No More Frozen Assets

... Protect Every

• Compressor • Wellhead • Regulator • Pipeline
with Lean, Efficient Catalytic Technology.

Proven in Thousands of Installations Worldwide.

www.bruestcatalyticheaters.com
800.835.0557 • Fax: 620.331.3402
Infrared Radiant Heaters

The Safest, Most Efficient Alternative Wherever Flameless Heat is Required

Catalytic heating is the product of intensive research efforts to quantify the effectiveness of catalysts in promoting the reaction of combustive gases with oxygen or air to produce heat. There is no flame to create a hazard, and catalytic heat can operate efficiently on low-cost natural gas, butane or propane.

The use of catalytic heaters has been approved and accepted for dozens of industrial and petrochemical applications.

How the Catalytic Principle Works

The normal ignition temperature of natural gas (80%) in air (20%) at atmosphere pressure is given as 1260°F. In the presence of the catalyst, the reaction occurs with sufficient velocity to begin a chain reaction at 225°F. Thus, if natural gas is brought into contact with the catalyst at 225°F in the presence of oxygen, it is oxidized to carbon dioxide and water vapor. Sufficient heat is, therefore, evolved to raise the temperature of the bed of the heater and oxidation will continue as long as gas and oxygen are supplied.

No flame is produced under these conditions, since the gases are well below ignition temperature (1260°F). However, approximately the same amount of heat is produced as if the gas had been burned in the normal manner.

The thermal efficiency of a catalytic heater is substantially higher than a conventional heater. In the catalytic heating principle, a considerably larger proportion of the heat produced is radiant heat of wavelengths of 2–16 microns, and much less heat is required to heat the evolved gases.

Sample Applications for Bruest Catalytic Heaters

- Compressor Gas Preheat
- Regulators and Control Valves
- Gas Wellhead Heaters
- Peak Shaving Vaporizer Valves
- Enclosures of all Types
- Oil Production Well Injection, Offshore Platform Approved
- Personnel, Fixed or Portable
- Space Heaters, Compressor Stations
- Pipeline Heaters

Bruest Catalytic Heaters are approved for use by
THE CANADIAN STANDARDS ASSOCIATION and FACTORY MUTUAL SYSTEM
for hazardous locations Class 1, Group D, Division 2.
For over 50 years, Bruest Catalytic Heaters has provided protection from freeze damage for sensitive measurement, regulation and distribution equipment. We believe ours are the most reliable and best performing catalytic heaters made. We have consistently been the leaders in designing innovative solutions to freeze problems as gas has become a major energy source for America.

Our products are easy to install, and perform on both everyday applications and more involved gas systems.

Selection of a Bruest catalytic heater assures a top quality product that will deliver many years of maintenance-free service. Some of our systems have been in constant use for thirty years without the need for overhaul or repair.

One additional factor you may find compelling: every Bruest catalytic heater has a special warranty of two full years – double the warranty provided by other catalytic heater manufacturers.

We at Bruest constantly strive to improve our products with an ongoing development program focused on the changing needs of the gas industry.

**TABLE OF CONTENTS**

- Round & Square Catalytic Heaters ................................................................. 4
- Rectangular Catalytic Heaters .......................................................................... 6
- Freez-Fiter Pilot Regulator Heaters ................................................................. 8
- Freez-Fiter Plus+ Pipe Heaters ................................................................. 10
- Super Freez-Fiter Pipe Heaters ................................................................. 11
- Pipeline Heater Packages ............................................................................ 12
- Portable Catalytic Heaters ........................................................................... 13
- Catalytic Heater Enclosure Packages ........................................................ 14
- Warranty ........................................................................................................ 16
- Representatives ............................................................................................... 17
- Order Form ....................................................................................................... 18
ROUND AND SQUARE CATALYTIC HEATERS
PRODUCE FLAMELESS INFRARED RADIANT HEAT

