



WELD*SPRAY*

Welding Automation & Thermal Spray

Thermach Inc.

Thermal Spray and Machining

AT-400 Two Wire Arc Spray System

Imagine having the power of a 400 amp spray system with one-fifth the maintenance costs of regular systems. Thermach Inc. is proud to present the **AT-400 Wire Arc Spray System**, offering high performance and unbeatable power.

This specially designed system ensures low operator fatigue and significantly reduced maintenance costs. Because the **AT-400** system uses the "push" method, the driving force is a bigger, more robust wire drive motor located within the control console instead of the torch. Pull-type systems cannot offer the power or the lightweight (2.5lb.) torch of the **AT-400**.

Other features that the **AT-400 Wire Arc Spray System** offers are:

- Easy to use and maintain
- Low operator fatigue
- Patented quick change wire guide system
- Quick change wire drive rolls

Unique capabilities such as:

- Re-settable LCD wire counter
- Re-settable LCD timer
- Pre-flow and Burn back air adjustments
- Remote/Local Voltage/Amperage control
- Display hold adjustment



Thermach Inc.

Electric Arc Torches

Thermach's line of electric arc torches are designed and built to handle a wide range of jobs. From anti-skid coatings, surface build up or corrosion resistant coatings, Thermach has a torch that can handle the job. Built tough and designed to be long lasting, the torches are also easy to maintain.



Thermach's **standard torch** is light weight and useful in a wide range of applications. Whether spraying by hand, or mounted to a manipulator, this torch can handle the job with ease. With patented quick change wire guides, the torch is both easy to maintain and durable.

Standard torch features include:

- Light-weight for hand spraying applications (Optional control boxes available)
- Handles multiple wire feedstock sizes - 14 gauge, 11 gauge and 2mm (requires different wire guides)
- Sprays 14 gauge wire 10 feet and 11 gauge wire 15 feet from the console
- Wide selection of Air Caps to match desired coating
- Easily mounted for stationary or manipulation applications
- Also available in an 1/8" wire version
 - Designed for spraying corrosion resistant coatings
 - Sprays 1/8" zinc or harder 11 gauge wire feedstock



Thermach's **Push/Pull torch** is designed for installations where the coax cables between the console and the torch are longer than 10 feet. The drive mechanism in the torch provides tension on wire feed stock such as aluminum bronze and other soft wires. The extra assistance avoids situations where the wire feed stock has a tendency to "slinky" in the coax cables and cause downtime due to wire mis-feeding.

Push/Pull torch features include:

- Handles multiple wire feed stock sizes - 14 gauge and 2mm (requires different wire guides)
- Easily mounted for stationary or manipulation applications
- Stationary or manipulator mount



Thermach's line of **extension torches** allow narrow spray patterns for coating seams for tube mill applications, or when interior bore coatings are required.

Extension torch features include:

- Availability in 6, 12, 24, & 36" standard lengths
- Handles 14 gauge and 11 gauge wire sizes (requires different wire guides)
- Interior spray bore clearance down to a minimum of 3 1/4"
- Easily mounted for stationary or manipulation applications
 - The 6" extension is designed for narrow spray pattern, straight-ahead applications. Especially useful for tube mill applications
 - Optional radial air tube available for the 12, 24, and 36" extensions to achieve spray patterns up to 90°

Thermach Inc.

Electric Arc System Accessories

Thermach carries a selection of accessories for the AT-400 series to enhance productivity. These products provide mobility, dust protection and bulk wire feed options.



The AT-400 power supply running gear makes light work of a heavy task. With the addition of running gear, the power supply becomes mobile. With the AT-400 wire feeder placed on top of the power supply the system becomes a mobile work center.

- Easy to install
- Provides an easy way to manage the location of the power supply
- Becomes a mobile work center with an AT-400 wire feeder placed on top



The AT-400 wire feeder running gear turns the wire feeder into a portable and maneuverable work center. Allows easy positioning in a workspace or at a worksite.

- Easy to install
- Makes the AT-400 wire feeder easy to move



The AT-400 trigger handle for the standard torch

- Easy to install
- Provides an easy method of hand spraying with the standard torch
- Large switch on front to control whether the system is spraying material or cooling air only

Thermach Inc.

