



THERMAL DYNAMICS
Professional 

CUTMASTER® 151

Air Plasma Cutting & Gouging System



CUT CAPACITY:

- 1 1/4" (32mm) Genuine**
- 1 1/2" (38mm) Maximum**
- 1 3/4" (45mm) Severance**

**Setting the Standard in
Flexibility, Value and Performance . . .**

**Excellent Cut Quality
on Thinner Metals!**

CUTMASTER® 151

Air Plasma Cutting & Gouging System

When you need an excellent, reliable performer for cutting metal, CUTMASTER® 151 answers the call. Designed to handle the heaviest fabrication, maintenance, and manufacturing jobs, this robust 100 amp system delivers excellent cutting results on a wide range of metal from gauge to 1½ inches thick. The inverter-based system utilizes proven CUTMASTER technology and operates on either single-phase or three-phase input power for maximum energy efficiency and low cost operation.

Standard on every system is Thermal Dynamics® exclusive 1Torch® with the unique built-in ATC® quick disconnect for fast process changes. This torch is comfortable to hold, has excellent front end parts visibility, and provides clean, dross free cuts. Cutting, piercing, and trimming are fast and easy with no damage to the front end parts. Piercing is fast and easy with no damage to front end parts. Special 1Torch technology eliminates high frequency starting and automatic tip saver circuitry supports better parts life. The arc remains constant even on expanded metal or grating and is strong enough to cut directly through paint and rust. The finished piece requires very little cleanup and is virtually weld-ready, saving time and money.



Specifications

NOTE: Dedicated models for manual and automated cutting available. See brochure 63-2505 for information on automated CUTMASTER 151 systems.

Cut Capacity:	1¼" (32mm) Genuine 1½" (38mm) Maximum 1¾" (45mm) Severance 5/8" (16mm) Pierce	Ship Weight:	105 lbs. (47.6 kg)
Output Current:	25 – 100 Amps, Adjustable	Work Cable:	20' (6.1m)
Input Power:	208 / 230V ±10%, 1 Phase, 50/60 Hz, 92 / 87 Amps 400V ±10%, 3 Phase, 50 Hz, 26 Amps 460V ±10%, 1/3 Phase, 60 Hz, 46 / 24 Amps 600V ±10%, 3 Phase, 60 Hz, 16 Amps	Control:	Hand Torch Switch or Hand Pendant Control
Duty Cycle:	104°F (40°C) 40% @ 100A @ 120 VDC 100% @ 50A @ 98 VDC	Input Power Cable:	10' (3m)
	68°F (20°C) 75% @ 100A @ 120 VDC	Gas Type:	Air
Dimensions:	Length 27.4" (696mm) Width 12.4" (315mm) Height 18" (457mm)	Gas Pressure:	70 psi (4.8 bar)
Weight:	83 lbs. (37.6 kg) Including Unit, Input Power Cable, Work Cable Torch and Leads	Gas Flow:	7.5 cfm (212 lpm)
		Pilot:	Start Cartridge (non high frequency start)
		Torch Configuration	
		Hand Torch:	SL100® w/ATC®, 75° Head
		Optional Lead Extensions:	15 ft. (4.6m), 25 ft. (7.6m) or 50 ft. (15.2m) Leads
		Warranty:	3 Years Parts & Labor (Power Supply) 1 Year Repair Parts & Labor (Torch)
		Certifications:	IP-23CS, CSA NTRL/C, CE, CCC

Features & Benefits

1Torch with ATC Quick Disconnect

The CUTMASTER 151 is equipped with the same great 1Torch introduced in 2002 as a universal replacement torch. The ATC Quick Disconnect makes it easy to convert from a hand to a machine torch operation in a matter of seconds.

Optional Lead Extensions

Add or subtract lead length to match the job requirements with optional leads extension packages available in 15 ft. (4.6m), 25 ft. (7.6m) and 50 ft. (15.2m) lengths. Recommended maximum length is 100 ft. / 30.5m.

Input Voltage Protection

This feature prevents damage to the unit and shuts the unit down safely if connected to the wrong input voltage.

Tip Saver™ – Current Fold Back Circuit

This feature protects the consumable parts by automatically reducing the cutting current while cutting or gouging at higher output levels, saving both time and money.

Auto Pilot Restart

Available on all CUTMASTER 1Series systems, this feature is useful for cutting expanded metal or in any application where automatic pilot restart is desirable. In Auto Pilot Restart mode, the operator has continuous operation without having to re-trigger the torch switch.

1Series Start Technology

Our CUTMASTER 1Series start technology eliminates electronic interference that can occur with other designs. 1Torch technology provides quick, reliable starts, and a strong pilot arc to cut through rusted, painted or coated surfaces without prior surface preparation.

