Our heating solutions

Let's innovate together!

Premix gas burners and condensing heat exchangers

Ignite the future

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01 A brief introduction

We don’t just imagine a brighter future. We build it.

No matter where you are in the world, you’re never too far away from Bekaert technology.

Our innovative steel wire and advanced coating know-how have helped our customers grow their businesses for more than 140 years. We are a global company headquartered in Belgium with more than 27,000 employees worldwide and € 5.9 billion in combined revenue. Bekaert Heating is part of the global corporation of Bekaert and we are your strategic supply partner in heating solutions.

We...

1. Have over 50 years of experience starting in 1966 under the name of Furigas and acquired by Bekaert in 2001.

2. Expanded our portfolio with aluminum heat exchangers in 2006 with the acquisition of Aluheat.

3. Are pioneers and technical leaders in the development and supply of steel and NIT fiber premix gas burners.

4. Have a leading market share for premix gas burners in the range from 1kW to 10 MW.

5. Are market leaders for commercial aluminum heat exchangers.

6. Have installed over 50 million premix burners in buildings and homes.

Your empowering partner in heating solutions

Our knowledge and technological expertise enable us to develop product designs
and solutions based on your specifications while conforming to local regulations.

We have solutions available for a wide range of applications:

- Residential Heating
- Commercial Heating
- Industrial Heating
- Commercial Cooking
- Water Heating
- Mobile Heating
- Air Heating

How we can help?

We are proud of our longstanding experience and excellent knowledge of heating solutions.

Our goal is to use our experience to unburden you, by offering the following services:

- Tailored solutions for your needs
- White label boiler assembly
- Joint development of hybrid heating solutions
- Joint development of hydrogen applications

Research and Development is part of our worldwide DNA

We have a market-driven R&D department to serve current and new customer needs. We support open innovation through cooperation with universities and research institutes as well as with customers and suppliers. During the development process we offer rapid prototyping and we take care of intellectual property protection.

What does this mean?

1. A dedicated R&D specialist will be specifically selected for your project.

2. Instant access to our specialists to answer your questions.

3. Product will be faster on the market.

02 Growing need for change

Driving progress for our planet and people

A better world for sustainable growth

With our expertise in heating solutions, Bekaert delivers innovations that contribute to a cleaner environment. For over 50 years we have been developing environmentally friendly heating solutions. Our gas burners and heat exchangers are designed with one goal in mind: achieving highest efficiency at lowest emissions.

One of the most interesting developments is the use of hydrogen as a replacement for natural gas as a heating source.

Hydrogen has similar properties as natural gas, but without the emissions (provided it is generated by green energy). A few minor but essential adjustments in the heating boiler, will make existing heating boilers function well on hydrogen.

The specific difference will be in the design and performance requirements of the burner and that is where the expertise of Bekaert Heating is important. We now have a range of patented hydrogen burners in our portfolio. With these hydrogen burners we already have executed several pilot projects with our customers in Western Europe.

Ready when you are

With four production facilities in strategic locations across the world, we can meet your logistic and supply needs quickly and efficiently.

"Low emissions?" Yes please! Our main challenge to increase efficiency and lower NOx emissions. As every application is unique, we use model processes to create optimized solutions. We produce all our burners in-house. This gives us full control over the manufacturing process; from knitting the material, to the punching, forming, welding and assembly of the burners. We are able to provide you with proto-types and pre-production samples at any time during development.

03 Premix gas burners

High modulating premix burners are exposed to much higher temperatures than conventional gas burners. This results in low NOx and CO emissions but it requires higher temperature resistance and careful consideration on temperature induced stresses. To create a reliable and high performance product, we test numerous functions in the lab. We expose new burner designs to accelerated life-tests to prove durability of design and material on any type of gas. Our testing facilities include:

1. Test rigs up to 5MW

2. A temperature controlled test room

3. Life-time test for burners and boilers

4. State-of-art facilities to measure emissions, temperature curves and fluid dynamics

Our products

Furipat®

Stainless steel round burner

Furipat® is the industry standard for premix steel gas burners used in residential condensing combi boilers. Its cylindrical shape suits a wide range of residential heat exchangers. Furipat® has been on the market for over 3 decades and enjoys a good reputation with major boiler manufacturers worldwide.

