

# **BINDER WORLD**

2021-1-



#### Dear Readers,

We have been helping to tackle the coronavirus crisis with our products since the very start of the pandemic. However, none of us could have predicted what would happen at the end of last summer. In their quest to create vaccine supply chains, logistics service providers from all over the world came knocking on our door to inquire about our energy-efficient ultra low temperature freezers with the "Made in Germany" mark. We recognized the trend right away and were able to ramp up our production immediately thanks to our highly motivated employees. Then, in November 2020, when BioNTech/Pfizer announced that it would be having its mRNA vaccine approved – which has to be stored at a temperature of minus 70 °C – the phones at BINDER company headquarters in Tuttlingen started going crazy. We were bombarded with question after question, such as "How quickly can you deliver and how many super freezers have you got in stock?" – and all at a time when our production employees were voluntarily working extra shifts over Christmas and New Year.

TV stations and news agencies from across the globe converged on Tuttlingen to report on the "super freezers" being produced in Germany. French TV channel France 2 was the first to arrive on the scene, with SWR from southern Germany showing up three days later. They were soon followed by international broadcasters such as SVT, France 5, and even the BBC from the UK and NBC from the USA. All of them were keen to report on how our freezers are able to store the vaccines in such a reliable, energy-efficient, and safe manner. In this edition, we will be taking a look back at this success story in the time of a pandemic.

We are bursting with pride that our  $CO_2$  incubators are also being used in drug research, that is to say in the development of coronavirus vaccines. Leaving the topic of coronavirus aside for a moment, we are – of course – also pressing ahead with the development of new products. Our CBF – a  $CO_2$  incubator with active humidification – is becoming the absolute benchmark in the market. The reliable water supply without water pan slots perfectly into a GMP environment for the ultimate in protection against contamination. And what scientist would not want that?

We are passionately pursuing our aspiration of providing our customers with the finest solutions via our best-in-class innovations. This aspiration is also the reason behind our continuous growth, a phenomenon that can currently be seen in the project to extend the COMPETENCE FACTORY in Tuttlingen, which was only constructed in 2017. BINDER is adding an extra 2,500 square meters of space here while insisting on the highest ecological standards. Once again, this showcases BINDER's ambitions: innovation and constant growth but always in tandem with sustainability. The key thing here is to ensure respect for our location, our employees, our customers, the high quality of our products, and our natural resources so that we never lose them.

I hope you enjoy reading about this wide range of topics.







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# Freezers from Tuttlingen in demand throughout the world BINDER ultra low temperature freezers used to store coronavirus vaccines, making the company world-famous

With its products, BINDER has been doing a lot to help tackle the coronavirus pandemic since the start of the crisis. For instance, BINDER freezers are being used for vaccine storage and its CO<sub>2</sub> chambers are helping with drug research. As a result, the family business headquartered in Tuttlingen (Germany) – which only produces there – soon

captured the attention of the world-wide media. Almost every day, there was a knock on the door by media representatives from the BBC, NBC, ARD, and SWR, as well as news agencies such as AP, Reuters, AFP, and EPA. The BINDER management team showed the journalists around the company's freezer production site (virtually the

only one in Germany) in stages, providing them with valuable insights. "It was a lot of fun but also got a little tiring in the end," laughs Vice President Peter Wimmer. He then adds: "In spite of it all, I still don't get recognized by all and sundry."









#### BINDER in the worldwide media



### Top chambers with optimal insulation

#### The vacuum insulating panels on BINDER ultra low temperature freezers are built to last



The <u>ultra low temperature freezers</u> from BINDER have really helped with vaccine storage during the coronavirus pandemic. But they will also continue to be very useful after the pandemic, as they are extremely energy-efficient and feature particularly good insulation of a kind rarely found on the market. In addition, the functional capabilities of the unit as a whole come with a five-year

warranty. Meanwhile, the "made in Germany" vacuum insulating panels are covered by a twelve-year warranty. BINDER has invested a great deal of time and effort in the advancement of its ultra low temperature freezers. Add to that the high-quality materials, such as the vacuum insulating panels, and what you end up with is a truly exceptional "super freezer". The vacuum panels used by BINDER, numbering six per chamber, have a core of fumed silica with the smallest possible pores. As a result, the full-surface and thermal bridge-free insulation ensures high energy efficiency, continuous temperature homogeneity in the interior, as well as long temperature constancy thanks to the use of perfect insulation with an unrivaled service life.

