



THE HOTLINE

Current news and information from Cambridge Engineering, Inc.

The Performance Leader In Industrial Space Heating & Make-Up Air
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"Telling the truth gives a man great satisfaction, and hard work returns many blessings to him." Proverbs 12:14

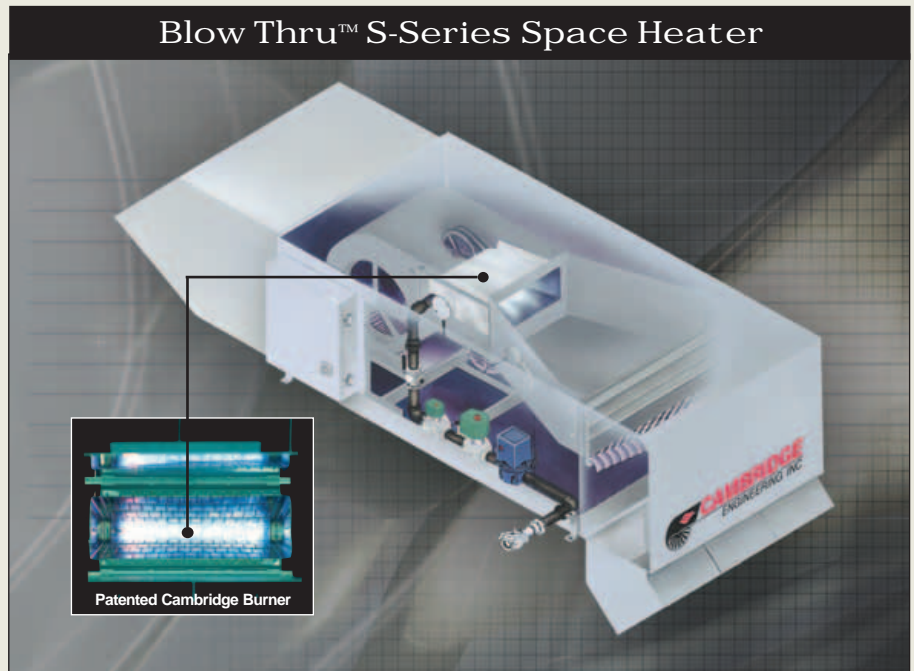
WARNING DO NOT ATTEMPT TO SUBSTITUTE

any other direct gas-fired heater for a Genuine Cambridge Blow-Thru™ Space Heater. The technologies are different. Ability to heat the building will be jeopardized and energy costs will increase.

The above WARNING STATEMENT reflects the unfortunate situation that other manufacturers are still trying to substitute their heating equipment for a Genuine Cambridge Blow-Thru™ Space Heater by saying "it is just like Cambridge". The result is an unhappy contractor or building owner who can't understand why their facility won't stay warm on really cold days and why energy usage is much higher than expected. The answer is simple; with Cambridge you get more useable heat and use less energy.

Patented Cambridge Burners:

Unlike our competition, Cambridge designs and manufactures its own patented high efficiency burners. You can't get the high performance of a Cambridge burner unless you have a Cambridge Heater.



Blow-Thru™ Space Heater:

The patented Cambridge burner, combined with Blow-Thru™ Space Heater technology outperforms every other direct gas-fired heater on the market. Only Cambridge offers the Blow-Thru™ design where the burner is down stream of the blower. This means a higher Btu/cfm ratio and lower operating costs.

160°F Certified Heater:

Despite misleading claims by our competitors, Cambridge is still the only manufacturer certified to ANSI Standard Z83.4 with a heater that will take 0°F inlet air

and heat it through a 160°F temperature rise to achieve a max discharge temperature of 160°F. The max 160°F rating for both temperature rise and outlet temperature is crucial for space heating applications. It translates into a smaller, more energy efficient space heater that uses a lower horsepower motor and most important of all, can heat a building using less outside air. That means, with Cambridge, you get more useable heat, use less energy and don't have to worry about this WARNING STATEMENT.

From the President

"Who makes your direct gas-fired heater?"



John Kramer, Jr.,
President

I've lost count of how many manufacturers now sell direct gas-fired air heating equipment. The names change every year as companies get in and out of our business, are bought by larger corporations, private label another company's heater or a new HVAC distributor sells unlabeled equipment on the Internet.

You could probably find at least 20 companies in a directory somewhere.

