

**THERMAL
DYNAMICS**

AUTOMATED PLASMA CUTTING SYSTEMS

Thermal Dynamics®

NEW A40i/A60i SERIES SYSTEMS

The new A-Series is the easiest solution to install on any cutting machine

- Easy access to all connection
- Smallest foot print and weight in its class. Ideal to install on the gantry
- Proven torch SL100SV torch design
- Marking capabilities
- Full featured CNC interface



We Bring Intelligence to the Table.™

AUTOMATED PLASMA CUTTING

With all the advantages of 1Torch and proven Thermal Dynamic's reliability, the automated new A-Series delivers the best in productivity, precision and performance.

- **Powerful duty cycle**

Powerful duty cycle 80% Duty Cycle to handle all-day production cutting in the toughest environments.

- **Proven 1Torch technology**

The A-Series systems include the SL100® SV 1Torch® start technology eliminating the electronic interference that can occur with other designs. The 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.

- **Automatic multi-voltage detection**

The system senses what type of power you're hooked up to and adjusts accordingly so you don't have to change manually for different input power. (CSA system only)

- **Power factor correction (PFC)**

Lower your overall current draw and power consumption with the built PFC technology which results in lower cutting cost

- **Durable LED display**

The system's large, high-visibility display allows for easy viewing of all machine settings from a distance. The intuitive, easy-to-use display instantly provides the necessary feedback for keeping your settings and cut quality optimized.

- **Gas optimizer**

This unique technology precisely regulates air pressure, ensuring premium cut quality and performance. When you set amperage and select torch type, torch lead length, and mode of operation, you're visually prompted to adjust gas pressure accordingly while still having the flexibility to tweak that setting to your liking.

- **Consumables end-of-life indicator**

A40i's end-of-life indicator monitors the remaining life of the consumable parts and alerts you when it's time to replace, maintaining optimal performance and cut quality.

- **Smallest foot print and weight in its class.**

Easy to install on gantry without losing dynamics of cutting machine. No long torch leads packages necessary

- **Easy installation**

No need anymore for opening the machine to have access to input power cord, work cable or raw arc voltage. All connections to your CNC are right at your finger tips

- **Marking capabilities**

Ideal for marking plates with part identifications numbers or welding lines. Argon or air can be used depending on application

- **Ohmic sensing through the tip**

No need anymore for ohmic clips and wires. Especially on thinner material exposed tips can be used for better cut quality.

- **Full featured CNC interface**

No need anymore for separate voltage divider board for ohmic sensing. Thermal Dynamics iCNC Performance or similar OEM CNC can be connected directly

- **Dedicated valve-in-torch design**

Valve-in-torch design reduces cycle time between parts and increases productivity.

- **Automated torch status detection**

Software automatically detects the torch that is attached and switches between automation and manual modes.

- **Dedicated automation software for better performance**

Dedicated automation software improves cycle time and performance in many applications.

- **Work cable options for various demand**

The SL100 SV Torch comes with standard ATC Quick Disconnect in lengths of 25 ft (7.6 m), 35 ft (10.7 m) and 50 ft (15.2 m) Longer torch leads up to 100 ft (30.5 m) available.



Features

Front Panel Controls

- Large Numeric Display for Cutting current and status messages
- Mode selection
- Current control
- Consumables end of life indicator
- Gas pressure indicator
- Torch type and lead length indicator

ATC® Quick Disconnect

- Torch detection allows fast change from an automation torch to a hand torch



- Dinse style Quick disconnect work cable



CNC Interface Connector on Rear of Power Supply

- 3, 4 Plasma Start/Stop Signal
- 5, 6 Divided Arc voltage
- 10, 11, 13 Plate contact for Ohmic sensing
- 12, 14 Ok-to-Move

- Standard Keyhole Mounting Feet

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® 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 Amp tips to optimize your cutting. The result is Total Gas Management. Precision gas control, longer consumable parts life and better cut performance.



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 start cartridge is the only moving part in the SL100SV torch.



Choice of Tip Shielding

Choose from two consumable styles:

