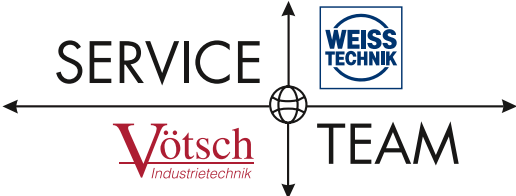




Energy optimization

Analysis, evaluation and implementation



A plus factor for the environment: Environmental simulation and environmental protection

45% of all German CO₂ emissions are discharged in the course of energy production. Power generation causes 4 times as much greenhouse gas as all cars in Germany together.

As part of an innovative and responsible company, the Weiss and Vötsch service team has been devoting itself to the issues of environmental protection and energy optimization for a long time. We would like to present our expertise in implementing cost-saving measurements to you. This brochure is intended to give you an insight into our portfolio of services and thus into your possibilities to optimize the energy consumption of environmental simulation systems.

Eco-friendly systems

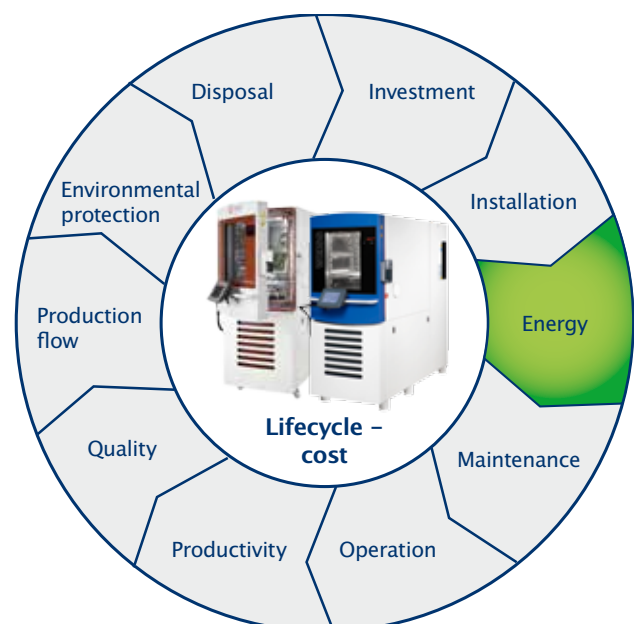
As innovative companies Weiss Umwelttechnik and Vötsch Industrietechnik are concerned with energy efficiency of their systems and the environmental protection not only for a short time. This is why, years ago already, we have retrofitted all our processes to ecological sustainability – from research right up to the final inspection.

- ✓ Our systems are virtually entirely recyclable.
- ✓ We use natural mineral wool as insulation in standard units and foams with no greenhouse effect in large chamber systems.
- ✓ Our systems operate with CFC-free refrigerants and we are retrofitting old systems for CFC-free refrigerants.
- ✓ We are certified according to DIN ISO 9001 and 9002, and tested in accordance with the WRA.
- ✓ Leak checks and maintenance work on our systems by trained technical staff ensure the lowest emissions possible, reliability and constant efficiency.
- ✓ Even during production energy and resources are saved, thanks to optimized processes.

Professional support

Thanks to our long time experience in the field of environmental simulation, we have the expert knowledge required to support you in saving energy in your processes. To that end we not only design new product lines which operate more energy efficient, but also improve the efficiency of your already existing systems as well. At the same time the reproducibility of your test results as well as the reliability of your systems is ensured. Count on us – you will be impressed by the results.

Lifecycle-cost-optimization



Delivery of profitable results: Our energy-optimized process configuration

Efficient collaboration

By means of comprehensive energy optimization the efficiency also of your systems and processes can be significantly increased – we are at your side to assist you. Together we ensure that you achieve profitable results by optimising your test processes.

- ✓ In collaboration with our specialists we select the most efficient system for your applications.
- ✓ Tailor made equipment is developed and designed to fit exactly to your special applications.
- ✓ By considering the complete system on site, e.g. testing facility, measuring devices, heat exchangers, etc., we are in the position to tap the full potential.
- ✓ We check the saving possibilities of your existing equipment.
- ✓ Our new test equipment operates within the optimal range thanks to efficient components and smart control.

Profitable results

Many advantages in various areas accrue thanks to the implementation of energy-saving measurement:

- ✓ Cost saving
- ✓ Reduction of expensive peak loads
- ✓ Reduction of wear
- ✓ Decrease of CO₂ emissions
- ✓ Clearing of your own energy consumption by transparency
- ✓ Protection of global resources
- ✓ Increase of competitiveness



Our qualified employees thoroughly analyse the actual state of your systems.