AT-3000 Plasma Control System



The AT-3000 Plasma Control System is designed with all considerations towards user-friendly and safe operation. Using PLC and Touchscreen control, the user can take advantage of many features that aid in the plasma process, such as: automatic start-up and shutdown sequences, an hour meter and settable maintenance alarm, and a series of built-in process alarms and warnings.

The system is designed with safety in mind, such that the AT-3000 can safely run Hydrogen as a secondary gas. The AT-3000 features a built-in user-operated Safety Purge System. This purge system allows a user to power up the console into a safe condition. All of the components of the system are designed so that all electrical signals and power entering and leaving the AT-3000 console during purging are deactivated. This insures that a dangerous condition prior to purging does not exist. From alarm and warning settings that include automatic safety shutdown sequences, to external components that send alarm feedback to the console, the AT-3000 system is designed with safety and ease of use in mind.

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Standard features include:

- Wall mounted console
- Built-in user-operated Safety Purge System (Class 1 Division 2 Type Z Purging, per NFPA 496)
- Booth and Emergency Stop Interconnections
- Critical Orifice Gas Flow Control
 - Argon/Nitrogen Primary Gas Control
 - Helium/Hydrogen Secondary Gas Control
 - Two Argon/Nitrogen Carrier Gas Controls
- Touchscreen/PLC Control of System Functions
 - Automatic Process Start and Stop
 - Alarms and Warnings with Automatic Safety Shutdown Sequences
 - Closed Loop Amperage Control
 - Dual Powder Feeder Control
 - Controls two Powder Feeders separately or simultaneously
 - Closed Loop RPM Control (when using 0-15 RPM AT-1200 Powder Feeders)
- Process hour meter with settable maintenance alarm
- 44kW Power Supply (1000 Amps at 44 Volts, 100% duty cycle)
- 10 Ton Heat Exchanger with alarm feedback to console
- Solid State High Frequency Arc Starter
- Built-In Gun Voltage Sensing

Optional Features/Equipment:

- 96kW Power Supply
- Manipulation/Robot Interface
- Wheeled Console Cart



AT-1200 Rotary Powder Feeder

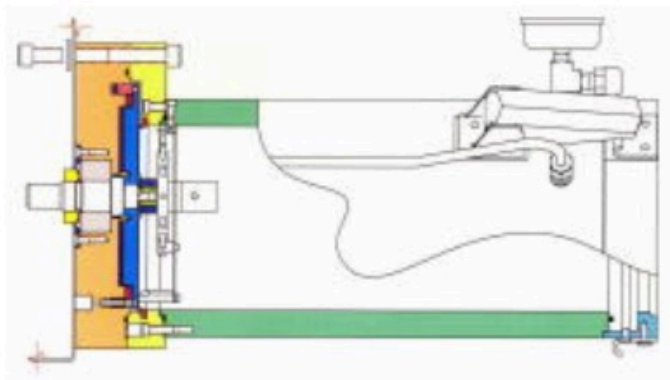
Achieve unmatched quality and dependability with Thermach's **AT-1200 Rotary Powder Feeder**. Utilizing proven technology and electrical controls, the **AT-1200** is inexpensive and reliable. The heart of the electrical controls is the digital closed-loop controller which offers precise and consistent wheel speed. To set the wheel speed, simply enter the desired speed into the controller. When the AT-1200 is switched to Feed Mode, the powder wheel will ramp up to the set speed, holding that speed very accurately. Speed is displayed in revolutions per minute (RPM).

The **AT-1200 Rotary Powder Feeder** offers a variety of features, including:

- Plasma & HVOF capable
- 15 RPM Motor (Standard), 32 RPM (Available)
- Closed-loop wheel speed control
- 90 PSI (621 kPa / 6.2 bar) maximum pressure
- 115 VAC (Standard), 230 VAC (Available) & 50 / 60Hz capable
- 205 cubic inch capacity (3359 ml)
- Remote control capable
- +/- 2% feed accuracy



The **AT-1200 Rotary Powder Feeder** implements common parts in it's canister assembly, such as:



- Powder Wheels
- Bearings
- O'Ring & Felt Ring Kits
- Wiper Rings
- Powder Sleeves & Surface Rings
- Tamper Assembly Parts
- Upper & Lower Housings
- Windows, Window Rings, & Latches

