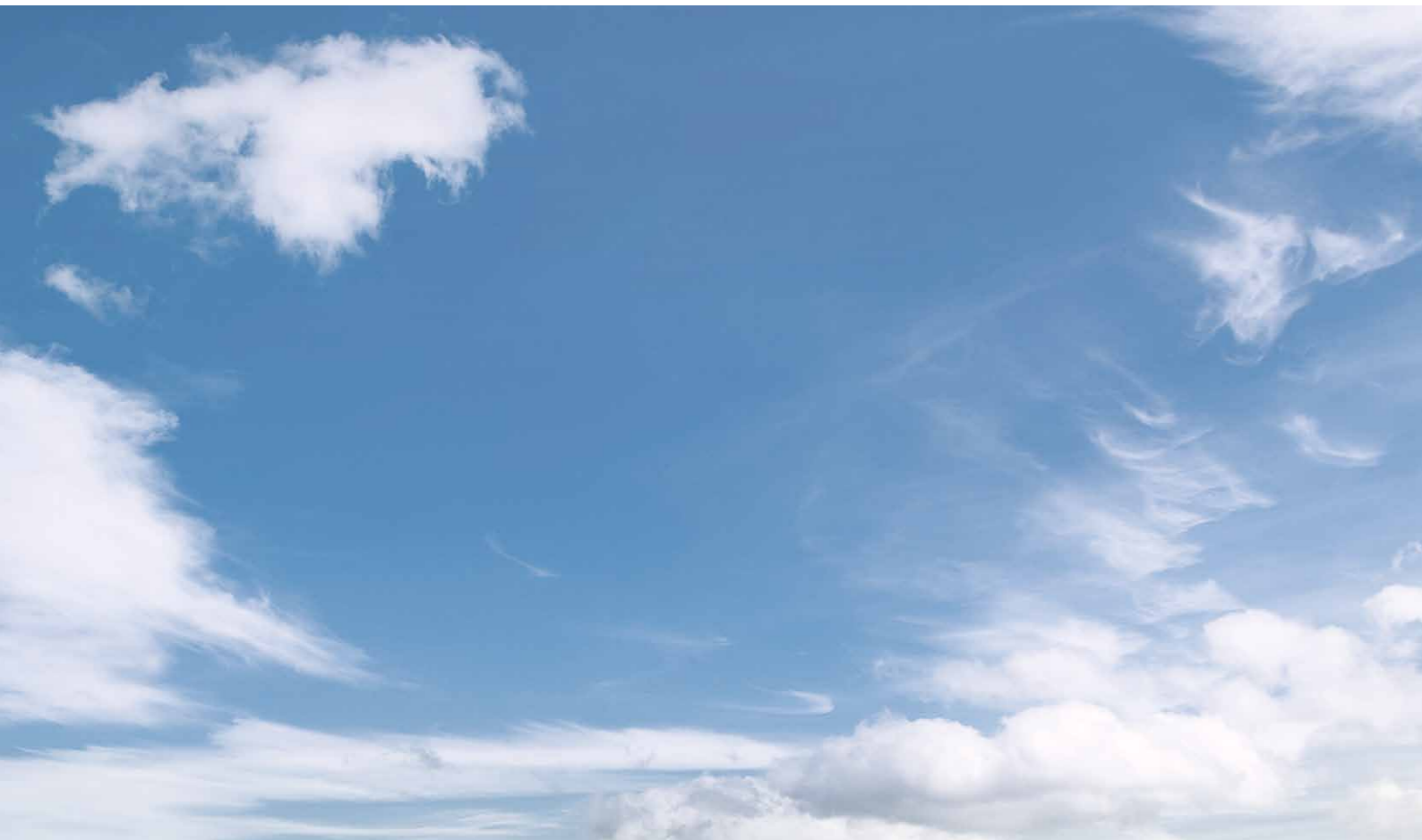


Vindur<sup>®</sup> Ventilation Solutions  
**for Ambulant Surgeries.**

# Patients can breathe a sigh of relief.

When it comes to sensitive procedures, the air in the operating room must be as particle- and germ-free as possible. We support you in this.



## Reliably protecting patients.

Operations on the human body are sensitive procedures and require particularly high indoor air quality. Infections caused by airborne germs must be avoided at all costs. It is crucial to keep surgical areas as germ-free as possible or to avoid contaminating wounds colonised with endogenous bacteria with additional external bacteria.

