AT-3200 Universal Coating System
Technical Datasheet

THERMACH
THERMAL SPRAY COATING SYSTEMS

SYSTEM COMPONENTS

1. 3200 Console
2. Arc Starter, Plasma System
3. Power Supply
4. Heat Exchanger
5. Powder Feeder
6. SG-100 Plasma Torch
7. Cable & Hose Package

OVERVIEW

The **AT-3200** is capable of controlling various thermal spray processes, including Plasma, HVOF and Flame. **The system was designed for flexibility and ease of user interface, allowing for recipe storage, closed-loop control, and integration into various process elements.**

Next generation in thermal spray equipment, it has the same level of quality and reliability as the AT-3010 predecessor, but now provides the 'smarts' to integrate with all system components and provide real-time data monitoring and feedback.

Whereas the 3010 is a reliable workhorse utilizing orifice control technology, **the 3200 leverages mass-flow controllers to provide flexibility for the system to store and manage many different recipes, and allowing for more sophisticated data monitoring and capture.**

An intuitive interface, coupled with a recipe driven approach, helps minimize the learning curve for new operators and provides access to critical monitoring information for more experienced users.

The 3200 is scalable, allowing it to interface with multiple feeders, ancillary system components such as robots and dust collectors, and has the capability of controlling multiple gas trains for more complex configurations.

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

SYSTEM OPTIONS

The **AT-3200 Console** is built for versatility, allowing the system to interface with and control multiple gas trains in order to manage complex systems. The carrier gas flows are managed by the controller, allowing for multiple powder feeders to be controlled simultaneously.

In addition to the gas controls, the **AT-3200** also monitors the cooling water temperature and conductivity for plasma applications.

PLASMA GASES

Argon | 250 PSI Supply Max.
- Primary 300 SCFH Max. (Std.)
- Carrier 60 SCFH Max. (Std.)

Nitrogen | 250 PSI Supply Max.
- Secondary 100 SCFH Max. (Std.)

Hydrogen | 250 PSI Supply Max.
- Secondary 100 SCFH Max. (Std.)

Helium | 250 PSI Supply Max.
- Secondary 100 SCFH Max. (Std.)

POWER SUPPLY (CHOICE OF)

AT-1000 | 50kW
AT-1100 | 100kW

HEAT EXCHANGER

AT-4100 8 TON

SPRAY TORCHES

SG-100
SG-100 90 Degree
2700 Extension
2086 Extension

POWDER FEEDER (MULTIPLE)

AT-1200
AT-1200HP - High Pressure
AT-1200HP - Extended Canister
AT-1200QC - Quick Change Canister
AT-1200WL - Weight Loss

