Weber
Baking

Vacuum for Baking

A Game-Changing Technology for Bakeries

webervacuum.group

Sales | Rentals | Support | Refurbishments

We are Vacuum Cooling

The Weber Group is one of the largest suppliers of vacuum solutions for baking, cooling & drying in the world. We have mastered the unique technology of vacuum for both cooling and drying applications and can therefore confidently say that we are the specialists in this field. Thanks to our expertise and economies of scale, we have developed equipment with unsurpassed value for money.

Vacuum cooler solutions for

- Bread & Bakery
- Convenience Food & Industrial Kitchens
- Rice & Sushi
- Vegetables & Herbs
- Flowers & Cold Chain
- Turf & Compost

What will be improved and optimised?

Quality

Shape & Volume

Crust & Structure

Productivity

-95% cooling time and space

+50% production

Shelf life

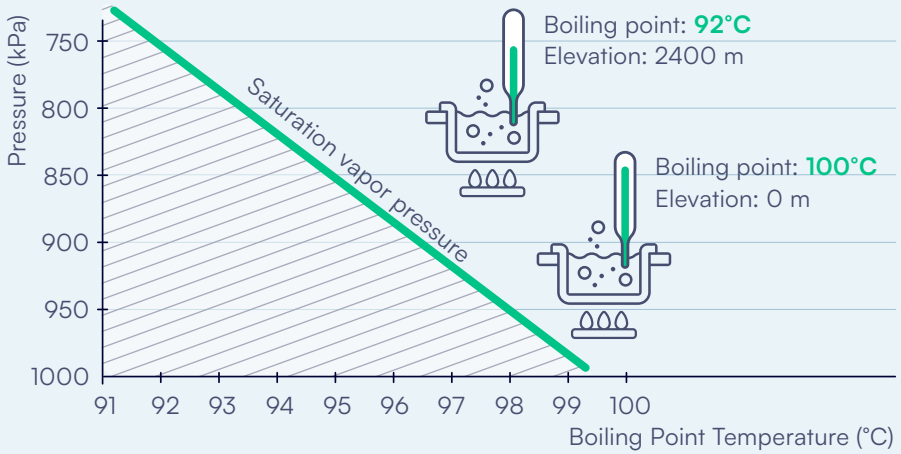
Crispiness

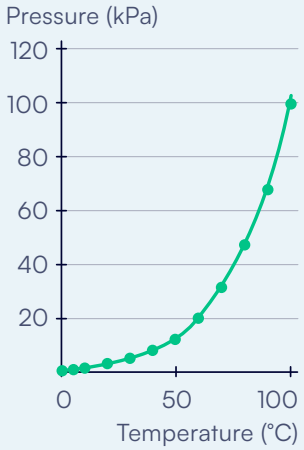
Freshness

Softness

Vacuum Cooling
Technology Explained

Vacuum works with pressure. There is a relation between the pressure level and the boiling point of water. The lower the pressure, the lower the boiling point of water. When introducing a product recently baked and put into the vacuum room, vacuum pumps start evacuating the air in the room, lowering the pressure. When the pressure level reaches the product's temperature, a fraction of the moisture inside the product is being forced to evaporate. This evaporation process extracts energy (= heat) from the product. Because of the created vacuum, not only the outside is cooled down, but the product's core as well, as cooling takes place from inside the product.





A condensing system is used to condense the water vapor coming from the produce. This system is being cooled by a refrigerant, or by (glycol) water. Based on intensive research, and hundreds of vacuum coolers installed in the market — Weber Vacuum Group has optimized the vacuum — cooling balance for each product to be cooled.

Note: For every 8-10°C reduction in temperature, approximately 1% of the produce weight needs to be turned into water vapor. In an average cycle of 5-10 minutes, weight loss can vary.

