## MAHLE



# MAHLE Aftermarket Service Solutions, your repair shop partner

To increase comfort, safety, and efficiency, vehicle technologies are becoming ever more complex. At the same time, also the demands on service and maintenance assistance are growing. In order to perform the work both professionally and safely, repair shops need to have the convenient devices —and the corresponding knowledge to use them.

MAHLE Service Solutions leverages the expertise of MAHLE's numerous business divisions - development partner and original equipment supplier, innovation leader and supplier of test and diagnosis systems for the automotive industry, support in the management of maintenance through the supply of quality spare parts - to offer the market innovative garage equipment tools and complete solutions for the professional maintenance vehicles.



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# BatteryPRO: a full range of electric vehicle solutions for independent workshops

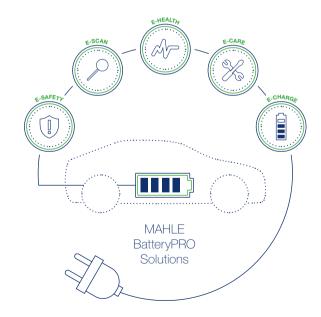
In the age of e-mobility, battery service will gain a completely new significance for independent workshops. MAHLE Aftermarket BatteryPRO solutions are opening a new chapter for service equipment.

#### **BatteryPRO**

With its BatteryPRO diagnostics and service solutions, MAHLE Aftermarket 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.

#### **AUTOMECHANIKA 2024 FOCUS:**

- BatteryPRO E-HEALTH Charge
- BatteryPRO E-CARE Fluid
- BatteryPRO E-SAFETY LVS preview 2025





## Reliable diagnostics of the high voltage battery

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.

#### The E-HEALTH Charge Solution

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.

#### ■ E-CHARGE 20

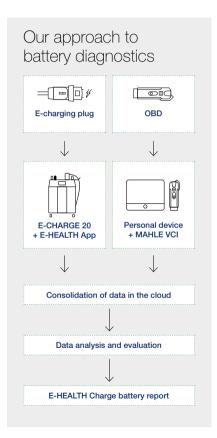
Movable DC chargers for electric vehicles. They contain powerful software capable of recording relevant parameters during the charging process.

#### TechPRO® line device

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

#### E-HEALTH App

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



## 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.





# 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.



## 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.

#### 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

#### **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.

#### 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.





## Features at a glance

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

#### **E-CARE Fluid functions**

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

# E-SAFETY LVS - Low Voltage System Diagnostics for 12 V batteries of electric and hybrid vehicles

Thanks to MIDTRONICS MDX-Al™, the E-SAFETY LVS ensures service readiness for BEV, PHEV, HEV vehicle systems, battery types, and new points of battery failure.

#### Elevate Your EV Maintenance with E-SAFETY LVS

In electric vehicles, the 12V battery plays the crucial role of powering essential safety systems like ABS, ADAS, and the HV Battery cooling system. Without reliable 12V Safety Power Capacity, electric vehicles could be at risk.

Traditional ICE diagnostics cannot accurately assess 12V battery health in EVs. Due to the 12V battery's unique – non-cranking application - in EVs, application-based diagnostics are required to ensure proper Safety Power Capacity for optimal performance.

That's where E-SAFETY LVS, powered by MIDTRONICS MDX-AI™, comes in.

#### A new service for top professionals

Low-voltage battery failure is now the leading issue impacting EV performance.

E-SAFETY LVS offers workshops a lucrative opportunity to provide rapid, accurate EV 12V diagnostics, enabling efficient and precise vehicle service to keep customers safe and vehicles performing well.

In addition, the benefits of MDX-AI are not limited only to electric vehicle service; MIDTRONICS' latest technology also unlocks industry-first capabilities for highest-precision 12V Reserve Capacity diagnostics in ICE vehicles.

#### Unique software, empowered by AI technology

Leveraging MDX-Al—an advanced predictive algorithm based on MIDTRONICS' extensive expertise in battery diagnostics—E-SAFETY LVS delivers:

- Functional EV 12V battery diagnostics in under 2 minutes.
- Accurate assessment the 12V battery's remaining capacity to support Safety Power™ for critical vehicle loads.
- Quantified available Safety Power Capacity to ensure warranty accuracy, vehicle service & performance, and driver safety/ satisfaction.

