MAHLE

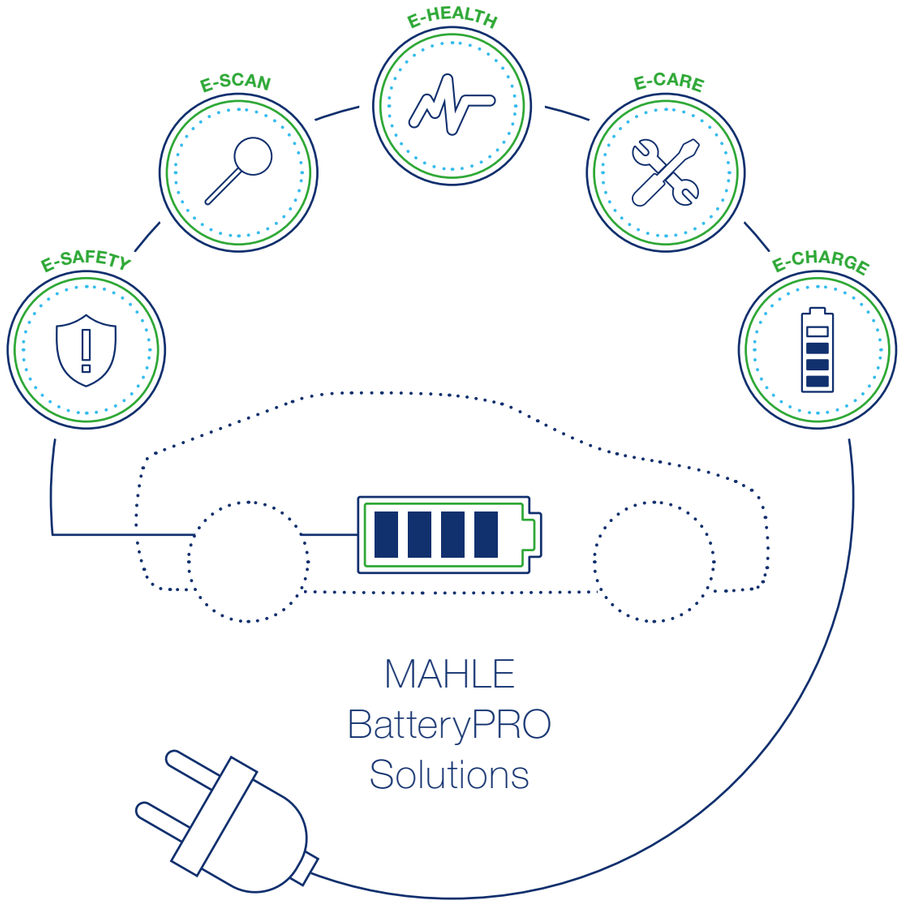
BatteryPRO

A revolution for the world of electric mobility maintenance

A full range of electric vehicle solutions for independent workshops

In the age of e-mobility, battery service will gain a completely new significance for independent workshops. MAHLE Aftermarket Service Solutions BatteryPRO solutions are opening a new chapter for service equipment.

With its BatteryPRO diagnostics and service solutions, MAHLE Aftermarket Service Solutions is one of the first provider worldwide to enable independent workshops to perform battery diagnostics on electric vehicles, thus helping them to secure additional business volume beyond the combustion engine.



E-SCAN: You won't be able to work without it

The first function in the battery diagnostic field MAHLE Aftermarket offered, fully dedicated to the world of electric mobility. E-SCAN is already included in your diagnostic tool!

A great feature for your diagnostics

E-SCAN is a software function available on all TechPRO® and CONNEX devices that can provide an initial analysis of the high-voltage battery of electric and hybrid vehicles. First in the market, it is designed to open up new, future-proof, business opportunities.

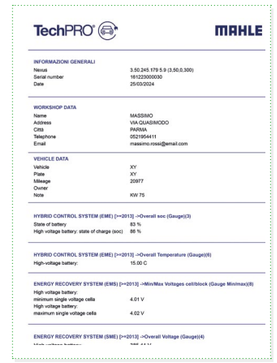
It can be accessed directly by selecting the electric or hybrid model supported: a dedicated section where battery parameters such as the min. and max. temperature and cell voltage are collected and reported in a standardized way, regardless of the vehicle model.

Printable report

At the end of the operation TechPRO® (or CONNEX) records the values for the vital parameters of the high voltage (HV) battery and a detailed report can be printed.

Continuous update program and introduction of new models

The world of electromobility is in a stage of constant enhancement. To keep pace with this development, the diagnostic database of the E-SCAN function is updated on a quarterly basis.


