

MINI Cooper

2002-2006
 Cooper, Cooper S

Diagnosis Without Guesswork

- Diagnostic tools and techniques
- Component descriptions and operation
- Circuit wiring schematics
- Pinout charts, waveforms, and nominal values
- Bus system operation and testing
- OBD II P-code (DTC) lookup



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WITHOUT GUESSWORK™

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MINI Cooper – Diagnosis Without Guesswork: 2002-2006 Cooper, Cooper S

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This MINI Cooper Diagnosis Without Guesswork handbook is a diagnostic manual written for the professional technician and the MINI enthusiast. Not intended to be a repair manual, this handbook is your comprehensive source for engine management and on-board system diagnosis.

For the MINI technician with advanced automotive test equipment, the circuit descriptions, pinout charts, wiring schematics, scope traces, and real-world nominal values will prove essential in diagnosing problem cars.

Even if you own only a generic OBD-II scan tool, a DVOM and a set of jumper wires, this book will help provide fast answers and guidance as it steps you through the diagnostic process.

As a result of publishing our MINI repair manuals, we have been asked for DTC-based diagnostic information. This handbook is a response to that feedback.



An OBD-II scan tool is invaluable for on-board diagnostics, such as clearing fault codes, and resetting the Check Engine light.
OBD On-Board Diagnostics



Factory scan tool being used to check power supply (Term. 30) 65 Electronic Immobilization System (EWS)



Backprobing ECM connector to check for voltage to LDP solenoid.
13 Engine Management

Pcode	MINI FC	Description	Threshold value	Related component(s)
P1242	4674	Upstream MAP sensor circuit too high engine deceleration	> 700 hPa	MAP sensor (Cooper) Page 13-117 TMAP MAP sensor (Cooper S) Page 13-120
P1320	4590	Flywheel adaptation for revolve detection range	Crankshaft segment adaptation test = 0.78%	CKP sensor Page 13-54
P1321	4597	Flywheel adaptation for revolve detection performance	Teeth count incorrect ±1 tooth	CKP sensor Page 13-54
P1366	4596	Ignition coil A primary circuit	Circuit fault, performed by software	Ignition coil Page 13-67
P1367	4597	Ignition coil B primary circuit	Circuit fault, performed by software	Ignition coil Page 13-67

Terminals at X600 connector X60631	Conditions	Test values	Circuit
27 and ground	key on engine off	13.3 volts (B+ F ambient temp)	IA1 signal
2 and ground	engine running at idle	1.25 volts (B+ ambient temp engine at operating temp)	IA1 signal
31 and ground	key on engine off	4.2V	MAP signal
31 and ground	engine running at idle	1.25 volts (18 in. vvac)	map signal
47 and ground	key on engine off engine running at idle @ 2500 (rpm no load)	0.1 volts (measured) sensor ground	reference voltage
31 and ground	key on engine off engine running at idle @ 2500 (rpm no load)	11 volts (approx.) reference voltage	reference voltage

Chapters

- Diagnostic Tool and Techniques (Gr. 01)
- Engine Management (Gr. 13)
- Fuel Supply System (Gr. 16)
- Automatic Transmission (Gr. 24)
- Electro-Hydraulic Power Steering (Gr. 32)
- Tire Pressure Monitoring (Gr. 36)
- Bus Systems (Gr. 61)
- Electronic Immobilization System - EWS (Gr. 65)
- On-Board Diagnostics (OBD II)