

ALCON STRAW BOILER

- FOR YOUR FINANCES AND THE ENVIRONMENT'S SAKE!

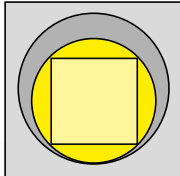
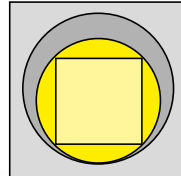
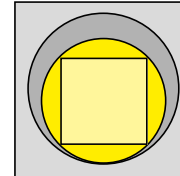
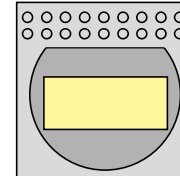
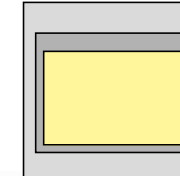


ALCON^{A/S}



ALCON SUPPLIES STRAW BOILERS IN MANY DIFFERENT SIZES.

WHICH BOILER SUITS YOU?

				
SERIES 1200	SERIES 2000	SERIES 2300	SERIES 2800	SERIES 4000
<p>Round combustion chamber Ø127 cm Combustion chamber depth 200 cm</p>	<p>Round combustion chamber Ø200 cm Combustion chamber depth 200-400 cm</p>	<p>Round combustion chamber Ø230 cm Combustion chamber depth 200-400 cm</p>	<p>Round combustion chamber Ø280 cm Combustion chamber depth 150-600 cm</p>	<p>Square combustion chamber Combustion chamber depth 140-150 cm Combustion chamber height 140-183 cm Combustion chamber width 270-280 cm</p>
<p>Actual efficiency 125 kW</p>	<p>Actual efficiency 310-520 kW</p>	<p>Actual efficiency 610-710 kW</p>	<p>Actual efficiency 520-1200 kW</p>	<p>Actual efficiency 330-530 kW</p>
<p>Oil substitution This series can replace an annual oil consumption of approx. 14,000 litres.</p>	<p>Oil substitution This series can replace an annual oil consumption of approx. 20,000 litres to 60,000 litres.</p>	<p>Oil substitution This series can replace an annual oil consumption of approx. 24,000 litres to 72,000 litres.</p>	<p>Oil substitution This series can replace an annual oil consumption of approx. 40,000 litres to 160,000 litres.</p>	<p>Oil substitution This series can replace an annual oil consumption of approx. 20,000 litres to 40,000 litres.</p>
<p>Used for: Round bales: 1 x Ø110 cm Mini-big bales: 1 x L=180 cm (inputted lengthwise) Big bales: No</p>	<p>Used for: Round bales: 1-3 x Ø180 cm Mini-big bales: 1 x length 180 cm 1 x length 150-240 cm (inputted lengthwise)</p>	<p>Used for: Round bales: 1-3 x Ø210 cm Mini-big bales: Enquire Big bales: 1 x length 240 cm (inputted lengthwise)</p>	<p>Used for: Round bales: Enquire Mini-big bales: Enquire Big bales: 1-4 x length 240 cm (inputted crosswise)</p>	<p>Used for: Round bales: No Mini-big bales: 1 x length 240 cm (inputted crosswise) Big bales: 1 x length 240 cm (inputted crosswise)</p>
<p>Engineering: Automatic boiler shunt: Yes Plate thickness of combustion chamber: 12 mm Alcon Straw boiler computer: Yes Technical cabinet/room: Cabinet</p>	<p>Engineering: Automatic boiler shunt: Yes Plate thickness of combustion chamber: 12 mm Alcon Straw boiler computer: Yes Technical cabinet/room: Cabinet</p>	<p>Engineering: Automatic boiler shunt: Yes Plate thickness of combustion chamber: 12 mm Alcon Straw boiler computer: Yes Technical cabinet/room: Cabinet</p>	<p>Engineering: Automatic boiler shunt: Yes Plate thickness of combustion chamber: 12 mm Alcon Straw boiler computer: Yes Technical cabinet/room: Room/cabinet</p>	<p>Engineering: Automatic boiler shunt: Yes Plate thickness of combustion chamber: 12 mm Alcon Straw boiler computer: Yes Technical cabinet/room: Cabinet</p>



SERIES 1200: THIS BOILER SERIES REPLACES AN ANNUAL OIL CONSUMPTION OF UP TO 14,000 LITRES

SERIES 1200 EASY TO OPERATE

In Skive Kristian Bro Jensen takes care of his cows. He currently has 71 dairy cows. He has had more before but with the new restrictions on milk production at the same time as the cows produce more milk, the number has slowly but surely come down to the 71 that are in the stall.