Not only are the panels of truly the

highest quality – but, on top of that, BINDER has added a 100% quality control system that checks the insulation with a type of pressure gage before it is used.

However, the ultra low temperature freezers stand out from the competition in one more respect, and that is the patented method of applying foam into the wall around the insulation panels. So if you are looking for a high-quality freezer and you want a product that guarantees a long service life coupled with energy efficiency, then BINDER is exactly the right choice.

#### A big thank you to all our employees working in freezer production

You have already learned quite a lot about our freezers. On this page and the following one, we will show you even more as we take you on a brief tour of our production facilities. What our employees have achieved here over recent months is worthy of special mention. And if you want to see BINDER freezers in action, you need look no further than the vaccination centers in Baden-Württemberg. BINDER ultra low temperature freezers are the only ones installed there!



Before the freezers are delivered, they are sent to the final inspection area.



The door of each freezer is constructed and inspected manually.

### Shelf-life testing of coronavirus vaccines

#### Pharmaceutical companies opt for constant climate chambers / airflow from two sides

Never before have vaccines been developed as rapidly as during the current coronavirus pandemic. Versions from companies including BioNTech and Moderna are already on the market and are being administered at lightning speed. But just how long is the shelf life of the new vaccine types? That is the very question that major pharmaceutical manufacturers currently attempting to answer with the help of constant climate chambers from BINDER. Normally, it would take between ten and twenty years to develop a vaccine. But with the coronavirus crisis still ongoing, waiting that long is not an option given the high numbers of infections and deaths that the world is continuing to experience. Calls for vaccination campaigns to be rolled out rapidly are getting louder and louder. Pharmaceutical companies are producing nonstop but are also focusing on the important issue of analyzing vaccine stability. Ultimately, coronavirus vaccines will be required annually and will have to be adapted each time to cope with particular mutations in the virus. That's where stability testing comes in, taking place in equipment such as a KBF or a KBF LQC i.e., inside a constant climate chamber with an ICH-compliant light source and light dose control. So why have the major pharmaceutical companies opted for BINDER? One reason is that the chambers, produced in the German town of Tuttlingen, can be used to conduct tests in line with ICH guidelines. Together with the unequaled stainless steel evaporator, the two-sided horizontal airflow on these chambers is superior to versions with one-sided air circulation because it creates climate conditions on each shelf that are up to four times more precise. For this reason, BINDER chambers can

hold up to 30 percent more samples than other brands. What's more, the constant climate chambers ensure a high level of temperature accuracy. BINDER offers climate conditions that are up to four times more precise than those of its competitors, as well as faster recovery times. Last but not least, it is the extensive service life of our constant climate chambers that truly sets them apart.



Find out more now >



As soon as the housing has been constructed, the chamber is transferred onto the freezer line for further assembly.



The highlight of the process – which left the journalists openmouthed – is when the ultra low temperature freezer is combined with its door.

### Incubators are needed in PCR test labs

#### Saliva samples are brought up to the correct temperature inside BINDER chambers

Corona rapid tests help identify infected individuals and break chains of infection. Standard antigen tests detect SARS-CoV-2 proteins using specific antibodies.

PCR (polymerase chain reaction) tests are even more accurate, meaning even more specific and sensitive, and are being used, for example, by a large lab in Vienna (Austria) to analyze saliva samples around the clock. BINDER incubators are involved at an early stage of this testing process, where they are proving highly successful.

Up to 60 postal buses deliver up to 200,000 sample tubes per day and more than 400 employees analyze several liters of saliva every day. It's an undertaking that requires speed as well as safe and reliable equipment. It's no

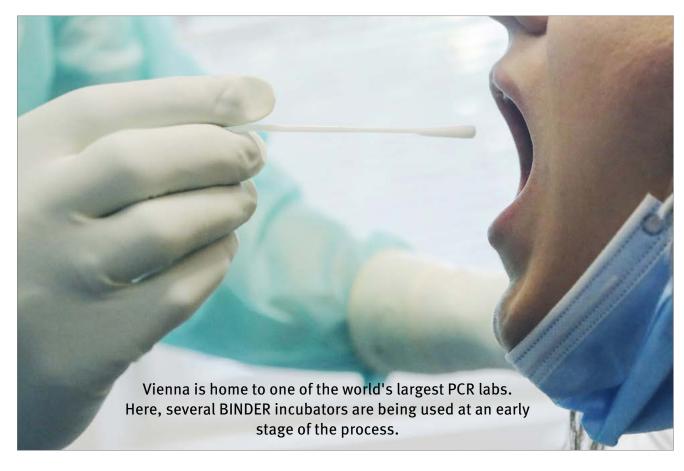
wonder, then, that the lab has a good number of BINDER incubators that are just waiting to heat new sample racks to the specified temperature so that they can be fed into the automated analysis process. Given that most of the samples are negative, a pipetting robot pools the samples into groups of ten to multiply the efficiency. These are then combined with a reagent mix.

