



weisstechnik[®]
a schunk company

RetroFit –
to keep things
running smoothly.

Update your system the simple way.

RetroFit. Individual and sustained all-round service for modernisation and expansion.



Always up to date.

Modern testing processes are constantly faced with new challenges regarding increasing digitisation, efficiency and legal requirements. When modernisation is considered, RetroFit provides a sensible alternative for many long-existing systems instead of completely replacing them with new installations. Substituting obsolete components and integrating new, up-to-date technological solutions also increase the productivity and improve the product quality.

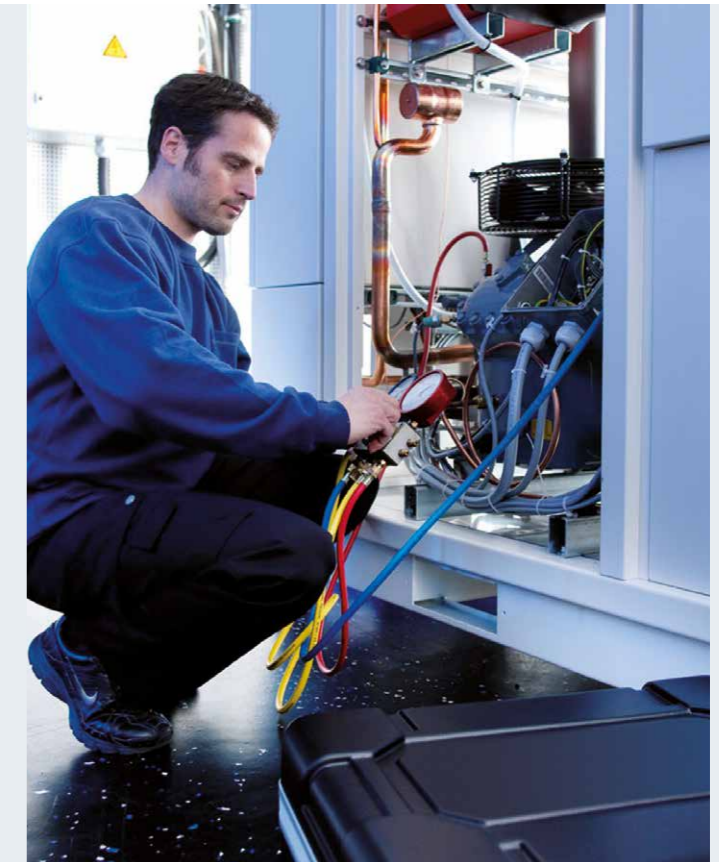
Increased service life, lower investment.

RetroFit not only extends the service life of your system, it also leads to significantly lower costs compared with new acquisitions and complete replacement. Stable basic substances are retained in the long term; high replacement investments, for example in new foundations for large test facilities, are not required. Protracted approval procedures are usually not necessary. And the measure can often be planned for quieter operational phases and then even implemented during production.

Unique facility, unique service.

RetroFit is our individual service programme for all systems already in service for 10 years or more. Particular attention is paid to preventive measures here to ensure that downtimes and the unpredictable costs associated with downtimes do not occur in the first place. Even if original spare parts are no longer available or the original plant constructor has ceased trading, we will still identify professional, tailored solutions for your system.

The spectrum covered by our RetroFit services is vast: it ranges from small touch panels and cooling technology in cooling circuits to integrated complete solutions for energy optimisation.



Know-how you can rely on.

Specially trained RetroFit service teams will provide you with an overview of the current condition of your system, which provides the basis for our realistic assessment of the necessary measures and optional recommendations for your future security. Our consulting services and individual offers are, of course, free of charge.

RetroFit services at a glance:

- Design of assemblies for which spare parts are no longer available
- Retrofitting of automation technology e.g. with programmable control systems
- Retrofitting with environmentally friendly refrigerants in compliance with statutory requirements
- General extension of the service life
- Work on devices also from other manufacturers

RetroFit.

Ideal for small and large solutions.