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AT-1200 High Pressure Rotary Powder Feeder

Thermach's **AT-1200HP Rotary Powder Feeder** is designed specifically for HVOF systems. This powder feeder is similar in design to the **AT-1200**, implementing the same durable electrical controls and proven reliability. The difference, however, lies in the canister assembly, where several upgrades have been made to create the **AT-1200HP's** canister design. These upgrades raise the maximum canister pressure to 150 PSI. The ability to handle this pressure allows the **AT-1200HP** to be used with HVOF systems that normally could not use the current design of rotary powder feeder. An additional benefit to this design is that maintenance parts, such as powder wheels, surface rings, wiper rings, etc., which are used on the **AT-1200** and other similar powder feeders, are interchangeable with the **AT-1200HP**.

Features of the **AT-1200HP Rotary Powder Feeder** include:

- 32 RPM Motor (Standard)
- Closed-loop wheel speed control
- 150 PSI (1034 kPa / 10.3 bar) maximum pressure
- 115 VAC (Standard), 230 VAC (Available) & 50 / 60Hz capable
- 205 cubic inch capacity (3359 ml)
- Remote control capable
- +/- 2% feed accuracy



Thermach Inc.

AT-1200HP Extended Capacity Rotary Powder Feeder

Thermach's **AT-1200HP Extended Capacity Rotary Powder Feeder** is designed specifically for HVOF systems where extra powder capacity is required. The AT-1200HP Extended Capacity has all of the same features of the AT-1200HP, but provides an additional 108 cubic inches of powder capacity for a total of canister volume of 312 cubic inches. The additional capacity minimizes the downtime for refilling the canister during long operations. As in the case of the **AT-1200HP**, maintenance parts such as powder wheels, surface rings, wiper rings, etc., which are used on the **AT-1200** and other similar powder feeders, are interchangeable with the **AT-1200HP Extended Capacity**.

Features of the **AT-1200HP Rotary Powder Feeder** include:

- 32 RPM motor (Standard)
- Closed-loop wheel speed control
- 150 PSI (1034 kPa / 10.3 bar) maximum pressure
- 115 VAC (Standard), 230 VAC (Available) & 50 / 60Hz capable
- 312 cubic inches capacity (5112)
- Remote control capable
- +/- 2% feed accuracy



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AT-1200 High Pressure High Volume Rotary Powder Feeder

The **AT-1200HPHV Rotary Powder Feeder** is designed for thermal spray applications where extra powder capacity and up to 500 PSI of back pressure will be encountered. This powder feeder is similar mechanically and electrically to the **AT-1200** and **AT-1200HP**. The significant difference is in the design of the canister, lid, and housings. This design brings the maximum canister pressure to 500 PSI, granting the **AT-1200HPHV** the ability to be used with HVOF and cold spray systems. As with all of Thermach's powder feeders, maintenance parts, such as powder wheels, surface rings, wiper rings, etc., which are used on the standard **AT-1200** and other similar powder feeders, are interchangeable.

For added safety, each **AT-1200HPHV** canister assembly is U-Stamped, signifying it was built and approved per the American Society of Mechanical Engineers Boiler and Pressure Vessel Code. Also, each canister assembly is registered as U-Stamped with the National Board of Boiler and Pressure Vessel Inspectors.

Features of the **AT-1200HPHV Rotary Powder Feeder** include:

- 15 RPM Motor (Standard), 32 RPM (Available)
- Closed-loop wheel speed control
- U-Stamped for 500 PSI (3447 kPa / 34.5 bar) maximum pressure
- 115 VAC (Standard), 230 VAC (Available) & 50 / 60Hz capable
- 464 cubic inch capacity (7603 ml)
- Remote control capable
- +/- 2% feed accuracy
- Each **AT-1200HPHV** is made to order.



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AT-1200 Extreme High Pressure Rotary Powder Feeder

The **AT-1200VFHP Rotary Powder Feeder** has been designed for cold spray applications where back pressure of up to 1000 PSI might be encountered. This powder feeder is similar mechanically and electrically to the **AT-1200** and **AT-1200HP**. The significant difference is in the design of the canister, As with all of Thermach's powder feeders, maintenance parts, such as powder wheels, surface rings, wiper rings, etc., which are used on the standard **AT-1200** and other similar powder feeders, are interchangeable.

