
Gas Type	Air @ 5.2 bar @ 189 lpm
Pilot	Start Cartridge
Weight	28.6 kg - Unit, Power Cable, (Torch and Leads)
Dimensions	H 343 mm x W 248 mm x L 660 mm
Work Cable	6.1 m
Control	CNC rear panel connector, Start/Stop, OK to Move, and divided arc voltage
Input Power Cable	2 m without plug (400 V)
Warranty	3 Years Power Supply & 1 Year Torch
Certifications	IP-23C, CSA, NTRL/C, CE, CCC
Torch Configuration	
Torch	SL100®SV w/ATC®, 180° Automation

(subject to change without notice)

SUPERIOR CUTTING PERFORMANCE

SureLok® Electrode Technology

The innovative, patented, self-locking electrode mechanism eliminates the need for an installation tool and ensures precise electrode and tip alignment. Both the electrode and tip are stationary which results in a highly defined arc and precise cuts. SureLok alignment also means longer tip and electrode life and reduced operating costs.



Total Gas Management™

The SL100®SV 1Torch® introduces a completely new tip technology which eliminates the need for a separate plasma gas distributor. Each tip includes plasma gas ports uniquely tuned to optimize cutting performance at its rated current. Select from 20, 30, 40, 60, 80, 100 or 120 Amp tips to optimize your cutting. The result is Total Gas Management. Precision gas control, longer consumable parts life and better cut performance.



Superior Quality at All Amperages

Whether you are fabricating thick plate or cutting ornamental shapes, the A-Series is perfect for the job.

At 120 Amp output, the A120 produces the BEST CUT on 12 mm mild steel plate at 1.86 m/min). For those cutting intricate shapes, select low amperage tips for kerf widths less than 1.14 mm wide.

Whether you cut plate, HVAC duct work or ornamental shapes, the A-Series is right for you.

Start Cartridge

High Frequency has been completely eliminated from the plasma system.

A patented component called the “Start Cartridge” sits between the tip and electrode. The Start Cartridge is in contact with the tip



while the torch is inactive. When a start signal is given, air forces the cartridge to break contact with the tip and the pilot arc is started. This unique design allows the pilot arc to start without moving either the tip or electrode, resulting in better parts life, cut performance and reliability.

The Heavy Duty start cartridge used by A-Series systems is constructed from a Meldin/Vespel material with a rugged brush body, ensuring long life in heavy usage automated applications.

The start cartridge is the only moving part in the SL100SV torch. Unlike the competitive torches, where the moving part is the torch head. If the moving parts of a competitor’s torch fails, you must replace the entire torch head. This is expensive, complicated, and time consuming. If our start cartridge fails, it’s economical, simple, and quick to replace. In less than a minute you’re back in full production.

Choice of Tip Shielding

Choose from two consumable styles:

- Extended Tip for cutting thin sheet at low power & narrow kerf



Extended Tip

- Shielded Tip for heavier plate piercing and cutting



Shielded Tip

Note: Use the Ohmic Clip with the Shielded Tip design if ohmic plate sensing is required

1TORCH, a trademark of Thermal Dynamics, is registered with the U.S. Patent and Trademark Office, and is the subject of trademark registrations and pending applications in numerous other countries. For information on trademark registrations of Thermal Dynamics, contact the local trademark offices in the countries of interest.

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CUTTING SPEED CHART

Material	Amps	Plasma/ Shield	Thickness [mm]	Speed mm/min
Mild Steel	40	Air/Air	1	3990
			2	2920
			3	1810
	60	Air/Air	5	1345
			4	3650
			6	2145
	80	Air/Air	10	1180
			12	795
			6	2745
	100	Air/Air	10	1060
			12	1025
			15	610
	120	Air/Air	10	1790
			12	1310
			20	490
Stainless Steel	20	Air/Air	10	2100
			12	1860
			15	1320
	30	Air/Air	20	720
			1.5	4.57
			1.5	6.10
	40	Air/Air	2	1140
			3	980
			5	715
	60	Air/Air	4	2865
			6	1790
			10	725
	80	Air/Air	12	580
			6	2765
			10	1070
Aluminium	100	Air/Air	12	765
			10	1575
			12	1255
	120	Air/Air	15	685
			10	2390
			12	1750
	20	Air/Air	15	1160
			1.5	4.57
			1.5	6.10
	30	Air/Air	2	3500
			3	2350
			5	1740
	60	Air/Air	4	5230
			6	2640
			10	1085
	80	Air/Air	12	845
			6	3190
			10	1330
	100	Air/Air	12	1060
			15	745
			10	1575
	120	Air/Air	12	1255
			20	470
			10	2660
			12	2100
			15	1445

