High Voltage Heater HVH 50/70 and HVH 100
The Future at Its Best: Innovative Heating Solution for E-Mobility

Webasto’s innovative technology works with an extremely thin heating layer that is firmly bonded onto the heat exchanger, and a large contact area for heating the coolant. The HVH therefore achieves extremely fast heat-up times, high precision and the highest efficiency. The system requires only a small installation space and can easily be integrated into vehicles. Webasto’s proven technology is available in 3 variants (maximum performance): HVH 50 (5 kW), HVH 70 (7 kW) and HVH 100 (10 kW).

These three words perfectly describe the electric High Voltage Heater (HVH). It is the ideal heating system for plug-in hybrids and electric vehicles. The HVH converts DC electric power into heat with practically no losses.

Technical advantages
- Powerful and reliable heat output: fast and constant comfort for the driver, passengers and battery systems
- Efficient and rapid performance: longer driving experience without wasting energy
- Exact and stepless controllability: better performance and optimized power management
- Fast and easy integration: easy control via LIN, PWM or main switch, plug & play integration

General advantages
- Reliable and certified safety: three mechanisms to handle malfunctions and guarantee safety
- Immediate and long-time availability: core technology produced in-house; no use of lead or rare earths
- Individual and global customer support: Webasto worldwide network for consulting services and technical support

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Note: Not all products are available in every country.
Webasto HVH

Power
- Almost 100% heat output
- Heat output independent of coolant medium temperature and operating voltage
- Seamless, quickly and precisely controllable
- No inrush current or peaks

Precision
- Fully linear heat output control
- Direct and fast heat transfer due to technology

Efficiency
- Rapid performance
- Direct, fast heat transfer

Safety
- 3-dimensional safety concept
- Compliance with international vehicle standards

Integration
- Wide range of original Webasto parts for HVH installations with the guaranteed high quality standard
- Installation parts
- Application benefits
- Profound global support for individual applications

Webasto technology vs. PTC technology

The heating layer of the HVH is rapidly and precisely adjustable. It avoids interfering short-term power spikes and converts them directly into heat – a clear advantage over PTC heaters. The power of the HVH is constant and independent of the coolant temperature or operating voltage.

Efficient Means "Fastest and Constant Comfort" for You
Webasto's layer technology consists of a thin heating layer that is bonded directly to the heating element. Direct heat transfer in combination with the wide heating surface guarantees fast heat-up times coupled with the highest efficiency and precision. It also enables the best and most gentle conditioning of the vehicle's high voltage battery.

Precision Means „Seamless, Quick and Flexible Comfort“ for You
The HVH can be controlled seamlessly (50/100 W steps). Almost no energy is wasted. It can achieve full performance immediately; for you, this means extremely fast heat-up of the coolant and thus best comfort. Furthermore, the heat output of the HVH can be controlled exactly as needed – which brings a fast heat-up for passengers and gentle conditioning of battery systems. Last, but not least, the HVH does not produce inrush current and supports thus a stable system – no peaks will occur which may damage other electrical components. The battery lifetime is therefore increased thanks to best operating conditions.

Safe Means "Reliability at Any Time" for You
For us, safety is key. We have integrated multiple, redundant safety measures in the design of the hardware and software as well as in the mechanism of the HVH. This allows us to avoid critical situations of the system. Thanks to the type approval and CE conformity, Webasto HVH is compliant with the international vehicle standards.

Redundant safety measures
- Software design: SPICE Level 2
- Hardware design: ISO26262
- Sensors
  - Coolant outlet temperature
  - Coolant inlet temperature
  - PCE temperature
  - Overheating sensor
  - High voltage current sensor

Further safety measures
- Galvanic separation between low voltage and high voltage
- Sensor layer monitoring the whole heating area
- Additional switches to provide a redundant switch-off

Webasto offers a wide range of installation parts for easy integration of the HVH into the vehicle.