Furinit®

Compact metal fiber burner

Furinit® is the most compact gas burner using Bekinit® in our range. Suitable for all major gas adaptive control systems, this burner is mostly used in residential and small commercial boilers and water heaters. Furinit® features a patented shaped burner deck that combines mesh and Bekinit®.

Aconit®

Round or rectangular metal fiber burner

Cylindrical Aconit® burners are the best option for commercial boilers and water heaters as it has a high turndown ratio and assures the highest efficiency and lowest NOx emissions. Flat Aconit® burners, on the other hand, are able to operate at continuously high temperatures in infrared mode without affecting the lifetime of the burner.

Furi-jet®

Metal fiber based round burner with an active burner head

Furi-Jet is our most powerful burner and the best option for two-pass boilers for commercial use. Bekaert is the inventor of Furi-Jet technology and the sole supplier of this unique product. Furi-Jet creates a rectangular shaped flame.

Bekinit®

3D metal fiber material

Bekinit® is a uniquely knitted 3D burner material made of refractory stainless steel fibers. This industry proven flexible medium can be used for both cylindrical and flat burner surfaces. It allows a reliable heat transfer, minimizes thermal stresses and allows for high modulation ranges.

Furipat® specifications

Refractory stainless steel cylindrical burner

Furipat® is the industry standard for premix steel gas burners used in residential condensing combi boilers. Its cylindrical shape suits a wide range of residential heat exchangers. Furipat® has been on the market for over 3 decades and enjoys a good reputation with major boiler manufacturers worldwide.

The benefits

1. Long product life

2. High efficiency

3. Low CO2 emission

Application

Residential/Small Commercial

Product table

Diameter (inch)	Typical length (inch)	Nominal input (kBtu/hr)
2	¾ - 6	40 - 125
2½	¾ - 10	60 - 300
2¾	¾ - 16	60 - 500

Other dimensions available upon request

Typical emission levels: CO: 1 - 60 - Nox: <20 ppm - Modulation: < 1:10

Furinit® specifications

Compact metal fiber burner

Furinit® is the most compact gas burner using Bekinit® in our range. Suitable for all major gas adaptive control systems, this burner is mostly used in residential and small commercial boilers and water heaters. Furinit® features a patented shaped burner deck that combines mesh and Bekinit®.

The benefits

1. Extremely wide modulation range

2. Excellent flame stability

3. High outputs at minimal dimensions

Application

Residential/Small Commercial

Versions

Round and rectangular

Product table

Round burners

Diameter (inch)	Nominal input (kBtu/hr)
2	2 - 60
2¾	2 - 200
4	10 - 300
5½	30 - 800
8	60 - 1200
9¾	100 - 2000

Rectangular burners

Dimensions (inch)	Nominal input (kBtu/hr)
Available upon request	2 - 300

Other dimensions available upon request

Typical emission levels: CO: 1 - 60 - Nox: <20 ppm - Modulation: < 1:25

Aconit® specifications

Round or rectangular metal fiber burner

Cylindrical Aconit® burners are the best option for commercial boilers and water heaters as it has a high turndown ratio and assures the highest efficiency and lowest NOx emissions. Flat Aconit® burners, on the other hand, are able to operate at continuously high temperatures in infrared mode without affecting the lifetime of the burner.

The benefits

1. Can be shaped to meet all heat exchanger lay-outs

2. Reduced surface temperature thanks to excellent heat transfer

3. High efficiency thanks to high turn-down ratio

Application

Commercial

Versions

Round and rectangular

Product table

Round burners

Diameter (inch)	Typical length (inch)	Nominal input (kBtu/hr)
1⅜	1⅜ - 12	20 - 160
2	1⅜ - 12	40 - 200
2½	1⅜ - 16	50 - 500
2¾	1⅜ - 20	50 - 700
3¼	1⅜ - 24	50 - 1000
4	2½ - 26	150 - 1750
5½	2½ - 40	200 - 4000
8	2½ - 55	300 - 8000
9¾	2½ - 65	350 - 12000
12	4 - 80	700 - 16000
14	4 - 80	1000 - 20000
19	4 - 80	1500 - 30000

Rectangular burners

Width (inch)	Length (inch)	Nominal input (kBtu/hr)
2 - 7	2 - 10	3 - 700

Other dimensions available upon request

Typical emission levels: CO: 1 - 60 - Nox: <20 ppm - Modulation: < 1:15

Furi-jet® specifications

Metal fiber round burner with an active burner head

Product table

Diameter (inch)	Minimum length (inch)	Nominal input (kBtu/hr)
5½	4	700
8	5	1700
9¾	5½	2500
12	7	4000
14	8	5500
19	11	11000
28¾	14	23000

Please note that the quoted performance data are indications. Other capacities and dimensions upon request. Modulation: < 1:10

Furi-Jet is our most powerful burner and the best option for two-pass boilers for commercial use. Bekaert is the inventor of Furi-Jet technology and the sole supplier of this unique product. Furi-Jet creates a rectangular shaped flame. The benefit of this flame size is that it reaches further into the combustion chamber which leads to improved usage of the combustion chamber as a whole.