Only when a positive sample is encountered does the pool need to be dissolved to identify the positive individual sample. The RT-PCR is the central process step. In this process, viral RNA, if present in the sample, is enzymatically recopied into DNA using very specific gene probes (reverse transcription, RT) and exponentially multiplied (PCR). Thus, only samples

containing SARS-CoV-2 RNA yield a large amount of specific DNA, which can then be easily detected.

Therefore, this method is much more sensitive than antigen tests, because even a very small number of viral RNA molecules will be amplified to such a degree that they can be reliably detected. And the reason for the very high level of specificity is that unique gene probes can be designed for the viral RNA that do not match any other known sequence and can be easily synthesized.

Find out more now >



### Top sellers: CO<sub>2</sub> incubators with active humidification

# The ultimate protection against contamination / best in class impresses with its fanless design

BINDER CO<sub>2</sub> incubators have many strengths and are now also available with humidity regulation in the form of a separate CBF series. Product manager Dr. Jens Thielmann even had this to say: "These are the best and safest CO<sub>2</sub> incubators on the market." Firstly, this is down to the typical CB fanless design with natural convection, which results in a quiet, uniform interior atmosphere without the risk of airborne germs. Secondly, it is due to the ingenious humidity regulation that does not require the use of a water pan.

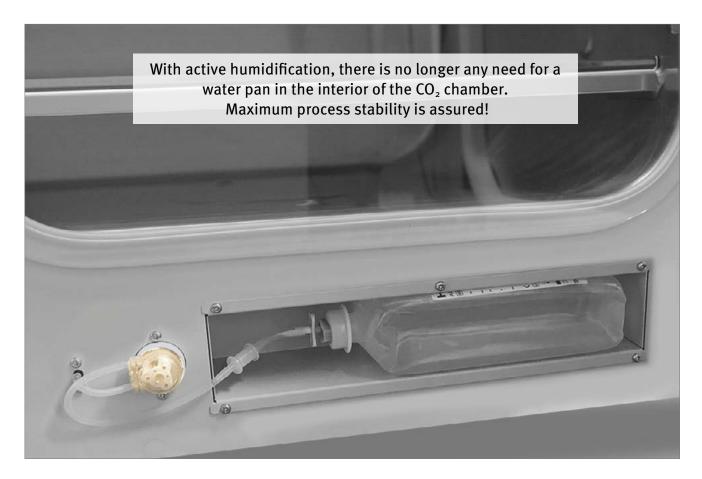
Cell culture contamination is just what scientists don't need. That's why more and more lab managers are choosing CBF models from BINDER with humidity regulation. And they work simply and reliably: When the humidity falls below

the set value, water is pumped from the connected water bottle into the steam generator, which in turn blows hot steam into the interior – without heating up the interior, of course. This active humidification has two major advantages: Firstly, the humidity recovery time after door opening is very short, and secondly, the water pan is no longer needed. The risk of contamination is already low in the CB, but this reduces it even further, making it practically negligible.

And so users don't have to worry about the quality or even the production of suitable humidification water, there is now a very smart option, namely the "Humidification Water Set" accessory. This set consists of ten one-liter bottles containing pure, sterile water plus all

the necessary tubes and connecting parts, thereby providing laboratory workers with everything they need for a convenient working environment. If the water bottle is empty, the user simply pierces a new one and inserts it in the loading bay, allowing contamination-free incubation of the cell cultures to continue in the CO<sub>2</sub> incubator right away. This guarantees maximum process reliability, as is required in GMP environments.

BINDER's active humidification solutions help establish the safest possible conditions. They also enable cell cultures to thrive.



