

Baum Tools CS2000 Data Scanner

Let's be honest: When it comes to onboard diagnostic information, European vehicles have always been a breed apart. Even several years ago, when vehicle system self-diagnostic capabilities were already a common sight on domestic and Asian vehicles, many European vehicles still lacked this important feature. When self-diagnostic capabilities finally did appear on European vehicles, dealer-only or brand-specific specialty tools were frequently required to retrieve and understand the data available.

The situation could be viewed as a blessing or a curse, depending on your point of view. The 'obscurity factor,' cost of admission for diagnostic equipment and scarcity of reliable diagnostic and repair information have probably intimidated a great many otherwise capable repair shops and technicians, forcing them to turn away European vehicle owners when diagnostic work was required. These same vehicle owners were then forced to either return to the dealer, or seek an independent European vehicle repair shop that had made the investment in diagnostic tools, support information and training. While one group of businesses continued to lose or turn away business from European vehicle owners, the other businesses continued to profit from the 'artificial-scarcity' situation.

In recent years a handful of tool and equipment manufacturers have recognized a viable market niche, and have stepped up to offer European-specific diagnostic equipment to the U.S. vehicle repair industry. Operating with little or no OEM cooperation, these



manufacturers 'reverse-engineered' the European vehicle systems, then incorporated what they were able to learn into their diagnostic equipment. Several of these tools have been profiled in earlier issues of *Import Service*. Their availability has opened the door to many shops that previously had to close their doors to many types of European vehicle diagnostic work.

The most recent piece of European-specific diagnostic equipment we've had a chance to work with is the Baum Tools CS2000 Data Scanner. The CS2000 uses interchangeable data cartridges and harness connectors, allowing it to interface with the self-diagnostic systems on vehicles from four major European manufacturers: BMW, Daimler-Benz, Volkswagen/Audi (including Seat and Skoda vehicles for European CS2000 users) and Volvo. A separate OBD-II cartridge also gives the CS2000 the capability to interface with and retrieve diagnostic information from all 1996-99 ISO 9141-compliant OBD-II equipped vehicles. This includes all European, Asian and Chrysler products built for the North American and Japanese markets that conform to the ISO 9141 communication standard.

While the generic OBD-II interface is nice to have for emissions and driveability diagnosis, it's the CS2000's ability to access many other vehicle systems and diagnostic information that give this tool its unique value. The CS2000 offers access to live datastream information, fault code handling, control unit ID and coding and service interval resets. A direct PC interface and the ability to graph live data are promised for the future. Preparations are also underway to introduce the following additional features for the CS2000 during 2000: Nissan, BMW (ZKE, instrument cluster, A/C, BC-MID), Porsche, Saab, GM, Ford and control module programming.

For 1988-99 BMW vehicles, the CS2000 can access engine diagnostics, transmission diagnostics, ABS/ASC/DSC, airbag, electronic throttle control and service reminder reset.

Mercedes-Benz digital information includes: 1991-99 engine diagnostics, 1991-97 diagnostic module, 1990-99 five speed automatic transmission, 1993-99 airbag. Analog information includes (get ready for the acronyms): ELR/EDS/CIS-E, DM, BM, DI, ETC, 4MATIC, EA/CC/ISC, ADS, ASD, ABS, ASR, SPS, RB, CST, RST, IRCL, PSE, ATA, CF, A/C and SRS. If you're a Benz specialist, you doubtless already know what all these acronyms mean, and there's no point in spelling them out for you here. For the rest of us, Baum has included an instruction manual that translates these and many other obscure European vehicle system acronyms.

The CS2000 Volkswagen/Audi cartridge offers a long list of diagnostic capabilities. Digital diagnostic capabilities include: engine, electronic Diesel, engine electronics, OBD-II, automatic transmission, electronic clutch, instrument cluster, A/C and heating, power seat, seat/mirror adjustment, interior monitoring, ABS, electronic suspension, traction control, tire pressure monitor, steering wheel, four wheel drive, level control, SRS (airbag), anti theft, central locking, sun roof, headlight control, parking aid, emergency calling, radio, sound system, navigation/GPS, battery control, battery charger, electronic control and gateway data bus.

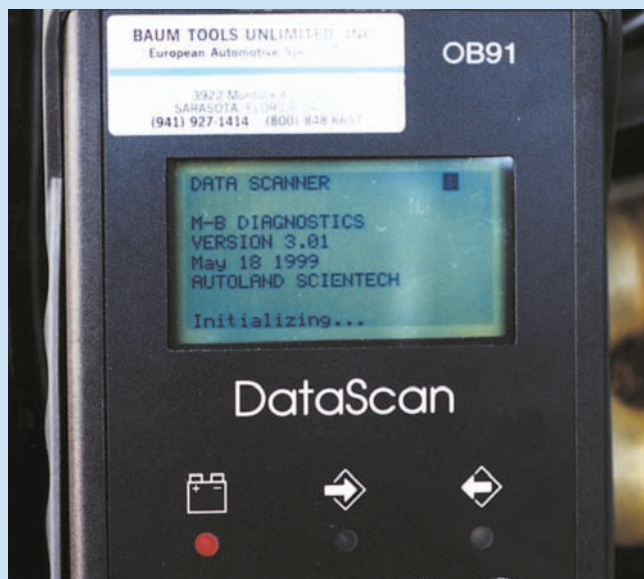
Baum introduced a Volvo cartridge for the CS2000 after I began preparing this article, so I did not have the opportunity to evaluate it. The Volvo cartridge includes access to: engine management systems (Motronic, LH, Fenix, Regina), ignition control, turbo control, service reminder light, instrument cluster, immobilizer, transmission, ABS, airbag, climate control, keyless entry and power seat.