The benefits

1. Improved usage of combustion chamber leads to higher efficiency

2. Excellent flame stability

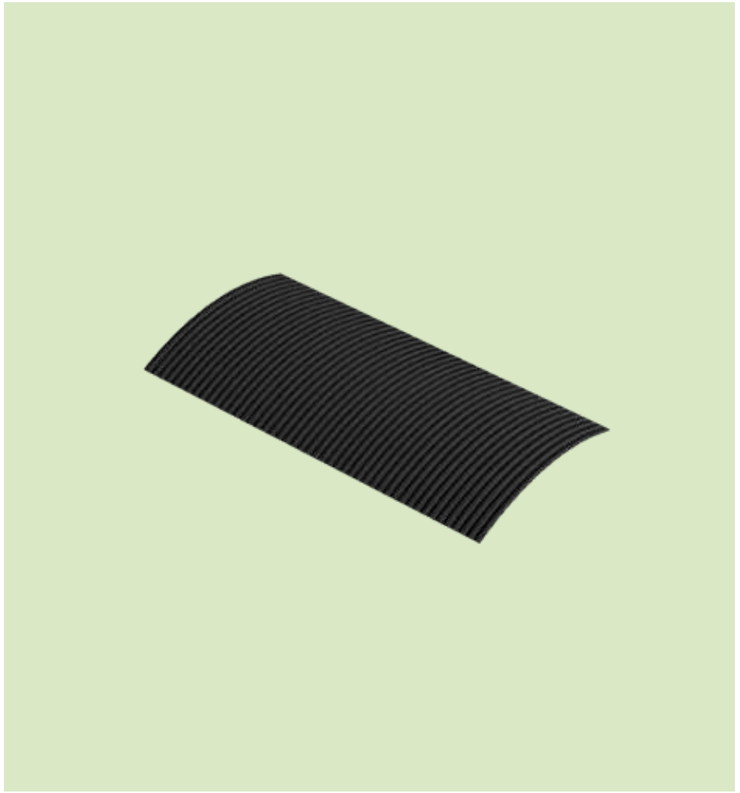
3. High outputs at minimal dimensions

Application

Commercial

Bekinit® specifications

3D metal fiber material



Bekinit® is a uniquely knitted 3D burner material made of refractory stainless steel fibers. This industry proven flexible medium can be used for both cylindrical and flat burner surfaces. It allows a reliable heat transfer, minimizes thermal stresses and allows for high modulation ranges.

