If there’s one machine that personifies our values, it’s the GEA CookStar. It’s a leader in terms of innovation, user friendliness, flexibility and performance.

It sets high standards for hygiene, food safety and health and safety at work. It’s an ecologically and economically responsible choice that puts customers’ needs at the top of the list.

And it’s done this for 25 years. But we’re not only celebrating its silver jubilee; that’s just looking back. We’re also celebrating a productive future for food processors. Who knows what products will come out of ovens in 2042? One thing’s sure, the GEA CookStar will be there. Maybe even that faithful old number one!

KLAUS STOJENTIN – HEAD OF PRODUCT MANAGEMENT & SALES
The CookStar - a Master of Cooking

There’s more to cooking than heat. It’s a balance of time, temperature, humidity and air circulation. Then there’s the choice of hot air, roasting, smoking, steam, and drying to consider. And of course, you have to get it right, every time. It is the ability to accurately control all these parameters that makes the GEA CookStar the master of industrial cooking.

Passionate about cooking
The GEA CookStar is the world’s only three-phase cooking concept in a double spiral. Its patented design combines horizontal air flow with vertical airflow in the impingement zone. This reduces cooking time and achieves a higher yield than pure horizontal airflow ovens. The oven has accurate zone control with balanced air flow, active climate control and exhaust control in each zone.

Consistent roasting and browning
During the second phase, the product surface can be dried or pre-colored in the impingement zone with vertical airflow. This booster zone also has benefits for products that don’t need browning or roasting. For example, chilled coated products where water activity is important to ensure longer shelf life.

240°C

Proven performance
Accurate climate control with full zone separation allows extreme temperature and dew-point differentials between the main oven zones. The achievable differences in temperature (up to 150°C) and dewpoint (up to 50°C) mean the CookStar can handle every conceivable application – up to an impressive 240°C maximum temperature.
In-line smoking without smoke

The SuperHeatSmoke in-line smoking process (co-developed with Red Arrow) produces fully cooked smoked products without declaration of additives (clean label), and cuts processing times from hours to minutes. It uses a purified smoke condensate to prepare authentic smoked products with even color and delicious flavor.

You name it, CookStar cooks it

In addition to naturally roasting products without color ingredients, the CookStar cooks crispy non-fry coated products, formed uncoated products, marinated products, steamed products, and dried or smoked pork, beef and fish. With the GEA CookStar, you can be sure you can cook tomorrow’s innovative market success.

Ultimate reliability

With 25 years’ experience in the field and countless millions of tons of food products passing through its towering spirals, the GEA CookStar has shown itself to be ultra-reliable. The robust construction, proven engineering, ease-of-use and hygienic design increase up-time and reduce operational costs.
1992

Introducing the first generation CookStar
Fully cooked products were gaining popularity, especially for export. Fast food starts to take hold in Europe. Linear ovens simply couldn’t meet capacity demands and yield was low. The answer finally came with the patented double-spiral, two-zone GEA CookStar.

Our first generation CookStar is still running on its very first steel belt! And it’s never had unplanned downtime in around 90,000 trouble-free hours. How’s that for reliability?

A SATISFIED DUTCH CUSTOMER

Our GEA CookStar contributes to achieving a higher production yield
A SATISFIED CHINESE CUSTOMER

1998

Make space for the 1000 mm CookStar
Fast food was really gathering speed and novel products like the chicken nugget appeared. Demands for up to four tons per hour and cook-fry processing instead of flash fry called for even higher capacity. It arrived with the 1000 mm wide GEA CookStar.
A new generation that saves money
With more focus on reducing costs, processors were looking for shorter cooking times and higher yield. Fewer artificial additives and lower fat content are also trends. The new generation GEA CookStar with improved air flow takes is introduced to take care of these issues.