E-SAFETY LVS supports both standard and customizable pass/ fail thresholds, making it adaptable to all EV inspection strategies, ensuring fast, accurate diagnostics for the highest EV service quality.



E-SAFETY LVS device in the website

# E-SCAN: dedicated BEV, PHEV, HEV function in your diagnostics device

The first function in the battery diagnostic field MAHLE Aftermarket offered, fully dedicated to the world of electric mobility. E-SCAN is included in TechPRO<sup>®</sup> Line diagnostics.

#### A great feature for your diagnostics

E-SCAN is a software function available on all TechPRO® devices that can provide an initial analysis of the high-voltage battery of electric and hybrid vehicles.

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.

- Quick access to battery status information
- Standardized interface with homogeneous parameter descriptions between the different vehicle manufacturers
- First analysis of possible failures of high-voltage batteries
- Printable report

#### 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® 2: the future-proof diagnostics line

MAHLE's TechPRO® line evolves and reinvents itself to ensure excellent performance and long-lasting solutions for every workshop need. Without ever having to give up the usual speed and ease of use.

### WHAT'S NEW

TechPRO® 2
TechPRO® 2 Smart
TechPRO® 2 Plus



- New graphical interface, even simpler, even more complete
- Commitment to exhaustive coverage of the car fleet
- Continuous software updates and database implementation, automatically installed through the instrument's Wi-Fi connection
- Unlimited initial diagnostic database license, upgrade licenses recommended
- Wide range of special functions with which to customize your instrumentation
- Automatic vehicle identification now also with the Click&Go function
- DoIP (Diagnostic overInternet Protocol)
- MCS Pass, Your pass to Cyber Security
- E-Scan function
- Troubleshooting guides (MTS license)
- Modular technical database (MRI MRP licenses)



### TechPRO® 2

- Android 12.0 tablet 10.1" display
   MIL-STD-810H; IP66 certification
- 8 MP Front camera
- 16 MP Rear camera
- Memory: RAM 4GB; FLASH 64GB
- VCI with CAN-FD, DoIP-Remote Ready
- IP54 certification
- EOBD connection via Bluetooth
- Wi-Fi Ready



### TechPRO® 2 Plus

- Windows 11 IoT Enterprise LTSC tablet
  - 10.1" display

MIL-STD-810H; MIL-STD-461G; IP65

- FULL HD Front camera
- 8 MP Rear camera
- Memory: RAM 8GB; FLASH 256 GB
- VCI with CAN-FD, DoIP Remote Ready
- IP54 certification
- EOBD connection via Bluetooth
- Wi-Fi Ready
- Docking station

### TechPRO® 2 Smart

- VCI with CAN-FD, DoIP Remote Ready
- IP54 certification
- EOBD connection via Bluetooth
- Wi-Fi Ready





#### Maximum speed:

Access the TechPRO® 2 app and you're ready to go. It doesn't get any faster than that!

#### Tailored to you:

The flexible licensing structure allows you to configure your tool based on your needs.

#### Video tutorials:

A wealth of video tutorials can guide you step by step whenever you wish.

#### TechPRO® 2 DS:

The new App developed to follow you today and into the future, with an even simpler interface.

#### Always connected:

The tool is always up-to-date and can access many In Cloud functions. So you are sure to use your TechPRO® 2 to its full potential every day.

#### Constant development:

A new planning and development strategy to enable the dynamic car fleet to be addressed with the right weapons.

#### Made by MAHLE:

As the latest generation of diagnostic tools, the new TechPRO® 2 line brings with it all the reliability of its brand.

## A unique tool, as unique is your workshop

A rich licensing system allows you to configure your tool according to your workshop needs, safe in the knowledge that you are always in control of its performance.

#### Multi-platform

Versatility is the main feature that MAHLE products are inspired by. For this reason, self-diagnosis is also adaptable to all operating systems you are used to working on in the workshop, through activation of the appropriate licenses.