For added safety, each **AT-1200VFHP** canister assembly is U-Stamped, signifying it was built and approved per the American Society of Mechanical Engineers Boiler and Pressure Vessel Code. Also, each canister assembly is registered as U-Stamped with the National Board of Boiler and Pressure Vessel Inspectors.

Features of the **AT-1200HPHV Rotary Powder Feeder** include:

- 32 RPM motor (Standard)
- Closed-loop wheel speed control
- U-Stamped for 1000 PSI (6894.8 kPa / 68.9 bar) maximum pressure
- 115 VAC (Standard), 230 VAC (Available) & 50 / 60Hz capable
- Canister volume of 205 cubic inches (3359 ml)
- Remote control capable
- +/- 2% feed accuracy
- Each **AT-1200VFHP** is made to order.



Thermach Inc.

AT-1210 Rotary Powder Feeder

The **AT-1210 Rotary Powder Feeder** is designed for the laser cladding industry. This powder feeder is similar mechanically to the **AT-1200** and **AT-1200HP** models. The significant differences are the high precision controller and high resolution encoder. As with all of Thermach's powder feeders, maintenance parts, such as powder wheels, surface rings, wiper rings, etc., which are used on the standard **AT-1200** and other similar powder feeders, are interchangeable.

Features of the **AT-1210 Rotary Powder Feeder** include:

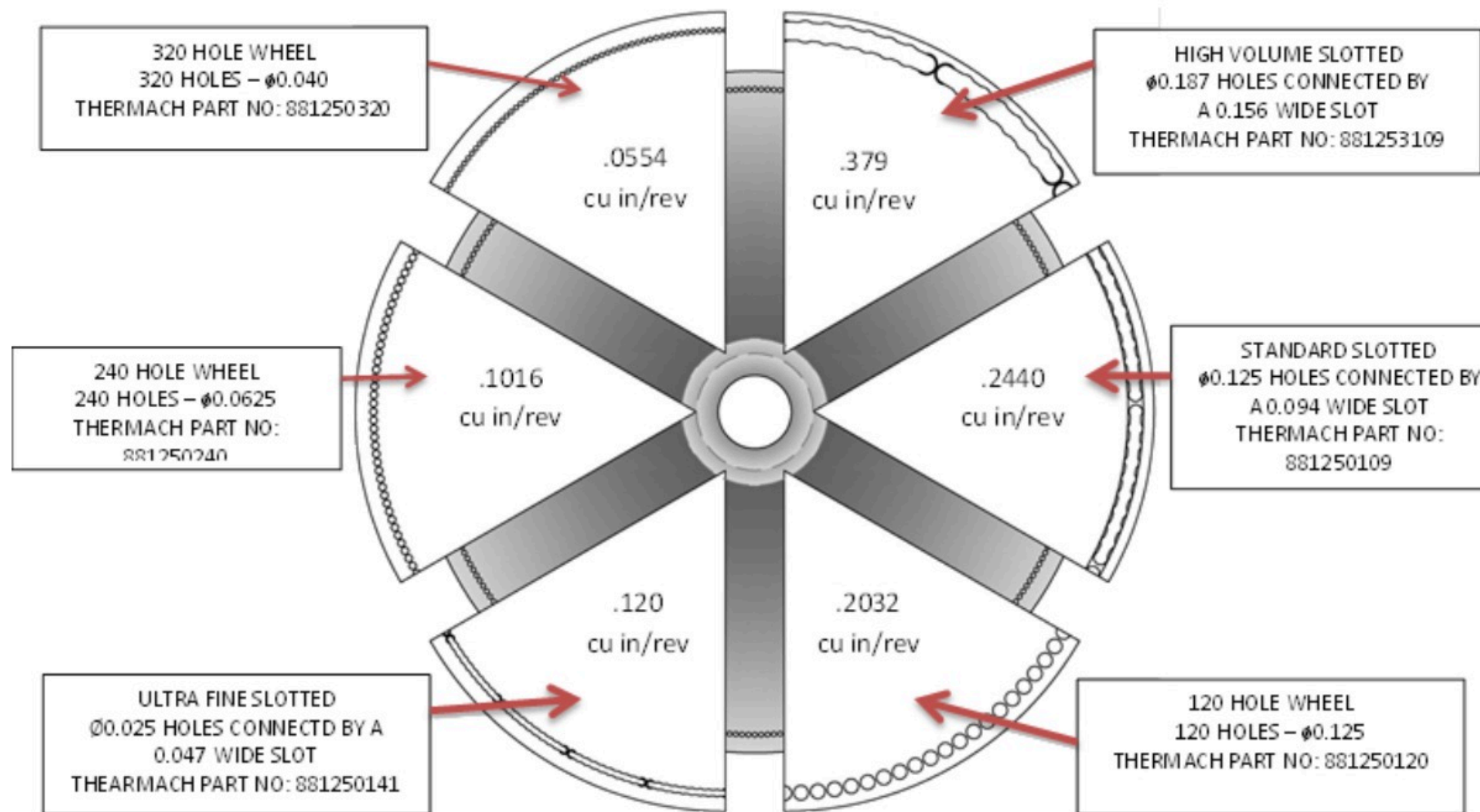
- 15 RPM Motor (Standard), 1.3 RPM (Available)
- 100 PPR encoder for increased resolution
- Closed-loop wheel speed control
- 90 PSI (621 kPa / 6.2 bar) maximum pressure
- 115 VAC (Standard), 50 / 60Hz capable
- 205 cubic inch capacity (3359 ml)
- Remote control capable