Let’s get turbo charged
Roasting poultry, beef and pork for a crispy bite and an appetizing golden brown color presents special challenges, particularly if the yield is to be kept high. These challenges were overcome with the patented impingement zone in the GEA CookStar TurboCook.

Generation three with three phase cooking.
Mature product markets like sausage, beef and pork were moving towards more efficient cooking with more color and flavor. Oven control became critical for quality. Enter the third generation GEA CookStar with three-phase cooking, extended climate control and additive-free smoke processing.

We work closely with GEA to get the best out of the CookStar
A SATISFIED CANADIAN CUSTOMER

25 years of continuous improvement
These milestones represent the major steps forward. There have been many incremental improvements that have kept the GEA CookStar at the forefront of industrial cooking. And we’re still pushing the boundaries of performance, so watch this space…
What's the big idea?

Dave van de Ven raises the roof on GEA CookStar production
CookStars are big. Very big, and with the hood raised, it’s simply too tall for GEA’s cranes in the production facility in Bakel. Floor space was not efficiently used either, so Dave van de Ven was given the task of setting up a lean manufacturing operation for the CookStar in a neighboring building.

Here’s how he did it.
Dave says, “We had reached the ceiling in the existing plant, both literally and in terms of capacity. And with sales growing, we have to be able to assemble more”.

Dave first had an internship with the company during his study 10 years ago, and then joined after graduating. He also has a green belt in lean manufacturing, and at 31, is relatively young to be setting up an assembly operation from scratch. He adds, “It’s always been my ambition to set up a manufacturing business, so this opportunity is a golden one for me”.

Starting with a huge hall and a lot of big ideas, he’s designed an operation that has the potential to double CookStar production capacity. “We had a unique opportunity to try different layouts in the empty hall to find the most efficient configuration”. After a couple of re-arrangements, he and his team have arrived at a setup that can handle three CookStars in a line. The flexible team comprises up to 16 people depending on workload, and Dave firmly believes in bottom up responsibility. He says, “Ownership is important. Everyone is continuously busy with – and responsible for – their own projects”. They’re aiming for yellow belts in lean manufacturing.

The new facility has moved from static ‘box production’ to ‘flow assembly’. Unlike the old situation, which involved a lot of shuffling heavy assemblies around, in the new approach the machine makes a logical progression through the plant. This of course leads to immediate improvements but Dave has applied his lean manufacturing know-how to many other areas. For example, he’s switched from Pre Delivery Inspection to In Process Inspection, which yields both quality and time improvements. The team has reduced lead time and assembly time, better integrated the supply chain.

To close, Dave adds, “Because we have a lean production mentality, we’re always looking for better ways to do things. The current layout works well for us, but it’s always open to improvement.”
Because we have a lean production mentality, we’re always looking for better ways to do things. The current layout works well for us, but it’s always open to improvement.

DAVE VAN DE VEN
Jan van Deursen has taken part in some significant developments in the meat processing industry, and helps shape the CookStar’s international reputation. He says, “Airline food launched the CookStar in the US and fast food played a part in its European roll out.” Here’s his story.

In one of his roles for the company, Jan opened the US office (then Koppens, now part of GEA), and sold the first CookStar in America to a company that pioneered pre-cooked airline meals. He also helped the CookStar gain a foothold in Europe. He recalls, “The world’s leading quick service chain was expanding internationally, and had to modify some products to meet European legislation. Chicken nuggets for example, had to be fully cooked and frozen before delivery to restaurants. But they had to look, feel and taste the same as the flash-fried US version. We proved the CookStar could do this”. The potential sales to food processors supplying the quick service industry accelerated the development of the 1000 mm CookStar, and many GEA ovens with this format still turn out perfectly cooked, golden, crunchy nuggets for the chain today.

Jan attributes the success of early sales of the CookStar to several factors, including innovation; continuous development and improved yield. He adds, “We understand what our customers are up against, particularly for products like chicken drumstick where thickness variation is a challenge to cook properly. A two zone solution with individual control over dew-point and temperature is the only way to get it right on an industrial scale. We were the only company that could offer this”.

