

Your **coating partner**, not your competitor.

AT-3010 Plasma System Technical Datasheet



SYSTEM COMPONENTS

- 1 Power Supply
- 2 Arc Starter
- 3 AT-3010 Plasma System Console
- 4 Heat Exchanger
- 5 Powder Feeder
- 6 SG-100 Plasma Torch

Easy online quote requests at www.thermach.com.
Call (920) 779-4299. Email sales@thermach.com.

OVERVIEW

The AT-3010 Plasma System is a robust, user-friendly plasma control system. The use of orifice control technology makes this an outstanding, repeatable production plasma system.

The AT-3010 Plasma Control Console is a semi-automatic plasma spray process controller designed for production environments. Easy to understand touch-screen controls and large analog gauges make the AT-3010 an excellent performer in any plasma coating operation.

Thermach has utilized its extensive knowledge of orifice flow control technology for processing gasses and automating the entire Plasma Spray process to ensure high quality coatings and repeatable performance. By close-looping on

process amperage and ensuring safe operations of the each component in the system, the AT-3010 Plasma System makes it an excellent choice for a robust production system.

Each variable of a given parameter is preset by the operator. Once set, the process can be stepped through in manual mode to turn on each function, one at a time, to verify and adjust as needed. Alternatively, Auto mode can be selected, and the entire process will initiate and ramp up to the preset full run parameter. Upon completion of spraying, the system will ramp down and sequentially turn off each component.

MADE IN THE USA

Manufacturer of Equipment & Parts for the Thermal Spray Industry.

SYSTEM OVERVIEW

The AT-3010 Plasma System is designed to utilize the known and trusted 80KW, SG100 Plasma Torch. It operates with either the standard 50KW power supply or the optional 100KW power supply. For subsonic and most Mach I parameters, the 50KW power supply is preferred. For those requiring Mach II parameters or other high voltage requirements, the 100KW power supply is an excellent option.

The AT-3010 Plasma System is capable of controlling 2x AT-1200 Powder Feeders that can be operated independently (bond coat/topcoat) or simultaneously. Hoses and cables are custom made to proper lengths to ensure an aesthetically pleasing installation

PLASMA GASES

Argon | 250 PSI Supply Max.

- Primary 380 SCFH Max.
- Carrier 48 SCFH Max.

Nitrogen | 250 PSI Supply Max.

- Secondary 36 SCFH Max.

Hydrogen | 250 PSI Supply Max.

- Secondary 29 SCFH Max.

Helium | 250 PSI Supply Max.

- Secondary 90 SCFH Max.

POWER SUPPLY (CHOICE OF)

AT-1000 | 50kW

AT-1000 | 100kW

HEAT EXCHANGER

AT-4100 8 TON

SPRAY TORCHES

SG-100

SG-100 90 Degree

2700 Extension

2086 Extension

POWDER FEEDER (UP TO 2*)

AT-1200

AT-1200HP - High Pressure

AT-1200HP - Extended Canister

AT-1200QC - Quick Change Canister

AT-1200WL - Weight Loss

* Integrate a Y-Splitter box to ensure constant process.

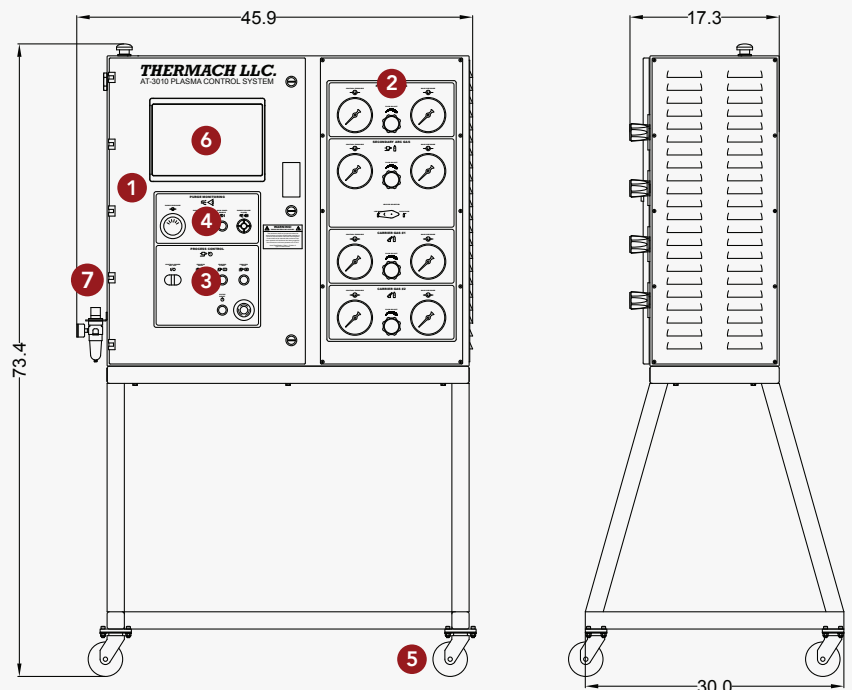
* Plasma gas flow rates are based on orifice.

