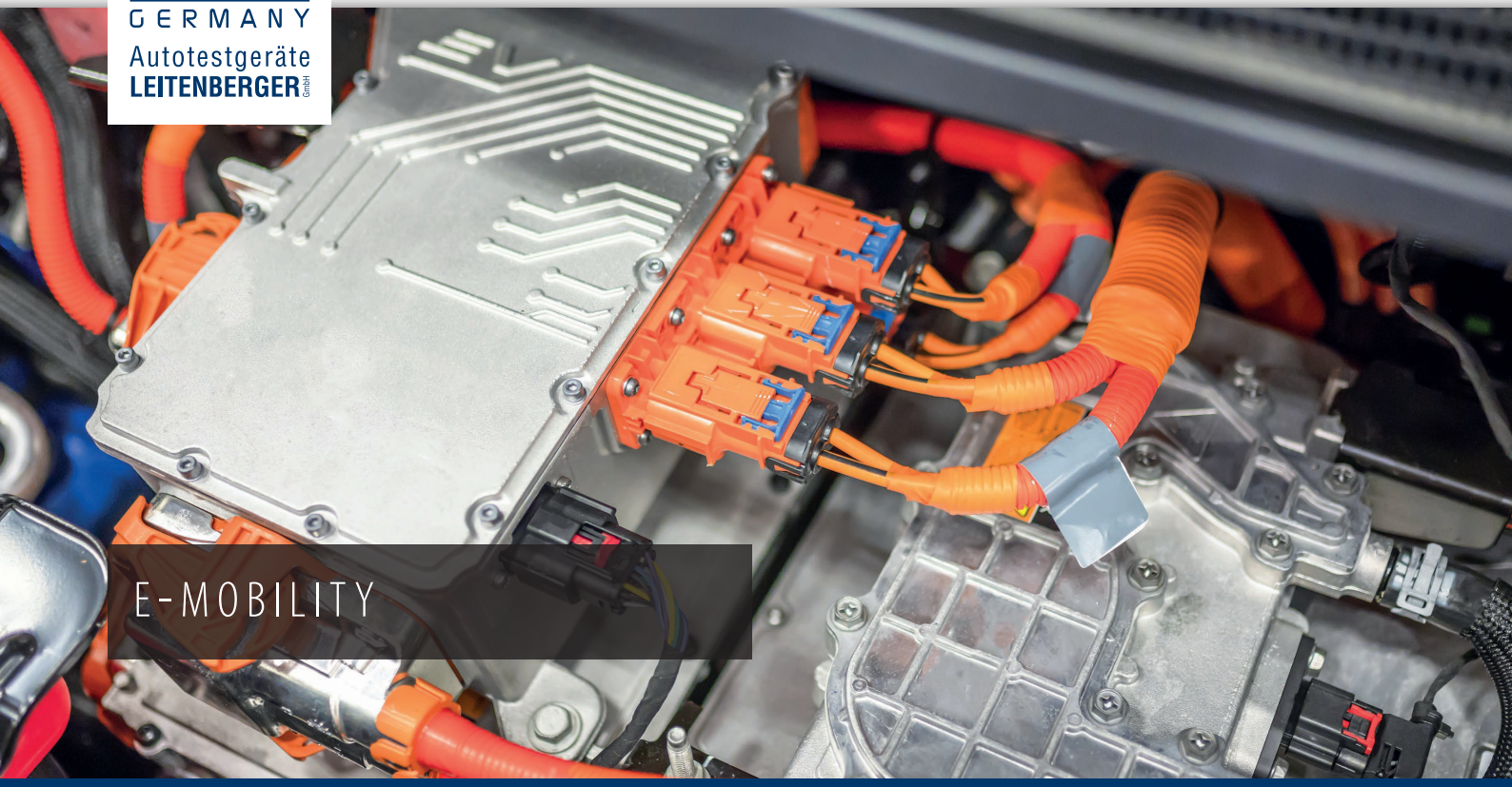
GERMANY
Autotestgeräte
LEITENBERGER GmbH