Thermach Inc.

Powder Wheel Options

Thermach offers a line of powder wheels to accommodate virtually any application for which a rotary powder feeder would be used.



Thermach Inc.

AT-6000 Weight Loss System

The **AT-6000** Scale System, a closed-loop weight-loss control that is compatible with our AT-1200 series powder feeders. When combined together, the **AT-6000** monitors weight-loss over a given time and corrects powder feeder rpm to achieve feed rate set point within a tolerance of +/-2 grams per minute from a full to an empty canister.

Features of the **AT-6000 Weight Loss System** include:

- PLC based system
- Easy to use touch window interface
- Accurate feed rate calculated on weight loss
- Vibration tolerant
- Standalone operation capable
- Compatible with the AT-3000 console
- Compatible with AT-1200, AT-1200HP and AT-1210 rotary powder feeders

To learn more about the **AT-6000 Weight Loss System**, please call [\(920\) 779-4299](tel:9207794299), or contact us by [email](#).

[Click here to see examples of Powder Feeder Consumables that Thermach has to offer.](#)

Download the **AT-1200 Rotary Powder Feeder** sales [brochure](#) in .pdf format now.



Thermach Inc.

AT-123x / AT-1245 Controllers

Thermach offers a comprehensive line of easy to use stand-alone and remote controllers. Whether a powder feeder is used in a stand-alone configuration, with a console that doesn't provide Feed On/Wheel speed and/or carrier gas control, or a powder feeder needs to be controlled from a remote location, the **AT-123x and AT-1245 series** of controllers can reliably handle the task.



The **AT-1230** is a gas flow controller. The **AT-1230** meters gas flow integrating a pressure control regulator, a pressure gauge, and a critical orifice in one easy to use package.

Features of the **AT-1230 Gas Flow Control** include:

- Designed for Thermach Powder Feeders
- 0-250 PSI using an inert gas supply only
- Critical orifice control 0-160 PSI
- Control Gas Hose and Feed On/Off Control Cable included



The **AT-1231** is a closed-loop remote wheel speed controller for use with rotary powder feeders. The **AT-1231** controls both Feed On/Off functions and wheel speed.

Features of the **AT-1231 Wheel Speed Control** include:

- Designed for Thermach Powder Feeders
- No external power required
- Feed On/Off and Wheel Speed Control Cable included



The **AT-1245** is a HVOF carrier gas flow control designed to interface an AT-1200HP rotary powder feeder with the Diamond Jet® HVOF gun. The **AT-1245** controls the flow of carrier gas to the powder feeder.

Features of the **AT-1245 Wheel Speed Control** include:

- Designed for Thermach Powder Feeders
- 0-250 PSI using an inert gas supply only
- Rotameter controlled 0-45 SCFH at 150 PSI gauge pressure
- Control Gas Hose and Feed On/Off Control Cable included

Thermach Inc.