Touch panels

Frequently conducted operational procedures mean that touch panels are very heavily used. In addition, they are constantly developing in terms of resolution and computing performance. Therefore, modernisation with smaller adjustments makes sense to ensure the trouble-free, long-term operation of the system.

Control/regulation

The rapid technological development particularly offers many advantages for control and regulating systems. Customers benefit from improved operating possibilities, greater accuracies and the ability to control or network systems with the computer.

Control cabinets

With older systems, most components in the control cabinet no longer meet the safety regulations according to VDE and DIN and need to be renewed when carrying out modernisation measures. Here less effort is required for producing a new control cabinet than for changes and rewiring.

Refrigeration units

There are many reasons for replacing refrigeration units: for example, to increase the cooling capacity, comply with legal requirements and as a result of wearout in combination with leakages caused by corrosion. On-site replacement is significantly more efficient than time-consuming changes to existing units.

Fans, heatings, heat exchangers

Increasing temperature changes usually requires the replacement of fans, heatings or heat exchangers. The design and dimensioning of the relevant components and the efficient and professional installation are among our strengths.

Humidification systems

There are many reasons for a new humidification system: for example modified standards often require higher moisture values or the system previously did not have a humidifier and now needs to be upgraded for climatic tests. Retrofitting kits for the safe, contactless and low-wear switching of existing humidifiers also belong to our range of services.



Making the test bench of a renowned car manufacturer fit again.

RetroFit. All-round service for a vehicle test bench.

Automotive test benches with climate chambers are important stages in vehicle development and involve major investments. In order to use them as long as possible, they have to be adapted to new customer requirements, legal provisions or changed processes. We have comprehensively modernised the climate chamber in a vehicle test bench for a renowned vehicle manufacturer.



30-year-old system from competitor.

The system was built before 1986 for the long-term testing of vehicles. In the test, the vehicles are placed on special hydraulic pistons whose movements simulate defined track profiles. In addition, cold, heat and sunlight are simulated in the chamber to precisely test their combined effect on the materials.

Since the construction of the system, the customer and legal requirements have changed. The system was no longer up to date and the chlorine-containing refrigerant R22 needed to be replaced. In addition, it was also planned to test not only passenger cars but also utility vehicles in future. This required an adaptation of the geometry for sunlight simulation purposes.

New construction or modernisation?

After the requirements had been defined, the question arose whether it would be more sensible to modernise the existing chamber or build a new system. An initial on-site inspection quickly revealed that the system could be retrofitted economically. A preliminary cost estimate confirmed this.

As a result, the customer compiled a detailed specification and the tender phase was initiated, whereby it was important to precisely define the responsibilities and interfaces for the supply lines (electrical, compressed air, cooling water, condensate drain). Weiss Umwelttechnik was awarded the contract for the project and was able to start the detailed planning.

Precise planning ensures reliable results.

The planning phase is a key project step that sets the entire course. For this reason, the detailed planning was precisely coordinated with the corresponding drawings. Following approval, the individual components were planned and produced. It was an advantage that all parts originate from a single source at Weiss Umwelttechnik and that the custom-made modules are based on proven standard solutions. This protects against surprises and ensures the reliable operation of the system. The following assemblies were produced and replaced as part of the project: cooling unit, control cabinet, control/regulation system, control console and air conditioning.

Experienced specialists for assembly and commissioning.

During the implementation phase, a team of engineers was initially responsible for dismantling the system and the legally compliant disposal of the system components and equipment. The system was subsequently rebuilt as planned with new modular units and put into operation by a second team. The preparation of the entire documentation was an important prerequisite for commissioning the system. It included the CE Manufacturer's Declaration, the EC Declaration of Conformity, the circuit diagram and the operating instructions. In order to optimally meet the customer's business requirements, it was decided to modernise the sunlight simulation in a second project step.

Enjoying sustained benefits.

