



BOSCH

Invented for life

Training Program for Automotive Technology

2019 - 2020

Southeast Asia

What drives you, drives us.

Introduction



Bosch – more than 130 years of system innovation and automotive technology

Dear Customers,

Today's vehicles are increasingly complex – and new technologies always present new challenges. An investment in training equips you and your team with the necessary expertise to perform diagnostic tasks, maintenance, and repair effectively and economically on the latest vehicle models. Clearly structured training is essential to ensure your business keeps pace with the latest developments in automotive technology.

An overview of the benefits for you:

1. More effective service and faster fault diagnosis
2. Greater repair process reliability
3. Optimal customer service
4. Positive customer feedback and reviews
5. Business management and process optimization
6. Long-term customer loyalty
7. Business success

The following pages provide you with an overview of our training program. We very much look forward to meeting you and your employees at our training courses and seminars.

For more information and availability of trainings in your area, please contact your local Bosch automotive dealer or get in touch with us at **<http://services.bosch-automotive.com/southeast-asia>**



New Training Course starting 2019

We have expanded the range of our trainings with 3 brand new courses & updated our existing trainings with new contents starting 2019.

NEW COURSES

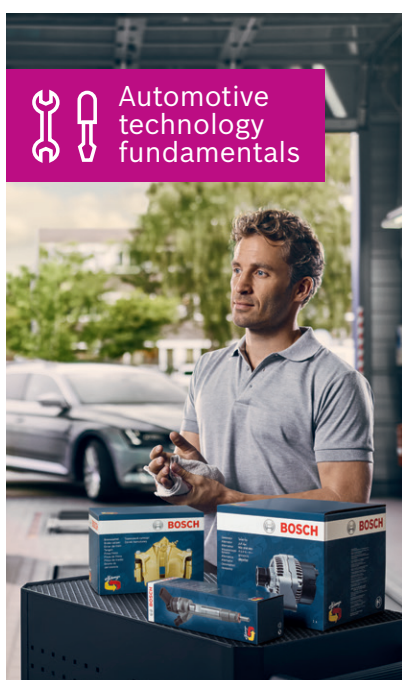
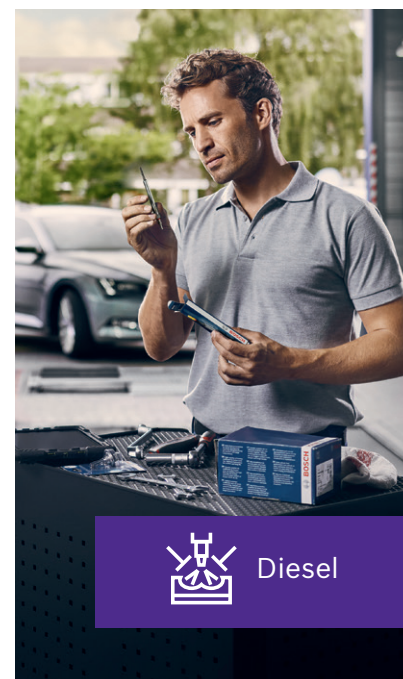
- ▶ Bosch Diesel Engine Management System DG-2
- ▶ Hybrid System HS-1
- ▶ Advanced Driver Assistance System AD-1

available from July 2019 onwards

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New Training Courses starting 2019

NEW
COURSES



Diagnostics

Bosch Diesel Engine Management System DG-2

Duration: 2 Days | Order Number: 1987 AZ0 015

Participants:

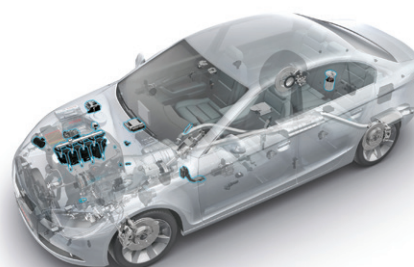
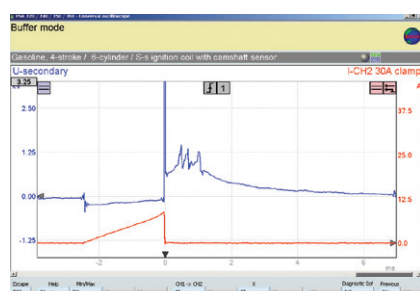
For Experienced technicians, product specialist and enthusiasts who desire to know the diagnostic functions of the KTS tester and Bosch Diesel engine management system.