TechPRO® 2	Android 12	
TechPRO® 2 Plus	Windows IoT Enterprise LTSC	
TechPRO® 2 Smart	Android/Windows (1)	

#### Quick to the target

Ready for fast action! TechPRO® 2 immediately recognizes the model of the vehicle being worked on. You can choose how you access the diagnosis, in accordance with your habits and preferences:

- Automatic Search: Connect the VCI to the vehicle, select Automatic Search, and TechPRO® 2 will immediately recognize the car model by reading and decoding the VIN
- Search bar: Just enter a keyword, you will enter a diagnostic session immediately
- By entering the VIN (2)
- By entering the license plate, with SKIP 12 license (3)
- Click&Go: Frame the license plate (with SKIP 12) or the VIN on the windshield, click, and your TechPRO® 2 will immediately recognize the model of the car being serviced
- Manual model search, facilitated by actual photos of the vehicle and by new numerous selection filters

<sup>1)</sup> Minimum requirements: Android 10, Windows 11 IoT Enterprise LTSC

<sup>&</sup>lt;sup>2)</sup> Optional. Also available: search with KBA (German Motor Transport Authority) in Germany.

<sup>&</sup>lt;sup>3</sup> Available in England, France, Ireland, Italy, the Netherlands, Portugal, and Spain. For other countries, please contact your MAHLE dealer.

#### Smart Scan: Intelligent fault scan

Completely redesigned fault scan to make fault detection and repair even more intuitive and easy.

With Smart Scan (MTS license), at the end of the fault-detection scan, the tool provides additional information about the fault and possible repair actions, with recall data and technical bulletins issued by the manufacturer and repair aids provided by experts in the field.





### New TechPRO® 2 DS APP

#### Easy to use and versatile, you'll be ready to start your work in no time!

#### Few gestures and video tutorials to go straight to the result

You do not need to have years of experience under your belt before you can use TechPRO® 2. A few moments and the system will be immediately familiar, as it exploits gestures and symbols common in the daily experience of the workshop professional.

A rich collection of video tutorials will follow you step by step through even the most difficult situations.

#### User friendly interface design

The graphical interface gives you immediate and quick access to all the information you need for your professional work.

The diagnostic tool communicates with the vehicle's system and allows you to quickly identify what work is required for its maintenance.

#### Developed with everyday use in mind

We are never satisfied. The interface, as well as the diagnostic database, is also undergoing continuous improvement in order to optimize its use in even the most dynamic workshops.





## A flexible licensing system

The strength of a true business ally is its ability to adapt to your needs. That is why we continue to offer a line of licenses that can be combined with each other to configure your self-diagnostics as you like.

#### EASY, ADAS or FULL: choose according to your type of activity

Each workshop has the right to modulate the use of its equipment according to the work opportunities or type of service it has decided to offer. With TechPRO® 2 you can choose from several diagnostic license modules, corresponding to as many different professional (or usage) types.

#### Choose the duration you want

The second step in configuring the tool is to choose the duration of your license: 12 or 36 months. No problem for renewal, you can always decide to change your size!



#### Add the functions that specialize your business

Now all that's left is to customize your tool, adding those features that will give you an extra boost in the workshop:

- MCS MAHLE CYBER SECURITY: Single (Flat) license that includes all current and future releases (including FCA, Renault/ Dacia<sup>(1)</sup>, Mercedes, VAG<sup>(1)</sup>, BMW<sup>(1)</sup>, KIA<sup>(1)</sup>, Hyundai<sup>(1)</sup>, Nissan<sup>(1)</sup>, and Maserati<sup>(1)</sup>)
- MRI MAHLE REPAIR INFORMATION: Basic access to repair support information bank
- MTS MAHLE TROUBLE SHOOTING: Guided diagnosis to get to the solution quickly - also includes the Smart Scan function
- MRP MAHLE REPAIR PLUS: In addition to technical information, you also have access to technical drawings, wiring diagrams, templates and workshop organizer
- MHL MAHLE HOT LINE: Chat and telephone support service (active in some countries)

## MAHLE Repair Functions

Everything you need, just one click away. So you don't know how to perform a particular service on a vehicle? It's simple: with TechPRO® 2 and the MRI - MTS - MRP functions.

#### MRI - MAHLE REPAIR INFORMATION

Provides access to the most important information, parameters and data sheets.