WWW.AUTOTESTGERAETE.DE



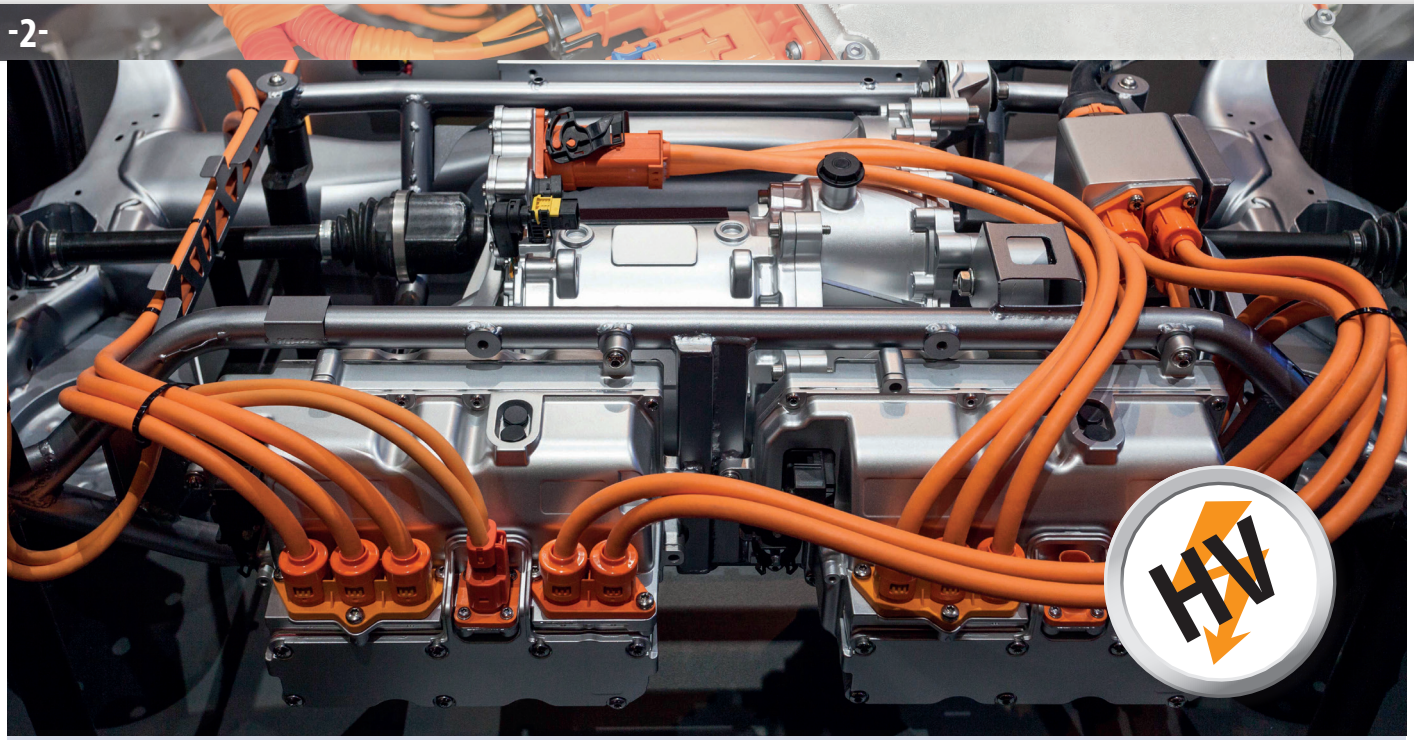
E-MOBILITY

AUTOTESTGERÄTE **LEITENBERGER GMBH**

f-cell

HV

PREMIUM-Products
Made in Germany



HIGH VOLTAGE-TECHNOLOGY

Autotestgeräte **LEITENBERGER** develops and produces devices for the high voltage technology. The market for electric- and hybrid vehicles is increasing rapidly. That leads to new developed tools and measurement technologies, which find their field of application in this special topic, like tools and testing devices for:

- Isolation measurements
- Tightnesstest on battery housings
- Quality of coolant
- Leakage test on battery housings
- Evacuating and filling

ABOUT US

When it comes to performing, simplifying and optimizing measurement, analysis and repair work on vehicles or engines, **LEITENBERGER** special tools are used worldwide. Each product is developed with the highest demands on functionality, durability, ergonomics and safety. Founded 50 years ago as a small family business, **LEITENBERGER** is today a worldwide operating company with plants in Germany and Greece.

- Owner-operated, traditional manufacturer of innovative measuring and analysis equipment as well as repair solutions for manufacturers and workshops
- In-house development and production of all devices up to series production
- Supplier independence due to high level of vertical integration
- Comprehensive technical know-how for eficient solutions
- Customer-oriented action
- ISO-certified quality
- International Network

Create your own set:

CASE + PUMP + OPTIONAL ADAPTER

A case containing cooling system test instruments can be fitted out in accordance with your personal requirements.

EXAMPLE SET

Example **Adaptors**

Example adapters
for electric and hybrid vehicles. Can also be used for cooling systems or thermal management systems.

LR 150_LR_EV1 **010785_2**

Cooling system test set for high-voltage batteries

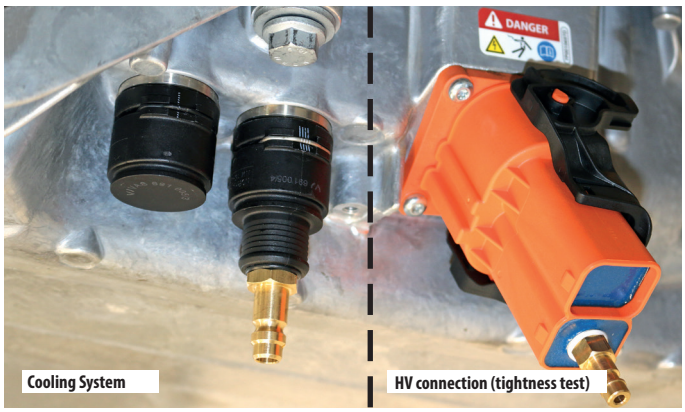
for tightnesstests

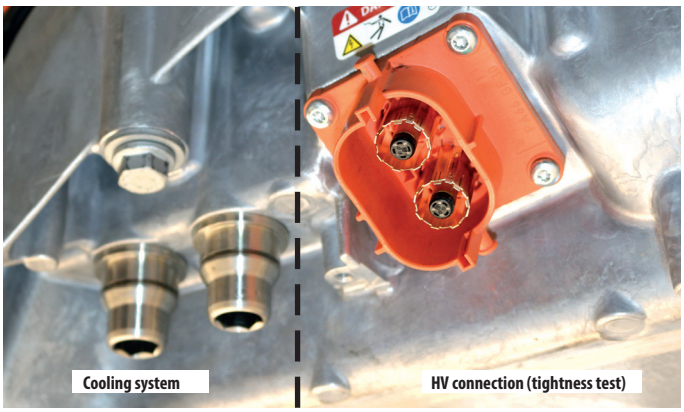
Thermal management systems for high-voltage vehicles have to be significantly denser than the cooling systems in combustion engines.
Therefore, the requirements for the tightness of such systems are significantly increased. If a high-voltage battery is successively flooded with coolant due to a leak, this ends in a short circuit.

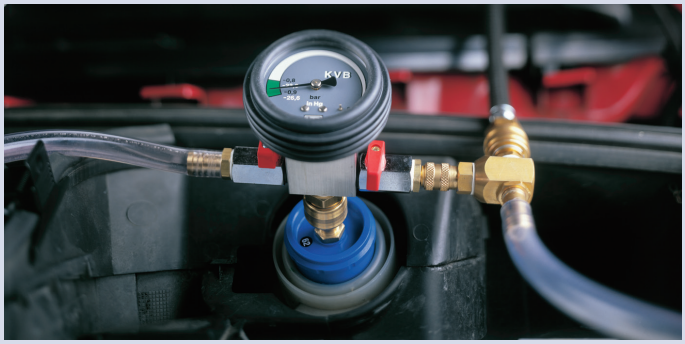
With LR 150_LR_EV_1, the thermal management of an e-vehicle can be checked for leaks - after repairs or as required.