After successfully completing the work on time, the customer now has a modernised vehicle test chamber that accords with all legal requirements and has high-performance climatic technology. This enables precise temperature control and operates much more economically than the previous system. A particular challenge was to integrate the special cooling system for the shock absorbers. This was necessary because the lack of a headwind means that the shock absorbers can heat up too much and therefore become damaged during testing. The implemented refurbishment measures enable the system to achieve energy savings of up to 20% and thus also help to attain the company's ecological objectives. Thanks to the integrated energy meter in the system, it is now possible to accurately record the consumption and precisely allocate the test bench costs to individual projects.

Key system data:

- Climate chamber for
- Continuous loading
 - Cold/heat/sunlight simulation
 - Driving simulation using hydraulic pistons

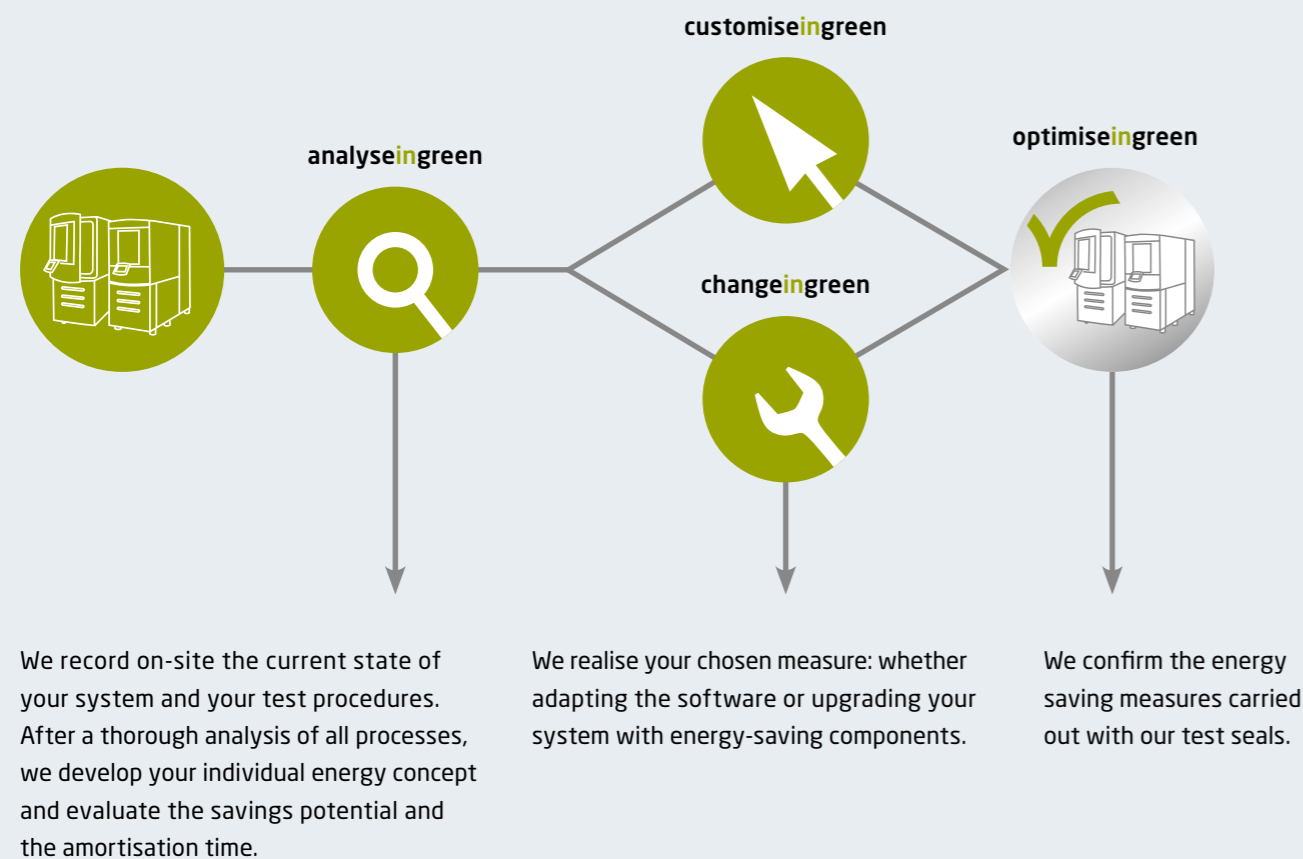
System volume:	approx. 100 m ³
New chiller:	100 kW
Cooling capacity at -30 °C:	93 kW
Cooling water requirement:	50 m ³ /h
Max. electrical installed load:	215 kW

With RetroFit and **greenmode**[®] for the energy transition!

