

Custom Turnkey Solutions



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.



Manufacturer of Equipment & Parts
for the Thermal Spray Industry.

1. SYSTEM ARCHITECTURE OVERVIEW

Thermach designs and integrates complete thermal spray cells, coordinating mechanical, electrical, controls, and safety systems into a single, fully supported solution. All subsystems are engineered to function as one cohesive system.

INTEGRATED SUBSYSTEMS MAY INCLUDE:

- Thermal spray equipment
- Robotics or gantry motion
- Part manipulation
- Enclosures and booths
- Dust collection
- Controls and safety systems

2. ROBOTICS & MOTION SYSTEMS CAPABILITIES

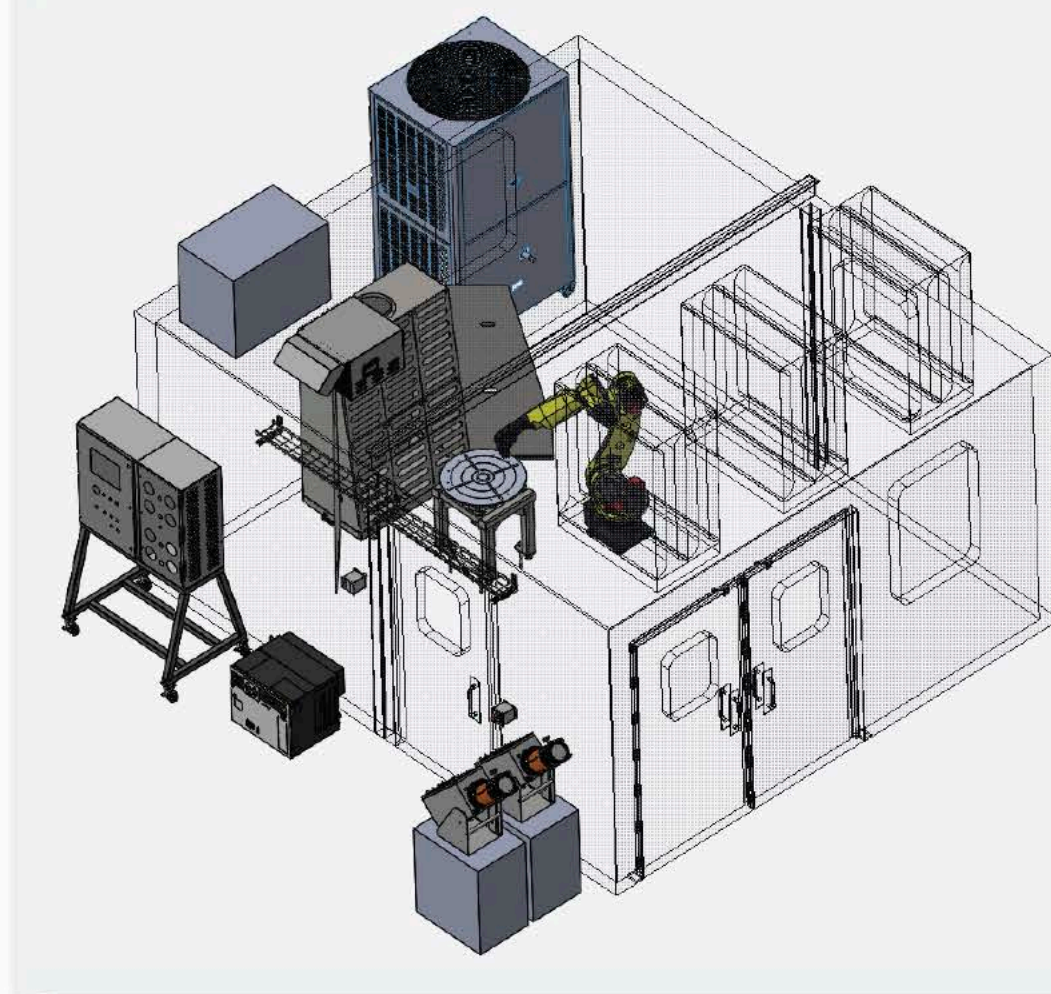
CAPABILITIES

- 6-axis industrial robots
- 7th-axis linear tracks
- Rotary positioners and custom part manipulators
- Multi-torch