Plasma Torches

Thermach offers a line of robust and proven **plasma torches** with plenty of options. The SG100 is offered in standard, 90° and interior diameter extension configurations.



The **SG-100** robust and versatile plasma torch. The **SG-100** is multimode and can spray subsonic, Mach I and Mach II - depending on hardware.

Features of the **SG-100** include:

- Easy to maintain - self aligning assembly
- Repeatable coatings
- Flexible powder injection; internal or external
- A wide variety of anode, cathode and gas injectors to match application requirements
- Subsonic, Mach I and Mach II spray velocities
- 80KW capability
- Suitable for Production and Research

The **90 Degree SG-100** is robust and versatile like the standard SG-100. The difference is that the **90 Degree SG-100** has all hose connections perpendicular to the spray stream. This allows for additional flexibility for spraying both exterior and interior spray applications.

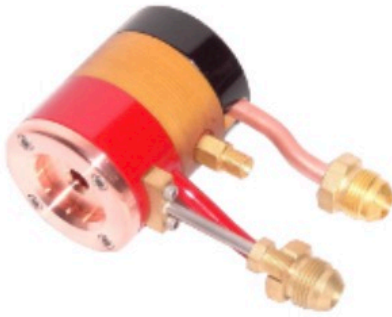
Features of the **90 Degree SG-100** include:



- Easy to maintain - self aligning assembly
- Repeatable coatings
- Hoses are perpendicular to the spray stream, making a more compact profile for interior spray applications
- Anodes, cathodes and gas injectors are the same as the SG-100 to match application and parameter requirements
- Flexible mounting for spraying interior and exterior surfaces
- Excellent choice for larger transition ducts
- Flexible powder injection; internal or external
- Subsonic, Mach I and Mach II spray velocities
- 80KW capability
- Suitable for Production and Research

Thermach Inc.

The **90 Degree SG-200** is a compact single mode plasma torch. The **SG-200** has all hose connections perpendicular to the spray stream. This allows both exterior and interior spray configurations.



Features of the **90 Degree SG-200** include:

- Easy to maintain - self aligning assembly
- Repeatable coatings
- Hoses are perpendicular to the spray stream, making a more compact profile for interior applications down to 5"
- Compact size
- 40KW capability
- Suitable for Production and Research

The **2700 Extension** converts an SG-100 into an interior 20KW extension torch. Customers can gain the capability of spraying small interior diameters by adding the **2700 Extension** to an existing SG-100 torch.

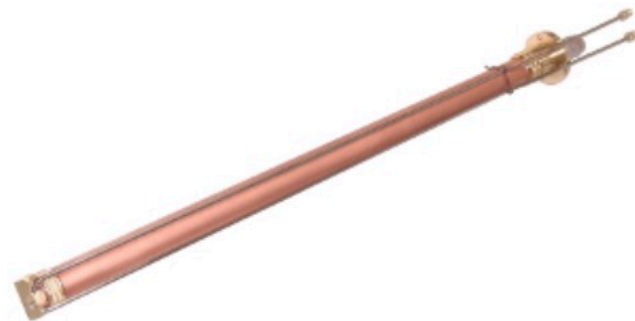


Features of the **2700 Extension** include:

- Easy to maintain - self aligning assembly
- Repeatable coatings
- Capable of spraying interior applications down to 1.5"
- Available in 12" and 24" standard lengths, and custom lengths from 6" to 72"
- Available spray patterns are straight ahead, 45° or 60° angles
- 20KW capability
- Suitable for Production and Research

The **2086 Extension** converts an SG-100 into an interior 40KW extension torch. Customers can gain the capability of spraying small interior diameters by adding the **2086 Extension** to an existing SG-100 torch.

Features of the **2086 Extension** include:



- Easy to maintain - self aligning assembly
- Repeatable coatings
- Capable of spraying interior applications down to 2.75"
- Available in 12" and 24" standard lengths, and custom lengths from 6" to 72"
- Available spray patterns are straight ahead, 45° or 60° angles
- 40KW capability
- Suitable for Production and Research

Thermach Inc.