- Factory Mutual System and Canadian Standards Association approved for Group D locations
- Bruest gas fueled flameless infrared radiant heaters are extremely safe
- Face temperature approximately 850°F
- Bruest heaters can be thermostatically controlled
- Long life catalyst pad – no moving parts
- Over 50 years field proven reliability
- Easily installed in the field
- Fuel: natural gas, L.P. (propane) or butane gas
- Sizes: 1500 - 72,000 BTU input

TYPICAL APPLICATIONS

- Freeze protection and instrument heating on:
  > Chokes
  > Instrumentation
  > Meters
  > Orifice Taps
  > Regulators
  > Valves
- Emergency heating – portable self-contained units for:
  > Remote Areas
  > Personnel

FREEZE PROTECTION FOR MEASUREMENT OR REGULATION EQUIPMENT

Heaters are normally installed in an enclosure designed to fit a specific piece of equipment. This affords protection from wind or rain when used outdoors and improves heat transfer to the equipment.

FREEZE PROTECTION FOR INSTRUMENTS

Small heaters can focus radiant heat directly on control instruments that are at risk for localized freezing. Thermostatic controls are available to prevent overheating equipment with sensitive seals and internal parts.
NOTE:

1. Specify when ordering:
   a) Model of heater - FM - CSA - Standard
      • Standard catalytic heaters are for use in non-hazardous locations
      • FM approved catalytic heaters are for use in Class 1, Division 2, Group D locations
      • CSA approved catalytic heaters are for use in Class 1, Division 1 and 2, Group D locations
   b) Fuel
      • Natural gas, L.P. (propane) or butane gas
   c) Starting voltage
      • 12 volt DC
      • 120 volt AC
      • 208 volt AC
      • 240 volt AC
      • 480 volt AC

2. Catalytic heaters are designed and orificed to operate on a standard fuel inlet pressure of 3 1/2” or 7” W.C. for natural gas and 11” W.C. for L.P. (propane) and butane gas.

3. FM model catalytic heaters are approved by Factory Mutual Research for use in Class 1, Division 2, Group D locations, and are equipped with a thermocouple – safety shut-off valve – and steel junction box. An explosion-proof junction box is optional at an additional charge.

4. Canadian Standards Association model catalytic heaters are approved for use in Class 1, Division 1 and 2, Group D locations, and are equipped with a thermocouple – safety shut-off valve – explosion-proof junction box – appliance type regulator (natural gas only) and manual shut-off valve.
RECTANGULAR CATALYTIC HEATERS PRODUCE FLAMELESS INFRARED RADIANT HEAT

- Factory Mutual System and Canadian Standards Association approved for Group D locations
- Bruest gas fueled flameless infrared radiant heaters are extremely safe
- Face temperature approximately 850°F
- Bruest heaters can be thermostatically controlled
- Long life catalyst pad - no moving parts
- Over 50 years field proven reliability
- Easily installed in the field
- Fuel: natural gas, L.P. (propane) or butane gas
- Sizes: 1500 - 72,000 BTU input

TYPICAL APPLICATIONS

- Building heating
  > Compressor Buildings
  > Fire Pump Buildings
  > Meter House Heating
  > Personnel Heating-Fixed or Portable
  > Pipeline Heating
  > Offshore Platforms

- Instrument heating
  > Control Instruments
  > Small Regulators
  > Small Valves
  > Electronic Measurement Devices

- Freeze protection
  > Chokes
  > Dump Valves
  > Level Controllers
  > Meters
  > Orifice Fittings
  > Valves
  > Regulators

METER HOUSE HEATING
Small capacity Bruest rectangular heaters are used extensively for heating meter houses, and when applied properly, will prevent freezing in almost any climate, with exceptional safety. Bruest heaters conserve energy by heating troublesome equipment, frequently replacing larger, more expensive line-type heaters.

