

Emissions analysis by Bosch

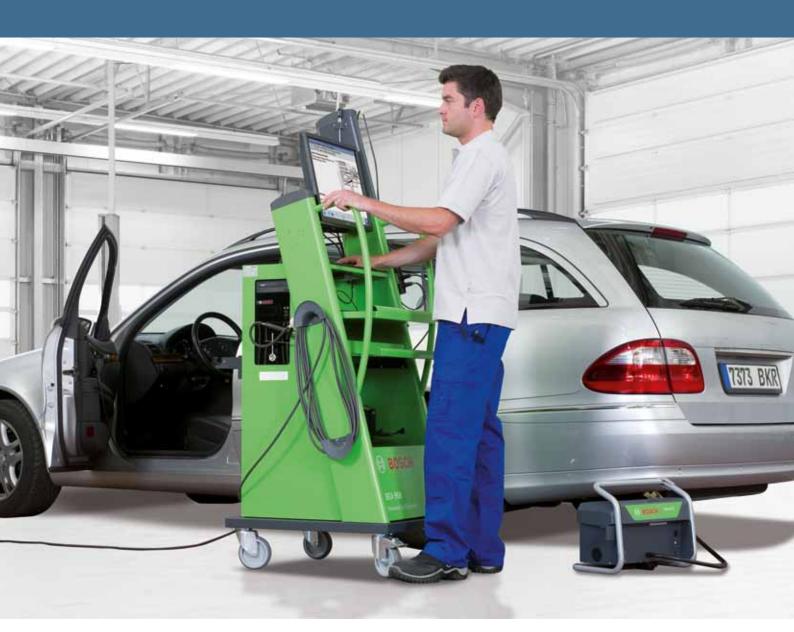


Emissions analysis system

for future-proof exhaust emission analysis

- ▶ BEA 950
- ▶ BEA 550 Kombi
- ▶ BEA 550 Otto
- ▶ BEA 550 Diesel
- BEA 030
- **BDM 300**
- ► BEA PC software
- ▶ Networking
- Accessories

- The all-round exhaust station with and without PC/monitor
- The mobile exhaust station
- The mobile 4/5 gas measuring module for gasoline and gas vehicles
- The mobile smoke-opacity testing module for diesel vehicles
- The testing module for engine speed and temperature measurement based on battery harmonics
- The module for engine speed measurement based on structure-borne and airborne sound signals
- Efficiently networkable via AWN, BNet, AU Plus
- Economical processes in the workshop
- ▶ Commercial vehicles and transporters BEA and Bosch diagnostics for professional drivers



Emissions analysis by Bosch

Clean bill of health for workshops and the environment



New! BEA 070: Easy and fast emission analysis

Modern vehicles with gasoline and diesel engines safeguard the mobility of people and goods. They will determine the way roads look for many years to come. Technical innovations from Bosch help to protect the environment and continuously reduce exhaust emissions. The statutory limits can be achieved by exact emission analysis and adjustment. This is a growing market that will become increasingly important for workshops and inspection organizations.

Green light for good results

To test and minimize the pollutant emissions in accord-ance with the latest legislation as easily and profitably as possible, workshops require a future-proof technol-ogy with every available advantage:

- ► Clear operator guidance
- ► Easy to handle
- ► Short warm-up times
- ► Short measuring times
- ► Precision measurement technology

Efficient emissions analysis with Bosch

The redesigned emissions analysis units provide workshops with clean and reliable results all along the line. A wide range of accessories enables workshops to obtain fast and precise emission measurements on passenger cars and motorcycles, commercial vehicles and buses.

Always a step ahead

Bosch offers a complete range of tests from simple exhaust emission analysis to emission system analysis:

- ► Exhaust-gas measuring system for exhaust emission analysis
- ► Exhaust-gas diagnostics system for error diagnosis
- ► Expandable modular test systems

The customized documentation of measurement and diagnosis results and consistently easy operation ensure maximum efficiency. Modular design, upwardly compatible test technology and software which meets future statutory requirements are three compelling arguments in favor of making a safe long-term investment.

