



*"SERVICE IS EVERYTHING"*

April 25, 2023

Puget Sound Clean Air Agency  
1904 3<sup>rd</sup> Ave. # 105  
Seattle WA 98101

Attn:

Air Quality Engineer  
Desk: (206) 343-8800  
pscleanair.gov

Subject: Bonney – Watson Memorial Park  
16445 International Blvd.  
Sea-Tac, WA 98188

Re: Remove Old Matthews PP II and Replace with  
New American A-250-Instant Access

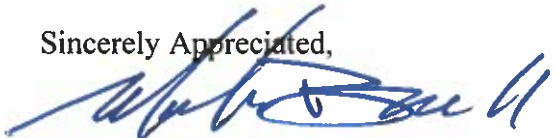
Please find the enclosed subject's application for "Minor Permit Revision" at the above location. We are proposing a new installation of an A-250- Instant Access.

We would like to expedite this permit application.

Please direct correspondence to Mike Burwell at American Crematory Equipment Co. and please notify Mr. Burwell when the application has been approved at (562) 926-2876

We thank you for all your assistance, please feel free to call us if you have any questions.

Sincerely Appreciated,



Mike Burwell  
CEO



## NOC APPLICATION SUPPLEMENTAL FORM

### Cremation Units

This application is for activities or equipment that is (check all that apply):

- ☒ New (including existing, unpermitted equipment)  
☒ Physical or operational modification of existing equipment  
☐ Relocation of existing equipment

Estimated date to begin construction: 2/1/23 Estimated date to startup: 5/30/23

Manufacturer: American Crematory Model: A-250- Instant Access

Number of Crematory Compartments:

- ☐ Single Compartment  
☒ Multiple Compartments (total number: 2 Chamber)

Type of Fuel: ☒ Natural Gas ☐ Fuel Oil ☐ Other: \_\_\_\_\_

### Cremation Unit Type

- ☒ Human Crematory ☐ Animal Crematory

### Primary Chamber

Max. Heat Input Rating (MMBtu/hr): 600,000

Operating Temperature (°F): 1500-1600

### Secondary Chamber

Max. Heat Input Rating (MMBtu/hr): 1.2

Operating Temperature (°F): 1500-1600

Average Residence Time (secs): 2.0

*If the unit has multiple compartments with different sizes and operating conditions, please attach this information for each compartment.*

## Cremation Units

### Operating Data

Maximum Processing Rate (lbs/hr): 125-190

Maximum Single Load Charge (lbs): 775

Estimated Annual Throughput (tons per year): \_\_\_\_\_

Maximum Number of Cases per Day: 7

Normal Operation 8 hours/day 7 days/week 50 weeks/yr

Maximum Operation 10 hours/day 7 days/week 52 weeks/yr

### Monitoring Device Information

Thermocouple to continuously monitor secondary chamber temperature installed? ☒ Yes ☐ No

If yes, provide the thermocouple calibration or replacement frequency: yearly

Opacity monitoring system installed? ☒ Yes ☐ No

### Stack Parameters

Stack diameter: 20 inches

Stack height above ground: 23 feet

Exhaust Flow Rate: 1952 acfm

Exhaust Temperature: 800 °F

### Building Dimensions of Project Location

Building Height (highest point of roof) 12 ft

Building Width 20 ft

Building Length 40 ft

### Required Attachments

1. Facility layout diagram showing location of the source (and its stack), associated buildings, and property lines.
2. Manufacturer specification sheet for cremation unit.

**HEREBY ISSUES AN ORDER OF APPROVAL  
TO CONSTRUCT, INSTALL, OR ESTABLISH**

Registration No. 29111

Date **OCT 14 2015**

**One Matthews Power-Pak II Cremator, rated at 100 lb/hr and 1.7 MMBtu/hr natural gas.**

**APPLICANT**

**Dean Smith  
Bonney-Watson Washington Memorial Park  
16445 International Blvd  
Sea-Tac, WA 98188**

**OWNER**

**Dean Smith  
Bonney-Watson Washington Memorial Park  
16445 International Blvd  
Sea-Tac, WA 98188**

**INSTALLATION ADDRESS**

**Bonney-Watson Washington Memorial Park, 16445 International Blvd, SeaTac, WA 98188**

**THIS ORDER IS ISSUED SUBJECT TO THE FOLLOWING RESTRICTIONS AND CONDITIONS**

1. Approval is hereby granted as provided in Article 6 of Regulation I of the Puget Sound Clean Air Agency to the applicant to install or establish the equipment, device or process described hereon at the **INSTALLATION ADDRESS** in accordance with the plans and specifications on file in the Engineering Division of the Puget Sound Clean Air Agency.
2. This approval does not relieve the applicant or owner of any requirement of any other governmental agency.
3. This crematory is authorized for 24 hour per day operation with a properly installed and operated opacity monitoring and alarm system linked to the combustion control system. Each alarm condition and machine/operator response shall be logged. In addition to local and remote alarms, the system will perform an automatic primary burner shutdown whenever visible emissions greater than 20% opacity (Ringelmann No.1) persists for a period of two minutes.
4. When the unit is in operation, afterburner 1-minute average temperatures shall be measured and logged automatically. Afterburner operating temperature shall be available for instantaneous readout by Puget Sound Clean Air Agency (Agency) personnel at any time.
5. The owner or operator shall maintain the operating temperature in the secondary chamber (afterburner) at or above 1,600 °F during the cremation mode.
6. Temperature sensor calibration shall be performed every 2,000 hours of operation or once every twelve months, whichever comes first. The owner or operator shall keep records of the date and results of each calibration along with a record of who performed it. If the thermocouple is replaced, the owner or operator shall keep a record of the date it was replaced and who replaced it.
7. In the event of a temperature sensor or electronic controller failure, no additional cases may be processed until the defective unit is fixed or replaced. Such failures, the corrective actions taken, and periodic maintenance on these sensors/controls shall be logged.
8. There shall be no visible emissions from the crematory.

# Order of Approval for NC No. 10187

OCT 14 2015

9. The facility shall record, and management shall investigate, complaints received regarding air quality as soon as possible, but no later than one working day after receipt. The facility shall correct any problems identified as attributable to the facility within 4 hours of such investigation or discontinue use of any defective equipment until repairs are made.
10. Manuals, Logs, and other Records – The manufacturer's recommended operation and maintenance manual, and the facility's O&M manual required by Clean Air Regulation I, Section 5.05(c), shall be maintained onsite as long as this cremation unit remains onsite. A copy of the most recent two years accumulation of the following logs shall be maintained onsite and made available for inspection to Puget Sound Clean Air Agency personnel upon request. The logs may be written, electronic or any combination that will satisfy the conditions of this Approval, but must include:
  - a. Crematory Operations and Afterburner Temperature Logs
  - b. Alarm Condition and Corrective Action Log
  - c. Calibration and Testing Log
  - d. Facility Complaint Log
11. This Order of Approval No. 10187 supersedes and cancels Order of Approval No. 9646 dated November 2, 2007.

## APPEAL RIGHTS

Pursuant to Puget Sound Clean Air Agency's Regulation I, Section 3.17 and RCW 43.21B.310, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon Puget Sound Clean Air Agency within 30 days of the date the applicant receives this Order.