He adds, “Although the two zone principle was a major breakthrough that redefined industrial cooking, we didn’t stop there. We kept pushing the boundaries of what’s possible”.

Jan recently retired from GEA, and in addition to starting the US office, he’s long career covered sales, international key customer management and application development at director level.
Three phases, three zones, three generations. Good things come in threes. And when it comes to numbers, the GEA CookStar has quite a few to be proud of.

But perhaps the most important numbers are the numbers that affect your bottom line. For example, the GEA CookStar has the potential to boost yield by up to 3 percent. Cooking times can be up to 30% faster too. It all adds up to more profitable processing for your products.

GEA CookStar number one was installed 25 years ago, and it’s still running.

TALKING NUMBERS

At 2200 kW, the CookStar delivers more heating power than comparable ovens.

With 240°C maximum temperature and up to 150°C temperature difference and 45°C dew point difference per zone.

There are over 400 CookStars running in all corners of the world.

The first dual spiral oven in the world and still the best after 25 years!

The effective cooking belt length is an impressive 160 meters.
Harry Kuenen led the team that designed the CookStar, and is proud to be part of its 25 year history. And although computer aided design was making inroads into product design in the eighties, the first CookStar took shape on the conventional drawing boards of designers like Joan van Gerwen and Toon Crooijmans. On the oven's 25 year anniversary, who would have thought that a lost order played a role in its inception?

Now retired, Harry joined the company in 1983. A while later, a lost order led to a hand-drawn sketch of a double spiral oven. Harry was given that sketch and asked to 'Build it'. He says, "We started with four people on the project, and it changed the way the food processing industry cooks. Back then, an in-line oven had 14 meters of conveyor belt. We packed 70 meters into about the same floor space, and gave it independently controllable zones. There was nothing like it at the time. And now we’re at 160 meters!"
Joan joined the company in 1989 and is still working at GEA. He picks up the story, “There’s still nothing like it because we keep moving forward. Take the second generation from a few years ago, which added a patented impingement zone for roasting. We also significantly reduced the time needed to modify a design for a specific customer”. Harry adds, “Improvements like impingement were customer driven. They needed to roast and brown. We gave them the means to do it”.

In addition to three generations, there are variations including 400, 600, 700 and 1000 millimeter versions. Joan adds, “The 400 was really just to prove the concept and never intended for volume production, but several were sold and still work today. And the 700 was a special imperial size for the US, but both illustrate our commitment to meeting customers’ needs”. Toon comments, “Today’s CookStar may look the same as those early models from the outside, but under the skin, it’s packed with advanced technologies. Development is ongoing, so there’s much more to come”.

Last word to Harry, “Our passion for performance and reliability is part of the CookStar”.

Toon is the longest serving of the three and joined the company in 1976. Over forty years later he’s still enthusiastic about what the GEA CookStar achieves. He says, “I’ve experienced the company grow from a family business that dared to take risks to being part of a multinational that thrives on innovation. I get the same kick from working on the latest CookStar as I did from being involved in number one”.

There’s still nothing like it because we keep moving forward
JOAN VAN GERWEN

I get the same kick from the third generation as I did from number one
TOON CROOIJMANS
"I love the way the CookStar captures the essence of cooked food"

Chef John Feeney talks about his first encounter with the GEA CookStar
To say that John Feeney is fanatical about cooking is an understatement. In his long and varied career as a classically trained chef, he’s cooked for royalty, Hollywood’s famous and captains of industry. And he’s worked with every piece of cooking equipment you can imagine – in restaurants, on board ocean liners, at Formula One tracks and in football stadiums. So what’s his connection to the GEA CookStar? And what made him say “It’s fantastic”.