- Measuring range: 0 . . . 4 bar absolute pressure
- Accuracy: 0.5% FSS
- Resolution: 1 mbar (0.001 bar)

QR code to the list with the assignment of the adapter designation to the vehicle manufacturer.







VACUUM COOLING SYSTEM FILLER

The vacuum cooling system filler ensures that the cooling system is rapidly filled with coolant, free of air pockets and without any need for subsequent bleeding. The device also carries out a vacuum leak test, preventing the filling of a leaking cooling system. A vacuum is generated in the cooling system by means of the workshop compressed air supply (6 . . . 10 bar) and a venturi nozzle. Provided the vacuum remains constant, the cooling system can be rapidly filled, devoid of any air pockets; the coolant is drawn in under vacuum. The filling method can be used on any type of vehicle.

- easy to use , no maintenance required
- the coolant is devoid of any air pockets
- security of the process
- the filling process and vacuum leak test are completed in about 5 minutes
- can be used to bleed stationary heating systems
- independent from the volume of cooling system

Also suitable for cooling systems in hybrid, EV and fuel cell vehicles.

KVB 01_BZ **011401_15**

Vacuum cooling system filler

This version of our Vacuum cooling system filler KVB 01_BZ is designed especially to charge thermomanagement systems/ cooling-systems of fuel-cells. With KVB 01_BZ an empty thermomanagement system/ cooling system can be tightness-tested and charged completely with the special coolant mix.
Note: This device is to be used ONLY with special coolant for fuel-cell (cooling system).

Scope of delivery:

- 1 KVB 01_BZ with vacuum meter -1.0 . . . 0 bar, incl. rubber protection
- 1 venturi nozzle (vacuum generator) incl. hose
- 1 container (for fresh coolant mix), volume 20 l
- Delivery in a stable case

KVBW 01_230VAC_LR **011424_1**

Evacuation, Filling and Test System for any cooling system, Thermomanagement- System of Fuel Cell vehicles and Electric Vehicles.

Applications:

- Rework process
- Test benches
- Small series
- Suitable to charge "wet" and "dry" systems
- Manual mode ONLY
- All parts are suitable for vacuum

Scope of delivery:

- Mobile cart
- High performance vacuum pump, 230 VAC, final vacuum: 35 mbars [Pabs]
- Drainage container (to protect vacuum pump)
- Hoses
- 60 Liter container for fresh coolants (2 x 30 L-container)
- Without adaptors to the expansion tank

Adaptors to the expansion tank:
The adaptors to the expansion tanks are NOT included in the delivery. We offer a range of ca. 400 different adaptors. Adaptors at 180°-angular adapter, 90°-angu.lar adapter, or 90°-angular adapter with a flexible hose are available. Please do not hesitate to contact us concerning this issue.

Further devices:

- KVBW 01_110VAC_LR
- KVBA 01 - Fully automatic filling device (see p. 5)

KVBA 01 **011415_1**

Automatic evacuation, filling and testing device for cooling systems, thermal management systems and Fuel cells of electric vehicles.

Applications:

- Rework process
- Test benches
- Suitable to charge „wet“ and „dry“ systems operator independent and reproducable filling results
- Automatic or manual processes possible
- Creation of Test and/or Filling processes (RD/ process-planning purposes)
- Static and dynamic tightness test of cooling systems

Controller and Operation:

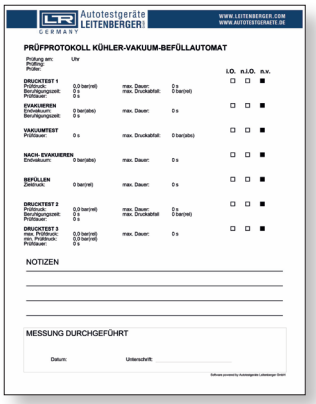
Via graphical user interface of the panel PC, the "Admin-level“ allows to create and save new processes, the "User-level“ allows to run the saved processes.

Scope of delivery:

- Mobile cart, weight: 130 kg
- L x W x D: 1.15 x 0.70 x 1.45 m
- High performance vacuum pump, 230 VAC @ 50 Hz, adjustable final vacuum
- Drainage container (to protect vacuum pump)
- Controller-Box
- Hoses (for suction and filling)
- Without adaptors to the expansion tank

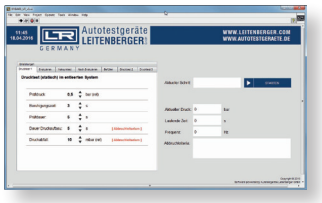
Adaptors (as option):

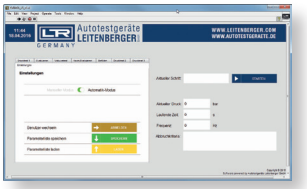
The adaptors to the expansion tanks are NOT included in the delivery. We offer a range of ca. 400 different adaptors. Adaptors at 180°-, 90° or 90° with a flexible hose are available. Please do not hesitate to contact us concerning this issue.


PRÜFPROTOKOLL KÜHLER-VAKUUM-BEFÜLLAUTOMAT

NOTIZEN

MESSUNG DURCHGEFÜHRT



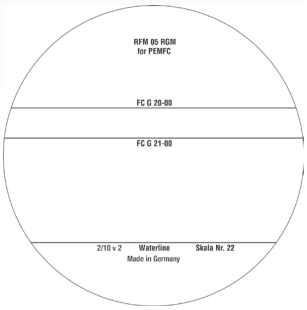


COOLING SYSTEM FUEL CELL

RFM 05_RGM **110309_1**

Refractometer

Refractometer for "ready-to-use-mix" coolant especially used in PEMFC*. RFM 05_RGM is suitable to measure the antifreeze point of this special coolant.

