

## 9. PROJECT EXECUTION & LONG-TERM SUPPORT

### THERMACH PROVIDES:

- Application review and concept development
- Complete system design and documentation
- Factory Acceptance Testing (FAT)
- Installation, commissioning, and training
- Ongoing service and technical support

This Technical Data Sheet describes typical AT-3010 Turnkey System capabilities. Final configuration and specifications are defined during application review and proposal development.

### 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

### CUSTOM TURNKEY ADDITIONS

Booth, Dust Collector, Robot, Turn Table or Part Manipulation, Dust Hood, Safety Interface



**THERMACH CUSTOM TURNKEY SOLUTIONS DELIVER INTEGRATION OF ALL COMPONENTS AND SAFETY CIRCUITS FOR ONE SEAMLESS CONTROL.**



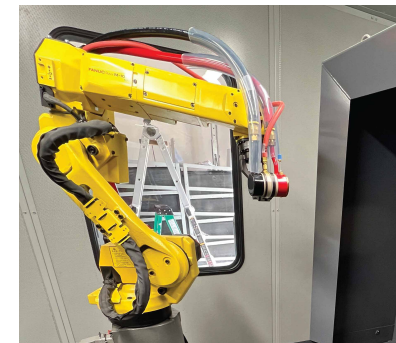
We not only manufacture high quality thermal spray equipment and spare parts, we also design and develop full turnkey solutions.

Explore our comprehensive turnkey solutions, designed to meet the unique needs of your industry and application. From noise enclosures to robotic manipulation and efficient dust collection, we will work with you to develop a solution that is crafted to your specific application. Our automated solutions integrate seamlessly, boosting productivity and safety on your production floor.

### Applications & Industries

We have experience installing thermal spray equipment in a variety of industries, including aerospace, medical, oil & gas and power generation to name a few. Whether looking to replace an aging line, add more capacity or just bringing thermal spray in for the first time, we can help.

## AT-3010 Turnkey Thermal Spray System



### Why Thermach?

We take pride in not only the quality of our product, but the service we provide after the equipment is installed; we'll pick up the phone! Because we design and manufacture our thermal spray equipment, we are uniquely positioned to integrate our systems into customers specific applications.

Thermach is the predominant industry option for custom thermal spray solutions. Why? Simple. We're not your competitor. Your other options are competitors. They coat, we don't. We only supply thermal spray equipment and parts. Proceed with confidence working with our team to create a custom system that meets your exacting specs.



Easy online quote requests at [www.thermach.com](http://www.thermach.com).  
Call (920) 779-4299. Email [sales@thermach.com](mailto:sales@thermach.com).

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



Manufacturer of Equipment & Parts  
for the Thermal Spray Industry.

# AT-3010 TURNKEY SYSTEM TECHNICAL CAPABILITIES & DESIGN STANDARDS

## 1. SYSTEM OVERVIEW & INTENDED USE

The AT-3010 Turnkey System is a fully integrated thermal spray cell designed for automated or semi-automated production environments requiring repeatable performance, robust safety integration, and straightforward system operation.

The AT-3010 platform is well-suited for applications where recipe-driven control and advanced data monitoring are not required, but where reliable automation, integrated safety, and coordinated subsystem operation are essential.

### TYPICAL APPLICATIONS

- Dedicated or single-process production lines
- Automated or assisted spray operations
- Facilities prioritizing robustness and simplicity
- Cost-conscious automation environments

### INDUSTRIES SERVED

- Aerospace
- General industrial manufacturing
- Power generation
- Oil & gas
- Infrastructure & repair applications

## 2. PROCESS & PERFORMANCE ENVELOPE - *Application dependent, ranges shown are typical*

### SUPPORTED SPRAY PROCESSES

- Atmospheric Plasma Spray (APS)

### TYPICAL MATERIALS

- Metals and alloys
- Nickel-Chrome alloys (bond coats & wear-resistant coatings)
- Aluminum Oxide (Al<sub>2</sub>O<sub>3</sub>)
- Yttria-Stabilized Zirconia (YSZ)
- Application-specific powders compatible with atmospheric plasma spray