# Vacuum drying chambers used to dry jewelry gently



#### Example application:

- Drying of end caps for bracelets
- Caps are made of stainless steel and are cleaned prior to drying
- Also suitable for drying chains (including some gold-plated ones)

#### **Procedure:**

- Phase 1: Rack is filled with wet caps and transferred to the chamber,
   VD 53 starts generating vacuum
- Phase 2: Drying process takes place at 30 °C
- <u>Phase 3:</u> The second pressure drop occurs, indicating that the drying process is complete. The dried caps can be removed.
- Drying takes up to 20 minutes

#### **Customer requirements:**

- Between 3,000 and 4,000 caps to be dried daily and up to 100,000 per month
- All moisture to be removed from jewelry
- No corrosion must occur
- Temperature range: 50 °C-70 °C
- Program-controlled drying monitoring with automatic ventilation at end of process
- Parts must not be scratched as they are being placed inside

#### Why BINDER?

The head of the design and product development department at a jewelry firm in Pforzheim explains:

"With a BINDER vacuum drying chamber, we are able to dry our jewelry gently at temperatures that are not too high."







#### **BINDER solutions:**

- Fast, gentle drying
- Optimum heat transfer through large thermal conducting plates
- Safe work thanks to proven safety concept
- Also optionally available as a modular complete system with vacuum pump and pump chamber
- Internal data logger, measured values can be read out in open format via USB
- At least one aluminum expansion rack, can be custom-positioned
- Space-saving in laboratory environments and quiet running
- Absolute reliability coupled with low power consumption



> VD 115 model

Inquire now with no obligation

### BINDER news roundup

### Best cell growth with BINDER CO2 incubators

Cell cultivation is a highly sensitive process which requires optimum and reproducible growth conditions. BINDER  $\rm CO_2$  incubators provide these. The incubators contain the perfect combination of a range of solutions – 180 °C hot air sterilization, rapid control, fixture-free interiors, and absolutely no consumables. For best cell growth – safe, reliable, smart, economical – it has to be BINDER.



Click to read more >

### Gold, silver, and bronze – our new range of maintenance services



We have taken the vast array of BINDER maintenance services and bundled them up into customer-friendly packages.

Do you want to make sure your BINDER chamber keeps running at its full potential – leaving you free to focus on your work? Want to make sure that your test chamber – made in Tuttlingen – delivers test results with maximum precision every time? Then the new range of maintenance services from BINDER is exactly what you're looking for. The new gold, silver, and bronze packages are designed to give you exactly the level of maintenance you need. From basic maintenance units to full-coverage packages, BINDER has everything you need to keep your premium product performing as it should.

Find out more >

### Product registration at BINDER – a choice of two options for free

At BINDER, the customer is king. And the new product registration service provided with every new BINDER chamber is further proof of the Tuttlingen-based company's commitment to its customers. With this service, customers can benefit from a one-year warranty extension by registering their product. Alternatively, they can opt for the BASIC edition of the Multi Management Software APT-COM<sup>TM</sup> 4 as a free gift.

Register now >



Register and start reaping the rewards right away. Product registration is now included with every chamber.

### Project launched to extend the COMPETENCE FACTORY

The CF was only constructed in 2017 / Now a further 2,500 square meters of space are being added

BINDER is continuing to invest in its main site at the company's headquarters in Tuttlingen. According to Vice President Benjamin Jeuthe, this is a clear signal from the corporate management team that BINDER remains on course for growth in 2021. It also shows how highly the company values its only production facility and its workforce. The state-ofthe-art COMPETENCE FACTORY, which was only constructed in 2017, is to be extended by 2,500 square meters. The boiler construction facilities, the foam facility, and parts of mechanical pre-assembly are set to start operations here from January 2023 onward. BINDER has set ambitious targets for this project, which will - once again - be headed up by Thomas Luippold. The groundbreaking

ceremony is scheduled for September 2021 and the plan is for the building to be ready just twelve months later. The machinery will then be relocated bit by bit during ongoing operation and new machinery will also be purchased.

This extension has several objectives: The management team hopes that it will contribute to future growth for the company as well as boosting automation. At the same time, by freeing up space in the LEAN FACTORY, it will enable further expansion of the assembly department. Overall, the management team expects to see an increase in productivity and an improvement in material flow. By embarking on this endeavor, BINDER is again demonstrating its commitment to its employees, who will benefit directly

from a state-of-the-art working environment, new offices, and break rooms in the CF. One of the other objectives of this construction project is to promote sustainability: Once the new building is finished, the entire roof of the CF will be covered with photovoltaic systems, which will supply electricity to cover the company's energy demands. But that's not all! Ecological factors are being incorporated into the design and will also be taken into account when putting the facility into operation further down the line.