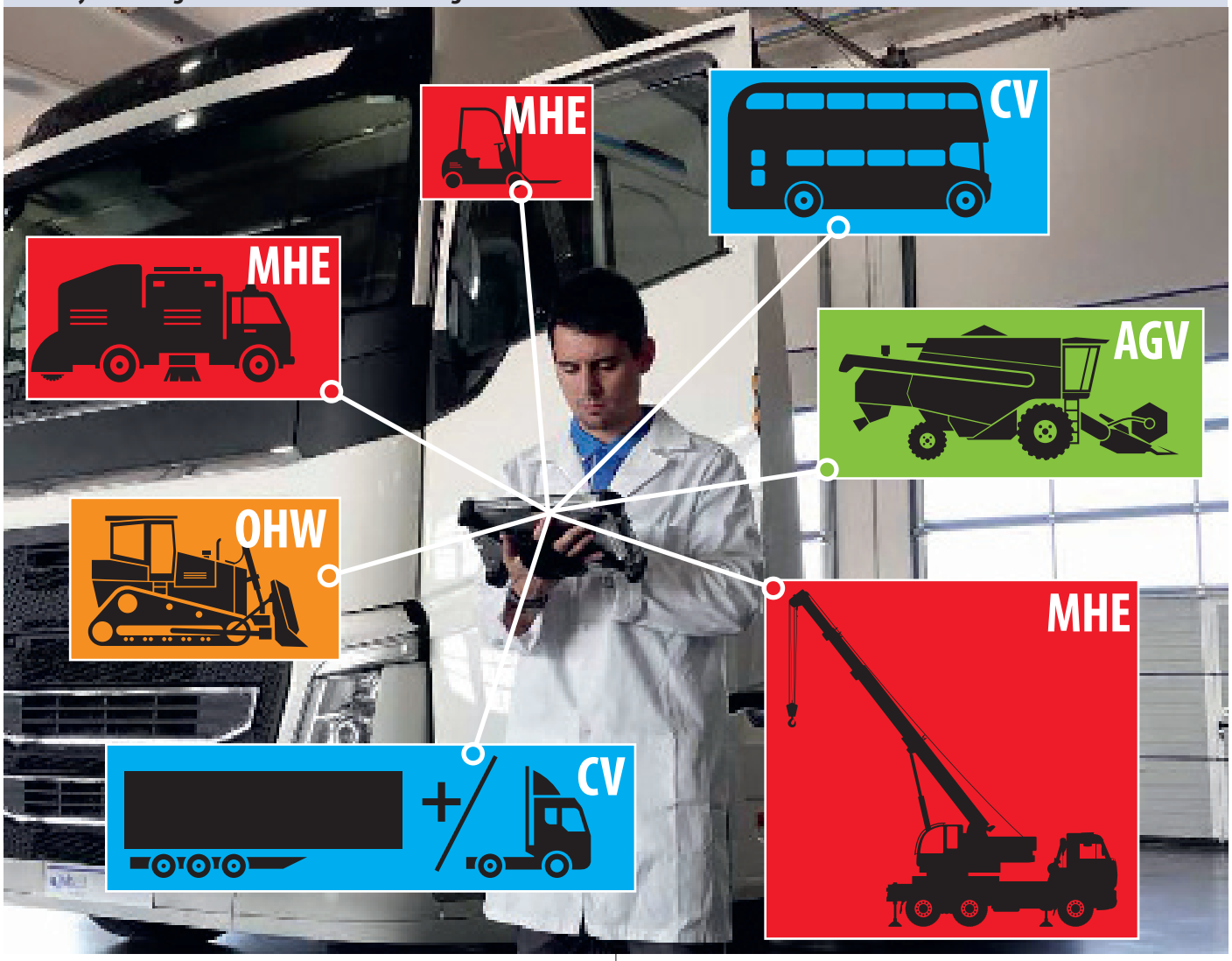


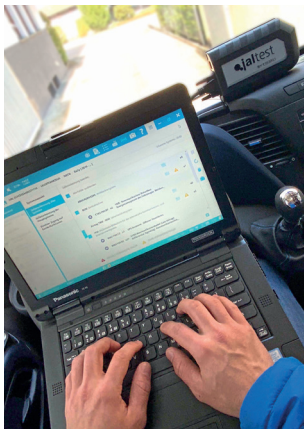
Scope of delivery:

- 1 Refractometer
- 1 Pipette
- 1 Instruction
- Delivery in small solid plastic case.

*PEMFC: Proton Exchange Membrane = Polymer Electrolyte Membrane Fuel Cell

Multisystem diagnostic device for vehicle diagnostics and maintenance work - Jaltest -





Jaltest is a **multi-brand, multi-system diagnostic device** that was developed to perform vehicle diagnostics and maintenance tasks in a simple and intuitive way.

Multi-brand workshops often face the challenge of diagnosing faults and make appropriate repairs.

With the multi-brand diagnostic solutions from Jaltest, Autotestgeräte Leitenberger now has a **UNIVERSAL DIAGNOSTICS DEVICE** in its product range. Thanks to individual adaptors and cables and a comprehensive software numerous manufacturers from the commercial vehicle, OHW and the agricultural sector are supported.

New brands, models and systems are constantly integrated into the system and made available to workshops **three times a year via a free software update.**

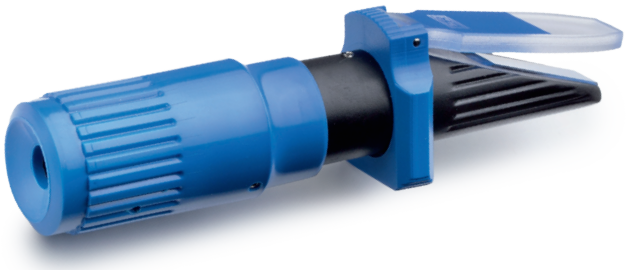
The multi-brand diagnostic offers include our **"5-Year Carefree Package"** with the following services included in the monthly lease rate:

- Industrial grade and rugged laptop, with German keyboard.
- Pre-installed diagnostic software on the laptop
- Activated 5-year user license
- 1-day basic training, at various locations in Germany

Thanks to individual plugs and cables and comprehensive software, numerous manufacturers are supported, from the fields of

- (CV) Commercial Vehicles
- (OHW) Off Highway
- (MHE) Material handling equipment
- (AGV) vehicles for agriculture and forestry

FT 2030.1 **110306_40**

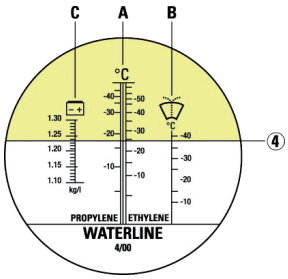


Refractometer for radiator coolant, battery acid, windshield washer fluid, Urea (AdBlue®*)

- Refractometer for determining the density of liquid media
- Adjustable ocular for different visual acuities
- Scales for different media
- Result is easily readable on the light-dark line

Scale for:

- Frost protection in cooling water
- Frost protection in windshield washer fluid
- Battery acid density
- Urea (AdBlue®*)
- Tested and recommended by BASF.