AT-8000 HVOF Control System



The AT-8000 HVOF Control System is designed with all considerations towards user-friendly and safe operation. Using PLC and Touchscreen control, the user can take advantage of many features that aid in the HVOF process, such as: automatic start-up and shutdown sequences, an hour meter and settable maintenance alarm, and a series of built-in process alarms and warnings.

The system is designed with safety in mind, such that the AT-8000 can safely run Hydrogen or Propylene as a fuel gas. The AT-8000 features a built-in user-operated Safety Purge System. This purge system allows a user to power up the console into a safe condition. All of the components of the system are designed so that all electrical signals and power entering and leaving the AT-8000 console during purging are deactivated. This insures that a dangerous condition prior to purging does not exist. From alarm and warning settings that include automatic safety shutdown sequences, to external components that send alarm feedback to the console, the AT-8000 system is designed with safety and ease of use in mind.

Standard features include:

- Built-in user-operated Safety Purge System (Class 1 Division 2 Type Z Purging, per NFPA 496)
- Booth and Emergency Stop Interconnections
- Rotameter Gas Flow Control
 - Oxygen Gas Control
 - Hydrogen/Propylene Fuel Gas Control
 - Argon/Nitrogen Carrier Gas Control
- Touchscreen/PLC Control of System Functions
 - Automatic Process Start and Stop
 - Alarms and Warnings with Automatic Safety Shutdown Sequences
 - Powder Feeder Control with Closed Loop RPM Control (when using 0-15 RPM AT-1200 Powder Feeders)
- Process hour meter with settable maintenance alarm
- 10 Ton Heat Exchanger with alarm feedback to console

Optional Features/Equipment:

- Automatic Flame Ignition
- Automatic Flame Detection



Thermach Inc.

Consumables

Thermach Inc. is an in-house manufacturer of thermal spray consumables for arc spray, plasma, HVOF, and powder feeders. Our highly qualified personnel and fully equipped manufacturing facility produce parts with precision quality at competitive prices. Thermach provides consumable parts that fit Plasmadyne, Miller Thermal/Praxair, TAFA, and Metco equipment, including: *SG100, SG200, 2086 Extension, HV2000, BP-400, and many more. Thermach is also capable of providing hose and cable assemblies, including gas and powder hoses, SG100/SG200 water cooled cables, control cables, and BP-400 coaxial cables.



Arc Spray Consumables



Powder Feeder Consumables



Plasma Spray Consumables



HVOF Consumables

Thermach Inc.

Consumables - Arc

Just a small sample of the line of consumables available from Thermach



BP-400/AT-400
High Velocity Air Caps



BP-400 Air Cap & Shield



BP-400 Wire Guides



Wire Drive Rolls



AT-400 Fan Spray Air Cap



Patented AT-400
Wire Guides



BP-400 Torch Replacement



BP-400 Coaxial Cables

Other consumables include:

- Coaxial Cable Liner
- Control Cables
- Power Cables
- Air Hoses
- Drive Housing Wire Guides

Thermach Inc.

Consumables - Powder Feeders

Thermach has a complete line of Powder Feeder parts and consumables available



Powder Wheels



Tamper Assemblies



Canister Drive Shafts



Drive Shaft Bearings



Replacement Parts



Dump Valves



Canisters, Latches
& Window Rings



Upper and Lower Housings



Powder Hoses



Powder Hose Y Connectors



Heater Blankets

Thermach Inc.

Consumables - Plasma

Thermach has a complete line of Plasma Spray parts and consumables available



SG100 Anodes



SG100 Cathodes



SG100 Gas Injectors



External Injection
Cover Plate



SG100 Maintenance Kit



SG200 Hardware



Powder Port
Tubes



2086 Anodes



2700 Anode and Cathode



SG100 Gas Shroud



Powder Hoses



Powder Y Connector



Water Cooled Cables



SG100 Cooling Wand



IRB1400/IRB2400
SG100 Brackets

Thermach Inc.

Consumables - HVOF

Thermach has a complete line of parts and consumables available for HVOF



HV2000 Assembly



HV2000 Mixers



HV2000 Nozzles



HV2000 Water Dividers



HV2000 Distribution
Blocks



HV2000 Flashback Arrestors



TJ5 Nozzles

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WELDSPRAY

Welding Automation & Thermal Spray

Thermach Inc.

Thermal Spray and Machining