Networked data - rapid testing

Networkable Bosch products and the comprehensive information from the ESI[tronic] software give workshops the tools they need for profitable business.

Designed to meet the highest standards – BEA 950: The premium exhaust station



PC, monitor

¹optional



Easily expandable to include:

- ► ECU diagnostics
- ► Troubleshooting instructions
- ► ESI[tronic]
- ► Engine System Testing

Equipped for the toughest applications

- ► Premium equipment trolley including PC, monitor, keyboard and A4 color printer
- ► BEA 055, 4/5 gas measuring module (CO, CO², HC, O², optional: NO)
- ► BEA 070, smoke-opacity testing module, Bluetooth, optional: battery and charger
- ► KTS 540, Bluetooth (optional)
- ► BEA 030, engine speed testing module, Bluetooth (B+/B-, TN/TD, Kl1/15, temperature)
- ► BDM 300 (structure-borne and airborne sound signals)
- ▶ BEA PC software
- ▶ Vehicle exhaust emission analysis target database

The high-performance system for emissions measurement and minimization

The premium solution for all workshops. Designed for extensive testing of pollutant emissions, this system offers an array of workshop-friendly details. PC and testing module BEA 070 are connected via wireless technology – which means that there are no interfering cables. Sensors can stay connected during transportation, making the BEA even more convenient and easier to handle.

BEA 950: The advantages at a glance

- Premium emission analysis station for workshops with the highest standards
- ► Space saving All testing components are housed in the equipment trolley
- Workshop compatible Rugged design ensures protection against damage
- ► User friendly PC, BEA 070, BEA 030 and KTS 5XX are wirelessly connected
- ► Flexible Battery operation of the BEA 070 is optional
- ► High availability Short setup and warm-up times
- Expandable to an all-in-one system complete with ECU diagnostics, troubleshooting instructions ESI[tronic] and Engine System Testing FSA

Order number:

BEA 950 S1 (including Premium equipment trolley and KTS 540)

0 684 120 350

BEA 950 S2 (including Premium equipment trolley without KTS 5XX)

0 684 120 352

BEA 950 for all-round use

All-round exhaust station

Used in conjunction with a standard laptop/netbook², the BEA 950 makes for a user-friendly basic system for exhaust gas analysis.



BEA 950: The versatile solution designed to meet current and future exhaust emission analysis requirements.

The high-performance allrounder BEA 950 is particularly effective in everyday testing applications. It can be conveniently connected to an existing PC system by wireless technology and is fast and easy to operate. The BEA 950 is the profitable platform for testing and adjusting emission values of gasoline, gas and diesel vehicles.

Equipped for a wide range of applications

- Medium equipment trolley, fully cabled, A4 color printer
- ► BEA 055, 4/5 gas measuring module (CO, CO², HC, O², optional: NO)

BEA 950: System overview



BEA 030 KTS 515¹



BEA 055



BEA 070



Laptop/DCU 130²

¹optional

²not included in the equipment supplied



BEA 950 with intelligent software:

- ► Windows-compatible
- ► Automatic calibration of the measuring unit
- ► Warm-up time <3 minutes

- ► BEA 070, smoke-opacity testing module, Bluetooth, optional: battery and charger
- ► KTS 515, Bluetooth (optional)
- ► BEA 030, engine speed testing module, Bluetooth (B+/B-, TN/TD, KI1/15, temperature)
- ► BEA PC software
- ▶ Vehicle exhaust emission analysis target database

Precise, reliable and fast exhaust emission test

With its practical features, the BEA 950 is equipped for tasks ranging from exhaust emission analysis to emission system analysis. Thoughtfully designed details make for precise and smooth operation. Cordless wireless and battery technology and hardwired sensors provide even greater convenience. The intelligent test software ensures that the system is ready for use in no time.

