MODULAR ENGINE MANAGEMENT

Practical Introduction to the World of Engine Management Systems

YOUR ALL-IN-ONE TRAINING SYSTEM

Install all sensors and actuators and put them into operation all by yourself. This unique training experience is what you can offer technicians of the future with Lucas-Nülle's "Modular engine management system".

Your trainees can be left alone to learn about the input-process-output (IPO) model and how to use circuit diagrams efficiently for diagnostics. The entire training system is modular so that it can be adapted for whatever training syllabus your trainees are to learn.

To ensure perfect coordination between practice and theory, Lucas-Nülle uses original vehicle components. In order to improve learning success still further, the individual modules all possess simulation and real operating modes.

Available systems
- "Common Rail" direct diesel injection system MMM1
- "Gasoline Direct Injection" direct fuel injection MMM2
- "Motronic 2.8" manifold fuel injection MMM3
- Fuel Injection „Motronic 2.8.1" MMM4
- Fuel Injection „Motronic ME 1.0.2" MMM7
- Fuel Injection „Motronic ME 1.0.1" MMM8
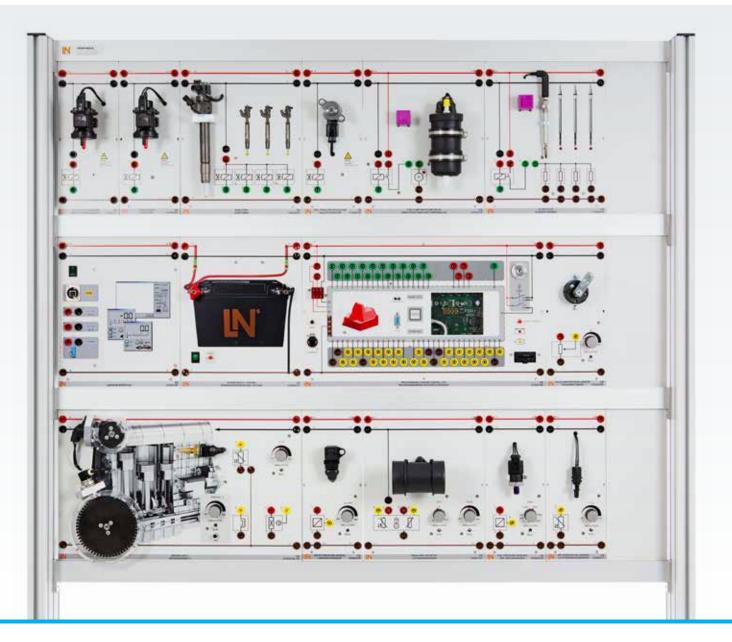
Art no. MMM1, MMM2, MMM3, MMM4, MMM7 or MMM8

The modular engine management system consists of a range of DIN A4 panels featuring original components from the relevant engine management systems. Supporting information about the individual components and the overall system is provided via the LabSoft digital training platform. This software features accurate descriptions of all the components. How the components and systems work is illustrated in detail by videos and animations. Communication between the software and experiment hardware makes it possible to comprehend the theoretical knowledge imparted in a practical context.

Benefits to you
- An engine management control unit which can be programmed for various petrol or diesel engines
- Fault memory which can be read out via an OBD connection
- Built-in, all-in-one measuring instrument
- Modular design for a complete engine management system
- Measurements of signals via 4-mm safety sockets
- Multimedia course for optimising success in learning
- Digital interconnection of control unit and measuring instruments with a computer

A DIESEL ENGINE RECONFIGURED FOR PETROL, COMMON RAIL MODIFIABLE TO GASOLINE DIRECT INJECTION

The modular design of the system means that swapping the right components allows for various fuel injection systems, even a diesel injection system, to be assembled. Just as the hardware is modified, the set of parameters for the programmable engine management controller needs to be changed, meaning that trainees also come into contact with aspects of controller programming since they make all these changes themselves. Even when new engine management systems are developed in the future, the modular engine management system will quickly have extensions available to cover those as well.

Authentic sensors and actuators
- Pressure sensors
- Mass air-flow sensors
- Injectors
- Exhaust gas recirculation valve
- Wastegate valve
- Glow plugs and much more

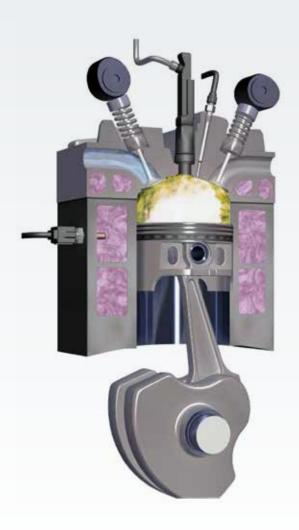**Programmable Engine Management Controller: The Heart of the Training System**

The engine management controller is fully programmable and provides a good insight into the input-process-output model. Your trainees can take measurements from any of the controller's pins. The 4-mm safety sockets are colour-coded so that the function of each pin can be recognised at a glance. The controller also proves to be multi-talented when it comes to diagnostics. Firstly, it is possible to read out standardised P0 codes with the help of the fault switches and OBD socket and also real-time data can be acquired and modifications made via the Ethernet port. This means that your trainees can be ideally prepared for practical work in future.
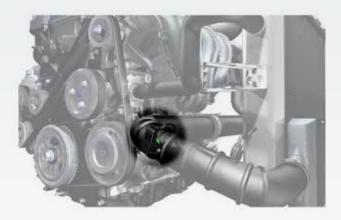
Training contents
- Sensors and actuators for engine management
- Interaction between sub-systems
- Measurements of signals
- Understanding the input-process-output model
- Recognising relationships and dependencies between the open- and closed-loop control systems
- Selection and application of suitable measurement and testing methods
- Improvement of diagnostic skills
- Programming an engine management controller

"LABSOFT" INTERACTIVE TRAINING PLATFORM

The digital training course introduces trainees to an engine management system step by step and explains all the contents in detail. Specially designed experiments deepen understanding of the hardware and student progress is monitored by means of numerous tests. "LabSoft" gives the trainees the impression of working in a real mechanics' workshop. All the experiments are based on job orders for such a workshop and as soon as the job is finished, the trainees can document their procedures and results in a test report. This means that teachers get the chance to teach their trainees sensible and efficient diagnostic strategies. They also learn the importance of circuit diagrams and how they are used. On the basis of these diagrams, trainees can then build up their own engine management system step by step. They also carry out the programming of the engine management controller on their own.

Benefits to you
- With experiment instructions and set-ups
- Professional instruction
- Realistic animations
- Including workshop job orders
- Classroom Manager available as an option

LN Academy

YOUR PERFECT TRAINING CENTRE

WITH THE EXPERT PROGRAM FROM THE LN ACADEMY YOU GET A COMPLETE TRAINING CONCEPT FOR YOU TRAINING CENTRE, WITH TRAINING SYSTEMS, TRAIN THE TRAINER PROGRAM AND TRAINING MODULES BASED ON THE GERMAN CURRICULUM.

JUST ASK FOR THE BROCHURE!

*"Learning is doing.
Everything else is just information."*
Albert Einstein

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