Scope of delivery:

- 1 Refractometer
- 1 Pipette
- 1 Manual
- Delivery in paper box

CD XX

Coolant diagnosis

For monitoring the coolant quality in internal combustion engines, electric vehicles and technical systems (in motor vehicles, rail vehicles, ships, block-type thermal power stations, industrial systems).

Coolant is used for **thermal protection** and for **increasing perforamance and operating safety** in the majority of internal combustion engines that are currently used.

Monitoring of the coolant quality as a preventive measure increases operational safety and reduces the operating costs.

Code	Descriptio	Ref no.
CD 01	The most extensive coolant analysis will be returned 4 - 5 working weeks after receipt of the samples	110407_1
CD 02	A complete coolant analysis will be returned 2 - 3 working weeks after receipt of the samples	110408_1
CD 03	A preliminary coolant test will be returned 1 - 2 working weeks after receipt of the samples	110409_1

PEK 01 **110400_1**

Sample-taking-kit

With the PEK 01 - the sample taking kit - you can easily and conveniently put liquid samples into the supplied sample bottles. A vacuum is created with the manually-operated piston that draws the fluid into the original sample bottle. Caution: Not for aggressive acids. Vapours could destroy the pump. It may only be used for substances against which its plastic components are resistant. Please inform yourself about „Chemical Resistance of Plastics“.

Scope of delivery:

- 1 PEK 01 pump
- 6 Sample bottles 100 ml
- 6 PE suction hose à 900 mm
- 1 Direction for use
- Delivery in solid plastic case

*AdBlue® is a registred Trade Mark of VDA, Verband der Deutschen Automobilindustrie e.V. (German Automobile Industry Association)..

EBT 03_USB **100127_1**

Electronic brake fluid tester with USB interface

The unit is menu-driven and shows the measurement result of boiling temperauture (in ° C) and water content (in %).

- For brake fluids: DOT 3, DOT 4, DOT 4 Plus und DOT 5.1
- Processor controlled
- Digital documentation of measurement and customer data
- With two-line, alphanumeric display
- Auto measurement starts on immersion of the sensor
- Low bat. indication
- Auto off after 2 min. without measurement
- Robust sensor, made of stainless steel
- Power supply 9 V block battery

Prüfprotokoll Bremsflüssigkeitstest /
Brake fluid test protocol

Kunde / Customer

Max Mustermann
Musterstraße 1
D-12345 Musterstadt

Kennzeichen / Car Registration:	AA BB 1234
Hersteller / Manufacturer:	Lamborghini
Typ / Type:	Gallardo
Kilometerstand / Mileage:	134.029 km
Fahrgestellnummer / VIN:	123456789012345

Messergebnisse / Measurement results

Bremsflüssigkeitstyp / Break fluid type:	DOT 3 universell
Siedetemperatur / Boiling temperature:	612 °C
Wassergehalt / Water content:	0,0 %
Empfehlung / Recommendation:	Bremsfluessigkeit ist in Ordnung Brake Fluid is o.k.

Notizen / Notes

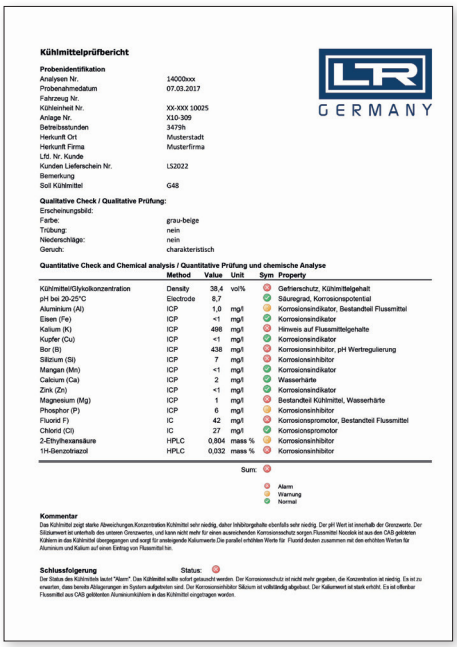
Bremsflüssigkeit gewechselt / Break fluid changed O Ja / Yes O Nein / No

Kommentar / Comment:

Messung durchgeführt von / Measurement accomplished by

M. Mustermann
Autotestgeräte Leitenberger GmbH
Bahnhofstraße 33
D-72138 Kirchentellinsfurt

12.01.2015 13:27 Unterschrift / Sign



Kühlmittelprüfbericht

LR GERMANY

Probenidentifikation

Analysen Nr.	14000xxx
Probenahmedatum	07.03.2017
Fahrzeug Nr.	
Kühleinheit Nr.	XX-XXX 10025
Anlage Nr.	X10-309
Betreibsstunden	3479h
Herkunft Ort	Musterstadt
Herkunft Firma	Musterfirma
Lfd. Nr. Kunde	
Kunden Lieferschein Nr.	LS2022
Bemerkung	
Soll Kühlmittel	G48

Qualitative Check / Qualitative Prüfung:

Erscheinungsbild:

Farbe:	grau-beige
Trübung:	nein
Niederschläge:	nein
Geruch:	charakteristisch

Quantitative Check and Chemical analysis / Quantitative Prüfung und chemische Analyse