Claude Williams  
Reviewing Engineer



Carole Cenci  
Senior Engineer

# Bonney-Watson Memorial Park

Replace Matthews PP-II with American A-250-Instant Access

- Legend**
- 16445 International Blvd
  - Stack

Stack

16445 International Blvd

S 165th St  
S 166th St

Google Earth

200 ft





## A-250

### TALE OF THE TAPE

|               |               |
|---------------|---------------|
| Length        | 15'8" (4.57m) |
| Width         | 6'9" (2.06m)  |
| Height        | 8'4" (2.5m)   |
| Door Width    | 45" (1.14m)   |
| Weight        | 28,000 Lbs.   |
| Case Capacity | 600 Lbs.      |

AMERICANCREMATORY.COM

#### AVAILABLE OPTIONS

##### STAINLESS STEEL OPTIONS



BRUSHED



STAMPED



DIAMOND

8'4"  
(2.5m)

45"  
(1.14m)

6'8.5"  
(2.0m)

5'10" (1.78)  
6'9" (2.06m) w/panel

15'8"  
(4.57m)



# A-250



"SERVICE IS EVERYTHING"

## A-250 Model Specifications

1. Equipment
  - A-250
2. Operating System Options
  - ACS-1 PLC & Touch Screen Operating System
  - GUARDIAN DAS Operating System
  - Instant Access Operating System
  - Aries Operating System
  - Unified Operating System
3. Dimensions
  - Footprint..... 13'4"x 5'10"
  - Length..... 15' 8"
  - Width W/Panel..... 6' 9"
  - Height W/ Door Hood..... 8' 4"
  - Chamber Loading Opening..... 28"x 45"
4. Weight = 28,000 Lbs.
5. Utility/Air Requirements
  - Gross Gas Input, Natural, or LP GAS..... 1.8 Million BTU/Hr. Max. Input
  - Running Gas Pressure, Natural Gas..... 12-14" W.C. or Greater
  - Running Gas Pressure, LP Gas..... 11" W.C. or Greater
  - Electrical Supply..... 208/220 Volt, 3 Phase or Single Phase, 60 HZ
  - Air Supply..... 2,500 cfm
6. Cremation Capacity..... 190 lbs./Hr.
7. Typical Loading Capacity of Waste Types
  - Type 4 Material..... 700-750 lbs.
8. Construction and Safety Standards
  - UL & NFPA 86
9. Steel Structure Construction
  - Frame..... 2"x 2" Square Tubing
  - Front/Rear Plates..... 3/8" Plate
  - Exterior Side Casing..... 12 Gauge Hot Rolled Sheet
  - Interior Casing..... 12 Gauge Hot Rolled Sheet



"SERVICE IS EVERYTHING"

10. Stack Construction

- Carbon Steel or Stainless Steel (Optional)..... 14 Gauge Seal Welded Seams
- Refractory Lining..... 4.5" 2800 Degree Castable
- Stack Weight..... 1000 Lbs.

11. Venturi Construction

- 310 Stainless Steel Dual Wall Welded Construction

12. Main Chamber Door

- Carbon Steel ..... 1/4" Plate
- Door Seal..... 4" Ceramic Fiber Construction
- Refractory Lining..... 2800 Degree Insulating Castable

13. Primary Chamber Wall Construction

- Exterior Casing Wall..... 12 Gauge Hot Rolled Sheet
- Interior Frame/Cavity..... 2" Heat Dissipation & Insulation Cavity
- Interior Casing Wall..... 12 Gauge Hot Rolled Sheet
- Interior Refractory Wall Insulation..... 5" 1900 Degree Insulating Block
- Interior Refractory Walls (Combination Wall) ..... 9" x 4.5" x 2.5" 3200 Degree **Super Duty** Firebrick & 2600 Degree Insulating Fire Brick (Optional Interlocking Fire Brick Available)

14. Secondary Chamber Wall Construction

- Exterior Casing Wall..... 12 Gauge Hot Rolled Sheet
- Interior Frame/Cavity..... 2" Heat Dissipation & Insulation Cavity
- Interior Casing Wall..... 12 Gauge Hot Rolled Sheet
- Interior Refractory Wall Insulation..... 6" 1900 Degree Insulating Block
- Interior Refractory Walls (Combination Wall)..... 9" x 4.5" x 2.5" 3000 Degree **Super Duty** Firebrick & 2600 Degree Insulating Fire Brick

## 15. Refractory Temperature Ratings

- Super Duty Firebrick..... 3,200 Degrees F
- Insulating Firebrick..... 2,600 Degrees F
- Castable Refractory (Hearth)..... 3,200 Degrees F
- Castable Refractory (Arch Roof)..... 3,000 Degrees F
- Insulating Block..... 1,900 Degrees F
- Brick Mortar..... 3,200 Degrees F

## 16. Chamber Volumes (Not Including External Flues, Stacks, or Chimneys)

- Primary Chamber to Thermocouple.....96 Cubic Ft
- Afterburner Chamber to Thermocouple..... 84 Cubic Ft

## 17. Emission Control Features

- Secondary Chamber Afterburner..... Standard
- Opacity Monitor and Combustion Control with Visual and Audible Alarms.....  
Optional/As Required
- O2 Monitoring and Control..... Optional
- Combustion Air Control System..... Standard
- Temperature Control System..... Standard
- Fuel to Air Ratio Input Control System..... Standard

## 18. Operating Temperatures

- Primary Chamber..... 1,550°F – 1,750°F
- Secondary Chamber..... 1,650°F – 1,850°F

## 19. Secondary Chamber Retention Time

- Type 4 material..... 190 lbs./hr.
- Retention time..... 2.52 Seconds

## 20. Safety Interlocks

- High Gas Pressure..... Standard
- Low Gas Pressure..... Standard
- Dual (normally closed) Safety Shut Off Single Housing Gas Valve. Standard
- Blower Air Pressure..... Standard
- Door Position..... Standard
- Opacity..... Standard
- Motor Starter Function..... Standard
- Hydraulic Door System Motor Starter..... Standard
- Afterburner Chamber Temperature Recorder..... Standard
- Low Fire Hold (Cremation Chamber)..... Standard

- Motor Starter Overloads..... Standard
- Proof of Closure Afterburner & Cremation Burner..... Standard
- Flame Safeguard ..... Standard
- Combustion Monitoring and Diagnostics..... Optional
- 21. Burner Description ..... High Velocity, Low NOx, Nozzle Mix, Amerijet Burners
- 22. Ultraviolet Flame Detection..... Standard
- 23. Operating Panel Indication Switch & Lights
  - Blower Start..... Standard
  - Safe Run..... Standard
  - Door Closed..... Standard
  - Opacity Alarm..... Standard
  - Afterburner (Secondary Burner) On/Off..... Standard
  - Cremation Burner (Primary Burner) On/Off..... Standard
  - Temperature Control Afterburner/Hi Limit..... Standard
  - Afterburner Flame Fail (Secondary Burner) Reset..... Standard  
(Remote Reset on Electromechanical Models)
  - Cremation Burner Process Temperature Control..... Standard
  - Cremation Burner Flame Fail (Primary Burner)..... Standard  
(Remote Reset on Electromechanical Models)
  - Hearth Air On/Off..... Standard
  - Throat Air On/Off..... Standard
- 24. Automatic Process Control
  - Master Cycle Timer..... Standard
  - Afterburner (Secondary Burner)..... Standard
  - Cremation Burner (Primary Burner Delay)..... Standard
  - Heart Air (Delay)..... Standard
  - Throat Air (Delay)..... Standard
  - Emissions Monitoring & Recording..... Optional/As Required
  - Afterburner (Secondary Burner) Purge ..... Standard
  - Cool Down Timer..... Standard
  - Opacity Combustion Control System..... Standard

25. Manual Process Control

- Throat Air Potentiometer
- Hearth Air Potentiometer

26. Removal

- Front End Hopper Which Funnel to Isolated Collection Pan.

