

Our heating solutions

Let's innovate together!

Premix gas burners and condensing heat exchangers



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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.

O2 Growing need for change



Driving progress for our planet and people

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.

A better world for sustainable growth

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 is 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 prototypes and pre-production samples at any time during development.



03 Premix gas burners

Tried, Tested, Trusted!

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 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.

Multipat®

Stainless steel cylindrical burner

Multipat® is the cost-effective alternative to Furipat®. Its durable and efficient design offers superior performance at the lowest cost. The burner offers good flame distribution and is available in different sizes and with different burner patterns. Multipat® is ideally suited for small size wall-hung boilers.

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®

Cylindrical or flat 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 cylindrical power 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.

Stainless steel cylindrical burner

Furipat®

Long product life

High efficiency

Low CO2 emission



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.

Application

Residential/Small commercial

Product table

Diameter (mm)	Typical length (mm)	Nominal input (kW)
50	40 - 150	12 - 40
63	40 - 250	15 - 100
70	40 - 400	15 - 150

Other dimensions available upon request

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

Stainless steel cylindrical burner

Multipat®

Customizable for optimal efficiency

Excellent cost-performance ratio

Good control over modulation range



Multipat® is the cost-effective alternative to Furipat®. Its durable and efficient design offers superior performance at the lowest cost. The burner offers

good flame distribution and is available in different sizes and with different burner patterns. Multipat® is ideally suited for small size wall-hung boilers.

Application

Residential/Small commercial

Product table

Diameter (mm)	Typical length (mm)	Nominal input (kW)
50	40 - 150	12 - 40
63	40 - 180	15 - 50
70	40 - 200	15 - 60

Other dimensions available upon request

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

Compact metal fiber burner

Furinit®

High outputs at minimal dimensions

Extremely wide modulation range

Excellent flame stability



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®.

Application

Residential/Small commercial

Versions

Cylindrical and flat

Product table

Cylindrical burners	
Diameter (mm)	Nominal input (kW)
50	1 - 18
70	1 - 40
98	3 - 80
140	10 - 200
200	20 - 350
245	30 - 500

Flat burners	
Dimensions (mm)	Nominal input (kW)
Available upon request	1 - 100

Other dimensions available upon request

Typical emission levels:

CO: 1 - 60 - Nox: <20 ppm - Modulation: < 1:25

Cylindrical or flat metal fiber burner

Aconit®

Reduced surface temperature thanks to excellent heat transfer

Can be shaped to meet all heat exchanger lay-outs

High efficiency, high turn-down ratio



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.

Product table

Cylindrical burners

Diameter (mm)	Typical length (mm)	Nominal input (kW)
35	40 - 290	8 - 50
50	40 - 290	12 - 60
63	40 - 400	15 - 140
70	40 - 500	15 - 200
82	40 - 600	15 - 300
98	40 - 700	45 - 525
140	60 - 1000	65 - 1100
200	60 - 1400	100 - 2200
245	60 - 1600	115 - 3000
300	100 - 2000	225 - 4500
350	100 - 2000	275 - 5500
480	100 - 2000	375 - 7500

Flat burners

Width (mm)	Length (mm)	Nominal input (kW)
50 - 160	50 - 500	1 - 200

Application

Residential/Small commercial

Versions

Cylindrical and flat

Other dimensions available upon request

Typical emission levels:

CO: 1 - 60 - Nox: <20 ppm - Modulation: < 1:15

Metal fiber cylindrical power burner with an active burner head

Furi-Jet®

Improved usage of combustion chamber leads to higher efficiency

Ultra low NOx emissions

Excellent flame stability

High outputs at minimal dimensions



Furi-Jet is our most powerful burner and the best option for two-pass boilers for industrial 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 the longer reach into the combustion chamber which leads to improved usage of the combustion chamber as a whole.

Application

Industrial

Product table

Diameter (mm)	Minimum length (mm)	Nominal input (kW)
140	100	200
200	125	500
245	140	700
300	175	1000
350	200	1400
480	280	2800
720	350	7000
830	475	10.000