For an up-to-date listing of all CS2000 capabilities and future tool upgrade plans, consult the Baum Tools website at www.baumtools.com or **Circle Number 117** on the Reader Service Card for additional information. The following photos will give you a sampling of the CS2000's capabilities and modes of operation. ■

—By Karl Seyfert



A separate data cartridge covers each carline. Slide the cartridge into place, noting the UP orientation. Attach the CS2000 battery connectors to power up the unit and begin initialization.



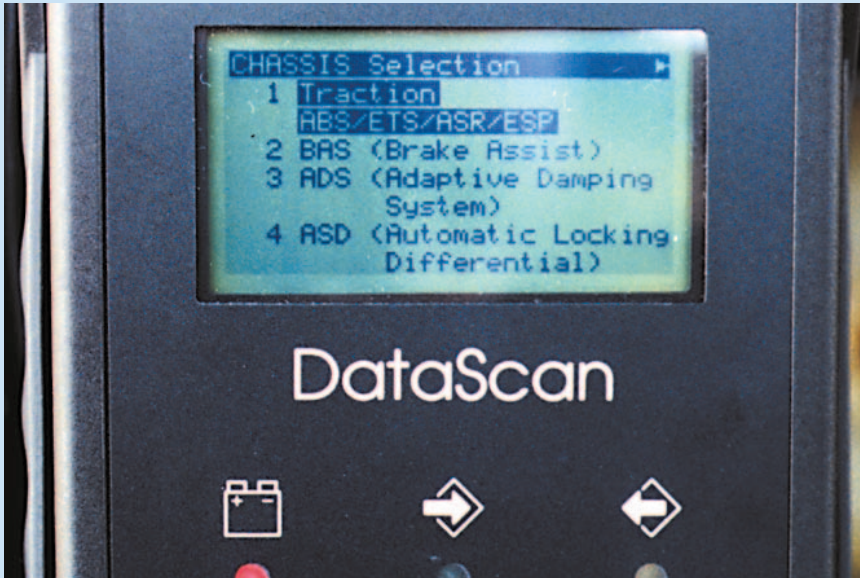
The CS2000 goes through a series of 'wake-up screens' next, identifying itself as well as the data cartridge you've installed. The tool uses an easy-to-follow menu format, asking a series of questions to determine both which vehicle you're working on and what type of information you want to retrieve.

TEST BENCH

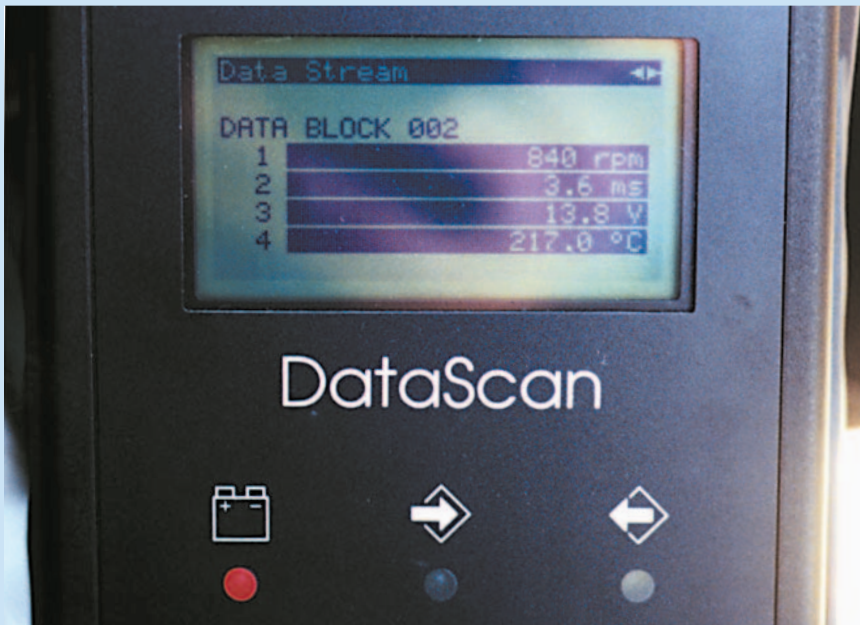
The Mercedes-Benz cartridge requires identification of the model you are working on, using the Benz chassis and engine numbering system. Once again, Mercedes specialists may find this to be Old Hat. However, if you're less familiar with this complex nomenclature, consult the manual before proceeding to make sure you've selected the right chassis and engine combination.



Based on your keypad selections, the CS2000 instructs you on the proper diagnostic terminals to insert the remaining diagnostic connectors. The procedures for Volkswagen and BMW are similar, although BMW utilizes a more convenient all-in-one diagnostic connector and matching CS2000 harness plug. Later M-B models also have this convenience.



After connecting to the vehicle, the CS2000 attempts communication with all available control units and then informs you of available diagnostic information. Scroll through the menu to find the system you need to work on. Even though you have correctly identified the chassis and engine, it's still possible the vehicle you're working on doesn't have all of the systems displayed by the CS2000. The tool informs you whether it can communicate with a particular system.



Much of the diagnostic information presented by the CS2000 is in the OE format. For example, the Volkswagen datastream information shown here follows the format used by the Volkswagen 1552 diagnostic service tool. If you have no previous experience with a 1552 or have no idea what Data Stream/Data Block 002 means, you'll need OE or OE-equivalent service information to sort it out. A great deal of this information is available separately from Baum, as well as from other sources. If you don't have it already and are considering the purchase of a CS2000, the supplementary information will be essential to get the most out of your diagnostic tool investment.