27. Exterior Finish

- Primer..... 2 Coats Rust Inhibiting
  - Finish..... 2 Coats Zolatone
- Standard Gray (Optional Colors Available)

28. Start-up and Training..... Startup of cremation equipment and training of the operators to properly maintain and operate the equipment is performed on-site under actual operating conditions. Included is an owner's manual with details on the equipment, it's components, and proper operation.

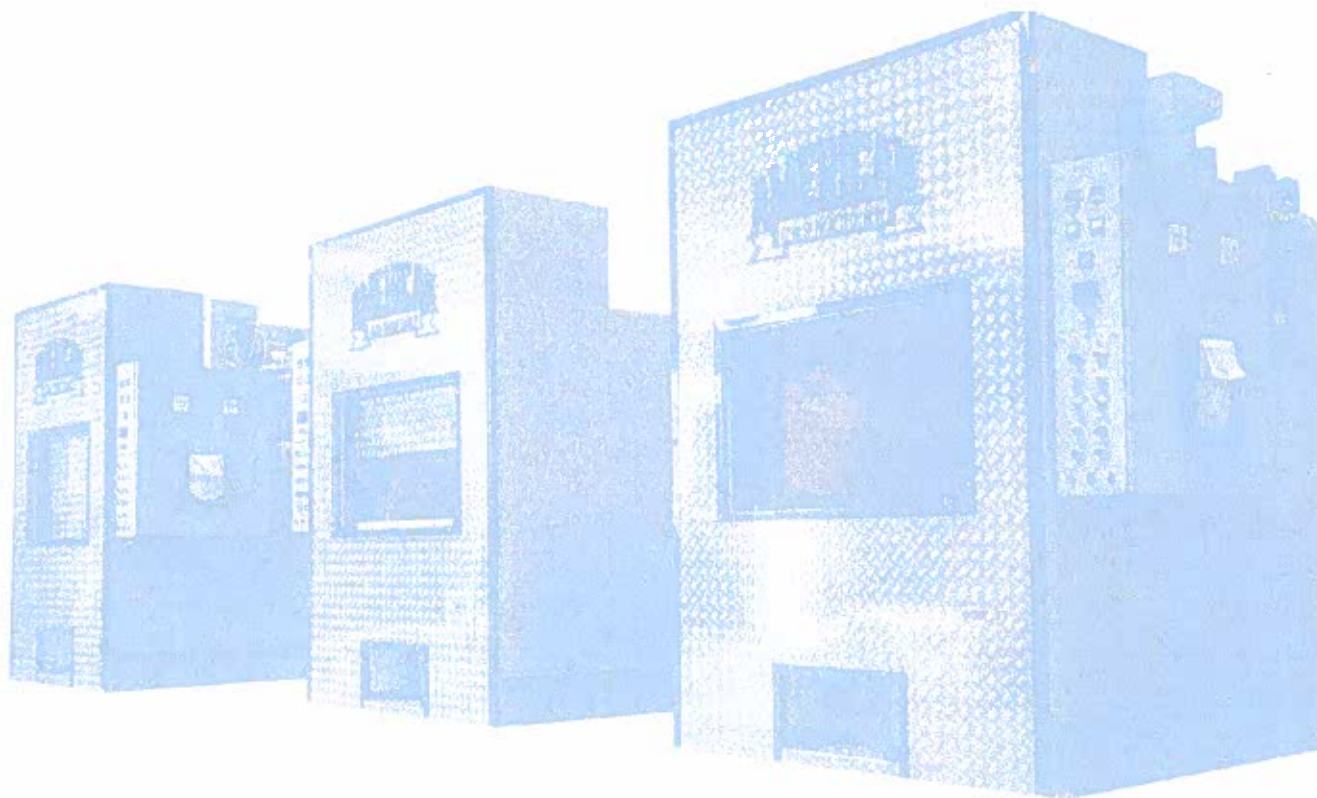


# *American* CREMATORY EQUIPMENT CO.



---

*"SERVICE IS EVERYTHING"*

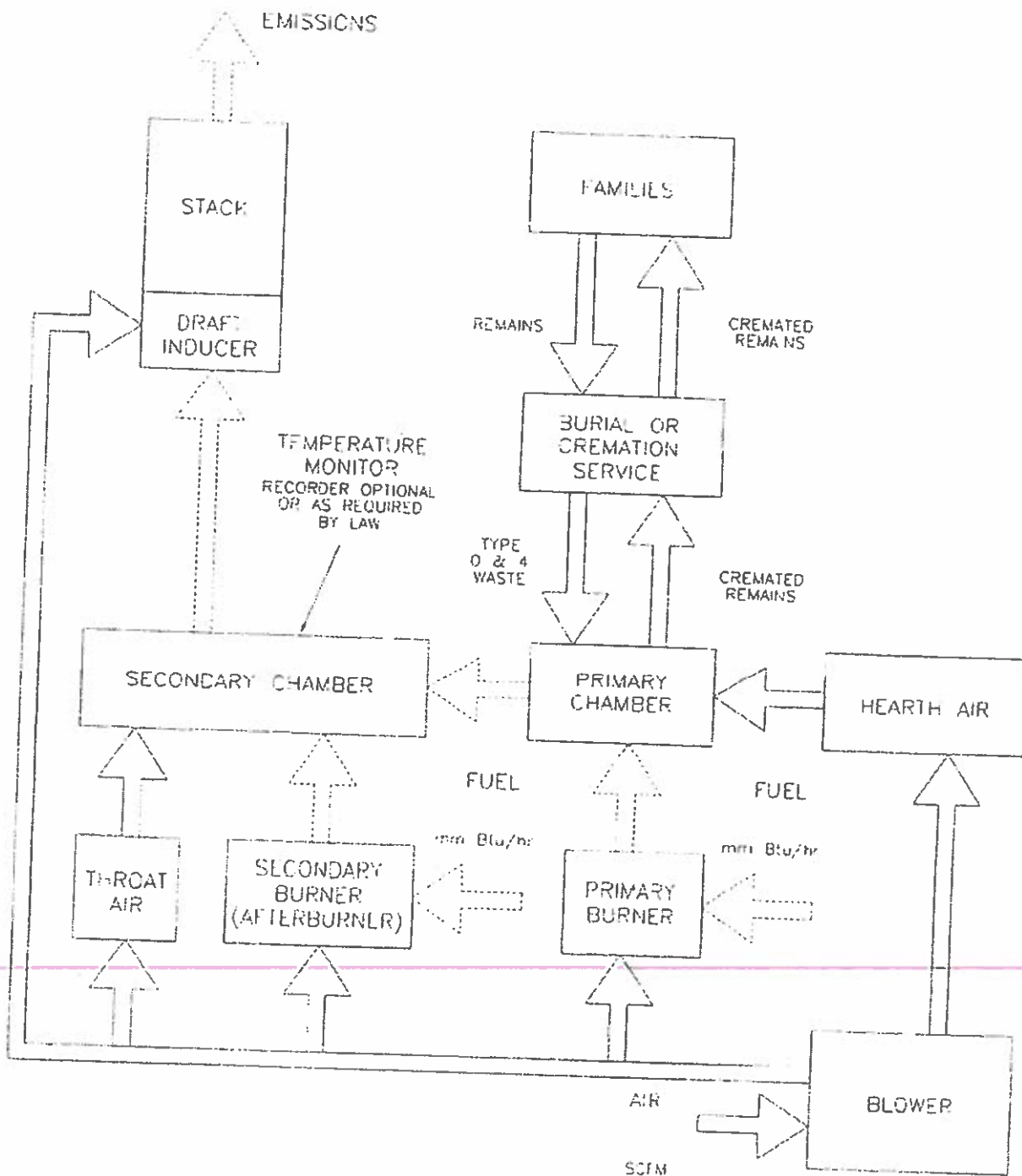


---

14530 ANSON AVENUE • SANTA FE SPRINGS, CA 90670  
OFFICE: (562) 926-2876 • (800) 396-2254 • FAX: (562) 926-2880  
[www.americancrematory.com](http://www.americancrematory.com)



# PROCESS FLOW DIAGRAM CREMATOR





## American Crematory AmeriJet® Medium/High Velocity Gas Burner

Low NOx gas burner, heavy-duty construction and robust design to fit a wide range of applications.