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

3D metal fiber material

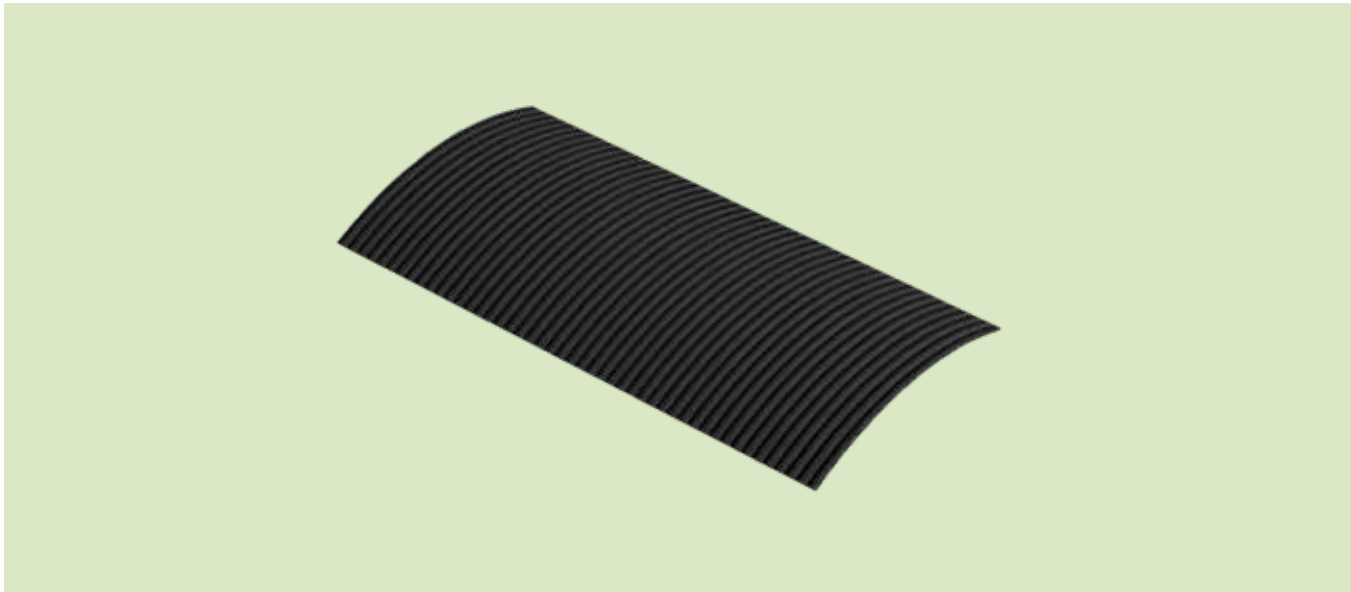
Bekinit®

Superior resistance to rapid and extreme temperature

Extended lifetime

High turn down ratios (>1:20)

Increased output at equal burner dimensions



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.

Application
Residential/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.

Essential material 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®

Residential 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®

Commercial 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®

Commercial 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®

Commercial heat exchanger

Alucom® 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®

Large commercial 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.

Residential heat exchanger

Alumini®

Designed as a complete heat solution with our Furinit® burner

High modulation range and low pneumatic resistance

High output range in compact housing



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.

Application

Residential

		20	30
Nominal input	kW	20	30
Maximum input	kW	32	40
Efficiency 100% nominal input 80/60 °C	%	98	98
Efficiency 30% nominal input 80/60 °C	%	108	108
Maximum flow temperature	°C	90	90
Operating pressure	bar	0,8 - 3	0,8 - 3

Small commercial wall heat exchanger

Alucento®

Complete heat cell solution with Aconit burner and plastic condensate collector

Compact

Light weight wall hung solution



This improved compact monobloc heat exchanger is ideal for small commercial condensing boilers.

Alucento® is available in capacities of 60 kW, 90 kW and 120 kW.

Application Small commercial

		60	90	120
Nominal input	kW	60	90	120
Maximum input	kW	72	108	144
Efficiency 100% load 80/60 °C	%	98	98	98
Efficiency 100% load 80/60 °C	°C	108	108	108
Maximum flow temperature	°C	90	90	90
Operating pressure	bar	1 - 6	1 - 6	1 - 6