Air-conditioning equipment that ensures an air lowest in particles and germs in the operating room is therefore absolutely essential.

## Creating a customised hygienic climate.

Depending on the requirements, Vindur hygienic climate solutions for ambulatory surgery can operate with either low-turbulence displacement flow or turbulent mixed ventilation. Airborne germs are either immediately "displaced" from the protected area or reduced by a factor of 100 in the OT within 20 minutes. Our high-performance systems are planned specifically for the customer and designed to meet your needs in accordance with the relevant standards. Benefit from our many years of hygienic climate experience, for successful procedures.

# Hygienic. Reliable. From a single source.

Vindur Ventilation Solutions for Ambulant Surgeries.

## Compact and tailored to your needs.

Vindur Ventilation Solutions are specially planned, delivered and installed for ambulatory operating rooms. They ensure that particles and germs are filtered out of the air while the entire refrigeration piping, control and regulation technology come fully integrated. And best of all: when combined with our compact air-handling units, they provide all the advantages even in confined spaces.

## Safe and standard-compliant.

All relevant regulations are fulfilled with utmost reliability: this includes DIN 1946-4 "Ventilation in buildings and rooms of health care" for room classes I and II as well as VDI 6022. Should any deviations from the applicable regulations may be necessary due to space and/or cost constraints, we will identify them and mutually clarify them with the responsible authorities and hygienists prior to the conclusion of the contract. This ensures that the hygiene-related inspection of your system is completed successfully and quickly.

## Competent and experienced.

Vindur Ventilation Solutions have been tried and tested in numerous practices and clinics worldwide. They are tailor-made to meet your needs, from the initial planning stage to after-sales service. To achieve this, we precisely match all our components optimally to each other. Benefit from our many years of experience as a system partner providing safe hygienic climate solutions with excellent references.



## Our highlights:

- Decades of experience in air-conditioning technology
- From consulting, planning, processing and after-sales service – everything from a single source
- Customised, needs-based and standard-compliant design
- Numerous and excellent references





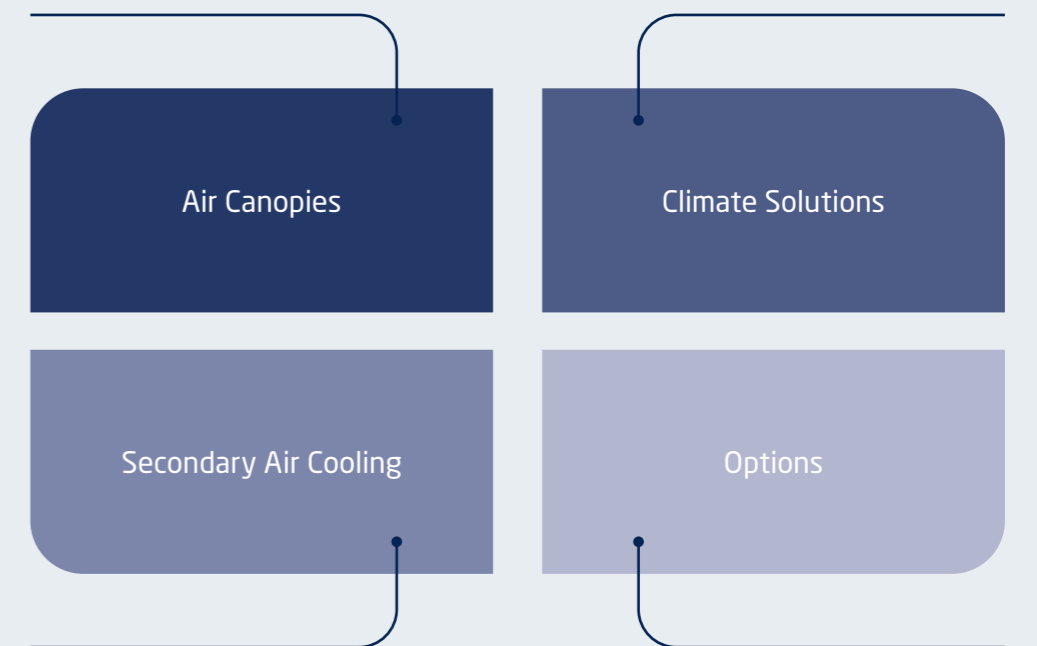
## Ventilation solutions for your OT.

With Vindur air-conditioning systems from **weisstechnik**, you can reach your hygiene goals optimally and cost-efficiently.