Table relation Pressure and Boiling point of water

Pressure on system		Temperature at which water boils	
mBar	Torr mm Hg	°F	°C
1000	760	212	100
56.2	42.2	95	35
42.4	31.8	86	30
31.7	23.8	77	25
28.4	21.3	68	20
20.6	15.5	64.4	18
18.2	137.7	60.8	16
17.0	12.8	59	15
16.0	12.0	57.2	14
15.0	11.3	55.4	13
14.0	10.5	53.6	12
13.1	9.8	51.8	11
12.3	8.6	48.2	9
10.7	8.0	46.4	8
10.0	7.5	44.6	7
9.3	7.0	42.8	6
8.7	6.5	41	5
8.1	6.1	39.2	4
7.6	5.7	37.4	3
7.1	5.3	35.6	2
6.6	5.0	33.8	1
6.1	4.6	32	0

Benefits in practice

Croissants and Danish pastries

Vacuum cooling allows you to bake the perfect croissant: maximum volume, beautiful airy layers, deliciously brittle on the outside, and soft on the inside. The structure is strong and retains its shape for a long time. Danish pastries are also baked to perfection. Baking time is reduced by an average of 30 percent, while cooling takes about 240 seconds.

Bread, crusty rolls and baguettes

Cooling is made easy and fast with vacuum, while saving up to 30 percent on baking time. This bread gets a perfect, thin and crispy crust and a bouncy, resilient texture. Because it stays fresh throughout the day, there is less need for multiple baking rounds and deliveries.

Toast and sandwich bread

Vacuum cooling also reduces baking and cooling times for these types of bread. For toast, form stability is key. High quality is easier to achieve, both on crust & crumb. The product can be cut faster, which in turn reduces space utilisation and the number of carts required, optimising productivity.

Hamburger (buns)

Vacuum cooling gives buns perfect stability and volume. The baking time is also reduced, resulting in minimal baking loss. Packaging the bread when at a slightly higher temperature creates the perfect soft crust. There are benefits in terms of both freshness and shelf life.

Benefits in practice

Multigrain and artisan bread

The quality of the bread is optimised by properly aligning baking and vacuum cooling parameters. Thanks to an intense process of gelation with vacuum, the shelf life of bread is extended (delayed retrogradation). The perfect crust stays crispy longer, while baking times are reduced by up to 30 percent.

Gluten-free bread

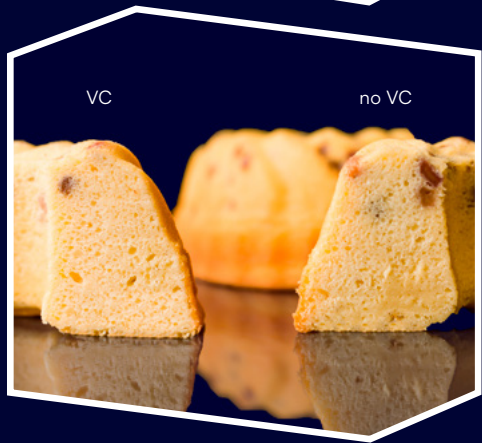
Vacuum cooling is a game changer for preparing gluten-free products and the process can offer a huge quality improvement. Thanks to the pulling effect during vacuum cooling, the bread structure is optimised and the volume maximised. Baking time is reduced by up to 30 percent and the bread can be sliced faster, better and at higher temperatures.

Cake, muffins and sponge cake

By applying vacuum cooling, you can achieve perfect quality and maximum volume, while enjoying increased productivity and keeping cooling times to a minimum. In addition, biscuits get the same volume with a decrease in ingredients used. Muffins come out with a big and bold top, a perfect flavour and a delicious bite.

Other breads and pastries

For almost all other bread and pastry products, applying vacuum cooling not only leads to shorter baking and cooling times, but also advantages in terms of shape, volume, crumb and structure.



Vacuum Cooling has high added value in terms of Quality, Savings and Efficiency — This is what we want to tell as many bakeries as possible about, from small artisan bakeries to large bakeries (at industrial scale).

Giel Vermeulen

Vacuum Baker & Advisor

As a fifth-gen baker, I grew up all around bakeries, while studying pastry, bread, and chocolate. I worked for both multiple small and large companies, and competed in (inter)national baking competitions to grow my skills.

For the past 2.5 years, I've been part of Weber Vacuum Group, inspiring others with the power and possibilities in the world of vacuum cooling.

Samuel Suarez

Vacuum Baker & Advisor

I've been a baker for over 22 years. I studied Baking Technology at N.B.S. in London, worked at Harrods, then traveled to New Zealand and trained in France. Back in Spain, I worked in product development for an industrial bakery.