Kristian Bro Jensen's milk production perhaps falls a bit outside Alcon's usual customers, because he doesn't have large heating expenses in connection with the dairy cows. They are in an open stall, which has a roof on it, but where the walls have only been built halfway up, so there is masses and masses of fresh air around the cows year round.

But anyway. Because in connection with milk production Kristian Bro Jensen uses both a milking robot and a 300 litre cooling tank for storing the milk. Naturally, these need to be cleaned at frequent intervals and cleaned well. Here Alcon's straw boiler model 1220 BA, which is one of Alcon's smallest straw boilers, really comes into its own. Because the straw boiler heats up all the hot water, heated to approx. 90 degrees, that is used for cleaning and rinsing of both the robot and the tank without using man hours. Everything is taken care of automatically and gives extra time for Kristian Bro Jensen.

He is also self-supplied with straw as he grows a total of approx. 90 hectares, where the straw is primarily used in the boiler.

"I fire approx. every 4th day, slightly depending on the time of year, but use approx. 170 mini bales of approx. 1.10 m in width year round. It suits my consumption of heat for my milking robot and my cooling tank fine and at the same time I use the heat to heat up my private house."

He continues: "Alcon's straw boiler utilizes the straw bale maximally, whole 87.5% supremely the best on the market. Naturally this means that you don't have to use as many straw bales and you know that when the use is so high it also counts on the CO₂ front".

Kristian Bro Jensen is also glad that the straw boiler is user friendly. "Even though it is always me who fires up and not the wife, you quickly learn to set a price on a straw boiler that is so easy and simple to operate, so you don't need to delve into a complete load of manuals, buttons and gadgets. Alcon's straw boiler is easy and simple and if you run into one irritating problem or another with the boiler, Alcon solves it quickly. So it can simply not be more easy", concludes Kristian Bro Jensen.



Everything is taken care of automatically and gives extra time for Kristian Bro Jensen.

SERIES 1200

Series 1200 is the series for customers that want to burn with small round bales or with mini-big bales. The series is characterised by its compact design, just as the chimney can be delivered mounted directly on the boiler.

- All boilers in the series are delivered with combustion chambers in 12 mm steel.
- The boilers all have a diameter of Ø127 cm, and come with a combustion chamber depth of 200 cm.
- Boilers can be used for 1 round bale with a diameter of Ø110 cm, or for mini-big bales (max. length 180 cm) inputted lengthwise.
- The boilers provides 125 kW.
- The boilers have the market's highest degree of efficiency tested at the Technological Institute.
- The combustion chamber is round instead of square. From nature's hand a round combustion chamber is stronger than a square one.
- The series is available in versions with and without an accumulation tank.
- Available in many colours. Supplied in standard colour red RR29 with trapezoidal sheets but can also be delivered with sinusoidal sheets.
- The boiler series is delivered with a technical cabinet at the back of the boiler.



Kristian Bro Jensen quickly and easily cleans tiles and chimney flues.



The milk robot is cleaned with 90 degree hot water.



SERIES 2000: THIS BOILER SERIES REPLACES AN ANNUAL OIL CONSUMPTION OF 20,000-60,000 LITRES

SERIES 2000 EASY MAINTENANCE

At Søren Hedegaard's in Skive, you will find one of Alcon's straw boilers. The straw boiler is a model 2020 BA with a combustion chamber of $\varnothing 200 \times 200$ cm, intended for firing 1 round bale of $\varnothing 180$ cm.

The straw boiler was supplied in 2007 through Mogenstrup Smede og Maskinforretning (Mogenstrup Smith and Machine Shop), who has been one of Alcon's fast dealers over many years. The owner, Gunnar Christensen, has operated the company since 1980.

