

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-400 Tube Mill Turnkey System capabilities. Final configuration and specifications are defined during application review and proposal development.



SYSTEM COMPONENTS

- 1 Feedstock
- 2 Wire Feeder/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.



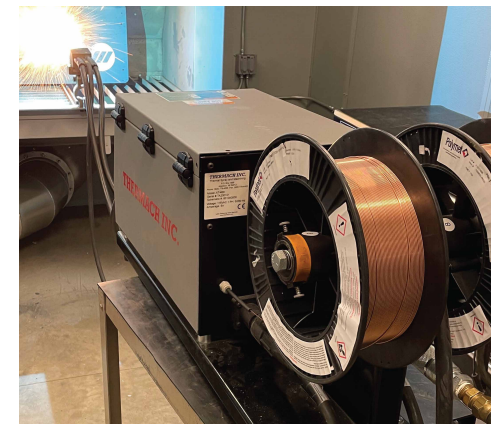
We not only manufacture high quality thermal spray equipment and spare parts, we also design and develop full turnkey solutions.

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-400 Tube Mill 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.
Call (920) 779-4299. Email sales@thermach.com.

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



Manufacturer of Equipment & Parts
for the Thermal Spray Industry.

AT-400 TUBE MILL TURNKEY SYSTEM TECHNICAL CAPABILITIES & DESIGN STANDARDS

1. SYSTEM OVERVIEW & INTENDED USE

The AT-400 Tube Mill Turnkey System is a fully integrated inline arc spray solution designed for continuous tube and pipe manufacturing environments. The system is engineered to apply metallic coatings directly within the tube mill process, providing corrosion protection without disrupting line speed or production flow.

Thermach integrates the AT-400 arc spray equipment with dust collection, enclosures, controls, and safety systems to deliver a robust, production-ready solution optimized for high uptime, repeatability, and maintainability in demanding mill environments.

TYPICAL APPLICATIONS

- Inline corrosion protection for steel tube and pipe
- Continuous production tube mills
- High-throughput manufacturing environments
- Retrofit or new tube mill installations

INDUSTRIES SERVED

- Construction and infrastructure
- Energy and utilities
- Agriculture
- General industrial manufacturing
- Tube and pipe OEMs

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

SUPPORTED SPRAY PROCESSES

- Twin wire electric arc spray

TYPICAL MATERIALS

- Zinc
- Aluminum
- Aluminum-zinc alloys (e.g., 85/15)
- Other arc-spray compatible wires

PERFORMANCE CHARACTERISTICS

- Coating thickness: application dependent
- Deposition rate: matched to line speed & coating requirement
- Duty cycle: designed for continuous production operation
- Coating consistency driven by synchronized spray & line motion

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

3. MECHANICAL & LINE INTEGRATION

SPRAY HEAD CONFIGURATION

- Arc spray guns mounted directly at the tube mill
- Fixed or adjustable mounting based on tube size range
- Designed for continuous inline operation

TUBE SIZE ACCOMMODATION

- Integration coordinated with mill tooling and guides
- Mechanical adjustability to accommodate size changes
- System configured to support specified tube diameter range

WIRE FEED SYSTEM

- AT-400 wire feeder configured for mill environments
- Optimized wire routing for reliability and minimal downtime
- Designed for rapid wire changeover and maintenance access

4. CONTROLS & AUTOMATION

CONTROLS PLATFORM

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

AUTOMATION & LINE COORDINATION

- Spray enable/disable synchronized w/ mill operation
- Interlocks tied to line speed and tube presence
- Coordinated startup and shutdown sequences

MONITORING

- System status and fault indication
- Basic process monitoring appropriate for continuous operation

SYSTEM INTEGRATION

- Arc spray power supply and wire feeder control
- Interface with tube mill controls (signals & interlocks)
- Dust collection system integration
- Safety system integration

5. INTEGRATED SAFETY & PROCESS CONTROL

SAFETY ARCHITECTURE

- Safety controlled through a dedicated Safety Controller
- Integrated safety system governing the arc spray station and enclosure
- Safety circuits coordinated with tube mill interlocks

STANDARD SAFETY FEATURES

- Fixed guarding and access door interlocks
- Emergency stops integrated with mill safety circuits
- Process interlocks preventing spray w/o tube presence
- Hydrogen detection in enclosure (when hydrogen is used as a process gas)

PROCESS CONTROL & INTERLOCKS

- Arc spray interlocked w/ tube presence & line motion
- Dust collector interlocked with spray operation
- Fault conditions triggering spray inhibit
- Alarm and system status indication to operators

INTEGRATED SUBSYSTEMS

- Arc spray equipment
- Dust collection
- Enclosures and guarding
- Utility and process interlocks

OPTIONAL SAFETY & MONITORING

Not all features are applicable to every installation

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

SAFETY COMMUNICATION

- Hardwired safety circuits (standard)
- Interface to mill safety circuits as required

6. ENCLOSURES, DUST COLLECTION & ENVIRONMENTAL CONTROLS

ENCLOSURES & GUARDING

- Inline spray enclosures designed for tube mill integration
- Partial or full containment depending on application
- Designed to allow continuous tube movement

NOISE CONTROL

- Acoustic attenuation designed to support OSHA noise exposure limits
- Noise performance dependent on enclosure design and process parameters

DUST COLLECTION

- Dedicated dust collection systems sized for continuous arc spray operation
- Dry or wet collection options (application dependent)
- Hood & ducting optimized for inline overspray capture
- Filter monitoring and maintenance access

7. UTILITIES, FOOTPRINT & INSTALLATION ASSUMPTIONS

UTILITIES (TYPICAL)

- Electrical power sized for arc spray power supply
- Compressed air for atomization & system functions
- Process gases as required by application
- Grounding per arc spray and mill requirements

INSTALLATION

- Thermach provides system integration, installation support, and commissioning
- Coordination with tube mill OEM or integrator required
- Customer-provided utilities and site preparation required unless otherwise specified

FOOTPRINT

- Inline footprint dependent on:
 - Tube diameter range
 - Spray station configuration
 - Enclosure and dust collection layout

8. COMMERCIAL & PROJECT ASSUMPTIONS

INCLUDED

- Integrated AT-400 Tube Mill arc spray system
- Mechanical, controls, and safety integration
- Factory acceptance testing (as applicable)
- Installation, commissioning, and operator training

STANDARDS REFERENCED: OSHA, NFPA, Applicable ANSI standards

APPLICATION DEPENDENT

- Coating thickness and performance
- Line speed capability
- Tube size range
- Environmental and safety feature selection