The benefits

1. Increased output at equal burner dimensions

2. High turn down ratios (>1:20)

3. Extended lifetime

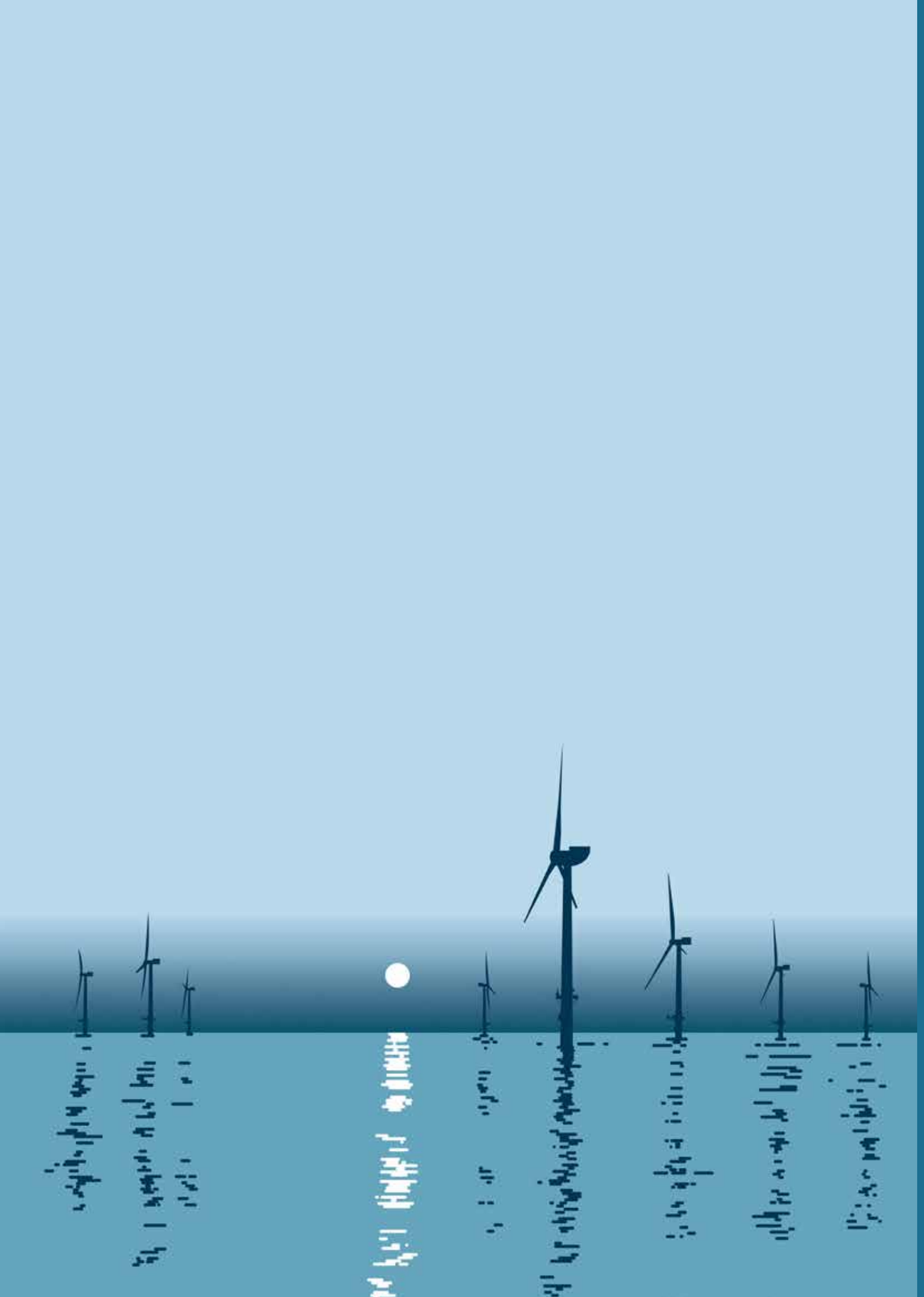
4. Superior resistance to rapid and extreme temperature

Application

Residential/Small Commercial

The future of sustainable warmth. Heating your home is what we do, cooling the planet is the result.

Bekaert offers customized burners that are tailored to your specific needs and local regulations. These solutions enable your company to access new markets and consolidate your position with your existing customer base.



04 Heat exchangers

Over the last three decades, Bekaert has designed more than 50 different cast aluminum condensing heat exchanger models in capacities ranging from 20kW to more than 4MW. Our innovative products and processes support you in delivering industry leading residential and commercial boilers.

Bekaert heat exchangers consist of high-grade aluminum supplied by a global network of top suppliers. This material has several essential benefits to the design:

1. Greater freedom of design

2. Excellent thermal conductivity (10 times higher than stainless steel)

3. High corrosion resistance

4. Significantly lighter and more efficient than stainless steel heat exchangers of similar capacity

Our products

Alumini®
Compact heat exchanger
This very compact monobloc aluminum heat exchanger is available in capacities of 20 and 30 kW and can support any modulation range. Its design features large and simple fluid ducts resulting in low hydraulic resistance.

Alucento®
Small commercial wall heat exchanger
This compact monobloc heat exchanger is ideal for small commercial condensing boilers. Alucento® is available in capacities of 60 kW, 90 kW and 120 kW.

WTB®
Extremely reliable heat exchanger
This range of commercial sectional condensing heat exchangers is available in capacities of 80 kW to 280 kW. A WTB® heat exchanger only needs one cylindrical burner and one fan and has a fully water-cooled chamber.