Our industry has experienced tremendous growth and change since Cambridge Engineering first pioneered the use of energy efficient, direct gas-fired industrial space heaters over 40 years ago. What hasn't changed is that we are still a family owned and operated company, dedicated to a single goal, "provide you with the best direct gas-fired heaters and technical support in the industry".

One way we accomplish this goal is by designing and manufacturing our own patented, high efficiency burners. This is the most critical component of the heater. However, every other manufacturer of direct gas-fired air heating equipment uses someone else's burner in their heaters. In fact they often use the lowest cost burner they can find, so their burner vendor may change from year to year.

Patented Cambridge burners are used in both our Space Heating and Make-Up Air Heating product lines. Combined with our Blow-Thru™ Space Heater Technology, this is why Cambridge can outperform every other direct gas-fired heater on the market. The all stainless steel burner construction and flame rod also reduce maintenance and extend service life. That's why only a Genuine Cambridge heater comes with the industry's best warranty package of 2 years on the heater and 5 years on the patented Cambridge burner.

If you want the best and if energy efficiency is important, then insist on Genuine Cambridge direct gas-fired heaters!

When the Cost of Energy Matters...Go with Genuine Cambridge

It seems like every heater manufacturer has jumped on the bandwagon promoting energy efficiency. Who do you believe? Does anyone have documented proof of actual energy savings versus all other types of heating systems?

Cambridge, direct gas-fired space heaters with high temperature rise, Blow-Thru™ technology have been used to heat thousands of buildings and over a billion square feet in recent years. Today this technology is recognized as the best and most energy efficient way to heat large insulated buildings that require some form of ventilation. Typical applications include warehouses, manufacturing facilities, assembly plants, car dealership service areas, aircraft hangers, boat storage and indoor sports facilities. Building studies and customer testimonials document 40% to 70% energy savings versus all other types of indirect and direct gas-fired heating systems as summarized in TABLE 1 and the Comparison Studies shown on the following pages.

TABLE 1
Energy Savings with
Blow-Thru™ Space Heater

Other Industrial Heating Systems	Energy Savings with Blow-Thru™ Space Heaters
Indirect Gas-Fired Systems	
Boilers	40% to 70%
Infrared (Radiant)	15% to 40%
Unit Heaters	30% to 50%
Air Turnover Systems	25% to 50%
Direct Gas-Fired Systems	
Make-Up Air (MUA)	20% to 50%
Recirculation (pressurization)	20% to 50%

Don't let the lowest bidder determine what is important to you when it comes to saving energy. When the Cost of Energy Matters, insist on Genuine Cambridge heating equipment.

Cambridge vs. Boiler



Cambridge Space Heaters replaced a Boiler Heating System in a 100,000 ft² manufacturing plant.

NOW

Cambridge Heating System

- (3) Direct Gas-Fired **Blow-Thru™ Space Heaters**
- Outdoor Vertical Mounting



- 4,109 MBH Total
- 22,080 CFM Total

BEFORE

Boiler Heating System

- Uneven Temperatures
- Cold Dock Areas
- High Maintenance Costs
- High Energy Costs



Results: The Cambridge system used 65% less gas, provided more even temperatures, eliminated cold dock areas and dramatically reduced maintenance costs.

Cambridge Energy Savings →

Gas Cost	Annual Savings
\$.75 / therm	\$ 46,000
\$ 1.00 / therm	\$ 61,000
\$ 1.25 / therm	\$ 77,000

Cambridge vs. Infrared

Warehouse #1



150,000 ft² x 27' high, R-15 Roof / R-12 Walls

Cambridge Heating System

- (2) Direct Gas-Fired **Blow-Thru™ Space Heaters**
- Thru-Wall Mounting
- 2,912 MBH Total
- 13,880 CFM Total

Warehouse #2



100,000 ft² x 28' high, R-15 Roof / R-12 Walls

Infrared (Radiant) Heating System

- (24) Gas-Fired Infrared Tube Heaters
- Suspended Mounting at 22'
- 4,200 MBH Total
- No ventilation with outside air

Results: The Cambridge system used 41% less gas per sq. ft. of floor space and provided ventilation.

