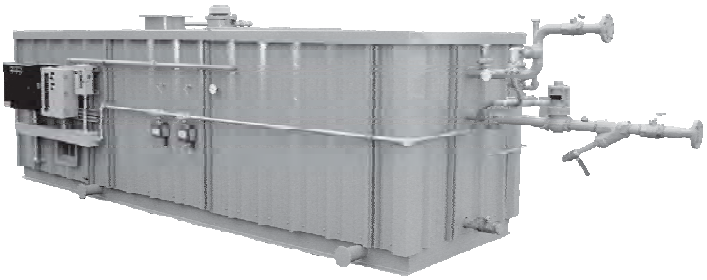
Natural Gas Equipment

aether dbs
elemental design build solutions

AQUA-GAS® Natural Gas Line Heaters



The Aether DBS **AQUA-GAS® NG Series** provides safe heating to natural gas supplies to:

- Prevent the formation of ice during pressure changes (Joule-Thompson effect)
- Maintain process temperatures in upstream and downstream distribution systems
- Protect against internal and external freezing in lines and equipment

The **AQUA-GAS NG®** design is based on a natural or forced draft natural gas burner supplying energy to a water-glycol mixture through multiple fire tubes to increase heat transfer efficiency.

During operation, the **AQUA-GAS NG®** uses the existing supply of natural gas to heat the water glycol bath, no other fuel source is needed (ie., Electric, LPG). The bath acts as an intermediate so that the natural gas is not heated directly, and the heat is safely transferred from the process coil to the natural gas.

In horizontal heaters, the natural gas discharge temperature is regulated by two PID loop controllers. One PID controller is designated as the primary discharge gas temperature controller; the other is the secondary water bath temperature controller or "limiting controller". The burner will modulate depending on both the discharge natural gas and water bath temperatures.

For vertical heaters, the burner cycles on/off to maintain the gas temperature. The pneumatic control system monitors both the waterbath and the outlet gas temperature. The pilot assembly in powered by a 12VDC system with an optional solar panel to recharge.

DESIGN

- Skid mounted and flange in - out design
- Natural gas exchanger coils are designed, manufactured, and stamped per ASME Section VIII, Division 1
- Electrical design will be per NEC, Class 1, Div 2, and Group D within 15 ft of the process inlet and outlet of the heater assembly