Aluflow®
Highly efficient heat exchanger
Aluflow is a highly efficient commercial aluminum condensing heat exchanger with revolutionary hydraulic properties. Needing only one cylindrical burner and one fan, the heat exchangers have a fully water cooled combustion chamber and require no ceramic insulation. The high thermal conductivity of the sectional casting design results in a very high efficiency in an extremely compact geometry.

Alucom®
Water cooled combustion heat exchanger
Alucom® and Alumega® (1MW) aluminum condensing heat exchangers only need one cylindrical burner and one fan. The heat exchangers have a fully water cooled combustion chamber and require no ceramic insulation. The high thermal conductivity of the sectional casting design results in a very high efficiency and the most compact dimensions for this type of heat exchanger.

Alupower®
Compact performance heat exchanger
Alupower® is revolutionary in terms of size and efficiency. Measuring approximately 25% smaller and weighing 60% lighter than cast iron boilers, this commercial heat exchanger easily fits through doors and elevators and into narrow boiler rooms. Alupower® also needs fewer components compared to cascaded systems with a similar output, resulting in lower installation and maintenance costs.

Alumini® specifications

Compact heat exchanger

This very compact monobloc aluminum heat exchanger is available in capacities of 20 and 30 kW and can support any modulation range. Its design features large and simple fluid ducts resulting in low hydraulic resistance.

The benefits

1. High output range in a very compact housing

2. High flame stability over the whole capacity range

3. High modulation range and low pneumatic resistance

4. Designed as a complete heat solution with our Furinit® burner

Application

Residential

Alumini® ASME approval pending		20	30
Nominal input	kBtu/hr	90	125
Maximum input	kBtu/hr	120	150
AHRI-1500 efficiency at nominal input	%	94	94
Maximum flow temperature	°F	195	195
Operating pressure	PSI	10 - 50	10 - 50

Alucento® specifications

Small commercial wall heat exchanger

This improved compact monobloc heat exchanger is ideal for mall commercial condensing boilers. Alucento® is available in capacities of 60 kW, 90 kW and 120 kW.

The benefits

1. Complete heat cell solution with Aconit burner and plastic condensate collector

2. Compact

3. Light weight wall hung solution

Application

Commercial

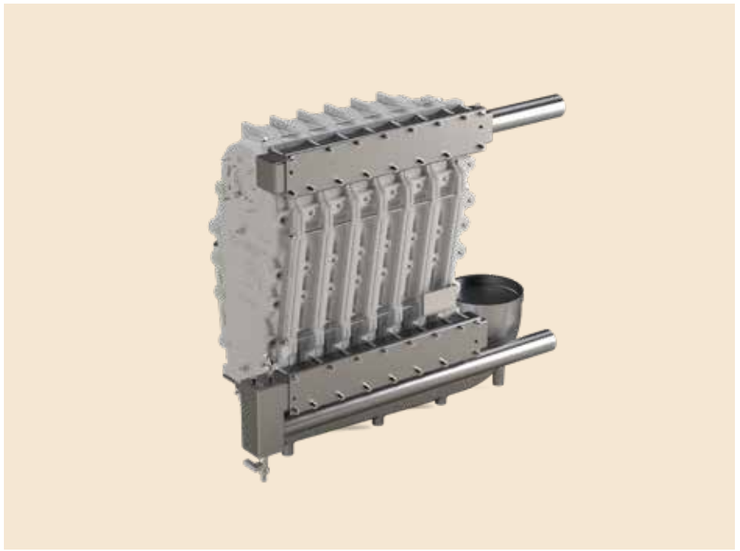
Alucento® ASME approval pending

		60	90	120
Nominal input	kBtu/hr	199	299	399
Maximum input	kBtu/hr	250	399	499
AHRI-1500 efficiency at nominal input	%	94	94	94
Maximum flow temperature	°F	195	195	195
Operating pressure	PSI	15 - 80	15 - 80	15 - 80

WTB® specifications

Extremely reliable heat exchanger

This range of commercial sectional condensing heat exchangers is available in capacities of 80 kW to 360 kW. The WTB® heat exchanger is extremely reliable with a proven lifetime in the field for more than 15 years.