- NPT or BSP air/gas inlets, adjustable in 90° increments
- 350,000 to 2,000,000 Btu/h HHV
- Tile options for medium/ high velocity
- Flame rod or UV flame detection
- Direct spark ignition



## PRODUCT OVERVIEW



Manufactured with Pride™. American Crematory, the purveyors of high velocity/ high excess air burners, present the The AmeriJet®.

The AmeriJet® is a direct fire, nozzle-mix burner that provides an alternative to other burners on the market. It features good temperature uniformity, product quality, and system efficiency through a medium or high velocity stream of hot gases.

The AmeriJet® is available in multiple sizes, with a medium or high velocity tile, with capacities ranging from 350,000 Btu/h HHV (132 kW, LHV) to 2,000,000 Btu/h HHV (396 kW, LHV).

### TYPES OF APPLICATIONS

- » Cremator/Crematory's
- » Periodic kilns
- » Tunnel kilns
- » Forge furnaces
- » Heat treat furnaces
- » Galvanizing baths
- » Scrap preheaters
- » Cupolas
- » Pipe coaters
- » Portable refractory dry out
- » Preheat equipment
- » Tempering furnaces
- » Reheating furnaces
- » Hardening furnaces
- » Fluidized bed dryers
- » Thermal oxidizers
- » Nonferrous melting
- » Ladle/tundish, glass lehrs

### PERFORMANCE BENEFITS

- » Low NOx emissions
- » Direct spark ignition
- » Integral air and gas metering orifices
- » Sturdy cast construction
- » Two tile types, two velocity options

### THE HIGH VELOCITY FLAME YOU CAN DEPEND ON

#### GOOD CONTROL FLEXIBILITY

The AmeriJet® gives you the choice of pulse firing, excess air, or near stoichiometric ratio control.

#### WIDE TURNDOWN RANGE

The AmeriJet® uses high excess air or pulse firing to achieve a wide turndown range while still providing the efficiency benefits of high velocity.

#### DIRECT SPARK

The AmeriJet® delivers the ability to light anywhere through a spark ignition system.

The AmeriJet® features standard pre-engineered components to meet many common requirements. With The AmeriJet® you choose the capacity range, tile type, fuel type, thread type and flame sensing components to fit your needs.

# PERFORMANCE DATA

- Combustion Air Requirement: 16-17.5"w.c. (4.0-4.4 kPa) at maximum input, maximum preheat 400°F (204°C)
- Fuel: Natural Gas, Propane, Butane.
- Flame Supervision: UV detector or Flame rod in specially configured models. Flame rods can be used up to 2200°F (1204°C) operating temperature. UV detectors can be used to maximum operating temperature. Consult National Safety Standards and insurance underwriters for specific flame supervision requirements.
- Ignition: Direct spark (no pilot) with 6000 V transformer. Full-wave spark transformer required, one per burner. The AmeriJet® burners require spark for reignition. They will not re-ignite from a hot tile or furnace.
- Control: Great performance with on-ratio, on/off and thermal shutdown systems. 15% excess air is the recommended rich limit of operation. To achieve the minimum excess air ratio with cross-connected regulator systems, use a low pressure drop limiting orifice valve between the ratio regulator and the burner.
- Piping: For cross-connected systems, maximum gas pressure at the burner can be adversely impacted by excessive pressure drop in the gas line between the ratio regulator and the burner. The design, selection, and installation of these systems must take into account the gas pressure required at the burner to achieve the desired heat release (i.e. gas flow). A butterfly valve can be used in place of a limiting orifice valve to minimize pressure drop downstream of the ratio regulator.