NOTE: Speeds reflected in this cutting chart are representative of optimum quality and speed. The chart data comes directly from the operating manual. BEWARE of competitor's claims, as the data represented in their brochure does not come from their operating manuals. Cut speeds in the competitor's brochure may be inflated by as much as 30-40% over the cut charts in their operating manuals.

SL100®SV Automation Torch

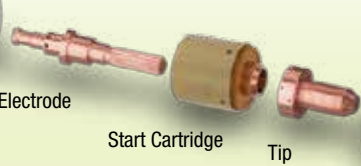


- Valve In Torch Design
- Patented 1Torch Consumable
- ATC Quick Disconnect

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Electrode



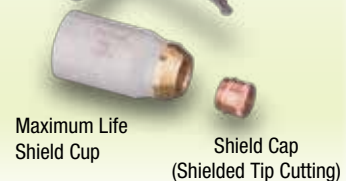
Start Cartridge

Tip

Maximum Life Shield Cup



Deflector



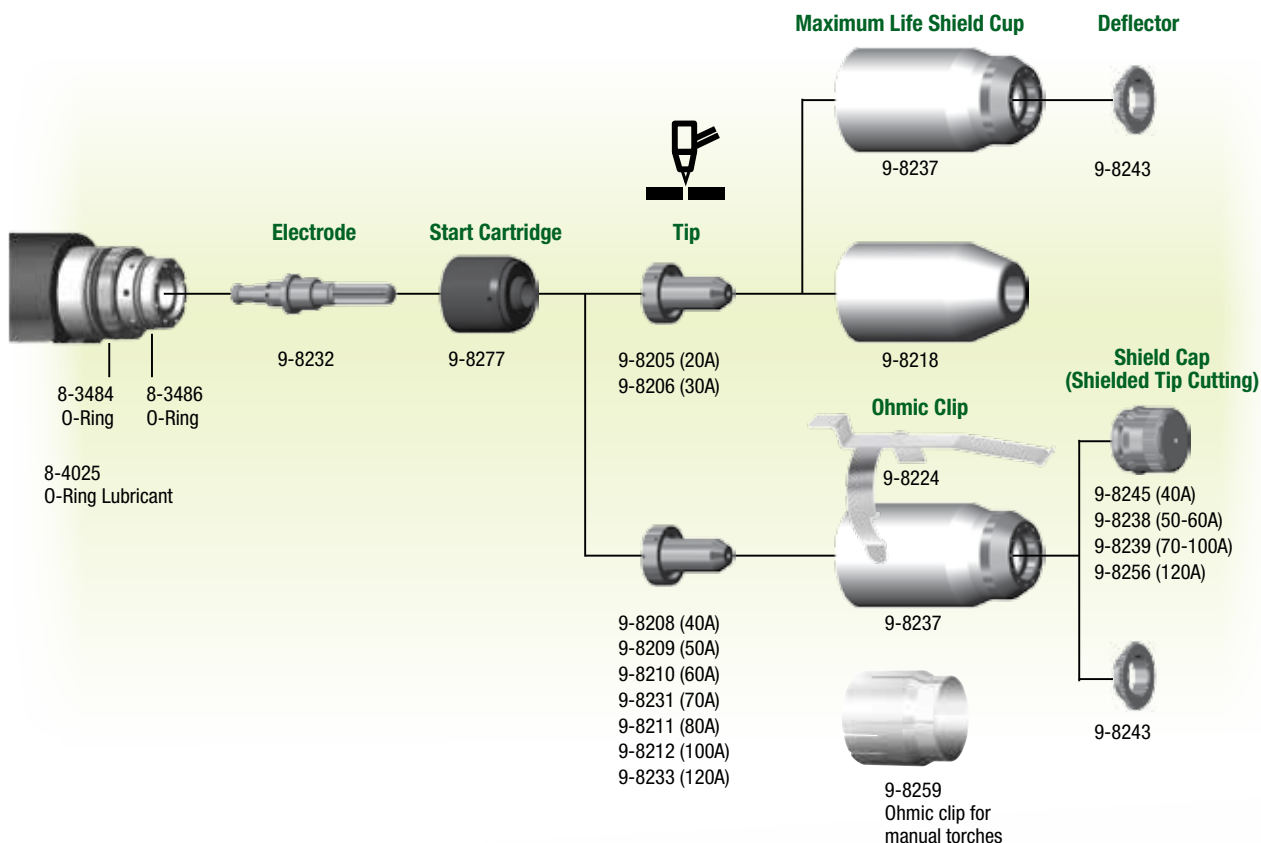
Maximum Life Shield Cup

Shield Cap (Shielded Tip Cutting)

This cutting speed chart includes preliminary data and is subject to change without notice

A-SERIES

CONSUMABLE PARTS



ACCESSORIES

CNC Cables

7.6 m	9-1008
10.6 m	9-1010
15.2 m	9-1011

1Torch® Automation Torch & Leads Packages

SL100® SV 180° - (Torch/Leads)			
7.6 m	7-4001	23 m	7-4004
10.6 m	7-4002	30.5 m	7-4005
15.2 m	7-4003		

Hand Torches

SL60® - (Torch/Leads)	
6.1 m	7-5204
15.2 m	7-5205
SL100 - (Torch/Leads)	
6.1 m	7-5206
15.2 m	7-5208



Single Stage Air Filter Kit

Cat. No. 7-7507 (Filter Body 9-7740, Hose 9-7742 (Filter Element 9-7741))

Two Stage Air Filter Kit

Cat. No. 9-9387
1st Stage Replacement Cartridge 9-1021
2nd Stage Replacement Cartridge 9-1022

Pinion Assembly

Cat. No. 7-2827 35 mm Diameter

Remote Pendant Control

Cat. No. 7-3460
6.1 m Remote Pendant Control for your mechanized application.

Hand Pendant Extension

Cat. No. 7-7744 7.6 m



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A-SERIES ORDERING INFORMATION