Property	Method	Value	Unit	Sym
Kühlmittel/Glykolkonzentration	Density	38,4	vol%	Gefrierschutz, Kühlmittelgehalt
pH bei 20-25°C	Electrode	8,7		Säuregrad, Korrosionspotential
Aluminium (Al)	ICP	1,0	mg/l	Korrosionsindikator, Bestandteil Flussmittel
Eisen (Fe)	ICP	<1	mg/l	Korrosionsindikator
Kalium (K)	ICP	498	mg/l	Hinweis auf Flussmittelgehalte
Kupfer (Cu)	ICP	<1	mg/l	Korrosionsindikator
Bor (B)	ICP	438	mg/l	Korrosionsinhibitor, pH Wertregulierung
Silizium (Si)	ICP	7	mg/l	Korrosionsinhibitor
Mangan (Mn)	ICP	<1	mg/l	Korrosionsindikator
Calcium (Ca)	ICP	2	mg/l	Wasserhärte
Zink (Zn)	ICP	<1	mg/l	Korrosionsindikator
Magnesium (Mg)	ICP	1	mg/l	Bestandteil Kühlmittel, Wasserhärte
Phosphor (P)	ICP	6	mg/l	Korrosionsinhibitor
Fluorid F)	IC	42	mg/l	Korrosionspromotor, Bestandteil Flussmittel
Chlorid (Cl)	IC	27	mg/l	Korrosionspromotor
2-Ethylhexansäure	HPLC	0,804	mass %	Korrosionsinhibitor
1H-Benzotriazol	HPLC	0,032	mass %	Korrosionsinhibitor

Sum:

Alarm
Warnung
Normal

Kommentar

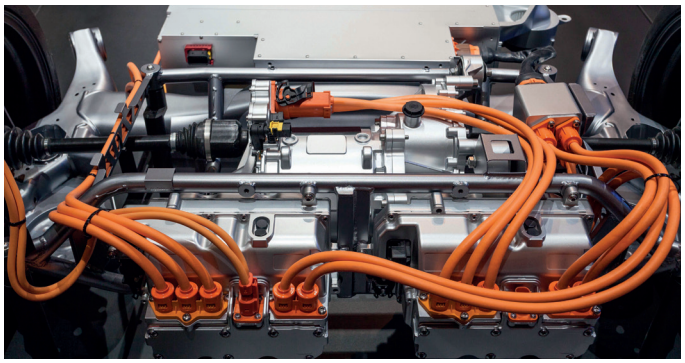
Das Kühlmittel zeigt starke Abweichungen.Konzentration Kühlmittel sehr niedrig, daher Inhibitorgehalte ebenfalls sehr niedrig. Der pH Wert ist innerhalb der Grenzwerte. Der Silizumwert ist unterhalb des unteren Grenzwertes, und kann nicht mehr für einen ausreichenden Korrosionsschutz sorgen.Flussmittel Nocolok ist aus den CAB gelösten Kühlern in das Kühlmittel übergegangen und sorgt für erwängende Kaliumwerte.Die parallel erhöhten Werte für Fluorid deuten zusammen mit den erhöhten Werten für Aluminium und Kalium auf einen Eintrag von Flussmittel hin.

Schlussfolgerung Status:

Der Status des Kühlmittels lautet "Alarm". Das Kühlmittel sollte sofort getauscht werden. Der Korrosionsschutz ist nicht mehr gegeben, die Konzentration ist niedrig. Es ist zu erwarten, dass bereits Ablagerungen im System aufgetreten sind. Der Korrosionsinhibitor Silizium ist vollständig abgebaut. Der Kaliumwert ist stark erhöht. Es ist offenbar Flussmittel aus CAB gelösten Aluminiumkühlern in das Kühlmittel eingetragen worden.

Scope of delivery:

- 1 EBT 03_USB
- 1 USB cable
- 1 software CD
- 2 manuals (for device and software installation)
- Delivery in solid plastic case



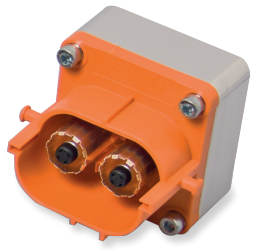
ACCESSORIES

LTBG_PA 01_LR **042728_1**

Tightness-Test-Adaptor for battery cases via HV-connection

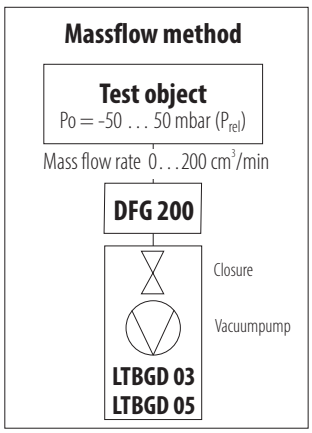
For the inflation of pressure or vacuum for leak testing

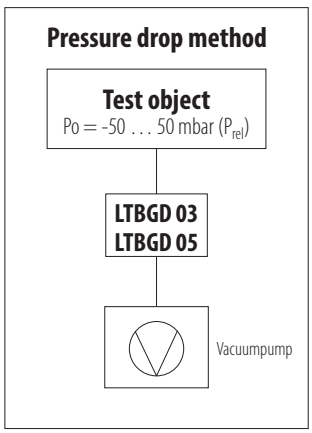
LTBG_PV 01_LR **042729_1**



Tightness-Test-Adaptor for LTBGD devices (self-test)

Adapter for closing the LTBGD test adapter (LTBG_PA 01_LR), for leak testing of LTBGD devices (self-test).





(*HV = High Voltage).

LTBGD 03_EV -

Tightness-Testing Kit for Battery Housings - digital

LTBGD 03_EV allows a Tightness-Test-Procedure with vacuum or/and pressure. The device is equipped with a special HV-Test-Adaptor (HV = High Voltage) in order to induce vacuum or pressure into the battery-housing tested. Vacuum and Pressure generator are powered by workshop pressure. For detection of low pressure drop.

- Measurement range: -50 . . . +50 mbar
- Accuracy: 0.5 %FSS
- Resolution: 0.1 mbar
- Pressure drop method
- Also available as analog version
- Delivery in solid plastic case

LTBGD 10 **NEW** -

Tightness-Testing Kit for Battery Housings - digital

Same function and delivery content as LTBGD 03_EV, but with measurement range: -200 . . . +200 mbar.