Training Goal:

Enable experienced electrical/electronic technicians to diagnose and test Diesel Common Rail Engine Management System.

Contents:

- ▶ System overview of diesel engine management.
- ▶ Construction and operation of Common Rail Engine Management Systems.
- ▶ Overview of automotive sensors with practical signal tests using oscilloscope.
- ▶ Actuator Test functions.
- ▶ High and low pressure test.
- ▶ Return flow injector quantity test.
- ▶ Common Rail Pump and Injector replacement.
- ▶ Use of CAS/CAS [plus] and the necessary test equipment (FSA 450, 7xx) in theory and practical sessions.
- ▶ Application of ESI(tronic) database.



New Training Courses starting 2019

NEW
COURSES



Alternative
drives



Hybrid System HS-1*

Duration: 2 Days | Order Number: 1 987 A0Z 025

Participants:

For technicians to be trained on the safety and basic functions of hybrid vehicle systems.

Training Goal:

To acquire and understand the working principle of hybrid vehicle management system and the various transmission powertrain. Functional diagnostic using KTS tester to analyze fault codes and check hybrid battery cell health.

Contents:

- ▶ Safety and precaution measures.
- ▶ Overview of the low and high voltage system.
- ▶ De-energize the high voltage system.
- ▶ Testing of the high voltage system.
- ▶ Measuring the battery voltage system.
- ▶ Construction and Operation of the electric motor.
- ▶ Examine and service the cooling system.
- ▶ Usage of KTS tester voltmeter measuring function.
- ▶ Practical hybrid vehicle diagnostic using KTS tester with actuator test function.



**Courses will be available under SkillsFuture SG*

New Training Courses starting 2019

NEW COURSES

*please note course is only available from July 2019 onwards



Electrical systems and electronics

Advanced Driver Assistance System AD-1*

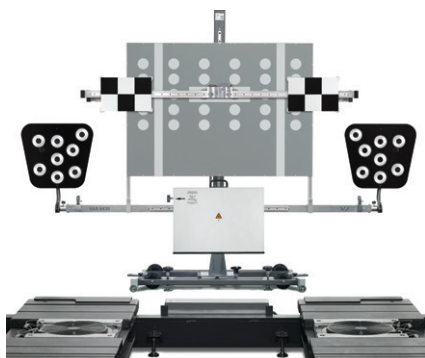
Duration: 2 Days | Order Number: 1987 726 013

Participants:

For experienced technicians to be trained on the basic functions of the electronic brake safety system, airbag and ADAS.

Training Goal:

Enable participants to handle and take safety precautions in dealing with the active, passive safety system and calibration for ADAS.



Contents:

- ▶ Design and function of ABS, ASR, ESP and airbag function.
- ▶ Safety regulations on airbag handling.
- ▶ Practical vehicle troubleshooting using KTS tester.
- ▶ Function and testing of speed sensors, yaw rate and steering angle sensors.
- ▶ Data input LIDAR, 3D imaging, radar, image processing components and test.
- ▶ Calibration equipment for ADAS.
- ▶ Replacing of sensors and alignment.
- ▶ Adaptive cruise control and lane assist.
- ▶ Use of CAS/CAS [plus] and the necessary test equipment (FSA 450, 7xx) in theory and practical sessions.
- ▶ Application of ESI(tronic) database.

Diesel Training Courses 2019-2020



Common Rail System Component CDS-1

Duration: 2 Days | Order Number: 1 987 727 568

Participants:

For diesel technicians performing repairs on common rail pumps and injector service.



Training Goal:

Enable participants to gain knowledge and repair procedures for common rail pumps and injectors.

Contents:

- Construction and Operation of CP1, CP2 and CP3 type pump.
- Principle of Operation of Common Rail Injectors for passenger CRI and commercial vehicles CRIN.
- Disassemble and Reassembling Common Rail Pumps and Injectors.
- Repair and Testing of Common Rail Pumps and Injectors.
- Third Stage Injector repair, measurement of the armature stroke, over stroke, residual air gap, spring force and valve lift.
- Usage of EPS 815 with KMA measuring technology calibration protocol.
- Application of ESI(tronic) database.