A40



A60



A80



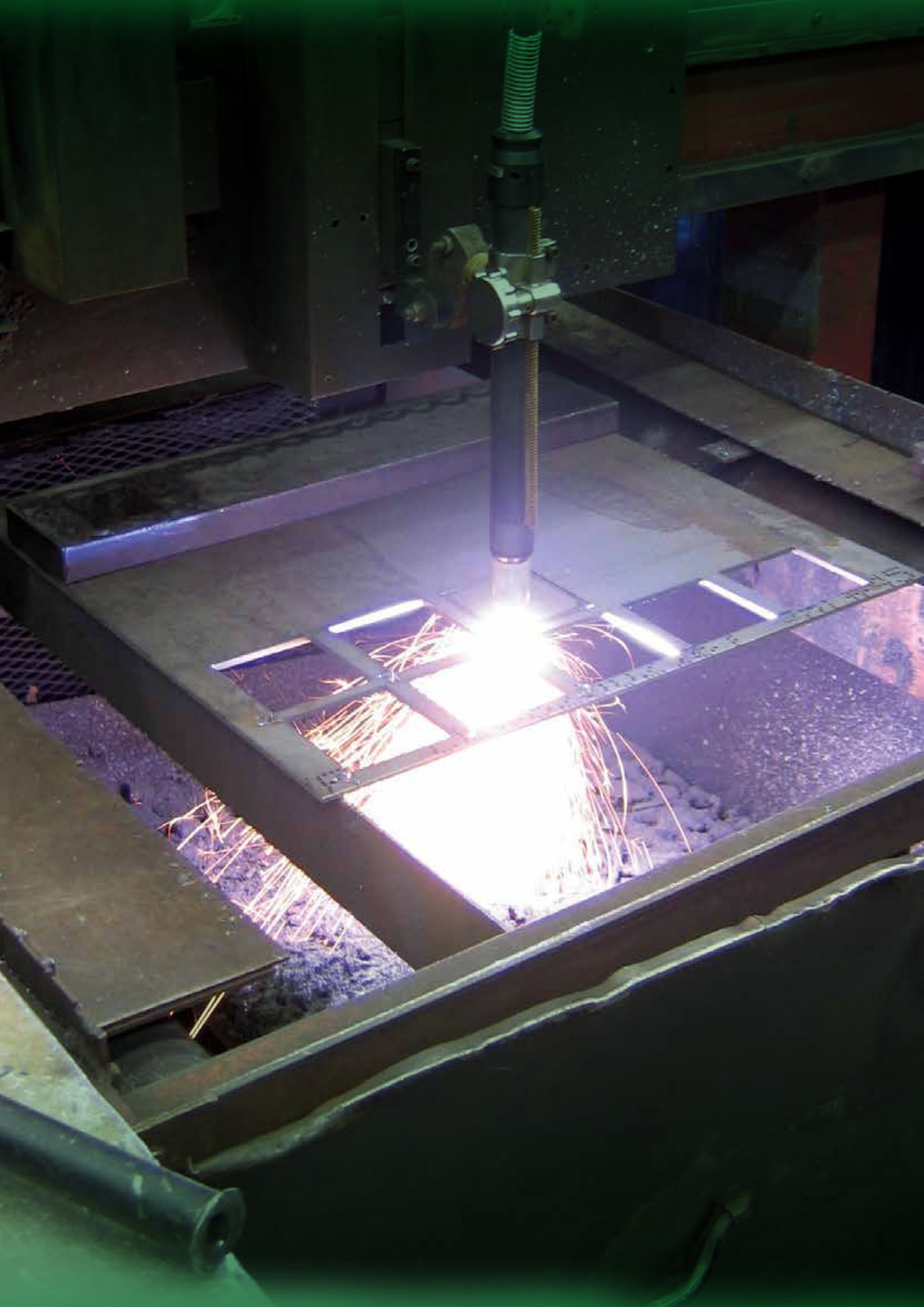
A120

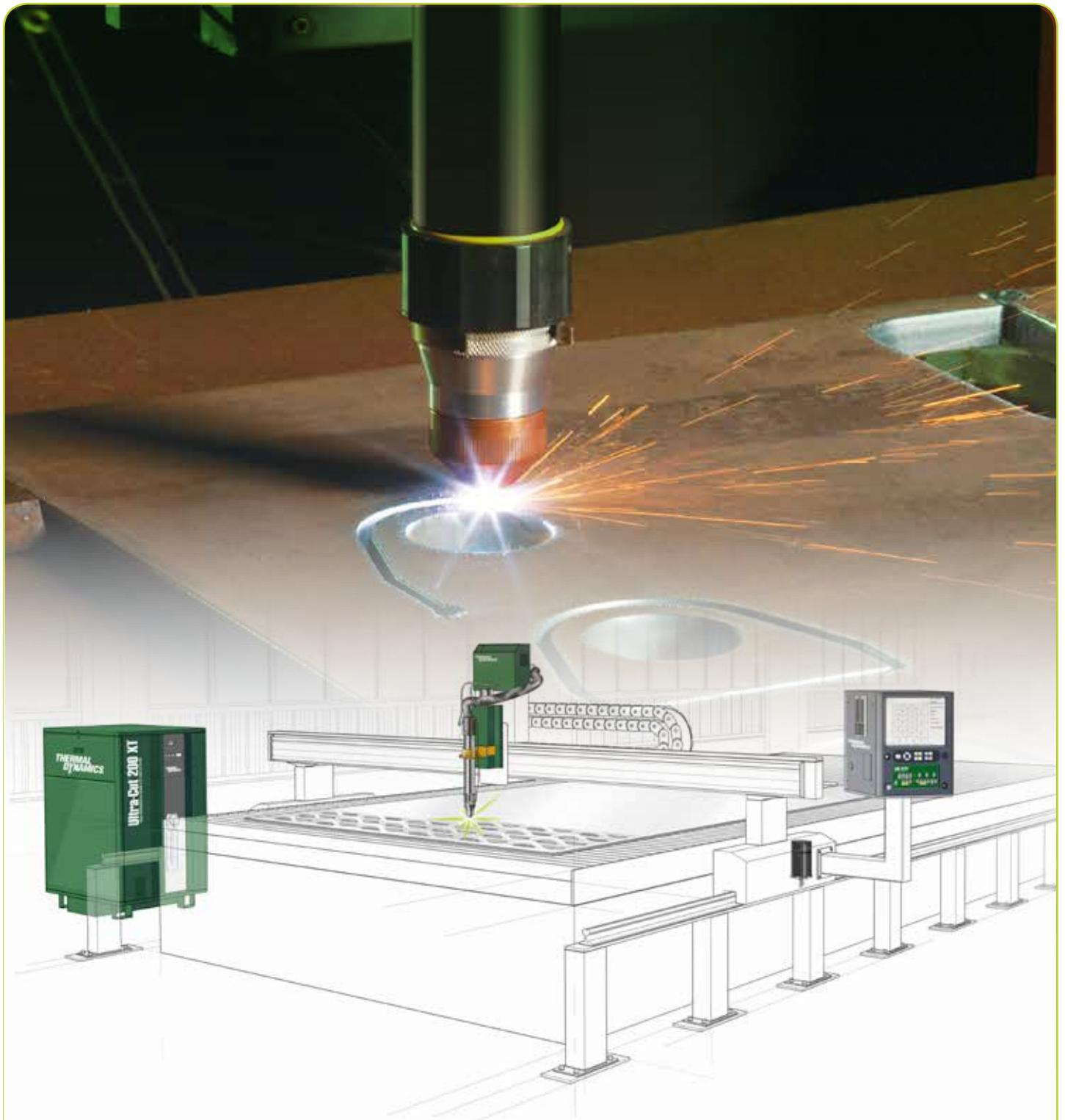
A-Series Unit Specifications*

	A40		A60		A80		A120	
Rated Output	40 Amps		60 Amps		80 Amps		120 Amps	
Output Range	20 - 40 Amps @ 80% DC, 60 Amps Max., Adjustable		20 - 60 Amps @ 80% DC, 80 Amps Max., Adjustable		30 - 80 Amps @ 80% DC, 100 Amps Max., Adjustable		30 - 120 Amps @ 80% DC, 120 Amps Max., Adjustable	
Production Piercing and Cutting Capacity	6 mm		10 mm		12 mm		15 mm	
Maximum Piercing and Cutting Capacity	12 mm		15 mm		20 mm		20 mm	
Maximum Edge Start	25 mm		25 mm		30 mm		40 mm	
Input Volts	380/400V, 3 ph, 50/60 Hz		380/400V, 3 ph, 50/60 Hz		380/400V, 3 ph, 50/60 Hz		380/400V, 3 ph, 50/60 Hz	
Input amps @ Max Output	Volts	3 Phase	Volts	3 Phase	Volts	3 Phase	Volts	3 Phase
	380V	16	380V	17	380V	29	380V	35
	400V	16	400V	17	400V	28	400V	36
Kilowatt Output	6.3 kW		9 kW		12 kW		15.4 kW	