*The AT-3010 platform is commonly used for oxide and ceramic coatings, including materials associated with thermal barrier coating systems.*

### PERFORMANCE CHARACTERISTICS

- Coating thickness: application dependent
- Deposition rates: material and process dependent
- Duty cycle: designed for production use
- Repeatability: driven by mechanical stability and consistent process setup

*Final performance is dependent on material selection, torch configuration, and application parameters.*

## 3. MECHANICAL & MOTION CONFIGURATION

### ROBOTIC

- 6-axis industrial robot (standard)
- Optional linear axis or positioner integration
- Floor, wall, or ceiling mounting options

### TORCH & HOSE MANAGEMENT

- Engineered torch mounting
- Cable and hose management packages
- Defined motion envelopes and collision avoidance

### PART MANIPULATION

- Rotary positioners
- Servo-driven or fixed-speed manipulators
- Custom fixtures and part handling solutions

### MOTION COORDINATION

- Robot-centric motion control
- Part manipulation coordinated through system interlocks

## 4. CONTROLS & AUTOMATION

### CONTROLS PLATFORM

- Dedicated system controller with integrated safety
- Operator interface for system operation and status

### AUTOMATION FEATURES

- Fixed or limited-set process configurations
- Manual and semi-automatic operating modes
- Integrated system sequencing
- Alarm and fault indication

### DATA & MONITORING

- Basic parameter monitoring
- Alarm indication and fault status
- Data logging limited to system requirements

### SYSTEM INTEGRATION

- Robot controller interface
- Thermal spray power supply integration
- Dust collection system interface
- Safety system integration

## 5. INTEGRATED SAFETY & PROCESS CONTROL

### SAFETY ARCHITECTURE

- Safety controlled through a dedicated Safety Controller (AT-3010 platform)
- One integrated safety system governing the entire cell
- Safety circuits from all subsystems tied together into a unified architecture

### SAFETY COMMUNICATION

- Hardwired safety circuits (standard)

### STANDARD SAFETY FEATURES

- Non-contact door interlocks
- Emergency stops as determined by cell design and risk assessment
- Hydrogen detection in booth (when hydrogen is used as a process gas)

### INTEGRATED SUBSYSTEMS

- Robotics
- Dust collection
- Part manipulation
- Enclosures and access doors
- Thermal spray equipment

### OPTIONAL SAFETY & MONITORING

*Not all features are applicable to every system*

- Dust collection airflow switches
- Vibration sensors
- Flame detection
- Oxygen detection

### PROCESS CONTROL & INTERLOCKS

- Dust collector interlocked with spray process
- Process parameter monitoring (limited)
- System alarms and fault notifications

## 6. ENCLOSURES, DUST COLLECTION & ENVIRONMENTAL CONTROLS

### ENCLOSURES

- Full spray booths
- Partial or modular enclosures
- Retrofit enclosures for existing lines

### NOISE CONTROL

- Acoustic attenuation designed to support OSHA noise exposure limits
- Integrated lighting and viewing windows

### DUST COLLECTION

- Dedicated or centralized dust collection systems
- Dry or wet collection options (application dependent)
- Hood and duct design optimized for overspray capture
- Filter monitoring and maintenance access

## 7. UTILITIES, FOOTPRINT & INSTALLATION ASSUMPTIONS

### UTILITIES (TYPICAL)

- Electrical power sized per system configuration
- Compressed air for spray and control functions
- Process gases as required by application
- Cooling water or chiller interface (if applicable)

### INSTALLATION

- Thermach provides system integration, installation support, and commissioning
- Customer-provided utilities and site preparation required unless otherwise specified

### FOOTPRINT

- Cell size dependent on:
  - Robot reach
  - Part size
  - Enclosure configuration
  - Material handling requirements

## 8. COMMERCIAL & PROJECT ASSUMPTIONS

### INCLUDED

- Integrated turnkey system design
- Controls and safety integration
- Factory acceptance testing (FAT)
- Installation, commissioning, and operator training

**STANDARDS REFERENCED:** OSHA, NFPA, ANSI/RIA, Applicable ISO standards

### APPLICATION DEPENDENT

- Final performance metrics
- Cycle time
- Coating rates
- Monitoring and automation level