John first experienced the CookStar in 2014, when he was invited to the GEA Griffith Coating Inspiration Seminar to create some innovative recipes for the machine. The results were astounding. John takes up the story, “After working in exclusive kitchens where budget is never an issue, it was refreshing to come into the industrial cooking world with a mission to raise the bar. For a chef, understanding the fundamentals of food is imperative. The flavor, the texture, the very essence of food. I love the way the CookStar – and the GEA people behind it – captures that essence.”
After leaving the high-end culinary world back in 2003, John needed a new challenge and joined Griffith Foods and is now the company’s Culinary and Innovation Director for Europe. This fourth generation family-owned business is a caring, creative product development partner that helps customers meet the needs and desires of consumers in ways that respect and sustain the planet. He says, “Working with customers ranging from Michelin starred restaurants to quick service chains and household food brands means I’m always facing new challenges. It’s not just being a round peg in a round hole, every task is different”.

Industrial cooking is particularly interesting for John, who says, “Industry is a tough environment. Compared to restaurants, where you are relatively unrestricted, commercial food processors are faced with cost, quantity, legislative, environmental and process constraints. And when I first saw the CookStar, I said, ‘I must try that oven!’ It can do everything, steam, cook, grill, roast, even sous vide. I just had to look under the bonnet, see how it works. And it even cleans itself!” He continues, “Open the cooling in the supermarket and GEA has played a role a huge number of the cooked products in there. And it’s not surprising, because the CookStar really captures the essence of cooked food and elevates that experience”. Anyone lucky enough to have tasted John’s creations at the Coating Seminar workshop in 2014 will agree. They were inspirational.

To close, John adds, “The CookStar takes food beyond the oven. GEA understands the balance between flavor and texture. Because if they’re not both there, the experience is only one dimensional”.

“When I first saw the CookStar, I said, ‘I must try that oven!’ It does everything!”

JOHN FEENEY
Three generations under one roof

Stefan van den Hanenberg has been one of the faithful since generation one. Stefan is Operations Director of Dalco, and he had no doubts when it was time to order a third cooker for a line dedicated to processed vegetarian products. He chose the third generation GEA CookStar. His first CookStar has cooked to perfection since 1999, and number two already has more than 10 productive years under its belt.
Talking of belts, Stefan is quick to point out, “Our first generation CookStar is still running on its very first steel belt! And it’s never had unplanned downtime in around 10,000 trouble-free hours. How’s that for reliability”. His second generation machine, which runs alongside the first, is a Turbo version and is used for roasted poultry products, although Stefan adds, “They are more or less interchangeable when needed”.

Dalco’s third generation GEA CookStar is also a non-turbo model because they don’t need impingement for the vegetarian product. Stefan says, “We produce for third parties, and they come to us with ideas for new products. Together we look at how to produce them on an industrial scale. This is where the CookStar comes in. You think of a product, and we’ll cook it on the CookStar”.

He’s tried just about everything, including Brie and French Fries. Meat has become a commodity product due to fierce competition from Eastern Europe, and Stefan says, “It’s important to use the whole animal. The growth opportunities are in added value products. I know this oven can deliver”.

To prove this, Stefan demonstrated to one skeptical poultry product manufacturer that his Turbo CookStar out-performs a conventional rotary spit oven for drumsticks. When asked what the differences between the generations are, Stefan reports that his head of Technical Services says “They got it right first time”. However, on a detail level, Stefan adds, “The airflow has improved with each generation. Yield is better. And the smoother, more rounded design makes cleaning easier too”.

Dalco is a Dutch family business that exports to Germany, Scandinavia, Cyprus and Greece. They process poultry parts, hamburgers, vegetarian products and biological meat products for retail, food service and QSR (Quick Serve Restaurant) customers.
A Master of Cooking

...and roasting, browning, smoking, steaming!
The GEA CookStar uses steam, hot air, roasting, smoking and drying in any combination. It’s a unique three-phase cooking solution with two horizontal air-flow zones and a ‘turbo’ impingement zone that uses high velocity, vertically flowing air to roast, brown or dry the product’s surface.