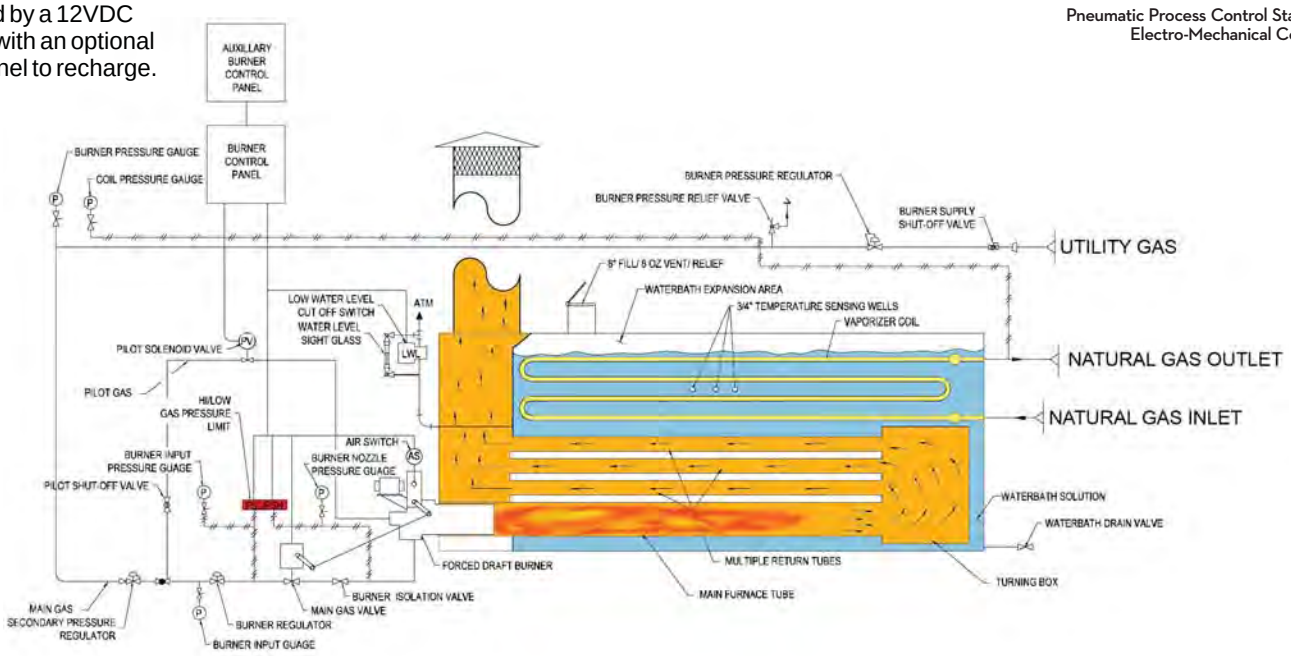
STANDARD FEATURES

- High quality NG natural or forced draft power burner
- Inlet and outlet pressure and temperature indicators
- Outlet temperature RTD and controller
- Process coil thermal relief
- Heater central control panel with first out Annunciator
- All exposed metal surfaces are mechanically cleaned, primed, and painted
- Complete with all operating and safety controls
- Optional Maintenance House/Control module

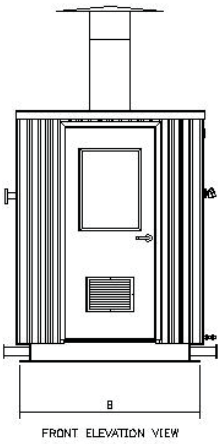
OPTIONS

- Maintenance/Control Module
  (7' x 4' with lights, heat, gas leak detection)
- Disconnects and Transformers
- Rotary Beacon
  (Provided with Maintenance/Control Module)
- PLC Control
- Multiple Output Options
- DC with Solar Panel or AC Operation Options

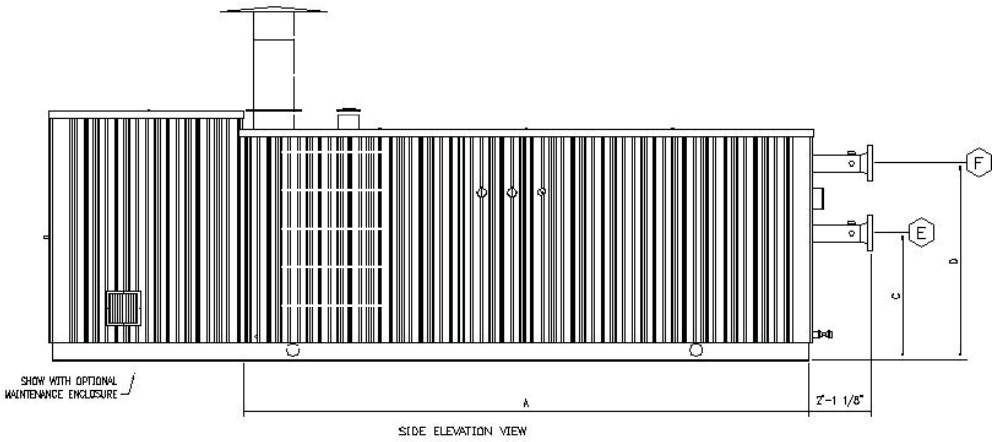
Pneumatic Process Control Standard,
Electro-Mechanical Control Available



AQUA-GAS® NG Horizontal System

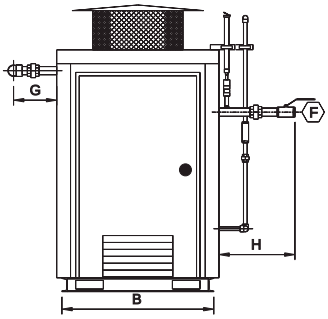


FRONT VIEW



SIDE VIEW

AQUA-GAS® NG Vertical System



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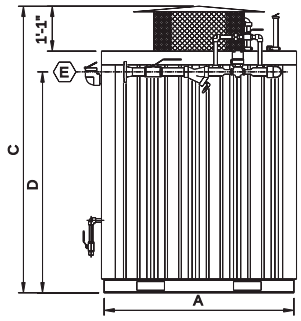

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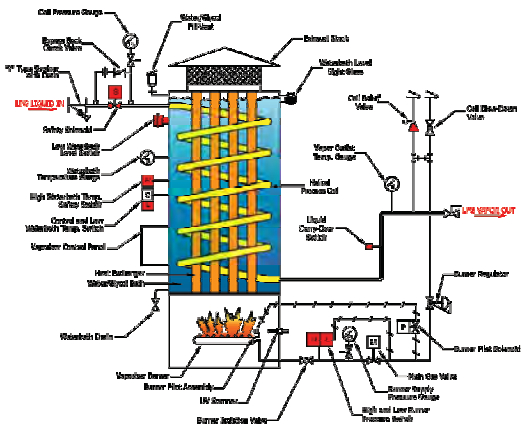