At a glance: Flow chart for successful operation

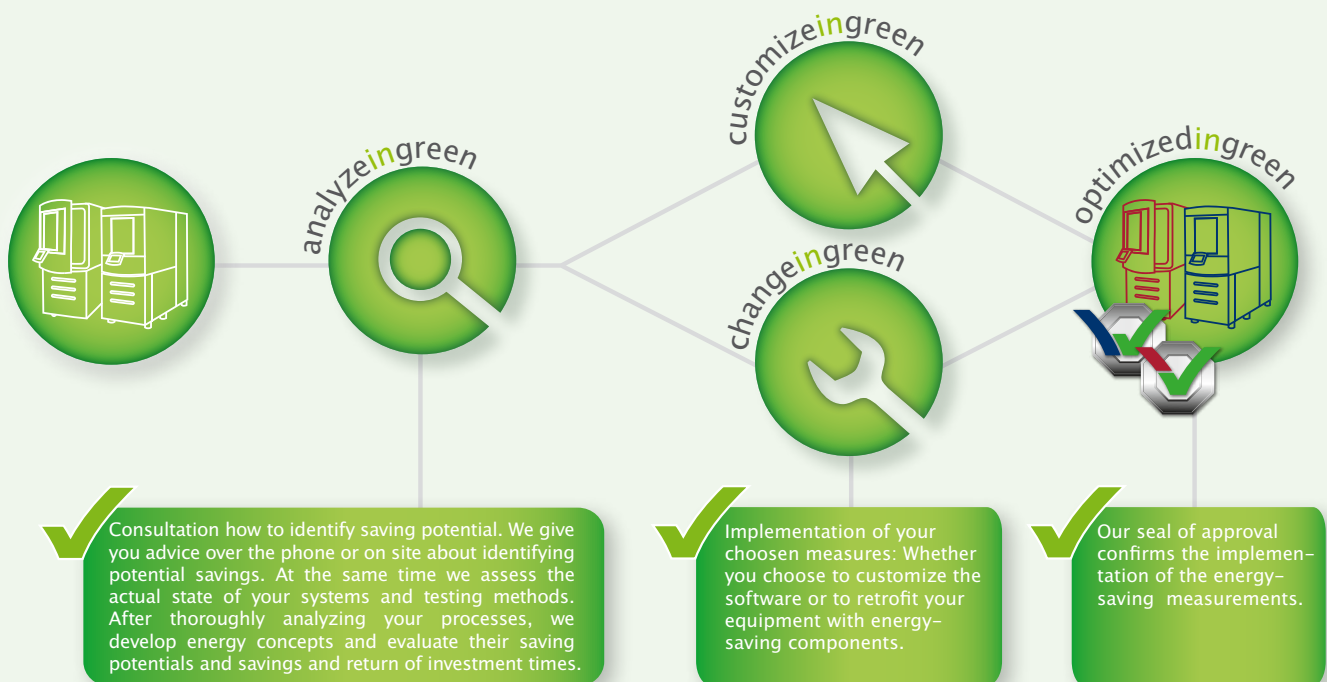
Principles of optimization

The energy consumption of test systems is subject to many different factors. These are for example: Type and weight of the test specimen, temperature range and installation room. This makes a structured procedure during ins-

pection of the equipment even more important in order to obtain optimal results.

In the process of energy optimization we adhere to our approved principles of analysis, evaluation and implementation.

Our optimization strategy

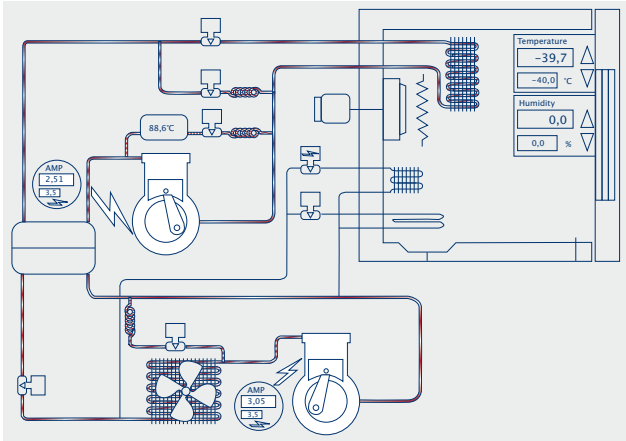




After assessing the operating parameters the equipment is optimally customized to your application.

