

THERMAL DYNAMICS®



A THERMADYNE® Company

AUTOMATION

Auto-Cut™ 100

Automated Plasma Cutting System

- MaximumLife® Parts
- Increased Productivity
- XT™-301 Torch
- Water Mist Secondary™ (WMS)



Automated Plasma Cutting System

Automated Plasma Cutting



Auto-Cut™ 100

Automated Plasma Cutting System

Precision – Performance – Productivity

The **Thermal Dynamics® Auto-Cut™ 100** delivers premium cut performance on both mild steel and non-ferrous materials. The power supply is designed for reliable, low cost operation. Features like the XT™-301 consumable parts cartridge and the Machine Status Message Center make the Auto-Cut™ 100 easy to operate.

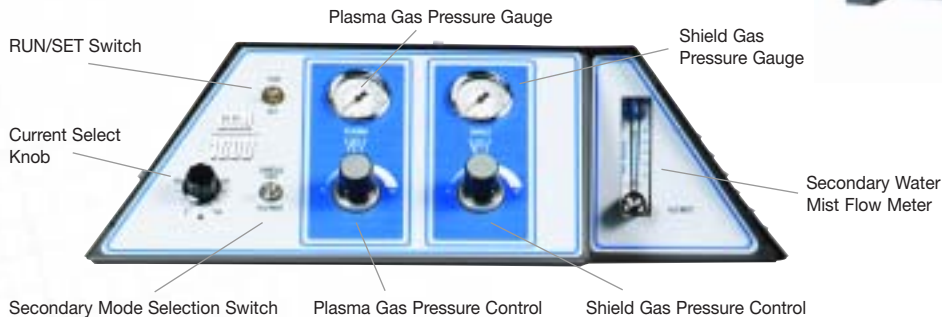
XT™-301 consumable parts are available for cutting metals from gauge thickness to 1 inch plate. The Auto-Cut™ 100 with patented XT™-301 torch is normally operated using economical air plasma and air shield gas for cutting mild steel and most nonferrous metals, resulting in high quality surface finishes and dross-free cuts. For even better cut quality on mild steel, Auto-Cut 100 offers O₂ plasma cutting capability. For lowest cost non-ferrous cutting and unmatched cut quality, use our unique Water Mist Secondary (WMS™) process with Nitrogen plasma and water shield. If heavy non-ferrous cutting is required, switch to Ar-H₂ (H_{3s}) and Nitrogen shield for premium non-ferrous performance up to 1" (25 mm).

Full Featured Gas Control - GCM 1000

Both plasma and 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.



Auto-Cut 100 Power Supply



Patent Pending XT™ Torch Technology

Thermal Dynamics' advanced XT™ Torch Technology brings plasma cutting to new levels of precision and productivity. Precision design and construction of the XT™-301 torch and cartridge ensure exact relocation of the center-line of the cut after process changes. Rapid engagement threads on the retaining collar of our keyless cartridge mean easy installation and a quick return to production.

XT™ Torch Technology for Maximum Performance



XT™-301 Shielded Torch and Lead Set-Up to 30m (100 ft.)

XT™-301 Torch Head

Cartridge

Electrode

Plasma Gas Distributor

Shield Gas Distributor

Shield Cup

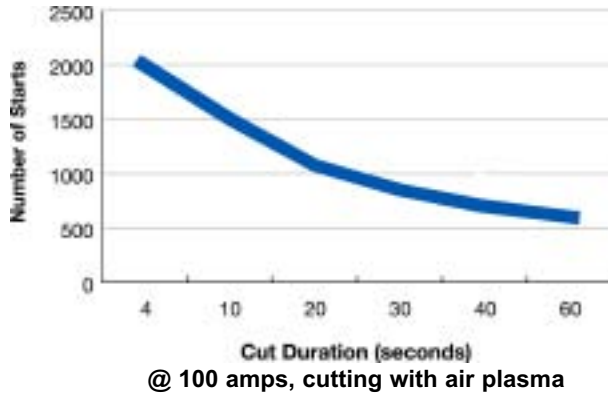
Tip

Shield Cap

XT™-301 Torch Technology

Thermal Dynamics' patent pending XT™ Torch Technology delivers productivity and performance you can measure.