TechPRO® MAHLE

INFORMAZIONI GENERALI
Nome: 3.60.245.179.5.9 (3.50.0.300)
Serial number: 161223000030
Date: 25/03/2024

WORKSHOP DATA
Name: MASSIMO
Address: VIA GUASIMODO
Città: PARMA
Telephone: 0521964411
Email: massimo.rossi@email.com

VEHICLE DATA
Vehicle: XY
Plate: XY
Mileage: 23877
Owner:
Note: KW 75

HYBRID CONTROL SYSTEM (EME) [>=2013] ->Overall soc (Gauge)(3)
State of battery: 93 %
High voltage battery: state of charge (soc): 56 %

HYBRID CONTROL SYSTEM (EME) [>=2013] ->Overall Temperature (Gauge)(6)
High-voltage battery: 15.00 C

ENERGY RECOVERY SYSTEM (EMS) [>=2013] ->Min/Max Voltages cell/block (Gauge Minimax)(8)
High voltage battery:
minimum single voltage cells: 4.01 V
High voltage battery:
maximum single voltage cells: 4.02 V

ENERGY RECOVERY SYSTEM (SME) [>=2013] ->Overall Voltage (Gauge)(4)

Why you should choose the E-SCAN function

- Already available in every standard configuration of TechPRO® line and CONNEX line
- Quick access to battery status information
- Standardized interface with homogeneous parameter descriptions between the different vehicle manufacturers
- By reading and interpreting parameters on the reports you receive a first understanding of possible damages at the high voltage battery
- Possibility to expand knowledge of the latest generation engines (BEV, PHEV, HEV) by analyzing and comparing the reports produced
- Possibility to transmit complete information about the status of the parameters of the high-voltage vehicle battery to the own customers
- Constant development of databases

E-CHARGE 20: Flexible solution for fast charging of battery vehicles

High quality DC movable charger for full electric vehicles. Ideal for any workshop thanks to the ability to be easily moved next to the vehicle being serviced. Ready for battery diagnostic E-HEALTH.

E-CHARGE 20
Fast charging power, wherever you need it

E-CHARGE 20 is a portable stand-alone DC charging solution designed to offer the possibility of charging electric vehicle fast and easy. To use its power, simply plug it into a three-phase 32A socket, move it near the car's electrical charging socket and it is ready to go!

Exclusive and revolutionary residual capacity of high voltage batteries determination

E-CHARGE 20 is a powerful and versatile tool when used as a 'simple' charging station. But it becomes extraordinary when it is combined with a TechPRO® and an intelligent algorithm which converts the station into the E-HEALTH Charge solution. Thanks to the intelligent control device and TechPRO® VCI, the electrical DC charging phase becomes a valuable source to determine the residual capacity and performance indicator of the high-voltage battery, easily and fast.

LCD Display

All settings, controls and service functions are shown in the LCD display, allowing the operator to monitor the service equipment's status, the progress of the system service and any alarms and error messages.

Who should use E-HEALTH Charge

- Car repair shops and body shops
- Car dealerships and retailers
- Logistics centres
- Commercial fleet operators
- Companies, which have their own car fleet and need flexibility and speed in managing the charging service

Discover the true health of your EV battery in just 15 minutes!

The MAHLE E-HEALTH Charge solution integrates battery charging with advanced diagnostics of the heart of the electric vehicle: the battery. This makes it the first comprehensive battery diagnostic system for electric vehicles, providing an accurate report on the battery's residual capacity and performance indicator within 15 minutes and without moving the vehicle while testing.

Charging and diagnostics as never seen before

The residual capacity is the performance level of the battery compared to when it was new. Determining the residual capacity of the high-voltage battery is indeed a complex operation and requires sophisticated systems, as it is influenced by numerous factors. Was the car driven often with high speed? Has it often been charged at fast-charging stations? Was is parked in extreme temperatures? Since high voltage batteries are sensitive a lot of factors can have a negative effect on the status of the battery.

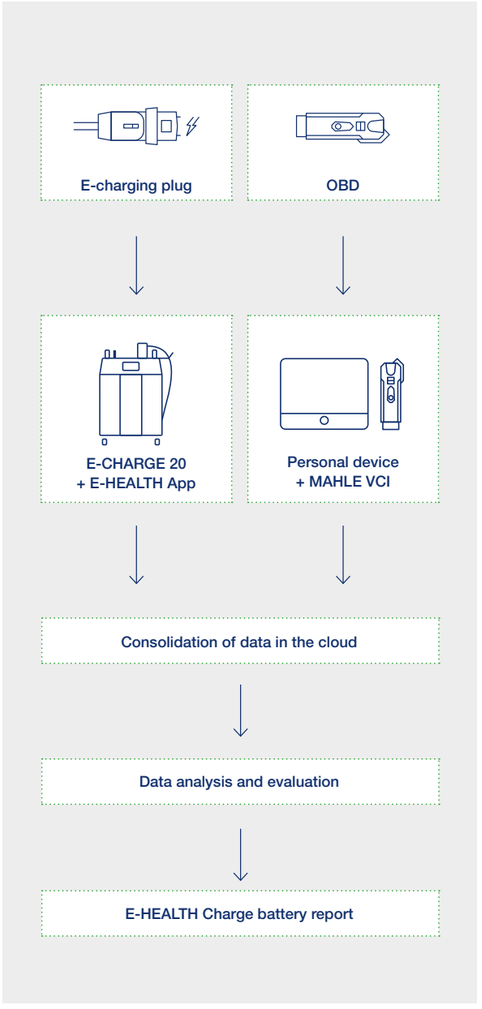
As one of the first on the market, MAHLE Aftermarket is launching an absolute novelty for independent workshops: the first system to determine the status of a high voltage battery during the vehicle's charging process, providing a manufacturer independent report of residual capacity.