The region is characterised by large livestock companies and in several places heating is supplied for production by a straw boiler from Alcon A/S.

"A straw boiler is CO₂ neutral and that is candy in these times. If you were to fire with oil, it would cost a fortune and the cost

of a straw boiler is quickly earned back. The farmer himself has straw so the operating costs are small. It is both the cheapest and best way to produce its heat," says Gunnar Christensen.

When one of Gunnar Christensen's customers decides on a straw boiler a tender is obtained from Alcon and the company in Låsby plans, delivers and sets up the system. Gunnar Christensen's role is comprised of connecting it, but it is also him the customer calls in the event of operational failure.

"As dealer I am closest to the customer, but I have to say that Alcon stands by their products and we have known each other so long that we can say things straight out. And then it goes much easier. Alcon's many years of experience are worth their weight in gold so it is certainly not so bad anyway!"



The 2000 series can be used for both round bales and big bales.

SERIES 2000

Series 2000 is the first boiler series that Alcon began manufacturing. The series is naturally updated with newly developed ideas and designs.

- All boilers in the series are delivered with combustion chambers in 12 mm steel.
- The boilers all have a diameter of Ø200 cm, and come with combustion chamber depths of 200 to 400 cm.
- Boilers can be used for 1-3 round bales with a diameter of Ø180 cm or for mini-big bales and big bales (big bales inputted lengthwise).
- The boilers provides 310 to 520 kW.
- The boilers have the market's highest degree of efficiency tested at the Technological Institute.
- The combustion chamber is round instead of square. From nature's hand a round combustion chamber is stronger than a square one.
- The series is available in versions with and without accumulation tank, and in respectively outdoor and indoor installation.
- Available in many colours. Supplied in standard colour red RR29 with trapezoidal sheets but can also be delivered with sinusoidal sheets.
- The boiler series is delivered with a technical cabinet at the back of the boiler.
- Model 2033 is specially constructed with a view to the Norwegian market for firing with 300 cm logs.



All Alcon's straw boilers are continuously updated with new technology.



SERIES 2300: THIS BOILER SERIES REPLACES AN ANNUAL OIL CONSUMPTION OF 24,000-72,000 LITRES

SERIES 2300

BOILERS FOR MANY HEATING PURPOSES

Over the years Alcon has supplied many projects with series 2300 boilers. The boiler series is primarily developed for the completely large round bales of Ø210 cm. The boiler series can burn 1-3 round bales per firing.

In Hauge at Herning Alcon delivered in February 2011 a model 2333 BA intended for 2 round bales of Ø210 cm. For 2 round bales model 2330 BA is normally delivered, but the customer wanted a combustion chamber that was 330 cm in depth and therefore the choice fell to model 2333 BA. The boiler heats up a 3200 m² poultry house and replaced an oil boiler of 300 kWh.

In Tistrup at Varde Alcon delivered in 2005 a model 2330 BA intended for 2 round bales of Ø210 cm. The boiler replaces an annual oil consumption of 40,000 litres oil and therefore annually saves the environment from up to 130 tonnes CO₂ emissions.

In Andebu, Norway Alcon delivered in 2012 a model 2333 BA intended for firing with whole logs of 300 cm. The combustion chamber depth is 330 cm and therefore ideal for a standard log of 300 cm. This customer is responsible for 50% of the gourmet chicken production in Norway. These chickens are in a barn for 58 days and are fed in a different and better way than the "normal chicken", which is only in a barn for 28 days. The barns are 1700 m² and today the boiler replaces a 200 kW gas burner.

In Utena in Lithuania there stands 2 model 2330 BA's in a parallel connection. These 2 boilers heat a large factory complex that produces agricultural machines. The factory has some 1000 employees.



Also takes care of set-up year round.

SERIES 2300

Series 2300 is the largest boiler series for round bales.