I was awarded Best Baker in Spain in 2022 and won the Rimini Bakery World Cup in 2023. After that, I became a freelance consultant for bakeries and discovered Weber Vacuum Group. Since then, I've been a proud brand ambassador.

Harrie van den Besselaar

Vacuum Baker & Advisor

I'm Harrie van den Besselaar, 56 years old and a baker since 1989. As a third-generation baker, I have a deep understanding of bakery processes, strengthened by years of sales experience in bread improvers.

As a baker, I'm truly impressed by the enhanced product quality, increased efficiency, and shorter production times that vacuum cooling offers.

Customer Oriented Approach

Together with our Weber specialists, we can help you redesign your baking process to make the most of this new, energy-efficient, quality-enhancing and time-saving technology.

Top Quality
At an affordable cost

Energy Saving
Thanks to innovation

WeCool Software
Intuitive & easy to use

Maintenance free
Most advanced
Vacuum Technology

Optimum Process Control
Yet simple programming

Testimonial

"This is an absolute game changer for us, it's very exciting to see something like this in action. This is the best thing I have ever heard of in my 40 years in the baking industry"

Ray Johns
Owner of The Red Hill Baker
Australia

WeBake Features

Affordable vacuum coolers for bakeries

Weber Vacuum Group only builds vacuum coolers. So it is no surprise that we have become experts at it! All vacuum coolers are designed by our Dutch engineering team and are built with high-quality European components. Thanks to our economies of scale, our intelligent design and our strategically positioned and highly efficient production sites in Europe and Asia, we are able to offer excellent value for money.

Quality

- SU 316 stainless steel chambers with sight glass
- Anti-drip system on ceiling
- False floor with automatic water collection system and drainage
- Automatic stainless steel ramp and protective bumpers
- Dutch Design; produced in accordance with CE and/or UL regulations
- Vacuum technology by Burkert, Busch & Leybold - high performance and perfect control
- Cooling technology: Aermec chillers with minimal carbon footprint and lowest TCO
- Control and electronics: Siemens, Schneider, Klöckner Möller, for maximum reliability

Maintenance

Leybold's latest generation of oil-free NovaDry vacuum pumps are completely maintenance-free and offer perfect process control. Virtually no maintenance is required, reducing your operational costs to the bare minimum.

Energy Consumption

Thanks to our intelligent alignment between vacuum and cooling technology, you only need about 1 kWh to cool down one standard rack (with 60 kg/130 lbs of bakery products). With the help of the Free Cooling Technology, this can be reduced to about 0.6 kWh! What's more, heat recovery allows you to use all the energy in the form of water heating.

Process control

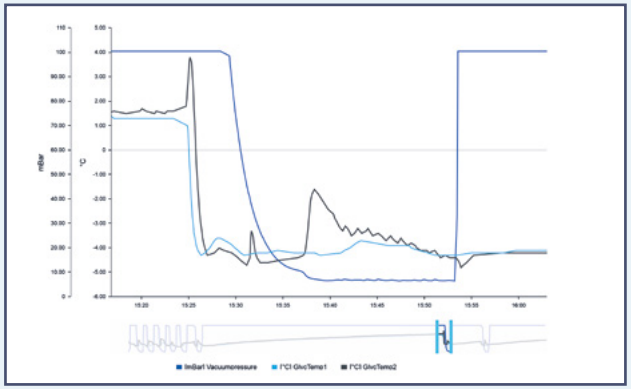
The WeCool software is intuitive and enables fast process optimisation, for every product. The optimal cooling curve settings can be easily stored and managed. The complete step-by-step control of the cooling speed is achieved by using proportional valve technology.

EWON - Industrial VPN gateway for secure remote access to machines

Read data from PLC and store it on the cloud (logging)

- Cycle length
- Glycol temperature
- Product temperature
- Vacuum pressure
- Alarms
- Operating hours
- Remote desktop
- Send e-mails with alarms

Make the data visible in graphs and an alarm table



Vacuum Cooler demo

Test it yourself in your own Bakery!

Would you like to experience the possibilities that vacuum cooling can offer? Then Weber's research vacuum coolers are a perfect option: compact in size and affordably priced. Also available for rental. Our systems allow you to discover the full potential of this innovative technology and optimize your own product range.