Commercial heat exchanger

WTB®

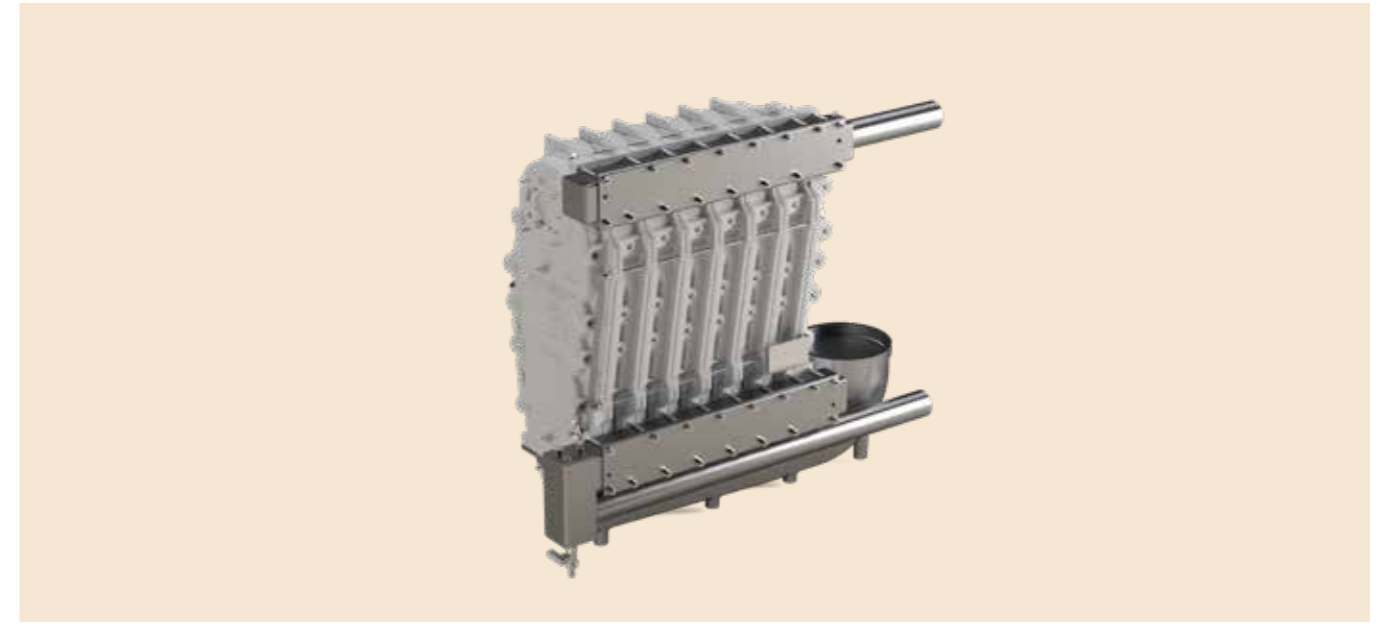
Modular flexibility within capacity range

A complete heat solution with our Aconit® burner

No ceramic insulation required

Light weight and small footprint

Easy maintenance



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.

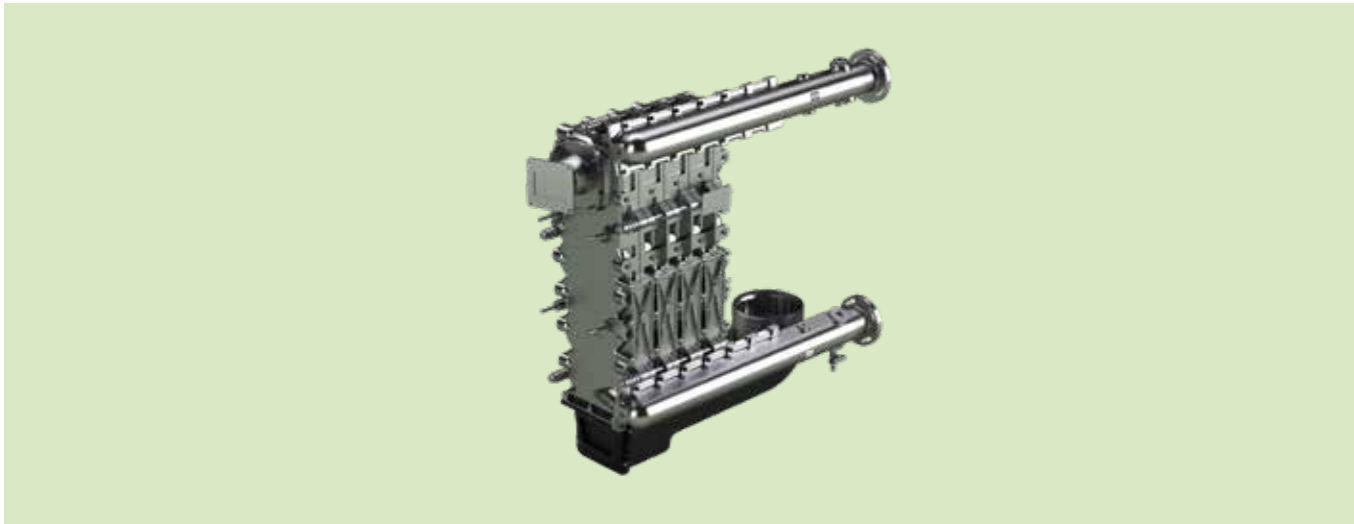
Application Commercial

		3	4	5	6	7	8	10
Nominal input max. load	kW	80	120	160	200	240	280	360
Modulation level	%	98	98	98	98	98	98	98
Efficiency 30% load 36/30 °C	%	108	108	108	108	108	108	108
Maximum flow temperature	°C	90	90	90	90	90	90	90
Operating pressure	bar	0,8 - 6	0,8 - 6	0,8 - 6	0,8 - 6	0,8 - 6	0,8 - 6	0,8 - 6

Commercial heat exchanger

Aluflow®

- Extremely low hydraulic resistance, 30 mbar at full load with delta T 20°C
- Easy maintenance
- Designed as a complete heat solution with our Aconit® burner
- No ceramic insulation required
- Plastic condensate collector
- Modular flexibility within capacity range
- Small footprint



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. Aluflow® has an allowed flow temperature of 95°C and allowed delta T up to 50°C.