ARC STARTER

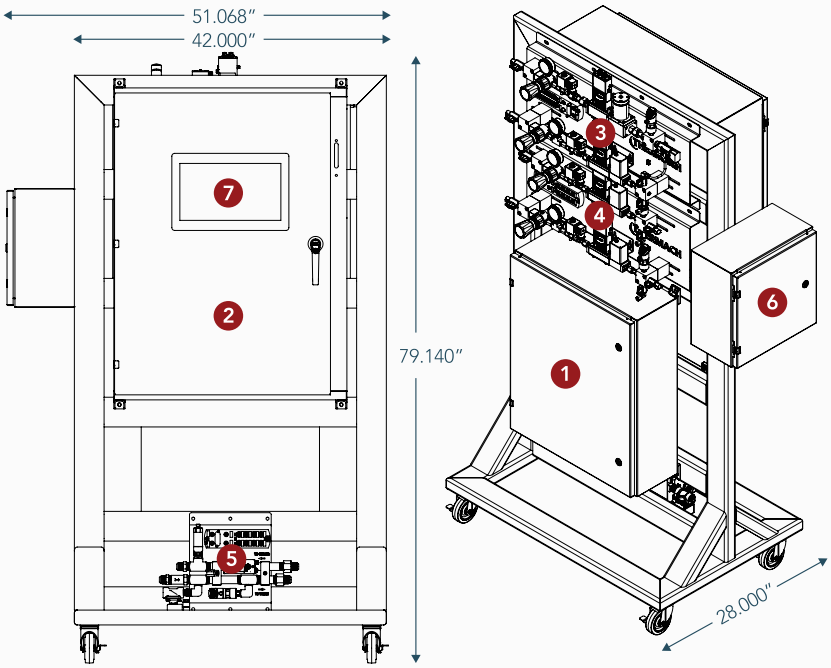
AT-2000

CONSOLE COMPONENTS

1. Plasma/HVOF Interface Module
2. Console Enclosure/User Interface
3. Process Gas Panel
4. Carrier Gas Panel
5. Water Flow Panel
6. Powder Feeder Interface Module
7. HMI

SYSTEM WEIGHTS

AT-3200 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)



SYSTEM FEATURE OVERVIEW

PRODUCTIVITY Intuitive touchscreen interface, store over 1,000 recipes for fast, reliable changeover, fully automated spray process cycling

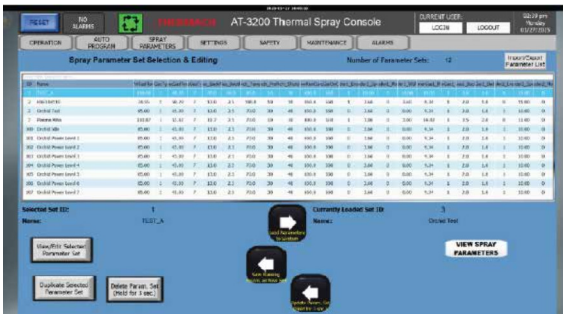
SAFETY Designed and built with operator and process safety throughout, Individual gas trains for easy remote mounting and separation from electrical sources

QUALITY Sensing at each process variable to ensure parameters are in control, data acquisition is readily available to validate Spray Process, mass flow control of process gases allows for enhanced gas flow management

OPERATOR INTERFACE CONTROLS

The operator controls the entire process through the touch screen display. Navigation is user friendly and quick access buttons are used to move between screens. Key data points are displayed on the main screen for quick confirmation the process is in control when running.

The intuitive interface allows for easy loading of recipes (including with bar codes), managing and adjusting key parameters with both warning and visual/audio alarms when out of tolerance conditions occur.



DATA LOGGING CAPABILITY

System can be customized to meet the individual customer needs for data collection. Data can be collected and fed to a customer device where it can then be stored and analyzed.

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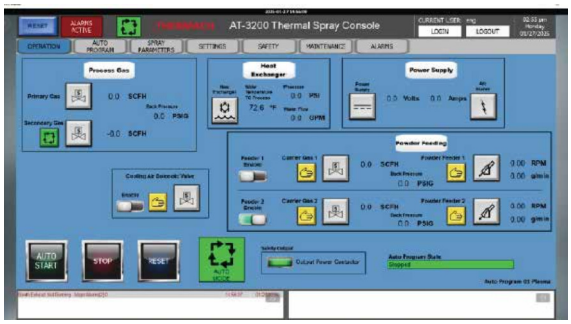
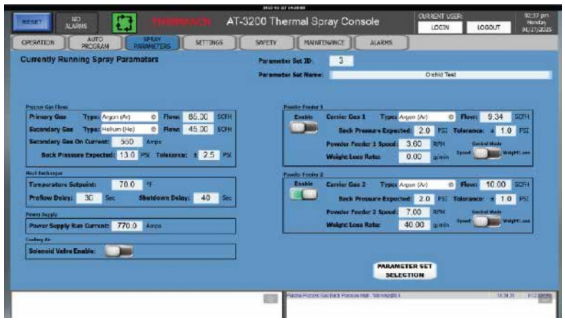


REMOTE MAINTENANCE

Remote Access is built in via secure internet connection to allow Thermach Service to analyze and help trouble shoot the system when issues arise. This feature will help save on service trip costs and minimize process downtime.