LTBGD 12 **NEW** -

Tightness-Testing Kit for Battery Housings - digital

Same function and delivery content as LTBGD 05_EV (see p. 10), but with measurement range: -200 . . . +200 mbar.

LTBG 04 -

Localization of leaks

- With LTBG 04 forming gas^ [N95/H5] can be introduced into the units-under-test. With a suitable detector for forming-gas (e.g. ELS 04, not included in the delivery of LTBG 04) leaks can be localized.
- Inlet pressure: max. 10 bar
- Outlet pressure: 25 mbar
- Accessories, LTBG_PA 01_LR und LTBG_PV 01_LR (see left).

LTBGD 05_EV **042717_2**

Tightness test of battery housings with large-volume (more than 5 dm³)

LTBGD 05_EV enables a tightness test with vacuum and/or pressure, even on batterys with a large volume. It is ÿtted with special HV-connector* to induce vacuum or pressure into the battery housing.

- Measuring range: -50 . . . +50 mbar
- Delivery in solid plastic case

DFG 200_230VAC_S **042724_2**

Note:
DFG 200 works with the principle of mass flow method. This method is a competitive method for pressure loss test / pressure drop method. Both methods complement each other frequently.

Flow gauge with digital pressure measurement and display

Digital flow meter for measuring leakage rates in the range 0 . . . 200 cm³/min in high-density units under test.

Examples:

- tightness test on components
- tightness test on high voltage batterie cases

Only usable with the LTBGD 03/05 (for vacuum and pressure generation)

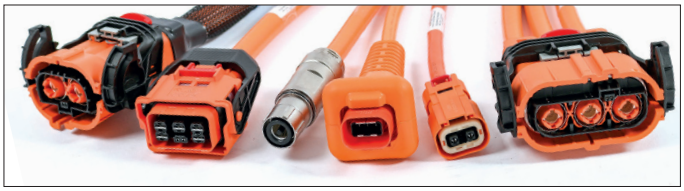
Measurement range:	0 . . . 200 cm3/
Min Pressure max:	1.7 bar
Accuracy:	3 %FSS
Power supply:	230 VAC
USB interface:	available

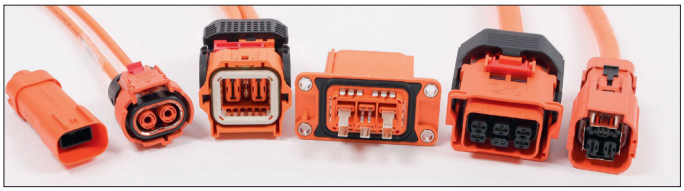
- Delivery in solid plastic case

Examples

Break-out-Box

Examples





BOB xx_HV — High Voltage - Break Out Box
BOB xx — Break Out Box for low voltage signals

Labour-processes as repair, diagnostics, maintenance, etc. on HV-batteries require the measurement of all relevant electrical values. First and foremost is the safety of the workshop personal and the driver/user of an electric vehicle.

The break-out box provides simple and secure access to the high-voltage system, to all relevant electric values. Measurement devices (e.g. MTi 801) are NOT included in the delivery. Please do not hesitate to get in contact with us with your specfic application. (Product picture exemplary)

(*HV = High Voltage).

MTi 801 — 041710_1

Insulation Resistance Tester

As the EV (Electric Vehicle) and HEV (Hybrid Electric Vehicle) market is becoming larger, the importance of accurately measuring insulation resistance values is growing bigger and bigger. With the new developed MTi 801 you have an accurate, reliable insulation tester with "analog" bar graph for voltage and resistant measurements, continuity and insulation test.

With new features:

- Accurate and reliable measurement
- 3 m Drop Protection
- Bar graph shows an approximate analog representation of a measurement
- DMM Features (AC/DC voltages, resistance & continuity)
- CAT III 1000 V and CAT IV 600 V overload protection

CBB 01 — NEW — 081004_1

Example

FIU
(**F**ault **I**nsertion **U**nits)

Interface for testing CAN bus systems

Mobile interface for testing CAN-Bus-Systems. The use of the box allows easy access to all pins of the OBD connector to measure and test the signals by different test devices.

KLDS 05 **060059_1**

Suitable for ALL air conditioners!

Tightness Test System for Air Conditioning Systems on cart

- Usable worldwide
- KLDS 01 is designed to run out simple and safe tightness tests of any mobile AC-system before the AC-system is charged. It is suitable for refrigerants R744 (CO2), R1234yf and R134a.

Tightness-tests, using any contrast agents are NO longer permitted!

- KLDS 01 is introducing forming gas (N95/H5) into the AC-system, using a high performance pressure regulator. A pressure drop and thus a leakage can be detected very simple and fast.
- The very practical cart allows the storage of all 6 testing hoses with 3 m each, accessories, removed parts and tools. The cart is providing a secure standing and a good maneuverability with its 10 L or 50 L forming gas containers.
- Certified Pressure Safety Valves guarantee a maximum protection for the AC.system and for the operator during the test procedure. „High end" components „Made in Germany" guarantee a safe and long life operation under often harsh workshop conditions. tightness test without contrast agent

- Suitable for AC-systems R744, R1234yf and R134a
- Adjustable testing pressure
- Easy and accurate readability of pressure drop
- „high end" AC-couplers HP and LP for refrigerants R744, R1234yf and R134a
- 3 m filling and test hoses / each
- Mobile cart with spacious, secure standing and good maneuverability, 2 swivel wheels with brakes and 2 fixed wheels
- Certified Pressure Safety Valves guarantee maximum protection
- „high end" components „Made in Germany"

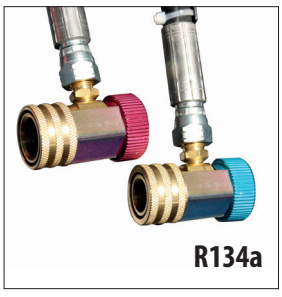
Scope of delivery:

- 1 KLDS 01 on carriage
- 1 Adapter for forming gas bottle (10 l)
- 3 Sets filling and test hoses (2 pcs.), 3.0 m, for refrigerants R744 (CO2), R1234yf, R134a
- 1 Operating manual
- Delivery on pallet, assembled, tested and ready for use

Mobile cart: suitable for 10 or 50 L containers of forming gas

R744

R1234yf



R134a

ACCESSORY KLDS 05/06

ELS 04 **030215_1**

Ideal supplement to 05 / 06 and to SLD 01_LR2.