The clean air quality in operating rooms is an important factor in the success of surgical procedures. Furthermore, it is crucial to protect patients and operating theatre staff from surgical smoke. Our solutions are suitable for a wide range of building environments, hygienic requirements and surgical settings. This places the highest priority on infection prevention and workplace safety.

Whether recirculation, filter surface ceiling or wall modules: we offer customised clean air systems to meet any requirement.

Optimal solutions for air-conditioning your rooms – both inside and outside the operating theatre.



Our innovative recirculating air cooling systems provide additional, reliable cooling in patient, examination or waiting rooms.

The versatile options expand the range in terms of infection prevention, workplace safety, hygiene and comfort.

# Benefit from our 360-degree expertise.

Flexible service modules from **weisstechnik** for all your individual air-conditioning requirements.

## Consultation and planning.

With our own planning service, we provide you with comprehensive advice on technical possibilities, process requirements and normative specifications. We prepare the basic evaluation, preliminary planning, design planning, implementation planning and support you with the authorities and the approval process.

## Agile project management.

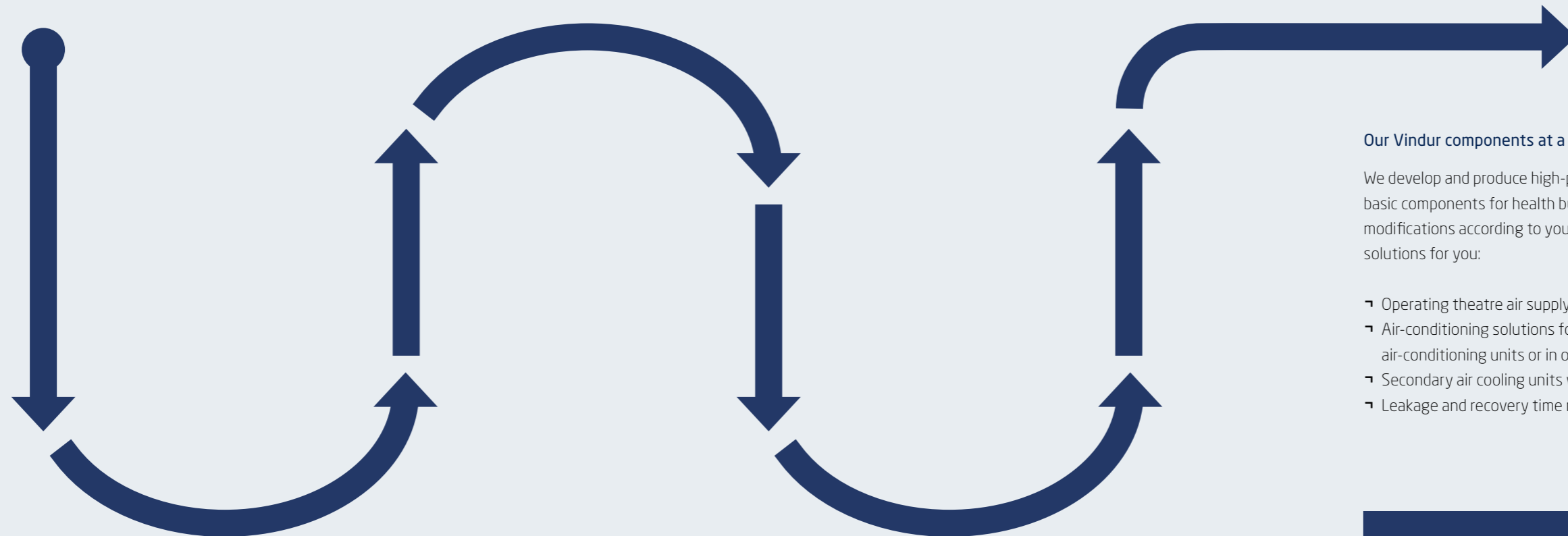
Thanks to proven engineering and development processes, we ensure the smooth determination and implementation of all requirements for you. We work with agile project management methods and selected data processing systems such as 3D, CAD and BIM, if required or desired.

## Installation service and commissioning.

We are also extremely efficient in the service we provide for you. We thus ensure the fast and professional installation and safe commissioning of the systems. All Service Employees are excellently qualified and – thanks to regular training – always up to date with the latest technical and normative knowledge.

