



THERMAL DYNAMICS

AUTOMATION

CUTMASTER® 81

60 Amp Air Plasma Cutting System



**Exclusive Warranty
from Thermal Dynamics!**

3 Years (System)

1 Year (Torch)

Includes Repair Parts and Labor

Automated Plasma Cutting System

Automated Plasma Cutting

CUTMASTER® 81

60 Amp Air Plasma Cutting System

Introducing the next generation of innovative CUTMASTER® 1Series™ Automated Plasma Cutting Systems from Thermal Dynamics®.

The new 1Series includes the SL100® 1Torch® with Advanced Torch Connector (ATC®) Quick Disconnect as standard equipment in lengths of 25 ft. (7.6m), 35 ft. (10.7m) and 50 ft. (15.2m). Our new 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. It can even cut expanded metal quickly and easily.

CUTMASTER 1Series Automation Systems include a full-featured CNC interface accessible from either a CPC connector on the rear of the power supply or inside on a terminal strip. The CPC interface includes ON/OFF, OK to MOVE and an adjustable divided voltage signal. Full arc voltage is available inside the power supply.

With all the advantages of 1Torch and proven CUTMASTER reliability, the new automated CUTMASTER 1Series delivers the best in productivity, precision and performance.



IGBT Inverter Power Supply

SL100 Torch & Leads



Pinch Block Assembly

End Cap Assembly

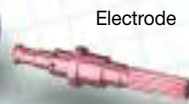


1Torch SL100 with ATC for Quick Disconnect



1Torch SL100 Torch Head

Electrode



Tip



Start Cartridge



Shield Cup Body



Deflector



Ohmic Clip



Shield Cup Body



Shield Cap



THERMAL DYNAMICS

AUTOMATION

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® 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 or 60 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 1/4" (6mm) plate or cutting ornamental shapes, the CUTMASTER™ 81 is perfect for the job.

At full 60 Amp output, CUTMASTER 81 produces BEST CUT on 5/16" (8mm) mild steel plate at 75 IPM (1.9m/min). For those

1TORCH, a trademark of Thermal Dynamics Corporation, 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 Corporation, contact the local trademark offices in the countries of interest.

cutting intricate shapes, select low amperage tips for kerf widths less than .020" (0.5mm) wide. Whether you cut plate, HVAC duct work or ornamental shapes, the CUTMASTER 81 is right for you.

Start Cartridge

High Frequency has been completely eliminated from the plasma system. A patent pending component called the "Start Cartridge" sits between the tip and electrode. It is normally in contact with the tip, but when air forces the tip and cartridge apart, 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.



Choice of Tip Shielding

Choose from two consumables styles:

- Extended Tip for cutting thin sheet at low power & narrow kerf
- Shielded Tip for heavier plate piercing and cutting



Extended Tip

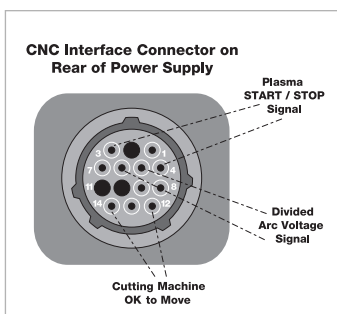


Shielded Tip

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

Advanced Features

Enhanced CNC Interface Connection



A CPC connector on the rear of the power supply provides access to START/STOP, OK TO MOVE and an adjustable Divided Arc Voltage signal suitable for controlling torch height control. Voltage is adjustable in 256 increments between 16.3:1 and 50:1. Full arc voltage is available inside the power supply.

ATC® Quick Disconnect

This advanced torch connection makes it quick and easy to connect or disconnect the torch from the power supply – safely and securely, each and every time.



Operator Controls

Simple front panel controls that provide the user flexibility and ease:

- (1) Current Control (Infinite from 20-60 Amps)
- (2) ON / OFF Switch
- (3) LED Indicators
 - AC
 - TEMP
 - GAS
 - DC
- (4) RUN / RAPID AUTO RESTART / SET Switch
- (5) ATC Female Receptacle



CUTMASTER® 81

60 Amp Air Plasma Cutting System

Ordering Information

Product Description	208-230V, 1ph	Catalog No. 460V, 1/3 ph	Other	
CUTMASTER® 81 with SL100® 180° Machine Torch, 25 ft. (7.6m) Lead*	1-1124-1	1-1124-2	1-1124-V	V (Voltage):
CUTMASTER® 81 with SL100® 180° Machine Torch, 35 ft. (10.7m) Lead*	1-1126-1	1-1126-2	1-1126-V	3 = 400V 3ph, 4 = 400V 3ph CE
CUTMASTER® 81 with SL100® 180° Machine Torch, 50 ft. (15.2m) Lead*	1-1125-1	1-1125-2	1-1125-V	5 = 600V

*Systems include Power Supply, Machine Torch with 1-3/8" (35mm) Diameter Non-Metallic Mounting Tube / 32 Pitch Rack (Detachable), Pinch Block Assembly, CNC Interface Cable, Hand Pendant, Spare Parts Kit, Input Power Cable (selected systems), Work Cable and Clamp.