Duty Cycle	80% @ 40 amps 100% @ 30 amps		80% @ 60 amps 100% @ 50 amps		80% @ 80 amps 100% @ 70 amps		80% @ 120 amps 100% @ 100 amps	
MAX OCV	260 VDC		260 VDC		260 VDC		260 VDC	
Gas Type	Air @ 5.2 bar @ 189 lpm		Air @ 5.2 bar @ 189 lpm		Air @ 5.2 bar @ 189 lpm		Air @ 5.5 bar @ 189 lpm	
Weight	19.5 kg - Unit, Power Cable, (Torch and Leads)		19.5 kg - Unit, Power Cable, (Torch and Leads)		28.6 kg - Unit, Power Cable, (Torch and Leads)		28.6 kg - Unit, Power Cable, (Torch and Leads)	
Dimensions	H 343 mm x W 248 mm x L 533 mm		H 343 mm x W 248 mm x L 533 mm		H 343 mm x W 248 mm x L 660 mm		H 343 mm x W 248 mm x L 660 mm	
Work Cable	6.1 m		6.1 m		6.1 m		6.1 m	
Control	CNC rear panel connector, Start/Stop OK to Move & Divided Arc Voltage		CNC rear panel connector, Start/Stop OK to Move & Divided Arc Voltage		CNC rear panel connector, Start/Stop OK to Move & Divided Arc Voltage		CNC rear panel connector, Start/Stop OK to Move & Divided Arc Voltage	
Input Power Cable	2 m without plug (400V)		2 m without plug (400V)		2 m without plug (400V)		2 m without plug (400V)	
Warranty	3 Year Power Supply and 1 Year Torch		3 Year Power Supply and 1 Year Torch		3 Year Power Supply and 1 Year Torch		3 Year Power Supply and 1 Year Torch	
Certifications	IP-23C, CSA, NTRL/C, CE, CCC		IP-23C, CSA, NTRL/C, CE, CCC		IP-23C, CSA, NTRL/C, CE, CCC		IP-23C, CSA, NTRL/C, CE, CCC	
Torch Configuration								
Torch	SL100® SV w/ ATC®, 180° Automation							
Ordering Information		Please See Your Thermal Dynamics® Sales Representative for Specific System Configurations						
System with 7.6 m torch	1-5134-4		1-1134-4		1-1334-4		1-1734-4	
System with 10.6 m torch	1-5136-4		1-1136-4		1-1336-4		1-1736-4	
System with 15.2 m torch	1-5135-4		1-1135-4		1-1335-4		1-1735-4	