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



Exposed Tip

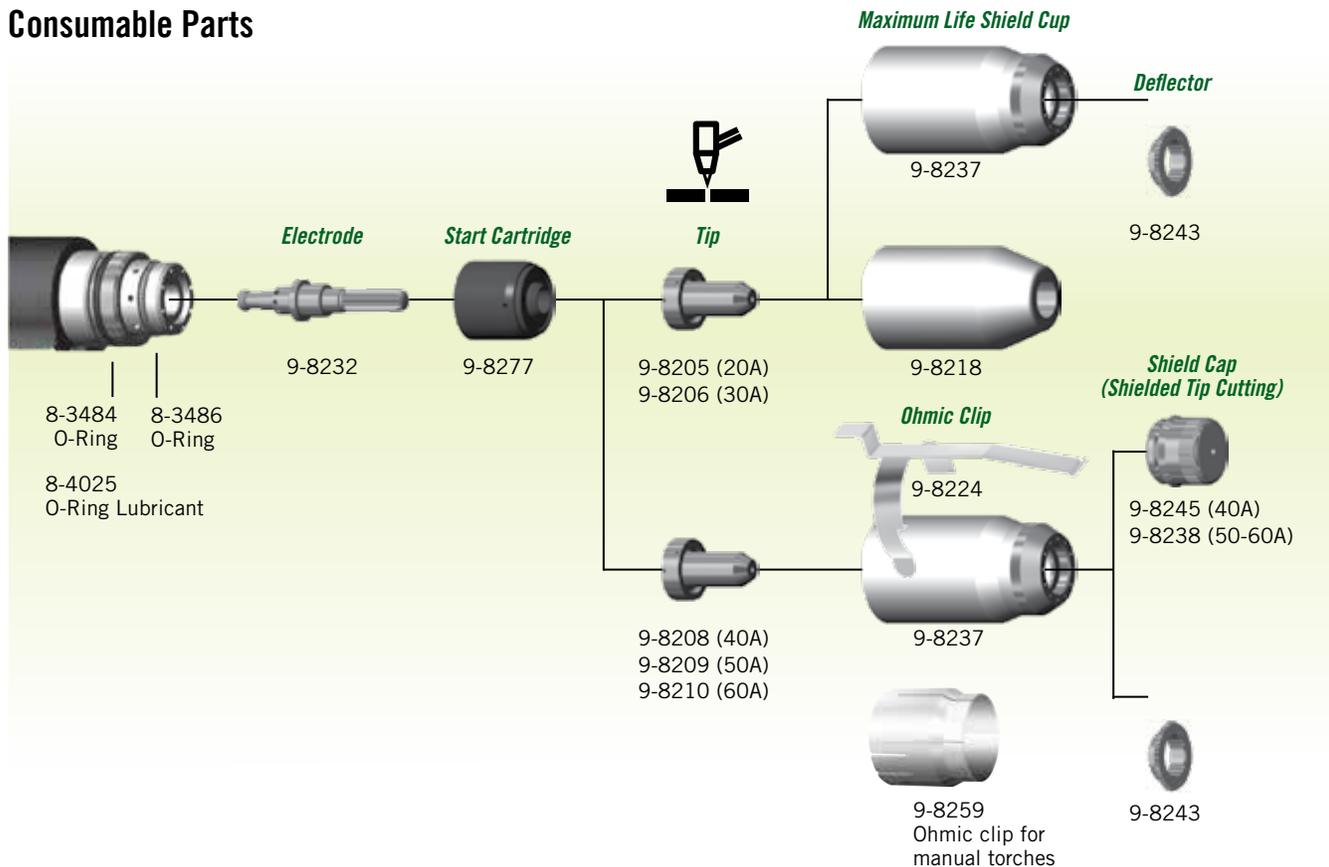
Shielded Tip

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Product Selection

SPECIFICATIONS		A40i	A60i
Production Piercing & Cutting Capacity	Gauge (0.5 mm – 2 mm)	<input type="checkbox"/>	<input type="checkbox"/>
	1/4" (6 mm)	<input type="checkbox"/>	<input type="checkbox"/>
	3/8" (10 mm)		<input type="checkbox"/>
	1/2" (12 mm)		
	5/8" (15 mm)		
Applications	Sheet Metal – Ductwork, Artwork, Trailer Panels	<input type="checkbox"/>	<input type="checkbox"/>
	Light Fabrication – Kitchenware, Autobody Panels, Pipe		<input type="checkbox"/>
	Medium Fabrication – Industrial Components, Truck Frame & Body		<input type="checkbox"/>
Duty	High Production – 80% Duty Cycle	<input type="checkbox"/>	<input type="checkbox"/>