The benefits

1. Modular flexibility within capacity range

2. No ceramic insulation required

3. Low weight and small footprint

4. Easy access on all sides for maintenance

5. Designed as a complete heat solution with our Aconit® burner

Application

Commercial

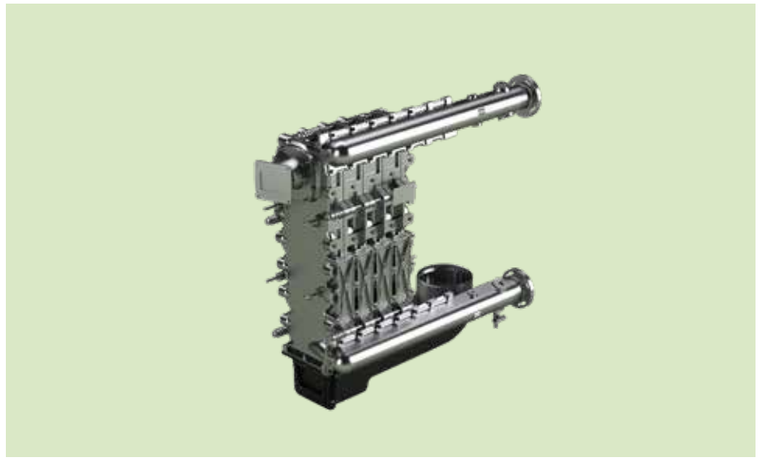
WTB® ASME approval pending

		3	4	5	6	7	8	10
Nominal/ Maximum input	kBtu/hr	300	450	600	750	900	1050	1300
AHRI-1500 efficiency at nominal input	%	94	94	94	94	94	94	94
Maximum flow temperature	°F	195	195	195	195	195	195	195
Operating pressure	PSI	10 - 125	10 - 125	10 - 125	10 - 125	10 - 125	10 - 125	10 - 125

Aluflow® specifications

Highly efficient heat exchanger

Aluflow is a highly efficient commercial aluminum condensing heat exchanger with revolutionary hydraulic properties. The heat exchangers have a fully water cooled combustion chamber and requires no ceramic insulation. The high thermal conductivity of the sectional casting design results in a very high efficiency in an extremely compact geometry.



The benefits

1. Extremely low hydraulic resistance, 30 mbar at full load with delta T 20°C

2. Allowed flow temperature up to 95°C and allowed delta T up to 50°C

3. Modular flexibility within capacity range

4. No ceramic insulation required

5. Small footprint

6. Easy access for maintenance

7. Designed as a complete heat solution with our Aconit burner

8. Has plastic condensate collector

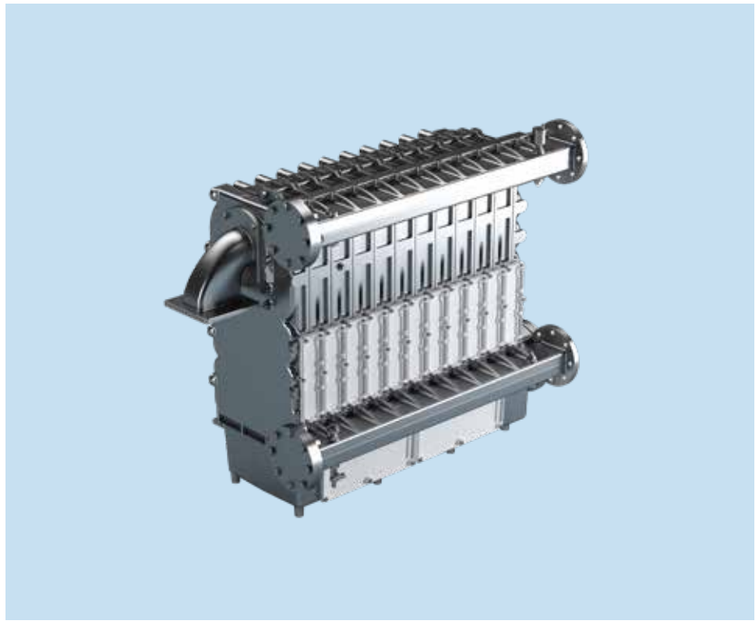
Application

Commercial

Aluflow®		3	4	5	6	7
Nominal input	kBtu/hr	400	550	700	850	1000
Maximum input	kBtu/hr	500	750	1000	1250	1500
AHRI-1500 efficiency at nominal input	%	94	94	94	94	94
Maximum flow temperature	°F	203	203	203	203	203
Operating pressure	PSI	10 - 125	10 - 125	10 - 125	10 - 125	10 - 125

Alucom® specifications

Water cooled combustion heat exchanger



Alucom® and Alumega® (1MW) aluminum condensing heat exchangers only need one cylindrical burner and one fan. The heat exchangers have a fully water cooled combustion chamber and require no ceramic insulation. The high thermal conductivity of the sectional casting design results in a very high efficiency and the most compact dimensions for this type of heat exchanger.