Order number:

BEA 950 S3 (including Medium equipment trolley and KTS 515)

0 684 120 300

BEA 950 S4 (including Medium equipment trolley without KTS 5XX)

0 684 120 301

BEA 950: The advantages at a glance

- Space saving All testing components are housed in the equipment trolley
- Workshop compatible Rugged design provides protection against damage
- ► Practical Generously sized laptop table on the equipment trolley for existing laptop
- ► User friendly PC, BEA 070, BEA 030 and KTS 5XX are wirelessly connected
- ► Simple Works in conjunction with a standard PC (laptop, netbook)
- ► High availability Short setup and warm-up times
- Complete Cabling is provided for laptop/ DCU 130

BEA 550 Kombi - The mobile combination

Exhaust-gas diagnosis on the go

BEA 550 Kombi

Developed in conjunction with inspection organizations specially for mobile use.



BEA 550: The advantages at a glance

- ► Flexible in use small, lightweight and transportable
- ► User friendly PC, BEA 060, BEA 070, BEA 030 and KTS 5XX are connected wirelessly
- Simple Works in conjunction with a standard PC (laptop, netbook)
- ► Specially designed for and in conjunction with inspection organizations
- ► Ideal for mobile exhaust emission analysis, particularly in inspection organizations
- ▶ Optional Battery operation of the BEA 070

BEA 550 Kombi: System overview



DE4 07



BEA 030 KTS 515¹



BEA 060



Laptop/



Case for accessories

¹optional ²not included in the equipment supplied

BEA 550 Kombi: Small and lightweight, perfect for variable test use

The transportable exhaust-gas testing system is ideal for all mobile testing applications. The mobile BEA 550 is specially tailored to meet the requirements of inspection organizations. With its wireless radio and battery technology as well as the practical sensors, which do not have to be removed for transportation purposes, it is always readily available for precise examination and setting of gasoline, gas and diesel vehicles. It offers an impressive combination of compact size, the low weight and transportability.

Equipped for a flexible applications

- ► BEA 060, 4/5 gas measuring module, Bluetooth (CO, CO², HC, O², optional: NO) with deposit area
- ► BEA 070, smoke-opacity testing module, Bluetooth, optional: battery and charger
- ► KTS 515, Bluetooth (optional)
- ► BEA 030, engine speed testing module, Bluetooth (B+/B-, TN/TD, KI1/15, temperature)
- ► BEA PC software
- ▶ Vehicle exhaust emission analysis target database
- Case for accessories

Order number:

BEA 550 Kombi (including BEA 030 and KTS 515)

0 684 105 500

BEA 550 Kombi (including BEA 030 without KTS 5XX)

0 684 105 502

BEA 550 Otto - 4/5 gas analysis

in mobile use



BEA 060

BEA 060: The mobile 4/5 gas measuring module for gasoline and gas vehicles

The measuring module for precise measurement of CO, CO², HC, O² and (optional) NO values in gasoline and gas vehicles.

Benefits to the workshop

- ► Standalone tester, PC controlled
- ► Flexible PC control via Bluetooth or USB
- ▶ Practical Deposit area for probe, hose, sensors
- ► Compact All measuring accessories are integrated in the unit
- ► Maintenance friendly Filter is easily accessible from the exterior
- ► Durable Extremely rugged and reliable
- ▶ Rugged Filter and connector with impact protection
- ► Easy to use Compact size and low weight
- ▶ Measuring input for temperature sensor
- Optionally expandable to include NO measuring function
- ► Connectivity for BDM 300
- ▶ Power supply for BDM 300
- ► Transfer of measurement data from BDM 300 to BEA 060 and PC

Order number:

BEA 550 Otto (including BEA 030)

0 684 105 277

Technical data	BEA 060
Dimensions (W x H x D)	414 x 330 x 280 mm
Weight approx.	10 kg
Supply voltage Power supply unit	100 – 240 V, 50 – 60 Hz
Operating temperature range	5 °C to 45 °C

Designation	Measurement range	Resolution
CO	0 – 10 % vol.	0.001 % vol.
CO2	0 – 18 % vol.	0.010 % vol.
HC	0 – 9,999 ppm	1.0 ppm
O2	0 – 22 % vol.	0.010 % vol.
NO	0 - 5,000 ppm	1.0 ppm
Lambda	0.5 - 1.8	0.001
COvrai	0 - 10 %	0.010 %

BEA 550 Diesel – Smoke-opacity testing module in mobile use



Perfect for flexible, userfriendly testing:

- ► Wireless technology
- Optional battery operation
- ► Short warm-up times
- ► Sensors remain connected during transportation

BEA 070: The mobile smoke-opacity testing module for diesel vehicles

This new, portable unit is designed for efficient smoke-opacity testing on diesel vehicles. It is ideal for workshops and inspection organizations.