Systems include: power supply, automation torch with 35 mm diameter non-metallic mounting tube/32 pitch rack (detachable), pinch block assembly, CNC interface cable, spare parts kit, input power cable (selected systems), work cable, and clamp.

* Subject to change without notice.





UPGRADE YOUR CUTTING TECHNOLOGY

We Bring Intelligence to the Table.™

RETROFIT PLASMA SYSTEMS

Improve Productivity and Reduce Costs with a Retrofit System from Thermal Dynamics®

- Increased Productivity
- Reduced Costs
- Improved Quality
- True 100% Duty Cycle Systems
- Integrated liquid-cooling
- Versatile range of systems
- Easy to Use
- Minimal Investment



We Bring Intelligence to the Table.™

Thermal Dynamics® offers integrated retrofit solutions for modernising CNC cutting equipment that uses older technologies such as oxy-fuel cutting or older, less efficient plasma cutting systems. Adding a new plasma cutting power-source, torch and CNC Controller to an existing system is often the most cost effective way to increase cut quality and production capacity.



Why install a Retrofit System?

- **Increased Productivity** - Adding a modern plasma cutting system to your existing CNC setup allows you to cut more by replacing outdated systems with the latest technology
- **Cost Reductions** - Thermal Dynamics systems offer increased consumables lifetime with XtremeLife and HeavyCut consumables for Mild Steel and Water Mist Secondary (WMS) technology for reduced gas costs on Stainless Steel and Aluminium
- **Increased Quality** - Our High Precision systems dramatically improve cut quality by using the optimal gasses and consumables to cut different materials
- **Versatility** - HeavyCut Technology offers the best cut quality, precision and parts life when cutting thicker than 20 mm
- **Choose the right machine for the right application:**

Ultra-Cut High Precision plasma cutting:

- Excellent cut quality with no dross
- XtremeLife consumables for outstanding parts life
- Water Mist Secondary (WMS) process for extraordinary quality and speeds on non-ferrous
- DiameterPro Technology produces the industry's most precise holes on thicknesses up to 25 mm (when combined with our iCNC XT controller)

Auto-Cut conventional plasma cutting:

- Good quality cuts
- Mainly used for Air-Plasma
- Can also use WMS for non-ferrous

- **Easy to Use** - Unique consumables cartridge allows for rapid replacement of consumable parts and digitally controlled gas console allows for easy adjustment of parameters
- **Minimal Investment** - No need to replace the entire CNC system - keep the same CNC controller, table and extraction system.
- **Upgrade your CNC** - Upgrade to the Thermal Dynamics iCNC XT or iCNC Performance, to bring true intelligent control to your table