## AMERIJET® NATURAL GAS PERFORMANCE DATA

| Burner Size                                                             | High Fire with Natural Gas (1020 Btu/scf) @ 15% Excess Air at Maximum Input |               |               |               |               |                 |                 |                 |                 |                 |
|-------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------|---------------|---------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                                                                         | AJ0350                                                                      | AJ0500        | AJ0650        | AJ0750        | AJ0950        | AJ1000          | AJ1100          | AJ1250          | AJ1400          | AJ1500          |
| Maximum Input, Btu/h (kW)                                               | 350,000 (87)                                                                | 500,000 (132) | 650,000 (166) | 750,000 (166) | 950,000 (272) | 1,000,000 (284) | 1,100,000 (284) | 1,250,000 (300) | 1,400,000 (336) | 1,500,000 (398) |
| Minimum Input On-Ratio, Btu/h (kW)                                      | 35,000 (7)                                                                  | 50,000 (13)   | 65,000 (16)   | 75,000 (16)   | 95,000 (23)   | 100,000 (26)    | 110,000 (26)    | 125,000 (31)    | 140,000 (35)    | 150,000 (40)    |
| Minimum Input Fixed Air, Btu/h (kW)                                     | 7,000 (2)                                                                   | 10,000 (3)    | 12,000 (4)    | 15,000 (4)    | 18,000 (5)    | 19,000 (5)      | 21,000 (5)      | 23,000 (6)      | 26,000 (7)      | 30,000 (8)      |
| Air Flow scfh (Nm³/h)                                                   | 2,950 (84)                                                                  | 5,750 (154)   | 7,135 (192)   | 8,625 (231)   | 10,062 (269)  | 11,000 (300)    | 11,500 (308)    | 12,950 (347)    | 14,400 (388)    | 17,250 (461)    |
| Air Meter dp UA-DA "w.c. (mbar)                                         | 4.1 (11.7)                                                                  | 5.1 (12.7)    | 5.8 (13.5)    | 6.1 (15.2)    | 6.0 (15)      | 5.0 (14.7)      | 5.9 (14.7)      | 5.9 (14.7)      | 6.2 (15.4)      | 6.2 (15.4)      |
| Natural Gas Flow scfh (Nm³/h)                                           | 340 (8.0)                                                                   | 490 (13.1)    | 612 (16.2)    | 735 (19.7)    | 855 (23.4)    | 950 (26.0)      | 980 (26.2)      | 1,100 (28.4)    | 1,225 (32.6)    | 1,470 (39.4)    |
| Natural Gas dp UG-DG "w.c. (mbar)                                       | 3.5 (6.4)                                                                   | 5.0 (12.4)    | 5.0 (12.4)    | 5.8 (14.4)    | 3.2 (8.0)     | 3.4 (8.5)       | 3.5 (8.7)       | 4.0 (9.9)       | 4.2 (10.5)      | 4.2 (10.5)      |
| Maximum % XSA at Maximum Input                                          | 50                                                                          | 50            | 50            | 50            | 50            | 50              | 50              | 50              | 50              | 50              |
| Maximum % XSA at Minimum Input                                          | 7,500                                                                       | 7,500         | 7,500         | 7,500         | 7,500         | 7,500           | 7,500           | 7,500           | 7,500           | 7,500           |
| High Velocity Tile @ 15% Excess Air at Maximum Input with Natural Gas   |                                                                             |               |               |               |               |                 |                 |                 |                 |                 |
| Air Inlet Pressure Required UA "w.c. (mbar)                             | 16.0 (39.8)                                                                 | 16.0 (39.8)   | 16.0 (39.8)   | 16.5 (41.0)   | 16.5 (41.0)   | 16.5 (41.0)     | 16.5 (41.0)     | 16.7 (41.0)     | 16.7 (41.0)     | 17.5 (44.0)     |
| Gas Inlet Pressure Required UG "w.c. (mbar)                             | 13.8 (34.4)                                                                 | 13.8 (34.4)   | 13.8 (34.4)   | 12.5 (31.0)   | 12.5 (31.0)   | 12.5 (31.0)     | 12.5 (31.0)     | 12.5 (31.0)     | 12.5 (31.0)     | 14.5 (38.0)     |
| Flame Length, inches (mm)                                               | 28 (711)                                                                    | 28 (711)      | 28 (711)      | 33 (835)      | 33 (835)      | 33 (835)        | 33 (835)        | 25 (635)        | 25 (635)        | 38 (965)        |
| Approximate Flame Velocity, f/s (m/s)                                   | 480 (148)                                                                   | 480 (148)     | 480 (148)     | 630 (192)     | 630 (192)     | 630 (192)       | 630 (192)       | 540 (165)       | 540 (165)       | 680 (207)       |
| Medium Velocity Tile @ 15% Excess Air at Maximum Input with Natural Gas |                                                                             |               |               |               |               |                 |                 |                 |                 |                 |
| Air Inlet Pressure Required UA "w.c. (mbar)                             | 9.0 (22.4)                                                                  | 9.0 (22.4)    | 9.0 (22.4)    | 9.0 (22.4)    | 9.0 (22.4)    | 9.0 (22.4)      | 9.0 (22.4)      | 9.5 (23.6)      | 9.5 (23.6)      | 9.5 (23.6)      |
| Gas Inlet Pressure Required UG "w.c. (mbar)                             | 7.2 (17.9)                                                                  | 7.2 (17.9)    | 7.2 (17.9)    | 5.5 (16.7)    | 5.5 (16.7)    | 5.5 (16.7)      | 5.5 (16.7)      | 7.0 (17.4)      | 7.0 (17.4)      | 7.0 (17.4)      |
| Flame Length, inches (mm)                                               | 28 (711)                                                                    | 28 (711)      | 28 (711)      | 38 (965)      | 38 (965)      | 38 (965)        | 38 (965)        | 43 (1092)       | 43 (1092)       | 43 (1092)       |
| Approximate Flame Velocity, f/s (m/s)                                   | 250 (76)                                                                    | 480 (148)     | 250 (76)      | 310 (65)      | 310 (65)      | 310 (65)        | 310 (65)        | 350 (107)       | 350 (107)       | 350 (107)       |

⊙ Imperial inputs based upon gross calorific values (HHV). All metric inputs based on net calorific values (LHV).

⊙ Velocity noted references high velocity tile option.

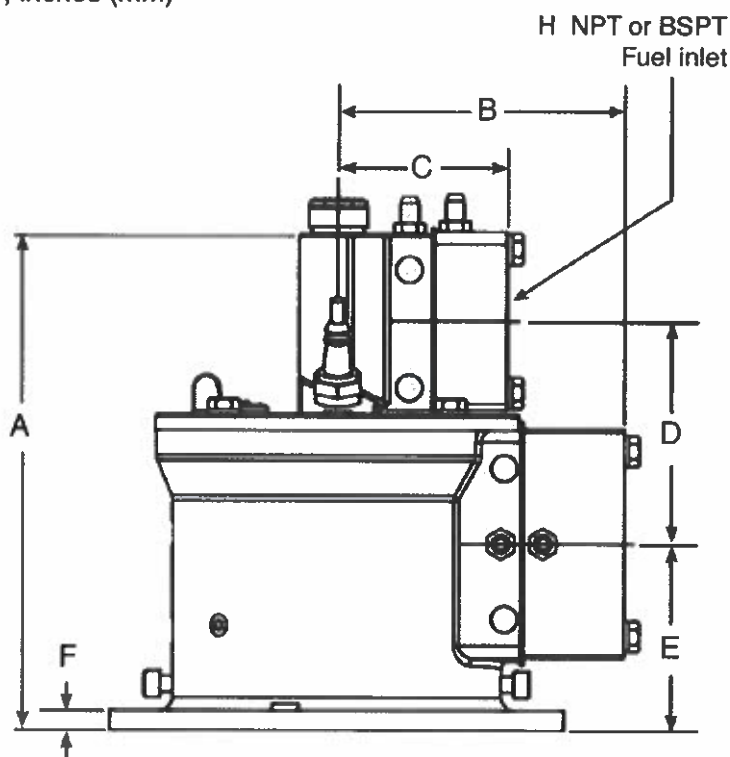
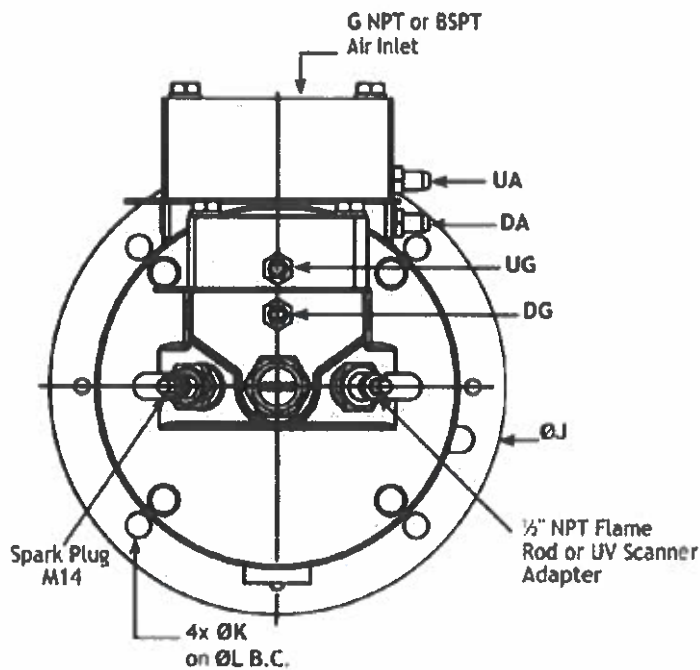
⊙ The listed air pressure is the maximum recommended for stable operation.

⊙ Excess fuel operation is not recommended for AmeriJet® burners.