SYSTEM MONITORING

The system can monitor key parameters and allow for alarm set points to be created. These set points will simply alarm the operator, where they can then assess and take the proper action. Additionally, the system does have system faults for automatic shutdown.

AT-3200 PLASMA SYSTEM REQUIREMENTS

CONTROL CONSOLE REQUIREMENTS

Electrical	115 VAC, Single Phase, 50/60 Hz, 15A
Environment	
Temperature	10 to 40 °C (50 to 104 °F)
Humidity	< 75%, non-condensing

CABINET PROTECTION RATING

Electrical Enclosure	IP65
Gas Enclosure	IP66

PROCESS GASES

	PRIMARY	SECONDARY		
	Argon Ar	**Nitrogen (N2)**	**Hydrogen (H2)**	**Helium (He)**
Flow (max)	141 NLPM (300 SCFH)	47 NLPM (100 SCFH)	47 NLPM (100 SCFH)	47 NLPM (100 SCFH)
Inlet Pressure (gauge)	17.2 bar (250 psi)	17.2 bar (250 psi)	17.2 bar (250 psi)	17.2 bar (250 psi)
Quality Grade	4.8 (99.998%)	5 (99.999%)	4.8 (99.998%)	4.8 (99.998%)
Connector NPT	1/4 in	1/4 in	1/4 in	1/4 in

COOLING WATER — SG-100

Flow (min)	10 gal/min
Conductivity	< 10 µS
Inlet Temperature	15 to 25 °C (59 to 95°F)
Inlet Pressure	13.8 bar (200 psi)
Connector JIC	3/4 in

COMPATIBILITY

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

INTERFACES

Spray Booth Interface	Exhaust switch input
External E-Stop	E-Stop buttons, door switches, light curtains, etc.
Manipulation	Robot or Turn-table; 24 VDC PLC Input
Safety	Dual channel: E-Stop master/slave, E-Stop reset, door supervision, gas alarm
Cooling Air	Aux 24 VDC output

AT-3200 HVOF SYSTEM REQUIREMENTS

CONTROL CONSOLE REQUIREMENTS

Electrical	115 VAC, Single Phase, 50/60 Hz, 15A
Environment	
Temperature	10 to 40 °C (50 to 104 °F)
Humidity	< 75%, non-condensing

CABINET PROTECTION RATING

Electrical Enclosure	IP65
Gas Enclosure	IP66

PROCESS GASES

			CARRIER GAS OPTIONS	
	Hydrogen (H2)	**Oxygen (O2)**	**Argon (Ar)**	**Nitrogen (N2)**
Flow (max)	2400 SCFH (1133 NLPM)	1100 SCFH (519 NLPM)	60 SCFH (28.3 NLPM)	
Inlet Pressure (gauge)	17.2 bar (250 psi)	17.2 bar (250 psi)	17.2 bar (250 psi)	
Quality Grade	4.8 (99.998%)	5 (99.999%)	4.8 (99.998%)	
Connector NPT	1/4 in	1/4 in	1/4 in	

COOLING WATER — HV2000

Flow (min)	7 gal/min
Inlet Temperature	15 to 25 °C (59 to 105°F)
Inlet Pressure	10.3 bar (150 psi)
Connector JIC	3/4 in

COMPATIBILITY

Spray Gun	HV2000
Power Supply	AT-1200, AT-1200HP, AT-1200HP Ext., AT-1200QC, AT-1200WL

INTERFACES

Spray Booth Interface	Exhaust switch input
External E-Stop	E-Stop buttons, door switches, light curtains, etc.
Manipulation	Robot or Turn-table; 24 VDC PLC Input
Safety	Dual channel: E-Stop master/slave, E-Stop reset, door supervision, gas alarm
Cooling Air	Aux 24 VDC output

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