The CookStar is founded on three pillars: passion, performance and reliability.

A passion for cooking
We’re passionate about duplicating the flavor, texture, mouth feel and look of chef-prepared or home-cooked food. And we’re so confident the CookStar can do this, we accept the challenge: show us your product and we’ll cook it to perfection.

The drive for performance
The unique combination of horizontal and vertical air flow in three zones delivers consistent cooking quality. You get total control over crispiness, juiciness, texture and color. It also has the largest heating capacity on the market.

A commitment to reliability
Performance mean little if your oven keeps stopping. So we designed it to be extremely reliable. Scheduled downtime is low and the robust construction and proven engineering keeps unplanned downtime to a minimum.
In the end, it’s

Have you heard the one about the Englishman, the Dutchman and the German? And it’s not a joke! On the contrary, Stuart Barnacle, Ben Kop and Dieter Gundt form GEA’s globetrotting applications support team for meat processing machines and applications – including the GEA CookStar. They have perfected the art of fusing theory and practice, and have helped countless food processors in every corner of the world get the best from their GEA machines.

Stuart, the Englishman in the trio, is a university graduate of food science, and actually first saw the CookStar as a customer in 1995. He joined GEA a few years later, so it must have made a good impression. Dutchman Ben has a master’s degree in food technology and joined the company 12 years ago. This leaves Dieter (not pictured) who has 22 years with GEA, and a university education that covers chemistry, meat processing, food technology and packaging. Dieter sums up the CookStar’s well known reliability in three words, “Running, running, running”. He adds, “You have to do something really stupid to break it”. To back this up, Ben points out, “A few of the early R&D 400 mm models did reach customers, and the first one is still working in Norway. And a few years ago, we refurbished one and it sold almost immediately”. 
Stuart also knows where the first 1000 mm machine in the UK is still reliably working. But reliability is only one aspect of the ‘Masters of Cooking’ philosophy. The others are performance and passion. This is where Stuart, Ben and Dieter really come in to the picture.

They each have a different approach. Ben says, “I like to show more than what happens. I explain why it happens, what it means to the product. ‘Impingement’ is much more than just a word”. Dieter is very hands on. He says, “I’m always curious. Can I even cook it? Can I improve the yield? And the answer is always yes”. Stuart believes, “In the end, everything is about physics”. But rather than dazzle his audience with science, he uses familiar examples like sauna and home cooking to explain the technology in everyday terms. “We represent where science meets technology, and then delivers results that usually exceed our customers’ expectations”.

It is this combination of skills, experiences, education and backgrounds that make the team unique. “Together we’re unbeatable”, says Ben. They’re involved in the continuous cycle of improvement, and help customers stretch the boundaries of performance. Dieter again, “We’ve been successfully doing this for years. It takes five seconds to shout you’re the best. It takes a lot longer to prove it”. This is why we run the master class seminars. Last word to Stuart, “We show the CookStar is unbeatable in the world. I guarantee it”.

Our complete team of Food and Application Technologists is much larger than Stuart, Ben and Dieter (who was helping a customer of the day the picture was taken). The complete team includes Angela van Bakel, Ben Kuhne, Tim Pessers, Jack Gielen, Martin Verhoeven, Hans van Schijndel and Eamon Brady.
Where there’s smoke, there’s SuperHeatSmoke is an innovative and award winning in-line solution for smoking of meat, poultry, seafood and meal components.
Smoke without fire
SuperHeatSmoke is a process for smoking at temperatures above 100 °C. It uses freshly generated smoke from a purified smoke condensate (from market leading specialists in liquid smoke, Red Arrow). This means cooking, baking, roasting and smoking can all take place at the same time in one spiral oven. The oven ensures a controlled environment for a more constant and mild smoke flavor. The technology further enables taste and color variation by using smoke condensates with different colors and flavor intensities, and by applying smoke in one or both oven sections.