## Ventilation solutions from a single source.

- New construction of operating theatres in hospitals and private clinics as well as thermally highly stressed rooms in the healthcare sector
- Conversion and modernisation of existing rooms and installations
- Customised solutions for individual requirements



## Design and execution.

For the design, we use our product portfolio, which meets the highest air-conditioning requirements. Of course, we can also integrate existing system parts or components from other manufacturers for you on a project-specific basis and coordinate all components and interfaces.

## Qualification and re-qualification.

As part of the commissioning process, we can also carry out optional protection level or recovery time measurements, qualifications as well as hygiene measurements.

## Worldwide after-sales service.

We offer fast and competent service for our facilities throughout the entire life cycle. You benefit from our large spare parts stock and excellently trained service specialists. We maintain, repair and modernise equipment and offer training and education for our customers.

## Our Vindur components at a glance.

We develop and produce high-performance and highly reliable basic components for health buildings. We also carry out modifications according to your needs and develop customised solutions for you:

- Operating theatre air supply systems
- Air-conditioning solutions for installation in central air-conditioning units or in operating theatres
- Secondary air cooling units with Thermal Disinfection
- Leakage and recovery time measurements

## Always up to date!

In order to reliably meet all requirements at any time, we constantly keep an eye on all relevant standards, laws and directives. We actively participate in standardisation committees and provide consistent training for our specialists. In this way, we are able to realise solutions that are as reliable as they are future-proof.





## Filter Surface Canopy Vindur FFA.

The intelligent solution for air-conditioning units located in adjoining rooms.

Vindur FFA is an optimised clean air ceiling for operating theatres, suitable for room class Ia. It is mainly used where there is no space for recirculation modules due to the floor space dimensions of the operating theatre. It is installed in the suspended ceiling of the operating theatre and consists of an air outlet element, terminal HEPA filters and a pressure body.

Vindur FFA is 100% supplied with air from the air-handling unit. This is transported via the duct system into the pressure body and flows as particle-filtered clean air from above into the operating theatre and set-up room. Thanks to unidirectional flow, it is distributed homogeneously and thus forms a protective zone for the entire aseptic environment of the surgical procedure. Thereby the patient, surgical team, material and instruments are protected optimally within the designated area with ideal protection against airborne particles and germs.

### Your benefits:

- Direct: mixing of supply and recirculated air takes place directly in the air-handling unit
- Accessible: nozzles for feeding and measuring the test aerosol are easily accessible
- Flexible: perfect even for low suspended ceiling heights



## Recirculating Air Canopy Vindur ULA.

Protect your patients and staff reliably.

Vindur ULA belongs to the new generation of low-turbulence clean air OT canopies for room class Ia. It is fully installed in the suspended ceiling of the operating theatre and consists of an air outlet element, terminal HEPA filters, a pressure body with sound dampers and recirculation modules.

To ensure maximum safety with optimal efficiency, the room air is drawn in at the recirculation module, mixed with the supply air processed by the air-handling unit in the module and fed into the pressure body located above the filter ceiling. The particle-filtered clean air then enters the operating theatre via unidirectional flow, forming a protective zone against particles and airborne germs.

The protective zone marked on the floor encompasses the entire aseptic environment of the surgical procedure, including material and instrument tables and sterilely dressed persons – all perfectly protected.

### Your benefits:

- Efficient: low energy consumption
- Reduced: smaller duct sizes coming from the air-handling unit
- Flexible: air volumes can be adjusted independently from the air-handling unit and duct system
- Consistent: mixing of room and supply air in the recirculation module, no temperature differences
- Economical: ideal for refurbishing existing systems



## Recirculating Air Module Vindur Wall.

The perfect alternative for narrow suspended ceilings.

The Wall-Mounted Recirculating Air Module Vindur Wall for room classes Ia + Ib has a very compact design and is therefore ideal for small rooms that require high air volumes. It is also very flexible: either in front of the wall, as an integral part of a lightweight wall or in the adjacent room. The latter set-up allows you to continue using the process room without interruption, even during necessary service and maintenance work.

The recirculated air is drawn in from the operating theatre directly via fluff separators on the recirculation wall module, then filtered and optionally cooled. The integrated damper allows the unit to be used even in noise-sensitive environments.

The recirculated air is then conveyed by the fan with the supply air coming from the air-handling unit into the pressure body of the filter surface canopy located above the filters. An F7 compact fine dust filter ensures reliably high air purity.