WeBake 10 R	WeBake 20 R
Small Research Vacuum Cooler	**Small Research Vacuum Cooler**
Designed for 400×600 mm baking trays, also suitable for 3/4 US trays (15"×21")	Designed for 600×800 mm baking trays, also suitable for US trays (18"×26")
Designed for loads up to **10 kg/20 lbs**, within 5 - 10 minutes	Designed for loads up to **20 kg/45 lbs**, within 5 - 10 minutes
500 × 700 × 800 mm 19.7" × 27.6" × 31.5" net interior space (w × d × h)	700 × 900 × 1000 mm 27.5" × 35.4" × 39.4" net interior space (w × d × h)
A cooler suitable for three (200 mm gap | 7.9") or four (150 mm gap | 5.9") baking trays	
Fully proportional pressure control, with intuitive Siemens PLC control	

The Standard WeBake Range

Our standard range includes three models, each designed for one or two medium or large carts. The standard chamber dimensions are suitable for almost any size cart and relevant cooling capacity.

WeBake 40

Compact Rack Solution

The WeBake 40 is designed for small (American and Japanese) carts and can be built in a very compact size.

The system is designed for cooling loads up to **40 kg/90 lbs**, within 5 - 10 min.

750 × 900 × 1900 mm
29.5" × 35.4" × 74.8"
net interior space (w × d × h)

WeBake 80

Single Rack Solution

The WeBake 80 is designed for most European single carts and American double carts.

The system is designed for cooling loads up to **80 kg/180 lbs**, within 5 - 10 min.

900 × 1200 × 2100 mm
35.4" × 47.2" × 82.7"
net interior space (w × d × h)

WeBake 160

Double Rack Solution

The WeBake 160 is designed for two carts. Most (European) cart models fit in a chamber.

The system is designed for cooling loads up to **160 kg/360 lbs**, within 5 - 10 min.

1200 × 1500 × 2100 mm
47.2" × 59.1" × 82.7"
net interior space (w × d × h)

Enthusiastic users of our vacuum cooling systems

Bakkerij Wiltink (NL)

We were one of the first bakeries in the Netherlands to opt for Weber Vacuum Group. The low cost was certainly a consideration. Our WeBake has been running for more than five years now, without any problems or difficulties!

WeBake 120 Gluten-free

Crelem Bakeries (BE)

We installed three WeBake chambers at one of our bakeries. A modest investment with two major benefits: quality optimisation and a 50 percent increase in productivity.

WeBake 60 Vienoiserie

The Good Bread (USA)

Installing three WeBake Vacuum Chambers has optimized our bakery's workflow. With a 25% faster baking time and less cooling required, we've increased both product quality and productivity.

WeBake 160 Bread

Weber Vacuum Group is the world-leading supplier of Vacuum Cooling Solutions

Weber is the largest supplier of vacuum cooling solutions in the world. We ONLY do vacuum cooling. For ALL applications where vacuum cooling is used.

We've developed dedicated, tailor-made solutions for each of these vacuum cooling applications.

FOOD APPLICATIONS

Bread & Pastry | Food & Kitchen | Rice & Sushi

FRESH APPLICATIONS

Vegetables & Herbs | Flowers & Cold Chain | Turf, Sedum & Substrate

Weber can provide highest quality solutions at lowest costs, thanks to our:

- **Economies of scale** – we are the largest vacuum cooler supplier in the world.
- **Low overhead** – we combine a lean and agile organization with a strong partner network.
- **Intelligent design** – using modular technology and innovative solutions.

Support - We Care

With regional offices in Europe and Asia and a global network of more than 25 sales and service partners, we offer fast and reliable maintenance and support to all our customers.

Installation – To ensure the fastest installation process at the lowest possible cost, we work with local specialists. Our technical specialists prepare the installation and offer on-site support.

Implementation – To guarantee optimal results, the Weber Vacuum Group and their team will provide support as long as necessary to integrate the vacuum cooler into your own baking process. Support is provided onsite or remotely depending on needs and circumstances.

Maintenance & support – We offer maintenance and support packages, compiled by us or by one of our partners. To unburden you is our goal. Now and in the future.

Contact

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