Rugged Case Design

Built for hard outdoor use as a portable plasma cutter, the innovative case design is the result of extensive stress testing and field evaluations. The wraparound roll bar protects the case from damage resulting from shocks and collisions and the powder coat finish provides a harder, more scratch resistant surface.

1Torch® with ATC® Design



Quick Change Torch & Leads

ATC (advanced torch connection) makes it quick and easy to connect or disconnect the torch and operate safely and securely, each and every time.



Lightweight, Flexible Torch Leads & Extensions

1Torch leads are lightweight, extremely flexible and tough. Optional ATC Lead Extensions (3 lengths) offer unique opportunities to add lead length to suit the job requirements.



Ergonomic Torch Handle with Trigger Release

The innovative, easy-to use torch has a precisely engineered handle and comfortable grip to prevent hand fatigue during long cutting sessions. The ergonomically designed trigger release prevents accidental starting if the torch is set down.



Encapsulated Torch Head Protects Parts

The new encapsulated head is built tough and protects the working parts from day-to-day damage and abuse.



No Installation Tools Ensures Perfect Alignment

The innovative, patented electrode self-locking mechanism eliminates the need for an installation tool and ensures that the electrode and tip remain in perfect alignment for longer tip and electrode life and lower operating costs.



No Moving Consumable Parts for Better Parts Life

The unique start cartridge allows the pilot arc to start without moving the electrode or tip. Stationary parts result in a well defined arc, precise cuts, better parts life, and cut performance.



Precision Engineered Torch Tips

1Torch introduces a completely new tip technology. Each tip is uniquely tuned to optimize cut performance at its rated cutting current. The result is precision gas management, longer consumable parts life and better cut performance across the entire range of 1Torch tips.



Two Choices in Shield Cups

We offer two styles of shield cups to suit your cutting style:

- An Extended Tip for greater visibility and control and precision drag cutting at low power.
- A Protected Tip for on-the-plate drag cutting at high power up to 100 amps.



Cut Quality

Genuine Cut – The Thermal Dynamics standard for a genuine cut is an excellent, smooth cut surface with little or no dross. CUTMASTER® 151 produces that excellent cut on 1-1/4 inch (32mm) mild steel.

Maximum Cut – At 1-1/2 inches (38mm) maximum cut rating, CUTMASTER 151 still has plenty of power. This extra capacity is important for the fabricator who occasionally needs to cut thicker material or needs to bevel cut thick plate.

Severance Cut – At 1-3/4 inches (45mm), CUTMASTER 151 still has the power to cut with accuracy and control.

Plasma Arc Gouging (PAG) – Plasma Arc Gouging is a fast, economical and an environmentally friendly method of removing metal. A simple change of torch tip can convert the CUTMASTER 151 into a versatile gouging system. High arc transfer distance and long arc characteristics allow excellent accessibility and visibility while maintaining uniform metal removal.

Beveling – Extended tips result in excellent visibility and control. High travel speeds and minimal heat input make this an efficient and cost effective way to prepare the edge of pipe or plate.

Cut Speed

CUTMASTER 1Series™ systems will deliver both speed and cutting power. 1Torch may be used in both drag and standoff cutting models for top cut quality on thin and thick materials.

Material Thickness		Output Current	Approximate Cutting Speed*					
			Mild Steel		Stainless Steel		Aluminum	
inches	mm		in./min.	mm/min.	in./min.	mm/min.	in./min.	mm/min.
16 ga.	1.5	40 A	275	6985	275	6985	275	6985
		80 A	350	8890	350	8890	350	8890
1/4	6	40 A	39	991	40	1016	40	1016
		80 A	112	2845	112	2845	112	2845
		100 A	129	3277	134	3404	149	3785
3/8	10	100 A	65	1651	67	1702	99	2515
1/2	13	100 A	49	1245	40	1016	65	1651
3/4	20	100 A	24	610	22	559	30	762
1	25	100 A	16	406	12	305	19	483
1-1/4	32	100 A	10	254	9	229	14	360
1-1/2	38	100 A	8	206	6	163	11	274

* Recommended cut speeds are approximately 80% of maximum.


Ordering Information

Product Description	Catalog No.		
Systems include power supply, torch and lead, spare parts kit, input power cable, work cable and clamp, and manual.	208-230V 1 phase	460V 1/3 phase	Other
CUTMASTER® 151 with SL100® 75° hand torch, 20 ft. (6.1m) lead	1-1720-1	1-1720-2	1-1720-V
CUTMASTER 151 with SL100 75° hand torch, 50 ft. (15.2m) lead	1-1721-1	1-1721-2	1-1721-V
CUTMASTER 151 with SL100 180° machine torch, 25 ft. (7.6m) lead *	1-1722-1	1-1722-2	1-1722-V
CUTMASTER 151 with SL100 180° machine torch, 50 ft. (15.2m) lead *	1-1723-1	1-1723-2	1-1723-V

* Systems include machine torch with 1-3/8" (34.9mm) Diameter / 32 Pitch Rack Mounting Tube, Hand Pendant Control and Pinch Block. Pinion Assembly to be ordered as an accessory.