Longer Consumables Life



- Keyless Consumable Cartridge for Rapid Process Changes
- Precision Construction Ensuring Accurate Re-Centering of Consumable Cartridge After Parts Change
- Rapid Engagement Retaining Collar Threads
- Liquid Cooled Consumable Parts Electrical Connections
- Spring Loaded Leak-Less Coolant Tube Design

XT Torch Technology for cutting from gauge (.5mm) to 1" (25mm), cuts both ferrous and non-ferrous materials with excellent quality.

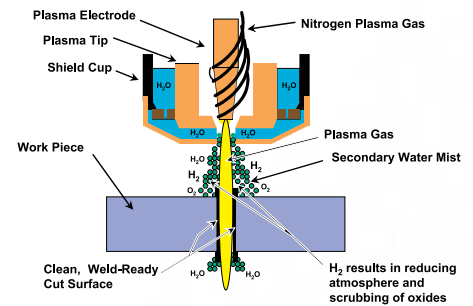
- Small Heat Affected Zone
- Smooth Cutting Edge Surface
- Wide Dross-free Parameter Windows

Water Mist Secondary (WMS)™ Optimizes Non-Ferrous Cutting

WMS delivers excellent non-ferrous cut quality and low cost of operation by using N₂ as plasma gas and ordinary tap water as the secondary. A reducing atmosphere is produced in the cut by the release of hydrogen from the secondary water. This reducing atmosphere significantly reduces oxidation on the cut face surface. WMS is recommended up to 1/2" (12 mm).

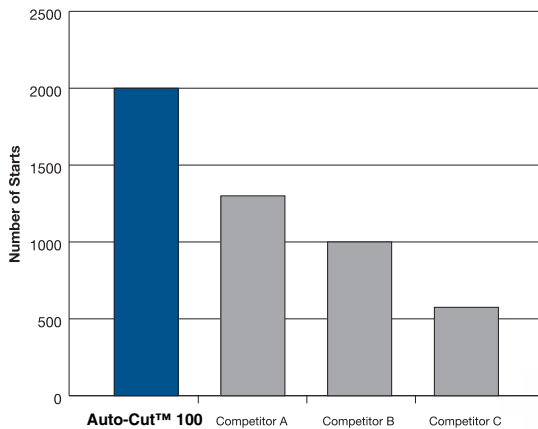
WMS Benefits

- Lowest Operating Costs
- Dross Free Cutting from Gauge to 1/2" (12 mm)
- Oxide Free Cut Face Surface
- Wide Parameter Window
- Easy to Use



Competitive Comparison

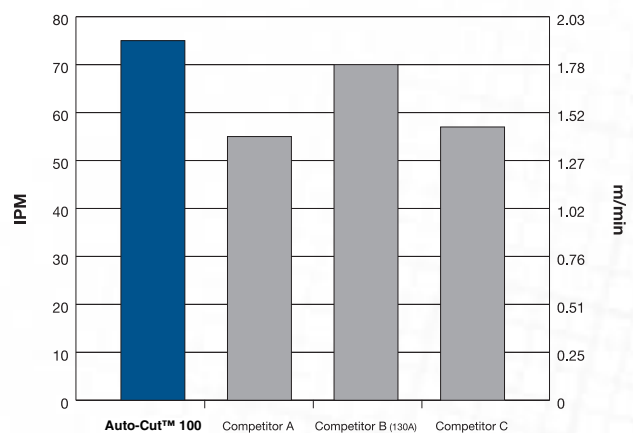
Superior Consumable Life



Data generated by making 11 sec. cuts @ 100 amps with air plasma, 3/8" (10mm) mild steel. Comparative data taken from competitors literature.