The benefits

1. Modular flexibility within capacity range

2. No ceramic insulation required

3. Covers very wide capacity range

4. Small footprint

5. Easy access for maintenance

6. Designed as a complete heat solution with our Aconit® burner

7. Proven design: 12 years of field lifetime without issues

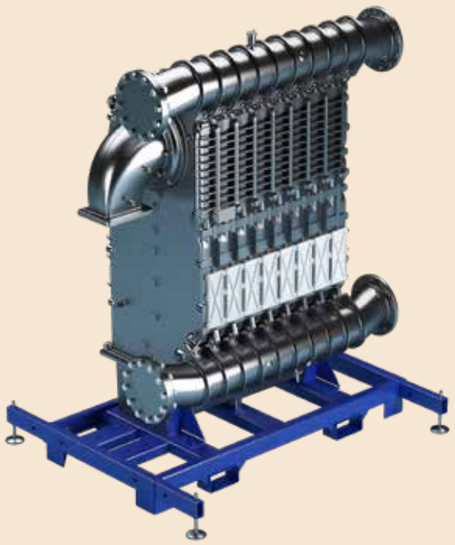
Application

Commercial

Alucom® & Alumega® ASME approval pending		5	6	7	8	9	10	12	16
Nominal / maximum input	kBtu/hr	1250	1500	1750	2000	2500	3000	4000	5000
AHRI-1500 efficiency nom input	%	94	94	94	94	94	94	94	94
Efficiency 30% load 36/30 °C	°F	195	195	195	195	195	195	195	195
Maximum flow temperature	PSI	10 - 160	10 - 160	10 - 160	10 - 160	10 - 160	10 - 160	10 - 160	10 - 160

Alupower® specifications

Compact performance heat exchanger



Alupower® is revolutionary in terms of size and efficiency. Measuring approximately 25% smaller and weighing 60% lighter than cast iron boilers, this commercial heat exchanger easily fits through doors and elevators and into narrow boiler rooms. Alupower® also needs fewer components compared to cascaded systems with a similar output, resulting in lower installation and maintenance costs.

The benefits

1. Excellent performance / weight ratio and exceptional efficiency

2. Compact size for easy installation and maintenance as well as a small footprint

3. Allowed flow temperature up to 95°C and allowed delta T up to 50°C

Application

Commercial

Optimal heat supply

Alupower® is at least 10% more efficient than boilers with the same output, which leads to more optimal heat supply and lower expected-running-costs. As you can see in the table, Alupower® offers high efficiencies at different flow temperature settings.

Alucento® ASME approval pending

		7	9	13
Nominal input	mBtu/hr	6	8	10
Maximum input	mBtu/hr	8	10.5	16
AHRI-1500 efficiency nom input	%	95	95	95
Maximum flow temperature	°F	203	203	203
Operating pressure	PSI	10 - 160	10 - 160	10 - 160

We think along with you with one goal in mind: improving your processes and the quality of your products. We developed specialized simulation models to simulate the actual performance of a new design under different circumstances. With these models we can study phenomena such as:

1. Heat transfer behavior

2. Combustion chamber and water channel gas as well as water flows

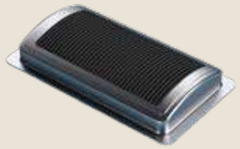
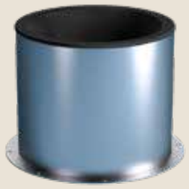
3. Fluid to metal interaction (gas to metal and metal to water)

4. Optimum peripheral design

5. Thermo-acoustic behavior and measures

Product overview and applications

Premix gas burners | Condensing heat exchangers

	Stainless steel, round burners	Rectangular metal, fiber burners	Round metal, fiber burners	Metal fiber, power burners	Metal, heat exchangers
					
Residential heating	x	x			x
Commercial heating		x	x		x
Industrial heating				x	
Commercial cooking	x	x	x		
Water heating	x				
RV heating	x	x	x		
Air heating		x			

We step out of our comfort zone so that we can provide yours. Building strong relationships with each other made us who we are today. Thank you!

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