HAZARDOUS SPACE HEATING
When heat is required in an area where a hazardous condition exists, Bruest has the answer. Examples include compressor buildings, meter houses, flammable materials storage, offshore platforms and many other locations.
CATALYTIC HEATER SPECIFICATIONS
Standard, FM and CSA Model Heaters
Stainless Steel

<table>
<thead>
<tr>
<th>HEATER MODEL</th>
<th>BTU/HR. INPUT</th>
<th>CU.FT./HR.</th>
<th>HEATER DIMENSIONS INCHES</th>
<th>STARTING VOLTAGES</th>
<th>FUEL INLET NPT</th>
<th>SHIPPING WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-24</td>
<td>6000</td>
<td>6.0</td>
<td>2.4</td>
<td>6.5</td>
<td>x</td>
<td>1/4&quot;</td>
</tr>
<tr>
<td>12-24</td>
<td>12000</td>
<td>12.0</td>
<td>4.8</td>
<td>12.12</td>
<td>x</td>
<td>1/4&quot;</td>
</tr>
<tr>
<td>12-36</td>
<td>18000</td>
<td>18.0</td>
<td>7.2</td>
<td>12.12</td>
<td>x</td>
<td>1/2&quot;</td>
</tr>
<tr>
<td>12-48</td>
<td>24000</td>
<td>24.0</td>
<td>9.6</td>
<td>12.12</td>
<td>x</td>
<td>1/2&quot;</td>
</tr>
<tr>
<td>12-60</td>
<td>30000</td>
<td>30.0</td>
<td>12.0</td>
<td>12.12</td>
<td>x</td>
<td>1/2&quot;</td>
</tr>
<tr>
<td>12-72</td>
<td>36000</td>
<td>36.0</td>
<td>14.4</td>
<td>12.12</td>
<td>x</td>
<td>1/2&quot;</td>
</tr>
<tr>
<td>18-36</td>
<td>28000</td>
<td>28.0</td>
<td>11.2</td>
<td>18.12</td>
<td>x</td>
<td>1/2&quot;</td>
</tr>
<tr>
<td>18-48</td>
<td>37000</td>
<td>37.0</td>
<td>14.8</td>
<td>18.12</td>
<td>x</td>
<td>1/2&quot;</td>
</tr>
<tr>
<td>18-60</td>
<td>45000</td>
<td>45.0</td>
<td>18.3</td>
<td>18.12</td>
<td>x</td>
<td>1/2&quot;</td>
</tr>
<tr>
<td>24-48</td>
<td>50000</td>
<td>50.0</td>
<td>20.0</td>
<td>24.12</td>
<td>x</td>
<td>1/2&quot;</td>
</tr>
<tr>
<td>24-60</td>
<td>60000</td>
<td>60.0</td>
<td>24.4</td>
<td>24.12</td>
<td>x</td>
<td>1/2&quot;</td>
</tr>
<tr>
<td>24-72</td>
<td>72000</td>
<td>72.0</td>
<td>28.8</td>
<td>24.12</td>
<td>x</td>
<td>1/2&quot;</td>
</tr>
</tbody>
</table>

NOTE:

1. Specify when ordering:
   a) Model of heater - FM - CSA - Standard
      • Standard catalytic heaters are for use in non-hazardous locations
      • FM approved catalytic heaters are for use in Class 1, Division 2, Group D locations
      • CSA approved catalytic heaters are for use in Class 1, Division 1 and 2, Group D locations
   b) Fuel
      • Natural gas, L.P. (propane) or butane gas
   c) Starting voltage
      • 12 volt DC
      • 120 volt AC
      • 208 volt AC
      • 240 volt AC
      • 480 volt AC

2. Catalytic heaters are designed and orificed to operate on a standard fuel inlet pressure of 3 1/2” or 7” W.C. for natural gas and 11” W.C. for L.P. (propane) and butane gas.

3. FM model catalytic heaters are approved by Factory Mutual Research for use in Class 1, Division 2, Group D locations, and are equipped with a thermocouple – safety shut-off valve – and steel junction box. An explosion-proof junction box is optional at an additional charge.

4. Canadian Standards Association model catalytic heaters are approved for use in Class 1, Division 1 and 2, Group D locations, and are equipped with a thermocouple – safety shut-off valve – explosion-proof junction box – appliance type regulator (natural gas only) and manual shut-off valve.