### Your benefits:

- Silenced: reduced sound pressure level when set up in the adjacent room
- Uninterrupted: service and maintenance work can be carried out from outside the operating theatre
- Manageable: easily accessible fluff separator, designed for machine cleaning
- Optional: use of a dry cooling is possible

## Air-Conditioning Unit Vindur Compact.

The perfect all-rounder for your equipment room.



Vindur Compact is particularly compact and ideal for integration into existing buildings.

Depending on the choice of air volume and air distribution system in the rooms requiring air-conditioning, all room classes required by DIN 1946-4 (Ia, Ib and II) can be guaranteed.

The entire control technology is already integrated, an additional control cabinet is generally not necessary. It is usually set up in the machine room closest to the operating room.

The unit operates in recirculation mode with standard-compliant fresh air (up to max. 1,200 m<sup>3</sup>/h), during which the fresh air is either fed to the unit with a separate connector or is already mixed with the recirculated air in the ventilation duct.

### Your benefits:

- Ready-to-fit: the unit comes with fully integrated piping and control system
- Compact: space-saving cabinet design
- Flexible: duct connections (top, bottom, rear side) and air direction (from top to bottom or vice versa)



## Air-Conditioning Unit Vindur System.

Complete means complete - a real advantage for you.



Our complete solution Vindur System for room class Ia combines all key functions into a single housing: ventilation, filtration, cooling, heating, humidification and dehumidification as well as electrical components. This saves valuable space that can be used for other components of the technical building equipment. The ideal location is in a machine room closest to the operating room.

The unit supplies 100% fresh air and 100% return air. The processed fresh air is either delivered directly into the rooms to be supplied via a duct system or supplied to downstream recirculating air cooler units.

Another bonus: heat recovery is provided by an integrated heat pump.

### Your benefits:

- Flexible: modular design to accommodate installation as required
- Ready to go: unit modules are delivered ready for use
- Optional: humidification via additional module



## Air-Conditioning Unit Vindur RoomIn.

Whisper-quiet, perfect for direct placing into your operating theatre.

Vindur RoomIn is a wall cabinet unit for room class Ib and II. Placement can be flexible, whether in the operating room itself or directly adjoining it outside – ideal for restricted spaces. Even the basic version offers variable temperature control options. Depending on the requirements and structural conditions, the unit can be operated with active internal cooling, active external cooling or chilled water. It also runs extremely quiet, which is ideal for use in noise-sensitive environments.

Vindur RoomIn operates in recirculation mode with a low proportion of fresh air (up to approx. 350 m<sup>3</sup>/h). The external air is fed to the side of the unit via a separate connector and mixed with the recirculated air internally. An integrated steam lance ensures fully automatic hygienic steam humidification with mineral- and odour-free sterile steam. F9 integrated cassette filters also ensure a high level of air purity.

The sophisticated unit concept has a fully integrated regulation and control unit including web visualisation. This simplifies assembly and makes the connection of further modules unnecessary.

### Your benefits:

- Ready-to-fit: completely integrated piping and control system
- Compact, space-saving and quiet
- Stand-alone: no separate equipment room required for installation





## Air-Conditioning Unit Vindur CeilingIn.

Ensuring clean air outside the operating theatre.

Vindur CeilingIn is used for room class Ib. Reductions in the proportion of fresh air (max. 400 m<sup>3</sup>/h) must, however, be accepted by those responsible for hygiene.

The air-conditioning unit is designed to be installed flush into a suspended ceiling and can be installed either inside or outside the room that is being conditioned.

It is available as a cold water or direct evaporation version, depending on your needs.

### Your benefits:

- Ready-to-fit: unit with built-in piping and wiring
- User-friendly: regulation and control integrated in one control cabinet
- Short service times: installation parts are easily accessible

## Secondary Air Cooler Vindur Top.

Don't give micro-organisms a chance.

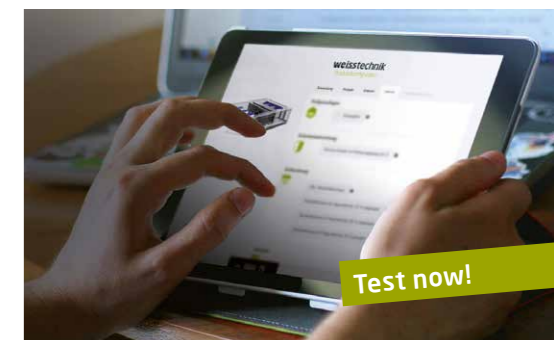
Vindur Top is a secondary air cooling unit for room class II and is usually installed directly in the room being cooled. The unit operates using recirculated air and is mounted with the bottom flush in the suspended ceiling for duct connection or below the ceiling for free intake and free discharge.

