



Developed with
TÜV Rheinland!

Test hydrogen vehicles and
components safely.



www.weiss-technik.com

You have the drive - we have the tools.

Extensive testing is required in the development of hydrogen-powered vehicles. The aim is to eliminate the risk of explosions. We help you do it right!



Moving into the future with hydrogen - safely.

Hydrogen is "thrilled to ignite", i.e. it reacts easily with oxygen and burns to form water. This is precisely the property that makes it suitable as a fuel. However, as highly explosive atmospheres can develop in a matter of seconds in fuel cell vehicles and direct hydrogen burners, its use also poses potential dangers.

If you are planning and implementing a project with hydrogen applications, you are in safe hands with **weisstechnik**. Trust in our know-how as a testing technology specialist. We will work with you to find the solution for your challenging testing requirements. To make sure that the test specimen, test room, building and people are protected from danger and are kept safe.

H₂ test solutions - developed with TÜV Rheinland.

As a first mover in the field of hydrogen, we have developed a unique safety concept in cooperation with TÜV Rheinland, which enables the testing of H₂ applications to be carried out easily, safely and economically.

The first step was to analyse and systematise risks and their possible effects when testing H₂ applications. The result is the first-ever standardised risk assessment and the foundation for the planning of safe H₂ testing solutions.

A sophisticated safety concept has been developed around this. This enables us to derive effective technical solutions to minimise the identified risks as much as possible, either as individual measures or as a combined package, depending on your requirements. This will provide you with consistently clear answers to any questions you may have regarding H₂ testing.

Developed specially for you.

The safe solution from **weisstechnik**.

Hydrogen vehicles and their components must pass the same environmental simulation tests as vehicles with combustion engines or electric drives.

The difference: due to the easy flammability of hydrogen, additional safety aspects must be taken into account.

Our H₂ safety concept was developed precisely for this purpose. It offers you the appropriate combination of suitable measures based on the standardised risk assessment and customer-specific specifications.

Primary: prevention

Here's how you prevent hazards from developing:

- We offer technical solutions that recognise dangers at an early stage and prevent or eliminate them.
- Our measures specifically ensure that all critical situations that arise do not lead to fire or explosion.

Secondary: risk minimisation

Test as risk-free as possible: with reliable safety technology from **weisstechnik**. We provide expert advice from the initial planning stage right through to on-site implementation, all from a single source.

Tertiary: operator obligations

Make use of organisational measures: we will offer you support in the implementation of specifications and guidelines for the safe planning and execution of H₂ mobility tests.



Safety concept in cooperation with TÜV Rheinland:

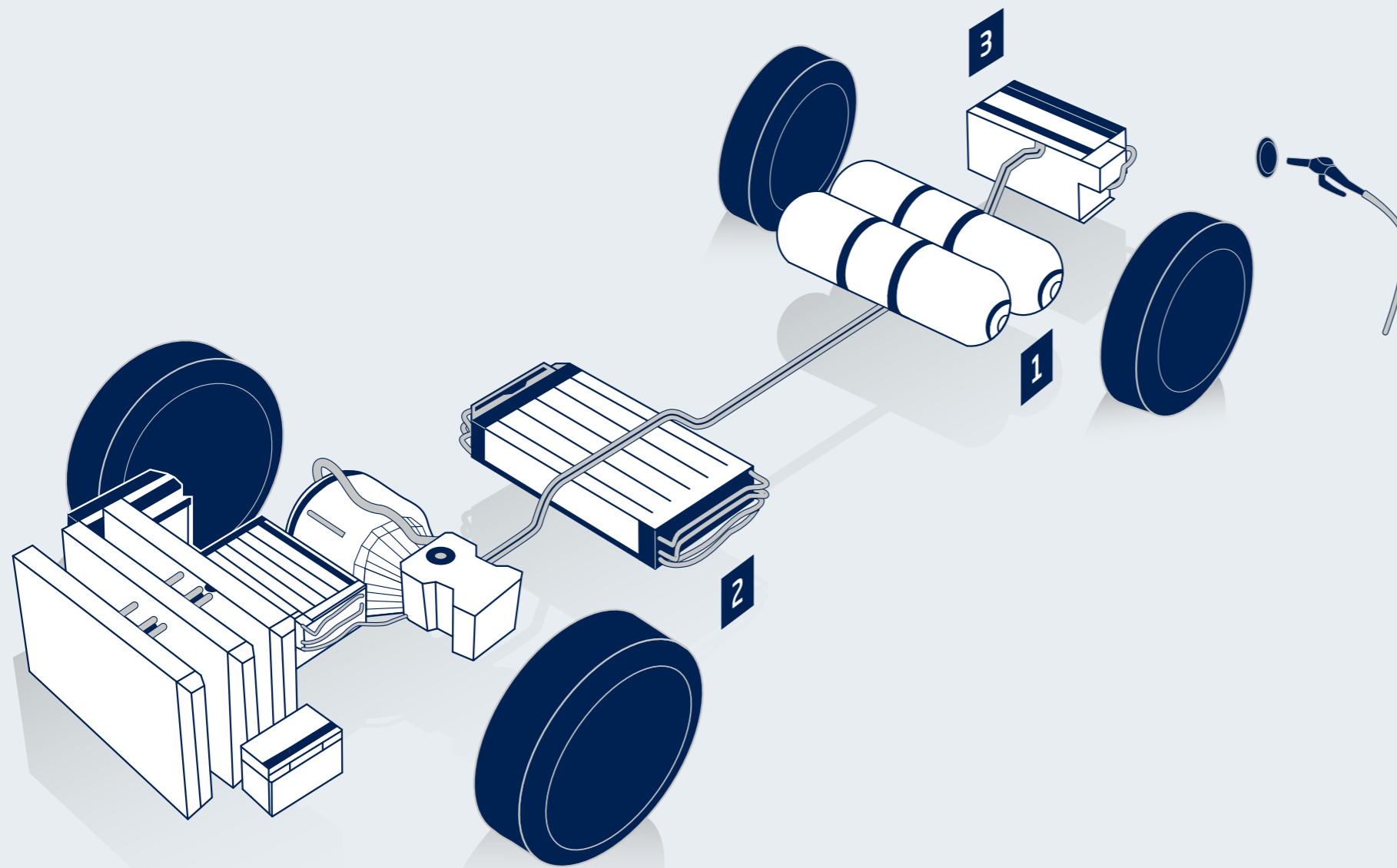
- Avoid dangers
- Minimise risks
- Safe planning

A well-thought-out safety concept.

For low-risk H₂ mobility testing.

Hydrogen is becoming increasingly important and offers great potential as an energy carrier that can support decarbonisation. Hydrogen vehicles and their components must pass the same environmental simulation tests as vehicles with combustion engines or electric drives.

However, they require significantly higher safety standards. The reason lies in the easy combustibility and highly explosive nature of hydrogen.



Risk identified.

The complex hazards that arise during the testing of fuel cell-powered vehicles require a perfectly tailored safety concept.

There are three different sources of risk to consider with H₂ vehicles:

1 H₂ tank

The tank stores gaseous hydrogen under high pressure

▲ Uncontrolled H₂ release

↳ Ignition of an explosive H₂ atmosphere

2 Fuel cell stack

Conversion of the energy stored in the hydrogen into electrical energy

▲ Uncontrolled H₂ release

↳ Ignition of an explosive H₂ atmosphere

3 Lithium-ion battery

Buffer storage for the generated electrical energy

▲ Thermal runaway with uncontrollable consequences

↳ H₂ release and ignition of an explosive H₂ atmosphere

As a specialist for test solutions, we have developed and implemented turnkey test systems that enable the simple, fast and customised inspection and testing of H₂ applications.

We equip the following test systems with safety technology for your H₂ mobility tests:

- Climate test chambers with or without sun simulation
- Test facilities for combined climate and vibration tests
- Chassis dynamometer for tests in driving mode according to WLTP standard
- Climate test chambers and chambers for individual components

Our H₂ safety concept will keep you on the safe side.
No ifs or buts. Test us!

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 selection 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

Professional consulting.

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 the spot.

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 will be happy to advise you.

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.

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Test it. Heat it. Cool it.

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