Maintenance form

Repair manuals

Wiring diagrams

Adjustment data

Fluids and lubricants

Identification data

Relays and fuses

Recall data

Technical service bulletins

#### MTS - MAHLE TROUBLE SHOOTING

An ideal extension for those who need an instrument with even higher performance.

Integrates all the contents of the MRI version (license required) including specific trouble shooting logic (guided diagnosis).

Indeed, starting from the error code reported by the diagnostic tool, through a series of consecutive tests, we arrive at determining the cause of the malfunction.

MTS Also includes the new Smart Scan function.

#### MRP - MAHLE REPAIR PLUS

Is the configuration of those who do not want to leave anything to chance. Adds additional diagrams and drawings to MTS (license required), as well as timetables, known cases and their resolution.

MRI	мтѕ	MRP
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## Cyber Security, a topic not to be underestimated

In a market where vehicles are increasingly equipped with computer interconnections that optimize their operation and improve the driving experience, the protection of exchanged data is increasingly important for all manufacturers.

#### A topic not to be underestimated

Starting with FCA Group, Mercedes-Benz and Renault/Dacia, all vehicle manufacturers are taking steps to improve the digital security of these interchanges by implementing protection systems that differ from each other but are commonly referred to as "Cyber Security".

However, protecting data in this case means disabling all access not preliminarily authorized. This also involves access to systems that are interrogated and managed on a daily basis in every multi-brand workshop. The result of this protective action has a strong impact on the work of the auto repairer, who is faced with the need to identify and manage agreements with each manufacturer.

For this reason, MAHLE introduces MCS - MAHLE Cyber Security: a service that facilitates workshop permissions management by the manufacturers of the protected brand, allowing authorized access directly through TechPRO® 2, without loss of time and effectiveness.

#### MCS - MAHLE Cyber Security

Through package activation, one license can enable all Cyber Security functions developed\* now and in the future\*\*.

- \* FCA-Group, Renault/Dacia, Mercedes
- \*\* VAG-Group, BMW, Kia, Hyundai, Nissan, Maserati



## MCS Pass - MAHLE Cyber Security

Facilitated access to Cyber Security permissions is now possible: MAHLE Cyber Security Pass is the one-time pass for all Secure Gateway licenses activated on your diagnostic tool.

#### A single digital identity.

#### All Cyber Security features you want.

Managing the Cyber Security strategy enabled by manufacturers is becoming standard practice within the repair world. However, for each of the trademarks adopting such protection, there is still no uniform and facilitated access procedure. At least so far...

MCS Pass - MAHLE Cyber Security Pass - is the universal, integrated and standardized solution that enables the workshop professional to access authenticated diagnostics directly with one click from their TechPRO® 2.

#### The benefits

- A single password to remember
- A single access procedure, simple and immediate
- Unbeatable speed of access to authenticated diagnosis

- 1. Have a valid ID handy and be prepared for a selfie.
- 2. Access the MCS Pass section from TechPRO® 2 DS Settings, select "Create New User," enter your information and confirm.
- **3.** Check your inbox where you will receive a message to proceed with identity verification, which must be done:
  - Directly on TechPRO® 2 / TechPRO® 2 Plus
  - On App (Android/iOS smartphones)
  - On Web portal (from PC with camera)
- **4.** Follow the step-by-step procedures required by the app or Web portal and confirm your information. Within a maximum of a couple of hours your MCS-Pass<sup>(1)</sup> account will be active (you can verify activation from the TechPRO® 2 DS settings).

### Other functions

#### Automatic search

It is the function that takes advantage of the software's self-learning capabilities. The vehicle identification algorithm is supported by a continuous learning mechanism on the associations between VIN and related car model.

#### **Special functions**

- Service Function Brings together repair functions for routine and extraordinary vehicle maintenance by making them accessible with a single click.
- Body Specialist Brings together procedures that enable easy replacement and reset of the Body Computer system, restoring its original configurations.
- Start & Stop For proper management and maintenance of the Start & Stop function, through instructions and diagnostic functions at the click of a button.
- PUK Pin Unlock Key Pincode retrieval function for key reprogramming procedures.
- Tow Bar Function for the correct configuration and management of the tow bar, through a wizard that allows you to perform the set of diagnostic operations necessary for the installation/uninstallation of the device.