Benefits to the workshop

- ▶ Standalone tester, PC controlled
- ► Flexible PC control via Bluetooth or USB
- ▶ PC control via Bluetooth or USB
- ▶ Practical Deposit area for probe, hose, sensors
- ► Compact All measuring accessories are integrated in the unit
- ► Maintenance friendly Sensor and receiver can easily be cleaned from the exterior
- ► Durable Extremely rugged and reliable
- ► Rugged Filter and connector with impact protection
- ► Easy to use Compact size and low weight
- ▶ Also suitable for use on buses and commercial vehicles
- ▶ Optional battery operation (lithium ion technology)¹
- Optional charger (mounted on the equipment trolley or wall)

Order number:

BEA 550 Diesel (including BEA 030)

0 684 105 177

Technical data	BEA 070
Dimensions (W x H x D)	414 x 330 x 280 mm
Weight approx.	10 kg
Supply voltage Power supply unit	100 – 240 V, 50 – 60 Hz
Operating temperature range	5 °C to 45 °C
Maximum temperature of exhaust-sample probe	250 °C
Maximum temperature at measuring input	200 °C

Sensor	Measurement range	Resolution
Sensor	Measurement range	Resolution
Degree of opacity	0 - 100 %	0.1 %
Coefficient of absorption	0 – 10 m ⁻¹	0.01 min ⁻¹

 $^{^{1}}$ Operating time approx. 2 hours, charging time approx. 1.5 – 3 hours

BEA 030 and BDM 300

For exact engine speed and temperature measurement



BEA 030 Bluetooth

BEA 030: For engine speed and temperature measurement

The new, practical module for fast and simple measurement of engine speed and temperature values.

The BEA 030 at a glance:

- ▶ PC control via Bluetooth or USB
- Connectivity for BDM 300
- ► Power supply for BDM 300
- ▶ Transfer of measurement data from BDM 300 to PC

Order number:

0 684 440 000

Technical data	BEA 030
Dimensions (L x W x H)	17 x 12 x 3.5 mm
Weight	0.35 kg
Supply voltage Power supply unit	100 – 240 V, 50 – 60 Hz
Operating temperature range	5 °C to 45 °C

Designation	Measurement range	Resolution
Battery voltage	9 to 32 V	0.1 V
Oil temperature	- 20 °C to 150 °C	0.16 °C
B+/B-	450 to 9,500 rpm	20 rpm
KI1/15, TN/TD	100 to 12,000 rpm	10 rpm

BDM 300

BDM 300: The testing module for engine speed measurement on diesel and gasoline vehicles

A handy unit for rapid engine speed sensing by recording structure-borne and airborne sound signals of the engine.

The BEA 300 at a glance:

- ▶ Speed sensing on diesel and gasoline engines
- ► Efficient: No need to lower the driver's cab on commercial vehicles
- ► Timesaving: Adapts easily to passenger car and commercial vehicle engines

Order number:

BDM 300

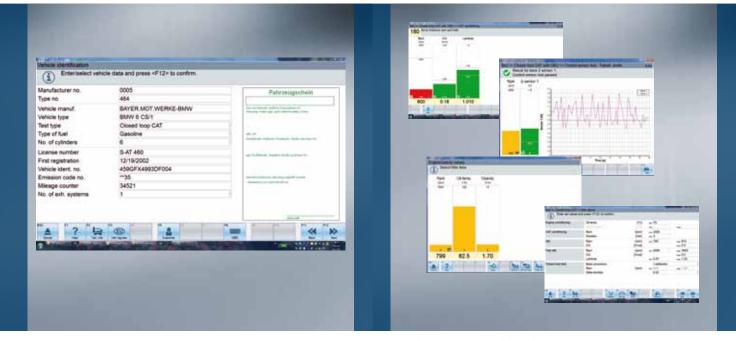
1 687 023 489

Technical data	BDM 300
Ground (L x W x H)	227 x 184 x 48
Weight	approx. 0.8 kg
Supply voltage power supply unit	230 VAC / 50 Hz through 12 VDC or OBD plug
Operating temperature range	5 °C to 45 °C