# DIMENSIONS & SPECIFICATIONS

## BURNER HOUSING

DIMENSIONS, inches (mm)



## PRESSURE TAPS

UA - Upstream Air  
DA - Downstream Air  
UG - Upstream Gas  
DG - Downstream Gas

AmeriJet® 500-0900 Burner weight less tile: 28lbs. (12.7 Kg)

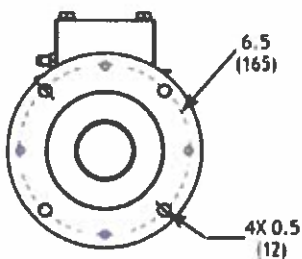
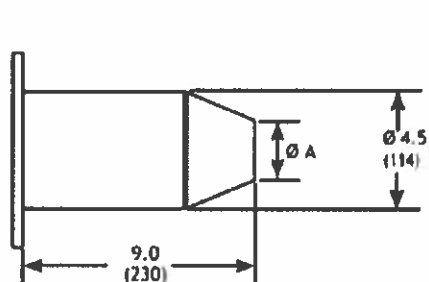
AmeriJet® 900-0200 Burner weight less tile: 39 lbs. (17.7 Kg)

Dimensions in inches (mm) or NPT (BSPT)

| Part Number | A         | B         | C        | D         | E        | F        | G  | H  | J         | K        | L         |
|-------------|-----------|-----------|----------|-----------|----------|----------|----|----|-----------|----------|-----------|
| AJ0350-0650 | 8.4 (214) | 5.1 (129) | 3.1 (78) | 3.7 (93)  | 3.4 (87) | 0.4 (9)  | 2½ | 1  | 7.5 (190) | 0.5 (12) | 6.5 (165) |
| AJ0750-1100 | 8.4 (214) | 5.1 (129) | 3.1 (78) | 3.7 (93)  | 3.4 (87) | 0.4 (9)  | 2½ | 1  | 7.5 (190) | 0.5 (12) | 6.5 (165) |
| AJ1250-1500 | 9.5 (240) | 5.5 (140) | 3.2 (81) | 4.1 (105) | 3.6 (92) | 0.4 (10) | 3  | 1½ | 8.7 (220) | 0.5 (12) | 7.5 (190) |
| AJ1700-2000 | 9.5 (240) | 5.5 (140) | 3.2 (81) | 4.1 (105) | 3.6 (92) | 0.4 (10) | 3  | 1½ | 8.7 (220) | 0.5 (12) | 7.5 (190) |

Dimensions are nominal. Please obtain certified prints from American Crematory, Inc. if space limitations or other considerations make dimension(s) critical.

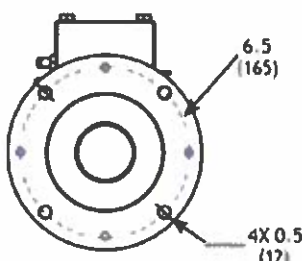
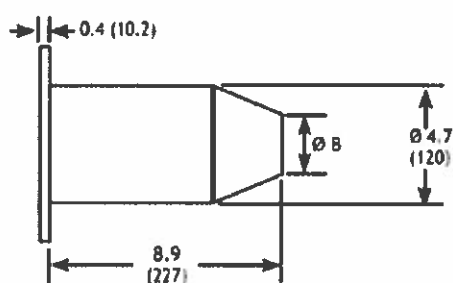
## BURNER BLOCKS & TUBES



### 310 Alloy Tile:

Weight: 2.7 lb (1.2 kg)

Maximum chamber temp: 1750°F (950°C)

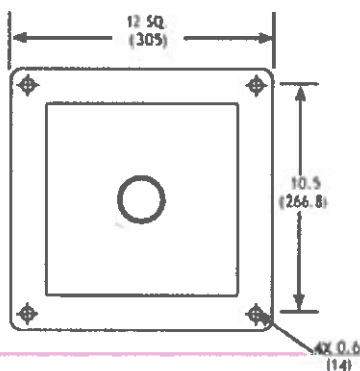
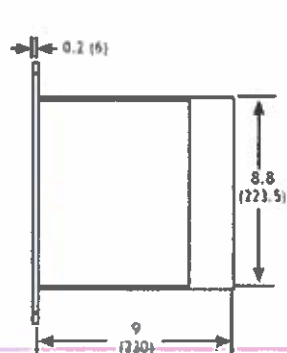


### Silicone Corbide Tile:

Weight: 5 lb (2.3 kg)

Maximum chamber temp: 2500°F (1371°C)

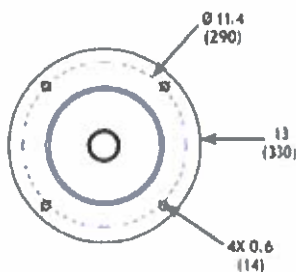
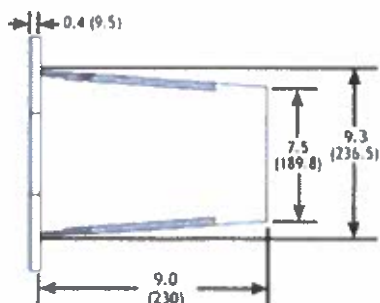
| Dimensions | High Velocity<br>0500-0900 | High Velocity<br>0100-0200 |
|------------|----------------------------|----------------------------|
| Ø A        | 1.8/2.3<br>(45/58)         | 2.2/3.1<br>(57/78)         |
| Ø B        | 2.0/2.5<br>(51/64)         | 2.5/3.3<br>(64/84)         |



### Square Refractory Tile:

Weight: 69 lb (31.3 kg)

Maximum chamber temp: 3200°F (1535°C)



### Round Refractory Tile:

Weight: 54 lb (24.5 kg)

Maximum chamber temp: 3200°F (1535°C)



AmeriJet®

## AMERIJET® OPTIONS

Tile materials and shapes to suit your specific needs.

“A” Tile (standard) — 310 SST alloy tile for applications up to 1750°F (954°C).

“SC” Tile — Silicon carbide tile for fiber wall and most applications up to 2500°F (1371°C).

“S” Tile — Square refractory block for applications to 2800°F (1535°C). Note: Recommended only for installation in solid wall construction furnaces/kilns.

“BO” Burner Only — Burner without tile, for applications where the tile is formed in the furnace wall.

American Crematory AmeriJet®

## ORDERING INFORMATION

AJ0750 - HV - A - N - UV

### Burner Size Input Btu/h HHV (kW, LHV)

0350 = 350,000 (132)  
0500 = 500,000 (132)  
0650 = 650,000 (132)  
0750 = 750,000 (198)  
0950 = 950,000 (264)  
0100 = 1,000,000 (264)  
0110 = 1,100,000 (264)  
0125 = 1,250,000 (264)  
0140 = 1,400,000 (396)  
0150 = 1,500,000 (396)  
0200 = 2,000,000 (521)

### Tile Exit Velocity

= High Velocity  
= Medium Velocity  
Blank = Body Only

### Fuel Type

N = Natural Gas  
P = Propane  
B = Butane

### Flame Supervision Requirement

FR = Flame Rod Supervision (flame rod  
**not** included in burner assembly)

UV = U.V. Supervision (Detector must be  
ordered separately)

### Tile Material

A = 310 alloy tile  
S = Square block refractory  
BO = Body only  
SC = Silicone carbide

