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-400R Remote Arc Spray Turnkey System capabilities. Final configuration and specifications are defined during application review and proposal development.

SYSTEM COMPONENTS

1. Feedstock
2. Remote Control Console
3. Power Supply
4. Torch
5. Side Panel Controls

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.

THERMACH
THERMAL SPRAY COATING SYSTEMS

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.**

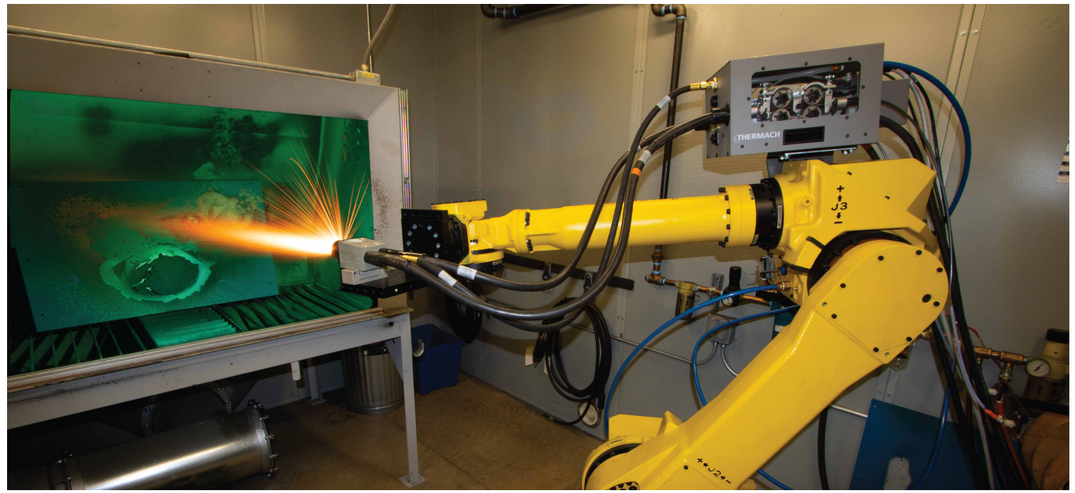
(920) 779-4299
(920) 779-4452 fax

N677 Communication Drive
Appleton WI 54914 USA

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

MADE IN THE USA

AT-400R Remote Arc Spray Turnkey Thermal Spray System



THERMACH
THERMAL SPRAY COATING SYSTEMS

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.

AT-400R REMOTE ARC SPRAY TURNKEY SYSTEM TECHNICAL CAPABILITIES & DESIGN STANDARDS

1. SYSTEM OVERVIEW & INTENDED USE

The AT-400R Turnkey System is a fully integrated robot-mounted arc spray solution designed for automated thermal spray applications where short wire feed distances, consistent wire delivery, and coordinated robotic motion are critical.

The AT-400R platform utilizes a remote-mounted wire feeder located close to the arc spray torch, minimizing wire path length and improving feed stability in robotic applications. When integrated into a turnkey cell, Thermach provides coordinated controls, safety integration, dust collection, and environmental containment as a single, supported system.

TYPICAL APPLICATIONS

- Robotic twin wire arc spray systems
- Automated coating of medium to large components
- Continuous or semi-continuous production environments
- Applications requiring consistent wire feed and repeatable

INDUSTRIES SERVED

- General industrial manufacturing
- Infrastructure and corrosion protection
- Power generation
- Marine and defense
- Oil & gas

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

SUPPORTED SPRAY PROCESSES

- Twin wire electric arc spray

TYPICAL MATERIALS

- Aluminum and Zinc
- Aluminum-zinc alloys
- Stainless steel
- Other arc-spray compatible solid or cored wires

PERFORMANCE CHARACTERISTICS

- Coating thickness: application dependent
- Deposition rates: wire material and diameter dependent
- Duty cycle: suitable for automated production operation
- Coating consistency driven by robotic motion & stable wire feeding

Final performance depends on tube diameter, line speed, coating specification, and material selection.

3. MECHANICAL & ROBOTIC INTEGRATION

REMOTE WIRE FEEDER CONFIGURATION

- AT-400R wire feeder mounted near the spray torch
- Short wire feed path to improve feed stability
- Reduced wire friction compared to centralized feeder layouts

TORCH & CABLE MANAGEMENT

- Engineered torch mounting brackets
- Cable and hose routing designed for robotic motion
- Defined motion envelopes & collision avoidance considerations

ROBOTIC INTEGRATION

- Designed for mounting on 6-axis industrial robots
- Compatible with robot arm or wrist-mounted torch assemblies
- Support for coordinated robot motion and spray sequencing

SYSTEM LAYOUT

- Flexible mounting options for feeder and power supply
- Optimized for enclosed spray booths and robotic cells

4. CONTROLS & AUTOMATION

CONTROLS PLATFORM

- Dedicated arc spray control system
- Operator interface for system status and parameter adjustment

AUTOMATION FEATURES

- Automated spray enable/disable via robot signals
- Interlocked system sequencing
- Integration with robotic programs and cell logic

MONITORING

- Basic parameter and system status monitoring
- Fault and alarm indication tied to system interlocks

SYSTEM INTEGRATION

- Arc spray power supply integration
- Wire feeder control
- Robot controller interface
- Dust collection system interface
- Safety system integration

5. INTEGRATED SAFETY & PROCESS CONTROL

SAFETY ARCHITECTURE

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

STANDARD SAFETY FEATURES

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

PROCESS CONTROL & INTERLOCKS

- Dust collector interlocked with arc spray operation
- Robot-controlled spray enable signals
- System alarms and fault notifications
- Interlocks preventing spray operation under unsafe conditions

INTEGRATED SUBSYSTEMS

- Robotic arc spray equipment
- Dust collection
- Enclosures and access doors
- Utility and process interlocks

OPTIONAL SAFETY & MONITORING

Not all features are applicable to every system

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

SAFETY COMMUNICATION

- Hardwired safety circuits (standard)

6. ENCLOSURES, DUST COLLECTION & ENVIRONMENTAL CONTROLS

ENCLOSURES

- Full robotic spray booths
- Partial or modular enclosures
- Retrofit enclosures for existing robotic cells

DUST COLLECTION

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

NOISE CONTROL

- Acoustic attenuation options designed to support OSHA noise exposure limits
- Noise levels dependent on enclosure design & process parameters

7. UTILITIES, FOOTPRINT & INSTALLATION ASSUMPTIONS

UTILITIES (TYPICAL)

- Electrical power sized for arc spray power supply
- Compressed air for atomization & control
- Process gases as required by application
- Facility grounding per arc spray system requirements

FOOTPRINT

- Cell footprint dependent on:
  - Robot size and reach
  - Enclosure configuration
  - Part size and handling method
  - Dust collection integration

INSTALLATION

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

8. COMMERCIAL & PROJECT ASSUMPTIONS

INCLUDED

- Integrated AT-400R remote arc spray system
- Robotic and system integration support
- Controls and safety integration
- Factory acceptance testing (as applicable)
- Installation, commissioning, and operator training

APPLICATION DEPENDENT

- Final coating performance
- Deposition rates
- Robot programming scope
- Environmental and safety feature selection

STANDARDS REFERENCED: OSHA, NFPA, Applicable ANSI standards