- Increased Life Through Electrode Alignment Control
- Increased Cooling of Tip and Electrode

Cutting Speed Comparison



Data generated by making 11 sec. cuts @ 100 amps with air plasma, 1/2" (12mm) mild steel. Comparative data taken from competitors literature.

- 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
- Patented Cutting Edge Consumable Technology



Auto-Cut™ 100

Automated Plasma Cutting System

Specifications (subject to change without notice)

Rated Output	100 Amps
Output Range (A)	10 - 100 Amps
Output (V)	80 - 160 VDC
Input Volts	208-230/460V, 3 ph, 50-60 Hz, 400V, 3 ph, 50-60 Hz, 600V, 3 ph, 50-60 Hz
Input Amps @ Rated Output	45A @ 208V 41A @ 230V 24A @ 400V 21A @ 460V 16A @ 600V
Duty Cycle (@ 104° F / 40° C)	100% @ 100A @ 160V (16kW)
MAX OCV	380 VDC
Plasma Gas	Air, O2, Ar-H2, N2 @ 120 psi (8.3 bar)
Shield Gas	Air, N2 @ 120 psi (8.3 bar)
Weight	Power Supply – 420 lbs. (191kg) Torch Assy & Mounting Tube – 3 lbs. (1.3kg) Lead Set (15 ft./4.6m) – 12 lbs. (5.4kg) Torch Leads (per ft.) – 0.8 lb. (0.36kg)
Dimensions	48.75" (1238mm) H x 27.5" (700mm) W x 38.5" (978mm) D (Fully Assembled Power Supply)
Warranty	Two Years Power Supply & One Year Torch
Certifications	CE, CSA, CCC

AUTO-CUT™ 100 Automated Systems include:

- 100A Power Supply including GCM-1000
- XT™ - 301 Torch and leads
- Torch Spare Parts Kit

Options & Accessories:

- Spare Parts Kit
- Wheel Kit

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

DISTRIBUTED BY:

Cutting Speed Chart

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

Torch Model		XT™-301			
Conventional Plasma Capacity		3/4" (20mm) Piercing / 1" (25mm) Maximum (Edge Start)			
Material	Thickness [inch]	Average Cut Speed [IPM]	Current [Amps]	Thickness [mm]	Average Cut Speed [m/min]
Mild Steel					
Plasma (Air)	20 ga.	650	55	1	16.51
Shield (Air)	10 ga.	190		3	4.83
	7 ga.	120		5	3.05
Plasma (O2)	20 ga.	600	55	1	15.24
Shield (Air)	10 ga.	170		3	4.32
	7 ga.	100		5	2.54
Plasma (Air)	1/4	150	100	6	3.81
Shield (Air)	3/8	85		10	2.16
	1/2	75		12	1.90
	3/4	30		20	.76
	1	20		25	.51
Plasma (O2)	1/4	130	100	6	3.30
Shield (Air)	1/2	57		12	1.45
	3/4	25		20	.64
	1	10		25	.25
Stainless Steel					
Plasma (Air)	14 ga.	118	50	2	3.00
Shield (Air)	10 ga.	55		3	1.40
	3/16	39		5	.89
	1/4	100	100	6	2.54
	3/8	45		10	1.14
	1/2	35		12	.89
Plasma (N2)	1/4	70	100	6	1.78
Shield (H20)	3/8	60		10	1.52
	1/2	45		12	1.14
Plasma (Ar-H2)	1/4	72	100	6	1.83
Shield (N2)	1/2	42		12	1.07
Aluminum					
Plasma (Air)	.063	140	50	1	3.56
Shield (Air)	.19	40		5	1.02
	1/4	100	100	6	2.54
	1/2	45		12	1.52
	3/4	35		20	.89
Plasma (N2)	1/4	60	100	6	2.54
Shield (H20)	3/8	40		10	1.52
	1/2	60		12	1.27

Note: 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, published speeds, gas settings and current, accurate torch height control and with torch perpendicular to the workpiece.

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