Moreover, the architecture of the extension will be based on the previous design. A sum of several million euros has been budgeted for this project.



### Training once again recognized for excellence

#### Ranked among the best in the whole of Germany / For the third time in a row



BINDER is a great place for training. Only the other day, Radio 7 took a picture of the training department.

For the third time in a row, Focus Money magazine has named BINDER as one of the best training companies in the whole of Germany. To produce its rankings, the magazine delved into and assessed the following aspects: training pay, successful training outcomes, and the various opportunities for career advancement.

After undergoing detailed scrutiny, the simulation chamber manufacturer from Tuttlingen has now been rewarded with a fantastic result. BINDER managed to score 80 out of 100 for the third year in a row – a feat that has only been achieved by a select number of companies. Training Managers Timo Haag and

Robert Pejakic are absolutely delighted, especially in light of the difficulties they have faced over the past year due to coronavirus and the stricter safety precautions.

"We have succeeded in nurturing young people closely even in the time of a pandemic so that they are able to channel their talents effectively," says Timo Haag.

His colleague Robert Pejakic adds: "Lots of companies were forced to scale back their trainee positions. By contrast, we are continuing to expand ours just as much as we ever have. BINDER is doing well and we are nurturing the next generation all the more closely as a result."

Anyone interested in a trainee position at the acclaimed company is welcome to apply by sending an e-mail to timo. haag@binder-world.com.

### Training workshop has a new 3D printer

### Trainees learn how to use state-of-the-art machinery

Time never stands still at the BINDER training workshop. A 3D printer was recently introduced here and has been running nonstop ever since. This production method involves building up the material layer by layer, and the trainees have already used it to make several sculptures and BINDER key fobs.

Timo Haag has the following to say about it: "We are so pleased that the management team has once again supported us in this endeavor." Anyone interested in a trainee position at BINDER is welcome to apply by sending an e-mail to timo.haag@binder-world.com.



The trainees have already used the new 3D printer to make sculptures and key fobs.

### What I cannot do without in my home office...

The things that are important to our employees and have helped them survive the pandemic



Laurie (USA): "When my dog Mickey died, my whole world imploded. I was sad all the time. A month after he passed on, I asked him to send me a sign. And at that very moment, the skies cleared. Mickey had sent me a sign and the very next day a friend called me about a Papillon that she was trying to find a home for. It was like a rebirth for me. That was five years ago and now Louis never leaves my side. I love him more than anything in the world ... he fills my home office with joy and happiness."



Charles (USA): "The thing that saved me was a new shortwave radio. Under normal circumstances, contact with others is really important to me, but the pandemic made it impossible to interact with anyone for long. My new shortwave radio reconnected me to the entire world. Listening to the news from China, Italy, or even Tennessee here in the US taught me that human interaction is as vital to all of us as the very air we breathe."



**Cathy (Hong Kong):** "I've got my best friend with me here at home. Kin, my tomcat, has been sharing my apartment with me for 13 years and he's really affectionate. Without him, I would have found the pandemic very lonely. The moment I arrive home, he jumps onto my lap, asking to be stroked and tickled. He is snow-white with blue eyes: Kin is a real looker and a great fan of BINDER.



**Daren (Singapore):** "In high school, I used to play basketball and spent a lot of time with my team. We went through highs and lows together. Whenever I find myself thinking about that time, I get out one of the trophies I won with my team. These beautiful memories warm the cockles of my heart."



Irina (Russia): "One thing that most people don't know about me is that I am a huge sports enthusiast. I've done gymnastics and a load of other stuff too. But it was when I went on a skiing vacation with my girlfriends that I really got hooked. That was the first time I had ever been on a snowboard. I have been in love with my board ever since and have even managed to take it down a couple of lonely slopes during the pandemic. I've found the sport of my dreams!"



**Artur (Poland):** "Last summer, I was trying to think of a sport that I would be able to do with my family in spite of the pandemic. Somehow, I came up with the idea of rollerblading. Without wasting any time, we arranged for a trainer to give us some lessons. To counter the stresses of work, I often spend the evening blading through the empty streets of Warsaw for hours on end. It is then that I feel truly free.