Structured procedure: Assessment and optimization of the systems

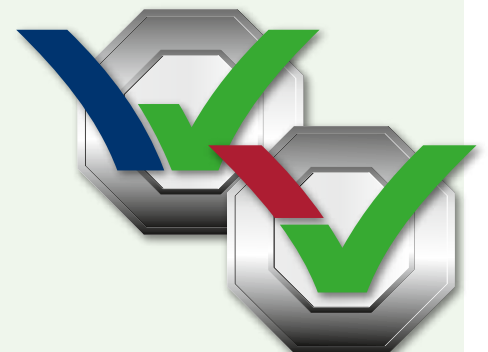
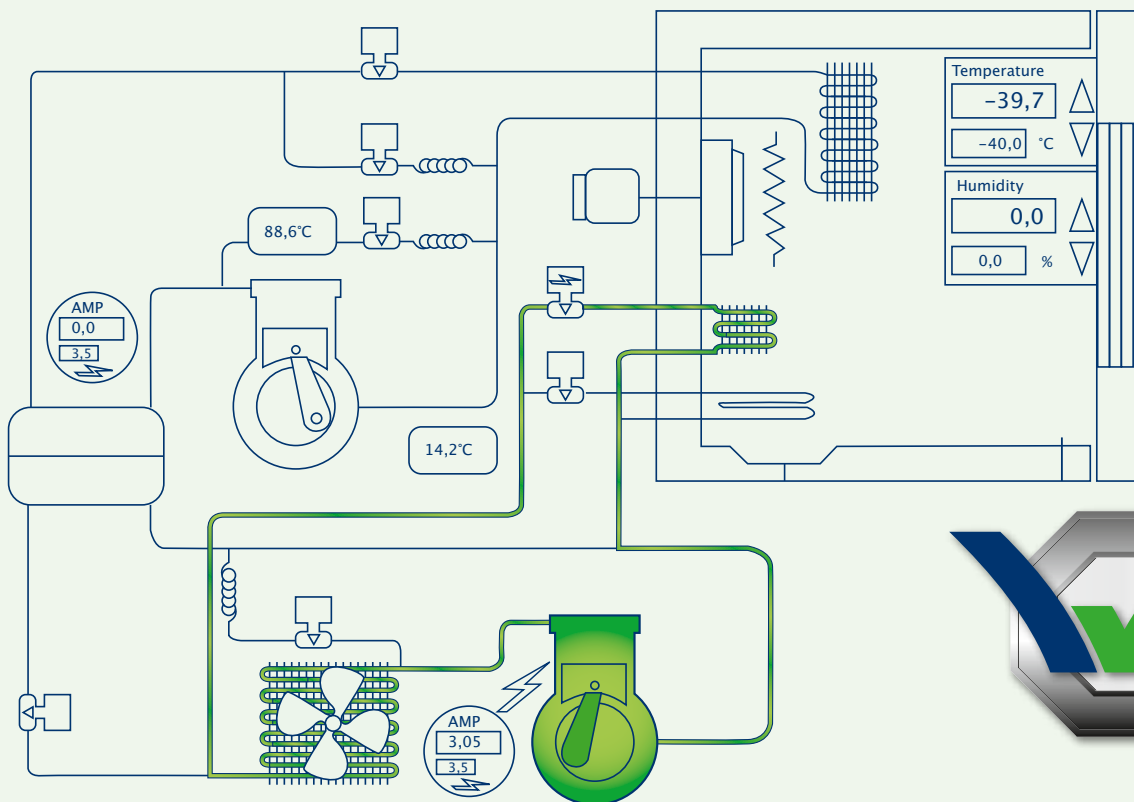
Stress screening system



Software and hardware modification

By using the “green” mode optionally only one compressor instead of two can be activated. Hence power and costs are saved.