Specifications (subject to change without notice)

Rated Output	60 Amps
Output Range (A)	20-60 Amps
Input Volts	208/230V, 1 ph, 50/60 Hz 400V, 3 ph, 50/60 Hz 460V, 1/3 ph, 60 Hz 600V, 3 ph, 60 Hz
Input Amps @ Rated Output	57A @ 208 VAC, 1 ph 52A @ 230 VAC, 1 ph 27A @ 460 VAC, 1 ph 16A @ 400 VAC, 3 ph 17A @ 460 VAC, 3 ph 10A @ 600 VAC, 3 ph
Duty Cycle	50% @ 60A @ 112 VDC, 100% @ 45A @ 98 VDC
MAX OCV	260 VDC
Gas Type	Air @ 70 psi (4.8 bar) @ 400 scfh (188 lpm)
Pilot	Start Cartridge
Weight	83 lbs. (37.6kg) Power Supply, Power Cable, Torch & Leads 1.6 lbs. (0.7kg) Torch Assembly & Mounting Tube 7.0 lbs. (3.2kg) 25ft./7.6m Lead Set with ATC™ (with Pigtail) 0.3 lbs. (0.1kg) Torch Leads (per ft.)
Shipping Weight	105 lbs. (47.6kg) Power Supply, Power Cable, Torch & Leads
Dimensions	17.3" (439mm) H x 12.4" (315mm) W x 27.4" (696mm) D
Work Cable	20 ft. (6.1m)
Control	CNC Interface - Rear CPC 14 Pin Connector with Standard TDC Pin-Out and Internal Terminal Strip
Input Power Cable	10 ft. (3.0m) with Plug (208/230V) 10 ft. (3.0m) without Plug (460V and 600V)
Warranty	Three Years Power Supply & One Year Torch
Certifications	CSA, IP-23C, CSA NTRL/C, CE
Torch Configuration	
Torch	SL100® 180° Machine Torch & Leads w/ ATC®
Leads	5 ft. (1.5m), 10 ft. (3.0m), 25 ft. (7.6m), 35 ft. (10.7m), or 50 ft. (15.2m)
Optional Leads Ext.	15 ft. (4.6m), 25 ft. (7.6m), or 50 ft. (15.2m) Not to exceed 100 ft. (30.4m) maximum length.

Cutting Speed Chart

Torch Model	SL100®	The cut speeds in the charts below are representative of results when using new consumables, a quality torch height control, and a well maintained plasma system and cutting machine.			
Recommended Cutting Capacity	5/16" (8mm)				
Maximum Pierce Cutting Capacity	1/2" (12mm)				
Max Cutting Capacity (edge start)	1" (25mm)				
Material	Thickness [inch]	Best Cut Speed [IPM]	Current [Amps]	Thickness [mm]	Best Cut Speed [m/min]
Mild Steel					
Air	16 ga.	180	20	1.5	4.57
	16 ga.	240	30	1.5	6.10
	10 ga.	175	40	3	4.45
	16 ga.	350	60	1.5	8.89
	10 ga.	175		3	4.45
	7 ga.	125		5	3.18
	5/16	75		8	1.91
	3/8	44		10	1.12
	1/2	23		12	0.58
	3/4	11		20	0.28
Stainless Steel					
Air	16 ga.	180	20	1.5	4.57
	16 ga.	240	30	1.5	6.10
	10 ga.	175	40	3	4.45
	16 ga.	350	60	1.5	8.89
	10 ga.	150		3	3.81
	7 ga.	110		5	2.79
	5/16	62		8	1.57
	3/8	35		10	0.89
	1/2	20		12	0.51
	3/4	10		20	0.25
Aluminum					
Air	16 ga.	180	20	1.5	4.57
	16 ga.	240	30	1.5	6.10
	10 ga.	175	40	3	4.45
	16 ga.	350	60	1.5	8.89
	10 ga.	175		3	4.45
	7 ga.	125		5	3.18
	5/16	75		8	1.91
	3/8	44		10	1.12
	1/2	23		12	0.58
	3/4	11		20	0.28

1TORCH, SL100 and ATC, trademarks of Thermal Dynamics Corporation, are registered with the U.S. Patent and Trademark Office, and are the subject of trademark registrations and pending applications in numerous other countries. For information on trademark registrations of Thermal Dynamics Corporation, contact the local trademark offices in the countries of interest.

U.S. Plasma Manual Customer Care: 800-752-7621 / FAX 800-221-4401 • International Customer Care: 905-827-9777 / FAX 905-827-9797
U.S. Plasma Automation Customer Care: 866-279-2628 / FAX 800-221-4401 • www.thermal-dynamics.com



A Global Cutting & Welding Market Leader™

THE AMERICAS

Denton, TX USA
U.S. Customer Care
Ph: (1) 800-426-1888
Fax: (1) 800-535-0557

West Lebanon, NH USA
Customer Care, Plasma
Ph: (1) 800-752-7621
Fax: (1) 800-221-4401

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

Oakville, Ontario, Canada
International Customer Care
Ph: (1) 905-827-9777
Fax: (1) 905-827-9797

Rio de Janeiro, Brazil
Customer Care
Ph: (55) 21-2485-8998
Fax: (55) 21-2485-8866

EUROPE

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

Milan, Italy
Sales Office
Ph: (39) 0236546801
Fax: (39) 0236546840

ASIA/PACIFIC

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

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

Melbourne, Australia
Customer Care:
Ph: 1300-654-674
Fax: 613- 9474-7391

International:
Ph: 613+ 9474-7508
Fax: 613+ 9474-7488

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

Shanghai, China
Sales Office
Ph: 86 21+ 6280-1273
Fax: 86 21+ 3226-0955

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