Our innovative four-stage safety concept works with unique Thermal Disinfection and ensures hygienic germ- and virus-free air – which provides the best protection for patients and staff. An additional HEPA filter can be used as a second or third filter stage for patients who are particularly vulnerable.

The **weisstechnik** product configurator is here!

Configure your very own Vindur Top. The online tool guides you through the configuration for your specific application in just a few steps.

Test us!



### Your benefits:

- Protected: four-stage safety concept for hygienic germ- and virus-free air
- Unique: Thermal Disinfection
- Manageable: easily accessible and easy to clean
- Integrable: connection to duct system possible

### Top explained. Top understood.

The Vindur Top principle:  
This is how Thermal Disinfection works  
against viruses, bacteria and mould.

Click here for  
the video:







# We measure ourselves by our service.

We think and act collaboratively service-oriented. With our Service Teams, we offer sustainable solutions for long-term safe system operation.



Our services - lots of good reasons:

- Global service network
- Wide range of preventive maintenance
- Reliable spare part supply
- Special deployments available any time
- Certified proper disposal of outdated devices

Our Service Experts are always near you.

24/7-Service-Helpline:  
+49 1805 666 556

## Expert advice.

Our experienced experts are ready to support you from the first idea to after-sales service in every step of your project, by telephone or on site.

## Maintenance and servicing.

We offer different service levels and guaranteed reaction times after the receipt of the fault report. Our full maintenance service provides additional safety with calculable costs.

## Spare parts management.

Many spare and wearing parts are directly available in our warehouse. To further increase operational reliability, selected spare parts can additionally be stocked on site. We would be pleased to advise you further.

## Instruction and training.

We provide regular trainings covering the application, operation and software of the units. We also offer customer-specific workshops on request at your location.

# Getting you fit for the future.

**weisstechnik Academy. Hands-on. Individual. Efficient.**

Advanced training needs not be mind-numbing theory. **weisstechnik Academy** makes it an informative, fun experience. For many years, we stand for successful and innovative application, technics and product trainings in the fields air-conditioning solutions and environmental simulation. Always tailored to our customer's and partner's needs.

Whether new employee, freshman or "old stager", you too will profit from learning new things, refreshing knowledge or broadening your mind. Benefit from the **weisstechnik Academy** training sessions - online or in presence on site! We are looking forward to you.



Digital learning platform



Webinars + live online trainings



Classroom training

## Vindur Cockpit - our intelligent service tool for your safety.

### Rapid response in the event of a malfunction.

When air-conditioning systems in critical infrastructures malfunction, action must be taken quickly. Your installed units communicate with our service centre via reliable, user-friendly remote access services using an encrypted VPN tunnel. This enables us to react immediately to any incidents. We determine the best course of action based on the data available and guarantee a timely, professional response.

We ensure a secure connection using reliable security measures and the highest IT security standards.





# Passionately innovative.

We work in partnership to support companies in research,  
development, production and quality assurance.  
With 22 companies in 15 countries at 40 locations.

weisstechnik  
For a safe future.



## Environmental Simulation

The first choice for engineers and researchers for innovative, safe environmental simulation facilities. In fast motion, our test systems can simulate all the influences in the world as well as for instance in space. In temperature, climate, corrosion, dust or combined stress tests. With a very high degree of reproducibility and precision.



## Air Solutions

As the leading provider of clean rooms, climate technology and air dehumidification, we consistently ensure optimal climatic conditions for people and machines. For industrial production processes, in hospitals, mobile operation tents or in the field of information and telecommunications technology. From project planning to implementation.



## Heat Technology

Experienced engineers and designers develop, plan and produce high-quality, reliable heat technology systems for a broad range of applications from heating and drying cabinets to microwave systems and industrial furnaces.



## Pharmaceutical Technology

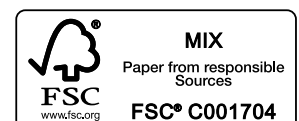
With decades of experience and know-how, we guarantee the most sophisticated clean air and containment solutions. Our comprehensive and innovative range of products includes barrier systems, laminar flow systems, safety workbenches, isolators, airlocks and stability test systems.

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learn more.



Passion for Climate.