Consumable Parts



Thermal Dynamics®

AUTOMATED PLASMA CUTTING



New A-Series Unit Specifications*

	A40i			A60i		
Output Range	10 - 40 Amps			10 - 60 Amps		
Production Piercing and Cutting Capacity	1/4" (6 mm)			3/8" (10 mm)		
Maximum Piercing and Cutting Capacity	1/2" (12 mm)			5/8" (15 mm)		
Maximum Edge Start	1" (25 mm)			1" (25 mm)		
Input Volts	208-230/480V, 1/3 ph, 50/60 Hz 380/400V, 3 ph, 50/60 Hz			208-230/480V, 1/3 ph, 50/60 Hz 380/400V, 3 ph, 50/60 Hz		
Input Amps @ Max Output	Volts	1 Phase	3 Phase	Volts	1 Phase	3 Phase
	208V	24.1	14.6	208V	40.1	24.3
	230V	21.8	13.1	230V	36.3	21.8
	380V	–	7.7	380V	–	12.9
	400V	–	7.4	400V	–	12.3
	480V	10.4	6.3	480V	17.3	10.5
Kilowatt Output	4.8 kW			7.9 kW		
Duty Cycle	80% @ 40 Amps, 100% @ 30 Amps			80% @ 60 Amps, 100% @ 50 Amps @ 3 phase voltage input (380V-480V) 50% @ 60 Amps, 100% @ 50 Amps @ 1/3 208-230V		
MAX OCV	300 VDC			300 VDC		
Gas Type	Air/Argon (Marking) @ 75 psi (5.2 bar) @ 6.7cfm (189 lpm)			Air/Argon (Marking) @ 75 psi (5.2 bar) @ 6.7cfm (189 lpm)		
Weight	35 lb / 15.9 kg			35 lb / 15.9 kg		
Dimensions	H 14.1" (359 mm) x W 7.8" (199 mm) x L 21.1" (536 mm)			H 14.1" (359 mm) x W 7.8" (199 mm) x L 21.1" (536 mm)		
Work Cable	20' (6.1 m)			20' (6.1 m)		
Control	CNC rear panel connector: Start/Stop, OK to Move, Divided arc voltage, Plate contact. Raw Arc Voltage on separate terminal			CNC rear panel connector: Start/Stop, OK to Move, Divided arc voltage, Plate contact. Raw Arc Voltage on separate terminal		
Input Power Cable	10' (3 m) with plug (208/230V) 6' (2 m) without plug (400V), no cable for CCC version			10' (3 m) with plug (208/230V) 6' (2 m) without plug (400V), no cable for CCC version		
Warranty	4 Year Power Supply (3 Year International) and 1 Year Torch - International			4 Year Power Supply (3 Year International) and 1 Year Torch - International		
Certifications	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					
SL100 SV - 25 ft lead	1-5634-V**			1-6634-V**		
SL100 SV - 35 ft lead	1-5636-V**			1-6636-V**		
SL100 SV - 50 ft lead	1-5635-V**			1-6635-V**		

Systems include: power supply, automation torch with 1 3/8" (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

**V (Voltage): 1 = 208/230V, 2 = 480V, 3 = 400V, 4 = 400V CE

AUTOMATED PLASMA CUTTING

Accessories

CNC Cables

- 25 ft (7.6 m) 9-1125
- 35 ft (10.6 m) 9-1126
- 50 ft (15.2 m) 9-1127

1Torch® Automation Leads Packages

- SL100® SV180° - (Torch/Leads)
- 25 ft (7.6 m) 7-4001 75 ft (23 m) 7-4004
 - 35 ft (10.6 m) 7-4002 100 ft (30.5 m) 7-4005
 - 50 ft (15.2 m) 7-4003

Hand Torches

- SL60® - (Torch/Leads)
- 20 ft (6.1 m) 7-5204
 - 50 ft (15.2 m) 7-5205



- SL100 - (Torch/Leads)
- 20 ft (6.1 m) 7-5206
 - 50 ft (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))



Pinion Assembly

- Cat. No. 7-2827 (1 3/8" (35 mm) Diameter)



Remote Pendant Control

- Cat. No. 7-3460
20 ft (6.1 m) Remote Pendant Control
for your mechanized application.



Hand Pendant Extension

- Cat. No. 7-7744 25 ft (7.6 m)

Cutting Speed Chart For New A-Series Systems

Material	Thickness (Inch)	Speed (IPM)	Amps	Plasma /Shield	Thickness (mm)	Speed mm/min.
Mild Steel	20 ga.	160	40	Air/Air	1	3990
	16 ga.	140			2	2920
	3/16	55			3	1810
	1/4	40			5	1345
	3/16	100	60	Air/Air	4	3650
	1/4	80			6	2145
	3/8	50			10	1180
	1/2	26			12	795
Stainless Steel	16 ga.	50	40	Air/Air	2	1140
	3/16	30			3	980
	1/4	18			5	715
	3/16	90	60	Air/Air	4	2865
	1/4	65			6	1790
	3/8	30			10	725
	1/2	21			12	580
Aluminum	16 ga.	170	40	Air/Air	2	3500
	3/16	75			3	2350
	1/4	30			5	1740
	3/16	170	60	Air/Air	4	5230
	1/4	85			6	2640
	3/8	45			10	1085
	1/2	30			12	845

NOTE: This cutting speed chart includes preliminary data and is subject to change without notice. 1TORCH, SL100SV and ATC, trademarks of Thermal Dynamics, 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, contact the local trademark offices in the countries of interest.