Intelligent energy optimisation for existing systems and processes saves resources sustainably, reduces CO₂ emissions and, above all, reduces costs by up to 40%. A genuine competitive advantage in production and testing. Smart control, efficient components and software make it possible.



The green optimisation strategy at a glance:



Not only fit, but fitter.

Would you like a little bit more?

Multiple options for retrofitting or upgrading your standard system:

- Retrofitting of a door with window and lighting and/or windows with handhole openings
- Mobile version
- Installation of telescopic rails with drawers instead of standard shelf inserts
- Adjustable circulating air volume
- Conversion from air to water cooling

Your test requirements have changed or increased?

No problem. We also have the solution for special requirements:

- Conversion of climate test cabinet into a test cabinet for testing with corrosive gases (e.g. NO_x, H₂S). This includes the installation of a corrosive gas cabinet extension (including 1 to 4 thermal mass flow controllers, air exchange device and pressure guide) as well as a PMMA auxiliary cabinet with corresponding supply lines
- Modification options for conversion to a Li-ion test cabinet
- Possible modifications for ATEX applications include, for example, N₂ purging with additional O₂ monitoring, control of the heating surface temperature, etc.



Note:

A very close and detailed coordination of the requirements is a prerequisite for modifying systems that are to be used for tests with combustible liquids, gases and energy storage devices (Li-ion batteries). To this end, we will develop a safety concept in a personal discussion with you, that is tailored to your needs while taking into account legal requirements.

When it comes to service,
we set a high bar.



We measure ourselves by our service!

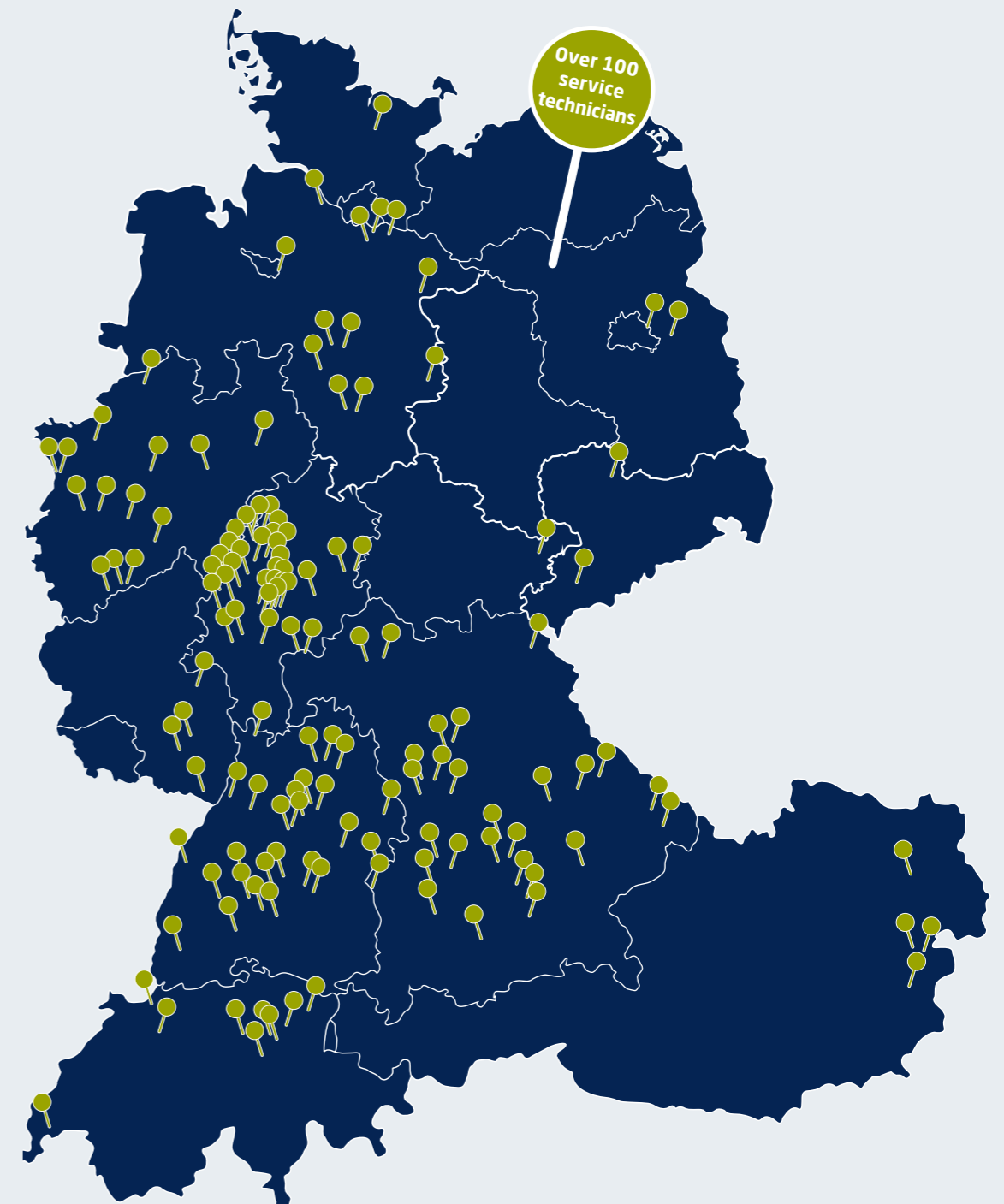
Our services - plenty of good arguments:

- Global service network
- Wide selection of preventive maintenance
- Reliable spare part supply
- Special deployments available any time
- Training programmes for our customers
- Certified proper disposal of outdated devices

You can always find a **weisstechnik** expert near you.

24/7 Service Helpline:
+49 1805 666 556

Strong service organisation,
optimally positioned for you.



weisstechnik

Test it. Heat it. Cool it.

Our solutions are deployed around the world in research, development, production and quality assurance of numerous products. Our experts from 22 companies are at your service in 15 countries at 40 locations. They provide optimum support and ensure high operational reliability of your systems.

Weiss Umwelttechnik and Vötsch Industrietechnik are among the most innovative and significant manufacturers of environmental simulation systems. With these testing systems, we can simulate all climatic conditions around the globe and beyond, under accelerated conditions. Whether temperature, climate, corrosion, dust or combined shock testing: we have the proper solution. We supply systems in all sizes, from standard versions up to customised, process-integrated facilities - for high reproducibility and precise test results.

Vötsch Industrietechnik also offers a wide product portfolio in the field of heat technology. With an experienced team of engineers and designers, we develop, plan and produce high-quality and reliable heat technology systems for virtually any field of application. Products include heating/drying ovens, clean room drying ovens, hot-air sterilisers, microwave systems and industrial ovens. The portfolio reaches from technologically sophisticated standard versions to customised solutions for individual production operations.

Weiss Klimatechnik delivers reliable climate solutions wherever people and machinery are challenged: in industrial production processes, in clean rooms, measuring rooms, hospitals, mobile operating tents or in the area of IT and telecommunications technology. As one of the leading providers of professional clean room and climate solutions, we offer effective and energy-saving solutions. Our experts will guide you from the planning to the implementation of your projects.

Weiss Pharmatechnik is a competent provider of sophisticated clean room and containment solutions. The product range includes barrier systems, laminar flow facilities, security workbenches, isolators and double door systems. The company emerged from the established enterprises Weiss GWE and BDK Luft- und Reinraumtechnik and has decade-long experience.

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