The E-HEALTH Charge Solution

- **E-CHARGE 20**
  Movable DC chargers for electric vehicles. They contain powerful software capable of recording relevant parameters during the charging process.

- **TechPRO®**
  MAHLE diagnostics. Via the vehicle's OBD connection, it retrieves the complementary parameters needed to optimise the analysis of the battery.

- **E-HEALTH Software**
  The data collected from the E-CHARGE and TechPRO® are consolidated and analysed in our database to provide a manufacturer independent SOH based on residual capacity.



The E-HEALTH Charge Battery Report

Battery diagnostics are necessary for the maintenance and repair of electric vehicles and for determining residual value of the vehicle since the high voltage battery makes up over 25% of the total costs of an electric vehicle. For example, a reliable diagnosis of the traction battery can be decisive when buying or selling a used electric vehicle.

The health status based on available remaining capacity

Thanks to the MAHLE E-HEALTH Charge solution, the residual capacity of the high voltage battery can be determined in 15 minutes, without moving the vehicle, giving you the ability to finish other operations in the meantime. And, of course, with a printable diagnostic report confirming the result.

Why you should choose E-HEALTH Charge

- No need to drive the vehicle, giving the operator time to perform other services on the vehicle
- Works on full electric vehicles (EV)
- Battery diagnostic report within 15 minutes
- Covers most important EVs available on the European market
- Unique combined system that analyses data from the vehicle's charging process and the parameters measured through the OBD socket
- Charges the car while testing, which is an additional service for the end customer
- The data is compared with a virtual database (cloud) that collects multi-brand statistical analyses of similar batteries, data on initial performance and relative performance over time
- The final, printable report provides an absolute value of the battery's residual capacity
- The test can be performed in any workshop without moving the vehicle, by using a three-phase 32A socket for the DC charger

E-CARE Fluid: Battery pack cooling enhancement

Take care of the high voltage battery cooling circuit with our E-CARE Fluid by exchanging the coolant and checking the circuit on leakages.

E-CARE Fluid

Electric and hybrid vehicles are equipped with high voltage batteries designed to ensure maximum vehicle performance. To reduce their sensitivity to temperature variations, they are therefore equipped with a cooling circuit that requires appropriate maintenance.

As a specialist in fluid management and maintenance, MAHLE Aftermarket has developed a dedicated product for the e-mobility market: E-CARE Fluid.

All of MAHLE's technological capabilities have been put at the service of the design of this new station to ensure simple, intuitive and profitable operation and to guarantee results of undeniable quality at all times.

Zero Cross Contamination function

E-CARE Fluid guarantees no contamination between fluids and a highly efficient result, as the intelligent drainage function ensures perfect cleaning during rinsing.

The E-Care Fluid is able to pump new coolant into the new tank or produce a coolant mix by percentage setting with the Auto Blending Fluid function.

Add a new Service in your worshop, right now

E-CARE Fluid is designed to recover, dry and replace BEV refrigerant fluid (glicole) and to detect potential leaks. Why do not proposite it as any ordinary car maintenance checking routine to your customers?

No hesitation: equipped with a comprehensive, constantly updated database, the station allows any profesional to follow the manufacturer's specifications for safe, fast and correct coolant replacement:

- Exchange of cooling fluid
- Emptying the coolant circuit in case of the removal of the high voltage battery pack from the vehicle for repair and re-filling afterwards
- Emptying the coolant circuit in case of repair and exchange of component from the coolant circuit and re-filling afterwards
- Maintenance: checking for leakages on the cooling circuit

Why you should choose E-CARE Fluid

- Fully-automatic coolant service
- Integrated with TechPRO® 2
- <5% cross contamination w/coolant changes
- 7" Touch display
- Visual & audible alarms
- E-vehicles Databank with OE procedures
- Hight efficiency vacuum pump
- Quick-connect adapter fitting
- Automatic shut-off
- Service reporting
- Free wireless software updates
- Metric/Imperial support
- Large capacity Funnel
- Adapters Kit
- Spill-less coolant siphon and extraction

Full Automatic o Manual Mode? It's up to you

How you operate the station is always up to you:.You can rely on the accuracy of the built-in database, which automatically adjusts the refrigerant charge and all process steps. Or you can operate in manual mode, selecting some or all of the necessary parameters. The Siphon Mode function automatically removes any excess refrigerant.

Fully integrated OE processes with TechPRO® 2 ecosystem.

E-CARE Fluid functions

- Fluid removal
- Pressure test
- Vacuum test
- Fluid refilling
- Topping up
- Cavitation test
- Siphon mode
- Cleaning

Member

MOTOR VALLEY

MAHLE Aftermarket Italy S.r.l.
Via Rudolf Diesel 10/a
43122 Parma
Italy
Tel. +39 0521 9544-11
Fax +39 0521 9544-90
info.aftermarket@mahle.com

www.mahle-aftermarket.com
www.mpulse.mahle.com

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