Diagnosis Training Courses 2019-2020



Bosch Gasoline Engine Management System DG-1*

Duration: 2 Days | Order Number: 1987 AZ0 314

Participants:

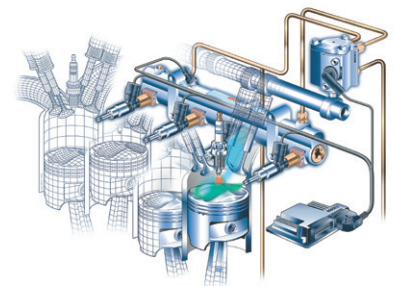
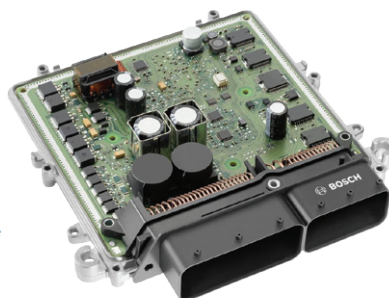
For technicians, product specialist and enthusiasts who desire to know the diagnostic functions of the KTS tester and Bosch gasoline engine management system.

Training Goal:

Understanding of automotive engine management and components. Equip participants with the skills and knowledge required to work efficiently on a range of Bosch gasoline engine management system.

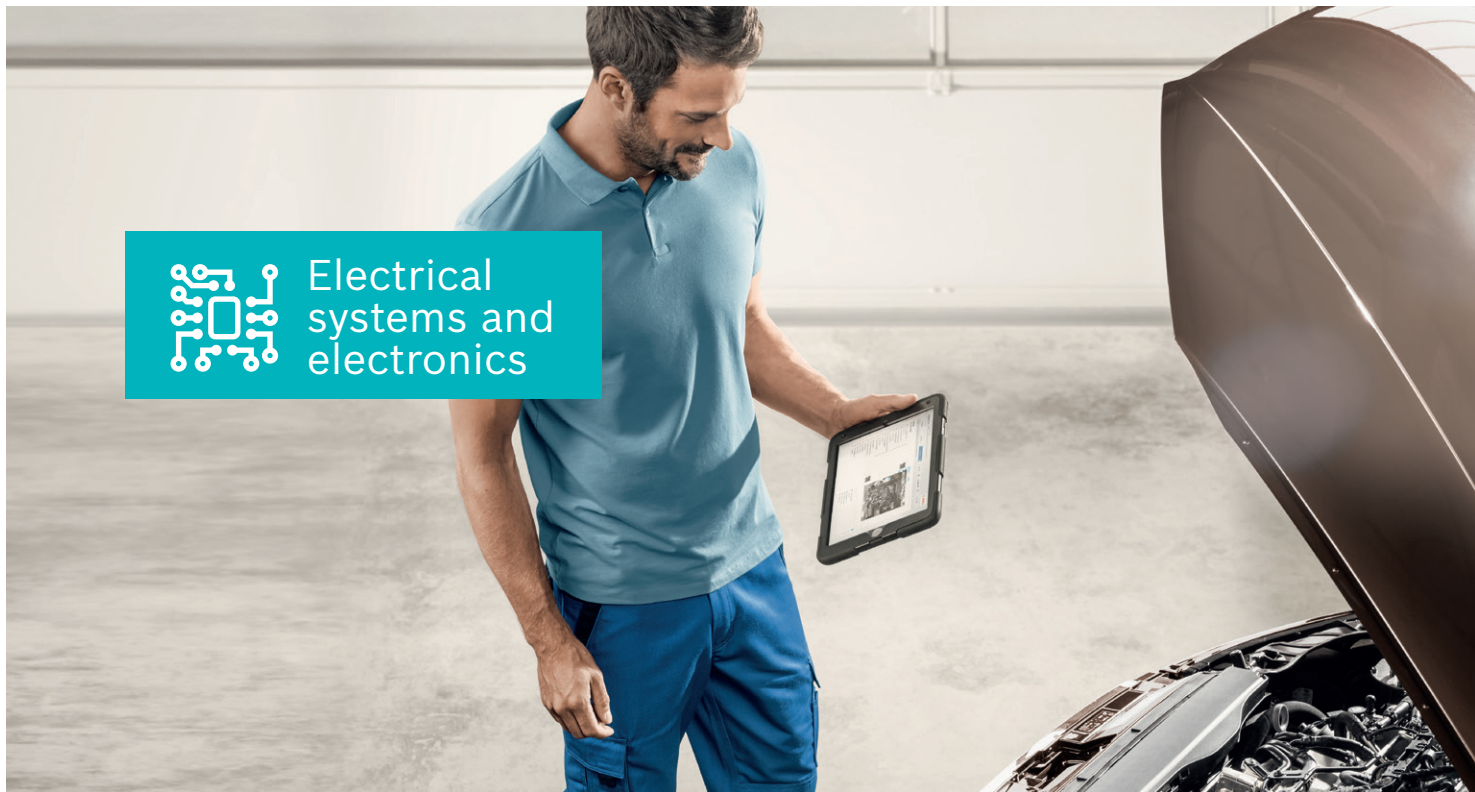
Contents:

- Overview of automotive technology milestone.
- Overview of Bosch information software ESI[tronic] and engine diagnostic tester KTS.
- Enables participants to diagnose and repair on various conventional transistorized, electronic and distributor less ignition systems.
- System overview of Bosch Motronic M/ME engine management system.
- Function, operation and types of Bosch oxygen sensor and catalytic converter.
- Use of CAS/CAS[plus] and the necessary test equipment (FSA 450, 7xx) in theory and practical sessions.
- Application of ESI(tronic) database.



**Courses will be available under SkillsFuture SG*

Foundations Training Courses 2019-2020



Automotive Electrical and Electronics AE-1

Duration: 2 Days | Order Number: 1987 AZ0 001

Participants:

For technicians, product specialist to be trained on the functions of the electrical and electronic systems in a passenger vehicle

Training Goal:

Enable participants to trouble shoot the electrical and electronic systems in a vehicle



Contents:

- ▶ Basic theory in electrical and electronics.
- ▶ Practical usage of multimeter, ammeter and voltmeter for diagnostics on modern vehicles.
- ▶ Working principles, repair and testing of Bosch battery, starting and charging systems.
- ▶ Electrical properties overview including voltage, current, resistance, capacitance & inductance.
- ▶ Function and diagnosis of automotive sensors and actuators of various vehicle systems. Practical tasks using Bosch oscilloscope equipment.
- ▶ Overview of automotive sensors with practical signal tests.
- ▶ Layout of CAN data bus in principle and evaluating the errors patterns. Illustrating the measurement options.
- ▶ Use of CAS/CAS [plus] and the necessary test equipment (FSA 450, 7xx) in theory and practical sessions.
- ▶ Application of ESI(tronic) database.

Foundations Training Courses 2019-2020



Product Training PT-1

Duration: 1 Day* | Order Number: 1987 AZ0 281

Participants:

For sales and administration staff to gain product information and technical knowledge.

Training Goal:

Enable participants to gain knowledge of the core business fields for the automotive aftermarket products.

Contents:

- ▶ Gasoline systems.
- ▶ Diesel systems.
- ▶ Ignition systems.
- ▶ Lighting systems.
- ▶ Overview of Starter and Charging systems.
- ▶ Filtration, energy and body systems.
- ▶ Braking technology and systems.
- ▶ Comfort Electronics.
- ▶ Vehicle diagnostics.
- ▶ Workshop Equipment.
- ▶ Application of ESI(tronic) database.

**PT-1 can be customized beyond 1 day duration to fit your participants or group needs*

Driven by efficiency

Bosch technologies are used worldwide in almost all vehicles. People, and assuring their mobility, is what we are focused on. Therefore, we have dedicated the last 130 years of pioneering spirit and expertise in research and manufacturing to achieving this.

We continue to work on our unique combination of solutions for spare parts, diagnostic devices, workshop equipment and services:

- ▶ Solutions for efficient vehicle repairs
- ▶ Innovative workshop equipment and software
- ▶ The world's most comprehensive range of new and replacement parts
- ▶ Large network of wholesale customers, for quick and reliable parts supply
- ▶ Competent hotline support
- ▶ Comprehensive educational and training offers
- ▶ Targeted sales and marketing support

Find out more at:
<http://services.bosch-automotive.com>

What drives you, drives us.

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