Electronic Leak Detector

Easy and accurate leak localization supported by accustic and optical signals.

- We recommend the hydrogen detection kit ELS 04 for leak detection and localization.
- Meets all requirements of W000 588 03 21 00
- Long and flexible swan-neck (> 500 mm) allows maximum reach
- Operated by AA-batteries (not included in the delivery)
- Measurement range: 1 ppm . . . 2.2 Vol.-%

Scope of delivery:

- 1 ELS 04 incl. 500 mm swan-neck
- 1 Operation manual, multilingual, hard copy
- Supplied in solid plastic case

LDS 01_BS **060057_1**

Ideal supplement to KLDS 05 / 06.

Leak Detection-System for brake system

- Via KLDS 01 and LDS 01_BS forming gas (N95/H5) can be initiated in an empty brake system prior to a tightness test procedure.
- With LDS 01_BS a pressure drop can be detected. In case of no pressure drop the system is tight. In case of a pressure drop the leak can be detected e.g. with ELS 04 (not included in the delivery)
- Suitable only for empty systems
- Test Pressure 4 bar
- Digital Pressure Measurement device Resolution 0,01 bar [10 mbar]
- Delivery without adaptations
- For identification please consult our B-adapter list

QR code to the list with the assignment of the adapter designation to the vehicle manufacturer.

LDS 01_KS **060057_2**

Leak Detections System for Cooling systems/ Thermomanagement systems

Function and handling like LDS 01_BS, but suitable for cooling systems and with a maximum test pressure of 2.5 bar.

LEAK TEST SYSTEM FOR REFRIGERATION AND AIR CONDITIONING SYSTEMS WITH INTEGRATED TEST REPORT PRINTER

Automated maintenance of refrigeration and air conditioning systems to ensure the implementation of European regulations and standards.

SLD 01_LR1 **060056_1**

Diagnostic device for leakages on air conditioning and refrig. systems, without ELS 04

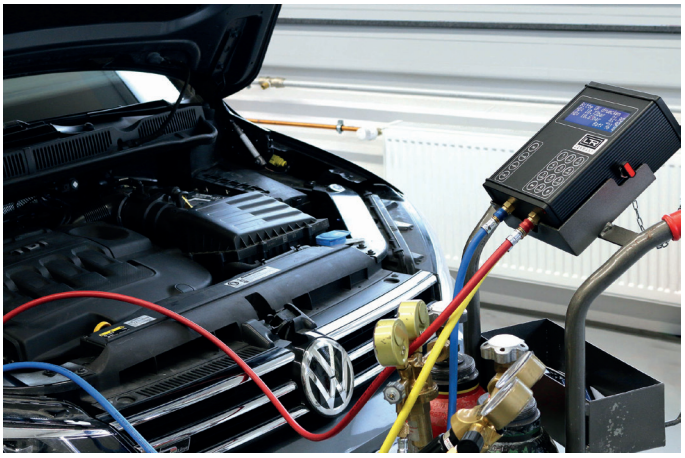
For simple and safe leakage pressure testing and leak localization* on current air conditioning / refrigeration systems with the refrigerants R1234yf and R134a.

The testing of air conditioning systems with contrast medium is no longer permitted!

- High-precision pressure testing on the high pressure and low pressure side.
- With integrated test report printer for creating a test report.
- Documentation security through real-time clock (time and date cannot be changed)
- Leak test without contrast medium
- Leakage pressure test with nitrogen
- Leak localization* with forming gas
- Digital display, easy to read and accurate
- Measurement accuracy 0.5%
- Display 0.01 bar
- Mobile use thanks to the integrated battery
- Recorded pressure test of min. 10 minutes to max. 24 hours

Scope of delivery:
1x Tightness tester with integrated protocol printer
1 Hose set
1x Adapter pair R134A
1x Adapter pair R1234yf

* An additional electronic leak detector (ELS 04) is required to locate leaks, see p.13



BSG 03_230 / BSG 03_230A **100501_1 / 100500_1**

Brake bleeder service unit

Brake bleeder for the maintenance of brake systems, clutches and ABS systems. Device BSG 03_230 is without suction Gerät BSG 03_230A is with suction.

Suitable for brake fluids DOT 3, DOT 4, DOT 4 Plus, DOT 5.1.

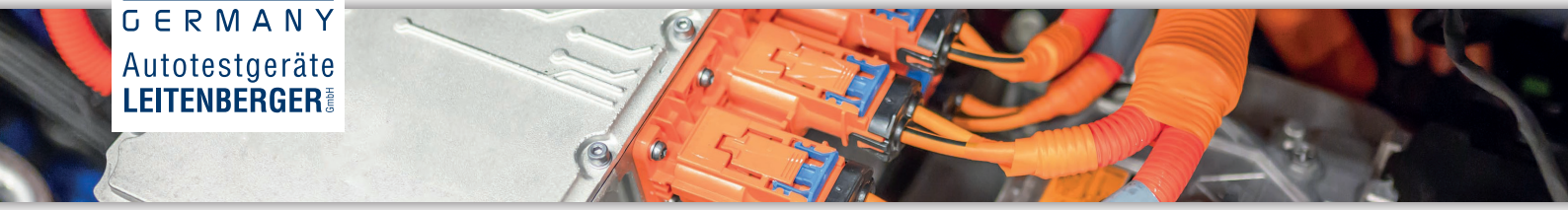
- 1 man service, fast and secure!

Features:

- No decanting of brake fluid into the bleeder
- Automatic cut-off at low fluid level
- Adjustable working pressure from 0.5 to 3.5 bar
- No venting of the device necessary when changing the container
- Pressureless decoupling from vehicle
- Adapters available for all common vehicles

ACCESSORIES BSG 03_230

QR code to the list with the assignment of the adapter designation to the vehicle manufacturer.



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