RETROFIT PLASMA SYSTEMS

System Components

AUTO-CUT® XT SERIES



- Power source with gas console and remote arc starter
- XT-301 Plasma Torch
- Cables and hoses

ULTRA-CUT® XT SERIES



- Power source
- Manual or automatic Gas Console
- Remote Arc Starter
- XT Plasma Torch
- Cables and hoses

iCNC XT



- Intelligent CNC controller
- Suitable for single plasma or multiple plasma/oxyfuel systems
- Servo drives include motors and gearboxes (optional)
- Torch Height Control (optional)

iCNC PERFORMANCE



- Low-cost intelligent height controller
- Everything integrated into 1 slim box
- Servo drives with built-in amplifiers (optional)
- Torch height control (optional)
- Servo drives include motors and gearboxes (optional)

We Bring Intelligence to the Table.™

General Information

Our retrofit systems make modernisation easy and cost effective. A few basic details about your current setup and future requirements are all that is needed to allow you to select the most appropriate system:

- **What cut quality is required?**
 - High Precision quality or conventional quality
- **Assess the cutting table:**
 - Positioning accuracy
 - Speed, acceleration and range of movement of the carriage
 - Will the height controller be appropriate for the upgraded system?
- **Is a new CNC required?**
 - Select iCNC XT or iCNC Performance configuration based on which torches, and how many torches are being used
 - Select drive motors
- **What metals will be cut?**
 - Mild Steel - use Oxygen (High Precision quality) or Air (conventional quality.)
 - Stainless Steel or Aluminium - use Water Mist Secondary (High Precision quality, fastest cut speeds), H35 (High Precision Quality) or Air (conventional quality.)
- **What Thicknesses will be cut?**
 - Choose between 100, 200, 300, and 400 Amps of cutting power to ensure that the system is capable of handling every thickness required.



SELECTION GUIDE

SYSTEM COMPARISON CHART AND SELECTION GUIDE

PLASMA CUTTING SYSTEMS



	A-Series	Auto-Cut® XT Series		Ultra-Cut® XT Series			
SPECIFICATIONS	A40, A60, A80, A120	Auto-Cut 200 XT	Auto-Cut 300 XT	Ultra-Cut 100 XT	Ultra-Cut 200 XT	Ultra-Cut 300 XT	Ultra-Cut 400 XT
Cutting up to 6 mm – A40 10 mm – A60 12 mm – A80 15 mm – A120	*	*	*	*	*	*	*
Cutting up to 15 mm		*	*	*	*	*	*
Cutting up to 25 mm		*	*		*	*	*
Cutting up to 35 mm			*			*	*
Cutting up to 40 mm						*	*
Cutting up to 50 mm							*
High Precision Cutting				*	*	*	*
Automated Gas Control				*	*	*	*
Non-HF Starting	*						
Air as Plasma Gas	*	*	*	*	*	*	*
O ₂ as Plasma Gas		*	*	*	*	*	*
XTremeLife™ Technology for O ₂				*	*	*	*
Ar-H ₂ or N ₂ as Plasma Gas		*	*	*	*	*	*
Water Mist Secondary		*	*	*	*	*	*
Marking				*	*	*	*
CNC Interface	*	*	*	*	*	*	*
Remote Control				*	*	*	*
ScrapCutter Manual Plasma Torch Interface				*	*	*	*

Cut capacities refer to production cut on mild steel

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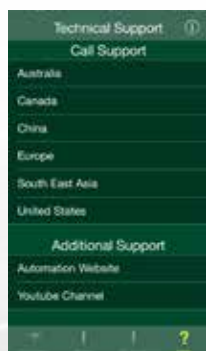
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Thermal Dynamics iPhone App



Our custom iPhone app includes digital cut chart and error code look-up for Thermal Dynamics Ultra-Cut XT high precision automated plasma systems. Select a material type and thickness to see the recommended best cut parameters. Enter an error code to view troubleshooting suggestions.

Scan the QR code to download the app.

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