- All boilers in the series are delivered with combustion chambers in 12 mm steel.
- The boilers all have a diameter of Ø230 cm, and come with combustion chamber depths of 200 to 400 cm. Boilers can be used for 1-3 round bales with a diameter of Ø210 cm.
- The boilers provides 610 to 710 kW.
- The boilers have the market's highest degree of efficiency tested at the Technological Institute.
- The combustion chamber is round instead of square. From nature's hand a round combustion chamber is stronger than a square one.
- The series is available in versions with and without accumulation tank, and in respectively outdoor and indoor installation.
- Available in many colours. Supplied in standard colour red RR29 with trapezoidal sheets but can also be delivered with sinusoidal sheets.
- The boiler series is delivered with a technical cabinet at the back of the boiler.
- Model 2233 is specially constructed with a view to the Norwegian market for firing with 300 cm logs.



Alcon straw boilers are available in several different colours.



SERIES 2800: THIS BOILER SERIES REPLACES AN ANNUAL OIL CONSUMPTION OF 40,000-160,000 LITRES

SERIES 2800

HE HAS LOADS OF HEAT

A change from oil to straw boiler saves Morten Vilsgaard, pig farmer from Mors, around DKK 177,000 per year, but it is an equation that according to Morten Vilsgaard can be set up in many ways.

"It can be very difficult to come up with a precise figure as to how much there can be saved because there are many ways of calculating a change from oil to straw boiler. But our calculations say a savings of around DKK 177,000 per year".

"We had a straw boiler from 1974 and it worked, to put it mildly, miserably. So we changed to an oil fired. But I became tired of the tanker car often coming and emptying oil at a very high price, so I made the decision to change back to straw boiler again. The technology has improved many times since my first straw boiler and as many of my friends are very satisfied with their straw boiler and as I had the straw myself, the decision actually wasn't so difficult," says Morten Vilsgaard, who used 34,000 litres of fuel oil per year.

The many litres of oil were, in addition to heating the farmhouse, also used for heating of all the stall installations. There

are 450 sows in the herd and 15,000 30 kg pigs and 3,000 slaughter pigs are produced annually.

"Both our then oil fired boiler and our now straw boiler are used for heating via floor heating in the farrowing stall and in the climate stall and for heating the room in the climate stall and in the slaughter pig stall." He stresses the importance of the correct temperature for the pigs as it would otherwise quickly tip the balance on the feed consumption.

"Now we don't have to think of the heat consumption and about saving when the stalls are to be dried out after washing, now it is simply about blowing a load of heat through," he says. At the same time a 122 kilowatt air heater is set up in front of the 600 tonne silo, which together with a 600 tonne gas tight silo is used for storage and drying of all the grain that is used for the herd.

"In 2012 we received grain with 18.8% water. After 10 days with the fan on full, the water percentage dropped all the way down to 15%."



The smoke pipes at the top of the boiler must be cleaned every 14 days. Otherwise there isn't much maintenance.

SERIES 2800

Series 2800 is the newest and the largest boiler series that Alcon manufactures. The series is an amalgamation of all the knowledge we have worked up over 36 years. Here we are discerning about all the details and have done everything in order to make a construction that is really adapted for future requirements and that has a long lifespan. The series is always delivered, except for the indoor models, with a large technical room. The series is available in models that can take 1-4 big bales per firing.

- All boilers in the series are delivered with combustion chambers in 12 mm steel.
- The boilers all have a diameter of Ø280 cm, and come with combustion chamber depths of 150 to 600 cm.
- Boilers can be used for 1-4 big bales inputted crosswise.
- The boilers provides 520 to 1200 kW.
- The boilers have the market's highest degree of efficiency tested at the Technological Institute.
- The combustion chamber is round instead of square. From nature's hand a round combustion chamber is stronger than a square one.
- The series is available in versions with and without accumulation tank, and in respectively outdoor and indoor installation.
- Available in many colours. Supplied in standard colour red RR29 with trapezoidal sheets but can also be delivered with sinusoidal sheets.
- The boiler series is delivered with a technical room at the back of the boiler (however, does not apply to indoor models and 2830 BAH).



The big bale suits perfectly.



The air heater raises the outdoor temperature by 14 degrees and last year we had the grain dried down from 18.8 to 15 percent water in 10 days. "Quite a bit of straw was used in those days," says Morten Vilsgaard.