V = Voltage (3 = 3ph 400V, 4 = 3ph 400V CE, 5 = 600V)

ACCESSORIES

Single Stage Air Filter	7-7507	Straight Line Cutting Guide	7-8911
Replacement Filter	9-7741		
SL100 180° Machine Torch	See #63-2303 for more info		
Automation Interface Kit	9-8310		
CNC Interface Cable (25ft./7.6m)	9-8312		
CNC Interface Cable (50ft./15.2m)	9-8313	Pinion Assembly	7-2827

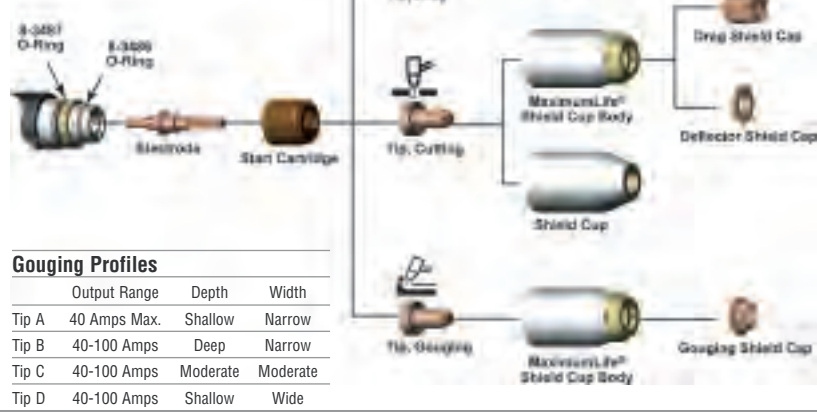
Product Description	Catalog No.
ACCESSORIES (CONT.)	
ATC® Leads Extensions	
15 ft. (4.6m)	7-7544
25 ft. (7.6m)	7-7545
50 ft. (15.2m)	7-7552
Leather Leads Cover	
15 ft. (4.6m)	9-1258
20 ft. (6.1m)	9-1260
25 ft. (7.6m)	9-1270
50 ft. (15.2m)	9-1280
Cutting Guide Kit	7-8910
Wheel Kit	9-8331
Multi-Purpose Cart	7-8888

Product Description Catalog No.

1TORCH® SL100 CONSUMABLES / PARTS

STANDARD	
Torch Head, 75°	9-8219
O-Ring	8-3487
O-Ring	8-3486
Electrode, MaximumLife®	9-8215
Start Cartridge	9-8213
Tip, 100A	9-8212
Shield Cup	9-8218
Spare Parts Kit, 100A, Manual	5-0170
includes 3 Electrodes, 7 Tips, 1 Standoff Guide, 1 Shield Cup Body, 1 Shield Cap-Drag, 2 O-Rings, 1 Utility Box	
Spare Parts Kit, 100A, Machine	5-0171
includes 3 Electrodes, 10 Tips, 1 Start Cartridge, 1 Shield Cup Body, 2 O-Rings, 1 Utility Box	
VIP Spare Parts Kit, 100A	5-0172
includes 20 Electrodes, 50 Tips, 1 Start Cartridge, 1 Shield Cup Body, 10 O-Rings	
Gouging Spare Parts Kit	5-0173
includes 5 Electrodes, 10 Tips, 1 Start Cartridge, 1 Shield Cup, 1 Shield Cap Gouging, 1 Shield Cup Body, 1 Shield Cap Deflector, 3 B-Tip Gouging, 3 C-Tip Gouging, 5 D-Tip Gouging, 2 O-Rings	
OPTIONAL	
Tip, 40A, Drag	9-8207
Tip, 60A	9-8210
Tip, 80A	9-8211
Tip, B, Gouging	9-8226
Tip, C, Gouging	9-8227
Tip, D, Gouging	9-8228
Shield Cup Body, MaximumLife	9-8237
Shield Cap, 50/60A, Drag	9-8235
Shield Cap, 70/100A, Drag	9-8236
Shield Cap, 40A, Machine	9-8245
Shield Cap, 50/60A, Machine	9-8238
Shield Cap, 70/100A, Machine	9-8239
Shield Cap, Deflector	9-8243
Shield Cap, Gouging	9-8241

SL100 1Torch Parts



Gouging Profiles

	Output Range	Depth	Width
Tip A	40 Amps Max.	Shallow	Narrow
Tip B	40-100 Amps	Deep	Narrow
Tip C	40-100 Amps	Moderate	Moderate
Tip D	40-100 Amps	Shallow	Wide

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