#### ODO Scan

MAHLE wanted to include a real specialist's function in its diagnostic software: measurement and analysis of the vehicle's mileage. This is the principle that ODO-Scan exploits, relating all the mileage values saved in the vehicle's ECUs. From viewing this data, the operator may find anomalies in the vehicle's mileage management.

Its use is recommended when...

- Assessing car wear and tear (e.g. in the second-hand market)
- The original odometer has been replaced
- Doubts arise about the actual status of a vehicle

#### TechPRO® Thru

Access portal to the Pass-Thru world, available through SMART THRU (optional), an accessory approved by the major automakers providing the service, for use with a PC terminal (Windows).



## RemotePRO, the perfect ally for your workshop

From now on you will no longer have 'impossible missions' in your workshop: with MAHLE's new remote diagnostics you can rely on a whole team of technicians ready to assist you and work for you.

It is the remote diagnostic support solution that complements and enhances your MAHLE self-diagnosis.

Thanks to the connection with TechPRO® and TechPRO® 2 diagnostics, a team of specialised professionals and a considerable variety of original diagnostic tools is at your disposal on a daily basis, enabling you to tackle any diagnostic challenge.

- Service can be activated on all TechPRO® () and TechPRO® 2 platforms (stand alone, iOS, Windows, Android)
- More than 20 specialised technicians, experts in diagnosis and repair
- More than 100 original OE diagnostic tools
- The best service coverage during working hours, including Saturdays
- Pay per Use solution (MAHLE Coins): no charge if the service is not used
- DoIP protocol supported; 4 simultaneous CAN-BUS channels

(\*) RemotePRO scantool mandatory

Preliminary Scan + error deletion	Scan to be performed upon acceptance of a repair job, including error deletion
End Scan + error deletion	Scan to be carried out at the end of a repair job, including error deletion
Calibration	System calibration, including ADAS modules
Programming + calibration	Component activation and subsequent calibration
Programming / coding	Programming and/or coding of modules or sensors, following the operation
Service Reset	Procedures required during routine/periodic maintenance work
Special configurations and investigations	Support and diagnostic investigations for specific issues
Key Encoding	Transponder Key Programming Procedure





TechPRO® MVT: Battery Tester set to redefine the standards of battery diagnostics

The new device in MAHLE family delivers lightning-fast battery testing while maintaining professional accuracy, ensuring that automotive professionals can efficiently diagnose and address battery issues with confidence and precision.

Powered by MIDTRONICS MDX-AI, the TechPRO® MVT handheld battery tester showcases diagnostic capabilities never thought possible in handheld battery testing. MVT makes battery testing lightning fast while delivering professional accuracy.

- Accurately diagnose discharged batteries in-vehicle, without having to charge them
- Get instant test results with no user input on most quick lane testing scenarios
- Accurately diagnose batteries when you can't see the CCA rating
- Accurately diagnose batteries when faced with vehicle system noise interruptions
- Eliminates almost all Charge & Retest decisions, when testing in vehicle.







Preview 2025

# TechPRO® Digital ADAS 2.0: reliable calibration of driver assistance systems

Thanks to the powerful Keystone system, the recognition of the vehicle through license plate reading, and the fully automatic acquisition of the measurements, in a few minutes you will have completed your calibration.

- Targetless technology it allows you to adapt the screen to any reference protocol of the car manufacturers, present and future
- Easy to use so simple to use, that you don't waste any time learning or using it
- Fully automatic automatic, by means of electrical control, adjustment of the structure, as well as automatic and virtual becomes any shift of the target with respect to the vehicle positioned. The car never moves!
- Keystone system it is the patented MAHLE technology; extreme
  precision is guaranteed by the self-adaptive system, which allows
  the software to assess the physical environmental conditions and
  adapt the image of the digital target accordingly
- Universal Coverage the database that powers the operation of Digital ADAS follows the continuous development of the TechPRO® line self-diagnosis
- RemotePRO Keystone powered: performs static ADAS
   CAMERA FRONT calibration on an ever-growing fleet of vehicles





## Digital ADAS 2.0 - Fully automatic, for calibration in the blink of an eye

Thanks to the special laser meters directly connected to the diagnosis, TechPRO® Digital ADAS 2.0 is able to directly acquire all the parameters related to the alignment of the car, which are transmitted to TechPRO®/TechPRO® 2 allowing you to immediately enter calibration.