SERIES 4000: THIS BOILER SERIES REPLACES AN ANNUAL OIL CONSUMPTION OF 20,000-40,000 LITRES

SERIES 4000

SUSTAINABLE PRODUCTION

Thomas Knudsen from Give raises chickens. In a major way. He has 4 very large barns, each with space for up to 30,000 chickens. Statistics say that he can start a new brood of chickens up to approx. 8.7 times per year. So there are quite a few chickens per year. Quite a lot actually.

Actually so many that the oil consumption was about to get out of control. It is very important to have the barn, and especially the floor, heated up so that it doesn't get too cold for the small chicken legs. Temperatures may gladly creep completely up to around 35 degrees. It is a really good chicken temperature for the small ones.

But it says itself that it requires oil. Masses of oil. And as the price of oil crawled up and up it was important for Thomas Knudsen to find a sustainable alternative. This is where Alcon came into the picture. "I wasn't so familiar with straw boilers," says Thomas Knudsen, "so I went quite simply after the cheapest boiler I could find on the market. It proved to be an Alcon, model 4500 BA, a prototype that I had delivered in 2002. It came in three parts on a large semi-trailer and then they started working assembling the parts with the aid of a crane. It went fine and problem-free and already the same day I could put it into use and disconnect my expensive oil burner".

It has really made a difference for Thomas Knudsen's cost level for production. "I can calculate", he says, "that before the straw boiler I used approx. 100,000 litres of oil per year. Since the boiler was set up in 2002, I have thus saved 1,200,000 litres of oil in the past 12 years. And that is something that means something when it comes to sustainable production. I have approx. 100 hectares of soil, where I grow some of my feed for

the chickens and then it was obviously at the same time to use what before, more or less, was a waste product, namely the straw. In the winter I use approx. 3-4 square big bales per day and in the summer only one or maybe two. I have a normal open barn where I can store approx. 600 bales of hay so I think that the whole thing fits together nicely".

When talk goes over to another part of the financial aspect, namely sustainability, Thomas Knudsen is also quite clear in his voice. "I agreed with my accountant that the straw boiler should be written off during the course of 10 years, we couldn't count on it lasting any longer. But now the boiler is 12 years old and shows no signs of wear or pending replacement, so in these years there is extra good economy with my straw boiler". Thomas Knudsen continues: "When it comes to operation it is very simple... I have a green button and that is it. With it I start and stop the boiler. It cannot be more simple. At the same time I have had good help from Alcon who ensures that the boiler keeps running so here I haven't had any reason to complain either. If we are to mention a final positive thing about Alcon's straw boiler, then it must be, that the animal welfare had gone upward in my production. Before, that is with the oil, one perhaps could have been apt to keep the heat down a little bit because the oil was really expensive. It didn't always suit the chickens so well, especially not, when the newly hatched chickens came out on the floor for the first time. But after the straw boiler was set up there hasn't been any reason to keep the temperature down so now the new "residents" have a perfect start temperature. It suits me really well. This is what I actually have it best with," concludes Thomas Knudsen.



"Since the boiler was set up in 2002, I have thus saved 1,200,000 litres of oil in the past 12 years," says Thomas Knudsen.

SERIES 4000

Series 4000 is the first boiler series that Alcon began manufacturing, for firing of square bales crosswise. Today this series is more and more being taken over by series 2800 but we still produce this boiler series as in some cases it suits the customer's needs better. The series is naturally updated with newly developed ideas and designs.

- All boilers in the series are delivered with combustion chambers in 12 mm steel.
- Boilers can be used for 1 mini-big bale or 1 big bale inputted crosswise.
- The boiler provides 330 to 530 kW.
- The boilers have the market's highest degree of efficiency tested at the Technological Institute.
- The series is available in versions with and without an accumulation tank. The series is solely for outdoor installation.
- Available in many colours. Supplied in standard colour red RR29 with trapezoidal sheets but can also be delivered with sinusoidal sheets.
- The boiler series is delivered with a technical cabinet at the back of the boiler.



Also other "residents" enjoy the straw.



Thomas Knudsen with a little yellow heat demanding "resident".



On the way with a straw bale to the straw boiler.