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Available July 7, 2001

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**Volkswagen
 Scan Tool Companion
 1990▶1995**

Working with On-Board Diagnostics (OBD) Data for Engine Management Systems



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**Working with On-Board Diagnostics (OBD)
 Data for Engine Management Systems**

Retail price: \$59.95
 Bentley Stock No. VD95
 ISBN 0-8376-0393-5
 VWoA Part No. LPV 800 902
 256 pages, 129 photos & illustrations,
 194 tables
 Softcover, 8-3/8" by 11"



On-car validation together with factory support information make this a valuable resource for the Volkswagen technician.

The **Volkswagen Scan Tool Companion 1990-1995** is the essential reference book for the professional Volkswagen technician or the do-it-yourselfer with a Volkswagen scan tool. This book together with a VAG 1551 scan tool or equivalent scan tool software is the only equipment you'll need to interrogate and diagnose 1990 through 1995 Volkswagen engine management systems.

You'll find all the engine management factory scan tool support information in one place culled from volumes of factory service information in an easy-to-use format. You'll also find lots of additional information not found in any factory repair manual, including nominal values for correctly functioning engine management systems, scan tool fundamentals, and exhaust and emissions theory.

Coverage includes gasoline engine management systems with On Board Diagnostics (OBD) commonly referred to as OBD-I (systems without readiness codes) for 1990 through 1995 model year Golf, Jetta, GTI, Corrado, Passat, Fox, Cabriolet, and Eurovan including California and Canadian versions. Also covered is the 1995 Winnebago Rialta and Camper and the OBD-D system found on 1996 Passat TDI diesel.

Engine codes covered:

- AAA (2.8L 6-cylinder VR-6)**
- AAF (2.5L, 5-cylinder)**
- ABA (2.0L, 4-cylinder)**
- ABG (1.8L, 4-cylinder)**
- ACC (1.8L, 4-cylinder)**
- ACU (2.5L, 5-cylinder)**
- PG (1.8L, 4-cylinder G60)**
- RV (1.8L, 4-cylinder)**
- 1Z (1.9L, 4-cylinder TDI Diesel)**
- 2H (1.8L, 4-cylinder)**
- 9A (2.0L, 4-cylinder 16V)**

Features:

- Detailed explanation of scan tool functions on all engine management systems.
- Complete "measuring value block" information with factory specified values along with known-good nominal values.
- Engine-specific step-by-step procedures for initiating basic settings using the scan tool.
- Explanation of component operation for the Output Diagnostic Mode.
- System views of each engine management system showing sensors, actuators and signals, including technical specifications for each engine.
- Detailed component overviews with the alpha-numeric identification. This is helpful when using factory repair manuals or wiring diagrams.
- Engine technical data for each engine.
- Glossary of terminology used in conjunction with the scan tool.
- Descriptions of Volkswagen Diagnostic Trouble Codes (DTCs) identified by blink code and by factory codes.

28		AAF			
Read Measuring Value Blocks (Function 08)					
Function 08 Display Group 001 (late)					
	1	2	3	4	
Display	xx.x °C	xxxx /min	x.xx V	xx.x ms	
Indicated	Coolant temperature	Engine speed	Oxygen sensor signal voltage	Fuel injector duration	
Specification	none given ⁰⁰¹⁻¹ Open circuit shows a constant -40°	775-825 idle rpm	0.0V -0.75V ⁰⁰¹⁻³	none given ⁰⁰¹⁻⁴	
Working range	-40°C...141°C (approximately)	775...5500 rpm ⁰⁰¹⁻²			

001-1) Specification unavailable. Experience indicates that at idle, temperature will vary between approximately 80°C and 105°C depending on radiator fan operating cycle. Temperature must rise smoothly during engine warm-up.
 001-2) Approximate maximum governed engine speed.
 001-3) Experience indicates that at idle, HO2S voltage must fluctuate rapidly. Low signal should be below 0.300 V and high signal should be above 0.700 V. If checked before a cold engine start, voltage must be 0.450 V and rise to approximately 0.750 V as the engine warms up. HO2S is considered on-line at this point due to plausible signal voltages and voltage must begin to fluctuate as noted above. The time from cold engine start to HO2S on-line is typically less than 1 minute and is not dependent on coolant temperature.
 001-4) Specification unavailable. Experience indicates that at warm idle, fuel injector duration will be approximately 2 to 3 ms. Maximum observed value is 10.0 ms. Minimum observed value is 0.00 ms during deceleration fuel shut-off function.

"Measuring value block" tables for all scan tool functions include specifications obtained from factory information and actual on-car testing.

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