Adrian (United Kingdom): "She's now six months old. She's incredibly sweet and loves licking me. I'm talking about Tilly, our new dog. We'd been wanting to get a second dog for some time but the pandemic encouraged us to take the step a bit sooner. The little Cavapoo does us a lot of good. We go on lots of walks with her, which clears our heads. We have a mountain of fun with Tilly."



**Sophie (China):** "2020 was a difficult year for the entire world because of the coronavirus pandemic. The whole of humanity was united by the crisis. That is why my favorite object is a calendar for the year 2021, when we will hopefully see improvements in every respect. After such a dark period, it is time for the light to dawn on us again. That's what I want to happen, at least."



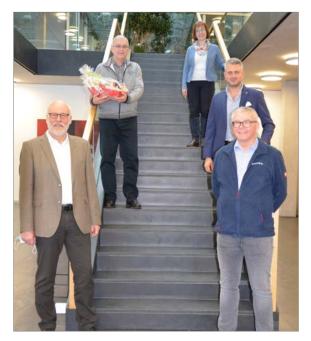
Janet (Germany): "The year of the coronavirus actually turned out to be a very special one for me. Firstly, because I started my job at BINDER — which I'm really happy in — and, secondly, because my partner proposed to me in October 2020. It happened like this: In October, we were vacationing on the island of Rügen just as we do every year and we took a ride on Rasender Roland (a narrow-gage railroad). When we reached the end of the line, my boyfriend got down on one knee and took hold of my hand. Every day, when I see the box for my engagement ring, it reminds me of that moment!"



Rainer (Germany): "I don't have a favorite object either, only favorite people. Our 26-year-old son Jonathan is currently doing his doctorate in theoretical physics in France and our other son Felix, who is 23, is studying music journalism in Dortmund. They are the main focus for us. We visit them regularly and enjoy a close and trusting relationship with both of them. I think that trust is extremely important. That also goes for the relationships we have with our BINDER customers, for example. Every single one matters to me."

### Welcome to the world of BINDER!

### Here are our favorite snapshots



#### ◆ An old hand at BINDER

After many years, it was time to say goodbye to Ronald Bothur, who left his job as a BINDER sales representative and is now enjoying a well-deserved retirement.



## ◆ And the award goes to the DACH team

Mariel Pacella and Dr. Thio Peters accepted a special achievement award on behalf of the DACH team.



#### ▲ Keeping on top of things

Janitor Viktor Kimbel is holding the fort, making sure that everything remains neat and tidy at the headquarters in Tuttlingen.



# ◆ Cupcakes for a 30th birthday

Larissa Schilling brought in some delicious cupcakes for her colleagues, which had been made using her sister's invention: the CUCAP® baking accessory.



#### ▲ Bernd Hofmann

We also said goodbye to our highly valued colleague, Bernd Hofmann, who was with BINDER for almost ten years.



## ▲ BINDER sparks the interest of the media

Vice President Michael Pfaff also faced questions from the media and was able to convey the sheer magic of BINDER.

#### Always worth a visit ►

The COMPETENCE FACTORY at the headquarters in Tuttlingen, which was built in 2017, is to be extended starting in September.

# ◄ Visit from the President of the Chamber of Commerce and Industry

Birgit Hakenjos-Boyd was very impressed by BINDER's innovations.



### ■ Nonstop panel production

A vast number of housing components are produced at the CF with a great deal of skill.



# ◆ His favorite place to be

The COMPETENCE FAC-TORY is one of Thomas Luippold's favorite places. Although, as you may have heard, he is also very at home on the golf course.



## SWR films footage at BINDER ►

Südwestrundfunk, a regional public broadcasting corporation serving the southwest of Germany, sent two camera teams to Tuttlingen within a short space of time. Once again, it was all about how vaccines are stored in our ultra low temperature freezers.



#### ■ News agencies

When the news agencies AP, Reuters, EPA, and AFP came to visit BINDER, it caused a real sensation.



#### ■ Take one!

"Camera, lights, action!" were the words that rang out when it came to filming a video with Vice Presidents Peter Wimmer and Michael Pfaff. In the process, the BINDER top brass demonstrated that they look good in front of a camera too.

#### **Product range**

CO2 incubators

Standard incubators

Cooling incubators

Growth chambers

Ultra low temperature freezers

Drying and heating chambers

Safety drying chambers

Vacuum drying chambers

Constant climate chambers

Dynamic climate chambers

Battery test chambers

Multi Management Software

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