### Examples:

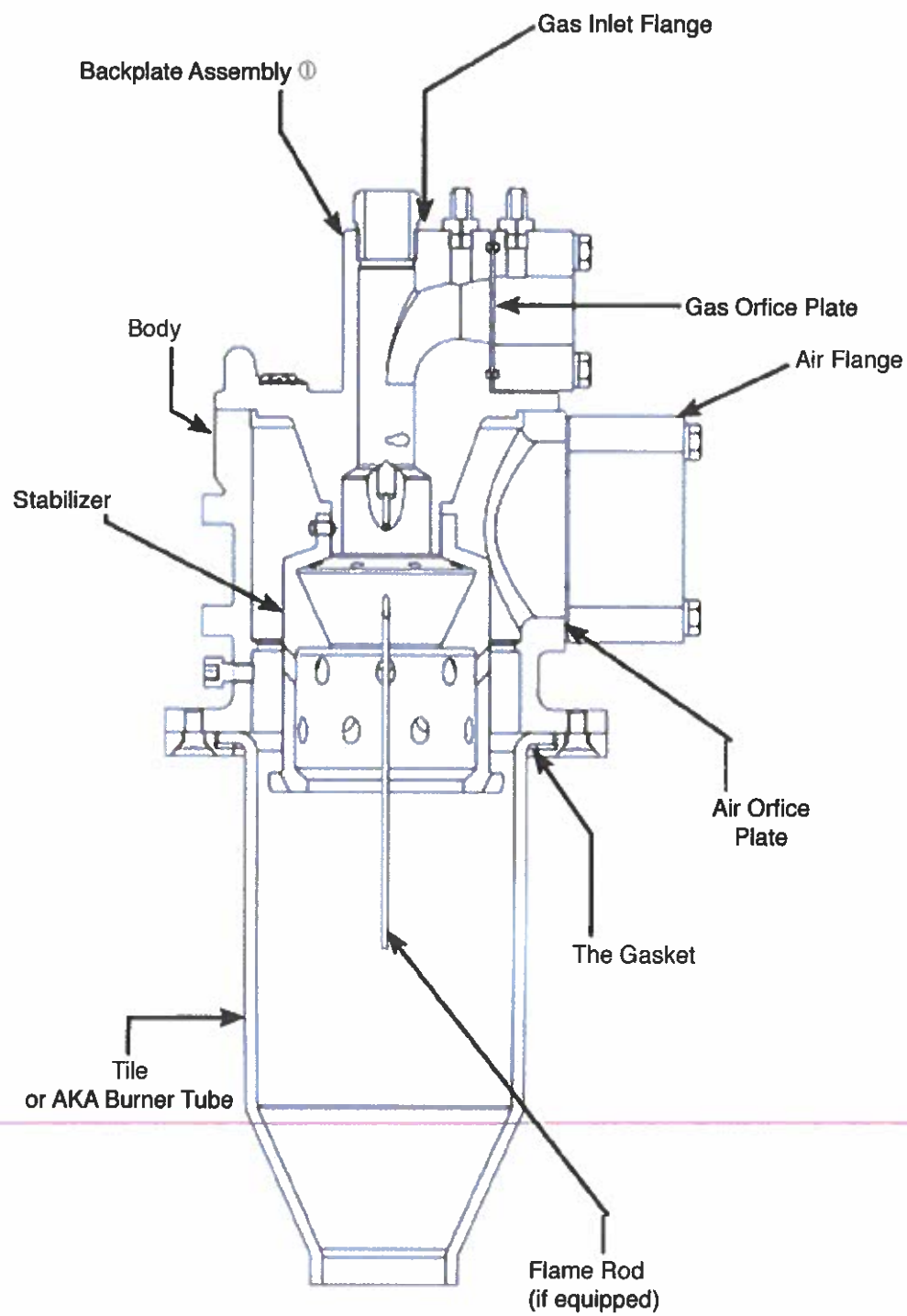
AJ0100-HV-A-N-UV — 1,000,000 Btu/h HHV (264 kW LHV) capacity Natural Gas burner with NPT air/gas connections, 310 alloy tile and high velocity tile outlet, and UV flame supervision compatibility.

AJ0075-HV-SC-N-UV— 750,000 Btu/h HHV (132 kW LHV) capacity Propane burner with BSPT air/gas connections, silicon carbide tile, medium velocity tile outlet, and flame rod supervision compatibility.

**WARNING:** Situations dangerous to personnel and property may exist with the operation and maintenance of any combustion equipment. The presence of fuels, oxidants, hot and cold combustion products, hot surfaces, electrical power in control and ignition circuits, etc., are inherent with any combustion application. Components in combustion systems may exceed 180°F (71°C) surface temperatures and present hot surface contact hazard. Fives North American Combustion, Inc. suggests the use of combustion systems that are in compliance with all Safety Codes, Standards, Regulations and Directives, and care in operation.

# PARTS DIAGRAM

(SEE NEXT PAGE FOR PARTS LIST)



# SPARE PARTS

| AmeriJet®                                           | MODEL NUMBER | AJ0350 | AJ0500 | AJ0650 | AJ0750 | AJ0800 | AJ0950 | AJ1000 | AJ1100 | AJ1250 | AJ1400 | AJ1500 | AJ2000 |
|-----------------------------------------------------|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| <b>PART NAME</b>                                    |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Burner only (less tile) -NPT                        |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Burner only (less tile) -BSP                        |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Body                                                |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Air inlet flange Ⓞ                                  |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Gas Inlet flange Ⓞ                                  |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Stabilizer, -U (U.V. only)                          |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Stabilizer, -R (flame rod compatible)               |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Backplate assembly ⓄⓄ                               |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Air orifice plate                                   |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Natural gas orifice plate                           |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Propane orifice plate                               |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Butane orifice plate                                |              |        |        |        |        |        |        |        |        |        |        |        |        |
| 310 SST Alloy tile (High Velocity)                  |              |        |        |        |        |        |        |        |        |        |        |        |        |
| 310 SST Alloy Tile (Medium Velocity)                |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Silicon carbide tile (High Velocity)                |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Silicon carbide tile (Medium Velocity)              |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Silicon carbide tile assembly (High Velocity)Ⓞ      |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Silicon carbide tile assembly (Medium Velocity)Ⓞ    |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Round refractory block tile (High Velocity)         |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Round refractory block tile (Medium Velocity)       |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Square refractory block tile (High Velocity)        |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Square refractory block tile (Medium Velocity)      |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Body/refractory tile gasket (for refractory blocks) |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Tile retaining ring (for Silicon Carbide Tile)      |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Tile retaining gasket (for Silicon Carbide Tile)    |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Spark plug                                          |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Optional Parts                                      |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Flame rod                                           |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Body/Furnace Mtg. Gasket (for Metal & SiC) Ⓞ        |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Tile/Furnace Mtg. Gasket (for square blocks) Ⓞ      |              |        |        |        |        |        |        |        |        |        |        |        |        |
| Tile/Furnace Mtg. Gasket (for round blocks) Ⓞ       |              |        |        |        |        |        |        |        |        |        |        |        |        |

Ⓞ Backplate assembly includes backplate, gas inlet flange, gas orifice plate, pressure taps and o-ring.

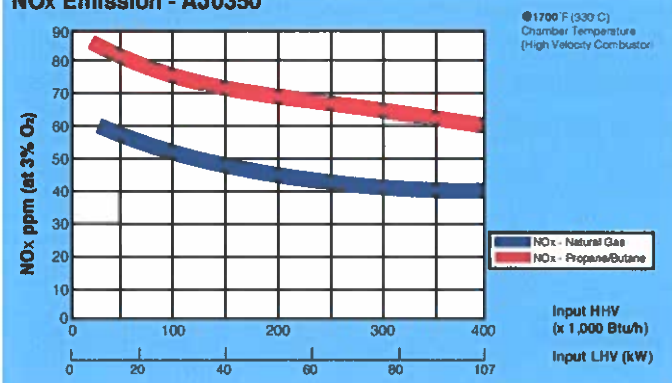
Ⓞ Assembly includes tile, tile retaining ring and tile gasket

Ⓞ Use "-1" suffix for NPT, "-2" for BSPT.

