

AUTOMOTIVE HANDBOOK



BOSCH

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EDITION

AUTOMOTIVE HANDBOOK



BOSCH

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Foreword to the 4th Edition

This "Automotive Handbook" is a handy, concise, pocket-sized technical reference manual. Its primary purpose is to provide the automotive engineer and mechanic, as well as all those interested in technical matters, with a wealth of reliable technical data and an insight into present-day state-of-the-art automotive technology in Germany. With this assignment in mind, the scope of the theoretical chapters dealing with **passenger cars and commercial vehicles**, as well as the remaining contents, have been kept to the practical and necessary level.

Within the framework of a pocketbook, it is impossible to present detailed coverage of individual technical subjects. On the other hand, bearing in mind the very wide range of readers, we did not want to dispense with generally applicable topics and data.

We recommend that you leaf through this "Automotive Handbook" before attempting to use it. This will prove to be a help when you subsequently want to refer to a particular subject.

The addition of new technical subjects and the expansion and up-dating of existing material are reflected in the fact that this 4th Edition is 40 pages longer than its predecessor.

Similar to the 2nd and 3rd Editions, this 4th Edition was to a great extent revised and up-dated by specialists from the Bosch Group, but also by experts from other companies. At this point we would like to express our appreciation to all concerned.

The editors

For your information:

Compared to the 3rd Edition, we have updated the following subjects:

Strength of materials, acoustics

Electronics:

Microhybrids, circuits, pc-board techniques, sensors, actuators

Materials science:

Basics, materials, lubricants, fuels, brake fluids, antifreeze

Joining and bonding techniques:

Punch riveting

Tribology

Internal-combustion engines:

Reciprocating-piston engines

Engine management (spark-ignition engines):

Spark plugs, electric fuel pumps, fuel supply (L-Jetronic),

Motronic, exhaust emissions, LPG systems

Engine management (diesel engines):

Axial/radial plunger distributor pumps, unit pump system, unit-injector system, common-rail, nozzles and nozzle-holders, exhaust emissions, auxiliary starting devices

Electric drives

Drivetrain:

ASR for pass. cars and commercial vehicles

Braking systems:

Basics, brake-circuit configurations, ABS for passenger cars, ABS and ELB for commercial vehicles

Lighting

Reflectors, PES-PLUS headlamps, Litronic, lights and lamps

Theft-deterrent systems

Communication/information systems:

Car radio, parking systems, navigation systems, mobile radio,

Board Information Terminal (BIT)

Safety systems:

Front and side airbag systems

Comfort and convenience systems:

Power sunroofs and power windows, seat and steering-column adjustment

Automotive electrical system:

Circuit diagrams, energy supply, CAN

Electromagnetic compatibility (EMC)

Motor-vehicle specifications

Following subjects have been introduced:

Vehicle dynamics control (VDC)

and the following have been dropped:

Rear-wheel steering, vehicle-monitoring system (Check-Control), trip computer, tire-pressure monitoring system (RKS)

4 Contents

Contents

Physics, basics			
Quantities and units	10		
Conversion tables	17		
Vibration and oscillation	39		
Mechanics	44		
Strength of materials	52		
Acoustics	60		
Heat	66		
Electrical engineering	70		
Electronics	86		
Sensors	102		
Actuators	122		
Electric machines	130		
Technical optics	135		
Mathematics, methods			
Mathematics	142		
Quality	150		
Engineering statistics, measuring techniques	156		
Reliability	164		
Data processing in motor vehicles	166		
Control engineering	170		
Materials			
Chemical elements	174		
Terminology and parameters	178		
Material groups	180		
Material properties	184		
Lubricants	224		
Fuels	232		
Chemicals	244		
Corrosion and corrosion protection	250		
Heat treatment	260		
Hardness	266		
Machine elements			
Tolerances	271		
Sliding and rolling bearings	274		
Spring calculations	282		
Gears and tooth systems	288		
Belt drives	298		
Threaded fasteners	302		
Joining and bonding techniques			
Welding	311		
Soldering	313		
Adhesives	314		
Riveting	315		
Pressurized clinching	316		
Punch riveting	317		
Sheet-metal processing	318		
Tribology, wear	321		
Motor-vehicle dynamics			
Road-going vehicle requirements	326		
Fuel requirements	327		
Dynamics of linear motion	330		
Dynamics of lateral motion	342		
Evaluating operating behavior (as per ISO)	346		
Special operating dynamics for commercial vehicles	351		
Agricultural-tractor requirements	354		
Environmental stresses	356		
Internal-combustion (IC) engines			
Operating concepts and classification	358		
Thermodynamic cycles	359		
Reciprocating-piston engines with internal combustion	361		
The spark-ignition (Otto) engine	364		
The diesel engine	368		
Hybrid processes	373		
Gas exchange	374		
Supercharging/turbocharging	378		
Power transfer	382		
Cooling	398		
Lubrication	398		
Empirical values and data for calculations	400		
Reciprocating-piston engine with external combustion (Stirling engine)	412		
The Wankel rotary engine	414		
Gas turbines	416		
Engine cooling			
Air and water cooling	418		
Charge-air cooling/intercooling	420		
Oil cooling	421		
Intake air, exhaust systems			
Air filters	422		
Turbochargers and superchargers	424		
Exhaust systems	430		
Engine management for spark- ignition (SI) engines			
Control parameters and operation	434		
Ignition			
Basics	436		
Components			
Ignition coils	439		
Spark plugs	440		
Ignition systems			
Conventional coil ignition (CI)	445		
Transistorized ignition (TI)	448		
Capacitor-discharge ignition (CDI)	450		
Electronic ignition (ESA and DLI)	451		
Knock control	454		

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