DIMENSIONAL DATA

SIZES = ft/in mm

MODEL NG	A	B	C	D	E	F	G	H
100VNG & 300VNG	4'-7" 1397	3'-8" 1118	6'-11" 2108	5'-0" 1524	2" 300#	2" 300#	1'- 1"	1'- 6"
600V-NG	4'-7" 1397	3'-8" 1118	8'-11" 2718	5'-6" 1676	2" 300#	2" 300#	1'- 1"	1'- 6"
800V-NG	4'-7" 1397	3'-8" 1118	9'-7" 2921	6'-2" 1880	2" 300#	2" 300#	1'- 1"	1'- 6"
1200V-NG	4'-7" 1397	7'-5" 2261	8'-11" 2718	5'-6" 1676	2" 300#	2" 300#	1'- 1"	1'- 6"
3000H-NG	19'-3" 5867	4'-11" 1499	3'-7" 1092	6'-3" 1905	2" 300#	2" 300#	-	-
6000H-NG	27'-4" 8331	6'-7" 2007	5'-1" 1549	8'-9" 2667	3" 300#	4" 300#	-	-
12000H-NG	32'-10" 10008	8'-4" 2540	5'-9" 1753	10'-3" 3124	4" 300#	8" 300#	-	-

- Inlet and outlet flanges are standard.
- For dimensions of optional Maintenance/Control Module, contact the Aether DBS factory.

AQUA-GAS® NG SERIES SPECIFICATION GUIDE

		WB-100V-NG	WB-300V-NG	WB-600V-NG	WB-800V-NG	WB-1200V-NG	WB-3000H-NG	WB-6000H-NG	WB-12000H-NG
HEATING CAPACITY	MSCFH	150	185	380	465	750	1300	3450	6500
WATERBATH CAPACITY	U.S. Gallons liters	93 352	93 352	192 727	227 859	450 1703	1700 6435	4200 15899	7000 26498
COIL DESIGN PRESSURE	Psig Mpa	1728 11.91							
SHELL DESIGN PRESSURE	Psig Mpa	Atmospheric							
WATERBATH OPERATING TEMP. *(ADJUSTABLE)*	F° C°	190 max 88 max							
ELECTRICAL	v / ph / hz	12 VDC STD on Vertical, AC Optional 240 VAC/3/60 STD on Horizontal							
BURNER FUEL INPUT	MMBTU/h MMKCAL/h	0.330 83.15	0.400 100.80	0.820 206.64	1000.0 252.00	1600.0 403.19	2400.0 604.79	6200.0 1562.37	12000.0 3023.95
SHIPPING WEIGHT	Lbs Kg	1980 900	1980 900	3170 1441	4470 2032	5800 2636	8950 4068	24000 10500	38000 17237
OPERATING WEIGHT	Lbs Kg	2755 1252	2755 1252	4769 2168	6361 2891	9549 4340	24000 10900	52000 26000	100500 45650
PRESSURE DROP	PSIG	8	10	20	10	20	10	20	10

- Design based on inlet pressure of 1440 PSIG, inlet temperature of 40°F. The pressure after the regulation is assumed to be 600PSIG with the pressure after regulation at 40°F. Please consult Aether DBS to confirm the proper size heater.
- Final sizing to be confirmed by Aether DBS and may vary from typical sizing shown above.
- Contact Aether DBS for your specific requirements.
- Design and Specifications are subject to change without notice.

Flow Monitoring Regulating Stations

Found at natural gas compressor stations, gathering stations, processing facilities and separating facilities, Aether DBS' Flow Monitoring and Pressure Regulation Skids give you the capability to fully control pressure and meter the flow of natural gas.

COMMON OPTIONS INCLUDE:

- **Custody Transfer Meters**
- **Working-Monitor Regulation Configuration for Redundancy**
- **Inline Gas Coalescing Filters to Remove Gas Impurities or Liquids**

For Gas Conditioning applications (including Bio-Gas supplies), Aether DBS can supply the line (dew point) heater and the regulation skid on a common platform to reduce onsite interconnection work.

Additional Natural Gas Equipment

- **Amine Scrubbers**
- **Gas Blenders**
- **Inlet Separators**
- **Flash Tanks**
- **Dew Point Heaters**
- **Heat Exchangers**
- **Filtration Units**
- **Liquid and Gas Pump Sets**

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