## ArcticPRO® line: powerful models for A/C Service

Advanced stations for connectivity and ease of maintenance, with Bluetooth and WiFi, a large touch screen, a status monitoring app and remote assistance. ArcticPRO® line: the complete line of A/C charging stations.

#### Air Purge System®

Automatic purging of non-condensing gas: special algorithm ensures that the purging of non-condensing gas is only recommended when actually necessary.

#### Agri & Work

Agricultural and construction machinery dedicated database and a special step-by-step refrigerant injection mode.

#### **HPV**®

It allows reaching an extremely high level of vacuum, so that even the tiniest residues of humidity can be removed from air conditioning systems.

#### **N-Leak Test**

Leak test on all air conditioning systems. This function is included as standard on all MAHLE stations, to be combined with the optional kit.

#### Eco Lock®

Patented feature - quick couplers prevent the "Puff" effect during every service (thus saving 2 g of refrigerant for each operation).

#### Super Charge®

100% guaranteed charging in all environmental conditions (patented function).

#### Long Life pump®

The special Long Life Pump® feature regenerates vacuum pump oil, thus extending its life to up to 1,000 hours.

#### Oil Care System

Process whereby air within the oil bottles is continuously dehumidified (patented feature).



## ACX 744 - The CO<sub>2</sub> service station for eco-friendly air conditioning

MAHLE presents its CO<sub>2</sub> solution for embracing sustainability in the world of car air conditioning. Choose technological excellence combined with environmental responsibility.

#### CO<sub>2</sub>: a new technology in ArcticPRO® family

In the world of automotive air conditioning, environmental sustainability is increasingly a top priority for car manufacturers. The choice of refrigerant gas to power air conditioning systems is a key factor in this direction, and more and more car manufacturers are moving towards environmentally friendly and low-impact solutions, such as the adoption of  $CO_2$  (R744) as a sustainable refrigerant for the future.

In an innovative response to this growing need for sustainability, MAHLE presents ACX 744 - its advanced service station designed specifically for the efficient and safe handling of  ${\rm CO_2}$  refrigerant in automotive air conditioning systems. As a result of MAHLE's experience and technological expertise, the ACX 744 has been developed to offer high performance, maximum operational efficiency and ease of use, making it the ideal choice for garages that want to seize every opportunity.

#### High performance, efficiency and ease of use

At the heart of the ACX 744 is its compact and manoeuvrable design, designed to make it easy to use in the workshop.

A key element of this is the use of an independent  $\mathrm{CO}_2$  cylinder, which can be easily installed and replaced without any special effort. This convenience, combined with a technology aimed to eliminates need to replace dryer units, minimises routine maintenance, optimizing therefore uptime and costs.

In terms of user interface, the ACX 744 features intuitive and user-friendly software with a large touch screen. This allows the operator to easily and instantly manage all station functions, from refrigerant charging to analysing operating parameters, ensuring a smooth and productive workflow.





EED

Preview 2025



Find out more details about the ACX 744 device in the website



### ACX 310 | 410

Weighs just 65 kg and is extremely compact: our entry-level units.

Attractive price/performance ratio, ACX 310 (R134a) and ACX 410 (R1234yf) represent the entry-level ACX model. Your workshop can advance to the highest technological level in air conditioning servicing without major investment.

### ACX 320 | 420

Accurate and fully automated work processes: ACX 320 (R134a) and ACX 420 (R1234yf) look simple, but are extremely performing, providing you with the extraordinary MAHLE technology.

Touch screen and Wifi integrated.

### ACX 350 | 450

Convenient, fast, intuitive; meets the highest requirements in A/C servicing. Our professional units are the perfect compromise for those who want a complete station, equipped with the UV Test function and the ACX technologies, at a convenient price level.



ACX 310 (R134a) ACX 410 (R1234yf)



ACX 320 (R134a) ACX 420 (R1234yf)



ACX 350 (R134a) ACX 450 (R1234yf)

## ACX 380 | 480

Maximum safety and high-end precision/ First-class service at the touch of a button: our premium units. ACX 380 (R134a) and ACX 480 (R1234yf) are the Top Level A/C stations in the series.