ARC STARTER

AT-2000

CONSOLE COMPONENTS

- 1 Control Cabinet
- 2 Gas Flow Panel
- 3 Process Controls
- 4 Purge Controls
- 5 Lockable Wheels
- 6 HMI Interface
- 7 Purge Air Inlet



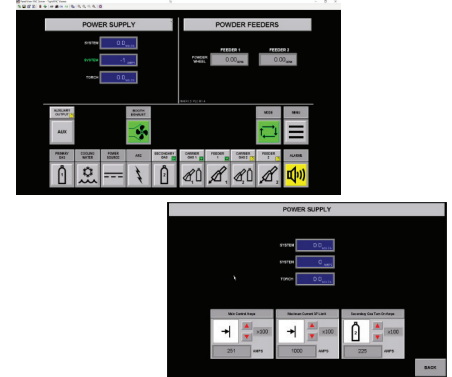
SYSTEM FEATURE OVERVIEW

SAFETY (1) Built in E-stop circuits. (2) Purged Electrical cabinet ensures positive internal pressure to prevent gasses from entering. (3) Multiple modes, maintenance, manual and auto, each having built in safety's to allow for testing of individual components and processes.

PROCESS CONTROL (1) Closed loop control of amperage, 2x, AT-1200 powder feed RPM's and cooling water flow, ensures the process is functioning as intended. Auxiliary items such as dust collection, robot initiation and part cooling are all options that can easily be integrated for ease of control.

OPERATOR INTERFACE CONTROLS

The operator interface utilizes an Allen Bradley touch screen with user friendly Icons and buttons to set and adjust parameters. Additionally, upper and lower parameter limits are added to ensure safe operations. The user alarm page is interactive, allowing for quick determination of a fault, when an out of spec condition occurs.



MAINTENANCE

Standard maintenance intervals consist of user defined timelines for powder feeder and torch hardware change out. These are determined mainly by powder types and parameters being ran. The system is very repeatable and proper maintenance schedules are easily determined.

ADVANTAGES

- Readily available maintenance and replacement parts allow for having the proper inventory on hand.
- Proper maintenance improves reliability and eliminates costly service calls.
- Known maintenance schedules can be planned for, reducing downtime.
- Ethernet communication for remote access.

AT-1000 POWER SUPPLY



Standard 50kW or optional 100 kW

AT-2000 ARC STARTER



The Arc Starter creates the initial high voltage required to initiate the Arc at the plasma torch. Additionally, it also serves as the connection device for providing both water and power to the water-cooled power cables, which in turn energize and cool the plasma torch.

AT-4100 HEAT EXCHANGER

8-ton variable speed Heat Exchanger is extremely energy efficient and maintains temperature "to process" ensuring consistent plasma torch performance.

THERMACH
THERMAL SPRAY COATING SYSTEMS

AT-3010 PLASMA SYSTEM REQUIREMENTS

POWER SUPPLY

	60 Hz Model			50 Hz Model		
Input Voltage	230V	460V	575V	380V	400V	440V
Input Amps	180	90	72	135	128	117

CABINET PROTECTION RATING

Electrical Enclosure	IP54
Gas Enclosure	IP43

PROCESS GASES

Argon Ar

Nitrogen N2

Hydrogen H2

Helium He

Flow (max)	100 NLPM (212 SCFH) 200 NLPM (424 SCFH)	20 NLPM (42 SCFH) 100 NLPM (212 SCFH)	20 NLPM (42 SCFH)	50 NLPM (106 SCFH)
Inlet Pressure (gauge)	6 to 8 bar (87 to 116 psi)	6 to 8 bar (87 to 116 psi)	6 to 8 bar (87 to 116 psi)	6 to 8 bar (87 to 116 psi)
Quality Grade	4.8 (99.998%)	5 (99.999%)	4.8 (99.998%)	4.8 (99.998%)
Connector Swagelok	3/8 in	3/8 in	1/4 in	3/8 in

COOLING WATER

SG-100

Flow (min)	8 gal/min
Conductivity	< 100 µS
Hardness CaCO3	< 10 ppm
Dissolved O2	< 10 ppm
Inlet Temperature	15°C to 35°C (59°F to 95°F)
Inlet Pressure	13.5 bar (196 psi)
Connector Swagelok	3/4 in

CONTROL CONSOLE REQUIREMENTS

Electrical	110 VAC, Single Phase, 50/60 Hz, 15A
Environment	
Temperature	10 to 40 °C (50 to 104 °F)
Humidity	< 75%, non-condensing
Purge Air	65 PSI, 10 SCFM Minimum

INTERFACES

Spray Booth Interface	Exhaust switch input
External E-Stop	E-Stop buttons, door switches, light curtains
Manipulation	Robot or Turntable; 115VAC PLC Input
Safety	Dual channel: E-Stop master/slave, E-Stop reset, door supervision
Cooling Air	Aux 115 VAC output

COMPATIBILITY

Spray Gun	SG-100
Power Supply	AT-1000 (50 kW); AT-1100 (100 kW)
Arc Starter	AT-2000 (50 kW); AT-2000EL (100 kW)
Powder Feeder	AT-1200, AT-1200HP, AT-1200HP Ext., AT-1200QC, AT-1200WL

SYSTEM WEIGHTS

AT-3010 Console with Cart	850 lbs (386 kg)
AT-1000 Power Supply (50 kW)	644 lbs (292 kg)
AT-1000 Power Supply (100kW)	1,800 lbs (816 kg)
AT-2000 Arc Starter	170 lbs (77 kg)
AT-4100 Heat Exchanger	1,000 lbs (454 kg)