Stress screening chamber in the „green“ mode



Successful optimization: Example for savings: Shock test systems

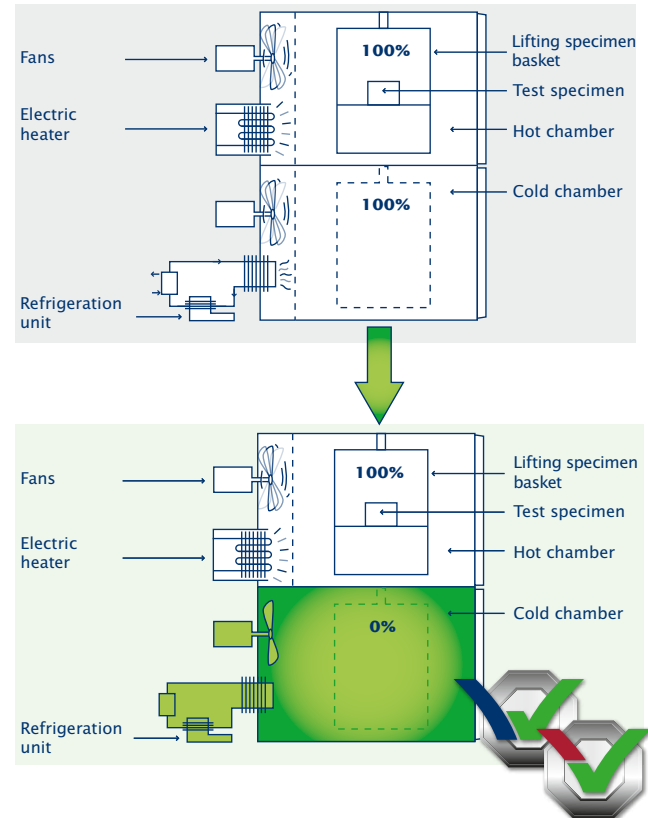
Individual control

By modifying the software, consumers that are not required, e.g. heaters, compressors and fans, are concertedly deactivated. Just in time before the test specimen is put into the other test chamber, the temperature is set back to the needed condition.

Your benefits

- ✓ reduced energy and cooling water consumption
- ✓ reduced noise emissions
- ✓ no change noticeable for the user
- ✓ retrofittable for many chamber types (since SIMCON controller type)
- ✓ short return of investment times
- ✓ lower supply system loading

Shock test chamber in comparison



Example for savings

Shock test cabinet, type TS 120 or VT 7012 S2, 120 litres

Electric energy is saved by deactivating the refrigerating unit, heaters and fans via a smart software module. After a rest-time of more than 30 minutes the unused chamber can be deactivated.

The following presumptions are subject to our calculation examples:

- Temperature cold chamber: Setpoint -40°C (setpoint inactive: -50°C)
- Temperature hot chamber: Setpoint $+85^{\circ}\text{C}$ (setpoint inactive: $+95^{\circ}\text{C}$)
- Dwell time: 1h in each chamber
- Test specimen weight: 10 kg
- System operating time 6,000 h per year corresponds to 3,000 cycles

Values measured on a sample test chamber:

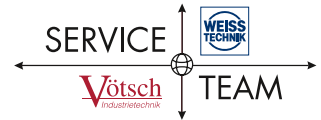
Before modification approx. : 42,000 kWh per year

After modification approx. : 24,300 kWh per year

This signifies a direct saving of 42%

Saving per year and system at 12 €ct per kWh: up to 2.124,00 EUR

All-round service: Our portfolio at a glance



Convincing services

- ✓ Consultation by phone or on site
- ✓ Assessment of the actual state of systems and testing methods
- ✓ Measurements of electrical energy and water consumption
- ✓ Analysis of existing installations for potential savings
- ✓ Development/selection of energy-saving components and systems
- ✓ Introduction of optimized new equipment
- ✓ Generation of an energy balance sheet
- ✓ Confirmation of the results



We also provide

- ✓ Maintenance
- ✓ Calibration on site
- ✓ Leakage test according to EC Reg 2037/2000 and EC Comm 842/2006
- ✓ Safety checks „BGV A3, BGV D24, BGR 500 ...“
- ✓ Equipment qualification
- ✓ Refrigerant retrofitting
- ✓ Modifications / expansions
- ✓ Customer trainings
- ✓ Service hotline
- ✓ 24-hour response-time agreements
- ✓ Overhaul of chambers
- ✓ Removals
- ✓ Supply of spare parts
- ✓ Proper disposal of old equipment

Weiss Umweltechnik GmbH
Simulationsanlagen – Messtechnik

35447 Reiskirchen–Lindenstruth
Greizer Str. 41–49
Tel.: +49 6408 84 0
Fax: +49 6408 84 8731
E-Mail: service@wut.com
Internet: <http://www.weiss.info/>

Vötsch Industrietechnik GmbH
Produktbereich Umweltsimulation

72336 Balingen–Frommern
Beethovenstr. 34
Tel.: +49 7433 303 0
Fax: +49 7433 303 4220
E-Mail: service@v-it.com
Internet: <http://www.voetsch.info/>

Do you have any questions?
Please give us a call!

Service Center:
Tel.: +49 180 5 66 65 56