You could not wish for more.



ACX 380 (R134a) ACX 480 (R1234yf)

## ACX 380B | 480B

These units are cutting edge when it comes to connectivity and ease of maintenance, with Bluetooth and WiFi, a large touch screen, a status monitoring app, and remote service.

ArcticPRO® ACX 380B (R134a) and ArcticPRO® ACX 480B (R1234yf) are officially approved by BMW.





## ATX FluidPRO®: for oil change in automatic transmission

Introduce the oil restoration service in automatic transmission systems to your workshop. Thanks to the ATX line from MAHLE you are assured of maximum professionalism and great ease of use.

- Almost 90% of all automatic transmissions on the market are compatible with FluidPRO® ATX 250 | 280
- Dynamic oil change allows for 90 to 100% oil change
- Changing the transmission oil every 60,000 km or every 4 years will extend the life of complex automatic transmissions and ensure their optimal operation
- The Zero Cross-Contamination function guarantees 100% cleanliness, removing oil and other types of residues, preventing possible serious damage to the automatic transmission
- Current Cycle Back Up Function: If an interruption occurs during an oil change procedure, flushing will be resumed from the last completed step, avoiding the need to repeat the entire cycle (ATX 280 only)





### ATX 250

The simplest, but great performance.

To introduce a high profitability service on the shop floor. Small, but powerful. Ideal for bringing ATF transmission service to the shop for the first time.



Thanks to the large 7" touch screen display and a new graphic interface, ATX 280 allows the operator to make any automatic transmission oil flushing operation even simpler and more automatic.

#### ATX 190

The ATF station approved by Mercedes-Benz. Station ATX 190 by MAHLE meets all the requirements of the car manufacturer, which has therefore approved its introduction in its authorized workshops.



Adapters Kit 1-17 included in the sales configuration



Adapters Kit 1-17 included in the sales configuration





# EmissionPRO®: maximum efficiency for minimal environmental impact

The MAHLE Emission Line fits all your needs for emission testing: it includes gas analysers and opacimeters for monitoring the exhaust system of petrol/diesel engined cars and also motorcycles. These devices do far more than standard measuring tools and are ideal for official inspections and tests on the composition of emissions. They comply with applicable national regulations.

- Modularity: you can configure your personal station by choosing MAHLE instruments, and connect them easily to the PC station
- Open system: compatible with all common commercial software and hardware systems
- Plug and Play solution: we completely pre-configure and test all our exhaust examination testers
- Highest measuring accuracy
- Approved by several national regulations (in continuous development)





## BMU 688 | BMU 690 DMU 300

### RMU 300

Exhaust gas analysers from MAHLE are designed for measuring the different exhaust gas concentrations in all engine types. They can be used for monitoring emissions in legally required inspections, for routine automotive servicing and also for repair.

Our opacimeters for diesel engines are small and compact. Equipped with a 12V power supply, the units are user friendly for workshops and also for mobile applications.

The universal RPM counter for petrol and diesel engines transfers its real-time data values to the tester via Bluetooth or USB. RMU 300 records the rotation frequency based on harmonics of the engine, according to battery charging signal or via a magnetic vibration sensor, and the engine temperature via the standard temperature sensor. The optional EOBD-300 sensor is also available for truck use.







## PMU 400: the new frontier in Emissions Control is signed by MAHLE

Thanks to the adoption of CPC technology - Condensation Particle Counter - MAHLE offers the market an extremely innovative product ready to adapt to all the evolutions and scenarios that may occur in the coming years. This, combined with special care in the choice of materials and sensors, makes the PMU 400 the most versatile and interesting Particulate Counter of the moment.

CPC - Condensation Particle Counter technology allows high measurement accuracy even at low concentrations (difficult to obtain with other technologies).

PMU 400 is a particularly reliable instrument in measuring, while not giving up on the great ease of use by the operator.



## Configuration B

- BMU 200
- DMU 100
- RMU 300
- PSI 50
- TRO-060



## Configuration C

- BMU 688
- DMU 300
- RMU 300
- PSI 51
- TRO-060

BMU 690

Configuration D

- DMU 300
- RMU 300
- PSI 51
- TRO-060







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