Designation	Measurement range
Speed on diesel engine	400 to 9,500 rpm
Speed on gasoline engine	400 to 8,000 rpm

BEA PC software - Safely networked

with AWN, BNet and AU Plus



BEA PC software: Identify the vehicle once only ...

... and use settings in all applications

BEA PC software: For high-speed data exchange

The new BEA PC software is the all-round solution for workshops. The possibility for data networking and easy operation with intuitive menu navigation and highly automated testing procedures will in future make possible even faster and more profitable statutory exhaust-gas testing.

Future-proof connectivity to other applications

The new test software by Bosch equips workshops for meeting new exhaust emission limits. By networking with AWN, BNet and AU Plus, Bosch workshops can take advantage of even more lucrative business opportunities.

AWN networked test equipment by Bosch



ASA Network links the entire test equipment to all other workshop areas. All information from order acceptance and the workshop through to central storage is available at all

times – on any workstation. When a new job order is created in the system, the exhaust-gas analyzer receives the job data automatically.

Also networkable with BNet by Beissbarth

BEA is compatible with BNet, the network technology of Beissbarth GmbH

AU Plus: Efficient, harmonized and fully integrated

The connected exhaust-gas analyzer informs the network manager about the progress of work. After the test is completed, the results are immediately available to the job order system for further analysis. The data is finally transferred to the AU Plus software and stored in the database.

Benefits to the workshop

- ► Networking with AWN, BNet and AU Plus
- ► User friendly Intuitive operation
- ► Fast Highly automated testing procedures
- ► Simple Automatic installation setup
- ► Future-proof Adapts to regulatory changes
- Efficient Linking of order acceptance and workshop
- ► Transparent Vehicle and customer data at a glance

Minimum requirements for PC or notebook

- ► CPU at least 2 GHz or 1.6 GHz Dual Core
- ► Operating system Windows XP or WIN 7
- ► At least 2 GB of RAM
- ► At least 160 GB of hard drive memory
- ▶ 2 free USB ports

Adaptivity:

▶ Software also runs on DCU 130 and KTS 670

Scope of delivery



BEA 060 application

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Scope of supply	Part No.													
BEA 950 S1	0 684 120 350	•	•		•	•		•	•	•		•	•	•
BEA 950 S2	0 684 120 352	•	•		•	•		•	•			•	•	•
BEA 950 S3	0 684 120 300	•	•		•		•		•		•			•
BEA 950 S4	0 684 120 301	•	•		•		•		•					•
BEA 550 Kombi	0 684 105 500	•		•	•						•			•
BEA 550 Kombi	0 684 105 502	•		•	•									•
BEA 550 Otto	0 684 105 277	•		•										•
BEA 550 Diesel	0 684 105 177	•			•									

Accessories for 4/5 gas analysis and temperature measurement



Measuring probes for temperature measurement¹



Infrared temperature sensor Order number: 1 687 230 066



Retrofit set NO Order number: 1 687 001 972



Silicone hose retrofit kit for 2-stroke engines Order number: 1 687 001 283



Gas filter, activated carbon Order number: 1 687 432 014



Exhaust gas probe for gasoline passenger cars (partial throttle up to 500 °C)

Order number: 1 680 790 052



Probe seal for leak testing Order number: 1 684 485 280



Connection cable (2 m) for BEA 060 to cigarette lighter Order Number: 1 684 465 584

¹Probes for temperature measurement

Probe	Cable length	Probe length	Remarks
1 687 230 036	300 cm	90 cm	Passenger cars
1 687 230 042	600 cm	90 cm	Passenger cars
1 687 230 045	600 cm	150 cm	Commercial vehicles
1 687 230 051	1,000 cm	150 cm	Commercial vehicles, buses
1 687 230 050	600 cm	210 cm	Commercial vehicles, buses