INTEGRATION FOCUS

- Torch and hose management
- Recipe-based motion programs
- Minimize operator dependence

TURNKEY COMPONENTS



3. GANTRY & LINEAR MOTION SYSTEMS

CAPABILITIES

- Single- or multi-axis gantry systems
- Long-part & large-structure coating applications
- Shipyard, pipe, and heavy-industry solutions

DESIGN CONSIDERATIONS

- Structural stiffness and vibration control
- Travel length, speed, and acceleration
- Environmental protection for spray environments
- Maintenance access and serviceability

4. PART MANIPULATION & WORKPIECE HANDLING

CAPABILITIES

- Rotary turntables and positioners
- Headstock / tailstock lathes
- Servo-driven rotational axes
- Custom fixturing and part supports

DESIGN CONSIDERATIONS

- Part weight, balance, and center of rotation
- Required rotational speed and torque
- Coating access and line-of-sight optimization
- Integration with robot or gantry motion
- Thermal exposure and environmental protection

TYPICAL APPLICATIONS

- Shaft, roll, and cylindrical components
- Tube mill and pipe coating applications
- Symmetric or indexed coating patterns
- Continuous or indexed rotation during spraying

CONTROLS & INTEGRATION

- Coordinated motion with robot or gantry systems
- Servo or VFD-driven rotation (application dependent)
- Recipe-based speed and position control
- Safety-rated integration with the overall cell

5. ENCLOSURES & NOISE CONTROL

CAPABILITIES

- Full spray booths
- Partial or modular enclosures
- Overhead crane or track entry/exit

TYPICAL FEATURES

- Steel or composite panel construction
- Acoustic attenuation designed to meet OSHA exposure limits
- Integrated lighting and viewing windows
- Access doors with safety interlocks
- Overspray containment and airflow management

6. DUST COLLECTION & OVERSPRAY MANAGEMENT

SYSTEM TYPES

- Dedicated cell collectors
- Centralized collection systems

COMPLIANCE FOCUS

- Designed to support OSHA, NFPA, and local environmental requirements

DESIGN CRITERIA

- Airflow sized to the specific thermal spray process
- Hood and ducting optimized for capture efficiency
- Spark arresting and fire mitigation options
- Maintenance access

7. CONTROLS & SYSTEMS INTEGRATION

CONTROLS SCOPE

- PLC-based system control
- HMI operator interface
- Recipe and parameter management
- System alarms and fault handling
- Interface with customer plant systems (as required)

INTEGRATION POINTS

- Thermal spray power supplies
- Robot controllers
- Dust collection systems
- Safety devices and networks

8. INTEGRATED SAFETY & PROCESS CONTROL

SAFETY ARCHITECTURE

- Safety controlled by Allen-Bradley Safety PLC
 - One integrated safety system governs the entire cell
 - Safety circuits from all subsystems are tied together to create a seamless, unified system

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)

PROCESS CONTROL & INTERLOCKS

- Dust collector interlocks with spray process
- Pyrometer integration
- Process parameter monitoring
- System alarms and fault notifications

INTEGRATED SUBSYSTEMS MAY INCLUDE:

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

SAFETY COMMUNICATION

- Hardwired safety circuits
- CIP Safety over Ethernet/IP (application dependent)

OPTIONAL SAFETY & MONITORING FEATURES

Not all features are applicable to every system

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

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



10. THERMACH OFFERS FOUR CUSTOM TURNKEY SOLUTIONS FOR YOUR COATING PROCESS

AT-3010 TURNKEY

- Best for single-process or dedicated applications where a robust, analog-style control system provides reliable, repeatable operation without the complexity of PLCs or mass flow controls.

AT-3200 TURNKEY

- Best for flexible production environments requiring PLC-based control, mass flow gas control, recipe management, and support for multiple processes such as plasma and HVOF.

AT-400R TURNKEY

- Best for robotic arc spray applications where a remote wire feeder mounted close to the torch improves wire feed stability and coating consistency.

AT-400 TUBE MILL TURNKEY

- Best for continuous, inline tube and pipe production where arc spray coating must be synchronized with line speed and integrated into mill controls.



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.

Easy online quote requests **at www.thermach.com**.

Call **(920) 779-4299**. Email **sales@thermach.com**.

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