If Warehouse #2 had installed a high efficiency **Cambridge system** they could have saved →

Gas Cost	Annual Savings
\$.75 / therm	\$ 9,000
\$ 1.00 / therm	\$ 11,000
\$ 1.25 / therm	\$ 14,000

Cambridge vs. Unit Heaters



Two Identical Side-By-Side Buildings

Each with 200,000 ft² x 25' high; R-15 Roof / R-15 Walls

Building #1



Cambridge Heating System

- (4) Direct Gas-Fired **Blow-Thru™ Space Heaters**
- Thru-Wall Mounting
- 4,800 MBH Total
- 27,800 CFM Total

Building #2



Unit Heater System

- (18) Indirect Gas-Fired Unit Heaters
- Suspended from ceiling
- 5400 MBH Total
- No ventilation with outside air

Results: The Cambridge system used 38% less gas and provided ventilation.

If Building #2 had installed a high efficiency **Cambridge system** they could have saved →

Gas Cost	Annual Savings
\$.75 / therm	\$ 22,000
\$ 1.00 / therm	\$ 30,000
\$ 1.25 / therm	\$ 38,000

Cambridge vs. Air Turnover

Warehouse #1



215,000 ft² x 30' high, R-19 Roof / R-11 Walls

Cambridge Heating System

- (3) Direct Gas-Fired Blow-Thru™ Space Heaters
- Thru-Wall Mounting
- 3,615 MBH Total
- 20,820 CFM Total
- 15 HP Total - intermittent

Warehouse #2



228,000 ft² x 27' high, R-19 Roof / R-10 Walls

Air Turnover System (Air Rotation)

- (2) Indirect Gas-Fired Air Turnover Heaters
- Floor Mounting
- 6,250 MBH Total
- 200,000 CFM Total
- 40 HP Total - continuous

Results: The Cambridge system used 68% less total energy per sq. ft. of floor space and provided ventilation.

If Warehouse #2 had installed a high efficiency **Cambridge system** they could have saved

Gas Cost	Electric Cost	Annual Savings
\$.75 / therm	\$.08 / kwh	\$ 46,000
\$1.00 / therm	\$.10 / kwh	\$ 62,000
\$1.25 / therm	\$.12 / kwh	\$ 75,000

Cambridge vs. Draw-Thru Make Up Air (100% Outdoor Air - No Recirculation)

Distribution Center #1



1.3 million ft² x 36' high, R-19 Roof / R-10 Walls

Cambridge Heating System

- (15) Direct Gas-Fired Blow-Thru™ Space Heaters
- Rooftop Mounting
- 27,806 MBH Total
- 132,340 CFM Total
- 95 HP Total - intermittent

Distribution Center #2



1.3 million ft² x 36' high, R-19 Roof / R-10 Walls

Make-Up Air Heating System (100% outside air)

- (15) Direct Gas-Fired Draw-Thru Make-Up Air Heaters
- Rooftop Mounting
- 30,315 MBH Total
- 210,000 CFM Total
- 150 HP Total - continuous

Results: The Cambridge system used 36% less total energy.

If Distribution Center #2 had installed a high efficiency **Cambridge system** they could have saved

Gas Cost	Electric Cost	Annual Savings
\$.75 / therm	\$.08 / kwh	\$ 90,000
\$1.00 / therm	\$.10 / kwh	\$ 116,000
\$1.25 / therm	\$.12 / kwh	\$ 155,000

Cambridge vs. Draw-Thru Make Up Air (80% Recirculation - 20% Outdoor Air)

Large Warehouse #1



1.7 million ft² x 40' high, R-13 Roof / R-10 Walls

Cambridge Heating System

- (12) Direct Gas-Fired Blow-Thru™ Space Heaters
- Rooftop Mounting
- 32,800 MBH Total
- 157,200 CFM Total
- 160 HP Total - intermittent

Large Warehouse #2



1.4 million ft² x 45' high, R-19 Roof / R-19 Walls

Make-Up Air Heating System (80/20 Recirculation)

- (8) Direct Gas-Fired Draw-Thru Make-Up Air Heaters
- Rooftop Mounting
- 77,000 MBH Total
- 800,000 CFM Total
- 600 HP Total - continuous

Results: Cambridge system used 68% less total energy on a cost per ft² basis

If Large Warehouse #2 had installed a high efficiency **Cambridge system** they could have saved

Gas Cost	Electric Cost	Annual Savings
\$.75 / therm	\$.08 / kwh	\$ 252,000
\$1.00 / therm	\$.10 / kwh	\$ 336,000
\$1.25 / therm	\$.12 / kwh	\$ 392,000