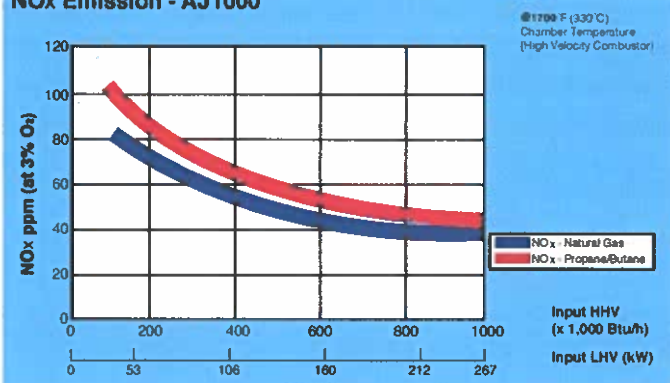
Ⓞ 1/8" compressed graphite

# NO<sub>x</sub> EMISSIONS ESTIMATES

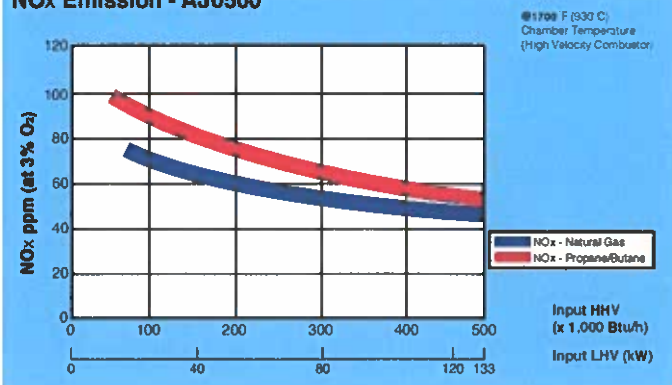
NO<sub>x</sub> Emission - AJ0350



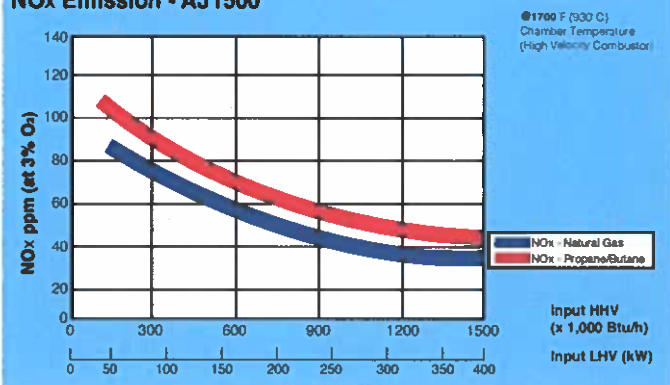
NO<sub>x</sub> Emission - AJ1000



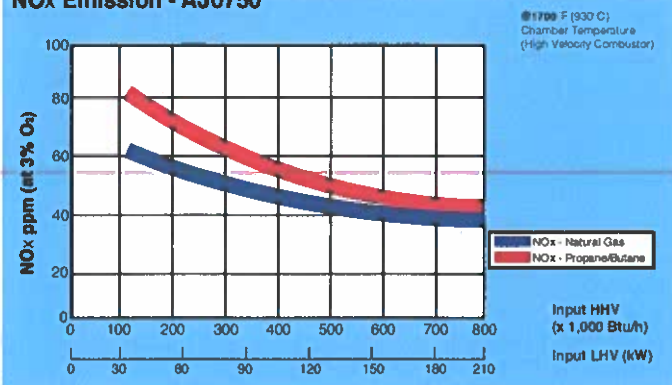
NO<sub>x</sub> Emission - AJ0500



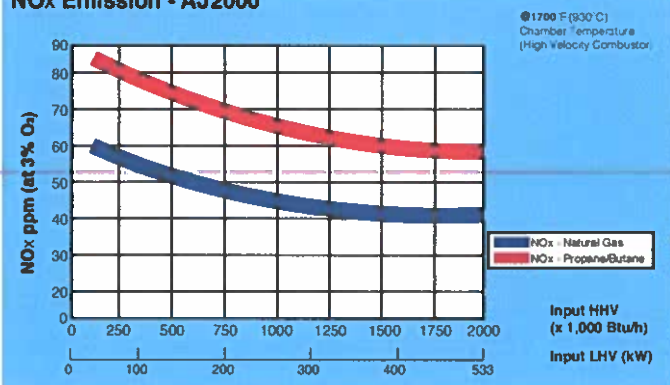
NO<sub>x</sub> Emission - AJ1500



NO<sub>x</sub> Emission - AJ0750



NO<sub>x</sub> Emission - AJ2000



# NO<sub>x</sub> EMISSIONS PERFORMANCE

## EMISSIONS PERFORMANCE

American Crematory performance values for NO<sub>x</sub>. Our NO<sub>x</sub> performance for the AmeriJet® Low NO<sub>x</sub>, burner emissions are listed in the below chart and are corrected to a 3% O<sub>2</sub> basis. These values are representative of performance obtained in prior Crematory applications under similar firing conditions.

Emissions estimates:

|                                                                    |                                                                                                     |
|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Burner Model Numbers Medium Velocity                               | 1.) AJ0350-AJ0650<br>2.) AJ0750-AJ1100<br>3.) AJ1250-AJ1500<br>4.) AJ1700-AJ2000                    |
| Burner Emissions Medium Velocity<br>Corrected to 3% O <sub>2</sub> | 1.) 39 – 49 ppm<br>2.) 38 – 46 ppm<br>3.) 29 – 37 ppm<br>4.) 38 – 40 ppm                            |
| Burner Model Numbers High Velocity                                 | 1.) AJ0350-AJ0650<br>2.) AJ0750-AJ1100<br>3.) AJ1250-AJ1500<br>4.) AJ1700-AJ2000                    |
| Burner Emissions High Velocity<br>Corrected to 3% O <sub>2</sub>   | 1.) 37 – 47 ppm<br>2.) 36 – 46 ppm<br>3.) 29 – 40 ppm<br>4.) 39 – 49 ppm                            |
| Application                                                        |                                                                                                     |
| Maximum Burner Capacity                                            | 1.) 0.350-0.650 MMBtu/h<br>2.) 0.800-1.10 MMBtu/h<br>3.) 1.25-1.50 MMBtu/h<br>4.) 1.70-2.00 MMBtu/h |
| Process Temperature                                                | 1500 - 1800 °F                                                                                      |
| Control Configuration                                              | Cross Connected - Pressure Balanced                                                                 |
| Excess Air                                                         | 15%                                                                                                 |
| Process Oxygen Concentration                                       | 3.0%                                                                                                |
| Geometry                                                           | Horizontal Fired                                                                                    |
| Special Tile                                                       | High Velocity, 310 Alloy Stainless Steel Tile                                                       |
| Preheated Air Temperature                                          | 65 - 88 °F                                                                                          |
| Fuel Specification                                                 | PUC Quality Natural Gas                                                                             |
| Special Conditions                                                 | N/A                                                                                                 |

*American*  
CREMATORY EQUIPMENT CO.



**American Crematory Equipment Co.**

14530 Anson Avenue,  
Santa Fe Springs, CA 90670

Toll Free: (800) 396-2254

Fax: (562) 926-2880

Contact: [orders@americancrematory.com](mailto:orders@americancrematory.com)