Accessories

for smoke-opacity testing



Passenger car full throttle exhaust gas probe for BEA 070

(measurements on engine power) Order number: 1 680 790 046



Comm. veh. extraction probe for BEA 070

Order number: 1 680 790 041



Extraction hose (BEA 070) for comm. veh. extraction probe (1m)

Order number: 1 680 712 195



Extraction hose (BEA 070) for truck extraction probe (3.5m)

Order number: 1 680 712 201



Heated extraction hose (BEA 070) for truck probe (5m)

Order number: 1 685 510 232



Clamping fixture with telescopic rod for BEA 070 (for trucks with high exhaust)

Order number: 1 688 040 258



Spiral hose (1,5 m) for connecting the BEA 070 to the exhaust gas extraction system

Order number: 1 680 707 118



Battery retrofit kit for BEA 070 Order number: 1 687 001 626



Charger for BEA 070 battery Order number: 1 687 023 619



Diesel upgrade kit for BEA 550 Otto to BEA 550 Kombi

Order number: 1 687 001 976

Accessories for professional emission analysis and OBD



KTS 515 - OBD moduleOrder number: 0 684 400 515



KTS 540 – ECU diagnostics with 1-channel multimeter Order number: 0 684 400 540



KTS 570 – ECU diagnostics with 2-channel multimeter/2-channel oscilloscope

Order number: 0 684 400 570



connector

Order number: 1 684 462 514



OBD diagnostic cable, 5m Order number: 1 684 465 567



Wall mount for BEA 060 or BEA 070 Order number: 1 687 001 973



DCU 130Order number: 0 684 400 130



Charger for DCU 130 Order number: 1 687 023 591



Remote control Order number: 1 687 201 985



BDM 300 Order number: 1 687 023 489



and to BEA 030
Order number: 1 684 463 810



Trolley for BEA 550Order number: 1 688 003 255



Probe kit Order number: 1 687 011 208

Bosch Diagnostics

for street pros



If you rely daily on a commercial vehicle whether it's a 40 tonner, a delivery van or a transporter – you can appreciate the importance of quality. You can always rely on Bosch for test equipment, service and spare parts.

Bosch Diagnostics with BEA for commercial vehicles and transporters

Bosch emission analysis equipment is also designed for practical and precise exhaust emission analysis of commercial vehicles and buses, with detail solutions for large vehicles and workshops. In addition, Bosch Diagnostics provides engine and suspension system testing, battery and air conditioning service, ECU diagnostics, tire service equipment and braking system analysis for commercial vehicles.

Engine System Testing FSA

- ▶ Innovative, state-of-the-art engine diagnostic systems for fast and effective troubleshooting
- ▶ So your workshop is always a step ahead

ECU Diagnostics KTS

The KTS series offers premium ECU diagnostics in conjunction with the ESI[tronic] information system:

- ▶ Standard OBD scantool
- ► Including multimeter
- ► Including dual-channel oscilloscope

ESI[tronic] workshop information software

This timesaving software by Bosch includes comprehensive information for troubleshooting engine management systems in gasoline and diesel vehicles, as well as passenger car braking and convenience systems:

- ► SIS troubleshooting instructions
- ▶ ECU diagnostics

BSA brake roller tester and SDL test line

Bosch precision pays when it comes to all-wheel drive and electronically controlled brake control systems:

- ▶ Efficient brake roller testers
- ▶ Complete test line for braking, suspension and toe-in

Profitable test equipment from the diesel systems expert

Professional diagnostics and repair of diesel components are worthwhile for both truck operators and workshops. Bosch supports workshops with systems for the diagnostics and repair of diesel components.



Tire service for commercial vehicles



Brake test stand for commercial

vehicles







KTS 800 Truck

EPS 200

Quick help with problems: Technical hotline and remote diagnosis from Bosch



Technical hotline and remote diagnostics for all ESI[tronic] customers

Know-how and problem solving by Bosch for daily work in the workshop. Trained experts quickly and effectively help in the diagnostics and repair of passenger cars and commercial vehicles.