Clean label
SuperHeatSmoke can be labeled ‘smoked’ on the packaging, and since there are no unhealthy residues on products such as tar, ash and polycyclic aromatic hydrocarbon (PAH), products may be designated ‘Clean Label’. The resulting products are healthier compared to conventional smoking methods. There are significant process benefits too, because the in-line process cuts smoking times from hours to minutes. It also produces more consistent product quality than batch smoking systems.
There’s always room for improvement

On one side you have the people who designed the CookStar. And on the other, the people who demonstrate how to get the best from it. In between, there are the people who complete the picture, and help shape the next 25 years of this benchmark industrial oven.

“Our goal is to keep the CookStar at the forefront

As head of the sales steering and support team for further processing at GEA, Marcel Janssen helps steer the sales of the CookStar. “We also look at markets, trends, and what the industry’s doing, and feed this back into development. For this reason, we work very closely with GEA marketing, product management, sales regions, and of course, customers. A spider in the web, dedicated to keeping the CookStar at the forefront”.
Having been involved in getting the CookStar established in the Benelux, he adds, “I’m proud to be part of the CookStar’s history”. “When I first saw a CookStar in 1994, I thought, ‘who’s going to buy something so huge?’ A lot of people, as it turned out!”
What makes the GEA CookStar different to its competitors? Product Manager for Processing Paul Verbruggen is clear. “We’ve never stopped improving it”. He has been involved with these spiral ovens since 2000. “Back then, a linear oven could roast but at the expense of yield. We solved this with a dual spiral oven with impingement. This was a significant milestone, but there have been many improvements along the way. Some small, some more significant. Trends in the market dictate what we develop. It’s a constant evolution”.

Product Expert for Processing, Luuc van Lankveld knows the GEA CookStar inside out. He started in 1999 building and installing them, and currently supports sales when application questions get tough. “Our customers realize when they’re talking to someone who understands their world. My practical background gives me this insight. I’m the link between our food- and machine technologists and our customers’ production people. I’ve been all over the world meeting creative people who share my passion for cooking. It’s a great feeling”. “Our customers respect know-how and expect honesty. We deliver both”.

“You can only sell something you believe in”

“We’ve never stopped improving the CookStar”
In the early nineties, as further processing starting gaining momentum, BRF (former Piusfood then called Friki) was a pioneer in the Netherlands. Ale Douma, Technical Manager at that time, remembers how GEA (then called Koppens) helped his company turn a labor intensive process into one of most advanced lines of its time. The collaboration led to the CookStar, and the prototype is running reliably in their plant today.

Ale says, “We were using a lot of manual labor preparing our poultry products, and it was getting expensive. We were frying and then cooking in batch ovens with very limited capacity. I needed an in-line solution”. After investigating what was happening in the US, where in-line oven technology offered up to 20 meters, BRF looked for a partner closer to home.

BRF had tested its own ideas. And the relationship with GEA was good. “Our two companies had similar attitude to innovation, similar cultures. There was a click from the start. I needed an oven with a belt length 70 meters. That was longer than our factory! The way to go was spiral!” says Ale. Industrial deep freezers used this configuration, but back then, ovens did not.

A complete new product was the result. Production Manager Jan Bergsma adds, “being a double spiral oven, the infeed at outfeed are at the same level. A unique feature that preserves product quality. But the real benefit was the huge leap forward in capacity. 1000 kilograms per hour, 24 hours a day, five days a week. And it keeps working in all conditions”.

Twenty five years later, that original oven is still in the same place. And the strong relationship between the two companies is still as strong as ever. Ale again, “The CookStar changed the way we cook”.

"1000 kilograms per hour, 24 hours a day, five days a week. For 25 years and counting!

JAN BERGSMA

Still going strong"
We changed the way the industry cooks

HARRY KUENEN