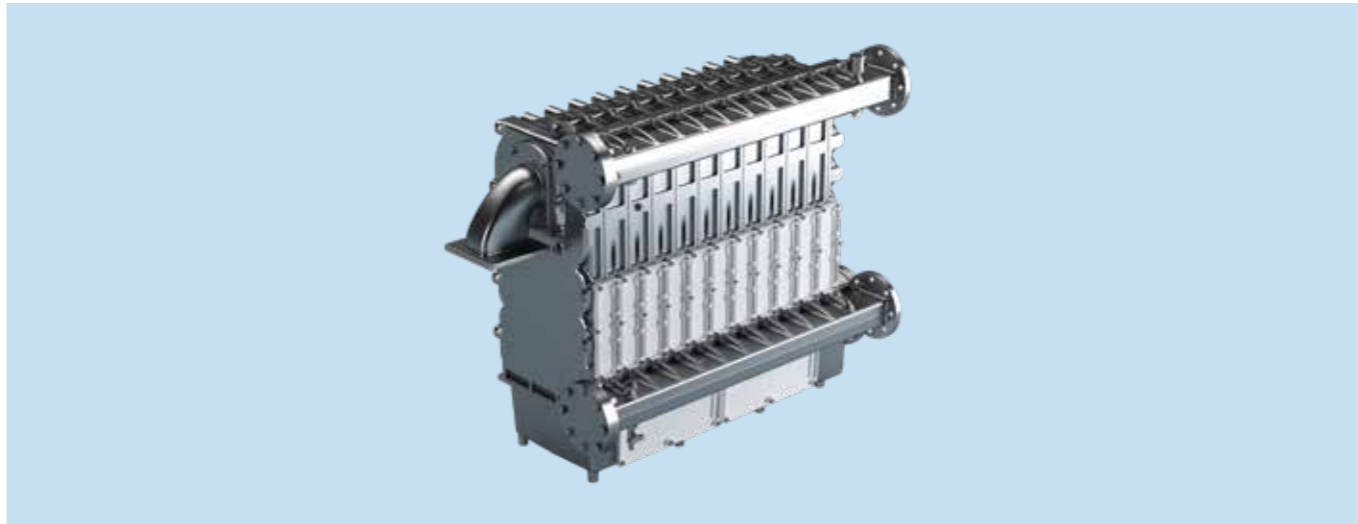
Application Commercial

			3	4	5	6	7
Nominal input	kW		100	150	200	250	300
Maximum input	kW		140	210	280	350	420
Efficiency 100% load 80/60 °C	%		98	98	98	98	98
Efficiency 30% load 36/30 °C	%		109	109	109	109	109
Maximum flow temperature	°C		95	95	95	95	95
Operating pressure	bar		0,8 - 6	0,8 - 6	0,8 - 6	0,8 - 6	0,8 - 6

Commercial combustion heat exchanger

Alucom®

- Small footprint
- Designed as a complete heat solution with our Aconit® burner
- Modular flexibility within capacity range
- Proven design: 15 years of field lifetime without issues
- No ceramic insulation required
- Covers very wide capacity range
- Easy maintenance



Alucom® 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.

Application Commercial

			5	6	7	8	9	10	12	16
Nominal / maximum input	KW		360	450	540	630	720	810	990	1350
Efficiency 100% load 80/60 °C	%		98	98	98	98	98	98	98	98
Efficiency 30% load 36/30 °C	%		108	108	108	108	108	108	108	108
Maximum flow temperature	°C		90	90	90	90	90	90	90	90
Operating pressure	bar		0,8 - 6	0,8 - 6	0,8 - 6	0,8 - 6	0,8 - 6	0,8 - 6	0,8 - 6	0,8 - 6

Large commercial heat exchanger

Alupower®

Excellent performance / weight ratio and exceptional efficiency

Compact size for easy installation and maintenance

Small footprint



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.

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. Alupower® has an allowed flow temperature of 95°C and allowed delta T up to 50°C.

Application

Commercial

			7	9	13
Nominal input	kW		1500	2100	2800
Maximum input	kW		2100	2800	4200
Efficiency 100% load 80/60 °C	%		98	98	98
Efficiency 30% load 36/30 °C	%		108	108	108
Maximum flow temperature	°C		95	95	95
Operating pressure	bar		0,8 - 6	0,8 - 6	0,8 - 6

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

Stainless steel cylindrical burners

Flat metal fiber burners

Cylindrical metal fiber burners

Metal fiber power burners

Metal heat exchangers



Residential heating

x

x

Commercial heating

x

Industrial heating

Commercial cooking

x

x

Water heating

x

RV heating

x

x

Air heating

x

x

x

x

x

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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