The advantages of the technical hotline at a glance:

- ▶ Save time: Repair and service easier and faster
- ► Create space: The burden on workshop managers or foremen is relieved and they can concentrate on important tasks such as customer support
- ► Increase customer binding: Customers impressed by good service
- ► Increase staff satisfaction: Fast and competent support produces a sense of achievement and boosts motivation

Remote Diagnosis: Problem solution

To support its partners more effectively on site, Bosch has consistently developed its technical hotline. Using a novel software program called Remote Diagnosis, a hotline expert can switch directly onto your computer or your test equipment via the Internet. As a result, he can see on his screen exactly what the employee in the workshop sees. The expert will then make any necessary settings and take any necessary operating steps by remote control. As he is doing this, he will explain the

procedure to the workshop employee step by step and actively accompany him through the diagnostic process – until the problem is solved successfully.

Direct use of expert knowledge in the workshop

In this way, the workshop receives direct support and, as a rule, an immediate solution to the problem – without long explanations and queries. Even tricky diagnostic tasks that the mechanic has to perform for the first time can be handled without difficulty using remote diagnosis. Above all, however, the deployment of these online diagnostics saves valuable time and prevents mistakes. Ultimately, the workshop customer is also satisfied, as he receives a low-cost, time-saving, and effective solution to his vehicle problem.



Remote diagnosis: This is how the expert helps directly on your computer

Modern software makes it possible: If you are stuck for a solution, our hotline expert provides assistance on your computer using controlled data access.

Our **knowledge**, your **success**: Bosch Diagnostics

Diagnostics – the key to the automotive workshop of the future

Motor vehicle systems are becoming increasingly complex; the demands placed on qualified diagnosis in workshops are rising.

For professional service on modern vehicles, Bosch provides everything at one stop, perfectly coordinated: test technology, software, technical training and hotline, supplemented by parts in initial equipment quality.





ESI[tronic] 2.0: Software for diagnostics and service

- Simple operation
- ▶ Rapid access
- ► Modular structure
- Comprehensive market coverage
- ► Continually updated
- Universal operation regardless of manufacturer



Test Equipment: Matched to each workshop type

- Optimized combination of hardware and software for rapid troubleshooting, qualified repair and high time savings
- PC-based test technology of the latest generation with extendable modules



Service Training: Knowledge as a factor of success

- ► Comprehensive training programs for automotive workshops
- ► Practical training courses
- ► Highly qualified trainers with practical experience



Technical Hotline: Support from the system developer

- ► Support in difficult technical situations
- Skills covering all brands and manufacturers

Bosch: Bringing you the workshop of the future

For over 125 years, innovations from Bosch have kept vehicles in motion to ensure that people get from A to B safely and comfortably.

Bosch Automotive Aftermarket offers the trade and workshops a worldwide unique combination of:

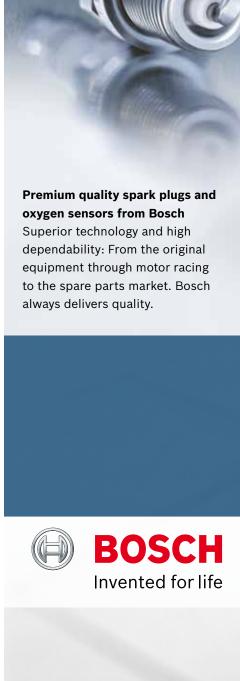
- ► Efficient diagnostics
- ► Innovative workshop equipment
- ► Fast and reliable delivery service
- ► The world's most comprehensive range of spare parts including both new and remanufactured

The emission analysis from Bosch is exactly tuned to developments in gasoline, gas and diesel drives. Bosch workshops benefit from the know-how, the high market coverage and the extensive Bosch product range of the market leader – e.g. spark plugs and lambda sensors.

Where to find Original Bosch Quality:

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The right to make changes of a technical nature and to alter the range on offer is reserved



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